CARL ROTH®

# 2018



Labware | Life Science | Chemicals




# You can contact us directly

## Or get in touch with your local distributor!

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Innovative use of combined heat and power technology when printing this product reduced $CO_2$ emissions by up to 52% in comparison to conventional methods in Germany.

minus 52% $CO_2$

# Your partner for high-quality performance

## With 5 plus points to your advantage:

### Quality

Constant high quality of the products. Our QM system is in accordance with ISO 9001 since August 1995.




### Logistics

Direct dispatch! Delivery fast, simple and reliable!

### Special rates & Discount

Fair and calculable, i. e. a quantity discount of 5 % from 6 packs and 10 % from 24 packs of same items will be granted. Please check with us for special rates on bulk amounts or standing orders.

### Customer advice

Customer proximity and competence, i. e. we are here to advise you before and after buying.

### Returned & Take-Back Goods

You can take advantage of our 10-day exchange and take-back guarantee. Just send the goods to us in their original packaging together with a copy of the invoice or delivery note and your modified order. We are unfortunately unable to pay the costs for postage and packing. We request you to get in touch with us for any legitimate complaints which require goods to be returned. We shall then authorize our forwarding agent immediately to pick up the goods in question. In the event of goods being returned independently and without prior notice, postage and packing costs can only be refunded for the same amount as agreed upon with our forwarding agent. Further information on returning goods can be found in the terms of sale and delivery at the back of this catalogue.




# A private enterprise with tradition

## Best service for more than 135 years

**1879**

CARL ROTH is established as a “material goods, colonial goods and dyes merchant and chemists” in Karlsruhe.

**1891**

CARL ROTH is appointed as an “official purveyor to the Grand Duke of Baden“.

**1899**

ROTH publishes its first sales and mailorder catalogue.

**1907**

CARL ROTH operates the first delivery van in Karlsruhe.



# Quality, Environment, Safety

## We take responsibility

Our QM system celebrates its 20th birthday in 2015. Over the past two decades we have continuously adapted our QM System to the growing market demands in order to meet quality requirements and to deliver a high standard of quality.

The guiding principle for an environmentally conscious corporate management has always been a fundamental part of our business conduct. To manifest this endeavour in the organisation, an environmental management system was successfully introduced and certified in 2016.

Our efforts towards sustainability are an integral part of our business model. In addition to fulfilling our statutory environmental commitments, therefore, we always strive to set additional environmental protection targets and to optimise our operating procedures under environmental aspects. That is why we participated in the ECOfit 2013/2014 environmental consulting programme, an environmental project sponsored by the state of Baden-Württemberg.

After participating in the programme for one year, the Ministry of the Environment, Climate and Energy of the state of Baden-Württemberg as well as the city of Karlsruhe confirmed that our company had succeeded in meeting the environmental protection targets.

By participating in the Responsible Care® programme of the chemical industry, we have undertaken a commitment to meet the goals set by the programme.

These goals are to promote sustainability, to show product responsibility, to ensure safety, to improve health protection in the workplace and to better protect the environment.

RESPONSIBLE CARE®
OUR COMMITMENT TO SUSTAINABILITY

**Rotilabo®**
For laboratory products with good cost-performance ratio.

**Sekuroka®**
For select safety and work protection products.

Many of the articles in this catalogue are protected by copyright and patented even when not explicitly stated.

**1928**
The laboratory chemicals department opens.

**1945**
The highly efficient manufacturing and bottling department enters service.

**1958**
ROTH unveils its proprietary high-pressure laboratory autoclaves at the ACHEMA Fair.

**1971**
ROTH is awarded a patent on its Mercurisorb-ROTH® high-speed mercury absorber.

**1989**
The „Association of Independent Businesses“ presents its award to ROTH in recognition of its environmentally friendly business practices.

# Plastics – Technical data / Key to symbols

## What about the packaging material?

**We are making our contribution to the environment:**

- By trying to use as little packaging material as possible. Unfortunately we cannot do without packaging completely as it has the important function of not only protecting the product, but also man and environment from any harm.

- By using environmentally friendly and recyclable packaging material as far as possible. As early as the beginning of the 80s, we stopped using polystyrene inserts for packing solvents, acids and alkaline aolution. We now use special boxes for hazardous goods made of 100 % recyclable corrugated cardboard. Paper is used as stuffing material.

Please also help by putting the **packaging in the recycling container after use**. Our boxes are labelled with the recy-symbol; they can be easily stored when cut open and pressed together without taking up much space, prior to being put out for recycling.

Our **plastic containers made of polyethylene (PE)** can also be turned in for recycling after they have been completely emptied and cleaned of all harmful substances.

The same applies to **tin flasks and canisters** once emptied and pollutent-free.

## Sterilizing plastics – Autoclaving

Recommended autoclave cycle:
20 minutes at 121 °C, 1 bar

1. Clean autoclave goods thoroughly prior to sterilizing.
2. Rinse off used detergent with distilled water.
3. Unscrew caps to enable pressure compensation.
4. Only autoclave containers with stop-cock when empty, screw off stop-cocks.

   Following plastics can be autoclaved repeatedly: ETFE, PFA, PTFE, FEP, E-CTFE, PMP/TPX®, PP, SI, PVDF; PES, PSU

**Note:**
Polycarbonate PC and Polysulfone PSU are also autoclavable, however this reduces the mechanical stability. This can result in material failure particularly when under high mechanical strain, e.g. during centrifuging.

Please contact us should you have any further questions regarding packaging.



**1990**
CARL ROTH publishes its first general product catalogue for its Labware, Life Science and Chemicals product lines.

**1993**
Construction of a modern high-bay warehouse.

**1995**
First certification of the quality management system to DIN EN ISO9001.

**2005**
The chemicals department moves into modern premises on the Karlsruhe-Rheinhafen industrial estate.



## Article numbers

Our Article numbers assemble themselves as follows:

| | | |
|---|---|---|
| 4 digits: | | **0000.1** |
| 1 letter | + 3 digits: | **X000.1** |
| 2 letters | + 2 digits: | **XX00.1** |
| 3 letters | + 1 digit: | **XXX0.1** |

(before .1 .2 .3 etc.)

**.1 .2 .3** etc. define the different packings.

## Standard abbreviations for plastics

| DIN-Abbrev. | Description | Application temperature (°C) from | to | |
|---|---|---|---|---|
| ABS | acrylic butadiene styrene copolymer | -40 | +85 | (+100) |
| E-CTFE | ethylene chlortrifluorethylene | -70 | +150 | (+170) |
| ETFE | ethylene tetrafluor ethylene | -100 | +150 | (+180) |
| FEP | tetrafluor ethylene perfluorpropylene | -100 | +205 | |
| HDPE | polyethylene high density | -50 | +80 | (+120) |
| LDPE | polyethylene low density | -50 | +75 | (+90) |
| MF | melamine | -60 | +80 | (+120) |
| NR | natural rubber | -40 | +80 | |
| PA | polyamide (PA6) | -30 | +80 | (+140) |
| PBT | polybutylene terephthalate | -50 | +150 | |
| PC | polycarbonate | -100 | +135 | (+140) |
| PE | polyethylene (see HDPE/LDPE) | -40 | +80 | (+90) |
| PES | polyether sulfone | -100 | +150 | |
| PETG | polyethylene terephthalate | -40 | +65 | |
| PFA | perfluoralkoxy | -200 | +260 | |
| PMMA | polymethylmethacrylate | -40 | +85 | (+90) |
| PMP (TPX®) | polymethylpentene | 0 | +150 | (+180) |
| POM | polyoxymethylene | -40 | +110 | (+140) |
| PP | polypropylene | -10 | +110 | (+140) |
| PS | polystyrene | -20 | +70 | (+80) |
| PSU | polysulfone | -100 | +150 | |
| PTFE | polytetrafluor ethylene | -200 | +260 | |
| PVC | polyvinylchlorid | -20 | +80 | |
| PVDF | polyvinylidene flouride | -40 | +105 | (+150) |
| SAN | styren acrylonitrile | -20 | +85 | (+95) |
| SI | silicone rubber | -50 | +180 | (+250) |
| TPE | thermoplastic elastomer | -50 | +121 | |

Temperature in ( ) short-term

All values given in this table refer to plastic raw material and can only be regarded as guidelines. As the temperature resistance may vary with different conditions of manufacturing or chemical influences, suitability tests by the user are highly recommanded.

**No legal claims can be derived from this information; nor do we accept any liability for it.**

## Key to symbols

News and Programme extensions

All autoclavable products in our catalogue are identified by this symbol. Please also note any additional instructions when autoclaving.

**Temperature Resistance:**

Safe to freeze (approx. -10/-20 °C)

Suitable for low temperatures (approx. -70/-80 °C)

Suitable for liquid nitrogen (gaseous phase / -196 °C)

See catalogue text for detailed information.

Ready-to-use products and reagents

Sterile products

All products identified as being particularly temperaturesensitive are shipped **in special ice boxes with freezer packs or in dry ice.**

**2013**

An extension with an automated small parts warehouse is added to the Chemicals and Life Science building, enlarging its area to approx. 8.000 m². CARL ROTH now stocks over 21.000 products in its warehouse.

**2014**

Succsesfull participation in the ECOfit programme sponsored by the state of Baden-Württemberg.

**2014**

Participation in the Responsible Care® programme.

**2015**

Relaunch of the new ROTH Online Shop.

**2016**

Certification of the corporate environmental management system according to ISO 14001 for the sustainable environmental protection.

# Chemical resistance of plastics

| Chemicals at 20 °C | MF | ETFE | PA | PC | HDPE | LDPE | PMMA | POM | PP | PS | PTFE/ FEP | PVC | SAN | PMP | PVDF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetaldehyde | | ❍ | ❍ | – | ❍ | ❍ | – | ❍ | – | – | ● | – | – | ❍ | – |
| Acetic Acid, glacial | ❍ | ❍ | – | – | ❍ | ❍ | – | – | ❍ | | ● | | | ❍ | ❍ |
| Acetone | ● | ❍ | ● | – | ● | ❍ | – | ● | ● | – | ● | – | – | ❍ | – |
| Acetonitrile | | ● | ● | – | ● | ● | – | ❍ | – | – | ● | – | | – | ❍ |
| Acetylene (Ethine) | | ● | ● | ● | ● | ● | | ● | ● | | ● | | – | | ● |
| Aluminum Chloride, saturated | | | – | ❍ | ● | ● | ● | – | ● | | ● | ❍ | ● | | ● |
| Ammonia, pure | | ● | | – | ● | ● | ❍ | | ● | ❍ | ● | | ❍ | ❍ | – |
| Ammonium Chloride, solid | ● | | ● | ● | ● | ● | ● | ❍ | ● | | ● | | | | ● |
| Aqua Regia | – | ● | – | – | – | – | | – | – | – | ● | – | – | ❍ | – |
| Ascorbic Acid, water solution | | ● | ❍ | ❍ | ● | ● | | ❍ | ● | | ● | | | | ● |
| Benzaldehyde | | ❍ | – | – | ❍ | ❍ | – | ● | ❍ | – | ● | – | ❍ | ● | ❍ |
| Benzine | ● | ● | ● | ❍ | ❍ | – | ❍ | ● | – | – | ● | ❍ | – | ❍ | ● |
| Benzoic Acid, saturated | | ● | – | – | ● | ● | ● | ❍ | ❍ | ❍ | ● | ● | ● | ● | ● |
| Benzol | ● | ● | ❍ | – | – | – | – | ❍ | – | – | ● | – | – | ❍ | ● |
| Calcium Chloride, water solution | | ● | ● | ● | ● | ● | ● | ❍ | ● | ● | ● | ● | ● | ● | ● |
| Carbon Tetrachloride (TETRA) | ● | ● | – | – | – | – | | ❍ | – | – | ● | – | – | – | ❍ |
| Chlorine 97 % | | | – | – | – | – | ❍ | – | – | – | ● | – | – | – | ● |
| Chlorine, water solution | | ● | – | – | ❍ | – | ❍ | – | – | – | ● | ❍ | ❍ | – | ● |
| Chlorobenzene | | ● | – | – | – | – | – | ● | – | – | ● | – | – | – | ● |
| Chloroform (Trichloromethane) | ● | ❍ | – | – | – | – | – | – | – | – | ● | – | – | – | ❍ |
| Copper(II) Chloride, saturated | | | – | ● | ❍ | ● | | ❍ | ❍ | | ● | ● | | ● | ❍ |
| Cyclohexane | ● | ● | ● | ❍ | – | – | ❍ | ● | – | – | ● | ❍ | ❍ | – | ● |
| Decahydronaphtalene | | ● | ● | – | ❍ | – | – | ● | – | – | ● | ❍ | – | – | ❍ |
| Dichloromethane (Methylene Chloride) | | ❍ | – | – | – | – | | ❍ | – | – | ● | – | – | – | ❍ |
| Diethyl Ether | | ● | ● | – | – | – | – | ● | – | – | ● | – | – | – | ❍ |
| Dimethyl Formamide (DMF) | | ❍ | ● | – | ● | ❍ | | ● | ● | – | ● | – | – | ● | – |
| Dimethyl Phtalate (DMP) | | | ❍ | – | – | ❍ | | ❍ | ❍ | – | ● | – | – | | ❍ |
| Dimethylsulfoxide (DMSO) | | ● | ❍ | – | ● | ● | | ● | ● | ● | ● | – | | ● | – |
| 1,4-Dioxane | | ● | ● | – | ❍ | ❍ | – | ● | ❍ | – | ● | – | – | ❍ | – |
| Ethanol 96 % | ● | ● | ● | ❍ | ● | ● | – | ● | ● | – | ● | ❍ | ❍ | ● | ● |
| Ethyl Acetate | ● | ● | ● | – | ❍ | – | | ● | ❍ | – | ● | – | – | – | – |
| Ethylene Chloride | | ● | – | – | ❍ | ❍ | | ● | – | – | ● | – | – | – | ● |
| Ethylene Glycol | ● | ● | ❍ | ❍ | ● | ● | ❍ | ● | ● | ● | ● | ❍ | ● | ● | ● |
| Ethylenediaminetetraacetic Acid (EDTA) | | ● | ❍ | ❍ | ● | ● | | ● | ● | | ● | | | | ● |
| Fluorinated Alcanes (FKW) | | ● | ❍ | ❍ | | – | | ❍ | ❍ | – | ● | | | | – |
| Fluorine | | ❍ | – | – | – | – | | – | – | – | ❍ | ❍ | – | – | ❍ |
| Formaldehyde 40 % | | ● | ❍ | ● | ● | ❍ | ● | ● | ● | – | ● | ❍ | – | ● | ● |
| Formic Acid 98 % | ● | ● | – | – | ● | ● | – | – | ❍ | – | ● | ❍ | – | ❍ | ❍ |
| Glycerine | ● | ● | ● | ❍ | ● | ● | ● | ● | ● | ● | ● | ❍ | ● | ● | ● |
| Haloalkanes (FCKW) | | | ❍ | ❍ | | | | ● | ❍ | – | ● | | | | ❍ |
| n-Heptane | | ● | ● | ● | ❍ | – | ● | ● | ❍ | – | ● | | ● | ❍ | ● |
| n-Hexane | | ● | ● | ❍ | ❍ | – | | ● | ❍ | – | ● | | ● | – | ● |
| Hydrobromic Acid 50 % | | ● | – | – | ● | ● | | – | ● | – | ● | ❍ | | – | ❍ |
| Hydrochloric Acid, concentrated | – | ● | – | – | ● | ● | | – | ● | ❍ | ● | ❍ | ❍ | ● | ● |
| Hydrofluoric Acid, concentrated | – | | – | – | | | | – | ❍ | | ● | | | | ● |
| Hydrogen Chloride, gasious | | | – | – | ● | | | – | ● | | ● | ❍ | | | ● |
| Hydrogen Peroxide 90 % | – | ● | – | ● | ● | ● | – | – | ● | ● | ● | ❍ | | ● | – |
| Mercury | | ● | ● | ● | ● | ● | | ● | ● | ● | ● | ❍ | ● | ● | ● |
| Methanol | | ● | ❍ | – | ● | ● | – | ● | ● | – | ● | ❍ | – | ● | ● |
| Methyl Ethyl Ketone (MEK) | | ❍ | ● | – | ❍ | – | – | ● | ❍ | – | ● | – | – | – | – |
| Methyl Methacrylate | | | ❍ | – | | | | ❍ | ❍ | – | ● | – | | – | ❍ |
| Oleum (fuming Sulfuric Acid) | | | – | – | – | – | – | – | – | – | ● | – | | – | – |
| Oxalic Acid | | ● | – | ● | ● | ● | ● | – | ● | ● | ● | ● | ● | ● | ❍ |
| Oxygen | | | ❍ | ● | ❍ | ❍ | | ● | ❍ | ● | ● | ● | | | ● |
| Perchloric Acid 70 % | | ● | – | – | ❍ | – | | – | – | ❍ | ● | – | | ❍ | ❍ |
| Petroleum Ether | | | ● | – | ❍ | ❍ | | ● | ❍ | – | ● | ❍ | ❍ | ● | ❍ |
| Phenol | | ● | – | – | ❍ | ❍ | – | – | ● | – | ● | – | – | ● | ● |
| Phosphoric Acid 85 % | – | ● | – | ● | ● | ● | ❍ | – | ● | ● | ● | ● | ● | ● | ● |
| Phosphoryl Chloride | | | – | – | ❍ | ❍ | | – | ❍ | | ● | – | | | – |
| Potassium Hydroxide, concentrated | – | ● | ● | – | ● | ● | ● | ❍ | ● | ❍ | ● | ● | ❍ | ● | – |
| Potassium Permanganate | | ● | – | ● | ❍ | ● | ❍ | ● | ● | ❍ | ● | ❍ | ❍ | ● | ● |
| Pyridine | | ● | ● | – | ❍ | ❍ | | ● | ❍ | – | ● | – | – | ❍ | – |
| Salicylic Acid, saturated | | ● | ● | ● | ● | ● | | – | ● | ● | ● | ❍ | ● | ● | ● |
| Silver Nitrate, water solution | | | ● | ● | ● | | | ● | ● | | ● | | | | ● |
| Sodium Hydroxide, concentrated | – | | ❍ | – | ● | ● | ● | | ● | | ● | | | | – |
| Sodium Thiosulfate | | ● | ● | | ● | ● | | ● | ● | | ● | | ● | | ● |
| Sulfuric Acid 95 % | | ● | – | – | – | – | – | – | – | – | ● | ❍ | – | ❍ | ● |
| Tetrahydrofuran (THF) | ● | ❍ | ● | – | – | – | – | ● | – | – | ● | – | – | – | – |
| Thionyl Chloride | | ● | – | – | – | – | | ❍ | – | – | ● | – | – | – | – |
| Tincture of Iodine | | ● | – | – | ❍ | ❍ | – | ● | ● | ❍ | ● | – | ❍ | ● | ● |
| Toluene | | ● | ● | – | ❍ | ❍ | – | – | ❍ | – | ● | – | – | ❍ | ● |
| Trichloroacetic Acid (TCA) | | | – | – | ❍ | – | | – | ● | – | ● | – | | | ❍ |
| Trichloroethylene (TRI) | | ● | – | – | – | – | | – | – | – | ● | – | – | – | ● |
| Urea | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ❍ | ● | ● | ● |
| Xylene | | ● | ● | – | – | – | – | ● | – | – | ● | – | – | – | ● |

● resistent
❍ conditionally resistent
– not resistent

All values given in this table refer to plastic raw material and can only be regarded as guidelines. As the chemical resistance may vary with different conditions of manufacturing or environmental influences, suitability tests by the user are highly recommanded.

**No legal claims can be derived from this information; nor do we accept any liability for it.**

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# Laboratory glass

DURAN
WHEATON
KIMBLE

Excellence in your hands



## DURAN Group is now DWK Life Sciences

Since the 1st June 2017, the companies DURAN Group, WHEATON Industries and KIMBLE Chase united under the new company name DWK Life Sciences. DWK Life Sciences is now a leading international manufacturer of premium laboratory products, packaging and storage solutions for a broad range of scientific and technical applications. The offer of DWK Life Sciences covers more than **25,000 laboratory products**, **which are manufactured at 12 locations** and marketed under the renowned brands **DURAN®, WHEATON®** and **KIMBLE®**. The leading global and field-tested range of laboratory products is supplemented by an innovative research and Life Science portfolio.

## The material of glass

### General properties

In comparison with other materials such as stainless steel or plastic, glass offers near-universal chemical resistance to water, saline solutions, acids, alkalis and other organic solvents. It is only affected by hydrofluoric acid and at increased temperatures by strong alkalis and concentrated phosphoric acids.
Glass is dimensionally stable and safe even at high temperatures and does not release harmful substances when heated. Glass also exhibits high transparency.
In the laboratory, various types of glass are used depending on application. These are chiefly soda-lime glass (AR®-glass) as well as various types of borosilicate glass.

**Soda-lime glass** has less chemical and thermal load capacity than borosilicate glass. Due to its high thermal expansion, soda-lime glass has a low thermal shock resistance and can incur stresses and crack when heated or cooled. Soda-lime glass is well suited to applications involving temporary chemical contact at room temperature as well as to disposable articles.

**Borosilicate glass** is to a large extent chemically inert and suitable for use up to very high temperatures. The various types of borosilicate glass mainly differ from one another in terms of their linear coefficient of expansion and hence their resistance to changes in temperature.
The most commonly used types of borosilicate glass are borosilicate glass 3.3 (DURAN®, SIMAX), borosilicate glass 4.9 (Fiolax®) and borosilicate glass 5.1.

**The following factors are critical to the quality of laboratory glassware:**

- The glassware and glass type
- The shape obtained during the production process
- Even distribution of wall thickness in all areas of the article (particularly in critical areas such as in the neck/shoulder area and at the transitions to the base). This ensures:
  - better mechanical stability
  - higher thermal shock resistance
  - freedom from stresses, which can cause the vessel to burst when heated

These quality characteristics not only increase safety for employees in the laboratory, but also extend the useful life of the laboratory glassware and protect valuable substances.

## Comparison of DURAN® and soda-lime glass

### Chemical properties:

| | DURAN® | Soda-lime glass |
|---|---|---|
| Chemical composition | 81 % $SiO_2$<br>13 % $B_2O_3$<br>4 % $Na_2O/K_2O$<br>2 % $Al_2O_3$<br>No added heavy metals | 69 % $SiO_2$<br>1 % $B_2O_3$<br>3 % $K_2O$<br>4 % $Al_2O_3$<br>13 % $Na_2O$<br>2 % BaO<br>5 % CaO<br>3 % MgO |
| Hydrolytic resistance to DIN ISO 719 | Class 1 | Class 3 |
| Acid resistance to DIN 12116 | Class 1 | Class 1 |
| Alkali resistance to ISO 695 | Class 2 | Class 2 |

### Physical properties:

| | | |
|---|---|---|
| Transformation temperature [°C] | 525 | |
| Coefficient of expansion α (20 to 300 °C) [$10^{-6}$ $K^{-1}$] | 3.3 | 9.1 |

### Usage instructions:

| | | |
|---|---|---|
| Max. allowable usage temperatures | 500 °C | approx. 100 °C |
| Maximum negative temperature | -70 °C | approx. 0 °C |
| Maximum temperature difference ΔT | 100 K | 30 K |
| Use in the microwave | Suitable | Unsuitable |
| Pressure and vacuum operation | Only products indicated as such are suitable for use under pressure/vacuum due to their geometry and wall thickness (e.g. suction bottles, dessicators, DURAN® pressure plus bottles) | Unsuitable |
| Cleaning in dishwashers | Suitable | Unsuitable |

The **thermal shock resistance of glass** is dependent on the shape, wall thickness, surface characteristics and finish of the glassware used.

Rapid changes in temperature cause high temporary stress in the glass, meaning that rapid cooling processes are very dangerous, since in this case a thin outer layer of the glass is placed under tensile stress over the still hot inner core. Glass is much more susceptible to tensile stress than to compressive stress.

DURAN® is much more resistant to rapid changes in temperature than soda-lime glass due to its lower thermal expansion.

**The special features of DURAN®**
Very high chemical resistance, nearly inert behaviour, a high usage temperature, minimal thermal expansion and the resultant high resistance to thermal shock are its most significant properties. Excellent physical and chemical performance makes DURAN® the ideal material for use in the laboratory and for the manufacture of chemical apparatus used in large-scale industrial plants. It is also widely used on an industrial scale in all other application areas in which extreme heat resistance, thermal shock resistance, mechanical strength and exceptional chemical resistance are required. The properties of DURAN® meet the specifications of DIN ISO 3585. Compared to other types of borosilicate 3.3. glass, DURAN® is noted for its highly constant and technically reproducible quality.

**Chemical properties**
DURAN® glass is more chemically resistant that all other known materials. DURAN® borosilicate glass is highly resistant to water, acids, saline solutions, organic substances and halogens, such as chlorine or bromine. It also has good resistance to alkaline solutions. Only hydrofluoric acid, concentrated phosphoric acid and strong alkalis break down the glass surface (glass corrosion) at temperatures >100 °C. Their near-inert behaviour means that there are no interactions (e.g. ion exchange) between the medium and glass and it is thus possible to practically rule out any influence on the experiments.

**Physical Properties**:
**Temperature stability under heating**
The maximum permissible operating temperature for DURAN® is 500 °C. As it has a very low coefficient of linear expansion ($\alpha = 3.3 \times 10^{-6}\ K^{-1}$), a feature of DURAN® is its high thermal shock resistance up to $\Delta T = 100$ K. This is also dependent on the wall thickness and the geometry of the products.

**Temperature stability under freezing**
DURAN® can be cooled down to the maximum possible negative temperature and is thus suitable for use with liquid nitrogen (approx. -196 °C). When doing so, bear in mind the product geometry and the properties of any additional components used (e.g. screw caps). In general, DURAN® products are recommended for use down to -70 °C. When cooling down and thawing, care must be taken to ensure that the temperature difference does not exceed 100 K. In practice, therefore, it is recommended that they be cooled and heated gradually.
When freezing substances such as DURAN® bottles, the container should only be filled to max. 3/4 full and frozen at an angle of 45 ° (in order to enlarge the surface area).

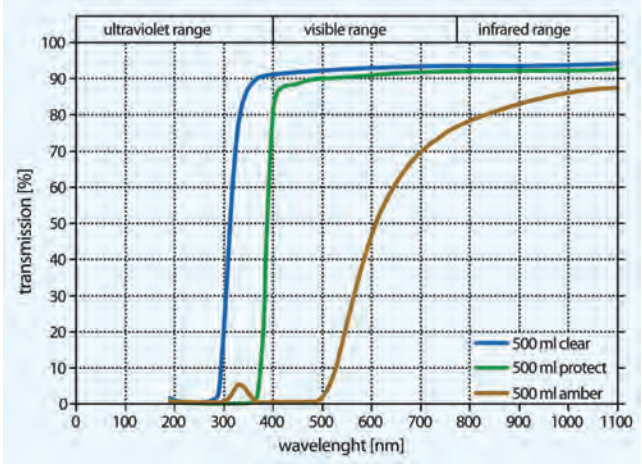
**Use in the microwave**
DURAN® laboratory glassware is suitable for use in microwaves. This also applies to plastic coated DURAN® products.

**Conformity with standards and guidelines**
DURAN® is a neutral glass with high hydrolytic resistance and therefore belongs to glass type 1 according to the European Pharmacopoeia (EP, Section 3.2.1), the Japanese Pharmacopoeia (JP, Section 7.01), the United States Pharmacopeia (USP, Section: 660) and the National Formulary.
In addition to being in conformity with the DIN ISO 3585 international standard, in which the properties of borosilicate glass 3.3 are defined, many items of DURAN® laboratory glassware meet the standards for glass laboratory equipment.

**Environmental compatibility of DURAN® laboratory glassware**
DURAN® laboratory glassware is manufactured from natural, mineral raw materials. Unlike other materials, laboratory glassware can be used for years if handled properly and therefore is superior to other materials in ecological terms.
Toxic substances cannot leach out. The production processes have been systematically optimised for maximum environmental compatibility during the production process.

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**Optical properties**
In the spectral range from approx. 310 to 2200 nm the absorption of DURAN® clear glass is negligibly low. In photochemical processes the light transmission of DURAN® in the ultraviolet range is of particular importance. The transmissivity in the UV range indicates the ease with which photochemical reactions, such as chlorinations and sulfochlorinations, can be carried out. The chlorine molecule absorbs in the range from 280 to 400 nm and thus serves as a carrier of the radiation energy.




**Amber colouring of DURAN® laboratory glassware**
The amber colouring allows the storage of light-sensitive substances in DURAN® products. In the wavelength band between 300 and 500 nm, light transmission compared to DURAN® clear glass is <10 %. Accordingly, the amber DURAN® glass meets USP/EP/JP guidelines. Since the amber diffusion ink is applied to the outside of the clear glass article by means of spray coating, the proven DURAN® properties inside the bottle remain unaffected; there is no contact or interaction between contents and amber coating.
The coating is then stove enamelled, and therefore is resistant to chemicals and cleaning in a dishwasher.

**Safety instructions**
DURAN® glassware is safe to use. The guidelines applicable for the use of special glass in laboratories in the country in question should always be observed. The following points should, however, always be observed:
- Before using DURAN® laboratory glassware, it should be checked to ensure that it is suitable for the intended purpose and that it will function properly.
- Faulty laboratory glassware can present a hazard (e. g. risk of cuts, burns, infection) which should not be underestimated. If appropriate repairs to any item cannot be carried out or cannot be justified on grounds of cost, it must be disposed of in the proper manner (as household waste or, depending on possible contamination, in accordance with the applicable guidelines; never as waste glass).
- Glassware should only be subjected to sudden changes in temperature taking into account a thermal shock resistance of $\Delta T$=100K. This applies in particular to thick-walled glassware, such as suction bottles or dessicators.
- Make sure that apparatus stands firmly and is not subjected to stress by using appropriate support material.

# Glass beakers



## Rotilabo®-glass beakers

Made of borosilicate glass 3.3. Graduated, has spout.
Acc. to DIN 12331, ISO 3819. Autoclavable.

*Without graduation. **Not according to DIN

**Short form**

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5* | 22 | 30 | **X685.1** | 10 | 26,45 |
| 10* | 26 | 35 | **X686.1** | 10 | 29,00 |
| 25* | 34 | 50 | **X687.1** | 10 | 31,10 |
| 50 | 42 | 60 | **X688.1** | 10 | 23,35 |
| 100 | 50 | 70 | **X689.1** | 10 | 20,00 |
| 150 | 60 | 80 | **X690.1** | 10 | 22,05 |
| 250 | 70 | 95 | **X691.1** | 10 | 23,60 |
| 400 | 80 | 110 | **X692.1** | 10 | 27,65 |
| 600 | 90 | 125 | **X693.1** | 10 | 37,85 |
| 800 | 100 | 135 | **X694.1** | 10 | 46,05 |
| 1000 | 105 | 145 | **X695.1** | 10 | 48,00 |
| 2000 | 130 | 185 | **X696.2** | 1 | 9,15 |
| 3000 | 150 | 210 | **X697.1** | 1 | 30,50 |
| 5000 | 170 | 270 | **X698.1** | 1 | 38,55 |
| 10000** | 217 | 350 | **ACK7.1** | 1 | 75,55 |

**Tall form**

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25* | 30 | 55 | **X700.1** | 10 | 29,00 |
| 50 | 38 | 70 | **X701.1** | 10 | 20,95 |
| 100 | 48 | 80 | **X702.1** | 10 | 20,00 |
| 150 | 54 | 95 | **X703.1** | 10 | 24,30 |
| 250 | 60 | 120 | **X704.1** | 10 | 25,20 |
| 400 | 70 | 130 | **X705.1** | 10 | 26,80 |
| 600 | 80 | 150 | **X706.1** | 10 | 32,20 |
| 800 | 90 | 175 | **X707.1** | 10 | 49,15 |
| 1000 | 95 | 180 | **X708.1** | 10 | 53,25 |
| 2000 | 120 | 240 | **X709.2** | 1 | 9,50 |
| 3000 | 135 | 280 | **X710.2** | 1 | 27,85 |



DURAN WHEATON KIMBLE
Material DURAN®

## Glass beakers

Made of DURAN®. Graduated, has spout.
Acc. to DIN 12331, ISO 3819. With Retrace-Code. Autoclavable.

*Without graduation. **Without graduation and not according to DIN

**Short form**

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5* | 22 | 30 | **C108.1** | 10 | 47,60 |
| 10* | 26 | 35 | **C109.1** | 10 | 53,85 |
| 25 | 34 | 50 | **C110.1** | 10 | 46,25 |
| 50 | 42 | 60 | **C111.1** | 10 | 44,00 |
| 100 | 50 | 70 | **C112.1** | 10 | 44,00 |
| 150 | 60 | 80 | **C113.1** | 10 | 46,20 |
| 250 | 70 | 95 | **C114.1** | 10 | 47,65 |
| 400 | 80 | 110 | **C115.1** | 10 | 57,45 |
| 600 | 90 | 125 | **C116.1** | 10 | 71,25 |
| 800 | 100 | 135 | **C117.1** | 10 | 98,35 |
| 1000 | 105 | 145 | **C118.1** | 1 | 11,90 |
| 2000 | 132 | 185 | **C119.1** | 1 | 20,55 |
| 3000 | 152 | 210 | **C120.1** | 1 | 36,70 |
| 5000 | 170 | 270 | **C121.1** | 1 | 62,30 |
| 10000** | 217 | 350 | **C122.1** | 1 | 174,00 |

**Tall form**

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 38 | 70 | **C123.1** | 10 | 44,55 |
| 100 | 48 | 80 | **C124.1** | 10 | 45,05 |
| 150 | 54 | 95 | **C125.1** | 10 | 47,75 |
| 250 | 60 | 120 | **C126.1** | 10 | 50,65 |
| 400 | 70 | 130 | **C127.1** | 10 | 60,60 |
| 600 | 80 | 150 | **C128.1** | 10 | 74,20 |
| 800 | 90 | 175 | **C129.1** | 10 | 105,00 |
| 1000 | 95 | 180 | **C130.1** | 1 | 12,15 |
| 2000 | 120 | 240 | **C131.1** | 1 | 21,80 |
| 3000 | 135 | 280 | **C132.1** | 1 | 45,50 |


- ▶ Autoclaving instructions on page 5
- ▶ Weight rings for beakers and Erlenmeyer flask see page 220
- ▶ Beakers made of plastic see page 97
- ▶ Liquid concentrates - special standard cleaners for labware see page 1103
- ▶ Watch glasses for covering beakers see page 177


**The following factors are critical to the quality of laboratory glassware:**

- The glassware and glass type
- The shape obtained during the production process
- Even distribution of wall thickness in all areas of the article (particularly in critical areas such as in the neck/shoulder area and at the transitions to the base). This ensures:
  - better mechanical stability
  - higher thermal shock resistance
  - freedom from stresses, which can cause the vessel to burst when heated

These quality characteristics not only increase safety for employees in the laboratory, but also extend the useful life of the laboratory glassware and protect valuable substances.



DURAN WHEATON KIMBLE
Material DURAN®
121 °C

## DURAN®-Super Duty glass beakers

- Proven DURAN® properties
- Glass type I, neutral glass according to USP, EP and JP
- High mechanical stability
- Reinforced, sturdy rim
- Uniform wall thickness distribution
- Autoclavable, sterilizable
- With retrace code
- Easily readable scale
- Fired-on highly durable labelling

**Notes of use:**
To avoid thermal stress in the glass, it is recommended that Super Duty products are slowly and uniformly heated. Standard DURAN beakers and Erlenmeyer flasks should be used when working at very high temperatures, or if rapid temperature changes are expected, as these, as these are characterized by excellent thermal shock resistance. However, their mechanical sturdiness is limited compared with the Super Duty range.

### DURAN®-Super Duty glass beakers, low form

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 150 | 60 | 80 | **PC33.1** | 10 | 54,85 |
| 250 | 70 | 95 | **PC34.1** | 10 | 54,85 |
| 400 | 80 | 110 | **PC35.1** | 10 | 72,70 |
| 600 | 90 | 125 | **PC36.1** | 10 | 84,40 |
| 1000 | 105 | 145 | **PC37.1** | 10 | 133,00 |
| 2000 | 132 | 185 | **PC38.1** | 10 | 234,00 |
| 5000 | 170 | 270 | **PC39.1** | 1 | 129,90 |

### DURAN®-Super Duty glass beakers, tall form

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 150 | 54 | 95 | **CHL2.1** | 10 | 56,55 |
| 250 | 60 | 120 | **CHL3.1** | 10 | 57,80 |
| 600 | 80 | 150 | **CHL4.1** | 10 | 87,35 |



121 °C

## Rotilabo®-beakers

Made of type 3.3 borosilicate glass.
Low form, with graduations, spout and handle. Autoclavable.

| Volume (ml) | Outer ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 250 | 70 x 95 | **NT29.1** | 6 | 28,45 |
| 400 | 80 x 110 | **NT30.1** | 6 | 30,00 |
| 600 | 90 x 125 | **NT31.1** | 6 | 35,15 |
| 1000 | 105 x 145 | **NT32.1** | 2 | 15,55 |



DURAN WHEATON KIMBLE
Material DURAN®
121 °C

## Beakers without spout

Made of DURAN®. High form with easy-to-read graduations and large labelling surface for easy product identification.
Graduation markings are kiln fired onto the glass for maximum durability.
Ideal for heating applications thanks to even wall thickness distribution.
With Retrace Code. Autoclavable.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 38 x 70 | **CCK5.1** | 10 | 44,55 |
| 100 | 48 x 80 | **CCK6.1** | 10 | 45,00 |
| 150 | 54 x 95 | **CCK7.1** | 10 | 47,75 |
| 250 | 60 x 120 | **CCK8.1** | 10 | 50,60 |
| 400 | 70 x 130 | **CCK9.1** | 10 | 60,60 |
| 600 | 80 x 150 | **CCL0.1** | 10 | 74,20 |
| 1000 | 95 x 180 | **CCL1.1** | 10 | 118,00 |

# Beakers



## Rotilabo®-beakers, PTFE

With spout. Chemically inert. Temperature stable from -200 to +260 °C. Low gas permeability. Anti-adhesive. Autoclavable.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 13 | 18 | **T643.1** | 1 | 7,55 |
| 5 | 20 | 26 | **T645.1** | 1 | 8,20 |
| 10 | 24 | 33 | **T646.1** | 1 | 9,50 |
| 25 | 32 | 47 | **T647.1** | 1 | 11,10 |
| 50 | 43 | 60 | **1183.1** | 1 | 14,45 |
| 100 | 54 | 68 | **1184.1** | 1 | 17,75 |
| 150 | 59 | 69 | **T648.1** | 1 | 19,25 |
| 250 | 66 | 97 | **1185.1** | 1 | 28,50 |
| 400 | 80 | 106 | **T649.1** | 1 | 38,95 |
| 500 | 80 | 125 | **T650.1** | 1 | 40,00 |
| 600 | 90 | 125 | **T651.1** | 1 | 56,65 |
| 1000 | 100 | 155 | **1187.1** | 1 | 79,05 |
| 2000 | 120 | 210 | **T652.1** | 1 | 146,20 |
| 5000 | 170 | 280 | **T653.1** | 1 | 269,85 |



## Rotilabo®-beakers

Made of high-grade stainless steel 18/10. With flange and contact base for magnetic and heating stirrers. Good chemical and temperature resistance. Autoclavable.

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 60 | 50 | **HT90.1** | 1 | 72,20 |
| 250 | 85 | 65 | **HT91.1** | 1 | 75,25 |
| 500 | 110 | 80 | **HT92.1** | 1 | 100,70 |
| 1000 | 130 | 100 | **HT93.1** | 1 | 122,55 |
| 2000 | 180 | 120 | **HT94.1** | 1 | 173,10 |
| 3000 | 180 | 150 | **HT95.1** | 1 | 206,40 |
| 5000 | 210 | 180 | **HT96.1** | 1 | 274,15 |



## Rotilabo®-cup

Made of stainless steel 18/10, suitable for foodstuffs. Autoclavable.

| Volume (ml) | Height (mm) | Top inside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 75 | 50 | 50 | **YX59.1** | 1 | 5,95 |
| 125 | 60 | 60 | **YX60.1** | 1 | 6,40 |
| 150 | 65 | 65 | **YX61.1** | 1 | 7,10 |
| 250 | 100 | 75 | **YX58.1** | 1 | 6,05 |



## Rotilabo®-beakers

Made of glazed porcelain. With spout.
Temperature stable up to 1000 °C. Autoclavable.

**Short form**

| Volume (ml) | Height (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 275 | 85 | 70 | **XX35.1** | 1 | 11,35 |
| 400 | 99 | 80 | **XX36.1** | 1 | 13,40 |
| 620 | 116 | 90 | **XX37.1** | 1 | 15,45 |
| 860 | 129 | 100 | **XX38.1** | 1 | 19,60 |
| 950 | 100 | 123 | **XX39.1** | 1 | 25,25 |

**Tall form**

| Volume (ml) | Height (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 170 | 90 | 52 | **XX40.1** | 1 | 9,50 |
| 225 | 106 | 57 | **XX41.1** | 1 | 10,05 |
| 450 | 143 | 70 | **XX42.1** | 1 | 12,55 |
| 1100 | 157 | 101 | **XX43.1** | 1 | 19,60 |

# Measuring beakers



## Griffin beakers

Made of **PP**, transparent. With spout and blue scale.
Food safe. Autoclavable to a limited extent, cleaning at max. 60 °C recommended to protect the printing.

| Volume (ml) | Graduations (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 2 | 30 x 36 | **2870.1** | 1 | 1,80 |
| 25 | 5 | 38 x 50 | **2871.1** | 1 | 1,80 |
| 50 | 10 | 47 x 60 | **2872.1** | 1 | 1,90 |
| 100 | 10 | 55 x 70 | **2873.1** | 1 | 2,00 |
| 150 | 20 | 66 x 80 | **2874.1** | 1 | 2,10 |
| 250 | 25 | 77 x 95 | **2875.1** | 1 | 2,45 |
| 400 | 50 | 87 x 112 | **2876.1** | 1 | 2,90 |
| 500 | 50 | 94 x 118 | **HX26.1** | 1 | 3,25 |
| 600 | 50 | 100 x 127 | **2877.1** | 1 | 3,25 |
| 1000 | 100 | 120 x 147 | **2879.1** | 1 | 4,65 |
| 2000 | 200 | 149 x 187 | **P804.1** | 1 | 8,00 |
| 3000 | 250 | 170 x 212 | **P805.1** | 1 | 15,60 |
| 5000 | 500 | 203 x 247 | **P806.1** | 1 | 20,55 |

## Griffin beaker set

**PP**. 10 items (one beaker each 10 to 1000 ml).

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **2880.1** | 1 | 22,60 |



## Griffin beakers

Made of **PMP**, transparent. Good chemical resistance.
With spout and printed red scale. Autoclavable to a limited extent, cleaning at max. 60 °C recommended to protect the printing.

| Volume (ml) | Graduations (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 2 | 30 x 36 | **2890.1** | 1 | 2,00 |
| 25 | 5 | 38 x 50 | **2891.1** | 1 | 2,10 |
| 50 | 10 | 47 x 60 | **2892.1** | 1 | 2,45 |
| 100 | 10 | 55 x 70 | **2893.1** | 1 | 2,70 |
| 150 | 20 | 66 x 80 | **2894.1** | 1 | 3,45 |
| 250 | 25 | 77 x 95 | **2895.1** | 1 | 3,55 |
| 400 | 50 | 87 x 112 | **2896.1** | 1 | 4,65 |
| 500 | 50 | 94 x 118 | **HX27.1** | 1 | 5,40 |
| 600 | 50 | 100 x 127 | **2897.1** | 1 | 6,05 |
| 1000 | 100 | 120 x 147 | **2899.1** | 1 | 8,40 |
| 2000 | 200 | 149 x 187 | **P807.1** | 1 | 13,75 |
| 3000 | 250 | 170 x 212 | **P808.1** | 1 | 24,25 |
| 5000 | 500 | 203 x 247 | **P809.1** | 1 | 32,65 |

## Griffin beaker set

**PMP**. 10 items (one beaker each 10 to 1000 ml).

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **2900.1** | 1 | 36,05 |



## Griffin beakers

Made of **PP**, transparent. With spout and embossed scale.
Temperature stable from 0 to +125 °C. Acc. to ISO 7056. Autoclavable.
Suitable for foodstuffs.

*Variant supplementary to ISO 7056

| Volume (ml) | Graduations (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 5 | 38 x 50 | **CKK4.1** | 1 | 1,75 |
| 50 | 10 | 47 x 60 | **CKK5.1** | 1 | 1,95 |
| 100 | 10 | 55 x 70 | **CKK6.1** | 1 | 2,05 |
| 150* | 20 | 66 x 80 | **CKK7.1** | 1 | 2,15 |
| 250 | 25 | 77 x 95 | **CKK8.1** | 1 | 2,40 |
| 400* | 50 | 87 x 111,5 | **CKK9.1** | 1 | 3,00 |
| 500 | 50 | 94 x 117,5 | **CKL0.1** | 1 | 3,25 |
| 600* | 50 | 100 x 126,5 | **CKL1.1** | 1 | 3,45 |
| 1000 | 100 | 120 x 147 | **CKL2.1** | 1 | 4,60 |
| 2000 | 200 | 149 x 187 | **CKL3.1** | 1 | 7,85 |
| 3000 | 250 | 170 x 212 | **CKL4.1** | 1 | 15,60 |
| 5000 | 500 | 203 x 247 | **CKL5.1** | 1 | 20,65 |



## Rotilabo®-Griffin beakers

Made of transparent **PFA** (Perfluoroalkoxy).
Graduated with embossed markings. Highly resistant to chemicals.
Temperature stable from -200 to +250 °C. Autoclavable.

| Volume (ml) | Graduations (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 5 | 32 x 50 | **A862.1** | 1 | 18,90 |
| 50 | 10 | 39 x 59 | **A863.1** | 1 | 23,85 |
| 100 | 20 | 50 x 72 | **A864.1** | 1 | 33,25 |
| 250 | 50 | 67 x 96 | **A865.1** | 1 | 56,20 |
| 500 | 100 | 88 x 122 | **A866.1** | 1 | 87,00 |
| 1000 | 100 | 105 x 143 | **A867.1** | 1 | 153,75 |


- For autoclaving information see page 5
- Chemical Resistance of Plastics Table see page 6

# Measuring beakers




121°C

## Griffin beakers

Made of **ETFE**, transparent. Very good chemical resistance.
With spout and printed black scale.
Temperature stable from -100 to +150 °C and autoclavable to a limited extent. Cleaning at max. 60 °C recommended to protect the printing.

| Volume (ml) | Graduations (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 5 | 32 x 50 | **2881.1** | 1 | 10,55 |
| 50 | 10 | 39 x 59 | **2882.1** | 1 | 10,95 |
| 100 | 20 | 50 x 72 | **2883.1** | 1 | 16,25 |
| 250 | 50 | 67 x 96 | **2884.1** | 1 | 27,95 |
| 400 | 50 | 77 x 109 | **2885.1** | 1 | 39,25 |
| 500 | 100 | 88 x 122 | **HX28.1** | 1 | 46,05 |
| 600 | 100 | 91 x 125 | **2886.1** | 1 | 53,40 |
| 1000 | 100 | 105 x 143 | **2887.1** | 1 | 77,10 |



121°C

## Rotilabo®-sample beakers

Made of **PP**, transparent. Graduated. With three spouts on corners for no-drip pouring. Temperature resistant from -20 to +121 °C. Autoclavable.

| Volume (ml) | Graduation (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 5 | 49 x 57 | **HT84.1** | 100 | 39,70 |
| 100 | 10 | 58 x 72 | **HT85.1** | 100 | 44,35 |
| 250 | 10 | 76 x 90 | **HT86.1** | 100 | 57,75 |
| 400 | 20 | 85 x 108 | **HT87.1** | 100 | 62,50 |
| 800 | 50 | 107 x 133 | **HT88.1** | 100 | 97,85 |
| 1000 | 50 | 115 x 145 | **HT89.1** | 100 | 98,90 |

▶ Sample beaker with a volume of 30 ml and more see page 117




121°C

## Rotilabo® measuring beakers

Made of transparent **PP** with smooth surface. Embossed, red scale. Suitable for foodstuffs. Autoclavable to a limited extent, cleaning at max. 60 °C recommended to protect the printing.

| Volume (ml) | Graduations (ml) | Height (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 2 | 70 | 40 | **YA29.1** | 1 | 1,90 |
| 100 | 2 | 80 | 50 | **YA30.1** | 1 | 2,10 |
| 250 | 5 | 120 | 70 | **YA31.1** | 1 | 3,15 |
| 500 | 10 | 133 | 91 | **0757.1** | 1 | 3,70 |
| 1000 | 10 | 170 | 116 | **0758.1** | 1 | 4,95 |
| 2000 | 20 | 215 | 150 | **0768.1** | 1 | 8,85 |
| 3000 | 50 | 242 | 170 | **0779.1** | 1 | 11,65 |
| 5000 | 100 | 270 | 210 | **0780.1** | 1 | 16,80 |

## Rotilabo®-measuring beakers set

Set of 5 beakers, capacity 500 to 5000 ml.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **0859.1** | 1 | 38,60 |




121°C

## Measuring beakers

Made of **PP**, highly transparent. With embossed scale and sturdy handle with good grip. Temperature stable from 0 to +125 °C. Autoclavable. Suitable for foodstuffs.

| Volume (ml) | Graduations (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 2 | 40 x 70 | **CKL6.1** | 1 | 2,00 |
| 100 | 2 | 50 x 80 | **CKL7.1** | 1 | 2,15 |
| 250 | 5 | 70 x 120 | **CKL8.1** | 1 | 3,20 |
| 500 | 10 | 91 x 133 | **CKL9.1** | 1 | 3,60 |
| 1000 | 20 | 116 x 170 | **CKN0.1** | 1 | 4,95 |
| 2000 | 50 | 150 x 215 | **CKN1.1** | 1 | 8,85 |
| 3000 | 50 | 170 x 242 | **CKN2.1** | 1 | 11,95 |
| 5000 | 100 | 210 x 270 | **CKN3.1** | 1 | 16,80 |

# Measuring beakers



NEU
NOUVEAU
NEW

## Measuring beakers

Made from transparent **PP**. 10 ml graduations, H 140 mm, ∅ 100 mm. With easily legible, imprinted scale and sturdy handle. Stackable. To preserve the imprint, cleaning at temperatures not exceeding 60 °C is recommended. Suitable for foodstuffs.

| Volume (ml) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 | blue | **APH6.1** | 1 | 3,90 |
| 500 | yellow | **APH7.1** | 1 | 3,55 |
| 500 | red | **APH8.1** | 1 | 3,55 |
| 500 | green | **APH9.1** | 1 | 3,55 |

## Measuring beaker assortment

Each set comprises 4 500 ml beakers in blue, yellow, red and green.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **APK0.1** | 1 | 13,95 |



121°C

## Rotilabo® measuring beakers

Made of ultra-transparent **PP**. With black scale printed on two sides. Stackable due to open handle. Autoclavable to a limited extent, cleaning at max. 60 °C recommended to protect the printing.

| Volume (ml) | Graduations (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 5 | 75 x 115 | **XY21.1** | 1 | 3,05 |
| 500 | 10 | 100 x 140 | **P800.1** | 1 | 3,55 |
| 1000 | 10 | 125 x 167 | **P801.1** | 1 | 4,75 |
| 2000 | 20 | 148 x 212 | **P802.1** | 1 | 8,75 |
| 3000 | 50 | 170 x 242 | **P803.1** | 1 | 11,85 |



## Measuring beakers

Made of **SAN**, transparent. With embossed scale and sturdy handle with good grip. Temperature stable from -40 to +70 °C. Suitable for foodstuffs.

| Volume (ml) | Graduations (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 5 | 70 x 120 | **CKN4.1** | 1 | 3,90 |
| 500 | 10 | 91 x 133 | **CKN5.1** | 1 | 5,25 |
| 1000 | 10 | 116 x 170 | **CKN6.1** | 1 | 6,40 |
| 2000 | 20 | 150 x 215 | **CKN7.1** | 1 | 10,70 |
| 3000 | 50 | 170 x 242 | **CKN8.1** | 1 | 13,50 |



121°C

## Measuring jugs

Made of **PP**, transparent. With injected, transparent measuring scale and additional blue stamped scale. Closed handle. Temperature stable from -20 to +100 °C, autoclavable. **Delivery without** lid, please order separately.

| Volume (ml) | Graduations (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1000 | 10 | 117 x 165 | **EKE7.1** | 1 | 6,70 |
| 2000 | 20 | 151 x 206 | **EKE8.1** | 1 | 12,15 |

## Lid for measuring jugs

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Lid for 1000-ml jug EKE7.1 | **EKE9.1** | 1 | 3,35 |
| Lid for 2000-ml jug EKE8.1 | **EKH0.1** | 1 | 4,10 |




121°C

## Measuring beakers 51

By Haldenwanger. Made of glazed porcelain, with the exception of the outer bottom surface. Graduated. Temperature stable up to 1000 °C. Autoclavable.

| Volume (ml) | Size | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 3a | 80 x 100 | **XL85.1** | 1 | 83,45 |
| 500 | 5a | 95 x 125 | **XL86.1** | 1 | 97,85 |
| 1000 | 8 | 110 x 165 | **XL87.1** | 1 | 140,85 |
| 2000 | 10 | 140 x 193 | **XL88.1** | 1 | 198,90 |

# Erlenmeyer flasks



## Rotilabo®-measuring beakers

Cylindric. Made of 18/10 stainless steel. Graduated inside and outside. Autoclavable.

| Volume (l) | Subdivisions (l) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,7 | 0,1 | 100 x 100 | **9472.1** | 1 | 30,05 |
| 1,3 | 0,1 | 120 x 120 | **9473.1** | 1 | 38,20 |
| 2,1 | 0,2 | 140 x 140 | **9475.1** | 1 | 49,35 |
| 3,2 | 0,2 | 160 x 160 | **9476.1** | 1 | 64,30 |
| 4,0 | 0,5 | 180 x 180 | **9478.1** | 1 | 81,65 |
| 5,0 | 1,0 | 200 x 200 | **9479.1** | 1 | 96,65 |



## Rotilabo®-measuring beakers with handle

Made of stainless steel 18/10, polished. Graduated on the inside. With open handle, stackable. Suitable for foodstuffs. Autoclavable.

| Volume (ml) | Graduation (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 50 | 50 | **YY00.1** | 1 | 4,85 |
| 250 | 50 | 70 | **YY01.1** | 1 | 5,70 |
| 500 | 100 | 110 | **YY02.1** | 1 | 10,25 |
| 1000 | 500 | 135 | **YY03.1** | 1 | 13,25 |
| 2000 | 500 | 195 | **YY04.1** | 1 | 22,50 |



## Rotilabo®-measuring beakers

Made of 18/10 stainless steel. Graduated inside, in 10 ml increments. Suitable for use with foodstuffs. Autoclavable.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 30 | 50 x 25 | **LT24.1** | 5 | 17,00 |
| 50 | 53 x 45 | **LT25.1** | 5 | 21,40 |



## Rotilabo®-wide neck Erlenmeyer flasks

Made of borosilicate glass 3.3. Graduated. Acc. to DIN 12385. Autoclavable.

*Acc. to DIN.

| Volume (ml) | Flask outer ∅ (mm) | Height (mm) | Outer neck ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25* | 42 | 70 | 32 | **X734.1** | 10 | 41,15 |
| 50 | 51 | 85 | 34 | **X735.1** | 10 | 41,15 |
| 100 | 64 | 105 | 34 | **X736.1** | 10 | 23,50 |
| 200 | 79 | 131 | 50 | **X737.1** | 10 | 28,40 |
| 250 | 85 | 135 | 50 | **X738.1** | 10 | 30,50 |
| 300* | 87 | 156 | 50 | **X739.1** | 10 | 35,40 |
| 500 | 105 | 170 | 50 | **X740.1** | 10 | 38,10 |
| 1000 | 131 | 215 | 50 | **X741.1** | 10 | 53,65 |
| 2000* | 153 | 280 | 72 | **X742.2** | 6 | 55,75 |

## Rotilabo®-narrow neck Erlenmeyer flasks

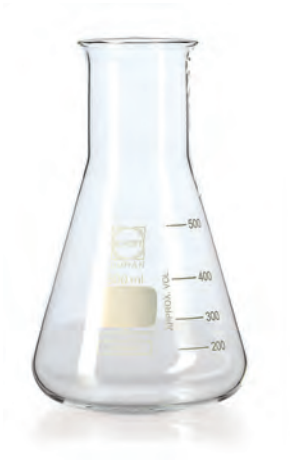
Made of borosilicate glass 3.3. Graduated. Acc. to DIN-ISO 1773. Autoclavable.

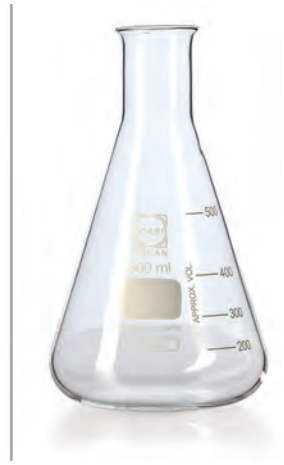
*Acc. to DIN-ISO.

| Volume (ml) | Flask outer ∅ (mm) | Height (mm) | Outer neck ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 42 | 70 | 22 | **X745.1** | 10 | 41,15 |
| 50 | 51 | 85 | 22 | **X746.1** | 10 | 41,15 |
| 100 | 64 | 105 | 22 | **X747.1** | 10 | 21,05 |
| 200* | 79 | 131 | 34 | **X748.1** | 10 | 26,85 |
| 250 | 85 | 140 | 34 | **X749.1** | 10 | 28,85 |
| 300* | 87 | 156 | 34 | **X750.1** | 10 | 34,95 |
| 500 | 105 | 175 | 34 | **X751.1** | 10 | 37,50 |
| 1000 | 131 | 220 | 42 | **X752.1** | 10 | 53,55 |
| 2000 | 166 | 280 | 50 | **X753.2** | 6 | 49,35 |
| 3000 | 187 | 310 | 50 | **X754.1** | 1 | 27,10 |
| 5000 | 220 | 365 | 50 | **X755.1** | 1 | 41,15 |


- Erlenmeyer flasks sterile see page 271
- Weighting rings for glass beakers an Erlenmeyer flasks see page 220

# Erlenmeyer flasks





DURAN WHEATON KIMBLE
Material DURAN®
121°C

## Wide-neck Erlenmeyer flasks

Made of DURAN®, graduated. With labelling field.
Acc. to DIN ISO 24450. With Retrace-Code. Autoclavable.

* Not acc. to DIN. ** Not graduated

| Volume (ml) | Outer neck ∅ (mm) | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 * | 31 | 43 | 70 | **C144.1** | 10 | 50,80 |
| 50 | 34 | 51 | 85 | **C145.1** | 10 | 51,00 |
| 100 | 34 | 64 | 105 | **C146.1** | 10 | 49,60 |
| 200 | 50 | 79 | 131 | **C147.1** | 10 | 54,25 |
| 250 | 50 | 85 | 140 | **C148.1** | 10 | 55,80 |
| 300 | 50 | 87 | 156 | **C149.1** | 10 | 65,95 |
| 500 | 50 | 105 | 175 | **C150.1** | 10 | 78,20 |
| 1000 | 50 | 131 | 220 | **C151.2** | 1 | 12,55 |
| 2000 * | 72 | 153 | 276 | **C152.2** | 1 | 22,90 |
| 3000 ** | 106 | 190 | 285 | **AAA3.1** | 1 | 74,60 |
| 5000 ** | 108 | 220 | 322 | **AAA4.1** | 1 | 96,40 |
| 10000 ** | 147 | 285 | 420 | **AAA5.1** | 1 | 187,00 |

## Narrow-neck Erlenmeyer flasks

Made of DURAN®, graduated. Acc. to ISO 1773. With Retrace-Code.
Autoclavable.

*Not acc. to ISO.

| Volume (ml) | Outer neck ∅ (mm) | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 22 | 42 | 75 | **C133.1** | 10 | 50,60 |
| 50 | 22 | 51 | 90 | **C134.1** | 10 | 50,80 |
| 100 | 22 | 64 | 105 | **C135.1** | 10 | 48,10 |
| 125* | 28 | 67 | 112 | **PY97.1** | 10 | 48,55 |
| 150 | 28 | 74 | 118 | **XT07.1** | 10 | 49,20 |
| 200* | 34 | 79 | 131 | **C136.1** | 10 | 50,80 |
| 250 | 34 | 85 | 145 | **C137.1** | 10 | 51,50 |
| 300* | 34 | 87 | 156 | **C138.1** | 10 | 59,25 |
| 500 | 34 | 105 | 180 | **C139.1** | 10 | 66,45 |
| 800* | 42 | 120 | 200 | **XT08.1** | 10 | 84,80 |
| 1000 | 42 | 131 | 220 | **C140.2** | 1 | 11,40 |
| 2000 | 50 | 166 | 280 | **C141.2** | 1 | 21,45 |
| 3000 | 52 | 187 | 310 | **C142.2** | 1 | 40,00 |
| 5000 | 52 | 220 | 365 | **C143.1** | 1 | 60,00 |

▶ Watch glasses for covering beakers
see page 177



DURAN WHEATON KIMBLE
Material DURAN®
121°C

## DURAN®-Super Duty narrow neck Erlenmeyer flasks

- Proven DURAN® properties
- Glass type I, neutral glass according to USP, EP and JP
- High mechanical stability
- Reinforced, stable rim
- Regular wall-thickness
- Autoclavable, sterilizable
- With retrace code
- Easily readable graduation
- Fired-on highly durable labelling

**Notes of use:**
To avoid thermal stresses in the glass, slow and gradual warming is recommended for Super Duty products. When working at very high temperatures, or if rapid temperature changes are expected, standard DURAN®-beakers and Erlenmeyer flasks should be used, as these are characterized by excellent thermal shock resistance. However, their mechanical sturdiness is limited compared with the Super Duty range.

### DURAN®-Super Duty narrow neck Erlenmeyer flasks

| Volume (ml) | Outer neck ∅ (mm) | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 22 | 42 | 75 | **PC40.1** | 10 | 91,45 |
| 50 | 22 | 51 | 90 | **PC41.1** | 10 | 93,10 |
| 100 | 22 | 64 | 105 | **PC42.1** | 10 | 85,60 |
| 250 | 34 | 85 | 145 | **PC43.1** | 10 | 74,40 |
| 500 | 34 | 105 | 180 | **PC44.1** | 10 | 88,65 |
| 1000 | 42 | 131 | 220 | **PC45.1** | 10 | 139,00 |
| 2000 | 50 | 166 | 280 | **PC46.1** | 10 | 259,00 |
| 5000 | 52 | 220 | 365 | **PC47.1** | 1 | 124,00 |

### DURAN®-Super Duty wide neck Erlenmeyer flasks

| Volume (ml) | Outer neck ∅ (mm) | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 34 | 64 | 105 | **PC48.1** | 10 | 67,75 |
| 250 | 50 | 85 | 140 | **PC49.1** | 10 | 74,40 |
| 500 | 50 | 105 | 175 | **PC50.1** | 10 | 88,65 |
| 1000 | 50 | 131 | 220 | **PC51.1** | 10 | 139,00 |

**The following factors are critical to the quality of laboratory glassware:**

- The glassware and glass type
- The shape obtained during the production process
- Even distribution of wall thickness in all areas of the article (particularly in critical areas such as in the neck/shoulder area and at the transitions to the base).
  This ensures:
  - better mechanical stability
  - higher thermal shock resistance
  - freedom from stresses, which can cause the vessel to burst when heated

These quality characteristics not only increase safety for employees in the laboratory, but also extend the useful life of the laboratory glassware and protect valuable substances.

# Erlenmeyer flasks



121 °C

## Rotilabo®-Erlenmeyer flasks

Made of borosilicate glass 3.3. With standard ground glass joint.

| Volume (ml) | Ground glass joint | Largest outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 14/23 | 42 | 70 | **Y643.1** | 10 | 77,85 |
| 25 | 19/26 | 42 | 70 | **NT33.1** | 10 | 69,30 |
| 50 | 14/23 | 51 | 85 | **Y644.1** | 10 | 110,75 |
| 50 | 29/32 | 51 | 85 | **X769.1** | 10 | 89,25 |
| 100 | 19/26 | 51 | 105 | **X770.1** | 10 | 123,65 |
| 100 | 29/32 | 64 | 105 | **X771.1** | 10 | 102,85 |
| 200 | 29/32 | 79 | 130 | **NT34.1** | 10 | 120,40 |
| 250 | 29/32 | 85 | 135 | **X773.1** | 10 | 96,65 |
| 250 | 45/40 | 85 | 135 | **X774.1** | 10 | 144,05 |
| 250 | 14/23 | 85 | 140 | **NT35.1** | 10 | 121,50 |
| 500 | 29/32 | 105 | 170 | **X776.1** | 10 | 115,05 |
| 500 | 45/50 | 105 | 175 | **NT36.1** | 10 | 151,60 |
| 1000 | 29/32 | 131 | 215 | **X778.1** | 10 | 184,90 |
| 1000 | 45/40 | 131 | 215 | **X779.1** | 10 | 195,65 |
| 2000 | 29/32 | 166 | 275 | **Y684.1** | 6 | 136,55 |
| 2000 | 45/50 | 166 | 275 | **NT37.1** | 6 | 144,05 |



① 

②

Material DURAN®

121 °C

## ① Iodine determination flasks

With standard ground glass joint made of DURAN®.
Hollow glass-stopper NS 29/32. Autoclavable.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **E535.1** | 1 | 14,10 |
| 250 | **E536.1** | 1 | 15,55 |
| 300 | **EPY7.1** | 1 | 19,10 |
| 500 | **E537.1** | 1 | 18,30 |
| 1000 | **EPY8.1** | 1 | 31,35 |

## ② Iodine determination flasks with neck

Made of DURAN®. With iodine stopper NS 29/32 and scale.

| Volume (ml) | Largest outer ∅ (mm) | Height approx. (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 60 | 135 | **TK12.1** | 1 | 65,95 |
| 250 | 81 | 170 | **TK13.1** | 1 | 69,50 |
| 500 | 101 | 205 | **TK14.1** | 1 | 76,35 |



Material DURAN®

121 °C

## Erlenmeyer flasks

Made of DURAN®. With standard ground glass joint. DIN 12387. Graduated.

*Acc. to DIN. **Tolerance: ±4 mm

| Volume (ml) | Ground glass joint | Largest outer ∅ (mm) | Height** (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10* | 14/23 | 30 | 60 | **KX15.1** | 10 | 70,65 |
| 25 | 14/23 | 42 | 70 | **KT59.1** | 10 | 83,45 |
| 25 | 19/26 | 42 | 70 | **KT98.1** | 10 | 87,90 |
| 50 | 14/23 | 51 | 85 | **KT60.1** | 10 | 84,35 |
| 50 | 19/26 | 51 | 85 | **KT99.1** | 10 | 89,20 |
| 50* | 24/29 | 51 | 85 | **KX17.1** | 10 | 89,85 |
| 50 | 29/32 | 51 | 85 | **KT62.1** | 10 | 88,80 |
| 100 | 14/23 | 64 | 105 | **KT97.1** | 10 | 90,75 |
| 100 | 19/26 | 64 | 105 | **KT61.1** | 10 | 93,65 |
| 100* | 24/29 | 64 | 100 | **KX18.1** | 10 | 95,90 |
| 100 | 29/32 | 64 | 105 | **KT63.1** | 10 | 80,00 |
| 250* | 19/26 | 85 | 145 | **KX16.1** | 10 | 166,65 |
| 250* | 24/29 | 85 | 140 | **KX19.1** | 10 | 109,65 |
| 250 | 29/32 | 85 | 139 | **KT64.1** | 10 | 89,70 |
| 250 | 45/40 | 85 | 128 | **KT68.1** | 10 | 159,10 |
| 300* | 29/32 | 87 | 150 | **KX00.1** | 10 | 97,20 |
| 500 | 29/32 | 105 | 170 | **KT65.1** | 10 | 111,80 |
| 500 | 45/40 | 105 | 165 | **KX01.1** | 10 | 193,50 |
| 1000 | 29/32 | 131 | 223 | **KT66.1** | 10 | 172,00 |
| 1000 | 45/40 | 131 | 208 | **KT69.1** | 1 | 30,05 |
| 2000* | 29/32 | 166 | 284 | **KT67.1** | 1 | 45,05 |
| 5000* | 45/40 | 220 | 360 | **KX20.1** | 1 | 168,80 |



❄

121 °C

## Rotilabo®-Erlenmeyer flask

Made of borosilicate glass 3.3. With GL thread and graduations.
Screw cap made of **PP**. Autoclavable.

| Volume (ml) | Thread | Outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | GL 25 | 64 | 100 | **NY86.1** | 1 | 8,40 |
| 250 | GL 32 | 85 | 140 | **NY87.1** | 1 | 10,00 |
| 500 | GL 32 | 105 | 175 | **NY88.1** | 1 | 12,00 |
| 1000 | GL 32 | 131 | 215 | **NY89.1** | 1 | 13,85 |

▶ Standard ground glass joint stoppers see page 138

# Erlenmeyer flasks



Material
DURAN®

121°C

## Erlenmeyer flasks

Made of DURAN®. **Thread acc. to DIN** and graduated.
With screw caps made of PBT and PTFE coated sealings. Autoclavable.
**Note:** unscrew cap before autoclaving.

| Volume (ml) | Largest outer ∅ (mm) | Thread | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 64 | GL 25 | 109 | **E531.1** | 1 | 26,90 |
| 250 | 85 | GL 32 | 149 | **E532.1** | 1 | 27,85 |
| 500 | 105 | GL 32 | 180 | **E533.1** | 1 | 29,05 |
| 1000 | 131 | GL 32 | 225 | **E534.1** | 1 | 42,95 |



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121°C

## PFA Erlenmeyer flasks

Made of **PFA**. Graduated, highly transparent. Microwave safe.
Autoclavable.

- Temperature resistant in the range -196 to +250 °C
- Inert to virtually all chemicals, including hydrofluoric and nitric acid
- High purity, low metal ion content, ideal for use in trace analysis and for the storage of highly pure substances
- No memory effect
- Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning

| Volume (ml) | Height (mm) | Neck ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 97 | 18 | **YY57.1** | 1 | 70,45 |
| 200 | 123 | 23 | **YY58.1** | 1 | 123,65 |
| 300 | 130 | 23 | **YY59.1** | 1 | 156,95 |


▶ Erlenmeyer flasks sterile see page 271

▶ Weighting rings for glass beakers and Erlenmeyer flasks see page 220




121°C

## Rotilabo®-wide neck Erlenmeyer flasks

Made of **PP**. With screw cap, also usable for ground glass stoppers.
Autoclavable at 121 °C.

| Volume (ml) | Graduations (ml) | Thread | Standard ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 10 | GL 40 | 34 | **8338.1** | 1 | 4,15 |
| 100 | 20 | GL 40 | 34 | **8339.1** | 1 | 4,75 |
| 250 | 50 | GL 52 | 45 | **8341.1** | 1 | 6,70 |
| 500 | 100 | GL 52 | 45 | **8342.1** | 1 | 7,50 |
| 1000 | 200 | GL 52 | 45 | **8344.1** | 1 | 10,05 |



121°C

## Disposable Erlenmeyer flask

Made of **PP**. Transparent, graduated from 0 to 170 ml. Specially shaped edge allows drip-free pouring. Can also be used for cultivating drosophila.
Autoclavable.
**Delivery without** snap-on lid (please order separately).

| Width (mm) | Depth (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | 55 | 105 | **AYP4.1** | 500 | 155,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| Snap-on lid for disposable Erlenmeyer flasks, ∅ 46 mm | **AYP5.1** | 2000 | 127,95 |



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121°C

## Erlenmeyer flasks

Made of **PTFE**. Thick-walled, with standard ground joint.
Highly pure, chemically inert. Hydrophobic, anti-adhesive surface.
Temperature stable from -200 to +250 °C. Autoclavable.

| Volume (ml) | Standard ground glass joint | Height (mm) | Outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 19/26 | 86 | 54 | **NP91.1** | 1 | 115,05 |
| 100 | 19/26 | 128 | 63 | **NP92.1** | 1 | 164,50 |
| 250 | 29/32 | 144 | 85 | **NP93.1** | 1 | 229,00 |
| 500 | 29/32 | 190 | 107 | **NP94.1** | 1 | 413,90 |

# Measuring cylinders



121°C

## Class A measuring cylinders, blue markings

**Tall form.** Made of borosilicate glass 3.3. With hexagonal foot. Comes with batch identification. Certificate of conformity can be requested. Adjusted to IN. Acc. to DIN 12680-2. Autoclavable.

| Volume (ml) | Graduations (ml) | Error (±ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 5 | 0,1 | 0,05 | 115 | 13 | **Y303.1** | 2 | 13,95 |
| 10 | 0,2 | 0,10 | 135 | 16 | **Y304.1** | 2 | 14,65 |
| 25 | 0,5 | 0,25 | 160 | 21 | **Y305.1** | 2 | 16,05 |
| 50 | 1,0 | 0,50 | 195 | 26 | **Y306.1** | 2 | 17,65 |
| 100 | 1,0 | 0,50 | 240 | 31 | **Y307.1** | 2 | 18,60 |
| 250 | 2,0 | 1,00 | 320 | 41 | **Y308.1** | 2 | 27,90 |
| 500 | 5,0 | 2,50 | 380 | 53 | **Y309.1** | 2 | 37,60 |
| 1000 | 10,0 | 5,00 | 465 | 67 | **Y310.1** | 2 | 61,30 |
| 2000 | 20,0 | 10,00 | 565 | 84 | **Y311.1** | 1 | 56,90 |



Material DURAN®

121°C

## Class A measuring cylinders, amber markings

By Hirschmann. **Tall form.** Made of DURAN®. Acc. to DIN EN ISO 4788. Comes with durably printed batch identification. Certificate of conformity can be requested. Adjusted to IN. With hexagonal base and spout. Autoclavable.

| Vol. (ml) | Graduations (ml) | Limit of error (±ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 5 | 0,1 | 0,05 | 115 | 13 | **AN01.1** | 2 | 20,80 |
| 10 | 0,2 | 0,10 | 140 | 14 | **AN02.1** | 2 | 20,80 |
| 25 | 0,5 | 0,25 | 170 | 21 | **AN03.1** | 2 | 21,40 |
| 50 | 1,0 | 0,50 | 200 | 25 | **AN04.1** | 2 | 21,85 |
| 100 | 1,0 | 0,50 | 260 | 29 | **AN05.1** | 2 | 22,90 |
| 250 | 2,0 | 1,00 | 335 | 39 | **AN06.1** | 2 | 39,70 |
| 500 | 5,0 | 2,50 | 390 | 53 | **AN07.1** | 2 | 68,80 |
| 1000 | 10,0 | 5,00 | 470 | 65 | **AN08.1** | 1 | 51,50 |
| 2000 | 20,0 | 10,00 | 500 | 85 | **AN09.1** | 1 | 89,75 |



Material DURAN®

121°C

## Class A measuring cylinders, blue graduated

By Hirschmann. **Tall form.** Made of DURAN®. Acc. to DIN EN ISO 4788. Comes with batch identification. Certificate of conformity can be requested. Adjusted to IN. With spout and hexagonal foot. Autoclavable.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 5 | 0,1 | 0,05 | 115 | 13 | **Y568.1** | 2 | 21,25 |
| 10 | 0,2 | 0,10 | 140 | 14 | **Y569.1** | 2 | 20,20 |
| 25 | 0,5 | 0,25 | 170 | 21 | **Y570.1** | 2 | 20,90 |
| 50 | 1,0 | 0,50 | 200 | 25 | **Y571.1** | 2 | 21,95 |
| 100 | 1,0 | 0,50 | 260 | 29 | **Y572.1** | 2 | 22,90 |
| 250 | 2,0 | 1,00 | 335 | 39 | **Y573.1** | 2 | 40,50 |
| 500 | 5,0 | 2,50 | 390 | 53 | **Y574.1** | 2 | 68,00 |
| 1000 | 10,0 | 5,00 | 470 | 65 | **Y575.2** | 1 | 54,85 |
| 2000 | 20,0 | 10,00 | 570 | 85 | **Y576.1** | 1 | 94,50 |



Material DURAN®

121°C

## Measuring cylinder class A, blue graduated

By Hirschmann. **Tall form**. Made of DURAN®. With **Schellbach stripe** for enhanced legibility and more exact meniscus configuration. DIN EN ISO 4788 certified. Certified conformity, with retrace code. Calibrated to IN. With hexagonal base and ring graduations. Autoclavable.

| Volume (ml) | Graduations (ml) | Tolerance (±ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 0,1 | 0,05 | 115 | **CNX1.1** | 2 | 25,05 |
| 10 | 0,2 | 0,1 | 140 | **CNX2.1** | 2 | 23,15 |
| 25 | 0,5 | 0,25 | 170 | **CNX3.1** | 2 | 24,20 |
| 50 | 1 | 0,5 | 200 | **CNX4.1** | 2 | 25,40 |
| 100 | 1 | 0,5 | 260 | **CNX5.1** | 2 | 32,15 |
| 250 | 2 | 1 | 335 | **CNX6.1** | 2 | 51,50 |
| 500 | 5 | 2,5 | 390 | **CNX7.1** | 2 | 85,80 |
| 1000 | 10 | 5 | 470 | **CNX8.1** | 1 | 56,95 |
| 2000 | 20 | 10 | 500 | **CNX9.1** | 1 | 108,60 |

# Measuring cylinders



Material
DURAN®
121 °C

## Class A measuring cylinders, blue markings

By Hirschmann. **Tall form.** Made of DURAN®. Hexagonal foot and protective collar made of **PP** that can be slipped on easily. With spout. Rings markers principal values. Acc. to DIN EN ISO 4788. Comes with batch identification. Certificate of conformity can be requested. Adjusted to IN. Autoclavable (without hexagonal foot).

| Volume (ml) | Graduations (ml) | Error (±ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 10 | 0,2 | 0,1 | 140 | 14 | **CX74.1** | 2 | 16,40 |
| 25 | 0,5 | 0,25 | 170 | 21 | **CX75.1** | 2 | 16,80 |
| 50 | 1 | 0,5 | 200 | 25 | **CX76.1** | 2 | 19,70 |
| 100 | 1 | 0,5 | 260 | 29 | **CX77.1** | 2 | 21,75 |
| 250 | 2 | 1,0 | 335 | 39 | **CX78.1** | 2 | 37,80 |
| 500 | 5 | 2,5 | 390 | 53 | **CX79.1** | 2 | 60,75 |
| 1000 | 10 | 5,0 | 470 | 65 | **CX80.1** | 1 | 48,30 |



DURAN
WHEATON
KIMBLE

Material
DURAN®
121 °C

## DURAN®-measuring cylinders

Made of DURAN®. According to DIN ISO 4788. **High form.** With hexagonal base and spout. Standardised wall thickness over the complete measurement range prevents wedge error. Calibrated to IN. Temperature stable up to 250 °C without change in volume. Autoclavable.

**Class A** with blue graduations. Conformity certified, with mark of conformity and enclosed batch certificate.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 5 | 0,1 | 0,05 | 112 | 13 | **AKA2.1** | 2 | 18,10 |
| 10 | 0,2 | 0,10 | 137 | 14 | **AKA3.1** | 2 | 17,90 |
| 25 | 0,5 | 0,25 | 167 | 21 | **AKA4.1** | 2 | 19,00 |
| 50 | 1 | 0,50 | 196 | 25 | **AKA5.1** | 2 | 20,25 |
| 100 | 1 | 0,50 | 256 | 29 | **AKA6.1** | 2 | 21,70 |
| 250 | 2 | 1,00 | 331 | 39 | **AKA7.1** | 2 | 41,75 |
| 500 | 5 | 2,50 | 360 | 53 | **AKA8.1** | 2 | 70,15 |
| 1000 | 10 | 5,00 | 460 | 65 | **AKA9.1** | 1 | 54,15 |
| 2000 | 20 | 10,00 | 500 | 85 | **AKC0.1** | 1 | 94,50 |

**Class B** with white graduations

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 5 | 0,1 | 0,1 | 112 | 13 | **AKC1.1** | 2 | 17,45 |
| 10 | 0,2 | 0,2 | 137 | 14 | **AKC2.1** | 2 | 18,75 |
| 25 | 0,5 | 0,5 | 167 | 21 | **AKC3.1** | 2 | 19,45 |
| 50 | 1 | 1 | 196 | 25 | **AKC4.1** | 2 | 20,15 |
| 100 | 1 | 1 | 256 | 29 | **AKC5.1** | 2 | 23,10 |
| 250 | 2 | 2 | 331 | 39 | **AKC6.1** | 2 | 31,55 |
| 500 | 5 | 5 | 360 | 53 | **AKC7.1** | 2 | 49,15 |
| 1000 | 10 | 10 | 460 | 65 | **AKC8.1** | 1 | 47,85 |
| 2000 | 20 | 20 | 500 | 85 | **AKC9.1** | 1 | 79,30 |



Material
DURAN®
121 °C

## Class B measuring cylinders, blue markings

By Hirschmann. **Tall form**. Made of DURAN®. With hexagonal foot. Acc. to DIN EN ISO 4788. Graduated, has spout. Autoclavable.

| Volume (ml) | Graduations (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 0,1 | 115 | 13 | **C173.2** | 2 | 16,80 |
| 10 | 0,2 | 140 | 14 | **C174.2** | 2 | 16,40 |
| 25 | 0,5 | 170 | 21 | **C175.2** | 2 | 16,85 |
| 50 | 1,0 | 200 | 25 | **C176.2** | 2 | 17,60 |
| 100 | 1,0 | 260 | 29 | **C177.2** | 2 | 19,30 |
| 250 | 2,0 | 335 | 39 | **C178.2** | 2 | 34,55 |
| 500 | 5,0 | 390 | 53 | **C179.2** | 2 | 56,35 |
| 1000 | 10,0 | 470 | 65 | **C180.1** | 1 | 45,00 |
| 2000 | 20,0 | 500 | 85 | **C181.1** | 1 | 79,80 |



Material
DURAN®
121 °C

## Class B measuring cylinders, amber markings

By Hirschmann. **Tall form**. Made of DURAN®. Acc. to DIN EN ISO 4788. Adjusted to IN. With hexagonal foot and spout. Autoclavable.

| Volume (ml) | Graduations (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 0,1 | 115 | 13 | **AN10.1** | 2 | 17,55 |
| 10 | 0,2 | 140 | 14 | **AN11.1** | 2 | 16,80 |
| 25 | 0,5 | 170 | 21 | **AN12.1** | 2 | 17,10 |
| 50 | 1,0 | 200 | 25 | **AN13.1** | 2 | 17,50 |
| 100 | 1,0 | 260 | 29 | **AN14.1** | 2 | 18,90 |
| 250 | 2,0 | 335 | 39 | **AN15.1** | 2 | 34,65 |
| 500 | 5,0 | 390 | 53 | **AN16.1** | 2 | 55,85 |
| 1000 | 10,0 | 470 | 65 | **AN17.1** | 1 | 45,05 |
| 2000 | 20,0 | 500 | 85 | **AN18.1** | 1 | 77,95 |

# Measuring cylinders



Material
DURAN®
121 °C

## Class B measuring cylinders, blue markings

By Hirschmann. **Tall form.** Made of DURAN®. Hexagonal foot and protective lip made of **PP** can be slipped on easily. With spout and scale. Acc. to DIN EN ISO 4788. Adjusted to IN.
Autoclavable (without hexagonal foot).

| Volume (ml) | Graduations (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 0,2 | 140 | 14 | **CX81.1** | 2 | 12,80 |
| 25 | 0,5 | 170 | 21 | **CX82.1** | 2 | 14,25 |
| 50 | 1,0 | 200 | 25 | **CX83.1** | 2 | 15,25 |
| 100 | 1,0 | 260 | 29 | **CX84.1** | 2 | 18,75 |
| 250 | 2,0 | 335 | 39 | **CX85.1** | 2 | 30,00 |
| 500 | 5,0 | 390 | 53 | **CX86.1** | 2 | 47,85 |
| 1000 | 10,0 | 470 | 65 | **CX87.1** | 1 | 40,80 |



NEU
NOUVEAU
NEW

DURAN
WHEATON
KIMBLE

Material
DURAN®
121 °C

## DURAN® Super Duty measuring cylinders, Class B

Low shape, with line graduations and hexagonal base. Autoclavable.

- Proven DURAN® properties
- Glass type I, Neutral glass according to USP, EP and JP
- High mechanical stability
- Higher impact resistance through reinforced, stable rim
- Regular wall-thickness
- Autoclavable, sterilisable
- Easily readable scale
- Fired-on highly durable labelling

| Volume (ml) | Graduations (ml) | Limit of error (ml) | Outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 100 | 2 | 1 | 39 | 168 | **HKL1.1** | 2 | 71,55 |
| 250 | 5 | 2 | 54 | 205 | **HKL2.1** | 2 | 92,50 |
| 500 | 10 | 5 | 66 | 253 | **HKL3.1** | 2 | 116,00 |
| 1000 | 20 | 10 | 85 | 290 | **HKL4.1** | 2 | 171,00 |



121 °C

## Class B measuring cylinders

By Hirschmann. **Low form.** Made of 3.3 borosilicate glass. Graduated, with hexagonal base and nozzle, amber graduations.
Acc. to DIN EN ISO 4788. Autoclavable.

| Volume (ml) | Height (mm) | ∅ (mm) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 100 | 21 | 1 | **K255.2** | 2 | 16,10 |
| 25 | 125 | 25 | 1 | **K256.2** | 2 | 16,10 |
| 50 | 150 | 29 | 2 | **K257.2** | 2 | 16,85 |
| 100 | 170 | 39 | 2 | **K258.2** | 2 | 19,55 |
| 250 | 220 | 54 | 5 | **K259.2** | 2 | 34,20 |
| 500 | 255 | 65 | 10 | **K260.2** | 2 | 54,70 |
| 1000 | 295 | 85 | 20 | **K261.1** | 1 | 44,85 |
| 2000 | 345 | 105 | 50 | **K262.1** | 1 | 76,70 |



## Nessler cylinders

Made of soda-lime glass, with spout.
Filling volume is adjusted to IN, with white ring mark.

**Short form**

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 175 | 26 | **TX37.1** | 1 | 16,05 |
| 100 | 200 | 32 | **TX38.1** | 1 | 17,00 |

**Tall form**

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 265 | 21 | **TX39.1** | 1 | 14,55 |
| 100 | 320 | 26 | **TX40.1** | 1 | 14,55 |

▶ Aerometer see page 818

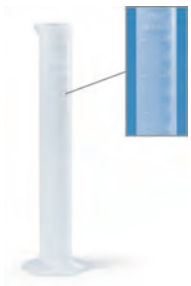
# Measuring cylinders



## Rotilabo®-short measuring cylinders made of PP

Made of transparent **PP.** With embossed scale and round base. Autoclavable.

| Vol. (ml) | Height (mm) | ∅ (mm) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 88 | 16 | 0,25 | **K846.1** | 1 | 3,55 |
| 25 | 107 | 22 | 1,0 | **K847.1** | 1 | 3,85 |
| 50 | 143 | 29 | 2,5 | **K848.1** | 1 | 4,10 |
| 100 | 178 | 34 | 5,0 | **K849.1** | 1 | 4,65 |
| 250 | 264 | 45,5 | 10,0 | **K850.1** | 1 | 8,20 |
| 500 | 305 | 55,5 | 10,0 | **K851.1** | 1 | 9,70 |
| 1000 | 332 | 70 | 25,0 | **K852.1** | 1 | 12,35 |
| 2000 | 370 | 92 | 50,0 | **K853.1** | 1 | 17,10 |



## Rotilabo®-tall measuring cylinders made of PP

Made of transparent **PP**. With embossed scale and hexagonal base. Rings mark the main points. Adjusted to IN. Tolerance of Class B conforms to DIN 12681 / ISO 6706. Thermal stress up to 80 °C causes no permanent exceeding of tolerance limit.

| Volume (ml) | Height (mm) | ∅ (mm) | Graduations (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 10 | 145 | 15 | 0,2 | 0,2 | **8357.1** | 1 | 2,55 |
| 25 | 170 | 22 | 0,5 | 0,5 | **8359.1** | 1 | 3,00 |
| 50 | 200 | 27 | 1,0 | 1,0 | **1666.1** | 1 | 3,20 |
| 100 | 250 | 33 | 1,0 | 1,0 | **1667.1** | 1 | 3,95 |
| 250 | 315 | 44 | 2,0 | 2,0 | **8362.1** | 1 | 6,05 |
| 500 | 360 | 58 | 5,0 | 5,0 | **1668.1** | 1 | 7,90 |
| 1000 | 440 | 68 | 10,0 | 10,0 | **1669.1** | 1 | 10,55 |
| 2000 | 482 | 97 | 20,0 | 20,0 | **8363.1** | 1 | 24,20 |



## Measuring cylinders with handle

Made of **PP**. With hexagonal base and handle (hand opening 89 x 29 mm). For safe, effortless pouring. Double scale for IN and EX, correctness ±5 %. Autoclavable.

| Volume (ml) | Graduations (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1000 | 10 | 64 x 439 | **YC27.1** | 1 | 38,10 |
| 2000 | 20 | 89 x 490 | **YC28.1** | 1 | 67,05 |



## Measuring cylinders

Class A, made of **PMP** in compliance with DIN 12681/ISO 6706. **Certificate of conformity**, clear. Graduated with embossed markings; principle values designated with rings. With hexagonal foot. Supplied with test certificate with batch number and year of manufacture. Autoclavable at 121 °C.

| Volume (ml) | Height (mm) | ∅ (mm) | Graduations (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 25 | 170 | 22 | 0,5 | 0,25 | **P148.1** | 2 | 14,20 |
| 50 | 200 | 27 | 1,0 | 0,5 | **P149.1** | 2 | 15,00 |
| 100 | 250 | 33 | 1,0 | 0,5 | **P150.1** | 2 | 20,25 |
| 250 | 315 | 44 | 2,0 | 1,0 | **P151.1** | 2 | 31,70 |
| 500 | 360 | 58 | 5,0 | 2,5 | **P152.1** | 1 | 24,30 |
| 1000 | 440 | 69 | 10,0 | 5,0 | **P153.1** | 1 | 34,55 |
| 2000 | 482 | 97 | 20,0 | 10,0 | **P154.1** | 1 | 57,10 |



## PFA measuring cylinders

Made of **PFA**, highly transparent. With easy-to-read graduations and wide base. Autoclavable.

- Temperature resistant in the range -196 to +250 °C
- Inert to virtually all chemicals, including hydrofluoric and nitric acid
- High purity, low metal ion content, ideal for use in trace analysis and for the storage of highly pure substances
- No memory effect
- Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning

| Volume (ml) | Height (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 165,9 | 17,8 | **YY72.1** | 1 | 356,90 |
| 50 | 216,7 | 20,0 | **YY73.1** | 1 | 385,95 |
| 100 | 231,8 | 25,7 | **YY74.1** | 1 | 456,90 |
| 200 | 281,8 | 33,6 | **YY75.1** | 1 | 553,65 |
| 300 | 295,3 | 40,7 | **YY76.1** | 1 | 643,95 |
| 500 | 352,4 | 49,5 | **YY77.1** | 1 | 736,40 |
| 1000 | 316,7 | 77,7 | **YY78.1** | 1 | 1287,85 |

# Mixing cylinders



Material
DURAN®

## Class A mixing cylinders

By Hirschmann. Made of DURAN®. Acc. to DIN EN ISO 4788. Graduated. Comes with durably printed batch identification. With blue markings. Adjusted to IN. With hexagonal base. With standard ground joint (NS) and PE-stopper.

| Vol. (ml) | Graduations (ml) | Limit of error (±ml) | Ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 10 | 0,2 | 0,1 | 10/19 | 160 | **Y585.1** | 2 | 40,85 |
| 25 | 0,5 | 0,25 | 14/23 | 193 | **Y586.1** | 2 | 43,40 |
| 50 | 1,0 | 0,5 | 19/26 | 226 | **Y587.1** | 2 | 49,10 |
| 100 | 1,0 | 0,5 | 24/29 | 290 | **Y588.1** | 2 | 53,40 |
| 250 | 2,0 | 1,0 | 29/32 | 367 | **Y589.1** | 2 | 80,00 |
| 500 | 5,0 | 2,5 | 34/35 | 425 | **Y590.1** | 2 | 112,90 |
| 1000 | 10,0 | 5,0 | 45/40 | 510 | **Y591.2** | 1 | 96,60 |
| 2000 | 20,0 | 10,0 | 45/40 | 610 | **Y592.1** | 1 | 163,40 |



Material
DURAN®

## Class B mixing cylinders

By Hirschmann. With standard ground joint (NS). Graduated.
Made of DURAN®. Acc. to DIN EN ISO 4788.
With PE-stopper and blue markings. With hexagonal base. Adjusted to IN.

| Volume (ml) | Graduations (ml) | Ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 0,2 | 10/19 | 160 | **Y577.1** | 2 | 33,60 |
| 25 | 0,5 | 14/23 | 193 | **Y578.1** | 2 | 35,35 |
| 50 | 1,0 | 19/26 | 226 | **Y579.1** | 2 | 39,60 |
| 100 | 1,0 | 24/29 | 290 | **Y580.1** | 2 | 42,65 |
| 250 | 2,0 | 29/32 | 367 | **Y581.1** | 2 | 64,00 |
| 500 | 5,0 | 34/35 | 425 | **Y582.1** | 2 | 98,90 |
| 1000 | 10,0 | 45/40 | 510 | **Y583.2** | 1 | 76,55 |
| 2000 | 20,0 | 45/40 | 610 | **Y584.1** | 1 | 143,00 |



DURAN WHEATON KIMBLE

Material
DURAN®

121°C

## DURAN®-mixing cylinders

Made of DURAN®. Compliant with DIN EN ISO 4788. Standardised wall thickness across the full measurement range prevents wedge error. With hexagonal base, standard taper and line graduations. Calibrated to IN. Temperature stable up to 250 °C without change in volume. Autoclavable.

**Delivery incl.** PE stopper.

**Class A** with blue graduations. Conformity certified, with mark of conformity and enclosed batch certificate.

| Vol. (ml) | Graduations (ml) | Limit of error (±ml) | Ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 10 | 0.2 | 0,10 | 10/19 | 156 | **AKE0.1** | 2 | 39,35 |
| 25 | 0.5 | 0,25 | 14/23 | 190 | **AKE1.1** | 2 | 41,55 |
| 50 | 1 | 0,50 | 19/26 | 222 | **AKE2.1** | 2 | 47,10 |
| 100 | 1 | 0,50 | 24/29 | 287 | **AKE3.1** | 2 | 52,10 |
| 250 | 2 | 1,00 | 29/32 | 363 | **AKE4.1** | 2 | 75,80 |
| 500 | 5 | 2,50 | 34/35 | 398 | **AKE5.1** | 2 | 107,00 |
| 1000 | 10 | 5,00 | 45/40 | 500 | **AKE6.1** | 1 | 97,55 |
| 2000 | 20 | 10,00 | 45/40 | 540 | **AKE7.1** | 1 | 163,00 |

**Class B** with white graduations

| Vol. (ml) | Graduations (ml) | Limit of error (±ml) | Ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 10 | 0.2 | 0,2 | 10/19 | 156 | **AKE8.1** | 2 | 35,15 |
| 25 | 0.5 | 0,5 | 14/23 | 190 | **AKE9.1** | 2 | 36,30 |
| 50 | 1 | 1 | 19/26 | 222 | **AKH0.1** | 2 | 40,60 |
| 100 | 1 | 1 | 24/29 | 287 | **AKH1.1** | 2 | 43,00 |
| 250 | 2 | 2 | 29/32 | 363 | **AKH2.1** | 2 | 65,00 |
| 500 | 5 | 5 | 34/35 | 398 | **AKH3.1** | 2 | 103,00 |
| 1000 | 10 | 10 | 45/40 | 500 | **AKH4.1** | 1 | 75,15 |
| 2000 | 20 | 20 | 45/40 | 540 | **AKH5.1** | 1 | 148,00 |



DURAN WHEATON KIMBLE

## Standard ground glass joint stoppers

Made of **PE**. Anatomically shaped for easier opening and closing, sealing ribs on taper ensure optimal and leak-proof sealing. With batch code on base of stopper. Temperature stable from -40 to +80 °C

| Standard taper (NS) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 7/16 | blue | **AKH6.1** | 10 | 7,55 |
| 10/19 | green | **AKH7.1** | 10 | 9,70 |
| 12/21 | violet | **AKH8.1** | 10 | 11,60 |
| 14/23 | yellow | **AKH9.1** | 10 | 8,15 |
| 19/26 | blue | **AKK0.1** | 10 | 9,15 |
| 24/29 | green | **AKK1.1** | 10 | 10,75 |
| 29/32 | red | **AKK2.1** | 10 | 13,10 |
| 34/35 | orange | **AKK3.1** | 1 | 2,95 |
| 45/40 | brown | **AKK4.1** | 1 | 3,35 |

# Volumetric flasks











Material DURAN®

## Volumetric flasks, borosilicate glass

Made of borosilicate glass 3.3. **Class A.** With certificate of conformity and batch identification. With standard ground joint and HDPE-stopper. Adjusted to IN. Acc. to DIN EN 12664, ISO 1042.

**Transparent glass**

* Wide neck

| Volume (ml) | Error (±ml) | Standard ground joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 0,025 | 7/16 | **Y273.1** | 2 | 15,55 |
| 5 | 0,025 | 10/19* | **Y274.1** | 2 | 12,75 |
| 10 | 0,025 | 7/16 | **Y275.1** | 2 | 13,35 |
| 10 | 0,025 | 10/19* | **Y276.1** | 2 | 13,80 |
| 20 | 0,040 | 10/19 | **Y277.1** | 2 | 13,95 |
| 25 | 0,040 | 10/19 | **Y278.1** | 2 | 14,75 |
| 50 | 0,060 | 12/21 | **Y279.1** | 2 | 15,70 |
| 50 | 0,060 | 14/23* | **Y280.1** | 2 | 16,85 |
| 100 | 0,100 | 12/21 | **Y281.1** | 2 | 16,90 |
| 100 | 0,100 | 14/23* | **Y282.1** | 2 | 18,25 |
| 200 | 0,150 | 14/23 | **Y283.1** | 2 | 22,75 |
| 250 | 0,150 | 14/23 | **Y284.1** | 2 | 22,90 |
| 500 | 0,250 | 19/26 | **Y285.1** | 2 | 29,55 |
| 1000 | 0,400 | 24/29 | **Y286.1** | 2 | 49,15 |
| 2000 | 0,600 | 29/32 | **Y287.1** | 2 | 81,40 |
| 5000 | 1,200 | 34/35 | **Y288.1** | 1 | 93,00 |

**Amber glass.** Graduated with white markings.

*Wide neck

| Volume (ml) | Error (±ml) | Standard ground joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 0,025 | 7/16 | **Y289.1** | 2 | 20,40 |
| 5 | 0,025 | 10/19* | **Y290.1** | 2 | 19,90 |
| 10 | 0,025 | 10/19* | **Y292.1** | 2 | 19,90 |
| 20 | 0,040 | 10/19 | **Y293.1** | 2 | 21,40 |
| 25 | 0,040 | 10/19 | **Y294.1** | 2 | 22,25 |
| 50 | 0,060 | 12/21 | **Y295.1** | 2 | 23,80 |
| 50 | 0,060 | 14/23* | **Y296.1** | 2 | 24,00 |
| 100 | 0,100 | 12/21 | **Y297.1** | 2 | 27,25 |
| 100 | 0,100 | 14/23* | **Y298.1** | 2 | 27,75 |
| 200 | 0,150 | 14/23 | **Y299.1** | 2 | 40,50 |
| 250 | 0,150 | 14/23 | **Y300.1** | 2 | 42,80 |
| 500 | 0,250 | 19/26 | **Y301.1** | 2 | 58,95 |
| 1000 | 0,400 | 24/29 | **Y302.1** | 2 | 74,95 |

▶ Glass-stoppers see page 138

## Volumetric flasks, DURAN®

By Hirschmann. Made of DURAN®. **Class A.** Comes with durably printed batch identification. With standard ground joint and PE stopper. Adjusted to IN. Acc. to DIN EN ISO 1042.

**Transparent glass.** Graduated with blue markings.

*Wide neck

| Volume (ml) | Error (±ml) | Standard ground joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 0,025 | 7/16 | **Y231.1** | 2 | 26,90 |
| 5 | 0,04 | 10/19* | **Y232.1** | 2 | 26,90 |
| 10 | 0,025 | 7/16 | **C162.1** | 2 | 26,25 |
| 10 | 0,04 | 10/19* | **Y233.1** | 2 | 26,90 |
| 20 | 0,04 | 10/19 | **C163.1** | 2 | 26,25 |
| 25 | 0,04 | 10/19 | **C164.1** | 2 | 26,25 |
| 25 | 0,06 | 12/21* | **Y234.1** | 2 | 27,85 |
| 50 | 0,06 | 12/21 | **C165.1** | 2 | 28,95 |
| 50 | 0,08 | 14/23* | **Y235.1** | 2 | 28,20 |
| 100 | 0,1 | 12/21 | **C166.1** | 2 | 30,25 |
| 100 | 0,1 | 14/23* | **Y236.1** | 2 | 29,00 |
| 200 | 0,15 | 14/23 | **C167.1** | 2 | 37,90 |
| 250 | 0,15 | 14/23 | **C168.1** | 2 | 41,05 |
| 500 | 0,25 | 19/26 | **C169.1** | 2 | 47,85 |
| 1000 | 0,4 | 24/29 | **C170.1** | 2 | 76,65 |
| 1000 | 0,6 | 29/32* | **Y237.1** | 2 | 92,90 |
| 2000 | 0,6 | 29/32 | **C171.1** | 2 | 115,05 |
| 5000 | 1,2 | 34/35 | **C172.1** | 1 | 132,25 |

**Trapezoid.** Graduated with blue markings.

| Volume (ml) | Error (±ml) | Standard ground joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 0,025 | 7/16 | **Y239.2** | 2 | 32,80 |
| 2 | 0,025 | 7/16 | **Y240.2** | 2 | 32,80 |
| 5 | 0,04 | 10/19 | **Y241.1** | 2 | 33,35 |
| 10 | 0,04 | 10/19 | **Y242.1** | 2 | 33,35 |
| 20 | 0,04 | 10/19 | **Y243.1** | 2 | 33,35 |
| 25 | 0,04 | 10/19 | **Y244.1** | 2 | 33,35 |
| 50 | 0,06 | 12/21 | **Y245.1** | 2 | 33,35 |

**Amber glass.** With marking ring and graduation in white ceramic colour.

1) Not in compliance with DIN *Wide neck

| Volume (ml) | Error (±ml) | Standard ground joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 0,04 | 10/19 | **L450.2** | 2 | 46,15 |
| 10 | 0,04 | 10/19 | **L452.2** | 2 | 46,15 |
| 20[1)] | 0,04 | 10/19 | **L453.2** | 2 | 46,15 |
| 25 | 0,04 | 10/19 | **L454.2** | 2 | 46,15 |
| 50 | 0,06 | 12/21 | **L455.2** | 2 | 48,35 |
| 50 | 0,08 | 14/23* | **L456.2** | 2 | 49,90 |
| 100 | 0,1 | 12/21 | **L457.2** | 2 | 51,00 |
| 100 | 0,1 | 14/23* | **L458.2** | 2 | 52,25 |
| 200 | 0,15 | 14/23 | **L459.2** | 2 | 58,45 |
| 250 | 0,15 | 14/23 | **L460.2** | 2 | 62,65 |
| 500 | 0,25 | 19/26 | **L461.2** | 2 | 82,10 |
| 1000 | 0,4 | 24/29 | **L462.1** | 1 | 61,05 |
| 2000 | 0,6 | 29/32 | **L463.1** | 1 | 92,15 |

# Volumetric flasks




## DURAN®-volumetric flasks

Clear glass, blue or white graduations. Calibrated to IN. According to DIN 12 600. Temperature stable up to 250 °C without change in volume.
**Delivery incl.** PE stoppers, temperature stable from -40 to +80 °C.

**Class A** with blue graduations and white ring mark. Conformity certified, with mark of conformity and enclosed **batch certificate**.

| Volume (ml) | Error (±ml) | Standard ground glass joint | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 0.025 | 7/16 | 65 | **AHL8.1** | 2 | 51,25 |
| 2 | 0.025 | 7/16 | 70 | **AHL9.1** | 2 | 51,25 |
| 5 | 0.04 | 10/19 | 70 | **AHN0.1** | 2 | 28,85 |
| 10 | 0.04 | 10/19 | 90 | **AHN1.1** | 2 | 29,00 |
| 20 | 0.04 | 10/19 | 110 | **AHN2.1** | 2 | 29,95 |
| 25 | 0.04 | 10/19 | 110 | **AHN3.1** | 2 | 29,95 |
| 50 | 0.06 | 12/21 | 140 | **AHN4.1** | 2 | 32,60 |
| 100 | 0.1 | 12/21 | 170 | **AHN5.1** | 2 | 36,45 |
| 100 | 0.1 | 14/23 | 170 | **AHN6.1** | 2 | 36,60 |
| 200 | 0.15 | 14/23 | 210 | **AHN7.1** | 2 | 41,70 |
| 250 | 0.15 | 14/23 | 220 | **AHN8.1** | 2 | 43,15 |
| 500 | 0.25 | 19/26 | 260 | **AHN9.1** | 2 | 51,00 |
| 1000 | 0.4 | 24/29 | 300 | **AHP0.2** | 2 | 89,00 |
| 1000 | 0.6 | 29/32 | 300 | **AHP1.2** | 2 | 98,55 |
| 2000 | 0.6 | 29/32 | 370 | **AHP2.2** | 2 | 121,00 |
| 5000 | 1.2 | 34/35 | 475 | **AHP3.1** | 1 | 122,00 |

**Class A** with blue graduations and white ring mark. Conformity certified, with mark of conformity and enclosed **individual certificate**.

| Volume (ml) | Error (±ml) | Standard ground glass joint | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 0.025 | 7/16 | 65 | **AHP4.1** | 2 | 102,50 |
| 2 | 0.025 | 7/16 | 70 | **AHP5.1** | 2 | 102,50 |
| 5 | 0.04 | 10/19 | 70 | **AHP6.1** | 2 | 70,70 |
| 10 | 0.04 | 10/19 | 90 | **AHP7.1** | 2 | 70,95 |
| 20 | 0.04 | 10/19 | 110 | **AHP8.1** | 2 | 71,80 |
| 25 | 0.04 | 10/19 | 110 | **AHP9.1** | 2 | 71,80 |
| 50 | 0.06 | 12/21 | 140 | **AHT0.1** | 2 | 74,50 |
| 100 | 0.1 | 12/21 | 170 | **AHT1.1** | 2 | 78,20 |
| 100 | 0.1 | 14/23 | 170 | **AHT2.1** | 2 | 78,55 |
| 200 | 0.15 | 14/23 | 210 | **AHT3.1** | 2 | 83,45 |
| 250 | 0.15 | 14/23 | 220 | **AHT4.1** | 2 | 84,95 |
| 500 | 0.25 | 19/26 | 260 | **AHT5.1** | 2 | 93,15 |
| 1000 | 0.4 | 24/29 | 300 | **AHT6.2** | 2 | 130,00 |
| 1000 | 0.6 | 29/32 | 300 | **AHT7.2** | 2 | 140,00 |
| 2000 | 0.6 | 29/32 | 370 | **AHT8.2** | 2 | 163,00 |
| 5000 | 1.2 | 34/35 | 475 | **AHT9.1** | 1 | 139,00 |

**Class B** with white graduations and white ring mark.

| Volume (ml) | Error (±ml) | Standard ground glass joint | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 0.08 | 10/19 | 70 | **AHX0.1** | 2 | 24,40 |
| 10 | 0.08 | 10/19 | 90 | **AHX1.1** | 2 | 24,85 |
| 20 | 0.08 | 10/19 | 110 | **AHX2.1** | 2 | 25,60 |
| 25 | 0.08 | 10/19 | 110 | **AHX3.1** | 2 | 25,60 |
| 50 | 0.12 | 12/21 | 140 | **AHX4.1** | 2 | 29,60 |
| 100 | 0.2 | 14/23 | 170 | **AHX5.1** | 2 | 33,00 |
| 200 | 0.3 | 14/23 | 210 | **AHX6.1** | 2 | 36,70 |
| 250 | 0.3 | 14/23 | 220 | **AHX7.1** | 2 | 38,65 |
| 500 | 0.5 | 19/26 | 260 | **AHX8.1** | 2 | 46,75 |
| 1000 | 0.8 | 24/29 | 300 | **AHX9.2** | 2 | 78,30 |
| 2000 | 1.2 | 29/32 | 370 | **AHY0.2** | 2 | 109,00 |
| 5000 | 2.4 | 34/35 | 475 | **AHY1.1** | 1 | 116,00 |




## DURAN®-volumetric flasks, class A, USP<31>

Clear glass with blue graduations and white ring mark. Calibrated to IN. According to DIN 12 600. USP<31> compliant, conformity certified with symbol of conformity and enclosed USP certificate.
Temperature stable up to +250 °C without change in volume.
**Delivery incl.** PE stoppers, temperature stable from -40 to +80 °C.

| Volume (ml) | Error (±ml) | Standard ground glass joint | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 0,02 | 10/19 | 70 | **AHY2.1** | 2 | 74,80 |
| 10 | 0,02 | 10/19 | 90 | **AHY3.1** | 2 | 75,00 |
| 25 | 0,03 | 10/19 | 110 | **AHY4.1** | 2 | 75,40 |
| 50 | 0,05 | 12/21 | 140 | **AHY5.1** | 2 | 78,20 |
| 100 | 0,08 | 14/23 | 170 | **AHY6.1** | 2 | 82,45 |
| 200 | 0,1 | 14/23 | 210 | **AHY7.1** | 2 | 87,60 |
| 250 | 0,12 | 14/23 | 220 | **AHY8.1** | 2 | 89,20 |
| 500 | 0,15 | 19/26 | 260 | **AHY9.1** | 2 | 97,80 |
| 1000 | 0,3 | 24/29 | 300 | **AKA0.2** | 2 | 136,00 |
| 2000 | 0,5 | 29/32 | 370 | **AKA1.2** | 2 | 171,00 |

# Volumetric flasks




## Volumetric flask with glass stopper

By Hirschmann. Made of DURAN®. **Class A**. Certified conformity with retrace code. With ground glass joint and hollow glass stopper. Calibrated to IN. DIN EN ISO 1042 certified.

**Clear glass.** Blue graduations.

*Wide mouth

| Volume (ml) | Tolerance (±ml) | Standard ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 0,025 | 7/16 | 70 | **CNY0.1** | 2 | 33,35 |
| 5 | 0,04 | 10/19* | 70 | **CNY1.1** | 2 | 33,35 |
| 10 | 0,025 | 7/16 | 90 | **CNY2.1** | 2 | 33,35 |
| 10 | 0,04 | 10/19* | 90 | **CNY3.1** | 2 | 33,35 |
| 20 | 0,04 | 10/19 | 110 | **CNY4.1** | 2 | 33,35 |
| 20 | 0,06 | 12/21* | 105 | **CNY5.1** | 2 | 38,50 |
| 25 | 0,04 | 10/19 | 110 | **CNY6.1** | 2 | 32,80 |
| 25 | 0,06 | 12/21* | 110 | **CNY7.1** | 2 | 32,80 |
| 50 | 0,06 | 12/21 | 140 | **CNY8.1** | 2 | 32,80 |
| 50 | 0,08 | 14/23* | 140 | **CNY9.1** | 2 | 33,90 |
| 100 | 0,1 | 12/21 | 170 | **CPA0.1** | 2 | 33,90 |
| 100 | 0,1 | 14/23 | 170 | **CPA1.1** | 2 | 34,95 |
| 200 | 0,15 | 14/23 | 210 | **CPA2.1** | 2 | 44,75 |
| 250 | 0,15 | 14/23 | 220 | **CPA3.1** | 2 | 47,20 |
| 500 | 0,25 | 19/26 | 260 | **CPA4.1** | 2 | 57,65 |
| 1000 | 0,6 | 19/32* | 300 | **CPA5.1** | 1 | 52,60 |
| 1000 | 0,4 | 24/29 | 300 | **CPA6.1** | 1 | 45,15 |
| 2000 | 0,6 | 29/32 | 370 | **CPA7.1** | 1 | 64,10 |
| 5000 | 1,2 | 34/35 | 470 | **CPA8.1** | 1 | 143,00 |
| 10000 | 2,0 | 45/40 | 570 | **CPA9.1** | 1 | 269,85 |

**Trapezoidal shape.** Blue graduations.

*Wide mouth

| Volume (ml) | Tolerance (±ml) | Standard ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 0,025 | 7/16 | 60 | **CPC0.1** | 2 | 40,50 |
| 2 | 0,025 | 7/16 | 70 | **CPC1.1** | 2 | 40,50 |
| 5 | 0,025 | 7/16 | 70 | **CPC2.1** | 2 | 40,50 |
| 5 | 0,04 | 10/19* | 70 | **CPC3.1** | 2 | 40,50 |
| 10 | 0,025 | 7/16 | 90 | **CPC4.1** | 2 | 40,50 |
| 10 | 0,04 | 10/19* | 90 | **CPC5.1** | 2 | 40,50 |
| 20 | 0,04 | 10/19 | 110 | **CPC6.1** | 2 | 40,50 |
| 25 | 0,04 | 10/19 | 110 | **CPC7.1** | 2 | 40,50 |
| 50 | 0,06 | 12/21 | 140 | **CPC8.1** | 2 | 40,50 |

**Brown glass.** White graduations.

*Wide mouth

| Volume (ml) | Tolerance (±ml) | Standard ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 0,025 | 7/16 | 70 | **CPC9.1** | 2 | 70,10 |
| 5 | 0,04 | 10/19* | 70 | **CPE0.1** | 2 | 59,40 |
| 10 | 0,025 | 7/16 | 90 | **CPE1.1** | 2 | 70,10 |
| 10 | 0,04 | 10/19* | 90 | **CPE2.1** | 2 | 59,40 |
| 20 | 0,04 | 10/19 | 110 | **CPE3.1** | 2 | 59,40 |
| 20 | 0,04 | 12/21* | 110 | **CPE4.1** | 2 | 59,40 |
| 25 | 0,04 | 10/19 | 110 | **CPE5.1** | 2 | 59,40 |
| 25 | 0,06 | 12/21* | 110 | **CPE6.1** | 2 | 59,40 |
| 50 | 0,06 | 12/21 | 140 | **CPE7.1** | 2 | 59,40 |
| 50 | 0,08 | 14/23* | 140 | **CPE8.1** | 2 | 59,35 |
| 100 | 0,1 | 12/21 | 170 | **CPE9.1** | 2 | 59,35 |
| 100 | 0,1 | 14/23 | 170 | **CPH0.1** | 2 | 60,55 |
| 200 | 0,15 | 14/23 | 210 | **CPH1.1** | 2 | 68,65 |
| 250 | 0,15 | 14/23 | 220 | **CPH2.1** | 2 | 75,15 |
| 500 | 0,25 | 19/26 | 260 | **CPH3.1** | 2 | 96,75 |
| 1000 | 0,4 | 24/29 | 300 | **CPH4.1** | 1 | 68,55 |
| 2000 | 0,6 | 29/32 | 370 | **CPH5.1** | 1 | 106,90 |




## Volumetric flasks with screw cap, class A

Individually ring-marked IN. Tolerance class A according to DIN EN ISO 1042. Autoclavable.

**Note:** exposure to temperatures up to 121 °C (autoclaving) will not cause tolerance limits to be permanently exceeded.

① Made of **PFA**, with screw cap made of PFA.
High temperature and chemical resistance. Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning. High purity, ideal for use in trace analysis and for storage of reference solutions. No memory effect.

| Volume (ml) | Tolerance (±ml) | Thread GL | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 0,04 | 18 | 90 | **XY51.1** | 1 | 124,70 |
| 25 | 0,04 | 18 | 115 | **XY52.1** | 1 | 127,95 |
| 50 | 0,06 | 18 | 150 | **XY53.1** | 1 | 130,10 |
| 100 | 0,10 | 18 | 180 | **XY54.1** | 1 | 162,35 |
| 250 | 0,15 | 25 | 235 | **XY55.1** | 1 | 203,20 |
| 500 | 0,25 | 25 | 270 | **XY56.1** | 1 | 233,30 |

② Made of **PMP**, opaque. With screw cap made of PP.
With imprinted lot number and batch certificate.
We recommend cleaning at below 60 °C to preserve the imprint.
UV-absorbent for storage of light-sensitive substances.

| Volume (ml) | Tolerance (±ml) | Thread GL | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 0,04 | 18 | 90 | **XY44.1** | 1 | 18,15 |
| 25 | 0,04 | 18 | 115 | **XY45.1** | 1 | 19,10 |
| 50 | 0,06 | 18 | 150 | **XY46.1** | 1 | 20,95 |
| 100 | 0,10 | 18 | 180 | **XY47.1** | 1 | 22,70 |
| 250 | 0,15 | 25 | 235 | **XY48.1** | 1 | 27,20 |
| 500 | 0,25 | 25 | 270 | **XY49.1** | 1 | 32,40 |
| 1000 | 0,40 | 32 | 310 | **XY50.1** | 1 | 56,55 |

# Volumetric flasks




## Volumetric flasks with stopper, class A

Made of **PMP**. With standard ground joint stopper made of PP. Individually ring-marked 'In'. Tolerance class A according to DIN EN ISO 1042. With imprinted lot number and batch certificate. We recommend cleaning at below 60 °C to preserve the imprint. Autoclavable.

**Note:** exposure to temperatures up to 121 °C (autoclaving) will not cause tolerance limits to be permanently exceeded.

① **Transparent.**

| Volume (ml) | Tolerance (±ml) | Standard ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 0,04 | 10/19 | 90 | **XY30.1** | 1 | 10,15 |
| 25 | 0,04 | 10/19 | 115 | **XY31.1** | 1 | 10,30 |
| 50 | 0,06 | 12/21 | 150 | **XY32.1** | 1 | 13,45 |
| 100 | 0,10 | 14/23 | 180 | **XY33.1** | 1 | 15,30 |
| 250 | 0,15 | 19/26 | 235 | **XY34.1** | 1 | 19,15 |
| 500 | 0,25 | 19/26 | 270 | **XY35.1** | 1 | 19,90 |
| 1000 | 0,40 | 24/29 | 310 | **XY36.1** | 1 | 22,90 |

② **Opaque.**
UV-absorbent for storage of light-sensitive substances.

| Volume (ml) | Tolerance (±ml) | Standard ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 0,04 | 10/19 | 90 | **XY37.1** | 1 | 18,25 |
| 25 | 0,04 | 10/19 | 115 | **XY38.1** | 1 | 19,25 |
| 50 | 0,06 | 12/21 | 150 | **XY39.1** | 1 | 21,20 |
| 100 | 0,10 | 14/23 | 180 | **XY40.1** | 1 | 22,80 |
| 250 | 0,15 | 19/26 | 235 | **XY41.1** | 1 | 27,45 |
| 500 | 0,25 | 19/26 | 270 | **XY42.1** | 1 | 32,15 |
| 1000 | 0,40 | 24/29 | 310 | **XY43.1** | 1 | 56,60 |

## Volumetric flasks with stopper, class B

With standard ground joint stopper made of **PP**. Individually ring-marked IN. Tolerances comply with DIN EN ISO 1042.

**Please note:**
Temperatures up to 60 °C cause no permanent exceeding of tolerance limit.

③ Made of **PMP**. Autoclavable at 121 °C.

| Volume (ml) | Tolerance (±ml) | Standard ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 0,08 | 10/19 | 115 | **8374.1** | 1 | 8,55 |
| 50 | 0,12 | 12/21 | 150 | **8375.1** | 1 | 11,10 |
| 100 | 0,20 | 14/23 | 180 | **8377.1** | 1 | 12,60 |
| 250 | 0,30 | 19/26 | 235 | **8378.1** | 1 | 16,05 |
| 500 | 0,50 | 19/26 | 270 | **8380.1** | 1 | 16,80 |
| 1000 | 0,80 | 24/29 | 310 | **8381.1** | 1 | 19,35 |

④ Made of **PP**.

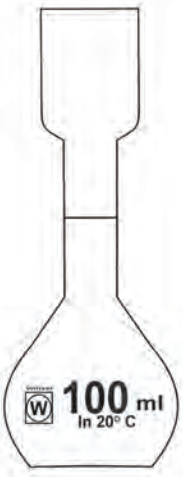
| Volume (ml) | Tolerance (±ml) | Standard ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 0,08 | 10/19 | 115 | **8364.1** | 1 | 7,45 |
| 50 | 0,12 | 12/21 | 150 | **8365.1** | 1 | 9,50 |
| 100 | 0,20 | 14/23 | 180 | **8366.1** | 1 | 10,15 |
| 250 | 0,30 | 19/26 | 235 | **8368.1** | 1 | 12,60 |
| 500 | 0,50 | 19/26 | 270 | **8370.1** | 1 | 13,30 |
| 1000 | 0,80 | 24/29 | 310 | **8372.1** | 1 | 15,30 |




## Rotilabo®-flasks with graduated neck

Made of borosilicate glass 3.3 with heavy duty rim. Brown, graduated. Autoclavable.

| Volume vessel (ml) | Neck volume (ml) | Graduations (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | +5 | 0.2 | 155 | **ACA7.1** | 1 | 16,15 |
| 100 | +10 | 0.2 | 205 | **ACA8.1** | 1 | 17,20 |
| 200 | +20 | 0.2 | 245 | **ACA9.1** | 1 | 23,80 |
| 250 | +25 | 0.5 | 280 | **ACC0.1** | 1 | 30,80 |
| 500 | +50 | 1.0 | 320 | **ACC1.1** | 1 | 30,40 |
| 1000 | +100 | 1.0 | 400 | **ACC2.1** | 1 | 40,65 |




## Rotilabo®-Kohlrausch flasks, class A

Made of borosilicate glass 3.3. For sugar analysis acc. to Kohlrausch. With ring mark, accuracy within official test tolerance.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **AAN3.1** | 1 | 25,20 |
| 200 | **AAN4.1** | 1 | 31,05 |




## ① Iodine determination flasks

With standard ground glass joint made of DURAN®.
Hollow glass-stopper NS 29/32. Autoclavable.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **E535.1** | 1 | 14,10 |
| 250 | **E536.1** | 1 | 15,55 |
| 300 | **EPY7.1** | 1 | 19,10 |
| 500 | **E537.1** | 1 | 18,30 |
| 1000 | **EPY8.1** | 1 | 31,35 |

## ② Iodine determination flasks with neck

Made of DURAN®. With iodine stopper NS 29/32 and scale.

| Volume (ml) | Largest outer ∅ (mm) | Height approx. (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 60 | 135 | **TK12.1** | 1 | 65,95 |
| 250 | 81 | 170 | **TK13.1** | 1 | 69,50 |
| 500 | 101 | 205 | **TK14.1** | 1 | 76,35 |



## Gay-Lussac pycnometers

Made of borosilicate glass 3.3. For determining the density of non-volatile, low-viscosity liquids. Pear-shaped.
With ground glass plug, grind ∅ top 9 mm, bottom 7 mm. Adjusted at 20 °C.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **P224.1** | 1 | 31,50 |
| 2 | **P225.1** | 1 | 33,65 |
| 5 | **P226.1** | 1 | 33,25 |
| 10 | **P227.1** | 1 | 34,35 |
| 25 | **P228.1** | 1 | 36,05 |
| 50 | **P229.1** | 1 | 39,80 |
| 100 | **P230.1** | 1 | 46,25 |

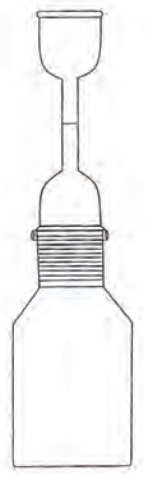


## Pycnometer acc. to Gay-Lussac

Made of borosilicate glass 3.3. Adjusted to IN, with thermometer and side capillaries. Acc. to DIN ISO 3507. Conical ground cap of the side capillaries NS 7/16. Thermometer with blue Toluene filling. Measuring range 10-35 °C. Graduation 0.2 °C. With NS 10/19.
Volume declaration in $cm^3$ (3 decimal places).
**Delivery incl.** individual certificate.

*In addition to DIN.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **EXP7.1** | 1 | 167,70 |
| 25 | **EXP8.1** | 1 | 169,85 |
| 50 | **EXP9.1** | 1 | 174,15 |
| 100* | **EXY0.1** | 1 | 178,45 |



## Rotilabo®-pycnometers

Made of borosilicate glass 3.3.
For bituminous compounds and mineral substances. With ring mark.

| Volume (ml) | NS | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 | 45/40 | **AAN8.1** | 1 | 87,30 |
| 1000 | 60/46 | **AAN9.1** | 1 | 109,65 |
| 2000 | 60/46 | **AAP0.1** | 1 | 126,85 |

# Measuring vessels



## Rotilabo®-Reischauer pycnometers

Made of borosilicate glass 3.3. With graduations in neck and ground glass joint 10/13. According to ISO 3507.

| Volume (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 105 | **TP46.1** | 1 | 28,95 |
| 50 | 115 | **TP47.1** | 1 | 31,90 |



121°C

## Einhorn fermentation saccharometer

Made of calcium soda glass. For determining the sugar content in liquids. With indelibly branded white graduations (0.2-5 ml). Autoclavable.
**Delivery incl.** burette with ring mark at 10 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CKY9.1** | 1 | 21,45 |



DURAN WHEATON KIMBLE

## BOD-bottles

By Wheaton. Made of borosilicate glass, in accordance with USP type I. With labelling field. For determination of the biochemical oxygen requirement. The extension at the bottle neck holds water displaced by stoppers or electrodes and thus protects against air entering the bottle. Neck internal ∅16.5 mm.
**Delivery incl.** stoppers.

**Uncoated**

| Volume (ml) | ∅ x H (mm) | Stopper type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 43 x 115 | Pennyhead | **EXT8.1** | 1 | 24,85 |
| 60 | 43 x 115 | Robotic | **EXT9.1** | 1 | 24,85 |
| 300 | 69 x 165 | Pennyhead | **EXX0.1** | 1 | 14,75 |
| 300 | 69 x 165 | Robotic | **EXX1.1** | 1 | 14,75 |

**With black PVC-coating**
Light protection up to 800 nm, prevents possible formation of oxygen through algae.
**Delivery incl.** cap made of LDPE.

| Volume (ml) | ∅ x H (mm) | Stopper type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 300 | 73 x 167 | Robotic | **EXX2.1** | 1 | 23,35 |



DURAN WHEATON KIMBLE

## Racks for BOD-bottles

By Wheaton. Made of epoxy-coated steel.
For storage or transportation of 60 ml or 300 ml BOD bottles.Stackable.
Dimensions: L 330 x W 254 x H 178 mm, height up to top level 143 mm.

| For bottle ∅ (mm) | Slots | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 43 | 20 | **EXX3.1** | 1 | 84,30 |
| 69 | 12 | **EXX4.1** | 1 | 67,05 |

## Stoppers for BOD-bottles

By Wheaton. Made of **PE**, with foam insert. Prevents the evaporation of the water in the bottle neck extension so that air cannot enter the bottle during incubation. ∅ 40 x H 35 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXX5.1** | 50 | 55,85 |

## Stopper safety clip for BOD-bottles

Made of rubber.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXX6.1** | 25 | 24,65 |

## Replacement stopper for BOD-bottles

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Pennyhead | **EXX7.1** | 12 | 56,05 |
| Robotic | **EXX8.1** | 12 | 53,90 |



## Oxygen bottles

Made of borosilicate glass. With PE stopper and labelling space.
For the determination of water dissolved oxygen.
Total volume is engraved in bottle, accuracy 0.01 ml.

| Volume (ml) | NS | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100-150 | 14/23 | **AAP3.1** | 1 | 18,50 |
| 100-150 | 29/22 | **AAP4.1** | 1 | 20,75 |
| 250-300 | 19/26 | **AAP5.1** | 1 | 19,55 |



## Winkler oxygen bottles

Made of clear glass. With ground-in stopper and opaque label, exact content is engraved on bottle. Two digits after the comma, tolerance ±0.1 ml.

| Volume (ml) | Standard ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100-150 | 14/23 | **HH78.1** | 1 | 25,60 |
| 250-300 | 19/26 | **HH79.1** | 1 | 29,00 |

▶ Spring clips for Winkler oxygen bottles, see page 140




DURAN WHEATON KIMBLE
Material DURAN®

## ① Imhoff Sedimentation cone

Made of DURAN®. Graduated. Acc. to DIN 12672, part 1. Volume 1000 ml.
Dimensions: H 465, widest ∅ 120 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K618.1** | 1 | 82,20 |

## ② Imhoff Sedimentation cone with stop cock

Made of borosilicate glass 3.3. Acc. to DIN 12672. Graduated up to 100 ml. Ring marking at 1000 ml. Cock with NS-glass-plug.
Dimensions: H (with cock) 510 mm, H (without cock) 465 mm, widest ∅ 120 mm. Funnel-∅ outer: 10 mm, inner 6.5 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AK68.1** | 1 | 166,65 |



## Rotilabo®-Imhoff sedimentation cone

Made of clear **SAN**. Graduated with embossed markings, and has a screw fitting for emptying. Volumes 1000 ml.
Graduation:
- 0-2 ml = 0.1 ml
- 2-10 ml = 0.5 ml
- 10-40 ml = 1.0 ml
- 40-100 ml = 2.0 ml
- 100-1000 ml = 50.0 ml

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9144.1** | 1 | 27,95 |

## Stand for 2 Imhoff sedimentation cones

Made of **PMMA**. Dimensions: L 300 x W 150 x H 290 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9147.1** | 1 | 84,90 |

## Stands for Imhoff funnels

Made of epoxy-coated wire.

| Design | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| For 3 Imhoff funnels | 45 x 17 x 41 | **YA75.1** | 1 | 92,15 |
| For 4 Imhoff funnels | 58 x 17 x 41 | **YA76.1** | 1 | 101,95 |

▶ Additional funnel racks see page 168

# Glass bottles



## DURAN®-settling bottles

Made of DURAN®. For storage and dispensing of aqueous media and aggressive liquids. Design conforms to ISO 4796-3. With retrace code. Autoclavable.

**With standard ground joint**
**Delivery incl.** ground glass stopcock and ground glass stopper.

| Volume (ml) | ∅ x H (mm) | Bottom tube NS | Neck NS | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 500 | 86 x 164 | 19/26 | 24/29 | **CCN4.1** | 1 | 104,00 |
| 1000 | 107 x 200 | 19/26 | 29/32 | **CCN5.1** | 1 | 109,00 |
| 2000 | 134 x 249 | 19/26 | 29/32 | **CCN6.1** | 1 | 142,00 |
| 5000 | 182 x 320 | 29/32 | 45/40 | **CCN7.1** | 1 | 195,00 |
| 10000 | 228 x 398 | 29/32 | 60/46 | **CCN8.1** | 1 | 269,00 |
| 20000 | 289 x 492 | 29/32 | 60/46 | **CCN9.1** | 1 | 433,00 |

**With GL 45 thread**
**Delivery incl.** screw cap, silicone seal, drain cock and PTFE spindle.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1000 | 101 x 225 | **CCP0.1** | 1 | 111,00 |
| 2000 | 136 x 260 | **CCP1.1** | 1 | 135,00 |
| 5000 | 182 x 330 | **CCP2.1** | 1 | 188,00 |
| 10000 | 230 x 410 | **CCP3.1** | 1 | 287,00 |




## Levelling bottles

Made of DURAN®, transparent. With flanged edge and glass connection on base for hoses with inner ∅ 10 mm. Autoclavable.

| Volume (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 73 | 131 | **PK81.1** | 1 | 32,05 |
| 500 | 89 | 162 | **PK82.1** | 1 | 38,65 |
| 1000 | 111 | 200 | **PK83.1** | 1 | 51,90 |



## Twist-off wide-necked jars

Made of hydrolytic class III clear glass. TO 66 thread. For sampling, packaging and storage of solids, pastes or non-aggressive liquids. Wide mouth opening allows easy filling and cleaning.
**Delivery without** screw cap (please order separately).

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 210 | 69.5 x 74,5 | **AYC0.1** | 12 | 21,00 |
| 380 | 75.5 x 112 | **AYC1.1** | 12 | 38,70 |

## Accessories: twist-off caps

Made of metal, white. TO 66 thread. Good sealing properties.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AYC2.1** | 12 | 13,45 |



## Wide-necked jars with screw cap

Made of hydrolytic class III clear to brown glass. For sampling, packaging and storage of solids, pastes or non-aggressive liquids.
Wide-mouth opening for easy filling and cleaning. DIN 168 round thread.
**Delivery incl.** leakproof PP closure with LDPE seal.

**Clear glass**

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 125 | 54 x 98 | GL 40 | **AYC3.1** | 80 | 117,20 |
| 250 | 70 x 113 | GL 55 | **AYC4.1** | 48 | 101,95 |
| 500 | 84 x 154 | GL 55 | **AYC5.1** | 20 | 67,75 |
| 1000 | 103,5 x 180,5 | GL 68 | **AYC6.1** | 18 | 96,25 |

**Brown glass**

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 125 | 54 x 98 | GL 40 | **AYC7.1** | 84 | 135,45 |
| 250 | 70 x 113 | GL 55 | **AYC8.2** | 30 | 65,45 |
| 500 | 84 x 154 | GL 55 | **AYC9.1** | 20 | 71,10 |
| 1000 | 103,5 x 180,5 | GL 68 | **AYE0.1** | 12 | 85,90 |

▶ Rotilabo®-cleaning brushes from page 1132



## Wide-neck jars

By Wheaton. Made of soda-lime glass, acc. to USP type III. Caps made of white PP with seals made of PTFE-coated PE foam. Straight walls enable a complete removal of the contents, ideal for soil samples and larger solids.

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 55 x 48 | 53-400 | **ETN7.1** | 24 | 63,30 |
| 125 | 60 x 68 | 58-400 | **ETN8.1** | 24 | 64,00 |
| 250 | 73 x 88 | 70-400 | **ETN9.1** | 12 | 43,85 |
| 500 | 91 x 95 | 89-400 | **ETP0.1** | 12 | 66,60 |
| 1000 | 95 x 170 | 89-400 | **ETP1.1** | 12 | 71,85 |



## Wide-neck vials

By Wheaton. Made of soda-lime glass, acc. to USP type III.
Caps made of white PP with seals made of PTFE-coated PE foam.

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 34 x 70 | 33-400 | **ETL6.1** | 48 | 71,55 |
| 60 | 42 x 85 | 38-400 | **ETL7.1** | 48 | 81,35 |
| 125 | 51 x 104 | 48-400 | **ETL8.1** | 24 | 66,25 |
| 250 | 62 x 129 | 58-400 | **ETL9.1** | 24 | 69,50 |
| 500 | 76 x 147 | 70-400 | **ETN0.1** | 24 | 78,15 |



## Standard wide-neck bottles

By Wheaton. Made of calcium soda glass.
Caps made of white PP with seals made of PTFE-coated PE foam.

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 125 | 52 x 86 | 48-400 | **ETK7.1** | 24 | 51,00 |
| 250 | 63 x 112 | 58-400 | **ETK8.1** | 24 | 75,90 |
| 500 | 79 x 135 | 63-400 | **ETK9.1** | 24 | 85,80 |
| 2000 | 122 x 215 | 83-400 | **ETL0.1** | 6 | 43,40 |
| 4000 | 157 x 258 | 89-400 | **ETL1.1** | 4 | 38,70 |



## Wide-neck vials, amber glass

By Wheaton. Made of amber soda-lime glass, acc. to USP type III.
Caps made of white PP with seals made of PTFE-coated PE foam.
For storing light-sensitive substances.

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 37 x 65 | 28-400 | **ETN1.1** | 24 | 31,75 |
| 60 | 44 x 75 | 33-400 | **ETN2.1** | 24 | 36,95 |
| 125 | 54 x 95 | 38-400 | **ETN3.1** | 24 | 44,30 |
| 250 | 66 x 119 | 45-400 | **ETN4.1** | 24 | 55,90 |
| 500 | 80 x 146 | 53-400 | **ETN5.1** | 12 | 38,95 |
| 1000 | 99 x 178 | 53-400 | **ETN6.1** | 12 | 48,15 |

# Glass bottles



## Dropper bottles, with rubber sucker

Made of soda-lime glass. Complete with rubber sucker and replaceable standard joint pipette made of clear glass. Ground 14/15.

**Clear glass**

| Volume (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 79 | **T930.1** | 10 | 76,90 |
| 100 | 105 | **T931.1** | 10 | 85,60 |

**Brown glass**

| Volume (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 79 | **T932.1** | 10 | 80,25 |
| 100 | 105 | **T933.1** | 10 | 96,60 |

## Spare parts for glass dropper bottles

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spare pipettes for 50 ml bottles | **T934.1** | 10 | 37,65 |
| Spare pipettes for 100 ml bottles | **T935.1** | 10 | 39,35 |
| Spare rubber sucker | **T936.1** | 10 | 4,95 |



## Dropper bottles

By Wheaton. Made of calcium soda glass.
Turning the plug seals the bottle tight.

**Clear glass**

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 45 x 95 | **ETL2.1** | 1 | 17,55 |
| 100 | 56 x 120 | **ETL3.1** | 1 | 19,70 |

**Brown glass**

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 45 x 95 | **ETL4.1** | 1 | 17,55 |
| 100 | 56 x 120 | **ETL5.1** | 1 | 19,80 |




Material DURAN®

121°C

## Narrow neck storage bottles, DURAN®

Made of DURAN®. Acc. to ISO 4796-2. With ground glass joint glass stoppers, solid glass ( NS 10 to 24) or semi-hollow (in NS 29 or larger). With Retrace-Code. Autoclavable.

**Narrow neck storage bottles, clear glass**

| Volume (ml) | Ground glass joint | Largest outer ∅ (mm) | Height without stopper (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 12/21 | 36 | 64 | **CCT1.1** | 1 | 24,60 |
| 50 | 14/15 | 42 | 80 | **Y622.1** | 1 | 22,00 |
| 100 | 14/15 | 52 | 96 | **Y623.1** | 1 | 22,00 |
| 250 | 19/26 | 70 | 130 | **Y624.1** | 1 | 24,40 |
| 500 | 24/29 | 86 | 164 | **Y625.1** | 1 | 31,25 |
| 1000 | 29/32 | 107 | 200 | **Y626.1** | 1 | 35,40 |
| 2000 | 29/32 | 134 | 248 | **Y835.1** | 1 | 51,20 |
| 5000 | 45/40 | 182 | 323 | **CCT2.1** | 1 | 156,00 |
| 10000 | 60/46 | 227 | 398 | **CCT3.1** | 1 | 236,00 |
| 20000 | 60/46 | 288 | 492 | **CCT4.1** | 1 | 447,00 |

**Narrow neck storage bottles, brown glass**

| Volume (ml) | Ground glass joint | Largest outer ∅ (mm) | Height without stopper (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 12/21 | 36 | 64 | **CCT5.1** | 1 | 46,60 |
| 50 | 14/15 | 42 | 80 | **Y627.1** | 1 | 34,50 |
| 100 | 14/15 | 52 | 96 | **Y628.1** | 1 | 35,10 |
| 250 | 19/26 | 70 | 130 | **Y629.1** | 1 | 46,55 |
| 500 | 24/29 | 86 | 164 | **Y630.1** | 1 | 54,75 |
| 1000 | 29/32 | 107 | 200 | **Y631.1** | 1 | 65,10 |
| 2000 | 29/32 | 134 | 248 | **Y836.1** | 1 | 106,00 |
| 5000 | 45/40 | 182 | 323 | **CCT6.1** | 1 | 233,00 |
| 10000 | 60/46 | 227 | 398 | **CCT7.1** | 1 | 345,00 |
| 20000 | 60/46 | 288 | 492 | **CCT8.1** | 1 | 649,00 |

# Glass bottles



## Narrow neck storage bottles

Made of soda-lime glass. Acc. to ISO 4796-2. With conical ground glass joint and standard ground glass stopper, solid glass (NS 14 to 24) or semi-hollow (in NS 29 or larger).

### Narrow neck, clear glass

| Volume (ml) | Standard ground glass joint | Largest outer ∅ (mm) | Height without stopper (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 14/15 | 52 | 96 | **H055.1** | 10 | 74,45 |
| 250 | 19/26 | 72 | 130 | **H056.1** | 10 | 89,95 |
| 500 | 24/29 | 89 | 165 | **H057.1** | 10 | 113,00 |
| 1000 | 29/32 | 110 | 200 | **H058.1** | 1 | 14,20 |

### Narrow neck, amber glass

| Volume (ml) | Standard ground glass joint | Largest outer ∅ (mm) | Height without stopper (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 14/15 | 42 | 80 | **H060.1** | 10 | 109,00 |
| 100 | 14/15 | 52 | 96 | **H061.1** | 10 | 111,00 |
| 250 | 19/26 | 72 | 130 | **CCX3.1** | 10 | 115,00 |
| 500 | 24/29 | 89 | 165 | **H063.1** | 10 | 145,00 |
| 1000 | 29/32 | 110 | 200 | **H064.1** | 1 | 17,00 |



## Glass stoppers

Made of DURAN®. Octagonal with ground glass joint, acc. to DIN 12252. Autoclavable.

| Type | Standard taper (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Solid | 14/23 | **E652.1** | 10 | 42,35 |
| Solid | 19/26 | **E653.1** | 10 | 60,50 |
| Semi-hollow | 29/32 | **E654.1** | 10 | 68,10 |
| Semi-hollow | 45/40 | **E655.1** | 1 | 12,00 |

## Brown glass stoppers

Made of SBW glass or DURAN®. With ground glass joint acc. to DIN 12252, octagonal. Autoclavable.

| Type | Standard taper (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| SBW glass, solid | 14/23 | **LK28.1** | 10 | 61,40 |
| SBW glass, solid | 19/26 | **LK29.1** | 10 | 73,80 |
| DURAN®, solid | 24/29 | **LK30.1** | 10 | 84,90 |
| DURAN®, semi-hollow | 29/32 | **LK32.1** | 10 | 90,75 |
| DURAN®, semi-hollow | 45/40 | **LK33.1** | 1 | 16,55 |




## Wide neck storage bottles, DURAN®

Made of DURAN®. Acc. to ISO 4796-2. With ground glass joint glass stoppers, solid glass ( NS 24) or semi-hollow (NS 29 or larger). With Retrace-Code. Autoclavable.

### Wide neck storage bottles, clear glass

| Volume (ml) | Ground glass joint | Largest outer ∅ (mm) | Height without stopper (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 24/20 | 44 | 79 | **Y612.1** | 1 | 25,95 |
| 100 | 29/22 | 52 | 97 | **Y613.1** | 1 | 27,40 |
| 250 | 34/35 | 70 | 133 | **Y614.1** | 1 | 36,65 |
| 500 | 45/40 | 86 | 163 | **Y615.1** | 1 | 45,00 |
| 1000 | 60/46 | 107 | 201 | **Y616.1** | 1 | 60,75 |
| 2000 | 60/46 | 133 | 247 | **Y833.1** | 1 | 72,70 |
| 5000 | 85/55 | 182 | 358 | **CCP4.1** | 1 | 195,00 |
| 10000 | 85/55 | 229 | 443 | **CCP5.1** | 1 | 289,00 |
| 20000 | 85/55 | 290 | 570 | **CCP6.1** | 1 | 499,00 |

### Wide neck storage bottles, brown glass

| Volume (ml) | Ground glass joint | Largest outer ∅ (mm) | Height without stopper (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 24/20 | 44 | 79 | **Y617.1** | 1 | 45,70 |
| 100 | 29/22 | 52 | 97 | **Y618.1** | 1 | 39,90 |
| 250 | 34/35 | 70 | 133 | **Y619.1** | 1 | 64,85 |
| 500 | 45/40 | 86 | 163 | **Y620.1** | 1 | 76,65 |
| 1000 | 60/46 | 107 | 201 | **Y621.1** | 1 | 97,15 |
| 2000 | 60/46 | 133 | 247 | **Y834.1** | 1 | 140,00 |
| 5000 | 85/55 | 182 | 358 | **CCP7.1** | 1 | 296,00 |
| 10000 | 85/55 | 229 | 443 | **CCP8.1** | 1 | 395,00 |
| 20000 | 85/55 | 290 | 570 | **CCP9.1** | 1 | 738,00 |

# Glass bottles



DURAN WHEATON KIMBLE

## Wide neck storage bottles

Made of soda-lime glass. With conical ground glass joint and standard ground joint glass stopper, solid glass (NS 24) or semi-hollow (NS 29 or larger). Acc. to ISO 4796-2.

**Wide neck, clear glass**

| Volume (ml) | Standard ground glass joint | Largest outer ∅ (mm) | Height without stopper (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 24/20 | 44 | 79 | **H044.1** | 10 | 92,70 |
| 100 | 29/22 | 52 | 97 | **H045.1** | 10 | 101,00 |
| 250 | 34/24 | 71 | 129 | **H046.1** | 1 | 16,00 |
| 500 | 45/40 | 86 | 164 | **H047.1** | 1 | 18,95 |
| 1000 | 60/46 | 107 | 200 | **H048.1** | 1 | 24,95 |

**Wide neck, amber glass**

| Volume (ml) | Standard ground glass joint | Largest outer ∅ (mm) | Height without stopper (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 29/22 | 52 | 97 | **H050.1** | 10 | 130,00 |
| 250 | 34/24 | 71 | 129 | **H051.1** | 1 | 20,00 |
| 500 | 45/27 | 86 | 164 | **H052.1** | 1 | 22,75 |
| 1000 | 60/46 | 107 | 200 | **H053.1** | 1 | 30,15 |



DURAN WHEATON KIMBLE

Material DURAN®

121 °C

## Acid bottles with cap

Made of DURAN®. With standard taper stopper and additional ground glass cap, providing a tight seal and protection against acid vapours. Autoclavable.

**Clear glass**

| Volume (ml) | ∅ x H (mm) | Standard ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 55 x 145 | 19/17 | **CCL6.1** | 1 | 60,15 |
| 250 | 75 x 180 | 19/17 | **CCL7.1** | 1 | 72,90 |
| 500 | 82 x 220 | 24/20 | **CCL8.1** | 1 | 81,15 |
| 1000 | 109 x 260 | 29/32 | **CCL9.1** | 1 | 123,00 |

**Brown glass**

| Volume (ml) | ∅ x H (mm) | Standard ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 55 x 145 | 19/17 | **CCN0.1** | 1 | 80,10 |
| 250 | 75 x 180 | 19/17 | **CCN1.1** | 1 | 93,95 |
| 500 | 82 x 220 | 24/20 | **CCN2.1** | 1 | 105,00 |
| 1000 | 109 x 260 | 29/32 | **CCN3.1** | 1 | 141,00 |



DURAN WHEATON KIMBLE

## Square narrow-mouth bottles

Made of calcium soda glass. Max. service temperature 100 °C.
**Delivery without** screw cap closure, please order separately.

**Clear glass**

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 49 x 119 | 32, high form | **EEK8.1** | 10 | 34,80 |
| 250 | 64 x 155 | 32, high form | **EEK9.1** | 10 | 59,50 |
| 500 | 77 x 186 | 32, high form | **EEL0.1** | 10 | 66,10 |
| 1000 | 97 x 223 | 45, high form | **EEL1.1** | 10 | 99,45 |

**Amber glass**
**Delivery incl.** pouring ring and dust protection cap.

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 49 x 119 | 32, high form | **EEL2.1** | 10 | 34,60 |
| 250 | 64 x 155 | 32, high form | **EEL3.1** | 10 | 59,50 |
| 500 | 77 x 186 | 32, high form | **EEL4.1** | 10 | 66,10 |
| 1000 | 97 x 223 | 45, high form | **EEL5.1** | 10 | 99,75 |

## Tamper-evident screw cap closures for narrow-mouth bottles

Made of **PP**, blue.

| Thread | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 32, high form | 45 x 32 | **EEL6.1** | 10 | 11,85 |
| 45, high form | 60 x 35 | **EEL7.1** | 10 | 12,90 |

## Safety screw cap closures for narrow-mouth bottles

Made of **PP**, red. The safety valve opens above a pressure of 0.1 bar.

| Thread | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 32, high form | 45 x 32 | **EEL8.1** | 10 | 34,75 |
| 45, high form | 60 x 35 | **EEL9.1** | 10 | 39,60 |

## Pouring rings for narrow-mouth bottles made of clear glass

| for thread (mm) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 32, high form | 45 x 32 | **EEN0.1** | 10 | 4,95 |
| 45, high form | 60 x 35 | **EEN1.1** | 10 | 5,50 |

# Glass bottles





## Square wide-mouth bottles

Made of calcium soda glass. Max. service temperature 100 °C.
**Delivery without** screw cap, please order separately.

**Clear glass**

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 48 x 70 | 32, short form | **EEN2.1** | 10 | 17,65 |
| 100 | 49 x 111 | 32, short form | **EEN3.1** | 10 | 22,75 |
| 250 | 64 x 146 | 45, short form | **EEN4.1** | 10 | 41,25 |
| 500 | 76 x 173 | 54, short form | **EEN5.1** | 10 | 50,40 |
| 1000 | 97 x 213 | 60, short form | **EEN6.1** | 10 | 77,15 |

**Brown glass**

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 49 x 111 | 32, short form | **EEN7.1** | 10 | 22,75 |
| 250 | 64 x 146 | 45, short form | **EEN8.1** | 10 | 41,25 |
| 500 | 76 x 173 | 54, short form | **EEN9.1** | 10 | 49,10 |
| 1000 | 97 x 213 | 54, short form | **EEP0.1** | 10 | 77,15 |

## Tamper-evident screw cap closures for wide-mouth bottles

Made of **PP**, blue.

| Thread | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 32, short form | 44 x 23 | **EEP1.1** | 10 | 8,40 |
| 45, short form | 58 x 27 | **EEP2.1** | 10 | 11,85 |
| 54, short form | 69 x 29 | **EEP3.1** | 10 | 13,35 |
| 60, short form | 78 x 29 | **EEP4.1** | 10 | 13,60 |

## Rotilabo®-narrow neck bottles for chemicals

Made of brown glass with hydrolytic class III with blue tamper-evident screw caps made of PP.
Acc. to DIN 12111. Lip seal formed in lid.

| Volume (ml) | Thread | Height (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 250 | 32 | 160 | square | **0328.1** | 6 | 26,35 |
| 500 | 32 | 180 | square | **0329.1** | 4 | 19,30 |
| 1000 | 45 | 230 | square | **0330.1** | 2 | 15,60 |
| 2500 | 45 | 270 | round | **A849.1** | 1 | 10,35 |

▶ Plastic bottles see page 97

# Glass bottles



## Screw neck bottles Rotilabo®, clear glass

Made of borosilicate glass 3.3. Acc. to ISO 4796-1. With subdivisions and DIN-thread GL. Autoclavable.
**Delivery incl.** screw-on cap and pouring spout ring made of PP.

| Volume (ml) | Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 32 | 46 | 91 | **ANP4.1** | 10 | 46,80 |
| 100 | 45 | 56 | 105 | **X712.1** | 10 | 36,35 |
| 250 | 45 | 70 | 143 | **X713.1** | 10 | 41,50 |
| 500 | 45 | 86 | 182 | **X714.1** | 10 | 47,10 |
| 1000 | 45 | 101 | 230 | **X715.1** | 10 | 76,25 |
| 2000 | 45 | 136 | 265 | **X716.1** | 10 | 153,75 |
| 5000 | 45 | 186 | 355 | **Y682.1** | 1 | 73,40 |
| 10 000 | 45 | 234 | 435 | **Y683.1** | 1 | 148,35 |
| 20 000 | 45 | 299 | 505 | **TK83.1** | 1 | 203,20 |



## Rotilabo®-square laboratory bottles GL 80

Made of type 3.3 borosilicate glass, with graduation and GL 80 thread. Autoclavable. **Note: autoclave only with lock screwed off completely.**
**Delivery incl.** screw cap and pouring ring made of PP.

**Clear glass**

| Volume (ml) | Side length (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 500 | 94 | 141 | **APK8.1** | 10 | 95,15 |
| 1000 | 105 | 187 | **APK9.1** | 10 | 110,75 |
| 2000 | 115 | 260 | **APL0.1** | 1 | 19,25 |
| 5000 | 160 | 357 | **APL1.1** | 1 | 106,65 |

**Brown glass**

| Volume (ml) | Side length (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 500 | 94 | 141 | **APL2.1** | 10 | 284,90 |
| 1000 | 105 | 187 | **APL3.1** | 10 | 330,05 |
| 2000 | 115 | 260 | **APL4.1** | 1 | 54,40 |
| 5000 | 160 | 357 | **APL5.1** | 1 | 218,25 |



## Rotilabo®-screw top bottles, brown glass

Made of type 3.3 borosilicate glass. According to ISO 4796-1. With graduations and GL DIN thread. With brown outer coating. Autoclavable.
**Delivery incl.** screw cap and pouring ring made of PP.

| Volume (ml) | Thread | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 32 | 46 | 91 | **ANP3.1** | 10 | 110,55 |
| 100 | 45 | 56 | 100 | **NY57.1** | 10 | 107,50 |
| 250 | 45 | 70 | 138 | **NY58.1** | 10 | 131,15 |
| 500 | 45 | 86 | 176 | **NY59.1** | 10 | 188,15 |
| 1000 | 45 | 101 | 225 | **NY60.1** | 10 | 220,40 |
| 2000 | 45 | 136 | 260 | **NY61.1** | 10 | 281,65 |
| 5000 | 45 | 186 | 330 | **NY62.1** | 1 | 117,20 |
| 10 000 | 45 | 234 | 410 | **NY63.1** | 1 | 206,40 |
| 20 000 | 45 | 299 | 505 | **NY64.1** | 1 | 254,80 |



## Replacement screw cap and pouring rings for GL 80 threaded bottles

Made of **PP**. GL 80 thread. Suitable for Rotilabo® square laboratory bottles with GL 80 thread (Art. Nos. APK8.1-APL5.1).
Temperature stable from -40 to +140 °C. Autoclavable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Replacement screw caps | **APL6.1** | 10 | 14,30 |
| Replacement pouring rings | **APL7.1** | 10 | 6,25 |


- For vacuum and compression proof screw neck bottles, see page 40
- Technical information on DURAN® and laboratory glassware see page 8



DURAN WHEATON KIMBLE
Material DURAN®
121°C

## Screw neck bottles, clear glass

- Made of DURAN®
- With DIN-GL-thread and graduation
- Bottle to 25 ml: With special moulded glass edge - extra pouring spout ring is not necessary
- Bottles 100 to 2000 ml: Ring-shaped reinforcement on bottle neck shows nominal capacity
- With printed Retrace-Code (Batch identification)
- Acc. to ISO 4796-1
- Autoclavable

**With pouring ring and screw cap made of PP**

| Volume (ml) | Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 25 | 36 | 50 | **AAA9.1** | 10 | 82,00 |
| 25 | 25 | 36 | 74 | **A356.1** | 10 | 65,20 |
| 50 | 32 | 46 | 91 | **A357.1** | 10 | 69,80 |
| 100 | 45 | 56 | 105 | **A358.1** | 10 | 59,95 |
| 150 | 45 | 62 | 110 | **PC79.1** | 10 | 64,25 |
| 250 | 45 | 70 | 143 | **A359.1** | 10 | 67,95 |
| 500 | 45 | 86 | 181 | **A360.1** | 10 | 83,00 |
| 750 | 45 | 95 | 203 | **PC80.1** | 10 | 103,00 |
| 1000 | 45 | 101 | 230 | **A361.1** | 10 | 118,00 |
| 2000 | 45 | 136 | 265 | **A362.1** | 1 | 28,35 |
| 3500 | 45 | 160 | 295 | **PC81.1** | 1 | 88,15 |
| 5000 | 45 | 182 | 335 | **A363.1** | 1 | 121,00 |
| 10000 | 45 | 227 | 415 | **A364.1** | 1 | 196,00 |
| 20000 | 45 | 288 | 510 | **A365.1** | 1 | 427,00 |

**Without pouring ring and screw cap**

| Volume (ml) | Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 25 | 36 | 50 | **AAC0.1** | 10 | 63,50 |
| 25 | 25 | 36 | 70 | **T424.1** | 10 | 47,20 |
| 50 | 32 | 46 | 87 | **T425.1** | 10 | 47,15 |
| 100 | 45 | 56 | 100 | **T426.1** | 10 | 38,15 |
| 150 | 45 | 62 | 110 | **PC82.1** | 10 | 43,00 |
| 250 | 45 | 70 | 138 | **T427.1** | 10 | 45,50 |
| 500 | 45 | 86 | 176 | **T428.1** | 10 | 62,30 |
| 750 | 45 | 95 | 203 | **PC83.1** | 10 | 83,10 |
| 1000 | 45 | 101 | 225 | **T429.1** | 10 | 101,00 |
| 2000 | 45 | 136 | 260 | **T430.1** | 1 | 25,45 |
| 3500 | 45 | 160 | 295 | **PC84.1** | 1 | 85,85 |
| 5000 | 45 | 182 | 330 | **T431.1** | 1 | 118,00 |
| 10000 | 45 | 227 | 410 | **T432.1** | 1 | 194,00 |
| 15000 | 45 | 268 | 445 | **T433.1** | 1 | 241,00 |
| 20000 | 45 | 288 | 505 | **T434.1** | 1 | 423,00 |



DURAN WHEATON KIMBLE
Material DURAN®
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## Screw neck bottles, brown glass

Made of DURAN®. Amber, unchanged DURAN® properties on inside of flask since only the exterior is coated; long useful life and good chemical resistance of brown colouring! Light protection: absorption in short wave range up to 500 nm. With Retrace-Code. Acc. to ISO 4796-1. Autoclavable.

**With pouring ring and screw cap made of PP**

| Volume (ml) | Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 25 | 36 | 50 | **AAC1.1** | 10 | 185,00 |
| 25 | 25 | 36 | 74 | **A366.1** | 10 | 170,00 |
| 50 | 32 | 46 | 91 | **A367.1** | 10 | 175,00 |
| 100 | 45 | 56 | 105 | **A368.1** | 10 | 193,00 |
| 150 | 45 | 62 | 110 | **PC85.1** | 10 | 234,00 |
| 250 | 45 | 70 | 143 | **A369.1** | 1 | 27,45 |
| 500 | 45 | 86 | 181 | **A370.1** | 1 | 35,15 |
| 750 | 45 | 95 | 203 | **PC86.1** | 10 | 388,00 |
| 1000 | 45 | 101 | 230 | **A371.1** | 1 | 43,25 |
| 2000 | 45 | 136 | 265 | **A372.1** | 1 | 67,15 |
| 3500 | 45 | 160 | 295 | **PC87.1** | 1 | 144,00 |
| 5000 | 45 | 182 | 335 | **A373.1** | 1 | 195,00 |
| 10000 | 45 | 227 | 415 | **A374.1** | 1 | 281,00 |

**Without pouring ring and screw cap made of PP**

| Volume (ml) | Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 20000 | 45 | 288 | 510 | **A375.1** | 1 | 495,00 |



DURAN WHEATON KIMBLE
Material DURAN®
121°C

## Square bottles

Made of DURAN®, transparent. With Retrace-Code. Space-efficient alternative (up to 44 %) to round screw neck bottles / per bottle in shelves, refrigerators and autoclaves. Burled base for stable and non-slip standing. Pouring ring and screw cap temperature stable from -40 to +140 °C. Autoclavable.

**With pouring ring and screw cap made of PP**

| Volume (ml) | Thread | Side length (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 32 | 50 | 109 | **P770.1** | 10 | 62,80 |
| 250 | 45 | 64 | 143 | **P771.1** | 10 | 70,25 |
| 500 | 45 | 78 | 181 | **P772.1** | 10 | 88,20 |
| 1000 | 45 | 94 | 222 | **P773.1** | 10 | 124,00 |

# Glass bottles




DURAN WHEATON KIMBLE
Material DURAN®
121°C

## DURAN®-Protect screw neck bottles

Made of DURAN®, **PU encased**. Acc. to 4796-1. Freezable down to -30 °C. The plastic casing protects against mechanical damage (scratch protection), minimises loss of fluid in the event of glass breakage (leak and splash protection), prevents scattering of glass shards and provides light protection up to a wavelength of 380 nm. With Retrace-Code. Microwave safe. Autoclavable.

**Note:**
do not expose DURAN®-Protect bottles to naked flames or direct heat. Max. thermal load 135 °C. Avoid continuous thermal exposure for longer than 30 min.

**DURAN®-Protect clear glass bottles**
**Delivery incl.** pouring ring and screw cap made of PP.

| Volume (ml) | Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 45 | 56 | 100 | **1076.1** | 10 | 149,00 |
| 150 | 45 | 62 | 110 | **PC88.1** | 10 | 151,00 |
| 250 | 45 | 70 | 138 | **A378.1** | 10 | 158,00 |
| 500 | 45 | 86 | 176 | **1077.1** | 1 | 18,60 |
| 750 | 45 | 95 | 203 | **PC89.1** | 10 | 223,00 |
| 1000 | 45 | 101 | 225 | **1078.1** | 1 | 25,70 |
| 2000 | 45 | 136 | 260 | **A379.1** | 1 | 47,60 |
| 3500 | 45 | 160 | 295 | **PC90.1** | 1 | 178,00 |
| 5000 | 45 | 182 | 330 | **A380.1** | 1 | 240,00 |

**DURAN®-Protect clear glass bottles**
**Delivery without** pouring ring and screw cap.

| Volume (ml) | Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 25 | 36 | 50 | **AAA6.1** | 10 | 153,00 |
| 25 | 25 | 36 | 70 | **AAA7.1** | 10 | 136,00 |
| 50 | 32 | 46 | 87 | **AAA8.1** | 10 | 137,00 |
| 10000 | 45 | 227 | 410 | **AKN0.1** | 1 | 368,00 |
| 15000 | 45 | 268 | 445 | **AKN1.1** | 1 | 600,00 |
| 20000 | 45 | 288 | 505 | **AKN2.1** | 1 | 804,00 |

**DURAN®-Protect brown glass bottles**
DURAN® retains its properties inside the bottle as the glass is coated externally only; light protection up to 500 nm.
**Delivery without** pouring ring and screw cap.

| Volume (ml) | Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 25 | 36 | 70 | **AKK5.1** | 10 | 266,00 |
| 50 | 32 | 46 | 87 | **AKK6.1** | 10 | 268,00 |
| 100 | 45 | 56 | 100 | **AKK7.1** | 10 | 268,00 |
| 250 | 45 | 70 | 138 | **AKK8.1** | 10 | 349,00 |
| 500 | 45 | 86 | 176 | **AKK9.1** | 10 | 432,00 |
| 1000 | 45 | 101 | 225 | **AKL0.1** | 10 | 563,00 |
| 2000 | 45 | 136 | 260 | **AKL1.1** | 10 | 850,00 |
| 5000 | 45 | 182 | 330 | **AKL2.1** | 1 | 314,00 |




DURAN WHEATON KIMBLE
Material DURAN®
121°C

## DURAN®-pressure plus screw neck bottles

Made of DURAN®. **Vacuum- and compression-proof** within a range of -1 to +1.5 bar (under pressure, the max. usage temperature is 140 °C and thermal shock resistant is 30 K). Extremely versatile, e.g. can be used as a suction bottle, filling bottle, Woulff bottle or wash bottle. Directly connectable to pressure or vacuum systems. Graduated, with DIN thread GL 45 and identification label indicating range of operation. With Retrace-Code. Autoclavable.
**Delivery without** screw cap and pouring ring.

**Clear glass**

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 56 | 100 | **EXK1.1** | 1 | 8,30 |
| 250 | 70 | 138 | **CK34.1** | 1 | 8,75 |
| 500 | 86 | 176 | **CK35.1** | 1 | 11,70 |
| 1000 | 101 | 225 | **H995.1** | 1 | 13,90 |

**Brown glass**
DURAN® retains its properties inside the bottle as the glass is coated externally only. Light protection up to 500 nm.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 56 | 100 | **EXK2.1** | 1 | 21,70 |
| 250 | 70 | 138 | **CK36.1** | 1 | 29,95 |
| 500 | 86 | 176 | **CK37.1** | 1 | 36,90 |
| 1000 | 101 | 225 | **CK38.1** | 1 | 44,45 |

## DURAN®-pressure plus Protect screw neck bottles

Made of DURAN®. The plastic casing protects against mechanical damage (scratch protection), minimises loss of fluid in the event of glass breakage (leak and splash protection), prevents scattering of glass shards and provides light protection up to a wavelength of 380 nm.
**Delivery without** screw cap and pouring ring.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 56 | 100 | **EXK3.1** | 1 | 14,50 |
| 250 | 70 | 138 | **CCX5.1** | 1 | 16,75 |
| 500 | 86 | 176 | **CCX6.1** | 1 | 21,00 |
| 1000 | 101 | 225 | **CCX7.1** | 1 | 27,25 |


- For autoclaving information see page 5
- Technical information on DURAN® and laboratory glassware see page 8
- Screw caps see page 44

# Glass bottles



DURAN WHEATON KIMBLE
Material DURAN®

121°C

## Premium bottles

Made of DURAN®, transparent. Thread GL 45. Acc.to ISO 4796-1. With pouring ring and lid made of TPCh260, without colour additives and colour pigments, temperature resistant from -196 to +260 °C. Screw cap with **PTFE**-coated silicone seal. Especially suitable for demanding sterilisation processes e.g. for hot air or dry sterilisation and for depyrogenizing due to the guaranteed thermal shock resistance of 160 K. Complies with USP/FDA standards. Scale exact up to ±5 %. Reverse scaling not only indicates current liquid level but also enables reading of removed volume. With Retrace-Code. Autoclavable.
**Delivery incl.** pouring ring and screw cap.

**With TÜV GS mark**

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 56 | 100 | **HL99.1** | 1 | 17,00 |
| 250 | 70 | 138 | **HT00.1** | 1 | 17,75 |
| 500 | 86 | 176 | **HT01.1** | 1 | 19,05 |
| 1000 | 101 | 225 | **HT02.1** | 1 | 22,90 |

**With TÜV GS mark and batch certificate**

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 56 | 100 | **HL99.2** | 10 | 155,00 |
| 250 | 70 | 138 | **HT00.2** | 10 | 161,00 |
| 500 | 86 | 176 | **HT01.2** | 10 | 178,00 |
| 1000 | 101 | 225 | **HT02.2** | 10 | 211,00 |




DURAN WHEATON KIMBLE
Material DURAN®

121°C

## DURAN® PURE screw top bottles

Made of DURAN® (Borosilicata glass Type I), with dust cap made of HDPE. With DIN-GL thread, division (accuracy ±5 %) and imprinted retrace code (batch identification). Compliant with DIN ISO 3585, USP <660>, Ph.Eur. 3.2.1 and JP 7.01 method 1.
Autoclavable, hot air and plasma-sterilisable ($H_2O_2$).
**Delivery incl. batch certificate.**
**Delivery without** protective cap and pouring ring.

**Clear glass**

| Volume (ml) | Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 25 | 36 | 70 | **HNK3.1** | 10 | 74,30 |
| 100 | 45 | 56 | 100 | **HNK4.1** | 10 | 67,85 |
| 250 | 45 | 70 | 138 | **HNK5.1** | 10 | 76,60 |
| 500 | 45 | 86 | 176 | **HNK6.1** | 10 | 92,55 |
| 1000 | 45 | 101 | 225 | **HNK7.1** | 10 | 134,00 |
| 2000 | 45 | 136 | 260 | **HNK8.1** | 10 | 305,00 |
| 5000 | 45 | 182 | 330 | **HNK9.1** | 1 | 129,00 |
| 10000 | 45 | 227 | 410 | **HNL0.1** | 1 | 210,00 |
| 20000 | 45 | 288 | 505 | **HNL1.1** | 1 | 453,00 |

**Brown glass**

| Volume (ml) | Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 25 | 36 | 70 | **HNL2.1** | 10 | 191,00 |
| 100 | 45 | 56 | 100 | **HNL3.1** | 10 | 217,00 |
| 250 | 45 | 70 | 138 | **HNL4.1** | 10 | 309,00 |
| 500 | 45 | 86 | 176 | **HNL5.1** | 10 | 384,00 |
| 1000 | 45 | 101 | 225 | **HNL6.1** | 10 | 489,00 |
| 2000 | 45 | 136 | 260 | **HNL7.1** | 10 | 733,00 |
| 5000 | 45 | 182 | 330 | **HNL8.1** | 1 | 204,00 |
| 10000 | 45 | 227 | 410 | **HNL9.1** | 1 | 295,00 |
| 20000 | 45 | 288 | 505 | **HNN0.1** | 1 | 527,00 |


- ▶ Premium screw caps see page 45
- ▶ PURE screw caps see page 45

# Glass bottles



DURAN WHEATON KIMBLE

Material DURAN®

121 °C

## DURAN® YOUTILITY laboratory bottles

Made of DURAN®. With Retrace Code. Autoclavable.

- Specially shaped recessed grips for easier and safer handling.
- Slim bottle shape allows more space-saving use
- Scale indicating total volume
- Predefined labelling space
- Ergonomically shaped screw cap with leak-proof sealing system for optimal handling, even by users with small or gloved hands
- Optimised thread (compatible with DIN GL 45 closures) for faster bottle opening and closing

**Delivery incl.** pouring ring and optimised screw caps made of PP.

### DURAN® YOUTILITY bottles, clear glass

| Volume (ml) | Thread GL | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 125 | 45 | 55 | 124 | **AEY2.1** | 4 | 28,20 |
| 250 | 45 | 66 | 158 | **AEY3.1** | 4 | 30,25 |
| 500 | 45 | 78 | 193 | **AEY4.1** | 4 | 37,30 |
| 1000 | 45 | 93 | 253 | **AEY5.1** | 4 | 52,85 |

### DURAN® YOUTILITY bottles, brown glass

For the storage of light-sensitive substances. Meets the requirements of USP <660> and Eur. Ph. 3.2.1. with regard to light protection. Unchanged DURAN® properties on inside of flask since only the exterior is coated; long useful life and good chemical resistance of brown colouring. Light protection: absorption in short wave range up to 500 nm.

| Volume (ml) | Thread GL | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 125 | 45 | 55 | 124 | **CCT9.1** | 4 | 86,60 |
| 250 | 45 | 66 | 158 | **CCX0.1** | 4 | 121,00 |
| 500 | 45 | 78 | 193 | **CCX1.1** | 4 | 156,00 |
| 1000 | 45 | 93 | 253 | **CCX2.1** | 4 | 191,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement DURAN® YOUTILITY screw caps | **AEY7.1** | 10 | 17,20 |
| Replacement DURAN® YOUTILITY pouring rings | **AEY8.1** | 16 | 8,65 |
| DURAN® bottle tags made of silicone, eight colours | **AEY9.1** | 16 | 23,60 |



DURAN WHEATON KIMBLE

Material DURAN®

121 °C

## DURAN® YOUTILITY labels

Made of polyester, self-adhesive. With indicator for autoclaving/steam sterilisation class 1 (ANSI/AAMI/ISO 11140-1:2005). Temperature stable from -40 to +150 °C, suitable for use in fridges and freezers, autoclaves, incubators and water baths. Removable without leaving any residues. Dimensions: labels for 36 x 70 mm bottles, labels for screw cap: ∅ 30 mm.

| Art. No. | Packaging | € |
|---|---|---|
| **AEY6.1** | 1 roll of 200 labels | 63,20 |



DURAN WHEATON KIMBLE

## Hybridisation vials

By Wheaton. Made of borosilicate glass, acc. to USP type I. Wall thickness 3.2 mm. With flat base, suitable for use in most conventional hybridisation ovens. Caps made of white PBT (35 mm) or PP (70 mm) with seals made of PTFE-coated silicone.

**Uncoated,** temperature stable up to 135 °C

| ∅ inner x height (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 35 x 75 | 45 | **ETH4.1** | 1 | 56,15 |
| 35 x 100 | 45 | **ETH5.1** | 1 | 59,95 |
| 35 x 150 | 45 | **ETH6.1** | 1 | 61,85 |
| 35 x 300 | 45 | **ETH7.1** | 1 | 65,45 |
| 70 x 300 | 70-400 | **ETH8.1** | 1 | 83,35 |

**PVC-coated**, temperature stable up to 121 °C

| ∅ inner x height (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 35 x 75 | 45 | **ETH9.1** | 1 | 72,60 |
| 35 x 100 | 45 | **ETK0.1** | 1 | 76,30 |
| 35 x 150 | 45 | **ETK1.1** | 1 | 78,10 |
| 35 x 300 | 45 | **ETK2.1** | 1 | 81,70 |
| 70 x 300 | 70-400 | **ETK3.1** | 1 | 110,20 |




DURAN WHEATON KIMBLE
Material DURAN®
121°C

## Wide-neck screw thread bottles

Made of DURAN®. Graduated with labelling area and Retrace Code. Screw thread GLS 80. Large neck interior-∅ of 65 mm enables easy and safe filling and removal of powders, pastes, granulates and liquids. Suitable for microwaves. Autoclavable.

**Delivery incl.** screw cap and pouring ring made of PP.

**Clear glass**

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Height including cap (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 250 | 95 | 105 | 109 | **XT02.1** | 10 | 95,80 |
| 500 | 101 | 148 | 152 | **ET99.1** | 10 | 129,00 |
| 1000 | 101 | 218 | 222 | **EX00.1** | 10 | 169,00 |
| 2000 | 136 | 248 | 252 | **EX01.1** | 1 | 32,65 |
| 3500 | 160 | 271 | 275 | **PY89.1** | 1 | 96,60 |
| 5000 | 182 | 310 | 314 | **EX02.1** | 1 | 131,00 |
| 10000 | 227 | 385 | 389 | **EX03.1** | 1 | 216,00 |
| 20000 | 288 | 480 | 484 | **EX04.1** | 1 | 468,00 |

**Brown glass**

Especially suitable for storing light-sensitive media. Unchanged DURAN® properties on inside of flask since only the exterior is coated; long useful life and good chemical resistance of brown colouring.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Height including cap (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 250 | 95 | 105 | 109 | **XT03.1** | 1 | 38,85 |
| 500 | 101 | 148 | 152 | **HT11.1** | 1 | 41,90 |
| 1000 | 101 | 218 | 222 | **HT12.1** | 1 | 50,85 |
| 2000 | 136 | 248 | 252 | **HT13.1** | 1 | 73,15 |
| 3500 | 160 | 271 | 275 | **PY91.1** | 1 | 155,00 |
| 5000 | 182 | 310 | 314 | **HT14.1** | 1 | 226,00 |
| 10000 | 227 | 385 | 389 | **HT15.1** | 1 | 309,00 |
| 20000 | 288 | 480 | 484 | **HT16.1** | 1 | 508,00 |

## Wide-neck screw thread bottles DURAN®-Protect

Made of DURAN® clear glass. GLS 80 thread. **PU-sheating.** Plastic sheathing protects against mechanical damage (scratch resistant), minimizes the loss of liquid (leakage and splash protection) and prevents glass from flying around when broken. Light protection up to max. wave length of 380 nm. Autoclavable. Suitable for microwave. Suitable for freezing up to max. -30 °C. With Retrace-Code.

**Attention:** Do not expose DURAN®-Protect bottles to an open flame and do not heat directly. Max. thermal stress 135 °C. Avoid exposure to thermal stress for longer than 30 min.
**Delivery incl.** pouring ring and screw cap made of PP.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 95 | 105 | **XT04.1** | 10 | 189,00 |
| 500 | 101 | 152 | **LC00.1** | 10 | 218,00 |
| 1000 | 101 | 222 | **KY97.1** | 10 | 286,00 |
| 2000 | 136 | 252 | **KY98.1** | 10 | 480,00 |
| 3500 | 160 | 275 | **PY90.1** | 1 | 199,00 |
| 5000 | 182 | 314 | **KY99.1** | 1 | 238,00 |



DURAN WHEATON KIMBLE
Material DURAN®
121°C

## Wide neck baffled flasks

Made of DURAN®, clear glass, thread GLS 80. With graduation and retrace code and three vertical baffles at the inside walls. The baffles increase the vertical circulation and produce a much more efficient and homogeneous mix. Autoclavable.
**Delivery incl.** screw cap and pouring ring made of PP.

| Volume (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 95 | 105 | **EXK4.1** | 1 | 19,45 |
| 500 | 101 | 152 | **EXK5.1** | 1 | 25,45 |
| 1000 | 101 | 222 | **EXK6.1** | 1 | 33,45 |



Material DURAN®
DURAN WHEATON KIMBLE
121°C

## Double-wall, wide-neck bottles GLS 80

Made of DURAN®. Integrated glass shell enables temperature regulation of the bottle contents by pumping warm or cold thermostating liquid through the shell. Autoclavable.

- Temperature stable from -40 to +120 °C and/or -45 to +180 °C when using quick-release closures GLS 80 (order no. PC52.1)
- Suitable for use with magnetic vane stir bars or the DURAN® GLS 80 magnetic stirrer reactor cap
- Compatible with GLS 80 connection systems for adding and/or removing fluids
- Easy-to-read scale on the inner vessel

**Delivery incl.** pouring ring Sand screw cap GLS 80 made of PP and 2 screw caps made of PBT with PTFE olives (GL 18, for hose with inner ∅ 10 mm).

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 | 110 x 170 | **ETP2.1** | 1 | 322,00 |
| 1000 | 110 x 270 | **ETP3.1** | 1 | 404,00 |

# Screw caps




## Screw caps and pouring rings

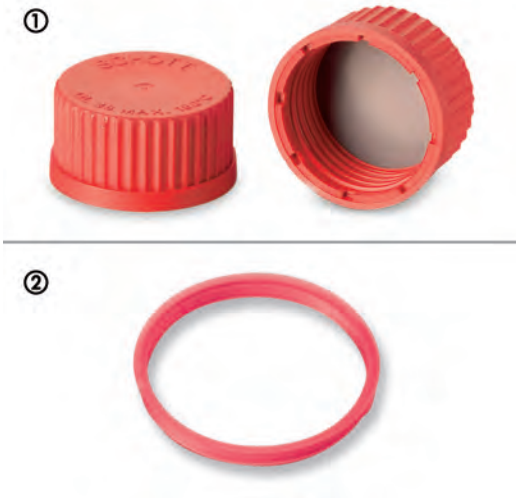
Made of **PP**. Temperature stable from -40 to +140 °C.
Steam autoclavable at max 140 °C.

① **Screw caps** with lip seal gasket.
Without pouring rings, please order separately.

| Thread | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| GL 25 | blue | **E752.1** | 10 | 12,20 |
| GL 32 | blue | **E753.1** | 10 | 12,00 |
| GL 45 | blue | **E754.1** | 10 | 14,15 |
| GL 45 | yellow | **CK22.1** | 10 | 14,15 |
| GL 45 | grey | **CK23.1** | 10 | 14,15 |
| GL 45 | green | **CK24.1** | 10 | 14,15 |
| GLS 80 | blue | **KY95.1** | 10 | 22,90 |

② **Pouring rings**

| Thread | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| GL 32 | blue | **K752.1** | 10 | 4,20 |
| GL 45 | blue | **K753.1** | 10 | 5,15 |
| GL 45 | yellow | **CK25.1** | 10 | 4,85 |
| GL 45 | grey | **CK26.1** | 10 | 4,85 |
| GL 45 | green | **CK27.1** | 10 | 4,85 |
| GLS 80 | blue | **KY96.1** | 10 | 14,85 |




## Screw caps and pouring rings

Colour **red**. Autoclavable and stable to +180 °C hot air sterilisation.

① **Screw caps** made of **PBT**. With PTFE-coated sealing. Temperature stable from -45 to +180 °C. Without pouring rings, please order separately.

| Thread | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| GL 14 | 20 x 17 | **TX90.1** | 10 | 16,80 |
| GL 18 | 23 x 20 | **TX91.1** | 10 | 19,65 |
| GL 25 | 33 x 23 | **TX92.1** | 10 | 24,25 |
| GL 32 | 42 x 26 | **TX93.1** | 10 | 36,80 |
| GL 45 | 54 x 28 | **TX94.1** | 10 | 56,00 |

② **Pouring rings**
Made of **ETFE**. Temperature stable from -100 to +180 °C.

| Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GL 32 | **N542.1** | 10 | 11,30 |
| GL 45 | **N543.1** | 10 | 12,20 |

## Replacement gaskets for screw caps

Made of PTFE-coated silicone rubber.

| for screw caps | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GL 14 | **AKL5.1** | 10 | 4,50 |
| GL 18 | **AKL6.1** | 10 | 6,70 |
| GL 25 | **AKL7.1** | 10 | 10,15 |
| GL 32 | **AKL8.1** | 10 | 14,65 |
| GL 45 | **AKL9.1** | 10 | 24,10 |

**Selection list for screw caps**

| Cap | Material | Colour | Temperature-stable | USP/FDA-conformity | Safety originality effect | Pressure compensation | DIN-thread GL |
|---|---|---|---|---|---|---|---|
| Screw caps (CK22.1 ff.) | PP | yellow/green/grey | -40 to +140 °C | no | no | no | 45 |
| Screw caps (E752.1 ff.) | PP | blue | -40 to +140 °C | no | no | no | 25,32,45, GLS 80 |
| Tamper evident screw caps (AH99.1) | PP | blue/red | -40 to +140 °C | no | yes | no | 45 |
| Membrane-screw caps (CK81.1 f.) | PP/PTFE | blue | -40 to +140 °C | no | no | yes | 45, GLS 80 |
| Screw caps (TX90.1 ff.) | PBT | red | -45 to +180 °C | no | no | no | 14,18,25,32,45 |
| Premium-screw caps (CK79.1 f.) | TPCh260 | colourless | -196 to +260 °C | yes | no | no | 25, 45 |
| DURAN® PURE premium-screw caps (HNN1.1 f.) | TPCh260 | colourless | -196 to +260 °C | yes | no | no | 25, 45 |
| PURE-screw caps (EEE3.1) | PFA | colourless | -196 to +260 °C | yes | no | no | 45 |
| Quick-release closures (PC52.1) | Polyarylsulphone | colourless | -45 bis +180 °C | yes | no | no | GLS 80 |

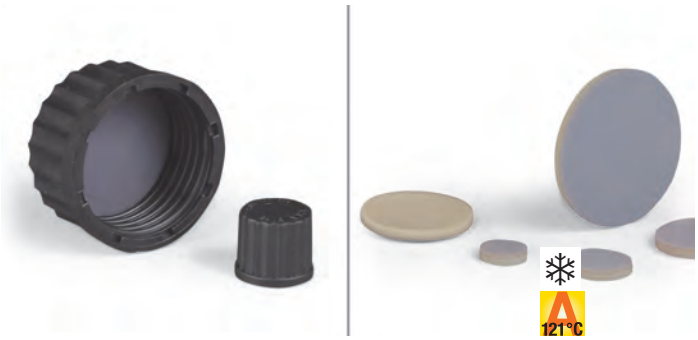
# Screw caps



## Screw caps

Made of **PBT**. With PTFE-coated sealing. Colour red.
Temperature stable from -45 to +150 °C, autoclavable.

| Thread GL | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14 | **E695.1** | 10 | 19,90 |
| 18 | **E696.1** | 10 | 23,95 |
| 25 | **E692.1** | 10 | 28,70 |
| 32 | **E693.1** | 10 | 43,00 |
| 45 | **E694.1** | 10 | 65,60 |



## Screw caps

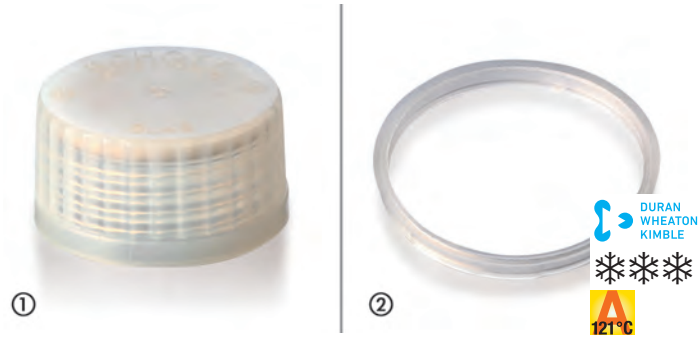
Made of **PPS**. With PTFE-coated silicon gasket.
Temperature stable from -20 to +230 °C, autoclavable.

| Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GL 14 | **NT01.1** | 10 | 26,00 |
| GL 18 | **NT02.1** | 10 | 23,50 |
| GL 25 | **NT03.1** | 10 | 32,55 |
| GL 32 | **NT04.1** | 10 | 37,55 |
| S 40 | **NT05.1** | 5 | 30,70 |
| GL 45 | **NT06.1** | 5 | 31,50 |

## Gaskets

Made of **silicone rubber elastomer** with chemically inert **PTFE coating.**
3.3 mm thick. Temperature stable from -60 to +230 °C. Autoclavable.

| Thread | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| GL 14 | 13 | **NT13.1** | 25 | 12,40 |
| GL 18 | 16,8 | **NT14.1** | 25 | 20,25 |
| GL 25 | 23,5 | **NT15.1** | 25 | 40,65 |
| GL 32 | 30.2 | **NT16.1** | 5 | 11,60 |
| S40 | 38 | **NT17.1** | 5 | 9,90 |
| GL 45 | 43,2 | **NT18.1** | 5 | 13,65 |




## Premium screw caps and pouring rings

Made of **TPCh260** (similar to PFA), without colour additives.
Temperature resistant from -196 to +260 °C, high resistant to chemicals.
For laboratory bottles with DIN standard thread. Characteristics ideal for application in pharmaceutical industry, for storing aggressive media as well as for demanding sterilisation procedures. FDA and USP-compliant.
Autoclavable, hot-air and dry-sterilisable and capable of depyrogenation.
With retrace code, batch certificates available.

① **Premium screw caps**. The welded silicone seal is coated with PTFE.
Without pouring rings, please order separately.

| Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| GL 25 | 32 | 22 | **PY85.1** | 5 | 24,55 |
| GL 45 | 51 | 26 | **CK79.1** | 5 | 49,25 |

② **Pouring rings** for lab bottles with DIN thread GL 45.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CK80.1** | 5 | 12,00 |



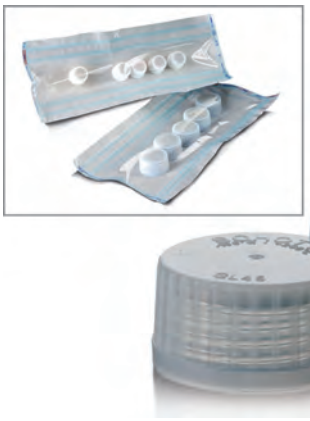

## PURE screw caps

Made of **PFA**; no colour additives or pigments. Features a lip seal.
For laboratory bottles with GL 45 thread. Retrace code and batch certificate available.

- Temperature resistance: -196 to +260 °C
- Can be autoclaved and dry-heat sterilised (at 260 °C)
- High chemical resistance
- Comply with FDA 21 CFR V, section 177.1550, and USP class VI

| Thread | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| GL 45 | 52,0 | 27,5 | **EEE3.1** | 5 | 62,60 |

# Screw caps



NEU
NOUVEAU
NEW

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KIMBLE

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## DURAN® PURE Premium screw caps

Made of **TPCh260** (similar to PFA), without colour additives. Manufactured in ISO Class 7 clean rooms. Temperature-stable from -196 to +260 °C, high resistant to chemicals. For laboratory bottles with DIN standard thread. Characteristics ideal for application in pharmaceutical industry, for storing aggressive media as well as for demanding sterilisation procedures. FDA and USP-compliant. Autoclavable and hot-sterilisable. With retrace code, batch certificates available.

**STERICLIN® sterile barrier system packaging:** Caps are sealed in packs of 5 and can be sterilised directly in the STERICLIN® packaging. No pre-cleaning necessary. Can be stored for up to 6 months after sterilising. Sterilizable by STEAM, EO and FORM sterilisation, the corresponding indicators are imprinted on the STERICLIN® packaging. Recommended sterilisation process: steam sterilisation with pre-vacuum, from 121 °C for 20 minutes up to 134 °C for 20 minutes.

| Type | Thread GL | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Standard packaging | 25 | 32 x 22 | **HNN1.1** | 5 | 25,40 |
| Standard packaging | 45 | 51 x 26 | **HNN2.1** | 5 | 50,35 |
| STERICLIN® packaging | 25 | 32 x 22 | **XT05.1** | 20 (4 x 5) | 117,00 |
| STERICLIN® packaging | 45 | 51 x 26 | **XT06.1** | 20 (4 x 5) | 232,00 |





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## Original seal

Made of **PP**. For laboratory bottles with DIN-thread GL 45. Steam autoclavable to max +140 °C.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Red tamper-proof ring with lip seal | **AH99.1** | 10 | 15,25 |
| Yellow tamper-proof ring with PTFE coated silicone seal | **KE51.1** | 10 | 46,75 |





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## Membrane screw caps

Made of **PP**. With welded PTFE-membrane. The membrane is liquid-proof, but gas permeable, this enables the pressure differential to reach upwards between the ambient pressure and the internal conditions of the bottle. This significantly reduces the risk of contamination. The ingress of liquids or solids is prevented. The caps can be screwed tightly on the laboratory glass bottles while autoclaving. Steam autoclavable to max. +140 °C.

| Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GL 25 | **LY42.1** | 5 | 23,60 |
| GL 32 | **LY43.1** | 5 | 24,10 |
| GL 45 | **CK81.1** | 5 | 20,95 |
| GLS 80 | **KE50.1** | 2 | 16,00 |







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## Quick-release closures GLS 80

① **Screw caps** made of **Polyarylsulphone plastic.** Notably improved chemical, thermal and mechanical properties compared to **PP** closures; temperature stable from -45 to +180 °C. Seal **PTFE**-coated on both sides. Thread permits opening and closing with only a three-quarter turn.

| ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 86 x 40 | **PC52.1** | 5 | 99,60 |

## Pouring rings GLS 80

② **Pouring rings** made of **PTFE**.

| Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6,85 | **PC53.1** | 5 | 64,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement sealing discs for screw caps, PTFE coated on both sides | **AKN3.1** | 5 | 27,75 |



121°C

## Screw caps GLS 80

Screw cap made of **PP**, gasket insert made of **PTFE**. High chemical resistance since medium only comes into contact with PTFE. Temperature stable from -20 °C to +140 °C, autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NY56.1** | 1 | 43,75 |

# Screw caps and olives




## ① Screw caps with borehole

Made of **PBT**. With GL-thread, for connecting olives, pipes or stopcocks.
Autoclavable, temperature stable from -45 to +180 °C.

| Thread GL | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14 | 9,5 | **L993.1** | 2 | 3,40 |
| 18 | 11 | **EL61.1** | 1 | 2,85 |
| 25 | 15 | **LL40.1** | 5 | 9,20 |
| 32 | 20 | **H396.1** | 1 | 2,40 |
| 45 | 34 | **L994.1** | 1 | 4,20 |

## ② Gaskets for screw caps with borehole

Made of **silicone rubber**, with moulded on **PTFE**-sleeve and borehole.

| Thread GL | for pipe ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14 | 5.5-6.5 | **AK96.1** | 1 | 4,25 |
| 18 | 5.5-6.5 | **AK97.1** | 1 | 4,70 |
| 18 | 7.5-9.0 | **AK98.1** | 1 | 4,70 |
| 18 | 9.0-11.0 | **AK99.1** | 1 | 4,70 |
| 25 | 7.5-9.0 | **LL92.1** | 2 | 9,90 |
| 25 | 9.0-11.0 | **LL93.1** | 2 | 9,90 |
| 25 | 11.0-13.0 | **LL94.1** | 2 | 9,90 |
| 32 | 9.0-11.0 | **LL95.1** | 2 | 14,50 |
| 32 | 11.0-13.0 | **H397.1** | 1 | 6,90 |
| 32 | 13.0-15.0 | **LL96.1** | 2 | 14,35 |
| 32 | 15.0-17.0 | **LL97.1** | 2 | 13,50 |
| 32 | 17.0-19.0 | **LL98.1** | 2 | 13,80 |
| 45 | 25.0-27.0 | **LL99.1** | 1 | 13,25 |
| 45 | 31.0-33.0 | **LN00.1** | 1 | 13,25 |

## ③ Septa for screw caps with borehole

Pierceable gaskets made of **silicone rubber**.
For screw caps with borehole and GL-thread. Autoclavable.

| Thread GL | ∅ (mm) | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 14 | 12 | 2 | **LL48.1** | 20 | 13,00 |
| 18 | 16 | 2 | **LL49.1** | 20 | 13,75 |
| 25 | 22 | 2 | **LL50.1** | 10 | 9,90 |
| 32 | 29 | 2 | **LL51.1** | 10 | 10,35 |
| 45 | 42 | 3 | **LL52.1** | 5 | 14,70 |



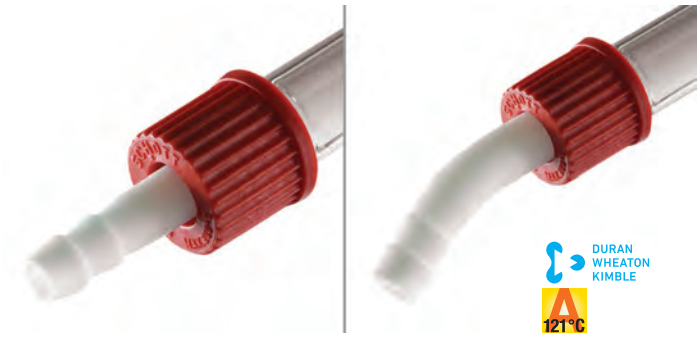

## Olives

Made of **PP**. With silicone rubber gasket. For screw caps with borehole and GL-thread. Autoclavable, temperature stable from -40 to +140 °C.

| Design | Thread GL | Outer ∅ (mm) | Inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Straight | 14 | 8,6 | 5,0 | **L992.1** | 2 | 3,25 |
| Bent | 14 | 8,6 | 4,0 | **LL46.1** | 2 | 3,55 |
| Straight | 18 | 10,8 | 6,8 | **EL60.1** | 1 | 6,30 |
| Bent | 18 | 10,8 | 6,8 | **LL45.1** | 2 | 11,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare sealing gaskets for olives GL 14 | **LK26.1** | 20 | 11,80 |




## Olives

Made of **PTFE**, temperature stable from -200 to +260 °C.
With silicone rubber gasket and screw thread cap made of PBT, temperature stable from -45 to +180 °C, with GL-thread. Autoclavable.

| Design | Thread GL | Outer ∅ (mm) | Inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Straight | 14 | 9,0 | 5,0 | **LK72.1** | 2 | 11,30 |
| Bent | 14 | 9,0 | 5,0 | **LK74.1** | 2 | 15,15 |
| Straight | 18 | 10,5 | 7,5 | **LK73.1** | 2 | 12,85 |
| Bent | 18 | 10,5 | 7,5 | **LK75.1** | 2 | 17,85 |
| Straight | 25 | 13,0 | 10,0 | **LN34.1** | 2 | 22,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare sealing gaskets for olives GL 14 | **LK26.1** | 20 | 11,80 |

# Screw caps and olives






## Screw caps with hole

Made of **PPS**. Temperature stable from -50 to +250 °C, autoclavable.
**Supplied without** gasket. Please order separately.

| Thread | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| GL 14 | 9,2 | **NT07.1** | 10 | 13,65 |
| GL 18 | 11 | **NT08.1** | 10 | 17,10 |
| GL 25 | 15 | **NT09.1** | 10 | 25,95 |
| GL 32 | 20 | **NT10.1** | 10 | 35,75 |
| S40 | 28 | **NT11.1** | 10 | 65,60 |
| GL 45 | 34 | **NT12.1** | 10 | 32,55 |

## Gaskets

Made of **silicone rubber elastomer** with chemically inert **PTFE coating.**
3.3 mm thick. Temperature stable from -60 to +230 °C. Autoclavable.

| Thread | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| GL 14 | 13 | **NT13.1** | 25 | 12,40 |
| GL 18 | 16,8 | **NT14.1** | 25 | 20,25 |
| GL 25 | 23,5 | **NT15.1** | 25 | 40,65 |
| GL 32 | 30.2 | **NT16.1** | 5 | 11,60 |
| S40 | 38 | **NT17.1** | 5 | 9,90 |
| GL 45 | 43,2 | **NT18.1** | 5 | 13,65 |



## Connectors

Made of **PFA** or **PTFE** with FPM O-ring and screw cap made of **PPS**.
Temperature stable from -200 to +250 °C. Near-universal chemical resistance since medium only comes into contact with PFA or PTFE.

**PFA**

| Design | Thread GL | Outer ∅ (mm) | Inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| straight | 14 | 8,7 | 6,0 | **NY33.1** | 2 | 11,30 |
| curved | 14 | 8,7 | 6,0 | **NY34.1** | 2 | 13,55 |
| straight | 18 | 10,4 | 7,0 | **NY35.1** | 2 | 21,35 |
| curved | 18 | 10,4 | 7,0 | **NY36.1** | 2 | 19,90 |

**PTFE**

| Design | Thread GL | Outer ∅ (mm) | Inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| straight | 25 | 16,0 | 10,0 | **NY37.1** | 2 | 25,55 |
| straight | 32 | 21,0 | 16,0 | **NY38.1** | 2 | 42,85 |






## Pressure equalisation sets

Screw cap made of **PPS** with **PTFE/silicon gasket** and interchangeable filter membrane (pore size 2.5 µm) made of **PTFE**. For pressure equalisation after the removal or addition of liquid samples from sealed containers or for the storage of out-gassing media. Pressure equalisation takes place when the pressure differential exceeds 0.1 bar.
High chemical resistance since medium only comes into contact with PTFE.
Temperature stable from -200 to +250 °C, autoclavable.

**Technical specifications:**

| Thread GL | Membrane ∅ (mm) | Flow rate (l/h) | |
|---|---|---|---|
| | | at 0.5 bar | at 1 bar |
| 14 | 12 | 16 | 25 |
| 18 | 16 | 25 | 85 |
| 25 | 23 | 50 | 180 |
| 32 | 29 | 80 | 320 |
| 45 | 45 | 210 | 800 |

| Thread GL | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14 | **NX61.1** | 1 | 9,65 |
| 18 | **NX62.1** | 1 | 10,65 |
| 25 | **NX63.1** | 1 | 13,85 |
| 32 | **NX64.1** | 1 | 34,00 |
| 45 | **NX65.1** | 1 | 50,45 |

**Replacement membranes** for pressure equalisation sets

| Thread GL | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14 | **NX66.1** | 10 | 27,55 |
| 18 | **NX67.1** | 10 | 19,25 |
| 25 | **NX68.1** | 10 | 20,65 |
| 32 | **NX69.1** | 5 | 29,95 |
| 45 | **NX70.1** | 5 | 20,90 |



## Dispenser GL 45

Made of **PTFE**, with screw cap made of **PPS**. Free rotating dispenser with stopcock and vent for controlled and safe pouring of aggressive or highly pure liquids. Surfaces are chemically inert, hydrophobic, anti-adhesive and therefore easy to clean. Temperature stable from -200 to +250 °C.
**Delivery incl.** PTFE septum cap for sealing the outlet.

| Outlet ∅ (mm) | Stopcock bore ∅ | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 4 | **NT22.1** | 1 | 116,10 |

# Bottle multi-dispensers



DURAN WHEATON KIMBLE

121°C

## Screw cap GL 45 with connectors

Made of **PP**. Temperature stable up to +140 °C, dishwasher safe. Features two continuous connectors, angled at the top to prevent kinking of tubes. Autoclavable.

- Designed for safe, sterile transfer of liquid media within a closed system
- The core rotates freely and allows a container to be replaced without twisting the fixed tubes
- Ideal for use with soft elastic tubes with ID 6-9 mm (Piton®, Tyron®, silicon), e.g. when using peristaltic pumps
- A filter attachment for sterile pressure equalisation is optional

**Screw cap GL 45 with twin connectors, outer ∅ 6-9 mm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY86.1** | 2 | 44,45 |

**Filter attachment for pressure equalisation**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY87.1** | 2 | 40,15 |



## Flex distributors with GL 45 thread

Made of **PP**, with curved connectors at top and straight connectors on the bottom. Temperature stable from -20 to +110 °C

| Number of connections | Hose inner ∅ (mm) | Connector port (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 7-11 | 7 | **NP98.1** | 1 | 33,60 |
| 3 | 6-9 | 6 | **NP99.1** | 1 | 50,00 |



DURAN WHEATON KIMBLE

121°C

## Multiport connection system GL 25

Screw-cap closure made of PBT and PTFE insert with olive plugs made of stainless steel. With 2, 3 or 4 connections. The olive plugs are suitable for hose inner ∅ 3.2 mm. For glass screw neck bottles GL 25 (10 ml or 25 ml). Suitable for media for small bioreactors, for cell cultures with perfusion cycle, for Fed-Batch bioreactors and for oxygenation/ventilation of very small sample volumes.
Temperature stable up to 180 °C. Autoclavable.
**Delivery without** laboratory glass flask GL 25, please order separately.

| Number of connections | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2 | **EXK7.1** | 1 | 41,40 |
| 3 | **EXK8.1** | 1 | 42,90 |
| 4 | **EXK9.1** | 1 | 43,85 |



DURAN WHEATON KIMBLE

Material DURAN®

121°C

## HPLC-bottles

Made of DURAN®. Vacuum and pressure resistant. With Retrace-Code. Suitable for loading HPLC-equipment and for safe transfer of solvents in closed or sterile systems. Cap can be rotated freely, which prevents the hose from being twisted when changing the bottle.
**Delivery incl.** HPLC-screw cap (Made of **PP**. GL 45, four metric M8-threaded necks) with hose connection set (4 seal inserts each made of silicone for hose ∅ 1.6 mm and ∅ 3.2 mm, 4 sealing gaskets made of silicone and 4 screw caps with bore hole).
**Please order pressure compensation set separately if required.**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| HPLC-bottle 500 ml | **KY94.1** | 2 | 81,55 |
| HPLC-bottle 1000 ml | **KY93.1** | 2 | 85,75 |
| **Accessories:** | | | |
| Screw cap GL 45 with 4 threaded necks and hose connection set | **HE24.1** | 2 | 48,20 |
| Spare hose connection set | **HE26.1** | 1 | 18,80 |
| Spare membrane filter pore size 0.2 µm | **HE27.1** | 2 | 11,25 |
| Pressure compensation set (Screw cap with olive, hose made of tygon, membrane filter) | **HE25.1** | 1 | 19,75 |
| DURAN®-pressure plus-screw thread bottle, 500 ml | **CK35.1** | 1 | 11,70 |
| DURAN®-pressure plus-screw thread botte, 1000 ml | **H995.1** | 1 | 13,90 |



121°C

## Rotilabo®-FEP-tubes

Temperature range -270 to +205 °C. Flexible, pore-free, gasproof. Hardness: 55-60 Shore D. Transparent. Autoclavable.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 0,8 (1/32″) | 1,58 (1/16″) | 0,4 | **C022.1** | 10 | 20,90 |
| 1,58 (1/16″) | 3,18 (1/8″) | 0,8 | **Y504.1** | 5 | 31,10 |
| 2,0 | 4,0 | 1,0 | **C023.1** | 10 | 51,55 |
| 3,96 (5/32″) | 6,35 (1/4″) | 1,2 | **Y505.1** | 5 | 52,90 |
| 4,0 | 6,0 | 1,0 | **C024.1** | 10 | 81,20 |
| 4,35 (11/64″) | 6,35 (1/4″) | 1,0 | **Y506.1** | 5 | 45,70 |
| 6,0 | 8,0 | 1,0 | **C025.1** | 5 | 55,85 |
| 6,35 (1/4″) | 9,52 (3/8″) | 1,59 | **Y507.1** | 5 | 103,20 |
| 8,0 | 10,0 | 1,0 | **C026.1** | 5 | 70,85 |
| 9,52 (3/8″) | 12,7 (1/2″) | 1,59 | **Y508.1** | 5 | 132,25 |
| 10,0 | 12,0 | 1,0 | **C027.1** | 5 | 85,90 |

# Bottle multi-dispensers




## Bottle multi-dispensers

Screw cap GL 45 with 2 or 3 GL 14 threaded collars. Suitable e.g. for filling HPLC-automatic machines with solvents, for usage with titration equipment and for transferring sterile culture media in biological processes.
Can also be used in lieu of a Woulffe's bottle.
Multi-dispenser bottles can be connected to tubes with outer-∅ of 1.6 to 6.0 mm with a GL 14 laboratory screw joint. The sealing insert is freely rotatable and prevents hoses from twisting when changing the bottle.
Autoclavable.
**Delivery without bottle**, laboratory screw joints GL 14 for different tube diameters and a pressure compensation set. Please order separately.

Made of **PP**, high chemical resistance, temperature stable from -40 to +140 °C.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2-way dispenser | **HX84.1** | 2 | 42,40 |
| 3-way dispenser | **HX85.1** | 2 | 45,40 |

Made of **PTFE** or **PFA** with screw cap made of **polyphenylene sulfide**. Multi-purpose, chemically inert and temperature stable from -50 to +250 °C.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2-way dispenser made of PFA | **K094.1** | 1 | 98,30 |
| 3-way dispenser made of PTFE | **K095.1** | 1 | 130,10 |

## Laboratory screw joints for 2- and 3-way dispensers

Consists of 2 threaded joint caps GL14 made of **PP** and 2 inserts for different tube diameters made of **PTFE** with silicone ring. Autoclavable.

| for hose with outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1,6 | **HX86.1** | 2 | 24,65 |
| 3,0 | **HX87.1** | 2 | 24,65 |
| 3,2 | **HX88.1** | 2 | 24,65 |
| 6,0 | **HX89.1** | 2 | 24,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| Pressure compensation-set (screw cap with olive,Tygon tube, membrane filter) | **HX90.1** | 1 | 19,75 |
| DURAN®-pressure plus-screw thread bottle, 500 ml | **CK35.1** | 1 | 11,70 |
| DURAN®-pressure plus-screw thread bottle, 1000 ml | **H995.1** | 1 | 13,90 |
| Spare membrane filter pore size 0.2 µm | **HE27.1** | 2 | 11,25 |
| Flat gasket GL 45 made of EPDM | **AKL4.1** | 1 | 5,85 |

## Threaded reducing adapters

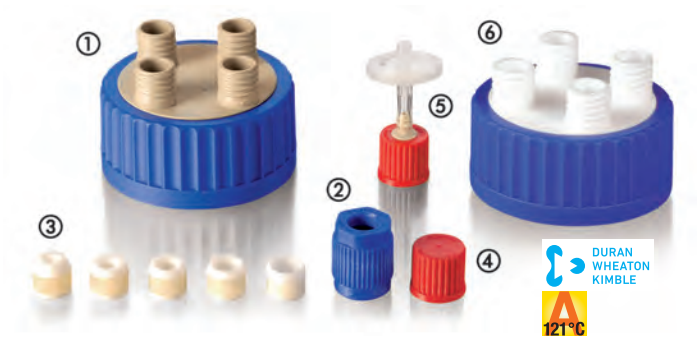
Suitable for vials with GL 40 thread, and for use with adapters with thread GL 45.

| Material | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fluororubber | **P321.1** | 1 | 21,45 |
| PTFE | **KY92.1** | 1 | 88,35 |

## Thread adapter

Made of **PTFE**. For bottles with thread S 38-430, for screwing on GL 45-adapters. Suitable for bottles, Art. No. AE00.3, for use with dispensers, bottle multi-dispensers or HPLC-bottle dispenser systems.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KY68.1** | 1 | 53,20 |




## GLS 80 bottle multi-dispensers

Made of **PP** or **PTFE**. Screw cap GLS 80 ① with four GL 18 thread necks. Ideal for loading HPLC-equipment with solvents, for use with titration devices and for transferring sterile culture media in biological processes. Also suitable for use Woulff bottles. Tubes with an outer ∅ of 3.2 to 12.0 mm can be attached to the bottle multi-dispensers with a GL 18 lab screw fitting. Autoclavable.
**Delivery without** bottle (Art. No. XT02.1ff), laboratory screw joints (Art. No. KE53.1ff) and pressure equalisation set (Art. No. KE85.1). Please order separately.

① Made of **PP**. Temperature stable from -40 to +140 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KE52.1** | 1 | 53,65 |

⑥ Made of **PTFE** with screw cap made of **PP**.
Temperature stable from 0 to +110 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NY20.1** | 1 | 97,20 |

## Lab screw fittings

For GLS 80 connection system (Art. No. KE52.1 or NY20.1).
Consists of 2 threaded joint caps GL 18 ② made of PP and 2 inserts ③ for different tube diameters made of PTFE with silicone ring. Autoclavable.

| for hose with outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 3,2 | **KE53.1** | 2 | 30,20 |
| 6,0 | **KE54.1** | 2 | 30,25 |
| 8,0 | **KE55.1** | 2 | 30,75 |
| 10,0 | **KE56.1** | 2 | 30,75 |
| 12,0 | **KE57.1** | 2 | 30,25 |

**Accessories:**

| | | | |
|---|---|---|---|
| ④ Screw cap PBT GL 18 | **E696.1** | 10 | 23,95 |
| Wide-neck screw thread bottles GLS 80 500 ml | **ET99.1** | 10 | 129,00 |
| Wide-neck screw thread bottles GLS 80 1000 ml | **EX00.1** | 10 | 169,00 |
| ⑤ Pressure compensation set (Screw cap GL 18 with olive, Tygon tube, membrane filter) | **KE58.1** | 1 | 20,00 |
| Spare membrane filter pore size 0.2 µm | **HE27.1** | 2 | 11,25 |
| Flat gasket GLS 80 made of EPDM, 78 x 63.5 x 1.5 mm | **AKL3.1** | 5 | 7,85 |



## HPLC connector caps with GL 45 thread

Screw cap made of **PPS** with distributor element made of **PTFE**. Connections with UNF 1/4″ 28G internal thread on top and bottom for attaching connecting hoses. Freely rotatable distributor element, cap can be screwed on and off without twisting the hoses. Optionally available with shutoff valve and plug made of **FEP**. Excellent chemical resistance, suitable for use at temperatures from -50 to +200 °C.

**Delivery without** connecting hoses, please order separately.

**For hoses with 0.8 mm inner Ø x 1.6 mm outer Ø,** 0.8 mm through-hole.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2 connections | **NX21.1** | 1 | 45,65 |
| 4 connections | **NX22.1** | 1 | 52,80 |
| 2 connections with shutoff valve | **NX23.1** | 1 | 102,35 |
| 3 connections with shutoff valve | **NX24.1** | 1 | 120,40 |

**For hoses with 1.6 mm inner Ø x 3.2 mm outer Ø,** 1.6 mm through-hole.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2 connections | **NX25.1** | 1 | 44,60 |
| 4 connections | **NX26.1** | 1 | 53,75 |
| 2 connections with shutoff valve | **NX27.1** | 1 | 72,95 |
| 3 connections with shutoff valve | **NX28.1** | 1 | 108,60 |

## HPLC connecting hoses

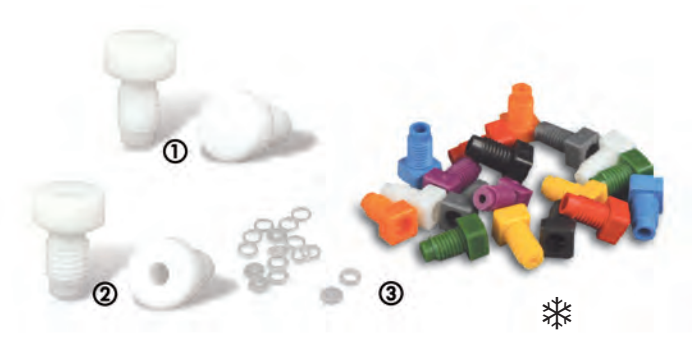
Crimped **PTFE** hoses with preassembled black UNF 1/4″ 28G banjo screws made of PP and pressure discs made of **PA**. Ready to use straight from the box, no need for time-consuming assembly in the lab. Temperature stable from -50 to +120 °C, pressure resistant up to 30 bar.

**Inner Ø x outer Ø 0.8 x 1.6 mm** (1/32″ x 1/16″)

| Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **NX29.1** | 1 | 15,50 |
| 250 | **NX30.1** | 1 | 15,90 |
| 500 | **NX31.1** | 1 | 16,65 |
| 750 | **NX32.1** | 1 | 19,60 |
| 1000 | **NX33.1** | 1 | 17,45 |

**Inner Ø x outer Ø 1.6 x 3.2 mm** (1/16″ x 1/8″)

| Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **NX34.1** | 1 | 12,55 |
| 250 | **NX35.1** | 1 | 13,05 |
| 500 | **NX36.1** | 1 | 13,85 |
| 750 | **NX37.1** | 1 | 15,30 |
| 1000 | **NX38.1** | 1 | 15,75 |




## HPLC screws

① **Dummy screws made of PTFE** with UNF 1/4″ 28G external thread. For sealing unused HPLC distributor cap connections. Temperature stable from -200 to +260 °C.

| For hose inner Ø x outer Ø (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.8 x 1.6 | white | **NX39.1** | 10 | 41,15 |
| 1.6 x 3.2 | white | **NX40.1** | 10 | 41,95 |

② **Banjo screws made of PTFE** with UNF 1/4″ 28G external thread. Temperature stable from -200 to +260 °C.

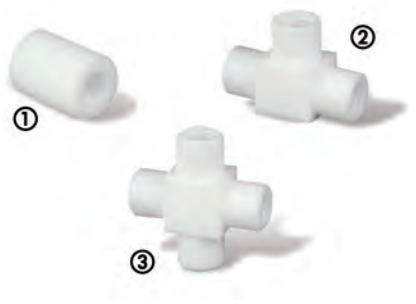
**Delivery incl.** pressure discs made of PA.

| For hose inner Ø x outer Ø (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.8 x 1.6 | white | **NX41.1** | 10 | 50,50 |
| 1.6 x 3.2 | white | **NX42.1** | 10 | 50,55 |

③ **Banjo screws made of PP** with UNF 1/4″ 28G external thread. Temperature stable from -10 to +100 °C.

**Delivery incl.** pressure discs made of PA.

| For hose inner Ø x outer Ø (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.8 x 1.6 | black | **NX43.1** | 10 | 29,90 |
| 0.8 x 1.6 | white | **NX44.1** | 10 | 13,80 |
| 0.8 x 1.6 | red | **NX45.1** | 10 | 12,85 |
| 1.6 x 3.2 | black | **NX46.1** | 10 | 12,85 |
| 1.6 x 3.2 | white | **NX47.1** | 10 | 12,85 |
| 1.6 x 3.2 | red | **NX48.1** | 10 | 12,85 |

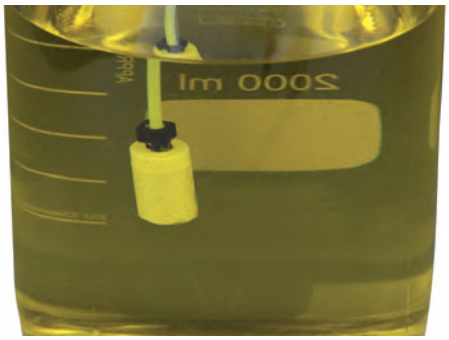



## HPLC screw couplings

**Screw couplings made of PTFE** with UNF 1/4″ 28G internal thread. For connecting or extending HPLC connecting hoses.

| Type | Connections | For hose inner Ø x outer Ø (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① straight | 2 | 0.8 x 1.6 | **NX49.1** | 1 | 8,10 |
| ① straight | 2 | 1.6 x 3.2 | **NX50.1** | 1 | 8,10 |
| ② T-type | 3 | 0.8 x 1.6 | **NX51.1** | 1 | 32,05 |
| ② T-type | 3 | 1.6 x 3.2 | **NX52.1** | 1 | 29,75 |
| ③ X-type | 4 | 0.8 x 1.6 | **NX53.1** | 1 | 37,15 |
| ③ X-type | 4 | 1.6 x 3.2 | **NX54.1** | 1 | 37,15 |

# Stirrer reactors





## HPLC intake filters

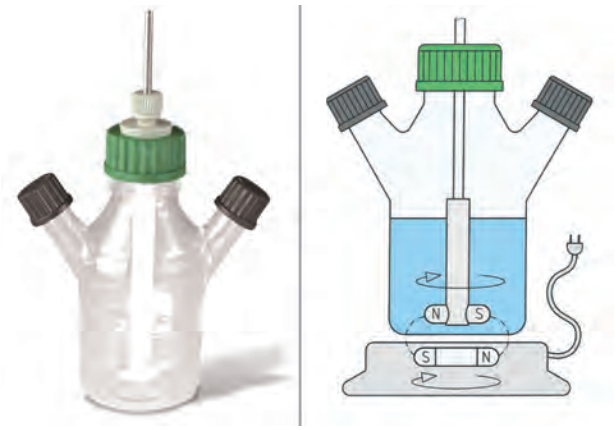
Filter cartridge holder made of **PTFE** with UNF 1/4″ 28G internal thread and interchangeable filter cartridge made of porous PTFE (Art. No. NX55.1). Protects HPLC systems, pumps, gaskets, pistons and membranes against contamination by particles or crystallising residues. Filter ∅ 14 mm. Filter length 25 mm.

| Pore size (µm) | For hose with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2 | (1/32″) - 0.8 | **NX55.1** | 1 | 71,20 |
| 2 | (1/16″) - 1.6 | **NX56.1** | 1 | 73,75 |
| 10 | (1/32″) - 0.8 | **NX57.1** | 1 | 55,40 |
| 10 | (1/16″) - 1.6 | **NX58.1** | 1 | 58,60 |

## HPLC replacement filter cartridges

Made of porous **PTFE**, for HPLC intake filters. Filter ∅ 14 mm. Filter length 20 mm.

| Pore size (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2 | **NX59.1** | 1 | 47,25 |
| 10 | **NX60.1** | 1 | 31,75 |



## Triple neck culture bottles

Made of borosilicate glass 3.3. With screw caps made of PP/glass fibre (centre neck) and PPS (side necks), as well as height-adjustable stirrer insert made of PTFE and stainless steel.
For gentle mixing of cell cultures. High chemical resistance, fully autoclavable. Hoses, probes or sensor probes can be inserted into the side necks. Drive is provided by commercially available magnetic stirrers (max. speed 1,000 RPM), centre neck, GL 45 thread, inner ∅ 30 mm.

| Usable volume (ml) | Thread, side necks | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | GL 14 | **NY29.1** | 1 | 149,45 |
| 125 | GL 18 | **NY30.1** | 1 | 151,60 |



## Screw couplings

Made of **PBT**. With GL-thread and silicone seal, flexible and freely rotatable. Autoclavable, temperature stable from -45 to +180 °C.

| Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GL 14 | **LL41.1** | 1 | 16,35 |
| GL 18 | **LL42.1** | 1 | 18,20 |
| GL 25 | **LL43.1** | 1 | 21,75 |
| GL 32 | **LL44.1** | 1 | 25,85 |
| GL 45 | **PY98.1** | 1 | 36,80 |



## Stirring magnet fish-clip® holders

Ideal for stirring sensitive liquids such as cell suspensions or tissue cultures. Magnet is placed into vessel with the flexible rotor clamp and can be fixed over the vessel base at the required height. When the magnetic stirrer is switched on the rod magnet will turn with controlled movements, protecting the substance and vessel. The support rod does not turn and the stopper remains gastight.

- Rotor and support rod made of PVDF
- Support rod: length 250 mm, ∅ 10 mm
- Stable to 160 °C, autoclavable

**Delivery incl.** magnetic follower.

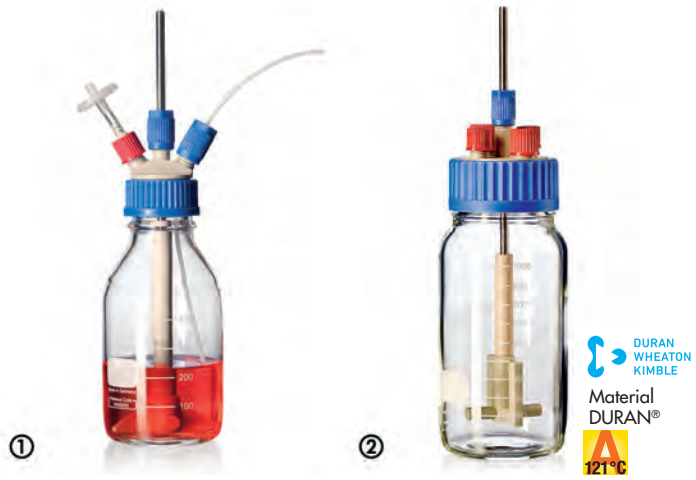
| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For magnetic followers ∅ 6 mm | **Y899.1** | 1 | 41,90 |
| For magnetic followers ∅ 8 mm | **Y900.1** | 1 | 41,90 |

## Accessories for magnetic follower holders fish-clip®

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Clamp stopper made of silicone for NS 19/26 | **Y901.1** | 1 | 4,75 |
| Clamped joint GL 25 | **Y903.1** | 1 | 10,30 |
| Clamped joint GL 32 with NS-adapter 29/32 | **Y906.1** | 1 | 35,10 |

▶ Solvent for HPLC and other accessories, see chapter on chromatography.

# Stirrer reactors




## Stirrer reactor sets

Significantly better mixing compared to standard magnetic stirring bars. Suitable for mixing solutions, dissolving solids, and fermentation processes. Driven by a magnetic stirrer. An additional media bottle or a sterile pressure equaliser can be connected using the DURAN® connector system.

- Materials used: PP/PTFE/PEEK/stainless steel/DURAN® glass
- Parts in direct contact with media are FDA-compliant
- Speed range: up to 500 rpm
- System is fully autoclavable
- Temperature stable up to +140 °C.

① **GL 45 stirrer reactors**

- 2 GL 14 connections
- Variable stirrer shaft, fits 500 ml and 1000 ml DURAN® GL 45 threaded bottles
- Compatible with the DURAN® connector system
- Suitable for hoses with diameters from 1.6 mm to 6.0 mm

**Delivery incl.** 500 ml or 1000 ml DURAN® GL 45 threaded bottle, 2-port GL 45 screw joint made of PP **with magnetic stirrer shaft**, 2 x GL 14 screw cap (PBT, red), (please order matching laboratory screw joints HX86.1-HX89.1 separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GL 45 stirrer reactor set, 500 ml | **PK85.1** | 1 | 218,00 |
| GL 45 stirrer reactor set, 1000 ml | **PK86.1** | 1 | 232,00 |

② **GLS 80 stirrer reactors**

- 4 connections: 2 x GL 18, 2 x GL 14
- Variable stirrer shaft, fits 1000 ml and 2000 ml DURAN® GLS 80 wide-neck threaded bottles
- Interchangeable stirrer element (anchor stirrer is standard, impeller stirrer is optional)
- Compatible with the DURAN® connector system
- Suitable for hoses with diameters from 1.6 mm to 12.0 mm

**Delivery incl.** 1000 ml or 2000 ml DURAN® GLS 80 wide-neck threaded bottle, GLS 80 4-port screw joint made of PP **with magnetic anchor stirrer** and GL 14 screw joint (PP, blue), 2 x GL 14 and 2 x GL 18 screw cap (PBT, red), (please order matching laboratory screw joints HX86.1-HX89.1 and KE53.1-KE57.1 separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GLS 80 stirrer reactor set, 1000 ml | **PK87.1** | 1 | 249,00 |
| GLS 80 stirrer reactor set, 2000 ml | **PK88.1** | 1 | 262,00 |


▶ Magnetic stirrer and stirring rods see page 998

▶ Double-wall, wide-mouth bottles see page 42





## Accessories for GL 45 stirrer reactors

**Replacement stirrer shaft**, magnetic, suitable for GL 45 stirrer reactor, including shaft

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK89.1** | 1 | 171,00 |

**Replacement GL 45 screw cap**, 2-port (2 x GL 14), PP (without agitator), incl. GL 14 screw joint (PP, blue)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK90.1** | 1 | 46,80 |

## Accessories for GLS 80 stirrer reactors

⑥ **GLS 80 4-port stirrer reactor cap with magnetic anchor stirrer**, complete with shaft, screw joint and caps (2 x GL 14, 2 x GL 18)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK91.1** | 1 | 225,00 |

⑦ **Replacement impeller stirrer**, magnetic, suitable for GLS 80 stirrer reactor

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK92.1** | 1 | 161,00 |

**Replacement anchor stirrer**, magnetic, suitable for GLS 80 stirrer reactor

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK93.1** | 1 | 161,00 |

① **Replacement 4-port screw cap** for GLS 80 stirrer reactor, PP, blue/grey

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK94.1** | 1 | 62,45 |

**Replacement shaft** for GLS 80 stirrer reactor, stainless steel, including PEEK screw joint

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK95.1** | 1 | 39,50 |

## Accessories for stirrer reactor sets

**DURAN® connector system**
Laboratory screw joint consisting of screw connector cap ② and insert ③for various hose-∅.

| Product | for hose with outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ② + ③ GL 14 laboratory screw joint | 1,6 | **HX86.1** | 2 | 24,65 |
| ② + ③ GL 14 laboratory screw joint | 3,0 | **HX87.1** | 2 | 24,65 |
| ② + ③ GL 14 laboratory screw joint | 3,2 | **HX88.1** | 2 | 24,65 |
| ② + ③ GL 14 laboratory screw joint | 6,0 | **HX89.1** | 2 | 24,65 |
| ② + ③ GL 18 laboratory screw joint | 3,2 | **KE53.1** | 2 | 30,20 |
| ② + ③ GL 18 laboratory screw joint | 6,0 | **KE54.1** | 2 | 30,25 |
| ② + ③ GL 18 laboratory screw joint | 8,0 | **KE55.1** | 2 | 30,75 |
| ② + ③ GL 18 laboratory screw joint | 10,0 | **KE56.1** | 2 | 30,75 |
| ② + ③ GL 18 laboratory screw joint | 12,0 | **KE57.1** | 2 | 30,25 |
| ④ GL 14 screw cap | | **E695.1** | 10 | 19,90 |
| ④ GL 18 screw cap | | **E696.1** | 10 | 23,95 |
| ⑤ GL 14 pressure equaliser set | | **HX90.1** | 1 | 19,75 |
| ⑤ GL 18 pressure equaliser set | | **KE58.1** | 1 | 20,00 |
| Replacement membrane filter 0.2 µm | | **HE27.1** | 2 | 11,25 |

# Desiccators



## Rotilabo®-glass desiccators

Made of borosilicate glass 3.3. Vacuum resistant.
**Delivery incl.** glass stopcock, plastic cap with hole (9 mm) and matching porcelain plate with hole.

| Type | approx. volume (l) | Outside ∅ (mm) | Overall height (mm) | Base ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 100 | 0,6 | 151 | 169 | 90 | **NX07.1** | 1 | 80,45 |
| 150 | 1,5 | 210 | 201 | 140 | **NX08.1** | 1 | 107,50 |
| 200 | 4,0 | 269 | 269 | 190 | **NX09.1** | 1 | 111,80 |
| 250 | 8,0 | 329 | 320 | 240 | **NX10.1** | 1 | 155,90 |
| 300 | 12,5 | 392 | 341 | 290 | **NX11.1** | 1 | 211,80 |



## Replacement stopcock for Rotilabo®-glass desiccators

Made of borosilicate glass 3.3. ∅ 8 x L 100 mm.

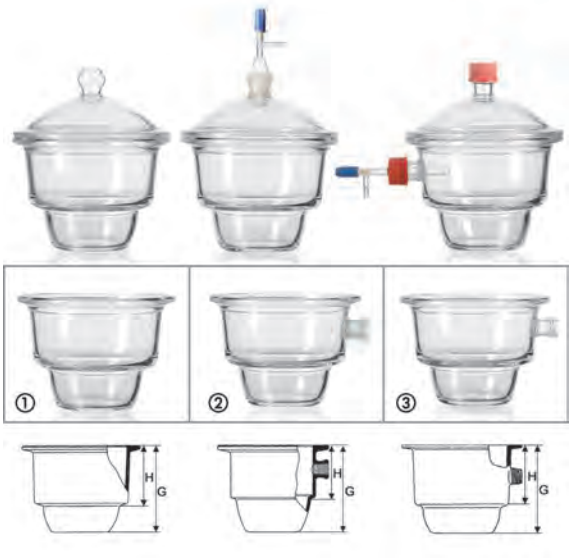
| Art. No. | Pack Qty. | € |
|---|---|---|
| **NX12.1** | 1 | 42,50 |



## Replacement plastic caps for Rotilabo®-glass desiccators

Made of **PP**.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Without hole | **NX13.1** | 1 | 3,20 |
| With hole, 9 mm | **NX14.1** | 1 | 4,05 |




DURAN WHEATON KIMBLE
Material DURAN®

## Desiccator bases

Made of DURAN® glass with ground flange. Without coating. The precision workmanship allows parts such as covers, bases, stopcocks and closures to be replaced and interchanged between all DURAN®-desiccators of similar type and size. By combining individual parts, the DURAN®-system enables the user to be flexible and work according to his individual needs.
DURAN®-desiccators are excellent for a wide range of applications: e.g. for drying and keeping substances dry; for culturing plants, bacteria, cell cultures; for vacuum manipulation; as mini clean-rooms for storage of sensitive substrates, components, high-purity metals; in the development or manufacture of semiconductors; in material and environmental research; in chip technology, etc. Designed for use up to the maximum technically possible vacuum (0 mbar).

DN = Nominal diameter

**① Without connector**

| DN | Overall height (mm) | Height (mm) | Outside ∅ (mm) | Inside ∅ (mm) | Vol.(l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|
| 100 | 112 | 58 | 153 ±2 | 118,5 | ~0,7 | **H356.1** | 1 | 55,25 |
| 150 | 154 | 81 | 215 ±2 | 172 | ~2,4 | **H357.1** | 1 | 59,50 |
| 200 | 202 | 115 | 270 ±2 | 224 | ~5,8 | **H358.1** | 1 | 98,20 |
| 250 | 235 | 120 | 320 ±2 | 274 | ~10,5 | **H359.1** | 1 | 179,00 |
| 300 | 283 | 150 | 380 ±2 | 332 | ~18,5 | **H360.1** | 1 | 291,00 |

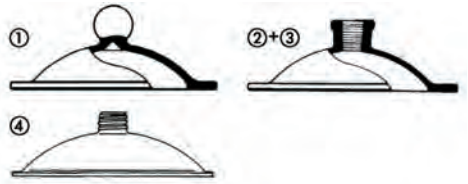
**② With 24/29 socket, Novus**

| DN | Overall height (mm) | Height (mm) | Outside ∅ (mm) | Inside ∅ (mm) | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|
| 100 | 112 | 58 | 153 ±2 | 118,5 | ~0,7 | **H361.1** | 1 | 100,00 |
| 150 | 154 | 81 | 215 ±2 | 172 | ~2,4 | **H362.1** | 1 | 102,00 |
| 200 | 202 | 115 | 270 ±2 | 224 | ~5,8 | **H363.1** | 1 | 146,00 |
| 250 | 235 | 120 | 320 ±2 | 274 | ~10,5 | **H364.1** | 1 | 265,00 |
| 300 | 283 | 150 | 380 ±2 | 332 | ~18,5 | **H365.1** | 1 | 401,00 |

**③ Thread size 32, Mobilex**

| DN | Overall height (mm) | Height (mm) | Outside ∅ (mm) | Inside ∅ (mm) | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|
| 150 | 154 | 81 | 215 ±2 | 172 | ~2,4 | **H366.1** | 1 | 96,60 |
| 200 | 202 | 115 | 270 ±2 | 224 | ~5,8 | **H367.1** | 1 | 130,00 |
| 250 | 235 | 120 | 320 ±2 | 274 | ~10,5 | **H368.1** | 1 | 220,00 |
| 300 | 283 | 150 | 380 ±2 | 332 | ~18,5 | **H369.1** | 1 | 341,00 |


▶ Lubricating grease on page 1138
▶ For drying agent see the Chromatography Chapter!




DURAN WHEATON KIMBLE
Material DURAN®

## Desiccator lids

Made of DURAN® glass with ground flange.

DN = Nominal diameter

**① With knob**

| DN | Outside ∅ (mm) | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 153 ± 2 | 118,5 | 75 | **H371.1** | 1 | 56,35 |
| 150 | 215 ± 2 | 172 | 98 | **H372.1** | 1 | 72,40 |
| 200 | 270 ± 2 | 224 | 107 | **H373.1** | 1 | 71,75 |
| 250 | 320 ± 2 | 274 | 122 | **H374.1** | 1 | 75,20 |
| 300 | 380 ± 2 | 332 | 150 | **H375.1** | 1 | 99,00 |

**② With 24/29 socket, Novus**

| DN | Outside ∅ (mm) | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 153 ± 2 | 118,5 | 62 | **H376.1** | 1 | 65,65 |
| 150 | 215 ± 2 | 172 | 85 | **H377.1** | 1 | 73,35 |
| 200 | 270 ± 2 | 224 | 94 | **H378.1** | 1 | 79,50 |
| 250 | 320 ± 2 | 274 | 109 | **H379.1** | 1 | 98,45 |
| 300 | 380 ± 2 | 332 | 137 | **H380.1** | 1 | 140,00 |

**③ With special 24/29 socket, Wertex**

| DN | Outside ∅ (mm) | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 150 | 215 ± 2 | 172 | 85 | **H382.1** | 1 | 82,65 |
| 250 | 320 ± 2 | 274 | 109 | **H384.1** | 1 | 109,00 |

**④ With screw thread 32, Mobilex**

| DN | Outside ∅ (mm) | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 150 | 215 ± 2 | 172 | 85 | **H386.1** | 1 | 69,55 |
| 200 | 270 ± 2 | 224 | 94 | **H387.1** | 1 | 70,00 |
| 250 | 320 ± 2 | 274 | 109 | **H388.1** | 1 | 73,50 |
| 300 | 380 ± 2 | 332 | 137 | **H389.1** | 1 | 99,75 |




DURAN WHEATON KIMBLE

## Desiccator plates

Made of porcelain acc. to DIN 12911 and metal acc. to DIN EN 10142.
For all desiccators listed above with equivalent nominal diameter (DN).

DN = Nominal diameter

**① Porcelain.** Hole-∅ 5 mm.

| DN | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 90 | **H403.1** | 1 | 23,90 |
| 150 | 140 | **H404.1** | 1 | 36,85 |
| 200 | 185 | **H405.1** | 1 | 71,95 |
| 250 | 235 | **H406.1** | 1 | 99,10 |
| 300 | 280 | **H407.1** | 1 | 134,00 |

**② Metal zinc coated.** Hole-∅ 3 mm

| DN | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 90 | **H408.1** | 1 | 7,00 |
| 150 | 140 | **H409.1** | 1 | 13,10 |
| 200 | 185 | **H410.1** | 1 | 17,35 |
| 250 | 235 | **H411.1** | 1 | 22,20 |
| 300 | 280 | **H412.1** | 1 | 28,45 |




DURAN WHEATON KIMBLE

## Accessories for desiccators, type Novus

**Stopcock with PTFE spindle**

| Image | Tube | Ground glass joint | Length (mm) | Olives-∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| ① | Side socket | 24/29 | 108 | 8 | **H399.1** | 1 | 31,75 |
| ② | Cover socket | 24/29 | 124 | 8 | **H400.1** | 1 | 36,05 |




DURAN WHEATON KIMBLE

## Accessories for desiccators, type Mobilex

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Stopcock (Length 160, olive ∅ 8 mm) | **H401.1** | 1 | 25,15 |
| ② | Screw cap GL 32 with bore hole ∅ 20 mm | **H396.1** | 1 | 2,40 |
| ③ | Gasket with hole ∅ 12 mm | **H397.1** | 1 | 6,90 |
| ④ | Cap, thread size 32 with gasket | **H398.1** | 1 | 4,10 |



DURAN WHEATON KIMBLE

## Accessories for desiccators, type Wertex

**Stoppers**

| Ground glass joint | Length (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 24/29 | 70 | 76 | **H402.1** | 1 | 37,90 |

## Desiccator grease white

Pharmacy quality.

| Art. No. | Pack Qty. (kg) | € |
|---|---|---|
| **1477.1** | 1 kg | 17,85 |

# Desiccators




## Desiccator sets

Made of DURAN®. Designed for use up to the maximum technically possible vacuum (0 mbar).
**Delivery without** porcelain dessicator plate. Please order separately.

① **Includes lid with knob, without connection**
For drying moist products as well as storage of moisture-sensitive substances.

| DN | approx. volume (l) | Height (mm) | Flange ID (mm) | Flange OD (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 100 | 0,7 | 187 | 118,5 | 153 ±2 | **AHK8.1** | 1 | 107,50 |
| 150 | 2,4 | 252 | 172 | 215 ±2 | **AHK9.1** | 1 | 127,00 |
| 200 | 5,8 | 209 | 222 | 270 ±2 | **AHL0.1** | 1 | 151,00 |
| 250 | 10,5 | 357 | 272 | 320 ±2 | **AHL1.1** | 1 | 236,00 |
| 300 | 18,5 | 433 | 332 | 380 ±2 | **AHL2.1** | 1 | 356,00 |

② **Type Novus with tube (NS 24/29) and stopcock in lid**
For faster drying or degassing of samples, vacuum can be applied via the stopcock.

| DN | approx. volume (l) | Height (mm) | Flange ID (mm) | Flange OD (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 100 | 0,7 | 174 | 118,5 | 153 ±2 | **AHL3.1** | 1 | 160,00 |
| 150 | 2,4 | 239 | 172 | 215 ±2 | **AHL4.1** | 1 | 171,00 |
| 200 | 5,8 | 296 | 222 | 270 ±2 | **AHL5.1** | 1 | 204,00 |
| 250 | 10,5 | 344 | 272 | 320 ±2 | **AHL6.1** | 1 | 305,00 |
| 300 | 18,5 | 420 | 332 | 380 ±2 | **AHL7.1** | 1 | 434,00 |




## Dessicator sets

Made of DURAN®. Designed for use up to the maximum technically possible vacuum (0 mbar). For drying moist products and storage of moisture-sensitive substances. To accelerate the drying process or de-gas samples, the stopcock can be used to produce a vacuum.
**Delivery incl.** bottom part, lid with stopcock and porcelain plate.

① **Type NOVUS with tube (NS 24/29) and stopcock in the lid**

| DN | approx. volume (l) | Height without stopcock (mm) | Flange ID (mm) | Flange OD (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 150 | 2,4 | 239 | 172 | 215 ±2 | **ETP4.1** | 1 | 202,00 |
| 200 | 5,8 | 296 | 222 | 270 ±2 | **ETP5.1** | 1 | 265,00 |
| 250 | 10,5 | 344 | 272 | 320 ±2 | **ETP6.1** | 1 | 389,00 |
| 300 | 18,5 | 420 | 332 | 380 ±2 | **ETP7.1** | 1 | 553,00 |

② **Type MOBILEX with thread GL 32 and stopcock in the lid**

| DN | approx. volume (l) | Height without stopcock (mm) | Flange ID (mm) | Flange OD (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 150 | 2,4 | 239 | 172 | 215 ±2 | **ETP8.1** | 1 | 188,00 |
| 200 | 5,8 | 296 | 222 | 270 ±2 | **ETP9.1** | 1 | 258,00 |
| 250 | 10,5 | 344 | 272 | 320 ±2 | **ETT0.1** | 1 | 372,00 |
| 300 | 18,5 | 420 | 332 | 380 ±2 | **ETT1.1** | 1 | 519,00 |

**Warning:**
When working with glass, the limits caused by mechanical stress and changes of temperature must be considered and the utmost precaution must be taken:

Never subject glass equipment to sudden temperature changes, i.e. do not remove when hot from the drying cabinet and place on a cold or wet lab bench. This applies especially to thicker glass equipment, such as desiccators.

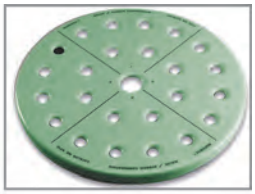
To avoid mechanical stress in the glass, evacuated vessels and/or vessels under pressure may not be heated on one side only or with a naked flame.

Glass vessels must be checked for flaws and defects prior to evacuation or pressure load (severe scratches, grooves, etc). Damaged glass vessels may not be used when working with vacuum or pressure.

Never expose glass equipment to sudden pressure changes, e.g. do not aerate evacuated vessels instantly. Laboratory glass vessels with flat base (e.g. Erlenmeyer and flatbottomed flasks) may not be put under pressure or vacuum.


- ▶ Lubricating grease on page 1138
- ▶ For drying agents, e.g. silica agents etc., see the Chromatography Chapter!





## Polycarbonate dessicator

By Nalgene®. Made of **PC**, fully transparent. For normal pressure and vacuum applications to max. 10 mbar. Maintains a partial pressure of 0.95 bar (95 kPa) over a 24 hour period. Implosion safe if used properly. No greasing needed. Connections for tubes with inner-∅ from 6.35 to 9.53 mm in lid and base. Suitable for room temperature applications only.

**Delivery incl.** silicon O-ring, vacuum tap made of PP (removable) and 2 TPE plugs for sealing hose connections while not in use. Please order dessicator plate separately.

| Outer ∅ x H (mm) | Inner ∅ (mm) | Usable height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 280 x 329 | 251 | 195 | **PK30.1** | 1 | 99,50 |

Accessories:

| | | | |
|---|---|---|---|
| Spare dessicator valve made of PP | **PK34.1** | 1 | 29,05 |

## Desiccator plate for polycarbonate desiccator

Metal-ceramic combination, light green. Unbreakable, i.e. if used properly in the dessicator it is resistant to thermal shock, corrosion and breakage.

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 230 | **PK31.1** | 1 | 64,50 |



## Vacuum bells

Low-pressure chambers for degassing or drying samples. Resistant to implosion during proper use. Suitable for use without vacuum grease. **Delivery incl.** base plate with seal and hose adapter for hoses with 6.4 mm inner ∅.

**Bell made of transparent PC, plate made of white PP.**

| Nominal capacity (l) | ∅ x H of bell (mm) | Outer ∅ of plate (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 4,7 | 170 x 237 | 191 | **ATL5.1** | 1 | 122,55 |

**Bell made of transparent brown polyetherimide, plate made of white PC.**

| Nominal capacity (l) | ∅ x H of bell (mm) | Outer ∅ of plate (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 8,3 | 222 x 254 | 330 | **ATL6.1** | 1 | 252,65 |
| 18,9 | 305 x 305 | 330 | **ATL7.1** | 1 | 413,90 |



## Rotilabo®-desiccators

Bases made of **PP,** lids made of **PC**. Lightweight and almost totally breakproof. Equipped with check valve, a removable insert for the drying agent and a perforated plate. Suitable for use with water jet pumps. **Delivery incl.** a neoprene rubber gasket, suitable desiccator-plate and vacuum stopcock.

| Vol.(l) | Inside ∅ (mm) | Usable height (mm) | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 2,15 | 150 | 135 | 190 | ca. 520 | **1008.1** | 1 | 61,60 |
| 4,35 | 200 | 175 | 230 | ca. 825 | **1827.1** | 1 | 94,80 |
| 9,20 | 250 | 225 | 300 | ca. 1250 | **1009.1** | 1 | 116,10 |







## ① Spare desiccator plates

Made of **PP**. 7 mm thick.

| For | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Desiccator 1008.1 | 140,5 | **N955.1** | 1 | 6,00 |
| Desiccator 1009.1 | 238 | **N957.1** | 1 | 9,35 |
| Desiccator 1827.1 | 189 | **N956.1** | 1 | 8,85 |

## ② Spare vacuum stopcock

Made of **PC** with **PE** valve. For tubes with inner-∅ 8 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N958.1** | 1 | 12,20 |

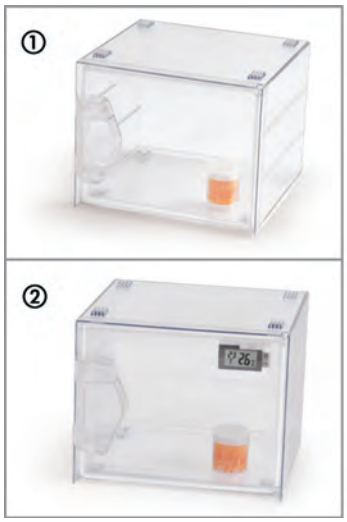


## Spare rubber joint gaskets

Made of neoprene.

| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Desiccator 1008.1 | **N959.1** | 5 | 13,50 |
| Desiccator 1827.1 | **N960.1** | 5 | 18,75 |
| Desiccator 1009.1 | **N961.1** | 5 | 25,05 |

# Desiccators






## Basic and Premium mini desiccators

Made of **PC**. For drying and safe storage of moisture-sensitive products. Available with one, two or three interconnecting chambers.

- Ideal for small items, easy-to-use and transportable
- One-touch revolving door with all-round seal
- Rugged and lightweight design, shatterproof
- Transparent, visible all round, glare-free
- Stackable

**Technical specifications:**

| Type | Mini 1 | Mini 2 | Mini 3 |
|---|---|---|---|
| Usable volume (l) | 6.2 | 2 x 6.2 | 3 x 6.2 |
| Outer dimensions W x D x H (mm) | 221 x 214 x 183 | 221 x 214 x 362 | 221 x 214 x 540 |
| Usable inner volume W x D x H (mm) | 212 x 180 x 162 | 212 x 180 x 162 | 212 x 180 x 162 |
| Working temperature (°C) | -35 to +70 | | |
| Total all-over load (kg) | 3 | | |
| Weight approx. (kg) | 0.9 | 1.8 | 2.7 |

① **Basic mini desiccators**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Mini 1 Basic | **NT23.1** | 1 | 129,00 |
| Mini 2 Basic | **NT24.1** | 1 | 274,15 |
| Mini 3 Basic | **NT25.1** | 1 | 413,90 |

② **Premium mini desiccators**

**Delivery incl.** 2 shelves and digital thermal hygrometer with Min/Max-function for monitoring the current temperature and humidity values.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Mini 1 Premium | **NT26.1** | 1 | 140,85 |
| Mini 2 Premium | **NT27.1** | 1 | 270,90 |
| Mini 3 Premium | **NT28.1** | 1 | 397,75 |

▶ For drying agents, e.g. silica agents etc., see the Chromatography Chapter!





## Star desiccators

Panels made of transparent **PMMA**, frame made of reinforced aluminium. Door with all-round rubber seal and magnetic catch. Can be fitted with up to 13 (Star Horizontal) or 26 (Star) shelves. For drying and safe storage of moisture-sensitive products (e.g. reference materials, retained samples, metallographic samples, tobacco leaves, DNA samples, etc.). Integrated digital thermal hygrometer with Min/Max function for monitoring actual temperature and moisture levels.

**Technical specifications:**

| Model | Star | Star Horizontal |
|---|---|---|
| Total volume (l) | 45 | |
| Usable volume (l) | 40 | 42 |
| Outer dimensions, W x D x H (mm) | 310 x 375 x 525 | 525 x 375 x 340 |
| Usable inner volume, W x D x H (mm) | 260 x 330 x 480 | 480 x 330 x 260 |
| Working temperature (°C) | -20 to +70 | |
| Max. all-over load per shelf (kg) | 10 | 1.5 |
| Total all-over load (kg) | 30 | |
| Weight (kg) | 7 | |

**Delivery incl.** 4 (or 2 with Star Horizontal dessicator) variable intermediate shelves made of PMMA and 1 bottom pan for dessicants.

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Star dessicator | **CT04.1** | 1 | 794,45 |
| Horizontal star desiccator | **NX18.1** | 1 | 962,15 |



## Rotilabo®-drying cabinets

Made of clear acrylic glass for storage of moisture-sensitive substances. Wall thickness 4 mm, smoothed edges. With lockable door and drawer for drying agents or molecular sieves.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 230 x 175 x 175 | **6121.1** | 1 | 313,90 |
| 410 x 305 x 175 | **6123.1** | 1 | 388,10 |



## Star Vitrum desiccator

Panels made of **type 3.3 borosilicate glass**, frame made of reinforced aluminium. Door with all-round rubber seal and magnetic catch. Usable with up to 26 shelves. For drying and safe storage of moisture-sensitive products (e.g. reference solutions, retained samples, metallographic samples, tobacco leaves, DNA samples, etc.). Ideal for suitable for storing hot materials (max. 300 °C), excellent resistance to chemicals. Integrated digital thermal hygrometer with Min/Max function for monitoring actual temperature and moisture levels.

**Technical specifications:**

| | |
|---|---|
| Total volume | 45 l |
| Usable volume | 42 l |
| Outer dimensions (W x H x D) | 310 x 375 x 525 mm |
| Usable inner volume (W x D x H) | 260 x 330 x 480 mm |
| Usage temperature | -20 to +150 °C |
| Max. all-over load per shelf | 10 kg |
| Total all-over load | 30 kg |
| Weight (approx.) | 14 kg |

**Delivery incl.** 4 variable height shelves made of stainless steel and 1 bottom pan for dessicants.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NX19.1** | 1 | 1081,45 |



## Super Star inert gas desiccator

Panels made of transparent **PMMA**, frame made of reinforced aluminium. All-round rubber door seal with magnetic strip and barrel lock. Usable with up to 26 shelves. Nitrogen or noble gases can be introduced through two gassing connections with quick couplings and self-closing valves. This allows the safe storage of air and moisture sensitive substances as well as highly reactive or toxic chemicals in an inert gas atmosphere. Integrated large digital thermal hygrometer with Min/Max function for monitoring temperature and moisture levels.

**Technical specifications:**

| | |
|---|---|
| Total volume | 45 l |
| Usable volume | 42 l |
| Outer dimensions (W x H x D) | 310 x 375 x 525 mm |
| Additional space required for coupling | 150 mm per side |
| Usable inner volume (W x D x H) | 260 x 330 x 480 mm |
| Usage temperature | -20 to +70 °C |
| Max. all-over load per shelf | 10 kg |
| Total all-over load | 30 kg |
| Weight approx. | 7.1 kg |

**Delivery incl.** 4 variable shelves made of PMMA, bottom pan for desiccants and hoses with quick couplings for gassing.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NX20.1** | 1 | 1019,10 |

**Desiccators/drying cabinets**

| | 6121.1 f | NT23.1 f | NT26.1 f | CT04.1 f | NX18.1 f | NX19.1 f | NX20.1 f | NP95.1 f | YT39.1 f |
|---|---|---|---|---|---|---|---|---|---|
| **Panel material** | PMMA | PMMA | PMMA | PMMA | PMMA | Borosilicate glass 3.3 | PMMA | PMMA | PMMA |
| **Thermohygrometer** | - | - | x | x | x | x | x | x | x |
| **Vacuum connection** | - | - | - | - | - | - | - | - | x |
| **Gassing connection** | - | - | - | - | - | - | x | - | - |
| **Automatic drying** | - | - | - | - | - | - | - | x | - |
| **Lockable** | x | - | - | - | - | - | x | - | - |
| **Stackable** | - | x | x | x | x | x | x | x | - |

# Desiccators




## Auto-Star desiccator

Panels made of transparent **PMMA**, frame made of reinforced aluminium. Door with all-round rubber seal and magnetic catch. Usable with up to 26 shelves. For long-term storage of moisture-sensitive materials, reference samples, electronic components, photographic equipment, papers, cultures etc.
Automatic drying ensures a constant low humidity of between 20 and 30 % and compensates for frequent opening of the door. In case of power failure, the humidity level inside the desiccator does not increase for several hours thereby giving valuable samples extra protection. No need for manual regeneration of the silica gels, no need for frequent checks, space for desiccant dish can also be used. Digital thermal hygrometer with Min/Max function for monitoring actual temperature and moisture levels.

**Technical specifications:**

| | |
|---|---|
| Total volume | 45 l |
| Usable volume | 42 l |
| Outer dimensions (W x H x D) | 310 x 375 x 525 mm |
| Additional space required for drying unit | 60 mm (back) |
| Usable inner volume (W x D x H) | 260 x 330 x 480 mm |
| Working temperature | -20 to +70 °C |
| Max. all-over load per shelf | 10 kg |
| Total all-over load | 30 kg |
| Weight (approx.) | 7.3 kg |
| Power supply | 230 V, 50 Hz |

**Delivery incl.** 4 variable shelves made of PMMA, drying unit and thermal hygrometer.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NP95.1** | 1 | 1482,45 |




## Vacuum desiccators

Made of transparent **PMMA**, wall thickness 25 mm. All-round silicon door seal, with 4 or 5 hinged safety locks. For contamination-free storage of air, moisture and heat sensitive products as well as for gentle drying of easily degradable and reactive substances.

**Technical specifications:**

| **Model** | **1** | **2** |
|---|---|---|
| Usable volume (l) | 17.5 | 24.5 |
| Exterior dimensions W x D x H (mm) | 300 x 300 x 340 | 300 x 300 x 440 |
| Additional space required for valves + vacuum gauge (mm) | 150 | |
| Usable inner volume W x D x H (mm) | 260 x 260 x 260 | 260 x 260 x 360 |
| Working temperature (ºC) | -20 to +70 | |
| Analogue vacuum gauge display | 0.1 to 0.001 MPa = 1000 to 10 mBar | |
| Needle valves (connector outer ∅, mm) | 9.0 | |
| Number of shelves in scope of supply / max. | 2 / 3 | 3 / 5 |
| Connections for hoses with internal dia. (mm) | 9 | |
| Max. all-over load per shelf (kg) | 9 | |
| Total all-over load (kg) | 30 | 40 |
| Weight, approx. (kg) | 15 | 18 |

**Delivery incl.** shelves made of PMMA, analogue vacuum gauge and needle valves.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **YT39.1** | 1 | 4000,10 |
| ② | **YT40.1** | 1 | 4476,30 |



## Ampoules, pre-scored

By Wheaton. Made of borosilicate glass. With tear-off cap for easy opening. Neck lockable by removing or flaming the tip.

**Clear glass** with low-extractable components, compliant with USP type I and ASTM E 438 type I, class A.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 10,5 x 67 | **ETE6.1** | 144 | 45,30 |
| 2 | 12 x 75 | **ETE7.1** | 144 | 45,30 |
| 5 | 16,5 x 84 | **ETE8.1** | 144 | 70,00 |
| 10 | 19 x 107 | **ETE9.1** | 144 | 95,15 |
| 20 | 22,5 x 130 | **ETH0.1** | 144 | 140,85 |

**Amber glass**, meets the requirements of USP type I for storing light-sensitive substances.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 10,5 x 67 | **ETH1.1** | 144 | 50,55 |
| 2 | 12 x 75 | **ETH2.1** | 144 | 50,80 |
| 5 | 16,5 x 84 | **ETH3.1** | 144 | 102,90 |



## Ampoules Cryule®, pre-scored

By Wheaton. Made of borosilicate glass with low-extractable components, compliant with USP type I and ASTM E 438 type I, class A. With tear-off cap for easy opening. Suitable for sample storage in the gas phase of liquid nitrogen.

| Volume (ml) | ∅ x H (mm) | Outer neck ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1,2 | 11,8 x 58 | 5 | **ETE4.1** | 144 | 85,40 |
| 2 | 11,5 x 70 | 5 | **ETE5.1** | 144 | 97,60 |



## Disposable ampoule openers

By Wheaton. Made of **PE**. For ampoules with volumes 1 to 2 ml. Protects against glass splitters and prevents cross-contamination. Inner ∅ 9.7 x H 25.2 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EPN8.1** | 144 | 21,45 |



## Ampoule opener

Opens ampoules from 1 to 10 ml easily and safely.
Transparent material renders the contents of the ampoule visible.
Single-handed opening of up to three ampoules at the same time.
Dimensions: 95 mm long x 76 mm wide x 83 mm high.
**Delivery incl.** 1 ampoule box and 4 inserts for opening 1 ml, 2 ml, 5 ml and 10 ml ampoules.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXT2.1** | 1 | 50,70 |

# Sample vials/Autosamplervials



## PET-bottles

By Nalgene®. Model 2035. **Sterile.** Bottle made of **PET copolymer**, screw cap made of **HDPE**. For sampling and storage of reagents and buffer solutions. **Leak-proof**.

| Volume (ml) | ∅ x H (mm) | Cap size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 22,5 x 46 | 20-415 | **ATK0.1** | 100 | 187,05 |
| 10 | 24 x 57 | 20-415 | **ATK1.1** | 100 | 189,20 |
| 20 | 30 x 65 | 20-415 | **ATK2.1** | 100 | 205,35 |



## Sample vials for pathology

Made of clear glass. With aluminium screw caps and black rubber seals. For storage of pathological samples. Prewashed.

| Volume (ml) | Type | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 7 | Bijou | 21 x 51 | **TX30.1** | 288 | 385,95 |
| 14 | McCartney | 26 x 67 | **TX31.1** | 288 | 448,30 |
| 28 | Universal wide-mouth | 28 x 85 | **TX32.1** | 144 | 267,70 |


- ▶ RBS® - Liquid concentrates - special standard cleaners for labware, see page 1106
- ▶ Brushes see page 1132
- ▶ Glass vials with rolled rim see page 71




## Rotilabo®-storage vials

Made of borosilicate glass of hydrolytic class 1.
Screw top vials with flat base. Please order caps separately.

| Volume (ml) | Type | Thread | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | Clear glass | ND15 | 17 x 61 | **XC37.1** | 100 | 28,40 |
| 5 | Brown glass | ND15 | 17 x 61 | **XC38.1** | 100 | 30,65 |
| 10 | Clear glass | ND15 | 19 x 66 | **XC39.1** | 100 | 29,60 |
| 10 | Brown glass | ND15 | 19 x 66 | **XC40.1** | 100 | 31,65 |
| 15 | Clear glass | ND18 | 21 x 71 | **XC41.1** | 100 | 33,90 |
| 20 | Clear glass | ND20 | 23 x 86 | **XC42.1** | 100 | 37,55 |

## Caps for storage vials

Made of **PP**, black. Art. no. XC46.1 white.
Screw caps with sealing pad, closed.

| Thread | Sealing material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ND15 | Natural rubber red orange / TEF transparent | **XC43.1** | 100 | 22,90 |
| ND15 | Butyl red / PTFE grey | **XC44.1** | 100 | 24,40 |
| ND18 | Butyl red / PTFE grey | **XC45.1** | 100 | 32,70 |
| ND20 | Butyl red / PTFE grey | **XC46.1** | 100 | 33,90 |



## Rotilabo®-sample vials

Alternatively in transparent or amber borosilicate glass and/or in **PP**. With flat bottom (Art. No. H992.1 with conical bottom) and tight-fitting lids made of **PE**. The conical recess in the cap enables easy penetration with syringe and needle is automatically centered. Easy to open and close. Ideal for storing sample materials or for use in autosampler.
2 ml vials are ideal for Perkin Elmer ISS-100 and ISS 200 autosamplers.

| Volume (ml) | Height (mm) | ∅ (mm) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,7 | 40 | 8 | PP | **H992.1** | 100 | 21,45 |
| 1 | 40 | 8 | glass, clear | **H300.1** | 200 | 32,80 |
| 1 | 40 | 8 | glass, amber | **H301.1** | 200 | 39,80 |
| 1 | 40 | 8 | PP | **H302.1** | 200 | 38,10 |
| 2 | 32 | 12 | glass, clear | **H303.1** | 100 | 25,10 |
| 2 | 32 | 12 | glass, amber | **H304.1** | 100 | 27,65 |
| 2 | 32 | 12 | PP | **H305.1** | 100 | 26,25 |
| 4 | 45 | 15 | glass, clear | **H306.1** | 100 | 26,30 |
| 4 | 45 | 15 | glass, amber | **H307.1** | 100 | 28,90 |
| 4 | 45 | 15 | PP | **H308.1** | 100 | 27,55 |


- ▶ Additional sample vials and accessories see page 68
- ▶ Tongs for welt rim vials see page 70



## Rotilabo®-sample vials 0,1 ml

Made of **PP**. With flat bottom and thread for screw cap and septum.
Height 32 mm, ∅ 12 mm. Thread 8 mm. Without cap and septum.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C518.1** | 200 | 40,80 |



## Rotilabo®-sample vials 2 ml

Made of borosilicate glass of hydrolytic class 1. With flat bottom and thread for screw cap and septum. Suitable for autosampler. Height 32 mm, ∅ 11.5 mm, thickness 0.9 mm. Thread 8 mm. Without cap and septum.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| clear | **E159.1** | 200 | 35,35 |
| brown | **E160.1** | 200 | 37,60 |

## Rotilabo®-inserts 100 µl

For sample vials 2.0 ml (E159.1 / E160.1 / C514.1).
Made of borosilicate glass of hydrolytic class 1.
Height 30 mm, ∅ 5 mm. With plastic spring for secure fit in vials.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C516.1** | 100 | 47,15 |



## Caps and septa

For Rotilabo®-sample vials E159.1, E160.1 and C518.1

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Screw cap with hole | **E161.1** | 200 | 14,55 |
| Screw cap without hole | **E162.1** | 200 | 16,15 |
| Septum PTFE, ∅ 8 mm | **E163.1** | 1000 | 42,95 |
| Septum silicone rubber/PTFE-coated, disposable | **E164.1** | 200 | 29,60 |
| Septum silicone white/PTFE red, can be pierced several times | **E165.1** | 200 | 35,40 |



## Rotilabo®-sample vials 4 ml

Made of borosilicate glass of hydrolytic class 1. With flat bottom and thread for screw cap and septum. Ideal for autosampler and DNA synthesis units (e.g. ABI). Height 45 mm, ∅ 14.75 mm, 0.95 mm thick.
Neck inner-∅ 8.5 mm. Thread 13 mm. Without cap and septum.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sample vials 4 ml, clear | **E152.1** | 200 | 36,20 |
| Sample vials 4 ml, brown | **E153.1** | 200 | 42,50 |
| Screw cap with hole | **E154.1** | 200 | 24,70 |
| Screw cap without hole | **E155.1** | 200 | 20,40 |
| Septum PTFE, ∅ 12 mm | **E156.1** | 1000 | 45,10 |
| Septum silicone rubber/PTFE-coated, disposable | **E157.1** | 200 | 38,65 |
| Septum silicone white/PTFE red, can be pierced several times | **E158.1** | 200 | 47,25 |



## Rotilabo®-sample vials

**With collar rim** for aluminium caps with septum.
Made of borosilicate glass of hydrolytic class 1. With flat bottom.
**Delivery without** aluminium caps with septum, please order separately.

| Volume (ml) | ∅ (mm) | Height (mm) | Neck outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | 12 | 32 | 11 | **C514.1** | 200 | 36,50 |
| 4 | 15 | 45 | 13 | **H511.1** | 200 | 38,65 |
| 6 | 22 | 38 | 20 | **H512.1** | 200 | 66,80 |
| 10 | 23 | 46 | 20 | **H513.1** | 200 | 75,15 |
| 20 | 23 | 75 | 20 | **H514.1** | 200 | 79,35 |



## Rotilabo®-aluminium caps with septum

For Rotilabo®-sample vials C514.1 to H514.1.

| for crimp vials with ∅ (mm) | Septum | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 11 | PTFE/silicone rubber | **H522.1** | 200 | 24,75 |
| 11 | PTFE/silicone | **C515.1** | 200 | 53,70 |
| 13 | PTFE/silicone rubber | **H518.1** | 200 | 59,70 |
| 13 | PTFE/silicone | **H519.1** | 200 | 68,80 |
| 20 | PTFE/butyl | **H520.1** | 200 | 156,95 |
| 20 | PTFE/silicone | **H521.1** | 200 | 112,90 |

# Sample vials/Autosamplervials



## Rotilabo®-screw neck ND8 vials

Made of borosilicate glass, hydrolytic class 1. Thread 8-425. Flat bottom. Dimensions: ∅ 11.6 x H 32 mm. CleanPack, bottles packed in a clean room under class 10.000 conditions. Standard bottles for GC and HPLC. Suitable for automatic samplers.
Please order micro inserts, screw caps and septa separately.

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Clear glass | 1,5 | **KE26.1** | 100 | 13,35 |
| Clear glass, with labelling area | 1,5 | **KE27.1** | 100 | 14,30 |
| Clear glass, conical base | 1,1 | **KE28.1** | 100 | 53,70 |
| Brown glass | 1,5 | **KE29.1** | 100 | 14,30 |
| Brown glass, with labelling area | 1,5 | **KE30.1** | 100 | 15,60 |

## Micro-inserts

Made of clear borosilicate glass. For screw neck ND8 vials.

| Type | Volume (ml) | Dimensions L x ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Conical 15 mm tip | 0,1 | 31 x 5 | **KE31.1** | 100 | 25,30 |
| With plastic spring | 0,1 | 29 x 5 | **KE32.1** | 100 | 56,90 |
| With metal spring | 0,05 | 27,5 x 4 | **KE33.1** | 100 | 30,00 |

## Screw caps closed

Made of **PP**, black. Without hole. For screw top vials ND8.
**Delivery incl.** septum, assembled.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Natural rubber orange red / TEF transparent | 1,3 | 60° | **TY72.1** | 100 | 17,75 |
| Butyl red / PTFE grey | 1,3 | 55° | **TY73.1** | 100 | 19,15 |
| Silicone white / PTFE red UltraClean | 1,3 | 45° | **NL96.1** | 100 | 28,85 |

## Screw caps with bore hole

Made of **PP**, black. Bore hole ∅ 5.5 mm. For screw neck ND8 vials.
**Delivery incl.** septum, mounted.

| Septum materials | Thick-ness (mm) | Hard-ness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PTFE red / silicone white / PTFE red | 1,0 | 45° | **KE34.1** | 100 | 37,10 |
| Silicone white / PTFE red UltraClean | 1,3 | 45° | **KE35.1** | 100 | 28,30 |
| Silicone cream / PTFE red UltraClean | 1,5 | 55° | **KE36.1** | 100 | 28,30 |
| Natural rubber orange red / TEF transparent | 1,3 | 60° | **KE37.1** | 100 | 16,10 |
| Butyl red / PTFE grey | 1,3 | 55° | **KE38.1** | 100 | 17,45 |
| Silicone white / PTFE red, slotted | 1,3 | 45° | **NL97.1** | 100 | 41,75 |

## Screw caps

Made of **PP**, black. For screw neck ND8 vials.
Without septum, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Without bore hole | **KE39.1** | 100 | 6,35 |
| With bore hole ∅ 5.5 mm | **KE40.1** | 100 | 5,95 |

## Septa ∅ 8 mm

| Material | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PTFE | 0,25 | 53° | **KE41.1** | 1000 | 32,15 |
| Natural rubber orange red / TEF transparent | 1,3 | 60° | **KE42.1** | 1000 | 74,75 |
| Butyl red / PTFE grey | 1,3 | 55° | **KE43.1** | 1000 | 91,30 |
| Silicone white / PTFE red | 1,3 | 45° | **KE44.1** | 1000 | 195,65 |
| Silicone white / PTFE blue, slotted | 0,9 | 55° | **KE45.1** | 1000 | 435,40 |



## Rotilabo®-short thread ND9 vials

Made of borosilicate glass, hydrolytic class 1. Wide opening for easy filling. Flat bottom. Dimensions: ∅ 11.6 x H 32 mm. CleanPack, bottles packed in clean room under class 10.000 conditions. Standard bottles for GC and HPLC. Suitable for automatic samplers.
Please order micro-inserts and screw caps separately.

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Clear glass | 1,5 | **LC02.1** | 100 | 14,20 |
| Clear glass, with labelling area | 1,5 | **LC03.1** | 100 | 14,75 |
| Clear glass, with integrated micro-insert | 0,2 | **LC04.1** | 100 | 102,15 |
| Clear glass, with solid conical bottom | 1,1 | **LC05.1** | 100 | 74,10 |
| Amber, with labelling area | 1,5 | **LC06.1** | 100 | 16,70 |
| Transparent PP, with graduation | 1,5 | **NL98.1** | 100 | 20,75 |
| Brown PP, with graduation | 1,5 | **NL99.1** | 100 | 21,75 |

## Micro-inserts

Made of clear borosilicate glass. For short thread ND9 vials.

| Type | Volume (ml) | Dimensions L x ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Tapered 15 mm tip | 0,1 | 31 x 6 | **LC07.1** | 100 | 24,20 |
| With plastic spring | 0,1 | 29 x 5,7 | **LC08.1** | 100 | 65,60 |
| Flat base | 0,2 | 31 x 6 | **LC09.1** | 100 | 20,40 |

## Screw caps closed

Made of **PP**, blue. Without hole. For short-thread screw top vials ND9.
**Delivery incl.** septum, assembled.

| Septum materials | Thick-ness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PTFE virginal | 0,2 | 53° | **TY74.1** | 100 | 18,50 |
| Silicone white / PTFE red UltraClean | 1,0 | 55° | **TY75.1** | 100 | 32,70 |

## Screw caps with bore hole

Made of **PP**, blue. Bore hole ∅ 6 mm. For short thread ND9 vials. Also suitable for (robot) claw arms.
**Delivery incl.** septum, mounted.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PTFE red / silicone white / PTFE red | 1,0 | 45° | **LC10.1** | 100 | 34,20 |
| Silicone white / PTFE red UltraClean | 1,0 | 55° | **LC11.1** | 100 | 29,00 |
| PTFE (*shore D) | 0,2 | 53° * | **LC12.1** | 100 | 15,00 |
| Natural rubber orange-red/ TEF transparent | 1,0 | 60° | **LC13.1** | 100 | 17,75 |
| Silicone white / PTFE blue, slotted | 1,0 | 55° | **LC14.1** | 100 | 41,75 |

## UltraBond screw caps bore hole

Made of **PP**, blue. Bore hole ∅ 6 mm. For short thread ND9 vials.
Joint cap and septum, septum cannot be pressed into the bottle even when using thick or blunt needles.
**Delivery incl.** septum, mounted.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Silicone beige / PTFE white, slotted | 1,3 | 45° | **LC15.1** | 100 | 49,35 |

## Screw caps for LC/GC-MS

Inert, non-bleed single-component cap, LC/GC-MS certified.
Transparent, with thinned penetration area, penetrable like a septum.
For ND9 short threaded vials.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NN00.1** | 100 | 33,90 |

## Magnetic screw caps with bore hole

Made of **PP**, blue. Bore hole ∅ 6 mm. With mounted magnetic cap, gold.
For ND9 short threaded vials.
**Delivery incl.** septum, mounted.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Silicone white / PTFE red UltraClean | 1,0 | 55° | **PT62.1** | 100 | 48,95 |

## Silanised ND9 short-thread screw top vials

Made of silanised borosilicate glass of hydrolytic class 1.
Please order micro inserts and screw caps separately.
**The surface of the vials is deactivated by silanisation. This minimises the adsorption of polar compounds (proteins, amines, phenols etc.) by the glass and prevents the loss of valuable specimens.**
Wide opening for easy filling. Flat base.
Dimensions: ∅ 11.6 x H 32 mm. CleanPack, vials packed in a clean room under class 10.000 conditions. Suitable for automatic samplers.

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Clear glass | 1,5 | **XC47.1** | 100 | 44,85 |
| Clear glass, with solid conical base | 1,1 | **XC48.1** | 100 | 101,60 |
| Brown glass, with labelling space | 1,5 | **XC49.1** | 100 | 45,70 |

## Silanised micro inserts

Made of silanised borosilicate glass, clear glass. For ND9 short-thread screw top vials, ND10 screw top vials, and ND11 rolled edge vials snap ring vials.
**The surface of the vials is deactivated by silanisation. This minimises the adsorption of polar compounds (proteins, amines, phenols etc.) by the glass and prevents the loss of valuable specimens.**

| Type | Volume (ml) | Dimensions L x ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Tapered 15 mm tip | 0,1 | 31 x 6 | **XC50.1** | 100 | 57,55 |
| With plastic spring | 0,1 | 29 x 5,7 | **XC51.1** | 100 | 87,10 |




## Certified Vial Kits ND9

HPLC and GC certified, tested for blank values and impurities.
Kits comprising:
- 100 short-thread screw top vials ND9 made of hydrolytic class 1 borosilicate glass. Dimensions: ∅ 11.6 x H 32 mm
- 100 **PP** UltraClean screw caps, with 6 mm hole ∅ and fitted septa, white silicone rubber/red PTFE, hardness (shore A) 55°, thickness 1.0 mm

| Type | Volume (ml) | Art. No. | Pack Qty. (set) | € |
|---|---|---|---|---|
| Clear glass, with labelling space | 1,5 | **XC64.1** | 1 | 50,00 |
| Brown glass, with labelling space | 1,5 | **XC65.1** | 1 | 50,00 |



## Rotilabo®-screw neck ND10 vials

Made of borosilicate glass, hydrolytic class 1. Thread 10-425.
Wide opening for easy filling. Flat bottom. Dimensions: ∅ 11.6 x H 32 mm.
CleanPack, bottles packed in a clean room under class 10.000 conditions.
Standard bottles for GC and HPLC. Suitable for automatic samplers.
Please order screw caps separately.

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Clear glass | 1,5 | **LC16.1** | 100 | 14,75 |
| Clear glass, with labelling area | 1,5 | **NN01.1** | 100 | 15,60 |
| Brown glass, with labelling area | 1,5 | **LC17.1** | 100 | 17,00 |

## Micro-inserts

Made of clear borosilicate glass. For screw thread ND10 vials.

| Type | Volume (ml) | Dimensions L x ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Tapered 15 mm tip | 0,1 | 31 x 6 | **LC07.1** | 100 | 24,20 |
| With plastic spring | 0,1 | 29 x 5,7 | **LC08.1** | 100 | 65,60 |
| Flat base | 0,2 | 31 x 6 | **LC09.1** | 100 | 20,40 |

## Screw caps closed

Made of **PP**, black. Without hole. For screw top vials ND10.
**Delivery incl.** septum, assembled.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Natural rubber orange red / TEF transparent | 1,3 | 60° | **TY76.1** | 100 | 24,65 |

## Screw caps with bore hole

Made of **PP**, black. Bore hole ∅ 7 mm. For screw thread ND10 vials.
**Delivery incl.** septum, mounted.

| Septum materials | Thick-ness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Silicone white / PTFE red UltraClean | 1,3 | 45° | **LC18.1** | 100 | 32,90 |
| Silicone white / PTFE beige | 1,5 | 45° | **LC19.1** | 100 | 33,65 |
| Natural rubber orange-red/ TEF transparent | 1,3 | 60° | **LC20.1** | 100 | 21,45 |
| PTFE red / Silicone white / PTFE red | 1,0 | 45° | **NN37.1** | 100 | 41,40 |
| Silicone white / PTFE blue, slotted | 1,5 | 55° | **LC21.1** | 100 | 47,25 |

▶ For HPLC solvents and further accessories see the Chromatography chapter!

# Sample vials/Autosamplervials



## ND11 Rotilabo®-welt rim vials

**With flange rim.** Made of borosilicate glass, hydrolytic Class 1. Wide opening for easy filling. Flat bottom. CleanPack, bottles packed in a clean room under class 10.000 conditions. Standard bottles for GC and HPLC. Suitable for automatic samplers. Please order micro-inserts and flange caps separately.

| Type | Volume (ml) | Dimensions H x ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Clear glass | 1,5 | 32 x 11,6 | **LC22.1** | 100 | 12,40 |
| Clear glass | 2,5 | 41 x 11,6 | **TY77.1** | 100 | 20,25 |
| Clear glass, with labelling area | 1,5 | 32 x 11,6 | **LC23.1** | 100 | 13,45 |
| Brown glass, with labelling area | 1,5 | 32 x 11,6 | **LC24.1** | 100 | 15,00 |
| TPX, with integrated glass-micro-insert | 0,2 | 32 x 11,6 | **LC25.1** | 100 | 65,05 |

## Micro inserts

Made of borosilicate glass, clear glass.
For ND11 crimp top and snap ring vials.

| Type | Volume (ml) | Dimensions L x ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Tapered 15 mm tip | 0,1 | 31 x 6 | **LC07.1** | 100 | 24,20 |
| With plastic spring | 0,1 | 29 x 5,7 | **LC08.1** | 100 | 65,60 |
| Flat base | 0,2 | 31 x 6 | **LC09.1** | 100 | 20,40 |

## Flange caps with bore hole

Made of aluminium, with transparent coating. Bore hole ∅ 5.5 mm.
For welt rim ND11 vials.

**Delivery incl.** septum, mounted.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PTFE red / silicone white / PTFE red | 1,0 | 45° | **LC26.1** | 100 | 35,50 |
| Silicone white / PTFE red, UltraClean | 1,3 | 45° | **LC27.1** | 100 | 27,85 |
| Natural rubber orange-red / butyl red / TEF transparent | 1,0 | 45° | **LC28.1** | 100 | 11,75 |
| Natural rubber red-orange / TEF transparent, AGILENT-quality | 1,0 | 60° | **LC29.1** | 100 | 11,50 |
| Butyl red / PTFE grey | 1,3 | 55° | **LC30.1** | 100 | 18,25 |
| Silicone white / PTFE blue, slotted | 1,5 | 55° | **NN02.1** | 100 | 55,70 |

## Magnetic flanged caps with bore hole

Made of aluminium, magnetic, painted gold. Bore hole ∅ 5 mm.
For ND11 rolled edge vials.

**Delivery incl.** septum, mounted.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Silicone white / PTFE red UltraClean | 1,3 | 45° | **PT63.1** | 100 | 42,95 |
| PTFE red / silicone white / PTFE red | 1,0 | 45° | **PT64.1** | 100 | 48,95 |

## TPF crimp caps with bore hole

Free of halogens, elastomers, plasticisers, silicone, butyl rubber, PTFE, FEP, TEF. Recommended for GC/LC-MS, for the storage of standards and analysis of halogenated compounds, VOC's, plastics, phthalates, polymerisation catalysts and silicones.
For ND11 rolled edge vials.

| Septum materials | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Aluminium (with O-ring seal) | 0,06 | **NN03.1** | 100 | 35,70 |



## Rotilabo®-snap ring vials ND11

Made of borosilicate glass of hydrolytic class 1.
Wide opening for easy filling. Flat base. Dimensions: ∅ 11.6 x H 32 mm.
CleanPack, vials packed in a clean room under class 10.000 conditions.
Standard vials for GC and HPLC. Suitable for automatic samplers.
Please order micro inserts and screw caps separately.

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Clear glass | 1,5 | **TY79.1** | 100 | 13,90 |
| Clear glass, with labelling space | 1,5 | **TY80.1** | 100 | 15,05 |
| Brown glass, with labelling space | 1,5 | **TY81.1** | 100 | 16,10 |
| TPX, with integrated glass-micro insert | 0,2 | **TY82.1** | 100 | 64,00 |

## Snap ring caps hard version

Made of **PE**, transparent. With bore hole. For ND11 snap ring vials.
Hard version for optimal leak tightness. No crimping tool is required.
**Delivery incl.** septum, assembled.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| RedRubber / PTFE beige, AGILENT quality | 1,0 | 45° | **TY83.1** | 100 | 18,85 |
| Natural rubber orange red / TEF transparent | 1,0 | 60° | **TY84.1** | 100 | 17,75 |

## Snap ring caps soft version

Made of **PE**, blue. With bore hole. For ND11 snap ring vials.
Soft version for easier push-on or removal. No crimping tool is required.
**Delivery incl.** septum, assembled.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| RedRubber / PTFE beige, AGILENT quality | 1,0 | 45° | **TY85.1** | 100 | 20,35 |
| Natural rubber orange red / TEF transparent | 1,0 | 60° | **TY86.1** | 100 | 19,15 |

## Push-on caps

Made of **PE**, blue, push-on type. For ND11 crimp top and snap ring vials. No crimping tool is required. Closed, with thinned penetration area instead of a septum, for non-critical assays.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TY78.1** | 100 | 8,40 |

▶ Tongs for welt rim vials see page 70

# Sample vials/Autosamplervials



## Rotilabo®-screw thread ND13 vials

Made of borosilicate glass, hydrolytic Class 1. Thread 13-425. Flat bottom. Dimensions: ∅ 14.7 x H 45 mm. CleanPack, bottles packed in a clean room under class 10.000 conditions. Suitable for automatic samplers.
Please order micro-insert, screw caps and septa separately.

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Clear glass | 4 | **LC31.1** | 100 | 17,15 |
| Clear glass, with labelling area | 4 | **LC32.1** | 100 | 18,60 |
| Brown glass | 4 | **LC33.1** | 100 | 18,25 |
| Brown glass, with labelling area | 4 | **LC34.1** | 100 | 19,70 |

## Micro-insert

Made of clear borosilicate glass. For screw thread ND13 vials.

| Type | Volume (ml) | Dimensions L x ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Conical 15 mm tip, with metal spring | 0,3 | 40 x 6 | **LC35.1** | 100 | 40,80 |

## Screw caps closed

Made of **PP**, black. Without hole. For screw top vials ND13.
**Delivery incl.** septum, assembled.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Natural rubber orange red / TEF transparent | 1,3 | 60° | **TY88.1** | 100 | 22,25 |
| Butyl red / PTFE grey | 1,3 | 55° | **TY89.1** | 100 | 24,95 |
| Silicone cream / PTFE red | 1,5 | 55° | **NN04.1** | 100 | 36,05 |

## Screw caps with bore hole

Made of **PP**, black. Bore hole ∅ 8.5 mm. For screw thread ND13 vials.
**Delivery incl.** septum, mounted.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PTFE red / silicone white / PTFE red | 1,0 | 45° | **LC36.1** | 100 | 47,25 |
| Silicone cream / PTFE red | 1,5 | 55° | **LC37.1** | 100 | 37,65 |
| Natural rubber orange-red / TEF transparent | 1,3 | 60° | **LC38.1** | 100 | 21,85 |
| Butyl red / PTFE grey | 1,3 | 55° | **LC39.1** | 100 | 24,40 |
| Silicone white / PTFE blue, slotted | 1,5 | 55° | **NN05.1** | 100 | 62,25 |

## Screw caps

Made of **PP**, black. For screw thread ND13 vials. Without septum, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Without bore hole | **LC40.1** | 100 | 10,25 |
| With bore hole ∅ 8.5 mm | **LC41.1** | 100 | 9,15 |

## Septa ∅ 12 mm

| Material | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PTFE (*shore D) | 0,25 | 53° * | **LC42.1** | 1000 | 40,35 |
| Natural rubber orange-red/ TEF transparent | 1,3 | 60° | **LC43.1** | 1000 | 97,30 |
| Butyl red / PTFE grey | 1,3 | 55° | **LC44.1** | 1000 | 135,45 |
| Silicone blue transparent / PTFE white | 1,3 | 45° | **LC45.1** | 1000 | 259,10 |
| Silicone cream / PTFE red | 1,5 | 55° | **LC46.1** | 1000 | 263,40 |



## Rotilabo®-fine screw thread ND18 vials

Made of borosilicate glass, hydrolytic Class 1. CleanPack, bottles packed in a clean room under class 10.000 conditions. Suitable for automatic samplers. Please order screw caps and septa separately.

| Type | Volume (ml) | Dimensions L x ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Clear glass | 10 | 46 x 22,5 | **LC47.1** | 100 | 31,75 |
| Brown glass | 10 | 46 x 22,5 | **LC48.1** | 100 | 49,35 |
| Clear glass | 20 | 75,5 x 22,5 | **LC49.1** | 100 | 35,40 |
| Brown glass | 20 | 75,5 x 22,5 | **LC50.1** | 100 | 53,45 |

## Magnetic screw caps closed

Magnetic, silver. Without hole. For fine pitch screw top vials ND18 (art. no. LC47.1-LC50.1).
**Delivery incl.** septum, assembled.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Butyl red / PTFE grey | 1,6 | 55° | **TY90.1** | 100 | 40,35 |

## Magnetic screw caps with bore hole

Made of steel, magnetic, silver, bore hole ∅ 8 mm.
For fine screw thread vials ND18 (Art. no. LC47.1 to LC50.1).
**Delivery incl.** septum, mounted.

| Septum materials | Thick-ness (mm) | Hard-ness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Silicone blue transparent / PTFE white Ultra Clean | 1,3 | 45° | **LC51.1** | 100 | 68,70 |
| Silicone white / PTFE red, slotted | 1,5 | 55° | **NN06.1** | 100 | 80,65 |
| Silicone white / PTFE blue Ultra Clean | 1,5 | 55° | **LC52.1** | 100 | 82,75 |
| Butyl red / PTFE grey | 1,6 | 55° | **LC53.1** | 100 | 41,75 |



121°C

## Rotilabo®-stands for vials and micro inserts

Made of **acrylic**. Transparent material allows easy checking of the filling level of the vials in the stand. With silicon feet for stability and stackability.
Stand for micro inserts and vials in sizes from ND8 to ND11 (Art. no. TY95.1 and TY96.1) can also hold tapered base vials.

| For autosampler vials | Hole ∅ (mm) | Slots | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Micro inserts | 8,5/3 | 5 x 10 | 173 x 95 x 20 | **TY95.1** | 1 | 68,70 |
| ND8 to ND11 | 12 | 5 x 10 | 173 x 95 x 20 | **TY96.1** | 1 | 74,65 |
| ND13 | 15,1 | 5 x 8 | 176 x 116 x 20 | **TY97.1** | 1 | 76,35 |
| ND18, ND20 (up to 20 ml) | 24 | 5 x 5 | 160 x 160 x 30 | **TY98.1** | 1 | 87,30 |

▶ Other boxes and stands for autosampler vials see page 222

# Sample vials/Autosamplervials



## Rotilabo®-screw-neck ND18 vials

Made of borosilicate glass of hydrolytic class 1. Round base.
Dimensions: ∅ 23 x H 75.5 mm. CleanPack, bottles packed in a clean room under class 10.000 conditions. Suitable for automatic samplers.
Screw caps and septa please order separately.

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Clear glass | 20 | **LY52.1** | 100 | 38,20 |

## Screw caps with septum

Made of **PP**, black. **Suitable only for screw thread vials art. no. LY52.1**.
Septum material: butyl red / PTFE grey.
**Delivery incl.** septum, assembled.

| Type | Thick-ness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Closed | 1,6 | 55° | **TY91.1** | 100 | 33,35 |
| Hole ∅ 12.5 mm | 1,6 | 55° | **TY92.1** | 100 | 35,40 |

## Screw caps

Made of **PP**, black. **Suitable only for screw thread vials art. no. LY52.1**.
Without septum, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Without bore hole | **LC54.1** | 100 | 13,45 |
| With bore hole ∅ 12 mm | **LC55.1** | 100 | 13,45 |

## Septa ∅ 16 mm

| Material | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Butyl red / PTFE grey | 1,3 | 55° | **LC56.1** | 1000 | 186,00 |
| Natural rubber orange-red / TEF transparent | 1,3 | 60° | **LC57.1** | 1000 | 186,00 |
| Silicone blue transparent / PTFE white | 1,7 | 45° | **LC58.1** | 1000 | 418,20 |
| PTFE red / silicone white / PTFE red | 1,0 | 45° | **LC59.1** | 1000 | 471,95 |

- ▶ For HPLC solvents and further accessories see the Chromatography chapter!
- ▶ Other boxes and stands for autosampler vials see page 222



## ND20 Rotilabo® rolled-edge headspace vials

Made of hydrolytic class 1 borosilicate glass. Clear glass, wall thickness 1.2 mm. CleanPack, vials packed in a clean room under class 10 000 conditions. Suitable for automatic samplers. Please order crimp caps separately.

**Round base**

| Type | Volume (ml) | Dimensions ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Clear glass, bevelled headspace edge | 5 | 22 x 38,2 | **LC60.1** | 100 | 28,10 |
| Clear glass, bevelled headspace edge | 20 | 23 x 75,5 | **LC61.1** | 100 | 30,25 |
| Clear glass, DIN rolled edge | 10 | 22,5 x 46 | **LC62.1** | 100 | 29,35 |
| Brown glass, DIN rolled edge | 10 | 22,5 x 46 | **NN07.1** | 100 | 32,80 |
| Clear glass, DIN rolled edge, long neck | 20 | 22,5 x 75,5 | **LC63.1** | 100 | 30,65 |
| Clear glass with labelling space, bevelled headspace edge | 20 | 23 x 75,5 | **NN08.1** | 100 | 31,75 |
| Brown glass, DIN rolled edge, long neck | 20 | 22,5 x 75,5 | **NN09.1** | 100 | 33,35 |

**Flat headspace base**

*not suitable for use under pressure.

| Type | Volume (ml) | Dimensions ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| DIN rolled edge | 5 | 20 x 38 | **LC64.1** | 100 | 28,20 |
| DIN rolled edge | 10 | 54,5 x 20 | **NN10.1** | 100 | 28,50 |
| DIN rolled edge, long neck | 10 | 22,5 x 46 | **LC65.1** | 100 | 30,00 |
| DIN rolled edge, long neck | 20 | 22,5 x 75,5 | **LC66.1** | 100 | 30,55 |
| DIN rolled edge | 50 | 31 x 101 | **LC67.1** | 100 | 60,10 |
| DIN rolled edge | 100* | 51,6 x 94,5 | **LC68.1** | 88 | 50,85 |

## Crimp caps with bore hole

Made of aluminium. Bore hole ∅ 10 mm.
For crimp neck Headspace ND20 vials.
**Delivery incl.** septum, mounted.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Butyl, dark grey | 3,0 | 50° | **LC69.1** | 100 | 19,15 |
| Butyl / PTFE, coated | 3,0 | 50° | **LC70.1** | 100 | 31,10 |
| Pharma-Fix-septa, butyl / PTFE | 3,0 | 50° | **LC71.1** | 100 | 41,90 |
| Silicone blue transparent / PTFE white Ultra Clean | 3,0 | 45° | **LC72.1** | 100 | 57,20 |
| Silicone white / PTFE beige (AGILENT HT quality) | 3,25 | 45° | **LC73.1** | 100 | 58,30 |

## Headspace-caps with bore hole

Made of aluminium. Bore hole ∅ 8 mm. For crimp neck Headspace vials ND20. With predetermined breaking points which open at 3.0 ±0.5 bar to release excess pressure.
**Delivery incl.** septum, mounted.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Butyl / PTFE, coated | 3,0 | 50° | **LC74.1** | 100 | 32,05 |
| Pharma-Fix-Septum, Butyl / PTFE | 3,0 | 50° | **LC75.1** | 100 | 43,25 |
| Silicone blue transparent / PTFE white Ultra Clean | 3,0 | 45° | **LC76.1** | 100 | 58,60 |
| Silicone white / PTFE beige (AGILENT HT quality) | 3,25 | 45° | **LC77.1** | 100 | 60,10 |

## Centre tear-off caps

Made of aluminium. For rolled-edge headspace vials ND20.
**Delivery incl.** septum, assembled.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Dark grey butyl rubber | 3,0 | 55° | **NN11.1** | 100 | 20,35 |
| Transparent blue silicone/ PTFE white UltraClean | 3,0 | 45° | **NN12.1** | 100 | 58,30 |

## Complete tear-off caps

Made of aluminium. For rolled-edge headspace vials ND20.
**Delivery incl.** septum, assembled.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Dark grey butyl rubber | 3,0 | 55° | **NN13.1** | 100 | 20,40 |
| Transparent blue silicone/ PTFE white UltraClean | 3,0 | 45° | **NN14.1** | 100 | 58,80 |

## Magnetic crimp caps with bore hole

Made of aluminium, gold coloured. For crimp neck Headspace vials.
**Delivery incl.** septum, mounted.

| Septum materials | Hole ∅ (mm) | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Butyl / PTFE, grey | 5 | 3,0 | 50° | **LC78.1** | 100 | 34,85 |
| Butyl / PTFE, grey | 8 | 3,0 | 50° | **LC79.1** | 100 | 34,85 |
| Silicone blue transparent / PTFE white Ultra Clean | 5 | 3,0 | 45° | **LC80.1** | 100 | 60,10 |
| Silicone blue transparent / PTFE white Ultra Clean | 8 | 3,0 | 45° | **LC81.1** | 100 | 60,10 |

## Butyl hollow stoppers

Grey. Suitable for all ND20 crimp top headspace vials (Art. No. LC60.1 to LC68.1).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TY94.1** | 100 | 11,00 |



## Rotilabo®-decappers

For removal of flanged aluminium caps 8, 11, 13 and 20 mm.
Coloured handles.

| Colour | for aluminium crimp caps | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| white | NW 8 mm | **C776.1** | 1 | 58,60 |
| red | NW 11 mm | **C777.1** | 1 | 58,60 |
| green | NW 13 mm | **C778.1** | 1 | 58,60 |
| blue | NW 20 mm | **C779.1** | 1 | 58,60 |



## Rotilabo®-screw neck ND24 vials (EPA)

Made of borosilicate glass, hydrolytic class 1. CleanPack, bottles packed in a clean room under class 10.000 conditions. Suitable for automatic samplers. Please order screw caps and septa separately.

| Type | Volume (ml) | Dimensions ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Clear glass | 20 | 27,5 x 57 | **LC88.1** | 100 | 40,80 |
| Amber | 20 | 27,5 x 57 | **LC89.1** | 100 | 72,05 |
| Clear glass | 30 | 27,5 x 72,5 | **LC90.1** | 100 | 41,85 |
| Amber | 30 | 27,5 x 72,5 | **LC91.1** | 100 | 76,35 |
| Clear glass | 40 | 27,5 x 95 | **LC92.1** | 100 | 43,55 |
| Amber | 40 | 27,5 x 95 | **LC93.1** | 100 | 82,25 |
| Clear glass | 60 | 27,5 x 140 | **LC94.1** | 100 | 73,65 |
| Amber | 60 | 27,5 x 140 | **LC95.1** | 100 | 87,30 |

## Screw caps

Made of **PP**, white. For screw neck ND24 vials.
Without septum, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| closed | **LC96.1** | 100 | 13,45 |
| Bore hole ∅ 15 mm | **LC97.1** | 100 | 12,80 |

## Septa ∅ 22 mm

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Butyl red / PTFE grey | 1,6 | 55° | **LC98.1** | 1000 | 266,60 |
| Butyl red / PTFE grey | 2,5 | 55° | **LC99.1** | 1000 | 278,45 |
| Silicone natural / PTFE beige (EPA-quality) | 3,2 | 45° | **LE00.1** | 1000 | 442,90 |
| Silicone white / PTFE blue, cross-slotted | 1,5 | 55° | **LE01.1** | 1000 | 741,75 |

## Screw caps closed

Made of **PP**, white. Without bore hole. For screw neck ND24 vials.
**Delivery incl.** septum, mounted.

| Septum materials | Thickness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Butyl red / PTFE grey | 2,5 | 55° | **LE02.1** | 100 | 47,85 |
| Silicone natural / PTFE beige (EPA-quality) | 3,2 | 45° | **LE03.1** | 100 | 65,80 |

## UltraBond™-screw caps

Made of **PP**, white. For screw neck ND24 vials. Joint cap and septum are a unit, septum cannot be pressed into bottle even when using thick or blunt needles.

| Septum materials | Type | Thick-ness (mm) | Hardness (shore A) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Silicone natural / PTFE beige (EPA-quality) | closed | 3,2 | 45° | **LE04.1** | 100 | 67,20 |
| Silicone natural / PTFE beige (EPA-quality) | Bore hole∅ 15 mm | 3,2 | 45° | **LE05.1** | 100 | 65,80 |

# Crimping tools for autosampler vials




## Rotilabo®-closing and opening pliers

Made of hardened steel with chemical resistant special coating. For sealing and opening standard aluminium crimp caps with ND 8, 11, 13 or 20 mm.

- Special surface coating for excellent grip
- Effortless working thanks to resetting spring
- Adjusting screws in crimping head and handle for optimal sealing and reproducible crimping results

**① Closing pliers**

| for aluminium crimp caps | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ND 8 mm | **C780.1** | 1 | 192,45 |
| ND 11 mm | **C781.1** | 1 | 192,45 |
| ND 13 mm | **5001.1** | 1 | 192,45 |
| ND 20 mm | **C782.1** | 1 | 192,45 |

**② Opening pliers**

For controlled opening of crimped sample vials without the danger of glass breakage.

| for aluminium crimp caps | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ND 8 mm | **ATN3.1** | 1 | 192,45 |
| ND 11 mm | **ATN4.1** | 1 | 192,45 |
| ND 13 mm | **ATN5.1** | 1 | 192,45 |
| ND 20 mm | **ATN6.1** | 1 | 192,45 |



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## Cleanroom crimping tongs

Made entirely of stainless steel, corrosion and heat resistant.
The tool is tolerant to repeated sterilisation for cleanroom use.
Free of lubricant and uncoated; no particles are released during use and therefore no increase in particle density occurs in the cleanroom.
Crimping pressure and height are adjustable for optimal crimping results, even when using different types of vial. Autoclavable.

**Closing tongs**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ND 11 | **XC66.1** | 1 | 729,95 |
| ND 13 | **XC67.1** | 1 | 729,95 |
| ND 20 | **XC68.1** | 1 | 729,95 |

**Opening tongs**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ND 11 | **XC69.1** | 1 | 729,95 |
| ND 13 | **XC70.1** | 1 | 729,95 |
| ND 20 | **XC71.1** | 1 | 729,95 |



## ND11 and ND20 cordless crimping tools

By Macherey-Nagel. Mobile electronic crimping tools for 11 mm and 20 mm aluminium crimp caps (unsuitable for magnetic or bimetal crimp caps).

- Consistent and reproducible crimping results
- Control unit for crimping pressure adjustment
- Longlife lithium batteries

**Delivery incl.** charging station and connector set.

**Closing tongs**

| For crimp vials | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ND11 | **APC4.1** | 1 | 736,00 |
| ND20 | **APC5.1** | 1 | 736,00 |

**Opening tongs**

| For crimp vials | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ND11 | **APC6.1** | 1 | 736,00 |
| ND20 | **APC7.1** | 1 | 736,00 |



## High performance crimping tool ND11 and ND20

By Macherey-Nagel. For secure and reproducible crimping and decapping of crimp caps on sampling bottles and autosampler vials.

- Also suitable for magnetic and bimetal crimp caps thanks to very powerful motor.
- Exchangeable crimping and decapping heads
- Digital LED display
- Memory function for different crimp settings
- A stand is optionally available for convenient and safe handling

**Delivery incl.** power supply (12 V) and cable.
Please order crimping and decapping heads separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **APE8.1** | 1 | 1220,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Crimping head for 11 mm crimp caps | **APE9.1** | 1 | 375,00 |
| Crimping head for 20 mm crimp caps | **APH0.1** | 1 | 375,00 |
| Decapping head for 11 mm crimp caps | **APH1.1** | 1 | 375,00 |
| Decapping head for 20 mm crimp caps | **APH2.1** | 1 | 375,00 |
| Stand for electronic crimping tools | **APH3.1** | 1 | 190,00 |



## Glass vials with rolled rim

Made of soda-lime glass.
**Delivery incl.** LDPE snap-on lids.

**Low form**

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2 | 11,5 x 36 | **CLA0.1** | 690 | 119,35 |
| 5 | 24 x 24 | **CLA1.1** | 154 | 44,20 |
| 8 | 24 x 34 | **CLA2.1** | 154 | 46,05 |
| 10 | 24 x 41 | **CLA3.1** | 154 | 42,60 |
| 15 | 26 x 48 | **CLA4.1** | 130 | 39,75 |
| 20 | 26 x 60 | **CLA5.1** | 130 | 43,25 |
| 30 | 28 x 72 | **CLA6.1** | 108 | 41,40 |
| 60 | 32 x 106 | **CLA7.1** | 84 | 60,20 |

**High form**

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 19 x 30 | **CLA8.1** | 200 | 41,95 |
| 5 | 19 x 40 | **CLA9.1** | 200 | 43,55 |
| 10 | 22 x 45 | **CLC0.1** | 200 | 45,90 |
| 25 | 30 x 50 | **CLC1.1** | 200 | 62,25 |
| 30 | 28 x 75 | **CLC2.1** | 200 | 65,60 |
| 40 | 30 x 80 | **CLC3.1** | 200 | 76,35 |
| 50 | 30 x 100 | **CLC4.1** | 200 | 80,55 |
| 100 | 34 x 145 | **CLC5.1** | 100 | 99,90 |



## Brown glass, rolled-rim vials

Made of soda-lime glass.
**Delivery incl.** LDPE snap-on lid.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 19 x 30 | **ENK0.1** | 200 | 64,40 |
| 5 | 19 x 40 | **ENK1.1** | 200 | 64,40 |
| 10 | 22 x 45 | **ENK2.1** | 200 | 71,95 |
| 25 | 30 x 50 | **ENK3.1** | 200 | 100,55 |
| 30 | 28 x 75 | **ENK4.1** | 200 | 107,00 |
| 40 | 30 x 80 | **ENK5.1** | 200 | 132,25 |
| 50 | 30 x 100 | **ENK6.1** | 200 | 148,35 |
| 100 | 34 x 145 | **ENK7.1** | 100 | 126,85 |



## Rotilabo®-snap-cap vials ND18 / ND22

Made of clear, Soda lime-glass, hydrolytic Class 3. Clear glass.
For storage of powders and solids. Please order lid separately.

| Volume (ml) | Nominal ∅ (mm) | Neck inner ∅ (mm) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | ND18 | 13,1 | 20 x 40 | **LC82.1** | 100 | 13,80 |
| 10 | ND18 | 13,1 | 22 x 50 | **LC83.1** | 100 | 15,60 |
| 15 | ND22 | 18,2 | 26 x 48 | **LC84.1** | 100 | 23,15 |
| 25 | ND22 | 18,2 | 26 x 65 | **LC85.1** | 100 | 24,10 |

## Snap-on lids

Made of **PE**, transparent, closed.

| for nominal ∅ | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ND18 | **LC86.1** | 100 | 4,65 |
| ND22 | **LC87.1** | 100 | 5,95 |



## Welted glasses

Made of soda-lime glass. **Delivery incl.** press-on lid (PE), tightly closing.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 19 | 40 | 13 | **X654.1** | 200 | 45,70 |
| 10 | 22 | 45 | 17 | **X655.1** | 200 | 49,05 |
| 15 | 24 | 52 | 17 | **X656.1** | 200 | 55,40 |
| 20 | 25 | 70 | 17 | **X657.1** | 200 | 58,60 |
| 20 | 27 | 55 | 17 | **X658.1** | 200 | 60,85 |
| 25 | 29 | 50 | 22 | **X659.1** | 200 | 63,65 |
| 30 | 28 | 75 | 17 | **X660.1** | 200 | 81,85 |
| 35 | 28 | 65 | 22 | **X661.1** | 200 | 80,10 |
| 40 | 29 | 80 | 22 | **X662.1** | 200 | 81,95 |
| 50 | 29 | 100 | 22 | **X663.1** | 200 | 88,15 |

# NMR-vials



## Rotilabo®-NMR-vials

Made of borosilicate glass 3.3. With lenticular-shaped based.
Ideal for applications with high operational capacity.

**Technical specifications:**

| | |
|---|---|
| Length (mm) | 178 ±0.5 |
| ∅ outer (mm) | 4.95 ±0.05 |
| ∅ inner (mm) | 4.15 ±0.05 |
| Straightness (mm) | ±0.07 |
| Wall thickness (mm) | 0.38 |
| MHz | 100-300 |

**Delivery without** cap, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rotilabo®-NMR-vials | **HX58.1** | 50 | 78,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| Caps made of EVA | **HX59.1** | 1000 | 94,10 |



## Rotilabo®-NMR-tube, brown

Made of type 3.3 borosilicate glass. Tinted brown with resistant silver diffusion dye. Specially designed for light-sensitive samples. With lenticular base, fire polished rim.

**Technical specifications:**

| | |
|---|---|
| Length | 178 mm ±0.5 |
| Outer ∅ | 4.97 mm +0.02, 4.97 mm -0.05 |
| Inner ∅ | 4.15 mm ±0.05 |
| Straightness | ±0.07 mm |
| Wall thickness | 0.38 mm |
| Megahertz | 100-300 MHz |

**Delivery incl.** sealing plug made of EVA.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ATP0.1** | 1 | 40,75 |



DURAN WHEATON KIMBLE

## NMR-vials

Vials contain no paramagnetic substances. Outstanding straightness. Uniform wall thickness. Good regularity of diameter. Length 178 mm.

Two models available:

- **Economic:** Made of DURAN®, with Retrace-Code, for one-time use in fully automatic sample changers or for high throughput
- **Scientific:** Made of borosilicate glass, for multiple use. Vials can be cleaned and sterilized. Optimal utilization of substance in extremely high-resolution range.

**Technical specifications:**

| Model | Economic | Scientific |
|---|---|---|
| Length (mm) | 178 | 178 |
| ∅ outer (mm) | 4,95 ±0,05 | 4,97 ±0,013 |
| ∅ inner (mm) | 4,20 ±0,05 | 4,20 ±0,013 |
| Straightness (mm) | ±0,07 | 0,013 |
| MHz | 300 | 500 |

**Delivery incl.** sealing plugs.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Economic | **EP54.1** | 250 | 470,00 |
| Scientific | **EP55.1** | 5 | 59,75 |



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## Rack for NMR-test tubes

Made of **PP**. With 72 slots and 2 side handles for easy transportation.
Stability is provided by hemispherical holes in the lower level.
For NMR test tubes L 178 mm, outer ∅ 5 mm.
Dimensions: L 210 x W 110 x H 220 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YA94.1** | 1 | 52,15 |

▶ NMR solvents see chapter Chemicals!

# Stirring staffs and wipers



## Stirring spatula

Made of **PP**, white. For stirring different specimens.
Length 244 mm, rod ∅ 6 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TT16.1** | 10 | 10,25 |



## Stirring bars

Made of **PVC**. Rigid, ∅ 7.15 mm.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 250 | **TT38.1** | 10 | 25,05 |
| 300 | **TT39.1** | 10 | 25,05 |
| 350 | **TT40.1** | 10 | 28,20 |



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## Rotilabo®-stirring rods

For stirring different types of samples.
Different models and dimensions available. Autoclavable.

**Made of flexible PTFE.** With spatulate ends. Rod-∅ 8 mm.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 150 | **EX96.1** | 1 | 4,75 |
| 200 | **EX97.1** | 1 | 5,40 |
| 250 | **EX98.1** | 1 | 6,05 |
| 300 | **EX99.1** | 1 | 7,00 |

**Made of PTFE with stainless steel core.** Can be bent if required.
Remains bent. Round ends. Rod-∅ 6 mm.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 150 | **EY00.1** | 1 | 6,60 |
| 200 | **EY01.1** | 1 | 7,20 |
| 250 | **EY02.1** | 1 | 7,55 |
| 300 | **EY03.1** | 1 | 9,70 |
| 350 | **EY04.1** | 1 | 11,10 |
| 400 | **EY05.1** | 1 | 12,15 |



## Rotilabo®-glass rods

Made of borosilicate glass, both ends sealed. Extensively free of inclusions.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 150 | 6 | **P210.1** | 10 | 6,80 |
| 200 | 6 | **P211.1** | 10 | 7,75 |
| 250 | 7 | **P212.1** | 10 | 11,30 |
| 250 | 8 | **P213.1** | 10 | 12,70 |
| 300 | 8 | **P214.1** | 10 | 13,90 |



## Rotilabo®-rubber wipers

Made of natural rubber. With fitting for glass rods: ∅ 5-6 mm.

**Rod-shaped**
Length 38 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| grey | **9548.1** | 10 | 11,85 |
| red | **9550.1** | 10 | 11,85 |

**Spade-shaped**
Width: top 36 mm, bottom 25 mm. Length 32 mm. 2 mm thick.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| grey | **9552.1** | 10 | 11,85 |
| red | **9553.1** | 10 | 11,85 |



## Rotilabo®-silicone wipers

With stainless steel handle. For removing or wiping objects clean of sticky substances and pastes media. Suitable for food.

| Total length (mm) | Width (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 200 | 27,5 | white | **HY10.1** | 1 | 10,70 |
| 260 | 50 | red | **HY11.1** | 1 | 12,05 |

# Analytical beakers and scintillation vessels



## Sample vials for analysis systems

By Greiner Bio-One. Made of **PS**, transparent.
With conical base and vertical lip.

| Volume (ml) | For model | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,3 | Centrifichem | **EC62.1** | 1000 | 33,95 |
| 0,5 | Gemsaec | **EC63.1** | 500 | 18,50 |
| 1,5 | Technicon | **EC64.1** | 500 | 12,90 |
| 4,0 | Technicon | **EC65.1** | 250 | 10,45 |




Programme extension!

## Scintillation vials

Made of **HDPE**.
① **Vial 20 ml** with white tight-closing screw cap.
For use in automatic analysers.
② **Mini Vial 5 ml** with clear screw cap, for putting into 20 ml carrier vial.

| Type | Volume (ml) | Outer ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Vial | 20 | 27 x 60 | **HEN0.1** | 1000 | 127,95 |
| ② Mini Vial | 5 | 14 x 53 | **5404.1** | 2000 | 131,15 |



## Sample vessels for cell counters

Made of **PS**. Optically clear, with parallel sides.
For use in analyser systems.
Volume 25 ml. Outer ∅ 35 x H 56 mm.
**Delivery incl.** snap-on lid made of PE.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AYX2.1** | 1000 | 141,90 |




## Scintillation vials

All-purpose vials for liquid and gamma scintillation counters or for sample storage. Cylindrical shape allows easy filling and residue-free drainage.
**Leak-proof.**

① **20 ml scintillation vials**
Made of transparent **PP**, closure made of **HDPE**.
Opening or inner ∅ 22 mm. Screw cap seals vial hermetically after 1/4 turn.

| Volume (ml) | Outer ∅ x H (mm) | Vial/cap material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | 27 x 61 | PP / HDPE | **AYX3.1** | 500 | 94,60 |

② **6.5 ml scintillation vials**
Made of transparent **PP** or **HDPE**. Opening or inner ∅ 12 mm.
Special push-on cap for quick closing, can be opened again with a 1/4 turn.

| Volume (ml) | Outer ∅ x H (mm) | Vial/cap material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 6,5 | 16 x 57 | HDPE / PP | **AYX4.1** | 1000 | 102,35 |
| 6,5 | 16 x 57 | PP / HDPE | **AYX5.1** | 1000 | 102,35 |



NEU
NOUVEAU
NEW

## Scintillation vials

Made of **HDPE**, closure made of **PP**.
Compatible with all conventional liquid scintillation counters.
Screw cap of the macro-tubes seals with as little as a quarter turn.

| Type | Volume (ml) | Outer ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Micro | 4 | 14 x 54 | **HEE8.1** | 2000 | 105,90 |
| Macro | 20 | 27 x 61 | **HEE9.1** | 1000 | 137,60 |


▶ Scintillation cocktails see Life Science!
▶ Dispensers on page 393




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## Scintillation vials 6 ml

By Wheaton. Made of **HDPE**, caps made of **PP**, can be opened with a quarter turn. The extension on the cap can be used to suspend type-② vials in 20 ml scintillation vials with thread 22-400.
**Delivery incl.** caps, included.

| Type | Cap type | Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | Standard | 6 | 17 x 57 | **EPA7.1** | 1000 | 373,05 |
| ② | Suspendable | 6 | 17 x 57 | **EPA8.1** | 1000 | 373,05 |



DURAN WHEATON KIMBLE

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## Omni-Vial® scintillation vials

By Wheaton. Made of **PP.** Suitable for liquid, beta and gamma-scintillation counters, for RIA or for sample storage. Autoclavable.
**Delivery incl.** caps.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 13 x 57 | **EXY7.1** | 1000 | 215,00 |



DURAN WHEATON KIMBLE

## Sampule® scintillation vials

By Wheaton. Made of borosilicate glass (in accordance with USP type I and ASTM E 438 type I, class A) or HDPE. Caps made of urea with seal made of aluminium-coated cellulose cardboard or PP.
**Delivery incl.** caps.

| Vial material | Volume (ml) | ∅ x H (mm) | Cap material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Glass | 6 | 17 x 58 | Urea / aluminium seal | **EXY8.1** | 1000 | 427,85 |
| HDPE | 6 | 17 x 57 | PP | **EXY9.1** | 1000 | 213,95 |



DURAN WHEATON KIMBLE

## Scintillation vials 20 ml

By Wheaton. Made of borosilicate glass (in accordance with USP type I and ASTM E 438 type I, class A), HDPE or PET. Caps made of PP with seals made of PE foam or aluminium-coated cellulose cardboard, assembled. Thread 22-400.

**Caps made of PP with PE foam seal**
Suitable for liquid, acid, alkaline or alcoholic solutions.

| Vial material | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Glass | 28 x 61 | **EXY1.1** | 500 | 223,60 |
| HDPE | 27 x 61 | **EXY2.1** | 500 | 161,25 |
| PET | 27 x 61 | **EXY3.1** | 500 | 195,65 |

**Caps made of PP with aluminium seal**
Suitable for solvents, hydrocarbons, oils, ketones and alcohols.

| Vial material | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Glass | 28 x 61 | **EXY4.1** | 500 | 227,90 |
| HDPE | 27 x 61 | **EXY5.1** | 500 | 160,20 |
| PET | 27 x 61 | **EXY6.1** | 500 | 198,90 |



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## Rack for scintillation tubes

Made of **PP**, with 24 holes in 3 x 8 array. Hole-∅ 30 mm.
Ideal for storing, transporting or as a rack on the laboratory bench.
Dimensions: L 298 x W 127 x H 95 mm. Height to intermediate shelf 44 mm.
Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K993.1** | 1 | 49,25 |



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## Racks for sample vials

Made of **PP**. For 12 vials up to ∅ max. 32 mm. Suitable for the storage and transportation of glass bottles, vials and sample tubs.
Dimensions: L 267 x W 102 x H 53 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXP7.1** | 1 | 33,70 |

# Test tubes



## Durham-tubes

Made of calcium soda glass. Wall thickness 0.7 mm. With round bottom and straight edge. For detecting gas production in micro-organisms.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5 | 6 x 35 | **TX27.1** | 250 | 31,10 |
| 0,5 | 7 x 25 | **TX28.1** | 250 | 46,25 |
| 0,75 | 6 x 50 | **TX29.1** | 350 | 37,95 |



## Rotilabo®-sample vials

Made of soda-lime glass. With flat bottom and fused rim. Thickness 0.6 mm.
**Delivery incl. PE**-stoppers.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2,5 | 10 x 50 | **0425.1** | 496 | 92,35 |



## Sample vials

Made of natural-coloured **PE**, with attached press-on lid.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1,0 | 9 | 32 | **5862.1** | 100 | 26,85 |
| 2,5 | 14 | 32 | **5863.1** | 100 | 28,65 |
| 5,0 | 15 | 50 | **5866.1** | 100 | 37,60 |
| 7,0 | 22 | 32 | **5867.1** | 100 | 41,55 |
| 8,0 | 17 | 58 | **TT12.1** | 100 | 41,95 |
| 20 | 25 | 75 | **TT13.1** | 100 | 47,30 |
| 25 | 31 | 53 | **TT14.1** | 50 | 37,65 |
| 35 | 31 | 75 | **TT15.1** | 50 | 41,95 |



## Test tubes

Made of **PP**, transparent. Autoclavable.
**Delivery without** screw caps (please order separately).

| Volume (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 40 | 30 | 85 | **PT32.1** | 500 | 46,80 |
| 60 | 30 | 126 | **PT33.1** | 300 | 38,30 |
| 120 | 44 | 115 | **PT34.1** | 250 | 41,85 |

## Screw caps for test tubes

Made of **PP**.

| For containers | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PT32.1 | **PT35.1** | 500 | 29,05 |
| PT33.1 | **PT36.1** | 300 | 20,35 |
| PT34.1 | **PT38.1** | 250 | 18,10 |



## Test tubes with tamper-evident seal

Made of **PP**. Temperature-resistant from -90 to +121 °C. Autoclavable.

- Leak-proof tamper-evident seal
- Free-standing, conical base for optimal sample recovery
- Frosted label field
- Graduated in 1 ml increments

| Volume (ml) | Dimensions, incl. lid (mm) | Vessel ∅ x H (mm) |
|---|---|---|
| 5 | 24 x 59 | 16 x 57 |
| 10 | 24 x 96 | 15 x 94 |

| Volume (ml) | Lid colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 | pink | **X327.1** | 250 | 80,65 |
| 5 | blue | **X328.1** | 250 | 80,65 |
| 5 | white | **X329.1** | 250 | 80,65 |
| 10 | pink | **X330.1** | 250 | 80,65 |
| 10 | blue | **X331.1** | 250 | 80,65 |
| 10 | white | **X332.1** | 250 | 80,65 |

# Test tubes



DURAN WHEATON KIMBLE

Material DURAN®

121 °C

## Culture tubes with screw caps

Made of DURAN®, with DIN-thread, screw caps made of PBT, gaskets PTFE-coated. Hot air sterilization to max. 180 °C. Autoclavable.

| Volume (ml) | Outside ∅ (mm) | Length (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 6 | 12 | 100 | GL 14 | **K248.1** | 50 | 158,00 |
| 9 | 13 | 100 | GL 14 | **PY94.1** | 50 | 158,00 |
| 20 | 16 | 150 | GL 18 | **PY95.1** | 50 | 158,00 |
| 20 | 16 | 160 | GL 18 | **K249.1** | 50 | 205,00 |
| 20 | 20 | 150 | GL 18 | **PY96.1** | 50 | 233,00 |
| 30 | 18 | 180 | GL 18 | **K250.1** | 50 | 223,00 |

Made of **AR®-glass**, with DIN-thread, screw caps made of PP, white rubber gasket. Heat resistant to 140 °C. Autoclavable (repeated autoclaving can lead to glas corrosion).

| Volume (ml) | Outside ∅ (mm) | Length (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 6 | 12 | 100 | GL 14 | **K251.1** | 100 | 39,65 |
| 12 | 16 | 100 | GL 18 | **K252.1** | 100 | 42,45 |
| 20 | 16 | 160 | GL 18 | **K253.1** | 100 | 52,45 |
| 30 | 18 | 180 | GL 18 | **K254.1** | 100 | 61,10 |


▶ For spare screw caps see page 44

▶ Test tubes see page 79

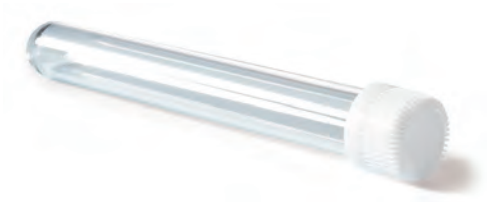



DURAN WHEATON KIMBLE

## Culture vials

By Wheaton. Made of borosilicate glass, acc. to USP type I and ASTM E 438 type I, class B. With round base, suitable for use on shakers and tilt/roller mixers. Caps made of black phenoplastic with seals made of PTFE-coated rubber.

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 11 | 16 x 100 | 15-415 | **ETK4.1** | 144 | 226,85 |
| 14 | 16 x 125 | 15-415 | **ETK5.1** | 144 | 231,15 |
| 27 | 20 x 150 | 18-415 | **ETK6.1** | 144 | 462,25 |



## Sterile culture vials with screw cap

Made of **PS**. Cap made of **HDPE**. **Sterile**. Centrifugable to 3000 x g. Coloured lid inserts for identification are optional (CK72.1ff). Volume 8 ml. Dimensions: ∅ 13 x L 100 mm. Pyrogen free. Temperature resistant in the range -80 to +80 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AEL3.1** | 1000 (8 x 125) | 246,20 |



## Sterile culture vials

- Made of transparent **PS** or translucent **PP**
- With two-position **PE** closure for anaerobic and aerobic bacteria cultures
- **Sterile**
- With or without graduations and labelling space
- Available in space-saving box or economy-priced bag

| | PS vials | PP vials |
|---|---|---|
| Temperature stability | up to +70 °C | -190 to +121 °C |
| Centrifugable up to | 1400 x g | 3000 x g |

### Made of PS

| Volume (ml) | ∅ (mm) | Height (mm) | Graduations | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 4 | 12 | 75 | yes | individual | **EA97.1** | 500 | 132,25 |
| 4 | 12 | 75 | yes | 25/box | **EA98.1** | 500 | 106,45 |
| 4 | 12 | 75 | no | Loose in bag | **AEX8.1** | 500 | 67,20 |
| 12 | 17 | 95 | yes | individual | **EA99.1** | 500 | 177,40 |
| 12 | 17 | 95 | yes | 25/box | **EC00.1** | 500 | 134,40 |
| 12 | 17 | 95 | no | Loose in bag | **AEX9.1** | 500 | 80,85 |

### Made of PP

| Volume (ml) | ∅ (mm) | Height (mm) | Graduations | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 4 | 12 | 75 | yes | individual | **EC01.1** | 500 | 132,25 |
| 4 | 12 | 75 | yes | 25/box | **EC02.1** | 500 | 106,45 |
| 4 | 12 | 75 | no | 25/bag | **AEY0.1** | 500 | 64,50 |
| 12 | 17 | 95 | yes | individual | **EC03.1** | 500 | 177,40 |
| 12 | 17 | 95 | yes | 25/box | **EC04.1** | 500 | 134,40 |
| 12 | 17 | 95 | no | 25/bag | **AEY1.1** | 500 | 98,90 |

# Test tubes



## Fluoroplastic test tubes

Made of **PFA**. Highly transparent. With or without ring mark, stopper joint made of PP or screw cap. Chemically inert to nearly all chemicals.

- Temperature resistant in the range -200 to +250 °C
- Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning
- High purity, ideal for used in trace analysis and for storage of reference solutions
- No memory effect
- Autoclavable

| Type | Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| With ring mark at 10 ml, with stopper joint made of PP | 12 | 110 | 16 | **YA25.1** | 1 | 40,10 |
| Without ring mark, without stopper joint | 12 | 110 | 16 | **YA26.1** | 1 | 30,75 |
| With ring mark at 10 ml, with screw cap GL 25 | 15 | 110 | 22 | **YA27.1** | 1 | 59,70 |
| Without ring mark, with screw cap GL 25 | 15 | 110 | 22 | **YA28.1** | 1 | 49,10 |

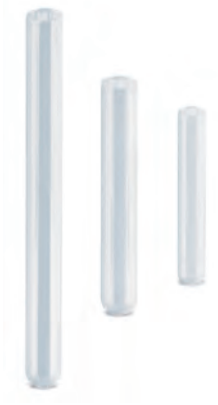


## PFA test tubes with plugs

Made of **PFA**. Highly transparent. Microwave safe. Autoclavable.

- Temperature resistant in the range -196 to +250 °C
- Inert to virtually all chemicals, including hydrofluoric and nitric acid
- High purity, low metal ion content, ideal for use in trace analysis and for the storage of highly pure substances
- No memory effect
- Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning

| Volume (ml) | Outer ∅ x H (mm) | Inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 10 x 132 | 8 | **YY79.1** | 1 | 61,50 |
| 10 | 12 x 152 | 10 | **YY80.1** | 1 | 70,45 |
| 15 | 16 x 162 | 14 | **YY81.1** | 1 | 85,50 |
| 20 | 16 x 175 | 14 | **YY82.1** | 1 | 85,50 |
| 25 | 19 x 185 | 16 | **YY83.1** | 1 | 105,35 |
| 50 | 22 x 235 | 19 | **YY84.1** | 1 | 135,45 |
| 60 | 22 x 245 | 19 | **YY85.1** | 1 | 139,75 |



## Test tubes

Made of soda-lime glass. With round bottom and straight edge.

| Volume (ml) | Wall thickness (mm) | Outer ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 4 | 0,6 | 10 x 75 | **TX18.1** | 1000 | 61,85 |
| 6 | 0,6 | 12 x 75 | **TX19.1** | 500 | 24,75 |
| 9 | 0,6 | 12 x 100 | **TX20.1** | 500 | 36,05 |
| 14 | 0,8 | 16 x 100 | **TX21.1** | 310 | 30,65 |
| 20 | 0,8 | 16 x 130 | **TX22.1** | 100 | 15,00 |
| 23 | 0,8 | 16 x 150 | **TX23.2** | 100 | 15,05 |
| 25 | 0,8 | 16 x 160 | **TX24.2** | 100 | 15,60 |
| 35 | 1,0 | 18 x 180 | **TX25.1** | 100 | 27,45 |
| 75 | 1,2 | 25 x 200 | **TX26.1** | 63 | 43,65 |



## Rotilabo®-test tubes

Made of soda-lime glass. Standard design L 160 x ∅ 16 x thickness 0.6 mm, with round base and straight rim, slightly narrowed at the top.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0486.2** | 250 | 27,20 |

## Rotilabo®-test tube clamps

Wooden. Length 180 mm. For test tubes with ∅ 12-20 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0645.1** | 12 | 9,65 |



## Rotilabo®-test tube holder with finger grip

Manufactured from nickel-plated steel. For test tubes with max. 30 mm ∅. Length 130 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X114.1** | 1 | 4,95 |

# Test tubes



121 °C

## Rotilabo®-test tubes

Made of borosilicate glass 3.3. ,Thick or thin walled.
Good thermal fatigue resistance. Autoclavable.

**Straight rim**

| Volume (ml) | Outside ∅ (mm) | Length (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 4 | 10 | 75 | 0,8-1,0 | **HA73.1** | 100 | 26,65 |
| 5 | 10 | 100 | 0,8-1,0 | **HA74.1** | 100 | 29,15 |
| 6 | 12 | 75 | 0,8-1,0 | **HA75.1** | 100 | 27,70 |
| 8 | 12 | 100 | 0,8-1,0 | **HA76.1** | 100 | 29,60 |
| 16 | 14 | 130 | 1,0-1,2 | **HA77.1** | 100 | 38,70 |
| 17 | 16 | 130 | 1,0-1,2 | **HA78.1** | 100 | 44,10 |
| 21 | 16 | 160 | 1,0-1,2 | **HA79.1** | 100 | 48,40 |
| 32 | 18 | 180 | 1,0-1,2 | **HA80.1** | 100 | 62,35 |
| 34 | 20 | 150 | 1,0-1,2 | **HA81.1** | 100 | 57,00 |
| 40 | 20 | 180 | 1,0-1,2 | **HA82.1** | 100 | 57,20 |
| 55 | 25 | 150 | 1,0-1,2 | **HA83.1** | 50 | 32,20 |
| 70 | 25 | 200 | 1,0-1,2 | **HA84.1** | 50 | 43,90 |
| 100 | 30 | 200 | 1,0-1,4 | **HA85.1** | 50 | 49,70 |

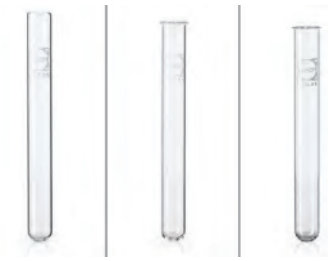
**Beaded rim**

| Volume (ml) | Outside ∅ (mm) | Length (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 4 | 10 | 75 | 0,8-1,0 | **HA87.1** | 100 | 27,55 |
| 5 | 10 | 100 | 0,8-1,0 | **HA88.1** | 100 | 29,05 |
| 8 | 12 | 100 | 0,8-1,0 | **HA90.1** | 100 | 28,40 |
| 16 | 14 | 130 | 0,8-1,0 | **HA91.1** | 100 | 36,15 |
| 17 | 16 | 130 | 1,0-1,2 | **HA92.1** | 100 | 39,05 |
| 21 | 16 | 160 | 1,0-1,2 | **HA93.1** | 100 | 42,15 |
| 32 | 18 | 180 | 1,0-1,2 | **HA94.1** | 100 | 49,05 |
| 34 | 20 | 150 | 1,0-1,2 | **HA95.1** | 100 | 51,60 |
| 40 | 20 | 180 | 1,0-1,2 | **HA96.1** | 100 | 57,60 |
| 55 | 25 | 150 | 1,0-1,2 | **HA97.1** | 50 | 32,20 |
| 70 | 25 | 200 | 1,0-1,2 | **HA98.1** | 50 | 42,90 |
| 100 | 30 | 200 | 1,0-1,4 | **HA99.1** | 50 | 50,80 |

**Made of borosilicate glass 5.1.** Thin-walled.
Good thermal fatigue resistance. Autoclavable.

**Beaded rim**

| Volume (ml) | Outside ∅ (mm) | Length (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | 8 | 70 | 0,4-0,5 | **HC00.1** | 100 | 21,40 |
| 4 | 10 | 75 | 0,4-0,5 | **HC01.1** | 100 | 20,75 |
| 6 | 10 | 100 | 0,4-0,5 | **HC02.1** | 100 | 21,40 |
| 6,5 | 12 | 75 | 0,4-0,5 | **HC03.1** | 100 | 21,40 |
| 9 | 12 | 100 | 0,4-0,5 | **HC04.1** | 100 | 21,40 |
| 16 | 14 | 130 | 0,4-0,5 | **HC05.1** | 100 | 26,55 |
| 20 | 16 | 130 | 0,5-0,6 | **HC06.1** | 100 | 26,35 |
| 25 | 16 | 160 | 0,5-0,6 | **HC07.1** | 100 | 24,20 |
| 35 | 18 | 180 | 0,5-0,6 | **HC08.1** | 100 | 30,00 |
| 45 | 20 | 180 | 0,5-0,6 | **HC10.1** | 100 | 34,35 |
| 60 | 25 | 150 | 0,6-0,7 | **HC11.1** | 50 | 22,15 |
| 80 | 25 | 200 | 0,6-0,7 | **HC12.1** | 50 | 27,15 |
| 110 | 30 | 200 | 0,7-0,8 | **HC13.1** | 50 | 53,70 |



DURAN WHEATON KIMBLE
Material DURAN®
121 °C

## DURAN®-test tubes

Made of DURAN®. Thick-walled and therefore mechanically stable.
Excellent thermal shock resistance. Autoclavable.

**Straight rim**

| Volume (ml) | Outside ∅ (mm) | Length (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | 8 | 70 | 0,8-1,0 | **C182.1** | 100 | 34,00 |
| 4 | 10 | 75 | 0,8-1,0 | **C183.1** | 100 | 36,75 |
| 5 | 10 | 100 | 0,8-1,0 | **C184.1** | 100 | 38,40 |
| 6 | 12 | 75 | 0,8-1,0 | **C185.1** | 100 | 40,10 |
| 8 | 12 | 100 | 0,8-1,0 | **C186.1** | 100 | 42,95 |
| 9 | 13 | 100 | 0,8-1,0 | **PY93.1** | 100 | 50,15 |
| 16 | 14 | 130 | 0,8-1,0 | **C187.1** | 100 | 55,30 |
| 17 | 16 | 130 | 1,0-1,2 | **C188.1** | 100 | 65,00 |
| 21 | 16 | 160 | 1,0-1,2 | **C189.1** | 100 | 65,95 |
| 32 | 18 | 180 | 1,0-1,2 | **C190.1** | 100 | 78,25 |
| 34 | 20 | 150 | 1,0-1,2 | **C191.1** | 100 | 79,50 |
| 40 | 20 | 180 | 1,0-1,2 | **C192.1** | 100 | 88,50 |
| 55 | 25 | 150 | 1,0-1,2 | **C193.1** | 50 | 60,00 |
| 70 | 25 | 200 | 1,0-1,2 | **C194.1** | 50 | 62,95 |
| 100 | 30 | 200 | 1,0-1,4 | **C195.1** | 50 | 99,00 |

**Beaded rim**

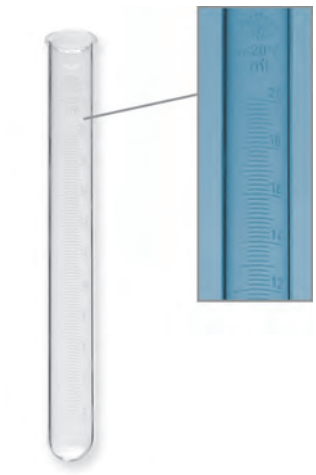
| Volume (ml) | Outside ∅ (mm) | Length (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | 8 | 70 | 0,8-1,0 | **C196.1** | 100 | 34,00 |
| 4 | 10 | 75 | 0,8-1,0 | **C197.1** | 100 | 36,75 |
| 5 | 10 | 100 | 0,8-1,0 | **C198.1** | 100 | 38,40 |
| 6 | 12 | 75 | 0,8-1,0 | **C199.1** | 100 | 40,00 |
| 8 | 12 | 100 | 0,8-1,0 | **C205.1** | 100 | 42,95 |
| 9 | 13 | 100 | 0,8-1,0 | **PY92.1** | 100 | 50,15 |
| 16 | 14 | 130 | 0,8-1,0 | **C206.1** | 100 | 55,30 |
| 17 | 16 | 130 | 1,0-1,2 | **C207.1** | 100 | 65,00 |
| 21 | 16 | 160 | 1,0-1,2 | **C208.1** | 100 | 65,95 |
| 32 | 18 | 180 | 1,0-1,2 | **C209.1** | 100 | 75,95 |
| 34 | 20 | 150 | 1,0-1,2 | **C210.1** | 100 | 79,50 |
| 40 | 20 | 180 | 1,0-1,2 | **C211.1** | 100 | 88,55 |
| 55 | 25 | 150 | 1,0-1,2 | **C212.1** | 50 | 60,00 |
| 70 | 25 | 200 | 1,0-1,2 | **C213.1** | 50 | 62,85 |
| 100 | 30 | 200 | 1,0-1,4 | **C214.1** | 50 | 99,00 |

## FIOLAX®-test tubes

Made of borosilicate glass 4.9, with beaded rim. Thin-walled, suited to rapidchanges of temperature and localized heating.

| Volume (ml) | Outside ∅ (mm) | Length (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | 8 | 70 | 0,4-0,5 | **K223.1** | 100 | 18,25 |
| 4 | 10 | 75 | 0,4-0,5 | **K224.1** | 100 | 18,85 |
| 6 | 10 | 100 | 0,4-0,5 | **K225.1** | 100 | 18,85 |
| 6,5 | 12 | 75 | 0,4-0,5 | **K226.1** | 100 | 19,80 |
| 9 | 12 | 100 | 0,4-0,5 | **K227.1** | 100 | 20,85 |
| 16 | 14 | 130 | 0,4-0,5 | **K228.1** | 100 | 25,80 |
| 20 | 16 | 130 | 0,5-0,6 | **K229.1** | 100 | 30,00 |
| 25 | 16 | 160 | 0,5-0,6 | **K230.1** | 100 | 30,80 |
| 35 | 18 | 180 | 0,5-0,6 | **K231.1** | 100 | 35,70 |
| 39 | 20 | 150 | 0,5-0,6 | **K232.1** | 100 | 40,70 |
| 45 | 20 | 180 | 0,5-0,6 | **K233.1** | 100 | 41,00 |
| 60 | 25 | 150 | 0,6-0,7 | **K234.1** | 50 | 30,50 |
| 80 | 25 | 200 | 0,6-0,7 | **K235.1** | 50 | 34,70 |
| 110 | 30 | 200 | 0,7-0,8 | **K236.1** | 50 | 67,90 |

# Test tubes



## Rotilabo®-test tubes

Made of type 3.3 borosilicate glass, with heavy duty rim, graduated. Autoclavable.

| Volume (ml) | Graduations (ml) | ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 0,1 | 13 | 150 | **NY70.1** | 50 | 160,20 |
| 15 | 0,1 | 15 | 160 | **NY71.1** | 50 | 165,55 |
| 20 | 0.2 | 17 | 160 | **NY72.1** | 50 | 173,10 |
| 25 | 0.2 | 17 | 190 | **NY73.1** | 50 | 177,40 |
| 50 | 0.5 | 22 | 250 | **NY74.1** | 50 | 199,95 |



## Test tubes with standard ground joint

By Brand. Made of borosilicate glass 3.3. With NS socket and PP stopper. Wall thickness 1.2 mm, white graduations.

| Volume (ml) | Graduations (ml) | Ground glass joint | ∅ x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 0,1 | 12/21 | 15 x 165 | **Y752.1** | 1 | 10,30 |
| 20 | 0,2 | 14/23 | 17 x 200 | **Y753.1** | 1 | 12,40 |
| 25 | 0,2 | 14/23 | 17 x 220 | **Y754.1** | 1 | 14,30 |
| 30 | 0,5 | 14/23 | 19 x 220 | **Y755.1** | 1 | 15,60 |


- For autoclaving information see page 5
- Accessories for test tubes see page 44




## Test tubes including stoppers with standard ground joint

Made of borosilicate glass 3.3, with ground glass socket, ground glass stopper and white labelling space. Autoclavable.

| Volume (ml) | Standard ground glass joint | ∅ x L (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 12/21 | 16 x 150 | 1,8 | **NY90.1** | 1 | 15,60 |
| 20 | 14/23 | 18 x 180 | 1,8 | **NY91.1** | 1 | 15,60 |
| 30 | 19/26 | 22 x 150 | 1,8 | **NY92.1** | 1 | 15,60 |
| 50 | 19/26 | 22 x 200 | 1,8 | **NY93.1** | 1 | 15,60 |
| 100 | 29/32 | 34 x 200 | 2,0 | **NY94.1** | 1 | 18,85 |



## Rotilabo®-test tubes

Made of **PS**. Thickness about 1 mm, with rounded base.

*conical

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 11,5 | 55 | **K940.1** | 1000 | 22,05 |
| 2 | 11 | 70 | **K939.1** | 1000 | 24,20 |
| 4 | 12 | 75 | **K937.1** | 1000 | 29,60 |
| 10 | 16 | 100 | **K936.3** | 100 | 5,60 |
| 10 | 16 | 100 | **K936.2** | 500 | 24,75 |
| 10* | 16 | 105 | **K935.1** | 1000 | 52,70 |
| 15 | 16 | 150 | **K938.1** | 1000 | 104,30 |



## Disposable test tubes with edge

Made of **PS** or **PP**. Capacity 10 ml, ∅ 16 x H 100 mm.

| Type | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Cylindrical | PP | **TT73.1** | 2000 | 103,50 |
| Conical | PS | **TT74.1** | 2000 | 127,95 |



## Rubber stoppers with turn-up lip

For tight sealing of glass, plastic and metals containers with or without a flanged rim or NS.
Tight fit prevents unintentional opening. The rubber stoppers can be pierced for removal of sample and remain watertight even after being perforated several times.
Temperature stable from -20 to +100 °C.

| Model | Bottom ∅ (mm) | Top inside ∅ (mm) | for ground glass joints | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 7,1 | 4,5 | 7,5 | 5 | **EC92.1** | 100 | 41,85 |
| 10,2 | 9,8 | 10,7 | 10 | **EC93.1** | 50 | 24,75 |
| 12,7 | 12,3 | 13,3 | 12 | **EC94.1** | 50 | 36,05 |
| 14,9 | 14,2 | 15,5 | 14 | **EC95.1** | 20 | 19,35 |
| 15,9 | 14,5 | 16,5 | 14 | **EC96.1** | 20 | 52,60 |
| 19,4 | 15,8 | 17,8 | 19 | **EC97.1** | 20 | 24,85 |
| 23,7 | 21,2 | 24,4 | 24 | **EC98.1** | 10 | 34,60 |
| 30,7 | 28,0 | 31,4 | 29 | **EC99.1** | 5 | 22,60 |



## Silicone stoppers with turn-up lip

Ideal for impervious closure of glass, plastic or metal vessels, with or without flanged rim or NS.
Tight fit prevents unintentional opening. The silicone stoppers can be pierced for removal of sample yet remain watertight even after being perforated several times.
Temperature stable from -60 to +220 °C. Autoclavable.

| Model | Bottom ∅ (mm) | Top inside ∅ (mm) | for ground glass joints | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 7,1 | 4,5 | 7,5 | 5 | **EE00.1** | 100 | 42,50 |
| 10,2 | 9,8 | 10,7 | 10 | **EE01.1** | 50 | 24,30 |
| 12,7 | 12,3 | 13,3 | 12 | **EE02.1** | 50 | 40,85 |
| 14,9 | 14,2 | 15,5 | 14 | **EE03.1** | 20 | 21,45 |
| 15,9 | 14,5 | 16,5 | 14 | **EE04.1** | 20 | 22,60 |
| 19,4 | 15,8 | 17,8 | 19 | **EE05.1** | 20 | 32,10 |
| 23,7 | 21,2 | 24,4 | 24 | **EE06.1** | 10 | 28,50 |
| 30,7 | 28,0 | 31,4 | 29 | **EE07.1** | 5 | 21,30 |



## Rotilabo®-cork plugs

Made of natural cork. Pointed, conical shape.
Lightweight and robust, easy to drill through.

| Bottom ∅ (mm) | Top ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 3 | 6 | 16 | **PL40.1** | 25 | 6,40 |
| 5 | 8 | 16 | **PL41.1** | 25 | 6,40 |
| 6 | 9 | 17 | **PL42.1** | 25 | 5,35 |
| 9 | 12 | 20 | **PL43.1** | 25 | 4,85 |
| 10 | 13 | 22 | **PL44.1** | 25 | 4,85 |
| 12 | 15 | 22 | **PL45.1** | 25 | 5,35 |
| 13 | 16 | 22 | **PP70.1** | 25 | 5,35 |
| 14 | 17 | 22 | **PL46.1** | 25 | 5,60 |
| 16 | 19 | 23 | **PL47.1** | 25 | 6,05 |
| 17 | 20 | 26 | **PL48.1** | 25 | 7,10 |
| 18 | 22 | 26 | **PL49.1** | 25 | 8,20 |
| 20 | 24 | 27 | **PL50.1** | 10 | 5,95 |
| 22 | 26 | 27 | **PL51.1** | 10 | 6,45 |
| 24 | 28 | 27 | **PL52.1** | 10 | 7,00 |
| 26 | 30 | 27 | **PL53.1** | 10 | 8,55 |
| 28 | 32 | 27 | **PL54.1** | 10 | 9,15 |
| 32 | 36 | 27 | **PL55.1** | 10 | 11,30 |



## Rotilabo®-stoppers made of natural rubber

Colour red. Elastic. Acc. to DIN 12871. Hardness 40 Shore A.
Temperature stable from -35 to +70 °C. Silicone-free. Autoclavable.

| Bottom ∅ (mm) | Top ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 3,5 | 6,5 | 15 | **TL09.1** | 100 | 12,90 |
| 5 | 9 | 20 | **TL10.1** | 100 | 16,00 |
| 8 | 12 | 20 | **TL11.1** | 100 | 21,00 |
| 10,5 | 14,5 | 20 | **TL12.1** | 25 | 7,55 |
| 12,5 | 16,5 | 20 | **TL13.1** | 25 | 8,55 |
| 14 | 18 | 20 | **TL14.1** | 25 | 8,95 |
| 17 | 22 | 25 | **TL15.1** | 25 | 14,25 |
| 18 | 24 | 30 | **TL16.1** | 25 | 16,60 |
| 21 | 27 | 30 | **TL17.1** | 25 | 21,45 |
| 23 | 29 | 30 | **TL18.1** | 25 | 26,80 |
| 26 | 32 | 30 | **TL19.1** | 25 | 32,05 |
| 29 | 35 | 30 | **TL20.1** | 25 | 35,35 |
| 31 | 38 | 35 | **TL21.1** | 25 | 47,55 |
| 36 | 44 | 40 | **TL22.1** | 25 | 56,55 |
| 41 | 49 | 40 | **TL23.1** | 25 | 74,65 |
| 47 | 55 | 40 | **TL24.1** | 5 | 22,70 |
| 50,5 | 59,5 | 45 | **TL25.1** | 5 | 28,40 |
| 56 | 65 | 45 | **TL26.1** | 5 | 33,80 |
| 60 | 70 | 50 | **TL27.1** | 5 | 41,70 |
| 64,5 | 75,5 | 55 | **TL28.1** | 5 | 46,45 |
| 71 | 83 | 60 | **TL29.1** | 1 | 13,45 |
| 79 | 92 | 65 | **TL30.1** | 1 | 18,65 |
| 87 | 100 | 65 | **TL31.1** | 1 | 21,50 |
| 94 | 107 | 65 | **TL32.1** | 1 | 23,40 |

# Stoppers



## Rotilabo®-stoppers made of natural rubber

Elastic. Temperature stable from -35 to +70 °C (+120 °C for humid heat). Shore-hardness approx. 40. Acc. to DIN 12871. Silicone-free. Autoclavable.

| Bottom ∅ (mm) | Top ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 3,5 | 6,5 | 15 | **C367.2** | 100 | 10,00 |
| 5 | 9 | 20 | **C368.2** | 100 | 12,55 |
| 8 | 12 | 20 | **C377.2** | 100 | 15,55 |
| 10,5 | 14,5 | 20 | **C378.2** | 25 | 5,30 |
| 14 | 18 | 20 | **0395.2** | 25 | 7,00 |
| 17 | 22 | 25 | **C379.2** | 25 | 11,50 |
| 18 | 24 | 30 | **C380.2** | 25 | 13,50 |
| 21 | 27 | 30 | **C381.2** | 25 | 17,65 |
| 26 | 32 | 30 | **C382.2** | 25 | 27,10 |
| 29 | 35 | 30 | **C383.2** | 25 | 32,85 |
| 31 | 38 | 35 | **C384.1** | 25 | 38,20 |
| 36 | 44 | 40 | **C385.1** | 25 | 48,90 |
| 41 | 49 | 40 | **C386.1** | 25 | 57,20 |
| 47 | 55 | 40 | **EK04.1** | 5 | 18,10 |
| 56 | 65 | 45 | **Y843.1** | 1 | 6,85 |
| 64,5 | 75,5 | 55 | **Y844.1** | 1 | 9,45 |
| 71 | 83 | 60 | **TK97.1** | 1 | 9,90 |
| 79 | 92 | 65 | **TK98.1** | 1 | 14,00 |
| 87 | 100 | 65 | **TK99.1** | 1 | 16,10 |
| 94 | 107 | 65 | **TL00.1** | 1 | 18,25 |



## Rotilabo®-stoppers made of silicone rubber

Acc. to DIN 12871. Shore-hardness approx. 50 A. Biologically inert. Resistant to ageing, ozone and repeated sterilization. Temperature stable from -60 to +180 °C (to +250 °C for short periods). Autoclavable.

| Bottom ∅ (mm) | Top ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 3,5 | 6,5 | 15 | **C388.1** | 250 | 41,15 |
| 5 | 9 | 20 | **C389.1** | 250 | 45,35 |
| 8 | 12 | 20 | **C390.1** | 100 | 24,20 |
| 10,5 | 14,5 | 20 | **C391.1** | 100 | 28,35 |
| 14 | 18 | 20 | **0396.1** | 50 | 21,45 |
| 17 | 22 | 25 | **C392.1** | 50 | 37,20 |
| 18 | 24 | 30 | **C393.1** | 50 | 47,15 |
| 21 | 27 | 30 | **C394.1** | 25 | 30,85 |
| 26 | 32 | 30 | **C395.1** | 25 | 46,60 |
| 29 | 35 | 30 | **C396.1** | 5 | 14,95 |
| 31 | 38 | 35 | **C397.1** | 5 | 19,25 |
| 36 | 44 | 40 | **C398.1** | 5 | 25,50 |
| 41 | 49 | 40 | **TL33.1** | 5 | 29,00 |
| 47 | 55 | 40 | **TL34.1** | 5 | 36,25 |
| 50,5 | 59,5 | 45 | **TL35.1** | 1 | 10,55 |
| 56 | 65 | 45 | **TL36.1** | 1 | 13,85 |
| 60 | 70 | 50 | **TL37.1** | 1 | 18,80 |
| 64,5 | 75,5 | 55 | **TL38.1** | 1 | 22,35 |
| 71 | 83 | 60 | **TL39.1** | 1 | 26,70 |
| 79 | 92 | 65 | **TL40.1** | 1 | 34,90 |
| 87 | 100 | 65 | **TL41.1** | 1 | 47,45 |
| 94 | 107 | 65 | **TL42.1** | 1 | 62,25 |



## Rotilabo®-stoppers with hole

Made of elastic natural rubber. With hole. Hardness 40 Shore A. Silicone-free. Temperature stable from -35 to +70 °C. Autoclavable.

| Bottom ∅ (mm) | Top ∅ (mm) | Height (mm) | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10,5 | 14,5 | 20 | 3 | **Y846.1** | 25 | 5,85 |
| 12,5 | 16,5 | 20 | 3 | **Y847.1** | 25 | 6,95 |
| 14 | 18 | 20 | 3 | **Y848.1** | 25 | 7,90 |
| 17 | 22 | 25 | 4 | **Y849.1** | 25 | 12,60 |
| 18 | 24 | 30 | 4 | **Y850.1** | 25 | 13,45 |
| 21 | 27 | 30 | 5 | **Y851.1** | 10 | 8,90 |
| 23 | 29 | 30 | 5 | **Y852.1** | 10 | 11,70 |
| 26 | 32 | 30 | 6 | **Y853.1** | 10 | 12,90 |
| 29 | 35 | 30 | 6 | **Y854.1** | 10 | 14,95 |
| 31 | 38 | 35 | 7 | **Y855.1** | 10 | 19,25 |

## Rotilabo®-stoppers with holes

Made of elastic natural rubber, with two holes, colour grey. Acc. to DIN 12871. Hardness: 40 Shore A. Silicone-free. Temperature stable from -35 to +70 °C. Autoclavable.

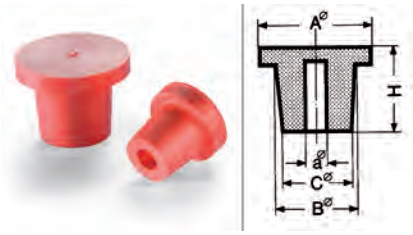
| Bottom ∅ (mm) | Top ∅ (mm) | Height (mm) | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 14 | 18 | 20 | 3 | **TL01.1** | 25 | 7,55 |
| 17 | 22 | 25 | 4 | **TL02.1** | 25 | 11,30 |
| 18 | 24 | 30 | 4 | **TL03.1** | 25 | 12,90 |
| 21 | 27 | 30 | 5 | **TL04.1** | 10 | 8,05 |
| 23 | 29 | 30 | 5 | **TL05.1** | 10 | 10,05 |
| 26 | 32 | 30 | 6 | **TL06.1** | 10 | 11,85 |
| 29 | 35 | 30 | 6 | **TL07.1** | 10 | 13,55 |
| 31 | 38 | 35 | 7 | **TL08.1** | 10 | 16,45 |



## Rotilabo®-stoppers made of silicone rubber

With hole. Transparent. Acc. to DIN 12871. Hardness 50 Shore A. Biologically inert. Resistant to ageing, ozone and repeated sterilisation. Temperature stable from -60 to +180 °C (+250 °C for a short time). Autoclavable.

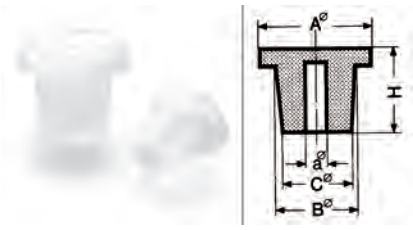
| Bottom ∅ (mm) | Top ∅ (mm) | Height (mm) | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10,5 | 14,5 | 20 | 3 | **TL49.1** | 25 | 7,90 |
| 12,5 | 16,5 | 20 | 3 | **TL50.1** | 25 | 9,15 |
| 14 | 18 | 20 | 3 | **TL51.1** | 25 | 11,40 |
| 17 | 22 | 25 | 4 | **TL52.1** | 25 | 16,65 |
| 18 | 24 | 30 | 4 | **TL53.1** | 25 | 21,05 |
| 21 | 27 | 30 | 5 | **TL54.1** | 10 | 12,10 |
| 23 | 29 | 30 | 5 | **TL55.1** | 10 | 16,05 |
| 26 | 32 | 30 | 6 | **TL56.1** | 10 | 18,65 |
| 29 | 35 | 30 | 6 | **TL57.1** | 10 | 23,15 |
| 31 | 38 | 35 | 7 | **TL58.1** | 10 | 28,85 |




## Rotilabo®-hollow stoppers made of natural rubber

Colour red. Elastic. Acc. to DIN 12871. Hardness Shore A.
Temperature stable from -35 to +70 °C. Autoclavable.

| A-Ø (mm) | B-Ø (mm) | C-Ø (mm) | a-Ø (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 19 | 14 | 12 | 6 | 18 | **TL43.1** | 10 | 6,95 |
| 21 | 16 | 14 | 8 | 19 | **TL44.1** | 10 | 7,45 |
| 27 | 19 | 17 | 10 | 20 | **TL45.1** | 10 | 7,75 |




## Rotilabo®-hollow stoppers made of silicone rubber

Acc. to DIN 12871. Hardness 50 Shore A. Biologically inert.
Resistant to ageing, ozone and repeated sterilisation. Temperature stable from -60 to +180 °C (+250 °C for a short time). Autoclavable.

| A-Ø (mm) | B-Ø (mm) | C-Ø (mm) | a-Ø (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 19 | 14 | 12 | 6 | 18 | **TL46.1** | 10 | 11,35 |
| 21 | 16 | 14 | 8 | 19 | **TL47.1** | 10 | 12,20 |
| 27 | 19 | 17 | 10 | 20 | **TL48.1** | 10 | 13,20 |



## Rotilabo®-lamella grip stoppers

Made of **LDPE**. Temperature stable from -50 to +80 °C.

**For tubes with inner-Ø 9-11 mm (outer-Ø 12 mm)**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| natural | **E023.1** | 1000 | 13,20 |
| yellow | **E024.1** | 1000 | 12,85 |
| red | **E025.1** | 1000 | 12,85 |
| green | **E026.1** | 1000 | 12,85 |
| blue | **E027.1** | 1000 | 12,85 |

**For tubes with inner-Ø 13-14 mm (outer-Ø 16 mm)**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| natural | **E028.1** | 1000 | 16,10 |
| yellow | **E029.1** | 1000 | 16,10 |
| red | **E030.1** | 1000 | 16,10 |
| green | **E031.1** | 1000 | 16,10 |
| blue | **E032.1** | 1000 | 16,10 |



## Thick-walled centrifuge glasses

Made of soda-lime glass or 3.3 borosilicate glass.
With straight rim, ungraduated.

**Made of calcium soda glass. Pointed conical bottom, angle 30°.**

| Volume (ml) | Ø max. x H (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 17 x 98 | 1.2 | **CKA2.1** | 100 | 40,65 |

**Made of 3.3 borosilicate glass, autoclavable. With conical bottom.**

| Volume (ml) | Ø max. x H (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 16 x 100 | 1.2 | **CKA3.1** | 100 | 81,60 |
| 50 | 34 x 100 | 2.8 | **CKA4.1** | 10 | 96,25 |



## 15 ml centrifuge glasses

Made of soda-lime glass or 3.3 borosilicate glass. Long conical.
With or without graduations (white, 0.1 ml resolution).
Wall thickness 1 mm.

**Made of calcium soda glass. With straight rim.**

| Ø x H (mm) | Graduations | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 17 x 113 | - | **CHY6.1** | 100 | 37,60 |
| 17 x 113 | 1-15 | **CHY7.1** | 100 | 143,00 |

**Made of calcium soda glass. With heavy duty rim.**

| Ø x H (mm) | Graduations | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 17 x 113 | - | **CHY8.1** | 100 | 37,55 |
| 17 x 113 | 1-10 | **CHY9.1** | 100 | 143,00 |
| 17 x 113 | 1-15 | **CKA0.1** | 100 | 143,00 |

**Made of 3.3 borosilicate glass, autoclavable. With heavy duty rim.**

| Ø x H (mm) | Graduations | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 17 x 113 | - | **CKA1.1** | 100 | 145,15 |

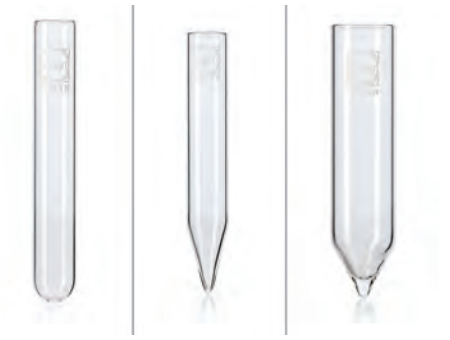


## Centrifuge glasses with screw caps

Made of calcium soda glass. With DIN 14 thread and PP screw cap.
Centrifugable up to max. 3000 x g. Autoclavable.

| Type | Volume (ml) | Ø x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Conical | 15 | 17 x 112 | **CLC6.1** | 100 | 73,10 |
| Round bottom | 15 | 17 x 98 | **CLC7.1** | 100 | 60,00 |

# Centrifuge tubes



DURAN WHEATON KIMBLE
Material DURAN®
121 °C

## Centrifuge glasses with round bottom

Made of DURAN®. Acc. to DIN 58970 (part 2) and approved for max. speed RZB = 4000 and filled up to capacity with contents having a max. density of 1.2 g/ml. Autoclavable.

*Not acc. to DIN.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 6 | 12 | 100 | **C101.1** | 50 | 164,00 |
| 12 | 16 | 100 | **C102.1** | 50 | 166,00 |
| 25 | 24 | 100 | **C103.1** | 10 | 49,10 |
| 50 | 34 | 100 | **C104.1** | 10 | 89,45 |
| 80 | 40* | 115 | **C105.1** | 10 | 115,00 |
| 80 | 44 | 100 | **C106.1** | 10 | 115,00 |
| 250 | 56* | 147 | **C107.1** | 10 | 199,00 |

## Centrifuge glasses with conical bottom

Made of DURAN®. Height 100 mm. Autoclavable.

| Volume (ml) | Angle | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 30° | 16 | **K211.1** | 50 | 178,00 |
| 25 | 60° | 24 | **K212.1** | 10 | 63,30 |
| 50 | 60° | 34 | **K222.1** | 10 | 101,00 |



121 °C

## Centrifuge tubes, conidal

By Nalgene®. With tapered base and engraved graduations.
For low speed centrifugation up to 6000 x g, bottles must be filled to at least 80 % of total capacity. Autoclavable.

**Model 3103,** made of **PPCO**. Transparent.

| Volume (ml) | Outer ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 15 | 17 x 119 | **ATL8.1** | 10 | 35,70 |
| 50 | 28,5 x 133 | **ATL9.1** | 10 | 47,70 |

**Model 3105,** made of **PC**. Transparent.

| Volume (ml) | Outer ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 15 | 17 x 120 | **ATN0.1** | 10 | 39,45 |
| 50 | 28,5 x 135 | **ATN1.1** | 10 | 52,55 |

## Stopper

By Nalgene®. Made of **PP**, for centrifuge tube models 3103 and 3105. Autoclavable.

| for tubes with outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 17 | **ATN2.1** | 20 | 30,30 |
| 28,5/29 | **APP8.1** | 20 | 40,10 |



121 °C

## Rotilabo®-centrifuge tubes

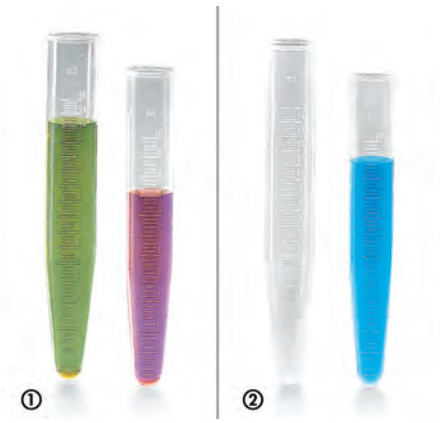
Made of **PP**. Transparent. Can be centrifuged up to 3500 x g. Autoclavable.

**With rounded base**

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 7 | 12 | 100 | **K941.1** | 100 | 42,60 |
| 16 | 17 | 100 | **K943.1** | 100 | 22,70 |
| 30 | 24 | 95 | **K944.1** | 25 | 33,15 |
| 50 | 30 | 100 | **K945.1** | 25 | 39,40 |
| 70 | 35 | 100 | **K946.1** | 20 | 41,90 |
| 110 | 40 | 120 | **K947.1** | 25 | 47,75 |

**With pointed base**

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 13 | 16 | 108 | **K948.1** | 100 | 19,90 |
| 16 | 17 | 120 | **K949.1** | 100 | 22,60 |




121 °C

## Centrifuge tubes, PMP or PP

Made of **PMP (TPX®)** or **PP**.
Conical, with graduation. Can be centrifuged up to 3000 x g. Autoclavable.

① Made of transparent **PMP (TPX®)**. Temperature stable up to +150 °C.

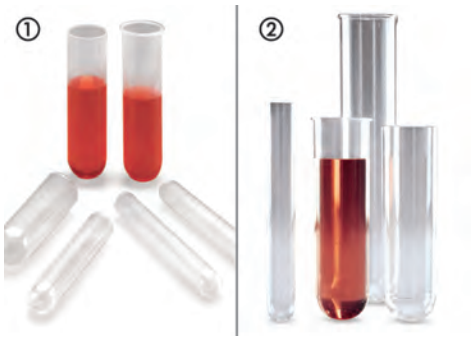
| Volume (ml) | ∅ (mm) | Graduations (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 16 | 0.2 (to 1 ml 0.1) | 107 | **TT17.1** | 50 | 38,20 |
| 15 | 18 | 0.2 | 118 | **TT18.1** | 50 | 41,90 |

② Made of **PP**. Temperature stable up to +120 °C.

| Volume (ml) | ∅ (mm) | Graduations (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 16 | 0.2 (to 1 ml 0.1) | 107 | **TT19.1** | 100 | 36,05 |
| 15 | 18 | 0.2 | 118 | **TT20.1** | 100 | 52,15 |

▶ Centrifuges for laboratorium see page 1087

# Centrifuge tubes




## Centrifuge tubes

By Nalgene®. With round bottom. Centrifugable to 50 000 x g when at least 80 % full. Autoclavable.

① **Model 3110, made of PPCO. Transparent.**

| Volume (ml) | Outer ∅ x H (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 16 x 103 | without rim | **APN1.1** | 10 | 28,50 |
| 15 | 16 x 114 | without rim | **APN2.1** | 10 | 29,75 |
| 16 | 18 x 99 | without rim | **APN3.1** | 10 | 30,75 |
| 38 | 25 x 89 | without rim | **APN4.1** | 10 | 32,50 |
| 50 | 29 x 103 | without rim | **APN5.1** | 10 | 34,40 |
| 50 | 28,5 x 104 | with rim | **APN6.1** | 10 | 43,00 |
| 100 | 32 x 164 | with rim | **APN7.1** | 10 | 71,80 |

② **Model 3117, made of PC. Transparent.**

| Volume (ml) | Outer ∅ x H (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 16 x 104 | without rim | **APN8.1** | 10 | 32,45 |
| 15 | 16 x 114 | without rim | **APN9.1** | 10 | 34,95 |
| 16 | 18 x 101 | without rim | **APP0.1** | 10 | 35,70 |
| 38 | 26 x 89 | without rim | **APP1.1** | 10 | 38,30 |
| 50 | 29 x 104 | without rim | **APP2.1** | 10 | 39,25 |
| 50 | 28,5 x 106 | with rim | **APP3.1** | 10 | 42,65 |
| 100 | 32 x 165 | with rim | **APP4.1** | 10 | 84,70 |




## ③ Stopper

By Nalgene®. Made of **PP**, for centrifuge tube models 3110 and 3117. Autoclavable. Note: Only leak-tight to a limited degree during high speed centrifugation.

| for tubes with outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 16 | **APP5.1** | 20 | 30,95 |
| 18 | **APP6.1** | 20 | 37,90 |
| 25/26 | **APP7.1** | 20 | 39,15 |
| 28,5/29 | **APP8.1** | 20 | 40,10 |
| 32 | **APP9.1** | 20 | 43,00 |

**To calculate the number of revolutions:** RCF = 1.118 · $10^{-5}$ x $rpm^2$ · r



## 15 ml centrifuge tubes

Made of **PS** or **PP**. Conical, with 0.25, 0.5, 1.0, 2.5, 5, 10, 12 and 15 ml graduations. Metal-free (< 100 ppm Sb, As, Ba, Cd, Cr, Pb).
Volume 15 ml.
**Delivery without** plug.

**Made of optical clear PS.** Centrifugable to 1200 x g.
Temperature stable from 0 to 90 °C.

| ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 17 x 120 | **AYX6.1** | 1000 | 97,00 |

**Made of transparent PP.** Centrifugable to 3000 x g. Autoclavable.

| ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 17 x 120 | **AYX7.1** | 1000 | 97,00 |

## Plugs for 15 ml centrifuge tubes

Made of **PE**. Temperature stable from 0 to 80 °C.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **AYX8.1** | 1000 | 47,85 |
| green | **AYX9.1** | 1000 | 47,85 |
| colourless | **AYY0.1** | 1000 | 47,85 |
| red | **AYY1.1** | 1000 | 47,85 |
| white | **AYY2.1** | 1000 | 47,85 |
| yellow | **AYY3.1** | 1000 | 47,85 |



## Rotilabo®-centrifuge tubes, PTFE

Made of **PTFE**. Centrifugable up to 20 000 x g. Autoclavable, inert.
**Delivery incl.** screw cap.

**Round bottom**

| Vol. (ml) | Outer ∅ x H (mm) | ∅ screw cap outside (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 8 | 100 x 12 | 22 | 1.0 | **LT74.1** | 1 | 18,10 |
| 17 | 100 x 18 | 24 | 1.5 | **LT75.1** | 1 | 21,10 |
| 50 | 140 x 25 | 31 | 2.0 | **LT76.1** | 1 | 32,50 |

**Conical bottom**

| Vol. (ml) | Outer ∅ x H (mm) | ∅ screw cap outside (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 13 | 100 x 16 | 22 | 1.5 | **LT77.1** | 1 | 19,70 |
| 18 | 120 x 18 | 24 | 1.5 | **LT78.1** | 1 | 23,35 |
| 45 | 150 x 25 | 31 | 2.0 | **LT79.1** | 1 | 36,25 |

# Centrifuge tubes



## Rotilabo®-centrifuge tubes

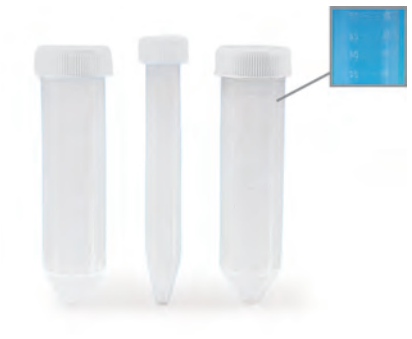
Made of highly transparent **PP**. Lid made of PE. **Sterile** or unsterile.
With printed, black graduation. Certified free of nucleases, endotoxins and metals (<1 ppm). Not cytotoxic. Temperature stability: from -80 to +122 °C.

**Without vertical lip, with white labelling area,** centrifugable (fixed angle rotor) max. 17 000 x g (15 ml-vials) resp. 20 000 x g (50 ml-vials).

| Volume (ml) | Design | ∅ x H (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 15 | unsterile | 17 x 120 | 50 in a bag | **N458.1** | 500 | 110,75 |
| 15 | **sterile** | 17 x 120 | 50 in a bag | **N459.1** | 500 | 120,40 |
| 15 | unsterile | 17 x 120 | 25 in a rack | **N460.1** | 500 | 137,60 |
| 15 | **sterile** | 17 x 120 | 25 in a rack | **N461.1** | 500 | 148,35 |
| 50 | unsterile | 29 x 115 | 50 in a bag | **N462.1** | 500 | 131,15 |
| 50 | **sterile** | 29 x 115 | 50 in a bag | **N463.1** | 500 | 144,05 |
| 50 | unsterile | 29 x 115 | 25 in a rack | **N464.1** | 500 | 155,90 |
| 50 | **sterile** | 29 x 115 | 25 in a rack | **N465.1** | 500 | 160,20 |

**With vertical lip, with white labelling area,** centrifugable up to 10 000 x g

| Volume (ml) | Design | ∅ x H (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | unsterile | 29 x 117 | 50 in a bag | **X063.1** | 500 | 156,95 |
| 50 | **sterile** | 29 x 117 | 50 in a bag | **X064.1** | 500 | 183,85 |



## Metal Free centrifuge tubes

Made of highly pure **PP**, with white labelling area. PE lid, fitted. **Sterile**.
**Heavy metal content <1 ppb**, suitable for sample preparation and storage for trace analysis, ICP-MS and other applications which require an extremely low metal content.
Nuclease and endotoxin free, non-cytotoxic.
Temperature stable from -80 to +122 °C. Centrifugable to 12 500 x g.

| Volume (ml) | ∅ x H (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 15 | 17 x 120 | 50 in bag | **XX96.1** | 500 | 143,00 |
| 15 | 17 x 120 | 25 in rack | **XX97.1** | 500 | 158,05 |
| 50 | 29 x 115 | 50 in bag | **XX98.1** | 500 | 158,05 |
| 50 | 29 x 115 | 25 in rack | **XX99.1** | 500 | 180,60 |



## Centrifuge tubes Eco

Made of **PP**. With raised graduation marking. **Sterile:** with red lid, gamma sterilized or **unsterile:** with blue lid. Can be centrifuged up to 3000 x g.

**Without vertical lip**

| Volume (ml) | Design | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 15 | unsterile | 17 x 120 | **AN76.1** | 150 | 32,80 |
| 15 | **sterile** | 17 x 120 | **AN77.1** | 150 | 37,65 |
| 50 | unsterile | 29 x 115 | **AN78.1** | 100 | 26,90 |
| 50 | **sterile** | 29 x 115 | **AN79.1** | 100 | 31,15 |

**With vertical lip**

| Volume (ml) | Design | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | unsterile | 29 x 115 | **AN80.1** | 100 | 30,65 |
| 50 | **sterile** | 29 x 115 | **AN81.1** | 100 | 32,25 |



## Flip-cap centrifuge tubes

Made of **PP**, lid of **HDPE**. **Sterile**.

- Screw/snap-on lid enables single-handed opening and also complete removal
- RNase-/DNase free, pyrogen-free
- With white labelling space
- Temperature stable from -80 to +120 °C

| **Volume (ml)** | **15** | **50** |
|---|---|---|
| Graduations | 1 to 15 ml | 5 to 50 ml |
| | Accuracy ±2 % | |
| Graduation cone | 0.1 to 1 ml | 0.5 to 3 ml |
| Max. centrifugability (x g) | 9400 | |

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 15 | **EKY1.1** | 500 (20 x 25) | 133,00 |
| 50 | **EKY2.1** | 500 (20 x 25) | 165,00 |

▶ Racks for centrifuge tubes see page 221

# Centrifuge tubes



## CELLSTAR®-centrifuge tubes

By Greiner Bio-One.
Made of PP. Blue **HDPE** screw cap. **Sterile.**
Excellent thermal, mechanical and chemical stability. Conical base.
Blue graduations and white labelling space. DNase/RNase and human DNA free, non-pyrogenic and non-cytotoxic.
Temperature stable from -50 to +100 °C.

| Type | Max. centrifugability (x g) | |
|---|---|---|
| | Fixed angle rotor | Oscillating rotor |
| 15 ml tubes | 15 000 | 4000 |
| 50 ml tubes | 9000 | 3200 |
| 50 ml tubes with rim | 11 500 | 2800 |

**Transparent, without rim**

| Volume (ml) | ∅ x H (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 15 | 17 x 120 | 50 in rack | **XH97.1** | 500 | 100,70 |
| 15 | 17 x 120 | 100 in bag | **XH97.2** | 1000 | 165,55 |
| 50 | 29 x 115 | 20 in bag | **XH98.1** | 500 | 92,80 |
| 50 | 29 x 115 | 25 in rack | **XH98.2** | 300 | 78,85 |

**Transparent, with rim**

| Volume (ml) | ∅ x H (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 29 x 115 | 25 in bag | **XH99.1** | 450 | 107,50 |
| 50 | 29 x 115 | 25 in rack | **XH99.2** | 300 | 83,15 |

**Light Protection Tubes, brown, without rim**

For light-sensitive substances and reactions.

| Volume (ml) | ∅ x H (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 15 | 17 x 120 | 100 in bag | **KL46.1** | 100 | 44,75 |
| 15 | 17 x 120 | 50 in rack | **KL46.2** | 50 | 26,35 |
| 50 | 29 x 115 | 20 in bag | **KL47.1** | 20 | 13,55 |
| 50 | 29 x 115 | 25 in rack | **KL47.2** | 25 | 17,55 |



## 50 ml centrifuge tubes

Made of optically clear **PS**, screw cap made of HDPE.
Graduated from 2.5 to 50 ml. Temperature stable from 0 to 90 °C.
Centrifugable up to 1000 x g, sterile test tubes are also suitable for storage of biological samples.

| Design | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Non-sterile, lid colour yellow | 29 x 118 | **AYY4.1** | 500 | 135,45 |
| **Sterile**, lid colour green, in rack | 29 x 118 | **AYY5.1** | 500 (20 x 25) | 235,45 |




## Oak Ridge centrifuge tubes

By Nalgene®. Made of **PC, PPCO, PSF** or **FEP**.
For **high speed centrifugation**.
For use in cooled or uncooled centrifuges up to 50 000 x g.
Before centrifuging, the tubes must be at least 80 % full and FEP tubes 100 % full.
**Please note:** screw closures with a seal are necessary for centrifuging hazardous substances or for centrifugal forces exceeding 10 000 x g.
Autoclavable. Before autoclaving, please make sure you always unscrew the lid.

Type 3115. Made of **PSF**, transparent.
Screw closure made of **PP** without seal.

| Nominal capacity (ml) | Filling capacity (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 30 | 25,7 x 94,5 | **ATC6.1** | 10 | 75,60 |
| 50 | 43 | 29,0 x 107,7 | **ATC7.1** | 10 | 91,35 |

① Type 3118. Made of **PC**, transparent.
Screw closure made of **PP** without seal.

| Nominal capacity (ml) | Filling capacity (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 10 | 16,1 x 81,7 | **PH26.1** | 10 | 59,40 |
| 28 | 28 | 25,4 x 101,8 | **PH27.1** | 10 | 63,05 |
| 30 | 30 | 25,7 x 94,5 | **PH28.1** | 10 | 63,40 |
| 50 | 43 | 28,8 x 107,0 | **PH29.1** | 10 | 72,90 |
| 85 | 81 | 38,2 x 105,7 | **PH30.1** | 10 | 83,25 |

② Type 3119. Made of **PPCO** (polypropylene copolymer), translucent.
Screw closure made of **PP** without seal.

| Nominal capacity (ml) | Filling capacity (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 10 | 16,0 x 81,4 | **PH36.1** | 10 | 47,00 |
| 28 | 28 | 25,4 x 101,9 | **PH37.1** | 10 | 52,20 |
| 30 | 30 | 25,5 x 94,3 | **PH38.1** | 10 | 50,00 |
| 50 | 42 | 28,8 x 106,7 | **PH39.1** | 10 | 65,50 |

③ Type 3114. Made of **FEP**, screw closure made of **ETFE** without seal.
Resistant to acids, bases and solvents. Ideal for chloroform and phenol extractions.

| Nominal capacity (ml) | Filling capacity (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 10 | 16,0 x 81,5 | **PH40.1** | 2 | 51,30 |
| 30 | 30 | 25,7 x 93,7 | **PH41.1** | 2 | 76,80 |
| 50 | 46 | 28,8 x 107,7 | **PH42.1** | 2 | 109,65 |

## Leak-tight closures for Oak Ridge centrifuge tubes

Screw closures from **PP**, with silicon seal. These enclosures ensure leak-free use of Oak Ridge centrifuge tubes. Recommended for centrifugal forces of 10 000 x g or higher. Autoclavable.

| Size (mm) | suitable for | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 | PH27.1, PH28.1, PH37.1, PH38.1, PH98.1, PK02.1 | **PH43.1** | 2 | 21,40 |
| 24 | PH29.1, PH39.1, PH99.1, PK03.1 | **PH44.1** | 2 | 23,85 |

# Centrifuge bottles



121°C

## Oak Ridge centrifuge tubes with leak-tight closure

By Nalgene®. Made of **PC, PSF** or **PPCO**. Screw closures made of **PP** with silicon seal. For **high speed centrifugation. Leak-proof.**
For use in cooled or uncooled centrifuges up to 50 000 x g.
Before centrifuging, tubes must be at least 80 % full. Autoclavable.
Before autoclaving, please make sure you always unscrew the lid.

Type 3137. Made of **PSF**, transparent.

| Nominal capacity (ml) | Filling capacity (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 42 | 29 x 115,3 | **ATC5.1** | 10 | 167,70 |

Type 3138. Made of **PC**, transparent.

| Nominal capacity (ml) | Filling capacity (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 10 | 16,1 x 82,3 | **PH96.1** | 10 | 76,85 |
| 16 | 16 | 18,2 x 106,9 | **PH97.1** | 10 | 92,85 |
| 30 | 30 | 25,7 x 101,6 | **PH98.1** | 10 | 121,50 |
| 50 | 42 | 28,8 x 115,0 | **PH99.1** | 10 | 129,00 |

Type 3139. Made of **PPCO** (polypropylene copolymer), translucent.

| Nominal capacity (ml) | Filling capacity (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 10 | 16,0 x 82,0 | **PK00.1** | 10 | 75,05 |
| 16 | 16 | 17,9 x 106,6 | **PK01.1** | 10 | 85,55 |
| 30 | 30 | 25,5 x 101,4 | **PK02.1** | 10 | 109,65 |
| 50 | 42 | 28,8 x 114,1 | **PK03.1** | 10 | 130,10 |



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121°C

## Centrifuge bottles with leak-tight closure

By Nalgene®. Wide-neck centrifuge bottle made of **PC** or **PPCO**.
Screw closure made of **PP** with silicon seal. Before centrifuging, bottles must be at least 80 % full. 250 ml bottle centrifugable up to 27 500 x g, 500 ml bottle centrifugable up to 13 700 x g.
Autoclavable. Before autoclaving, always remove the lid.

① Type 3140. Made of **PC**, transparent.

| Nominal capacity (ml) | Filling capacity (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 250 | 61,5 x 135,1 | **PH89.1** | 4 | 82,95 |
| 500 | 450 | 69,5 x 160,0 | **PH90.1** | 4 | 101,55 |

② Type 3141. Made of **PPCO** (polypropylene copolymer), translucent.

| Nominal capacity (ml) | Filling capacity (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 250 | 60,7 x 133,4 | **PH91.1** | 4 | 74,50 |
| 500 | 450 | 69,5 x 160,0 | **PH92.1** | 4 | 99,40 |



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121°C

## Centrifuge bottles

By Nalgene®. Made of **PPCO**, **PC** or **FEP**. Before centrifuging, bottles must be at least 80 % full and FEP bottles 100 % full, with the exception of 500 ml bottle PH81.1 which should not be more than 75 % full.
Autoclavable. Before autoclaving, always remove the lid.

① Type 3120. Made of **PPCO** (polypropylene copolymer), translucent.
Screw closure made of **PP** without seal.

*Max. 75 % fill **for IEC rotors

| Volume (ml) | ∅ x H (mm) | max. RCF (x g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 61,8 x 127,7 | 13 200 | **PH79.1** | 4 | 34,70 |
| 500 | 73,8 x 169,8 | 4800 | **PH80.1** | 4 | 42,10 |
| 500 | 69,5 x 170,2 | 4800 | **PH81.1** | 4 | 40,85 |
| 1000 | 97,5 x 184,5 | 7100 | **PH82.1** | 4 | 80,30 |
| 1000** | 97,7 x 179,0 | 7100 | **PH83.1** | 4 | 81,45 |

② Type 3122. Made of **PC**, transparent.
Screw closure made of **PP** without seal.

**for IEC rotors

| Volume (ml) | ∅ x H (mm) | max. RCF (x g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 61,8 x 127,6 | 27 500 | **PH84.1** | 4 | 49,30 |
| 500 | 69,5 x 169,6 | 13 700 | **PH85.1** | 4 | 79,15 |
| 1000 | 97,6 x 188,4 | 7100 | **PH86.1** | 4 | 102,90 |
| 1000** | 98,1 x 180,2 | 7100 | **PH87.1** | 4 | 105,30 |

③ Type 3127. Made of **FEP**. Screw closure made of **ETFE** without seal.
Cooled centrifugation at 4 °C. Room temperature is not recommended.

| Volume (ml) | ∅ x H (mm) | max. RCF (x g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 60,0 x 128,8 | 4000 | **PH88.1** | 1 | 111,80 |

## Accessories for centrifuge bottles

**Leak-tight closures.** Screw closures made of **PP** with silicon seal.

| Size (mm) | suitable for | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 58 | PH89.1, PH91.1 | **PH93.1** | 2 | 30,45 |
| 63 | PH82.1, PH83.1, PH86.1, PH87.1, PH90.1, PH92.1 | **PH94.1** | 2 | 41,85 |

**Centrifuge adapter for Sorvall GSA rotor.**
Type DS 3125. Made of **LDPE**, white. For 250 ml centrifuge bottles.

| Size (mm) | suitable for | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ∅ 61,5 | PH79.1, PH84.1, PH88.1, PH89.1, PH91.1 | **PH95.1** | 6 | 73,05 |

**To calculate the number of revolutions:** $RCF = 1.118 \cdot 10^{-5} \times rpm^2 \cdot r$



## Salzkotten safety lab canisters

Made of stainless steel 1.4571, flame arrester made of 1.4401, seals made of PTFE. With pressure control valve. Stackable.

**Model 202**, with screw cap. **1205.1 and 1206.1 UN-approved 1A1/X1.5/250.**

| Volulme (l) | Height (mm) | ∅ (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 280 | 300 | 3400 | **1205.1** | 1 | 337,55 |
| 25 | 500 | 300 | 5000 | **1206.1** | 1 | 388,10 |
| 50 | 570 | 380 | 7000 | **T621.1** * | 1 | 506,35 |

**Model 213**, with screw-cap and self-closing draincock ½″

| Volulme (l) | Height (mm) | ∅ (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 280 | 300 | 3600 | **1207.1** | 1 | 656,85 |
| 25 | 500 | 300 | 5200 | **1208.1** | 1 | 688,00 |
| 50 | 570 | 380 | 7200 | **T624.1** * | 1 | 856,80 |

**Model 215**, with screw cap, self-closing draincock ½″ and content indicator display

| Volulme (l) | Height (mm) | ∅ (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 15 | 340 | 300 | 5000 | **T628.1** * | 1 | 926,65 |
| 25 | 500 | 300 | 6000 | **T629.1** * | 1 | 963,20 |
| 50 | 570 | 380 | 8200 | **T630.1** * | 1 | 1144,90 |

* Longer delivery times possible. Please check with our Sales Department.

▶ Safety systems for disposal see page 696



## Salzkotten safety lab canisters

Made of stainless steel 1.4571, flame arresters made of 1.4401, seals made of PTFE. With pressure control valve.

**With screw cap, UN-approved 3A1/X2.0/600**

| Volulme (l) | H x W x D (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 290 x 200 x 130 | 1600 | **1221.1** | 1 | 275,20 |
| 10 | 370 x 280 x 130 | 2450 | **1222.1** | 1 | 325,75 |
| 20 | 450 x 340 x 175 | 4500 | **1223.1** | 1 | 414,95 |

**With fine dosing spout**

| Volulme (l) | H x W x D (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 330 x 200 x 130 | 1600 | **0561.1** | 1 | 331,10 |
| 10 | 400 x 280 x 130 | 2450 | **0562.1** | 1 | 369,80 |
| 20 | 500 x 340 x 175 | 4500 | **1226.1** | 1 | 468,70 |



## Salzkotten safety laboratory cans

Made of stainless steel WN 1.4571, polished, wall thickness 0.8 mm, seals made of PTFE. Laboratory cans for collecting, storing and filling flammable liquids. With fire arrester (WN 1.4401) in the filler neck. With fuse, the fuse melts at temperatures above 60 °C allowing the gas pressure to escape. Type 101 and 102 with pressure relief valve (pressure equalisation from approx. 0.3 bar).

**Type 100, with screw cap**

| Volume (l) | Height (mm) | ∅ (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 210 | 110 | 560 | **ANL8.1** | 1 | 169,85 |
| 2 | 270 | 130 | 740 | **ANL9.1** | 1 | 188,15 |
| 5 | 385 | 175 | 1300 | **ANN0.1** | 1 | 223,60 |

**Type 101 with screw cap, pressure relief valve and UN-X approval 1A1/X2.0/600.**

Type-approved transport containers acc. to GGVSE/GGVSee/ADR/RID/IMDG-Code/ICAO-TI.

| Volume (l) | Height (mm) | ∅ (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 210 | 110 | 560 | **ANN1.1** | 1 | 178,45 |
| 2 | 270 | 130 | 740 | **ANN2.1** | 1 | 195,65 |
| 5 | 385 | 175 | 1300 | **ANN3.1** | 1 | 235,45 |

**Type 102, with precision metering device and pressure relief valve**

Precision metering device rotatable through 360°, self-closing. With vent.

| Volume (l) | Height (mm) | ∅ (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 230 | 110 | 600 | **ANN4.1** | 1 | 222,55 |
| 2 | 290 | 130 | 770 | **ANN5.1** | 1 | 240,80 |
| 5 | 420 | 175 | 1400 | **ANN6.1** | 1 | 270,90 |



## Safety flasks

Made of aluminium 99.5 %. With screw cap and self closing pouring and ventilation valve made of plastic. Inner sealing made of Viton®. Can be used for petrol, oil, etc.

| Volume (ml) | ∅ x H (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 500 | 60 x 225 | 130 | **2984.1** | 1 | 48,40 |
| 1000 | 75 x 275 | 190 | **2985.1** | 1 | 53,50 |

# Canisters





## Safety canisters

Made of stainless steel 1.4571, polished. 20-litre canister (Art. No. PC09.1), made of stainless steel 1.4301. Wall thickness 0.8 mm. Seals made of PTFE. For safe storage and decanting of flammable liquids. With removable flame arrestor in the filler. In models with a screw cap, the screw cap is secured against loss by a flexible shaft.

**With screw cap and UN-X-approved**
In compliance with GGVSEB, GGVSee, ADR, RID and IMDG Code requirements for transporting hazardous liquids. 20-litre canister (Art. No. PC09.1) also with venting screw for manual pressure relief.

| Volulme (l) | H x W x D (mm) | Weight (g) | UN approval | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 310 x 130 x 200 | 1650 | 3A1/X1.6/300 | **PC07.1** | 1 | 242,95 |
| 10 | 380 x 130 x 280 | 2500 | 3A1/X1.6/300 | **PC08.1** | 1 | 285,95 |
| 20 | 470 x 175 x 345 | 3700 | 3A1/X2.0/300 | **PC09.1** | 1 | 376,25 |

**With self-closing stopcock**
Suitable for horizontal storage, fits into most laboratory safety cabinets. With venting screw for manual pressure relief.

| Volulme (l) | H x W x D (mm) | Weight (g) | UN approval | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 310 x 130 x 200 | 1650 | without | **PC10.1** | 1 | 321,45 |
| 10 | 380 x 130 x 280 | 2500 | without | **PC11.1** | 1 | 353,70 |
| 20 | 470 x 175 x 345 | 3700 | without | **PC12.1** | 1 | 409,60 |

## Accessories for safety canisters

**Replacement tap 1½″**
Made of stainless steel 1.4305, seals made of PTFE.
Closes automatically after use. Suitable for safety canisters with pressure equalising screw PC09.1 to PC12.1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE00.1** | 1 | 105,35 |

**Fine dispenser 1½″**
Made of stainless steel 1.4305, seals made of PTFE. With vent.
Suitable for safety canisters PC07.1 and PC08.1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE01.1** | 1 | 80,65 |

**Spout 1½″**
Made of stainless grades 1.4301 and 1.4305, seals made of PTFE.
Rotatable, suitable for all safety canisters.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE02.1** | 1 | 77,40 |

**Replacement screw cap 1½″**
Made of stainless steel 1.4305, seals made of PTFE.
Suitable for safety canisters with UN approval PC07.1 to PC09.1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE03.1** | 1 | 50,55 |

**Screw cap 1½″**
Made of stainless steel 1.4305, seals made of PTFE.
With pressure relief valve, suitable for safety canisters PC10.1 to PC12.1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE04.1** | 1 | 58,05 |

**Funnel**
Made of stainless steel 1.4571, angled, wall thickness 0.6 mm.
Funnel-∅ 120 mm, stem-∅ 34 mm, height 120 mm, weight 350 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PC13.1** | 1 | 67,20 |

## Safety laboratory cans

Made of stainless steel 1.4571, polished or unpolished. Wall thickness 0.6 mm. Seals made of PTFE, grip made of powder-coated aluminium. With removable flame arrestor in the filler. In models with a screw cap, the screw cap is secured against loss by a flexible shaft.

**Polished, with screw cap and overpressure valve**

| Volulme (l) | Height (mm) | ∅ (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 235 | 111 | 650 | **1192.1** | 1 | 156,95 |
| 2 | 295 | 131 | 750 | **1193.1** | 1 | 172,00 |
| 5 | 400 | 165 | 1150 | **1194.1** | 1 | 208,55 |

**Polished, with microdispenser and overpressure valve**

| Volulme (l) | Height (mm) | ∅ (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 235 | 111 | 700 | **5791.1** | 1 | 195,65 |
| 2 | 295 | 131 | 800 | **0544.1** | 1 | 210,70 |
| 5 | 400 | 165 | 1200 | **0157.1** | 1 | 237,60 |

**Unpolished, with screw cap and UN-approval 1A1/X2.0/400**
In compliance with GGVSEB, GGVSee, ADR, RID and IMDG Code requirements for transporting hazardous liquids.

| Volulme (l) | Height (mm) | ∅ (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 235 | 111 | 650 | **PC01.1** | 1 | 153,75 |
| 2 | 305 | 131 | 750 | **PC02.1** | 1 | 168,80 |
| 5 | 400 | 165 | 1150 | **PC03.1** | 1 | 205,35 |

## Accessories for safety laboratory cans

**Fine dispenser 1¼″**
Made of stainless steel 1.4305, seals made of PTFE. Self-closing.
With pressure relief valve, suitable for all safety laboratory cans.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE05.1** | 1 | 72,05 |

**Replacement screw cap 1¼″**
Made of stainless steel 1.4305, seals made of PTFE.
Suitable for safety laboratory cans with UN approval PC01.1 to PC03.1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE06.1** | 1 | 44,10 |

**Replacement screw cap 1¼″**
Made of stainless steel 1.4305, seals made of PTFE. With pressure relief valve, suitable for safety laboratory cans 1192.1 to 0157.1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE07.1** | 1 | 50,55 |

**Funnel**
Made of stainless steel 1.4571, wall thickness 0.6 mm.
Funnel-∅ 120 mm, stem-∅ 23 mm, height 120 mm, weight 300 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PC04.1** | 1 | 60,75 |

## Accessories:

**Moistener with pump for safety laboratory cans**
Made of stainless steel 1.4301. For economical soaking of cleaning cloths. Minimizes hazardous solvent vapours; liquid that is not required runs back into the can. Spring-mounted soaking tray.
**Delivery without** safety can, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Moistener for 1-litre safety laboratory cans | **PC05.1** | 1 | 126,85 |
| Moistener for 2-litre safety laboratory cans | **PC06.1** | 1 | 127,95 |



## Rotilabo®-UN-wide neck barrels

Made of **HDPE**. UN-X-approved in compliance with GGVSE requirements for transporting solid materials with a density of at least 1.5 g/cm³. Coloured blue. Approved for foodstuffs.
**Delivery incl.** PE lid and galvanized tension ring. 30 l and 60 l barrels come with handles.

| Vol. (l) | ∅ (mm) | Neck inner ∅ (mm) | Height (mm) | UN approval | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 30 | 313 | 251 | 518 | 1H2/X61/S | **T970.1** | 1 | 38,30 |
| 60 | 398 | 325 | 620 | 1H2/X88/S | **T971.1** | 1 | 50,45 |
| 120 | 503 | 393 | 791 | 1H2/X200/S | **T972.1** | 1 | 75,20 |
| 150 | 503 | 393 | 965 | 1H2/X255/S | **T973.1** | 1 | 85,90 |

▶ Chemical collection pans see page 702



## Wide neck barrels

By CurTec. Made of **HDPE**, with rubber seal.
UN-approval (X-approval) for storage and transport of solid materials and pastes. Approved for food, chemical and pharmaceutical products. Impermeable to air, water and water vapours. Art. No. CY90.1 to 5459.1 with handles. Maximum filling temperature is 80 °C. Sealable.

| Vol. (l) | ∅ (mm) | Neck inner ∅ (mm) | Height (mm) | UN approval | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 3,6 | 198 | 136 | 173 | 1H2/X12/S | **K280.1** | 1 | 14,20 |
| 6,4 | 198 | 136 | 265 | 1H2/X20/S | **0788.1** | 1 | 17,50 |
| 10,4 | 274 | 204 | 239 | 1H2/X22/S | **L958.1** | 1 | 27,10 |
| 15,4 | 274 | 204 | 328 | 1H2/X22/S | **0789.1** | 1 | 31,90 |
| 20 | 274 | 204 | 418 | 1H2/X27/S | **L959.1** | 1 | 35,50 |
| 26 | 316 | 204 | 426 | 1H2/X33/S | **0790.1** | 1 | 39,45 |
| 42 | 410 | 282 | 416 | 1H2/X51/S | **CY90.1** | 1 | 56,55 |
| 55 | 410 | 282 | 518 | 1H2/X66/S | **CY91.1** | 1 | 62,25 |
| 68,5 | 410 | 282 | 632 | 1H2/X81/S | **5459.1** | 1 | 64,45 |



## Rotilabo®-mixing barrel

Made of **LDPE**, natural coulored. Capacity 30 l. With 120 mm wide neck thread opening. Screw-on lid with integral funnel. H 20 mm, inner ∅ 38 mm. Additional side opening at the bottom with same dimensions. Both top and side openings can be fitted with the supplied screw cap or 9 mm tap. Sealings made of rubber. Total height 520 mm, ∅ incl. handles 370 mm. Weight when empty 1800 g. Approved for foodstuffs.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rotilabo®-mixing barrel | **1089.1** | 1 | 64,45 |
| Spare lid incl. centering screw cap | **P774.1** | 1 | 12,10 |
| Spare stopcock, ∅ outer 12.5 mm, inner 10 mm | **P775.1** | 1 | 9,15 |

▶ Scoops see page 195



## Rotilabo®-storage drums

Made of 1.4541 stainless steel. Stackable. Relatively light. Brushed finish on the outside. Ground and brushed inside and out. Surfaces in contact with product Ra ≤0.6 µm. Lid with silicone seal and 1.4301 stainless steel tension ring. Autoclavable. Impervious to fluids.

| Volulme (l) | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1,5 | 170 | 85 | **A859.1** | 1 | 284,90 |
| 3 | 170 | 156 | **A860.1** | 1 | 299,95 |
| 5 | 250 | 145 | **0489.1** | 1 | 320,35 |
| 10 | 250 | 280 | **0490.1** | 1 | 396,70 |
| 30 | 315 | 425 | **0491.1** | 1 | 553,65 |

# Canisters



Programme extension!

## Canisters

Made of **HDPE**, natural coloured. Ideal for storing, packing and transporting. Suitable for foodstuffs.
**Delivery incl.** screw cap. Drain cock please order separately.

| Vol. (l) | UN approval | Neck inner ∅ (mm) | L x W x H (mm) | Thread DIN | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 2 | 3H1/Y1.9/150 | 34,5 | 145 x 109 x 181 | 45 | **T391.1** | 1 | 4,95 |
| 2,5 | 3H1/Y1.6/150 | 34,5 | 153 x 115 x 208 | 45 | **T392.1** | 1 | 5,65 |
| 3 | 3H1/Y1.6/150 | 34,5 | 153 x 115 x 240 | 45 | **T393.1** | 1 | 6,10 |
| 5 | 3H1/X1.9/250 | 43 | 190 x 145 x 251 | 51 | **T394.1** | 1 | 7,20 |
| 6 | 3H1/Y1.9/200 | 43 | 191 x 149 x 292 | 51 | **T395.1** | 1 | 7,75 |
| 8 | - | 34,5 | 230 x 190 x 270 | 45 | **T396.1** | 1 | 9,15 |
| 10 | 3H1/X1.9/250 | 43 | 230 x 190 x 310 | 51 | **T397.1** | 1 | 12,70 |
| 20 | 3H1/X1.9/250 | 48,5 | 290 x 246 x 385 | 61 | **PY06.1** | 1 | 21,45 |
| 30 | 3H1/X1.8/250 | 48,5 | 358 x 293 x 432 | 61 | **HCC7.1** | 1 | 32,15 |

## Draincocks

Made of **PE**, with separate air vent canal. With variable speed regulation of flow. Sealing made of aveolite. Not suitable for glass threads.

| Screw cap | Art. No. | Pack Qty. | € |
|---|---|---|---|
| DIN 45 | **X530.1** | 3 | 23,45 |
| DIN 50 | **X531.1** | 3 | 28,85 |
| DIN 51 | **5665.1** | 3 | 22,05 |
| DIN 61 | **5666.2** | 4 | 29,55 |




## Uritainer™-canisters

By Simport. Made of **HDPE**. Outer-∅ wide-neck opening 79 mm. Lid made of PP. Push-Pull valve enables simple, controlled and drip-proof pouring. Graduated, graduation 50 ml. **CE-marking in accordance with MPG.**

① **With vertical and horizontal graduation**

| Volume (l) | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 115 x 245 x 160 | **HT07.1** | 1 | 4,15 |
| 4 | 115 x 245 x 201 | **HT08.1** | 1 | 4,15 |

② **With vertical graduation**

| Volume (l) | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2,5 | 333 x 133 x 232 | **HT09.1** | 1 | 4,15 |
| 3,5 | 333 x 133 x 295 | **HT10.1** | 1 | 4,15 |




## Rotilabo®-canisters

Made of **HDPE**, natural color UV-stabilized.

① **Wide-neck canister**

Slanted wide neck opening (outer-∅ 88 mm, inner-∅ 85 mm) and additional drain nozzle (outer-∅ 18 mm, inner-∅ 13 mm), with screw caps. With thread and stopper for cock connection on the narrow side.
**Delivery without** drain cock, please order separately.

| Volume (l) | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 | 297 x 135 x 280 | **C944.1** | 1 | 24,30 |
| 10 | 302 x 140 x 397 | **0572.1** | 1 | 34,35 |
| 22 | 370 x 180 x 475 | **EPK0.1** | 1 | 38,20 |

② **Narrow-neck canister**

Narrow neck opening (outer-∅ 29 mm). With drain pipe L 250 mm, ∅ drain 20 mm. **Without** cock connection.

| Volume (l) | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | 290 x 160 x 331,5 | **1590.1** | 1 | 10,45 |




## Accessories for Rotilabo®-canisters

Drain cocks made of **HDPE** for wide-neck canisters C944.1, 0572.1 and EPK0.1. Inner-∅ spout 10 mm.
Connection possible for tubes with inner-∅ 12 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① straight | **0573.1** | 1 | 16,10 |
| ② bent | **HA38.1** | 1 | 13,45 |

▶ Plastic bottles with UN approval see page 102

**Correct fit**
To determine if the different stopcocks and adapters will fit your container, please check container thread type. Plastic barrels and containers have all sorts of thread types, e.g. standardized according to DIN or manufacturer-specific threads. We'll be delighted to assist you with any containers which you purchase from us. However we do ask you to understand that we are unable to give you any information with regard to them fitting containers from other suppliers. Information on the size of the diameter is unfortunately not sufficient.



## Metal fuel canister

Made of powder-coated steel with inner coating, wall thickness 0.9 mm. With safety cap, prevents unintentional opening of the canister.
UN approval 3A1/Y/100/... for transporting petrol, diesel, E10 and other hazardous goods.

**Model Classic**

| Volume (l) | L x W x H (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 230 x 120 x 310 | 1850 | **EPL8.1** | 1 | 37,60 |
| 10 | 350 x 165 x 283 | 3000 | **EPL9.1** | 1 | 38,65 |
| 20 | 343 x 165 x 469 | 4280 | **EPN0.1** | 1 | 42,95 |

**Model EXPLO-SAFE**
With aluminium mesh filling to reduce the risk of explosion.

| Volume (l) | L x W x H (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 230 x 120 x 310 | 1980 | **EPN1.1** | 1 | 58,80 |
| 10 | 350 x 165 x 283 | 3260 | **EPN2.1** | 1 | 72,05 |
| 20 | 343 x 165 x 469 | 4790 | **EPN3.1** | 1 | 89,80 |




## Space-saving canisters

By Bürkle. Made of transparent **PP**. Capacity 5 l. Many liquids can be stored and filled even in a very confined area. Suitable for foodstuffs. Autoclavable at +121 °C without cock. With litre scale. ∅ of opening 41 mm.
Dimensions: W 65 x D 335 x H 335 mm. Weight 800 g.
**Delivery without** stop-cock and screw cap for threaded connection, please order separately.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| With thread connection ¾″ | **9267.1** | 1 | 34,40 |
| Without thread connection | **T974.1** | 1 | 32,20 |

## Accessories to space saving canisters

By Bürkle.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Draincock ¾″ made of PP (not autoclavable) | **2683.1** | 1 | 24,20 |
| Draincock compact ¾″ (not autoclavable) | **PE42.1** | 1 | 15,00 |
| Cap ¾″ | **9275.1** | 1 | 6,25 |
| Safety holder for 3 canisters | **9270.1** | 1 | 24,35 |



## Fuel cans

Made of **HDPE**, black. Heavy-duty, industrial quality. With UN-approval. Incl. spout and attached screw cap.

| Vol. (l) | L x W x H (mm) | Neck inner ∅ (mm) | UN approval | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | 147 x 80 x 270 | 18 | without | **EY69.1** | 1 | 9,65 |
| 3 | 215 x 100 x 205 | 29 | 3H1/X1.0 Y1.0 Z1.0/250 | **EY70.1** | 1 | 10,65 |
| 5 | 265 x 147 x 247 | 29 | 3H1/Y1.0/250 | **EY71.1** | 1 | 8,10 |
| 10 | 333 x 164 x 324 | 29 | 3H1/Y1.2/200 | **EY72.1** | 1 | 11,75 |
| 20 | 365 x 178 x 435 | 29 | 3H1/Y/150 | **EY73.1** | 1 | 17,35 |




## Flat-top canisters

By Nalgene®. With draincock and screw cap made of **PP**. Excellent for storing and dispensing reagents, titrating solutions and distilled water. The flat design fits easily into tight spaces and refrigerators. Up to 3 canisters can be stacked. With practical integral handgrip for safe and easy transport. Thread 63 mm. **Leakproof**.

Made of **HDPE**. Type 2323.

| Volulme (l) | H x W x D (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 8 | 165 x 368 x 305 | **E193.1** | 1 | 125,80 |

Made of **PP**. Type 2324. **Autoclavable**.

| Volulme (l) | H x W x D (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 8 | 165 x 368 x 305 | **E195.1** | 1 | 166,65 |

## Spare stopcocks

Suitable for square canisters, flat-top canisters, carboys and fluorinated canisters. For tubes with inner-∅ 6.5-7.9 mm. **Autoclavable**.

| Material | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PP | **E727.1** | 1 | 33,90 |
| ETFE | **E728.1** | 1 | 85,95 |

# Canisters



## Rotilabo®-canisters

Made of **PE**. Folding. Robust with resistant, flexible walls. Sturdy integral handles for easy transport. Economical and space-saving, as canisters can be folded when empty. Smooth walls and rounded corners allow optimal emptying of canister. Fine dosing is possible without air admission. Handles and canister made of PE, recycable. Tap connection possible. Outer-∅ spout 11 mm. Connecting nozzle 30 mm with screw cap.

| Volume (l) | L x W x H (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 230 x 230 x 230 | 1 handle | **N369.1** | 1 | 6,40 |
| 20 | 280 x 280 x 280 | 2 handles | **N370.1** | 1 | 7,50 |

**Accessories:**

| | | | | |
|---|---|---|---|---|
| Stopcock | **N371.1** | 1 | 3,55 |



## Square canisters

By Nalgene®. With screw cap thread 100 mm and draincock made of **PP**. Robust, graduated, space-saving model with stainless steel handle. Wide neck opening of ∅ 90 mm enables easy filling and cleaning. **Leakproof**.

**Made of HDPE.** Type 2211 (without stopcock) or 2320 (with stopcock).

| Type | Volulme (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| without stopcock | 9 | 216 x 146 x 356 | **K646.1** | 1 | 72,00 |
| without stopcock | 20 | 318 x 219 x 381 | **K647.1** | 1 | 104,90 |
| with stopcock | 9 | 216 x 146 x 356 | **K648.1** | 1 | 115,05 |
| with stopcock | 20 | 318 x 219 x 381 | **K649.1** | 1 | 149,45 |

**Made of PP. Autoclavable.** Type 2212 (without stopcock) or 2321 (with stopcock).

| Type | Volulme (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| without stopcock | 9 | 216 x 146 x 356 | **K644.1** | 1 | 101,05 |
| without stopcock | 20 | 318 x 219 x 381 | **K645.1** | 1 | 138,70 |
| with stopcock | 9 | 216 x 146 x 356 | **E191.1** | 1 | 135,45 |
| with stopcock | 20 | 318 x 219 x 381 | **E192.1** | 1 | 169,85 |

**Made of PC.** Type DS 2213 (without stopcock) or 2322 (with stopcock). Transparent. Excellent for developing nutrient and culture media when light or transparency is required. Ideal for use in cooling rooms. **Autoclavable.**

| Type | Volulme (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| without stopcock | 9 | 216 x 146 x 356 | **K651.1** | 1 | 152,65 |
| without stopcock | 20 | 318 x 219 x 381 | **K652.1** | 1 | 221,45 |
| with stopcock | 9 | 216 x 146 x 356 | **K653.1** | 1 | 178,45 |
| with stopcock | 20 | 318 x 219 x 381 | **K654.1** | 1 | 213,95 |



## Fluorinated canisters with draincock

By Nalgene®. Type DS 2327. Made of fluorinated **HDPE**, stopcock made of ETFE, screw cap made of fluorinated PP, thread 100 mm.
Ideal for the safe storage and dispensing of solvents or distilled water. Comes in a rectangular, space-saving design. Transparent. The fluorinated outer and inner surfaces improve the barrier properties and reduce solvent absorption and permeation. **Leakproof**. With graduation, and stainless steel handle. The 20 l-container additionally has robust handles.

| Volulme (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 9 | 216 x 146 x 343 | **E189.1** | 1 | 184,90 |
| 20 | 318 x 219 x 381 | **E190.1** | 1 | 213,95 |

## Spare stopcocks

Suitable for square canisters, flat-top canisters, carboys and fluorinated canisters. For tubes with inner-∅ 6.5-7.9 mm. **Autoclavable**.

| Material | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PP | **E727.1** | 1 | 33,90 |
| ETFE | **E728.1** | 1 | 85,95 |



## Fluorinated canisters

By Nalgene®. Type 2242. Made of **HDPE**, fluorinated inside and out, screw cap made of fluorinated PP. Provides good barrier properties, high resistance to chemicals and reduces solvent diffusion and penetration. Very robust. Excellent for working under extreme conditions with acids and aggressive solvents. With wide base for extra stability. Long spout and integral handgrip in base enable easy pouring. Graduated in litres and gallons. **Leakproof**. Thread 53 B.

| Volulme (l) | Subdivisions (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 2 | 191 x 229 x 368 | **E187.1** | 1 | 68,10 |
| 20 | 4 | 229 x 305 x 445 | **E188.1** | 1 | 102,00 |



## Carboys

Made of **HDPE**, natural coloured. With 50 mm funnel neck, thread S 65. Alternatively available without tap connection or with tap connection and stopcock.

**With tap connection and stopcock**

| Volume (l) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 167 | 330 | **K980.1** | 1 | 51,10 |
| 10 | 206 | 427 | **5645.1** | 1 | 55,55 |
| 25 | 278 | 580 | **5646.1** | 1 | 96,65 |
| 60 | 346 | 823 | **5651.1** | 1 | 147,20 |

**Without tap connection**

| Volume (l) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 167 | 330 | **K981.1** | 1 | 35,05 |
| 10 | 206 | 427 | **K982.1** | 1 | 37,60 |
| 25 | 278 | 580 | **K983.1** | 1 | 81,60 |
| 60 | 346 | 823 | **K984.1** | 1 | 137,60 |

**Stopcock**, blue. Offset spout, ∅ 15.5 mm. Length 25 mm, inner ∅ 10 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5652.1** | 1 | 20,40 |



## Fluorinated carboys

By Nalgene®. Type 2097. Made of fluorinated **HDPE** with screw cap made of PP, thread 83 B. Excellent for storing and transporting aggressive chemicals. The fluorinated inner and outer surface reduces diffusion and penetration of solvents and enhances long-term storage with minimal evaporation loss. Extremely resistant to cracks and puncturing. Suitable for most acids, alkalis and aggressive organic solvents. **Leakproof.**

| Volume (l) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 249 x 389 | 64 | **C476.1** | 1 | 89,90 |
| 20 | 287 x 628 | 64 | **C477.1** | 1 | 131,15 |




## Carboys

By Nalgene®. Thread narrow neck 83B. Wide neck 100 mm. Ideal for storing chemicals, standard solutions, nutrient media, distilled water and liquids. Also good for storing large amounts of powder or other solids. Graduated in 1 gal and 5 litres styles. **Leakproof**.

Made of **LDPE**, screw cap made of PP. Type 2210 (narrow neck) or 2234 (wide neck). Wide handles enable easy transport and pouring.

| Type | Volulme (l) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Narrow neck | 10 | 249 x 389 | 64 | **K633.1** | 1 | 51,80 |
| Narrow neck | 15 | 287 x 432 | 64 | **K634.1** | 1 | 77,15 |
| Narrow neck | 20 | 287 x 528 | 64 | **K635.1** | 1 | 85,90 |
| Narrow neck | 25 | 287 x 597 | 64 | **K636.1** | 1 | 91,50 |
| Narrow neck | 50 | 376 x 673 | 64 | **K637.1** | 1 | 203,20 |
| Wide neck | 10 | 249 x 338 | 88 | **K638.1** | 1 | 49,05 |
| Wide neck | 20 | 287 x 483 | 88 | **K640.1** | 1 | 94,25 |

Made of **PP**, wide handles enable easy transport and pouring. Type 2250 (narrow neck) or 2235 (wide neck). **Autoclavable**.

| Type | Volulme (l) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Narrow neck | 10 | 249 x 389 | 64 | **C478.1** | 1 | 76,15 |
| Narrow neck | 20 | 287 x 521 | 64 | **C479.1** | 1 | 127,95 |
| Narrow neck | 50 | 376 x 673 | 64 | **C480.1** | 1 | 213,95 |
| Wide neck | 10 | 249 x 343 | 88 | **K642.1** | 1 | 72,25 |
| Wide neck | 20 | 287 x 483 | 88 | **K643.1** | 1 | 119,35 |

Made of **PC**, crystal clear. With screw cap made of PP, type 2251. Excellent for developing large amounts of nutrient media, especially where light is required. Can also be used at temperatures below 0 °C. **Autoclavable**.

| Type | Volulme (l) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Narrow neck | 10 | 249 x 389 | 64 | **C469.1** | 1 | 123,65 |
| Narrow neck | 20 | 287 x 521 | 64 | **C470.1** | 1 | 175,25 |

▶ For autoclaving information see page 5

# Carboys



## Carboys with stopcock

By Nalgene®. Graduated. Ideal for storing distilled water, reagents, nutrient media. **Leakproof**. For extra stability and sealing, the draincock thread has been integrated and not welded into the bottle.

**Made of LDPE,** type 2318. Thread 83 B (K655.1: 38-430).

| Volulme (l) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 4 | 152 x 328 | 28 | **K655.1** | 1 | 50,15 |
| 10 | 249 x 389 | 64 | **K656.1** | 1 | 84,25 |
| 20 | 287 x 521 | 64 | **K657.1** | 1 | 118,25 |
| 25 | 287 x 597 | 64 | **K658.1** | 1 | 140,85 |
| 50 | 376 x 673 | 64 | **K659.1** | 1 | 209,65 |

**Made of PP,** type 2319. **Autoclavable**. Thread 83 B.

| Volulme (l) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 249 x 389 | 64 | **K660.1** | 1 | 130,10 |
| 20 | 287 x 521 | 64 | **K661.1** | 1 | 160,20 |
| 50 | 376 x 673 | 64 | **K662.1** | 1 | 280,60 |

**Made of PC,** type 2317. Transparent, **autoclavable**. Thread 83 B.

| Volulme (l) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 249 x 389 | 64 | **K663.1** | 1 | 181,70 |
| 20 | 287 x 521 | 64 | **K664.1** | 1 | 240,80 |

## Spare stopcocks

Suitable for square canisters, flat-top canisters, carboys and fluorinated canisters. For tubes with inner-∅ 6.5-7.9 mm. **Autoclavable**.

| Material | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PP | **E727.1** | 1 | 33,90 |
| ETFE | **E728.1** | 1 | 85,95 |



## Accessories: filling/vent caps

By Nalgene®. Made of **PP**, white, with 3 connections. For sterile liquid transfer of nutrient media, biological reagents, pure water and chemicals. Usable with vacuum bottles and belly bottles with cap sizes of 53 or 83 mm. **Autoclavable**.

**Delivery incl.** TPE seals, 2 platinum-coated silicone suction and dispensing hoses, filling splash guard and 3 dummy plugs.

| ∅ x H (mm) | Closure size (mm) | Connections for hoses with internal ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 66.7 x 68,6 | 53 B | 6,3 | **PK44.1** | 1 | 30,00 |
| 102 x 98 | 83 B | 6,3 | **PK45.1** | 1 | 34,00 |
| 102 x 98 | 83 B | 12,7 | **PK46.1** | 1 | 37,40 |



## Dual tubing olive assembly sets

For upgrading Nalgene® vacuum bottles (PK40.1 f.) or carboys with 53 mm or 83 mm screw caps.
For this purpose, two holes (∅ 10 mm for PP13.1 or ∅ 16 mm for PP14.1) must be drilled in the screw cap and those connectors fitted. Autoclavable.
For tubes with ∅ inside 6 mm or 13 mm.
53 mm screw caps only be used with 6 mm tubing olives;
83 mm screw caps with 6 mm and/or 13 mm tubing olives.

**Delivery incl.** tube connections made of **PP**, nuts made of **azetal**, **silicone** seals, caps made of **TPE**. (**Delivery without** screw caps).

| For hose with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6 | **PP13.1** | 2 | 16,50 |
| 13 | **PP14.1** | 2 | 17,10 |


- ▶ PTFE thread tape see page 1145
- ▶ Tubes from page 371

# Plastic bottles, LDPE



NEU
NOUVEAU
NEW

## Narrow-mouth bottles LaboPlast® Bio

By Bürkle. Made of **Green LDPE**. Made of renewable raw material and fully recyclable. The seal-tight screw-cap closure, transparent. Suitable for foodstuffs.

| Volume (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 26 x 47 | 9 | 14 | **HEN6.1** | 10 | 10,70 |
| 20 | 32 x 58 | 9 | 14 | **HEN7.1** | 10 | 11,30 |
| 50 | 40 x 86 | 13 | 18 | **HEN8.1** | 10 | 13,95 |
| 100 | 45 x 106 | 13 | 18 | **HEN9.1** | 10 | 16,60 |
| 250 | 60 x 140 | 18 | 25 | **HEP0.1** | 10 | 23,15 |
| 500 | 75 x 173 | 18 | 25 | **HEP1.1** | 5 | 18,85 |
| 1000 | 95 x 213 | 21 | 28 | **HEP2.1** | 5 | 27,60 |



## LDPE narrow neck bottles

By Nalgene®. Model 2003. Bottle made of **LDPE**, screw cap made of **PP**. Higher transparency, flexibility and impact strength than HDPE bottles. LDPE has a low trace element content and, therefore, is suitable for use in trace analysis after appropriate cleaning. **Leak-proof**.

| Volume (ml) | ∅ x H (mm) | Cap size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 8 | 25 x 45 | 20 | **ATH1.1** | 12 | 10,30 |
| 15 | 25 x 58 | 20 | **ATH2.1** | 12 | 11,15 |
| 30 | 34 x 63 | 20 | **ATH3.1** | 12 | 12,10 |
| 60 | 39 x 86 | 20 | **ATH4.1** | 12 | 13,95 |
| 125 | 50 x 101 | 24 | **ATH5.1** | 12 | 17,00 |
| 250 | 61 x 133 | 24 | **ATH6.1** | 12 | 22,45 |
| 500 | 73 x 170 | 28 | **ATH7.1** | 12 | 32,20 |
| 500 | 73 x 168 | 38-430 | **ATH8.1** | 12 | 49,30 |
| 1000 | 91 x 199 | 38-430 | **ATH9.1** | 6 | 27,75 |



## Narrow neck bottles

Made of **LDPE**, transparent. According to DIN 168 and 13316. Comes with screw cap and is graduated.

| Volume (ml) | Graduation (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 10 | 38 x 92 | GL 18 | **A207.1** | 6 | 8,80 |
| 100 | 20 | 48 x 108 | GL 18 | **A751.1** | 6 | 10,30 |
| 250 | 25 | 60 x 150 | GL 25 | **A208.1** | 4 | 10,25 |
| 500 | 100 | 75 x 182 | GL 25 | **A752.1** | 4 | 11,70 |
| 1000 | 100 | 95 x 224 | GL 32 | **A209.1** | 4 | 17,20 |

## Wide neck bottles

Made of **LDPE**, transparent. With thread acc. to DIN 168. Wide neck opening for easy filling of solids and liquids. Come with screw cap and is graduated. Approved for foodstuffs.

| Volume (ml) | Graduation (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 10 | 38 x 88 | GL 32 | **E217.1** | 12 | 20,65 |
| 100 | 20 | 48 x 105 | GL 32 | **E218.1** | 12 | 22,90 |
| 250 | 25 | 60 x 140 | GL 45 | **E219.1** | 6 | 13,95 |
| 500 | 100 | 75 x 170 | GL 45 | **E220.1** | 6 | 19,50 |
| 1000 | 100 | 95 x 206 | GL 63 | **E221.1** | 6 | 27,20 |
| 2000 | 100 | 120 x 252 | GL 63 | **PE88.1** | 5 | 26,85 |



## Wide neck bottles, brown

Made of **LDPE**. Ideal for protecting light-sensitive samples from UV-radiation. With screw-on cap.

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 77 | 39 | **T508.1** | 10 | 15,60 |
| 100 | 93,5 | 48 | **T509.1** | 10 | 18,85 |
| 250 | 120 | 64 | **T510.1** | 10 | 23,45 |
| 500 | 154 | 77 | **T511.1** | 10 | 36,70 |
| 1000 | 205 | 95 | **T512.1** | 4 | 24,55 |

▶ For autoclaving information see page 5

# Plastic bottles, HDPE



## HDPE narrow neck bottles

By Nalgene®. Type 2002. Bottle made of **HDPE**, screw cap made of **PP**. Suitable for general laboratory applications. Good chemical resistance to many acids and alkalis. **Leakproof**.

| Volume (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 4 | 16 x 41 | 8 | **PX58.1** | 12 | 8,85 |
| 8 | 25 x 45 | 14 | **PX59.1** | 12 | 8,85 |
| 15 | 25 x 58 | 14 | **PX60.1** | 12 | 9,15 |
| 30 | 34 x 61 | 14 | **PX61.1** | 12 | 10,25 |
| 60 | 37 x 85 | 14 | **PX62.1** | 12 | 12,10 |
| 125 | 50 x 101 | 18 | **PX63.1** | 12 | 14,30 |
| 250 | 61 x 133 | 18 | **PX64.1** | 12 | 19,85 |
| 500 | 73 x 170 | 21 | **PX65.1** | 12 | 27,50 |
| 1000 | 91 x 216 | 27 | **PX66.1** | 6 | 23,10 |



## Narrow neck bottles, brown

By Nalgene®. Type 2004. Made of **HDPE**. Ideal for protecting light-sensitive samples from UV-radiation. With screw-on cap. **Leakproof**.

| Volume (ml) | Connector-∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 13 | **APK6.1** | 12 | 16,65 |
| 8 | 20 | **APK7.1** | 12 | 16,25 |
| 15 | 20 | **AN71.1** | 12 | 16,35 |
| 30 | 20 | **AK57.1** | 12 | 21,45 |
| 60 | 20 | **AK58.1** | 12 | 22,15 |
| 125 | 24 | **AK59.1** | 12 | 27,75 |
| 250 | 24 | **AK60.1** | 12 | 36,95 |
| 500 | 28 | **AK61.1** | 12 | 53,25 |
| 1000 | 38 | **AK62.1** | 6 | 46,05 |



## Rotilabo®-narrow neck bottles SafeGrip

Made of **HDPE**. Original cap with PTFE-sealing. Square-shaped form for easy handling. Thread GL 32. Neck ∅ inner 18.6 mm.

| Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 40 x 40 x 79 | **HH14.1** | 10 | 25,65 |
| 100 | 46 x 46 x 108 | **HH15.1** | 10 | 28,95 |
| 250 | 60 x 60 x 136 | **HH16.1** | 10 | 34,40 |
| 500 | 75 x 75 x 169 | **HH17.1** | 10 | 36,55 |



## Fluorinated narrow neck bottles

By Nalgene®. Type 2097. Made of fluorinated **HDPE.** With PP screw cap. Excellent for storing and transporting aggressive chemicals. The fluorinated inner and outer surface reduces diffusion and penetration of solvents and enhances long-term storage with minimal evaporation loss.
Extremely resistant to cracks and puncturing.
Suitable for most acids and aggressive organic solvents. **Leakproof.**

| Volume (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 61 x 133 | 17 | **C471.1** | 12 | 41,05 |
| 500 | 73 x 171 | 21 | **C472.1** | 12 | 58,05 |
| 1000 | 92 x 216 | 27 | **C473.1** | 6 | 49,45 |
| 2000 | 122 x 246 | 27 | **C474.1** | 2 | 53,45 |
| 4000 | 153 x 334 | 27 | **C475.1** | 1 | 36,30 |

# Plastic bottles, HDPE







## Wide-neck bottles

By Nalgene®. Bottle made of **HDPE**, screw cap made of **PP**. Durable all-purpose bottles, universally applicable in the laboratory and in sampling applications. Wide neck opening allows easy filling of dry matter and liquids. **Leak-proof.**

**① Type 2104, transparent**

| Volume (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 34 x 63 | 21 | **PX93.1** | 12 | 12,05 |
| 60 | 39 x 86 | 21 | **PX94.1** | 12 | 13,95 |
| 125 | 50 x 99 | 28 | **PX95.1** | 12 | 18,75 |
| 250 | 61 x 131 | 33 | **PX96.1** | 12 | 23,15 |
| 500 | 73 x 168 | 44 | **PX97.1** | 12 | 38,65 |
| 1000 | 91 x 199 | 53 | **PX98.1** | 6 | 26,70 |

**② Type 2106, brown**

Brown coloration protects light-sensitive substances during shipment or storage.

| Volume (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 34 x 63 | 21 | **ATE1.1** | 12 | 27,85 |
| 60 | 39 x 86 | 21 | **ATE2.1** | 12 | 29,50 |
| 125 | 50 x 99 | 28 | **ATE3.1** | 12 | 31,85 |
| 250 | 61 x 131 | 33 | **ATE4.1** | 12 | 47,55 |
| 500 | 73 x 168 | 44 | **ATE5.1** | 12 | 58,05 |
| 1000 | 91 x 199 | 53 | **ATE6.1** | 6 | 53,60 |



## Sealable wide-mouth bottles

By Bürkle. Made of **HDPE**. Robust wide-mouth bottles with sealing eyelets on the screw cap and bottle. Impervious to fluids. Suitable for storing and shipping specimens. Specifically designed for viscous media, powders, granulates and pastes. Protective seals must be ordered separately.

| Volume (ml) | Neck inner ∅ (mm) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 26,5 | 64 x 118 | **PK54.1** | 25 | 67,65 |
| 500 | 40 | 78 x 147 | **PK55.1** | 10 | 25,65 |
| 1000 | 50 | 100 x 186 | **PK56.1** | 10 | 47,85 |
| 2000 | 50 | 120 x 230 | **PK57.1** | 1 | 7,65 |

## Protective seals

By Bürkle. Made of **PP**, red. For sealable wide-mouth bottles. Uniquely identifiable by a continuous 9-digit number. The ring lock is secured in the locking chamber by a metal insert made of a stainless steel spring. With disposable pull mechanism for protection against manipulation. Dimensions: length 260 mm, ∅ band 2 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK58.1** | 10 | 10,55 |



## Wide-necked bottles

Made of **HDPE**, transparent. **Sterile** or non-sterile. For sampling, packing and storage of liquid, solid and pasty media. Heavy metal free to EC/94/62. Temperature stable from -80 to +110 °C.

**Delivery incl.** fitted HDPE screw cap with PE seal. **Leakproof**.

**Non-sterile**

| Volume (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 36 x 77 | 27 | **CCY4.1** | 600 | 427,85 |
| 100 | 51 x 80 | 37 | **CCY5.1** | 335 | 219,30 |
| 250 | 60 x 125 | 37 | **CCY6.1** | 145 | 103,85 |
| 500 | 80 x 136 | 58 | **CCY7.1** | 140 | 119,35 |
| 1000 | 101 x 174 | 58 | **CCY8.1** | 68 | 85,15 |
| 2000 | 121 x 220 | 57 | **CCY9.1** | 25 | 97,30 |

**Sterile (ionising radiation, SAL$^{-3}$)**

| Volume (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 51 x 80 | 37 | **CEA0.1** | 335 | 264,45 |
| 250 | 60 x 125 | 37 | **CEA1.1** | 145 | 121,50 |
| 500 | 80 x 136 | 58 | **CEA2.1** | 140 | 160,20 |
| 1000 | 101 x 174 | 58 | **CEA3.1** | 68 | 103,85 |


- ▶ Glass bottles from page 39
- ▶ Screw caps see page 44
- ▶ Wide-neck cans see page 112

# Plastic bottles, HDPE



## Rotilabo®-narrow neck bottles

Made of **HDPE**. Rectangular. Ideal for storing, packing and sampling chemicals. With tamper evident screw cap. Thread GL 32.

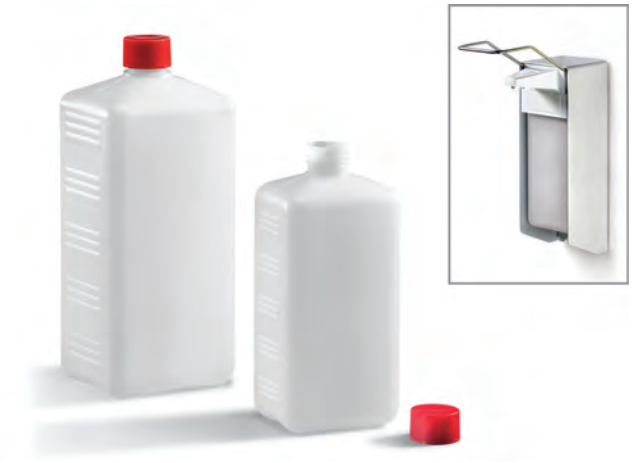
| Volume (ml) | Lid colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | blue | **5698.1** | 10 | 14,75 |
| 250 | blue | **5706.1** | 10 | 17,55 |
| 500 | blue | **5713.1** | 10 | 15,60 |
| 1000 | blue | **5717.1** | 10 | 22,40 |



## Wide neck-rectangular bottles

Made of **HDPE**. With push-in stopper and screw-on cap made of PP. Graduated. **Can be leaded.**

| Vol. (ml) | Graduation (ml) | L x W x H (mm) | Inner-∅ opening (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 5 | 34 x 32 x 50 | 18 | **K811.1** | 10 | 7,70 |
| 50 | 10 | 39 x 37 x 70 | 24 | **K812.1** | 10 | 8,85 |
| 100 | 20 | 48 x 42 x 90 | 34 | **K813.1** | 10 | 12,05 |
| 250 | 50 | 60 x 57 x 110 | 34 | **K814.1** | 10 | 13,10 |
| 500 | 100 | 80 x 70 x 140 | 44 | **K815.1** | 1 | 2,30 |
| 1000 | 100 | 103 x 80 x 175 | 58 | **K816.1** | 1 | 2,80 |
| 2000 | 100 | 135 x 100 x 210 | 58 | **K817.1** | 1 | 4,95 |



## Rotilabo®-dispenser bottles

Made of **HDPE**, with **PP** screw cap. With DIN 25 thread. ∅ neck inside 20 mm. Suitable for Sekuroka®-soap and disinfectant dispensers plus Art. No. TE53.1 f. and Sekuroka®-dispensers Art. No. N108.1 f.

| Volume (ml) | H x W x D (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 | 165 x 71 x 57 | **KA39.1** | 6 | 7,75 |
| 1000 | 210 x 87 x 71 | **KA40.1** | 6 | 9,45 |




## ① Wide neck-rectangular bottles

By Nalgene®. Type 2007. Made of **HDPE**. With PP screw cap. Sturdy wall construction, very robust. Wide neck opening for easy filling. Ideal for efficient storage and transport of liquids and solids. **Leakproof.**

| Volume (ml) | H x W x D (mm) | Cap ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 125 | 102 x 64 x 38 | 28 | **C488.1** | 12 | 24,30 |
| 250 | 114 x 76 x 48 | 38 | **C489.1** | 12 | 35,95 |
| 500 | 140 x 94 x 58 | 48 | **C490.1** | 12 | 56,55 |
| 1000 | 180 x 125 x 71 | 53 | **C491.1** | 6 | 65,60 |
| 2000 | 239 x 152 x 81 | 63 | **C492.1** | 4 | 69,90 |

## ② Wide neck-rectangular bottles, brown

By Nalgene®. Type 2009. Made of **HDPE**. With PE screw cap. Robust and space-efficient design. Ideal for protecting light-sensitive samples from UV-radiation. **Leakproof.**

| Volume (ml) | H x W x D (mm) | Cap ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 125 | 102 x 64 x 38 | 28 | **C459.1** | 12 | 36,55 |
| 250 | 114 x 76 x 48 | 38 | **C460.1** | 12 | 50,65 |
| 500 | 140 x 94 x 58 | 48 | **C461.1** | 12 | 70,85 |
| 1000 | 180 x 125 x 71 | 53 | **C462.1** | 6 | 82,05 |
| 2000 | 239 x 152 x 81 | 63 | **C463.1** | 4 | 80,75 |

# Plastic bottles, PP



## Bottles for demanding applications

By Nalgene®. Type 2126. **Vacuum bottles** made of **PP**, thick-walled. Screw cap made of PP, white with TPE seal. Highly robust, evacuable wide-mouth bottle. Vacuum-tight over 24 hours at 20 °C. **Leak-proof.** Suitable as vacuum trap or as storage bottle for analytical or dispensing apparatus. Vacuum-resistant to 0.1 mbar. Autoclavable.

| Volume (ml) | ∅ x H (mm) | Closure size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1000 | 93 x 226 | 53 B | **PK40.1** | 1 | 26,70 |
| 2000 | 119 x 260 | 53 B | **PK41.1** | 1 | 31,70 |
| 4000 | 155 x 338 | 83 B | **PK42.1** | 1 | 52,95 |
| 5000 | 156 x 414 | 83 B | **PK43.1** | 1 | 78,95 |



## Narrow neck bottles

By Nalgene®. Type 2006. Bottle and screw cap made of **PP**. Suitable for general laboratory applications. Good chemical resistance. **Leak-proof.** Autoclavable.

| Volume (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 4 | 16 x 41 | 8 | **PT86.1** | 12 | 11,00 |
| 8 | 25 x 45 | 14 | **PT87.1** | 12 | 9,50 |
| 15 | 25 x 58 | 14 | **PT88.1** | 12 | 9,95 |
| 30 | 34 x 61 | 14 | **PT89.1** | 12 | 10,70 |
| 60 | 37 x 85 | 14 | **PT90.1** | 12 | 11,30 |
| 125 | 50 x 101 | 18 | **PT91.1** | 12 | 13,95 |
| 250 | 61 x 133 | 18 | **PT92.1** | 12 | 20,45 |
| 500 | 73 x 170 | 21 | **PT93.1** | 12 | 33,15 |
| 1000 | 91 x 216 | 27 | **PT94.1** | 6 | 23,60 |

▶ For autoclaving information see page 5



## Wide-mouth bottles

By Nalgene®. Type 2105. Bottle and screw cap made of **PP**. Suitable for general laboratory applications. Good chemical resistance. **Leak-proof**. Autoclavable.

| Volume (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 34 x 63 | 21 | **PY08.1** | 12 | 12,80 |
| 60 | 39 x 86 | 21 | **PY09.1** | 12 | 14,85 |
| 125 | 50 x 99 | 28 | **PY10.1** | 12 | 22,50 |
| 250 | 61 x 131 | 33 | **PY11.1** | 12 | 29,00 |
| 500 | 73 x 168 | 44 | **PY12.1** | 12 | 47,20 |
| 1000 | 91 x 199 | 53 | **PY13.1** | 6 | 28,95 |



## Wide neck

Made of **PP**. Natural coloured. Ideal for pastes, granulates and for the decanting of hot products. Autoclavable.

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 94 | 48,5 | **T486.1** | 10 | 20,25 |
| 250 | 121 | 64,5 | **T487.1** | 10 | 26,10 |
| 500 | 155 | 77,5 | **T488.1** | 10 | 40,10 |
| 1000 | 206 | 96,0 | **T489.1** | 4 | 25,60 |



## High breast bottles GL 45

Made of **PP**. Flexible, transparent. Chemically (formalin, ethanol) and radiation sterilizable (β rays, 25kGy), microwave safe. Autoclavable. Art. No. PY05.1 with handle.
**Delivery incl.** PP screw cap.

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 132 | 73 | **PY01.1** | 1 | 3,45 |
| 500 | 172 | 87 | **PY02.1** | 1 | 4,15 |
| 1000 | 197 | 105 | **PY03.1** | 1 | 7,20 |
| 2000 | 241 | 131 | **PY04.1** | 1 | 8,95 |
| 5000 | 315 | 178 | **PY05.1** | 1 | 15,30 |

# UN-bottles



## Rotilabo®-wide neck bottles, UN-approved

Made of **HDPE**, natural coloured rectangular. With sunken area for labels and UN approval for solid materials. With tamper evident screw cap made of PP with PE-foam insert.

| Volume (ml) | L x W x H (mm) | UN approval | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 36 x 36 x 88,5 | none | **T474.1** | 10 | 16,35 |
| 100 | 45 x 45 x 101 | 3H1/X0.3/S | **T475.1** | 10 | 18,40 |
| 250 | 59 x 59 x 128 | 3H1/X0.8/S | **T476.1** | 10 | 23,45 |
| 500 | 75 x 75 x 161 | 3H1/X1.5/S | **T477.1** | 10 | 31,75 |
| 1000 | 85 x 85 x 212 | 3H1/X2.5/S | **T478.1** | 9 | 33,25 |
| 1500 | 111 x 111 x 209 | 3H1/X4/S | **T479.1** | 6 | 33,10 |
| 2500 | 122 x 122 x 258 | 3H1/X5/S | **T480.1** | 3 | 19,50 |
| 4000 | 142 x 142 x 294 | 3H1/X5.5/S | **T481.1** | 1 | 11,10 |



## Rotilabo®-narrow neck bottles, UN-approved

Made of **HDPE**, natural coloured. With a tamper evident screw cap made of PE with PTFE-insert. GL 45. Ideal for storing and transporting liquids.

**Type 1**: square. Dimensions: L 97 x W 97 x H 219 mm.

**Type 2:** round. Dimensions: ∅ 132 x H 293 mm. With robust handle.

| Type | Volume (ml) | UN approval | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Typ 1 | 1000 | 3H1/X1.9/250 | **T502.1** | 6 | 16,95 |
| Typ 2 | 2500 | 1H1/X1.3 Y1.9/250 | **T503.1** | 2 | 8,55 |



## Rotilabo®-wide neck bottles, UN-approved

Made of **HDPE**. Natural coloured. Square. With black plastic cap made of PP with PE foam insert 1,5 mm. Wide neck enables easy filling. With UN-X approval for solid materials.

| Vol. (ml) | Side length (mm) | Neck inner ∅ (mm) | Height without cap (mm) | UN approval | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 50 | 36 | 21,0 | 88,5 | none | **H333.1** | 35 | 53,50 |
| 100 | 45 | 24,0 | 101 | 3H1/X0.3/S | **H334.1** | 30 | 50,00 |
| 250 | 59 | 35,0 | 128 | 3H1/X0.8/S | **H335.1** | 20 | 50,80 |
| 350 | 60 | 35,0 | 164 | none | **H336.1** | 10 | 25,60 |
| 500 | 75 | 42,5 | 161 | 3H1/X1.5/S | **H337.1** | 10 | 29,00 |
| 750 | 85 | 42,5 | 185 | 3H1/X2.5/S | **H338.1** | 10 | 35,80 |
| 1000 | 85 | 42,5 | 212 | 3H1/X2.5/S | **H339.1** | 9 | 33,25 |
| 1500 | 111 | 68,5 | 209 | 3H1/X4/S | **H340.1** | 7 | 34,30 |
| 2500 | 122 | 68,5 | 258 | 3H1/X5/S | **H341.1** | 3 | 18,80 |
| 4000 | 142 | 68,5 | 294 | 3H1/X5.5/S | **H342.1** | 1 | 10,45 |


- ▶ Canisters with UN approval see page 93
- ▶ Wide neck barrels with UN approval see page 91

# UN-bottles




## Stainless steel bottles with GL 45 thread

Made of stainless steel 1.4404. With smooth inner surface (acc. to IIIc DIN 17441) and rounded inside edges for complete drainage and easy cleaning. Temperature stable up to +500 °C, autoclavable.

- Shatterproof
- Light-impermeable
- Chemical resistant (except halogen-containing media)

① **UN approved transport bottle 1A1/X2.0/1000**

For safe transportation of hazardous and flammable liquids, for storage of high-quality materials such as fine chemicals, pharmaceuticals or cosmetic products as well as light-sensitive materials.
No additional outer packaging required, as UN-approved. Approved for the conveyance of liquids with a relative density of up to 2.0 classified into UN packaging group I, II or III as hazardous goods.

**Delivery incl.** screw cap made of stainless steel with PTFE gasket.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1500 | **AAC4.1** | 1 | 449,00 |

② **Non-UN-approved storage bottle**

For the storage of aggressive media, high-purity fine chemicals, pharmaceuticals and cosmetic products as well as light-sensitive materials.

**Delivery without** cap. Please order separately.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1500 | **AAC5.1** | 1 | 404,00 |

Accessories:

| | | | |
|---|---|---|---|
| Stainless steel cap with GL 45 thread and PTFE gasket | **AAC6.1** | 1 | 112,00 |



## Rotilabo®-aluminium bottles

Made of 99.5 % pure aluminium, seamlessly manufactured. For the storage and transportation of substances and retained samples. Bottles with a volume of more than 60 ml have **UN approval 1B1/X/250.** Fully drainable. Neutral odour, impervious to light, rustproof and shatterproof. Screw cap made of PP with aluminium inner gasket and tamper evident closure.

* without UN approval

| Volume (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30* | 35 | 70 | **XY65.1** | 10 | 17,00 |
| 60 | 40 | 88 | **P791.1** | 10 | 18,90 |
| 120 | 57 | 97 | **P792.1** | 10 | 22,45 |
| 300 | 57 | 160 | **P793.1** | 10 | 32,15 |
| 600 | 74 | 192 | **P794.1** | 5 | 19,70 |
| 1200 | 88 | 248 | **P795.1** | 5 | 22,40 |

## Spare tamper-evident caps for Rotilabo®-aluminium bottles

Made from **PP**, features an aluminium inner seal.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For 30 ml bottles | **EEE8.1** | 10 | 7,75 |
| For 60-1200 ml bottles | **EEE9.1** | 10 | 7,75 |



## UN aluminium bottles

Made of 99.5 % pure aluminium. Screw cap with FKM gasket, **leak-proof**. **UN approval 1B1/X/250**, suitable for transportation and storage of hazardous substances. Sealable, impervious to light.

| Volume (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 125 | 50 | 105 | **XY66.1** | 1 | 17,35 |
| 250 | 65 | 140 | **XY67.1** | 1 | 20,65 |
| 500 | 80 | 145 | **XY68.1** | 1 | 25,05 |
| 1250 | 100 | 205 | **XY69.1** | 1 | 26,85 |

# Plastic bottles, PFA/PTFE



## PFA-narrow neck bottles

Made of highly pure **PFA**. With ETFE screw cap and special lip seal for tight sealing.

For trace analysis and long-term storage of highly pure oxidants, acids and alkalis, as well as hydrocarbons, solvents and standards.

- High thermal stability from -200 to +260 °C, autoclavable
- Chemically inert and resistant to virtually all chemicals
- Good transparency and dimensional stability
- Entrainment and cross-contamination are practically eliminated by highly hydrophobic, anti-adhesive and smooth surfaces
- Long shelf life of low concentration reference solutions in PFA vessels
- Easy to clean
- No memory effect

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 37 x 90 | GL 18 | **9718.1** | 1 | 35,40 |
| 100 | 45 x 114 | GL 18 | **9719.1** | 1 | 47,00 |
| 250 | 61 x 157 | GL 25 | **9720.1** | 1 | 77,20 |
| 500 | 76 x 189 | GL 25 | **9721.1** | 1 | 111,30 |
| 1000 | 96 x 233 | GL 32 | **9723.1** | 1 | 151,60 |



## PFA-wide neck bottles

Made of highly pure **PFA**. With tight closing PFA screw cap.

For trace analysis and long-term storage of highly pure oxidants, acids and alkalis, as well as hydrocarbons, solvents and standards.

- High thermal stability from -200 to +260 °C, autoclavable
- Chemically inert and resistant to virtually all chemicals
- Good transparency and dimensional stability
- Entrainment and cross-contamination are practically eliminated by highly hydrophobic, anti-adhesive and smooth surfaces
- Long shelf life of low concentration reference solutions in PFA vessels
- Easy to clean
- No memory effect

| Volume (ml) | ∅ x H (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 37 x 86 | S 28 | **9702.1** | 1 | 60,05 |
| 100 | 45 x 120 | S 28 | **9703.1** | 1 | 91,40 |
| 250 | 61 x 150 | S 40 | **9704.1** | 1 | 108,60 |
| 500 | 76 x 179 | S 40 | **9705.1** | 1 | 151,60 |
| 1000 | 96 x 217 | S 40 | **9706.1** | 1 | 209,65 |

▶ Screw caps made of PFA see page 45



## PFA-bottles

Made of **PFA**. Graduated, highly transparent, **leak-proof**. Microwave safe. Autoclavable.

- Temperature resistant in the range -196 to +250 °C
- Inert to virtually all chemicals, including hydrofluoric and nitric acid
- High purity, low metal ion content, ideal for use in trace analysis and for the storage of highly pure substances
- No memory effect
- Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning

**Narrow neck**

| Volume (ml) | Height (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 100,8 | 16,7 | **YY60.1** | 1 | 67,65 |
| 250 | 133,7 | 16,5 | **YY61.1** | 1 | 110,75 |
| 500 | 165,1 | 17,0 | **YY62.1** | 1 | 139,75 |
| 1000 | 202,4 | 25,3 | **YY63.1** | 1 | 239,75 |
| 2000 | 235 | 33 | **YY64.1** | 1 | 714,90 |
| 3000 | 269,9 | 36,6 | **YY65.1** | 1 | 751,45 |
| 5000 | 316,7 | 36,4 | **YY66.1** | 1 | 834,20 |

**Wide neck**

| Volume (ml) | Height (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | 60,3 | 16,4 | **YY67.1** | 1 | 38,30 |
| 100 | 106,5 | 25,7 | **YY68.1** | 1 | 96,65 |
| 250 | 136,8 | 25,7 | **YY69.1** | 1 | 137,60 |
| 500 | 173,8 | 33,9 | **YY70.1** | 1 | 213,95 |
| 1000 | 207,2 | 36,8 | **YY71.1** | 1 | 349,40 |



## Rotilabo®-narrow neck bottles

Made of **PTFE**. With screw cap. Chemically inert. Temperature stable from -200 to +260 °C. Low gas permeability. Anti-adhesive. Autoclavable.

| Volume (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 16 x 27 | 10 | **T633.1** | 1 | 15,95 |
| 5 | 22 x 35 | 10 | **T635.1** | 1 | 18,50 |
| 10 | 26 x 50 | 12 | **T636.1** | 1 | 20,90 |
| 25 | 33 x 61 | 19 | **T637.1** | 1 | 27,75 |
| 50 | 43 x 76 | 25 | **T638.1** | 1 | 35,15 |
| 100 | 52 x 88 | 35 | **T639.1** | 1 | 46,35 |
| 150 | 60 x 90 | 35 | **T640.1** | 1 | 49,05 |
| 250 | 67 x 115 | 42 | **1181.1** | 1 | 60,10 |
| 500 | 80 x 150 | 52 | **T641.1** | 1 | 100,10 |
| 1000 | 100 x 185 | 57 | **1182.1** | 1 | 139,15 |
| 2000 | 120 x 240 | 60 | **T642.1** | 1 | 253,70 |



## Rotilabo®-glass wash bottles

Made of borosilicate glass 3.3. Complete wash bottle consisting of flat bottom flask with NS 29/32 socket and wash bottle adapter. Autoclavable.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 250 | **ACK8.1** | 1 | 35,10 |
| 500 | **ACK9.1** | 1 | 37,05 |
| 1000 | **ACL0.1** | 1 | 41,25 |

## Replacement adapter for NS 29/32 glass wash bottles

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACL1.1** | 1 | 17,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| Pipette bulbs PVC, suck. vol. 85 ml | **H619.1** | 2 | 14,00 |
| Pipette bulbs PVC, suck. vol. 140 ml | **H620.1** | 2 | 19,35 |
| Pipette bulbs PVC, suck. vol. 220 ml | **H621.1** | 2 | 23,80 |




## Rotilabo®-wide neck wash bottles

Made of **LDPE**. Comes with contents label printed in three languages, danger identification mark in accordance with the GHS. Screw cap colour-coded. Non-scratch ink. Movable suction tube enables total emptying.
**Note:** The chemical resistance of the spray bottles is limited when aggressive filling media are used. The bottles should therefore be replaced regularly and not used for analytical or critical applications.

| Label | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Acetone | 250 | **T398.1** | 1 | 5,60 |
| Acetone | 500 | **T399.1** | 1 | 7,00 |
| Ethanol | 250 | **T400.1** | 1 | 5,60 |
| Ethanol | 500 | **T401.1** | 1 | 7,00 |
| Isopropanol | 250 | **T402.1** | 1 | 5,60 |
| Isopropanol | 500 | **T403.1** | 1 | 7,00 |
| Methanol | 250 | **T404.1** | 1 | 5,60 |
| Methanol | 500 | **T405.1** | 1 | 7,00 |
| Dist. water | 250 | **T406.1** | 1 | 5,60 |
| Dist. water | 500 | **T407.1** | 1 | 7,00 |



## Rotilabo®-safety wash bottles

Bottle made of **LDPE** or **PP**, screw cap and spray tube made of PP.
A pressure relief valve in the screw cap stops discharge, dripping or leakage of liquid through the spray tube, e.g. due to temperature fluctuations.
With indelible contents label in four languages (German, English, French and Spanish) and hazard warning label in accordance with GHS.
**Note:** The chemical resistance of the spray bottles is limited when aggressive filling media are used. The bottles should therefore be replaced regularly and not used for analytical or critical applications.

**500 ml, thread GL 25**

| Label | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Acetone | PP | **HL51.1** | 1 | 8,00 |
| Dist. water | LDPE | **HL52.1** | 1 | 8,00 |
| Methylene chloride (DCM) | LDPE | **PY36.1** | 1 | 8,10 |
| Ethyl acetate | LDPE | **HL53.1** | 1 | 8,00 |
| Ethanol | LDPE | **HL54.1** | 1 | 8,00 |
| Isopropanol | LDPE | **HL55.1** | 1 | 8,00 |
| Methanol | LDPE | **HL56.1** | 1 | 8,00 |
| Methyl ethyl ketone (MEK) | PP | **PY44.1** | 1 | 8,10 |
| Toluene | LDPE | **PY39.1** | 1 | 8,10 |

**1000 ml, thread GL 32**

| Label | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Acetone | PP | **HL57.1** | 1 | 9,65 |
| Dist. water | LDPE | **HL58.1** | 1 | 9,65 |
| Ethanol | LDPE | **HL59.1** | 1 | 9,65 |
| Isopropanol | LDPE | **HL61.1** | 1 | 9,45 |
| Methyl ethyl ketone (MEK) | PP | **PY54.1** | 1 | 9,65 |

# Wash bottles



## Wash bottles

Made of **LDPE**, transparent.
Screw cap and spray tube with elongated tip made of **PP**.

| Volume (ml) | Thread GL | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 18 | 73 | 37 | **XY89.1** | 1 | 3,70 |
| 100 | 18 | 95 | 43 | **XY90.1** | 1 | 3,90 |
| 250 | 25 | 135 | 58 | **XY91.1** | 1 | 4,25 |
| 250 | 45 | 146 | 58 | **XY92.1** | 1 | 4,75 |
| 500 | 25 | 180 | 74 | **XY93.1** | 1 | 5,60 |
| 500 | 45 | 166 | 76 | **XY94.1** | 1 | 5,95 |
| 1000 | 32 | 221 | 92 | **XY95.1** | 1 | 6,60 |
| 1000 | 63 | 226 | 91 | **XY96.1** | 1 | 7,80 |



121°C

## Screw caps

With integrated lip seal, leak-proof. Autoclavable.

Made of **PP**

| Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GL 18 | **YA32.1** | 24 | 13,95 |
| GL 25 | **YA33.1** | 12 | 7,00 |
| GL 32 | **YA34.1** | 12 | 8,25 |
| GL 40 | **YA35.1** | 12 | 13,45 |
| GL 45 | **YA36.1** | 12 | 13,80 |
| GL 52 | **YA37.1** | 12 | 14,65 |
| GL 56 | **YA38.1** | 12 | 14,85 |
| GL 63 | **YA39.1** | 12 | 15,75 |

Made of **PFA**

| Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GL 18 | **YA40.1** | 1 | 5,25 |
| GL 25 | **YA41.1** | 1 | 9,45 |
| S 28 | **YA42.1** | 1 | 23,35 |
| S 40 | **YA43.1** | 1 | 27,75 |



## Rotilabo®-wash bottles

Made of **LDPE**. Natural coloured.

| Volume (ml) | Height without suction (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 145 | 60 | **5330.1** | 1 | 4,45 |
| 500 | 180 | 75 | **5331.1** | 1 | 5,00 |
| 1000 | 230 | 100 | **5332.1** | 1 | 6,60 |

## Rotilabo®-wash bottles-set

Three wash bottles. Volumes 250, 500 and 1000 ml.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **5333.1** | 1 | 12,85 |



## Rotilabo®-wash bottles

Made of **LDPE**, coloured. Screw cap and spray tube made of **PP**.
GL 25 thread. Precision jet and optimised medium backflow through fine tip of spray tube. Easy identification thanks to selection of differently coloured bottled.

**Volume 250 ml**, outer ∅ 58 mm, bottle height 135 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **APK1.1** | 1 | 5,35 |
| green | **APK2.1** | 1 | 5,35 |
| yellow | **APK3.1** | 1 | 5,35 |
| blue | **APK4.1** | 1 | 5,35 |

**Volume 500 ml**, outer ∅ 75 mm, bottle height 180 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **6530.1** | 1 | 5,60 |
| green | **6533.1** | 1 | 5,60 |
| yellow | **6536.1** | 1 | 5,60 |
| blue | **6539.1** | 1 | 5,60 |

## Rotilabo®-wash bottle assortment

Consisting of 4 wash bottles **volume 500 ml** in red, green, yellow and blue.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **APK5.1** | 1 | 20,95 |

# Wash bottles



## Wash bottles

By Nalgene®. Type 2422. Made of **LDPE**. Srew cap and suction made of PP. Coloured caps enable easy identification of contents.
**Leakproof,** because the cap and suction tube were moulded in one piece.
Capacity 500 ml.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| yellow | **K665.1** | 1 | 7,65 |
| green | **K667.1** | 1 | 7,65 |
| red | **K668.1** | 1 | 7,65 |
| blue | **K666.1** | 1 | 7,65 |



## Wash bottles

Made of **PE**, with bent ascending pipe and removable spray nozzle.

| Volume (ml) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 35 | **Y767.1** | 1 | 2,55 |
| 100 | 43 | **Y768.1** | 1 | 2,55 |
| 250 | 60 | **Y769.1** | 1 | 3,45 |
| 500 | 75 | **Y770.1** | 1 | 3,80 |
| 1000 | 95 | **Y771.1** | 1 | 5,05 |



## Rotilabo®-wash bottles

Made of **PE**. The intergrated nozzle is robust and moulded in one piece. Removeable screw cap. Bottle can be emptied completely.

| Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 250 | 90 x 60 x 140 | **Y801.1** | 1 | 4,45 |
| 500 | 96 x 65 x 178 | **Y802.1** | 1 | 4,80 |



## Wide neck wash bottles

By Nalgene®. Type 2402 (transparent) or DS 2408 (red). Made of **LDPE**. With PP screw cap. Wide neck opening for fast and easy filling.
Intergrated nozzle to ensure total emptying of bottle. With leakproof top.

| Colour | Volume (ml) | Cap ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| transparent | 125 | 24 | **C464.1** | 6 | 26,15 |
| transparent | 250 | 38 | **C465.1** | 4 | 21,10 |
| transparent | 500 | 38 | **C466.1** | 4 | 24,60 |
| transparent | 750 | 38 | **C467.1** | 4 | 34,70 |
| transparent | 1000 | 43 | **C468.1** | 2 | 18,80 |
| red | 250 | 38 | **K669.1** | 1 | 12,85 |
| red | 500 | 38 | **K670.1** | 1 | 20,40 |



## FEP-wash bottles

By Nalgene®. Type 2403. Made of **FEP**. Suction tube and screw cap made of ETFE. Excellent chemical resistance. Enable contamination-free working during trace element analysis. **Leakproof**, because the cap and suction tube were moulded in one piece. Free from phthalate. Autoclavable.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 125 | **K671.1** | 1 | 87,10 |
| 250 | **K672.1** | 1 | 138,70 |
| 500 | **K673.1** | 1 | 168,80 |
| 1000 | **K674.1** | 1 | 218,25 |

▶ Chemical Resistance of Plastics, table see page 6

# Dropper bottles



DURAN
WHEATON
KIMBLE

## Dropper bottles

Made of soda-lime glass. Complete with rubber sucker and replaceable standard joint pipette made of clear glass. Ground 14/15.

**Clear glass**

| Volume (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 79 | **T930.1** | 10 | 76,90 |
| 100 | 105 | **T931.1** | 10 | 85,60 |

**Brown glass**

| Volume (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 79 | **T932.1** | 10 | 80,25 |
| 100 | 105 | **T933.1** | 10 | 96,60 |

## Spare parts for glass dropper bottles

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spare pipettes for 50 ml bottles | **T934.1** | 10 | 37,65 |
| Spare pipettes for 100 ml bottles | **T935.1** | 10 | 39,35 |
| Spare rubber sucker | **T936.1** | 10 | 4,95 |



## High breast bottles with pipette

Made of clear or brown glass. Complete with clear glass pipette, suction cup with PP stopper with standard ground joint.

**Clear glass**

| Volume (ml) | Height (mm) | NS | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 77 | 14/15 | **TT98.1** | 10 | 100,85 |
| 100 | 103 | 14/23 | **TT99.1** | 6 | 93,55 |
| 250 | 131 | 19/26 | **TX00.1** | 10 | 138,70 |

**Brown glass**

| Volume (ml) | Height (mm) | NS | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 77 | 14/15 | **TX01.1** | 10 | 117,20 |
| 100 | 103 | 14/23 | **TX02.1** | 6 | 99,35 |
| 250 | 131 | 19/26 | **TX03.1** | 10 | 163,40 |




## Dropper bottles

By Nalgene®. Made of **LDPE**, stopper made of **PP**, dropper tip made of **LDPE**. Good chemical resistance. Ideal for small culture volumes. Precise single drop release. Drop size 40 µl (aqua dest). **Leakproof.**

① **Type 2751, white bottles and lids.** Suitable for UV-sensitive samples.

| Volume (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 41 | **HX22.1** | 25 | 40,00 |
| 8 | 52 | **HX23.1** | 25 | 41,40 |
| 15 | 62 | **HX24.1** | 25 | 42,40 |

② **Type 2752, transparent bottles, colour-coded lids** (white, red, green, blue, yellow).

| Volume (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 41 | **PP10.1** | 25 | 35,75 |
| 8 | 52 | **PP11.1** | 25 | 37,25 |
| 15 | 62 | **PP12.1** | 25 | 39,15 |



## Dropper bottles

Made of **LDPE**, transparent. Supplied with dropping closure.

| Volume (ml) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | GL 18 | **6541.1** | 6 | 10,05 |
| 100 | GL 18 | **6542.1** | 6 | 11,25 |
| 250 | GL 25 | **6544.1** | 4 | 11,40 |
| 500 | GL 25 | **6545.1** | 4 | 13,10 |
| 1000 | GL 32 | **6548.1** | 4 | 17,05 |

## Spare dropper lids

Made of **HDPE**.

| Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GL 18 | **YA52.1** | 24 | 27,45 |
| GL 25 | **YA53.1** | 12 | 16,80 |
| GL 32 | **YA54.1** | 12 | 17,45 |

▶ Dropper bottles made of PTFE see page 116

# Dropper bottles



## Dropper bottles

Made of **PE**, translucent, with red screw cap, dropper pipette and suction cup.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 35 x 96 | **TT69.1** | 10 | 28,15 |
| 100 | 43 x 115 | **TT70.1** | 10 | 33,35 |
| 250 | 60 x 140 | **TT71.1** | 10 | 37,10 |
| 500 | 75 x 180 | **TT72.1** | 10 | 40,85 |




## Dropper bottles

By Nalgene®. Model DS2420. Bottle made of **polypropylene copolymer**, dropper cap and cap made of **PP**. For dispensing sterile aqueous media. Also autoclavable when full with tip open. Tip sealing cap is combined with the screw cap and therefore cannot be lost. Autoclavable.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 125 | **ATL3.1** | 6 | 42,80 |
| 250 | **ATL4.1** | 6 | 46,20 |



## Narrow-neck, four-edged bottles

By Bürkle. Made of **HDPE**, screw cap made of LDPE. With labelling area. For packing and storing liquids.

**With screw cap, leakproof**

| Volume (ml) | Dimensions L x W x H (mm) | Thread (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 41 x 34 x 113 | 18 | 13 | **KA91.1** | 10 | 8,10 |
| 250 | 51 x 44 x 160 | 25 | 17,5 | **KA92.1** | 10 | 11,35 |
| 500 | 68 x 53 x 182 | 25 | 17,5 | **KA93.1** | 10 | 14,10 |
| 1000 | 90 x 64 x 230 | 25 | 17,5 | **KA94.1** | 10 | 20,70 |

**With dropper-lid made of PVC**

| Volume (ml) | Dimensions L x W x H (mm) | Thread (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 41 x 34 x 113 | 18 | 13 | **KA95.1** | 10 | 8,75 |
| 250 | 51 x 44 x 160 | 25 | 17,5 | **KA96.1** | 10 | 11,95 |
| 500 | 68 x 53 x 182 | 25 | 17,5 | **KA97.1** | 10 | 14,25 |
| 1000 | 90 x 64 x 230 | 25 | 17,5 | **KA98.1** | 10 | 22,80 |



## Dosing bottles

Made of **PE** with **PMP** measuring cup. Adjustable measurement units, graduated from 5 to 50 ml. Accurate to within 2 %. Measuring cup filled by putting pressure on bottle. Surplus amounts flow back automatically. Filling tube can be sealed.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 250 | **6996.1** | 1 | 11,50 |
| 500 | **7009.1** | 1 | 12,05 |
| 1000 | **7024.1** | 1 | 14,25 |

▶ Pasteur pipettes see page 413

# Spray bottles



## Spray diffusers

By Rixius. Made of brown glass. Volume approx. 20 ml, ∅ 29 mm, overall height with spray nozzle 98 mm. With GL 18 thread.
Spray nozzle complete with cap and tube made of PE.
Approx. 0.05 ml spray volume per pump action.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N145.1** | 3 | 8,40 |



## Spray bottle Turn'n'Spray

By Bürkle. Made of **LDPE**, parts in contact with media are made of PP, PE, silicon and stainless steel. Allows uninterrupted spraying from all positions, including overhead. Nozzle is continuously adjustable, nozzle ∅ 0.6 mm.
Spray quantity per stroke: 1.2 ml ±0.1.

| Volume (ml) | Height including cap (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 220 | 18 | **PX90.1** | 1 | 8,25 |
| 500 | 240 | 18 | **PX91.1** | 1 | 8,85 |
| 1000 | 295 | 21 | **PX92.1** | 1 | 9,35 |



## Spray bottles

Bottle made of **PE**, pump spray nozzle made of **PP**, transparent.
The protective cap stops the pump from being pressed accidentally and also acts as a dust protection cap.

| Volume (ml) | Bottle ∅ (mm) | Height with protective cap (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 35 | 110 | **EP66.1** | 5 | 10,45 |
| 100 | 37 | 161 | **EP67.1** | 2 | 3,80 |
| 250 | 50 | 202 | **EP68.1** | 2 | 4,10 |



## Pump spray flasks

Made of **PP**. Trigger-operated, with adjustable spray jet. Colour white.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 400 | **0499.1** | 1 | 8,35 |
| 850 | **0500.1** | 1 | 8,85 |



## Pressure sprayer

By Bürkle. With short spray nozzle. The hand pump can generate a pressure of up to 4 bar inside the container.
Then simply press the button to spray.
**Ideal for following applications:** disinfecting, cleaning, plant protection, thin-layer chromatography, technical and sanitary needs.

- Parts in contact with media: PP, PE, PA glass fiber reinforced, V2A, FKM
- Nozzles-∅ 0.6 mm, infinitely adjustable
- Spray lance (length 30 cm) are optionally available

| Volume (ml) | Bottle ∅ (mm) | Height including cap (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1500 | 142 | 315 | 45 | **EP63.1** | 1 | 36,80 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spray lance, length 30 cm | **EP64.1** | 1 | 23,15 |


▶ Spray flasks see page 527
▶ TLC atomisers made of glass see page 527



## Rotilabo®-deep freeze boxes

Made of natural-coloured **PE**, (box HDPE, lid LDPE).
Temperature stable from -40 to +95 °C. Polished.
Rectangular, slightly conical. With notched lid.
Stackable, matching. Suitable for foodstuffs.

| Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 | 103 x 103 x 64 | **1597.1** | 5 | 12,15 |
| 1000 | 208 x 103 x 64 | **1598.1** | 5 | 19,90 |
| 1000 | 103 x 103 x 127 | **1599.1** | 5 | 17,55 |
| 1500 | 208 x 103 x 94 | **A272.1** | 5 | 25,60 |
| 2000 | 208 x 208 x 64 | **A274.1** | 5 | 34,00 |
| 2000 | 255 x 103 x 94 | **A273.1** | 5 | 30,00 |
| 3300 | 208 x 208 x 94 | **A275.1** | 5 | 36,50 |



NEU NOUVEAU NEW

## Rotilabo®-preservation jars

Made of **PP**, translucent and dimensionally stable.
With blue snap-on lid made of LDPE. For storing granulates, powders and paste-like substances.
Temperature stable from -40 to +85 °C.
Dishwasher and microwave safe. Suitable for foodstuffs.

| Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 110 x 110 x 44 | **HEK2.1** | 10 | 17,10 |
| 500 | 150 x 100 x 50 | **HEK3.1** | 10 | 23,15 |
| 500 | 230 x 140 x 32 | **HEK4.1** | 10 | 39,25 |
| 1000 | 180 x 120 x 65 | **HEK6.1** | 10 | 31,15 |
| 1000 | 235 x 140 x 52 | **HEK7.1** | 10 | 46,25 |
| 1500 | 230 x 150 x 65 | **HEK8.1** | 10 | 49,45 |
| 2000 | 280 x 180 x 65 | **HEK9.1** | 5 | 40,35 |
| 2500 | 250 x 158 x 92 | **HEL0.1** | 5 | 31,10 |
| 3000 | 280 x 180 x 80 | **HEL1.1** | 5 | 45,70 |
| 4000 | 280 x 180 x 115 | **HEL2.1** | 5 | 47,20 |



NEU NOUVEAU NEW

## Rotilabo® microwave jars

Made of **PP**, translucent, strong design with red clip-on lid.
With small, lockable vent in lid for pressure compensation on heating.
Temperature resistant from -40 to +110 °C.
Dishwasher and microwave safe. Suitable for foodstuffs.

| Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 600 | 170 x 110 x 60 | **HEL3.1** | 4 | 18,60 |
| 1000 | 175 x 175 x 60 | **HEL4.1** | 4 | 23,65 |
| 1250 | 170 x 110 x 120 | **HEL5.1** | 4 | 29,60 |
| 2500 | 175 x 175 x 145 | **HEL6.1** | 4 | 35,40 |
| 3000 | 290 x 180 x 95 | **HEL7.1** | 4 | 39,75 |



NEU NOUVEAU NEW

## Rotilabo® shaker jars

Made of **PP**, translucent, solid design. Blue clip-on lid made of LDPE with integrated lid opening (∅ 44 mm) and flip-top closure.
Temperature resistant from -40 bis +95 °C.
Dishwasher and microwave safe. Suitable for foodstuffs.

| Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1200 | 170 x 95 x 145 | **HEL8.1** | 4 | 38,50 |
| 1800 | 170 x 95 x 205 | **HEL9.1** | 4 | 34,35 |



## Multi-purpose containers

By Nalgene®. Type 5700. Made of **SAN.** Lid made of PE. Stackable.
Lid with safety catch. The rounded edges make cleaning easier.
Excellent for storing granulates, powders and small parts.
The shape of the 500-ml-container makes it ideal for electrophoresis gels.
Not dishwasher safe.

| Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 325 | 129 x 75 x 59 | **K677.1** | 4 | 46,90 |
| 500 | 191 x 156 x 37 | **K678.1** | 2 | 39,20 |
| 1000 | 127 x 73 x 175 | **K680.1** | 2 | 37,65 |
| 2000 | 191 x 154 x 94 | **K681.1** | 1 | 27,65 |

# Tins



## Rotilabo®-storage containers

With lid. Made of 18/10 stainless steel. Ideal for storing solid and liquid substances. Suitable for foodstuffs. 7.5 l containers have folding handles on 2 sides.

| Volulme (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,46 | 80 x 80 x 80 | **9502.1** | 1 | 38,95 |
| 2,5 | 140 x 140 x 140 | **9506.1** | 1 | 78,50 |
| 7,5 | 200 x 200 x 200 | **9509.1** | 1 | 138,70 |



## Rotilabo®-stainless steel deep-freeze boxes

Made of 18/10 stainless steel, matt polished, stackable.
Suitable for foodstuffs. Autoclavable.
Supplied without lid. Please order separately.

| Volume (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5 | 95 x 95 x 60 | **YH09.1** | 1 | 17,00 |
| 1 | 195 x 95 x 60 | **YH10.1** | 1 | 23,60 |
| 2 | 195 x 195 x 60 | **YH11.1** | 1 | 30,00 |

## Lid for Rotilabo®-stainless steel deep-freeze boxes

| For deep-freeze boxes | Art. No. | Pack Qty. | € |
|---|---|---|---|
| YH09.1 | **YH12.1** | 1 | 8,75 |
| YH10.1 | **YH13.1** | 1 | 11,05 |
| YH11.1 | **YH14.1** | 1 | 15,95 |



## Rotilabo®-storage tins

Made of stainless steel 18/10, high-gloss. Odour and moisture proof. Suitable for foodstuffs.

**With hinged lid** made of acrylic glass and silicon seal, **leak-proof**.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 700 | 125 x 95 | **YX66.1** | 1 | 14,85 |
| 1000 | 125 x 125 | **YX67.1** | 1 | 17,35 |
| 1250 | 125 x 155 | **YX68.1** | 1 | 19,30 |
| 1700 | 125 x 195 | **YX69.1** | 1 | 21,40 |

**With slip lid** made of stainless steel with acrylic glass window.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 | 80 x 110 | **YX70.1** | 1 | 10,70 |
| 800 | 90 x 125 | **YX71.1** | 1 | 11,85 |
| 2000 | 125 x 170 | **YX72.1** | 1 | 18,20 |
| 4500 | 175 x 210 | **YX73.1** | 1 | 18,85 |



## Rotilabo®-wide-neck cans

Made of **HDPE.** With press-in plugs and screw cap. Ideal for storing powders or granulated substances. Large wide-neck opening enables easy filling and cleaning. Suitable for foodstuffs.

| Volume (ml) | Neck inner ∅ (mm) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 70 | 36 | 50 | 60 | **HT55.1** | 100 | 96,55 |
| 120 | 36 | 56 | 71 | **HT56.1** | 100 | 104,30 |
| 250 | 50 | 69 | 94 | **HT57.1** | 50 | 51,85 |
| 500 | 70 | 86 | 107 | **HT58.1** | 50 | 67,30 |
| 1000 | 85 | 111 | 128 | **HT59.1** | 20 | 36,70 |
| 2000 | 87 | 111 | 235 | **HT60.1** | 10 | 26,25 |


- ▶ Stainless steel beaker see page 12
- ▶ Stainless steel measuring beaker see page 16



## Rotilabo®-wide neck cans

Made of **hard PVC,** clear or amber or clear **PETG**. Square. Screw-on cap made of PP with PE-foam insert. Excellent for packing and storing liquids and solids. Wide neck enables easy filling. Suitable for foodstuffs.

**PVC clear**

| Volume (ml) | Side length (mm) | Neck inner ∅ (mm) | Height without cap (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 38 | 23 | 60,5 | **H312.1** | 25 | 19,80 |
| 100 | 46 | 31 | 71 | **H313.1** | 24 | 21,85 |
| 200 | 59,5 | 41 | 88,5 | **H314.1** | 14 | 19,95 |
| 300 | 67,5 | 41 | 95 | **H315.1** | 15 | 21,40 |
| 500 | 80,5 | 54 | 108 | **H316.1** | 10 | 22,05 |
| 750 | 91,5 | 69 | 120 | **H317.1** | 10 | 25,75 |
| 1000 | 97,5 | 69 | 144 | **H318.1** | 8 | 22,60 |
| 2000 | 122 | 69 | 187 | **H319.1** | 4 | 16,10 |

**PVC amber**

| Volume (ml) | Side length (mm) | Neck inner ∅ (mm) | Height without cap (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 38 | 23 | 60,5 | **H320.1** | 25 | 21,00 |
| 100 | 46 | 31 | 71 | **H321.1** | 24 | 22,50 |
| 200 | 59,5 | 41 | 88,5 | **H322.1** | 14 | 22,80 |
| 300 | 67,5 | 41 | 95 | **H323.1** | 15 | 23,90 |
| 500 | 80,5 | 54 | 108 | **H324.1** | 10 | 24,40 |
| 750 | 91,5 | 69 | 120 | **H325.1** | 10 | 27,85 |
| 1000 | 97,5 | 69 | 144 | **H326.1** | 8 | 24,20 |
| 2000 | 122 | 69 | 187 | **H327.1** | 4 | 19,30 |

**PETG**

| Volume (ml) | Side length (mm) | Neck inner ∅ (mm) | Height without cap (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 38 | 23 | 60,5 | **H328.1** | 25 | 24,55 |
| 100 | 46 | 31 | 71 | **H329.1** | 24 | 26,80 |
| 200 | 59,5 | 41 | 88,5 | **H330.1** | 14 | 27,25 |
| 500 | 80,5 | 54 | 108 | **H331.1** | 10 | 28,90 |
| 1000 | 97,5 | 69 | 144 | **H332.1** | 8 | 30,35 |
| 2000 | 122 | 69 | 187 | **T408.1** | 4 | 23,15 |

▶ Wide-necked jars see page 32




## Wide neck containers

By Nalgene®. Top made of **PP**. Large wide neck opening for easy filling. No rims where material can accumulate.

- Cans 125 ml to 1000 ml have a recess in the lid and are therefore stackable
- Sizes 125 ml and 250 ml are suitable for mixers with a Mason-thread

Do not use for the shipment of liquids. Autoclavable.

**PC.** Clear, shock-proof, non-toxic. Excellent for storage in refrigerators and cooling chambers. Temperature stable from -135 to +130 °C.

| Volume (ml) | ∅ (mm) | Cap ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 15 | 32 | 38 | 46 | **K682.1** | 4 | 13,45 |
| 30 | 36 | 43 | 48 | **K683.1** | 4 | 16,60 |
| 60 | 48 | 53 | 48 | **K684.1** | 4 | 18,60 |
| 125 | 69 | 70 | 74 | **K685.1** | 4 | 31,30 |
| 250 | 66 | 70 | 119 | **K686.1** | 4 | 35,05 |
| 500 | 117 | 120 | 86 | **K687.1** | 4 | 55,75 |
| 1000 | 112 | 120 | 142 | **K688.1** | 4 | 66,15 |

**PMP.** Transparent. Good chemical resistance. Especially ideal for permanent storage. Formaldehyde loss is only approx. 2 % per year. Suitable for foodstuffs.

| Volume (ml) | ∅ (mm) | Cap ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 60 | 48 | 53 | 48 | **K693.1** | 4 | 17,55 |
| 125 | 69 | 70 | 74 | **K694.1** | 4 | 29,60 |
| 250 | 66 | 70 | 119 | **K695.1** | 4 | 33,70 |
| 500 | 117 | 120 | 86 | **K696.1** | 4 | 54,85 |
| 1000 | 117 | 120 | 145 | **K697.1** | 4 | 64,45 |

**PP.** Transparent. Good chemical resistance. Suitable for foodstuffs. Temperature stable from 0 to +130 °C.

| Volume (ml) | ∅ (mm) | Cap ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 15 | 32 | 38 | 46 | **K698.1** | 12 | 23,45 |
| 30 | 36 | 43 | 48 | **K699.1** | 12 | 24,65 |
| 60 | 48 | 53 | 48 | **K700.1** | 12 | 26,30 |
| 125 | 64 | 70 | 74 | **K701.1** | 12 | 40,85 |
| 250 | 66 | 70 | 119 | **K702.1** | 6 | 26,40 |
| 500 | 117 | 120 | 86 | **K703.1** | 6 | 38,65 |
| 1000 | 117 | 120 | 145 | **K704.1** | 6 | 56,25 |

▶ Chemical Resistance of Plastics, table see page 6

▶ For autoclaving information see page 5

# Tins



❄❄

## Sample tubs

By Nalgene®. Made of **LDPE**, transparent. With friction-fit, snap closure. Versatile - can be used as sample containers, beakers for pH-measurements, weighing tubs etc. Temperature stable from -100 to +80 °C.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 23,6 | 24,9 | **ATK3.1** | 12 | 9,65 |
| 12 | 27,1 | 35,6 | **ATK4.1** | 12 | 10,25 |
| 18 | 27,1 | 52,6 | **ATK5.1** | 12 | 13,45 |
| 28 | 27,1 | 84,6, | **ATK6.1** | 12 | 17,10 |
| 50 | 37,3 | 70,9 | **ATK7.1** | 12 | 20,05 |
| 75 | 37,3 | 107,3 | **ATK8.1** | 12 | 26,70 |



## Sample bottles

Made of **PP**, transparent. With snap-on lid made of **LDPE**. Suitable for foodstuffs.

| Volume (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 20 | 25 | **YA12.1** | 25 | 24,40 |
| 18 | 22 | 57 | **YA14.1** | 25 | 32,60 |
| 50 | 30 | 97 | **YA15.1** | 10 | 17,45 |
| 160 | 50 | 110 | **YA16.1** | 10 | 20,30 |



❄

## Rotilabo®-screw cap bottles

Made of **HDPE**. Leakproof. Ideal for storing liquids or solids. Extremely thick-walled.

| Volume (ml) | Outside ∅ (mm) | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 21 | 17 | 30 | **K760.1** | 10 | 20,70 |
| 10 | 21 | 17 | 52 | **K761.1** | 10 | 23,50 |
| 30 | 35 | 31 | 53 | **K762.1** | 10 | 26,55 |
| 60 | 35 | 31 | 92 | **K763.1** | 10 | 30,45 |
| 90 | 55 | 50 | 62 | **K764.1** | 5 | 19,90 |
| 180 | 55 | 50 | 108 | **K765.1** | 5 | 24,15 |



❄ S A 121°C

## Rotilabo®-sample tins with snap-on lid

Made of **PP**, with attached lid. Lid can be affixed vertically. **Sterile** (γ-sterilized) or unsterile. Has labelling area and is graduated by 10 ml steps (except Art. No. EP22.1). Leakproof. Temperature stable from -20 to +121 °C. Autoclavable with open lid.

**Unsterile**

| Volume (ml) | Design | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 45 | unsterile | 29 | 85 | **EP22.1** | 650 | 90,70 |
| 50 | unsterile | 31 | 78 | **EP24.1** | 650 | 96,25 |
| 90 | unsterile | 43 | 80 | **EP26.1** | 350 | 74,35 |
| 300 | unsterile | 75 | 88 | **EP28.1** | 240 | 111,80 |

**Sterile**

| Volume (ml) | Design | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | sterile | 31 | 78 | **EP25.1** | 650 | 110,75 |
| 90 | sterile | 43 | 80 | **EP27.1** | 350 | 90,20 |
| 300 | sterile | 75 | 88 | **EP29.1** | 240 | 126,85 |



## Rotilabo®-round containers

Lid of **PE**. For powders, pastes, granulates and other bulk materials. With tamper evident lid. HDPE tubs with snap-on lid, PP tubs with slip-on lid. Suitable for foodstuffs.

| Volume (ml) | ∅ (mm) | Height (mm) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 30 | 35 | 54 | HDPE | **5553.1** | 10 | 4,90 |
| 75 | 45 | 67 | HDPE | **5602.1** | 10 | 6,05 |
| 150 | 64 | 67 | HDPE | **5623.1** | 10 | 10,25 |
| 300 | 64 | 110 | HDPE | **5642.1** | 10 | 12,15 |
| 750 | 108 | 96 | PP | **5657.1** | 10 | 30,05 |
| 1250 | 108 | 155 | PP | **5694.1** | 5 | 18,85 |



## Cryo tins with screw cap

By Nalgene®. Type 5005. **Sterile.** Made of **PP**, lid made of **HDPE**.
Volume 15 ml.
For storing solid samples. Use in freezers and/or deep freezers. Pyrogen-free and noncytotoxic. CE marking according to IVD Guideline 98/79/EC.
Dimensions: ∅ 33 x H 47 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PP19.1** | 75 | 96,20 |



DURAN WHEATON KIMBLE
Material DURAN®
121°C

## Glass jars

Made of DURAN®. High temperature and chemical resistance. Autoclavable.
**Delivery incl.** lid.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 75 | 60 x 40 | **CCL2.1** | 1 | 31,25 |
| 175 | 80 x 50 | **CCL3.1** | 1 | 37,50 |
| 325 | 100 x 60 | **CCL4.1** | 1 | 47,00 |
| 1000 | 150 x 80 | **CCL5.1** | 1 | 85,75 |



## Sample tins

Made of **PP**. With screw cap made of **PP**. For sampling, transporting and storing samples. Suitable for foodstuffs.

| Volume (ml) | Thread GL | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 30 | 40 | 54 | 38 | **YA17.1** | 10 | 46,95 |
| 60 | 40 | 90 | 38 | **YA18.1** | 10 | 59,70 |
| 90 | 56 | 62 | 54 | **YA19.1** | 10 | 73,75 |
| 180 | 56 | 112 | 54 | **YA20.1** | 10 | 87,10 |



121°C

## Rotilabo®-aluminium cans

Made of 99.5 % pure aluminium, uncoated. Screw-on lids have integral rubber seal. Can be deep-frozen to max. -196 °C. Autoclavable.

| Filling capacity (ml) | Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | 3 | 23 | 14,5 | **1083.1** | 100 | 106,25 |
| 10 | 15 | 29 | 30,0 | **1084.1** | 100 | 160,75 |



## Screw cap containers

Made of **PP**. Cap made of **PE**. For storing solid samples.
Temperature stable from 0 to +100 °C.
Free of undercuts, fully drainable.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 104 | 50 | **XY70.1** | 1 | 4,60 |
| 500 | 104 | 100 | **XY71.1** | 1 | 5,70 |
| 1000 | 126 | 126 | **XY72.1** | 1 | 8,10 |

▶ Cotton wool see page 1131

# Tins



## Rotilabo®-sample vials

Made of **PTFE**. Autoclavable, inert.
Temperature stable from -200 to +260 °C.
Thick-walled version with conical base. **Delivery incl.** closures.

**Dropper bottles**

| Volume (ml) | Outer ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 80 x 33 | 25 | **LT80.1** | 1 | 38,50 |
| 50 | 100 x 43 | 25 | **LT81.1** | 1 | 45,05 |

**Vials**

| Volume (ml) | Outer ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 64 x 33 | 25 | **LT82.1** | 1 | 60,85 |
| 50 | 78 x 43 | 31 | **LT83.1** | 1 | 76,90 |



## PFA tins

Made of **PFA**, highly transparent. With labelling space and seal, leak-proof. Cryo and microwave safe. Autoclavable.

- Temperature resistant in the range -196 to +250 °C
- Inert to virtually all chemicals, including hydrofluoric and nitric acid
- High purity, low metal ion content, ideal for use in trace analysis and for the storage of highly pure substances
- No memory effect
- Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 46,8 | 50,8 | **YY50.1** | 1 | 60,20 |
| 120 | 53,2 | 66,0 | **YY51.1** | 1 | 91,40 |
| 240 | 96 | 75,4 | **YY52.1** | 1 | 126,85 |
| 360 | 90,4 | 95 | **YY53.1** | 1 | 160,75 |
| 480 | 94,3 | 65,2 | **YY54.1** | 1 | 182,75 |
| 1000 | 150,0 | 106,7 | **YY55.1** | 1 | 356,90 |
| 2000 | 269,1 | 104,1 | **YY56.1** | 1 | 525,70 |



## Rotilabo®-wide neck bottles

Made of **PTFE**. Autoclavable, inert.
Temperature stable from -200 to +260 °C.Thick-walled version, stackable.

| Volume (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 15 | 34 x 34 | 26,0 | **LT85.1** | 1 | 23,80 |
| 30 | 34 x 62 | 26,0 | **LT86.1** | 1 | 29,25 |
| 60 | 60 x 46 | 47,0 | **LT87.1** | 1 | 37,95 |
| 120 | 72 x 62 | 54,0 | **LT88.1** | 1 | 49,05 |
| 240 | 72 x 100 | 60,0 | **LT89.1** | 1 | 60,65 |
| 360 | 90 x 95 | 73,0 | **LT90.1** | 1 | 83,00 |
| 480 | 90 x 125 | 73,0 | **LT91.1** | 1 | 95,90 |
| 1000 | 110 x 160 | 92,0 | **LT92.1** | 1 | 146,20 |
| 2200 | 134 x 260 | 110,6 | **LT93.1** | 1 | 279,20 |



## Fluoroplastic sample tins

Made of **PFA**. Highly transparent, with screw cap.

- For sampling, transportation and storage
- Chemically inert to nearly all chemicals
- Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning
- High purity, ideal for used in trace analysis and for storage of reference solutions
- No memory effect
- Temperature resistant in the range -200 to +250 °C
- Autoclavable

| Volume (ml) | Thread GL | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 30 | 40 | 54 | 38 | **YA21.1** | 1 | 39,00 |
| 60 | 40 | 90 | 38 | **YA22.1** | 1 | 47,55 |
| 90 | 56 | 62 | 54 | **YA23.1** | 1 | 52,20 |
| 180 | 56 | 112 | 54 | **YA24.1** | 1 | 65,40 |

# Sample beakers



## Medical beakers

Made of **PP**. Highly transparent, shatterproof, graduated, 1 ml graduations (from 3 ml upwards). Dimensions: ∅ bottom 27 mm, height 42 mm.
Physiologically safe, biologically inert, heavy metal free.
**CE certified to 98/79/EC.**
**Delivery without** snap-on lid (please order separately).

| Volume (ml) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 30 | natural | **PT13.1** | 75 | 3,15 |
| 30 | blue | **PT14.1** | 75 | 3,15 |
| 30 | red | **PT15.1** | 75 | 3,15 |
| 30 | yellow | **PT16.1** | 75 | 3,15 |
| 30 | green | **PT17.1** | 75 | 3,15 |

## Snap-on lid for medical beakers

Made of **LDPE**, white, ∅ 39 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PT18.1** | 75 | 3,20 |



## Rotilabo®-disposable sample beakers

Made of **PP**. Volume 100 ml. With indented graduation on the side for 20, 40, 60, 80 and 100 ml.
Dimensions: H 50 mm x ∅ 72 mm (including 5 mm pad).
With self-adhesive paper lid.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5195.1** | 100 | 19,05 |




## Rotilabo®-sample beakers

Made of **PP**, transparent. Graduated. With three spouts on corners for no-drip pouring. Temperature resistant from -20 to +121 °C. Autoclavable.

| Volume (ml) | Graduation (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 5 | 49 x 57 | **HT84.1** | 100 | 39,70 |
| 100 | 10 | 58 x 72 | **HT85.1** | 100 | 44,35 |
| 250 | 10 | 76 x 90 | **HT86.1** | 100 | 57,75 |
| 400 | 20 | 85 x 108 | **HT87.1** | 100 | 62,50 |
| 800 | 50 | 107 x 133 | **HT88.1** | 100 | 97,85 |
| 1000 | 50 | 115 x 145 | **HT89.1** | 100 | 98,90 |



## Sample beakers

Beakers made of **PP**. Highly transparent, graduated, shatterproof.
**Sterile** (assembled, individually packed) or non-sterile (lid enclosed).
Physiologically safe, biologically inert, heavy metal free. With labelling area and liquid-impermeable lid. **CE certified to 98/79/EC**.

**With snap-on lid**
Made of **LDPE**. ∅ 67 x H 69 mm, 25 ml graduations.

| Volume (ml) | Lid colour | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 125 | blue | non-sterile | **PT07.1** | 500 | 52,15 |
| 125 | red, with spout | non-sterile | **PT08.1** | 500 | 41,40 |
| 125 | yellow | **sterile** | **PT09.1** | 150 | 69,90 |

**With screw cap**
Made of **HDPE**. ∅ 64 x H 70 mm, 20 ml graduations. **Leakproof.**

| Volume (ml) | Lid colour | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | green | non-sterile | **PT10.1** | 500 | 64,10 |
| 100 | green | non-sterile | **PT11.1** | 100 | 15,95 |
| 100 | yellow | **sterile** | **PT12.1** | 150 | 47,25 |

# Sample- and shipping containers



## Multipurpose beakers with screw cap

Made of **PP**. Transparent. **With CE identification acc. to 98/79/EC**.

**Non-sterile**

| Volume (ml) | ∅ x H (mm) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 43 x 46 | - | **YP04.1** | 1000 | 88,15 |
| 60 | 43 x 65 | 10 | **YP05.1** | 600 | 57,00 |
| 120 | 56 x 72 | 25 | **YP06.1** | 500 | 50,50 |
| 200 | 64 x 81 | - | **YP07.1** | 200 | 76,35 |

**Sterile,** individually packed

| Volume (ml) | ∅ x H (mm) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 43 x 46 | - | **YP08.1** | 1000 | 116,10 |
| 60 | 43 x 65 | 10 | **YP09.1** | 500 | 62,90 |
| 120 | 56 x 72 | 25 | **YP10.1** | 250 | 62,15 |
| 200 | 64 x 81 | - | **YP11.1** | 150 | 62,15 |



## Lid inserts

Made of **PP**. For colour-coded, easy identification of reaction vials (Art. No. CK47.1 ff, CK57.1 ff and ATC4.1) or microscope slide tubs with tamper evident closure (Art. No. KL89.1), as well as sample tubs (Art. No. AYT6.1ff).

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **CK72.1** | 500 | 13,55 |
| yellow | **CK73.1** | 500 | 13,55 |
| red | **CK74.1** | 500 | 13,55 |
| white | **CK75.1** | 500 | 13,55 |
| green | **CK76.1** | 500 | 13,55 |
| assorted colours | **CK77.1** | 500 | 13,55 |



## SpecTainer™-sample vials

Made of highly transparent **PP**, screw cap made of **PE**.
**Sterile** or non-sterile. For storage or transportation of liquids, pasty and solid samples. Shatterproof, stackable and leakproof.
Tamper evident closure guarantees the safety of the contents: a security tab breaks when unscrewing the cap, indicating that the container has been opened.

Temperature stable from -90 to +100 °C. Contains no plasticisers, release agents and latex. CE marking in accordance with IVD.

**Non-sterile, lid colour yellow**

| Volume (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 48 | 62 | **AYT6.1** | 500 | 116,10 |
| 90 | 58 | 62 | **AYT7.1** | 400 | 107,40 |
| 120 | 58 | 78 | **AYT8.1** | 300 | 88,65 |

**Sterile, lid colour turquois**

| Volume (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 48 | 62 | **AYT9.1** | 500 | 124,70 |
| 90 | 58 | 62 | **AYX0.1** | 400 | 115,05 |
| 120 | 58 | 78 | **AYX1.1** | 300 | 93,00 |



## Sputum containers

Made of **PS**, cap made of HDPE. Transparent vessel, without graduations. Flat base. Physiologically safe, biologically inert, heavy metal free.
**CE certified to 98/79/EC.**

**Sputum tube with stopper plug**
Supplied assembled.

| Volume (ml) | ∅ x H (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 16 | 22 x 62 | non-sterile | **PT19.1** | 1000 | 96,65 |

**Sputum tub with screw cap**
Delivery assembled, **sterile** or non-sterile.

| Volume (ml) | ∅ x H (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 24 | 70 x 23 | non-sterile | **PT20.1** | 200 | 47,85 |
| 24 | 70 x 23 | **sterile** | **PT21.1** | 200 | 61,30 |

## Shipping containers for sputum container

Made of **HDPE**.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PT39.1** | 100 | 38,70 |



## Test tubes

With wide mouth spoon for bean-sized samples. Physiologically safe, biologically inert, heavy metal free. **CE certified to 98/79/EC.** Supplied assembled.

**With stopper plug**
Made of **PS**, cap with sample spoon made of HDPE. Transparent tube, without graduations.

| Volume (ml) | ∅ x H (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 16 | 22 x 75 | Flat base, non-sterile | **PT22.1** | 1000 | 100,00 |

**With screw cap**
Made of **PP**, cap made of HDPE, spoon made of HIPS. **Radiation sterile** or non-sterile. Transparent tube, without graduations. Overlapping screw cap ensures optimal hygiene when opening, impervious to fluids. Primary packaging for the shipment of stool samples compliant with DIN EN 829.

| Volume (ml) | ∅ x H (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 13 | 16 x 100 | Round base, non-sterile | **PT24.1** | 1000 | 120,40 |
| 15 | 20 x 76 | Rim, non-sterile | **PT23.1** | 1000 | 140,85 |
| 30 | 25 x 107 | Rim, non-sterile | **PT25.1** | 500 | 91,40 |
| 13 | 16 x 100 | Round base, **sterile** | **PT27.1** | 100 | 16,10 |
| 15 | 20 x 76 | Rim, **sterile** | **PT26.1** | 100 | 18,85 |
| 30 | 25 x 107 | Rim, **sterile** | **PT28.1** | 100 | 24,75 |



## Protective and shipping containers

Made of **PP**, with absorbent pad and print. Secondary packaging for test and stool tubes to DIN EN 829, optimal protection against external forces. Aeskulap symbol and CE mark of conformity visibly printed. Sample vessels and absorbent pads are easily removable, absorbent pad encloses the sample container and provides additional protection. Autoclavable. Protective containers dia. 30 mm fit into standard letter boxes with 35 mm slot, protective container PT31.1 is also suitable for shipping standard agar carriers (e.g. Uricult®). Protective container PT30.1 with cap PT37.1 is suitable for Port-a-Cul™-tubes.
**Delivery without** screw caps (please order separately).

| Volume (ml) | ∅ x H (mm) | for stool tubes | With caps | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 40 | 30 x 85 | PT22.1<br>PT23.1<br>PT19.1 | PT35.1 or PT36.1 PT35.1 for container ∅ 30 mm | **PT29.1** | 500 | 128,50 |
| 60 | 30 x 126 | PT24.1 | for container ∅ 30 mm | **PT30.1** | 300 | 95,25 |
| 120 | 44 x 115 | PT25.1 | PT38.1 | **PT31.1** | 250 | 106,70 |

## Screw caps for protective and shipping containers

Made of **PP**.

| For containers ∅ (mm) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 30 | Standard | **PT35.1** | 500 | 29,05 |
| 30 | With base for tube ∅ 16 mm | **PT36.1** | 300 | 20,35 |
| 30 | With inner attachment ∅ 16 mm | **PT37.1** | 300 | 23,65 |
| 44 | With base for tube ∅ 25 mm | **PT38.1** | 250 | 18,10 |




## Uritainer™-canisters

By Simport. Made of **HDPE**. Outer-∅ wide-neck opening 79 mm. Lid made of PP. Push-Pull valve enables simple, controlled and drip-proof pouring. Graduated, graduation 50 ml. **CE-marking in accordance with MPG.**

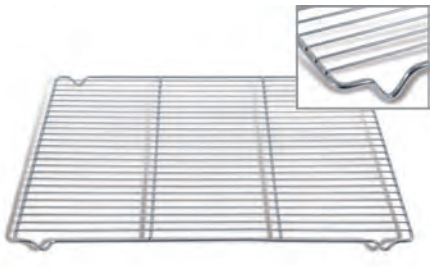
**① With vertical and horizontal graduation**

| Volume (l) | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 115 x 245 x 160 | **HT07.1** | 1 | 4,15 |
| 4 | 115 x 245 x 201 | **HT08.1** | 1 | 4,15 |

**② With vertical graduation**

| Volume (l) | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2,5 | 333 x 133 x 232 | **HT09.1** | 1 | 4,15 |
| 3,5 | 333 x 133 x 295 | **HT10.1** | 1 | 4,15 |

# Drying racks



## Rotilabo®-draining grids

Made of stainless steel 18/10, wire thickness 2.5 mm, frame wire 6 mm, heavy duty. Autoclavable.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 440 x 310 x 20 | **YX63.1** | 1 | 28,95 |
| 470 x 310 x 22 | **YX64.1** | 1 | 31,10 |
| 590 x 390 x 26 | **YX65.1** | 1 | 38,50 |



## Rotilabo®-draining mat

Made of **PP**, black, variable assembly, hole size: 2 x 2 cm, 4 mm surface clearance allows unobstructed drainage of drip water. Rugged quality. Weight 57 g. Autoclavable.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 315 x 210 x 8 | **YX62.1** | 1 | 3,15 |



## Lab sink mat

Made of soft **PVC** to prevent glass breakage when washing. Round profile prevents splashing of running water. The smooth surface prevents dirt from settling. Weight of mat is sufficient to insure secure position in flowing water. An additional advantage: Magnetic rods do not slip through mesh easily into drain pipe. Dimensions: L 750 x W 450 x H 15 mm.
Width of profile 8 mm. Width of web 40 mm.

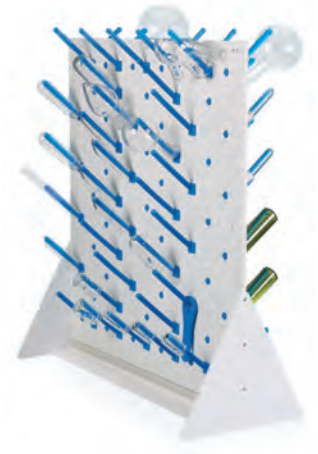
| Art. No. | Pack Qty. | € |
|---|---|---|
| **C374.1** | 1 | 64,30 |



## Rotilabo®-drying racks

Made of **PE** coated metal. Can be attached to wall or used as a stand. Come with 20 mm high drip tray and plastic caps on base feet. Dimensions: W 420 x D 170 mm.

| Design | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12 pins and 11 arched pins | 300 | **N144.1** | 1 | 71,30 |
| 24 pins and 20 arched pins | 610 | **N143.1** | 1 | 91,40 |
| 51 pins (s. pic.) | 610 | **0516.1** | 1 | 88,15 |
| 60 pins and 5 arched pins | 610 | **N142.1** | 1 | 88,15 |
| Spare drip tray | 20 | **C593.1** | 1 | 11,80 |



## Draining racks

Made of **PVC**, slot-in pegs made of **PP**. For use on table or bench, usable on both sides. Sturdy and shatterproof. With removable collecting tray.
**Delivery incl.** slot-in pegs and wrenches.

| W x H (mm) | Number of 60 mm pegs | Number of 100 mm pegs | Number of 150 mm pegs | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 400 x 400 | 5 | 26 | 2 | **XY74.1** | 1 | 177,40 |
| 500 x 500 | 10 | 39 | 4 | **XY75.1** | 1 | 206,40 |
| 600 x 600 | 15 | 56 | 6 | **XY76.1** | 1 | 232,20 |

## Replacement slot-in pegs

Made of **PP**. Suitable for 1841.1ff draining boards and XY74.1ff draining racks.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 60 | 6 | **XY77.1** | 50 | 57,25 |
| 100 | 10 | **XY78.1** | 56 | 57,75 |
| 150 | 12 | **XY79.1** | 50 | 76,00 |



## Draining rack

Made of **PS**, with 72 slot-in pegs (∅ 15 x L 95 mm) which can be inserted randomly. The peg slots are sealed at the back and therefore leakproof. With drainage channel and tube (L 300 mm, outer ∅ 12 mm).
For wall mounting. Dimensions: L 630 x W 450 x D 110 mm.
**Delivery incl.** slot-in pegs and fixing hardware.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CT39.1** | 1 | 88,10 |

## Accessories for draining rack

Slot-in pegs made of **PS**.

| Type | Peg ∅ x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| For small ∅ vessels | 6 x 95 | **CT40.1** | 11 | 12,40 |
| Standard | 15 x 95 | **TT76.1** | 72 | 37,10 |



## Rotilabo®-lab dishes

Made of **PP**. White. Rugged design. Approved for foodstuffs.

| Dimensions base, L x W x H (mm) | Outer dimensions edge L x W (mm) | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 190 x 140 x 42 | 230 x 180 | 0,5 | **1722.1** | 1 | 5,95 |
| 250 x 190 x 65 | 310 x 250 | 1,5 | **1724.1** | 1 | 9,25 |
| 310 x 250 x 75 | 370 x 310 | 3,0 | **0772.1** | 1 | 14,85 |
| 410 x 310 x 120 | 520 x 420 | 10,0 | **0778.1** | 1 | 24,85 |
| 530 x 430 x 140 | 634 x 534 | 21,0 | **0782.1** | 1 | 41,70 |
| 720 x 520 x 160 | 846 x 648 | 39,0 | **0799.1** | 1 | 64,40 |

## Rotilabo®-lab dishes set

| Type | Art. No. | Pack Qty. (assortment) | € |
|---|---|---|---|
| Assortment (set of six) | **0938.1** | 1 | 136,55 |



## Drying boards

By Bürkle. Made of **PVC**, with robust, drying rods of different lengths (60, 100 and 150 mm), rods made of **PP**, which can be inserted and locked in place when needed. Is water-repellent, hygienic and breakproof.
Also features draining rim and hose. For wall mounting.
**Delivery incl.** wall mounting kit and key for slot-in pegs.

| Length (mm) | Width (mm) | Number of 60 mm pegs | Number of 100 mm pegs | Number of 150 mm pegs | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 400 | 400 | 5 | 26 | 2 | **1841.1** | 1 | 179,55 |
| 500 | 500 | 10 | 39 | 4 | **K715.1** | 1 | 217,15 |
| 600 | 600 | 15 | 56 | 6 | **K716.1** | 1 | 246,20 |



## Rotilabo®-lab dishes

Made of **hard-PVC**. White. Excellent for acids.

| Dimensions base, L x W x H (mm) | Outer dimensions top L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 200 x 150 x 45 | 245 x 195 | **7032.1** | 1 | 13,65 |
| 250 x 200 x 60 | 305 x 250 | **7034.1** | 1 | 18,25 |
| 320 x 260 x 70 | 385 x 325 | **7035.1** | 1 | 27,85 |
| 350 x 300 x 80 | 420 x 375 | **7038.1** | 1 | 37,10 |
| 430 x 330 x 90 | 505 x 405 | **7041.1** | 1 | 47,60 |
| 520 x 420 x 90 | 600 x 495 | **7043.1** | 1 | 69,25 |
| 675 x 530 x 100 | 765 x 620 | **7045.1** | 1 | 109,65 |
| 540 x 420 x 180 | 635 x 515 | **7047.1** | 1 | 119,35 |

▶ Detergents see page 1120
▶ Intensive cleaners for laboratory dishwashers see page 1107
▶ Disposable sample bowls see page 176

# Lab dishes and tubs



## Rotilabo®-lab dishes

Made of breakproof **PVC**. Temperature stable to +70 °C. The tray with ridges on its base is ideal for use as developing tray or for staining electrophoresis gels. Ridges prevent gels from sticking to bottom. Liquids can be poured out easily over edges of tray. The tray without ridges is ideal for general lab and storage purposes, especially when colour coding is required.

**With ridges**

| Colour | Height (mm) | Dimensions top L x W (cm) | Dimensions base L x W (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| white | 40 | 18 x 23 | 14 x 19 | **C030.1** | 1 | 9,60 |
| white | 50 | 24 x 32 | 19 x 26 | **C031.1** | 1 | 13,45 |
| white | 50 | 32 x 37 | 26 x 32 | **C032.1** | 1 | 21,40 |
| white | 105 | 43 x 53 | 31 x 41 | **C033.1** | 1 | 44,75 |
| white | 110 | 52 x 61 | 42 x 51 | **C034.1** | 1 | 77,40 |
| white | 110 | 63 x 73 | 51 x 61 | **C035.1** | 1 | 109,65 |
| red | 40 | 18 x 23 | 14 x 19 | **C037.1** | 1 | 9,60 |
| red | 50 | 24 x 32 | 19 x 26 | **C038.1** | 1 | 13,45 |
| red | 50 | 32 x 37 | 26 x 32 | **C039.1** | 1 | 21,30 |
| red | 105 | 43 x 53 | 31 x 41 | **C040.1** | 1 | 44,85 |
| red | 110 | 52 x 61 | 42 x 51 | **C041.1** | 1 | 77,40 |
| black | 50 | 24 x 32 | 19 x 26 | **C045.1** | 1 | 13,45 |
| black | 50 | 32 x 37 | 26 x 32 | **C046.1** | 1 | 21,30 |
| black | 110 | 52 x 61 | 42 x 51 | **C048.1** | 1 | 77,40 |
| black | 110 | 63 x 73 | 51 x 61 | **C049.1** | 1 | 109,65 |

**Without ridges**

| Colour | Height (mm) | Dimensions top L x W (cm) | Dimensions base L x W (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| white | 30 | 15 x 20 | 11 x 16 | **C050.1** | 1 | 7,50 |
| white | 40 | 18 x 23 | 14 x 19 | **C051.1** | 1 | 9,60 |
| white | 50 | 24 x 32 | 19 x 26 | **C052.1** | 1 | 13,45 |
| white | 50 | 32 x 37 | 26 x 32 | **C053.1** | 1 | 21,30 |
| white | 105 | 43 x 53 | 31 x 41 | **C054.1** | 1 | 44,85 |
| white | 110 | 52 x 61 | 42 x 51 | **C055.1** | 1 | 77,40 |
| white | 110 | 63 x 73 | 51 x 61 | **C056.1** | 1 | 109,65 |
| red | 30 | 15 x 20 | 11 x 16 | **C057.1** | 1 | 7,50 |
| red | 40 | 18 x 23 | 14 x 19 | **C058.1** | 1 | 9,60 |
| red | 50 | 24 x 32 | 19 x 26 | **C059.1** | 1 | 13,45 |
| red | 50 | 32 x 37 | 26 x 32 | **C060.1** | 1 | 21,30 |
| red | 105 | 43 x 53 | 31 x 41 | **C061.1** | 1 | 44,85 |
| red | 110 | 52 x 61 | 42 x 51 | **C062.1** | 1 | 77,40 |
| red | 110 | 63 x 73 | 51 x 61 | **C063.1** | 1 | 109,65 |
| black | 30 | 15 x 20 | 11 x 16 | **C064.1** | 1 | 7,50 |
| black | 40 | 18 x 23 | 14 x 19 | **C065.1** | 1 | 9,60 |
| black | 50 | 24 x 32 | 19 x 26 | **C066.1** | 1 | 13,45 |
| black | 50 | 32 x 37 | 26 x 32 | **C067.1** | 1 | 21,30 |
| black | 105 | 43 x 53 | 31 x 41 | **C068.1** | 1 | 44,85 |
| black | 110 | 52 x 61 | 42 x 51 | **C069.1** | 1 | 77,40 |
| black | 110 | 63 x 73 | 51 x 61 | **C070.1** | 1 | 109,65 |



## Rotilabo®-lab dishes

Made of **MF**. Temperature stable from -40 to +110 °C.

* No cover available.

| Volume (ml) | Length, top (mm) | Width, top (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 700 | 190 | 150 | 40 | **8449.1** | 1 | 10,00 |
| 1000 | 290 | 160 | 35 | **8453.1** | 1 | 13,25 |
| 1900 | 290 | 160 | 60 | **8454.1** | 1 | 17,55 |
| 2200 | 350* | 250 | 40 | **8455.1** | 1 | 26,05 |
| 6000 | 340 | 245 | 100 | **8457.1** | 1 | 33,95 |

## Rotilabo®-lids

Made of **PS**. Suitable for Rotilabo®-melamin laboratory bowls. Art. No. P165.1 with stackable recessed handle lid.

| Length, top (mm) | Width, top (mm) | For | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 190 | 150 | 8449.1 | **P163.1** | 1 | 11,75 |
| 290 | 160 | 8453.1/8454.1 | **P164.1** | 1 | 13,25 |
| 340 | 245 | 8457.1 | **P165.1** | 1 | 19,90 |




## Rotilabo®-dishes

Made of stainless steel 18/10, polished. Deep-drawn with smooth edge. Suitable for foodstuffs. Autoclavable.

| Type | Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 600 | 190 x 120 x 40 | **YH70.1** | 1 | 18,85 |
| ① | 1200 | 240 x 170 x 40 | **YH71.1** | 1 | 25,30 |
| ① | 2000 | 300 x 205 x 55 | **YH72.1** | 1 | 35,40 |
| ② | 3000 | 340 x 210 x 60 | **YH73.1** | 1 | 27,85 |



## Laboratory trays

By Nalgene®. Made of **PP**. Suitable storing and sterilising instruments and small laboratory items. Heavy duty design with reinforced edges for maximum stability. Autoclavable.

| Volume (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2 | 260 x 159 x 64 | **ATE7.1** | 1 | 23,60 |
| 2,8 | 260 x 159 x 105 | **ATE8.1** | 1 | 29,00 |
| 3,1 | 324 x 260 x 70 | **ATE9.1** | 1 | 37,45 |
| 5 | 324 x 257 x 108 | **ATH0.1** | 1 | 41,40 |



## Rotilabo®-spillage tubs

Made of 18/10 stainless steel. Specified dimensions refer to the base. Autoclavable. Suitable for foodstuffs.

| L x W x H (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350 x 250 x 50 | 1150 | **0375.1** | 1 | 49,45 |
| 450 x 300 x 50 | 1450 | **0376.1** | 1 | 54,85 |
| 550 x 350 x 50 | 1750 | **Y756.1** | 1 | 70,95 |
| 650 x 400 x 50 | 2485 | **YH48.1** | 1 | 96,25 |



## Rotilabo®-spillage trays

Made of 18/10 stainless steel. Thickness 0.8 mm. Autoclavable. Suitable for foodstuffs.

| Outer dimensions (L x W x H) mm | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 210 x 145 x 20 | **9492.1** | 1 | 26,90 |
| 290 x 210 x 20 | **9493.1** | 1 | 24,75 |
| 580 x 210 x 20 | **9494.1** | 1 | 40,75 |
| 580 x 400 x 20 | **9495.1** | 1 | 66,55 |



## Rotilabo®-work surface

Made of stainless steel 18/10, thickness 1.1 mm.
Easy to clean and disinfect. Dimensions: L 600 x W 400 x H 7 mm.
Suitable for foodstuffs. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YH28.1** | 1 | 64,00 |



## Rotilabo®-spillage tub

Made of stainless steel 18/10. With slanting sides and an inlaid perforated plate on 7 mm ridges. Dimensions bottom: L 500 x W 350 x H 60 mm, top: L 435 x W 285 mm. Setting depth approx. 50 mm. Weight 1800 g. Autoclavable. Suitable for foodstuffs.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0377.1** | 1 | 93,45 |



## Rotilabo®-drip pans

Made of 18/8 stainless steel. With removable grid. Hole gauge 19 mm, hole ∅ 12 mm. Centre hole ∅ 19 mm. Autoclavable.

| Length (mm) | Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 310 | 125 | 30 | **X103.1** | 1 | 89,80 |
| 320 | 200 | 27 | **X104.1** | 1 | 97,85 |
| 560 | 200 | 27 | **X105.1** | 1 | 138,70 |
| 440 | 270 | 27 | **X111.1** | 1 | 131,15 |

# Lab dishes and tubs



## Rotilabo®-tubs

Made of 18/10 chrome-nickel stainless steel. Rectangular.
With folding handles on two sides. Autoclavable. Suitable for foodstuffs.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 365 x 270 x 75 | **8103.1** | 1 | 84,85 |
| 470 x 325 x 90 | **8104.1** | 1 | 127,95 |
| 520 x 325 x 90 | **8105.1** | 1 | 156,95 |
| 630 x 450 x 90 | **8106.1** | 1 | 247,25 |



## Laboratory pots

Made of aluminium. For use as water or oil bath, can be used in conjunction with hotplates or magnetic stirrers. Max. usage temperature 280 °C.
**Delivery incl.** cover.

| Volume (l) | Height (mm) | ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1,5 | 100 | 160 | 1,2 | **AEN7.1** | 1 | 32,75 |
| 3,0 | 120 | 200 | 1,5 | **AEN8.1** | 1 | 36,80 |
| 5,2 | 140 | 240 | 1,3 | **AEN9.1** | 1 | 42,50 |



## Stainless steel pots

Made of high-grade 18/10 steel. With sandwich base and handles. Suitable for use on hot plates and induction hobs, not usable on magnetic stirrers. Suitable lids please order separately. Autoclavable.

| Volume (l) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2,5 | 160 | 130 | **EE93.1** | 1 | 24,30 |
| 3,5 | 200 | 110 | **EE94.1** | 1 | 31,10 |
| 4 | 200 | 150 | **EE95.1** | 1 | 33,90 |
| 5 | 240 | 120 | **EE96.1** | 1 | 39,60 |
| 9 | 240 | 210 | **EE97.1** | 1 | 53,55 |

## Lids

For stainless steel pans. Made of high-grade 18/10 steel. Welded handles.

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 160 | **EE98.1** | 1 | 8,55 |
| 200 | **EE99.1** | 1 | 11,65 |
| 240 | **EH00.1** | 1 | 14,20 |



## Rotilabo®-water baths

Made of 18/10 stainless steel, matt polished.
Heavy duty, with two side handles. Suitable for foodstuffs.
**Supplied without** lid. Please order separately.

| Volume (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5 | 155 x 105 x 55 | **YY42.1** | 1 | 34,30 |
| 1 | 155 x 105 x 75 | **YY43.1** | 1 | 39,25 |
| 2,5 | 155 x 105 x 160 | **YY44.1** | 1 | 50,50 |
| 5 | 155 x 155 x 235 | **YY45.1** | 1 | 64,45 |
| 13 | 240 x 240 x 235 | **YY46.1** | 1 | 112,90 |

## Lids for Rotilabo®-water baths

Made of 18/10 stainless steel, matt polished.

| L x W (mm) | For water baths | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 155 x 105 | 0,5-2,5 l | **YY47.1** | 1 | 17,75 |
| 155 x 155 | 5 l | **YY48.1** | 1 | 19,30 |
| 240 x 240 | 13 l | **YY49.1** | 1 | 23,60 |

**Information on the care of stainless steel**
Stainless steel is rustproof, durable, hygienic and non-toxic. Stainless steel generally has a higher resistance to corrosive media than mild steel.
**Care:** stainless steel is easy to maintain and can be cleaned either by machine or manually using mild detergents. Extraneous rust can easily be removed using a stainless steel cleaner, while lime scale deposits can be removed using acidic products (e.g. descaling agent). Do not use steel wool and avoid shock cooling after heating. Concentrated disinfectants and bleaches or diluted agents of this kind can attack stainless steel if allowed to react for a lengthy period of time. After contact with aggressive media or solids such as salts, the stainless steel must be cleaned thoroughly.

**Extraneous rost:** the passive protective layer of the stainless steel can be destroyed by base metal particles if they adhere to the surface of the stainless product.
The chemically active particles can cause the entire steel to corrode. For this reason, do not clean, use or store stainless steel together with steel or iron particles (particularly steel wool pads).

**Caution:** stainless steel is not resistant to prolonged contact with chlorides and acids.



## Glass instrument trays

Made of soda-lime glass with stainless steel lid. Autoclavable and hot air sterilisable up to +180 °C. **Note:** do not expose glass trays to abrupt changes of temperature. Trays must be heated and cooled slowly as soda-lime glass has limited thermal shock resistance.
Do not sterilise with lid attached.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 120 x 60 x 40 | **CYY9.1** | 1 | 33,35 |
| 170 x 90 x 45 | **EAA0.1** | 1 | 39,25 |
| 200 x 100 x 50 | **EAA1.1** | 1 | 42,95 |
| 220 x 150 x 55 | **EAA2.1** | 1 | 50,55 |
| 275 x 150 x 60 | **EAA3.1** | 1 | 59,15 |
| 350 x 220 x 70 | **EAA4.1** | 1 | 116,10 |
| 200 x 100 x 100 | **EAA5.1** | 1 | 50,55 |



## Rotilabo®-instruments trays with lid

Made of 18/10 stainless steel. Tray is moulded in one piece. Special lid with handle. Tray is moulded in one piece for easy cleaning and disinfection. Stackable. Autoclavable.

| L x W x H outer (mm) | L x W x H inner (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 230 x 133 x 55 | 210 x 120 x 45 | **C849.1** | 1 | 47,70 |
| 315 x 215 x 65 | 295 x 195 x 55 | **C850.1** | 1 | 72,65 |





## Rotilabo®-instrument trays

Made of stainless steel 18/10, suitable for foodstuffs. Autoclavable.

**With lid with knob**

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 x 60 x 40 | **YX87.1** | 1 | 62,30 |
| 160 x 100 x 30 | **YX88.1** | 1 | 53,65 |
| 200 x 100 x 50 | **YX89.1** | 1 | 53,70 |
| 300 x 200 x 50 | **YX90.1** | 1 | 80,65 |
| 400 x 200 x 80 | **YX91.1** | 1 | 112,90 |

**With flat lid,** deep-drawn with rounded edges

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 180 x 80 x 50 | **YX92.1** | 1 | 19,80 |
| 200 x 90 x 50 | **YX93.1** | 1 | 21,95 |
| 250 x 100 x 50 | **YX94.1** | 1 | 33,90 |
| 300 x 125 x 60 | **YX95.1** | 1 | 36,15 |



## Kidney dish

Made of **PP**, white. Capacity approx. 850 ml. Dimensions: L 260 x H 55 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TT75.1** | 1 | 9,15 |



## Rotilabo®-kidney pans

Made of stainless steel 18/10, high-gloss. Suitable for foodstuffs. Autoclavable.

| Volume (ml) | Dimensions L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 250 | 170 x 40 | **YT76.1** | 1 | 8,20 |
| 350 | 205 x 40 | **YT77.1** | 1 | 10,25 |
| 500 | 250 x 40 | **YT78.1** | 1 | 11,65 |
| 750 | 275 x 45 | **YT79.1** | 1 | 12,80 |

# Bowls



## Rotilabo®-trays

Made of **PP**, with stacking notches. Good chemical resistance. Dishwasher-proof up to +80 °C. Suitable for foodstuffs.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 350 x 265 x 20 | **YH74.1** | 1 | 4,95 |
| 400 x 300 x 20 | **YH75.1** | 1 | 6,60 |
| 450 x 350 x 20 | **YH76.1** | 1 | 7,75 |



## Rotilabo®-instrument trays, round

Made of stainless steel, high-gloss finish. Suitable for foodstuffs. Autoclavable.

| ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 20 | **YH66.1** | 1 | 8,25 |
| 350 | 20 | **YH67.1** | 1 | 10,40 |
| 400 | 22 | **YH68.1** | 1 | 15,00 |
| 500 | 22 | **YH69.1** | 1 | 22,40 |



## Rotilabo®-instrument trays

Made of polished Melamin **(MF)**. With adhesive safety base.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 190 x 150 x 17 | **P159.1** | 2 | 17,15 |
| 240 x 180 x 17 | **P160.1** | 2 | 21,15 |
| 268 x 208 x 17 | **P161.1** | 2 | 24,25 |
| 355 x 240 x 17 | **P162.1** | 2 | 41,15 |
| 428 x 288 x 17 | **0824.1** | 2 | 66,35 |



## Rotilabo®-carrier buckets

Made of **PP**. Extremely robust with wide grip rim. Stackable. Autoclavable at 121 °C. Suitable for foodstuffs.

| Volulme (l) | Outside ∅ (mm) | Height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,8 | 160 | 70 | 60 | **H289.1** | 1 | 2,45 |
| 1,7 | 200 | 80 | 80 | **H290.1** | 1 | 3,20 |
| 2,8 | 240 | 100 | 120 | **H291.1** | 1 | 4,45 |
| 4,5 | 280 | 120 | 220 | **H292.1** | 1 | 6,05 |
| 6,5 | 320 | 130 | 240 | **H293.1** | 1 | 8,40 |
| 10 | 360 | 150 | 360 | **H294.1** | 1 | 9,30 |
| 13 | 400 | 180 | 460 | **H295.1** | 1 | 13,35 |



## Rotilabo®-instrument trays, square

Made of 18/10 stainless steel, high-gloss finish. Suitable for foodstuffs. Autoclavable.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 220 x 170 x 10 | **YH57.1** | 1 | 17,50 |
| 260 x 200 x 20 | **YH58.1** | 1 | 23,15 |
| 310 x 240 x 20 | **YH59.1** | 1 | 26,85 |
| 340 x 260 x 20 | **YH60.1** | 1 | 30,05 |
| 365 x 280 x 20 | **YH61.1** | 1 | 32,15 |
| 420 x 320 x 20 | **YH62.1** | 1 | 39,25 |
| 470 x 365 x 20 | **YH63.1** | 1 | 44,65 |
| 520 x 400 x 20 | **YH64.1** | 1 | 54,85 |
| 600 x 470 x 24 | **YH65.1** | 1 | 75,15 |



## Rotilabo®-mixing bowls

Made of **PP**, transparent-white. Stackable. Microwave safe.

| Volume (l) | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 160 | 80 | **YE47.1** | 1 | 4,10 |
| 2,5 | 200 | 110 | **YE48.1** | 1 | 7,35 |
| 4,5 | 240 | 130 | **YE49.1** | 1 | 7,85 |
| 6 | 280 | 145 | **YE50.1** | 1 | 10,25 |
| 9 | 320 | 160 | **YE51.1** | 1 | 12,05 |
| 13 | 360 | 180 | **YE52.1** | 1 | 16,15 |



## Rotilabo®-stainless steel bowls, bulbous

Made of stainless steel 18/10, high-gloss. Extra heavy duty.
With flanged, non-slip rim. Suitable for foodstuffs. Autoclavable.

| Volume (l) | Top ∅ (mm) | Bottom ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,75 | 145 | 90 | 60 | **YH49.1** | 1 | 17,10 |
| 1 | 160 | 115 | 70 | **YH50.1** | 1 | 18,20 |
| 1,5 | 180 | 130 | 80 | **YH51.1** | 1 | 23,15 |
| 2,5 | 210 | 160 | 90 | **YH52.1** | 1 | 26,70 |
| 4 | 245 | 180 | 105 | **YH53.1** | 1 | 32,15 |
| 6 | 280 | 205 | 125 | **YH54.1** | 1 | 41,40 |
| 9 | 325 | 240 | 140 | **YH55.1** | 1 | 47,10 |
| 12 | 350 | 260 | 150 | **YH56.1** | 1 | 55,80 |
| 17 | 410 | 270 | 160 | **YT62.1** | 1 | 61,85 |



## Stainless steel carrier bowls

Made of 18/10 stainless steel. Heavy duty with flanged edge and smooth base. Excellent durability, stability and grip. Stackable. Autoclavable. Suitable for foodstuffs.

| Volulme (l) | Top inside ∅ (mm) | Bottom ∅ (mm) | Height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 1 | 160 | 110 | 65 | 230 | **L938.1** | 1 | 19,30 |
| 1,5 | 180 | 120 | 78 | 300 | **L939.1** | 1 | 22,55 |
| 2 | 200 | 140 | 88 | 350 | **L940.1** | 1 | 24,20 |
| 3,5 | 240 | 160 | 105 | 510 | **L941.1** | 1 | 28,95 |
| 5,6 | 280 | 180 | 120 | 660 | **L942.1** | 1 | 36,50 |
| 8,3 | 320 | 200 | 130 | 880 | **L943.1** | 1 | 48,40 |

## Stainless steel carrier bowls set

Set of six stainless steel bowls. Capacity 1 l to 8.3 l.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **0073.1** | 1 | 156,95 |




## Rotilabo®-stainless steel bowls, conical

Made of 18/10 stainless steel, matt polished. Light-duty version with open, smooth rim. Suitable for foodstuffs. Autoclavable.

① **Deep type**

| Volume (l) | Top ∅ (mm) | Bottom ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,5 | 120 | 75 | 70 | **YH77.1** | 1 | 7,20 |
| 1 | 150 | 95 | 80 | **YH78.1** | 1 | 8,95 |
| 3 | 220 | 140 | 125 | **YH79.1** | 1 | 14,95 |
| 5 | 265 | 180 | 130 | **YH80.1** | 1 | 20,40 |
| 8 | 310 | 200 | 165 | **YH81.1** | 1 | 27,75 |
| 11 | 355 | 215 | 180 | **YH82.1** | 1 | 36,35 |
| 14 | 370 | 215 | 200 | **YH83.1** | 1 | 37,55 |

② **Flat type**

| Volume (l) | Top ∅ (mm) | Bottom ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,5 | 140 | 95 | 55 | **YH84.1** | 1 | 7,50 |
| 1 | 165 | 115 | 75 | **YH85.1** | 1 | 9,05 |
| 3 | 240 | 160 | 95 | **YH86.1** | 1 | 14,85 |
| 6 | 290 | 195 | 130 | **YH87.1** | 1 | 24,75 |
| 8 | 320 | 210 | 140 | **YH88.1** | 1 | 26,15 |
| 11 | 380 | 285 | 130 | **YH89.1** | 1 | 38,70 |
| 14 | 400 | 285 | 155 | **YH90.1** | 1 | 41,85 |



## Buckets

By Nalgene®. Made of **LDPE**. Air-tight. With nylon coated wire handles. The close-fitting and airtight lids enable the bins to be used for storage of samples in formalin and other preservatives. Bins comply to OSHA-Norm 29 CFR part 1910.1030 for use as protection against haematogen pathogens. Suitable for safe handling of biologically harmful substances.

| Vol. (l) | Colour | Inside ∅ (mm) | Height incl. lid (mm) | Height without lid (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 7,6 | white | 240 | 267 | 254 | **K573.1** | 1 | 39,80 |
| 13,2 | yellow | 270 | 328 | 315 | **K575.1** | 1 | 55,80 |

# Buckets



## Rotilabo®-bins with nozzle

Made of **HDPE**. With metal handle. White, with graduation.
Scale in 1-litre-steps.

| Volulme (l) | Height (mm) | Top ∅ (mm) | Bottom ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 9 | 250 | 280 | 203 | **AC97.1** | 1 | 10,60 |
| 12 | 280 | 300 | 227 | **AC98.1** | 1 | 12,40 |
| 17 | 310 | 340 | 249 | **AC99.1** | 1 | 18,80 |



## Rotilabo®-buckets with spout

Made of natural coloured **HDPE**, polished, conical, can be stacked.
With embossed graduation 500 ml inside. Approved for foodstuffs.

| Volulme (l) | Height (mm) | Top ∅ (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 280 | 290 | 570 | **1608.1** | 1 | 16,70 |
| 17 | 320 | 330 | 860 | **1609.1** | 1 | 20,35 |



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## Buckets

Made of **HDPE**. White. With graduation (scale in 1-litre-steps) and handle.
Approved for foodstuffs.

| Volume (l) | Height (mm) | Top ∅ (mm) | Bottom ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 240 | 250 | 165 | **K620.1** | 1 | 12,90 |
| 10 | 300 | 290 | 210 | **K622.1** | 1 | 15,60 |

## Lid for Sekuroka®-buckets

Made of **LDPE**. Transparent. Air-tight. Approved for foodstuffs.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Lid for bins 5 l | **K621.1** | 1 | 3,95 |
| Lid for bins 10 l | **K623.1** | 1 | 4,55 |


- ▶ Chemical Resistance of Plastics, table see page 6
- ▶ For autoclaving information see page 5




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## Disposable buckets

Made of white **PP**. For safe storage of liquids, solids and pathological samples. Tamper evident closure guarantees the safety of the contents: a security tab breaks when opening the snap-on lid, indicating that the container has been opened. Art. No. AYP9.1 and AYT0.1 include carry handle for easy transportation. Autoclavable.

| Volume (ml) | Height (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 300 | 45 | 111 | **AYP6.1** | 100 | 76,30 |
| 500 | 75 | 111 | **AYP7.1** | 100 | 85,70 |
| 1000 | 140 | 111 | **AYP8.1** | 100 | 121,50 |
| 2600 | 124 | 200 | **AYP9.1** | 25 | 79,00 |
| 5700 | 195 | 225 | **AYT0.1** | 10 | 66,65 |



## Rotilabo®-bins with nozzle

Made of **PP**. With handle and scale in 1-litre-steps.
Good chemical resistance. Suitable for foodstuffs.

| Volume (l) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 330 | 310 | **HX60.1** | 1 | 26,10 |
| 15 | 370 | 310 | **HX61.1** | 1 | 28,50 |



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## Rotilabo®-measuring beaker

Made of 18/10 stainless steel, matt polished. Heavy-duty quality, wall thickness 0.8 mm. Graduated in one-litre increments. With handle and additional grip for simple pouring. Suitable for foodstuffs. Autoclavable.

| Volume (l) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 240 | 260 | **YH43.1** | 1 | 289,20 |
| 15 | 270 | 300 | **YH44.1** | 1 | 321,45 |
| 20 | 270 | 400 | **YH45.1** | 1 | 381,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| Lid for Rotilabo®-measuring beaker, 10 l | **YH46.1** | 1 | 41,85 |
| Lid for Rotilabo®-measuring beaker, 15 and 20 l | **YH47.1** | 1 | 48,30 |



## Rotilabo®-carrier buckets

Made of 18/10 stainless steel. With lid and handle. Convex base.
Autoclavable without lid. Suitable for foodstuffs.

| Volume (l) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 130 | 170 | **C856.1** | 1 | 123,65 |
| 3 | 155 | 180 | **C857.1** | 1 | 134,40 |
| 5 | 175 | 240 | **C859.1** | 1 | 160,20 |
| 8 | 200 | 290 | **C861.1** | 1 | 188,15 |
| 10 | 220 | 300 | **C862.1** | 1 | 192,45 |



## Stainless steel buckets

Made of **Remanit 4301**. Graduated, scale in 1-litre-steps.
With smooth bottom. Handle width: 15 mm, rim width: 8 mm. Autoclavable.
**Delivery without** lid, please order separately if required.

| Volume (l) | Overall height (mm) | Top ∅ (mm) | Bottom ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 6 | 210 | 265 | 170 | **KY05.1** | 1 | 53,25 |
| 10 | 282 | 295 | 170 | **KY06.1** | 1 | 67,20 |
| 12 | 298 | 340 | 220 | **KY07.1** | 1 | 74,20 |
| 15 | 340 | 355 | 250 | **KY08.1** | 1 | 84,95 |

## Lids

For stainless steel buckets. Made of **Remanit 4301.**

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 265 | **KY70.1** | 1 | 39,25 |
| 295 | **KY69.1** | 1 | 41,25 |
| 340 | **KY71.1** | 1 | 50,55 |
| 355 | **KY72.1** | 1 | 53,70 |

▶ For additional containers for storage and transport from page 722



## Carrier buckets

Made of 18/10 stainless steel. Lid with high/low pressure equalising valve, silicon gasket and three fasteners. Suitable for foodstuffs.
Autoclavable without lid.

| Volume (l) | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 6,5 | 240 | 160 | **LT21.1** | 1 | 95,60 |
| 10,5 | 240 | 250 | **LT22.1** | 1 | 107,30 |
| 15,5 | 300 | 230 | **LT23.1** | 1 | 149,45 |



## Universal containers

Made of 18/10 stainless steel, extra heavy-duty.
Material thickness of 1.0 mm. Items EEX5.1 and EEX6.1 come with handle reinforcement plates.
**Delivery incl.** lid and three toggle fasteners to secure it in place.

| Volume (l) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | 265 | 395 | **EEX2.1** | 1 | 354,75 |
| 25 | 300 | 395 | **EEX3.1** | 1 | 414,95 |
| 30 | 300 | 465 | **EEX4.1** | 1 | 428,95 |
| 50 | 350 | 555 | **EEX5.1** | 1 | 513,85 |
| 75 | 400 | 620 | **EEX6.1** | 1 | 619,20 |



## Transport castors

Made of 18/10 stainless steel. With five rubber castors dia. 100 mm, one of which can be locked. For transporting round containers safely.

| For ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 300 | **EET7.1** | 1 | 203,20 |
| 350 | **EET8.1** | 1 | 212,85 |
| 400 | **EET9.1** | 1 | 241,90 |
| 445 | **EEX0.1** | 1 | 317,15 |
| 550 | **EEX1.1** | 1 | 370,90 |

# Flat-bottom flasks




DURAN WHEATON KIMBLE

Material DURAN®

121 °C

## Flat-bottom flasks

Made of DURAN®. Acc. to ISO 1773. Autoclavable.

① **Narrow neck flat-bottom flasks**

| Volume (ml) | Neck Ø (mm) | Flask outer Ø (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 26 | 51 | 90 | **K182.1** | 10 | 84,60 |
| 100 | 26 | 64 | 105 | **K183.1** | 10 | 65,25 |
| 250 | 34 | 85 | 138 | **K184.1** | 10 | 76,25 |
| 500 | 34 | 105 | 163 | **K185.1** | 10 | 103,00 |
| 1000 | 42 | 131 | 190 | **K186.1** | 1 | 15,25 |
| 2000 | 42 | 166 | 250 | **K187.1** | 1 | 27,95 |
| 3000 | 50 | 185 | 250 | **K188.1** | 1 | 53,80 |
| 4000 | 50 | 207 | 275 | **K189.1** | 1 | 76,60 |
| 5000 | 50 | 223 | 290 | **K190.1** | 1 | 86,45 |
| 6000 | 65 | 237 | 315 | **K191.1** | 1 | 97,60 |
| 10 000 | 65 | 280 | 360 | **K192.1** | 1 | 169,00 |

② **Wide neck flat-bottom flasks**

| Volume (ml) | Neck Ø (mm) | Flask outer Ø (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 34 | 51 | 90 | **K193.1** | 10 | 159,00 |
| 100 | 34 | 64 | 105 | **K194.1** | 10 | 65,40 |
| 250 | 50 | 85 | 138 | **K195.1** | 10 | 76,75 |
| 500 | 50 | 103 | 163 | **K196.1** | 10 | 103,00 |
| 1000 | 50 | 131 | 190 | **K197.1** | 1 | 17,90 |
| 2000 | 50 | 166 | 230 | **K198.1** | 1 | 28,10 |



Material DURAN®

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## Flat-bottom flasks with ground glass joints

Made of DURAN®. Acc. to DIN 12348. With standard ground joint 29/32. Autoclavable.

| Volume (ml) | Outer Ø (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 51 | 90 | **Y653.1** | 1 | 8,10 |
| 100 | 64 | 110 | **Y654.1** | 1 | 8,45 |
| 250 | 85 | 140 | **Y655.1** | 1 | 15,25 |
| 500 | 105 | 170 | **Y656.1** | 1 | 20,70 |
| 1000 | 131 | 200 | **Y657.1** | 1 | 29,20 |
| 2000 | 166 | 250 | **Y658.1** | 1 | 56,10 |




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## Rotilabo®-flat bottom flasks

Made of type 3.3 borosilicate glass with heavy duty rim. Autoclavable.

① **Narrow neck,** according to ISO 1773.

| Volume (ml) | Neck Ø (mm) | Largest outer Ø (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 22 | 51 | 100 | **NT71.1** | 10 | 88,05 |
| 100 | 22 | 64 | 110 | **NT72.1** | 10 | 22,35 |
| 250 | 34 | 85 | 140 | **NT73.1** | 10 | 24,65 |
| 500 | 34 | 105 | 170 | **NT74.1** | 10 | 40,10 |
| 1000 | 42 | 131 | 200 | **NT75.1** | 1 | 17,10 |
| 2000 | 50 | 166 | 250 | **NT76.1** | 1 | 24,75 |
| 4000 | 50 | 207 | 300 | **NT77.1** | 1 | 35,40 |
| 6000 | 65 | 236 | 340 | **NT78.1** | 1 | 46,15 |
| 10 000 | 65 | 279 | 400 | **NT79.1** | 1 | 68,80 |

② **Wide neck**

| Volume (ml) | Neck Ø (mm) | Largest outer Ø (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 34 | 51 | 100 | **NT54.1** | 10 | 85,50 |
| 250 | 50 | 85 | 140 | **NT55.1** | 10 | 95,90 |
| 500 | 50 | 105 | 170 | **NT56.1** | 10 | 110,75 |
| 1000 | 50 | 131 | 200 | **NT57.1** | 1 | 18,30 |
| 2000 | 76 | 166 | 250 | **NT58.1** | 1 | 25,30 |



121 °C

## Rotilabo®-flat bottom flasks with standard ground joint

Made of type 3.3 borosilicate glass. According to DIN 12 348. Autoclavable.

| Volume (ml) | Ground glass joint | Largest outer Ø (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 250 | 29/32 | 85 | 140 | **NT59.1** | 10 | 127,95 |
| 250 | 45/40 | 85 | 140 | **NT60.1** | 10 | 143,00 |
| 500 | 29/32 | 105 | 170 | **NT61.1** | 10 | 150,50 |
| 500 | 45/40 | 105 | 170 | **NT62.1** | 10 | 170,95 |
| 1000 | 29/32 | 131 | 200 | **NT63.1** | 1 | 21,40 |
| 1000 | 45/40 | 131 | 200 | **NT64.1** | 1 | 23,40 |
| 2000 | 29/32 | 166 | 250 | **NT65.1** | 1 | 26,25 |
| 2000 | 45/40 | 166 | 250 | **NT66.1** | 1 | 30,00 |
| 4000 | 45/40 | 207 | 300 | **NT67.1** | 1 | 42,15 |
| 6000 | 60/46 | 236 | 340 | **NT68.1** | 1 | 50,50 |
| 10 000 | 60/46 | 279 | 400 | **NT69.1** | 1 | 95,70 |
| 20 000 | 60/46 | 345 | 190 | **NT70.1** | 1 | 131,15 |

# Standard ground joint flasks




Material
DURAN®

121°C

## Round flasks, DURAN®

Made of DURAN®. With ground glass joints.
Acc. to DIN 4797 and/or in addition to DIN. Autoclavable.

* In add. to DIN.

**Transparent glass**

| Volume (ml) | Conical ground joint (NS) | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5* | 14/23 | 30 | 58 | **HY49.1** | 1 | 6,85 |
| 10* | 14/23 | 35 | 70 | **HY50.1** | 1 | 6,85 |
| 25* | 14/23 | 41 | 85 | **E588.1** | 1 | 7,30 |
| 25 | 19/26 | 41 | 85 | **KY27.1** | 1 | 7,70 |
| 50 | 14/23 | 51 | 90 | **E589.1** | 1 | 8,30 |
| 50 | 19/26 | 51 | 90 | **KY28.1** | 1 | 8,75 |
| 50* | 24/29 | 51 | 90 | **KY32.1** | 1 | 9,25 |
| 50 | 29/32 | 51 | 90 | **E590.1** | 1 | 8,75 |
| 100 | 14/23 | 64 | 105 | **E591.1** | 1 | 8,55 |
| 100 | 19/26 | 64 | 105 | **KY29.1** | 1 | 10,00 |
| 100* | 24/29 | 64 | 105 | **KY33.1** | 1 | 9,55 |
| 100 | 29/32 | 64 | 105 | **E592.1** | 1 | 8,30 |
| 250* | 14/23 | 85 | 140 | **KY26.1** | 1 | 18,50 |
| 250* | 19/26 | 85 | 140 | **KY30.1** | 1 | 18,90 |
| 250* | 24/29 | 85 | 140 | **KY34.1** | 1 | 16,30 |
| 250 | 29/32 | 85 | 145 | **E593.1** | 1 | 15,20 |
| 250 | 45/40 | 85 | 145 | **E594.1** | 1 | 37,00 |
| 500* | 19/26 | 105 | 168 | **KY31.1** | 1 | 28,65 |
| 500* | 24/29 | 105 | 165 | **KY35.1** | 1 | 20,55 |
| 500 | 29/32 | 105 | 175 | **E595.1** | 1 | 19,40 |
| 500 | 45/40 | 105 | 175 | **E596.1** | 1 | 42,90 |
| 1000* | 24/29 | 131 | 195 | **KY36.1** | 1 | 28,50 |
| 1000 | 29/32 | 131 | 200 | **E597.1** | 1 | 28,25 |
| 1000 | 45/40 | 131 | 200 | **E598.1** | 1 | 35,70 |
| 2000* | 24/29 | 166 | 260 | **KY37.1** | 1 | 54,45 |
| 2000 | 29/32 | 166 | 260 | **E599.1** | 1 | 48,40 |
| 2000 | 45/40 | 166 | 260 | **E600.1** | 1 | 53,70 |
| 3000* | 29/32 | 185 | 265 | **TE93.1** | 1 | 137,60 |
| 3000* | 45/40 | 185 | 265 | **TE94.1** | 1 | 140,85 |
| 4000 | 29/32 | 207 | 290 | **TE95.1** | 1 | 137,60 |
| 4000 | 45/40 | 207 | 315 | **E601.1** | 1 | 137,60 |
| 5000* | 29/32 | 223 | 315 | **TE96.1** | 1 | 166,65 |
| 5000 | 45/40 | 223 | 315 | **TE97.1** | 1 | 167,70 |
| 6000* | 29/32 | 236 | 360 | **ELA0.1** | 1 | 206,40 |
| 6000 | 45/40 | 236 | 360 | **ELA1.1** | 1 | 212,85 |
| 10 000* | 29/32 | 279 | 375 | **ELA2.1** | 1 | 353,70 |
| 10 000 | 45/40 | 279 | 375 | **ELA3.1** | 1 | 363,35 |
| 20 000* | 29/32 | 345 | 495 | **ELA4.1** | 1 | 535,35 |
| 20 000* | 45/40 | 345 | 495 | **ELA5.1** | 1 | 557,95 |

**Amber glass**

| Volume (ml) | Conical ground joint (NS) | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 29/32 | 51 | 90 | **ELA6.1** | 1 | 39,45 |
| 100 | 29/32 | 64 | 115 | **Y646.1** | 1 | 34,35 |
| 250 | 29/32 | 85 | 145 | **Y647.1** | 1 | 52,65 |
| 500 | 29/32 | 105 | 175 | **Y648.1** | 1 | 53,70 |
| 1000 | 29/32 | 131 | 210 | **Y649.1** | 1 | 63,55 |




121°C

## Rotilabo®-round bottom flasks with ground glass joint

① Made of borosilicate glass 3.3. ISO 4797 compliant. Autoclavable.

| Volume (ml) | Standard ground glass joint | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 14/23 | 51 | 105 | **ACH0.1** | 10 | 67,90 |
| 50 | 19/26 | 51 | 105 | **ACH1.1** | 10 | 73,75 |
| 50 | 29/32 | 51 | 105 | **ACH2.1** | 10 | 69,20 |
| 100 | 14/23 | 64 | 115 | **ACH3.1** | 10 | 77,30 |
| 100 | 19/26 | 64 | 115 | **ACH4.1** | 10 | 90,55 |
| 100 | 29/32 | 64 | 115 | **ACH5.1** | 10 | 74,90 |
| 250 | 29/32 | 85 | 145 | **ACH6.1** | 10 | 116,10 |
| 250 | 45/40 | 85 | 145 | **ACH7.1** | 1 | 18,25 |
| 500 | 29/32 | 105 | 175 | **ACH8.1** | 10 | 136,55 |
| 500 | 45/40 | 105 | 175 | **ACH9.1** | 1 | 22,25 |
| 1000 | 29/32 | 131 | 210 | **ACK0.1** | 1 | 24,05 |
| 1000 | 45/40 | 131 | 210 | **ACK1.1** | 1 | 26,30 |
| 2000 | 29/32 | 166 | 260 | **ACK2.1** | 1 | 28,50 |
| 2000 | 45/40 | 166 | 260 | **ACK3.1** | 1 | 31,30 |
| 4000 | 45/40 | 207 | 315 | **ACK4.1** | 1 | 40,25 |
| 6000 | 60/46 | 236 | 355 | **ACK5.1** | 1 | 53,30 |
| 10 000 | 60/46 | 279 | 420 | **ACK6.1** | 1 | 87,00 |

## Rotilabo®-round bottom flasks with heavy duty rim

Made of type 3.3 borosilicate glass. Autoclavable.

② **Narrow neck,** according to ISO 1773.

| Volume (ml) | Neck ∅ (mm) | Largest outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 22 | 51 | 105 | **NT88.1** | 10 | 84,45 |
| 100 | 22 | 64 | 115 | **NT89.1** | 10 | 110,75 |
| 250 | 34 | 85 | 147 | **NT90.1** | 10 | 88,50 |
| 500 | 34 | 105 | 175 | **NT91.1** | 10 | 107,30 |
| 1000 | 42 | 131 | 210 | **NT92.1** | 1 | 18,20 |
| 2000 | 50 | 166 | 260 | **NT93.1** | 1 | 23,50 |
| 4000 | 50 | 207 | 315 | **NT94.1** | 1 | 32,95 |
| 6000 | 65 | 236 | 355 | **NT95.1** | 1 | 43,65 |
| 10 000 | 65 | 279 | 420 | **NT96.1** | 1 | 64,40 |
| 20 000 | 80 | 345 | 500 | **NT97.1** | 1 | 113,95 |

③ **Wide neck**

| Volume (ml) | Neck ∅ (mm) | Largest outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 34 | 51 | 105 | **NT98.1** | 10 | 85,90 |
| 100 | 34 | 64 | 115 | **NT99.1** | 10 | 106,10 |
| 250 | 50 | 85 | 145 | **NX00.1** | 10 | 93,85 |
| 500 | 50 | 105 | 175 | **NX01.1** | 10 | 107,30 |
| 1000 | 50 | 131 | 210 | **NX02.1** | 1 | 18,20 |
| 2000 | 76 | 166 | 260 | **NX03.1** | 1 | 23,55 |
| 4000 | 76 | 207 | 315 | **NX04.1** | 1 | 32,20 |
| 6000 | 89 | 236 | 355 | **NX05.1** | 1 | 45,75 |
| 10 000 | 89 | 279 | 420 | **NX06.1** | 1 | 65,55 |

▶ Boiling pebbles see page 1148

# Standard ground joint flasks



## Round bottom flasks

Made of **PFA**, transparent.
- High chemical resistance
- Temperature resistant in the range -200 to +260 °C
- Hydrophobic and anti-adhesive, extremely smooth surfaces allow easy cleaning
- High purity, ideal for used in trace analysis and for storage of reference solutions
- No memory effect
- Also suitable for use in rotary evaporator as safety flask
- Autoclavable

| Volume (ml) | NS | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 29/32 | 65 | 117 | **XY62.1** | 1 | 79,55 |
| 250 | 29/32 | 88 | 147 | **XY63.1** | 1 | 92,05 |
| 500 | 29/32 | 107 | 177 | **XY64.1** | 1 | 127,95 |



## Rotilabo®-PTFE round bottom flasks

Made of **PTFE**. Chemically inert, temperature stable from -200 to +250 °C. Autoclavable.

| Volume (ml) | Standard ground glass joint | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 14/23 | 32 | **NX92.1** | 1 | 26,15 |
| 10 | 19/26 | 32 | **NX93.1** | 1 | 26,90 |
| 25 | 19/26 | 42 | **NX94.1** | 1 | 41,60 |
| 25 | 24/29 | 42 | **NX95.1** | 1 | 40,35 |
| 50 | 24/29 | 52 | **NX96.1** | 1 | 55,70 |
| 50 | 29/32 | 52 | **NX97.1** | 1 | 54,75 |
| 100 | 29/32 | 64 | **NX98.1** | 1 | 90,65 |



## Kjeldahl flasks

Made of DURAN®. With ground glass joint. Acc. to DIN 12360. Autoclavable.

| Volume (ml) | Flask outer ∅ (mm) | Height (mm) | Ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 51 | 200 | 14/23 | **Y659.1** | 1 | 40,10 |
| 50 | 51 | 200 | 19/26 | **Y661.1** | 1 | 39,65 |
| 100 | 60 | 200 | 14/23 | **Y660.1** | 1 | 40,90 |
| 100 | 60 | 200 | 19/26 | **Y662.1** | 1 | 41,00 |
| 250 | 81 | 270 | 29/32 | **Y663.1** | 1 | 54,40 |
| 500 | 101 | 300 | 29/32 | **Y664.1** | 1 | 57,00 |
| 750 | 115 | 340 | 29/32 | **Y665.1** | 1 | 64,80 |
| 1000 | 126 | 350 | 29/32 | **Y666.1** | 1 | 74,85 |



## Pear shaped flasks

Made of DURAN®. Acc. to DIN 12383. Autoclavable.

*In add. to DIN

| Volume (ml) | Socket (ground glass) | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5* | 14/23 | 27 | 68 | **TK67.1** | 1 | 9,30 |
| 10* | 14/23 | 30 | 75 | **E602.1** | 1 | 7,75 |
| 25* | 14/23 | 40 | 90 | **E603.1** | 1 | 9,80 |
| 25* | 19/26 | 42 | 90 | **TK68.1** | 1 | 9,90 |
| 50* | 14/23 | 50 | 110 | **E604.1** | 1 | 10,95 |
| 50 | 19/26 | 51 | 100 | **TK69.1** | 1 | 11,95 |
| 50* | 29/32 | 51 | 100 | **TK70.1** | 1 | 15,25 |
| 100* | 14/23 | 62 | 125 | **E605.1** | 1 | 13,05 |
| 100 | 19/26 | 64 | 130 | **TK71.1** | 1 | 16,05 |
| 100* | 29/32 | 64 | 130 | **TK72.1** | 1 | 23,25 |
| 250* | 14/23 | 85 | 195 | **TK73.1** | 1 | 28,70 |
| 250 | 19/26 | 85 | 195 | **TK74.1** | 1 | 29,60 |
| 250* | 29/32 | 85 | 190 | **TK75.1** | 1 | 31,95 |



## Two-necked pear shaped flasks

Made of DURAN®. With angled side neck (angle 25°) NS 14/23. Acc. to DIN 12383. Autoclavable.

*In add. to DIN.

| Volume (ml) | Centre neck with ground glass joints | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25* | 14/23 | 40 | 90 | **TH63.1** | 1 | 23,60 |
| 25* | 19/26 | 40 | 90 | **TH64.1** | 1 | 42,50 |
| 50* | 14/23 | 50 | 100 | **TH65.1** | 1 | 24,65 |
| 50 | 19/26 | 50 | 100 | **TH66.1** | 1 | 45,70 |
| 100* | 14/23 | 64 | 130 | **TH67.1** | 1 | 27,45 |
| 100 | 19/26 | 64 | 130 | **TH68.1** | 1 | 55,60 |
| 250* | 14/23 | 85 | 195 | **TH69.1** | 1 | 73,75 |
| 250 | 19/26 | 85 | 195 | **TH70.1** | 1 | 79,20 |


▶ Taper-ground clamps see page 140
▶ Boiling pebbles made of PTFE see page 1148
▶ Iodine determination flasks see page 18

# Standard ground joint flasks



Material
DURAN®
121 °C

## Double neck round bottom flasks, side neck parallel

Made of DURAN®. Centre neck NS 29/32, with parallel side neck. Autoclavable.

| Volume (ml) | Side neck with ground glass joints | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 14/23 | 64 | 105 | **ELA7.1** | 1 | 25,40 |
| 250 | 14/23 | 85 | 140 | **ELA8.1** | 1 | 33,00 |
| 250 | 29/32 | 85 | 140 | **ELA9.1** | 1 | 39,60 |
| 500 | 14/23 | 105 | 163 | **ELC0.1** | 1 | 44,05 |
| 500 | 29/32 | 105 | 163 | **ELC1.1** | 1 | 49,45 |
| 1000 | 14/23 | 131 | 200 | **ELC2.1** | 1 | 50,55 |
| 1000 | 29/32 | 131 | 200 | **ELC3.1** | 1 | 58,30 |
| 2000 | 14/23 | 166 | 240 | **ELC4.1** | 1 | 79,35 |
| 2000 | 29/32 | 166 | 240 | **ELC5.1** | 1 | 84,55 |
| 4000 | 29/32 | 207 | 290 | **ELC6.1** | 1 | 185,45 |



❄
121 °C

## Rotilabo®-double neck round bottom flasks

Made of borosilicate glass 3.3. With standard ground joints. Autoclavable.

| Volume (ml) | Centre neck with ground glass joints | Side neck with ground glass joints | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 29/32 | 14/23 | **ACE4.1** | 1 | 23,20 |
| 500 | 29/32 | 14/23 | **ACE5.1** | 1 | 26,00 |
| 1000 | 29/32 | 14/23 | **ACE6.1** | 1 | 30,85 |
| 2000 | 29/32 | 14/23 | **ACE7.1** | 1 | 37,95 |
| 4000 | 45/40 | 14/23 | **ACE8.1** | 1 | 58,50 |
| 6000 | 60/46 | 14/23 | **ACE9.1** | 1 | 82,70 |



Material
DURAN®
121 °C

## Two-necked round-bottom flasks

Made of DURAN®. With angled side neck (angle 20°).
In accordance with DIN 12394 an/or in addition to DIN. Autoclavable.

* Add. to DIN

| Volume (ml) | Centre neck with ground glass joints | Side neck with ground glass joints | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 25 | 14/23 | 14/23 | 41 | 85 | **KY12.1** | 1 | 20,35 |
| 50 | 14/23 | 14/23 | 51 | 90 | **KY13.1** | 1 | 21,15 |
| 100* | 14/23 | 14/23 | 64 | 105 | **KY14.1** | 1 | 22,40 |
| 100* | 24/29 | 14/23 | 64 | 105 | **ELC7.1** | 1 | 24,15 |
| 100* | 24/29 | 19/26 | 64 | 105 | **KY24.1** | 1 | 30,00 |
| 100* | 29/32 | 14/23 | 64 | 105 | **E606.1** | 1 | 24,55 |
| 100* | 29/32 | 19/26 | 64 | 105 | **ELC8.1** | 1 | 31,90 |
| 100* | 29/32 | 29/32 | 64 | 105 | **ELC9.1** | 1 | 34,70 |
| 250* | 14/23 | 14/23 | 85 | 140 | **ELE0.1** | 1 | 34,10 |
| 250* | 24/29 | 14/23 | 85 | 140 | **ELE1.1** | 1 | 33,00 |
| 250* | 24/29 | 19/26 | 85 | 140 | **KY25.1** | 1 | 39,60 |
| 250 | 29/32 | 14/23 | 85 | 140 | **E607.1** | 1 | 33,25 |
| 250 | 29/32 | 19/26 | 85 | 140 | **ELE2.1** | 1 | 39,65 |
| 250* | 29/32 | 29/32 | 85 | 140 | **ELE3.1** | 1 | 40,75 |
| 500* | 24/29 | 14/23 | 105 | 163 | **ELE4.1** | 1 | 36,25 |
| 500* | 24/29 | 19/26 | 105 | 163 | **ELE5.1** | 1 | 39,60 |
| 500 | 29/32 | 14/23 | 105 | 163 | **E608.1** | 1 | 38,65 |
| 500 | 29/32 | 19/26 | 105 | 163 | **ELE6.1** | 1 | 45,10 |
| 500* | 29/32 | 29/32 | 105 | 163 | **ELE7.1** | 1 | 47,65 |
| 1000* | 24/29 | 19/26 | 131 | 200 | **ELE8.1** | 1 | 47,50 |
| 1000 | 29/32 | 14/23 | 131 | 200 | **E609.1** | 1 | 46,80 |
| 1000 | 29/32 | 19/26 | 131 | 200 | **ELE9.1** | 1 | 47,30 |
| 1000* | 29/32 | 29/32 | 131 | 200 | **ELH0.1** | 1 | 56,80 |
| 2000 | 29/32 | 14/23 | 166 | 240 | **E610.1** | 1 | 78,85 |
| 2000 | 29/32 | 19/26 | 166 | 240 | **ELH1.1** | 1 | 85,65 |
| 2000* | 29/32 | 29/32 | 166 | 240 | **ELH2.1** | 1 | 85,05 |
| 4000* | 29/32 | 29/32 | 207 | 290 | **ELH3.1** | 1 | 170,95 |

# Standard ground joint flasks



Material
DURAN®
121 °C

## Three-necked round-bottom flasks, side necks parallel

Made of DURAN®. In accordance with DIN 12392 and/or in addition to DIN. Autoclavable.

*in addition to DIN

| Volume (ml) | Centre neck with ground glass joints | Side neck with ground glass joints | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 100* | 24/29 | 19/26 | 64 | 105 | **ELH4.1** | 1 | 43,65 |
| 100* | 29/32 | 14/23 | 64 | 105 | **KY15.1** | 1 | 32,55 |
| 100* | 29/32 | 19/26 | 64 | 105 | **ELH5.1** | 1 | 49,30 |
| 100* | 29/32 | 29/32 | 64 | 105 | **KY16.1** | 1 | 65,25 |
| 250* | 24/29 | 19/26 | 85 | 105 | **ELH6.1** | 1 | 53,35 |
| 250* | 29/32 | 14/23 | 85 | 140 | **E615.1** | 1 | 47,30 |
| 250* | 29/32 | 19/26 | 85 | 140 | **ELH7.1** | 1 | 63,65 |
| 250* | 29/32 | 29/32 | 85 | 140 | **KY17.1** | 1 | 50,55 |
| 500* | 24/29 | 19/26 | 105 | 163 | **ELH8.1** | 1 | 64,90 |
| 500* | 29/32 | 14/23 | 105 | 163 | **E616.1** | 1 | 51,35 |
| 500* | 29/32 | 19/26 | 105 | 163 | **ELH9.1** | 1 | 65,85 |
| 500* | 29/32 | 29/32 | 105 | 163 | **E617.1** | 1 | 61,55 |
| 1000* | 24/29 | 19/26 | 131 | 200 | **ELK0.1** | 1 | 69,70 |
| 1000* | 29/32 | 14/23 | 131 | 200 | **E618.1** | 1 | 62,95 |
| 1000* | 29/32 | 19/26 | 131 | 200 | **ELK1.1** | 1 | 76,30 |
| 1000 | 29/32 | 29/32 | 131 | 200 | **E619.1** | 1 | 67,95 |
| 1000* | 45/40 | 29/32 | 131 | 200 | **ELK2.1** | 1 | 87,60 |
| 2000* | 24/29 | 19/26 | 166 | 240 | **ELK3.1** | 1 | 116,10 |
| 2000* | 29/32 | 14/23 | 166 | 240 | **E620.1** | 1 | 93,15 |
| 2000* | 29/32 | 19/26 | 166 | 240 | **ELK4.1** | 1 | 117,20 |
| 2000 | 29/32 | 29/32 | 166 | 240 | **E621.1** | 1 | 100,90 |
| 2000 | 45/40 | 29/32 | 166 | 240 | **ELK5.1** | 1 | 130,10 |
| 3000* | 29/32 | 14/23 | 185 | 265 | **ELK6.1** | 1 | 188,15 |
| 3000* | 29/32 | 29/32 | 185 | 265 | **ELK7.1** | 1 | 177,40 |
| 3000* | 45/40 | 29/32 | 185 | 265 | **ELK8.1** | 1 | 218,25 |
| 4000* | 29/32 | 14/23 | 207 | 290 | **ELK9.1** | 1 | 221,45 |
| 4000* | 29/32 | 29/32 | 207 | 290 | **ELL0.1** | 1 | 224,70 |
| 4000 | 45/40 | 29/32 | 207 | 290 | **ELL1.1** | 1 | 251,55 |
| 5000* | 29/32 | 29/32 | 223 | 315 | **ELL2.1** | 1 | 274,15 |
| 5000* | 45/40 | 29/32 | 223 | 315 | **ELL3.1** | 1 | 310,70 |
| 6000* | 29/32 | 14/23 | 236 | 360 | **ELL4.1** | 1 | 267,70 |
| 6000* | 29/32 | 29/32 | 236 | 360 | **ELL5.1** | 1 | 278,45 |
| 6000 | 45/40 | 29/32 | 236 | 360 | **ELL6.1** | 1 | 321,45 |
| 10 000* | 29/32 | 29/32 | 279 | 375 | **ELL7.1** | 1 | 428,95 |
| 10 000* | 45/40 | 29/32 | 279 | 375 | **ELL8.1** | 1 | 471,95 |
| 20 000* | 45/40 | 29/32 | 345 | 495 | **ELL9.1** | 1 | 729,95 |



Material
DURAN®
121 °C

## Three-necked round-bottom flasks, side necks angled

Made of DURAN®. With two angled side necks (angle 20°). In accordance with DIN 12394 and/or in addition to DIN. Autoclavable.

*in addition to DIN

| Volume (ml) | Centre neck with ground glass joints | Side neck with ground glass joints | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 25* | 14/23 | 14/23 | 41 | 70 | **ELN0.1** | 1 | 48,40 |
| 50* | 14/23 | 14/23 | 51 | 90 | **KY18.1** | 1 | 41,40 |
| 100* | 14/23 | 14/23 | 64 | 105 | **KY19.1** | 1 | 43,50 |
| 100* | 24/29 | 14/23 | 64 | 105 | **ELN1.1** | 1 | 44,90 |
| 100* | 24/29 | 19/26 | 64 | 105 | **ELN2.1** | 1 | 48,95 |
| 100* | 29/32 | 14/23 | 64 | 105 | **E611.1** | 1 | 37,15 |
| 100* | 29/32 | 19/26 | 64 | 105 | **ELN3.1** | 1 | 53,40 |
| 100* | 29/32 | 29/32 | 64 | 105 | **ELN4.1** | 1 | 73,25 |
| 250* | 24/29 | 14/23 | 85 | 140 | **ELN5.1** | 1 | 55,35 |
| 250* | 24/29 | 19/26 | 85 | 140 | **ELN6.1** | 1 | 59,05 |
| 250 | 29/32 | 14/23 | 85 | 140 | **E612.1** | 1 | 46,10 |
| 250 | 29/32 | 19/26 | 85 | 140 | **ELN7.1** | 1 | 69,80 |
| 250* | 29/32 | 29/32 | 85 | 140 | **KY20.1** | 1 | 52,60 |
| 500* | 24/29 | 14/23 | 105 | 163 | **ELN8.1** | 1 | 61,30 |
| 500* | 24/29 | 19/26 | 105 | 163 | **ELN9.1** | 1 | 64,45 |
| 500 | 29/32 | 14/23 | 105 | 163 | **E613.1** | 1 | 51,60 |
| 500 | 29/32 | 19/26 | 105 | 163 | **ELP0.1** | 1 | 70,95 |
| 500* | 29/32 | 29/32 | 105 | 163 | **KY21.1** | 1 | 57,00 |
| 1000* | 24/29 | 14/23 | 131 | 200 | **ELP1.1** | 1 | 72,15 |
| 1000* | 24/29 | 19/26 | 131 | 200 | **ELP2.1** | 1 | 74,75 |
| 1000 | 29/32 | 14/23 | 131 | 200 | **E614.1** | 1 | 60,40 |
| 1000 | 29/32 | 19/26 | 131 | 200 | **ELP3.1** | 1 | 80,55 |
| 1000* | 29/32 | 29/32 | 131 | 200 | **KY22.1** | 1 | 69,65 |
| 1000* | 45/40 | 29/32 | 131 | 200 | **ELP4.1** | 1 | 94,30 |
| 2000* | 24/29 | 19/26 | 166 | 240 | **ELP5.1** | 1 | 121,50 |
| 2000 | 29/32 | 14/23 | 166 | 240 | **ELP6.1** | 1 | 115,05 |
| 2000 | 29/32 | 19/26 | 166 | 240 | **ELP7.1** | 1 | 118,25 |
| 2000* | 29/32 | 29/32 | 166 | 240 | **KY23.1** | 1 | 90,80 |
| 2000* | 45/40 | 29/32 | 166 | 240 | **ELP8.1** | 1 | 125,80 |
| 3000* | 29/32 | 14/23 | 185 | 265 | **ELP9.1** | 1 | 196,75 |
| 3000* | 29/32 | 29/32 | 185 | 265 | **ELT0.1** | 1 | 208,55 |
| 3000* | 45/40 | 29/32 | 185 | 265 | **ELT1.1** | 1 | 210,70 |
| 4000* | 29/32 | 14/23 | 207 | 290 | **ELT2.1** | 1 | 211,80 |
| 4000* | 29/32 | 29/32 | 207 | 290 | **ELT3.1** | 1 | 234,35 |
| 4000* | 45/40 | 29/32 | 207 | 290 | **ELT4.1** | 1 | 232,20 |
| 5000* | 29/32 | 29/32 | 223 | 315 | **ELT5.1** | 1 | 310,70 |
| 5000* | 45/40 | 29/32 | 223 | 315 | **ELT6.1** | 1 | 292,40 |
| 6000* | 29/32 | 14/23 | 236 | 360 | **ELT7.1** | 1 | 262,30 |
| 6000* | 29/32 | 29/32 | 236 | 360 | **ELT8.1** | 1 | 328,95 |
| 6000* | 45/40 | 29/32 | 236 | 360 | **ELT9.1** | 1 | 295,65 |
| 10 000* | 29/32 | 29/32 | 279 | 375 | **ELX0.1** | 1 | 485,90 |
| 10 000* | 45/40 | 29/32 | 279 | 375 | **ELX1.1** | 1 | 476,25 |
| 20 000* | 45/40 | 29/32 | 345 | 495 | **ELX2.1** | 1 | 806,25 |

# Standard ground joint flasks



## Round bottom flasks, PFA, centre neck NS 29/32

Made of PFA. Highly pure, chemically inert. Hydrophobic, anti-adhesive surfaces. Centre neck NS 29/32. Temperature stable from -200 to +250 °C. Transparent and pore-free, partially suitable for vacuum (e.g. 30 mbar at 50 °C).

**Single neck flasks**

| Volume (ml) | Height (mm) | Flask outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 117 | 67 | **NY39.1** | 1 | 110,75 |
| 250 | 149 | 88 | **NY40.1** | 1 | 130,10 |
| 500 | 177 | 107 | **NY41.1** | 1 | 176,30 |

**Double neck flasks**

| Volume (ml) | Side neck with ground glass joints | Height (mm) | Flask outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 14/23 | 117 | 67 | **NY42.1** | 1 | 353,70 |
| 250 | 29/32 | 149 | 88 | **NY43.1** | 1 | 576,20 |
| 500 | 29/32 | 177 | 107 | **NY44.1** | 1 | 643,95 |

**Triple neck flasks**

| Volume (ml) | Side neck with ground glass joints | Height (mm) | Flask outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 14/23 | 117 | 67 | **NY45.1** | 1 | 490,20 |
| 250 | 29/32 | 149 | 88 | **NY46.1** | 1 | 871,85 |
| 500 | 29/32 | 177 | 107 | **NY47.1** | 1 | 938,50 |




## Four-necked round bottom flasks

Made of DURAN®. In accordance with DIN 12392 and/or in addition to DIN. Side necks with ground glass joints 29/32. Autoclavable.

*In addition to DIN

**① Parallel side necks**

| Volume (ml) | Centre neck with ground glass joints | Flask outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 500* | 29/32 | 105 | **TH78.1** | 1 | 102,65 |
| 1000 | 29/32 | 131 | **TH79.1** | 1 | 112,90 |
| 1000 | 45/40 | 131 | **ELX3.1** | 1 | 110,75 |
| 2000 | 29/32 | 166 | **TH80.1** | 1 | 146,20 |
| 2000 | 45/40 | 166 | **ELX4.1** | 1 | 151,60 |
| 3000* | 29/32 | 185 | **TH81.1** | 1 | 220,40 |
| 3000* | 45/40 | 185 | **ELX5.1** | 1 | 230,05 |
| 4000* | 29/32 | 207 | **ELX6.1** | 1 | 235,45 |
| 4000 | 45/40 | 207 | **ELX7.1** | 1 | 274,15 |
| 5000* | 45/40 | 223 | **TH82.1** | 1 | 334,35 |
| 6000* | 29/32 | 236 | **ELX8.1** | 1 | 339,70 |
| 6000 | 45/40 | 236 | **ELX9.1** | 1 | 351,55 |
| 10000* | 45/40 | 279 | **ELY0.1** | 1 | 559,00 |

**② Side necks, angled (15°)**

| Volume (ml) | Centre neck with ground glass joints | Flask outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250* | 29/32 | 85 | **TH76.1** | 1 | 103,00 |
| 500 | 29/32 | 105 | **TH77.1** | 1 | 103,65 |



## Sulphuration flasks

Made of type 3.3 borosilicate glass.
With three standard ground joints on side neck. Autoclavable.

| Volume (ml) | Standard ground joint (main neck) | Standard ground joints (side necks 1+2) | Standard ground joint (side neck 3) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 500 | 45/40 | 14/23 | 14/23 | **TK78.1** | 1 | 40,30 |
| 1500 | 71/51 | 29/32 | 14/23 | **TK79.1** | 1 | 61,50 |
| 2500 | 71/51 | 29/32 | 14/23 | **TK80.1** | 1 | 69,70 |
| 4000 | 71/51 | 29/32 | 14/23 | **TK81.1** | 1 | 91,75 |
| 6000 | 71/51 | 29/32 | 14/23 | **TK82.1** | 1 | 106,20 |


- Standard ground joint stoppers see page 138
- Clear lubricants see page 1138
- Taper-ground clamps see page 140
- Boiling pebbles see page 1148

# Standard ground joint flasks



Material DURAN®

121 °C

## Collecting flasks

Made of DURAN®. With spherical bowl joint S 35.
Made especially for rotary evaporators. Autoclavable.

| Volume (ml) | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 85 | 140 | **KY57.1** | 1 | 32,85 |
| 500 | 105 | 155 | **KY58.1** | 1 | 36,35 |
| 1000 | 131 | 200 | **KY59.1** | 1 | 48,05 |
| 2000 | 166 | 245 | **KY65.1** | 1 | 73,25 |

## Collecting flasks with PUR coating

Made of DURAN®. With spherical ground cup S 35, specially designed for rotary evaporators. Highly transparent coating provides protection from scratches, impacts and light (absorption up to approx. 380 nm). In the event of glass breakage, the coating helps contain broken glass and leakage.
Temperature stable from -30 to +140 °C. Autoclavable.

| Volume (ml) | Flask outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 64 | 100 | **TH18.1** | 1 | 90,30 |
| 250 | 85 | 124 | **TH19.1** | 1 | 96,35 |
| 500 | 105 | 150 | **TH20.1** | 1 | 108,60 |
| 1000 | 131 | 185 | **TH21.1** | 1 | 123,10 |
| 2000 | 166 | 240 | **TH22.1** | 1 | 163,40 |



Material DURAN®

121 °C

## Powder flasks

Made of DURAN®. With centred ground glass joint 29/32, for drying substances on the rotary evaporator. Autoclavable.

| Volume (ml) | Largest outer ∅ (mm) | Height approx. (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 60 | 110 | **TH71.1** | 1 | 76,65 |
| 250 | 81 | 125 | **TH72.1** | 1 | 83,85 |
| 500 | 101 | 155 | **TH73.1** | 1 | 100,60 |
| 1000 | 126 | 195 | **TH74.1** | 1 | 120,40 |
| 2000 | 158 | 245 | **TH75.1** | 1 | 165,55 |



Material DURAN®

121 °C

## Evaporating flasks

Made of DURAN®. With ground glass joint, pear shaped. Autoclavable.

| Volume (ml) | Flask outer ∅ (mm) | Height (mm) | Ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 25 | 55 | 14/23 | **TH04.1** | 1 | 16,30 |
| 10 | 33 | 65 | 14/23 | **TH05.1** | 1 | 17,20 |
| 25 | 40 | 75 | 14/23 | **TH06.1** | 1 | 17,95 |
| 50 | 50 | 88 | 14/23 | **TH07.1** | 1 | 19,00 |
| 50 | 56 | 95 | 29/32 | **TH08.1** | 1 | 12,95 |
| 100 | 60 | 110 | 29/32 | **K263.1** | 1 | 19,20 |
| 250 | 81 | 140 | 29/32 | **K264.1** | 1 | 32,15 |
| 500 | 101 | 170 | 29/32 | **K265.1** | 1 | 37,50 |
| 1000 | 126 | 210 | 29/32 | **K266.1** | 1 | 53,45 |
| 2000 | 158 | 245 | 29/32 | **TH09.1** | 1 | 66,55 |
| 3000 | 175 | 270 | 29/32 | **TH10.1** | 1 | 116,80 |

## Evaporating flasks with PUR coating

Made of DURAN®. With ground glass joint, pear shaped.
Highly transparent coating provides protection from scratches, impacts and light (absorption up to approx. 380 nm). In the event of glass breakage, the coating helps contain broken glass and leakage.
Temperature stable from -30 to +140 °C. Autoclavable.

| Volume (ml) | Flask outer ∅ (mm) | Height (mm) | Ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 56 | 95 | 29/32 | **TH11.1** | 1 | 63,10 |
| 100 | 60 | 110 | 29/32 | **TH12.1** | 1 | 64,50 |
| 250 | 81 | 140 | 29/32 | **TH13.1** | 1 | 81,30 |
| 500 | 101 | 170 | 29/32 | **TH14.1** | 1 | 94,60 |
| 1000 | 126 | 210 | 29/32 | **TH15.1** | 1 | 111,80 |
| 2000 | 158 | 245 | 29/32 | **TH16.1** | 1 | 145,15 |
| 3000 | 175 | 270 | 29/32 | **TH17.1** | 1 | 183,85 |


▶ Rotary evaporator see page 965
▶ Round bottom flask stand see page 142

# Standard ground joint flasks



Material
DURAN®

## Nitrogen round-bottom flasks (Schlenk flasks)

Made of DURAN®. With ground glass joint.
With stopcock ground glass joint 14.5; bore hole 2.5 mm, onnector ∅ 9 mm.

| Volume (ml) | Conical ground joint (NS) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 14/23 | 85 | **KY38.1** | 1 | 46,75 |
| 50 | 14/23 | 90 | **KY39.1** | 1 | 47,20 |
| 50 | 29/32 | 90 | **KY42.1** | 1 | 48,40 |
| 100 | 14/23 | 105 | **KY40.1** | 1 | 49,40 |
| 100 | 29/32 | 105 | **KY43.1** | 1 | 51,50 |
| 250 | 14/23 | 140 | **KY41.1** | 1 | 59,70 |
| 250 | 29/32 | 137 | **KY44.1** | 1 | 59,75 |
| 500 | 29/32 | 160 | **KY45.1** | 1 | 64,00 |
| 1000 | 29/32 | 192 | **KY46.1** | 1 | 80,95 |



## Round bottom flasks with stopcock, special sizes

By Winzer. Made of borosilicate glass 3.3. With ground glass joint and NS 12.5 stopcock, 2.5 mm hole. Connector for hoses with inner ∅ 8 mm.

| Volume (ml) | Conical ground joint (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | 14/23 | **AAP1.1** | 1 | 44,00 |
| 2000 | 29/32 | **AAP2.1** | 1 | 100,55 |



Material
DURAN®

## Nitrogen round bottom flasks with stopcock

Made of DURAN®. With PTFE stopcock. Valve bore 2.5 mm.

| Volume (ml) | Standard ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 14/23 | **TH35.1** | 1 | 59,80 |
| 50 | 14/23 | **TH36.1** | 1 | 61,80 |
| 50 | 29/32 | **TH37.1** | 1 | 62,80 |
| 100 | 14/23 | **TH38.1** | 1 | 65,25 |
| 100 | 29/32 | **TH39.1** | 1 | 67,10 |
| 250 | 14/23 | **TH40.1** | 1 | 72,60 |
| 250 | 29/32 | **TH41.1** | 1 | 73,95 |
| 500 | 29/32 | **TH42.1** | 1 | 76,35 |
| 1000 | 29/32 | **TH43.1** | 1 | 93,50 |




Material
DURAN®

## Nitrogen tubes (Schlenk tubes)

Made of DURAN®. With stopcock ground glass joint 14.5;
bore hole 2.5 mm, connector ∅ 9 mm.

① **Model with sleeve joint 14/23**

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **KY47.1** | 1 | 49,00 |
| 25 | **KY48.1** | 1 | 50,75 |
| 50 | **KY49.1** | 1 | 51,50 |
| 100 | **KY50.1** | 1 | 54,00 |
| 250 | **KY51.1** | 1 | 59,80 |

② **Model with core joint 14/23**

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **KY52.1** | 1 | 60,70 |
| 25 | **KY53.1** | 1 | 61,90 |
| 50 | **KY54.1** | 1 | 63,05 |
| 100 | **KY55.1** | 1 | 64,95 |
| 250 | **KY56.1** | 1 | 75,00 |




Material
DURAN®

## Nitrogen tubes with stopcock

Made of DURAN®. With PTFE stopcock. Valve bore 2.5 mm.

① **With ground glass socket 14/23**

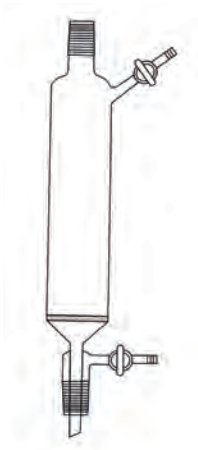
| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **TH25.1** | 1 | 80,50 |
| 25 | **TH26.1** | 1 | 82,95 |
| 50 | **TH27.1** | 1 | 86,20 |
| 100 | **TH28.1** | 1 | 89,05 |
| 250 | **TH29.1** | 1 | 101,00 |

② **With ground glass cone 14/23**

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **TH30.1** | 1 | 95,90 |
| 25 | **TH31.1** | 1 | 97,45 |
| 50 | **TH32.1** | 1 | 100,10 |
| 100 | **TH33.1** | 1 | 103,00 |
| 250 | **TH34.1** | 1 | 110,75 |


▶ Bubble counter see page 150
▶ Dewar containers see page 248

# Reversible frits/Stand. ground joint stoppers



## Reversible frits

By Winzer. Made of borosilicate glass 3.3. With vacuum receiver, two stopcocks (NS 14.5 with solid glass plug, 2.5 mm hole) and ∅ 8 mm connector.

**10 ml,** filter plate ∅ 13 mm, ground glass cones 14/23.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **AAT0.1** | 1 | 164,50 |
| 2 | **AAT1.1** | 1 | 164,50 |
| 3 | **AAT2.1** | 1 | 164,50 |
| 4 | **AAT3.1** | 1 | 164,50 |

**50 ml,** filter plate ∅ 22 mm, ground glass cones 29/32.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **AAT4.1** | 1 | 174,15 |
| 2 | **AAT5.1** | 1 | 174,15 |
| 3 | **AAT6.1** | 1 | 174,15 |
| 4 | **AAT7.1** | 1 | 174,15 |

**100 ml,** filter plate ∅ 32 mm, ground glass cones 29/32.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **AAT8.1** | 1 | 181,70 |
| 2 | **AAT9.1** | 1 | 181,70 |
| 3 | **AAX0.1** | 1 | 181,70 |
| 4 | **AAX1.1** | 1 | 187,05 |

**250 ml,** filter plate ∅ 46 mm, ground glass cones 29/32.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **AAX2.1** | 1 | 198,90 |
| 2 | **AAX3.1** | 1 | 201,05 |
| 3 | **AAX4.1** | 1 | 198,90 |
| 4 | **AAX5.1** | 1 | 203,20 |

**500 ml,** filter plate ∅ 52 mm, ground glass cones 29/32.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **AAX6.1** | 1 | 250,50 |
| 2 | **AAX7.1** | 1 | 250,50 |
| 3 | **AAX8.1** | 1 | 250,50 |
| 4 | **AAX9.1** | 1 | 260,15 |

**1000 ml,** filter plate ∅ 75 mm, ground glass cones 29/32.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **AAY0.1** | 1 | 294,55 |
| 2 | **AAY1.1** | 1 | 294,55 |
| 3 | **AAY2.1** | 1 | 294,55 |
| 4 | **AAY3.1** | 1 | 294,55 |


- ▶ Volumetric flasks from page 25
- ▶ Mixing cylinder from page 24
- ▶ Test tubes see page 78
- ▶ Glass flasks see page 17
- ▶ Glass components from page 141




Material DURAN®

## Cold traps

Made of DURAN®, cone and socket style 29/32.

**Without steam outlet**

| Coolant (ml) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 200 | 270 | 70 | **Y803.1** | 1 | 299,95 |
| 500 | 320 | 85 | **Y804.1** | 1 | 439,70 |
| 1000 | 400 | 100 | **Y805.1** | 1 | 770,80 |

**With steam outlet**

| Coolant (ml) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 200 | 370 | 70 | **Y806.1** | 1 | 375,20 |
| 500 | 395 | 85 | **Y807.1** | 1 | 509,55 |
| 1000 | 480 | 100 | **Y808.1** | 1 | 867,55 |



DURAN WHEATON KIMBLE

Material DURAN®

121 °C

## Glass stoppers

Made of DURAN®. Octagonal with ground glass joint, acc. to DIN 12252. Autoclavable.

| Type | Standard taper (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Solid | 14/23 | **E652.1** | 10 | 42,35 |
| Solid | 19/26 | **E653.1** | 10 | 60,50 |
| Semi-hollow | 29/32 | **E654.1** | 10 | 68,10 |
| Semi-hollow | 45/40 | **E655.1** | 1 | 12,00 |

## Brown glass stoppers

Made of SBW glass or DURAN®.
With ground glass joint acc. to DIN 12252, octagonal. Autoclavable.

| Type | Standard taper (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| SBW glass, solid | 14/23 | **LK28.1** | 10 | 61,40 |
| SBW glass, solid | 19/26 | **LK29.1** | 10 | 73,80 |
| DURAN®, solid | 24/29 | **LK30.1** | 10 | 84,90 |
| DURAN®, semi-hollow | 29/32 | **LK32.1** | 10 | 90,75 |
| DURAN®, semi-hollow | 45/40 | **LK33.1** | 1 | 16,55 |

# Standard ground joint stoppers



DURAN WHEATON KIMBLE

Material DURAN®

121 °C

## Hollow glass stoppers

Made of DURAN®. Hexagonal with ground glass joint. Autoclavable.

| Standard taper (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 7/16 | **X782.1** | 10 | 23,55 |
| 10/19 | **X783.1** | 10 | 14,60 |
| 12/21 | **X784.1** | 10 | 15,40 |
| 14/23 | **X785.1** | 10 | 15,55 |
| 19/26 | **X786.1** | 10 | 20,85 |
| 24/29 | **X787.1** | 10 | 22,70 |
| 29/32 | **X788.1** | 10 | 27,40 |
| 34/35 | **X789.1** | 1 | 8,55 |
| 45/40 | **X790.1** | 1 | 11,70 |



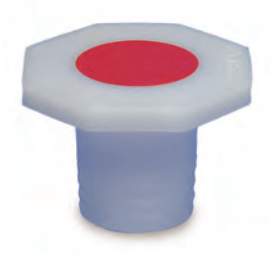
DURAN WHEATON KIMBLE

## Standard ground glass joint stoppers

Made of **PE**. Anatomically shaped for easier opening and closing, sealing ribs on taper ensure optimal and leak-proof sealing. With batch code on base of stopper. Temperature stable from -40 to +80 °C

| Standard taper (NS) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 7/16 | blue | **AKH6.1** | 10 | 7,55 |
| 10/19 | green | **AKH7.1** | 10 | 9,70 |
| 12/21 | violet | **AKH8.1** | 10 | 11,60 |
| 14/23 | yellow | **AKH9.1** | 10 | 8,15 |
| 19/26 | blue | **AKK0.1** | 10 | 9,15 |
| 24/29 | green | **AKK1.1** | 10 | 10,75 |
| 29/32 | red | **AKK2.1** | 10 | 13,10 |
| 34/35 | orange | **AKK3.1** | 1 | 2,95 |
| 45/40 | brown | **AKK4.1** | 1 | 3,35 |

▶ Stoppers made of natural rubber see page 81



## Plastic stoppers

Made of **PE**. With ground glass joint acc. to DIN 12254, octagonal.

| Standard taper (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 7/16 | **LL77.1** | 10 | 5,35 |
| 10/19 | **LL78.1** | 10 | 7,30 |
| 12/21 | **LL79.1** | 10 | 7,75 |
| 14/23 | **LL80.1** | 10 | 8,50 |
| 19/26 | **LL81.1** | 10 | 10,70 |
| 24/29 | **LL82.1** | 10 | 12,00 |
| 29/32 | **LL83.1** | 10 | 13,15 |
| 34/35 | **LL84.1** | 1 | 3,25 |
| 45/40 | **LL85.1** | 1 | 3,80 |



## Rotilabo®-standard ground glass joint stoppers

Made of **PE**. Acc. to DIN 12242.

| Standard ground joint (NS) | Colour | Bottom ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 7/16 | violet | 5,9 | **K864.1** | 10 | 9,95 |
| 10/19 | blue | 8,1 | **K865.1** | 10 | 9,95 |
| 12/21 | green | 10,4 | **K866.1** | 10 | 9,95 |
| 14/23 | brown | 12,2 | **K867.1** | 10 | 9,95 |
| 19/26 | yellow | 16,4 | **K868.1** | 10 | 12,45 |
| 24/29 | red | 21,1 | **K869.1** | 10 | 15,60 |
| 29/32 | black | 25,8 | **K870.1** | 5 | 9,45 |
| 34/35 | white | 30,9 | **K871.1** | 5 | 12,65 |



❄❄❄

121 °C

## Rotilabo®-PTFE stoppers

Made of **PTFE**. Usable without ground joint grease. Chemically inert, temperature stable from - 200 to +250 °C. Autoclavable.

| Standard ground glass joint | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10/19 | 31 | **NX99.1** | 1 | 7,55 |
| 14/23 | 34 | **NY00.1** | 1 | 8,95 |
| 19/26 | 38 | **NY01.1** | 1 | 10,75 |
| 24/29 | 44 | **NY02.1** | 1 | 13,60 |
| 29/32 | 47 | **NY03.1** | 1 | 15,80 |
| 34/35 | 51 | **NY04.1** | 1 | 18,75 |

# Wire joint clamps



## Conical joint clips

Made of **POM**. Resistant to most chemicals.
Temperature stable up to +90 °C.

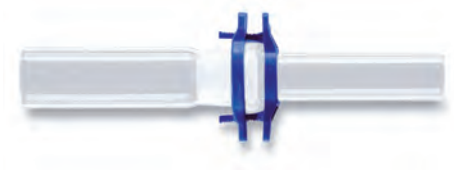
| for ground glass joints | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | green | **1163.1** | 12 | 32,25 |
| 12 | violet | **1164.1** | 12 | 34,30 |
| 14 | yellow | **1165.1** | 12 | 36,05 |
| 19 | blue | **1166.1** | 12 | 37,60 |
| 24 | green | **1167.1** | 12 | 39,60 |
| 29 | red | **1168.1** | 12 | 40,65 |
| 34 | orange | **1169.1** | 12 | 42,90 |
| 40 | yellow | **1170.1** | 12 | 49,35 |
| 45 | brown | **1171.1** | 12 | 50,50 |



## Rotilabo®-wire joint clamps

Made of nickel chromium spring steel. For conical ground glass joints.
Autoclavable.

| Ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **CE96.1** | 1 | 3,95 |
| 19/26 | **CE97.1** | 1 | 4,10 |
| 24/29 | **CE98.1** | 1 | 4,75 |
| 29/32 | **CE99.1** | 1 | 4,95 |
| 45/40 | **CH00.1** | 1 | 6,70 |



## Safety clips for conically tapered joints

Made of **POM**. Can be varied in height, also for ground joint sleeves with grip band. Highly chemical-resistant. Colour: Blue.
Heat resistant up to approx. +150 °C.

| Ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10/19 | **EKA0.1** | 10 | 22,60 |
| 12/21 | **EKA1.1** | 10 | 24,05 |
| 14/23 | **EKA2.1** | 10 | 24,95 |
| 19/26 | **EKA3.1** | 10 | 25,60 |
| 24/29 | **EKA4.1** | 10 | 26,35 |
| 29/32 | **EKA5.1** | 10 | 27,00 |
| 34/35 | **EKA6.1** | 10 | 28,70 |
| 45/40 | **EKA8.1** | 10 | 32,90 |



## Clamps for conical ground joint

Made of spring steel, nickel-plated. Suitable for temperatures over 150 °C.
Autoclavable.

| for ground glass joints | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14 | **8231.1** | 4 | 24,95 |
| 19 | **8232.1** | 4 | 26,35 |
| 24 | **8233.1** | 4 | 27,55 |
| 29 | **8234.1** | 4 | 28,70 |
| Set | **8289.1** | 4 | 30,10 |



## Rotilabo®-PTFE clamps for ground joint clamps

Made of PTFE-encased steel. Chemically inert, temperature stable from -200 to +250 °C. Autoclavable.

| Standard ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **NX71.1** | 1 | 5,05 |
| 19/26 | **NX72.1** | 1 | 5,30 |
| 24/29 | **NX73.1** | 1 | 5,40 |
| 29/32 | **NX74.1** | 1 | 5,70 |
| 34/35 | **NX75.1** | 1 | 6,60 |
| 45/40 | **NX76.1** | 1 | 7,00 |



## Spring clips

Made of nickel-plated steel. For bottles with standard ground glass joints and Winkler oxygen bottles.

| Suitable for ground glass joints | Art. No. | Pack Qty. | € |
|---|---|---|---|
| NS 14 | **CEA6.1** | 1 | 3,15 |
| NS 19 | **CEA7.1** | 1 | 3,45 |
| NS 24 | **CEA8.1** | 1 | 3,70 |
| NS 29 | **CEA9.1** | 1 | 4,10 |


▶ Winkler bottles see page 31
▶ Glass components until page 141

# Round bottom flask stand



## Rotilabo®-fork clamps for ground joints

Made of nickel chromium steel. Autoclavable.

**Without set screw**

| Ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **CH01.1** | 1 | 13,25 |
| 19/26 | **CH02.1** | 1 | 13,90 |
| 24/29 | **CH03.1** | 1 | 14,55 |
| 29/32 | **CH04.1** | 1 | 16,70 |
| 45/40 | **CH05.1** | 1 | 17,65 |

**With set screw**

| Ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **CH06.1** | 1 | 18,90 |
| 19/26 | **CH07.1** | 1 | 19,55 |
| 24/29 | **CH08.1** | 1 | 20,60 |
| 29/32 | **CH09.1** | 1 | 21,45 |
| 45/40 | **CH10.1** | 1 | 22,90 |



## Rotilabo®-joint clamps for spherical ground joints

Made of **stainless steel.** With adjustment screw. For securing spherical ground glass joints. Very sturdy model. Autoclavable.

| For spherical joint | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 13/2 | **E033.1** | 1 | 10,70 |
| 19/9 | **E034.1** | 1 | 11,80 |
| 29/15 | **E035.1** | 1 | 12,85 |
| 35/25 | **E036.1** | 1 | 13,95 |
| 40/25 | **E037.1** | 1 | 24,25 |
| 65/45 | **E038.1** | 1 | 39,65 |



## Coil spring ground-joint clamps

For secure connection of tapered ground joints.
**Delivery without** coil springs. Please order separately.

**Aluminium rings with hooks**

| for ground glass joints | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12/21-14/23 | **LE76.1** | 10 | 16,40 |
| 19/26-24/29 | **LE77.1** | 10 | 16,95 |
| 29/32-34/35 | **LE78.1** | 10 | 17,70 |
| 45/40 | **LE79.1** | 10 | 18,65 |

**Coil springs**, made of stainless steel.

| Total length (mm) | for aluminium rings | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | LE76.1 | **LE80.1** | 10 | 26,00 |
| 35 | LE77.1 | **LE81.1** | 10 | 27,20 |
| 40 | LE78.1 | **LE82.1** | 10 | 33,35 |
| 60 | LE79.1 | **LE83.1** | 10 | 41,80 |



## Flask stand

Made of **PP**. Secure hold for flasks and tubes of different shapes and sizes. Autoclavable.

| for flask vol. (ml) | Inside ∅ (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 36 | 73 | **ETA7.1** | 3 | 24,20 |
| 25 | 45 | 74 | **ETA8.1** | 3 | 24,20 |
| 50 | 55 | 75 | **ETA9.1** | 3 | 24,20 |
| 100 | 64 | 88 | **ETC0.1** | 3 | 27,55 |
| 250 | 89 | 110 | **ETC1.1** | 3 | 32,95 |
| 500 | 110 | 132 | **ETC2.1** | 3 | 35,45 |

## Flask stand set

Set comprising 3x 10 ml, 25 ml, 50 ml and 100-ml stands each.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **ETC3.1** | 1 set = 12 stands | 104,30 |

# Ground glass joints seals



## Round bottom flask stand

Made of PP. With 10-step inner wall for good stability. Suitable for round bottom flasks up to 10 litres in size. Usable at temperatures of up to +100 °C (for short periods). H 49 mm, ∅ 160 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TT11.1** | 1 | 9,65 |



## Rotilabo®-cork rings

Compressed cork secure non-slip stand for round flasks, etc.

| for flask vol. (ml) | Outside ∅ (mm) | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10-100 | 80 | 30 | 30 | **H111.1** | 5 | 10,45 |
| 250-500 | 110 | 60 | 30 | **H112.1** | 5 | 12,90 |
| 500-1000 | 140 | 90 | 30 | **H113.1** | 5 | 18,20 |
| 1000-6000 | 170 | 120 | 30 | **H114.1** | 5 | 23,80 |
| 10 000 | 210 | 160 | 30 | **H115.1** | 2 | 18,20 |
| 20 000 | 240 | 180 | 30 | **H116.1** | 2 | 23,55 |

## Rotilabo®-cork ring assortments

**Set 1** containing 3 rings each, type H111.1/H112.1/H113.1
**Set 2** containing 2 rings each, type H114.1/H115.1/H116.1

| Type | Art. No. | Pack Qty. (assortment) | € |
|---|---|---|---|
| Set 1 for flask vol.10-1000 ml | **0421.1** | 1 | 24,30 |
| Set 2 for flask vol. 1000-6000 ml | **0422.1** | 1 | 47,35 |



## Rotilabo®-compressed cork mats

10 mm thick, ideal for hot flat-bottom flasks, beakers, etc. soft and non-slip. Pack: contains 2 mats 30 x 30 cm and 4 mats 15 x 15 cm.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **1391.1** | 1 | 35,05 |


- ▶ Clear lubricant see page 1138
- ▶ Glass flasks and glass components see page 147




## Rotilabo®-ridged sleeves

Made of **PTFE**. For gas-, liquid- and vacuum-tight ground glass joints up to max. 0.1 mbar. Almost universally chemically-resistant, temperature stable from -200 to +260 °C. Easy to remove with thick rim. Reusable. No grease necessary. Autoclavable.

| Conical ground joint (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 7/16 | **E053.1** | 10 | 29,35 |
| 10/19 | **E054.1** | 10 | 22,80 |
| 12/21 | **E055.1** | 10 | 25,80 |
| 14/23 | **0692.1** | 10 | 11,85 |
| 19/26 | **0693.1** | 10 | 12,50 |
| 24/29 | **E056.1** | 10 | 13,30 |
| 29/32 | **0694.1** | 10 | 13,65 |
| 34/35 | **E057.1** | 5 | 10,35 |
| 45/40 | **0695.1** | 5 | 14,00 |
| 60/46 | **E058.1** | 5 | 19,05 |



## Rotilabo®-sealing sleeves

Made of **PTFE**, for gas-, liquid- and vacuum-tight ground glass joints. Joint rings on the outer side of the conical sleeves ensure a high vacuum-tight seal (Leakage rate <1 x $10^{-1}$ mbar l $s^{-1}$) and prevent the ground glass joints from sticking. Easy to remove with thick rim. Reusable. Practically resistant to all chemicals. Temperature stable from -200 to +260 °C. No grease necessary. Autoclavable.

| Conical ground joint (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10/19 | **C246.1** | 1 | 7,10 |
| 14/23 | **1012.1** | 1 | 8,10 |
| 19/26 | **C248.1** | 1 | 8,75 |
| 24/29 | **C249.1** | 1 | 10,55 |
| 29/32 | **1013.1** | 1 | 16,25 |
| 34/35 | **C250.1** | 1 | 17,75 |
| 45/40 | **1014.1** | 1 | 23,65 |



## Rotilabo®-spherical ground glass joint sleeves

Made of **PTFE**. For gas-, liquid- and vacuum-tight ball-and-socket joints. With sealing grooves for sealing in high vacuums (leakage: <1 x $10^{-2}$ mbar l $s^{-1}$). Easy to remove and reusable. No grease necessary. Temperature stable from -200 to +260 °C. High chemical resistance. Autoclavable.

| For spherical joint | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 13 | **A219.1** | 5 | 29,60 |
| 19 | **A220.1** | 5 | 27,85 |
| 29 | **A221.1** | 5 | 37,05 |
| 35 | **A222.1** | 5 | 47,25 |
| 40 | **A223.1** | 5 | 65,60 |

# Reducing adapters



## Rotilabo®-seals for conical ground glass joints

Made of **PTFE**. Can be used to seal the equipment and containers.
For gas-, liquid- and extremely vacuum-tight standard ground joints (Leakage rate <1 x $10^{-6}$ Pa l $s^{-1}$). Prevents seizing of joints.
Joints remain clean and free of grease. Temperature stable up to +250 °C.
Seals are wafer-thin and can be combined with joint clips. Autoclavable.
**Delivery incl.** cartridge with 50 fitted gaskets.

| for ground glass joints | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12 | **T221.1** | 50 | 26,70 |
| 14 | **E699.1** | 50 | 29,00 |
| 19 | **E700.1** | 50 | 30,05 |
| 24 | **E701.1** | 50 | 31,10 |
| 29 | **E702.1** | 50 | 32,20 |
| 45 | **T222.1** | 50 | 42,90 |



## Rotilabo®-bellow connectors for ground joints

Made of **PTFE**. Bend of angle max. 120°.
Prevents tension between parts in glass equipment. Autoclavable.

| Conical ground joint (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **7235.1** | 1 | 41,60 |
| 19/26 | **7236.1** | 1 | 49,45 |
| 24/29 | **7239.1** | 1 | 56,35 |
| 29/32 | **7240.1** | 1 | 63,00 |



## Hose connection plug for standard ground joints

Made of **PP**, transparent, NS 29/32. With 2 ∅ 8 mm hose connections.
Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TT21.1** | 1 | 8,55 |



## Rotilabo® PTFEreducers

Made of **PTFE**. Usable without ground joint grease. Chemically inert, temperature stable from - 200 to + 250 °C. Autoclavable.

| Socket (ground glass) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14/23 | 19/26 | **NX82.1** | 1 | 13,25 |
| 14/23 | 24/29 | **NX83.1** | 1 | 14,75 |
| 19/26 | 24/29 | **NX84.1** | 1 | 15,80 |
| 19/26 | 29/32 | **NX85.1** | 1 | 20,00 |
| 19/26 | 34/35 | **NX86.1** | 1 | 22,40 |
| 24/29 | 29/32 | **NX87.1** | 1 | 20,00 |
| 24/29 | 34/35 | **NX88.1** | 1 | 22,50 |
| 24/29 | 45/40 | **NX89.1** | 1 | 26,05 |
| 29/32 | 34/35 | **NX90.1** | 1 | 22,40 |
| 29/32 | 45/40 | **NX91.1** | 1 | 26,05 |



## Ground glass joint reduction set

Made of **PTFE**. Highly pure, chemically inert. Comprising 7 reducer rings: NS 14, NS 19, NS 24, NS 29, NS 34, NS 45, NS 60.
Height 20 mm, suitable for all ground glass joints conforming to DIN 12242.
Temperature stable from -200 °C to +250 °C. Suitable for vacuum.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NY32.1** | 1 | 71,50 |



Material DURAN®

## Extensions

Made of DURAN®.

| Socket (ground glass) | Cone (ground glass) | ∅ (mm) | Wall thickness (mm) | Overall length, approx. (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 14/23 | 14/23 | 17 | 1.8 | 120 | **TK08.1** | 1 | 10,70 |
| 14/23 | 29/32 | 26 | 2.0 | 130 | **TK09.1** | 1 | 12,20 |
| 19/26 | 19/26 | 22 | 1.8 | 125 | **TK10.1** | 1 | 11,45 |
| 29/32 | 29/32 | 33 | 2.0 | 150 | **TK11.1** | 1 | 13,55 |

# Reducing adapters



Material
DURAN®

## Reducing adapters

Made of DURAN®. With ground glass joints (NS) acc. to DIN 12257.

*In addition to DIN

| Socket (ground glass) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14/23 | 19/26 | **K267.1** | 1 | 10,35 |
| 14/23 | 24/29* | **K268.1** | 1 | 10,65 |
| 14/23 | 29/32 | **K269.1** | 1 | 10,35 |
| 19/26 | 14/23 | **K270.1** | 1 | 11,70 |
| 19/26 | 24/29* | **K271.1** | 1 | 12,20 |
| 19/26 | 29/32 | **K272.1** | 1 | 11,60 |
| 24/29* | 14/23 | **K273.1** | 1 | 14,85 |
| 24/29* | 19/26 | **K274.1** | 1 | 16,00 |
| 24/29* | 29/32 | **K275.1** | 1 | 12,50 |
| 29/32 | 14/23 | **K276.1** | 1 | 14,55 |
| 29/32 | 19/26 | **K277.1** | 1 | 14,95 |
| 29/32 | 24/29* | **K278.1** | 1 | 17,20 |
| 29/32 | 45/40 | **KN64.1** | 1 | 15,05 |
| 29/32* | 60/46 | **TK15.1** | 1 | 58,65 |
| 45/40* | 29/32 | **KN65.1** | 1 | 24,75 |
| 45/40* | 60/46 | **TK16.1** | 1 | 67,75 |
| 60/46* | 29/32 | **TK17.1** | 1 | 77,95 |
| 60/46* | 45/40 | **TK18.1** | 1 | 88,45 |



Material
DURAN®

## Adapters from ground glass joint to spherical socket

Made of DURAN®.

### Ground glass joint to spherical socket

| Cone (ground glass) | Connection (spherical) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 29/32 | 29 | **TH93.1** | 1 | 38,45 |
| 29/32 | 35 | **TH94.1** | 1 | 45,70 |

### Ground joint socket to spherical socket

| Socket (ground glass) | Ball (spherical) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 29/32 | 29 | **TH95.1** | 1 | 39,55 |
| 29/32 | 35 | **TH96.1** | 1 | 44,40 |



Material
DURAN®

## Adapters with olive

Made of DURAN®. With ground glass joint core and tubing olives ∅ 10 mm.

### Straight tubing olive

| Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **CA80.1** | 1 | 8,85 |
| 19/26 | **CA81.1** | 1 | 9,65 |
| 24/29 | **CA82.1** | 1 | 10,65 |
| 29/32 | **CA83.1** | 1 | 10,90 |

### Bent tubing olive (90°)

| Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **CA84.1** | 1 | 9,65 |
| 19/26 | **CA85.1** | 1 | 10,65 |
| 24/29 | **CA86.1** | 1 | 11,60 |
| 29/32 | **CA87.1** | 1 | 11,60 |



Material
DURAN®

## Adapters with olive

Made of DURAN®. With sleeve and tubing olive outer-∅ 10 mm.

### Straight tubing olive

| Socket (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **LK46.1** | 1 | 13,15 |
| 19/26 | **LK47.1** | 1 | 14,20 |
| 24/29 | **LK48.1** | 1 | 15,40 |
| 29/32 | **LK49.1** | 1 | 16,45 |

### Bent tubing olive (90°)

| Socket (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **LK50.1** | 1 | 12,80 |
| 19/26 | **LK51.1** | 1 | 14,10 |
| 24/29 | **LK52.1** | 1 | 15,30 |
| 29/32 | **LK53.1** | 1 | 16,10 |

# Reducing adapters



Material
DURAN®

## Adapters with NS-stopcock

Made of DURAN®. With ground glass joint core and stopcock with solid glass plugs. Bore hole 2.5 mm. Both straight and 90° offset tubing olives ∅ 10 mm are available.

**Straight tubing olive**

| Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **CC24.1** | 1 | 26,45 |
| 19/26 | **CC25.1** | 1 | 28,45 |
| 24/29 | **CC26.1** | 1 | 30,10 |
| 29/32 | **CC27.1** | 1 | 30,10 |

**Bent tubing olive (90°)**

| Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **CC28.1** | 1 | 26,45 |
| 19/26 | **CC29.1** | 1 | 28,45 |
| 24/29 | **CC30.1** | 1 | 30,10 |
| 29/32 | **CC31.1** | 1 | 30,10 |



Material
DURAN®

## Adapters with socket and stopcock

Made of DURAN®. With bent nozzle.
Stopcock NS 14.5 with solid glass plug, bore 2.5 mm, olive ∅ 10 mm.

| Socket (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **LK54.1** | 1 | 33,50 |
| 19/26 | **LK55.1** | 1 | 34,55 |
| 24/29 | **LK56.1** | 1 | 37,50 |
| 29/32 | **LK57.1** | 1 | 38,95 |



Material
DURAN®

## Adapters with stopcock

Made of DURAN®. With solid glass plugs.

| Socket (ground glass) | Cone (ground glass) | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 14/23 | 14/23 | 2,5 | **EPE9.1** | 1 | 64,00 |
| 29/32 | 29/32 | 8 | **EPH0.1** | 1 | 73,10 |



❄

## Ground swivel screw fittings

Ground element made of **PTFE**, with screw cap made of **PPS**.
Allows secure fixing of thermometers, sensor probes, tubes or hoses to avoid collisions within the reaction vial, e.g. during simultaneous use of a stirrer shaft. Temperature stable from -50 to +250 °C.

| Standard ground glass joint | Outer ∅ of opening (mm) | Maximum angle of deflection | Cap thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 19/26 | 6 | 4° | GL 18 | **NY48.1** | 1 | 101,30 |
| 29/32 | 6 | 8° | GL 25 | **NY49.1** | 1 | 74,95 |
| 29/32 | 8 | 7° | GL 25 | **NY50.1** | 1 | 73,25 |
| 29/32 | 10 | 6° | GL 25 | **NY51.1** | 1 | 76,15 |
| 29/32 | 12 | 5° | GL 25 | **NY52.1** | 1 | 76,15 |

# Ground glass joints components/glass tubes

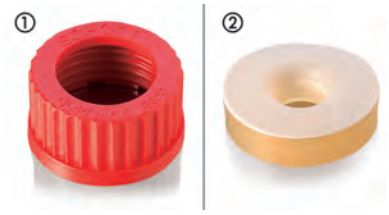


Material
DURAN®

## Thermometer adapters

Made of DURAN®. Ground glass joint, plastic screw cap, silicone seal with PTFE-sleeve.

| Thread | for thermometers-∅ (mm) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 14 | 5,5-6,5 | 14/23 | **AK92.1** | 1 | 14,30 |
| 14 | 5,5-6,5 | 19/26 | **TE98.1** | 1 | 17,10 |
| 14 | 5,5-6,5 | 24/29 | **TE99.1** | 1 | 18,40 |
| 14 | 5,5-6,5 | 29/32 | **AK93.1** | 1 | 16,65 |
| 18 | 7,5-9,0 | 14/23 | **AK94.1** | 1 | 15,35 |
| 18 | 7,5-9,0 | 19/26 | **TH00.1** | 1 | 18,25 |
| 18 | 7,5-9,0 | 29/32 | **AK95.1** | 1 | 17,20 |
| 25 | 9,0-11,0 | 29/32 | **TH01.1** | 1 | 35,35 |
| 32 | 13,0-15,0 | 29/32 | **TH02.1** | 1 | 42,10 |




## ① Screw caps with borehole

Made of **PBT**. With GL-thread, for connecting olives, pipes or stopcocks. Autoclavable, temperature stable from -45 to +180 °C.

| Thread GL | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14 | 9,5 | **L993.1** | 2 | 3,40 |
| 18 | 11 | **EL61.1** | 1 | 2,85 |
| 25 | 15 | **LL40.1** | 5 | 9,20 |
| 32 | 20 | **H396.1** | 1 | 2,40 |
| 45 | 34 | **L994.1** | 1 | 4,20 |

## ② Gaskets for screw caps with borehole

Made of **silicone rubber**, with moulded on **PTFE**-sleeve and borehole.

| Thread GL | for pipe ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14 | 5.5-6.5 | **AK96.1** | 1 | 4,25 |
| 18 | 5.5-6.5 | **AK97.1** | 1 | 4,70 |
| 18 | 7.5-9.0 | **AK98.1** | 1 | 4,70 |
| 18 | 9.0-11.0 | **AK99.1** | 1 | 4,70 |
| 25 | 7.5-9.0 | **LL92.1** | 2 | 9,90 |
| 25 | 9.0-11.0 | **LL93.1** | 2 | 9,90 |
| 25 | 11.0-13.0 | **LL94.1** | 2 | 9,90 |
| 32 | 9.0-11.0 | **LL95.1** | 2 | 14,50 |
| 32 | 11.0-13.0 | **H397.1** | 1 | 6,90 |
| 32 | 13.0-15.0 | **LL96.1** | 2 | 14,35 |
| 32 | 15.0-17.0 | **LL97.1** | 2 | 13,50 |
| 32 | 17.0-19.0 | **LL98.1** | 2 | 13,80 |
| 45 | 25.0-27.0 | **LL99.1** | 1 | 13,25 |
| 45 | 31.0-33.0 | **LN00.1** | 1 | 13,25 |



Material
DURAN®

## Spherical joint connections

Made of DURAN®. In accordance with DIN 12264.

*in addition to DIN

| Connection (spherical) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 13/2* | 100 | **EKA9.1** | 10 | 88,40 |
| 13/5 | 100 | **EKC0.1** | 10 | 62,25 |
| 19 | 120 | **EKC1.1** | 10 | 63,90 |
| 29 | 120 | **EKC2.1** | 10 | 75,20 |
| 35* | 120 | **EKC3.1** | 10 | 88,15 |
| 40 | 120 | **EKC4.1** | 1 | 15,70 |
| 41* | 120 | **EKC5.1** | 1 | 24,90 |
| 51 | 150 | **EKC6.1** | 1 | 38,30 |
| 65 | 170 | **EKC7.1** | 1 | 78,05 |



Material
DURAN®

## Balls with a spherical joint

Made of DURAN®. In accordance with DIN 12264.

*in addition to DIN

| Ball (spherical) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 13/2* | 100 | **EKC8.1** | 10 | 87,10 |
| 13/5 | 100 | **EKC9.1** | 10 | 64,05 |
| 19 | 120 | **EKE0.1** | 10 | 65,90 |
| 29 | 120 | **EKE1.1** | 10 | 83,85 |
| 35* | 120 | **EKE2.1** | 10 | 95,30 |
| 40 | 120 | **EKE3.1** | 1 | 16,65 |
| 41* | 120 | **EKE4.1** | 1 | 26,20 |
| 51 | 150 | **EKE5.1** | 1 | 38,35 |
| 65 | 170 | **EKE6.1** | 1 | 62,20 |


- ▶ Ground joint thermometers see page 785
- ▶ Thread couplings see page 52
- ▶ Clear lubricant see page 1138



Material
DURAN®

## Tubes with standard ground joint

Made of DURAN®.

**Ground glass joints** acc. to DIN 12249 Shape B.

| Cone (ground glass) | ∅ (mm) | Wall thickness (mm) | Overall length, approx. (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 14/23 | 13 | 1.5 | 130 | **TH83.1** | 10 | 24,15 |
| 19/26 | 17 | 1.8 | 130 | **TH84.1** | 10 | 31,20 |
| 24/29 | 22 | 1.8 | 130 | **TH85.1** | 10 | 35,45 |
| 29/32 | 26 | 2.0 | 130 | **TH86.1** | 10 | 36,95 |
| 45/40 | 40 | 2.3 | 145 | **TH87.1** | 10 | 90,80 |

**Sockets with ground glass joint** acc. to DIN 12249 Shape E.

| Socket (ground glass) | ∅ (mm) | Wall thickness (mm) | Overall length, approx. (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 14/23 | 17 | 1.8 | 130 | **TH88.1** | 10 | 24,55 |
| 19/26 | 22 | 1.8 | 130 | **TH89.1** | 10 | 27,60 |
| 24/29 | 28 | 2.0 | 130 | **TH90.1** | 10 | 37,40 |
| 29/32 | 33 | 2.0 | 130 | **TH91.1** | 10 | 40,35 |
| 45/40 | 50 | 2.5 | 145 | **TH92.1** | 10 | 107,70 |



Material
DURAN®

## Threaded tubes

Made of DURAN®. Acc. to DIN 12216.

*In addition to DIN

| Thread GL | ∅ (mm) | Wall thick-ness (mm) | Overall length, approx. (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 14 | 12 | 1.5 | 100-120 | **TH97.1** | 10 | 14,20 |
| 18 | 16 | 1.8 | 100 | **TH98.1** | 10 | 19,25 |
| 25 | 22 | 1.8 | 100 | **TH99.1** | 10 | 29,30 |
| 32 | 28 | 2.0 | 140 | **TK00.1** | 10 | 44,85 |
| 45* | 40 | 2.3 | 180 | **TK01.1** | 10 | 136,55 |



## Glass tubes

Made of calcium soda glass. Length 50 cm.
Heat resistant up to approx. 100 °C.

| Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 0.9 | **CNK8.1** | 12 | 7,75 |
| 8 | 0.9 | **CNK9.1** | 12 | 8,20 |
| 10 | 1.0 | **CNL0.1** | 12 | 8,55 |




## Cooling tubes

Made of borosilicate glass 3.3. Ground glass joint. Autoclavable.

| Length (mm) | Standard ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 | 29/32 | **TP48.1** | 1 | 17,65 |
| 1000 | 29/32 | **TP49.1** | 1 | 21,00 |



Material
DURAN®

## Immersion heater with bell

Made of DURAN®. To prevent boiling delay. Dimensions: L 180 x ∅ 4 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EPX0.1** | 1 | 4,50 |

▶ Boiling pebbles see page 1148

# Distillation




Programme extension!

Material DURAN®

## Gas inlet tubes/boiling capillaries

Made of DURAN®. With ground cone and thin arms (for removing from the burner).

① **Straight.** Installation length approx. 200 mm.

| Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **Y343.1** | 1 | 10,75 |
| 19/26 | **EPT4.1** | 1 | 16,45 |
| 24/29 | **EPT5.1** | 1 | 18,65 |
| 29/32 | **EPT6.1** | 1 | 18,15 |

② **Straight, with valve stopcock.** For dosing, with angled olive (90°), olive ∅ 8 mm. Installation length approx. 150 mm.

| Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **EPT7.1** | 1 | 73,65 |

③ **Curved, (angle 90°).** Installation length approx. 250 mm. Olive ∅ 10 mm.

| Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **Y344.1** | 1 | 12,30 |
| 19/26 | **EPT8.1** | 1 | 18,85 |
| 24/29 | **EPT9.1** | 1 | 30,40 |
| 29/32 | **Y345.1** | 1 | 20,80 |




Material DURAN®

## Elbow

Made of DURAN®. With two NS cones, curved.

① **Elbow, 75°**

| Cones (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **EPC6.1** | 1 | 14,90 |
| 19/26 | **EPC7.1** | 1 | 20,75 |
| 24/29 | **EPC8.1** | 1 | 26,20 |
| 29/32 | **EPC9.1** | 1 | 29,60 |

② **Elbow, 90°**

| Cones (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **EPE0.1** | 1 | 15,25 |
| 19/26 | **EPE1.1** | 1 | 20,20 |
| 24/29 | **EPE2.1** | 1 | 25,70 |
| 29/32 | **EPE3.1** | 1 | 28,70 |



Programme extension!

Material DURAN®

## Two-necked adapters

Made of DURAN®. With parallel necks. Acc. to DIN 12594. With two NS sleeves and one NS cone.

*in addition to DIN

| Sockets (NS) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14/23 | 14/23 | **Y676.1** | 1 | 20,40 |
| 19/26 | 19/26 | **LK66.1** | 1 | 30,30 |
| 19/26* | 24/29 | **EPC3.1** | 1 | 31,45 |
| 24/29* | 24/29 | **EPC4.1** | 1 | 33,80 |
| 24/23* | 29/32 | **EPC5.1** | 1 | 32,10 |
| 29/32 | 29/32 | **Y677.1** | 1 | 28,50 |



Material DURAN®

## Claisen heads

Made of DURAN®. Sleeves NS 14/23. Acc. to DIN 12594. For distillation thermometers with 55 mm total length.

| Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **KX43.1** | 1 | 29,60 |
| 29/32 | **Y681.1** | 1 | 35,85 |



Programme extension!

Material DURAN®

## Distillation heads

Made of DURAN®. With one sleeve 14/23 and two NS cores. Drain angle 75°. In accordance with DIN 12594. For distillation thermometers with 55 mm installation length.

*In addition to DIN

| Vertical cone (NS) | Angled cone (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14/23 | 14/23 | **KX44.1** | 1 | 24,55 |
| 19/26 | 19/26 | **EPE4.1** | 1 | 21,45 |
| 24/29* | 19/26 | **EPE5.1** | 1 | 26,40 |
| 24/29* | 24/29 | **EPE6.1** | 1 | 26,90 |
| 29/32 | 29/32 | **Y680.1** | 1 | 30,65 |

▶ Distillation thermometers see page 785




Material
DURAN®

## Vacuum adapters

Made of DURAN®. With olive, outer-∅ 7-8 mm. With drain tip.

① **Straight**

| Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **LK62.1** | 1 | 18,85 |
| 19/26 | **LK63.1** | 1 | 22,60 |
| 24/29 | **LK64.1** | 1 | 26,40 |
| 29/32 | **LK65.1** | 1 | 21,95 |

② **Bent 105°**

| Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **Y341.1** | 1 | 21,80 |
| 19/26 | **LK70.1** | 1 | 28,10 |
| 24/29 | **LK71.1** | 1 | 30,95 |
| 29/32 | **Y342.1** | 1 | 28,80 |



Material
DURAN®

## Vacuum adapters with threaded connection

Made of DURAN®. In accordance with DIN 12594 and/or in addition to DIN. With threaded connection GL 18 and angle tip.

*in addition to DIN

① **Straight**

| Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **EPP5.1** | 1 | 31,00 |
| 19/26* | **EPP6.1** | 1 | 29,85 |
| 24/29 | **EPP7.1** | 1 | 33,70 |
| 29/32 | **EPP8.1** | 1 | 33,80 |

② **Curved 105°**

| Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **EPP9.1** | 1 | 36,35 |
| 19/26* | **EPT0.1** | 1 | 37,00 |
| 24/29 | **EPT1.1** | 1 | 40,50 |
| 29/32 | **EPT2.1** | 1 | 40,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| Olive with screw cap GL 18, straight | **LK73.1** | 2 | 12,85 |
| Olive with screw cap GL 18, curved | **LK75.1** | 2 | 17,85 |



**Programme extension!**

Material
DURAN®

## Adapters for distillation receiver acc. to Bredt

Made of DURAN®. Sleeves with NS 29/32. With suction nozzle GL 18.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Straight | **EPT3.1** | 1 | 46,25 |
| Curved 105° | **EE76.1** | 1 | 56,75 |

**Accessories:**

| | | | |
|---|---|---|---|
| Plastic olives, ∅ outside 10 mm | **EL60.1** | 1 | 6,30 |
| Screw cap with hole, GL 18 | **EL61.1** | 1 | 2,85 |



Material
DURAN®

## Distributor acc. to Bredt

Made of DURAN®. With 4 cores ground glass joints NS 14/23 for round-bottomed flasks of max. 250 ml. The top is ground glass joint NS 29/32.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE75.1** | 1 | 95,25 |



Material
DURAN®

## Distilling distributors acc. to Bernauer (Spider)

Made of DURAN®. With vacuum connection, ground glass joint 14/23.

| Socket (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **KX78.1** | 1 | 80,30 |
| 29/32 | **KX79.1** | 1 | 83,80 |





**Programme extension!**

Material DURAN®

## ① Delivery adapters

Made of DURAN®. With bent drain tube. Length 65 mm, angle 105°.

| Socket (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **LK58.1** | 1 | 11,10 |
| 19/26 | **LK59.1** | 1 | 18,30 |
| 24/29 | **LK60.1** | 1 | 19,40 |
| 29/32 | **LK61.1** | 1 | 15,40 |

## ② Delivery adapters

Made of DURAN®. Bent 105°, with drain tip.

| Socket (ground glass) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14/23 | 14/23 | **KX77.1** | 1 | 16,05 |
| 19/26 | 19/26 | **EPN9.1** | 1 | 17,95 |
| 24/29 | 24/29 | **EPP0.1** | 1 | 21,25 |
| 29/32 | 29/32 | **EE74.1** | 1 | 20,10 |



Material DURAN®

## Delivery adapters

Made of DURAN®. Straight with suction connection (glass olive).

| Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **EPP1.1** | 1 | 16,30 |
| 19/26 | **EPP2.1** | 1 | 19,10 |
| 24/29 | **EPP3.1** | 1 | 21,30 |
| 29/32 | **EPP4.1** | 1 | 21,20 |


- ▶ Clamps for conical ground joint see page 140
- ▶ Ground joint sleeves see page 142
- ▶ Clear lubricant see page 1138
- ▶ Vacuum pumps see page 356




**Programme extension!**

Material DURAN®

## Stutzer splash heads

Made of DURAN®. Straight with cone and socket.
Fits directly onto the destillation flask for droplet separation.

| Socket (ground glass) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14/23 | 14/23 | **KX80.1** | 1 | 56,25 |
| 19/26 | 24/29 | **EPE8.1** | 1 | 66,40 |
| 29/32 | 14/23 | **EPE7.1** | 1 | 66,35 |
| 29/32 | 29/32 | **EE70.1** | 1 | 57,20 |



Material DURAN®

## Bubble counter

Made of DURAN®. For monitoring gas flow.
∅ 32 mm, overall height 120 mm, hose connection ∅ 8 mm.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **KX54.1** | 1 | 27,05 |



## Bubble counters with ground glass joint

Made of type 3.3 borosilicate glass. For monitoring the gas flow in apparatus. Suitable for excess pressure and vacuum. With ground glass joint and GL 32 screw cap with PTFE-coated seal.
Overall height without ground joint approx. 145 mm, ∅ approx. 30 mm.
Temperature stable up to +200 °C.
**Delivery without** GL 14 connectors, please order separately for bubble counters with GL connection.

| Connections | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Tubing connector ∅ 7-8 mm | 29 | **CEK3.1** | 1 | 137,60 |
| Threaded connection GL 14 | 29 | **CEK4.1** | 1 | 137,60 |
| Tubing connector ∅ 9-10 mm | 14 | **CEK5.1** | 1 | 137,60 |
| Threaded connection GL 14 | 14 | **CEK6.1** | 1 | 137,60 |

**Accessories:**

| | | | |
|---|---|---|---|
| Tubing connector ∅ 9 mm with connecting cap GL 14 | **LK72.1** | 2 | 11,30 |



Material
DURAN®

## Distillation bridges

Made of DURAN®. Joints are parallel and vertical.

| Jacket length (mm) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 150 | 14/23 | **KX82.1** | 1 | 17,45 |
| 350 | 29/32 | **EE71.1** | 1 | 32,75 |



Material
DURAN®

## Distillation bridges

Made of DURAN®. Liebig condenser with vacuum stopper ∅ 8 mm. Sleeve NS 14/23. For distillation thermometers with 55 mm total length. ∅ olive water connection 11 mm.

| Jacket length (mm) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 14/23 | **KX49.1** | 1 | 63,45 |
| 250 | 29/32 | **EE72.1** | 1 | 75,45 |
| 400 | 29/32 | **EE73.1** | 1 | 84,75 |



Material
DURAN®

## Distillation bridge

Made of DURAN®. Without condenser, with two vertical openings and ground glass joints 14/23. For distillation thermometers with 55 mm total length.

| Jacket length (mm) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350 | 29/32 | **KY60.1** | 1 | 45,90 |



Material
DURAN®

## Distillation bridges acc. to Claisen

Made of DURAN®. Liebig condenser with straight outlet, and ground glass joints 14/23. For distillation thermometers with 55 mm total length. Olives ∅ 11 mm.

| Jacket length (mm) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 14/23 | **KX70.1** | 1 | 70,50 |
| 250 | 29/32 | **KX71.1** | 1 | 79,85 |



Material
DURAN®

## Distillation bridges

Made of DURAN®. Liebig condenser with straight outlet, and ground glass joints 14/23. For distillation thermometers with 55 mm total length. Olives ∅ 11 mm.

| Jacket length (mm) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 14/23 | **KX72.1** | 1 | 59,15 |
| 250 | 29/32 | **KX73.1** | 1 | 70,55 |



Material
DURAN®

## Distillation bridges acc. to Claisen

Made of DURAN®. Liebig condenser with vacuum stopper ∅ 8 mm. Ground glass joints 14/23. For distillation thermometers with 55 mm total length.
∅ olive water connection 11 mm.

| Jacket length (mm) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 14/23 | **KX45.1** | 1 | 81,20 |
| 250 | 14/23 | **KX46.1** | 1 | 84,95 |
| 250 | 29/32 | **KX47.1** | 1 | 88,70 |
| 400 | 29/32 | **KX48.1** | 1 | 94,00 |

▶ Distillation thermometers see page 785

# Distillation



Material
DURAN®

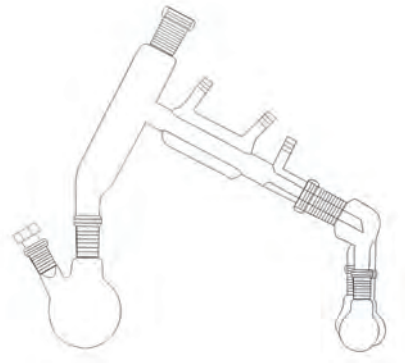
## Short-path-distillation bridge

Made of DURAN®. Core and sleeve standard ground glass joint 14/23.
GL 14 coolant and vacuum connections.
**Delivery without** olive fittings and screw caps (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LE20.1** | 1 | 91,60 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement plastic hose connection with silicone seal, straight, GL 14, outer- ∅ 8.6 mm | **L992.1** | 2 | 3,25 |
| Replacement screw caps, red, PBT, GL 14, hole ∅ 9.5 mm | **L993.1** | 2 | 3,40 |



## Micro distillation apparatus

Made of borosilicate glass 3.3. Compact design for loss-free condensate flow. Short-flow distilling link with socket and two ground glass cones 14/23, Liebig condenser, jacket length 70 mm and vacuum receiver.
Please order ground joint clamps and thermometer separately.
**Delivery incl.** distillation udder, 3 5 ml round bottom flasks, 50 ml double-neck flask and NS 14/23 hollow glass stopper.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AAN5.1** | 1 | 196,75 |

## Replacement parts for micro distillation apparatus

**Replacement parts**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Short-flow distilling link | **AAN6.1** | 1 | 105,80 |
| Distillation udder without vacuum receiver | **AAN7.1** | 1 | 65,90 |
| 50-ml-double neck flask NS 14/23 | **KY13.1** | 1 | 21,15 |
| 5-ml round bottom flask NS 14/23 | **HY49.1** | 1 | 6,85 |
| Hollow glass stopper NS 14/23 | **X785.1** | 10 | 15,55 |

**Accessories:**

| | | | |
|---|---|---|---|
| Wire ground joint clamps NS 14/23 | **CE96.1** | 1 | 3,95 |
| Thermometer -10 to +250 °C | **ET05.1** | 1 | 19,30 |
| Thermometer adapter | **AK92.1** | 1 | 14,30 |



## Apparatus for the determination of etheric oils

Made of borosilicate glass 3.3. acc. to DAB. Complete distillation head with ground glass cone 29/32, Allihn cooler, vent plug NS 7/16, 1 ml measuring tube (graduated 0.01 ml) with 3 ml ball, refill/overflow funnel and Czako three-way stopcock with PTFE keys.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XX23.1** | 1 | 282,75 |



Material
DURAN®

## Water analysis meter tubes acc. to Dean Stark

Made of DURAN®. Acc. to DIN 12420. Core and sleeve ground glass joint 29/32. With stopcock standard ground joint 14.5; bore hole ∅ 2.5 mm. Maximum measuring volume 10 ml, subdivisions 0.1 ml.
**Delivery without** condenser and flask, please order separately.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Zero point at the stopcock | **LE60.1** | 1 | 86,45 |
| Zero point above stopcock | **LE61.1** | 1 | 97,60 |
| Without stopcock, zero point at tip | **LE62.1** | 1 | 69,05 |

▶ Drying agents see Chromatography chapter!

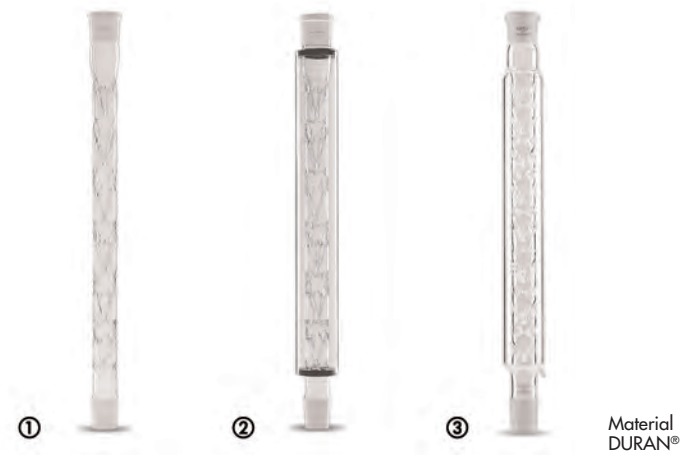


Material
DURAN®

## Attachment for steam distillation

Made of DURAN®. With two ground glass joints 29/32 cores and GL 14 threaded connection. For 2000-ml-flasks.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LE19.1** | 1 | 60,40 |




Material
DURAN®

## Vigreux columns

Made of DURAN®. Alternating horizontal and diagonal punctures.

① **Without shell**

| Filling height (mm) | Total length (mm) | Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 200 | 300 | 14/23 | **LE21.1** | 1 | 47,85 |
| 300 | 425 | 14/23 | **LE22.1** | 1 | 60,55 |
| 300 | 445 | 29/32 | **LE23.1** | 1 | 59,90 |

② **With slip-on glass shell**

| Filling height (mm) | Total length (mm) | Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 300 | 450 | 29/32 | **E628.1** | 1 | 85,95 |
| 600 | 650 | 29/32 | **E629.1** | 1 | 109,65 |

③ **With fused on glass vacuum shell**

| Filling height (mm) | Total length (mm) | Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 200 | 300 | 14/23 | **LE24.1** | 1 | 140,85 |
| 300 | 445 | 29/32 | **LE25.1** | 1 | 177,40 |
| 600 | 745 | 29/32 | **LE26.1** | 1 | 181,70 |



Material
DURAN®

## Columns acc. to Hempel

Made of DURAN®. For filling with packing (Raschig rings or glass pearls).

**Without glass jacket**

| Filling height (mm) | Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 200 | 14/23 | **TK19.1** | 1 | 27,20 |
| 300 | 29/32 | **TK20.1** | 1 | 40,75 |
| 500 | 29/32 | **TK21.1** | 1 | 46,75 |
| 800 | 29/32 | **TK22.1** | 1 | 66,65 |

**With fused-on glass jacket**

| Filling height (mm) | Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 200 | 14/23 | **TK23.1** | 1 | 144,05 |
| 300 | 29/32 | **TK24.1** | 1 | 189,20 |
| 500 | 29/32 | **TK25.1** | 1 | 197,80 |
| 800 | 29/32 | **TK26.1** | 1 | 240,80 |



Material
DURAN®

## Condensers with glass hose connections

Made of DURAN®. With standard ground socket and cone.
Olives ∅ 11 mm.

**Liebig condensers**, acc. to DIN 12576.

*In add. to DIN

| Jacket length (mm) | Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 14/23 | **TK27.1** | 1 | 36,80 |
| 160 | 19/26 | **TK28.1** | 1 | 39,70 |
| 250* | 14/23 | **TK29.1** | 1 | 41,30 |
| 250 | 19/26 | **TK30.1** | 1 | 42,80 |
| 250* | 24/29 | **TK31.1** | 1 | 43,20 |
| 250 | 29/32 | **TK32.1** | 1 | 43,95 |
| 400 | 29/32 | **TK33.1** | 1 | 54,40 |

**Dimroth condensers**, acc. to DIN 12591.

*In add. to DIN

| Jacket length (mm) | Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160* | 14/23 | **TK34.1** | 1 | 67,25 |
| 160* | 19/26 | **TK35.1** | 1 | 73,70 |
| 250* | 14/23 | **TK36.1** | 1 | 82,25 |
| 250* | 19/26 | **TK37.1** | 1 | 83,75 |
| 250* | 24/29 | **TK38.1** | 1 | 85,10 |
| 250 | 29/32 | **TK39.1** | 1 | 76,65 |
| 400 | 29/32 | **TK40.1** | 1 | 89,80 |
| 400 | 45/40 | **TK41.1** | 1 | 127,95 |

# Condensors




Material
DURAN®

## ① Liebig condensers

Made of DURAN®. With 2 ground glass joints and 2 removable plastic hose connections thread GL 14. Acc. to DIN 12576.

| Jacket length (mm) | Socket (ground glass) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 160 | 14/23 | 14/23 | **E630.1** | 1 | 40,80 |
| 250 | 14/23 | 14/23 | **E631.1** | 1 | 50,10 |
| 250 | 29/32 | 29/32 | **E632.1** | 1 | 50,55 |
| 400 | 29/32 | 29/32 | **E633.1** | 1 | 57,75 |

## ② Bulb condensers

Made of DURAN®. With 2 ground glass joints and 2 unscrewable plastic olives thread GL 14. According to DIN 12581.

| Jacket length (mm) | Number of beads | Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 160 | 5 | 14/23 | **KX81.1** | 1 | 52,85 |
| 250 | 5 | 29/32 | **E634.1** | 1 | 64,45 |
| 400 | 8 | 29/32 | **E635.1** | 1 | 78,65 |



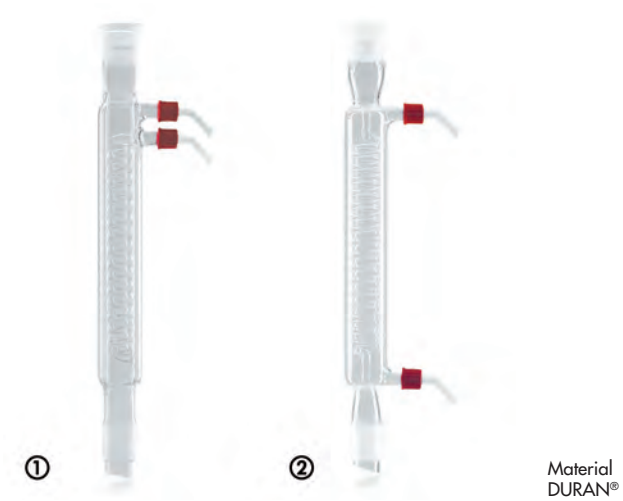
Material
DURAN®

## Dimroth condensers

Made of DURAN®. With two ground glass joints and two removable plastic hose connections thread GL 14. Acc. to DIN 12591.

* Not acc. to DIN.

| Jacket length (mm) | Socket (ground glass) | Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 160* | 14/23 | 14/23 | **E637.1** | 1 | 77,15 |
| 250 | 29/32 | 29/32 | **E638.1** | 1 | 82,60 |
| 400 | 29/32 | 29/32 | **E639.1** | 1 | 100,75 |




Material
DURAN®

## ① Coil condensers

Made of DURAN®.
With two removable plastic hose connections GL 14. Acc. to DIN 12593.

*Not compliant with DIN

| Jacket length (mm) | Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160* | 14/23 | **TH44.1** | 1 | 90,15 |
| 250* | 24/29 | **TH45.1** | 1 | 119,35 |
| 160 | 29/32 | **TH46.1** | 1 | 91,70 |
| 250 | 29/32 | **E640.1** | 1 | 103,65 |
| 400 | 29/32 | **E641.1** | 1 | 111,80 |
| 500* | 29/32 | **TH47.1** | 1 | 130,10 |

## ② Spiral condensers

Made of DURAN®.
With two removable plastic hose connections thread GL 14.

| Jacket length (mm) | Socket/cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 14/23 | **TH48.1** | 1 | 69,65 |
| 250 | 29/32 | **E636.1** | 1 | 84,85 |
| 400 | 29/32 | **TH49.1** | 1 | 131,15 |
| 500 | 29/32 | **TH50.1** | 1 | 137,60 |


- Tubes from page 371
- Round bottom flasks from page 131
- High quality ground glass joint sleeves and joint clamps from page 142
- To purchase RBS-liquid concentrate - the universal special cleaner for labware see page 1106



Material
DURAN®

## Dimroth condensers

Made of DURAN®. For Soxhlet extractors, with two screw-off plastic olives.

| Cone (ground glass) | Extractor-capacity (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 45/40 | 100-250 | **AA60.1** | 1 | 79,05 |
| 60/46 | 300-500 | **AA61.1** | 1 | 117,20 |
| 71/51 | 1000 | **AA62.1** | 1 | 138,70 |



## Soxhlet extractors

Made of borosilicate glass 3.3. Cone ground glass joints 29/32, socket 45/40. Acc. to DIN 12602.

* Not acc. to DIN

| Volume (ml) | Inside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 43 | **Y353.1** | 1 | 41,40 |
| 150 | 43 | **Y354.1** | 1 | 45,45 |
| 250 | 45 | **Y355.1** | 1 | 56,90 |
| 500* | 54 | **Y356.1** | 1 | 75,15 |

**Selection list extraction thimbles**

| Extraction thimble (Art. No.) | Outer ∅ x H (mm) | For extractors **acc. to DIN** with volume (ml) |
|---|---|---|
| **H203.1** | 25 x 80 | 30 |
| **H209.1** | 36 x 94 | 100 |
| **H210.1** | 33 x 100 | 150 |
| **L867.1** | 36 x 205 | 250 |
| **L868.1** | 52 x 230 | 500 |
| **L869.1** | 62 x 315 | 1000 |

▶ Further extraction thimbles see page 520




Material
DURAN®

## ① Soxhlet extractors

Made of DURAN®. Cone NS 29/32. Acc. to DIN 12602.

| Sockets (NS) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 29/32 | 30 | **TE05.1** | 1 | 49,45 |
| 45/40 | 100 | **Y685.1** | 1 | 71,20 |
| 45/40 | 150 | **Y686.1** | 1 | 74,85 |
| 45/40 | 250 | **Y687.1** | 1 | 78,30 |
| 60/46 | 500 | **Y688.1** | 1 | 112,90 |
| 71/51 | 1000 | **Y689.1** | 1 | 141,90 |

## ② Soxhlet extractors with stopcock

Made of DURAN®. Cone NS 29/32. Acc. to DIN 12602.

*not acc. to DIN

| Sockets (NS) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 45/40 | 100 | **Y690.1** | 1 | 112,90 |
| 45/40 | 150* | **Y691.1** | 1 | 116,10 |
| 45/40 | 250 | **Y692.1** | 1 | 124,70 |
| 60/46 | 500 | **Y693.1** | 1 | 173,10 |



Material
DURAN®

## Knöfler-Böhm extraction heads

Made of DURAN®. Core standard ground joint 29/32. The extracting agent is constantly in circulation, the condensate flows back continuously through the extraction material into the flask.

| Socket (ground glass) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 29/32 | 30 | **LE38.1** | 1 | 162,35 |
| 45/40 | 100 | **LE39.1** | 1 | 203,20 |
| 45/40 | 250 | **LE40.1** | 1 | 222,55 |
| 60/46 | 500 | **LE41.1** | 1 | 293,50 |

# Extraction




Material DURAN®

## ① Extraction heads for solids

Made of DURAN®. Core ground glass joint 29/32. The ascending vapours enter the condenser directly; the condensate flows back continuously through the extraction material into the flask.
**Delivery without** glass inserts for extraction sleeves, please order separately.

| Socket (ground glass) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 45/40 | 70 | **LE42.1** | 1 | 88,80 |
| 45/40 | 100 | **LE43.1** | 1 | 92,20 |
| 60/46 | 250 | **LE44.1** | 1 | 133,30 |

## ② Glass inserts for extraction sleeves

Made of DURAN®. For extraction adapters LE42.1ff.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 70 | **LE45.1** | 1 | 33,55 |
| 100 | **LE46.1** | 1 | 35,50 |
| 250 | **LE47.1** | 1 | 41,50 |




Material DURAN®

## ① Extraction heads

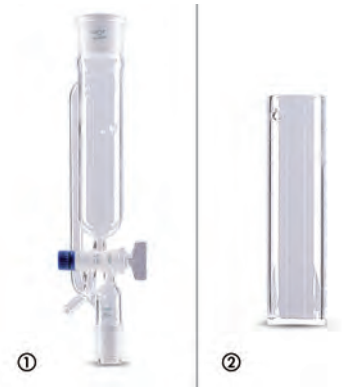
Made of DURAN®. Core ground glass joint 29/32.
For extracting liquids with a particularly light extraction agent.
**Delivery without** distribution tube, please order separately.

| Socket (ground glass) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 45/40 | 100 | **LE48.1** | 1 | 188,15 |
| 45/40 | 250 | **LE49.1** | 1 | 222,55 |
| 60/46 | 500 | **LE50.1** | 1 | 264,45 |

## ② Distribution tubes

Made of DURAN®. With frit porosity 0. For extraction adapters LE48.1ff.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **LE51.1** | 1 | 59,65 |
| 250 | **LE52.1** | 1 | 68,35 |
| 500 | **LE53.1** | 1 | 73,15 |




Material DURAN®

## ① Thielepape extraction heads

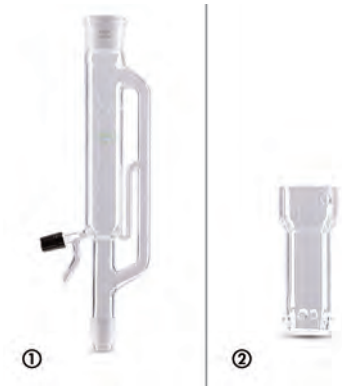
Made of DURAN®. Core ground glass joint 29/32. With two-way stopcock ground joint 18.8 and bore hole ∅ 4 mm. For extraction of solid materials. The ascending vapours enter the condenser directly; the condensate flows back continuously through the extraction material into the flask.
**Delivery without** fritted sleeve, please order separately.

| Socket (ground glass) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 29/32 | 30 | **LE32.1** | 1 | 124,70 |
| 45/40 | 150 | **LE33.1** | 1 | 188,15 |
| 45/40 | 250 | **LE34.1** | 1 | 204,25 |

## ② Fritted sleeves

Made of DURAN®. For Thielepape extraction adapters.
With fused in filter plate, porosity 0.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 30 | **LE35.1** | 1 | 38,35 |
| 150 | **LE36.1** | 1 | 39,20 |
| 250 | **LE37.1** | 1 | 47,10 |




Material DURAN®

## ① Extractor heads

Made of DURAN®. Core 29/32.
For the extraction of liquids with specific heavier solvents.
**Delivery without** distribution tube, please order separately.

| Socket (ground glass) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 45/40 | 100 | **LE54.1** | 1 | 173,10 |
| 45/40 | 250 | **LE55.1** | 1 | 222,55 |
| 60/46 | 500 | **LE56.1** | 1 | 274,15 |

## ② Distribution tubes

Made of DURAN®. With frit porosity 0. For extractor heads LE54.1ff.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **LE57.1** | 1 | 36,30 |
| 250 | **LE58.1** | 1 | 41,05 |
| 500 | **LE59.1** | 1 | 53,65 |

# Drying tubes



Material
DURAN®

## Drying tubes with cone

Made of DURAN®. Bent (75°). Inner-∅ 15 mm.

| Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14/23 | **KX74.1** | 1 | 15,00 |
| 29/32 | **Y340.1** | 1 | 18,75 |



Material
DURAN®

## Drying tubes (chlorcalcium tubes)

Made of DURAN®. Acc. to DIN 12610, straight or bent. Inner-∅ 13 mm, nominal length 130 mm. ∅ hose connection 6 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Straight | **KX75.1** | 1 | 7,35 |
| Bent | **KX76.1** | 1 | 10,05 |



## Rotilabo®-drying tubes

Made of **PE**. Ideal for drying gases. With push-in stoppers and conical olives for tubing ∅ 8 to 10 mm on both sides.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 20 | **6553.1** | 1 | 4,55 |
| 150 | 20 | **6554.1** | 1 | 5,35 |
| 200 | 20 | **6557.1** | 1 | 6,00 |

▶ Drying agents see chapter Chromatography!




Material
DURAN®

## U-shaped drying tubes

Made of DURAN®, U-shaped drying tubes.
① **Side tube with connector**, external -∅ 6 mm.

| Height (mm) | Tube inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 13 | **PL35.1** | 1 | 24,75 |
| 130 | 13 | **PL36.1** | 1 | 25,80 |
| 180 | 18 | **PL37.1** | 1 | 29,05 |

② **With NS stopcocks.** Conforms to DIN 12616. With interchangeable NS stopcock plugs and side hose connector ∅ 6 mm. Tube inner ∅ 13 mm.

| Height (mm) | Socket (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 125 | 14/23 | **PL38.1** | 1 | 58,35 |
| 150 | 19/26 | **PL39.1** | 1 | 79,20 |




## ① Rotilabo®-fermentation tube

Made of soda-lime glass. With 2 spheres and extension.
Overall length 200 mm, tube ∅ approx. 10-11 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CKY8.1** | 1 | 3,45 |

## ② Rotilabo®-fermentation tube

Made of borosilicate glass 3.3. With NS 29/32 ground glass joint.
Height 200 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACL2.1** | 1 | 32,50 |

# Capillary tubes




## CFS battery capillary filling device

To quickly and safely fill melting-point determination capillaries.
Suitable for capillaries with a diameter of 1 to 1.5 mm and
a length of 60 to 100 mm.

- Lengthy stoking and tapping are no longer required,
  the capillaries are cleanly and repeatedly filled to the bottom
- No direct contact with dangerous substances
- Clear housing protects against glass breakage

**Usage:**
The capillaries are carefully inserted into the filling funnel until their open side matches the lowest point of the funnel. Insert the funnel containing the capillaries into the unit. By turning the funnel guide, the height is adjusted until the capillaries touch the bottom and the funnel overlaps the guide by a few millimetres (see figure). The funnel is filled with a spatula tip's worth of the sample, and the unit switches on. The capillaries are filled using powerful vibrations. The unit switches off automatically after 10 seconds. The filling process can be repeated as often as required.

**Note:** The samples must be dry and finely powdered.
Unit dimensions: ∅ 80 x height 140 mm.
**Delivery incl.** AC-adapter.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YT60.1** | 1 | 304,25 |



Material
DURAN®

## Thiele melting point measuring apparatus

Made of DURAN®.

**Usage:**
Fill apparatus with silicone oil. Insert a melting point capillary (outer-∅ max. 2 mm) into one of the side tubes so that the molten end touches the ball of the thermometer. The other side tube is for ventilation purposes. If the apparatus does not have side tubes, a long capillary must be inserted from above. This apparatus also has to be ventilated from above. The apparatus should be heated at the elbow to ensure a uniform rise in temperature.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Without side tubes | **TH23.1** | 1 | 39,60 |
| With side tubes | **TH24.1** | 1 | 47,45 |




## Rotilabo®-capillary tubes

Made of AR®-glass. Thin-walled, open on one side.
Length 80 mm, outer-∅ 1.35 mm, inner-∅ 0.95 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0820.1** | 100 | 7,75 |



## Melting point capillary

By Hirschmann. Made of clear glass. Thin-walled, open at one end.

| Length (mm) | Outer ∅ (mm) | Inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 75 | 1,35 | 0,95 | **EAA9.1** | 10 x 100 | 53,65 |
| 75 | 1,55 | 1,15 | **EAC0.1** | 10 x 100 | 60,50 |
| 80 | 1,0 | 0,8 | **EAC1.1** | 10 x 100 | 71,30 |
| 80 | 1,55 | 1,15 | **EAC2.1** | 10 x 100 | 62,50 |
| 90 | 1,55 | 1,15 | **EAC3.1** | 10 x 100 | 63,40 |
| 100 | 1,0 | 0,8 | **EAC4.1** | 10 x 100 | 95,65 |
| 100 | 1,35 | 0,95 | **EAC5.1** | 10 x 100 | 59,15 |
| 100 | 1,55 | 1,15 | **EAC6.1** | 10 x 100 | 64,50 |



## Rotilabo®-clay squares

For drying melting-point samples. Dimensions 150 x 150 mm, divided in 25 squares 30 x 30 mm. Easy to break off by hand.
No sharp edges or splinters, therefore there is no danger of injury.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A205.1** | 1 | 14,65 |



DURAN WHEATON KIMBLE
Material DURAN®

## Single way stopcocks

Made of DURAN®. Complete with SBW-glass stopcock plug and three part retaining device. Art. Nos. LP05.1 and LP06.1 are capillary stopcocks.

| Stopcock NS | Tube outer ∅ (mm) | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12,5 | 8 | 2,0 | **LP05.1** | 1 | 14,30 |
| 14,5 | 9 | 2,5 | **LP06.1** | 1 | 14,90 |
| 12,5 | 8 | 2,0 | **LP07.1** | 1 | 10,80 |
| 12,5 | 8 | 2,5 | **LP08.1** | 1 | 10,80 |
| 14,5 | 9 | 2,5 | **LP09.1** | 1 | 11,25 |
| 14,5 | 10 | 4 | **LP10.1** | 1 | 12,40 |
| 18,8 | 10 | 4 | **LP11.1** | 1 | 15,15 |
| 18,8 | 13 | 6 | **LP12.1** | 1 | 16,90 |



DURAN WHEATON KIMBLE
Material DURAN®

## Single way stopcocks

Made of DURAN®. Wall thickness 3 mm, 1.5 mm in LP13.1 and in LP14.1. Complete with **PTFE**-stopcock plug and three part retaining device.

| Stopcock NS | Tube outer ∅ (mm) | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12,5 | 8 | 2,0 | **LP13.1** | 2 | 30,80 |
| 12,5 | 8 | 2,5 | **LP14.1** | 2 | 30,80 |
| 14,5 | 9 | 2,5 | **LP15.1** | 2 | 34,80 |
| 14,5 | 10 | 4 | **LP16.1** | 2 | 37,60 |
| 18,8 | 10 | 4 | **LP17.1** | 2 | 47,30 |
| 18,8 | 13 | 6 | **LP18.1** | 2 | 49,90 |
| 21,5 | 13 | 6 | **LP19.1** | 1 | 34,55 |
| 24 | 15 | 8 | **LP20.1** | 1 | 46,70 |
| 29,2 | 18 | 10 | **LP21.1** | 1 | 63,95 |



DURAN WHEATON KIMBLE

## Cock plugs

Made of **SBW** glass. With screw thread and standard joint.

| for ground glass joints | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12.5 | 2 | **LN87.1** | 2 | 12,85 |
| 12.5 | 2,5 | **LN88.1** | 2 | 12,85 |
| 14,5 | 2,5 | **LN89.1** | 2 | 15,05 |
| 14.5 | 4 | **LN90.1** | 2 | 14,85 |
| 18.8 | 4 | **LN91.1** | 2 | 17,90 |
| 18.8 | 6 | **LN92.1** | 2 | 17,90 |

## Screw-retaining devices

Three part, complete. For stopcock plugs made of **SBW** glass.

| for cock plug NS | Thread GL | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12,5 | 8 | **LN93.1** | 10 | 10,00 |
| 14,5 | 9 | **LN94.1** | 10 | 10,00 |
| 18,8 | 12 | **LN95.1** | 10 | 12,10 |

▶ Plastic cocks see page 385



121°C

## Cock plugs

Made of **PTFE**. With screw thread and standard joint, with retaining device made of **PP**. Autoclavable.
**Please order O-rings separately.**

| for ground glass joints | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12.5 | 2 | **LN96.1** | 2 | 8,40 |
| 12.5 | 2,5 | **LN97.1** | 2 | 8,85 |
| 14.5 | 2,5 | **LN98.1** | 2 | 9,35 |
| 14.5 | 4 | **LN99.1** | 2 | 10,00 |
| 18.8 | 4 | **LP00.1** | 2 | 11,85 |
| 18.8 | 6 | **LP01.1** | 2 | 14,95 |
| 21.5 | 6 | **LP02.1** | 1 | 16,15 |
| 24 | 8 | **LP03.1** | 1 | 18,30 |
| 29.2 | 10 | **LP04.1** | 1 | 29,40 |

## O-rings for cock plugs

Made of Perbunan.

| For cock plug | Art. No. | Pack Qty. | € |
|---|---|---|---|
| NS 12,5, NS 14,5 | **CNC6.1** | 20 | 12,85 |
| NS 18,8 | **CNC7.1** | 20 | 18,20 |
| NS 21,5, NS 24, NS 29,1 | **CNC8.1** | 20 | 13,45 |

# Chromatography columns




Material
DURAN®

## Chromatography columns

Made of DURAN®. With ground glass socket and PTFE stopcock (NS 14.5).

① **Without frit.**
With grooves under the stopcock to apply a piece of cotton wool.

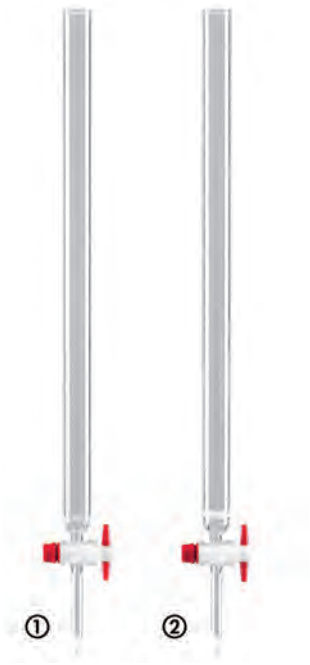
| Length (mm) | Volume (ml) | Inner ∅ (mm) | Ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 200 | 15 | 10 | 14/23 | **TK54.1** | 1 | 47,15 |
| 200 | 35 | 15 | 14/23 | **Y669.1** | 1 | 50,55 |
| 400 | 125 | 20 | 29/32 | **Y670.1** | 1 | 55,10 |
| 600 | 430 | 30 | 29/32 | **Y671.1** | 1 | 62,65 |
| 800 | 1000 | 40 | 29/32 | **TK55.1** | 1 | 98,65 |

② **With fused-in frit** (porosity 0)

| Length (mm) | Volume (ml) | Inner ∅ (mm) | Ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 8 | 10 | 14/23 | **TK56.1** | 1 | 57,45 |
| 200 | 15 | 10 | 14/23 | **Y672.1** | 1 | 61,25 |
| 300 | 23 | 10 | 14/23 | **Y673.1** | 1 | 63,30 |
| 200 | 35 | 15 | 14/23 | **Y674.1** | 1 | 65,10 |
| 400 | 125 | 20 | 29/32 | **Y675.1** | 1 | 78,75 |
| 600 | 430 | 30 | 29/32 | **HX73.1** | 1 | 82,90 |

③ **With fused-in frit** (porosity 0),
**ground glass cone and extraction connection GL 18**

| Length (mm) | Volume (ml) | Inner ∅ (mm) | Ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 200 | 35 | 15 | 14/23 | **TK57.1** | 1 | 123,65 |
| 400 | 120 | 20 | 14/23 | **TK58.1** | 1 | 130,10 |
| 400 | 280 | 30 | 29/32 | **TK59.1** | 1 | 135,45 |
| 600 | 430 | 30 | 29/32 | **TK60.1** | 1 | 144,05 |




Material
DURAN®

## Chromatography columns with beaded rim

Made of DURAN®. With ground glass socket and PTFE stopcock (NS 14.5).

① **Without frit.** With grooves under the stopcock to apply a piece of cotton wool.

| Length (mm) | Volume (ml) | Inside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 200 | 15 | 10 | **ENT5.1** | 1 | 48,40 |
| 200 | 35 | 15 | **ENT6.1** | 1 | 50,05 |
| 400 | 125 | 20 | **ENT7.1** | 1 | 55,05 |
| 600 | 430 | 30 | **ENT8.1** | 1 | 65,60 |
| 800 | 1000 | 40 | **ENT9.1** | 1 | 88,85 |

② **With fused-in frit** (porosity 0)

| Length (mm) | Volume (ml) | Inside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 200 | 15 | 10 | **ENX0.1** | 1 | 61,05 |
| 200 | 35 | 15 | **ENX1.1** | 1 | 65,60 |
| 400 | 125 | 20 | **ENX2.1** | 1 | 63,80 |
| 600 | 430 | 30 | **ENX3.1** | 1 | 77,75 |
| 800 | 1000 | 40 | **ENX4.1** | 1 | 105,65 |

## Accessories for chromatography columns

**Connectors** with screw cap GL 18, for hoses with inside ∅ 10.5 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LK73.1** | 2 | 12,85 |

**Screw caps** GL 18

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E696.1** | 10 | 23,95 |


- ▶ Glass beads see page 1148
- ▶ Rotisol see page 520
- ▶ Stand rings see page 216
- ▶ Stand rods see page 212




## Separating funnels

**Conical form**. Made of Borosilicate glass 3.3.
With ground glass joint, glass or PTFE, stopcock, and plastic stopper.
Acc. to DIN 12451.

**① With glass stopcock**

| Volume (ml) | Standard ground joint | Stopcock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 19/26 | 12,5 | 2,5 | **E646.1** | 1 | 38,45 |
| 100 | 19/26 | 12,5 | 2,5 | **E647.1** | 1 | 39,90 |
| 250 | 29/32 | 14,5 | 4,0 | **E648.1** | 1 | 46,80 |
| 500 | 29/32 | 14,5 | 4,0 | **E649.1** | 1 | 54,65 |
| 1000 | 29/32 | 18,8 | 6,0 | **E650.1** | 1 | 77,15 |
| 2000 | 29/32 | 18,8 | 6,0 | **E651.1** | 1 | 112,90 |

**② With PTFE stopcock**

| Volume (ml) | Standard ground joint | Stopcock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 19/26 | 12,5 | 2,5 | **KT70.1** | 1 | 39,15 |
| 100 | 19/26 | 12,5 | 2,5 | **KT71.1** | 1 | 42,80 |
| 250 | 29/32 | 14,5 | 4,0 | **KT72.1** | 1 | 51,20 |
| 500 | 29/32 | 14,5 | 4,0 | **KT73.1** | 1 | 61,65 |
| 1000 | 29/32 | 18,8 | 6,0 | **KT74.1** | 1 | 79,30 |
| 2000 | 29/32 | 18,8 | 6,0 | **KT75.1** | 1 | 112,90 |



## Separating funnels

**Squibb-form**, graduated. Made of borosilicate glass 3.3.
With ground glass joint, **PTFE**-plug, and plastic stopper.

| Volume (ml) | Standard ground joint | Stopcock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 19/26 | 12,5 | 2,5 | **KT76.1** | 2 | 75,70 |
| 100 | 19/26 | 12,5 | 2,5 | **KT77.1** | 2 | 70,95 |
| 250 | 29/32 | 14,5 | 4,0 | **KT78.1** | 2 | 85,40 |
| 500 | 29/32 | 14,5 | 4,0 | **KT79.1** | 2 | 100,95 |
| 1000 | 29/32 | 18,8 | 6,0 | **KT80.1** | 2 | 123,65 |
| 2000 | 29/32 | 18,8 | 6,0 | **KT81.1** | 1 | 83,80 |



## Separating funnels acc. to Gilson

Made of Borosilicate glass 3.3.
With ground glass joint PTFE-plug and PE-stopper.

| Volume (ml) | Standard ground joint | Stopcock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 19/26 | 12.5 | 2,5 | **LK40.1** | 2 | 134,40 |
| 100 | 19/26 | 12.5 | 2,5 | **LK41.1** | 2 | 137,60 |
| 250 | 29/32 | 14.5 | 4,0 | **LK42.1** | 2 | 151,60 |
| 500 | 29/32 | 14.5 | 4,0 | **LK43.1** | 2 | 191,35 |
| 1000 | 29/32 | 18.8 | 6,0 | **LK44.1** | 2 | 238,65 |
| 2000 | 29/32 | 18.8 | 6,0 | **LK45.1** | 1 | 176,30 |




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## Separating funnels

**Cylindrical.** Made of borosilicate glass 3.3.
Graduated, with NS glass and/or PTFE-tap valves and PE plugs.

**① With glass plug**

| Vol. (ml) | Graduations (ml) | Standard ground glass joint | Stop-cock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 50 | 2 | 29/32 | 12,5 | 2,5 | **ENN3.1** | 2 | 94,30 |
| 100 | 5 | 29/32 | 12,5 | 2,5 | **ENN4.1** | 2 | 90,25 |
| 250 | 10 | 29/32 | 14,5 | 4,0 | **ENN5.1** | 2 | 112,90 |
| 500 | 10 | 29/32 | 14,5 | 4,0 | **ENN6.1** | 2 | 133,30 |
| 1000 | 20 | 29/32 | 18,8 | 6,0 | **ENN7.1** | 2 | 186,55 |

**② With PTFE plug**

| Vol. (ml) | Graduations (ml) | Standard ground glass joint | Stop-cock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 50 | 2 | 29/32 | 12,5 | 2,5 | **ENN8.1** | 2 | 107,20 |
| 100 | 5 | 29/32 | 12,5 | 2,5 | **ENN9.1** | 2 | 100,80 |
| 250 | 10 | 29/32 | 14,5 | 4,0 | **ENP0.1** | 2 | 137,60 |
| 500 | 10 | 29/32 | 14,5 | 4,0 | **ENP1.1** | 2 | 145,15 |
| 1000 | 20 | 29/32 | 18,8 | 6,0 | **ENP2.1** | 2 | 197,80 |

# Separating and dropper funnels



## Separating funnels acc. to Squibb

Made of **PP**, with **PTFE** plug **PP** screw cap. Graduated.
Transparent (to allow easy recognition of phase transitions).
Plug NS 14.5, hole ∅ 4 mm. Temperature stable up to max. 135 °C.
High chemical resistance, max. 60 % hydrofluoric acid.
Autoclavable without stopcock and closure.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **YA73.1** | 1 | 94,85 |
| 250 | **YA74.1** | 1 | 100,55 |



## Separating funnels

Made of **FEP**. Highly pure, chemically inert, temperature stable from -200 to +250 °C. Hydrophobic, anti-adhesive surfaces. With fine metering tap and NS 29/32 ground glass cone made of **PTFE**, screw cap and integrated combination nut for easy attachment and detachment of the conical ground joint.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 125 | **NY53.1** | 1 | 373,05 |
| 250 | **NY54.1** | 1 | 435,40 |
| 500 | **NY55.1** | 1 | 561,15 |

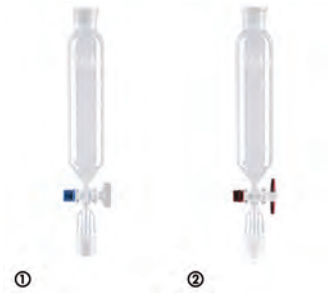


## Separating funnel holder

Made of **PP**. For separating funnels from 125-500 ml.
With clamp for attaching to stand rods with ∅ 8-14 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY61.1** | 1 | 12,55 |


- ▶ Standard ground glass joint stoppers see page 138
- ▶ Stand rings see page 216
- ▶ Stand rods see page 212


## Dropping funnels

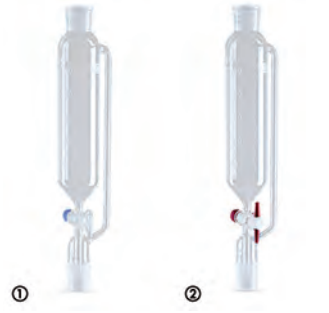
Made of Borosilicate glass 3.3. Graduated and cylindrical.
With ground glass brusted joint, standard joint core and tapered valve plugs with threaded nut retention. Acc. to DIN 12567/ISO 4800.

**① With solid glass tap cocks**

| Vol. (ml) | Graduations (ml) | Socket/cone (ground glass) | Stop-cock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 50 | 1 | 29/32 | 12.5 | 2,5 | **CH30.1** | 1 | 54,65 |
| 100 | 2 | 29/32 | 12.5 | 2,5 | **CH31.1** | 1 | 60,60 |
| 250 | 5 | 29/32 | 14,5 | 4,0 | **CH32.1** | 1 | 72,65 |
| 500 | 10 | 29/32 | 14,5 | 4,0 | **CH33.1** | 1 | 79,40 |

**② With PTFE-plug valve**

| Vol. (ml) | Graduations (ml) | Socket/cone (ground glass) | Stop-cock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 50 | 1 | 29/32 | 12.5 | 2,5 | **CH34.1** | 1 | 61,20 |
| 100 | 2 | 29/32 | 12.5 | 2,5 | **CH35.1** | 1 | 65,00 |
| 250 | 5 | 29/32 | 14,5 | 4,0 | **CH36.1** | 1 | 77,15 |
| 500 | 10 | 29/32 | 14.5 | 4,0 | **CH37.1** | 1 | 84,85 |




## Dropper funnels with pressure compensation

Made of borosilicate glass 3.3. Graduatied and cylindrical. With pressure compensation tube, NS-core, NS-sleeve and stopcock plug with threaded safety device. Acc. to DIN 12567, ISO 4800.

**① With solid glass plugs**

| Vol. (ml) | Graduations (ml) | Socket/cone (ground glass) | Stop-cock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 50 | 1 | 14/23 | 12,5 | 2,5 | **E642.1** | 1 | 68,80 |
| 50 | 1 | 29/32 | 12,5 | 2,5 | **KL62.1** | 1 | 67,30 |
| 100 | 2 | 14/23 | 12,5 | 2,5 | **E643.1** | 1 | 71,30 |
| 100 | 2 | 29/32 | 12,5 | 2,5 | **KL63.1** | 1 | 73,85 |
| 250 | 5 | 29/32 | 14,5 | 4,0 | **E644.1** | 1 | 82,10 |
| 500 | 10 | 29/32 | 14,5 | 4,0 | **E645.1** | 1 | 91,75 |
| 1000 | 20 | 29/32 | 18,8 | 6,0 | **KL64.1** | 1 | 118,80 |

**② With PTFE-plug**

| Vol. (ml) | Graduations (ml) | Socket/cone (ground glass) | Stop-cock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 50 | 1 | 14/23 | 12,5 | 2,5 | **KL65.1** | 1 | 73,00 |
| 50 | 1 | 29/32 | 12,5 | 2,5 | **KL76.1** | 1 | 71,60 |
| 100 | 2 | 14/23 | 12,5 | 2,5 | **KL77.1** | 1 | 74,55 |
| 100 | 2 | 29/32 | 12,5 | 2,5 | **KL78.1** | 1 | 76,60 |
| 250 | 5 | 29/32 | 14,5 | 4,0 | **KL79.1** | 1 | 87,95 |
| 500 | 10 | 29/32 | 14,5 | 4,0 | **KL80.1** | 1 | 100,35 |
| 1000 | 20 | 29/32 | 18,8 | 6,0 | **KL81.1** | 1 | 121,50 |




121°C

## Dropping funnels

**Conical**. Made of borosilicate glass 3.3. With NS sleeve, NS cone and stopcock with thread lock.

**① With solid glass plug**

| Volume (ml) | Socket/cone (ground glass) | Stopcock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 19/26 | 12.5 | 2,5 | **ENP3.1** | 1 | 60,45 |
| 100 | 19/26 | 12.5 | 2,5 | **ENP4.1** | 1 | 58,65 |
| 250 | 29/32 | 14.5 | 4,0 | **ENP5.1** | 1 | 66,85 |
| 500 | 29/32 | 14.5 | 4,0 | **ENP6.1** | 1 | 75,20 |
| 1000 | 29/32 | 18.8 | 6,0 | **ENP7.1** | 1 | 90,90 |
| 2000 | 29/32 | 18.8 | 6,0 | **ENP8.1** | 1 | 153,20 |

**② With PTFE plug**

| Volume (ml) | Socket/cone (ground glass) | Stopcock NS | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 19/26 | 12.5 | 2,5 | **ENP9.1** | 1 | 70,50 |
| 100 | 19/26 | 12.5 | 2,5 | **ENT0.1** | 1 | 69,85 |
| 250 | 29/32 | 14.5 | 4,0 | **ENT1.1** | 1 | 77,80 |
| 500 | 29/32 | 14.5 | 4,0 | **ENT2.1** | 1 | 102,75 |
| 1000 | 29/32 | 18.8 | 6,0 | **ENT3.1** | 1 | 109,65 |
| 2000 | 29/32 | 18.8 | 6,0 | **ENT4.1** | 1 | 175,25 |



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121°C

## Ribbed funnels

Made of type 3.3 borosilicate glass. For quick filtration. Autoclavable.

| Top, outer ∅ (mm) | Outer stem ∅ (mm) | Funnel length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 105 | 18 | 80 | **NY75.1** | 1 | 13,95 |
| 138 | 22 | 90 | **NY76.1** | 1 | 17,10 |
| 170 | 26 | 120 | **NY77.1** | 1 | 21,70 |
| 210 | 38 | 140 | **NY78.1** | 1 | 35,85 |
| 250 | 40 | 155 | **NY79.1** | 1 | 50,15 |



## Rotilabo®-glass funnels

Made of soda-lime glass. With short stem. Angle 60°.

| Funnel-∅ outer (mm) | Outer stem ∅ (mm) | Length of stem (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 6 | 30 | **EE58.1** | 10 | 30,35 |
| 35 | 6 | 35 | **EE59.1** | 10 | 31,00 |
| 40 | 6 | 40 | **EE60.1** | 10 | 31,80 |
| 45 | 7 | 45 | **EE61.1** | 10 | 36,35 |
| 50 | 7 | 50 | **EE62.1** | 10 | 39,55 |
| 55 | 8 | 55 | **EE63.1** | 10 | 41,30 |
| 60 | 8 | 60 | **EE64.1** | 10 | 43,30 |
| 70 | 9 | 70 | **EE65.1** | 10 | 53,60 |
| 80 | 9 | 80 | **EE66.1** | 10 | 59,50 |
| 100 | 10 | 100 | **EE67.1** | 10 | 75,15 |

## Rotilabo®-funnels

Made of borosilicate glass 3.3. With short stem. 60° angle. Autoclavable.

| Inner rim ∅ (mm) | Outer stem ∅ (mm) | Length of stem (mm) | For paper filter ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 35 | 6 | 35 | 45-55 | **ACC3.1** | 10 | 30,00 |
| 45 | 6 | 45 | 55-70 | **ACC4.1** | 10 | 33,50 |
| 55 | 8 | 55 | 70-90 | **ACC5.1** | 10 | 37,15 |
| 75 | 8 | 75 | 125-150 | **ACC6.1** | 10 | 47,60 |
| 85 | 9 | 85 | 150 | **ACC7.1** | 10 | 52,70 |
| 100 | 10 | 100 | 150-185 | **ACC8.1** | 10 | 64,85 |
| 125 | 16 | 125 | 185 | **ACC9.1** | 1 | 11,15 |
| 150 | 16 | 150 | 240-270 | **ACE0.1** | 1 | 15,30 |
| 200 | 24 | 150 | 320-385 | **ACE1.1** | 1 | 27,45 |
| 250 | 30 | 175 | 400-450 | **ACE2.1** | 1 | 36,95 |
| 300 | 34 | 175 | 500 | **ACE3.1** | 1 | 63,10 |


- ▶ Spare-taps see page 159
- ▶ Filter papers see page 508
- ▶ Standard ground glass joint stoppers see page 138

# Funnels



DURAN WHEATON KIMBLE
Material DURAN®
121°C

## Funnels

Made of DURAN®. With short stem. Acc. to ISO 4798. Autoclavable.

*Not acc. to ISO

| Outer edge ∅ (mm) | Outer stem ∅ (mm) | Length, stem (mm) | For paper filter ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 35 | 6 | 35 | 45-55 | **C153.1** | 10 | 89,75 |
| 45* | 6 | 45 | 55-70 | **C154.1** | 10 | 93,20 |
| 55 | 8 | 55 | 70-90 | **C155.1** | 10 | 135,00 |
| 70* | 8 | 70 | 110-125 | **C156.1** | 10 | 135,00 |
| 80 | 10 | 80 | 125-150 | **C157.1** | 10 | 142,00 |
| 100 | 10 | 100 | 150-185 | **C158.1** | 1 | 16,10 |
| 150 | 16 | 150 | 240-270 | **C159.1** | 1 | 27,65 |
| 200* | 26 | 175 | 320-385 | **C160.1** | 1 | 66,00 |
| 300* | 30 | 175 | 500 | **C161.1** | 1 | 125,00 |



## Rotilabo®-plastic funnels

Made of natural coloured **HDPE** with smooth surface.
With lifting eye and 4 ventilation ribs (except Art. No. 0583.1).

*Incl. sieve ∅ 50 mm, mesh size 0.4 mm.

| Top ∅ (mm) | Height (mm) | Outlet ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 60 | 3 | **0583.1** | 1 | 1,85 |
| 60 | 80 | 8 | **0584.1** | 1 | 2,00 |
| 80 | 105 | 11 | **0585.1** | 1 | 2,10 |
| 100 | 125 | 12 | **0586.1** | 1 | 2,30 |
| 120 | 145 | 12 | **0587.1** | 1 | 2,50 |
| 140 | 165 | 15 | **0588.1** | 1 | 3,15 |
| 164 | 195 | 17 | **0589.1** | 1 | 3,60 |
| 208 | 220* | 20 | **A828.1** | 1 | 6,35 |

## Rotilabo®-plastic funnel set

7 pieces, one each Art. No. 0583.1 to 0589.1

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **0594.1** | 1 | 12,80 |



## Funnels

Made of **PP**. Transparent. With handle and ring bolt. Suitable for foodstuffs.

| Top ∅ (mm) | Height (mm) | Outlet ∅ x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 45 | 1,5 x 25 | **YA44.1** | 1 | 1,20 |
| 30 | 47 | 4 x 25 | **YA45.1** | 1 | 1,30 |
| 40 | 65 | 4 x 35 | **YA46.1** | 1 | 1,40 |
| 50 | 85 | 7 x 43 | **YA47.1** | 1 | 1,55 |
| 75 | 108 | 7 x 55 | **YA48.1** | 1 | 1,75 |
| 100 | 155 | 8 x 77 | **YA49.1** | 1 | 1,95 |
| 120 | 180 | 11 x 90 | **YA50.1** | 1 | 2,45 |
| 150 | 220 | 15 x 95 | **YA51.1** | 1 | 3,20 |



## Rotilabo®-disposable funnels

With aeration grooves. Angle 60°. ∅-spout, inside 4.3 mm.

**Made of PS**

| Top inside ∅ (mm) | Height (mm) | Length, stem (mm) | For paper filter ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 55 | 69 | 25 | 110 | **HY45.1** | 100 | 23,90 |
| 65 | 78 | 30 | 125 | **HY46.1** | 100 | 23,90 |

**Made of PP**

| Top inside ∅ (mm) | Height (mm) | Length, stem (mm) | For paper filter ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 55 | 69 | 25 | 110 | **HY47.1** | 100 | 23,90 |
| 65 | 78 | 30 | 125 | **HY48.1** | 100 | 23,90 |



## Rotilabo®-PTFE funnels

Made of **PTFE**. Chemically inert, temperature stable from - 200 to + 250 °C. With very smooth, hydrophobic inner surface. Autoclavable.

| Outside ∅ (mm) | Stem ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 8 | 50 | **NX77.1** | 1 | 13,55 |
| 50 | 10 | 85 | **NX78.1** | 1 | 18,40 |
| 70 | 12 | 110 | **NX79.1** | 1 | 26,55 |
| 100 | 14 | 170 | **NX80.1** | 1 | 55,40 |
| 150 | 16 | 220 | **NX81.1** | 1 | 100,65 |



## Microfunnels

Made of **PP**. For filling burettes and vessels with small opening. Autoclavable.

| Top ∅ (mm) | Stem ∅ (mm) | Volume (ml) | Length, stem (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 24 | 4,5 | 2,6 | 16 | **YA66.1** | 12 | 48,40 |
| 28 | 6 | 5,2 | 19 | **YA67.1** | 12 | 42,95 |
| 35 | 8 | 8,1 | 23 | **YA68.1** | 12 | 38,65 |
| 43 | 8 | 15,7 | 26 | **YA69.1** | 12 | 81,70 |



## Rotilabo®-lab funnels

Made of stainless steel 18/8, outlet made of non-magnetic 18/10 stainless steel. With handle and side groove for air discharge from the container (except Art. No. 0162.1). Autoclavable. Suitable for food.

| Top, outer ∅ (mm) | Height (mm) | Outlet ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 65 | 7 | **0162.1** | 1 | 11,80 |
| 100 | 120 | 13 | **0164.1** | 1 | 16,80 |
| 120 | 135 | 13 | **0166.1** | 1 | 19,15 |
| 150 | 165 | 22 | **0167.1** | 1 | 24,65 |
| 200 | 200 | 22 | **0168.1** | 1 | 30,05 |
| 250 | 230 | 22 | **0169.1** | 1 | 34,35 |

## Rotilabo®-lab funnel set

6 pieces, one each of every size.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **5838.1** | 1 | 127,95 |



## Rotilabo®-stainless steel mini funnels

Made of stainless steel 18/10. Height 5 cm. Seamless, matt polished. Suitable for foodstuffs. Autoclavable.

| Outlet ∅ (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 27 | **YY23.1** | 10 | 25,20 |
| 6 | 27 | **YY24.1** | 10 | 25,20 |
| 7 | 28 | **YY25.1** | 10 | 25,20 |
| 8 | 29 | **YY26.1** | 10 | 25,20 |
| 10 | 31 | **YY27.1** | 10 | 25,20 |
| 11 | 32 | **YY28.1** | 10 | 25,20 |
| 12 | 33 | **YY29.1** | 10 | 25,20 |
| 13 | 34 | **YY30.1** | 10 | 25,20 |
| 14 | 35 | **YY31.1** | 10 | 25,20 |

# Funnels



Material
DURAN®

121 °C

## Funnels with ground joint

Made of DURAN®. Funnel tube with 60° angle. Autoclavable.

| Cone (ground glass) | Outer edge ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14/23 | 45 | **KX83.1** | 1 | 19,05 |
| 19/26 | 55 | **EHL5.1** | 1 | 22,05 |
| 24/29 | 70 | **EHL6.1** | 1 | 33,65 |
| 29/32 | 80 | **KY11.1** | 1 | 31,35 |

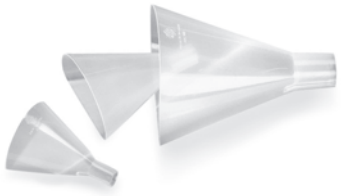


121 °C

## Powder funnels

Made of borosilicate glass 3.3 with short stem. Autoclavable.

| Outer edge ∅ (mm) | Outer stem ∅ (mm) | Length, stem (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 20 | 20 | 50 | **X669.1** | 10 | 77,85 |
| 60 | 20 | 20 | 60 | **X670.1** | 10 | 77,75 |
| 80 | 25 | 25 | 75 | **X672.1** | 10 | 84,10 |
| 100 | 25 | 25 | 95 | **X673.1** | 10 | 102,65 |
| 120 | 30 | 25 | 110 | **X674.1** | 10 | 111,00 |
| 160 | 35 | 30 | 137 | **NX16.1** | 1 | 19,60 |
| 200 | 38 | 30 | 180 | **NX17.1** | 1 | 21,85 |



## Rotilabo®-standard joint funnel

Made of **PP**. For clean filling of flasks and other equipment.
Suitable for foodstuffs.

| Conical ground joint (NS) | Top ∅ (mm) | Length (mm) | Funnel length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 14/23 | 40 | 75 | 17 | **2060.1** | 1 | 3,50 |
| 19/26 | 50 | 95 | 23 | **2073.1** | 1 | 4,55 |
| 29/32 | 75 | 135 | 30 | **2075.1** | 1 | 5,60 |

## Rotilabo®-standard joint funnel assortment

3 pieces, one of each size.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **2080.1** | 1 | 12,80 |



121 °C

## Powder funnels

Made of **PP**, with ribbed exterior to avoid pressure build-up.
60° inclination angle. Autoclavable.

| Outer edge ∅ (mm) | Outer stem ∅ (mm) | Volume (ml) | Length, stem (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 60 | 15 | 45 | 18 | **TT41.1** | 1 | 2,30 |
| 80 | 15 | 94 | 22,2 | **TT42.1** | 1 | 3,70 |
| 100 | 25 | 200 | 24,8 | **TT43.1** | 1 | 4,30 |
| 120 | 30 | 360 | 27,1 | **TT44.1** | 1 | 4,70 |
| 150 | 36 | 730 | 39,9 | **TT45.1** | 1 | 5,50 |
| 180 | 43 | 1290 | 48,8 | **TT46.1** | 1 | 6,75 |



121 °C

## Rotilabo®-powder funnels

Made of **PP** or **HDPE**, very light, with smooth surface, transparent.
Autoclavable, with the exception of 2057.1.

*incl. sieve ∅ 105 mm.

| Top inside ∅ (mm) | Height (mm) | ∅ inner, bottom (mm) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 65 | 68 | 16 | PP | **2041.1** | 1 | 1,95 |
| 80 | 75 | 22 | PP | **2046.1** | 1 | 2,60 |
| 100 | 94 | 23 | PP | **2047.1** | 1 | 2,80 |
| 120 | 110 | 27 | PP | **2049.1** | 1 | 3,10 |
| 150 | 138 | 29 | PP | **2051.1** | 1 | 4,30 |
| 253 | 190* | 50 | HDPE | **2057.1** | 1 | 11,40 |

## Rotilabo®-powder funnel set

6 pieces, one of each size

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **2020.1** | 1 | 23,15 |



## Rotilabo®-barrel funnels

Made of **PP** or **HDPE**, transparent.
Art. No. HY26.1 and HY27.1 with side handle.

| ∅ (mm) | Length (mm) | Outlet ∅ (mm) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 200 | 200 | 22 | PP | **HY26.1** | 1 | 7,10 |
| 250 | 260 | 30 | PP | **HY27.1** | 1 | 11,20 |
| 350 | 440 | 35 | PP | **HY28.1** | 1 | 23,45 |
| 400 | 365 | 42 | HDPE | **HY29.1** | 1 | 56,45 |

## Sieve insert

Made of stainless steel and aluminium.
Suitable for Art. No. HY26.1 and HY27.1.

| ∅ (mm) | Mesh size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 0,45 | **HY30.1** | 1 | 4,65 |



## Rotilabo®-analytical funnels

Made of type 3.3 borosilicate glass. According to ISO 4798. Stem ∅ 8 mm. Length 150 mm. For quick filtration. Autoclavable.

| Inner rim ∅ (mm) | For paper filter ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 55 | 70-90 | **NT85.1** | 1 | 12,80 |
| 75 | 110-125 | **NT86.1** | 1 | 13,15 |
| 100 | 150-185 | **NT87.1** | 1 | 14,95 |


- ▶ Disposable sieves see page 518
- ▶ Round and folded filters see page 511




DURAN WHEATON KIMBLE
Material DURAN®

## Analysis funnels

Made of DURAN®. Ribbed. Autoclavable.

| Outer edge ∅ (mm) | Outer stem ∅ (mm) | Length, stem (mm) | For paper filter ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 70 | 8 | 70 | 110 - 125 | **K243.1** | 1 | 19,95 |
| 80 | 10 | 80 | 125 - 150 | **K244.1** | 1 | 21,15 |
| 100 | 10 | 100 | 150 - 185 | **K245.1** | 1 | 25,50 |
| 150 | 16 | 150 | 240 - 270 | **K246.1** | 1 | 33,80 |
| 200 | 26 | 175 | 320 - 385 | **K247.1** | 1 | 55,00 |



## Rotilabo®-analysis funnels

Made of transparent **PP**. Funnel length 150 mm, funnel-∅ 8 mm. Autoclavable.

| Top, outer ∅ (mm) | For paper filter ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 60 | 70-90 | **9518.1** | 1 | 10,00 |
| 80 | 110-125 | **9519.1** | 1 | 10,55 |
| 100 | 150-185 | **9520.1** | 1 | 11,45 |



## Rotilabo®-urbanti funnels

Made of **TPX**. Ideal for speedy filtration without a vaccum. The spiral-shaped groove inside the funnel enhances the porosity of the filter paper. With ventilation grooves. Temperature stable up to 170 °C. Autoclavable.

| Top inside ∅ (mm) | ∅ of tube, inside (mm) | Length, stem (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 51 | 3 | 150 | **EA42.1** | 1 | 7,50 |
| 70 | 3 | 150 | **EA43.1** | 1 | 8,00 |
| 100 | 7 | 108 | **EA44.1** | 1 | 9,65 |
| 140 | 10 | 132 | **EA45.1** | 1 | 32,20 |
| 196 | 20 | 160 | **EA46.1** | 1 | 42,95 |

# Funnels and holder



## Hirsch funnels 126

Made of glazed porcelain.

| ∅ Filter plate (mm) | Top ∅ (mm) | Height (mm) | Tube ∅, bottom/top (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 9 | 30 | 45 | 5,5/7 | **TL75.1** | 1 | 29,55 |
| 11 | 40 | 56 | 6/9 | **TL76.1** | 1 | 32,15 |
| 13 | 45 | 61 | 7/12 | **TL77.1** | 1 | 32,25 |
| 15 | 52 | 74 | 8/11,5 | **TL78.1** | 1 | 37,30 |
| 27 | 72 | 102 | 11/16 | **TL79.1** | 1 | 42,65 |



NEU
NOUVEAU
NEW

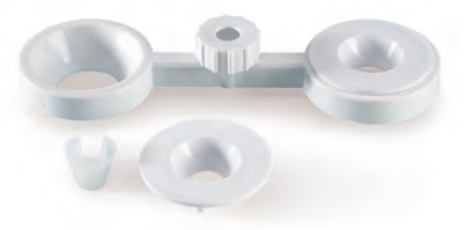
## Funnel racks

Made of PP and chromium-plated steel. For funnel ∅ from 40 to 180 mm (the reduction inserts supplied can be used for smaller funnels) or for Imhoff sedimentation funnels from ∅ 90 mm. Magnet concept for infinitely variable height adjustment. Adjustable height up to 450 mm. With 2 or 4 slots on the foot.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For 2 funnels | **HCC8.1** | 1 | 73,45 |
| For 4 funnels | **HCC9.1** | 1 | 99,80 |
| For 2 sedimentation cones | **HCE0.1** | 1 | 75,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| Funnel holder with reduction insert | **HCE1.1** | 1 | 12,80 |
| Holder (2 holding rings) for 1 sedimentation cone | **HCE2.1** | 1 | 15,60 |



## Rotilabo®-funnel holders

Made of **PP**. With stand clamp for attaching to stands with ∅ 8 to 14 mm. Suitable for funnel-∅ of 50 to 120 mm and max. stem outer ∅ of 39 mm. With replaceable inner ring for varying funnel sizes.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For 1 funnel | **9768.1** | 1 | 16,40 |
| For 2 funnels | **9769.1** | 1 | 23,45 |



## Rotilabo®-Büchner funnels

Made of glazed porcelain. Excellent resistance to acids and bases. Temperature stable up to 1000 °C.

| Volume (ml) | for filter paper ∅ (mm) | ∅ Filter plate (mm) | Height (mm) | Tube length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 35 | 45 | 48 | 24 | 43 | **XX44.1** | 1 | 13,30 |
| 70 | 55 | 62 | 30 | 64 | **XX45.1** | 1 | 15,45 |
| 120 | 70 | 77 | 35 | 64 | **XX46.1** | 1 | 18,45 |
| 240 | 90 | 97 | 40 | 71 | **XX47.1** | 1 | 25,60 |
| 400 | 110 | 116 | 49 | 83 | **XX48.1** | 1 | 31,90 |
| 600 | 125 | 130 | 52 | 85 | **XX49.1** | 1 | 40,15 |
| 1000 | 150 | 156 | 59 | 96 | **XX50.1** | 1 | 53,35 |
| 2000 | 185 | 192 | 74 | 117 | **XX51.1** | 1 | 71,45 |
| 4000 | 240 | 248 | 90 | 117 | **XX52.1** | 1 | 166,65 |
| 7000 | 290 | 296 | 105 | 130 | **XX53.1** | 1 | 401,00 |
| 10 000 | 320 | 334 | 120 | 133 | **XX54.1** | 1 | 500,95 |



## Büchner funnels 127 C

By Haldenwanger. With firm sieve plate. Made of porcelain acc. to DIN 60672-3, type C 110. Highly resistant to chemical and physical influences. Temperature stable up to +1000 °C.

| Size | Height (mm) | ∅ Filter plate (mm) | Tube length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 000 | 47 | 19 | 22 | **1578.1** | 1 | 32,60 |
| 00 | 64 | 29 | 30 | **1579.1** | 1 | 33,35 |
| 0a | 95 | 48 | 35 | **1580.1** | 1 | 36,05 |
| 0 | 76 | 42 | 50 | **4168.1** | 1 | 35,50 |
| 1 | 110 | 59 | 50 | **1581.1** | 1 | 42,50 |
| 2 | 140 | 74 | 65 | **1582.1** | 1 | 54,85 |
| 2a | 165 | 94 | 70 | **4177.1** | 1 | 69,45 |
| 3 | 195 | 114 | 75 | **1583.1** | 1 | 85,95 |
| 4 | 215 | 129 | 100 | **4178.1** | 1 | 115,05 |
| 4a | 235 | 155 | 105 | **1584.1** | 1 | 153,75 |
| 5 | 280 | 190 | 105 | **XX19.1** | 1 | 246,20 |
| 6 | 300 | 248 | 120 | **XX20.1** | 1 | 395,60 |
| 6a | 330 | 279 | 125 | **XX21.1** | 1 | 725,65 |
| 8 | 350 | 330 | 150 | **XX22.1** | 1 | 966,45 |


- Material for stands from page 209
- Water jet pumps see page 370
- Filtering flasks see page 171
- Matching filter papers see page 508

# Fritted filter funnels



121 °C

## Rotilabo®-Büchner funnels

Made of **PP**. Robust, breakproof. Top and bottom parts can be detached for cleaning. Autoclavable.

| For filters-∅ (mm) | Volume (ml) | Outer stem ∅ (mm) | Hole size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 55 | 70 | 5,1 | 1,1 | **HT33.1** | 1 | 10,20 |
| 70 | 180 | 6,8 | 2 | **HT34.1** | 1 | 10,70 |
| 80 | 285 | 8,1 | 2 | **HT35.1** | 1 | 12,55 |
| 90 | 390 | 9,1 | 2.5 | **HT36.1** | 1 | 16,75 |
| 110 | 810 | 14 | 2.5 | **HT37.1** | 1 | 21,20 |
| 150 | 2100 | 16,0 | 2,75 | **HT38.1** | 1 | 37,55 |



DURAN WHEATON KIMBLE

Material DURAN®

121 °C

## Slotted sieve filters (Büchner funnels)

Made of DURAN®. For paper-round filters and membrane filters. Autoclavable.

| For filters-∅ (mm) | Volume (ml) | Plate ∅ (mm) | Outer stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 45 | 70 | 48 | 10 | **Y880.1** | 1 | 65,70 |
| 55 | 125 | 60 | 10 | **Y881.1** | 1 | 77,85 |
| 70 | 220 | 73 | 18 | **Y882.1** | 1 | 102,00 |
| 90 | 500 | 95 | 22 | **Y883.1** | 1 | 116,00 |
| 110 | 1000 | 120 | 22 | **Y884.1** | 1 | 162,00 |



121 °C

## Fritted filter funnels

Made of borosilicate glass 3.3. Autoclavable.

**50 ml**

| Porosity | Plate ∅ (mm) | Outer stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 35 | 10 | **Y772.1** | 1 | 30,30 |
| 2 | 35 | 10 | **Y773.1** | 1 | 30,30 |
| 3 | 35 | 10 | **Y774.1** | 1 | 30,30 |
| 4 | 35 | 10 | **Y775.1** | 1 | 31,85 |
| 5 | 35 | 10 | **Y871.1** | 1 | 53,90 |

**75 ml**

| Porosity | Plate ∅ (mm) | Outer stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 45 | 10 | **Y777.1** | 1 | 32,80 |
| 2 | 45 | 10 | **Y778.1** | 1 | 33,60 |
| 3 | 45 | 10 | **Y779.1** | 1 | 35,25 |
| 4 | 45 | 10 | **Y780.1** | 1 | 37,75 |
| 5 | 45 | 10 | **Y872.1** | 1 | 59,55 |

**125 ml**

| Porosity | Plate ∅ (mm) | Outer stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 60 | 10 | **Y782.1** | 1 | 46,40 |
| 2 | 60 | 10 | **Y783.1** | 1 | 47,50 |
| 3 | 60 | 10 | **Y784.1** | 1 | 48,95 |
| 4 | 60 | 10 | **Y785.1** | 1 | 51,25 |
| 5 | 60 | 10 | **Y873.1** | 1 | 88,60 |

**500 ml**

| Porosity | Plate ∅ (mm) | Outer stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 95 | 22 | **Y787.1** | 1 | 95,65 |
| 2 | 95 | 22 | **Y788.1** | 1 | 98,90 |
| 3 | 95 | 22 | **Y789.1** | 1 | 95,65 |
| 4 | 95 | 22 | **Y790.1** | 1 | 116,10 |
| 5 | 95 | 22 | **Y874.1** | 1 | 183,00 |

**1000 ml**

| Porosity | Plate ∅ (mm) | Outer stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 120 | 22 | **Y792.1** | 1 | 143,00 |
| 2 | 120 | 22 | **Y793.1** | 1 | 146,20 |
| 3 | 120 | 22 | **Y794.1** | 1 | 148,35 |
| 4 | 120 | 22 | **Y795.1** | 1 | 151,60 |
| 5 | 120 | 22 | **Y875.1** | 1 | 316,00 |

**4000 ml**

| Porosity | Plate ∅ (mm) | Outer stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 175 | 30 | **Y876.1** | 1 | 393,00 |
| 2 | 175 | 30 | **Y877.1** | 1 | 393,00 |
| 3 | 175 | 30 | **Y878.1** | 1 | 393,00 |
| 4 | 175 | 30 | **Y879.1** | 1 | 455,00 |

# Filter crucibles



DURAN WHEATON KIMBLE
Material DURAN®
121 °C

## Filter crucibles

Made of DURAN®. Autoclavable. Temperature stable up to 450 °C.

| Porosity | Pore width (µm) | Examples for use |
|---|---|---|
| **0** | 160 - 250 | Gas dispersion in fluids, filtration of coarse sediments |
| **1** | 100 - 160 | Filtration of coarse sediments, gas dispersion in fluids, liquid dispersion, coarse gas filters |
| **2** | 40 - 100 | Preparative fine filtration, mercury filtration, preparative work with crystalline sediments |
| **3** | 16 - 40 | Analytic filtration, analytic and preparative work with medium-fine sediments, fine gas filters |
| **4** | 10 - 16 | Analytic fine filtration, analytic and preparative work with very fine sediments e.g. $BaSO_4$, $Cu_2O$ |
| **5** | 1.0 - 1.6 | Very fine filtration |

| Volume (ml) | Porosity | Plate ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 8 | 2 | 20 | **E549.1** | 1 | 12,65 |
| 8 | 3 | 20 | **E550.1** | 1 | 12,80 |
| 8 | 4 | 20 | **E551.1** | 1 | 14,25 |
| 15 | 1 | 23 | **E552.1** | 1 | 12,55 |
| 15 | 2 | 23 | **E553.1** | 1 | 12,85 |
| 15 | 3 | 23 | **E554.1** | 1 | 12,55 |
| 15 | 4 | 23 | **E555.1** | 1 | 15,15 |
| 30 | 1 | 30 | **E556.1** | 1 | 13,20 |
| 30 | 2 | 30 | **E557.1** | 1 | 13,20 |
| 30 | 3 | 30 | **E558.1** | 1 | 13,20 |
| 30 | 4 | 30 | **E559.1** | 1 | 14,90 |
| 30 | 5 | 30 | **E560.1** | 1 | 28,00 |
| 50 | 1 | 40 | **E561.1** | 1 | 19,15 |
| 50 | 2 | 40 | **E562.1** | 1 | 19,15 |
| 50 | 3 | 40 | **E563.1** | 1 | 19,15 |
| 50 | 4 | 40 | **E564.1** | 1 | 21,80 |
| 50 | 5 | 40 | **E565.1** | 1 | 44,30 |



DURAN WHEATON KIMBLE
121 °C

## Rubber adapters

Made of **EPDM**. For vacuum-tight connection of crucibles and adapters. Temperature stable from -45 to +150 °C. Autoclavable.

| Outside ∅ (mm) | For filter crucibles (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 26 | 8 | **E566.1** | 10 | 18,50 |
| 33 | 15 | **E567.1** | 10 | 18,95 |
| 41 | 30 | **E568.1** | 10 | 19,65 |
| 49 | 50 | **E569.1** | 10 | 20,60 |



DURAN WHEATON KIMBLE
Material DURAN®
121 °C

## Crucible adapters

Made of DURAN®. For filter crucibles. Outer-∅ funnel 10 mm. Autoclavable.

| Top inside ∅ (mm) | Length (mm) | For filter crucibles (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 27 | 108 | 8 | **E570.1** | 1 | 19,00 |
| 34 | 110 | 15 | **E571.1** | 1 | 19,20 |
| 41 | 125 | 30 | **E572.1** | 1 | 20,00 |
| 50 | 132 | 50 | **E573.1** | 1 | 20,80 |



121 °C

## Filter tubes acc. to Allihn

Made of borosilicate glass 3.3. Volume 30 ml, filter plate-∅ 20 mm. Tube outer-∅ 9 mm. Autoclavable.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **LE72.1** | 1 | 28,35 |
| 2 | **LE73.1** | 1 | 28,35 |
| 3 | **LE74.1** | 1 | 28,35 |
| 4 | **LE75.1** | 1 | 29,85 |



121 °C

## Micro filter funnels

Made of borosilicate glass 3.3. Volume 2 ml, filter plate-∅ 10 mm. Tube outer-∅ 6 mm. Autoclavable.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0 | **LE65.1** | 1 | 26,15 |
| 1 | **LE66.1** | 1 | 26,15 |
| 2 | **LE67.1** | 1 | 26,15 |
| 3 | **LE68.1** | 1 | 27,60 |
| 4 | **LE69.1** | 1 | 29,60 |

▶ Filter crucibles made of porcelain
see page 185



## Filter funnels

Made of borosilicate glass 3.3. Volume 25 ml, filter plate-∅ 25 mm, overall-∅ 55 mm. Height 100 mm. Autoclavable.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 3 | **LE70.1** | 1 | 29,60 |
| 4 | **LE71.1** | 1 | 32,15 |



NEU NOUVEAU NEW

## Vacuum filter adapters

Made of PTFE, with sealing ring made of FKM. Allows filtration of commercially available filter funnels directly in the vials with ground sleeve with thread GL 45. For funnel without outlet ∅ up to 22 mm. Side stepped olive made of PTFE for connection to a vacuum pump using hoses with an inner ∅ 9 or 12 mm.
Temperature stable from -15 to +200 °C. Autoclavable.

**For vessels with ground sleeve**

| Standard ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 29/32 | **HKK8.1** | 1 | 62,15 |
| 45/40 | **HKK9.1** | 1 | 118,25 |

**For vessels with thread**

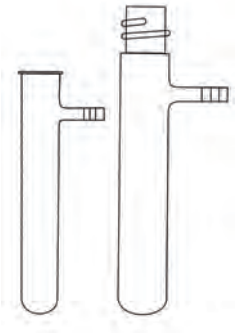
| Thread GL | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 45 | **HKL0.1** | 1 | 113,95 |



## Suction bottles

By Nalgene®. Made of **PP**. Moulded from a single piece.
Downwards-facing hose connection reduces tilting hazard. Autoclavable.

| Vol. (ml) | ∅ x H (mm) | Neck inner ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 500 | 108 x 187 | 29 | 6,4-9,5 | **ATL0.1** | 1 | 26,85 |
| 1000 | 140 x 215 | 32,5 | 6,4-9,5 | **ATL1.1** | 1 | 41,00 |
| 1700 | 162 x 272 | 44 | 9,5 | **ATL2.1** | 1 | 57,20 |



## Suction tubes

By Winzer. Made of borosilicate glass 3.3. With glass hose connection.

**With heavy duty rim**

| Volume (ml) | Outer ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 | 16 x 160 | **AAP7.1** | 1 | 22,95 |
| 30 | 18 x 180 | **AAP8.1** | 1 | 23,25 |

**With GL 14 thread,** screw cap with hole and silicon gasket (inner ∅ 6 mm)

| Volume (ml) | Outer ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | 12 x 160 | **AAP9.1** | 1 | 27,75 |



## Rotilabo®-suction bottles

Made of borosilicate glass 3. With glass hose connection. ∅ 10 mm. Autoclavable.

| Volume (ml) | Bottle ∅ (mm) | Neck inner ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 70 | 24 | 105 | **NY65.1** | 1 | 25,10 |
| 250 | 85 | 35 | 145 | **NY66.1** | 1 | 29,70 |
| 500 | 105 | 35 | 175 | **NY67.1** | 1 | 33,35 |
| 1000 | 135 | 45 | 230 | **NY68.1** | 1 | 48,05 |
| 2000 | 165 | 60 | 255 | **NY69.1** | 1 | 53,65 |



DURAN WHEATON KIMBLE

## Flask with safety coating

By Wheaton. Made of borosilicate glass with PVC coating.
With glass olives for hoses with an inner ∅ of 6 mm. Autoclavable.

| Volume (ml) | Largest outer ∅ (mm) | Height (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1000 | 136 | 225 | 37 | **EXX9.1** | 1 | 145,15 |

# Filtering flasks and seals



DURAN WHEATON KIMBLE
Material DURAN®
121 °C

## Filtering flasks

Made of DURAN®. With KECK™-connector set, consisting of plastic tubing connector made of PP, plastic-tubulature made of PP and silicone rubber seal. Heavy walled for vacuum use, fulfils the regulations of the "equipment and product safety regulations". Acc. to DIN 12 476, ISO 6556. Autoclavable.

**Erlenmeyer shape**

| Volume (ml) | Largest outer ∅ (mm) | Height (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 64 | 105 | 24 | **E575.1** | 1 | 18,10 |
| 250 | 85 | 155 | 34 | **E576.1** | 1 | 23,45 |
| 500 | 105 | 185 | 34 | **E577.1** | 1 | 29,25 |
| 1000 | 135 | 230 | 45 | **E578.1** | 1 | 43,70 |
| 2000 | 166 | 255 | 60 | **E579.1** | 1 | 90,35 |

**Bottle shape**

| Volume (ml) | Largest outer ∅ (mm) | Height (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 3000 | 170 | 295 | 58 | **E580.1** | 1 | 113,00 |
| 5000 | 185 | 360 | 68 | **E581.1** | 1 | 156,00 |
| 10000 | 240 | 420 | 70 | **E582.1** | 1 | 233,00 |
| 15000 | 255 | 500 | 70 | **E583.1** | 1 | 301,00 |
| 20000 | 290 | 535 | 70 | **E584.1** | 1 | 379,00 |

## Spare connector set

Consisting of plastic tubing connector straight ∅ 9 mm and **PP** tubulature. Silicone rubber seal.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **A389.1** | 1 | 4,80 |



## Rotilabo®-safety cuffs

Made of **EPDM**. For glass filtering flasks. Enables a clean, firm seal between funnels, vacuum filters, etc. and the flask. The tightness of the seal increases when flask is under vacuum.

| For filtering flasks capacity (ml) | Height (mm) | Adapter inner-/outer-∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 6 | 17/39 | **E349.1** | 1 | 10,75 |
| 250 - 500 | 15 | 29/54 | **E350.1** | 1 | 11,65 |
| 1000 | 20 | 32/66 | **E351.1** | 1 | 12,85 |
| 2000 - 3000 | 25 | 41/83 | **E352.1** | 1 | 13,95 |
| 5000 - 20000 | 25 | 55/93 | **E353.1** | 1 | 15,60 |

## Set of Rotilabo®-safety adapters

Set of five adapters for filtering flasks 100 - 20 000 ml.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **E354.1** | 1 | 52,60 |



DURAN WHEATON KIMBLE
Material DURAN®
121 °C

## Witt filtration apparatus

Made of DURAN®. Complete with KECK™ assembly kit and tube lid NS 29/32 ① or NS 45/40 ②. Lids are interchangeable. Autoclavable.

| Nominal ∅ (mm) | Socket (ground glass) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 29/32 | 236 | **PL01.1** | 1 | 218,00 |
| 150 | 29/32 | 302 | **PL02.1** | 1 | 261,00 |
| 200 | 29/32 | 426 | **PL03.1** | 1 | 350,00 |
| 100 | 45/40 | 244 | **PL04.1** | 1 | 226,00 |
| 150 | 45/40 | 312 | **PL05.1** | 1 | 289,00 |

## Accessories: spare lids for Witt filtration apparatus

| Nominal ∅ (mm) | Socket (ground glass) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 29/32 | 76 | **PL06.1** | 1 | 113,00 |
| 150 | 29/32 | 102 | **PL07.1** | 1 | 138,00 |
| 200 | 29/32 | 126 | **PL08.1** | 1 | 164,00 |
| 100 | 45/40 | 84 | **PL09.1** | 1 | 161,00 |
| 150 | 45/40 | 112 | **PL10.1** | 1 | 217,00 |



## Rotilabo®-Guko sleeve adapters

Made of natural rubber. For vacuum-tight connection of suction bottles and filter funnels. Successive sizes can be stacked inside each other.

| Top, outer ∅ (mm) | ∅ bottom, outer (mm) | Height (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 21 | 12 | 18 | 2,5 | **9755.1** | 1 | 2,55 |
| 27 | 17 | 20 | 3 | **9756.1** | 1 | 2,85 |
| 33 | 21 | 24 | 3 | **9757.1** | 1 | 3,80 |
| 41 | 27,5 | 27 | 4 | **9758.1** | 1 | 4,30 |
| 53 | 33 | 34 | 5 | **9759.1** | 1 | 4,60 |
| 68 | 48 | 35 | 5,5 | **9760.1** | 1 | 5,25 |
| 78 | 58 | 35 | 6 | **9761.1** | 1 | 6,35 |
| 89 | 66 | 40 | 6,5 | **9762.1** | 1 | 7,75 |



DURAN WHEATON KIMBLE
121 °C

## GUKO set

Made of **EPDM**. Conical rubber seals for suction bottle.
Temperature resistant in the range -45 to +150 °C. Autoclavable.
**Delivery incl.** 8 Gukos, size 22, 29, 36, 44, 53, 63, 73, 84 mm.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **PK84.1** | 1 | 36,05 |

# Gas wash bottles/Woulff's bottles





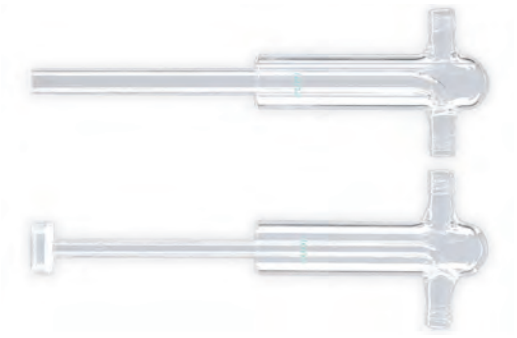
Material DURAN®

121 °C

## Gas washing bottles

Made of DURAN®. With top acc. to Drechsel, adjustable.
Capacity 500 ml. Porosity of filter plate 100-160 µm. Autoclavable.
**Delivery incl.** 2 olives for tubes with inner ∅ 8 mm.
**Tip:** Absorption effiency can be increased considerably when the gas is distributed into the liquid through filter plate.

| Design | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| without filter disc | 500 | **C215.1** | 1 | 50,65 |
| with filter disc, porosity 1 | 500 | **C216.1** | 1 | 67,20 |



Material DURAN®

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## Drechsel spare top-insert

Total length 220 mm, screw connectors not included. Autoclavable.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without filter disc | **C217.1** | 1 | 25,35 |
| with filter disc, ∅ 24 mm, porosity 1 | **C218.1** | 1 | 38,95 |



① ②

121 °C

## Gas washing bottles

Made of borosilicate glass 3.3. Standard ground joint 29/32, acc. to DIN 12463. Height of bottle: 200 mm. Autoclavable.
**Delivery incl.** top made of DURAN® with two olives (outer-∅ approx. 11 mm).

| Design | Volume (ml) | Bottle ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Without filter plate | 100 | 40 | **KX61.1** | 1 | 37,65 |
| ① Without filter plate | 250 | 55 | **KX62.1** | 1 | 39,90 |
| ① Without filter plate | 500 | 75 | **KX63.1** | 1 | 47,20 |
| ② With filter plate, porosity 1 | 100 | 40 | **KX64.1** | 1 | 54,85 |
| ② With filter plate, porosity 1 | 250 | 55 | **KX65.1** | 1 | 55,90 |
| ② With filter plate, porosity 1 | 500 | 75 | **KX66.1** | 1 | 61,30 |

Accessories:

| | | | |
|---|---|---|---|
| Spare gas washing bottle 100 ml | **KX50.1** | 1 | 19,35 |
| Spare gas washing bottle 250 ml | **KX51.1** | 1 | 21,95 |
| Spare gas washing bottle 500 ml | **KX60.1** | 1 | 31,00 |
| Spare top-insert without filter plate, with tubing olives | **KX52.1** | 1 | 17,75 |
| Spare top-insert without filter plate, with GL 14 connections | **EPX1.1** | 1 | 30,75 |
| Spare top-insert with filter plate, porosity 0, with tubing olives | **EPX2.1** | 1 | 43,55 |
| Spare top-insert with filter plate, porosity 1, with tubing olives | **KX53.1** | 1 | 39,80 |
| Spare top-insert with filter plate, porosity 2, with tubing olives | **EPX3.1** | 1 | 44,00 |
| Spare top-insert with filter plate, porosity 0, with GL 14 connections | **EPX4.1** | 1 | 50,45 |
| Spare top-insert with filter plate, porosity 1, with GL 14 connections | **EPX5.1** | 1 | 50,45 |
| Spare top-insert with filter plate, porosity 2, with GL 14 connections | **EPX6.1** | 1 | 50,45 |


- ▶ Water jet pumps on page 370
- ▶ Tubing accessories see page 377, 734
- ▶ Tubes from page 371

# Gas wash bottles/Woulff's bottles




Material
DURAN®
121°C

## Kit for Woulff´s bottle

One pack of every Art. No. is required. Autoclavable.

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | DURAN®-pressure plus-screw thread bottle, 1000 ml | **H995.1** | 1 | 13,90 |
| ② | Top without filter disc | **C217.1** | 1 | 25,35 |
| ③ | Replacement plastic hose connection with silicone seal, straight, GL 14, outer- ∅ 8.6 mm | **L992.1** | 2 | 3,25 |
| ④ | Replacement screw caps, red, PBT, GL 14, hole ∅ 9.5 mm | **L993.1** | 2 | 3,40 |
| ⑤ | Screw cap GL 45 | **L994.1** | 1 | 4,20 |
| (not illustrated) | Silicone ring inner ∅ 26 mm | **L995.1** | 1 | 5,50 |



DURAN WHEATON KIMBLE
Material
DURAN®
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## Woulff's bottles

Made of DURAN®. With three ground glass joint necks. Vacuum resistant due to the wall thickness and geometry. Acc. to DIN 12480. Autoclavable.

| Volume (ml) | Standard ground joint necks | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 500 | 19/26 | 87 | **AK00.1** | 1 | 87,40 |
| 1000 | 24/29 | 113 | **AK01.1** | 1 | 93,75 |
| 2000 | 29/32 | 135 | **AAC2.1** | 1 | 136,00 |
| 5000 | 34/35 | 185 | **AAC3.1** | 1 | 207,00 |




## ① Gas washing bottles

Made of **PFA**, attachment made of PTFE with 2 threaded connections for hoses with 6 or 8 mm outer ∅. Highly pure, chemically inert. Hydrophobic, anti-adhesive surfaces. Temperature stable from -200 °C to +250 °C.

**Delivery incl.** interchangeable frit made of porous PTFE (Art. No. NY24.1), pore size approx. 3 µm, M8 threaded connection.

| Volume (ml) | Height (mm) | Outer ∅ (mm) | For hoses with outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 250 | 175 | 60 | 6 | **NY26.1** | 1 | 299,95 |
| 500 | 200 | 75 | 6 | **NY27.1** | 1 | 402,05 |
| 1000 | 240 | 95 | 8 | **NY28.1** | 1 | 459,05 |




121°C

## ① PTFE gas inlet tubes

Highly pure, chemically inert. Hydrophobic, anti-adhesive surface. Inner ∅ 5 mm. With ∅ 9 mm hose connector and M8 thread for connecting to a gas frit or a gas distributor (please order separately). Temperature stable from -200 to +250 °C, autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 200 | **NY21.1** | 1 | 17,50 |
| 400 | **NY22.1** | 1 | 20,05 |
| 600 | **NY23.1** | 1 | 22,25 |

## Accessories for PTFE gas inlet tubes and gas wash bottles

### ② Gas frit

Made of porous PTFE. Pore size approx. 3 µm, M8 threaded connection.

| Outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 26 | **NY24.1** | 1 | 28,50 |

### ③ PTFE gas distributor

With ports (4 x ∅ 0.4 mm) for even dispersion of the flowing gas. M8 threaded connection.

| Outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 28 | 24 | **NY25.1** | 1 | 44,00 |

# Sample bowls




## Filter tubes

Made of DURAN®. For treatment of liquids for intake or for protecting downstream pumps and other apparatus against ingress of solid particles.

① **Microfilter cartridges** 13 x 25 mm, tube: ∅ 8 mm, H 200 mm

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **AAC7.1** | 10 | 320,00 |
| 2 | **AAC8.1** | 10 | 320,00 |
| 3 | **AAC9.1** | 10 | 320,00 |
| 4 | **AAE0.1** | 10 | 358,00 |

② **Immersion filters**

**Micro:** plate ∅ 10 mm, tube: ∅ 6 mm, H 100 mm

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **AAE1.1** | 10 | 207,00 |
| 2 | **AAE2.1** | 10 | 207,00 |
| 3 | **AAE3.1** | 10 | 207,00 |
| 4 | **AAE4.1** | 10 | 222,00 |

② **Standard:** plate ∅ 35 mm, tube: ∅ 10 mm, H 210 mm

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **AAE5.1** | 1 | 43,70 |
| 2 | **AAE6.1** | 1 | 43,70 |
| 3 | **AAE7.1** | 1 | 43,70 |
| 4 | **AAE8.1** | 1 | 46,00 |



## Gas dispersion tubes

Made of DURAN®. For fine dispersion of gases in liquids, e.g. during reactions. Tube height 250 mm.

**Glass tube, lateral ring**

| Tube outer ∅ (mm) | Plate ∅ (mm) | Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 6 | 22 | 0 | **AAE9.1** | 5 | 141,00 |
| 6 | 22 | 1 | **AAH0.1** | 5 | 140,00 |
| 6 | 22 | 2 | **AAH1.1** | 5 | 140,00 |

**Glass tube, centre ring**

| Tube outer ∅ (mm) | Plate ∅ (mm) | Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 9 | 25 | 0 | **AAH2.1** | 5 | 167,00 |
| 9 | 25 | 1 | **AAH3.1** | 5 | 167,00 |
| 9 | 25 | 2 | **AAH4.1** | 5 | 167,00 |
| 11 | 34 | 1 | **AAH5.1** | 5 | 193,00 |



## Rotilabo®-sample bowls

Made of stainless steel 18/10, high-gloss finish. Suitable for foodstuffs. Autoclavable.

**Delivery without** lid. Please order separately.

| Volume (l) | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,25 | 120 | 35 | **YH20.1** | 1 | 12,60 |
| 0,4 | 130 | 40 | **YH21.1** | 1 | 11,30 |
| 0,65 | 150 | 45 | **YH22.1** | 1 | 12,85 |
| 0,85 | 170 | 45 | **YH23.1** | 1 | 16,05 |
| 1,25 | 190 | 50 | **YH24.1** | 1 | 18,10 |
| 1,4 | 190 | 55 | **YH25.1** | 1 | 20,35 |
| 1,6 | 210 | 55 | **YH26.1** | 1 | 22,60 |
| 2 | 225 | 55 | **YH27.1** | 1 | 24,70 |

## Lids for Rotilabo®-sample bowls

| for sample pan | Art. No. | Pack Qty. | € |
|---|---|---|---|
| YH20.1 | **YL03.1** | 1 | 8,55 |
| YH21.1 | **YL04.1** | 1 | 9,65 |
| YH22.1 | **YL05.1** | 1 | 10,70 |
| YH23.1 | **YL06.1** | 1 | 13,95 |
| YH24.1 | **YL07.1** | 1 | 15,00 |
| YH25.1 | **YL08.1** | 1 | 17,15 |
| YH26.1 | **YL09.1** | 1 | 19,30 |
| YH27.1 | **YL10.1** | 1 | 21,45 |



## Rotilabo®-tablet bowls

Made of stainless steel 18/10, high-gloss. Suitable for foodstuffs. Autoclavable.

**Flat type**

| ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 120 x 20 | **YX74.1** | 1 | 9,15 |
| 140 x 25 | **YX75.1** | 1 | 12,50 |

**Tall type**

| ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 65 x 20 | **YX76.1** | 1 | 4,25 |
| 100 x 30 | **YX77.1** | 1 | 7,10 |

# Sample bowls



## Rotilabo®-aluminium bowls with lid

Moulded in one piece. Leakproof. The cardboard lids are aluminium coated on one side and can be secured by bending rim of container.
The white side can be marked or labelled.

| Volume (ml) | Length, top (mm) | Width, top (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 500 | 140 | 115 | 40 | **0906.1** | 100 | 47,85 |
| 250 | 120 | 95 | 35 | **0522.1** | 100 | 39,75 |



## Dappen glasses

Made of calcium soda glass. For mixing small quantities of substances.
∅ 31 x H 29 mm. Can be used on both sides. Volume: approx. 1.5 or 3 ml.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| clear | **CKY4.1** | 1 | 7,00 |
| green | **CKY5.1** | 1 | 7,00 |
| pink | **CKY6.1** | 1 | 7,00 |
| brown | **CKY7.1** | 1 | 7,00 |



## Rotilabo®-general-purpose aluminium trays

Made of aluminium. Free of oil residues and coatings. Easy to stack. Highly versatile as weighing or drying dishes, as dispensing or storage containers or for covering vessels.

| Volume (ml) | Height (mm) | Inside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | 12 | 44 | **PP65.1** | 100 | 17,75 |
| 60 | 17 | 63 | **PP66.1** | 100 | 17,00 |
| 75 | 30 | 62 | **PP67.1** | 100 | 17,75 |
| 200 | 35 | 110 | **PP68.1** | 50 | 18,20 |
| 500 | 25 | 181 | **PP69.1** | 50 | 20,40 |




## Rotilabo®-specimen jars

Made of type 3.3 borosilicate glass.

① **With lid with knob**

| Jar outer ∅ (mm) | Lid ∅ (mm) | Height(mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 85 | 95 | 85 | **NT38.1** | 1 | 35,05 |
| 100 | 110 | 100 | **NT39.1** | 1 | 38,30 |
| 120 | 130 | 120 | **NT40.1** | 1 | 43,65 |
| 150 | 162 | 150 | **NT41.1** | 1 | 58,30 |
| 200 | 214 | 200 | **NT42.1** | 1 | 101,45 |
| 250 | 264 | 250 | **NT43.1** | 1 | 144,05 |
| 300 | 314 | 300 | **NT44.1** | 1 | 170,95 |

② **With recessed knob**

| Jar outer ∅ (mm) | Lid ∅ (mm) | Height(mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 65 | 60 | 65 | **NT46.1** | 1 | 52,80 |
| 85 | 79 | 85 | **NT47.1** | 1 | 64,45 |
| 100 | 94 | 100 | **NT48.1** | 1 | 68,55 |
| 100 | 94 | 500 | **NT49.1** | 1 | 117,20 |
| 120 | 114 | 120 | **NT50.1** | 1 | 79,90 |
| 120 | 114 | 500 | **NT51.1** | 1 | 127,95 |
| 150 | 142 | 150 | **NT52.1** | 1 | 107,50 |
| 150 | 142 | 500 | **NT53.1** | 1 | 170,95 |



## Rotilabo®-sample bowls

Made of aluminium. Flat, without lid.

| Volume (ml) | Height (mm) | Inside ∅ (mm) | Top, outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 28 | 13 | 55 | 64 | **5494.1** | 100 | 13,25 |
| 125 | 26 | 85 | 96 | **5496.1** | 100 | 21,10 |

► Aluminium foils see page 258

# Crystallization dishes and watch glasses



DURAN WHEATON KIMBLE
Material DURAN®
121°C

## Glass jars

Made of DURAN®. High temperature and chemical resistance. Autoclavable.
**Delivery incl.** lid.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 75 | 60 x 40 | **CCL2.1** | 1 | 31,25 |
| 175 | 80 x 50 | **CCL3.1** | 1 | 37,50 |
| 325 | 100 x 60 | **CCL4.1** | 1 | 47,00 |
| 1000 | 150 x 80 | **CCL5.1** | 1 | 85,75 |



121°C

## Rotilabo®-cotton and swab container

Made of stainless steel 18/10, suitable for foodstuffs. Autoclavable.
**Delivery without** lid, please order separately.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 150 | 60 x 60 | **YT80.1** | 1 | 12,50 |
| 250 | 85 x 50 | **YT81.1** | 1 | 12,85 |
| 350 | 100 x 50 | **YT82.1** | 1 | 18,20 |
| 400 | 85 x 85 | **YT83.1** | 1 | 15,40 |
| 600 | 85 x 125 | **YT84.1** | 1 | 23,15 |
| 750 | 100 x 100 | **YT85.1** | 1 | 17,45 |
| 1750 | 150 x 100 | **YT86.1** | 1 | 29,70 |
| 2500 | 150 x 150 | **YT87.1** | 1 | 28,95 |
| 3000 | 200 x 100 | **YT88.1** | 1 | 43,00 |

## Lid for Rotilabo®-cotton and swab container

Made of stainless steel 18/10,

| For container ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 60 | **YT89.1** | 1 | 6,80 |
| 85 | **YT90.1** | 1 | 8,55 |
| 100 | **YT91.1** | 1 | 9,30 |
| 150 | **YT92.1** | 1 | 14,60 |
| 200 | **YT93.1** | 1 | 15,80 |

▶ Cotton wool see page 1131



121°C

## Rotilabo®-crystallising dishes

Made of type 3.3 borosilicate glass. Autoclavable.

**With spout.** Compliant with DIN 12338.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | 40 | 25 | **AYE1.1** | 10 | 42,15 |
| 40 | 50 | 30 | **AYE2.1** | 10 | 43,50 |
| 60 | 60 | 35 | **AYE3.1** | 10 | 51,15 |
| 100 | 70 | 40 | **AYE4.1** | 10 | 58,75 |
| 150 | 80 | 45 | **AYE5.1** | 10 | 82,30 |
| 300 | 95 | 55 | **AYE6.1** | 10 | 91,90 |
| 500 | 115 | 65 | **AYE7.1** | 10 | 104,15 |
| 900 | 140 | 75 | **AYE8.1** | 10 | 130,10 |
| 2000 | 190 | 90 | **AYE9.1** | 1 | 21,20 |
| 3500 | 230 | 100 | **AYH0.1** | 1 | 25,25 |

**Without spout.** Compliant with DIN 12337.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | 40 | 25 | **AYH1.1** | 10 | 32,60 |
| 40 | 50 | 30 | **AYH2.1** | 10 | 32,85 |
| 60 | 60 | 35 | **AYH3.1** | 10 | 36,40 |
| 100 | 70 | 40 | **AYH4.1** | 10 | 47,30 |
| 150 | 80 | 45 | **AYH5.1** | 10 | 75,90 |
| 300 | 95 | 55 | **AYH6.1** | 10 | 80,45 |
| 500 | 115 | 65 | **AYH7.1** | 10 | 87,55 |
| 900 | 140 | 75 | **AYH8.1** | 10 | 117,20 |
| 2000 | 190 | 90 | **AYH9.1** | 1 | 19,15 |
| 3500 | 230 | 100 | **AYK0.1** | 1 | 23,15 |



## Watch glasses

Made of soda-lime glass. With fused edges (C090.1 and C090.2: ground edges).

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 40 | **C079.1** | 10 | 8,90 |
| 50 | **C080.1** | 10 | 9,45 |
| 60 | **C081.1** | 10 | 10,30 |
| 70 | **C082.1** | 10 | 11,70 |
| 80 | **C083.1** | 10 | 12,65 |
| 90 | **C084.1** | 10 | 13,80 |
| 100 | **C085.1** | 10 | 14,85 |
| 120 | **C086.1** | 10 | 17,50 |
| 125 | **C087.1** | 10 | 19,25 |
| 150 | **C088.1** | 10 | 21,45 |
| 200 | **C089.1** | 10 | 39,10 |
| 250 | **C090.2** | 5 | 30,50 |

# Mortars




## Crystallization dishes

Made of DURAN®. Autoclavable.

**With spout.** Acc. to DIN 12338.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | 40 | 25 | **C091.1** | 10 | 64,15 |
| 40 | 50 | 30 | **C092.1** | 10 | 64,65 |
| 60 | 60 | 35 | **C093.1** | 10 | 67,15 |
| 100 | 70 | 40 | **C094.1** | 10 | 74,40 |
| 150 | 80 | 45 | **C095.1** | 10 | 82,20 |
| 300 | 95 | 55 | **C096.1** | 10 | 87,35 |
| 500 | 115 | 65 | **C097.1** | 1 | 13,25 |
| 900 | 140 | 75 | **C098.1** | 1 | 19,50 |
| 2000 | 190 | 90 | **HX07.1** | 1 | 46,60 |
| 3500 | 230 | 100 | **HX08.1** | 1 | 67,75 |

**Without spout.** Acc. to DIN 12337.

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | 40 | 25 | **HX09.1** | 10 | 64,15 |
| 40 | 50 | 30 | **HX10.1** | 10 | 64,65 |
| 60 | 60 | 35 | **HX11.1** | 10 | 67,15 |
| 100 | 70 | 40 | **HX12.1** | 10 | 74,40 |
| 150 | 80 | 45 | **HX13.1** | 10 | 82,20 |
| 300 | 95 | 55 | **HX14.1** | 10 | 87,35 |
| 500 | 115 | 65 | **HX15.1** | 1 | 13,25 |
| 900 | 140 | 75 | **HX16.1** | 1 | 19,15 |
| 2000 | 190 | 90 | **HX17.1** | 1 | 46,60 |
| 3500 | 230 | 100 | **HX18.1** | 1 | 67,75 |




## Rotilabo®-watch glasses

Made of **PP**. Very stable. Autoclavable.

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 60 | **K842.1** | 10 | 13,05 |
| 80 | **K843.1** | 10 | 16,05 |
| 100 | **K844.1** | 10 | 19,80 |
| 125 | **K845.1** | 10 | 22,70 |




## Rotilabo®-watch glasses

Made of **PTFE**. Excellent chemical resistance.
Temperature stable from -200 to +260 °C. Autoclavable.

| ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 6 | **K837.1** | 1 | 4,20 |
| 75 | 13 | **K838.1** | 1 | 6,15 |
| 100 | 20 | **K839.1** | 1 | 10,75 |
| 125 | 20 | **K840.1** | 1 | 11,35 |
| 150 | 25 | **K841.1** | 1 | 16,35 |




## Watch glasses

Made of DURAN®. Fused edge. Acc. to DIN 12341. Autoclavable.

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 40 | **Y634.1** | 10 | 65,30 |
| 50 | **Y635.1** | 10 | 71,95 |
| 60 | **Y636.1** | 10 | 77,75 |
| 80 | **Y637.1** | 10 | 85,30 |
| 100 | **Y638.1** | 10 | 97,35 |
| 125 | **Y639.1** | 10 | 105,00 |
| 150 | **Y640.1** | 10 | 135,00 |
| 200 | **Y641.1** | 10 | 204,00 |
| 250 | **Y642.1** | 1 | 36,55 |




## Rotilabo®-mortars with pestle

Made of borosilicate glass 3.3, with spout.
Capacity specifications are approximate figures.

① **Coarse friction surface**

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 60 | 80 | **TX04.1** | 1 | 34,55 |
| 200 | 75 | 100 | **TX05.1** | 1 | 40,45 |
| 300 | 90 | 120 | **TX06.1** | 1 | 50,90 |
| 650 | 110 | 150 | **TX07.1** | 1 | 64,40 |
| 800 | 135 | 200 | **NX15.1** | 1 | 93,75 |

② **Smooth inner surface**

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 60 | 80 | **NT80.1** | 1 | 30,10 |
| 200 | 75 | 100 | **NT81.1** | 1 | 33,00 |
| 300 | 90 | 120 | **NT82.1** | 1 | 39,10 |
| 650 | 110 | 150 | **NT83.1** | 1 | 50,85 |
| 800 | 135 | 200 | **NT84.1** | 1 | 70,80 |





## Smooth-walled mortars

Made of **MF**, white, with spout. Smooth friction surface prevents accumulation of sample residues and cross-contamination.
Microwave safe. Temperature resistant from -40 to +110 °C.

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 300 | 75 | 125 | **PY55.1** | 1 | 17,45 |
| 500 | 90 | 150 | **PY56.1** | 1 | 20,65 |

## Pestles

Made of **MF**, white, heavy-duty version, with smooth head.
Temperature resistant from -40 to +110 °C.

| ∅ Head (mm) | Length (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 125 | 55 | **PY57.1** | 1 | 19,60 |
| 35 | 145 | 85 | **PY58.1** | 1 | 21,15 |
| 40 | 160 | 120 | **PY59.1** | 1 | 23,65 |
| 42 | 215 | 175 | **PY60.1** | 1 | 49,30 |



## Mortars and pestles, short form

Made of **agate**. Flawless, polished inner surface. Minimal abrasion.
Dimensions are approximate. Autoclavable.

| Outside ∅ (mm) | Inside ∅ (mm) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 20 | 5 | **TL93.1** | 1 | 46,15 |
| 40 | 35 | 10 | **TL94.1** | 1 | 49,35 |
| 50 | 42 | 15 | **HC74.1** | 1 | 56,90 |
| 60 | 48 | 20 | **TL95.1** | 1 | 65,40 |
| 75 | 63 | 40 | **HC75.1** | 1 | 108,60 |
| 85 | 70 | 65 | **TL96.1** | 1 | 141,90 |
| 100 | 80 | 80 | **HC76.1** | 1 | 223,60 |
| 110 | 90 | 100 | **TL97.1** | 1 | 304,25 |
| 125 | 115 | 150 | **HC77.1** | 1 | 382,70 |
| 150 | 125 | 180 | **HC78.1** | 1 | 792,30 |
| 200 | 170 | 400 | **TL98.1** | 1 | 2512,30 |

## Spare pestles for mortars, short form

Made of **agate.**

| ∅ Head (mm) | Length (mm) | For Mortar | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 7 | 28 | TL93.1 | **TL99.1** | 1 | 11,65 |
| 9 | 42 | TL94.1 | **TP00.1** | 1 | 12,85 |
| 12 | 52 | HC74.1 | **TP01.1** | 1 | 13,45 |
| 14 | 62 | TL95.1 | **TP02.1** | 1 | 14,55 |
| 18 | 77 | HC75.1 | **TP03.1** | 1 | 20,45 |
| 20 | 86 | TL96.1 | **TP04.1** | 1 | 27,95 |
| 24 | 104 | HC76.1 | **TP05.1** | 1 | 45,45 |
| 22 | 112 | TL97.1 | **TP06.1** | 1 | 65,80 |
| 29 | 128 | HC77.1 | **TP07.1** | 1 | 84,20 |
| 35 | 155 | HC78.1 | **TP08.1** | 1 | 164,50 |
| 43 | 203 | TL98.1 | **TP09.1** | 1 | 362,30 |



## Mortars and pestles, tall form

Made of **agate.** Flawless, polished inner surface. Minimal abrasion.
Dimensions are approximate. Autoclavable.

| Outside ∅ (mm) | Inside ∅ (mm) | Volume (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 60 | 50 | 25 | 36 | **TP10.1** | 1 | 195,65 |
| 70 | 55 | 40 | 42 | **TP11.1** | 1 | 256,95 |
| 80 | 65 | 65 | 53 | **TP12.1** | 1 | 370,90 |
| 90 | 70 | 100 | 56 | **TP13.1** | 1 | 457,95 |
| 100 | 80 | 125 | 61 | **TP14.1** | 1 | 581,60 |
| 130 | 110 | 250 | 72 | **TP15.1** | 1 | 1310,45 |

## Spare pestles for mortars, tall form

Made of **agate.**

| ∅ Head (mm) | Length (mm) | For Mortar | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 16 | 60 | TP10.1 | **TP16.1** | 1 | 26,45 |
| 18 | 80 | TP11.1 | **TP17.1** | 1 | 35,40 |
| 22 | 100 | TP12.1 | **TP18.1** | 1 | 46,70 |
| 22 | 110 | TP13.1 | **TP19.1** | 1 | 64,10 |
| 23 | 120 | TP14.1 | **TP20.1** | 1 | 90,30 |
| 27 | 150 | TP15.1 | **TP21.1** | 1 | 192,45 |



## Mortars and pestles

Mortar and pestle made of stainless steel 18/10, mortar frame and pestle handle made of powder-coated steel. Smooth friction faces.
Heavy design, with slip resistant feet.
**Note:** Not autoclavable, not suitable for dishwashers.
Do not immerse in water.

| Volume (ml) | Outer ∅ (mm) | Inner ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 165 | 100 | 90 | 60 | **LL28.1** | 1 | 81,60 |
| 330 | 135 | 125 | 80 | **LL29.1** | 1 | 100,85 |
| 450 | 160 | 150 | 90 | **LL30.1** | 1 | 124,70 |



## Rotilabo®-mortar

Made of stainless steel, with plastic base. Heavy duty.
Suitable for foodstuffs.
**Delivery incl.** pestle, length 175 mm.

| Top inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 110 | 80 | **YX96.1** | 1 | 23,15 |

# Mortars





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A 121 °C

## Mortars 55, coarse

By Haldenwanger.
Made of glazed porcelain, **coarse grind surface (unglazed).**
Suitable for use with liquid nitrogen. Temperature stable up to +200 °C.
Autoclavable.

| Vol. (ml) | Size | Height (mm) | Inside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 20 | 00 | 32 | 50 | **XL89.1** | 1 | 11,05 |
| 70 | 0a | 40 | 65 | **1567.1** | 1 | 16,70 |
| 75 | 1 | 45 | 70 | **3773.1** | 1 | 17,35 |
| 100 | 2 | 50 | 80 | **3782.1** | 1 | 22,80 |
| 170 | 3 | 55 | 90 | **1568.1** | 1 | 24,30 |
| 300 | 4 | 63 | 115 | **3820.1** | 1 | 32,20 |
| 400 | 5 | 65 | 130 | **3823.1** | 1 | 47,85 |
| 700 | 6a | 70 | 150 | **3824.1** | 1 | 60,10 |
| 1000 | 8 | 80 | 180 | **3826.1** | 1 | 144,05 |
| 2600 | 11 | 100 | 240 | **XL90.1** | 1 | 332,20 |
| 6000 | 15 | 140 | 330 | **XL91.1** | 1 | 536,45 |

## Pestles 56, coarse

By Haldenwanger.
Made of glazed porcelain, **coarse grind surface (unglazed).**
Temperature stable up to +200 °C. Autoclavable.

| ∅ Head (mm) | Size | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 24 | 00 | 115 | **1570.1** | 1 | 11,10 |
| 28 | 0a | 125 | **3831.1** | 1 | 12,05 |
| 30 | 1 | 135 | **1571.1** | 1 | 13,75 |
| 36 | 2 | 150 | **3832.1** | 1 | 18,85 |
| 42 | 3 | 175 | **3836.1** | 1 | 26,75 |
| 45 | 4 | 180 | **XL92.1** | 1 | 29,40 |
| 48 | 5 | 185 | **3839.1** | 1 | 31,80 |
| 55 | 6a | 210 | **3841.1** | 1 | 34,30 |
| 60 | 8 | 215 | **XL93.1** | 1 | 49,35 |
| 74 | 13 | 262 | **XL94.1** | 1 | 160,20 |
| 85 | 15 | 280 | **XL95.1** | 1 | 213,95 |

## Mortars 55, smooth

By Haldenwanger.
Made of glazed porcelain, **smooth grind surface (glazed)**,
prevents accumulation of sample residues and cross-contamination.
Suitable for use with liquid nitrogen. Temperature stable up to +200 °C.
Autoclavable.

| Volume (ml) | Size | Height (mm) | Inside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 20 | 00 | 32 | 50 | **XL96.1** | 1 | 24,00 |
| 70 | 0a | 40 | 65 | **XL97.1** | 1 | 28,35 |
| 170 | 3 | 55 | 90 | **XL98.1** | 1 | 36,70 |
| 700 | 6a | 70 | 150 | **XL99.1** | 1 | 71,60 |
| 1000 | 8 | 80 | 180 | **XP00.1** | 1 | 158,05 |

## Pestles 56, smooth

By Haldenwanger.
Made of glazed porcelain, **smooth grind surface (glazed)**.
Temperature stable up to +200 °C. Autoclavable.

| ∅ Head (mm) | Size | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 24 | 00 | 115 | **XP01.1** | 1 | 21,85 |
| 28 | 0a | 125 | **XP02.1** | 1 | 22,45 |
| 30 | 1 | 135 | **XP03.1** | 1 | 24,30 |
| 42 | 3 | 175 | **XP04.1** | 1 | 36,35 |
| 55 | 6a | 210 | **XP05.1** | 1 | 45,00 |
| 60 | 8 | 215 | **XP06.1** | 1 | 57,85 |



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## Mini-Cryo mortar with pestle

Container made of stainless steel with PE insulating jacket, reaction vial holder made of stainless steel with insulated, removable handle (L 102 mm). For filling with liquid nitrogen. Allows the homogenisation of plant material or tissue directly inside the 1.5 ml reaction vial.
Dimensions: ∅ 165 x H 114 mm.
**Delivery incl.** pestle (∅ 9 x L 127 mm) with PE handle.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXX6.1** | 1 | 493,45 |



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## Cryo mortars

Container made of stainless steel with PE insulating jacket, mortar and pestle insert made of stainless steel with insulated, removable handle (L 102 mm). For filling with liquid nitrogen; cooling aids, for example, the shredding and homogenisation of plant material and similar samples.
Dimensions: ∅ 165 x H 114 mm.
Inner ∅ of mortar and pestle insert 100 mm, 48 mm deep.
**Delivery without** pestle; can be used with porcelain pestles (Art. No. 3836.1 or XL92.1), for example.

**Cryo mortar**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CYH1.1** | 1 | 481,60 |

**Cryo mortar, replacement mortar and pestle insert (without handle)**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CYH2.1** | 1 | 179,55 |

# Evaporating bowls



## Rotilabo®-evaporating dishes

Made of type 3.3 borosilicate glass. With spout. Autoclavable.

**With round bottom**

| Volume (ml) | Outer edge ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 15 | 51 | 22 | **AYK1.1** | 10 | 77,70 |
| 35 | 64 | 29 | **AYK2.1** | 10 | 92,25 |
| 90 | 85 | 39 | **AYK3.1** | 10 | 94,75 |
| 180 | 105 | 49 | **AYK4.1** | 10 | 106,05 |
| 400 | 131 | 62 | **AYK5.1** | 10 | 132,25 |
| 800 | 166 | 80 | **AYK6.1** | 1 | 16,25 |
| 1700 | 206 | 100 | **AYK7.1** | 1 | 23,25 |
| 2600 | 235 | 115 | **AYK8.1** | 1 | 27,35 |

**With flat bottom**

| Volume (ml) | Outer edge ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 40 | 18 | **AYK9.1** | 10 | 56,60 |
| 15 | 50 | 25 | **AYL0.1** | 10 | 65,15 |
| 45 | 60 | 30 | **AYL1.1** | 10 | 77,00 |
| 60 | 70 | 35 | **AYL2.1** | 10 | 80,70 |
| 90 | 80 | 45 | **AYL3.1** | 10 | 85,65 |
| 170 | 95 | 55 | **AYL4.1** | 10 | 90,60 |
| 320 | 115 | 65 | **AYL5.1** | 10 | 112,90 |
| 600 | 140 | 80 | **AYL6.1** | 1 | 16,25 |
| 1500 | 190 | 100 | **AYL7.1** | 1 | 20,80 |
| 2500 | 230 | 130 | **AYL8.1** | 1 | 23,60 |



## Evaporating dishes with snap-on lids

Made of highly transparent **PFA**, lid made of **PE**.
For contamination-free sample preparation and for transporting samples.

- Temperature resistant in the range -200 to +250 °C
- Chemically inert to nearly all chemicals
- Hydrophobic and anti-adhesive
- High purity, ideal for used in trace analysis and for storage of reference solutions
- With conical recess in base, to hold small quantities of solvent for absorption of evaporated samples
- Extremely smooth surfaces allow easy cleaning, no memory effect
- Autoclavable

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 25 | 50 | **XY19.1** | 1 | 39,70 |
| 50 | 54 | 50 | **XY20.1** | 1 | 52,60 |



DURAN WHEATON KIMBLE
Material DURAN®

## Evaporating bowls

Made of DURAN®, with spout. Acc. to DIN 12 336. Autoclavable.

| Volume (ml) | Outer edge ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 15 | 50 | 25 | **E540.1** | 10 | 66,15 |
| 45 | 60 | 30 | **E541.1** | 10 | 68,00 |
| 60 | 70 | 35 | **E542.1** | 10 | 76,35 |
| 90 | 80 | 45 | **E543.1** | 10 | 82,90 |
| 170 | 95 | 55 | **E544.1** | 10 | 88,40 |
| 320 | 115 | 65 | **E545.1** | 10 | 132,00 |
| 600 | 140 | 80 | **E546.1** | 1 | 19,30 |
| 1500 | 190 | 100 | **E547.1** | 1 | 47,00 |
| 2500 | 230 | 130 | **E548.1** | 1 | 68,40 |



## Rotilabo®-evaporating bowls

Made of **PTFE**. Flat. Chemically inert.
Temperature stable from -200 to +260 °C. Anti-adhesive. Autoclavable.

| Volume (ml) | Outside ∅ (mm) | Outer height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 42 | 25 | **T654.1** | 1 | 16,15 |
| 50 | 65 | 23 | **1188.1** | 1 | 17,45 |
| 100 | 80 | 28 | **1189.1** | 1 | 23,15 |
| 180 | 78 | 46 | **T655.1** | 1 | 31,40 |
| 350 | 100 | 55 | **1190.1** | 1 | 43,35 |

# Lab porcelain



## Rotilabo®-evaporating bowls

Made of 18/10 stainless steel. Cylindric. Autoclavable.

**Tall form**

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 125 | 35 | 71 | **C873.1** | 1 | 31,15 |
| 250 | 50 | 85 | **C874.1** | 1 | 39,30 |
| 500 | 55 | 110 | **C875.1** | 1 | 57,35 |
| 1000 | 75 | 140 | **C876.1** | 1 | 85,80 |
| 2000 | 105 | 160 | **C877.1** | 1 | 110,75 |
| 5000 | 160 | 200 | **C878.1** | 1 | 227,90 |

**Short form**

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 20 | 60 | **C879.1** | 1 | 20,95 |
| 75 | 20 | 70 | **C880.1** | 1 | 26,15 |
| 100 | 20 | 80 | **C881.1** | 1 | 36,50 |



## Evaporating dishes 888

By Haldenwanger. Made of glazed porcelain, with the exception of the outer bottom surface. Temperature stable up to +1000 °C. Flat shape, with spout. Autoclavable.

| Volume (ml) | Size | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 000 | 40 x 9 | **XL72.1** | 1 | 8,25 |
| 10 | 00 | 50 x 11 | **XL73.1** | 1 | 9,15 |
| 20 | 0 | 63 x 13 | **XL74.1** | 1 | 10,15 |
| 40 | 2 | 80 x 20 | **XL75.1** | 1 | 11,25 |
| 80 | 4 | 100 x 22 | **XL76.1** | 1 | 15,40 |
| 270 | 6 | 125 x 27 | **XL77.1** | 1 | 19,95 |
| 450 | 6a | 160 x 35 | **XL78.1** | 1 | 33,30 |
| 1100 | 8 | 190 x 55 | **XL79.1** | 1 | 71,85 |
| 1750 | 9 | 240 x 65 | **XL80.1** | 1 | 127,95 |
| 2500 | 10 | 300 x 60 | **XL81.1** | 1 | 183,85 |



## Rotilabo®-evaporating dishes

Made of porcelain, glazed inner surface.
Semi-deep form with round bottom.
Temperature stable up to +1000 °C. Autoclavable.

| Volume (ml) | Height (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 41 | 26 | 72 | **XX26.1** | 5 | 27,15 |
| 62 | 27 | 83 | **XX27.1** | 5 | 29,75 |
| 110 | 30 | 96 | **XX28.1** | 5 | 43,60 |
| 160 | 37 | 110 | **XX29.1** | 5 | 46,35 |
| 215 | 41 | 117 | **XX30.1** | 5 | 47,00 |
| 240 | 42 | 127 | **XX31.1** | 5 | 57,90 |
| 325 | 46 | 142 | **XX32.1** | 5 | 58,95 |
| 420 | 50 | 154 | **XX33.1** | 5 | 64,40 |
| 558 | 55 | 170 | **XX34.1** | 5 | 79,30 |



## Evaporating dishes 109

By Haldenwanger. Made of glazed porcelain, with spout and round bottom.
Temperature stable up to +1000 °C. Autoclavable.

| Volume (ml) | Size | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 5/0 | 40 x 16 | **XL61.1** | 10 | 57,55 |
| 20 | 4/0 | 50 x 20 | **3860.1** | 10 | 59,80 |
| 40 | 000 | 63 x 25 | **1575.1** | 10 | 68,50 |
| 50 | 00 | 70 x 26 | **3880.1** | 10 | 84,95 |
| 75 | 0 | 80 x 34 | **3933.1** | 10 | 96,25 |
| 110 | 1 | 85 x 36 | **3945.1** | 10 | 104,10 |
| 180 | 2 | 100 x 40 | **1576.1** | 1 | 12,80 |
| 310 | 5 | 115 x 47 | **4004.1** | 1 | 22,60 |
| 370 | 6 | 150 x 45 | **4012.1** | 1 | 32,95 |
| 640 | 6a | 160 x 64 | **1577.1** | 1 | 39,10 |
| 1000 | 7B | 200 x 80 | **XL62.1** | 1 | 59,05 |
| 2200 | 9 | 260 x 86 | **XL63.1** | 1 | 100,10 |
| 3400 | 10 | 310 x 110 | **XL64.1** | 1 | 180,60 |



## Evaporating dishes 131

By Haldenwanger. Made of glazed porcelain.
French style, with spout and flat bottom.
Temperature stable up to +1000 °C. Autoclavable.

| Volume (ml) | Size | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 2 | 58 x 24 | **XL65.1** | 1 | 11,75 |
| 60 | 3 | 75 x 30 | **XL66.1** | 1 | 19,60 |
| 100 | 4 | 84 x 38 | **XL67.1** | 1 | 22,60 |
| 150 | 5 | 97 x 40 | **XL68.1** | 1 | 28,20 |
| 250 | 6 | 110 x 50 | **XL69.1** | 1 | 34,55 |
| 290 | 7 | 125 x 52 | **XL70.1** | 1 | 39,25 |
| 400 | 8 | 150 x 60 | **XL71.1** | 1 | 48,30 |



## Evaporating dishes 130

By Haldenwanger. Made of glazed porcelain.
French style, with spout and round bottom.
Temperature stable up to +1000 °C. Autoclavable.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 70 | 75 x 40 | **TL71.1** | 1 | 20,45 |
| 190 | 97 x 50 | **TL72.1** | 1 | 32,60 |
| 270 | 110 x 52 | **TL73.1** | 1 | 41,15 |
| 350 | 125 x 60 | **TL74.1** | 1 | 44,30 |



## Casseroles

By Haldenwanger. Made of porcelain. With handle.
Glazed with the exception of the rim. Acc. to DIN 12907.
Temperature stable up to +1000 °C. Autoclavable.

| Volume (ml) | Size | Height (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 80 | 4/0 | 36 | 63 | **HC79.1** | 1 | 26,70 |
| 140 | 000 | 46 | 80 | **HC80.1** | 1 | 33,00 |
| 290 | 0 | 69 | 102 | **HC81.1** | 1 | 40,35 |
| 500 | 2 | 70 | 127 | **HC82.1** | 1 | 59,70 |
| 1300 | 4 | 97 | 160 | **HC83.1** | 1 | 188,15 |
| 2600 | 4 b | 110 | 215 | **HC84.1** | 1 | 194,60 |



## Ignition dishes 33 D

By Haldenwanger. Made of glazed porcelain, with the exception of the outer bottom surface. Flat shape. Temperature stable up to +1000 °C. Autoclavable.

| Volume (ml) | Size | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 8 | 2 | 37 x 10 | **XL82.1** | 1 | 6,80 |
| 10 | 3 | 42 x 11 | **XL83.1** | 1 | 7,10 |
| 15 | 4 | 48 x 12 | **XL84.1** | 1 | 8,90 |



## Ignition dishes 33

By Haldenwanger. Porcelain, glazed.
Temperature stable up to +1000 °C. Autoclavable.

| Volume (ml) | Size | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 15 | 1 | 21 | 40 | **3740.1** | 10 | 60,35 |
| 30 | 2 | 25 | 50 | **1564.1** | 10 | 75,20 |
| 60 | 4 | 31 | 60 | **1565.1** | 10 | 91,25 |



## Ignition dishes 33 C

By Haldenwanger. Made of glazed porcelain. Slightly tapered.
Temperature stable up to +400 °C. Autoclavable.

| Length (mm) | Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 48 | 26 | 10 | **TL80.1** | 1 | 10,65 |
| 55 | 42 | 16 | **TL81.1** | 1 | 13,25 |
| 70 | 46 | 13 | **TL82.1** | 1 | 16,65 |
| 96 | 55 | 16 | **TL83.1** | 1 | 21,20 |

▶ Laboratory burners see page 918
▶ Metal crucibles see page 186

# Lab porcelain



## Combustion boats

By Haldenwanger. Made of porcelain. With eyelet. Autoclavable.

**Glazed.** Glazing prevents build-up of sample residues and cross-contamination. Temperature stable up to +1000 °C.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 90 x 12 x 8 | **L016.1** | 1 | 16,70 |
| 100 x 12 x 10 | **L017.1** | 1 | 18,05 |
| 130 x 20 x 13 | **L019.1** | 1 | 26,85 |

**Unglazed.** Temperature stable up to +1350 °C.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 80 x 13 x 9 | **TL84.1** | 10 | 16,65 |



## Rotilabo®-spoons

Made of glazed porcelain. Length 237 mm.
Temperature stable up to 1000 °C. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XX62.1** | 5 | 86,30 |



## Rotilabo®-weighing boats

Made of glazed porcelain. Temperature stable up to +1000 °C.
Autoclavable.

| Length (mm) | Width (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 37 | 17 | 7 | **XX55.1** | 10 | 22,85 |
| 53 | 23 | 10 | **XX56.1** | 10 | 23,65 |
| 64 | 29 | 12 | **XX57.1** | 10 | 24,75 |



## Spoon spatulas

By Haldenwanger. Made of porcelain. Highly resistant against chemical and physical influences. Temperature stable up to +200 °C. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 120 | **C749.1** | 1 | 14,60 |
| 160 | **C751.1** | 1 | 15,35 |
| 200 | **C753.1** | 1 | 22,70 |
| 300 | **C755.1** | 1 | 42,50 |



## Spot test plates

By Haldenwanger. Made of glazed porcelain.
Temperature stable up to +1000 °C. Autoclavable.

| No. of moulds | L x W x H (mm) | ∅ of moulds (mm) | Depth of moulds (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 6 | 115 x 80 x 12 | 36 | 11 | **C765.1** | 1 | 17,65 |
| 12 | 119 x 85 x 6 | 20 | 3 | **C767.1** | 1 | 25,60 |
| 12 | 127 x 97 x 12 | 25 | 6 | **C768.1** | 1 | 26,70 |




## Porcelain marker pen

For labelling glazed and unglazed lab porcelain.
Ink color: brown, temperature stable up to max. 1400 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CEK7.1** | 1 | 12,50 |

# Filter crucibles




## Rotilabo®-filter crucibles

Made of glazed porcelain. With porous bottom, unglazed.
Temperature stable up to +1000 °C. Compliant with DIN 12909.

| Volume (ml) | Pore size (µm) | Top ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 8 | 6 | 25 | 28 | **XX64.1** | 2 | 25,35 |
| 8 | 7 | 25 | 28 | **XX65.1** | 2 | 25,35 |
| 8 | 8 | 25 | 28 | **XX66.1** | 2 | 25,35 |
| 15 | 6 | 30 | 35 | **XX67.1** | 2 | 28,90 |
| 15 | 7 | 30 | 35 | **XX68.1** | 2 | 28,90 |
| 15 | 8 | 30 | 35 | **XX69.1** | 2 | 28,90 |
| 25 | 6 | 35 | 40 | **XX70.1** | 2 | 31,10 |
| 25 | 7 | 35 | 40 | **XX71.1** | 2 | 31,10 |
| 25 | 8 | 35 | 40 | **XX72.1** | 2 | 31,10 |
| 35 | 6 | 40 | 43 | **XX73.1** | 2 | 31,50 |
| 35 | 7 | 40 | 43 | **XX74.1** | 2 | 31,50 |
| 35 | 8 | 40 | 43 | **XX75.1** | 2 | 31,50 |
| 50 | 6 | 45 | 50 | **XX76.1** | 2 | 31,85 |
| 50 | 7 | 45 | 50 | **XX77.1** | 2 | 31,85 |
| 50 | 8 | 45 | 50 | **XX78.1** | 2 | 31,85 |



## Rotilabo®-swelling crucibles with cover

Made of unglazed porcelain, wide form.
Temperature stable up to +1350 °C.

| Volume (ml) | Height (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 19 | 27 | 43 | **XX25.1** | 5 | 13,10 |


- ▶ Filter crucibles made of glass see page 170
- ▶ Lab burners see page 918





## Gooch crucibles

By Haldenwanger. Made of glazed porcelain.
Temperature stable up to +1000 °C.
**Delivery without** sieve plate. Please order separately.

**Wide body, type 82 A**

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 39 x 42 | **TL86.1** | 1 | 18,85 |
| 35 | 42 x 45 | **TL87.1** | 1 | 20,60 |

**High body, type 82 R**

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 35 x 41 | **TL88.1** | 1 | 16,10 |

## Sieve plates for Gooch crucibles

By Haldenwanger. Made of glazed porcelain. According to Dr. Witt.

| ∅ (mm) | for crucible | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 22 | TL86.1, TL88.1 | **TL89.1** | 1 | 8,90 |
| 25 | TL87.1 | **TL90.1** | 1 | 9,90 |




## Filter crucible 84

By Haldenwanger. Made of glazed porcelain.
Temperature stable up to +1000 °C.
Porosity of base: P2 (~5 µm). Acc. to DIN 12909.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 35 x 43 | **C760.1** | 1 | 105,90 |



## Rotilabo®-crucibles with cover

Made of unglazed porcelain, high form. Temperature stable up to +1350 °C.
For the determination of volatile liquids.

| Volume (ml) | Height (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 22 | 42 | 32 | **XX24.1** | 5 | 12,05 |

# Crucibles



## ① Melting crucibles 79, shallow

By Haldenwanger. Porcelain, wide, glazed.
Temperature stable up to +1000 °C.

| Volume (ml) | Size | Height (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 8 | 000 a | 20 | 30 | **L217.1** | 10 | 44,10 |
| 11 | 00 | 23 | 35 | **L218.1** | 10 | 44,95 |
| 20 | 0 | 26 | 40 | **L219.1** | 10 | 49,10 |
| 25 | 1 | 29 | 45 | **L220.1** | 10 | 62,55 |
| 40 | 2 | 32 | 50 | **L221.1** | 10 | 82,30 |
| 65 | 2 a | 38 | 60 | **L222.1** | 10 | 90,20 |
| 95 | 3 | 47 | 70 | **L223.1** | 10 | 115,05 |
| 180 | 4 | 55 | 83 | **L224.1** | 10 | 149,45 |

## ② Melting crucibles 79 MF, medium

By Haldenwanger. Porcelain, glazed.
Temperature stable up to +1000 °C.

| Volume (ml) | Size | Height (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 8 | 25 | 30 | **L225.1** | 10 | 43,90 |
| 13 | 7 | 28 | 35 | **L226.1** | 10 | 45,30 |
| 20 | 7 a | 32 | 40 | **L227.1** | 10 | 49,15 |
| 38 | 6 | 36 | 45 | **L228.1** | 10 | 61,90 |
| 50 | 6 a | 40 | 50 | **L229.1** | 10 | 69,85 |
| 60 | 5 | 43 | 52 | **L230.1** | 10 | 72,70 |
| 90 | 4 | 50 | 60 | **L231.1** | 10 | 88,05 |
| 150 | 2 | 60 | 70 | **L232.1** | 10 | 120,40 |
| 230 | 1 | 65 | 82 | **L233.1** | 10 | 160,20 |



## Melting crucibles 79 C, high

By Haldenwanger. Porcelain, glazed. Temperature stable up to +1000 °C.

| Volume (ml) | Size | Height (mm) | Top ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 15 | 0 | 38 | 30 | **1572.1** | 10 | 49,45 |
| 24 | 1 | 44 | 35 | **3842.1** | 10 | 52,70 |
| 40 | 2 | 51 | 40 | **3848.1** | 10 | 62,35 |
| 50 | 3 | 53 | 46 | **1573.1** | 10 | 72,00 |
| 85 | 4 | 65 | 51 | **3859.1** | 10 | 107,00 |
| 140 | 5 | 79 | 60 | **1574.1** | 10 | 141,90 |

## Lids for melting and filter crucibles

By Haldenwanger. Porcelain, glazed. Temperature stable up to +1000 °C.

| For crucible-∅ (mm) | for size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 30 | 8 | **L234.1** | 10 | 53,65 |
| 35 | 7 | **L235.1** | 10 | 55,40 |
| 40 | 7a | **L236.1** | 10 | 59,65 |
| 45/46 | 6 | **L237.1** | 10 | 62,35 |
| 50/52 | 5 | **L238.1** | 10 | 67,40 |
| 60 | 4 | **L239.1** | 10 | 81,25 |
| 70 | 2 | **L240.1** | 5 | 45,75 |
| 80-85 | 1 | **L241.1** | 5 | 66,10 |




121°C

## Rotilabo®-melting crucibles, medium-high form

Made of glazed porcelain. Temperature stable up to +1000 °C.
Acc. to DIN 12904. Autoclavable.

*Not acc. to DIN

| Volume (ml) | Top ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10* | 30 | 25 | **XX79.1** | 5 | 11,00 |
| 12 | 35 | 28 | **XX80.1** | 5 | 11,85 |
| 20 | 40 | 32 | **XX81.1** | 5 | 13,65 |
| 30 | 45 | 36 | **XX82.1** | 5 | 14,05 |
| 45 | 50 | 40 | **XX83.1** | 5 | 18,85 |
| 80 | 60 | 48 | **XX84.1** | 5 | 22,95 |
| 120 | 70 | 56 | **XX85.1** | 5 | 29,40 |
| 200* | 80 | 62 | **XX86.1** | 5 | 36,25 |

## Lids for Rotilabo®-melting crucibles

Made of glazed porcelain. Temperature stable up to +1000 °C.
Autoclavable.

| For crucible-∅ (mm) | Lid ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 30 | 34 | **XX87.1** | 5 | 11,65 |
| 35 | 39 | **XX88.1** | 5 | 12,55 |
| 40 | 44 | **XX89.1** | 5 | 13,65 |
| 45 | 49 | **XX90.1** | 5 | 16,40 |
| 50 | 54 | **XX91.1** | 5 | 17,20 |
| 60 | 64 | **XX92.1** | 5 | 18,80 |
| 70 | 74 | **XX93.1** | 5 | 22,50 |
| 80 | 84 | **XX94.1** | 5 | 23,45 |



## Rotilabo®-melting crucibles, stainless steel

Made of 18/10 stainless steel (material-number 1.4301).
Wall thickness 1 mm. Temperature stable up to about +850 °C.

| Volume (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 35 | 35 | **8307.1** | 1 | 23,05 |
| 30 | 40 | 35 | **8309.1** | 1 | 29,00 |
| 70 | 50 | 45 | **8311.1** | 1 | 32,25 |

## Lids for melting crucibles made of stainless steel

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Lid for crucible 25 ml | **8313.1** | 1 | 11,95 |
| Lid for crucible 30 ml | **8314.1** | 1 | 12,40 |
| Lid for crucible 70 ml | **8315.1** | 1 | 13,65 |



## Rotilabo®-melting crucibles nickel

Made of pure nickel 99.5 %. Temperature stable up to about +750 °C.

| Volume (ml) | ∅ x H (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 20 x 20 | 0,5 | **ETY8.1** | 1 | 20,65 |
| 10 | 25 x 25 | 0,5 | **ETY9.1** | 1 | 22,50 |
| 15 | 30 x 30 | 1 | **8291.1** | 1 | 38,30 |
| 25 | 35 x 35 | 1 | **8293.1** | 1 | 46,70 |
| 30 | 40 x 40 | 1 | **8294.1** | 1 | 55,85 |
| 30 | 40 x 40 | 2 | **EXA0.1** | 1 | 99,95 |
| 50 | 45 x 45 | 1 | **8296.1** | 1 | 65,05 |
| 50 | 45 x 45 | 1,5 | **EXA1.1** | 1 | 89,75 |
| 70 | 50 x 50 | 1 | **8298.1** | 1 | 70,85 |
| 70 | 50 x 50 | 2 | **EXA2.1** | 1 | 188,15 |
| 130 | 60 x 60 | 1 | **8299.1** | 1 | 94,60 |
| 130 | 60 x 60 | 2 | **EXA3.1** | 1 | 211,80 |
| 270 | 80 x 80 | 1 | **EXA4.1** | 1 | 135,45 |

## Lids for melting crucibles made of pure nickel

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Lid for crucible 5 ml | **EXA5.1** | 1 | 14,10 |
| Lid for crucible 10 ml | **EXA6.1** | 1 | 16,75 |
| Lid for crucible 15 ml | **8300.1** | 1 | 16,40 |
| Lid for crucible 25 ml | **8301.1** | 1 | 18,40 |
| Lid for crucible 30 ml | **8302.1** | 1 | 20,35 |
| Lid for crucible 50 ml | **8303.1** | 1 | 23,95 |
| Lid for crucible 70 ml | **8304.1** | 1 | 25,05 |
| Lid for crucible 130 ml | **8305.1** | 1 | 28,25 |
| Lid for crucible 270 ml | **EXA7.1** | 1 | 44,40 |



## Rotilabo®-melting crucible iron

Made of iron. 2 mm wall thickness, ∅ top 48 mm, height 36 mm.
Temperature stable to +800 °C, or up to +1000 °C in the absence of oxygen.

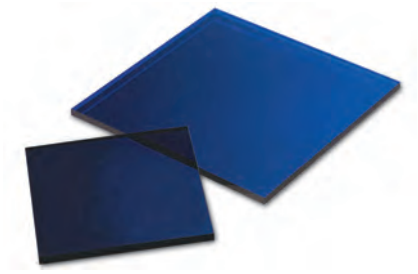
| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Melting crucible | **8316.1** | 1 | 12,05 |
| Lid | **8317.1** | 1 | 5,05 |



## Rotilabo®-lead crucible

With lid. 3 mm wall thickness, ∅ top 40 mm, height 44 mm.
Temperature stable up to max. +200 °C.

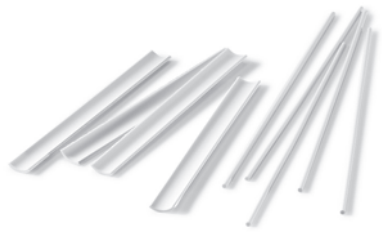
| Art. No. | Pack Qty. | € |
|---|---|---|
| **8326.1** | 1 | 13,60 |



## Sight glasses / Cobalt glasses

Made of **cobalt glass.** With cut edges. Approx. 2.5 mm thick.

| Dimensions (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 50 x 50 | **P221.1** | 2 | 13,45 |
| 100 x 100 | **P223.1** | 2 | 28,20 |



## Magnesia scoops

For annealing and incineration of samples, as well as for the production of oxygen melts for the detection of chromium, manganese etc. and for bead tests. W 9 x L 100 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **6537.1** | 25 | 20,40 |

## Magnesia rods

Ideal for flame analysis of sodium, etc. For borax-bead analysis of cobalt. For bead tests. ∅ 1.5 x L 140 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **6543.1** | 25 | 23,15 |

▶ Lab burners see page 918

# Weighing accessories



## Rotilabo®-weighing bottles

Made of borosilicate glass 3.3. With ground glass cap and labelling space.

**Short**

| Volume (ml) | Height without cap (mm) | Standard ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 9 | 30 | 29/12 | **AAY7.1** | 1 | 17,50 |
| 12 | 30 | 34/12 | **AAY8.1** | 1 | 20,60 |
| 25 | 35 | 40/12 | **AAY9.1** | 1 | 22,80 |
| 38 | 35 | 50/12 | **ACA0.1** | 1 | 27,10 |
| 100 | 35 | 80/12 | **ACA1.1** | 1 | 43,55 |

**Middle**

| Volume (ml) | Height without cap (mm) | Standard ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 50 | 29/12 | **ACA2.1** | 1 | 17,55 |
| 32 | 50 | 34/12 | **ACA3.1** | 1 | 20,60 |
| 47 | 50 | 40/12 | **ACA4.1** | 1 | 22,75 |
| 70 | 50 | 50/12 | **ACA5.1** | 1 | 27,85 |
| 185 | 50 | 80/12 | **ACA6.1** | 1 | 43,75 |



## Balance table

For analytical laboratories. Absorbs oscillations and vibrations which would otherwise falsify weighing results. Workbench with aluminium profile frame and height-adjustable feet. Polished marble slab (36 kg) as integrated worktop, mounted on absorbent rubber elements.
Balance plate dimensions: W 267 x D 405 x H 120 mm.
Outer dimensions fully assembled: W 770 x D 650 x H 815 mm.
Overall weight approx. 55 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AEP0.1** * | 1 | 990,00 |

* Longer delivery times possible. Prices do not include transport costs.Please check with our Sales Department.



Programme extension!

## Rotilabo®-weighing bottles

Made of borosilicate glass. **Tall type**.
With replaceable NS lid, label field and size details.

| Vol. (ml) | Standard ground glass joint | Height without lid (mm) | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | 14/8 | 20 | 15 | **1368.1** | 1 | 17,15 |
| 4,5 | 19/9 | 30 | 20 | **1367.1** | 1 | 17,75 |
| 10 | 24/11 | 40 | 25 | **1366.1** | 1 | 17,15 |
| 20 | 29/11 | 50 | 30 | **1365.1** | 1 | 17,60 |
| 45 | 34/11 | 70 | 35 | **1364.1** | 1 | 18,10 |
| 40 | 40/11 | 50 | 40 | **HNX1.1** | 1 | 18,95 |
| 45 | 40/11 | 65 | 40 | **HNX2.1** | 1 | 20,00 |
| 70 | 40/11 | 80 | 40 | **HNX3.1** | 1 | 22,00 |
| 110 | 50/11 | 80 | 50 | **HNX4.1** | 1 | 28,55 |

## Rotilabo®-weighing bottles assortment

Five pieces, sizes 2 to 45 ml.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **1369.1** | 1 | 70,85 |

## Rotilabo®-weighing bottles

Made of DURAN®. **Low type**. With replaceable NS lid, label field and size details. Acc. to DIN 12605.

* not acc. to DIN

| Vol. (ml) | Standard ground glass joint | Height without lid (mm) | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 6* | 24/12 | 25 | 25 | **K614.1** | 1 | 12,90 |
| 15 | 40/12 | 25 | 40 | **HNX5.1** | 1 | 21,00 |
| 15 | 34/12 | 30 | 35 | **K615.1** | 1 | 14,35 |
| 30 | 50/12 | 30 | 50 | **K616.2** | 6 | 84,15 |
| 45 | 60/12 | 30 | 60 | **HNX6.1** | 1 | 29,60 |
| 80 | 80/12 | 30 | 80 | **K617.1** | 1 | 29,15 |


- ▶ Balances from page 858
- ▶ Test weights from page 880




## Rotilabo®-weighing tweezers

Made of stainless steel, with PVC tips. Curved. Length 90 mm. Weight 8 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YT63.1** | 1 | 6,25 |



## Rotilabo®-weighing cans

Made of transparent **PP**. With airtight lid. Upper part can be pressed together to enable easy pouring. Low weight reduces measurement adjustments. Autoclavable.

| Volume (ml) | Top, outer ∅ (mm) | Height (mm) | Tara (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 20 | 40 | 30 | 8 | **K778.1** | 2 | 6,75 |
| 23 | 30 | 50 | 8 | **K779.1** | 2 | 6,80 |
| 30 | 50 | 30 | 10 | **K790.1** | 2 | 7,55 |
| 40 | 40 | 70 | 14 | **K791.1** | 2 | 7,45 |
| 50 | 60 | 35 | 18 | **K792.1** | 2 | 8,05 |
| 190 | 60 | 90 | 28 | **K793.1** | 2 | 9,00 |
| 360 | 70 | 120 | 40 | **K794.1** | 2 | 10,15 |



## Rotilabo®-weighing boats

Made of borosilicate glass 3.3. With flat bottom.

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2 | 50 | **AAY4.1** | 1 | 38,50 |
| 4 | 70 | **AAY5.1** | 1 | 42,90 |
| 7 | 100 | **AAY6.1** | 1 | 45,60 |



## Rotilabo®-weighing boats

Made of glazed porcelain. Temperature stable up to +1000 °C. Autoclavable.

| Length (mm) | Width (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 37 | 17 | 7 | **XX55.1** | 10 | 22,85 |
| 53 | 23 | 10 | **XX56.1** | 10 | 23,65 |
| 64 | 29 | 12 | **XX57.1** | 10 | 24,75 |

▶ Volumetric flasks see page 25



## Rotilabo®-weighing funnels

Ideal for weighing liquid and solid samples. Sits safely and flush on the balance. Spout enables easy filling and emptying of measuring flasks, test tubes, etc. Autoclavable.

**Made of PP**

| Volume (ml) | Length (mm) | Funnel ∅ (mm) | Spout ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | 44 | 23 | 7 | **P652.1** | 50 | 42,90 |
| 7 | 63 | 35 | 11 | **P653.1** | 50 | 61,10 |
| 10 | 88 | 48 | 17 | **P654.1** | 20 | 57,65 |
| 25 | 117 | 63 | 20 | **P655.1** | 10 | 66,15 |

**Made of Borosilicate glass**

| Volume (ml) | Length (mm) | Funnel ∅ (mm) | Spout ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | 44 | 23 | 7 | **P656.1** | 6 | 61,10 |
| 7 | 63 | 35 | 11 | **P657.1** | 6 | 69,80 |
| 10 | 88 | 48 | 17 | **P658.1** | 6 | 80,75 |
| 25 | 117 | 63 | 20 | **P659.1** | 6 | 84,40 |



## Weighing funnels

Made of antistatic **PP**, resistant to static charge. With wide mouth for easy access. Tapered neck for use with volumetric flasks in sizes from 10 to 250 ml. Extended metering neck for direct transfer of samples and liquids to flask, ventilation slot between funnel and vessel prevents accumulation of liquid.

**Technical specifications:**

| | |
|---|---|
| Typical metering quantity | 1 mg - 5 g |
| Suitable for volumetric flasks | 5 (wide mouth), 10, 25, 50, 100 and 250 ml |
| Suitable for ground glass joints | 10/19, 12/21, 14/23 |
| Dimensions | L 75 x W 30 x H 26 mm |
| Nozzle outer ∅ | Tapered, 9-15 mm |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CET4.1** | 50 | 89,50 |

# Weighing accessories



## Rotilabo®-weighing boats

Made of stainless steel 18/8. Width 30 mm.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **HT05.1** | 1 | 8,55 |
| 120 | **HT06.1** | 1 | 9,35 |



## Rotilabo®-micro aluminium dishes

Made of **aluminium**. Free from oil residues and layers.

- Suitable for micro scales, micro-elementary and thermal systems
- Compatible with most micro scales and analysis devices
- Packed in practical plastic containers

**Round form**

| Volume (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,035 | 6 | 2,5 | **PP58.1** | 250 | 96,25 |
| 0,35 | 13 | 3,5 | **PP59.1** | 100 | 53,00 |

**Oval form**

| Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,04 | 6,5 x 3,5 x 2,5 | **PP60.1** | 250 | 85,90 |
| 0,11 | 10 x 4 x 4,5 | **PP61.1** | 250 | 78,50 |
| 0,12 | 12 x 4 x 2,7 | **PP62.1** | 250 | 94,10 |
| 1,12 | 25 x 7 x 7 | **PP64.1** | 50 | 55,50 |



## Rotilabo®-aluminium dishes with handle

Made of aluminium. Free from oil residues and layers. Compressed walls for extra stability. Handles ideal for labelling or holding. Easy to stack. Variety of applications that require weighing dishes, evaporating dishes or drying dishes, to cover containers or store small items.

| Volume (ml) | ∅ (mm) | Height (mm) | Material thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 8 | 28 | 10 | 0,11 | **PP54.1** | 500 | 50,50 |
| 20 | 43 | 13 | 0,11 | **PP55.1** | 100 | 10,50 |
| 60 | 57 | 16 | 0,09 | **PP56.1** | 100 | 11,30 |
| 80 | 70 | 16 | 0,11 | **PP57.1** | 100 | 13,90 |



## Rotilabo®-disposable weighing trays

Made of aluminium. For solid and liquid substances. Stackable.
∅ 100 mm, height 7 mm. Material thickness 0.1 mm.
Temperature stable up to approx. +400 °C.

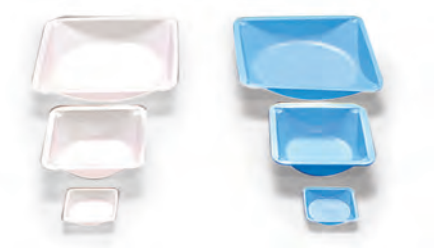
| Art. No. | Pack Qty. | € |
|---|---|---|
| **9262.1** | 80 | 40,80 |



## Rotilabo®-weighing pans

Made of stainless steel 18/10. With rounded edges. Autoclavable.

| Design | L x W x H (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Mat | 260 x 180 x 25 | 266 | **YE43.1** | 1 | 16,05 |
| Glossy | 260 x 200 x 45 | 356 | **YE44.1** | 1 | 19,90 |
| Glossy | 310 x 245 x 50 | 564 | **YE45.1** | 1 | 23,65 |



## Rotilabo®-disposable weighing trays

Made of **PS**, antistatic. For solid and liquid substances. Resistant to diluted acids, alkalis, alcohols. Biologically inert. Temperature stable up to +80 °C.

**Natural coloured, transparent**

| Volume (ml) | Length (mm) | Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 20 | 46 | 46 | 8 | **1878.2** | 500 | 25,75 |
| 100 | 85 | 85 | 24 | **1884.1** | 500 | 34,95 |
| 330 | 140 | 140 | 22 | **0875.2** | 500 | 69,70 |

**Opaque blue, ideal for white substances**

| Volume (ml) | Length (mm) | Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 20 | 46 | 46 | 8 | **2149.2** | 500 | 26,85 |
| 100 | 85 | 85 | 24 | **2150.1** | 500 | 39,70 |
| 330 | 140 | 140 | 22 | **2159.2** | 500 | 74,15 |



## Flat weighing pans

Made of **PS**, antistatic. Flexible design with wide base for even pouring and dispensing of solids and liquids. Resistant to diluted acids, bases and alcohols. Bioinert. Capacity 50 ml, dimensions: L 89 x W 89 x H 6 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ATC3.1** | 500 | 33,35 |



## Disposable weighing pans, diamond-shaped

Made of **PS**, antistatic. Flexible pans with smooth surface for thorough emptying with minimal sample loss. FDA-compliant.
Temperature stable from -10 to +70 °C.

**Natural colours, transparent**

| Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 | 55 x 35 x 6 | **TP58.1** | 500 | 19,90 |
| 25 | 71 x 46 x 14 | **TP59.1** | 500 | 32,15 |
| 100 | 119 x 90 x 19 | **TP60.1** | 500 | 61,10 |

**Black, optimal contrast, specially designed for white weighing material**

| Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 | 55 x 35 x 6 | **TP61.1** | 500 | 22,05 |
| 25 | 71 x 46 x 14 | **TP62.1** | 500 | 32,80 |
| 100 | 119 x 90 x 19 | **TP63.1** | 500 | 65,60 |



## Disposable weighing boats

Made of natural-coloured **PS**, antistatic. For weighing solid and liquid substances. With spout for easy pouring and flat bottom.
Temperature stable up to +90 °C.

| Volume (ml) | Length (mm) | Width (mm) | Depth (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 20 | 57 | 41 | 8 | **A229.1** | 250 | 26,80 |
| 140 | 133 | 89 | 25 | **A230.1** | 250 | 42,95 |
| 270 | 190 | 120 | 25 | **ATC2.1** | 250 | 61,85 |



## Rotilabo®-hexagonal weighing pans

Made of **PS**, antistatic. For solid and liquid substances. With flat bottom. Stackable. Pans can be squeezed together in several places to form a spout. Temperature max. +80 °C.

| Volume (ml) | Inner-∅ top (mm) | Inner-∅ bottom (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 9 | 38 | 25 | 9 | **KC03.1** | 500 | 23,55 |
| 50 | 64 | 51 | 19 | **KC04.1** | 500 | 38,50 |
| 200 | 102 | 76 | 22 | **KC05.1** | 500 | 64,00 |
| 350 | 127 | 89 | 31 | **KC06.1** | 500 | 75,05 |

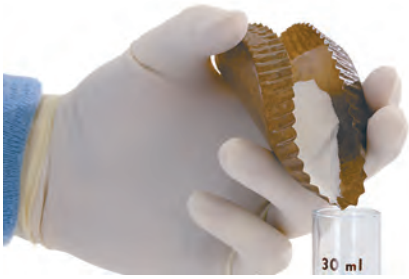

- ▶ Balances from page 858
- ▶ Volumetric flasks see page 25




## Weighing boats

Made of nitrogen-free special parchment, 0.07 mm thick, grammage 83 g/m². For weighing viscous and syrupy substances.
For determining nitrogen concentration using the Kieldahl method.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 58 x 10 x 10 | **EL10.1** | 100 | 80,50 |
| 70 x 23 x 15 | **EL11.1** | 100 | 113,00 |




## Rotilabo®-disposable weighing pans

Made of pergament paper. For solid substances. No static charging. Brown pans for better recognition of light-colored weighing materials.
Dimensions: ∅ 88 mm x H 11 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HX57.1** | 150 | 33,35 |

# Brushes



## Rotilabo®-cards

Blank for laboratory purposes, e.g. can be used as weighing blades or scratchers.

| Art. No. | Pack Qty. (kg) | € |
|---|---|---|
| **1656.1** | 1 | 16,10 |




## Weighing papers

By Macherey-Nagel. Made of glassine. With smooth surface. Impervious, transparent. Booklet with 100 sheets. Dimensions: L 115 x W 90 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1069.1** | 10 | 99,80 |
| **1069.2** | 1 | 11,30 |



## Rotilabo®-weighing papers

Made of nitrogen-free paper. With smooth surface for optimal sample recovery.

| L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 76 x 76 | **TP64.1** | 500 | 21,30 |
| 102 x 102 | **TP65.1** | 500 | 34,95 |
| 152 x 152 | **TP66.1** | 500 | 50,45 |




## Brush heads

By Hammacher. Made of chrome-nickel steel (18/8), with red sable hair. Suitable for ergo brush handles.
**Delivery without** ergo brush handle.

| Type | Design | Use | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | Size 0 | For brush handle EXC8.1 | **EXE1.1** | 1 | 6,90 |
| ② | Size 1 | For brush handle EXC8.1 | **EXE2.1** | 1 | 7,20 |
| ③ | Size 2 | For brush handle EXC8.1 | **EXE3.1** | 1 | 8,00 |
| ④ | Size 4 | For brush handle EXC8.1 | **EXE4.1** | 1 | 10,35 |
| ⑤ | Size 6 | For brush handle EXC8.1 | **EXE5.1** | 1 | 17,20 |
| ⑥ | Size 8 | For brush handle EXC9.1 | **EXE6.1** | 1 | 24,00 |




## Brush handles ergo brush

By Hammacher. Made of plastic, angled. Equips with various sizes of brush heads. Tilted design for free view to workpiece. Length 140 mm.

| Type | Design | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | (for brush head sizes 0-4) | petrol | **EXC8.1** | 1 | 23,50 |
| ② | (for brush head sizes 5-8) | violet | **EXC9.1** | 1 | 23,55 |



## Weighing brushes

Brush head made of goat hair, with white-painted birchwood handle. Ideal for dusting weighing boats, scales and weights.
Total length approx. 170 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5481.1** | 3 | 8,55 |



## Set of brushes

Brushes made of bovine hair with nickel ferrule. With long, unlaquered handles. Ideal for cleaning sensitive equipment.
Set consists of 6 brushes, sizes 2 to 12.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **L242.1** | 1 | 18,25 |



## Rotilabo®-round sieves

Made of 18/10 stainless steel (1.4301). With handle and 2 eyelets for resting sieve on vessels. Autoclavable. Mesh size approx. 1.5 mm (ca. 6 holes/cm).

| Volume (l) | ∅ (mm) | Grifflänge (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,15 | 100 | 135 | **8096.1** | 1 | 10,55 |
| 0,25 | 120 | 145 | **8097.1** | 1 | 12,15 |
| 0,4 | 140 | 150 | **8098.1** | 1 | 14,55 |
| 0,7 | 160 | 170 | **8099.1** | 1 | 16,35 |
| 1,0 | 180 | 160 | **8100.1** | 1 | 17,10 |
| 1,5 | 200 | 160 | **8101.1** | 1 | 19,75 |
| 2,0 | 220 | 170 | **8102.1** | 1 | 23,60 |



## Rotilabo®-round sieves

Made of 18/8 stainless steel (1.4112), polished.
With handle, broad rim and a big eyelet. Autoclavable.

| Outside ∅ (mm) | Mesh size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 75 | 0,5 | **A624.1** | 1 | 13,55 |
| 120 | 0,8 | **A625.1** | 1 | 17,75 |
| 160 | 1,2 | **1359.1** | 1 | 25,40 |
| 190 | 1,2 | **A626.1** | 1 | 28,50 |
| 230 | 1,2 | **A627.1** | 1 | 32,20 |



## Sodium spoon

Bowl made of copper mesh, ∅ 25 mm. Total length 180 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P180.1** | 1 | 9,65 |




## Rotilabo®-flat sieves

Sieve frame and braid made of stainless steel 18/10. Suitable for separating powders, granulates and other bulk goods. Easy to clean, dishwasher safe.

① **Very fine** (8 holes/cm, mesh aperture approx. 1 mm).
Without ground clearance.

| Inside ∅ (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 200 | 60 | **YH29.1** | 1 | 11,05 |
| 240 | 63 | **YH30.1** | 1 | 14,30 |
| 275 | 67 | **YH31.1** | 1 | 21,30 |
| 390 | 77 | **YH32.1** | 1 | 42,95 |

② **Medium fine** (hole size: approx. 1 x 2.5 mm). Filling height 50 mm.

| Inside ∅ (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 100 | **YH36.1** | 1 | 70,85 |
| 350 | 100 | **YH37.1** | 1 | 85,90 |

③ **Coarse** (hole size: approx. 3 x 3 mm). Filling height 50 mm.

| Inside ∅ (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 250 | 100 | **YH38.1** | 1 | 53,65 |
| 300 | 100 | **YH39.1** | 1 | 70,85 |



## Rotilabo®-plastic sieve

Sieve frame made of **PP**, woven nylon braid.
Suitable for separating powders, bulk goods and granulates.
Extra fine, 7 holes/cm (hole size: 1 x 1 mm).
Dimensions: inner ∅ 220 mm, outer ∅ 240 mm, overall height 82 mm, inner height 60 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YH42.1** | 1 | 23,90 |

▶ Analytical sieves, see page 522

# Slotted ladles and sieve spoons



## Rotilabo®-drain scoop

Made of stainless steel, perforated, with hollow handle.
For taking samples from water baths, transporting agarose gels, etc.
Scoop dimensions: L 100 x W 80 mm. Overall length: 255 mm.
Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE60.1** | 1 | 10,45 |




## ① Rotilabo®-slotted ladles, flat

Made of stainless steel 18/10, seamless. Flat shape. Heavy duty.
Hole ∅ 4 mm. Autoclavable.

| ∅ (mm) | Handle length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 80 | 280 | **YE97.1** | 1 | 7,50 |
| 100 | 320 | **YE98.1** | 1 | 9,15 |
| 120 | 360 | **YE99.1** | 1 | 11,30 |
| 140 | 400 | **YH00.1** | 1 | 13,45 |
| 160 | 430 | **YH01.1** | 1 | 16,45 |
| 200 | 470 | **YH03.1** | 1 | 26,15 |

## ② Rotilabo®-slotted ladles, deep

Made of stainless steel 18/10, seamless. With hole ∅ 5-6 mm. Heavy duty.
Autoclavable.

| Volume (ml) | ∅ (mm) | Handle length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 80 | 70 | 290 | **YE90.1** | 1 | 20,35 |
| 125 | 80 | 320 | **YE91.1** | 1 | 21,45 |
| 200 | 90 | 330 | **YE92.1** | 1 | 22,60 |
| 250 | 100 | 370 | **YE93.1** | 1 | 23,45 |
| 500 | 120 | 400 | **YE94.1** | 1 | 26,80 |
| 750 | 140 | 410 | **YE95.1** | 1 | 31,75 |



## Rotilabo®-embryo spoon Banivo

Made of stainless steel. To hold delicate structures. Perforated spoon allows fluid to drain. Dimensions: spoon ∅ 15 mm, depth 3 mm.
Overall length 145 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TL85.1** | 1 | 64,40 |



## Rotilabo®-ladles

Made of stainless steel 18/10 (1.4301). High-gloss, seamless, made in one piece (except L006.1), heavy-duty version.

| Volume (ml) | ∅ (mm) | Handle length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | 45 | 220 | **L001.1** | 1 | 11,30 |
| 30 | 50 | 220 | **L002.1** | 1 | 12,50 |
| 60 | 60 | 230 | **L003.1** | 1 | 13,15 |
| 80 | 70 | 290 | **L004.1** | 1 | 14,45 |
| 125 | 80 | 320 | **L005.1** | 1 | 17,20 |
| 200 | 90 | 330 | **L006.1** | 1 | 18,85 |
| 250 | 100 | 360 | **L007.1** | 1 | 24,20 |
| 500 | 120 | 400 | **L008.1** | 1 | 30,10 |
| 750 | 140 | 410 | **L009.1** | 1 | 39,80 |
| 1000 | 160 | 450 | **L010.1** | 1 | 42,95 |



## Filling scoops with knob handle

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

| Dimensions of scoop (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 35/70 | 190 | **YC80.1** | 1 | 20,55 |
| 30/63 | 205 | **YC81.1** | 1 | 21,65 |

# Hand scoops



## Pharmaceutical scoops

Made of stainless steel V4A (1.4401), high gloss finish. GMP-compliant. Smooth scoop surface. Wall thickness 1.2 mm. Autoclavable.

| Volume (ml) | Dimensions of scoop L x W (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 100 x 50 | 180 | **CHX0.1** | 1 | 131,15 |
| 450 | 150 x 75 | 260 | **CHX1.1** | 1 | 140,85 |
| 1000 | 235 x 110 | 365 | **CHX2.1** | 1 | 159,10 |
| 2500 | 250 x 135 | 400 | **CHX3.1** | 1 | 183,85 |



## Rotilabo®-multipurpose scoops

Made of stainless steel 18/10 (1.4301). Jointless connection of scoop with hollow handle. With loop to hang up. Extra strong. Autoclavable.

| Volume (ml) | Dimensions of scoop (mm) | Total length (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 120 x 59 | 215 | 145 | **KP45.1** | 1 | 13,95 |
| 200 | 140 x 75 | 230 | 190 | **KP46.1** | 1 | 17,00 |
| 250 | 155 x 85 | 245 | 223 | **KP47.1** | 1 | 19,15 |
| 350 | 180 x 100 | 290 | 280 | **KP48.1** | 1 | 22,05 |
| 500 | 220 x 130 | 350 | 415 | **KP49.1** | 1 | 28,35 |



## Rotilabo®-aluminium scoops

Made of cast aluminium. Suitable for hand cleaning using mild detergents (no soda). A dark-coloured protective film may form (does not have to be removed). Autoclavable.

| Volume (ml) | Dimensions of scoop (mm) | Total length (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 20 | 85 x 50 | 145 | 38 | **YE53.1** | 1 | 2,70 |
| 80 | 105 x 55 | 185 | 45 | **YE54.1** | 1 | 3,20 |
| 110 | 120 x 70 | 210 | 78 | **YE55.1** | 1 | 4,10 |
| 250 | 150 x 90 | 250 | 118 | **YE56.1** | 1 | 5,30 |
| 400 | 170 x 100 | 265 | 148 | **YE57.1** | 1 | 6,35 |
| 400 | 180 x 105 | 310 | 206 | **YE58.1** | 1 | 12,40 |
| 750 | 220 x 135 | 350 | 303 | **YE59.1** | 1 | 13,95 |



## Rotilabo® hand scoops

Made of Remanit 4301. Length excluding handle. Autoclavable.

| Volume (ml) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 120 | 100 | 50 | **0703.1** | 1 | 13,90 |
| 450 | 150 | 75 | **0704.1** | 1 | 18,05 |
| 1000 | 200 | 100 | **PX24.1** | 1 | 18,95 |
| 1500 | 240 | 120 | **0705.1** | 1 | 22,60 |
| 2500 | 250 | 150 | **PX25.1** | 1 | 27,45 |

## Rotilabo® hand scoop range

Three hand scoops, with capacities of 120, 450 and 1500 ml.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **0706.1** | 1 | 47,20 |



## Rotilabo®-plastic scoops

Made of natural coloured **HDPE** with smooth surface.

| Volume (ml) | Dimensions L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 135 x 42 | **0574.1** | 1 | 1,85 |
| 65 | 185 x 60 | **0575.1** | 1 | 1,85 |
| 125 | 187 x 65 | **0576.1** | 1 | 2,90 |
| 275 | 250 x 90 | **0577.1** | 1 | 4,05 |
| 512 | 310 x 110 | **0578.1** | 1 | 5,95 |
| 857 | 350 x 145 | **0579.1** | 1 | 7,20 |
| 1520 | 400 x 170 | **0580.1** | 1 | 10,55 |

## Rotilabo®-plastic scoop-set

Seven scoops, capacity from 25 to 1520 ml.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **0997.1** | 1 | 23,15 |



## Plastic scoops

Made of **PP**. White or assorted colours (white, yellow, green, light blue, blue, ultramarine, red, grey, black). Also suitable as weighing scoop. With precision moulded filling edge and comfortable, sturdy handle. Easily legible volume quantities on the upper side of the handle. Suitable for foodstuffs under regulation (EC) No. 10/2011. Volume 100 ml, dimensions: L 200 x W 70 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **APH4.1** | 12 | 15,70 |
| assorted colours | **APH5.1** | 9 | 13,20 |

# Spoons



## Disposable sample scoops

Made of **PS**, **sterile** (gamma-sterilised, individually packed).
With or without lid.

- Long handle allows safe distance between sample and hand
- Flat base for upright storage
- Usable as a weighing bottle

For sampling, analysis or conveyance of substances.

**With lid, white**
Lid with tab. Spoon and sample container in one.

| Volume (ml) | Total length (mm) | Scoop L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 205 | 78 x 41 x 29 | **YC11.1** | 10 | 60,75 |

**Without lid, white**

| Volume (ml) | Total length (mm) | Scoop L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 205 | 78 x 41 x 29 | **YC15.1** | 100 | 148,35 |
| 125 | 221 | 94 x 51 x 33 | **YC14.1** | 100 | 188,15 |

**Without lid, red**
Suitable for light-coloured substances, aids visibility.

| Volume (ml) | Total length (mm) | Scoop L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 205 | 78 x 41 x 29 | **YC16.1** | 100 | 191,35 |



## SteriPlast®Bio sample scoops

By Bürkle. Made of green **PE**, **sterile**. For sampling powders, granulates and pastes. Sample scoop and packaging are made from renewable raw materials and fully recyclable. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 141 | **CPP9.1** | 10 | 20,30 |
| 50 | 160 | **CPT0.1** | 10 | 20,40 |
| 100 | 205 | **CPT1.1** | 10 | 21,00 |
| 150 | 216 | **CPT2.1** | 10 | 22,05 |



## SteriPlast®Bio sample spoons

By Bürkle. Made of green **PE**, **sterile**. For sampling powders, granulates, pastes and liquids. Sample spoon and packaging are made from renewable raw materials and are fully recyclable. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2,5 | 127 | **CPT3.1** | 100 | 45,15 |
| 10 | 170 | **CPT4.1** | 100 | 47,30 |



## Sample scoops SteriPlast®

By Bürkle. Made of **PS**, **sterile**, with transparent lid. For sterile and contamination-free sampling, e.g. of powders, granulates and pastes. Sample scoop can be sealed with lid after taking sample. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 142 | **CPP5.1** | 10 | 27,45 |
| 50 | 161 | **CPP6.1** | 10 | 29,35 |
| 100 | 206 | **CPP7.1** | 10 | 30,00 |
| 150 | 218 | **CPP8.1** | 10 | 30,45 |



## Sample spoons

Made of **PS**. **Sterile** (individually wrapped).
For powder, granulates, pastes, liquids.

| Volume (ml) | Length (mm) | Spoon W x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 125 | 25 x 35 | **X031.2** | 1000 (10 x 100) | 269,85 |
| 8 | 150 | 35 x 50 | **X032.2** | 1000 (10 x 100) | 269,85 |



## Sample spoons

Made of **PS**, white. **Sterile.** Volume approx. 2.5 ml.
Dimensions: L 155 x W 32.5 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EPY9.1** | 100 (5 x 20) | 25,30 |



NEU NOUVEAU NEW

## Measuring spoons

By Bürkle. Made of **PS**, blue. Set comprising 8 measuring spoons with volumes 0.5/1/2.5/5/10/15/25/50 ml. Volume of measuring spoon stamped on spoon handle. Round shape, easy emptying.

| Volume (ml) | Art. No. | Pack Qty. (set) | € |
|---|---|---|---|
| 0,5-50 | **HEP3.1** | 1 | 10,70 |



NEU NOUVEAU NEW

## Single-use spoon spatulas

By Bürkle. Made of **PS**. **Sterile** (gamma-sterilised) or non-sterile. Double spatula with spoon 0.5 ml and spatula blade 17 mm. Ideal for single-use applications, chemical-stable, corrosion-proof. Numerous applications for measuring or transferring small amounts or mixing and stirring. Cleanroom-manufactured (class 7). Suitable for foodstuffs.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Non-sterile | **HEP4.1** | 100 | 21,45 |
| **Sterile,** individually packed | **HEP5.1** | 100 | 53,75 |




## Rotilabo®-measuring spoons set

Made of 18/10 stainless steel. Set of 4 spoons.

**Technical specifications:**

| Model | Volume (ml) | Length (mm) | ∅ (mm) | Depth (mm) |
|---|---|---|---|---|
| ① | 1.25 | 120 | 24 | 5 |
| ② | 2.5 | 125 | 28 | 8 |
| ③ | 5 | 130 | 32 | 10 |
| ④ | 15 | 145 | 48 | 10 |

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **HC47.1** | 1 | 15,05 |



## Sample spoons

Made of **PS**, white. For powders, granulates, pastes and liquids. Suitable for foodstuffs.

| Volume (ml) | Length (mm) | Spoon W x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 125 | 25 x 35 | **APC9.1** | 100 | 12,85 |
| 9 | 175 | 40 x 60 | **APE0.1** | 100 | 21,10 |



## Mini sample spoons

Made of **PS**, assorted colours. For powders, granulates, pastes and liquids. Suitable for foodstuffs.
Volume 0.5 ml, spoon W 20 x L 25 mm, overall length 93 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **APC8.1** | 1000 | 14,15 |



## Set of glass spoons

Made of borosilicate glass. In 4 sizes, length from 210 to 230 mm.

| Packaging | Art. No. | Pack Qty. (set) | € |
|---|---|---|---|
| Pack of 4 x 2 = 8 | **0185.1** | 1 | 278,45 |

# Spoons



## Rotilabo®-spoons

Made of glazed porcelain. Length 237 mm.
Temperature stable up to 1000 °C. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XX62.1** | 5 | 86,30 |



## Round spoon

Made of stainless steel, with ergonomic handle made of **ABS**.
Dimensions: L 148 x W 43 x H 21 mm, spoon ∅ 40 mm.
Temperature stable up to max. +99 °C. Dishwasher safe.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC43.1** | 1 | 9,15 |



## Spoon spatulas

By Haldenwanger. Made of porcelain. Highly resistant against chemical and physical influences. Temperature stable up to +200 °C. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 120 | **C749.1** | 1 | 14,60 |
| 160 | **C751.1** | 1 | 15,35 |
| 200 | **C753.1** | 1 | 22,70 |
| 300 | **C755.1** | 1 | 42,50 |



## Spoons for chemicals

Made of 18/10 stainless steel. One-sided, with rounded handle.
Autoclavable.

| Total length (mm) | Spoon ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 120 | 25 | **A635.1** | 1 | 4,85 |
| 150 | 25 | **A636.1** | 1 | 4,85 |
| 180 | 25 | **A637.1** | 1 | 5,30 |
| 210 | 30 | **A638.1** | 1 | 6,25 |
| 250 | 35 | **A639.1** | 1 | 7,00 |
| 300 | 35 | **A640.1** | 1 | 7,45 |



## Laboratory spoons

By Hammacher. Made of Wironit 4301 stainless steel. Autoclavable.

| Total length (mm) | Spoon W x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 195 | 44/60 | **YC90.1** | 1 | 15,45 |
| 205 | 55/70 | **YC91.1** | 1 | 26,45 |



## Chemicals spoon, angled

By Hammacher. Made of Wironit 4301 stainless steel.
Length 200 mm, spoon ∅ 27 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC82.1** | 1 | 21,65 |



## Rotilabo®-melting spoon

Stainless steel scoop, with wooden handle. Scoop-∅ 75 mm, with spout.
Length 275 mm. Weight 73 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YT65.1** | 1 | 6,35 |



## Rotilabo®-phosphor spoon

Stainless steel scoop. Scoop-∅ 16 mm.
Length 450 mm. Weight 14 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YT64.1** | 1 | 3,35 |



## Pharmacist's spoon

Made of Remanit 4301 high-grade steel. Total length 150 mm.
Spoon width 15 mm, spoon length 30 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K745.1** | 1 | 3,15 |



## Open spoon

Made of Remanit 4301 high-grade steel. Length 200 mm.
Spoon width 20 mm, spoon length 30 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K734.1** | 1 | 7,05 |



## Rotilabo®-Pharmacist's spoons

Made of stainless steel 18/10. Wide form. Autoclavable.

| Length (mm) | Spoon W x L (mm) | W x L of spatula (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 150 | 28 x 43 | 17 x 60 | **HY05.1** | 1 | 4,85 |
| 200 | 36 x 60 | 22 x 80 | **HY06.1** | 1 | 5,35 |
| 240 | 43 x 75 | 25 x 90 | **HY07.1** | 1 | 6,40 |
| 280 | 50 x 85 | 31 x 105 | **HY08.1** | 1 | 8,40 |
| 320 | 45 x 110 | 32 x 115 | **HY09.1** | 1 | 9,80 |



## Double spoons, large

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

| Length (mm) | W x L spoon 1 (mm) | W x L spoon 2 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 160 | 22/35 | 30/45 | **YC88.1** | 1 | 7,35 |
| 230 | 30/60 | 38/75 | **YC89.1** | 1 | 8,80 |



## Spoons for chemicals

Made of high-grade 18/9 steel. Double-sided, with rounded handle.
Autoclavable.

| Length (mm) | W x L spoon 1 (mm) | W x L spoon 2 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 120 | 17/17 | 25/30 | **K746.1** | 1 | 6,20 |
| 150 | 17/17 | 25/30 | **K747.1** | 1 | 6,40 |
| 180 | 17/17 | 25/30 | **K748.1** | 1 | 7,00 |
| 210 | 20/25 | 30/35 | **K749.1** | 1 | 7,35 |
| 250 | 20/25 | 35/45 | **K750.1** | 1 | 8,10 |
| 300 | 20/25 | 35/45 | **K751.1** | 1 | 8,50 |



## Double spoons

By Hammacher. Made of Wironit 4301 stainless steel. Autoclavable.

| Length (mm) | W x L spoon 1 (mm) | W x L spoon 2 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 150 | 11/22 | 20/25 | **YC83.1** | 1 | 26,35 |
| 180 | 20/27 | 24/32 | **YC84.1** | 1 | 27,60 |
| 210 | 20/28 | 27/35 | **YC85.1** | 1 | 33,10 |
| 250 | 24/32 | 30/40 | **YC86.1** | 1 | 37,50 |
| 300 | 29/40 | 35/45 | **YC87.1** | 1 | 40,80 |



## Double spoon

Made of Remanit 4301 high-grade steel. Autoclavable.

| Length (mm) | W x L spoon 1 (mm) | W x L spoon 2 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 190 | 12/30 | 20/35 | **K733.1** | 1 | 7,20 |

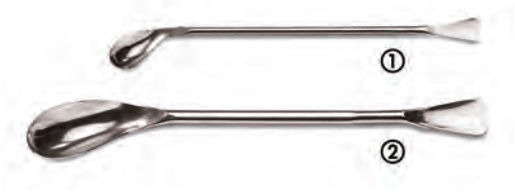


## Double spoons

By Hammacher. Made of Remanit 4024 stainless steel.
Spoon dimensions: W 10 x L 20 mm. Stem ∅ 3.5 mm. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 180 | **YK72.1** | 1 | 5,85 |
| 210 | **YK73.1** | 1 | 6,10 |

# Spoon spatulas




## Rotilabo®-multi-purpose spoons

Made of stainless steel 18/10. With solid round handle.

**① Handle-Ø 5 mm. Dimensions of spoon: 15 x 35 mm**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 150 | **HX95.1** | 1 | 6,20 |
| 180 | **HX96.1** | 1 | 6,40 |
| 210 | **HX97.1** | 1 | 6,70 |
| 250 | **HX98.1** | 1 | 7,40 |
| 300 | **HX99.1** | 1 | 7,50 |

**② Handle-Ø 8 mm. Dimensions of spoon: 28 x 65 mm**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 210 | **HY00.1** | 1 | 8,90 |
| 250 | **HY01.1** | 1 | 9,25 |
| 300 | **HY02.1** | 1 | 9,80 |
| 400 | **HY03.1** | 1 | 12,65 |
| 500 | **HY04.1** | 1 | 14,00 |




## Multi-purpose spoon set for left-handers

Made of stainless steel 1.4301. With solid round handle. Autoclavable.

**Contents:**

| Type | Length (mm) | Spoon dimensions (mm) | Stem Ø (mm) |
|---|---|---|---|
| ① | 150 | 15 x 35 | 5 |
| | 180 | 15 x 35 | 5 |
| | 210 | 15 x 35 | 5 |
| ② | 210 | 28 x 65 | 8 |
| | 300 | 28 x 65 | 8 |

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **HEY3.1** | 1 | 31,15 |




## Spoon spatulas

Made of 18/10 rust-proof stainless steel, Remanit 4301. Autoclavable.

**① With solid round handle**

| Total length (mm) | Spoon Ø (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 150 | 25 | 15 | 35 | **A641.1** | 1 | 6,40 |
| 180 | 25 | 15 | 35 | **A642.1** | 1 | 6,80 |
| 210 | 25 | 15 | 35 | **A643.1** | 1 | 7,40 |
| 250 | 25 | 15 | 35 | **A644.1** | 1 | 7,50 |

**② With flat handle**

| Total length (mm) | Spoon Ø (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 120 | 20 | 18 | 20 | **YP87.1** | 1 | 3,40 |
| 150 | 25 | 18 | 25 | **YP88.1** | 1 | 3,80 |
| 180 | 25 | 20 | 25 | **YP89.1** | 1 | 4,10 |
| 210 | 30 | 20 | 30 | **YP90.1** | 1 | 4,85 |
| 250 | 35 | 28 | 40 | **YP91.1** | 1 | 8,10 |
| 300 | 35 | 28 | 40 | **YP92.1** | 1 | 9,15 |



## Spoon spatulas

Made of stainless steel 18/10.

**① Autoclavable**

| Length (mm) | Spoon W x L (mm) | Plate W x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 120 | 31 x 23 | 30 x 20 | **PH56.1** | 1 | 3,50 |
| 150 | 38 x 27 | 32 x 22 | **PH57.1** | 1 | 4,30 |
| 180 | 40 x 28 | 32 x 22 | **PH58.1** | 1 | 4,90 |
| 210 | 40 x 28 | 32 x 22 | **PH59.1** | 1 | 5,60 |
| 250 | 50 x 35 | 45 x 32 | **PH60.1** | 1 | 9,15 |
| 300 | 55 x 41 | 50 x 37 | **PH61.1** | 1 | 11,10 |

**② With PTFE coating**

| Length (mm) | Spoon W x L (mm) | Plate W x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 180 | 40 x 28 | 32 x 22 | **PH62.1** | 1 | 29,75 |



## Micro-spoon spatula

Made of stainless steel 18/10, with hexagonal handle. Autoclavable.

| Length (mm) | Spoon Ø (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 140 | 5 | **AT18.1** | 1 | 10,70 |



## Micro-spoon powder spatula

Made of stainless steel 1.4301. Overall length 150 mm, spoon width 5 mm, blade L 30 x W 5 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHN5.1** | 1 | 5,50 |




## Spoon spatulas

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

① **With micro-spoon**
Dimensions of spoon: W 10 x L 20 mm.

| Length (mm) | Blade width (mm) | Blade length (mm) | Stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 180 | 10 | 35 | 3,5 | **YK74.1** | 1 | 5,55 |
| 210 | 10 | 35 | 3,5 | **YK75.1** | 1 | 6,35 |

② **With flat spoon**
Dimensions of spoon: W 17 x L 38 mm.

| Length (mm) | Blade width (mm) | Blade length (mm) | Stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 150 | 10 | 50 | 3,5 | **YK76.1** | 1 | 6,45 |
| 180 | 10 | 55 | 3,5 | **YK77.1** | 1 | 6,60 |
| 210 | 10 | 60 | 3,5 | **YK78.1** | 1 | 6,80 |
| 230 | 10 | 60 | 4,0 | **YK79.1** | 1 | 7,00 |




## Micro-spoon spatulas

Made of 18/10 stainless steel, Remanit 4301.
Blade length 40 mm, blade width 5 mm. Autoclavable.

① **Spoon shape, spoon width 5 mm**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **PX33.1** | 1 | 4,25 |
| 150 | **6186.1** | 1 | 5,00 |
| 185 | **PX34.1** | 1 | 4,60 |
| 300 | **PX35.1** | 1 | 5,00 |

① **Spoon shape, spoon width 7 mm**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 150 | **YP97.1** | 1 | 4,05 |
| 185 | **YP98.1** | 1 | 4,25 |
| 210 | **YP99.1** | 1 | 4,70 |

② **Scoop shape**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 150 | **3191.1** | 1 | 5,05 |
| 180 | **PX36.1** | 1 | 6,40 |




## Micro spatulas, US-type

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

| Length (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 140 | 6 | 45 | **YL35.1** | 1 | 4,45 |
| 160 | 6 | 45 | **YL36.1** | 1 | 4,90 |
| 210 | 6 | 45 | **YL37.1** | 1 | 5,35 |




## Micro-spoon powder spatula sets

Made of 1.4301 stainless steel. Autoclavable.

**Contents:**

| Type | Length (mm) | Spoon width (mm) | Blade width (mm) |
|---|---|---|---|
| ① | 150 | 5.5 | 5 |
| | 180 | 5.5 | 5 |
| | 210 | 5.5 | 5 |
| ② | 150 | 8 | 7 |
| | 180 | 8 | 7 |
| | 210 | 8 | 7 |

| Type | Art. No. | Pack Qty. (set) | € |
|---|---|---|---|
| ① | **HEY4.1** | 1 | 13,95 |
| ② | **HEY5.1** | 1 | 13,95 |




## Micro double spatulas

By Hammacher. Flexible, autoclavable.

① **Angular type, made of Remanit 4024 stainless steel, flexible, stem ∅ 2.5 mm.**

| Length (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 130 | 6 | 40 | **YL38.1** | 1 | 4,15 |
| 150 | 6 | 40 | **YL39.1** | 1 | 4,30 |
| 185 | 6 | 50 | **YL40.1** | 1 | 4,60 |
| 210 | 6 | 55 | **YL41.1** | 1 | 4,90 |

② **Trapezoidal, made of Wironit 4301 stainless steel, stem ∅ 2.0 mm.**

| Length (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 130 | 5 | 28 | **YL42.1** | 1 | 8,30 |
| 185 | 5 | 30 | **YL43.1** | 1 | 8,75 |
| 210 | 5 | 30 | **YL44.1** | 1 | 9,90 |




## Double spatulas

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

① **Narrow type**

| Length (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 300 | 15 | 70 | **YK66.1** | 1 | 7,45 |
| 350 | 15 | 70 | **YK67.1** | 1 | 8,75 |
| 400 | 20 | 70 | **YK68.1** | 1 | 9,45 |
| 500 | 20 | 70 | **YK69.1** | 1 | 11,05 |

② **Wide type**

| Length (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 150 | 15 | 32 | **YK70.1** | 1 | 4,45 |
| 210 | 18 | 36 | **YK71.1** | 1 | 5,50 |

# Spatulas



## Micro-double spatulas

Made of stainless steel 18/10, electropolished. Autoclavable.

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 2 | **3396.1** | 1 | 3,20 |
| 130 | 2 | **3415.1** | 1 | 3,35 |
| 150 | 2 | **3433.1** | 1 | 3,70 |
| 100 | 3 | **3439.1** | 1 | 3,90 |
| 130 | 3 | **2865.1** | 1 | 4,25 |
| 150 | 3 | **2866.1** | 1 | 4,25 |
| 100 | 4 | **2867.1** | 1 | 4,25 |
| 130 | 4 | **2868.1** | 1 | 4,25 |
| 150 | 4 | **2869.1** | 1 | 4,25 |
| 185 | 4 | **2889.1** | 1 | 4,25 |
| 100 | 5 | **2901.1** | 1 | 4,25 |
| 130 | 5 | **2905.1** | 1 | 4,25 |
| 150 | 5 | **2906.1** | 1 | 4,25 |
| 185 | 5 | **2910.1** | 1 | 4,25 |
| 210 | 5 | **2912.1** | 1 | 4,25 |



## Double spatulas

By Hammacher. Made of Wironit 4301 stainless steel. Autoclavable.

① **One spatula blade is rounded**

| Length (mm) | Blade width (mm) | Blade length (mm) | Stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 120 | 4 | 25 | 2,0 | **YK51.1** | 1 | 7,40 |
| 120 | 6 | 28 | 2,5 | **YK52.1** | 1 | 8,45 |
| 150 | 9 | 36 | 3,5 | **YK53.1** | 1 | 8,75 |
| 150 | 11 | 38 | 4,0 | **YK54.1** | 1 | 9,00 |
| 180 | 9 | 38 | 3,5 | **YK55.1** | 1 | 9,85 |
| 180 | 11 | 40 | 4,0 | **YK56.1** | 1 | 11,05 |
| 210 | 9 | 40 | 3,5 | **YK57.1** | 1 | 11,05 |
| 210 | 11 | 40 | 4,0 | **YK58.1** | 1 | 11,75 |
| 240 | 12 | 60 | 4,0 | **YK59.1** | 1 | 15,35 |
| 300 | 13 | 60 | 5,0 | **YK60.1** | 1 | 20,65 |

② **Both spatula blades are rounded**

| Length (mm) | Blade width (mm) | Blade length (mm) | Stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 150 | 7 | 28 | 2,5 | **YK61.1** | 1 | 9,90 |
| 180 | 7 | 28 | 2,5 | **YK62.1** | 1 | 10,35 |

③ **One spatula blade is trapezoidal**

| Length (mm) | Blade width (mm) | Blade length (mm) | Stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 150 | 9 | 33 | 3,5 | **YK63.1** | 1 | 12,60 |
| 180 | 10 | 38 | 3,5 | **YK64.1** | 1 | 13,80 |
| 210 | 12 | 40 | 4,0 | **YK65.1** | 1 | 14,30 |



## Double spatulas

Made of stainless steel 18/10 or pure nickel 99.5 %.
Both versions electropolished. Autoclavable.

① **Remanit 4301 (18/10) high-grade steel, flexible**

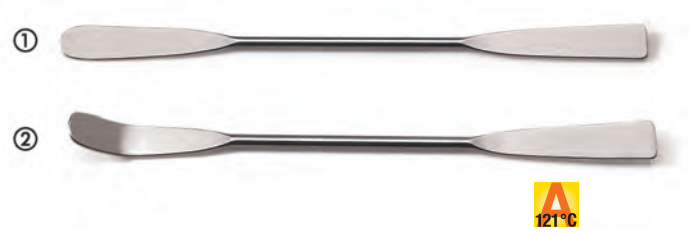
| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 130 | 8 | **3293.1** | 1 | 4,65 |
| 150 | 9 | **3294.1** | 1 | 4,85 |
| 185 | 9 | **3298.1** | 1 | 5,00 |
| 210 | 11 | **3311.1** | 1 | 5,35 |
| 250 | 11 | **3318.1** | 1 | 5,40 |

① **Remanit 4301 (18/10) high-grade steel, fixed**

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 16 | **3321.1** | 1 | 7,00 |
| 350 | 16 | **3335.1** | 1 | 7,40 |
| 500 | 20 | **3351.1** | 1 | 10,20 |

② **Pure nickel, fixed**

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 130 | 9 | **3361.1** | 1 | 10,70 |
| 210 | 11 | **3371.1** | 1 | 11,30 |
| 250 | 11 | **3376.1** | 1 | 12,75 |



## Double spatulas, Chattaway type

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

① **Straight**

| Length (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 7 | 30 | **YL21.1** | 1 | 3,15 |
| 125 | 7 | 40 | **YL22.1** | 1 | 3,55 |
| 150 | 7 | 40 | **YL23.1** | 1 | 3,80 |
| 180 | 8 | 50 | **YL24.1** | 1 | 4,05 |
| 200 | 9 | 60 | **YL25.1** | 1 | 4,10 |
| 235 | 10 | 70 | **YL26.1** | 1 | 4,25 |
| 265 | 11 | 70 | **YL27.1** | 1 | 4,90 |

② **Curved**

| Length (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 7 | 30 | **YL28.1** | 1 | 3,35 |
| 125 | 7 | 40 | **YL29.1** | 1 | 3,80 |
| 150 | 7 | 40 | **YL30.1** | 1 | 3,95 |
| 180 | 8 | 50 | **YL31.1** | 1 | 4,15 |
| 200 | 9 | 60 | **YL32.1** | 1 | 4,45 |
| 235 | 10 | 70 | **YL33.1** | 1 | 4,50 |
| 265 | 11 | 70 | **YL34.1** | 1 | 5,65 |



## Chemist's double spatulas

Made of high-grade steel. Width 6 mm, length 150 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1902.1** | 5 | 20,40 |



## Double spatulas, curved

Made of stainless steel Remanit 4301, electropolished. Autoclavable.

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 130 | 4 | **3194.1** | 1 | 5,20 |
| 150 | 4 | **3200.1** | 1 | 5,20 |
| 150 | 9 | **3207.1** | 1 | 5,20 |
| 185 | 4 | **3455.1** | 1 | 4,75 |
| 185 | 9 | **3472.1** | 1 | 5,15 |
| 210 | 9 | **3489.1** | 1 | 5,40 |



## Micro powder spatulas

By Hammacher. Made of Remanit 4024 stainless steel, flexible. Autoclavable.

**Straight**

| Length (mm) | Blade width (mm) | Blade length (mm) | Stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 130 | 6 | 40 | 2,5 | **YL50.1** | 1 | 5,05 |
| 150 | 3 | 40 | 1,8 | **YL51.1** | 1 | 5,20 |
| 150 | 6 | 40 | 2,5 | **YL52.1** | 1 | 5,30 |
| 185 | 3 | 50 | 1,8 | **YL53.1** | 1 | 5,60 |
| 185 | 6 | 50 | 2,5 | **YL54.1** | 1 | 5,50 |
| 210 | 6 | 55 | 2,5 | **YL55.1** | 1 | 5,70 |

**Angled**

| Length (mm) | Blade width (mm) | Blade length (mm) | Stem ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 150 | 5 | 40 | 2,0 | **YL56.1** | 1 | 5,55 |
| 185 | 5 | 50 | 2,0 | **YL57.1** | 1 | 5,60 |
| 210 | 4 | 55 | 2,0 | **YL58.1** | 1 | 5,70 |



## Micro-powder spatulas, straight

Made of stainless steel 18/10, with hexagonal handle. Autoclavable.

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 150 | 3 | **AT23.1** | 1 | 10,70 |
| 150 | 4 | **AT24.1** | 1 | 10,70 |



## Weighing spatulas

By Hammacher. Made of Wironit 4301 stainless steel. Autoclavable.

① **Standard**

| Length (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 120 | 6 | 28 | **YL14.1** | 1 | 9,55 |
| 150 | 9 | 30 | **YL15.1** | 1 | 10,90 |
| 180 | 9 | 35 | **YL16.1** | 1 | 11,40 |
| 210 | 9 | 38 | **YL17.1** | 1 | 12,45 |

② **Micro**

| Length (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 130 | 4 | 28 | **YL18.1** | 1 | 9,80 |
| 150 | 4 | 28 | **YL19.1** | 1 | 10,95 |
| 180 | 5 | 30 | **YL20.1** | 1 | 11,40 |



## Weighing spatula

By Hammacher. Made of Remanit 4024 stainless steel. Length 170 mm, scoop L 40 x W 10 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YL59.1** | 1 | 4,80 |



## Powder spatula

Made of 18/10 stainless steel. Scoop L 40 x W 10 mm. Total length 170 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C829.1** | 1 | 3,20 |



## Spatulas

Made of stainless steel 18/10, electropolished. One end is spoon-shaped. Autoclavable.

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 130 | 5 | **3006.1** | 1 | 3,05 |
| 150 | 5 | **3066.1** | 1 | 3,15 |
| 185 | 5 | **3015.1** | 1 | 3,25 |
| 210 | 5 | **3042.1** | 1 | 3,35 |

# Spatulas




## Mixing spatulas

By Hammacher. Made of Wironit 4301 stainless steel. Autoclavable.

| Type | Length (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① Double | 210 | 6 | 30 | **YL45.1** | 1 | 33,15 |
| ① Double | 210 | 7 | 30 | **YL46.1** | 1 | 33,15 |
| ① Double | 210 | 8 | 30 | **YL47.1** | 1 | 33,15 |
| ② With spoon | 190 | 10 | 20 | **YL48.1** | 1 | 32,55 |
| ③ Single | 155 | 5 | 30 | **YL49.1** | 1 | 23,05 |



## Micro-spatula set

4 pieces. Made of stainless steel 18/10, with black plastic handle made of PVC.

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 3 - 4 - 5 - 6 | **AT16.1** | 1 | 14,65 |



## Micro-powder spatula set

4 pieces. Made of stainless steel 18/10, with black plastic handle made of PVC.

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 3 - 4 - 5 - 6 | **AT17.1** | 1 | 16,10 |



## Micro-spatulas

Made of 18/10 stainless steel, antimagnetic.
With handle made of PVC, ∅ 6 mm.

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 4 | **6191.1** | 1 | 3,55 |
| 160 | 5 | **3119.1** | 1 | 3,50 |



## Micro-spatulas, straight

Made of stainless steel 18/10, with hexagonal-handle. Autoclavable.

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 140 | 3 | **AT21.1** | 1 | 10,70 |
| 140 | 4 | **AT22.1** | 1 | 10,70 |



## Micro-spatulas, round

Made of stainless steel 18/10, with hexagonal-handle. Autoclavable.

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 140 | 2 | **AT19.1** | 1 | 10,70 |
| 140 | 3 | **AT20.1** | 1 | 10,70 |



## Dosing spatula

Stainless steel (18/10) blade and plastic handle. For powders, granules, etc. Required dosage of sample can be obtained by turning the knurling wheel. Blade L 50 x W 12 mm. Total length 190 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C848.1** | 1 | 18,50 |



## Spatulas with knob

Made of Remanit 4301 high-grade steel. With plastic knob.

| Length (mm) | Blade width (mm) | Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 150 | 9 | 35 | **K722.1** | 1 | 5,70 |
| 210 | 9 | 35 | **K723.1** | 1 | 5,90 |
| 250 | 9 | 40 | **K724.1** | 1 | 6,10 |
| 300 | 15 | 55 | **K725.1** | 1 | 7,15 |
| 200 | 20 | 35 | **K727.1** | 1 | 7,50 |
| 250 | 20 | 35 | **K728.1** | 1 | 7,85 |
| 300 | 30 | 60 | **K729.1** | 1 | 9,65 |
| 400 | 30 | 60 | **K730.1** | 1 | 10,75 |
| 500 | 30 | 60 | **K731.1** | 1 | 11,80 |



## Pharmacist's spatulas

With wooden handle and flat blade made of hardened stainless chrome steel.

| Total length (mm) | Blade length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 180 | 70 | 18 | **A651.1** | 1 | 6,60 |
| 210 | 100 | 20 | **A652.1** | 1 | 6,80 |
| 235 | 125 | 20 | **A653.1** | 1 | 7,65 |
| 255 | 145 | 22 | **A654.1** | 1 | 8,05 |

# Spatulas



## Spatula assortement

In case. Made of 18/10 stainless steel. Set consists of 6 of the most commonly used double and micro-spatulas plus 1 forceps (straight with blunt tips). Autoclavable (without case).

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **E286.1** | 1 | 41,25 |



## Chemist's instruments

Consists of four instruments made of high-grade steel (Remanit 4301). In case W 90 x L 150 mm.

**Contents:**

1 precision scissors, pointed/blunt 130 mm
1 forceps, pointed 130 mm
1 micro-double spatula 130 mm, blade width 4 mm
1 chemist's double spatula, 150 mm, blade width 9 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1863.1** | 1 | 23,55 |



## Spatula

Flexible blade made of chromium steel 18/0. Handle made of stainless steel 18/10. Dimensions: blade L 210 x W 30 mm, total length 340 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CY65.1** | 1 | 9,15 |



## Chemist set, large

By Hammacher. Instruments made of stainless steel, autoclavable.

*Scissors made of steel, nickel plated and coated, non-autoclavable.

In plastic box, dimensions: L 214 x W 102 x H 27 mm.

**Contents:**

1 micro double spatula, 130 mm
1 micro spoon spatula, spoon 5 x 7 mm
1 micro powder spatula, flexible, 185 mm
1 double spatula, rigid, 185 mm
1 tweezers, straight, sharp, 160 mm
1 scissors*, straight, serrated, 170 mm
1 Poly spoon, 180 mm
1 weighing spoon
1 double spatula, wide, round on both sides, 150 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TE20.1** | 1 | 69,70 |



## Solid spatulas for easy lifting of tissue

Made of stainless steel 18/10.
Flexible blade length 50 mm, total length 150 mm.
Autoclavable.

| Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **A645.1** | 1 | 6,85 |
| 15 | **A646.1** | 1 | 6,90 |
| 20 | **A647.1** | 1 | 7,00 |



## Spatulas

With blade made of stainless steel 18/0 and black **PA** handle. Autoclavable.

| Blade L x W (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 x 65 | 260 | **YE83.1** | 1 | 23,65 |
| 160 x 100 | 285 | **YE84.1** | 1 | 30,10 |

# Spatulas



## Spatula

With blade made of a stainless steel 18/0 (1.4016), with a wood handle. Blade L 115 x W 100 mm. Total length 215 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **8108.1** | 1 | 12,40 |



## Scrapers

Made of flexible **PP**. Thickness 0.6 mm. Dimensions: L 130 x W 100 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE82.1** | 10 | 7,50 |



## Rotilabo®-mouth spatulas

Made wood or **PS. Sterile** (ETO gas sterilised, individually packed) or non-sterile. Dimensions: L 150 x W 20 mm.

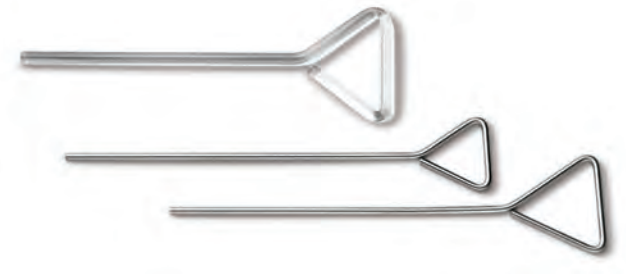
| Material | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Wood | **sterile** | **XL58.1** | 50 | 13,45 |
| Wood | non-sterile | **EH10.1** | 100 | 3,95 |
| PS, white | non-sterile | **XL59.1** | 100 | 9,45 |



## Stirring spatula

Made of wood. Dimensions: L 140 x W 5 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **APE1.1** | 1000 | 5,35 |



## Drigalski spatulas

Made of stainless steel (Remanit 4301) or soda-lime glass. Ideal for even distribution of bacterial substances on solid nutrient media. Also suitable as stirrer. Autoclavable.

| Material | Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Stainless steel | 165 | 30 | **K732.1** | 1 | 4,00 |
| Stainless steel | 165 | 40 | **AL98.1** | 1 | 4,55 |
| Glass | 145 | 50 | **T724.2** | 10 | 32,80 |

▶ Further Bacterial cell spreaders see page 278



## Glass spatula

By Hammacher. Made of calcium soda glass. Length 100 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HEA5.1** | 1 | 4,95 |



## Rotilabo®-double spatulas

Made of glazed porcelain. Temperature stable up to 1000 °C. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 104 | **XX58.1** | 5 | 29,65 |
| 186 | **XX59.1** | 5 | 39,95 |
| 250 | **XX60.1** | 5 | 45,10 |
| 298 | **XX61.1** | 5 | 54,90 |



## Mixing and laboratory spatula

By Hammacher. Made of PP. Length 160 mm, width 20 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HEA6.1** | 1 | 10,20 |

# Spatulas



## Spatula

Made of **PTFE**. Double-sided, flexible. Chemically inert. L 150 x W 16 mm. Thickness 4 mm. Weight 19 g. Temperature stable from -200 to +250 °C. Autoclavable

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0503.1** | 1 | 16,70 |



## Plastic spatulas

Made of **fibre reinforced PA**, red. Autoclavable.

| Type | Length (mm) | Spoon capacity (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Double spatula | 150 | - | **TT31.1** | 10 | 10,45 |
| Double spatula | 180 | - | **TT32.1** | 10 | 11,85 |
| Spoon spatula | 180 | 1,5 | **TT33.1** | 10 | 14,95 |
| Spoon spatula | 210 | 1,8 | **TT34.1** | 10 | 16,60 |



## Plastic stirring spatula

Made of **PS**, transparent. With or without mixing plate for vertical mixing in cells or other narrow vessels. Overall length 120 mm.
Sheet: L 30 x W 3 mm. Rod ∅ 3 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| With mixing plate | **XL60.1** | 500 | 12,80 |
| Without mixing plate | **4893.2** | 500 | 13,90 |



## Plastic stirring spatula

Made of **PS**, white. Dimensions: overall length 140 mm, rod width 5 mm, stirrer blade: L 30 x W 10 mm. Temperature stable from -25 to + 90 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **APE2.1** | 1000 | 11,15 |




## Disposable plastic spatulas

Made of **PP**. **Sterile** or non-sterile. Suitable for use as sample spoon, scraper and stirring bar. Ideal for weighing, e.g. in PCR vials, reaction vials and centrifuge tubes. FDA-compliant.
Temperature stable from 0 to +121 °C. Autoclavable.

**Technical specifications:**

| Type | For vials (ml) | Overall length (mm) | Stem ∅ (mm) | W x L spoon (mm) |
|---|---|---|---|---|
| ① Micro, antistatic | 0.2 | 140 | 3.5 | - |
| ② Eco | 15/1.5 | 140 | 7 | 14 x 25 |
| ③ Standard, blue | 15/1.5 | 210 | 7 | 14 x 25 |
| ④ Standard, opaque | 15/1.5 | 210 | 7 | 14 x 25 |
| ⑤ Macro, green | 50 ml | 310 | 10 | 23.5 x 42 |

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① Micro, antistatic | non-sterile | **NL90.1** | 300 | 29,35 |
| ② Eco | non-sterile | **NL91.1** | 300 | 41,50 |
| ③ Standard, blue | non-sterile | **NL92.1** | 300 | 37,60 |
| ④ Standard, opaque | non-sterile | **NL93.1** | 300 | 37,60 |
| ④ Standard, opaque | **sterile** (10 per pack.) | **NL94.1** | 100 (10 x 10) | 152,65 |
| ⑤ Macro, green | non-sterile | **NL95.1** | 150 | 41,60 |



NEU
NOUVEAU
NEW

## Single-use micro-spatula

By Bürkle. Made of **PS**. **Sterile** (gamma-sterilised) or non-sterile. Double-spoon spatula with rounded ends, contents 1.0 and 0.25 ml. Precise working with stable and easy-to-handle centre grip.
For filling or processing small amounts of chemicals, powders, granulates, pastes, creams or liquids.
Cleanroom-manufactured (class 7). Suitable for foodstuffs.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Non-sterile | **HEP6.1** | 100 | 21,45 |
| **Sterile,** individually packed | **HEP7.1** | 100 | 53,75 |



## Sample spatula SteriPlast®

By Bürkle. Made of PS, sterile. For sterile and contamination-free sampling, e.g. of powders, granulates and pastes. Insertion depth 150 mm. With long, sturdy handle and sharp blade for piercing paper and plastic bags etc. Sample spatula is optionally available with a lid made of PS which allows the sample to be sealed straight after it is taken. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

| Design | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Without lid | 263 | **CLT5.1** | 10 | 16,85 |
| With lid | 268 | **CLT6.1** | 10 | 24,70 |

# Laboratory jacks



## Rotilabo®-jacks

Plates made of stainless steel. Aluminium scissors frame. Compliant with DIN 12897. Rubber feet for stable standing position. Support plates with M 10 threaded hole, e.g. for attaching the Flex clamps, art. no. YT72.1ff.

**Technical specifications:**

| Type | L x W (mm) | Height adjustability (mm) | Operating load (kg) | Static load (kg) | Weight (kg) |
|---|---|---|---|---|---|
| ① | 120 x 140 | 60-243 | 5 | 30 | 1.37 |
| ② | 130 x 160 | 60-255 | 7 | 30 | 1.67 |
| ③ | 200 x 200 | 60-265 | 7 | 30 | 2.3 |
| ④ | 300 x 300 | 130-470 | 12 | 60 | 8.0 |
| ⑤ | 400 x 400 | 150-670 | 15 | 60 | 12.4 |

**Delivery without** flex clamps, please order separately.

**Standard version**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **YT69.1** | 1 | 122,55 |
| ② | **T458.1** | 1 | 136,55 |
| ③ | **T459.1** | 1 | 153,75 |

**Heavy duty version**

Gas-spring assisted for easy action.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ④ | **YT70.1** | 1 | 547,20 |
| ⑤ | **YT71.1** | 1 | 728,85 |

## Rotilabo®-flex clamps with M 10 thread

Made of die cast zinc and brass, nickel-plated. For use on jacks (Art. No. YT69.1 ff.) or stand plates with M 10 thread (for ex. Art. No. X072.1ff.). Length 300 mm.

| Design | Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Three finger | 0-40 | **YT72.1** | 1 | 29,00 |
| Round | 12-25 | **YT73.1** | 1 | 29,00 |

**Operating load** is the greatest dynamic load at which the jack can be lifted out of any position.

**Static load** is the maximum static load which can be applied to the jack.

**Example:**
the Rotilabo® Mini jack (Art No. YT68.1) can carry a max. load of 2 kg and be moved up or down (= operating load). A maximum weight of 15 kg may be applied to the jack, but it will no longer be possible to screw the jack up or down (= static load).



## Rotilabo® Mini jack

Plates made of stainless steel. Aluminium scissors frame.
Compliant with DIN 12897. Rubber feet for stable standing position.
Dimensions: L 75 x W 80 mm. Height adjustable 49-147 mm.
Moveable load 2 kg. Static load 15 kg. Weight 415 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YT68.1** | 1 | 116,10 |




## MAXI lab jacks

Manufactured in accordance with DIN 12897. Height adjustment using a hand-wheel. Increased height (30 %) using extended scissor lift. **Height adjustable 75-400 mm.** Moveable load 7 kg. Maximum static load 30 kg.

**Made of 18/10 stainless steel**

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 130 | **YT34.1** | 1 | 203,20 |
| 200 | 200 | **YT35.1** | 1 | 241,90 |

**Made of powder-coated aluminium, green**

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 130 | **YT36.1** | 1 | 152,65 |
| 200 | 200 | **YT37.1** | 1 | 179,55 |



## Lab jacks

Made of powder-coated aluminium. Scissor-type construction made of 18/10 steel. Manufactured in accordance with DIN 12897.

- Ergonomic knob, rounded
- Smaller models (type ①) with single adjusting wheel, manual operation
- Larger models (type ②) for use with ratchet to be attached to a special adjusting wheel

**Technical specifications:**

| Type | L x W (mm) | Height-adjustability (mm) | Moveable load (kg) | Static load (kg) | Art. No. |
|---|---|---|---|---|---|
| ① | 100 x 100 | 55-120 | 5 | 10 | K578.1 |
| ① | 160 x 130 | 60-275 | 7 | 30 | K579.1 |
| ① | 200 x 200 | 60-275 | 7 | 30 | K580.1 |
| ① | 240 x 240 | 60-275 | 7 | 30 | K581.1 |
| ② | 300 x 300 | 90-470 | 12 | 60 | 0483.1 |
| ② | 400 x 400 | 90-470 | 15 | 60 | K583.1 |

**Type ② delivery incl.** ratchet.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **K578.1** | 1 | 127,95 |
| ① | **K579.1** | 1 | 137,60 |
| ① | **K580.1** | 1 | 152,65 |
| ① | **K581.1** | 1 | 178,45 |
| ② | **0483.1** | 1 | 504,20 |
| ② | **K583.1** | 1 | 772,95 |




## Laboratory jacks, autoclavable

Plates, shears and rotary knob made of stainless steel 18/10. Manufactured in accordance with DIN 12897.
Height adjustability 60-275 mm. Operating load 7 kg.
Maximum static load 30 kg. Autoclavable.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 130 | **CHY3.1** | 1 | 190,30 |
| 200 | 200 | **CHY4.1** | 1 | 223,60 |
| 240 | 240 | **CHY5.1** | 1 | 238,65 |



## H-stand

Complete with cast iron base, 3 x 80 cm aluminium rods, 2 x 50 cm aluminium rods and 6 boss heads.
Dimensions: H 80 cm x W 50 cm x D 25 cm. Stand rod ∅ 12 mm.
Weight 6.5 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHH2.1** | 1 | 265,55 |

**Accessories:**

| | | | |
|---|---|---|---|
| Hexagon wrench, 4 mm AF | **CHX9.1** | 1 | 5,95 |



## H-stands

Suitable for large, heavy units and attachments, e.g. stirrer. With H-foot for non-tilting stand. With compensator screw for uneven workplaces.
Support rod-∅: 34 mm. Max. load: 10 kg.
Model R 2723 also comes with pressure spring telescopic support stand for smooth moving of heavy units or attachments.
Height of lift: 390 mm.

| Type | Width (mm) | Depth (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| R2722 | 460 | 420 | 1010 | **CC16.1** | 1 | 605,00 |
| R2723 | 460 | 420 | 620-1010 | **CC17.1** | 1 | 1123,00 |

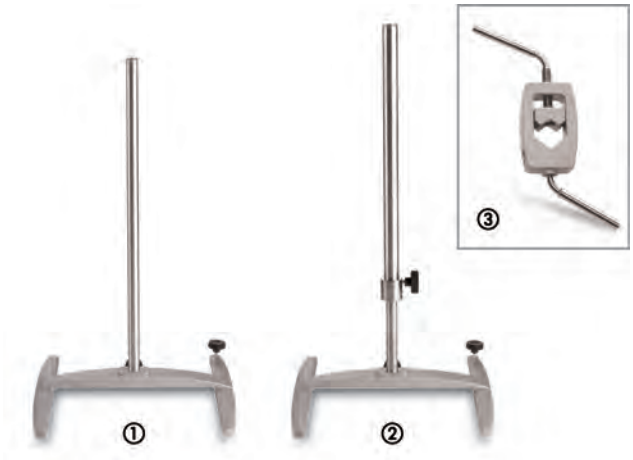
# Material for stands



## Plate stands

With anti-slip foil on plate.The support rod is also fixed under the plate with a nut to prevent accidental removal of rod. Support rod-∅: 16 mm. Max. load: 5 kg.

| Type | Width (mm) | Depth (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| R1825 | 200 | 316 | 560 | **CC13.1** | 1 | 235,00 |
| R1826 | 200 | 316 | 800 | **CC14.1** | 1 | 259,00 |
| R1827 | 200 | 316 | 1000 | **CC15.1** | 1 | 281,00 |




## S2-series H-stands

**S2 and S2 XXL** models
Made of V2A. The support rod is additionally secured with a nut which prevents it from being unscrewed accidentally. Support rod ∅ 25 mm. With levelling screw. Max. weight load: 4 kg.

**Tele S2 model**
same as S2 and S2 XXL but with retractable support rod variable in length from 725 to 1025 mm. Support rod ∅ 32 mm.

| Type | Width (mm) | Depth (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① S2 | 345 | 420 | 700 | **TL67.1** | 1 | 247,00 |
| S2 XXL | 345 | 420 | 1000 | **TL68.1** | 1 | 291,00 |
| ② Tele S2 | 345 | 420 | 725-1025 | **TL69.1** | 1 | 585,00 |

## Accessories for S2-series H-stands

③ **Clamp**
Made of V2A and cast aluminium. For rod ∅ 13 to 32 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TL70.1** | 1 | 108,00 |



## Stand plates with rods

Made of **PP**, rods made of chrome-plated steel. Stand rods L 250 mm, ∅ 12 mm, can be interconnected to increase overall height.
Dimensions: L 300 x W 150 x H 15 mm.
**Delivery incl.** two stand rods.

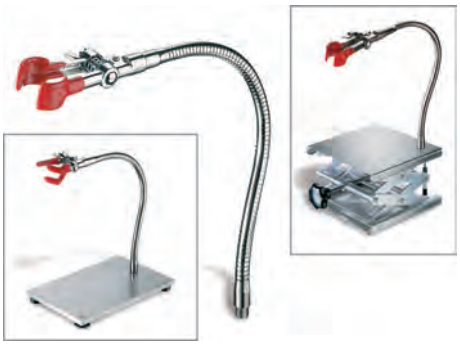
| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Central insertion opening | **TT24.1** | 1 | 66,05 |
| Side insertion opening | **TT25.1** | 1 | 66,05 |
| **Accessories:** | | | |
| Stand rods made of chrome-plated steel, L 250 mm, ∅ 12 mm | **TT26.1** | 2 | 56,10 |



## Rotilabo®-flexible stands

Manufactured from die cast zinc and brass, nickel-plated.
With adhesive safety base. Length 300 mm.

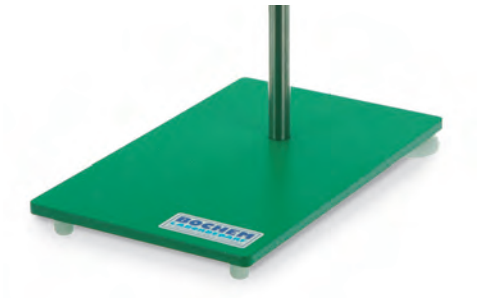
| Design | Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Three-prong | 0-40 | **X094.1** | 1 | 38,50 |
| round | 12-25 | **X095.1** | 1 | 37,10 |



## Rotilabo®-flex clamps with M 10 thread

Made of die cast zinc and brass, nickel-plated. For use on jacks (Art. No. YT69.1 ff.) or stand plates with M 10 thread (for ex. Art. No. X072.1ff.). Length 300 mm.

| Design | Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Three finger | 0-40 | **YT72.1** | 1 | 29,00 |
| Round | 12-25 | **YT73.1** | 1 | 29,00 |



## Retort stand bases, classic

Acc. to DIN 12892. Made of powder coated steel.
With threaded bore hole M 10 in the centre of the front side.
With four feet for extra stability, one adjustable foot.
**Delivery without** stand rod, please order separately.

| Length (mm) | Width (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 210 | 130 | 1300 | **2369.1** | 1 | 22,95 |
| 250 | 160 | 2000 | **2375.1** | 1 | 30,65 |
| 300 | 150 | 2200 | **2376.1** | 1 | 33,70 |
| 315 | 200 | 3000 | **2377.1** | 1 | 48,40 |



## Rotilabo®-stand plates

Made of corrosion-free stainless 18/10 (material 1.4301).
With four adjustable feet made of plastic.
Threaded hole M10 in the centre of the face side.

| Length (mm) | Width (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 180 | 100 | 850 | **ENY4.1** | 1 | 42,95 |
| 220 | 142 | 1470 | **ENY5.1** | 1 | 56,95 |
| 250 | 142 | 1670 | **ENY6.1** | 1 | 62,70 |
| 285 | 142 | 1900 | **ENY7.1** | 1 | 67,70 |
| 315 | 200 | 2970 | **ENY8.1** | 1 | 87,85 |
| 330 | 165 | 2600 | **ENY9.1** | 1 | 81,60 |



## Rotilabo®-stand plates, tall

Made of corrosion-free stainless 18/10 (material 1.4301). With four anti-slip feet for safe positioning. Threaded hole M10 in the centre of the face side.
Overall height 33 mm, floor clearance 28 mm.

| Length (mm) | Width (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 210 | 130 | 1600 | **EPA1.1** | 1 | 56,35 |
| 300 | 150 | 2500 | **EPA2.1** | 1 | 75,05 |



## Rotilabo®-tripods

Made of powder coated steel. With threaded bore hole M 10.
Rubber feet for secure support.

| Leg length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 80 | **X072.1** | 1 | 16,80 |
| 115 | **X075.1** | 1 | 18,60 |
| 150 | **X076.1** | 1 | 24,65 |
| 185 | **X077.1** | 1 | 29,05 |



## Stand plates, extra stability

Made from 18/10 stainless steel (material 1.4301-5, AISI type 304-303), antimagnetic. Acc. to DIN 12892. Wide, heavy adjusting feet with non-slip rubber surface for high stability, 1 adjustable foot to compensate for uneven surfaces. M 10 threaded hole at front centre.
**Delivery without** stand rod (please order separately).

| Length (mm) | Width (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 210 | 130 | 1600 | **C851.1** | 1 | 85,25 |
| 250 | 160 | 1900 | **C852.1** | 1 | 102,70 |
| 300 | 150 | 2000 | **C853.1** | 1 | 115,05 |
| 315 | 200 | 2400 | **C854.1** | 1 | 137,60 |



## Rotilabo®-tripods

Made of powder coated steel. For max. 13 mm ∅ of rods.
Rods are attached with locking screw M 6. Rubber feet for secure support.

| Leg length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 80 | **X078.1** | 1 | 22,20 |
| 115 | **X079.1** | 1 | 25,45 |
| 150 | **X080.1** | 1 | 32,80 |
| 185 | **X081.1** | 1 | 35,50 |

# Material for stands



①



②

## ① Stand base

Made of Laboral (aluminium alloy). For wall/ceiling attachment.
For stand rod ∅ from 12-13 mm. Secured by socket head screw.
Base ∅ 50 mm. With three screw holes (fastening material not included).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHE9.1** | 1 | 31,15 |

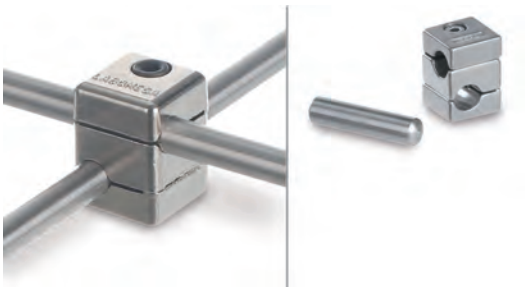
**Accessories:**

| | | | |
|---|---|---|---|
| Hexagon wrench, 4 mm AF | **CHX9.1** | 1 | 5,95 |

## ② Stand base

Made of white malleable cast iron. For wall/ceiling attachment. For up to three ∅ 12 mm stand rods. Rods are secured by slotted-head screws.
Base ∅ 80 mm. With four screw holes.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHE8.1** | 1 | 21,85 |



## Double boss heads, square

For connecting 2 stand rods ∅ 12-13 mm at an angle of 90°.
With hexagon socket screws. Angles from 0-360° can be set by connecting two double boss heads using a connecting rod.
**Delivery without** connecting rod (please order separately).

| Material | Art. No. | Pack Qty. | € |
|---|---|---|---|
| High grade steel 18/10 | **CHX6.1** | 1 | 41,60 |
| Laboral (aluminium alloy) | **CHX7.1** | 1 | 13,10 |

**Accessories:**

| | | | |
|---|---|---|---|
| Connecting rod L 50 x ∅ 12 mm | **CHX8.1** | 1 | 6,85 |
| Hexagon wrench, 4 mm AF | **CHX9.1** | 1 | 5,95 |



## Rotilabo®-stand rods

Made of stainless steel (material 1.4305), solid. With thread M 10.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 600 | 10 | **2378.1** | 1 | 14,55 |
| 750 | 12 | **2379.1** | 1 | 17,45 |
| 1000 | 12 | **2380.1** | 1 | 22,70 |
| 1250 | 12 | **2381.1** | 1 | 26,35 |
| 1500 | 16 | **2382.1** | 1 | 42,95 |

## Rotilabo®-stand rods

Made of polished stainless steel (Remanit 4301), antimagnetic.
With thread M 10. Rod ∅ 12 mm.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 450 | **CHC9.1** | 1 | 14,75 |
| 500 | **CHE0.1** | 1 | 16,70 |
| 600 | **P110.1** | 1 | 22,00 |
| 750 | **P111.1** | 1 | 23,80 |
| 1000 | **P112.1** | 1 | 29,65 |
| 1250 | **P113.1** | 1 | 37,25 |
| 1500 | **P114.1** | 1 | 42,50 |



## Rotilabo®-table clamp

Manufactured from powder-coated aluminium.
For rods of max. ∅ 13 mm and table tops max. 60 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X082.1** | 1 | 30,10 |



## Rotilabo®-stand rods, unthreaded

Made of polished stainless steel (Remanit 4301), antimagnetic.
Rod ∅ 12 mm.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 450 | **CHE1.1** | 1 | 14,75 |
| 500 | **CHE2.1** | 1 | 15,90 |
| 600 | **CHE3.1** | 1 | 18,75 |
| 750 | **CHE4.1** | 1 | 21,35 |
| 1000 | **CHE5.1** | 1 | 26,75 |
| 1250 | **CHE6.1** | 1 | 32,15 |
| 1500 | **CHE7.1** | 1 | 37,30 |




## ① Double boss heads, rectangular

Made of malleable cast iron, chrome-plated. 90° angle.
With clamping screws.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For rods up to ∅ 16.5 mm | **2134.1** | 1 | 10,65 |
| For rods up to ∅ 20 mm | **2135.1** | 1 | 14,80 |
| For rods with ∅ 36 mm | **2179.1** | 1 | 27,10 |

## ② Cross double boss head

Made of malleable cast iron, chrome-plated. 90/180° angle.
With clamping screws.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For rods up to ∅ 16.5 mm | **2194.1** | 1 | 13,90 |

## ③ Double boss heads, rotatable

Made of die-cast zinc, powder-coated.
With brass clamping screws, nickel-plated.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For rods up to ∅ 16 mm | **2136.1** | 1 | 18,80 |



## Ball sleeves

Made of die-cast zinc, with nickel-plated hinge screws. ∅ 35 mm.
For rod-∅ to 13 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Powder-coated | **PH46.1** | 1 | 9,15 |
| Uncoated | **PH47.1** | 1 | 8,85 |
| Nickel-plated | **PH48.1** | 1 | 11,30 |



## Hook connectors

For stable right angle connection of rods or clamps to retort stands.
Span width 13 mm. With brass screw, nickel-plated.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Powder-coated steel | **E039.1** | 1 | 9,65 |
| Rustproof stainless steel | **E040.1** | 1 | 18,25 |



## Cross sleeve 18/10

Made of stainless steel 18/10, with heart-shaped safety screws.
For stand rods up to ∅ 16,5 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XT63.1** | 1 | 60,95 |




## ① Cross double boss head

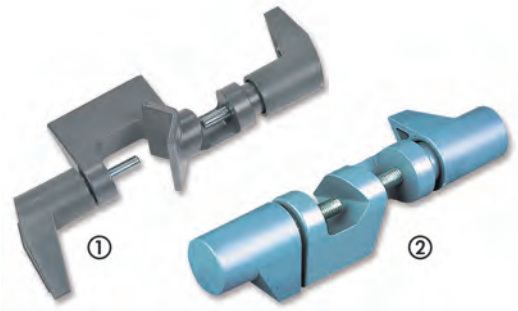
Made of aluminium. 90° angle. With easily accessible clamping screws.
For rods up to ∅ 16.5 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P179.1** | 1 | 11,80 |

## ② Hook boss head

Made of aluminium. 90/180° angle. With clamping screws.
For rods up to ∅ 13 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P178.1** | 1 | 18,25 |




## Cross sleeves

Made with aluminium casting.

| Type | for stand type | Clamping range stand (mm) | Clamping range bracket (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① R 270 | R 2722, R 2723 | 25-36 | 5-21 | **CC18.1** | 1 | 96,00 |
| ② R 182 | R 1825, R 1826, R 1827 | 6-16 | 6-16 | **CY92.1** | 1 | 71,00 |

# Material for stands



## Stand clamps with boss head

Manufactured from powder-coated die-cast zinc. Clamp with cork insert.

| Span (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12-25 | 185 | **X083.1** | 1 | 13,05 |
| 20-40 | 195 | **X084.1** | 1 | 14,10 |
| 38-60 | 200 | **X086.1** | 1 | 16,35 |



## Stand clamps

Made of die-cast zinc, powder-coated. With cork inlay. Rod ∅ 10 mm.

| Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10-25 | **P172.1** | 1 | 11,45 |
| 13-40 | **P174.1** | 1 | 11,75 |
| 26-60 | **P175.1** | 1 | 13,05 |




## Stand clamps

With two round jaws, with cork inlay.

① **Made of 18/10 steel**

| Span (mm) | Shaft length (mm) | Shaft ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 150 | 10 | **2000.1** | 1 | 26,05 |
| 40 | 150 | 10 | **2004.1** | 1 | 28,35 |
| 60 | 150 | 10 | **2007.1** | 1 | 31,10 |
| 80 | 180 | 12 | **P177.1** | 1 | 24,65 |

② **Made of die cast zinc**, powder-coated

| Span (mm) | Shaft ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12-25 | 10 | **1993.1** | 1 | 11,95 |
| 20-40 | 10 | **1995.1** | 1 | 13,10 |
| 38-60 | 10 | **1998.1** | 1 | 15,05 |




## Universal stand clamps

4-finger jaws, with cork protection. Total length 240 mm.

① **Made of Remanit 4301 high grade steel**, span width max. 90 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KX88.1** | 1 | 46,20 |

② **Made of die-cast zinc**, span width max. 80 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KX89.1** | 1 | 17,55 |



## Stand clamps, large span

Acc. to DIN 12894. Round jaws with cork pads. Shaft ∅ 12 mm. Shaft length 180 mm.

**Made of galvanised steel**

| Span (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 80 | 325 | **CHL5.1** | 1 | 16,95 |
| 100 | 345 | **CHL6.1** | 1 | 19,10 |
| 120 | 360 | **CHL7.1** | 1 | 21,50 |
| 150 | 380 | **CHL8.1** | 1 | 24,70 |

**Made of stainless steel 18/10**

| Span (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 80 | 325 | **CHL9.1** | 1 | 32,70 |
| 100 | 340 | **CHN0.1** | 1 | 52,10 |
| 120 | 360 | **CHN1.1** | 1 | 57,00 |
| 150 | 380 | **CHN2.1** | 1 | 74,75 |



## Universal-stand clamp, swivel-type

Made of die cast zinc, powder coated, 4-finger jaws with cork pads. Clamping range 0-80 mm. Swivel range 180°. Overall length 275 mm, rod length 150 mm, rod ∅ 10 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YP54.1** | 1 | 36,55 |




## Rotilabo®-stand clamps

**Flexible**. Made of 18/8 stainless steel. With nickel-plated shaft.
Available as round, rectangular and burette shaped clamp.
Please order bossheads separately.

| Design | Span (mm) | Shaft ∅ (mm) | Shaft length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① round | 25-40 | 12 | 250 | **C863.1** | 1 | 110,75 |
| ② round | 15-65 | 12 | 200 | **C864.1** | 1 | 127,95 |
| ③ rectangular | 25-40 | 12 | 250 | **C865.1** | 1 | 110,75 |
| ④ burette | 0-20 | 12 | 250 | **C866.1** | 1 | 104,85 |
| ⑤ burette | 0-30 | 8 | 200 | **C867.1** | 1 | 93,35 |



## Rotilabo®-flexible clamps with rotatable boss head

Manufactured from die-cast zinc and brass, nickel-plated.
For rods of max. 16 mm ∅. Length 300 mm.

| Design | Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| three prong | 0-40 | **X087.1** | 1 | 36,50 |
| round | 12-25 | **X088.1** | 1 | 37,75 |



## Rotilabo®-three-prong clamps

Manufactured from powder-coated die-cast zinc.
With plastic-coated prongs. Shaft length 140 mm.

| Span (mm) | Bar-∅ (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-40 | 8 | 225 | **X096.1** | 1 | 9,80 |
| 0-40 | 10 | 225 | **X097.1** | 1 | 10,60 |
| 25-80 | 10 | 250 | **X098.1** | 1 | 16,35 |







## Rotilabo®-three-finger clamps

Made of stainless steel 18/10. Silicone coated fingers. Also suitable for holding irregular shaped objects. Shaft ∅ 12 mm, shaft length 190 mm.

| Image | Span (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 0-80 | 320 | **CHN3.1** | 1 | 70,15 |
| ② | 0-120 | 340 | **C827.1** | 1 | 136,55 |



## Rotilabo®-four-finger clamp

Made of stainless steel 18/10. Silicone coated fingers. Also suitable for holding irregular shaped objects. Shaft ∅ 12 mm, shaft length 190 mm.

| Span (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50-150 | 360 | **CHN6.1** | 1 | 95,15 |



## Rotilabo®-cooler clamp

Made of malleable cast iron, chrome-plated. With movable shaft.
Prongs are covered with transparent silicone. Spans from 50 to 100 mm.
Shaft-∅ 12 mm, shaft length 150 mm.

| Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 50-100 | **C826.1** | 1 | 30,05 |

# Material for stands



## Chain clamps

With cork inlay. For fastening flasks and other laboratory vessels.
Shaft ∅ 10 mm. Shaft length 200 mm.

| For containers ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 40-120 | **E050.1** | 1 | 41,85 |
| 80-150 | **E051.1** | 1 | 40,15 |
| 100-170 | **E052.1** | 1 | 41,60 |



## Belt clamp

Clamping head of powder-coated aluminium and stem of nickel-plated steel. With eccentric lock and cork insert. Bar ∅ 10 mm, shaft length 195 mm. Belt length 600 mm, width 12 mm.
For vessel ∅ 60 to 170 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PH45.1** | 1 | 41,95 |



## Rotilabo®-stand rings with opening

Made of stainless steel 18/10. Shaft ∅ 8 mm.

**Technical specifications:**

| Type | Inner ∅ (mm) | Outer ∅ (mm) | Opening width (mm) | Overall length (mm) | Shaft length (mm) |
|---|---|---|---|---|---|
| ① | 50 | 68 | 35 | 220 | 160 |
| ② | 70 | 87 | 50 | 280 | 200 |
| ③ | 100 | 120 | 70 | 330 | 220 |

**Delivery without** boss head.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **CHN7.1** | 1 | 20,30 |
| ② | **CHN8.1** | 1 | 20,80 |
| ③ | **CHN9.1** | 1 | 22,95 |



## Stand rings

**Without sleeve**
Made of galvanised steel. With three-point support. Rod ∅ 8 mm.

| Inside ∅ (mm) | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 54 | 70 | **2206.1** | 1 | 10,35 |
| 84 | 100 | **2210.1** | 1 | 11,40 |
| 114 | 130 | **2211.1** | 1 | 13,90 |
| 130 | 146 | **2262.1** | 1 | 14,10 |

**With sleeve**
Made of galvanised steel, with three-point support.
Sleeve with nickel-plated brass screw. Rod ∅ 8 mm.

| Inside ∅ (mm) | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 54 | 70 | **2264.1** | 1 | 16,35 |
| 84 | 100 | **2265.1** | 1 | 18,30 |
| 114 | 130 | **2283.1** | 1 | 19,15 |
| 130 | 146 | **2336.1** | 1 | 20,25 |

## Rotilabo® stand rings

**Without sleeve**
Made of Remanit 4301 stainless steel. Electropolished. Rod ∅ 8 mm.

| Inside ∅ (mm) | Outside ∅ (mm) | Total length (mm) | Length of stem (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 65 | 210 | 150 | **C882.1** | 1 | 13,95 |
| 70 | 85 | 240 | 150 | **C883.1** | 1 | 15,60 |
| 100 | 115 | 255 | 145 | **C884.1** | 1 | 16,25 |
| 130 | 145 | 290 | 145 | **C885.1** | 1 | 18,25 |
| 160 | 175 | 330 | 155 | **C886.1** | 1 | 19,30 |



## Rotilabo®-burette holders

Made of die-cast zinc, nickel-plated. For rods of max. ∅ 16 mm.
Clamping width 0-40 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For 1 burette | **2048.1** | 1 | 23,40 |
| For 2 burettes | **2129.1** | 1 | 32,45 |



## Burette holders

Made of **PP**. With non-slip rubber grips and stainless steel springs.
With stand clamp for attaching to rods with ∅ 8-14 mm.
Burette stays fully readable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For 1 burette | **PY63.1** | 1 | 23,55 |
| For 2 burettes | **PY64.1** | 1 | 29,95 |



## Burette clamps

Made of die-cast aluminium, with roller support.
Clamping width: 0 to 20 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For 1 burette | **PH49.1** | 1 | 27,45 |
| For 2 burettes | **PH50.1** | 1 | 36,05 |



## Beaker tongs

Made of 18/10 stainless steel, Remanit 4301, with cork inserts.

| ∅ jaws (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 30 | 200 | **YP93.1** | 1 | 20,65 |
| 40 | 220 | **YP94.1** | 1 | 20,95 |
| 50 | 250 | **YP95.1** | 1 | 21,45 |
| 60 | 300 | **YP96.1** | 1 | 22,05 |



## Rotilabo®-beaker tongs

Made of 18/10 steel. Jaws covered with ceramic fibres.
For ∅ 60 to 150 mm. Length 330 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **6150.1** | 1 | 25,75 |

## Rotilabo®-flask tongs

Made of 18/10 steel. Electropolished. With cork inserts.
For ∅ 15 to 60 mm. Length 230 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **6160.1** | 1 | 24,00 |




## All-purpose holding forceps Hünebeck

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Jaws ribbed on inside for better grip.
Length 195 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCN7.1** | 1 | 46,25 |




## All-purpose holding forceps

By Hammacher. Made of Remanit 4301 stainless steel. Inside serrated gripper jaws for better grip (production-related indentations do not influence the functionality). Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 200 | **YL66.1** | 1 | 47,55 |
| 280 | **YL67.1** | 1 | 48,75 |

# Tongs



## Piston forceps

By Hammacher. Made of Wironit 4301 stainless steel. With cork pads.
Length 330 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YL60.1** | 1 | 65,25 |




## Crucible forceps

By Hammacher. Made of Remanit 4301 stainless steel.
Double curved, with scissor action, notched on inside. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 200 | **YL62.1** | 1 | 18,25 |
| 250 | **YL63.1** | 1 | 18,45 |
| 400 | **YL64.1** | 1 | 23,25 |
| 600 | **YL65.1** | 1 | 27,65 |




## Rotilabo®-flask tongs

Made of 18/8 stainless steel, plastic coated.

| Span (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① 45-70 | 300 | **X100.1** | 1 | 18,10 |
| ② 17-60 | 220 | **X101.1** | 1 | 20,25 |




## Rotilabo®-tongs for crucibles

**Bent twice.** Made of Remanit 4301. Electropolished. Autoclavable.

**Riveted**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 200 | **3214.1** | 1 | 8,85 |
| 220 | **3221.1** | 1 | 9,45 |
| 250 | **3228.1** | 1 | 9,60 |
| 300 | **3231.1** | 1 | 9,80 |
| 400 | **3232.1** | 1 | 17,85 |
| 500 | **3236.1** | 1 | 17,85 |
| 600 | **3237.1** | 1 | 17,85 |

**Screwed**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 200 | **3240.1** | 1 | 18,10 |
| 220 | **3241.1** | 1 | 19,25 |
| 300 | **3271.1** | 1 | 19,70 |



## Rotilabo®-beaker tongs

Made of 18/8 stainless steel. With PVC coating. Span width 40-100 mm.
Length 250 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X099.1** | 1 | 13,45 |



## Rotilabo®-tongs

(Sodium tongs) stainless steel, L 350 mm, W 16 mm.

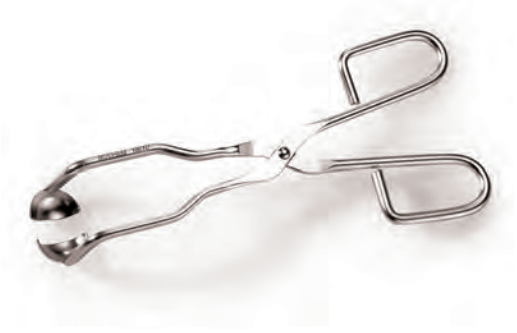
| Art. No. | Pack Qty. | € |
|---|---|---|
| **0065.1** | 1 | 17,15 |



## Cell forceps

By Hammacher. Made of Remanit 4301 stainless steel. Length 550 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YL61.1** | 1 | 45,70 |



121°C

## Rotilabo®-mercury tongs

Made of 18/10 stainless steel. Length 220 cm, weight 140 g. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1551.1** | 1 | 17,50 |



## Rotilabo®-tube tongs

Manufactured from die-cast zinc, nickel-plated. With plastic-coated handle. Width of bit 55 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X102.1** | 1 | 31,75 |

▶ Universal clamps see page 740



## Universal spring clamps

Made of **PA**. For powerful clamping with constant tension force. With ergonomic, antislip handle and flexible, movable soft pads. Excellent for sensitive materials such as glass plates, wood and plastics. Extremely light and handy, but with highest stability.

| Total length (mm) | Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 60 | 20 | **LK35.1** | 1 | 4,45 |
| 90 | 34 | **LK36.1** | 1 | 5,35 |
| 120 | 44 | **LK37.1** | 1 | 7,50 |
| 160 | 60 | **LK38.1** | 1 | 10,70 |



## Rotilabo®-clips

Made of spring steel. For DC plates, x-ray films, sheets of paper, etc. Can be hung up.

| Width (mm) | Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 19 | 7 | **ACY9.1** | 12 | 5,05 |
| 25 | 10 | **0826.1** | 12 | 5,85 |
| 41 | 18 | **0827.1** | 6 | 7,55 |
| 51 | 28 | **0850.1** | 6 | 11,75 |



## Labo-Clip

For quick holding of lab instruments, temperature sensors and tubes with a ∅ from 4 to 14 mm in beakers from minimum 250 ml. Plate made of foam-plastic, ∅ 55 mm, thickness 12 mm. Metal parts are corrosion protected.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0510.1** | 1 | 30,05 |

# Weighting rings



## Rotilabo®-weights and stabilizing rings

With heavy metal core and vinyl coating. Suitable for stabilizing flasks and Erlenmeyer flasks in water baths and during stirring.

**Closed form**

| Inside ∅ (mm) | for Erlenmeyer flasks (ml) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 48 | 125-500 | 270 | **CY71.1** | 1 | 32,20 |
| 51 | 250-1000 | 500 | **CY72.1** | 1 | 34,40 |
| 57 | 500-2000 | 700 | **CY73.1** | 1 | 41,00 |
| 70 | 1000-4000 | 840 | **CY74.1** | 1 | 44,25 |

**Open form**

| Inside ∅ (mm) | for Erlenmeyer flasks (ml) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 42 | 125-500 | 200 | **CY81.1** | 1 | 35,70 |
| 51 | 250-1000 | 480 | **CY82.1** | 1 | 40,75 |
| 54 | 500-2000 | 660 | **CY83.1** | 1 | 47,95 |
| 66 | 1000-4000 | 930 | **CY84.1** | 1 | 51,85 |



## Rotilabo®-supports for beakers and flasks

Beakers or flasks are supported by 4 stainless steel clamps, then placed upright on a vinyl-coated lead ring. Ideal in waterbaths, circulation thermostats, etc. as water can circulate under the glass.

| ∅ (mm) | For cylinder (ml) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 80 | 250 | 237 | **K989.1** | 1 | 133,30 |



## Rotilabo®-weighting rings

Open. Heavy lead core covered with PVC. Prevent floating or tipping of Erlenmeyer and measuring flasks, etc. in waterbaths.

| for Erlenmeyer flasks (ml) | Inside ∅ (mm) | Weight (g) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| - | 20 | 95 | orange | **L075.1** | 1 | 36,05 |
| 25 | 35 | 240 | red | **L076.1** | 1 | 50,35 |
| 50-250 | 50 | 650 | orange | **L077.1** | 1 | 59,05 |
| 200-500 | 70 | 900 | red | **L078.1** | 1 | 63,65 |
| 750-1500 | 100 | 1200 | blue | **L079.1** | 1 | 71,85 |
| 2000 | 150 | 1750 | orange | **L080.1** | 1 | 87,10 |
| 4000 + 6000 | 200 | 3800 | blue | **L081.1** | 1 | 138,70 |



## Rotilabo®-stabilizing collars

For bottles, beakers, vacuum bottles, flasks, etc.

- Metal core with PVC coating
- Pliable, can be opened and closed
- Protect vessels from falling and support them in an upright position

| For containers ∅ (mm) | Weight (g) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 45-65 | 240 | red | **L082.1** | 1 | 50,35 |
| 55-80 | 460 | orange | **L083.1** | 1 | 55,15 |
| 65-100 | 600 | red | **L084.1** | 1 | 58,60 |
| 85-125 | 750 | blue | **L085.1** | 1 | 70,75 |


▶ For ultrasonic compact baths see p. 1094

▶ Glass beakers and erlenmeyer flasks see p. 10

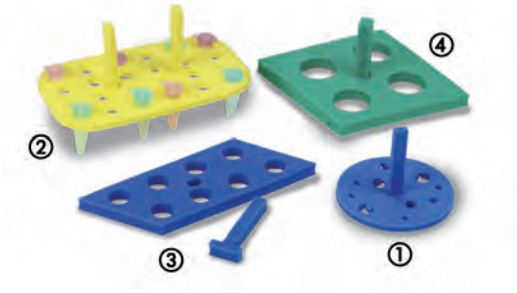
# Floating racks



## Rotilabo®-multi-purpose holders

Made of **PP**. Ideal for attaching or clamping probes, tubes, thermometers to beakers or Erlenmeyer flasks. White holder has additional opening. Autoclavable.

| Colour | ∅ of openings (mm) | L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| orange | 11, 9, 7 | 70 x 15 | **C533.1** | 5 | 17,15 |
| white | 11, 9, 7/6 | 100 x 15 | **C534.1** | 5 | 42,80 |
| green | 15, 12, 10 | 85 x 22 | **C535.1** | 5 | 23,20 |




## Rotilabo®-floating racks

Made of foam **HDPE**. Excellent for tempering centrifuge and micro-centrifuge tubes in water baths. With handle for easier immersion and removal. The racks float fully loaded on the surface, the tubes however, remain immersed in water.

| **Model** | ① | ② | ③ | ④ |
|---|---|---|---|---|
| for tubes | 0.2/0.5/1.5/2.0 ml | 1.5/2 ml | 15 ml | 50 ml |
| Number of holes | 18 | 24 | 8 | 4 |
| L x W x H (mm) | round, ∅ 82 x H 60 | 150 x 82 x 69 | 130 x 59 x 65 | 105 x 105 x 65 |
| Colour | blue | yellow | blue | green |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **LP92.1** | 5 | 17,15 |
| ② | **P199.1** | 5 | 17,10 |
| ③ | **P200.1** | 5 | 17,10 |
| ④ | **P201.1** | 5 | 17,10 |

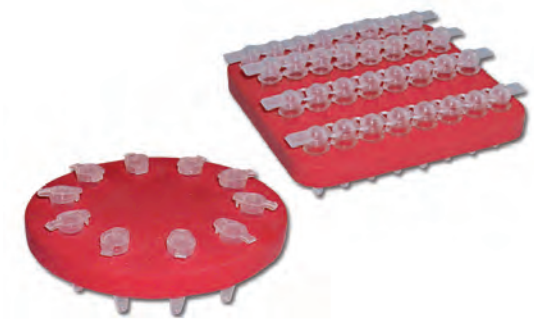
▶ Microcentrifuge tube see page 474



## Microcentrifuge tube racks

By Nalgene®. Made of **PP**, ideal for temperature control of centrifuge tubes, size 0.5 to 2.0 ml in water bath tubs. Racks float fully loaded on the water´s surface. Microcentrifuge tubes are fixed into rack and cannot float away. With handle for inserting and removing.
Temperature stable from -70 to +100 °C. Autoclavable.

| Design | Dimensions (mm) | Slots | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| round | ∅ 66 | 8 | **E072.1** | 1 | 10,00 |
| round | ∅ 96 | 20 | **E073.1** | 1 | 10,00 |
| square | 103 x 103 | (4 x 4) | **E075.1** | 1 | 10,00 |



## Cryo floating stands

Made of foam **PE**. Ideal for keeping temperature of samples in PCR-tubes or 8 port strips. Loaded stands still float, and tubes remain fixed in the stand. Borehole ∅ 5 mm, temperature stable from -80 to +80 °C.

| Type | For containers | Slots | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| round | Single tubes | 10 | ∅ 70 x 8,5 | **LH39.1** | 10 | 13,90 |
| square | 8-port strips | 4 x 8 | 80 x 80 x 8,5 | **LH40.1** | 10 | 23,60 |

▶ For dewar containers and ice containers see page 248

# Stands for vials and micro inserts







❄❄
121°C

## Rotilabo®-storage boxes

Made of **PP**. For autosamplervials or other vials with suitable dimensions.
With transparent lid. Stackable.
Heat resistant from -80 to +100 °C. Autoclavable.

① **For 1.5 ml autosamplervials:**
81 slots, hole ∅ 12 mm.
With alphanumeric coding on all four side edges and in base cavities.
Outer dimensions: L 130 x W 130 x H 45 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| pink | **TY99.1** | 1 | 20,90 |
| yellow | **XA00.1** | 1 | 20,90 |
| orange | **XA01.1** | 1 | 20,90 |
| blue | **XA02.1** | 1 | 20,90 |
| green | **XA03.1** | 1 | 20,90 |
| transparent | **XA04.1** | 1 | 20,90 |

② **For 4 ml autosamplervials:**
49 slots, hole ∅ 15 mm.
With alphanumeric coding on all four side edges and in base cavities.
Outer dimensions: L 130 x W 130 x H 52 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **XA05.1** | 1 | 25,60 |

③ **For 5, 10 and 20 ml headspace vials:**
25 slots, 25 x 25 mm.
Outer dimensions: L 130 x W 130 x H 102 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **XA06.1** | 1 | 30,35 |

③ **For 20 ml EPA screw top vials:**
16 slots, 30 x 30 mm.
Outer dimensions: L 130 x W 130 x H 70 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| violet | **XA07.1** | 1 | 30,35 |

④ **For 30 ml and 40 ml EPA screw top vials:**
10 slots, ∅ 30 mm.
Outer dimensions: L 130 x W 130 x H 105 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| violet | **XA08.1** | 1 | 35,50 |



121°C

## Storing box with lid

Made of **PP**, with insert for 96 vials to max. ∅ 12 mm.
Dimensions: L 172.5 x W 116.5 x H 40.5 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A618.1** | 1 | 10,55 |



121°C

## Rotilabo®-stands for vials and micro inserts

Made of **acrylic**. Transparent material allows easy checking of the filling level of the vials in the stand. With silicon feet for stability and stackability.
Stand for micro inserts and vials in sizes from ND8 to ND11 (Art. No. TY95.1 and TY96.1) can also hold tapered base vials.

| For autosampler vials | Hole ∅ (mm) | Slots | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Micro inserts | 8,5/3 | 5 x 10 | 173 x 95 x 20 | **TY95.1** | 1 | 68,70 |
| ND8 to ND11 | 12 | 5 x 10 | 173 x 95 x 20 | **TY96.1** | 1 | 74,65 |
| ND13 | 15,1 | 5 x 8 | 176 x 116 x 20 | **TY97.1** | 1 | 76,35 |
| ND18, ND20 (up to 20 ml) | 24 | 5 x 5 | 160 x 160 x 30 | **TY98.1** | 1 | 87,30 |



121°C

## Racks for 5-8 ml sample vials

Made of **PP**. For 150 vials up to ∅ max. 17 mm. Suitable for the storage and transportation of glass bottles, vials and reaction vials.
Dimensions: L 324 x W 210 x H 48 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXP5.1** | 1 | 67,55 |



## Sample vial holders

Made of hardwood. L 257 x W 47 x H 24 mm. Bore hole ∅ 11 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0403.1** | 1 | 13,95 |

▶ Sampling vials see page 62

# Stands for vials and micro inserts



## Racks for incubation test tubes

Made of **PP**, with handles. For incubation of small test tubes, serum / RIA test tubes and T3/T4 reaction vials.
Suitable for most water baths. Height of second level: 41 mm.
Temperature stable from -80 up to max. +121 °C. Autoclavable.

| For test tube ∅ (mm) | Slots | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10-13 | 72 | 238 x 111 x 89 | **YC06.1** | 1 | 43,15 |
| 13-16 | 40 | 254 x 111 x 89 | **YC07.1** | 1 | 41,40 |
| 16-20 | 40 | 254 x 111 x 89 | **YC08.1** | 1 | 42,50 |



## Racks for sample vials

Made of **PP**. For 12 vials up to ∅ max. 32 mm. Suitable for the storage and transportation of glass bottles, vials and sample tubs.
Dimensions: L 267 x W 102 x H 53 mm. Autoclavable.

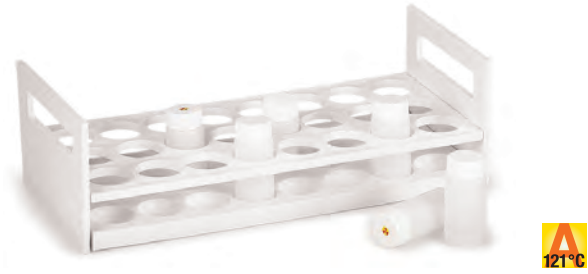
| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXP7.1** | 1 | 33,70 |



## Rotilabo®-PTFE racks for test tubes

Made of **PTFE**. Bottom dimensions L 180 x B 60 mm. Chemically inert, temperature stable from - 200 to +250 °C. Autoclavable.

| Hole ∅ (mm) | Slots | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 8 | 27 (3 x 9) | 45 | **NY05.1** | 1 | 66,80 |
| 13 | 21 (3 x 7) | 60 | **NY06.1** | 1 | 66,80 |
| 19 | 10 (2 x 5) | 70 | **NY07.1** | 1 | 66,80 |
| 30 | 4 (1 x 4) | 80 | **NY08.1** | 1 | 66,90 |



## Rack for scintillation tubes

Made of **PP**, with 24 holes in 3 x 8 array. Hole-∅ 30 mm.
Ideal for storing, transporting or as a rack on the laboratory bench.
Dimensions: L 298 x W 127 x H 95 mm. Height to intermediate shelf 44 mm.
Autoclavable.

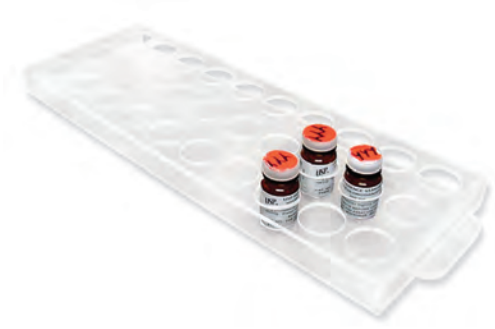
| Art. No. | Pack Qty. | € |
|---|---|---|
| **K993.1** | 1 | 49,25 |



## Grab Rack™ sample rack

Made of **ABS**. With 50 slots, ∅ 18 mm. Silicon inserts hold the vials securely in place at the bottom; to empty rack, simply turn it over.
Dimensions: L 259 x W 127 x H 49 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NY19.1** | 1 | 23,15 |



## Rack for sample vials

Made of **acrylic**, with 30 slots, hole ∅ 24 mm.
Transparent base for easy reading of labels.
Dimensions: L 330 x W 110 x H 22 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC05.1** | 1 | 96,25 |

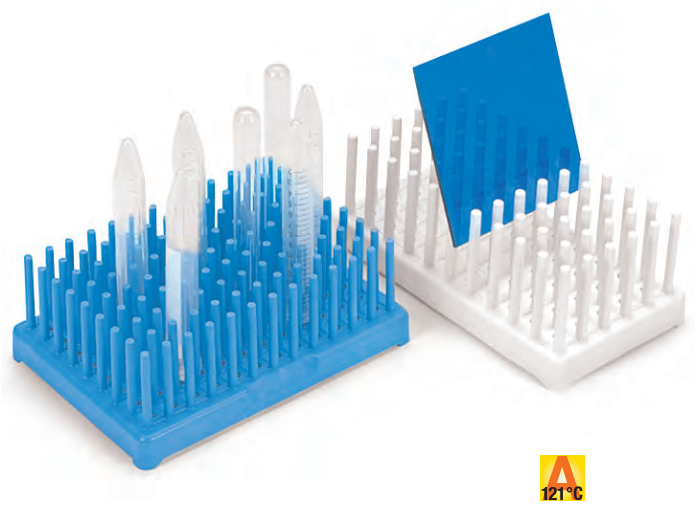
# Test tube racks



## Racks for test tubes and tubs

Made of epoxy-coated steel. Temperature stable up to 121 °C. Autoclavable.

| For test tube ∅ (mm) | Slots | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 12 (2 x 6) | 164 x 64 x 32 | **AXE5.1** | 1 | 20,75 |
| 25 | 50 (5 x 10) | 271 x 145 x 32 | **AXE6.1** | 1 | 34,10 |
| 33 | 12 (2 x 6) | 212 x 80 x 60 | **AXE7.1** | 1 | 20,75 |
| 33 | 50 (5 x 10) | 355 x 189 x 60 | **AXE8.1** | 1 | 36,85 |
| 58 | 24 (6 x 4) | 393 x 262 x 50 | **AXE9.1** | 1 | 56,45 |



## Test tube and drying racks

By Nalgene®. Made of reinforced **PP**. Provides a secure hold for sample vials and centrifuge tubes, e.g. when used to secure sample while shaking. Racks allow full view of tube contents and do not float in water bath. Also excellent as drying rack for tubes, electrophoresis and chromatography plates. Autoclavable.

| Colour | For test tube ∅ (mm) | Slots | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| white | 10-13 | 96 (8x12) | 179 x 127 x 64 | **E088.1** | 1 | 15,60 |
| blue | 10-13 | 96 (8x12) | 179 x 127 x 64 | **E091.1** | 1 | 15,60 |
| white | 14-17 | 50 (5x10) | 187 x 105 x 70 | **E094.1** | 1 | 16,95 |
| blue | 14-17 | 50 (5x10) | 187 x 105 x 70 | **E097.1** | 1 | 16,95 |

▶ Test tubes see page 78

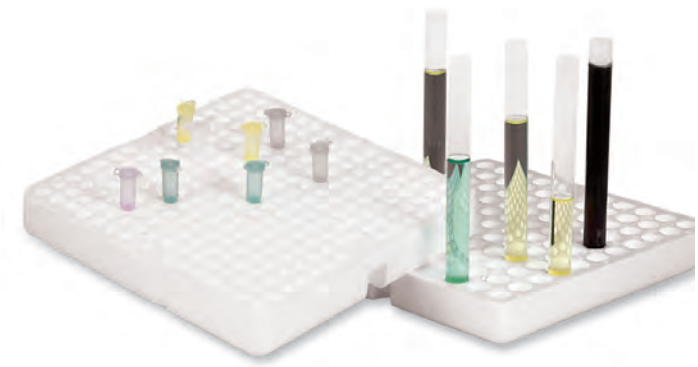


## Rack for NMR-test tubes

Made of **PP**. With 72 slots and 2 side handles for easy transportation. Stability is provided by hemispherical holes in the lower level.
For NMR test tubes L 178 mm, outer ∅ 5 mm.
Dimensions: L 210 x W 110 x H 220 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YA94.1** | 1 | 52,15 |

▶ NMR-Vials an scintillation tubes see page 72



## Rotilabo®-test tube trays

Made from foam **PS**. Ideal for a large number of centrifuge tubes or test tubes. Holes are deep enough to keep test tubes, vials, etc. stable. Stackable. Extremely light. With finger recesses for easy lifting.
K828.1 is ideal for 1.5 ml vials.
Dimensions: L 218 x W 218 x H 33 mm.

| Hole ∅ (mm) | Depth of holes (mm) | No. of holes | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 8,5 | 15 | 250 | **K828.1** | 5 | 28,30 |
| 14,5 | 18 | 119 | **K829.1** | 5 | 28,30 |
| 16,5 | 22 | 96 | **K830.1** | 5 | 28,30 |

# Test tube racks



## Test tube racks

By Nalgene®. Made of **Resmer®**. Moulded in one piece with 3 tiers. Easy viewing of contents. With alphanumeric marking on the top and a large labelling area on the front side.
Do not float in water baths, stackable.
Temperature stable from -70 to +121 °C. Autoclavable.

**For tubes ∅ 13 mm, compartment size 14 x 14 mm**

| Colour | Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 36 (6 x 6) | 102 x 102 x 56 | **H529.1** | 1 | 16,45 |
| blue | 36 (6 x 6) | 102 x 102 x 56 | **H530.1** | 1 | 16,45 |
| red | 36 (6 x 6) | 102 x 102 x 56 | **H532.1** | 1 | 16,45 |
| white | 72 (6 x 12) | 200 x 100 x 57 | **7390.1** | 1 | 25,10 |
| orange | 72 (6 x 12) | 200 x 100 x 57 | **7391.1** | 1 | 25,10 |
| yellow | 72 (6 x 12) | 200 x 100 x 57 | **7392.1** | 1 | 25,10 |
| blue | 72 (6 x 12) | 200 x 100 x 57 | **7393.1** | 1 | 25,10 |
| green | 72 (6 x 12) | 200 x 100 x 57 | **7394.1** | 1 | 25,10 |
| red | 72 (6 x 12) | 200 x 100 x 57 | **H524.1** | 1 | 23,50 |

**For tubes ∅ 16 mm, compartment size 18 x 18 mm**

| Colour | Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 36 (6 x 6) | 126 x 126 x 68 | **H533.1** | 1 | 18,65 |
| blue | 36 (6 x 6) | 126 x 126 x 68 | **H534.1** | 1 | 18,65 |
| green | 36 (6 x 6) | 126 x 126 x 68 | **H535.1** | 1 | 18,65 |
| red | 36 (6 x 6) | 126 x 126 x 68 | **H536.1** | 1 | 18,65 |
| white | 72 (6 x 12) | 250 x 130 x 70 | **7395.1** | 1 | 25,10 |
| orange | 72 (6 x 12) | 250 x 130 x 70 | **7401.1** | 1 | 25,10 |
| yellow | 72 (6 x 12) | 250 x 130 x 70 | **7407.1** | 1 | 25,10 |
| blue | 72 (6 x 12) | 250 x 130 x 70 | **7431.1** | 1 | 25,10 |
| green | 72 (6 x 12) | 250 x 130 x 70 | **7435.1** | 1 | 25,10 |
| red | 72 (6 x 12) | 250 x 130 x 70 | **H525.1** | 1 | 23,50 |

**For tubes ∅ 20 mm, compartment size 22 x 22 mm**

| Colour | Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 20 (4 x 5) | 128 x 103 x 83 | **H537.1** | 1 | 18,65 |
| blue | 20 (4 x 5) | 128 x 103 x 83 | **H538.1** | 1 | 18,65 |
| green | 20 (4 x 5) | 128 x 103 x 83 | **H539.1** | 1 | 18,65 |
| red | 20 (4 x 5) | 128 x 103 x 83 | **H540.1** | 1 | 18,65 |
| white | 40 (4 x 10) | 250 x 100 x 83 | **7438.1** | 1 | 25,10 |
| orange | 40 (4 x 10) | 250 x 100 x 83 | **7441.1** | 1 | 25,10 |
| yellow | 40 (4 x 10) | 250 x 100 x 83 | **7475.1** | 1 | 25,10 |
| blue | 40 (4 x 10) | 250 x 100 x 83 | **7477.1** | 1 | 25,10 |
| green | 40 (4 x 10) | 250 x 100 x 83 | **7478.1** | 1 | 25,10 |
| red | 40 (4 x 10) | 250 x 100 x 83 | **H526.1** | 1 | 23,50 |

**For tubes ∅ 25 mm, compartment size 26 x 26 mm**

| Colour | Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 16 (4 x 4) | 122 x 122 x 75 | **H541.1** | 1 | 18,65 |
| blue | 16 (4 x 4) | 122 x 122 x 75 | **H542.1** | 1 | 18,65 |
| white | 40 (4 x 10) | 300 x 120 x 92 | **7479.1** | 1 | 25,00 |
| orange | 40 (4 x 10) | 300 x 120 x 92 | **7484.1** | 1 | 25,00 |
| yellow | 40 (4 x 10) | 300 x 120 x 92 | **7487.1** | 1 | 25,00 |
| blue | 40 (4 x 10) | 300 x 120 x 92 | **7488.1** | 1 | 25,00 |
| green | 40 (4 x 10) | 300 x 120 x 92 | **7489.1** | 1 | 25,00 |
| red | 40 (4 x 10) | 300 x 120 x 92 | **H527.1** | 1 | 26,25 |

**For tubes ∅ 30 mm, compartment size 32 x 32 mm**

| Colour | Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 9 (3 x 3) | 109 x 109 x 84 | **H543.1** | 1 | 18,65 |
| blue | 9 (3 x 3) | 109 x 109 x 84 | **H544.1** | 1 | 18,65 |
| green | 9 (3 x 3) | 109 x 109 x 84 | **H545.1** | 1 | 18,65 |
| red | 9 (3 x 3) | 109 x 109 x 84 | **H546.1** | 1 | 18,65 |
| white | 24 (3 x 8) | 285 x 110 x 83 | **7492.1** | 1 | 25,00 |
| orange | 24 (3 x 8) | 285 x 110 x 83 | **7493.1** | 1 | 25,00 |
| yellow | 24 (3 x 8) | 285 x 110 x 83 | **7495.1** | 1 | 25,00 |
| blue | 24 (3 x 8) | 285 x 110 x 83 | **7497.1** | 1 | 25,00 |
| green | 24 (3 x 8) | 285 x 110 x 83 | **7508.1** | 1 | 25,00 |
| red | 24 (3 x 8) | 285 x 110 x 83 | **H528.1** | 1 | 26,25 |



## Universal test tube racks

Made of **PP**. Does not float in water. Alphanumerically coded holes for up to 90 test tubes. Temperature stable from -10 to +120 °C. Autoclavable.

**For tubes ∅ 13 mm, compartment size 13 x 13 mm**

| Colour | Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 90 (6 x 15) | 250 x 105 x 60 | **4279.1** | 1 | 11,50 |
| red | 90 (6 x 15) | 250 x 105 x 60 | **4283.1** | 1 | 11,50 |
| blue | 90 (6 x 15) | 250 x 105 x 60 | **4287.1** | 1 | 11,50 |
| yellow | 90 (6 x 15) | 250 x 105 x 60 | **4288.1** | 1 | 11,50 |

**For tubes ∅ 16 mm, compartment size 16 x 16 mm**

| Colour | Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 60 (5 x 12) | 250 x 105 x 70 | **4299.1** | 1 | 11,50 |
| red | 60 (5 x 12) | 250 x 105 x 70 | **4327.1** | 1 | 11,50 |
| blue | 60 (5 x 12) | 250 x 105 x 70 | **4367.1** | 1 | 11,50 |
| yellow | 60 (5 x 12) | 250 x 105 x 70 | **4383.1** | 1 | 11,50 |

**For tubes ∅ 20 mm, compartment size 21 x 21 mm**

| Colour | Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 40 (4 x 10) | 250 x 105 x 70 | **4388.1** | 1 | 11,50 |
| red | 40 (4 x 10) | 250 x 105 x 70 | **4398.1** | 1 | 11,50 |
| blue | 40 (4 x 10) | 250 x 105 x 70 | **4399.1** | 1 | 11,50 |
| yellow | 40 (4 x 10) | 250 x 105 x 70 | **4430.1** | 1 | 11,50 |

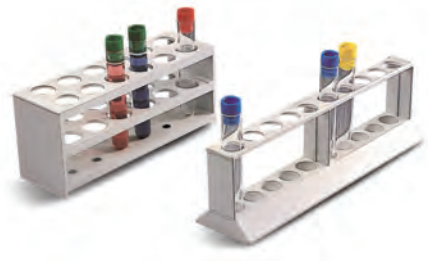
**For tubes ∅ 25 mm, compartment size 26 x 26 mm**

| Colour | Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 40 (4 x 10) | 300 x 125 x 85 | **4448.1** | 1 | 11,50 |
| red | 40 (4 x 10) | 300 x 125 x 85 | **4449.1** | 1 | 11,50 |
| blue | 40 (4 x 10) | 300 x 125 x 85 | **4450.1** | 1 | 11,50 |
| yellow | 40 (4 x 10) | 300 x 125 x 85 | **4466.1** | 1 | 11,50 |

**For tubes ∅ 30 mm, compartment size 31 x 31 mm**

| Colour | Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 24 (3 x 8) | 300 x 110 x 85 | **K833.1** | 1 | 16,50 |
| red | 24 (3 x 8) | 300 x 110 x 85 | **K834.1** | 1 | 16,50 |
| blue | 24 (3 x 8) | 300 x 110 x 85 | **K835.1** | 1 | 16,50 |
| yellow | 24 (3 x 8) | 300 x 110 x 85 | **K836.1** | 1 | 16,50 |

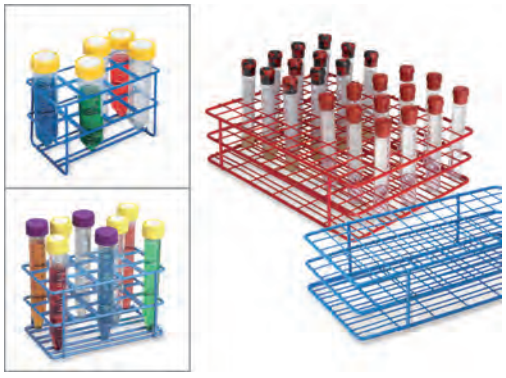
# Test tube racks



## Test tube stands with several tiers

Made of **PP**. Temperature stable up to 120 °C, autoclavable.

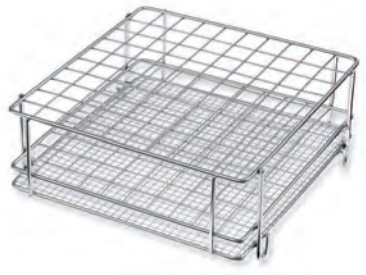
| Slots | Hole ∅ (mm) | Tiers | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 18 | 2 | 250 x 60 x 74 | **EPA9.1** | 1 | 8,10 |
| 12 | 12 | 3 | 190 x 60 x 80 | **EPC0.1** | 1 | 9,05 |
| 12 | 20 | 3 | 190 x 60 x 80 | **EPC1.1** | 1 | 9,05 |
| 24 | 20 | 3 | 375 x 65 x 95 | **EPC2.1** | 1 | 16,90 |



## Racks for test tubes

Made of epoxy-coated steel. Temperature stable up to 121 °C. Autoclavable.

| For test tube ∅ (mm) | Slots | L x W x H (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 13 | 72 (6 x 12) | 205 x 105 x 65 | blue | **AXH0.1** | 1 | 30,55 |
| 13 | 108 (9 x 12) | 205 x 162 x 65 | red | **AXH1.1** | 1 | 30,55 |
| 16 | 72 (6 x 12) | 241 x 127 x 65 | blue | **AXH2.1** | 1 | 30,40 |
| 16 | 108 (9 x 12) | 237 x 188 x 65 | red | **AXH3.1** | 1 | 30,40 |
| 18 | 15 (3 x 5) | 127 x 76 x 76 | blue | **AXH4.1** | 1 | 30,40 |
| 30 | 8 (2 x 4) | 147 x 80 x 89 | blue | **AXH5.1** | 1 | 30,45 |



## Rotilabo®-test tube rack

Made of stainless steel 18/10 (material 1.4301), electrolytically polished. With four feet, floor clearance 14 mm.
Dimensions: L 200 x W 200 x H 70 mm. Autoclavable.

| For container ∅ (mm) | Slots | Compartment size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 16 | 100 (10 x 10) | 18 x 18 | **ENX9.1** | 1 | 39,75 |



## Rotilabo®-test tube racks

Made of clear acrylic glass.

**Hole ∅ 11 mm,** bottom plate with bore holes (hole ∅ 6 mm).

| Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 x 2 | 135 x 42 x 35 | **5427.1** | 1 | 117,20 |
| 12 x 2 | 255 x 42 x 35 | **5453.1** | 1 | 84,85 |
| 12 x 4 | 255 x 82 x 35 | **5457.1** | 1 | 117,20 |

**Hole ∅ 18 mm**, bottom plate with bore holes (hole ∅ 14 mm).

| Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 165 x 55 x 75 | **CPT9.1** | 1 | 17,35 |
| 6 x 2 | 186 x 60 x 80 | **5119.1** | 1 | 56,05 |
| 8 x 3 | 220 x 80 x 79 | **CPX0.1** | 1 | 46,80 |
| 11 x 3 | 310 x 80 x 80 | **CPX1.1** | 1 | 59,15 |

**Hole ∅ 36 mm,** smooth bottom plate.

| Slots | L x W x H outer (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 x 2 | 275 x 100 x 80 | **5416.1** | 1 | 91,40 |



## Rotilabo®-test tube racks

Made of **steel and polyamide coating**, height 70 mm.

| Slots | L x W (mm) | Compartment size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 x 6 | 130 x 50 | 18 x 18 | **L385.1** | 1 | 15,35 |
| 2 x 10 | 210 x 50 | 18 x 18 | **L386.1** | 1 | 17,95 |
| 2 x 12 | 250 x 50 | 18 x 18 | **L387.1** | 1 | 18,60 |
| 3 x 12 | 250 x 70 | 18 x 18 | **L388.1** | 1 | 20,20 |
| 4 x 6 | 130 x 90 | 18 x 18 | **L389.1** | 1 | 19,05 |
| 4 x 12 | 250 x 90 | 18 x 18 | **L390.1** | 1 | 21,40 |
| 10 x 10 | 210 x 210 | 18 x 18 | **L391.1** | 1 | 28,40 |

Made of **stainless steel**, height 70 mm, autoclavable.

| Slots | L x W (mm) | Compartment size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 x 6 | 101 x 44 | 14 x 14 | **H439.1** | 1 | 38,95 |
| 2 x 12 | 197 x 44 | 14 x 14 | **H440.1** | 1 | 45,05 |
| 4 x 12 | 197 x 76 | 14 x 14 | **H441.1** | 1 | 47,10 |
| 2 x 6 | 130 x 50 | 18 x 18 | **H442.1** | 1 | 30,05 |
| 2 x 12 | 250 x 50 | 18 x 18 | **H443.1** | 1 | 42,95 |
| 4 x 12 | 250 x 90 | 18 x 18 | **H444.1** | 1 | 40,75 |

▶ For autoclaving information see page 5

# Test tube racks



## Test tube racks

Made of stainless steel 18/10. Autoclavable.

| Slots | Hole ∅ (mm) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 x 6 | 17 | 145 x 52 x 90 | **PH51.1** | 1 | 36,80 |
| 2 x 12 | 17 | 278 x 52 x 90 | **PH52.1** | 1 | 40,25 |
| 4 x 12 | 17 | 287 x 97 x 90 | **PH53.1** | 1 | 68,95 |
| 2 x 6 | 20 | 164 x 60 x 90 | **PH54.1** | 1 | 45,90 |
| 2 x 12 | 20 | 310 x 60 x 90 | **PH55.1** | 1 | 59,45 |



## Rotilabo®-test tube racks, round

Made of 18/10 stainless steel. Hole-∅ 20 mm.
Height (without handle) 165 mm. Autoclavable.

| ∅ (mm) | Slots | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 98 | 9 | **YT05.1** | 1 | 57,85 |
| 116 | 12 | **YT06.1** | 1 | 82,95 |
| 194 | 45 | **YT07.1** | 1 | 96,20 |



## Rotilabo®-test tube racks

Made of stainless steel Remanit 4301. Stackable. Autoclavable.

| Slots | Hole ∅ (mm) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 12,5 | 155 x 78 x 50 | **X115.1** | 1 | 25,70 |
| 50 | 14,5 | 188 x 95 x 58 | **X116.1** | 1 | 28,80 |
| 25 | 17,5 | 110 x 110 x 40 | **PX26.1** | 1 | 23,40 |
| 50 | 17,5 | 220 x 115 x 63 | **X117.1** | 1 | 34,30 |
| 15 | 30 | 220 x 115 x 63 | **PX27.1** | 1 | 29,30 |



## Test tube racks, wood

Made of beechwood, varnished. For test tubes with a min. height of 100 mm (Art. No. AEE3.1 for test tubes with a min. height of 160 mm).
Optionally available with draining pegs for drying test tubes after cleaning.

**Single level**

| For glass ∅ (mm) | Slots | Draining pegs | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 18 | 6 | without | 210 x 55 x 120 | **AEE0.1** | 1 | 10,25 |
| 18 | 6 | 6 | 210 x 55 x 120 | **AEE1.1** | 1 | 11,75 |
| 22 | 6 | without | 230 x 55 x 120 | **AEE2.1** | 1 | 10,65 |
| 30 | 6 | Without | 270 x 55 x 180 | **AEE3.1** | 1 | 13,90 |

**Two levels for simple storage of test tubes**

| For glass ∅ (mm) | Slots | Draining pegs | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 18 | 12 | Without | 210 x 55 x 200 | **AEE4.1** | 1 | 12,70 |
| 18 | 12 | 6 | 210 x 55 x 200 | **AEE5.1** | 1 | 14,95 |
| 18 | 24 | Without | 370 x 55 x 200 | **AEE8.1** | 1 | 16,10 |
| 22 | 12 | 6 | 230 x 75 x 200 | **AEH0.1** | 1 | 15,00 |

▶ Autoclaving informations on page 5

# Combi racks



## Test tube racks, extra large

Made of **PP**. For applications involving high sample throughput.
With alphanumeric coding.

**For vials ∅ 10-13 mm**

| Colour | Slots | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 216 | 327 x 267 x 91 | **TP51.1** | 1 | 35,45 |
| blue | 216 | 327 x 267 x 91 | **TP50.1** | 1 | 35,45 |

**For vials ∅ 13-16 mm**

| Colour | Slots | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 120 | 327 x 267 x 91 | **TP54.1** | 1 | 35,45 |
| blue | 120 | 327 x 267 x 91 | **TP55.1** | 1 | 35,45 |



## Combined test tube racks and grid inserts

Made of **POM**. Versatile frame racks with interchangeable grid inserts.
- Grid inserts in 5 colours for different test tube sizes
- 2 different test tube sizes are possible per rack
- Fast replacement of individual grids
- 3 levels for stability
- Slip-resistant rubber feet
- Stackable

Dimensions: L 318 x W 111 x H 67 mm.
Temperature stable from -80 to +121 °C. Autoclavable.

**Combined racks**

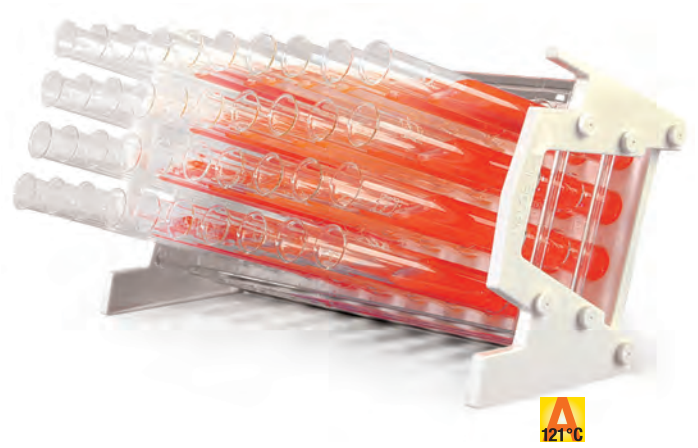
**Delivery incl.** frame rack and a set of 4 grids.

| Colour | For test tube ∅ (mm) | Slots | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| orange | 10-13 | 84 (14 x 6) | **YA95.1** | 1 | 25,70 |
| blue | 13-16 | 60 (12 x 5) | **YA96.1** | 1 | 25,70 |
| green | 16-20 | 40 (10 x 4) | **YA97.1** | 1 | 25,70 |
| pink | 20-25 | 24 (8 x 3) | **YA98.1** | 1 | 25,70 |
| yellow | 25-30 | 12 (6 x 2) | **YA99.1** | 1 | 25,70 |

**Grid inserts**

Additional grids (combinable).

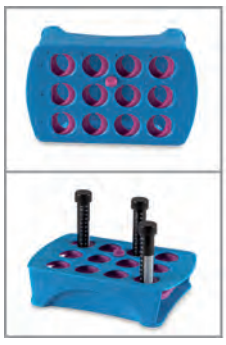
| Colour | For test tube ∅ (mm) | Slots | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| orange | 10-13 | 84 (14 x 6) | **YC00.1** | 4 | 8,90 |
| blue | 13-16 | 60 (12 x 5) | **YC01.1** | 4 | 8,90 |
| green | 16-20 | 40 (10 x 4) | **YC02.1** | 4 | 8,90 |
| pink | 20-25 | 24 (8 x 3) | **YC03.1** | 4 | 8,90 |
| yellow | 25-30 | 12 (6 x 2) | **YC04.1** | 4 | 8,90 |



## Slanted racks

By Nalgene®. Made of white **PC**, for simple and speedy preparation of angular agar with two different inclination angles.
The side supports on the rack enable on the one side the preparation of a culture medium with a 5° angle of inclination, i.e. with a steep slope and therefore with a larger surface, e.g. for aerobic cultures, and on the other side with a 20° inclination angle, i.e. with a flat slope and smaller surface, e.g. for anaerobic cultures. The 20° angle helps prevent the drying out of nutrient media during long-term storage.
Also excellent for incubating liquid tissue cultures and for use in water baths - do not float. Nutrient media tubes can be autoclaved in rack in a vertical position. With 40 alphanumerically marked holes (4x10).
Dimensions: L 285 x W 115 mm.

| For test tubes | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ∅ 15-16 mm | 17 | **E100.1** | 1 | 58,50 |
| ∅ 20 mm | 20 | **E101.1** | 1 | 58,50 |





## Universal rack for test tubes

Made of **PP**. With 12 variable-size slots, for test tube ∅ 16-30 mm.
Slots can be opened by inserting the vessels or by turning a knob.
Dimensions: L 194 x W 140 x H 51 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NY31.1** | 1 | 47,10 |



## Pop-Up™-racks

Made of PP. For centrifuge tubes 15 and/or 50 ml. Folds up to save storage space. Easy to unfold for quick access. Numbered slots for identification of samples. Robust design.
Dimensions: L 255 x W 137 x H 72 mm, folded H 21 mm.

| for centrifuge tubes | Holes | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 15/50 ml | 21 x ∅ 17 mm / 12 x ∅ 30 mm | blue | **PC54.1** | 2 | 31,20 |
| 15/50 ml | 21 x ∅ 17 mm / 12 x ∅ 30 mm | pink | **PC55.1** | 2 | 31,20 |
| 15 ml | 45 x ∅ 17 mm | violet | **TP22.1** | 2 | 32,20 |
| 50 ml | 18 x ∅ 30 mm | green | **TP23.1** | 2 | 32,20 |



## Rotilabo®-combi racks 4 in 1, oblong shape

Made of **PP**. Space saving and ideal for use on the laboratory bench, under a hood, in the water bath and freezer (max. -90 °C).
For centriguge tubes, test tubes, microcentrifuge tubes, PCR-tubes.
Dimensions: L 180 x W 90 x H 52 mm. Autoclavable.
Four different side can be fitted:

- Bore holes-∅ 30 mm - 4 centrifuge tubes 50 ml
- Bore holes-∅ 17 mm - 12 centrifuge tubes 15 ml
- Bore holes-∅ 11 mm - 32 centrifuge tubes 1.5/2 ml
- Bore holes-∅ 8 mm - 32 centrifuge tubes 0.5/ml

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| neon blue | **K082.1** | 1 | 17,45 |
| neon green | **K083.1** | 1 | 17,45 |
| neon orange | **K084.1** | 1 | 17,45 |
| neon pink | **K085.1** | 1 | 17,45 |
| neon yellow | **K086.1** | 1 | 17,45 |


- For autoclaving information see page 5
- Centrifuge tubes see page 83
- Microcentrifuge tubes see page 474





## Single stand for 50 ml centrifuge tubes

For tube ∅ 27.5 to 29 mm, with conical or round base.

① Made of **PS**, ∅ 92 x H 30 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TP29.1** | 5 | 20,45 |

② Made of epoxy-coated steel, autoclavable.
Dimensions: L 90 x W 67 x H 67 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TP30.1** | 1 | 15,00 |



## Puzzle racks

Made of **PP**. Double-sided, for various vial types:

- 8 reaction vials à 1.5/2 ml + 9 centrifuge tubes à 15 ml
- 4 reaction vials à 1.5/2 ml + 4 centrifuge tubes à 50 ml

Coloured individual parts (yellow, blue, green, orange) can be assembled as a larger rack.
Dimensions: L 151 x W 135 x H 66 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NL89.1** | 4 | 47,25 |

# Combi racks



## Combi reaction vial stands

Pipetting station, individually combinable.
For reaction vials, centrifuge tubes or reagent reservoirs.

- Vials are readily visible due to cascaded design
- Inserts also suitable for use on laboratory bench or ice bath
- Dimensions of a single white station: L 260 x W 135 x H 90 mm
- Red holders allow assembly to form a combination station

Inserts temperature stable from -90 to +121 °C, autoclavable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Set (2 stations, 6 inserts for 1.5 ml vials, 2 inserts each for 0.5 ml vials and centrifuge tubes 15 and 50 ml, 2 holders) | **EKN9.1** | 1 | 49,80 |
| Station (white) incl. holders, without inserts | **EKP0.1** | 2 | 28,00 |
| Holders (red) | **EKP1.1** | 6 | 16,50 |
| Inserts for 12 x 0.5 ml reaction vials (red) | **EKP2.1** | 5 | 10,50 |
| Inserts for 12 x 1.5 ml reaction vials (violet) | **EKP3.1** | 5 | 10,50 |
| Inserts for 7 x 0.5 ml reaction vials (green) | **EKP4.1** | 5 | 10,50 |
| Inserts for 4 x 0.5 ml reaction vials (blue) | **EKP5.1** | 5 | 10,50 |
| Inserts for 3 x 50 ml reaction vials (orange) | **EKP6.1** | 5 | 10,50 |
| Inserts for 36 x 0.2 ml PCR tubes (yellow) | **EKP7.1** | 5 | 10,50 |
| Reagent reservoir insert, 25 ml | **EKP8.1** | 50 | 29,50 |




## Multi-tube-racks

Made of **POM**. 4 flexible slots for variable use, fits tube ∅ 12 to 30 mm.
Interconnectable. Dimensions: L 181 x W 56 x H 76 mm. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue/green | **AXH9.1** | 2 | 13,10 |
| blue/yellow | **AXK0.1** | 2 | 13,10 |
| blue | **AXK1.1** | 2 | 13,10 |
| green | **AXK2.1** | 2 | 13,10 |
| yellow | **AXK3.1** | 2 | 13,10 |
| white | **AXK4.1** | 2 | 13,10 |
| pink | **AXK5.1** | 2 | 13,10 |




## Rotilabo®-combi racks 4 in 1, cubical shape

Made of **PP**. Can be fitted together on the open sides any way you like.
For centrifuge vials, test tubes and centrifuge tubes. Autoclavable.
Dimensions: L 108 x W 108 x H 108 mm.
With four different insertion sides:

- Bore holes-∅ 30 mm - 4 centrifuge vials 50 ml
- Bore holes-∅ 17 mm - 10 centrifuge vials 15 ml
- Bore holes-∅ 13 mm - 12 test tubes ∅ 12 x L 75/100 mm
- Bore holes-∅ 12 mm - 16 centrifuge tubes 1.5/2 ml

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| sorted (blue, yellow, green, orange, pink) | **AK71.1** | 5 | 45,15 |




## Rotilabo®-racks, revolving

Made of **PP**. Four colored models (violet, blue, green and yellow) are connected together, can however be turned individually, thus allowing centrifuge tubes and vials of different size to be stored and transported in one rack. Autoclavable.

**Model 1 for large vials:**

- Hole-∅ 29.6 mm - 2 vials 50 ml
- Hole-∅ 16.4 mm - 8 vials 15 ml
- Hole-∅ 20.5 mm - 6 vials ∅ 16 to 20 mm
- Hole-∅ 13.5 mm - 10 vials ∅ 10 to 13 mm

Dimensions: L 112 x W 112 x H 224 mm

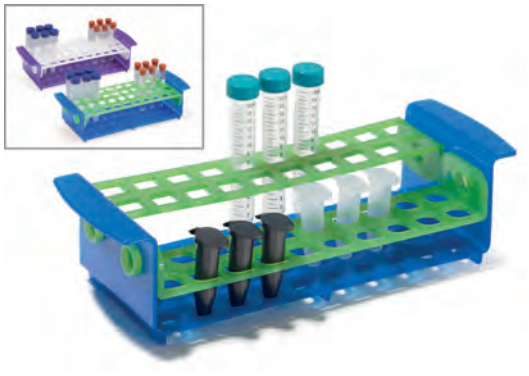
**Model 2 for centrifuge tubes:**

- Hole-∅ 16.4 mm - 6 centrifuge tubes 15 ml
- Hole-∅ 11.2 mm - 9 centrifuge tubes 1.5 to 2 ml
- Hole-∅ 8.0 mm - 12 centrifuge tubes 0.5 ml
- Hole-∅ 6.5 mm - 32 PCR-centrifuge tubes or 4 centrifuge tube strips at 8 tubes each

Dimensions: L 100 x W 100 x H 208 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **HC25.1** | 1 | 51,10 |
| 2 | **HC26.1** | 1 | 51,10 |

# Centrifuge tube racks



## Combi racks for 5/15-ml tubes

Made of **PP**. With 40 slots, slot ∅ 17 mm for test tube ∅ bis 16 mm.

Flexible adaptation by turning the slot level:
- Upper position for 15 ml centrifuge tubes, high form
- Lower position for 5 ml reaction vials, low form

Dimensions: L 309 x W 107 x H 77 mm. Temperature-stable up to 121 °C. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue/green | **ENL5.1** | 1 | 36,70 |
| violet/clear | **ENL6.1** | 1 | 36,70 |



## Centrifuge tube racks 2 in 1

**Double-sided,** made of **PP**, with lid. Handy and compact size of 158 x 79 mm. With 32 holes for 0.5/0.65 ml centrifuge tubes and 8 holes for 1.5/1.7/2 ml vials on one side as well as 32 holes for 1.5/1.7/2 ml vials and 8 holes for 0.5/0.65 ml vials on the other. Hole-∅ 8 or 11 mm. Alphanumerically coded on both sides. Can be stacked. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Selected (orange, pink, yellow, blue, green) | **EHP2.1** | 5 | 74,30 |



## Reaction vial racks for 5 ml tubes

Made of **PP**. For 5 ml centrifuge vials as well as tubes with ∅ 13-16 mm. With side handles for transporting and stacking.
Dimensions: L 260 x W 113 x H 105 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXP6.1** | 1 | 40,75 |



## Test tube racks, recycled

Made from recycled plastic, colour variations possible.

- Double-sided, with 48 or 96 alphanumerically labelled slots
- 10.5 mm slot ∅ for 1.5/2 ml reaction vials
- 7.5 mm slot ∅ for 0.5 ml reaction vials
- Large distances between the slots to ensure that screw cap vials can be opened easily
- Temperature-resistant down to -80 °C

| Slots | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 48 | 215 x 69 x 27 | **EEC5.1** | 5 | 20,40 |
| 96 | 215 x 130 x 27 | **EEC6.1** | 5 | 37,10 |




## Rotilabo®-centrifuge tube racks

Made of **PP**, for 1.5 and 2 ml centrifuge tubes. 20 holes,∅ 10.5 mm, arranged in two levels. Large, easy-to-read numbers on the individual holes. Can be clipped together on the sides. With recessed grip for easy handling.
Dimensions: L 210 x W 90 x H 50 mm. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **N390.1** | 1 | 7,50 |

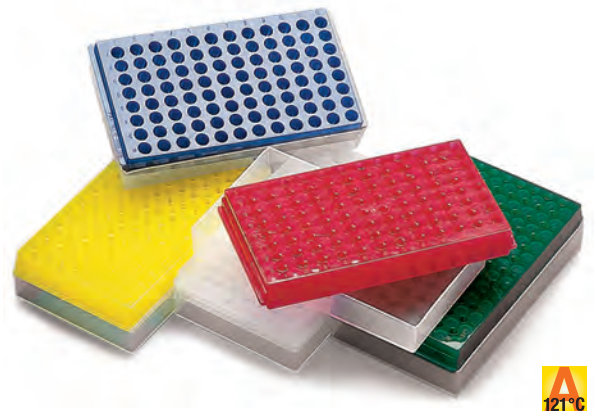


## Mμlti®-ultra racks

Made of **PP**. With 48 alphanumerically coded holes for centrifuge tubes with 0.65, 1.7 and 2 ml volume. Colour grey. Autoclavable.

| For vials (ml) | Hole ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.65 | 8 | **A775.1** | 1 | 22,25 |
| 1.5 / 1.7 / 2 | 11 | **A777.1** | 1 | 22,25 |

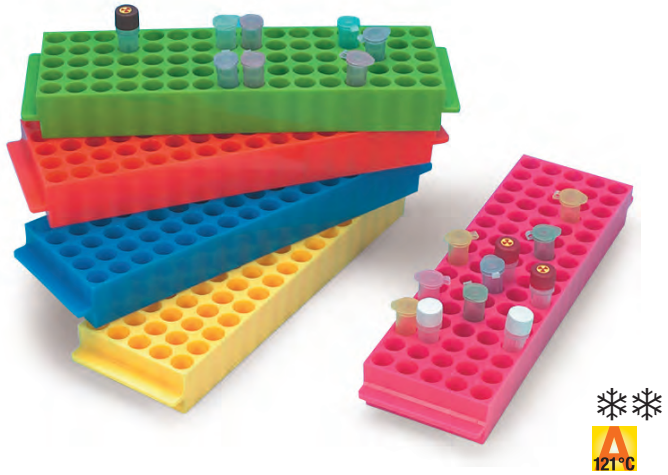
# Centrifuge tube racks



## Rotilabo®-micro-centrifuge tube racks 2 in 1

**Double-sided**, made of **PP**. There are alphnumerically coded holes for 0.5/0.65 ml or 1.5/1.7 ml centrifuge tubes. With bore holes ∅ 8 resp. 11 mm on both sides. With large spaces for labelling on all four sides of the rack and transparent lid. Autoclavable.
Dimensions: L 210 x W 115 x H 25 mm without lid/with lid 50 mm.

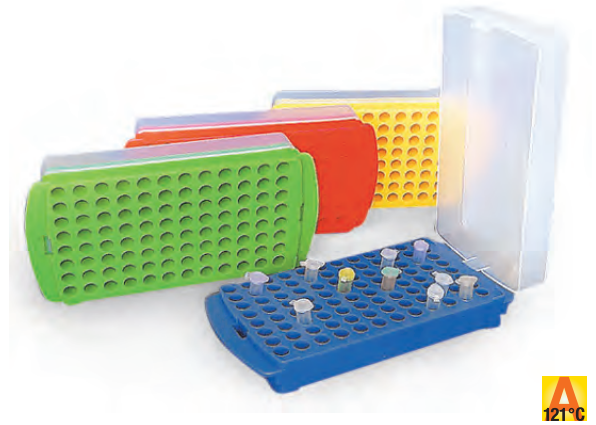
| Colour | Slots | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| natural | 96 (8 x 12) | **E271.1** | 1 | 28,50 |
| blue | 96 (8 x 12) | **E272.1** | 1 | 28,50 |
| green | 96 (8 x 12) | **E273.1** | 1 | 28,50 |
| red | 96 (8 x 12) | **E274.1** | 1 | 28,50 |
| yellow | 96 (8 x 12) | **E275.1** | 1 | 28,50 |



## Rotilabo®-test tube racks

Made of **PP**. With 80 numerically labelled holes in 5 x 16 array, for 1.5/2 ml centrifuge tubes as well as screw cap vials with volumes up to 2 ml. 11 mm ∅ of holes, depth 25 mm, vertically drilled. With a space for labelling. Temperature stable down to -80 °C. Autoclavable. Dimensions: L 210 x W 65 x H 27 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **C771.1** | 1 | 7,00 |
| green | **C772.1** | 1 | 7,00 |
| orange | **C773.1** | 1 | 7,00 |
| pink | **C774.1** | 1 | 7,00 |
| yellow | **C775.1** | 1 | 7,00 |



## 2 in 1 Rotilabo®-racks for microcentrifuge tubes

**Double-sided**, made of **PP**. With 96 holes for 1.5/2 ml centrifuge tubes on one side and 96 holes for 0.5 ml centrifuge tubes on the other. Alphanumerically coded holes in a 8 x 12 array. Hole-∅ 8 or 11 mm. Transparent slip lid with latch and large labelling area.
Dimensions: L 246 x W 121 x H 25 mm without lid (with lid 50 mm). Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| natural | **T216.1** | 1 | 12,90 |
| blue | **T217.1** | 1 | 12,90 |
| green | **T218.1** | 1 | 12,90 |
| pink | **T219.1** | 1 | 12,90 |
| yellow | **T220.1** | 1 | 12,90 |
| sorted (blue, green, pink, yellow, orange) | **NY18.1** | 5 | 57,00 |



## Rotilabo®-micro-centrifuge tube racks

Made of highly transparent **PS**. With 24 holes in 3 rows, for 1.5/2 ml centrifuge tubes as well as test tubes and vials up to a ∅ of 12 mm. Each row is numbered from 1 to 8. Temperature stable from -40 to +70 °C. L 155 x W 76 mm. Set consists of 4 attachable racks.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **P166.1** | 1 | 36,35 |

# Centrifuge tube racks



## Racks for micro-centrifuge tubes

Made of **PP**. With alphanumerically labelled holes ∅ 11 mm for 100 centrifuge tubes with 1.5 - 2 ml volume. Does not float in water. Stackable. Temperature stable from -15 to +130 °C.
Dimensions: L 265 x W 110 x H 45 mm. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **4562.1** | 1 | 15,20 |
| blue | **4563.1** | 1 | 15,20 |
| red | **4575.1** | 1 | 15,20 |
| yellow | **4581.1** | 1 | 15,20 |



## Mini reaction vial racks 2 in 1

Made of **PP**. With 25 slots for 1.5 / 2 ml reaction vials or screw vials up to 2 ml on one side and 16 slots for 0.2 / 0.5 ml PCR vials on the other side.
Dimensions: 75 mm long x 65 mm wide x 22 mm high. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **CXN7.1** | 10 | 26,15 |
| red | **CXN8.1** | 10 | 26,15 |
| yellow | **CXN9.1** | 10 | 26,15 |



## Cryo vials rack

By Nalgene®. Made of white **PC**. The snap-in attachment in the base stops the vials from turning when opening and closing the box and also enables speedy and convenient one-hand operation. With alpha-numerical coding for easy sample identification. Rubber knobs on base prevent slipping. 50 holes in a 5 x 10 array (∅ 12.5 mm).
Dimensions: L 197 x W 102 x H 28 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H615.1** | 1 | 43,00 |



## Racks for reaction vials with screw cap

Made of **POM**. For 50 screw top vials. Hole ∅ 10.75 mm, locking system in base as well as ribbed holes allowing single-handed opening of most standard reaction vials with screw cap and cryogenic vials. Suitable for use in a water bath, non floating, retains stability even when stored under water. Stackable. Temperature stable from -196 to +121 °C.
Dimensions: L 293 x W 115 x H 39 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **AEN2.1** | 10 | 105,90 |
| green | **AEN3.1** | 10 | 105,90 |
| violet | **AEN4.1** | 10 | 105,90 |
| orange | **AEN5.1** | 10 | 105,90 |
| yellow | **AEN6.1** | 10 | 105,90 |



## Rotilabo®-cryogenic vial racks

Made of **PP**. With 50 alphanumerically coded holes (∅ 12.5 mm) in a 5 x 10 array. Latch system on the bottom allows one-handed opening and closing of the cryo vials. Rubber knobs prevent slipping. Stackable.
Dimensions: L 200 x W 100 x H 25 mm. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **K551.1** | 1 | 16,05 |
| red | **K552.1** | 1 | 16,05 |
| violet | **K554.1** | 1 | 16,05 |

▶ Cryo-vials see page 481

# PCR-stands/PCR-boxes



## PCR-workstations

Made of **PP**, with lid. With 32 holes for PCR-vials 0.2 ml, 24 holes for 1.5/2 ml centrifuge tubes and 16 holes for 0.5 ml centrifuge tubes. Alphanumerically coded holes and large label space on all 4 sides for easy identification. Holes-∅ 6.5/8/12 mm.
Dimensions: L 215 x W 120 x H 50 mm. Can be combined with PCR-racks, Art. No. K823.1-K827.1. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| neon blue | **K818.1** | 1 | 27,85 |
| neon green | **K819.1** | 1 | 27,85 |
| neon orange | **K820.1** | 1 | 27,85 |
| neon pink | **K821.1** | 1 | 27,85 |
| neon yellow | **K822.1** | 1 | 27,85 |

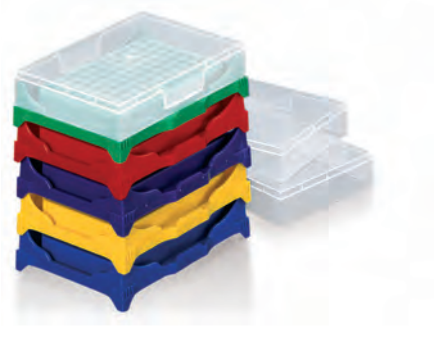
▶ PCR-vials see page 472



## PCR-racks

Made of **PP**, with lid. With 96 holes ∅ 6 mm for 0.2 ml PCR-tubes. Come in standard 8 x 12 micro-titre plate array. Are therefore excellent for PCR-plates, 8 or 12 tube strips or for individual PCR-tubes. PCR-racks can be easily mounted over the 32 x 0.2 ml holes of PCR-workstation. By securing them with 4 clips, the racks can be removed or inserted easily when required.
Dimensions: L 126 x W 86 mm. Height 33 mm with lid, 11 mm without lid. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| neon blue | **K823.1** | 1 | 11,30 |
| neon green | **K824.1** | 1 | 11,30 |
| neon orange | **K825.1** | 1 | 11,30 |
| neon pink | **K826.1** | 1 | 11,30 |
| neon yellow | **K827.1** | 1 | 11,30 |



## Rotilabo®-PCR-racks

Made of **PP**, with transparent slip lid. Stackable. For PCR-vials, strips and plates with a volume of 0.2 ml. 96 holes. Array 8 x 12. Bore hole ∅ 5.5 mm. Temperature stable from -80 to +121 °C.
Dimensions: L 138 x W 98 x H 39 mm. Height without lid: 30 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| assorted (blue, yellow, green, red, purple) | **HX25.1** | 5 | 54,95 |



## Rotilabo®-PCR-racks

Made of **PP**. With attached, removable lid.
96 alphanumerically coded holes ∅ 6 mm for PCR-vials, -plates and -strips 0.2 ml. 8 x 12 array in microtitre plate format.
Dimensions: L 130 x W 100 x H 30 mm. Height without lid: 15 mm. Autoclavable.

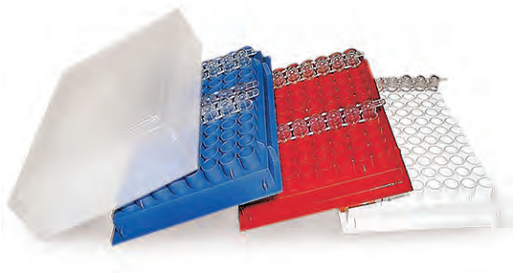
| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| natural | **T098.1** | 1 | 8,30 |
| blue | **T099.1** | 1 | 8,30 |
| green | **T100.1** | 1 | 8,30 |
| sorted (blaue, green, pink, yellow, orange) | **NY17.1** | 5 | 34,40 |



## PCR-box

Made of **PC**. With 144 alphanumerically numbered slots for 0.2 ml PCR vials. Dimensions: L 132 x W 132 x H 25 mm. Temperature stable to -86 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXP1.1** | 1 | 11,30 |



## Rotilabo®-PCR-stands

Made of **PP**, lid Art. No. P769.2 made of **SBS**. With 96 holes ∅ 6 mm in 8 x 12 array, for vials 0.2 ml, individual vials, on strips or plates.
Dimensions L 127 x W 85 x H 16 mm.

| Type | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| PCR-racks | white | **P765.2** | 10 | 18,25 |
| PCR-racks | blue | **P766.2** | 10 | 18,25 |
| PCR-racks | red | **P767.2** | 10 | 18,25 |
| Lid flat (14 mm) | colourless | **P768.2** | 10 | 16,75 |
| Lid high (28 mm) | colourless | **P769.2** | 10 | 18,25 |



## PCR cryogenic boxes

Made of low-temperature-resistant, water-repellent cardboard.
For storing PCR single vials or PCR 8-tube strips. Slot size 8 x 8 mm.
**Delivery incl.** partition piece.

| Slots | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 64 | 76 x 76 x 25 | **EKN0.1** | 5 | 13,95 |
| 196 | 114 x 124 x 25 | **EKN1.1** | 5 | 11,50 |



## Work2Store™ storage boxes

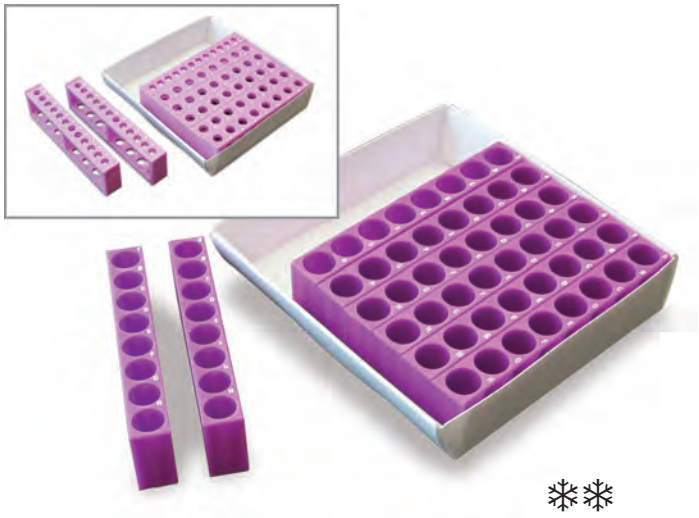
**Variable all-in-one rack and storage boxes:** Can be pulled apart for easy sample handling with large distances between rows.
Can be stored flat to save space.

- Alphanumeric numbering
- Stackable
- Temperature stable from -80 to +121 °C.
- Autoclavable

**Technical specifications:**

| | Work2StoreTM | Work2Store™ Micro |
|---|---|---|
| For reaction vials | 1.5/2 ml or cryo vials up to 2 ml | 0.2/0.5 ml or PCR strips |
| Slots | 64 x ∅ 12 mm;<br>holes with locking function for cryo vials | Double-sided rack:<br>side 1: 64 x ∅ 7.99 mm<br>side 2: 96 x ∅ 6.30 mm |
| Dimensions with lid / open | L 133 x W 133 x H 53 /<br>L 310 x W 128 x H 33.5 mm | L 133 x W 133 x H 48 mm /<br>L 310 x W 128 x H 31 mm |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Work2StoreTM | **NL88.1** | 1 | 31,35 |
| Work2Store™ Micro | **AXH8.1** | 1 | 31,70 |



## Storage boxes with inserts

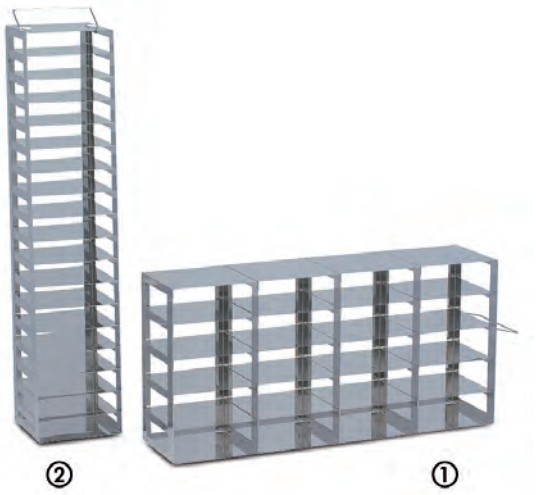
Made of **PP**. Box with 8 inserts. Individually removable inserts for flexible working, alphanumeric marking for sample identification.
Dimensions Box: L 129 x W 130 x H 35 mm.
Temperature stable from -80 to +70 °C. Inserts autoclavable.

**Technical specifications:**

| Type | For vessels | Slots | Slot-∅ | Special features |
|---|---|---|---|---|
| **TracRack™** | 1.5/2 ml or cryo vials up to 2 ml | 64 | 12.3 | Latching device at bottom for Cryo-vial enables single-handed opening and closing |
| **TracRack™ Micro** | 0.2 ml | 96 | 5.1 | Inserts reversible for flexible use |
| | 0.5 ml | 64 | 7.8 | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| TracRack™ | **ENL8.1** | 1 | 22,70 |
| TracRack™ Micro | **ENL9.1** | 1 | 22,75 |

# Cryo racks




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## Cryo racks for cryo boxes

Made of polished stainless steel. Corrosion resistant, very robust and easy to clean. For storing cryo-boxes in freezers. With handles. Suitable for cryo boxes in sizes from 130 x 130 to 136 x 136 mm.

**① Horizontal racks for upright freezers**

| For box height (mm) | L x W x H (mm) | Compartments | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 424 x 140 x 274 | 3 x 5 | **LH44.1** | 1 | 127,95 |
| 50 | 566 x 140 x 219 | 4 x 4 | **LH43.1** | 1 | 127,95 |
| 50 | 566 x 140 x 274 | 4 x 5 | **LH42.1** | 1 | 151,60 |
| 50 | 566 x 140 x 328 | 4 x 6 | **LH41.1** | 1 | 155,90 |

**② Vertical racks for chest style freezers**

| For box height (mm) | L x W x H (mm) | Compartments | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 140 x 140 x 495 | 1 x 9 | **LH49.1** | 1 | 91,40 |
| 50 | 140 x 140 x 550 | 1 x 10 | **T440.1** | 1 | 89,20 |
| 50 | 140 x 140 x 604 | 1 x 11 | **LH47.1** | 1 | 92,40 |
| 50 | 140 x 140 x 659 | 1 x 12 | **LH48.1** | 1 | 89,95 |
| 50 | 140 x 140 x 713 | 1 x 13 | **LH46.1** | 1 | 96,70 |
| 75-77 | 140 x 140 x 641 | 1 x 8 | **LH50.1** | 1 | 85,90 |
| 75-77 | 140 x 140 x 720 | 1 x 9 | **LH51.1** | 1 | 105,35 |

## Cryogenic racks for cryogenic boxes, aluminium

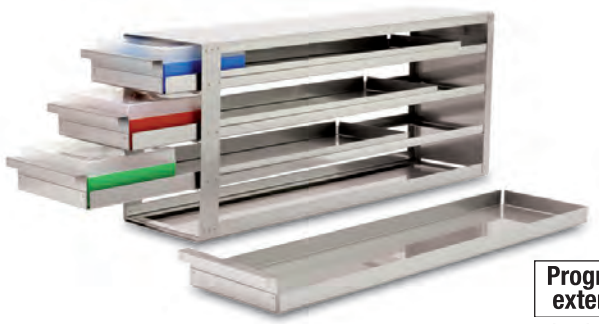
Made of aluminium, with carry handle. At least 30 % lighter than stainless steel racks. For the storage of cryogenic boxes in deep freezer chests or deep freezers, less effort is required for removal and insertion. Improved design for faster cooling rate. Suitable for cryogenic boxes in sizes from 130 x 130 to 136 x 136 mm.

**① Wide version for deep freezers**

| For box height (mm) | L x W x H (mm) | Compartments | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 566 x 140 x 274 | 4 x 5 | **CLL6.1** | 1 | 203,20 |
| 50 | 566 x 140 x 328 | 4 x 6 | **CLL7.1** | 1 | 224,70 |

**② High version for deep freezer chests**

| For box height (mm) | L x W x H (mm) | Compartments | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 140 x 140 x 550 | 1 x 10 | **CLL8.1** | 1 | 127,95 |



**Programme extension!**

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## Cryogenic racks for cryogenic boxes, cabinet modules

Made of stainless steel with polished surface, easy to clean. For the storage of cryogenic boxes in deep freezers, less effort is required for removal and insertion. Cabinet modules without pull-out stop. Suitable for cryogenic boxes in sizes from 130 x 130 to 136 x 136 mm.

| For box height (mm) | L x W x H (mm) | Compartments | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 556 x 141 x 225 | 4 x 4 | **CLL9.1** | 1 | 148,35 |
| 50 | 556 x 141 x 280 | 5 x 4 | **CLN0.1** | 1 | 152,65 |
| 50 | 690 x 141 x 280 | 5 x 5 | **HHX5.1** | 1 | 171,25 |
| 50 | 556 x 141 x 335 | 6 x 4 | **CLN1.1** | 1 | 166,65 |
| 75 | 556 x 141 x 250 | 3 x 4 | **CLN2.1** | 1 | 141,90 |
| 75 | 556 x 141 x 335 | 4 x 4 | **CLN3.1** | 1 | 159,10 |



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## Rotilabo®-stainless steel rack

Ideal for storing and transporting 6 storage boxes with 200 holes (P786.1), 12 boxes with 100 holes (N195.1ff/N200.1) or a combination of both. Very sturdy. Dimensions: L 285 x W 159 x H 439 mm. Shed heigth: 69 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P959.1** | 1 | 263,40 |



## Rotilabo®-cryogenic boxes made of cardboard

Made of low temperature resistant cardboard. Flexible storage of cryo vials and other sample containers through variable configurations using different dividers. Also suitable for larger contains without grid dividers.
Dimensions: L 136 x W 136 mm.
**Delivery without** dividers, please order dividers separately.

**Fitting table for Rotilabo®-cryo boxes:**

| Sample vessel type | Cryobox | Divider |
|---|---|---|
| 0.5 ml reaction vial | Y054.2 / CLE8.1 | Y050.2 |
| 1.5/2 ml reaction vials | P895.3 / CLE9.1 | P900.2 |
| Cryovials up to 2 ml, internal thread | P895.3 / CLE9.1 | P900.2 |
| Cryovials up to 2 ml, external thread | P895.3 / CLE9.1 | P900.2 |
| 5 ml cryovials | P897.2 / CLH5.1 | Y046.2 |
| 15 ml centrifuge tubes | Y055.2 / CLH6.1 | Y042.2 |
| 50 ml centrifuge tubes | Y055.2 / CLH6.1 | Y038.2 |

**With water repellent standard coating**

| Height (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 32 | white | **Y054.2** | 10 | 33,90 |
| 50 | white | **P895.3** | 10 | 27,95 |
| 50 | white | **P895.2** | 50 | 96,65 |
| 50 | blue | **XP98.1** | 10 | 35,40 |
| 50 | red | **XP99.1** | 10 | 35,40 |
| 50 | green | **XT00.1** | 10 | 35,40 |
| 50 | yellow | **XT01.1** | 10 | 35,40 |
| 75 | white | **P896.2** | 10 | 40,35 |
| 100 | white | **P897.2** | 10 | 60,75 |
| 130 | white | **Y055.2** | 10 | 63,45 |

**With waterproof plastic coating**

| Height (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 32 | white | **CLE8.1** | 10 | 49,40 |
| 50 | white | **CLE9.1** | 10 | 32,20 |
| 50 | blue | **CLH0.1** | 10 | 53,55 |
| 50 | red | **CLH1.1** | 10 | 53,55 |
| 50 | green | **CLH2.1** | 10 | 53,55 |
| 50 | yellow | **CLH3.1** | 10 | 53,55 |
| 75 | white | **CLH4.1** | 10 | 40,80 |
| 100 | white | **CLH5.1** | 10 | 61,20 |
| 130 | white | **CLH6.1** | 10 | 68,30 |

## Partition inserts made of cardboard

Made of cardboard for partitioning cryo boxes.

| Slots | Slot L x W (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 4 x 4 | 31 x 31 | 30 | **Y037.2** | 10 | 31,20 |
| 4 x 4 | 31 x 31 | 65 | **Y038.2** | 10 | 31,20 |
| 5 x 5 | 24 x 24 | 30 | **Y039.2** | 10 | 21,00 |
| 5 x 5 | 24 x 24 | 65 | **Y040.2** | 10 | 24,00 |
| 6 x 6 | 20 x 20 | 30 | **Y041.2** | 10 | 24,75 |
| 6 x 6 | 20 x 20 | 65 | **Y042.2** | 10 | 26,80 |
| 7 x 7 | 17 x 17 | 30 | **Y043.2** | 10 | 19,90 |
| 7 x 7 | 17 x 17 | 65 | **Y044.2** | 10 | 26,85 |
| 8 x 8 | 15 x 15 | 30 | **P898.2** | 10 | 16,10 |
| 8 x 8 | 15 x 15 | 65 | **Y045.2** | 10 | 26,85 |
| 9 x 9 | 13,5 x 13,5 | 30 | **P899.2** | 10 | 16,10 |
| 9 x 9 | 13,5 x 13,5 | 65 | **Y046.2** | 10 | 26,85 |
| 10 x 10 | 12,5 x 12,5 | 30 | **P900.2** | 10 | 16,10 |
| 10 x 10 | 12,5 x 12,5 | 65 | **Y047.2** | 10 | 26,85 |
| 12 x 12 | 10 x 10 | 25 | **Y048.2** | 10 | 26,85 |
| 12 x 12 | 10 x 10 | 30 | **Y049.2** | 10 | 26,85 |
| 13 x 13 | 9 x 9 | 25 | **Y050.2** | 10 | 28,50 |
| 13 x 13 | 9 x 9 | 30 | **Y051.2** | 10 | 28,50 |
| 14 x 14 | 8 x 8 | 25 | **Y052.2** | 10 | 28,50 |
| 14 x 14 | 8 x 8 | 30 | **Y053.2** | 10 | 28,50 |



## Rotilabo®-mini cryo boxes made of cardboard

Made of frost-resistant, water-repellent cardboard.
Boxes are suitable for labelling, space-saving and environmentally friendly.
Ideal for storing cryo vials and other sample vessels.
**Delivery without** cardboard inserts, please order separately.

| Length (mm) | Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 75 | 75 | 50 | **LH31.1** | 10 | 36,55 |
| 136 | 68 | 50 | **LH33.1** | 10 | 32,20 |

## Partition inserts made of cardboard, H 30 mm

| Suitable for cardboard boxes L x W (mm) | For vial ∅ (mm) | Slots | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 75 x 75 | 11,0 | 5 x 5 | **LH32.1** | 10 | 18,25 |
| 136 x 68 | 14,5 | 8 x 4 | **LH34.1** | 10 | 19,25 |
| 136 x 68 | 11,0 | 10 x 5 | **LH35.1** | 10 | 18,20 |

## Rotilabo®-maxi cryogenic boxes made of cardboard

Made of low temperature resistant cardboard. For the storage of samples from 15 or 50 ml centrifuge vials. Can also be used for larger vessels without grid dividers. Temperature stable up to -80 °C.
Dimensions: L 148 x W 148 x H 130 mm.
**Delivery incl.** grid dividers.

**With waterproof plastic coating**

| For vial ∅ x H (mm) | Grid dividers | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 30 x 115 | 4 x 4 | **CLE6.1** | 5 | 59,15 |
| 17 x 120 | 6 x 6 | **CLE7.1** | 5 | 62,25 |

# Cryo boxes / storage boxes



## Rotilabo®-cryogenic boxes

Made of **PP**. With hinged lid and drain holes in base. Flexible storage of cryogenic vials and other sample containers through variable configurations using different dividers. Also suitable for larger contains without grid dividers.
Dimensions: L 133 x W 133 mm.
Temperature stable from -90 to +121 °C. Autoclavable.
**Delivery without** grid dividers. Please order separately.

**Cryogenic box height 52 mm**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| natural | **CLH7.1** | 5 | 18,10 |
| yellow | **CLH8.1** | 5 | 18,10 |
| red | **CLH9.1** | 5 | 18,10 |
| green | **CLK0.1** | 5 | 18,10 |
| blue | **CLK1.1** | 5 | 18,10 |
| black | **CLK2.1** | 5 | 18,10 |

**Cryogenic box height 75 mm**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| natural | **CLK3.1** | 5 | 18,95 |
| yellow | **CLK4.1** | 5 | 18,95 |
| red | **CLK5.1** | 5 | 18,95 |
| green | **CLK6.1** | 5 | 18,95 |
| blue | **CLK7.1** | 5 | 18,95 |
| black | **CLK8.1** | 5 | 18,95 |

## Grid dividers, H 30 mm

| Slots | Slot L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 x 6 | 20,5 x 20,5 | **CLK9.1** | 5 | 12,40 |
| 7 x 7 | 17,3 x 17,3 | **CLL0.1** | 5 | 13,80 |
| 8 x 8 | 15,8 x 15,8 | **CLL1.1** | 5 | 14,00 |
| 9 x 9 | 12,8 x 12,8 | **CLL2.1** | 5 | 15,05 |
| 10 x 10 | 11,2 x 11,2 | **CLL3.1** | 5 | 17,20 |



## Storage boxes with variable partitioning

Made of **PP**, transparent, with slip lid. For storage of reaction vials, cryo vials and other sample containers. Please order variable dividers separately.
Temperature stable to -196 °C. Autoclavable.

**Storage boxes**
- 4 to 81 slots
- Variable partitioning, by using between 2 and 16 dividers
- Height-adjustable lid, locks at 43 mm, 50 mm and 55 mm

Dimensions: L 130 x W 130 x H 43-55 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACL8.1** | 5 | 27,75 |

**Dividers**

Made of **PP**, individual partitions for flexible partitioning of ACL8.1 storage boxes.
Dimensions: L 121 x H 30 mm, thickness 1 mm.

**Technical specifications:**

| Number of partitions | Slots | Compartment size (mm) |
|---|---|---|
| 2 | 4 | 50 x 55 to 65 x 65 |
| 3 | 6 | 40 x 50 to 40 x 65 |
| 4 | 9 | 40 x 40 |
| 6 | 12 | 25 x 40 |
| 8 | 16 | 25 x 25 |
| 10 | 27 | 12 x 40 |
| 12 | 36 | 12 x 25 |
| 16 | 81 | 12 x 12 |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACL9.1** | 16 partitions | 7,50 |



## Cryogenic boxes, foldable

Made of corrugated **PP**, moisture-resistant.
Temperature-resistant down to -80 °C.
**Delivery incl.** dividers.

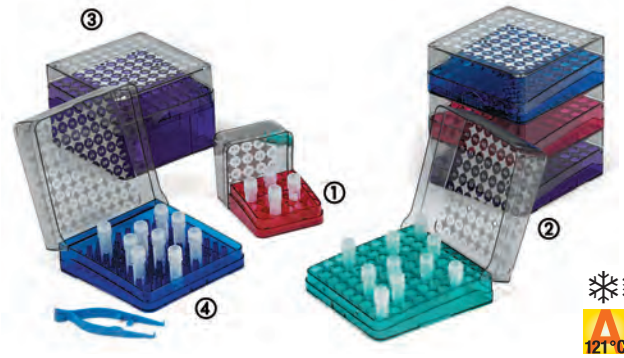
| For vessel type | Slots | Slot L x W (mm) | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,2 ml | 144 (12 x 12) | 7,9 | 133 x 130 x 30 | **ENL0.1** | 10 | 75,05 |
| 0,5 ml | 81 (9 x 9) | 12 | 133 x 130 x 42 | **ENL1.1** | 10 | 75,05 |
| 1,5/2 ml | 81 (9 x 9) | 12 | 133 x 130 x 51 | **AXE4.1** | 10 | 39,10 |
| 5 ml | 25 (5 x 5) | 22,6 | 133 x 130 x 75 | **ENL2.1** | 10 | 75,05 |
| 15 ml | 36 (6 x 6) | 19,8 | 147 x 145 x 120 | **ENL3.1** | 10 | 101,05 |
| 50 ml | 16 (4 x 4) | 31,6 | 147 x 145 x 120 | **ENL4.1** | 10 | 97,85 |



## Storage boxes

Made of **PP**. For centrifuge vials 15 and 50 ml. Replaceable, with quick-action inserts that offer ample depth for stable, upright vials storage. Translucent lid and numbered inserts for fast identification of samples.
Temperature resistant in the range -80 to + 121 °C.
Dimensions: L 132 x W 132 x H 129 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PC60.1** | 5 | 65,05 |




❄❄❄
121°C

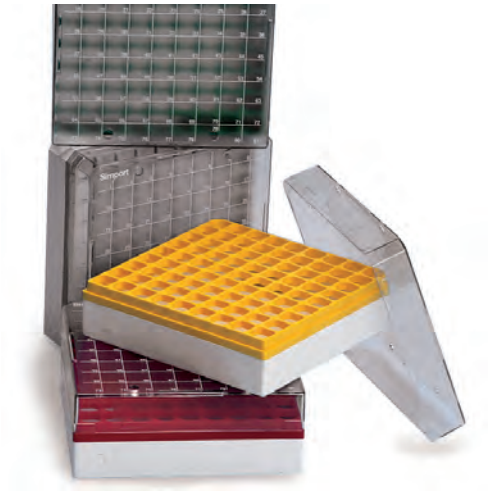
## Rotilabo®-cryo storage boxes

Made of **PC**, transparent color. Hinged lid with alphanumeric coding attached. (HE00.1 with loose lid). Stackable. For 1.2 to 5.0 ml cryo vials. With outlet holes on the base. Temperature resistant from -196 to +121 °C. Autoclavable. Art. No. HE01.1 comes with extraction aid.

**Technical specifications:**

| Model | Spaces | Dimensions L x W x H (mm) | Vessels |
|---|---|---|---|
| ① **Small box** | 5 x 5 | 76 x 76 x 53 | Cryo vials 1.2 / 2.0 ml |
| ② **Standard box** | 9 x 9 | 133 x 133 x 53 | Cryo vials 1.2 / 2.0 ml |
| ③ **Tall box** | 9 x 9 | 133 x 133 x 96 | Cryo vials 3.0 / 5.0 ml |
| ④ **Standard box with pin raster** | 10 x 10 | 133 x 133 x 53 | Cryo vials 1.2 / 2.0 ml |

| Type | Colour | ∅ hole (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | red | 12,5 | **HE00.1** | 1 | 8,85 |
| ② | assorted by color (blue, red, green, violet) | 12,5 | **HE01.1** | 4 | 54,45 |
| ③ | violet | 12,5 | **HE02.1** | 1 | 18,25 |
| ④ | blue | 12,5 x 12,5 | **HE03.1** | 1 | 13,80 |

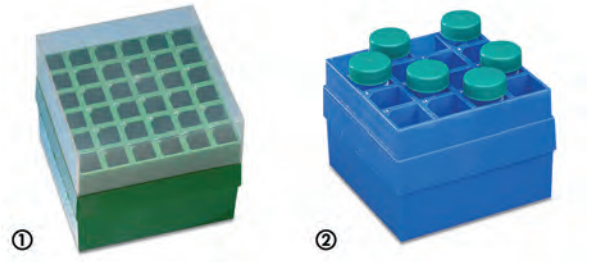


❄❄❄
121°C

## Rotilabo®-cryo boxes

Made of robust **PC**. With transparent lid and removeable coloured insert. **81 holes** (12.2 x 12.2 mm) numerically coded for cryo vials with an outer thread of 1 to 5 ml, depending on the design of the box. Lid is also numerically coded corresponding to the bottom part. With outlet holes on the base, and with a large labelling field on the box and lid. Stackable. Boxes K585.1-K588.1 suitable for cryo-racks LH44.1ff.
Temperature stable from -196 to +121 °C. Autoclavable.

| For cryo vials (ml) | Colour | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 to 2 ml | blue | 133 x 133 x 52 | **K585.1** | 1 | 13,05 |
| 1 to 2 ml | green | 133 x 133 x 52 | **K586.1** | 1 | 13,05 |
| 1 to 2 ml | red | 133 x 133 x 52 | **K587.1** | 1 | 13,05 |
| 1 to 2 ml | yellow | 133 x 133 x 52 | **K588.1** | 1 | 13,05 |
| 3 to 5 ml | blue | 133 x 133 x 95 | **K589.1** | 1 | 16,05 |
| 3 to 5 ml | green | 133 x 133 x 95 | **K590.1** | 1 | 16,05 |
| 3 to 5 ml | red | 133 x 133 x 95 | **K591.1** | 1 | 16,05 |
| 3 to 5 ml | yellow | 133 x 133 x 95 | **K592.1** | 1 | 16,05 |




❄❄
121°C

## Rotilabo®-deep freeze boxes

Made of **PP**, with transparent slip lid. For 15 and 50 ml centrifuge tubes. With labelling area on two sides. Dimensions: L 144 x W 144 x H 127 mm. Height without lid: 102 mm. Temperature resistant from -90 to +121 °C. Autoclavable.

**Technical specifications:**

| | Type ① | Type ② |
|---|---|---|
| For centrifuge tubes (ml) | 15 | 50 |
| Tubes max. ∅ x H (mm) | 18 x 121 | 30 x 121 |
| Spaces | 36 (6 x 6) | 16 (4 x 4) |
| Inner hole size (mm) | 18 x 18 | 30 x 30 |
| Colour | green | blue |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **HX01.1** | 2 | 49,30 |
| ② | **HX02.1** | 2 | 49,30 |



❄❄❄
121°C

## Rotilabo®-cryo storage box

Made of **PC**, transparent, with hinged lid and coloured insert. For cryo vials, screw vials and reaction vials up to 5 ml. Also suitable for storage of larger vials thanks to removable insert.

- 81 slots
- For vial ∅ 12-13 mm, heights up to 93 mm
- With embossed numeric coding
- Stackable

Dimensions: L 145 x W 142 x H 97 mm.
Temperature stable to -196 °C. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACL7.1** | 1 | 11,30 |

# Cryo boxes / storage boxes



## Rotilabo®-cryo boxes

Coloured bottom part made of **PC** and transparent lid. With **100 holes** for 1 to 2 ml cryo-vials with female thread. Holes are numerically coded in bottom and on the lid. With outlet holes on the base. Large field for labelling on the side. Stackable. Dimensions: L 133 x W 133 x H 52 mm.
Suitable for cryo-racks LH44.1ff.
Temperature stable from -196 to +121 °C. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **K593.1** | 1 | 12,50 |
| green | **K594.1** | 1 | 12,50 |
| red | **K595.1** | 1 | 12,50 |
| yellow | **K596.1** | 1 | 12,50 |



## Rotilabo®-cryo storage boxes

Made of **PP**. With **100 holes** (12.4 x 12.4 mm). For 0.5 and 1.5/2 ml centrifuge tubes and for cryo vials. Max. tube height 53.3 mm. Transparent lid with alphanumerically coded index card for speedy identification. Black box with black lid for the storage of light-sensitive samples. Stackable. Dimensions: L 140 x W 140 x H 60 mm.
Suitable for Rotilabo®-stainless steel rack P959.1.
Temperature stable from -90 to +121 °C. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| transparent | **N195.1** | 1 | 14,75 |
| red | **N196.1** | 1 | 14,75 |
| blue | **N197.1** | 1 | 14,75 |
| green | **N198.1** | 1 | 14,75 |
| yellow | **N199.1** | 1 | 14,75 |
| black | **N200.1** | 1 | 12,50 |

## Rotilabo®-box inserts

Made of **PP**. With **64 holes** for 0.5/1.5 ml centrifuge tubes. Suitable for storage boxes N195.1ff as well as N200.1. Can be used as a free-standing rack on the laboratory bench or as an insert in the storage boxes.
Can be inserted and removed quickly. Stackable. Alphanumerically coded in 8 x 8 configuration. Temperature stable up to -85 °C. Autoclavable.

| Hole ∅ (mm) | for Tubes (ml) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 8 | 0,5 | transparent | **N912.1** | 1 | 3,80 |
| 11 | 1,5 | transparent | **N917.1** | 1 | 3,80 |



## Rotilabo®-cryo boxes

Made of **PP**. **81 holes** in 9 x 9 array for cryo vials. Other features include a hinged lid and spring-loaded latch. Numerically coded, **contains removable grid**, slots 13 x 13 mm. Outlet on the base and corners for stacking ensure safe transport. Dimensions: L 133 x W 133 x H 52 mm.
Suitable for Cryo-racks Art. No. LH44.1ff.
Temperature stable from -90 to +121 °C. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| transparent | **T435.1** | 1 | 5,35 |
| red | **T436.1** | 1 | 5,35 |
| blue | **T437.1** | 1 | 5,35 |
| green | **T438.1** | 1 | 5,35 |
| yellow | **T439.1** | 1 | 5,35 |



## Storage boxes, recycled

Lower section is made from recycled plastic, colour variations possible. With transparent PP hinged lid, removable.
Temperature-resistant from -80 to +135 °C. Autoclavable.

- 100 slots
- Taller than standard boxes, for tubes up to max. height of 53.5 mm
- For reaction vials from 0.5 to 2 ml
- Alphanumerically labelled lid
- Stackable
- Dimensions: L 140 x W 140 x H 62 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EEC4.1** | 5 | 25,80 |





## Storage boxes

Made of **PP**, with transparent lid. **With 81 slots** (13 x 13 mm).
For the storage of 1.5/2 ml reaction vials or cryo vials up to 2 ml.
Alphanumeric numbering of slots (9 x 9 arrangement). With outlet holes on the base. Black box with black lid for the storage of light-sensitive samples.
Dimensions: L 130 x W 130 x H 47 mm. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| transparent | **NL80.1** | 5 | 35,45 |
| blue | **NL81.1** | 5 | 35,45 |
| green | **NL82.1** | 5 | 35,45 |
| pink | **NL83.1** | 5 | 35,45 |
| yellow | **NL84.1** | 5 | 35,45 |
| orange | **NL85.1** | 5 | 35,45 |
| black | **NL86.1** | 5 | 35,45 |
| assorted colours (blue, green, pink, yellow, orange) | **NL87.1** | 5 | 35,45 |



## Rotilabo® storage boxes

Made of **PP**. For 0.5 ml to 2 ml reaction vials and cryo vials.
With two tabs on the front for inserting tags.
- 200 slots (12 x 12 mm)
- For tube ∅ up to 12 mm, heights up to 53.5 mm
- Hinged lid with alphanumeric coding
- Stackable
- Suitable for Rotilabo® stainless steel rack P959.1

Dimensions: L 275 x W 151 x H 64 mm.
Temperature stable from -80 to +135 °C. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| transparent | **P786.1** | 1 | 23,15 |
| black | **ACN1.1** | 1 | 23,25 |




## Cryogenic storage boxes

Made of **PP**. With **50 slots**. For the storage of 1.5/2 ml reaction vials or cryogenic vials up to 2 ml. Autoclavable.

**Type** ①: With hinged cover. Slots: 13 x 13 mm.
Alphanumeric labelling of the slots.
Dimensions: L 142 x W 92 x H 56 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| transparent | **NY15.1** | 5 | 21,00 |
| sorted (blue, green, violet, yellow, orange) | **NY16.1** | 5 | 21,40 |

**Type** ②: With slip lid. Slots: 12.5 x 12.5 mm.
Tube height variable up to 55 mm thanks to height-adjustable slip lid.
Dimensions: L 144 x W 75 x H 35-55 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| transparent | **N201.1** | 1 | 8,55 |
| pink | **P184.1** | 1 | 8,55 |
| yellow | **P185.1** | 1 | 8,55 |
| blue | **P186.1** | 1 | 8,55 |
| green | **P187.1** | 1 | 8,55 |



## Rotilabo® storage box, slim version

Made of black **PP**. For 0.5 ml to 2 ml reaction vials and cryo vials
- 100 slots (12 x 12 mm)
- For tube ∅ up to 12 mm, heights up to 50 mm
- Slip lid with alphanumeric coding
- Loose fitting lid, height-adjustable
- Stackable

Dimensions: L 287 x W 76 x H 38-52 mm.
Temperature stable from -80 to +135 °C. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACN0.1** | 1 | 9,15 |



## Rotilabo®-polystyrene boxes with lid

With 50/100 holes in 5 rows for 1.5 and 2 ml micro-centrifuge tubes and for 1.2 ml cryo vials (max. height 44 mm). Ideal for long-term storage in refrigerators and freezing chambers or as a working rack on the lab benchtop. Space-efficient and stackable.

| Slots | ∅ (mm) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 13 | 210 x 110 x 71 | **N443.2** | 10 | 42,80 |
| 100 | 12 | 338 x 95 x 63 | **K496.2** | 10 | 48,05 |

# Cooling racks



## Cryo-freezing device Mr. Frosty

By Nalgene®. Made of **PC**, lid and vial holder made of HDPE.
With foamed lining.
Simple application: only 100 % isopropylalcohol and a freezer are required. For 18 cryo-vials 1.2 / 2 ml. For reproducible, repeated cooling of specimens by approx. -1 °C/min. Optimal cellular yield after storage at very low temperatures. The vial holder prevents direct contact of the vials to the alcohol, the writing on the vials remains readable. The vial holder can be used additionally as a floating stand to defrost the samples in the water bath. Dimensions: H 86 x ∅ 112 mm. Lid-∅ 120 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AC96.1** | 1 | 117,20 |



## Labtop freezing boxes

By Nalgene®. Made of **PC**. For cooling heat-sensitive samples in the laboratory.

- Usable up to -20 °C (min. -40 °C)
- Protects against temperature fluctuation and power failure
- Markable grid surface on lid
- Breakproof and stackable, with non-slip feet
- With white PC lid with non-toxic gel filling or with transparent PC lid without gel filling

**Labtop box -20 °C:**
Bottom part made of blue, gel-filled PC.

**Labtop freezer boxes 0 °C:**
Bottom part made of green, gel-filled PC.

*Delivery incl. 16 adapters for remodelling the 1.5 ml holes into 0.5 ml holes for 0.5 ml tubes.

**For 12 vials (3 x 4), lid without gel filling**

| Temp. constancy | For test tubes | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| < -15 °C to 1 hour | 0.5-2 ml* | 151 x 108 x 125 | **L243.1** | 1 | 166,65 |
| < 1 °C to 3,5 hours | 0.5-2 ml* | 151 x 108 x 125 | **L245.1** | 1 | 165,55 |
| < 1 °C to 5 hours | ∅ 12-13 mm | 197 x 140 x 190 | **L247.1** | 1 | 304,25 |
| < 1 °C to 5 hours | ∅ 16-17 mm | 197 x 140 x 190 | **L248.1** | 1 | 304,25 |

**For 32 vials (4 x 8), lid with gel filling**

| Temp. constancy | For test tubes | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| < -15 °C to 2 hours | 0.5-2 ml* | 243 x 157 x 146 | **L244.1** | 1 | 310,70 |
| < 1 °C to 5 hours | 0.5-2 ml* | 243 x 157 x 146 | **L246.1** | 1 | 333,25 |

▶ Centrifuge tubes see page 474



## Cooling boxes

Made of **PC**, gel-filled. For cooling heat-sensitive samples such as PCR reagents or enzymes in the laboratory.

- With non-slip rubber feet
- Type 0.2 ml is also suitable for PCR plates

**Technical specifications:**

| Lid | Temp. constancy | For vial type | Number of vials | Art. No. |
|---|---|---|---|---|
| Transparent | -15 °C to 2.5 hrs. | 0.5-2 ml* | 12 (3 x 4) | **NY09.1** |
| Transparent | -15 °C to 3.5 hrs. | 0.5-2 ml* | 32 (4 x 8) | **NY10.1** |
| Gel-filled | -15 °C to 5 hrs. | 0.5-2 ml* | 32 (4 x 8) | **NY11.1** |
| Transparent | -15 °C to 3.5 hrs. | 0.2 ml | 96 (8 x 12) | **NY12.1** |

***Delivery incl.** adapter for 0.5 ml reaction vials·

| For test tubes | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12 (0.5-2 ml) | 145 x 105 x 100 | **NY09.1** | 1 | 85,80 |
| 32 (0.5-2 ml) | 245 x 105 x 100 | **NY10.1** | 1 | 143,00 |
| 32 (0.5-2 ml) | 245 x 105 x 100 | **NY11.1** | 1 | 162,35 |
| 96 (0.2 ml) | 225 x 165 x 110 | **NY12.1** | 1 | 162,35 |



## Freezing box

By Nalgene®. Made of **PC**, with non-toxic insulating liquid. Excellent for speedy and repeated cooling of samples. Can be used repeatedly for max. 45 min. Cools up to 2 ml alcohol-based solution in less than 3 min to -20 °C or up to 2 ml water-based solution in less than 4 min to 0 °C. 12 holes for 0.2 ml tubes (with adapters) to 2 ml. Holes have 3 x 4 array. Labels and markings do not dissolve as there is no direct contact between tube and dielectric liquid. Breakproof and stackable. Rubber feet on base prevent slipping. Comes with 16 adapters. Dimensions: L 151 x W 108 x H 125 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L249.1** | 1 | 184,90 |

# Cooling racks



## Rotilabo®-cooling boxes

Double-sided, made of **PC**, for 20 centrifuge tubes 0.5 ml on one side and 20 vials 1.5 or 2 ml on the other. Ideal for cooling heat-sensitive samples on the lab benchtop. Also excellent for transporting frozen samples or as a storage box in refrigerators to protect against temperature fluctuation or power failure. Holes (∅ 8/12 mm) are alphanumerically coded on both sides. Comes with gel filling and transparent lid. Once they have been removed from the refrigerator, the boxes maintain a temperature of 0 °C (white box) for 5 hours or -15 to -20 °C (blue box) for approx. 2 hours. Dimensions of boxes (with lid): L 170 x W 110 x H 105 mm.

| Colour | Fit for | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| white | 0 °C | **K087.1** | 1 | 181,70 |
| blue | -20 °C | **K088.1** | 1 | 181,70 |



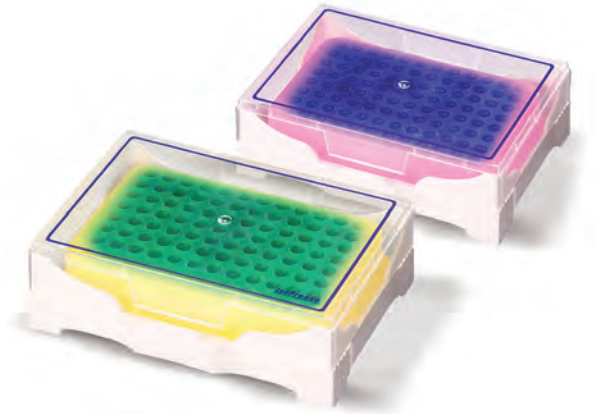
## Rotilabo®-Aluminium racks

Aluminium stands for cooling samples in ice baths.

**Technical specifications:**

| Model | Slots | For centrifuge tubes |
|---|---|---|
| Aluminium rack | 24 (4 x 6) | 2.0 ml |
| Aluminium rack 1.5 | 24 (4 x 6) | 1.5 ml |
| Aluminium rack 2 | 96 (8 x 12) / 6 | 0.2 ml (single / strips / 96 hole plates) / 1.5 ml |
| Aluminium rack 5 | 36 / 11 | 0.5 ml / 1.5 ml |

| Type | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Rotilabo®-Aluminium rack | 115 x 90 x 30 | **KH56.1** | 1 | 77,20 |
| Rotilabo®-Aluminium rack 1.5 | 115 x 90 x 30 | **EP69.1** | 1 | 77,20 |
| Rotilabo®-Aluminium rack 2 | 115 x 90 x 15 | **N470.1** | 1 | 77,20 |
| Rotilabo®-Aluminium rack 5 | 180 x 80 x 15 | **N548.1** | 1 | 77,20 |



## Rotilabo®-ice boxes for PCR-plates

Made of **PP**. Filled with non-toxic gel filling. 96 slots ∅ 6 mm in 8 x 12 array. Ideal for cooling heat-sensitive samples on the laboratory desk.

Suitable for 0.2 ml PCR-vials, plates and centrifuge tube strips.

- Keeps the temperature at 4-7 °C for approx. 3 hours
- The rack changes its colour at approx. 7 °C
- Recommended storage temperature: -20 °C

Dimensions: with lid: L 141 x W 99 x H 44 mm,
without lid: L 141 x W 99 x H 38 mm.

| Colour change | Art. No. | Pack Qty. | € |
|---|---|---|---|
| violet to pink | **EX48.1** | 2 | 115,05 |
| green to yellow | **EX49.1** | 2 | 115,05 |



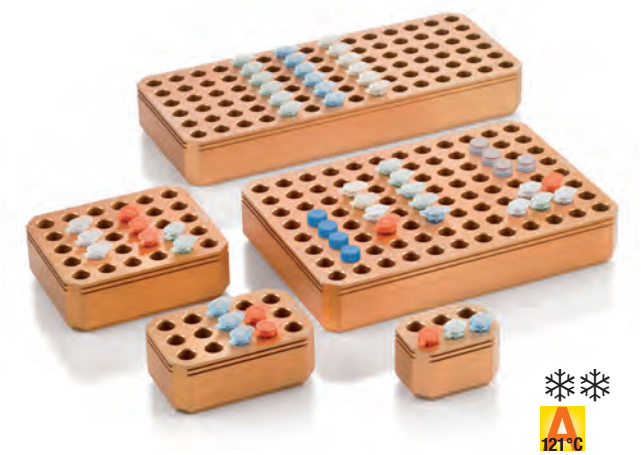

## Cooling racks PolarSafe™

Made of aluminium, blue anodised. Ideal for use on ice, dry ice, in water baths or liquid nitrogen. With side recesses for safe grip. Temperature stable up to -196 °C. Autoclavable.

**Note:** Frequent autoclaving and cleaning can result in colour changes.

| For vessel type | Slots | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 ml cryo vials | 15 (3 x 5) | 113 x 77 x 38 | **EKP9.1** | 1 | 110,00 |
| Reaction vials 1.5 to 2 ml | 15 (3 x 5) | 113 x 77 x 38 | **EKT0.1** | 1 | 110,00 |
| 0.5 ml reaction vial | 24 (4 x 6) | 113 x 77 x 33 | **EKT1.1** | 1 | 110,00 |
| PCR vials, strips and trays | 96 | 113 x 77 x 20 | **EKT2.1** | 1 | 130,00 |
| PCR trays | 384 | 113 x 77 x 13 | **EKT3.1** | 1 | 169,00 |

# Cooling / Insulating



## Cooling racks

Made of heat-conductive metal, anodised for improved corrosion resistance. Suitable for cooling samples on ice, dry ice or in the vapour phase of liquid nitrogen as well as for heating samples in water baths and incubators. Slots are numbered alphanumerically.
Temperature stable to -150 °C. Autoclavable.

**Cooling racks for reaction vials**
For 1.5/2 ml reaction vials and screw vials in sizes from 0.5 to 2 ml.

| Slots | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 (2 x 3) | 60 x 43 x 32 | **CXK6.1** | 1 | 73,85 |
| 15 (3 x 5) | 96 x 60 x 32 | **CXK7.1** | 1 | 160,20 |
| 30 (5 x 6) | 114 x 96 x 32 | **CXK8.1** | 1 | 272,00 |
| 90 (6 x 15) | 274 x 114 x 32 | **CXK9.1** | 1 | 384,85 |
| 96 (8 x 12) | 221 x 149 x 32 | **CXL0.1** | 1 | 504,20 |

**Cooling racks for cryo vials**
For cryo vials in sizes up to 2 ml. Rack CXL2.1 includes a locking mechanism for one-handed opening of vials.

| Slots | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 15 (3 x 5) | 128 x 85 x 32 | **CXL1.1** | 1 | 170,95 |
| 24 (4 x 6) | 96 x 60 x 32 | **CXL2.1** | 1 | 309,60 |
| 30 (5 x 6) | 114 x 96 x 32 | **CXL3.1** | 1 | 315,00 |
| 45 (5 x 9) | 173 x 96 x 32 | **CXL4.1** | 1 | 282,75 |

**Cooling racks for PCR plates**
SBS dimensions, compatible with automated systems.

| Slots | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 96 | 128 x 85 x 25 | **CXL5.1** | 1 | 332,20 |
| 384 | 128 x 85 x 23 | **CXL6.1** | 1 | 377,35 |



## Ice box

Made of **EPP** (polypropylene-based foam).
Highly robust with excellent insulation properties. With recessed hand grips.
Internal dimensions: L 345 x W 345 x H 220 mm.
**Delivery incl.** lid.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EET6.1** | 1 | 38,50 |



## Cooling platforms

Made of heat-conductive metal, anodised for improved corrosion resistance. Suitable for placement in ice, dry ice, in the vapour phase of liquid nitrogen as well as in water baths and incubators. Keeps racks dry for cooling. Temperature stable to -150 °C. Autoclavable.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 279 x 140 x 86 | **CXL7.1** | 1 | 318,20 |
| 279 x 140 x 63 | **CXL8.1** | 1 | 294,55 |



## Ice containers True North®

Made of **PU**. Excellent insulation properties for deep-freeze applications using ice, liquid nitrogen, ice-salt mixtures or other cooling media.
Tight-fitting cover for minimum evaporation loss (can be stored below ice container while not in use).
Nozzle for easy pouring out of melted ice.
Conical shape and recessed cover for space-saving stacking.
**Delivery incl.** cover.

| Volume (l) | Colour | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | turquoise | 267 x 196 x 114 | **TP25.1** | 1 | 64,40 |
| 4 | black | ∅ 234 x 181 | **TP24.1** | 1 | 79,45 |
| 4 | blue | 381 x 254 x 182 | **TP26.1** | 1 | 89,10 |
| 9 | red | 521 x 292 x 163 | **TP27.1** | 1 | 125,80 |



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## Ice shovel

Made of stainless steel. Perforated, ideal for filling ice.
Melt water flows back into the ice container. Dimensions: ∅ 50 x L 190 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HEC6.1** | 1 | 10,65 |



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## Ice containers and ice tubs

Made of foam **PS**. Sturdy thick-walled design provides ideal cooling and prevents condensation. Suitable for ethanol and refrigerant mixtures, dry ice or liquid nitrogen. Temperature stable to -196 °C.

① **Ice containers**
Close fitting cover minimises evaporation losses.
**Delivery incl.** cover.

| Volume (l) | Colour | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2,5 | blue | 300 x 110 | **TE08.1** | 1 | 40,80 |
| 2,5 | green | 300 x 110 | **TE09.1** | 1 | 40,80 |
| 5 | blue | 300 x 160 | **TE10.1** | 1 | 51,60 |
| 5 | green | 300 x 160 | **TE11.1** | 1 | 51,60 |

② **Ice tubs**

| Volume (l) | Colour | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | blue | 155 x 155 x 95 | **TE12.1** | 1 | 18,75 |
| 1 | green | 155 x 155 x 95 | **TE13.1** | 1 | 18,75 |
| 4 | blue | 220 x 310 x 125 | **TE14.1** | 1 | 40,80 |
| 4 | green | 220 x 310 x 125 | **TE15.1** | 1 | 40,80 |
| 9 | blue | 335 x 435 x 130 | **TE16.1** | 1 | 56,55 |
| 9 | green | 335 x 435 x 130 | **TE17.1** | 1 | 56,55 |



## Rotilabo®-ice bucket

Made of stainless steel, double-walled, with handle.
Capacity 2 l, ∅ 150 mm, height 210 mm.
**Delivery incl.** cover.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE46.1** | 1 | 32,90 |



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## Ice containers

Made of stainless steel 18/10 (material 1.4301), dual wall.

| Volume (l) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5 | 140 x 65 | **HEC3.1** | 1 | 21,20 |
| 1,5 | 200 x 90 | **HEC4.1** | 1 | 26,80 |
| 2,5 | 230 x 100 | **HEC5.1** | 1 | 32,20 |



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## Ice container racks

Made of **PS**, for filling with ice or water.
Exact-fit rack holds samples securely in ice. Stackable.

| For vials (ml) | Number of vials | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 15/50 | 15 | 276 x 164 x 134 | **NY14.1** | 1 | 38,20 |



## Cooling boxes

Made of **PP**, with isolation made of PU foam.
With hinged lid and bow handle.

**Technical specifications:**

| Capacity (l) | L x W x H outer (mm) | Cooling power (±1 °C) | Weight (kg) |
|---|---|---|---|
| 26 | 407 x 313 x 424 | 24 h | 2.4 |
| 30 | 408 x 322 x 461 | 27 h | 2.6 |

| Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 26 | **AA46.1** | 1 | 32,20 |
| 30 | **AA47.1** | 1 | 39,75 |

# Cooling / Insulating



## Ice boxes Xtreme®

Made of **HDPE**, with full foam insulation made of **PU**. With attached lid and snap closure for tight closing. Watertight and rust resistant drainage.
Cooling capacity max. 5 days. Suitable for food.

| Vol. (l) | L x W x H outer (mm) | L x W x H inner (mm) | Weight (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 48 | 700 x 380 x 440 | 530 x 240 x 280 | 5,6 | **LT01.1** | 1 | 108,60 |
| 66 | 720 x 400 x 440 | 610 x 300 x 330 | 6,1 | **LT02.1** | 1 | 143,00 |
| 90 | 920 x 420 x 440 | 790 x 330 x 290 | 7,4 | **LT03.1** | 1 | 203,20 |



## Dry ice machines

To make a block of -79 °C cold dry ice
- A weight of 50 g in ~0.5 min
- A weight of 250 g in ~1 min

Multi-range unit, e.g. for lowering temperature in cooling baths or traps, precooling of tissue samples, transporting or storing biological substances, freezing blood or tissue samples, research in chemistry and physics etc.
Fits all standard short $CO_2$-gas bottles with top valve
(W 21.80 x 1/14“ acc. to DIN 477 no. 6).

**Instructions:**

Fit ice machine to $CO_2$-bottle, open valve, allow $CO_2$ to enter ice machine, close valve, open fastener and take out ice block.

**Dry ice machine for 50 g blocks**

H 30 x ∅ 50 mm.
Protuctiveness with 22 kg gas canister for approx. 90 blocks.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9282.1** | 1 | 223,60 |

**Dry ice machine for 250 g blocks**

H 60 x ∅ 80 mm.
Productiveness with 22 kg gas canister for approx. 16 blocks.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9285.1** | 1 | 289,20 |



## Cooling boxes

Made of **PP**, with isolation made of PU foam.
With hinged lid and bow handle (box 37 l with 2 side handles).
10 and 17 l boxes with loose-fit lid.

**Technical specifications:**

| Capacity (l) | L x W x H outer (mm) | Cooling power (±1 °C) | Weight (kg) |
|---|---|---|---|
| 10 | 350 x 225 x 310 | 17 h | 1.4 |
| 17 | 410 x 245 x 355 | 20.5 h | 2.1 |
| 25 | 407 x 314 x 425 | 26 h | 2.5 |
| 29 | 408 x 322 x 462 | 29 h | 2.7 |
| 37 | 550 x 349 x 407 | 32 h | 3.7 |

| Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **P252.1** | 1 | 34,40 |
| 17 | **P253.1** | 1 | 52,70 |
| 25 | **P254.1** | 1 | 42,80 |
| 29 | **P255.1** | 1 | 53,65 |
| 37 | **P256.1** | 1 | 67,20 |



## Thermoelectric cooler

- Operates via 230 V power supply (optional) or 12 V connector in the car
- Capacity 24 litres
- Strong PU insulation
- Secure lid
- Integrated storage compartment for the cable
- Integrated fan (39 dB) accelerates the cooling process
- Cooling capacity up to 20 °C below outside temperature,

Dimensions outside: L 407 x W 313 x H 435 mm,
inside: L 328 x W 243 x H 310 mm. Weight 3.6 kg.
**Delivery incl.** 12 V connector. Please order 230 V transformer separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Thermoelectric cooler | **P272.1** | 1 | 96,65 |
| Transformer | **P273.1** | 1 | 37,60 |




## Cooler bags Fold'N Cool™

Made of **polyester**, with PU coating on back. PEFA lining, suitable for foodstuffs, easy to clean. High-performance EPE foam insulation. Collapsible for space-saving storage. With adjustable shoulder strap, hanger loop and separate front bag.
Art. No. LP94.1 with 2 additional carry handles.

| Image | Vol. (l) | L x W x H outer (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | 5 | 230 x 155 x 190 | 310 | **LP95.1** | 1 | 17,20 |
| ② | 20 | 320 x 200 x 370 | 610 | **LP93.1** | 1 | 26,35 |
| ③ | 30 | 390 x 250 x 380 | 765 | **LP94.1** | 1 | 30,05 |




## Rotilabo®-cooling packs

Made of suitable for food-safe PA/PE, with gel filling.
Outstanding cooling properties. Multifunctional.

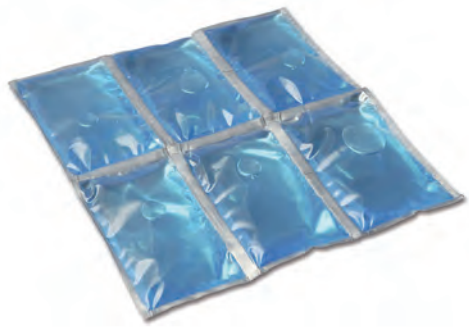
| Length (mm) | Width (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 140 | 137 | 230 | **PX99.1** | 60 | 40,35 |
| 190 | 137 | 460 | **PY00.1** | 32 | 25,30 |



## Cooler bag Freez'Box™

Made of **PP** with airtight lid. Textile casing made of polyester, PVC-coated inside. Insulation made of EPE. Lid with handle and holder for cooling element (Art. No. E447.1 or LT04.1, please order separately).
Approved for foodstuffs.
**Delivery incl.** one plastic container and one cooling element.

| Volume (l) | L x W x H outer (mm) | L x W x H (Box) inside (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 195 x 145 x 110 | 181 x 110 x 38 | **LP98.1** | 1 | 20,30 |



## Cooling elements Flexi Freez'Pack®

With individual cooling segments for extreme flexibility, even when frozen.
Suitable for food.

| L x W x H outer (mm) | Cooling segments | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 290 x 160 x 18 | 6 x 2 | 150 | **LT04.1** | 10 | 45,15 |
| 300 x 240 x 18 | 4 x 3 | 300 | **LT05.1** | 10 | 53,25 |
| 600 x 240 x 18 | 12 x 3 | 600 | **LT06.1** | 10 | 64,30 |




## Insulating bags, Frozen Food Bag

Made of **PE**. With **EPE** foam insulation. Cooling capacity max 3 h.
Suitable for food.

| Volulme (l) | L x W x H outer (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 19 | 500 x 465 x 7 | 110 | **LP96.1** | 10 | 38,20 |
| 26 | 585 x 475 x 7 | 120 | **LP97.1** | 10 | 44,10 |



## Rotilabo®-cooling packs

Made of environmental-friendly **PE**. Filled with coolant.
Dimensions: 169 x 75 x 19 mm. Weight 220 g each.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E447.1** | 5 | 7,00 |
| **E447.2** | 50 | 48,35 |

# Dewar containers



## Rotilabo®-cooling jacket

Insulating cooling pack in black microfibre sleeve. Maintains a temperature of 10 °C for approx. 8 hours. For cooling and keeping cool bottles with a ∅ of approx. 70-100 mm. Adapts to bottle shape.
Also suitable for angled containers.
Can be reused any number of times. Foldable for space-saving storage.
Dimensions: L 450 x W 200 mm, folded approx. L 200 x W 150 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CY97.1** | 1 | 31,10 |




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## Bowl shaped Dewar vessels

By KGW. With silver plated glass inlet and aluminium housing.
Ideal for tempering flasks in heating or cooling baths. Not magnetic.

| Volume (ml) | Inside ∅ (mm) | Filling height (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 80 | 67 | 40 | 75 | **LH06.1** | 1 | 116,10 |
| 120 | 77 | 50 | 90 | **C610.1** | 1 | 123,65 |
| 400 | 110 | 70 | 115 | **C611.1** | 1 | 203,20 |
| 800 | 138 | 80 | 125 | **C612.1** | 1 | 240,80 |
| 1600 | 170 | 110 | 145 | **C613.1** | 1 | 336,50 |
| 2700 | 200 | 125 | 160 | **LH07.1** | 1 | 526,75 |

▶ Screw thread bottles see page 38




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## Temperature-control containers

By KGW. Double-walled, made of stainless high-grade steel. Ideal for keeping samples warm or cold in the range of -30 to +120 °C. Quick adaption to change of temperature. Features connector for tubing with inner ∅ 6 mm. The cold or hot tempering medium is pumped with the aid of a thermostat through the space between the double walls.

| Vol. (l) | Inside ∅ (mm) | Outside ∅ (mm) | Inner height (mm) | Outer height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 1 | 85 | 107 | 206 | 231 | **A628.1** | 1 | 381,65 |
| 2 | 100 | 122 | 285 | 312 | **A629.1** | 1 | 461,20 |
| 3 | 185 | 200 | 160 | 190 | **A630.1** | 1 | 622,45 |
| 6 | 185 | 200 | 270 | 300 | **A631.1** | 1 | 757,90 |



## Dewar ice containers

By KGW. With silver-coated glass insert, lid and handle. Suitable for storage and transportation of heat sensitive goods, such as dry ice ($CO_2$). A hole must be drilled in the lid when using gassing coolants.

| Volulme (l) | Inside ∅ (mm) | Filling height (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 200 | 350 | 475 | **0443.1** | 1 | 546,10 |
| 14 | 200 | 500 | 610 | **1100.1** | 1 | 636,40 |
| 28 | 250 | 620 | 750 | **0444.1** | 1 | 954,60 |

# Dewar containers




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## Dewar insulating containers

By KGW. Cylindric. With silvered borosilicate glass insert 3.3, metal jacket, blue-coated. Suitable for storage and on-site transportation of specimens in coolants, such as liquid nitrogen.
**Delivery without** stopper, please order separately.

① **without handle**

| Type | Vol. (ml) | Inside ∅ (mm) | Filling height (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 00C | 100 | 40 | 90 | 135 | **LE85.1** | 1 | 71,65 |
| 3C | 500 | 57 | 210 | 260 | **0440.1** | 1 | 107,30 |
| 9C | 1000 | 77 | 235 | 290 | **0441.1** | 1 | 118,25 |
| 12C | 1500 | 90 | 245 | 300 | **LE86.1** | 1 | 151,60 |
| 13C | 2000 | 90 | 340 | 390 | **LE87.1** | 1 | 178,45 |
| 18C | 2500 | 110 | 290 | 345 | **1003.1** | 1 | 201,05 |
| S21C | 4000 | 138 | 310 | 375 | **LE88.1** | 1 | 291,35 |

② **with side handle**

| Type | Vol. (ml) | Inside ∅ (mm) | Filling height (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| G0C | 200 | 40 | 170 | 215 | **LE89.1** | 1 | 102,40 |
| G3C | 500 | 57 | 210 | 260 | **LE90.1** | 1 | 133,30 |
| G9C | 1000 | 77 | 235 | 290 | **LE91.1** | 1 | 148,35 |
| G12C | 1500 | 90 | 245 | 300 | **LE92.1** | 1 | 175,25 |
| G13C | 2000 | 90 | 340 | 390 | **LE93.1** | 1 | 201,05 |
| G18C | 2500 | 110 | 290 | 345 | **LE94.1** | 1 | 219,30 |
| GS21C | 4000 | 138 | 310 | 375 | **LE95.1** | 1 | 315,00 |
| GS22C | 8000 | 138 | 600 | 660 | **LE96.1** | 1 | 436,45 |



## Stoppers for Dewar-insulation containers

Made of **PU**. Lie loosely on top. For Dewar-insulation containers LE85.1ff.

| For Dewar containers with Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **LE97.1** | 1 | 33,25 |
| 200 | **LE98.1** | 1 | 33,25 |
| 500 | **LE99.1** | 1 | 33,25 |
| 1000 | **LH00.1** | 1 | 35,45 |
| 1500 | **LH01.1** | 1 | 35,45 |
| 2000 | **LH02.1** | 1 | 35,45 |
| 2500 | **LH03.1** | 1 | 41,85 |
| 4000 | **LH04.1** | 1 | 41,85 |
| 8000 | **LH05.1** | 1 | 41,85 |




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## Dewar containers

By KGW. Cylindric. Made of stainless chrome-nickel steel. For safe handling of cooling agents and freezing mixtures, e.g. liquid nitrogen. No danger of implosion.
**Delivery without** stopper, please order separately.

① **Type DSS. 1 litre and up come with removeable handle.**

| Volume (ml) | Inside ∅ (mm) | Filling height (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 500 | 65 | 180 | 203 | **3628.1** | 1 | 283,80 |
| 1000 | 85 | 206 | 231 | **3635.1** | 1 | 299,95 |
| 1000 W | 100 | 157 | 177 | **3651.1** | 1 | 327,90 |
| 2000 | 100 | 285 | 312 | **3653.1** | 1 | 378,40 |
| 3000 | 185 | 160 | 190 | **3655.1** | 1 | 542,90 |
| 6000 | 185 | 270 | 300 | **3669.1** | 1 | 686,95 |

② **Type GSS. With handles on side and top.**

| Vol. (ml) | Inside ∅ (mm) | Outside ∅ (mm) | Inner height (mm) | Outer height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 1000 | 85 | 107 | 206 | 231 | **A632.1** | 1 | 335,40 |
| 2000 | 100 | 122 | 285 | 312 | **A633.1** | 1 | 411,75 |
| 3000 | 185 | 200 | 160 | 190 | **A634.1** | 1 | 568,70 |



## Stoppers for Dewar containers

Made of **PU**. Lie loosely on top. For Dewar containers 3628.1ff. and A632.1ff.

| For Dewar containers with Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 500 | **XX13.1** | 1 | 38,65 |
| 1000 | **XX14.1** | 1 | 38,65 |
| 1000W, 2000 | **XX15.1** | 1 | 38,65 |
| 3000, 6000 | **XX16.1** | 1 | 42,95 |

▶ Sekuroka®-safety gloves CRYO
see page 644

# Dewar containers



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## Dewar transporting containers

By KGW. Suitable for storage and transportation of heat-sensitive specimens in coolants, such as liquid nitrogen. With silver coated glass insert made of borosilicate glass 3.3, insulated plastic lid and aluminium handle. **A hole must be made in the lid when using a gassing coolant (in the centre; ∅ approx. 2 mm).**

**Technical specifications:**

| Model | ∅ inner (mm) | ∅ outer (mm) | Filling height (mm) | Total height (mm) | Evaporating rate liq. $N_2$ (l/day) |
|---|---|---|---|---|---|
| **26 B / 26 BE** | 100 | 132 | 150 | 215 | 1.1 |
| **27 B / 27 BE** | 138 | 170 | 170 | 245 | 1.7 |
| **28 B / 28 BE** | 138 | 170 | 230 | 305 | 1.5 |
| **29 B / 29 BE** | 138 | 170 | 310 | 385 | 1.3 |

**① With blue metal cover**

| Type | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 26 B | 1 | **0442.1** | 1 | 143,00 |
| 27 B | 2 | **HT39.1** | 1 | 203,20 |
| 28 B | 3 | **1098.1** | 1 | 249,40 |
| 29 B | 4 | **1099.1** | 1 | 307,45 |

**② With stainless steel cover**

| Type | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 26 BE | 1 | **HT40.1** | 1 | 164,50 |
| 27 BE | 2 | **HT41.1** | 1 | 231,15 |
| 28 BE | 3 | **HT42.1** | 1 | 295,65 |
| 29 BE | 4 | **HT43.1** | 1 | 340,80 |



## Long wooden tweezers

Made of untreated beechwood.
Suitable for removing samples from liquid nitrogen.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 20 | **EET0.1** | 1 | 2,70 |
| 400 | 20 | **EET1.1** | 1 | 3,15 |




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## Dewar vessels in spherical shape

By KGW. For storing liquid nitrogen. The vessels consist of a robust metal casing with handle and bulb-form, silver-plated glass insert. The glass inlet is wrapped in foam rubber to prevent breaking. An insulation lid put on loosely prevents evaporation.

**Technical specifications:**

| Model | Outer-∅ (mm) | Inner-∅ opening (mm) | Filling height (mm) | Total height (mm) | Evaporating rate liq. $N_2$ (l/day) |
|---|---|---|---|---|---|
| **21 AL** | 175 | 30 | 235 | 300 | 0.2 |
| **22 AL** | 225 | 60 | 305 | 380 | 0.4 |
| **23 AL** | 260 | 60 | 350 | 450 | 0.4 |
| **24 AL** | 330 | 65 | 380 | 480 | 0.6 |

| Type | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 21 AL | 1 | **C369.1** | 1 | 259,10 |
| 22 AL | 3 | **C370.1** | 1 | 407,45 |
| 23 AL | 5 | **C371.1** | 1 | 474,10 |
| 24 AL | 10 | **C372.1** | 1 | 650,40 |



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## Dewar containers

By Nalgene®. Made of **HDPE**. Chemical-resistant with double walls filled with polyurethane foam. Vented, insulated lid. With moulded-in ribs, metal clips for fastening the lid, pour spout, and bottom grip area. Canister with carrying strap (except for 10 l). Suitable for safe short-term handling and storage of liquid nitrogen, dry ice, freezing mixtures and iced water. Shatter-proof. With stands temperatures from -196 to +100 °C.

| Volume (l) | Inner ∅ (mm) | Inner height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 96 | 195 | **PP15.1** | 1 | 156,95 |
| 2 | 122 | 231 | **PP16.1** | 1 | 170,95 |
| 4 | 158 | 295 | **PP17.1** | 1 | 182,75 |
| 10 | 198 | 396 | **PP18.1** | 1 | 325,75 |

# Sample bags



Programme extension!

## Rotilabo®-sample bags

Made of glass-transparent **LDPE**. Press down on strip to seal.

**50 µm thick**

| Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 40 | 60 | **HHL0.1** | 1000 | 14,85 |
| 50 | 80 | **P277.2** | 1000 | 25,70 |
| 60 | 130 | **HHL1.1** | 1000 | 21,45 |
| 70 | 100 | **HHL2.1** | 1000 | 18,85 |
| 80 | 120 | **P278.2** | 1000 | 32,15 |
| 90 | 90 | **HHL3.1** | 1000 | 20,40 |
| 100 | 150 | **P279.2** | 1000 | 36,45 |
| 120 | 170 | **P280.2** | 1000 | 38,60 |
| 140 | 190 | **HHL4.1** | 1000 | 28,95 |
| 150 | 220 | **P281.2** | 1000 | 42,90 |
| 180 | 250 | **P282.2** | 1000 | 55,50 |
| 200 | 300 | **P283.2** | 1000 | 68,70 |
| 250 | 350 | **HHL5.1** | 100 | 19,25 |
| 300 | 400 | **P284.1** | 100 | 13,95 |
| 350 | 450 | **HHL6.1** | 100 | 26,90 |

**90 µm thick**

| Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 220 | **HHL7.1** | 100 | 18,15 |
| 200 | 300 | **HHL8.1** | 100 | 21,00 |
| 300 | 400 | **HHL9.1** | 100 | 31,75 |

▶ Waste disposal bags see page 704



## Paper bags

For storage of small parts, plant seeds etc.

**Made of cellulose**

| Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 65 | 90 | **TK02.1** | 1000 | 25,60 |
| 95 | 132 | **TK03.1** | 1000 | 34,95 |
| 130 | 180 | **TK04.1** | 1000 | 51,60 |

**Made of glassine**

| Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 65 | 90 | **XC52.1** | 100 | 4,55 |
| 95 | 132 | **XC53.1** | 100 | 6,70 |
| 130 | 180 | **XC54.1** | 100 | 10,55 |



Programme extension!

## Rotilabo®-sample bags

Made of glass-transparent **LDPE**. Press down on strip to seal.
Also feature white write-on lines for labelling on one side. 50 µm thick.

| Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 40 | 60 | **HHK7.1** | 100 | 7,35 |
| 70 | 100 | **0638.1** | 100 | 7,50 |
| 100 | 150 | **0639.1** | 100 | 8,55 |
| 120 | 170 | **0640.1** | 100 | 9,65 |
| 160 | 220 | **HHK8.1** | 100 | 12,40 |
| 200 | 300 | **HHK9.1** | 100 | 16,80 |



## Rotilabo®-bags with string-tie closure

Made of 50 µm thick **LDPE**.

| Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 240 | **1510.1** | 100 | 15,60 |
| 200 | 300 | **1511.1** | 100 | 18,60 |
| 300 | 500 | **1512.1** | 100 | 26,35 |




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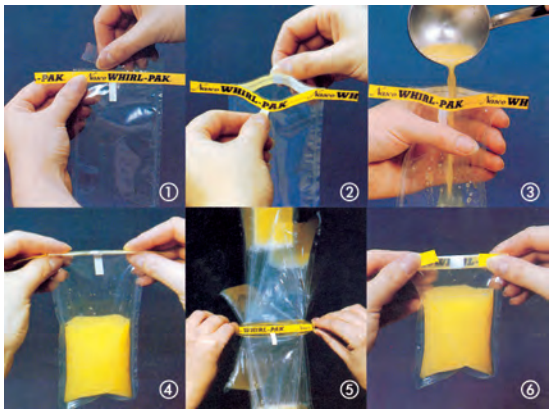
## Liquid sample bags, black

By Nasco. Whirl-Pak®. Made of **LDPE. Sterile**. For saving and storing light-sensitive liquid and solid samples. With imprinted, white labelling area. Dimensions: L 115 mm x W 230 mm, 64 µm thick. Volume 532 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HT83.2** | 100 | 30,80 |

# Sample bags Whirl-Pak®

- Made of **LDPE**
- **Sterile**
- With wire-tie closure for leakproof and airtight seal of bags
- Temperature stable from -196 to +80 °C
- FDA-approved




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## Liquid sample bags

By Nasco. Whirl-Pak®. Made of **LDPE**. **Sterile**.
Ideal for storing liquid and solid samples.

**Procedure:**

**1.** Can be opened easily by simply tearing the plastic along the perforation. The bag interior is therefore protected against contamination, as long as the bag is not used.

**2.** Practical pull-open loops enable easy opening of bag, without contact to the interior. The bag remains open when filling.

**3.** The wide-neck opening of the bag makes filling easier. Hold the bag as indicated and fill approx. 2/3 full.

**4.** The bags are closed by pulling on the outer loops.

**5.** Hold the bag at a distance and spin it at least 3 times (bag with volume >2500 ml, fold 4-5x to seal).

**6.** The bags are sealed tightly by bending the loops.

**With labelling space**

| Volume (ml) | Wall thickness (µm) | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 57 | 65 x 125 | **E252.2** | 500 | 78,40 |
| 60 | 57 | 75 x 125 | **E253.2** | 500 | 80,05 |
| 120 | 57 | 75 x 185 | **1611.2** | 500 | 84,95 |
| 210 | 64 | 95 x 180 | **CEE1.1** | 500 | 88,85 |
| 530 | 64 | 115 x 230 | **1612.2** | 500 | 112,90 |
| 710 | 76 | 150 x 230 | **CEE2.1** | 500 | 134,40 |
| 800 | 76 | 125 x 305 | **CEE3.1** | 500 | 149,45 |
| 2720 | 102 | 254 x 380 | **CEE5.1** | 250 | 195,65 |
| 5440 | 102 | 380 x 508 | **CEE6.1** | 100 | 151,60 |

**Without labelling space**

| Volume (ml) | Wall thickness (µm) | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 120 | 57 | 75 x 185 | **T252.2** | 500 | 74,40 |
| 210 | 76 | 95 x 180 | **CEE7.1** | 500 | 83,80 |
| 530 | 64 | 115 x 230 | **T253.2** | 500 | 112,90 |
| 710 | 76 | 150 x 230 | **T254.2** | 500 | 147,30 |
| 800 | 76 | 125 x 305 | **CEE8.1** | 500 | 131,15 |
| 1080 | 76 | 125 x 380 | **T255.2** | 500 | 165,55 |
| 1630 | 76 | 190 x 300 | **CEE9.1** | 500 | 197,80 |
| 2070 | 76 | 190 x 380 | **T256.2** | 500 | 203,20 |



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## Sample bags, free-standing

By Nasco. Whirl-Pak®. Made of **LDPE. Sterile**. Stand-Up specially formed base allows bags to stand completely free and without support. Suitable for liquids and solids. With large labelling area.

| Volume (ml) | Wall thickness (µm) | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 120 | 64 | 75 x 185 | **T261.2** | 500 | 105,35 |
| 540 | 76 | 115 x 230 | **T262.2** | 500 | 149,45 |
| 710 | 76 | 150 x 230 | **ETA5.1** | 500 | 192,45 |
| 2000 | 102 | 190 x 380 | **ETA6.1** | 250 | 203,20 |



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## Liquid sample bags with sponge

By Nasco. Whirl-Pak®. Made of **LDPE,** sponge and bag. **Sterile**. Speci-Sponge® for sample taking from laboratory benches, furniture, equipment and all other areas which must be tested for listeria, salmonella, *E.coli* and other pathogens. Sponge and bags are sterile. Sponge is free from bacteria and not growth-inhibiting. After "wiping" the sample, return the sponge to the bag. Add medium and if required incubate directly in the bag. Bags come with wire ties and large labelling area.
Dimensions of sponge when wet: L 76 x W 38 x H 16 mm.

| Vol. (ml) | Filling quantity (ml) | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 540 | 360 | 115 x 230 | **T263.2** | 100 | 123,65 |
| 1650 | 1100 | 190 x 300 | **T265.2** | 100 | 170,95 |



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## Liquid sample bags with sponge tester

By Nasco. Whirl-Pak®. Bag made of **LDPE**, material thickness 3 mm, with labelling space. **Sterile**. Stem and holder made of PP, sponge made of non-growth-inhibiting cellulose. Overall length (holder + sponge) 20.3 cm. For collecting surface samples in hard-to-reach areas.

**Procedure:**
Moisten sponge, squeeze off excess liquid, wipe across surface, place sponge back in bag. Hold stem on outside, unscrew and dispose of. Allow sponge to drop into bag and seal bag.

| Vol. (ml) | Filling quantity (ml) | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 710 | 480 | 150 x 230 | **ACP7.1** | 50 | 124,70 |

# Homogenizing bags




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## Liquid sample bags with sodium thiosulphate

By Nasco. Whirl-Pak®. Made of **LDPE**. **Sterile**. Thio-Bag® for collecting and neutralizing chlorinated water samples. Are lighter, less fragile, and more space efficient than bottles. The bag, depending on its size, contains 1 to 3 non-toxic tablets with 10 mg each of active sodium sulphate for neutralizing. With large labelling area and marking at 100/300 ml.

| Design | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| For water samples up to 100 ml | 75 x 185 | **T259.1** | 100 | 37,95 |
| For water samples up to 300 ml | 115 x 230 | **T260.1** | 100 | 73,10 |



## Homogeniser bag stand BagOpen®

**For opening and holding bags.**
For single 400 ml bags. Self-adhesive pads adhere to the outer walls of the bag and to the side walls of the stand and hold the bag open. Reduces risk of sample contamination. Dimensions: W 80 x D 150 x H 250 mm.
**Delivery incl.** 2 adhesive pads.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XX17.1** | 1 | 115,05 |

▶ Homogenizers see page 1035



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## Sample bags

By Nasco. Whirl-Pak®. Made of **PE**, **sterile**.
Suitable for use with lab blenders.

**Without labelling space**

| Volume (ml) | Wall thickness (µm) | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 380 | 76 | 130 x 190 | **T257.2** | 500 | 113,95 |
| 710 | 102 | 150 x 230 | **T258.2** | 500 | 174,15 |

**With labelling space**

| Volume (ml) | Wall thickness (µm) | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 710 | 102 | 150 x 230 | **E254.2** | 500 | 176,30 |
| 1650 | 102 | 190 x 300 | **E255.2** | 500 | 235,45 |

**With labelling space and round bottom**
Round bottom prevents sample fragments from getting caught in the corners of the bag.

| Volume (ml) | Wall thickness (µm) | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1540 | 102 | 185 x 330 | **CEC2.1** | 500 | 231,15 |

**With labelling space and full-surface filter**
Contains a third layer of finely perforated PE which filters out solids in the sample when used in lab blenders.

| Volume (ml) | Wall thickness (µm) | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 200 | 76 | 95 x 180 | **CEC3.1** | 250 | 160,75 |
| 710 | 102 | 150 x 230 | **P310.2** | 250 | 213,95 |
| 1650 | 102 | 190 x 300 | **P311.2** | 250 | 267,70 |
| 2040 | 102 | 190 x 380 | **CEC4.1** | 250 | 267,70 |
| 2720 | 102 | 254 x 380 | **CEC5.1** | 250 | 198,90 |



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## Homogenizing bags

By Nasco. Made of **PE**. γ-**sterile**. 70 µm thick. Suitable for use in homogenizers. Available with and without filter. The filter holds back solid particles and stops the pipettes from becoming blocked.

| Volume (ml) | W x H (mm) | Filter type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 80 | 105 x 150 | without | **AYY6.1** | 1500 | 101,05 |
| 400 | 180 x 300 | without | **EP15.1** | 500 | 46,80 |
| 400 | 190 x 300 | over whole surface | **EP16.1** | 500 | 222,55 |
| 400 | 190 x 300 | side filters | **EP17.1** | 500 | 222,55 |
| 3500 | 380 x 510 | without | **AYY7.1** | 100 | 34,05 |

# Portable racks and Clips



## Portable racks

By Nasco. Ideal for sample bags, especially Whirl-Pak®-bags.
For transport and storage of bags filled with liquid. Made of plastic-coated metal. With second wire netting, approx. 2.5 cm below the upper edge to hold the bag in an upright position and to prevent it from slipping in the rack. Autoclavable.

| Matching bags | Rotilabo®-portable racks | | | | |
|---|---|---|---|---|---|
| | N225.1 | N226.1 | N227.1 | N228.1 | N229.1 |
| 1611.2 | x | x | | | |
| 1612.2 | | | x | x | |
| E252.2 | x | x | | | |
| E253.2 | x | x | | | |
| E254.2 | | | x | | x |
| E255.2 | | | | | x |
| P310.2 | | | x | | x |
| P311.2 | | | | | x |
| T252.2 | x | x | | | |
| T253.2 | | | x | x | |
| T254.2 | | | x | | x |
| T255.2 | | | | | x |
| T256.2 | | | | | x |
| T257.2 | | | x | x | x |
| T258.2 | | | x | | |
| T259.1 | x | x | | | |
| T260.1 | | | x | x | |
| T261.2 | x | x | | | |
| T262.2 | | | x | x | |
| T263.2 | | | x | x | |
| T265.2 | | | | | x |
| HT83.2 | | | x | x | |

| Number of compartments | Compartment size (mm) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 15 | 40 x 50 | 230 x 165 x 76 | **N225.1** | 1 | 36,55 |
| 30 | 38 x 50 | 270 x 248 x 76 | **N226.1** | 1 | 42,95 |
| 12 | 76 x 60 | 254 x 254 x 90 | **N227.1** | 1 | 48,60 |
| 20 | 64 x 64 | 340 x 270 x 102 | **N228.1** | 1 | 50,10 |
| 6 | 114 x 114 | 350 x 235 x 114 | **N229.1** | 1 | 60,15 |

## Universal handle

For portable racks by Nasco. Enables easy transport of full racks. Made of plastic and metal. Plastic part L 305 x W 25 mm, metal part L 70 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N230.1** | 1 | 42,60 |



## Clips

Made of polyamide. Ideal for closing bags, dialysis tubes, freezer bags. Tightly closing. Easy to use. Usage temperature -30 to +80 °C. Colour white. Autoclavable.

| Sealing length (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 45 | 65 | **H277.1** | 10 | 7,45 |
| 65 | 90 | **H278.1** | 10 | 9,65 |
| 110 | 130 | **P901.1** | 10 | 15,00 |
| 150 | 170 | **P902.1** | 10 | 23,60 |

▶ Further Clips see chapter Dialysis!



## Rotilabo®-soft ties

Made of highly flexible material (**TPU**). With extremely high tensile strength and high flexibility. UV- and weather resistant. Enables binder to be opened and closed repeatedly. Resistant to oils, fats and solvents.

**Technical specifications:**

| | |
|---|---|
| Material | TPU |
| Temperature range | from -40 to +80 °C |
| Breakdown voltage | 20 kV/mm |
| Elongation at tear | approx. 400 % |

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 180 | 7 | **K150.1** | 50 | 10,70 |
| 260 | 7 | **K151.1** | 50 | 13,45 |
| 260 | 11 | **K152.1** | 50 | 17,45 |
| 340 | 11 | **K153.1** | 50 | 22,40 |



## Rotilabo®-all-purpose rounded ties

Made of **PE**. Ideal for closing bags, for tying cables, replacing wires, for attaching and hanging up equipmnet, etc.
With practical snap-on closure, can be opened repeatedly.

| Length (mm) | Closure holes | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 140 | 1 | reinforced | **H720.1** | 100 | 6,80 |
| 180 | 2 | standard | **H721.1** | 100 | 7,00 |
| 240 | 2 | standard | **H722.1** | 100 | 9,60 |



## Roll holder

With cutter. With holding devices for 2 rolls of foil and 1 paper towel rolls up to 35 cm width. Colour white grey.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0661.2** | 1 | 32,20 |

## Refillable rolls

**Rotilabo®-aluminium foil,** 13 µm, W 30 cm, L 20 m.

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **0192.1** | 6 | 28,50 |

**Paper towels Rotizell® T**, 64 perforated tissues 26 x 25 cm per roll.

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **0264.1** | 28 | 39,25 |



## Rotilabo®-dispenser box

Made of clear 5 mm thick acrylic glass with 5 mm thick PC lid. With safety cutting device. For clean storage and cutting of Parafilm® and Dura Seal®. For max. roll width 10 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H413.1** | 1 | 145,15 |

▶ Roll holder and dispenser cart for large rolls, see page 1129




## Foil bag sealer

With sight glass, double weld seam and automatic air evacuation. Dimensions: W 35 x H 9 x D 13 cm. Power approx. 160 watt. **Delivery incl.** sample roll of foil.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K279.1** | 1 | 48,30 |

## Roll of foil

Made of opaque **HDPE**. W 285 mm, L 10 m. Approx. 30 µm strong. One side wall open. Temperature stable from -40 to +100 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0278.1** | 3 | 11,80 |



## Rotilabo®-dispenser boxes

Made of **ABS**. For speedy and clean cutting of Parafilm® and Dura Seal® (only Art. No. E364.1) or also Tough Tags®. Handling width up to max. 10 cm. With safety cutting device. Dimensions: L 171 x W 120 x H 144 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dispenser, blue | **EE82.1** | 1 | 52,65 |
| Dispenser, green | **HY13.1** | 1 | 52,65 |
| Dispenser, red | **HY14.1** | 1 | 52,65 |
| **Accessories:** | | | |
| Spare blades | **EE83.1** | 5 | 8,40 |

# Foils




## PARAFILM® M

Ideal for sealing vessels, petri dishes, cells etc. High flexible (stretches up to 200 %). Clings even around irregular shapes and surfaces.

- The sealing film is free of plasticisers, and consists largely of polyolefin's and paraffin waxes
- PARAFILM® M complies with the general requirements of the FAD (Food and Drug Administration) for use under 55 °C, as well as satisfying GMP (Good Manufacturing Practice)
- PARAFILM® is resistant up to 48 hours against many polar substances, e.g. saline solutions, inorganic acids and alkaline solutions; after this period embrittlement may occur

Gas permeability in 24 hours at 23 °C with 50 % relative humidity for:
Oxygen: 350 $cm^3/m^2$
Nitrogen: 105 $cm^3/m^2$
Carbon dioxide: 1100 $cm^3/m^2$
Water vapor permeability in 24 hours at 37 °C and 90 % relative humidity for: 0.8 $g/m^2$.

**Technical specifications:**

| | |
|---|---|
| Film thickness | 120 µm |
| Temperature stability | -45 to +50 °C |
| Melting point | 60 °C |
| Elasticity | 200 % |

| Width (mm) | Length (m) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|
| 50 | 75 | **H951.1** | 1 | 38,50 |
| 100 | 38 | **H666.1** | 1 | 36,50 |
| 100 | 75 | **CNP8.1** | 1 | 74,10 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cutter for rolls, widths 50/100 mm | **CNP9.1** | 1 | 153,75 |



## Dura Seal®

Highly transparent stretch cling film on a LDPE-base. Ideal for covering beakers, Erlenmeyer flasks, test tubes, etc. Chemically resistant against most aliphatic, aromatic and chlorinated solvents as well as acids and alkaline solutions.

Excellent heat resistance (softening point at approx. 110 °C). Approved for microwave.

Application: Stretch the film and pull it over the container rim. The film clings automatically to the rims.

**Technical specifications:**

| | |
|---|---|
| Foil thickness | 100 µm |
| Temperature stability | up to approx. +100 °C |
| Elasticity | 500-800 % |

**Delivery** on rolls in a roll-off carton without layers of paper.

| Width (mm) | Length (m) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|
| 102 | 150 | **E364.1** | 1 | 91,40 |
| 127 | 45 | **Y701.1** | 1 | 61,25 |




## Barriofilm® film

Based on vinylidene chloride, foil thickness 10 µm. With very good battery properties. Excellent for covering gel-electrophoresis plates, particularly with DNA- and RNA-sequencing gels. Foil does not stick and is easy to roll. Non-flammable, self-extinguishing High water vapour and oxygen barrier. Food-safe and microwave-safe. Temperature stable from -60 to +140 °C.
**Delivery incl.** foil cutter, in box.

| Width (mm) | Length (m) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|
| 295 | 300 | **HCL0.1** | 1 | 49,35 |

**Foil Overview**

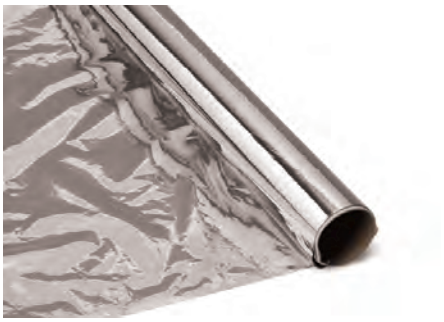
| Foil type | Parafilm® | Dura Seal® | Barriofilm®-foil |
|---|---|---|---|
| Art. No. | H666.1 f. | E364.1 f. | HCL0.1 |
| Material | primarily polyolefine and paraffin wax | on a LDPE-base | on a vinyl chloride-base |
| Starch (µm) | approx. 120 | 100 | 11.5 |
| Temp. stability | 45 to +50 °C | up to approx. +100 °C | -20 to +100 °C |
| Elasticity | 200 % | 500-800 % | 60 % |
| Anti-adh. paper | yes | no | no |
| Suitable for microwave | no | yes | yes |
| Transparency | semi | yes | yes |




## Clear cling foil

Made of LDPE, fully transparent. For wrapping and covering containers. Very flexible. Inert to odour and taste. Water and greaseproof. Approx. 14 µm strong.
On rolls: W 30 cm, L 300 m. In tear-off box.
Temperature stable from -20 to +70 °C.

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **1255.1** | 1 | 18,10 |



## Tin foil

(Tin foiling) 98 %. 8 µm thick. Very soft and adaptable. Mostly resistant against chemicals. On rolls of 40 cm width. Length about 11 m. 250 g net weight.

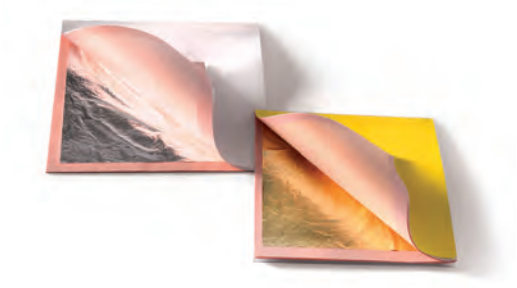
| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **9296.1** | 1 | 63,45 |



## Rotilabo®-cover foil

Made of **LDPE**. Transparent. Heavy-duty version, very strong and tear resistant. Dimensions: L 4 x W 6 m.

| Design | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| heavy | 0,16 | **0828.1** | 1 | 44,55 |
| standard | 0,08 | **0833.1** | 1 | 31,90 |



## Sheets of gold

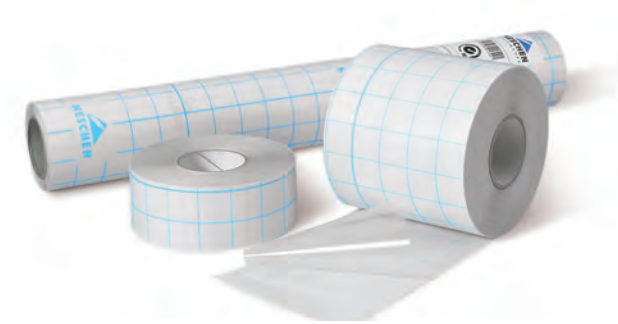
**22 carat**, block of 25 sheets 80 x 80 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **7605.1** | 1 piece (25 sheets) | 109,55 |

## Sheets of silver

**Strength 4 µm**, block of 25 sheets 95 x 95 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9367.1** | 1 piece (25 sheets) | 37,30 |



## Filmolux 609 protective films

Made of **soft PVC**. Thickness 70 µm, self-adhesive. For protecting labels, laminating books, warning signs, instructions and the like. High-gloss, transparent, non-yellowing. On siliconised paper with grid (20 mm) for easy cutting to size.

| Width (mm) | Length (m) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|
| 40 | 50 | **C327.1** | 1 | 23,45 |
| 100 | 50 | **C328.1** | 1 | 51,50 |
| 240 | 25 | **YY17.1** | 1 | 50,35 |
| 420 | 10 | **0484.1** | 1 | 45,05 |

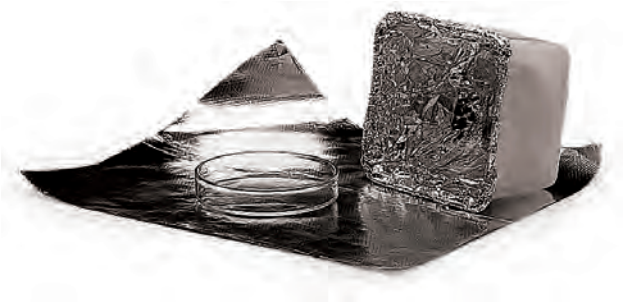



## Pre-cut aluminium foil pieces with dispenser box

Easy removal from dispenser box. Material thickness 13 µm. Measurements: 230 x 270 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE77.1** | 1 box with 200 pieces | 16,05 |

# Foils



## Rotilabo®-aluminium foil pre-cut pieces

In carton, 1000 foils, separated by silk paper. Thickness 25 µm.

| Type | Length (mm) | Width (mm) | Art. No. | Pack Qty. (box) | € |
|---|---|---|---|---|---|
| Z7 | 245 | 177 | **5473.1** | 1 | 95,70 |
| Z12 | 290 | 235 | **5474.1** | 1 | 128,50 |




## Rotilabo®-aluminium foils

Ideal for covering up, wrapping and insulating. Approved for food handling. Al-content over 99.0 %. In cutter box (articles 0192.1 and 1770.2 refill rollers without cutter box).

| Thickness (µm) | Width (mm) | Length (m) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| **12** | 295 | 150 | **1399.1** | 1 | 24,70 |
| **13** | 300 | 20 | **0192.1** | 6 | 28,50 |
| **15** | 300 | 150 | **AA76.1** | 1 | 24,65 |
| **15** | 450 | 150 | **AA77.1** | 1 | 40,35 |
| **16** | 300 | 100 | **1770.1** | 1 | 22,05 |
| **16** | 300 | 100 | **1770.2** | 4 | 89,90 |
| **18** | 440 | 150 | **1502.1** | 1 | 48,40 |
| **20** | 450 | 150 | **0954.1** | 1 | 56,95 |
| **30** | 500 | 100 | **2596.1** | 1 | 62,35 |



## Rotilabo®-aluminium foil disks

In a box, 1000 sheets separated with a layer of tissue paper. Aluminium foil 30 µm strong.

| Type | ∅ (mm) | Art. No. | Pack Qty. (box) | € |
|---|---|---|---|---|
| R 80 | 80 | **E723.1** | 1 | 52,25 |
| R 100 | 100 | **0953.1** | 1 | 64,45 |
| R 120 | 120 | **E724.1** | 1 | 83,35 |
| R 130 | 130 | **E725.1** | 1 | 92,20 |
| R 150 | 150 | **0196.1** | 1 | 105,35 |



## Foil Cover-ALLS™ aluminium foil cover

Pre-moulded aluminium foil cover, 25 µm thick.
For quick covering of various laboratory vessels. Suitable for sterilisation of Erlenmeyer flasks, beakers and measuring cylinders. Autoclavable.

| Height (mm) | Basic ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 38 | **YA87.1** | 252 | 36,55 |
| 44 | 51 | **YA89.1** | 252 | 42,90 |



## Polyfoil™ covers

Thermoplastic aluminium foils, polyester-coated. Square blanks.
Easy to fold, adapts well to surfaces. Resistant to mechanical influences.
**Resistant to most organic solvents as well as corrosive media.**
Suitable for sterilisation of laboratory vessels, incubation of cultures or temporary sterile storage of laboratory materials. FDA-compliant. Autoclavable.

| Size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 102 x 102 | **YA90.1** | 100 | 50,00 |
| 130 x 130 | **YA91.1** | 100 | 63,45 |
| 203 x 203 | **YA92.1** | 100 | 85,95 |



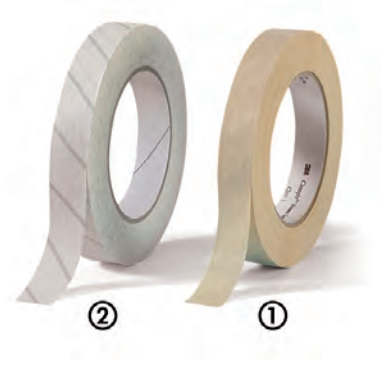

## Rotilabo®-sterile indicator strips

Self-adhesive, for labelling or sealing sterilisation vessels. Labellable.
Roll length 55 m, strip width 19 mm, core inner ∅ 76 mm. Autoclavable.

① **Steam sterilisation:**
Changes colour from yellow to brown after 10 min at 121 °C
or after 2 min at 135 °C.

② **Hot air sterilisation (Poupinel method):**
The V imprint changes colour from green to brown after 30 min at 155 °C.

| Type | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|
| ① For steam sterilisation | **XC20.1** | 1 | 10,35 |
| ② For hot air sterilisation | **XC21.1** | 1 | 20,35 |




## Sterile indicator tapes

By 3M. For marking or sealing sterilisation vessels.
Labellable. Inner core ∅ 76 mm. Autoclavable.

**Technical specifications:**

| Type | ① steam sterilisation (Comply™) | ② hot air sterilisation (Indair™) |
|---|---|---|
| Specification | Changes colour from beige to dark brown after 10 min at 121 °C (after 2 min at 134 °C). Process indicator in compliance with EN ISO 11140-1:2005. | Changes colour from green to brown after approx. 30 min at 155 °C. |
| Roll length (m) | 55 | 50 |
| Strip width (mm) | 18 | 19 |

| Type | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|
| ① For steam sterilisation | **8221.1** | 1 | 17,15 |
| ② For hot air sterilisation | **H590.1** | 1 | 29,00 |

## Sterilisation monitoring

### Machine monitoring

System-independent function test for air extraction and steam penetration. Must be performed once per steriliser every day according to DIN EN 17665.
Not a direct indicator of sterilisation performance (= Performance Test).

### Treatment monitoring

Sterilisable materials are labelled with external indicators to allow differentiation between sterilisable materials and sterile materials.
This minimises the risk of using non-sterilised goods.

### Load/batch monitoring

A meaningful chemo-indicator is treated together with the load. This may be inserted in a special test piece.

### Indicator selection aid

| Monitoring step | Class* | Application | Product type | Art. No. |
|---|---|---|---|---|
| Treatment monitoring | 1 | Process indicators (treatment indicators) for differentiating between treated goods and untreated goods | Sterile indicator strips | XC20.1<br>XC21.1<br>8221.1<br>H590.1 |
| | | | Sterile indicator labels | T033.1<br>ANX6.1 |
| Machine monitoring | 2 | Indicators for daily air extraction and steam penetration testing | Bowie-Dick disposable test pack | ANX4.1 |
| Batch monitoring | 5 | Integrators for reaction to all critical variables in a series of defined sterilisation processes | SteriGage™ Integrator | ANX5.1 |

*Indicator classes according to DIN EN ISO 11140



## Comply™ indicator labels

By 3M. Simple identification labels for steam sterilisation, with treatment indicator, lead-free. Can be labelled with an indelible pen, easily removable without residues, especially from metal containers.
Dimensions: L 100 x W 25 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANX6.1** | 500 | 192,45 |




## Comply™ SteriGage™ chemo-indicators

By 3M. Class 5 integrating indicators (integrators) for monitoring the sterilisation process within individual packaging. "Moving Front" technology ensures clear results: As the sterilisation process progresses, a dark strip forms, stopping either within the "Accept" band (pass) or within the "Reject" band (fail). The result can be read directly off the indicator without any need for interpretation. Suitable for steam sterilisation at +121 °C and +134 °C. High performance: reaction is identical to that of an bioindicator strip in the sterilisation process.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANX5.1** | 100 | 90,85 |




## Sterile indicator label

Heat-resistant labels with sterilisation indicator field. Size 29 x 27.6 mm. Labels can be printed on either by hand or with a stamp. Colour change of indicator point from yellow to red at steam sterilisation after 5 to 10 minutes at 116 to 135 °C, depending on temperature.
Free from lead, copper and bismuth. 700 labels on roll.

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **T033.1** | 1 | 18,85 |


- Disposal bags with sterilisation indicator see page 705
- Data logger for autoclaves see page 804





## Indicators for autoclave monitoring

By 3M. Bowie-Dick disposable test pack. Heavy-metal-free indicators for daily air extraction and water vapour permeability test according to DIN EN 17665. Meets EN 867-1 1997, EN 867-4:2000, ISO 11140-1:1995 and ISO 11140-4:2001. Simple interpretation and fault detection through colour change from blue to pink, as well as non-reflective surface. No subsequent change of colour for safe storage and transparency of results. Reproducible.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANX4.1** | 20 | 241,90 |




## Thermometer for autoclaves

For monitoring the temperature during autoclaving. Max. temperature is indicated by the moving red marker. Manual resetting by turn screw. Bimetallic thermometer with housing and removable base made of stainless steel, dust cap made of silicone rubber.
Watertight glass window, pressure resistant. Autoclavable.

**Technical specifications:**

| | |
|---|---|
| Measurement range | -20 to +150 °C |
| Graduations | 2 °C |
| Accuracy | ±1.5 °C |
| Dimensions | ∅ 81 x D 85 x H 95 mm |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXP0.1** | 1 | 54,65 |



## Pipette containers

Made of aluminium. For the storage of plastic pipettes and glassware between 150 and 480 mm in length, e.g. stirring bars, serological, Pasteur pipettes, volumetric pipettes and graduated pipettes. With silicone inner padding and lid for protection of the stored glass pipettes. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 160-200 | **CLN4.1** | 1 | 32,15 |
| 235-305 | **CLN5.1** | 1 | 37,45 |
| 315-385 | **CLN6.1** | 1 | 40,55 |
| 315-485 | **CLN7.1** | 1 | 42,80 |



## Varicon variable pipette containers

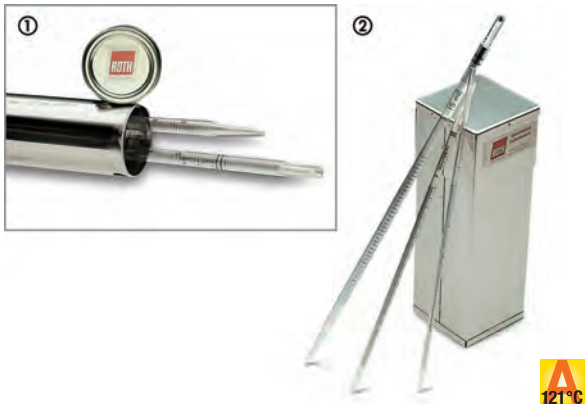
Made of aluminium. Round. Ideal for sterilising pipettes of different volume and size. Consists of two aluminium parts, which can be pushed inside each other. ∅ 60 mm.
Only one container size required for: all standard pipettes 280 to 420 mm and for all short- or Pasteur pipettes 145 to 235 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Varicon RK 145-235 mm | **P978.1** | 1 | 50,45 |
| Varicon RS 280-420 mm | **P979.1** | 1 | 37,45 |

## Silicone insert

For laying in Varicon pipette container.
Prevents damage to pipettes.
Made of 2 mm thick silicone rubber. ∅ 58 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P980.1** | 1 | 7,50 |




## Rotilabo® sterilising container for pipettes

Made of stainless steel. With silicone coated base and lid.
Sterilisable up to +205 °C.

① **Round**
The holes in the lid can be opened and closed by twisting the lid.

| Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 380 | 50 | **C839.1** | 1 | 74,20 |
| 420 | 50 | **C840.1** | 1 | 74,20 |
| 380 | 65 | **C841.1** | 1 | 74,20 |
| 450 | 65 | **C842.1** | 1 | 77,40 |
| 380 | 80 | **C843.1** | 1 | 83,85 |
| 500 | 80 | **C844.1** | 1 | 91,40 |

② **Angular**
Stackable. Tube size 70 x 70 mm.

| Total length (mm) | Effective length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 210 | 180 | **C868.1** | 1 | 125,80 |
| 290 | 257 | **C869.1** | 1 | 136,55 |
| 340 | 307 | **C870.1** | 1 | 155,90 |
| 430 | 412 | **C871.1** | 1 | 162,35 |
| 490 | 458 | **C872.1** | 1 | 191,35 |

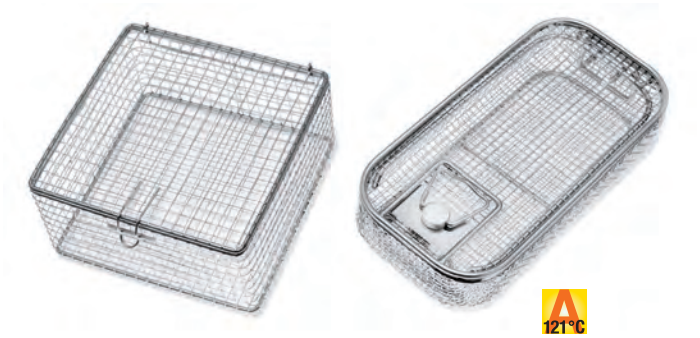


## Rack for pipette containers

Made of stainless steel. With fixed tilt. Ideal for convenient storage of round and rectangular pipette containers at the workplace or in safe storage. Max. ∅ of round containers 74 mm, and max. edge length of rectangular ones 71 mm. Minimum length of containers 250 mm.

| For | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 containers | 195 x 235 x 229 | **P982.1** | 1 | 123,65 |
| 6 containers | 195 x 235 x 315 | **P983.1** | 1 | 127,95 |
| 8 containers | 195 x 235 x 405 | **P984.1** | 1 | 169,85 |

# Sterilisation




## Rotilabo®-sterilisation baskets

Made of stainless steel 18/10 (material 1.4301), electrolytically polished. With lid attached. Autoclavable.

| Type | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Square | 180 x 180 x 90 | **EPA3.1** | 1 | 76,45 |
| Rectangular, with handle | 250 x 130 x 60 | **EPA4.1** | 1 | 107,00 |




## Rotilabo®-sterilisation baskets

Made of stainless steel 1.4301, electropolished. Mesh baskets spot - welded, 8 x 8 x 1 mm. Ideal for storing, transporting, cleaning and sterilising labware. Autoclavable.

① **Quadratic and rectangular**

| Length (mm) | Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 100 | 100 | **L040.1** | 1 | 40,00 |
| 120 | 120 | 120 | **L041.1** | 1 | 45,75 |
| 140 | 140 | 140 | **L042.1** | 1 | 52,05 |
| 160 | 160 | 160 | **L043.1** | 1 | 58,80 |
| 180 | 180 | 180 | **L044.1** | 1 | 67,65 |
| 200 | 200 | 200 | **L045.1** | 1 | 78,60 |
| 300 | 200 | 200 | **L046.1** | 1 | 100,25 |
| 400 | 200 | 200 | **L047.1** | 1 | 123,65 |

② **Round**
With handle.

| ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 80 | **HHA1.1** | 1 | 49,25 |
| 120 | 100 | **L050.1** | 1 | 56,45 |
| 150 | 120 | **L051.1** | 1 | 57,55 |
| 160 | 180 | **HHE0.1** | 1 | 73,65 |
| 180 | 160 | **L052.1** | 1 | 73,00 |
| 210 | 180 | **L053.1** | 1 | 83,85 |
| 240 | 180 | **L054.1** | 1 | 91,40 |
| 270 | 180 | **L055.1** | 1 | 109,65 |
| 300 | 200 | **L056.1** | 1 | 129,00 |




## Sterilisation baskets, rectangular

Made of stainless steel 18/10, electrolytically polished. For storage, transportation, cleaning and sterilisation of labware.
Mesh size 8 x 8 x 1 mm. Autoclavable.

| Length (mm) | Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 150 | 100 | 100 | **YT41.1** | 1 | 51,25 |
| 200 | 150 | 150 | **YT42.1** | 1 | 64,30 |
| 250 | 150 | 150 | **YT43.1** | 1 | 115,05 |
| 500 | 300 | 250 | **YT44.1** | 1 | 224,70 |
| 600 | 400 | 300 | **YT45.1** | 1 | 234,35 |




## Baskets

By Nalgene®. Made of **PP**. Ideal for storing, sterilising and cleaning labware. Smooth surface prevents any scratching of glass and plastic. Baskets are stackable. Autoclavable.

| Length (mm) | Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 123 | 154 | 105 | **L068.1** | 1 | 22,05 |
| 168 | 178 | 156 | **L069.1** | 1 | 24,30 |
| 230 | 239 | 233 | **L070.1** | 1 | 32,20 |



Programme extension!

121°C

## Sterilisation containers polySteribox®

Transparent special plastic, can be used for approx. 1250 sterilization cycles. **For the sterilization and storage of instruments.** Suitable for steam, gas and plasma sterilization. Hydrophobic PTFE filter stops germs and bacteria (replace after approx. 250 sterilizations, includes date insert). A sterilization mark and protective seal can be used to check the sterility of the contents. Safety seal for safe transportation. Stackable. Dishwasher safe.
Acc. to DIN 58952, 58953, EN 868-1/868-8/554, ISO 11607 and DIN EN ISO 17664 and 11137-1. CE certified. Autoclavable up to 134 °C. **Delivery incl.** PTFE filter (12-month filter, polySteribox M with permanent filter). Permanent filter set is optional. Please order separately.

| Type | Outer dimensions: L x W x H (mm) | Inner dimensions: L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| polySteribox® SH | 208 x 111 x 55 | 177 x 76 x 44 | **X616.1** | 1 | 115,05 |
| polySteribox® M | 185 x 145 x 59 | 156 x 124 x 48 | **KP96.1** | 1 | 134,40 |
| polySteribox® L | 290 x 184 x 74 | 261 x 163 x 64 | **KP97.1** | 1 | 164,50 |
| polySteribox® XL | 497 x 122 x 65 | 465 x 90 x 54 | **TA78.1** | 1 | 226,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Sterilisation seal with indicator strip | **X617.1** | 1000 | 49,05 |
| Protective seals | **H653.1** | 500 | 46,70 |
| Non-slip silicon mat for polySteribox® SH | **H654.1** | 1 | 27,70 |
| Non-slip silicon mat for polySteribox® M | **TA79.1** | 1 | 32,20 |
| Non-slip silicon mat for polySteribox® L | **TA80.1** | 1 | 46,15 |
| Screen basket for polySteribox® SH | **HLE9.1** | 1 | 80,65 |
| Screen basket for polySteribox® M | **HLH0.1** | 1 | 83,35 |
| Screen basket for polySteribox® L | **HLH1.1** | 1 | 85,80 |
| Screen basket for polySteribox® L with lid | **HLH2.1** | 1 | 192,45 |
| Grid insert made of stainless steel for polySteribox® L | **HLH3.1** | 1 | 55,70 |
| Screen basket for polySteribox® XL with lid for 2 endoscopes | **HLH4.1** | 1 | 265,55 |
| Permanent filter set for polySteribox® SH | **TA85.1** | 1 | 20,45 |
| Permanent filter set for polySteribox® M | **TA86.1** | 1 | 24,20 |
| Permanent filter set for polySteribox® L/XL | **TA87.1** | 1 | 29,25 |



121°C

## DuraPorter™ safety containers

Made of **PC**, with watertight silicon seal. Ideal for in-house transportation of biological and chemical samples, instruments or for storage. Transparent box with hinged lid, three snap locks and carry handle, stackable. Partitionings for smaller samples can be removed to make use of the entire interior. Lid can be fully opened for easy filling and cleaning. Dimensions: outer L 380 x W 196 x H 160 mm, inner L 335 x W 155 x H 135 mm. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| transparent/blue | **AAA0.1** | 1 | 85,50 |
| red | **AAA1.1** | 1 | 85,50 |
| yellow | **AAA2.1** | 1 | 85,50 |



121°C

## Rotilabo®-sterilisation containers for petri dishes

Made of 18/8 stainless steel. With holder for dishes with max. ∅ 100 mm. Can be sterilised up to max. +150 °C.

| ∅ (mm) | Height (mm) | Capacity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 120 | 250 | 10 Petri dishes | **C846.1** | 1 | 118,25 |
| 120 | 500 | 20 Petri dishes | **C847.1** | 1 | 213,95 |

▶ Steam sterilizers CertoClav see page 905

▶ Instrument trays made of stainless steel see page 125

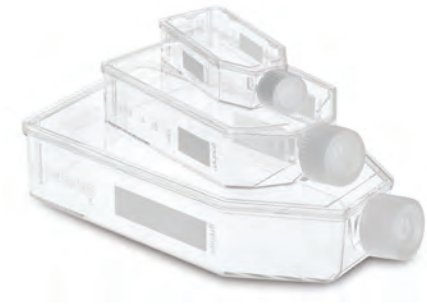
# Cell culture bottles



## Plastic roller bottles

By Greiner Bio-One. Made of **PS**. **Sterile.** Graduated.
TC-surface treatment improves cell adhesion and increases the yield.
**DNase-, RNase- and human DNA-free.** Non-pyrogenic.
HDPE-screw closure available as a standard screw closure or as a filter screw closure with hydrophobic membrane (PET/PTFE) for optimal gas exchange.

| Max. filling cap. (ml) | ∅ x H (mm) | Growth surface ($cm^2$) | Screw closure | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2550 | 122 x 271 | 850 | standard | **CE58.1** | 24 | 145,15 |
| 2100 | 122 x 271 | 850 | with filter | **CE59.1** | 24 | 159,10 |



## Suspension culture bottles with filter screw cap

By Greiner Bio-One. **Made of PS. Sterile.** Hydrophobic membrane (pore size 0.2 µm) for minimal risk of contamination and optimal gas exchange. High, angled neck reduces the risk of media contact with the inside of the screw cap and thus provides an additional layer of protection against contamination.

- Hydrophobic surface
- Ideal for suspension cultures, hybridoma cells and embryonal stem cells
- Optimal access with pipette
- Graduations and labelling space on side
- Optimal gas exchange thanks to high air flow rate of membrane
- Additional standard screw caps (without filter) in every box
- **DNase, RNase and human DNA free**
- Endotoxin free, free of cytotoxic substances

| Max. filling cap. (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 50 | **CNA6.1** | 200 (20 x 10) | 135,45 |
| 250 | **CNA7.1** | 120 (24 x 5) | 109,65 |
| 650 | **CNA8.1** | 40 (8 x 5) | 83,35 |



## Suspension culture bottles

By Greiner Bio-One. Made of **PS**. **Sterile.** With white screw cap.
Ideal for suspension cultures through strongly hydrophobic surfaces.
High, slanting bottle neck protects cap interior from contamination through medium.
Bottles are graduated on the side and have a labeling area.
**DNase-, RNase- and human DNA-free.**
Endotoxin free, free of cytotoxic substances.

| Max. filling cap. (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 50 | **CE51.1** | 200 | 135,45 |
| 250 | **CE52.1** | 120 | 136,55 |
| 650 | **CE53.1** | 40 | 92,45 |



## Cell culture bottles with filter screw cap

By Greiner Bio-One. Made of **PS**. **Sterile**. Hydrophobic membrane (pore size 0.2 µm) for minimal risk of contamination and optimal gas exchange. Angled neck reduces the risk of media contact with the inside of the screw cap and thus provides an additional layer of protection against contamination.

- Cell layers are easy to reach with the cell scraper
- Optimal access with pipette
- Graduations and labelling space on side
- Improved cell adherence through physical surface treatment
- Optimal gas exchange thanks to high air flow rate of membrane
- **DNase, RNase and human DNA free**
- Endotoxin free, free of cytotoxic substances

| Max. filling cap. (ml) | Working capacity (ml) | Growth surface ($cm^2$) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 5-10 | 25 | **CE48.1** | 200 (20 x 10) | 145,15 |
| 250 | 15-38 | 75 | **CE49.1** | 120 (24 x 5) | 152,65 |
| 550 | 20-45 | 175 | **CLY2.1** | 50 (10 x 5) | 109,65 |
| 650 | 20-85 | 175 | **CE50.1** | 40 (8 x 5) | 93,45 |



## Tissue culture bottles

Made of **PS**. Lid made of **PE**. **Sterile**. Ideal for cultivating and storing cell cultures. Very high optical clarity. Non toxic. Bottom of bottle has been surface-treated for optimum cell growth. Slanting neck and large opening enable entire culture surface to be accessed.
**Variable closure:** Screw cap can be closed tightly for anaerobic cultures, or screwed into vent position for defined ventilation. Bottles are graduated and have a labeling area. Stackable.

| Useable area ($cm^2$) | Volume (ml) | L x W x H (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 60 | 90 x 50 x 25 | 36 x 10 | **X845.1** | 360 | 378,40 |
| 75 | 270 | 150 x 85 x 35 | 20 x 5 | **X846.1** | 100 | 226,85 |
| 150 | 690 | 205 x 120 x 45 | 12 x 3 | **X847.1** | 36 | 176,30 |



## Cell culture bottles

By Greiner Bio-One. **Made of PS. Sterile.** Screw cap can be used in two positions: ventilation position or gastight cap. High, angled bottle neck reduces the risk of media contact with the inside of thecap.

- Cell layers are easy to reach with the cell scraper
- Optimal access with pipette
- Graduations and labelling space on side
- Improved cell adherence through physical surface treatment
- **DNase, RNase and human DNA free**
- Endotoxin free, free of cytotoxic substances

*With grid.

| Max. filling cap. (ml) | Working capacity (ml) | Growth surface ($cm^2$) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 5-10 | 25 | **CNA9.1** | 200 (20 x 10) | 133,30 |
| 50 | 5-10 | 25* | **CNC0.1** | 200 (20 x 10) | 163,40 |
| 250 | 15-38 | 75 | **CNC1.1** | 120 (24 x 5) | 104,30 |
| 550 | 20-45 | 175 | **CNC2.1** | 50 (10 x 5) | 101,60 |
| 650 | 20-85 | 175 | **CNC3.1** | 40 (10 x 4) | 84,00 |



## Cell scrapers

By Greiner Bio-One. Made of **PS**. Swivel blade, made of **HDPE**, for gentle scraping of cells on difficult to reach surfaces. Individually **sterile** wrapped.

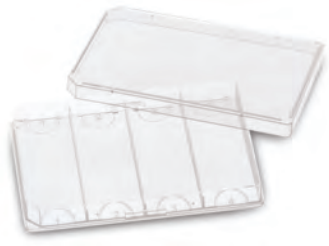
| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 280 | 18 | **CE60.1** | 100 | 226,85 |
| 400 | 18 | **CE61.1** | 100 | 262,30 |



## Cell scrapers

Made of **ABS**, blade made of flexible TPE. **Sterile**, individually packed. For cell harvesting in cell culture flasks and dishes. Swivelling movements, as well as horizontal and vertical blade rotation, enable a variety of applications and allow access to points that are difficult to reach.

| Length (mm) | Blade width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 245 | 20 | **EKX9.1** | 100 | 79,00 |
| 385 | 30 | **EKY0.1** | 100 | 121,00 |



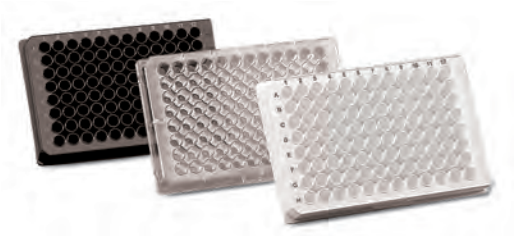
## FourWell Plate™ CELLSTAR®

By Greiner Bio-One. Made of **PS**. **Sterile.** Four-well plate for microscopic applications, for cultivation and processing of cells on microscope slides. Can also be used as incubation tray for blotting membranes.
Dimensions: L 127.8 x W 85.5 x H 14.4 mm (plate footprint conforms to ANSI standard).

- 4 individual chambers, each with a max. volume of 18.6 ml per well
- Numbered wells for secure sample identification
- Bevelled edges on the left-hand side of the plates serve as a guide
- Vents
- With cover panel
- **Free of detectable DNase, RNase and human DNA**
- **Free of detectable endotoxins, free of cytotoxic substances**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CNA2.1** | 32 (4 x 8) | 117,20 |

# Cell culture plates, pans + vials



## Microtitration plates BRAND*plates*®

By Brand. Manufactured according to ANSI/SBS standards 1 to 4 - 2004 to ensure compatibility when carrying out manual processes and, in particular, automatic processes.

- 96 well standard format
- Clearly distinguishable by embossed alphanumeric colour code: grey for standard plates, blue for immunology, orange for the cell culture
- **Free of endotoxins, DNase, DNA, RNase, non-cytotoxic**

**Microtitration plates cellGrade™**

Made of **PS**.

- **Sterile** (individually packed, with cover)
- Standard plate for cultivating adherent cell cultures
- PS surface with various freely accessible chemical groups, e.g. carboxyl and hydroxyl groups
- Surface is hydrophilic (untreated PS is non-hydrophilic)
- Serum constituents are bound to the free chemical groups which allow indirect adhesion of cells

| Volume per well (µl) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350 | transparent, F-bottom | **CNP6.1** | 50 | 131,15 |
| 350 | white, F-bottom | **XT72.1** | 50 | 246,20 |
| 350 | black, F-bottom | **XT73.1** | 50 | 246,20 |
| 330 | white, with transparent F-bottom | **XT74.1** | 50 | 600,95 |
| 330 | black, with transparent F-bottom | **XT75.1** | 50 | 600,95 |

**Microtitration plates, inertGrade™**

Made of **PS**.

- **Sterile** (individually packed, with cover)
- Suitable for cultivating suspension cell cultures
- Ideal for cell cultures if cell adhesion is to be avoided
- Optimised surface properties minimise cell binding, protein absorption, enzyme activation and cellular activation
- This allows, for example, premature differentiation of stem cells to be inhibited

| Volume per well (µl) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 330 | 96 well, transparent, U-bottom | **XT76.1** | 40 | 450,45 |
| 350 | 96 well, transparent, F-bottom | **XT77.1** | 40 | 450,45 |

**Microtiter plates pureGrade™ S**

Made of transparent **PS**. Untreated surface.

- **Sterile** (individually packed, with cover) or non-sterile
- Chimney shaped 96 well cavities, with alphanumeric labelling
- F profile (flat bottom shape) for precision optical measurements
- Sterile type is ideal for bacteriological assays
- Non-sterile type designed, in particular, for homogeneous assays, screenings and storage

| Volume per well (µl) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350 | F-profile, **sterile** | **XT64.1** | 50 | 122,55 |
| 350 | F-profile, non-sterile | **CNP7.1** | 100 | 94,50 |

▶ For further information on Brand microtiter plates see page 464



## Cell culture plates

Made of **PS**. **Sterile** (Gamma sterilised), individually packed, with cover. Hydrophilic, negatively-charged surface through plasma treatment for uniform cell adhesion and cell growth.

- F profile (flat-shaped base)
- Optically clear for good cell visualisation
- Increased well edge reduces evaporation
- Condensation rings in the lid reduce cross-contamination
- Alphanumeric numbering
- Non-pyrogenic

| Wells | Volume per well (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 17 | **EKX5.1** | 100 | 149,00 |
| 12 | 6,8 | **EKX6.1** | 100 | 159,00 |
| 24 | 3,5 | **EKX7.1** | 100 | 159,00 |
| 96 | 0,39 | **EKX8.1** | 100 | 159,00 |



## Cell culture Multiwell plates

By Greiner Bio-One. Made of **PS**. **Sterile** (individually packed, cover plate for adherent cell cultures). TC-surface treated. Non-pyrogenic.
**Free of detectable DNase, RNase and human DNA. Free of detectable endotoxins, free of zytotoxic substances.** Alphanumeric well coding. F-bottom. Max. centrifuging: 4800 x g.

| Wells | Growth surface per well ($cm^2$) | Working volume per well (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 6 | 9,6 | 2-5 | **CE54.1** | 100 | 184,90 |
| 12 | 3,9 | 2-4 | **CE55.1** | 100 | 234,35 |
| 24 | 1,9 | 0,5-1,5 | **CE56.1** | 100 | 206,40 |
| 48 | 1,0 | 0,5-1 | **CE57.1** | 100 | 273,05 |
| 96 | 0,34 | 0,025-0,34 | **KL43.1** | 100 | 218,25 |



## Cell strainer EASYstrainer™

By Greiner Bio-One. Housing made of **PP**, filter diaphragm made of **PET**. **Sterile,** individually packed (single blister pack). For the filtration of cell suspensions and primary cell isolates, e.g. after organ digestion, for use in primary cell extraction or cell preparation for flow cytometry.

- Fits all standard 50 ml tubes
- With handle and mantle surface for improved aseptic handling
- Venting slot for rapid filtration, no overflowing of the cell strainer

Aids aseptic work: the mantle surface and handle protect against unintentional contact with the sterile filter material. The single blister pack allows for convenient and aseptic removal of the strainer. Venting slot between fitted cell strainer and tube allows the air in the tube to escape quickly during filtration and ensures that liquid does not accumulate between the strainer and the tube or that the strainer cannot overflow.

| Mesh size (µm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 40 | green | **CLY9.1** | 50 | 97,40 |
| 70 | blue | **CNA0.1** | 50 | 97,40 |
| 100 | yellow | **CNA1.1** | 50 | 97,40 |



## Cell culture dishes

Made of **PS**. **Sterile** (gamma-sterilised). Optically clear for microscopy. Plasma-treated for optimal cell growth conditions, both for adherent cells and for cell suspensions. With vents to ensure optimal gas exchange. Stackable. The circular elevation on the edge prevents accidental opening of dishes during transit. Non-pyrogenic.

| Working capacity (ml) | Growth surface ($cm^2$) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 3 | 9,4 | 35 x 10 | **PK37.1** | 500 (25 x 20) | 145,15 |
| 5 | 21,5 | 60 x 15 | **PK38.1** | 500 (50 x 10) | 178,45 |
| 12,5 | 60,8 | 100 x 20 | **PK39.1** | 200 (20 x 10) | 111,80 |



## CELLreaktor™-tubes CELLSTAR®

By Greiner Bio-One. Made of **PP**, filter screw cap with PTFE-coated capillary pore filter membrane (USP Class VI certified, pore size 0.2 µm). **Sterile.** Temperature stability - tube: from -196 to +121 °C, screw cap: from -80 to +100 °C.
Tubes are autoclavable (without screw cap).

- Conical tube design facilitates direct cell harvesting
- With graduations and labelling space
- Excellent gas exchange
- Free of detectable DNase, RNase and human DNA
- Pyrogen free, non-cytotoxic

**Uses:**
- Miniaturisation of large scale test set-ups
- Maximises the number of parallel experiments
- Bioreactors for the cultivation of suspension cells and spheroid cells
- Expansion of aerobic bacteria, yeasts and micro-organisms
- Storage of substances which require gas exchange

| Volume (ml) | Max. centrifugability | Dimensions: ∅ x H (mm) |
|---|---|---|
| 15 | Oscillating rotor: 4000 x g<br>Fixed angle rotor: 15 000 x g | 17 x 120 |
| 50 | Oscillating rotor: 3200 x g<br>Fixed angle rotor: 9500 x g | 30 x 115 |

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 15 | **CLY4.1** | 300 (15 x 20) | 211,80 |
| 50 | **CLY3.1** | 500 (25 x 20) | 380,55 |



## Cell culture vials CELLSTAR®

By Greiner Bio-One. Made of **PS**, with HDPE screw cap. **Sterile.**
Volume 12 ml, dimensions: ∅ 17 x H 100 mm.

- Improved cell adherence through physical surface treatment
- **Free of detectable DNase, RNase and human DNA**
- **Free of detectable endotoxins, free of cytotoxic substances**

**Technical specifications:**

| Type | Max. centrifugability (g) | |
|---|---|---|
| | Fixed angle rotor | Oscillating rotor |
| Conical bottom, with screw cap | 5000 | 3000 |
| Self-standing, with support skirt and bayonet cap (opens with 1/3 turn) | 5000 | 5000 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Conical bottom | **CNC4.1** | 1000 (200 x 5) | 263,40 |
| Self-standing | **CNC5.1** | 1000 (200 x 5) | 267,70 |

# Culture vials



## Culture vials

Made of AR® glass, clear. Autoclavable.
**Supplied without** screw caps (please order separately).

| Type | Volume (ml) | Outside ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Conical bottom | 15 | 16 | 125 | **EXE8.1** | 100 | 25,75 |
| Straight base | 15 | 16 | 125 | **EXE9.1** | 100 | 25,75 |

## Screw-cap closures

Made of **PP**, white, with integrated seal made of TPE, **leak-proof**.
- Extended closures, reduce risk of contamination
- Short screw thread for easy opening and closing
- Highest safety for sterilization through injected seal

Dimensions: outside ∅ 20 x L 30 mm.
Temperature stable from -10 to +121 °C. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXH0.1** | 100 | 34,35 |



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Material DURAN®

## Culture tubes with screw caps

Made of DURAN®, with DIN-thread, screw caps made of PBT, gaskets PTFE-coated. Hot air sterilization to max. 180 °C. Autoclavable.

| Volume (ml) | Outside ∅ (mm) | Length (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 6 | 12 | 100 | GL 14 | **K248.1** | 50 | 158,00 |
| 9 | 13 | 100 | GL 14 | **PY94.1** | 50 | 158,00 |
| 20 | 16 | 150 | GL 18 | **PY95.1** | 50 | 158,00 |
| 20 | 16 | 160 | GL 18 | **K249.1** | 50 | 205,00 |
| 20 | 20 | 150 | GL 18 | **PY96.1** | 50 | 233,00 |
| 30 | 18 | 180 | GL 18 | **K250.1** | 50 | 223,00 |

Made of **AR®-glass**, with DIN-thread, screw caps made of PP, white rubber gasket. Heat resistant to 140 °C. Autoclavable (repeated autoclaving can lead to glas corrosion).

| Volume (ml) | Outside ∅ (mm) | Length (mm) | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 6 | 12 | 100 | GL 14 | **K251.1** | 100 | 39,65 |
| 12 | 16 | 100 | GL 18 | **K252.1** | 100 | 42,45 |
| 20 | 16 | 160 | GL 18 | **K253.1** | 100 | 52,45 |
| 30 | 18 | 180 | GL 18 | **K254.1** | 100 | 61,10 |

▶ For spare screw caps see page 44
▶ Test tubes see page 78



## Sterile culture vials with screw cap

Made of **PS**. Cap made of **HDPE**. **Sterile**. Centrifugable to 3000 x g.
Coloured lid inserts for identification are optional (CK72.1ff). Volume 8 ml.
Dimensions: ∅ 13 x L 100 mm. Pyrogen free.
Temperature resistant in the range -80 to +80 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AEL3.1** | 1000 (8 x 125) | 246,20 |



## Sterile culture vials

- Made of transparent **PS** or translucent **PP**
- With two-position **PE** closure for anaerobic and aerobic bacteria cultures
- **Sterile**
- With or without graduations and labelling space
- Available in space-saving box or economy-priced bag

| | PS vials | PP vials |
|---|---|---|
| Temperature stability | up to +70 °C | -190 to +121 °C |
| Centrifugable up to | 1400 x g | 3000 x g |

**Made of PS**

| Volume (ml) | ∅ (mm) | Height (mm) | Graduations | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 4 | 12 | 75 | yes | individual | **EA97.1** | 500 | 132,25 |
| 4 | 12 | 75 | yes | 25/box | **EA98.1** | 500 | 106,45 |
| 4 | 12 | 75 | no | Loose in bag | **AEX8.1** | 500 | 67,20 |
| 12 | 17 | 95 | yes | individual | **EA99.1** | 500 | 177,40 |
| 12 | 17 | 95 | yes | 25/box | **EC00.1** | 500 | 134,40 |
| 12 | 17 | 95 | no | Loose in bag | **AEX9.1** | 500 | 80,85 |

**Made of PP**

| Volume (ml) | ∅ (mm) | Height (mm) | Graduations | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 4 | 12 | 75 | yes | individual | **EC01.1** | 500 | 132,25 |
| 4 | 12 | 75 | yes | 25/box | **EC02.1** | 500 | 106,45 |
| 4 | 12 | 75 | no | 25/bag | **AEY0.1** | 500 | 64,50 |
| 12 | 17 | 95 | yes | individual | **EC03.1** | 500 | 177,40 |
| 12 | 17 | 95 | yes | 25/box | **EC04.1** | 500 | 134,40 |
| 12 | 17 | 95 | no | 25/bag | **AEY1.1** | 500 | 98,90 |

# Culture bottles



## Drosophila vials

By Greiner Bio-One. Made of **PS**.
Ideal for the cultivation of Drosophila melanogaster.

| Volume (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 16 | 22 x 63 | **CLY5.1** | 1500 | 104,95 |
| 28 | 27 x 64 | **CLY6.1** | 1500 | 144,05 |

## Plug for Drosophila vials

By Greiner Bio-One. Made of water repellent Ceapren, permeable to air.

| For vial vol. (ml) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 16 | 22 | **CLY7.1** | 1500 | 174,15 |
| 28 | 26 | **CLY8.1** | 1500 | 121,50 |



## Drosophila cultivation tubes

Made of **PP**. Ideal for cultivating drosophila and other insects.
Straight-walled for easy storage in racks, filling and sealing. Autoclavable.

| ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 50 x 100 | **PK11.1** | 225 | 88,70 |
| 28 x 85 | **PK10.2** | 950 | 138,70 |

## Plug for drosophila cultivation tubes

Made of multiple-embossed foam (PU), air permeable and mite safe.

| ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 28 x 25 | **PK13.1** | 100 | 50,80 |
| 50 x 25 | **PK15.1** | 100 | 89,80 |



DURAN WHEATON KIMBLE
Material DURAN®
121 °C

## Breed-Demeter square bottle

Made of DURAN®. Capacity 180 ml. Neck ∅ 28 mm.
Dimensions: W 48 x H 148 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T954.1** | 1 | 15,35 |



## Medium bottles

By Greiner Bio-One. Made of **PET. Sterile.**

- With graduations
- Square shaped
- **Free of detectable DNase, RNase and human DNA**
- **Free of detectable endotoxins, free of cytotoxic substances**

| Volume (ml) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 77 x 77 x 177,3 | **CNA3.1** | 100 (4 x 25) | 130,10 |
| 500 | 53 x 53 x 108,3 | **CNA4.1** | 50 (2 x 25) | 97,45 |
| 1000 | 92 x 92 x 218,8 | **CNA5.1** | 24 (2 x 12) | 94,55 |



## Nutrient media bottles

By Nalgene®. Bottle made of **PETG**, screw cap made of HDPE.
**Sterile** (γ-sterilized). Square. Break-resistant and robust, transparent.
**Leakproof.** The 2 l-bottle has moulded handles to enable easier handling.
Low permeation of $CO_2$ and $O_2$ enables storage of nutrient media up to 6 months. Bottles and caps are non-pyrogenic. Sealed with a heat-shrink band sealing around cap and neck: Sterility is ensured as long as band is intact.

| Volume (ml) | Cap ∅ (mm) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 20 | 38 x 38 x 63 | **C481.1** | 24 | 61,65 |
| 60 | 24 | 41 x 41 x 82 | **C482.1** | 24 | 79,95 |
| 125 | 38 | 52 x 52 x 108 | **C483.1** | 24 | 126,85 |
| 250 | 38 | 58 x 58 x 147 | **C484.1** | 24 | 148,35 |
| 500 | 38 | 73 x 73 x 177 | **C485.1** | 12 | 113,95 |
| 1000 | 38 | 93 x 93 x 218 | **C486.1** | 12 | 155,90 |
| 2000 | 53 | 116 x 116 x 270 | **C487.1** | 6 | 130,10 |

▶ To purchase nutrient media, go to the Life Science chapter part Microbiology!

# Culture bottles






NEU
NOUVEAU
NEW

DURAN WHEATON KIMBLE

Material DURAN®

121°C

## DURAN®-*TILT* cell culture media bottles

Made by DURAN®. Can be used in two positions: Upright for storage, tilted at 45° for ergonomic pipetting.

- Compact shape, ideal for low sliding windows in sterile workbenches
- Stackable and space-saving
- Wide opening for easy pipetting
- Ergonomic screw thread for easy opening and closing
- Double volume marking for added convenience

500 ml volume, GL 56 thread, 151 mm high.
**Delivery incl**. screw thread made of **PP**, white.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXH2.1** | 4 | 50,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| White silicone light protection cover, with 4 identification rings (orange, yellow, blue, violet) | **EXH3.1** | 4 | 22,45 |
| DURAN® Bottle Tags identification rings, silicone, GL 56, orange | **EXH4.1** | 20 | 25,45 |
| DURAN® Bottle Tags identification rings, silicone, GL 56, yellow | **EXH5.1** | 20 | 25,15 |
| DURAN® Bottle Tags identification rings, silicone, GL 56, blue | **EXH6.1** | 20 | 25,15 |
| DURAN® Bottle Tags identification rings, silicone, GL 56, violet | **EXH7.1** | 20 | 25,45 |
| PTFE thread adapter, white, for DURAN®-*TILT* bottles (GL 45 outside, GL 56 inside) | **EXH8.1** | 1 | 30,00 |
| Self-adhesive labels, polyester, white, ∅ 40 mm, for GL 56 screw threads | **EXH9.1** | 60 | 12,65 |
| Replacement screw threads GL 56, PP, white | **EXK0.1** | 10 | 18,45 |



## Bottle rest

Made of **PMMA**. For comfortable working beneath the clean bench due to angled positioning of the bottle during the pipetting. The 45° angle keeps the contents of the bottle sterile because no foreign particles can drop into the bottle. The pipette can be left in the bottle in between pipetting operations. Suitable for bottles with a diameter of up to 96 mm.
Dimensions: W 110 x L 180 x H 117 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AXC0.1** | 1 | 109,65 |




① ②

DURAN WHEATON KIMBLE

Material DURAN®

121°C

## ① Nutrient media bottles with beaded rim

Made of DURAN®. Autoclavable.

| Volume (ml) | ∅ (mm) | Neck ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 50 | 29 | 115 | **T955.1** | 1 | 14,80 |
| 300 | 70 | 42 | 168 | **T956.1** | 1 | 19,55 |
| 1000 | 105 | 46 | 237 | **T958.1** | 1 | 30,70 |
| 2500 | 150 | 50 | 315 | **T959.1** | 1 | 60,60 |

## ② Nutrient media bottles with straight neck

Made of DURAN®. Neck-∅ 38 mm, suitable for Erlenmeyer-CAP-caps K395.1-K397.1. Autoclavable.

| Volume (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 300 | 70 | 170 | **T962.1** | 1 | 33,75 |
| 500 | 83 | 208 | **T963.1** | 1 | 39,55 |
| 1000 | 105 | 243 | **T964.1** | 1 | 50,90 |

# Culture flasks



DURAN WHEATON KIMBLE
Material DURAN®
121 °C

## Fernbach culture flask

Made of DURAN®. Volumen 1800 ml. Large liquid surface, ideal for cultivating micro-organisms in liquid nutrient media, with improved ventilation for faster growth.Conical form with straight neck for Erlenmeyer-CAP-caps K395.1-K397.1. Capacity 1800 ml.
Neck ∅ 38 mm, base ∅ 200 mm, height 175 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T965.1** | 1 | 60,25 |



DURAN WHEATON KIMBLE
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## Flasks for culture media, Erlenmeyer shape

Made of DURAN®. One-sized, straight neck with ∅ 38 mm, for metal caps. Autoclavable.

| Volume (ml) | Largest outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 64 | 114 | **L182.1** | 10 | 146,00 |
| 200 | 79 | 138 | **L183.1** | 10 | 156,00 |
| 250 | 85 | 149 | **L184.1** | 10 | 159,00 |
| 300 | 87 | 161 | **L185.1** | 10 | 80,45 |
| 500 | 105 | 183 | **L186.1** | 10 | 100,00 |
| 1000 | 131 | 229 | **L187.1** | 1 | 21,10 |
| 2000 | 166 | 302 | **L188.1** | 1 | 27,50 |



121 °C

## Baffled Erlenmeyer flasks

By Nalgene®. Made of breakproof **PC**. Ideal as an alternative to glass flasks, with comparable growth rate for *E.coli* and *S.cerevisiae*.
The four incorporated baffles increase the mixing during trypsinizing, aeration or fermentation in cell culture or genetic engineering. Autoclavable.

* Straight neck for closing with Erlenmeyer-CAP-caps K395.1; K396.1; K397.1

| Volume (ml) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 250 | neck with beaded rim | **E104.1** | 1 | 17,05 |
| 500* | straight neck | **E105.1** | 1 | 21,45 |
| 1000* | straight neck | **E106.1** | 1 | 37,20 |
| 2000 | neck with beaded rim | **E107.1** | 1 | 50,45 |



S

## Sterile disposable Erlenmeyer flask

By Nalgene®. Made of crystal-clear **PETG**, screw-cap closures made of **HDPE**. **Sterile** (individually packed), SAL $10^{-6}$, non-pyrogenic, non-cytotoxic. With graduations. Suitable for agitation and suspension cultures, for making culture media or storage.

**Without baffles, with blue screw cap, ventilated.**
The ventilation filter made of hydrophobic PTFE membrane, pore size 0.2 µm allows sterile ventilation and reduces risk of contamination.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 125 | **PX73.1** | 24 | 209,65 |
| 250 | **PX74.1** | 12 | 115,05 |
| 500 | **PX75.1** | 12 | 141,90 |
| 1000 | **PX76.1** | 6 | 82,65 |
| 2000 | **PX77.1** | 4 | 81,50 |

**With baffles, with blue screw cap, ventilated.**
The ventilation filter made of hydrophobic PTFE membrane, pore size 0.2 µm allows sterile ventilation and reduces risk of contamination.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 125 | **ETA0.1** | 24 | 204,25 |
| 250 | **ETA1.1** | 12 | 112,90 |
| 500 | **ETA2.1** | 12 | 136,55 |
| 1000 | **ETA3.1** | 6 | 79,45 |
| 2000 | **ETA4.1** | 4 | 77,95 |

▶ For autoclaving information see page 5



121 °C

## Rotilabo®-wide neck Erlenmeyer flasks

Made of **PP**. With screw cap, also usable for ground glass stoppers. Autoclavable at 121 °C.

| Volume (ml) | Graduations (ml) | Thread | Standard ground glass joint | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 10 | GL 40 | 34 | **8338.1** | 1 | 4,15 |
| 100 | 20 | GL 40 | 34 | **8339.1** | 1 | 4,75 |
| 250 | 50 | GL 52 | 45 | **8341.1** | 1 | 6,70 |
| 500 | 100 | GL 52 | 45 | **8342.1** | 1 | 7,50 |
| 1000 | 200 | GL 52 | 45 | **8344.1** | 1 | 10,05 |

# Culture flasks



Material DURAN®

121 °C

## Rotilabo®-baffled flasks with straight neck

Made of DURAN®. Neck-∅ 38 mm, for Erlenmeyer CAP caps K395.1-K397.1. Flask for culture media with three integrated baffles for better mixing. Ideal for cultivating *S. cerevisiae* and aerobic bacteria cultures. Autoclavable.

*Narrow neck flask with flanged edge, cannot be used with Erlenmeyer CAP caps.

| Volume (ml) | Largest outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 64 | 114 | **LY94.1** | 1 | 35,85 |
| 250 | 85 | 149 | **LY95.1** | 1 | 39,60 |
| 500 | 105 | 183 | **LY96.1** | 1 | 37,55 |
| 1000 | 131 | 232 | **LY97.1** | 1 | 52,60 |
| 2000 | 166 | 305 | **LY98.1** | 1 | 70,75 |
| 5000* | 220 | 365 | **PK29.1** | 1 | 130,10 |



Material DURAN®

121 °C

## Rotilabo®-erlenmeyer flasks with baffles

Made of DURAN®. With screw caps made of **PBT** and **PTFE**-coated sealings. Flask for culture media with three integrated baffles for better mixing. Particularly excellent for cultivating *S. cerevisiae* (do not close cap tightly).

| Volume (ml) | Largest outer ∅ (mm) | Thread | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 100 | 64 | GL 25 | 109 | **LK17.1** | 1 | 35,80 |
| 250 | 85 | GL 32 | 149 | **LK18.1** | 1 | 36,45 |
| 500 | 105 | GL 32 | 180 | **LK19.1** | 1 | 38,10 |
| 1000 | 131 | GL 32 | 225 | **LK20.1** | 1 | 53,40 |

## Membrane screw caps

Made of **PP**. With welded PTFE-membrane.
The caps can be screwed tightly on the laboratory glass bottles while autoclaving. Steam autoclavable to max. +140 °C.

| Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GL 25 | **LY42.1** | 5 | 23,60 |
| GL 32 | **LY43.1** | 5 | 24,10 |
| GL 45 | **CK81.1** | 5 | 20,95 |



121 °C

## Erlenmeyer-CAP-caps

Made of aluminium, colour anodized. For Erlenmeyer and culture flasks with straight neck, ∅ 38 mm. Springs grip the outer wall of vessel.
Use a neutral cleaner only.
Temperature stable up to 140 °C. Autoclavable.

| for glasses with ∅ (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 37/39 | silver | **K395.1** | 10 | 37,65 |
| 37/39 | blue | **K396.1** | 10 | 37,65 |
| 37/39 | red | **K397.1** | 10 | 37,65 |



DURAN WHEATON KIMBLE

Material DURAN®

121 °C

## Erlenmeyer baffled flasks

Made of DURAN®. With diaphragm screw caps (GL 45 thread) and graduations. Four baffles on the bottom create a turbulent flow, enlarge gas exchange surface area and thus increase oxygen intake. Automated production ensures a reproducible flask geometry and consistent results. High wall thickness for tagged mechanical stability. With Retrace Code.
Temperature stable up to +140 °C. Autoclavable.

| Vol. (ml) | Largest outer ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 | 81 | 145 | **PK16.1** | 4 | 67,50 |
| 500 | 105 | 180 | **PK17.1** | 4 | 75,70 |
| 1000 | 136 | 221 | **AEP1.1** | 1 | 24,20 |

▶ RBS®-Neutral T for cleaning, see page 1104

# Culture stoppers and caps



121°C

## Rotilabo®-culture plugs

Made of cellulose. Air permeable, bacteria filtering plug, ideal for the incubation of plant or bacteria cultures and for the sterilisation of culture media. Autoclavable up to 200 °C.

**Fitting chart for Rotilabo®-culture plugs:**

| Vial type | Matching Rotilabo®-culture plug |
|---|---|
| Narrow neck Erlenmeyer flask, 25 - 100 ml | PC22.1 |
| Narrow neck Erlenmeyer flask, 200 - 500 ml | PC24.1 |
| Narrow neck Erlenmeyer flask, 1000 ml | PC29.1 |
| Narrow neck Erlenmeyer flask, 2000 - 5000 ml | PC31.1 |
| Wide neck Erlenmeyer flask, 25 ml | PC25.1 |
| Wide neck Erlenmeyer flask, 50 - 100 ml | PC24.1 |
| Wide neck Erlenmeyer flask, 200 - 1000 ml | PC31.1 |
| Straight neck culture flask ∅ 38 mm | PC27.1 |
| Erlenmeyer flask, NS 14/23 | PC17.1 |
| Erlenmeyer flask, NS 19/26 | PC20.1 |
| Erlenmeyer flask, NS 29/32 | PC23.1 |
| Erlenmeyer flask, NS 45/40 | PC29.1 |

| Size | for inner ∅ (mm) | Bottom ∅ (mm) | Top ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 8 P | 7,5-11,0 | 7,5 | 12,5 | 30,0 | **PC16.1** | 1000 | 34,30 |
| 9 P | 9,0-10,5 | 8,5 | 12 | 31,0 | **CTC8.1** | 2000 | 63,45 |
| 13 | 12,0-14,5 | 11,0 | 16,0 | 36,5 | **PC17.1** | 1000 | 33,45 |
| 14 | 13,0-14,5 | 11,5 | 16,5 | 40,0 | **PC18.1** | 1000 | 33,65 |
| 14 P | 12,0-14,0 | 11,0 | 17,0 | 37,0 | **CTC9.1** | 1000 | 37,95 |
| 15 P | 14,0-16,5 | 13,0 | 20,0 | 39,0 | **PC19.1** | 1000 | 40,10 |
| 16 | 16,5-18,0 | 15,5 | 20,0 | 39,0 | **PC20.1** | 1000 | 53,00 |
| 17 | 13,0-16,0 | 11,5 | 18,5 | 34,0 | **CTE0.1** | 1000 | 48,60 |
| 18 D | 17,5-19,5 | 16,5 | 22,0 | 36,5 | **PC21.1** | 1000 | 44,30 |
| 20 P | 19,0-22,5 | 18,5 | 25,0 | 39,0 | **PC22.1** | 500 | 53,25 |
| 26 | 25,0-27,0 | 24,0 | 27,5 | 42,0 | **PC23.1** | 2000 | 181,70 |
| 27 | 27,0-32,5 | 24,0 | 35,0 | 54,0 | **PC24.1** | 1500 | 198,90 |
| 29 | 28,5-31,0 | 27,5 | 33,0 | 63,0 | **PC25.1** | 1200 | 175,25 |
| 32 P | 31,0-33,5 | 31,0 | 45,5 | 55,5 | **PC26.1** | 850 | 178,45 |
| 32 | 32,5-35,0 | 31,0 | 36,0 | 61,0 | **PC27.1** | 1000 | 179,55 |
| 34 | 33,5-36,0 | 33,0 | 37,0 | 61,5 | **PC28.1** | 900 | 168,80 |
| 37 | 37,5-41,5 | 38,0 | 47,0 | 60,0 | **CTE1.1** | 400 | 107,30 |
| 38 | 40,0-45,5 | 38,0 | 49,0 | 61,0 | **PC29.1** | 650 | 160,20 |
| 40 P | 43,0-46,0 | 42,0 | 52,0 | 50,0 | **PC30.1** | 650 | 245,10 |
| 45 P | 44,0-48,0 | 44,0 | 60,0 | 65,0 | **PC31.1** | 370 | 174,15 |
| 60 P | 58,0-66,0 | 56,0 | 71,0 | 68,0 | **PC32.1** | 250 | 234,35 |



121°C

## Silicone sponge plugs

Made of silicone rubber with regular pores, ideal for the preparation and sterilization of culture media, as well as the cultivation of aerobic micro-organisms. Good air permeability with low evaporation, ideal for long-term culture tests. Washable and reusable. Dry sterilizable up to 180 °C, autoclavable.

| Bottom ∅ (mm) | Top ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 9 | 12 | 30 | **NN15.1** | 10 | 31,90 |
| 11 | 15 | 20 | **NN16.1** | 10 | 37,65 |
| 13 | 17 | 40 | **0599.2** | 10 | 36,50 |
| 15 | 19 | 42 | **0606.2** | 10 | 40,65 |
| 18 | 22 | 45 | **0607.2** | 10 | 43,55 |
| 22 | 32 | 60 | **0615.2** | 10 | 59,10 |
| 30 | 42 | 90 | **NN17.1** | 10 | 214,50 |
| 40 | 52 | 100 | **0616.2** | 10 | 179,55 |



## Rotilabo®-ready-to-use cellucotton stoppers

For test tubes, flasks, smoothing coiled.

| Bottom ∅ (mm) | Top ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 6,5 | 9,5 | 18,5 | **E336.1** | 1000 | 23,35 |
| 8 | 12 | 23 | **4512.1** | 1000 | 27,10 |
| 8 | 13,5 | 31 | **E337.1** | 1000 | 33,90 |
| 10,5 | 15 | 29 | **E338.1** | 1000 | 36,35 |
| 14 | 16 | 23 | **E339.1** | 1000 | 34,35 |
| 13 | 19 | 35 | **4514.1** | 1000 | 48,95 |
| 13,5 | 17 | 37,5 | **E340.1** | 1000 | 50,50 |
| 18 | 22 | 32 | **4515.2** | 500 | 31,20 |
| 14,8 | 21,5 | 41 | **E341.2** | 800 | 55,50 |
| 14 | 22 | 34,5 | **E342.1** | 1000 | 61,10 |
| 27 | 30 | 35 | **E343.1** | 500 | 68,75 |
| 21,5 | 32 | 60 | **E344.2** | 200 | 41,50 |
| 34 | 44 | 60 | **E345.1** | 250 | 98,90 |
| 41 | 49,5 | 79 | **E346.1** | 100 | 55,70 |

# Culture stoppers and caps



## LABOCAP-caps without handle

Made of aluminium, colour anodized. Chrome-nickel steel springs clamp against the outer wall of the vessel. Use a neutral cleaner only. Temperature stable up to 140 °C. Autoclavable.

**Silver**

| for glasses with ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 9/10 | **LL88.1** | 100 | 81,50 |
| 12/13 | **K375.1** | 100 | 84,95 |
| 14/15 | **K376.1** | 100 | 102,15 |
| 15/16 | **K377.1** | 100 | 91,40 |
| 17/18 | **K378.1** | 100 | 95,70 |
| 19/20 | **K379.1** | 100 | 102,15 |
| 21/23 | **LN27.1** | 100 | 166,65 |
| 24/26 | **K381.1** | 100 | 203,20 |
| 28/30 | **K382.1** | 100 | 213,95 |

**Blue**

| for glasses with ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12/13 | **K385.1** | 100 | 84,95 |
| 14/15 | **LN10.1** | 100 | 103,20 |
| 15/16 | **K387.1** | 100 | 91,40 |
| 17/18 | **K388.1** | 100 | 95,70 |
| 19/20 | **K389.1** | 100 | 102,15 |
| 21/23 | **LN28.1** | 100 | 166,65 |
| 24/26 | **LN30.1** | 100 | 203,20 |

**Red**

| for glasses with ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12/13 | **K390.1** | 100 | 84,95 |
| 15/16 | **K392.1** | 100 | 91,40 |
| 17/18 | **K393.1** | 100 | 95,70 |
| 19/20 | **LN21.1** | 100 | 102,15 |
| 24/26 | **LN31.1** | 100 | 203,20 |

**Yellow**

| for glasses with ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12/13 | **LL91.1** | 100 | 85,50 |
| 15/16 | **LN11.1** | 100 | 91,40 |
| 17/18 | **LN16.1** | 100 | 95,70 |
| 19/20 | **LN22.1** | 100 | 102,15 |

**Green**

| for glasses with ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12/13 | **LN06.1** | 100 | 85,50 |
| 15/16 | **LN12.1** | 100 | 91,40 |
| 17/18 | **LN17.1** | 100 | 95,70 |
| 19/20 | **LN23.1** | 100 | 102,15 |

**Black**

| for glasses with ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12/13 | **LN08.1** | 100 | 85,50 |
| 15/16 | **LN14.1** | 100 | 91,40 |
| 17/18 | **LN19.1** | 100 | 95,70 |

**Violet**

| for glasses with ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12/13 | **LN09.1** | 100 | 85,50 |
| 15/16 | **LN15.1** | 100 | 91,40 |
| 17/18 | **LN20.1** | 100 | 95,70 |



## LABOCAP-caps with gripping knob

Made of aluminium, colour anodized. Chrome-nickel steel springs grip the outer wall of the vessel. Use a neutral cleaner only. Temperature stable up to 140 °C. Autoclavable.

| for glasses with ∅ (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 15/16 | silver | **K363.1** | 100 | 117,20 |
| 17/18 | silver | **K364.1** | 100 | 123,65 |
| 15/16 | blue | **K367.1** | 100 | 117,20 |
| 17/18 | blue | **K368.1** | 100 | 123,65 |
| 15/16 | red | **K371.1** | 100 | 117,20 |
| 17/18 | red | **K372.1** | 100 | 123,65 |

▶ RBS®-Neutral T for cleaning, see page 1104



## Plastic caps

Made of **PP**. For test tubes, culture vials and straight-neck Erlenmeyer flasks. For air-tight sealing, also use sealing tape or Parafilm® M. Autoclavable.

| For container with outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 13 | **CXK0.1** | 1000 | 95,85 |
| 16 | **CXK1.1** | 1000 | 98,35 |
| 18 | **CXK2.1** | 1000 | 128,50 |
| 20 | **CXK3.1** | 1000 | 92,90 |
| 25 | **CXK4.1** | 500 | 146,20 |
| 38 | **CXK5.1** | 250 | 160,20 |



## Rotilabo®-stands for petri dishes

Made of **PP**. For Petri dishes with ∅ 90-94 mm. Robust, stable design with rounded edges. Clips on the end rods of the stand enable a card to be attached to identify the stand. Dimensions: L 294 x W 100 x H 172 mm. Autoclavable.

| Number of Petri dishes | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 x 10 | natural | **K120.1** | 1 | 50,50 |
| 3 x 10 | red | **K121.1** | 1 | 57,00 |
| 3 x 10 | blue | **K122.1** | 1 | 57,00 |



## Rotilabo®-stands for petri dishes

For petri dishes with 100 mm ∅. Stacking height 230 mm, overall height 250 mm, inner ∅ 102 mm, outer ∅ 120 mm excl. handle, 137 mm incl. handle. Stand made of high grade steel are autoclavable.

| Material | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Steel, PE-coated (not autoclavable) | **L057.1** | 1 | 20,95 |
| High grade steel, electropolished | **L058.1** | 1 | 27,95 |



## Stand for ∅ 60 mm Petri dishes

Made of **PP**, powder coated steel base. With carry handle.
For Petri dishes with ∅ max. 60 mm. Capacity: max. 54 Petri dishes in 6 stacks. Dimensions: L 267 x W 171 x H 171 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXP2.1** | 1 | 87,95 |



## Stands for ∅ 60 mm Petri dishes

Made of powder coated steel. For Petri dishes with ∅ max. 72 mm. Autoclavable.

| Number of Petri dishes | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 x 10 | 82 x 82 x 140 | **CXP3.1** | 1 | 34,35 |
| 3 x 10 | 82 x 246 x 140 | **CXP4.1** | 1 | 76,35 |



## Sealing tapes for petri dishes

Elastic, self-adhesive. As well for microtest plates, bottles, cans, etc. Excellent alternative to heat-shrinkable sleeves. Prevents water loss, gas diffusion and contamination. Waterproof and resistant to most solvents. Flexible even under low temperatures (-30 °C).
Temperature stable from -40 to +77 °C (for a short time stable to +100 °C).
Thickness 0.13 mm, width of roll 13 mm, Length of roll 33 m.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| transparent | **K427.1** | 1 | 52,60 |
| white | **K428.1** | 1 | 52,60 |
| red | **K429.1** | 1 | 52,60 |
| yellow | **K430.1** | 1 | 52,60 |
| blue | **K431.1** | 1 | 52,60 |



## Sealing tapes for petri dishes, gas permeable

Polyurethane based, elastic, self-adhesive. Ideal for cultivating aerobic bacteria, yeast cultures or plant seedlings.

- Safe sealing of Petri dishes
- Prevents contamination
- Even exchange of oxygen and carbon dioxide

Temperature stable from -80 to +100 °C.
Dimensions: L 282.58 x W 15.88 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AEA2.1** | 100 | 87,10 |

# Petri dishes and accessories



## Rotilabo®-petri dishes

Two pieces. Manufactured from hydrolytic class 3 soda-lime-glass using a countersinking process. Dimensions: ∅ 100 x H 20 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0690.1** | 18 | 36,50 |




## DUROPLAN® petri dishes

Two pieces. Acc. to DIN EN ISO 13132. Made from DURAN® in a special production process, microscopically flat and free from bubbles and streaks. Dishes enable an even distribution of culture media and have a distortion-free transparency. Autoclavable.

| Outside ∅ (mm) | Height (mm) | Height incl. lid (mm) | outer ∅ base (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 60 | 20 | 22 | 54,5 | **K608.1** | 10 | 105,50 |
| 80 | 20 | 22 | 74 | **K609.1** | 10 | 108,00 |
| 100 | 15 | 17 | 94 | **K610.1** | 10 | 115,00 |
| 100 | 20 | 22 | 94 | **K611.1** | 10 | 113,00 |
| 120 | 20 | 22 | 114 | **K612.1** | 10 | 121,00 |
| 150 | 27 | 32 | 143 | **K613.1** | 10 | 192,00 |

## STERIPLAN® petri dishes

Two pieces. Made of soda-lime glass. Autoclavable.

| Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 40 | 12 | **T937.1** | 10 | 12,85 |
| 60 | 15 | **T938.1** | 10 | 12,85 |
| 80 | 15 | **T939.1** | 10 | 13,45 |
| 90 | 15 | **PY88.1** | 10 | 13,75 |
| 100 | 10 | **T940.1** | 10 | 14,50 |
| 100 | 15 | **T941.1** | 10 | 14,50 |
| 100 | 20 | **T942.1** | 10 | 14,50 |
| 120 | 20 | **T943.1** | 10 | 22,60 |
| 150 | 25 | **T944.1** | 10 | 35,60 |
| 180 | 30 | **T945.1** | 10 | 73,55 |
| 200 | 30 | **T946.1** | 10 | 97,35 |
| 200 | 45 | **T947.1** | 10 | 109,00 |



## Petri dishes, standard version

By Greiner Bio-One. Made of **PS**, transparent. **Sterile** or non-sterile. Flat stacking surfaces ensure high dimensional stability. Versatile: has a wide range of uses in microbiology and bacteriology. Ideal for microscopy.

Available in two versions:
- With vents to ensure optimal gas exchange.
- Without vents, for long incubation periods at 37 °C

**Sterile** (gamma-sterilised)

| ∅ (mm) | Height (mm) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 35 | 10 | with vents | **XH88.1** | 740 (74 x 10) | 181,70 |
| 60 | 15 | with vents | **XH89.1** | 600 (30 x 20) | 140,85 |
| 94 | 16 | without vents | **EN16.1** | 480 (24 x 20) | 87,75 |
| 94 | 16 | with vents | **ALA5.1** | 480 (24 x 20) | 74,10 |
| 145 | 20 | with vents | **XH90.1** | 120 (8 x 15) | 92,05 |

Produced under aseptic conditions

| ∅ (mm) | Height (mm) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 35 | 10 | with vents | **EL46.1** | 740 (74 x 10) | 149,45 |
| 60 | 15 | with vents | **EL47.1** | 600 (30 x 20) | 79,20 |
| 94 | 16 | with vents | **EL48.1** | 480 (24 x 20) | 56,45 |
| 94 | 16 | without vents | **EL45.1** | 480 (24 x 20) | 53,90 |
| 145 | 20 | with vents | **EL49.1** | 120 (8 x 15) | 59,10 |

## Petri dishes, heavy-duty version

By Greiner Bio-One. Made of **PS**, transparent. **Sterile** or non-sterile. Flat stacking surfaces ensure high dimensional stability. Versatile: has a wide range of uses in microbiology and bacteriology. Optimised for use in automatic systems and higher temperature stability when working with hot agar. Ideal for microscopy.

Available in two versions:
- With vents to ensure optimal gas exchange.
- Without vents, for long incubation periods at 37 °C

**Sterile** (gamma-sterilised)

| ∅ (mm) | Height (mm) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 94 | 16 | with vents | **PX81.1** | 480 (24 x 20) | 111,80 |
| 94 | 16 | without vents | **PX82.1** | 480 (24 x 20) | 125,80 |

Produced under aseptic conditions

| ∅ (mm) | Height (mm) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 94 | 16 | with vents | **PX83.1** | 480 (24 x 20) | 62,30 |
| 94 | 16 | without vents | **PX84.1** | 480 (24 x 20) | 69,10 |



## Petri dishes

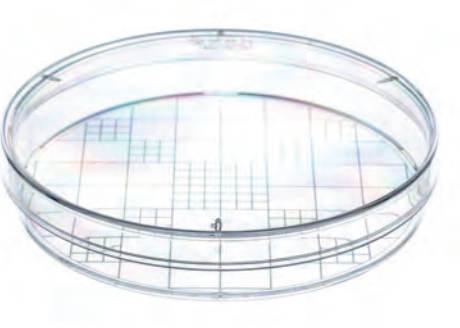
Made of **PS**, transparent. **Sterile** (gamma-sterilised). Flat surfaces for reproducible agar filling levels. Temperature stable up to 55 °C. Versatile: has a wide range of uses in microbiology and bacteriology. 25 mm high Petri dishes are ideal for the germination of plant seeds.

Available in two versions:

- With vents to ensure optimal gas exchange
- Without vents, for long incubation periods at 37 °C

| ∅ (mm) | Height (mm) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 90 | 14 | with vents | **N221.2** | 825 (25 x 33) | 111,80 |
| 90 | 14 | without vents | **TA19.1** | 825 (25 x 33) | 127,95 |
| 55 | 15 | with vents | **N223.2** | 1620 (108 x 15) | 177,40 |
| 55 | 15 | without vents | **N224.2** | 1620 (108 x 15) | 178,45 |
| 90 | 25 | with vents | **NP90.1** | 500 (50 x 10) | 247,25 |

▶ Nutrient media see chapter Life Science!



NEU
NOUVEAU
NEW

## Germ count dishes, graduated

By Greiner Bio-One. Made of **PS**. **Sterile**.

- Graduated and divided into 10 mm squares for quick and easy analysis
- Ideal for microscopy
- With vents
- Ideal for stacking

| ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 94 x 16 | **HLX6.1** | 480 (24 x 20) | 136,55 |



## Petri dishes

Made of **PS**. **Sterile**. Stackable, tight-sealing and therefore suitable for long incubation times without drying out. Lid with matt white labelling space and projecting edge for single-handed opening. For use with filter paper ∅ 47 mm. Optionally available with absorptive paper, e.g. for cultivating plant seedlings .

Dimensions: ∅ 50 mm x H 9 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without absorptive paper | **AEN0.1** | 500 (25 x 20) | 110,75 |
| with absorptive paper | **AEN1.1** | 500 (25 x 20) | 123,65 |



## Quadratic petri dishes

By Greiner Bio-One. Made of **PS**, transparent. **Sterile** or unsterile. For multi-purpose use in microbiology and bacteriology. Can be stacked easily. With ventilation cams. Dimensions: L 120 x W 120 x H 17 mm.

**Sterile** (gamma-sterilized)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PX67.1** | 240 (24 x 10) | 166,65 |

Produced under low-germ conditions

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EL50.1** | 240 (24 x 10) | 160,20 |



## Square petri dishes with grid

Made of **PS**. **Sterile**. Ideal for phage typing, colony counting etc. With 13 mm grid on bottom, alphanumeric identification markings. With vents to avoid condensation.

Dimensions: L 100 x W 100 x H 15 mm, volume 110 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AEL9.1** | 500 (50 x 10) | 210,70 |

# Petri dishes and accessories



## Contact dishes

By Greiner Bio-One. Made of **PS**, transparent. **Sterile** (gamma-sterilised). For detecting microorganisms and testing the effectiveness of cleaning and disinfection on flat surfaces using contact cultures.
Dimensions: ∅ 65 x H 15 mm.

- Optimised dish design produces a meniscus on the surface of the agar when the contact dish is filled
- Optionally available with vents for improved gas exchange, or without vents
- Graduated and divided into 10 mm squares to allow quick and easy analysis

| Type | Filling capacity (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| with vents | 12,5 | **PX85.1** | 600 (30 x 20) | 184,90 |
| without vents | 13,5 | **PX86.1** | 600 (30 x 20) | 156,95 |

▶ Sterile ready-to-use agar carrier Roti®-DipSlides see section Life Science!

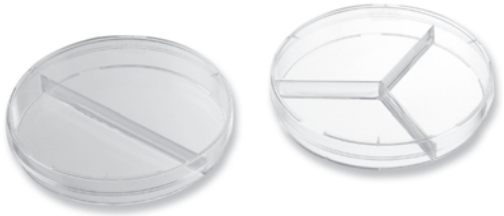


DURAN WHEATON KIMBLE
Material DURAN®
121°C

## Petri dishes with partitions

Made of DURAN®. Pressed. Acc. to DIN 12339.
Dimensions: ∅ 100 x H 20 mm. Autoclavable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| with 2 partitions | **T948.1** | 10 | 89,90 |
| with 3 partitions | **T949.1** | 10 | 89,90 |
| with 4 partitions | **T950.1** | 10 | 89,90 |



Programme extension!

## Subdivided petri bowls

By Greiner Bio-One. Made of **PS**, transparent. **Sterile** or unsterile.
For multi-purpose use in microbiology and bacteriology labs.
Can be stacked easily. With ventilation cams.
Dimensions: ∅ 94 x H 15 mm.

**Sterile** (gamma-sterilized)

| Type | Volume/Well (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| subdivided in 2 sections | 25 | **HLY9.1** | 480 (24 x 20) | 140,85 |
| subdivided in 3 sections | 18 | **HNA0.1** | 480 (24 x 20) | 124,70 |

Produced under almost germ-free conditions

| Type | Volume/Well (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| subdivided in 2 sections | 25 | **EP50.1** | 480 (24 x 20) | 89,95 |
| subdivided in 3 sections | 18 | **EP51.1** | 480 (24 x 20) | 92,05 |



121°C

## Rotilabo®-petri dishes

Made of 18/10 stainless steel. Autoclavable.

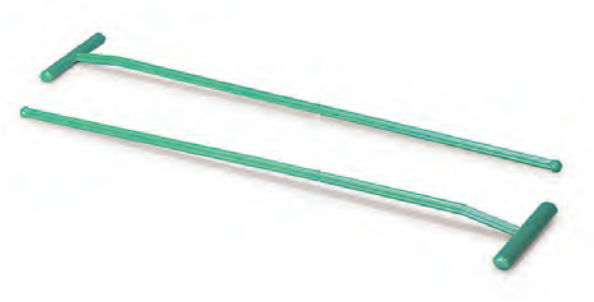
| Outside ∅ (mm) | Height without lid (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 60 | 20 | **YT00.1** | 1 | 12,05 |
| 75 | 20 | **YT01.1** | 1 | 14,20 |
| 90 | 20 | **YT02.1** | 1 | 17,25 |
| 100 | 15 | **YT03.1** | 1 | 34,95 |
| 120 | 20 | **YT04.1** | 1 | 26,10 |



## Bacterial cell spreaders Delta™

Made of **ABS**. **Sterile** (packed individually). With smooth surface, prevents scratching of agrar surfaces. Delta-shaped head distributes the contact pressure evenly for a smooth application.
Dimensions: L 172 x W 37 x ∅ 4 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PC59.1** | 500 | 89,10 |



## Bacterial cell spreaders

Made of **PS**. **Sterile** (packed individually).
To easily spread out cells on agar plates. Dimensions: L 171 x W 36 mm.

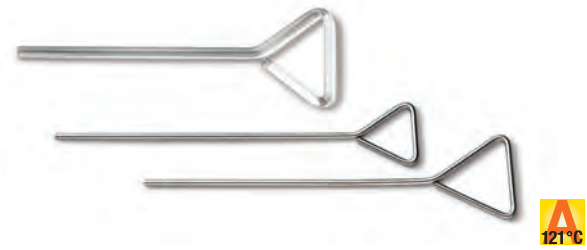
| Art. No. | Pack Qty. | € |
|---|---|---|
| **AY19.1** | 100 | 80,65 |



## L-shaped bacterial cell spreaders

Made of **ABS**. **Sterile.** With smooth surface, prevents scratching for agrar surfaces. Dimensions: L 146 x W 38 x ∅ 4 mm.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| individually wrapped | **PC57.1** | 500 | 80,10 |
| 50 x 10 | **PC58.1** | 500 | 75,25 |



## Drigalski spatulas

Made of stainless steel (Remanit 4301) or soda-lime glass.
Ideal for even distribution of bacterial substances on solid nutrient media. Also suitable as stirrer. Autoclavable.

| Material | Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Stainless steel | 165 | 30 | **K732.1** | 1 | 4,00 |
| Stainless steel | 165 | 40 | **AL98.1** | 1 | 4,55 |
| Glass | 145 | 50 | **T724.2** | 10 | 32,80 |

▶ Further Bacterial cell spreaders see page 278



## Electroporation cuvettes

Cuvette made of **PC**, electrodes made of **aluminium**. Manufactured under clean-room conditions, individually packed. In 3 column widths, 1, 2 and 4 mm. Colour-coded lids according to column width. Compatible with most electroporation systems (Bio-Rad®, BTX®, Invitrogen®, Eppendorf and Kodak®/IBI®), and many more.

| Column width (mm) | Lid colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | orange | **PP38.1** | 50 | 164,50 |
| 2 | green | **PP39.1** | 50 | 164,50 |
| 4 | black | **PP40.1** | 10 | 38,55 |



## Clone cylinders

Made of **PS, sterile**. For isolating clones or for singling out cells or cell groups. Conical cylinder flared at lower edge for good contact with dish surface.

To isolate a clone, the base of the cylinder is coated with a thin grease film (e.g. sterile silicone oil) in order to ensure better sealing. The silicone side cylinder is placed over the selected clone. After adding a small quantity of Trypsin/EDTA and a short incubation period at 37 °C, the cells separate and can be transferred to other vessels.

| Size | Inside ∅ (mm) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Small | 4,7 | 7 x 8 | **YA78.1** | 50 (5 x 10) | 81,65 |
| Medium | 6,4 | 8.5 x 9,5 | **YA79.1** | 50 (5 x 10) | 84,95 |
| Large | 9,5 | 12 x 13 | **YA80.1** | 50 (5 x 10) | 107,00 |



## Toothpicks

Made of polished wood, ∅ 2.2 mm. With two tips, ∅ at tip 0.8 mm. Come loose in dispenser.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 65 | **ETT2.1** | 1000 | 4,10 |
| 80 | **EC48.1** | 1000 | 4,10 |



## Rotilabo®-cotton buds

With cotton tip. **Sterile** (ETO-gas sterilized, individually wrapped) or unsterile. Ideal for hygiene, cleaning or laboratory applications.

| Supports | Design | ∅ Head (mm) | Handle L x ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Wood | unsterile | 4-5,5 | 150 x 2,2 | **EH11.1** | 100 | 3,80 |
| Wood | **sterile** | 4-5,5 | 150 x 2,2 | **EH12.1** | 100 | 12,15 |
| Wood | unsterile | 10-12 | 200 x 3 | **XL54.1** | 50 | 8,85 |
| Aluminium | **sterile** | 2 | 150 x 1 | **XL55.1** | 100 | 25,60 |
| PP | **sterile** | 4-5,5 | 150 x 2,5 | **XL56.1** | 100 | 14,80 |
| PP | **sterile** | 10-12 | 150 x 4,7 | **XL57.1** | 100 | 22,70 |

# Inoculation loops / applicators



## Sterile applicators

Made of wood, with cotton tip. **Sterile**. Fitted in **PP** tubes, with **HDPE** screw cap. Volume 13 ml. Dimensions: ∅ 16 x H 100 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XC10.2** | 1000 (10 x 100) | 194,60 |



## Disposable inoculation loops

**Made of PS. Sterile.** With flat, grooved handle for safe handling. Inoculation loop volume 1 µl or 10 µl, each with inoculation needle on other end. Length 195 mm.

| Design | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 µl | neutral | **CPX4.1** | 500 (25 x 20) | 41,40 |
| 10 µl | blue | **CPX5.1** | 500 (25 x 20) | 41,40 |

▶ To purchase nutrient media, go to the Life Science chapter part Microbiology!



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## Inoculation loop

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Eyelets ∅ inside 4 mm, outside 6.4 mm. Length 210 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCN0.1** | 1 | 22,15 |

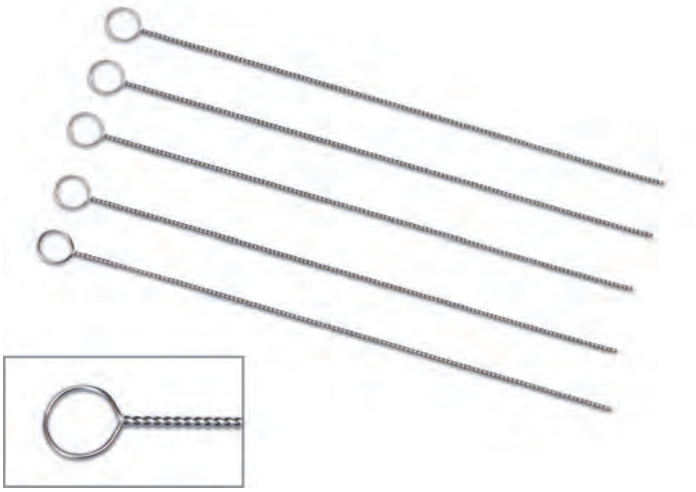


## Disposable inoculation loops and needles

Precision-moulded from **PS**. **Sterile**. The loops are smooth, flexible and enable inoculation in clear streaks. Needles can be used for intradermal inoculation in all types of culture media as well as colony picking. Length 227 mm. Subpacked in resealable pressure lock bags, individually packed inoculation loop in disposable packaging made of paper/plastic.

| Design | Colour | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Inoculation loop, 1 µl | blue | 250 x 1 | **AEL0.1** | 250 | 104,60 |
| Inoculation loop, 1 µl | blue | 100 x 10 | **EA88.1** | 1000 | 85,80 |
| Inoculation loop, 1 µl | blue | 40 x 25 | **EA89.1** | 1000 | 72,60 |
| Inoculation loop, 10µl | yellow | 250 x 1 | **AEL1.1** | 250 | 104,60 |
| Inoculation loop, 10 µl | yellow | 100 x 10 | **EA90.1** | 1000 | 85,95 |
| Inoculation loop, 10 µl | yellow | 40 x 25 | **EA91.1** | 1000 | 72,60 |
| Needles | white | 250 x 1 | **AEL2.1** | 250 | 104,60 |
| Needles | white | 100 x 10 | **EA92.1** | 1000 | 89,15 |
| Needles | white | 40 x 25 | **EA93.1** | 1000 | 72,60 |

▶ Bacterial cell spreaders see page 278



## Inoculation loops

Made of twisted nickel-chrome wire. Fast cooling, uniform shape and high flexibility to conserve the agar plate. Calibrated inoculation loops are supplied with ASM/APHA calibration certificate, test method acc. to Evans Blue Dye test protocol.
Dimensions: wire ∅ 0.6 mm, L 75 mm.
**Delivery without** inoculation loop holder.

| Design | Inside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Standard, small | 2,26 | **EKN2.1** | 25 | 49,50 |
| Standard, medium | 2,91 | **EKN3.1** | 25 | 49,50 |
| Standard, large | 3,57 | **EKN4.1** | 25 | 49,50 |
| Calibrated, 10 µl | 4 | **EKN5.1** | 5 | 159,00 |
| Calibrated, 1 µl | 1,45 | **EKN6.1** | 5 | 159,00 |

# Inoculation loops / applicators




## ① Rotilabo®-needle holder

Acc. to Kolle. With aluminium upper part and plastic handle.
Length 240 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **6189.1** | 1 | 9,60 |

## ② Inoculating loops, needles and lancets

Made of heat conducting Ni Cr 80 20 wire.
Temperature stable up to 1200 °C. Wire ∅ 0.6 mm. Autoclavable.

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Loops-∅ 1.5 mm | 50 | **6163.1** | 10 | 10,25 |
| Loops-∅ 1.5 mm | 70 | **ENX6.1** | 10 | 11,65 |
| Loops-∅ 2.5 mm | 50 | **6173.1** | 10 | 10,65 |
| Loops-∅ 2.5 mm | 70 | **ENX7.1** | 10 | 11,65 |
| Loops-∅ 4.0 mm | 50 | **6174.1** | 10 | 11,75 |
| Loops-∅ 4.0 mm | 70 | **ENX8.1** | 10 | 11,65 |
| Needles | 50 | **6183.1** | 10 | 8,10 |
| Lancets | 50 | **6181.1** | 10 | 9,90 |



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## Preparation needle holder, aluminium

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Needle holder for smear test eyelets and preparation needles up to max. ∅ 1.0 mm, with Wironit top part and aluminium handle (∅ 5 mm). Length 170 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCN8.1** | 1 | 15,35 |



NEU
NOUVEAU
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## Preparation needle holder with removable handle

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Needle holder for smear test eyelets and preparation needles up to max. ∅ 1.0 mm, with removable Wironit top part (autoclavable) and plastic handle (∅ 5 mm). Length 240 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCN9.1** | 1 | 20,60 |



121 °C

## Inoculating loop holder

Made of stainless steel. Loops are fixed with union nut. For inoculating loops with wire-∅ 0.6-1.0 mm. Set sorted by colour: blue, yellow, red, black.
Length: 245 mm. Autoclavable at 121 °C.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Inoculating loop holder set | **KL97.1** | 4 | 54,05 |

## Inoculating loops

Made of **special stainless steel**. Wire-∅ 0.6 mm.
**Delivery without** inoculating loop holder, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Loop ∅ inside 1 mm | **KL98.1** | 10 | 26,85 |
| Loop ∅ inside 3 mm | **KL99.1** | 10 | 27,75 |
| Loop ∅ inside 5 mm | **KN00.1** | 10 | 27,90 |

Made of **platinum/iridium**. Wire-∅ 0.6 mm.
**Delivery without** inoculating loop holder, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Loop ∅ inside 1 mm | **KN01.1** | 1 | 102,70 |
| Loop ∅ inside 3 mm | **KN02.1** | 1 | 102,70 |
| Loop ∅ inside 5 mm | **KN03.1** | 1 | 102,70 |



121 °C

## Instrument holder

By Hammacher. Made of stainless steel Remanit® 4021.
Holder for Drigalski spatula, brush, inoculating loops and other instruments.
Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXE0.1** | 1 | 73,10 |




## Petri dish revolving tables

For smoothing out liquids evenly on agar surfaces in Petri dishes.

**Technical specifications:**

| **Model** | **① Petriturn-M** | **② Petriturn-E** |
|---|---|---|
| Operation | manual | electric drive |
| Special features | · Strong drive and long running due to high mass of the rotary disc<br>· **Can be used on both sides** | · Non-contact operation of rotary disc via **sensor with automatic switch-off** (3 s to 2 min)<br>· Continuous operation possible |
| Foot switch-control | - | Can also be operated via foot switch (please order separately ③) |
| Suitable for petri dishes up to: | ∅ 100 mm, or to ∅ 150 mm by simply turning over | to ∅ 100 mm (Please order attachment for up to ∅ 150 mm separately ④) |
| Speed control | - | 10 to 100 $min^{-1}$, continuously variable |
| Voltage supply | - | Power unit 12 V DC / 5 VA |
| ∅ x H (mm) | 160 x 45 | 160 x 70 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Petriturn-M | **N962.1** | 1 | 191,35 |
| ② Petriturn-E | **HT52.1** | 1 | 418,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| ③ Foot switch (Petriturn-E) | **HT53.1** | 1 | 63,95 |
| ④ Rotary disc attachment for petri dishes ∅ 150 mm (Petriturn-E) | **HT54.1** | 1 | 63,00 |



## Hand-held colony counters

Battery-operated pen for counting and marking colonies.
- Acoustic or visual signal registers counting process
- Count up/down function
- Locking key to switch off counting function
- For counting up to 32 plates
- With totalling function

**Delivery incl.** pen, stand and battery (3 V, type: CR 1220).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KN08.1** | 1 | 315,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare pens, black | **KN09.1** | 12 per pack | 38,70 |
| Spare pens, sorted | **XT85.1** | 8 | 32,65 |
| Button cell battery CR 1225 (3 V) | **AEC3.1** | 1 | 5,35 |



## Colony counter SC6 PLUS

By Stuart. For fast and exact counting of bacterial colonies in Petri dishes.
- Counting is initiated by pressing down on the Petri dish with any pen
- Pressure sensitivity is individually adjustable
- Confirmation of count by audible signal (optional)
- With integrated average counter for evaluating up to 99 Petri dishes
- Optional light or dark background (dark background aids counting translucent colonies)
- With non-reflective LED lighting
- Three-digit LED display
- Connectivity to PC
- With antimicrobial BioCote® surface coating

**Technical specifications:**

| | |
|---|---|
| Digital display | 0-999 |
| Ambient temperature range | +5 to +40 °C |
| Dimensions (W x D x H) | 310 x 300 x 140 mm |
| Weight | 1.5 kg |
| Power supply | 230 V, 50 Hz |

**Delivery incl.** 2 Wolffhügel grids and 2 reducer rings (centring aids) for Petri dishes 50-90 mm in diameter, USB cable (1 m long). Please order magnifying glasses for counting microscopic colonies separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Colony counter SC6 PLUS | **EN38.1** | 1 | 789,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Magnifying glass, 1.7x magnification (with flexible swan neck stand) | **EN39.1** | 1 | 95,65 |
| Magnifying glass, 3x magnification (with fixed stand arm) | **EN40.1** | 1 | 115,00 |
| Clear protective covers | **EN43.1** | 5 | 76,80 |
| Replacement Wolffhügel grid | **EN41.1** | 10 | 95,00 |
| Replacement Petri dish holder | **TK07.1** | 1 | 66,00 |
| Replacement reducer rings (centring aids) | **EN42.1** | 2 | 32,70 |

▶ Manual counters see page 856



## Micro pestles

Made of **PP**. For homogenising cells and tissue in reaction vials by hand or using laboratory stirrers. Length 70 mm. Autoclavable.

| For reaction vials | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.5 ml | Standard | **CXH6.1** | 100 | 103,00 |
| 1.5 ml | Standard | **CXH7.1** | 100 | 103,00 |
| 0.5 ml | RNase/DNase-free, pyrogen free, individually packed | **CXH8.1** | 100 | 139,75 |
| 1.5 ml | RNase/DNase-free, pyrogen free, individually packed | **CXH9.1** | 100 | 139,75 |



## Quick-change chuck and pestle

Cone-shaped pestle made of autoclavable **PP**, quick change chuck made of stainless steel. Fits all standard laboratory-stirrers. Reusable.

Pestle-dimensions: Overall length 70 mm. Shaft-∅ 4.9 mm.
Cone can reduce from 6 to 2.5 mm, cone length 10 mm.

**Pestle can be changed when motor is running**:
Vessel can be held with one hand and pestle changed with the other.

Quick-change chuck suitable for all chucks that fit an 8 mm clamp.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Quick-change chuck | **P986.1** | 1 | 74,75 |
| PP-pestle | **P987.1** | 10 | 30,65 |



## Micro-homogenizers

Made of **PP**. Conical form. Autoclavable. For homogenizing cells and tissue in centrifuge tubes and test tubes. Overall length 206 mm. Shaft-∅ 5 mm. Cone can reduce from 8.2 to 2.9 mm, cone length 18 mm. Rounded base.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K994.1** | 6 | 24,55 |



## Rotilabo®-micro-pestle

Made of stainless steel. Ideal for homogenizing cells and tissues in 1.5 ml microcentrifuge tubes. Manufactured in one piece, no joints, no entrainment. Easy to disinfect. Minimal homogenate displacement through offset shaft. Conical shape.
Length 100 mm. ∅ of shrank 5 mm. Cones tapers from 8 to 4 mm over a length of 16 mm. Can be cooled to -196 °C. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P985.1** | 1 | 67,75 |



## Rotilabo®-macro pestle

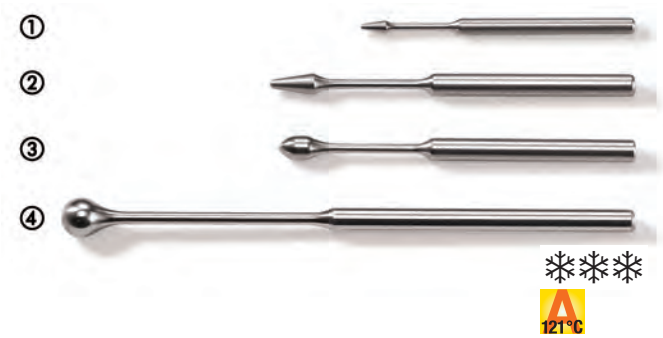
Made of stainless steel 1.4301. For the homogenisation of cells, tissue, foodstuffs samples and much more, manually or using laboratory stirrers. Suitable for 15 ml centrifuge tubes (e.g. Art. No. AN76.1f).

- Made from one piece and polished for a perfect fit
- Transitions are optimally designed for easy disinfection
- Tapered shank for minimal homogenate displacement
- Autoclavable

Dimensions: overall length 185 mm, handle length 100 mm. Shank ∅ 8 mm (tapering to 4.5 mm), taper ∅ 12 mm (tapering to 4 mm). Weight 60 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NH32.1** | 1 | 41,85 |

# Homogenisers and pestles




## Rotilabo®-micro pestles

Made of stainless steel 1.4301. For homogenising cells, tissue, foodstuff samples and much more in reaction vials or reagent test tubes manually or using laboratory stirrers. Tailored from a single block and polished, perfect transitions, easy to disinfect. Tapered shank for minimal homogenate displacement. Autoclavable.

**Technical specifications:**

| For vessels | Overall length (mm) | Handle length (mm) | Stem length (mm) | Taper length (mm) | Weight (g) |
|---|---|---|---|---|---|
| **0.5 ml** | 94 | 60 | 26.3 (tapered from 6.0 to 3.0) | 10 (tapered from 6.0 to 2.9) | 16 |
| **1.5 ml** | 124 | 69 | 40 (tapered from 7.9 to 3.5) | 17 (tapered from 7.9 to 3.5) | 34 |
| **2.0 ml** | 120 | 67 | 40 (tapered from 8.0 to 3.5) | 11.2 (tapered from 8.6 to 1.7) | 35 |
| **13 ml** | 190 | 100 | 75 (tapered from 8.0 to 4.4) | 10 (round head, ∅ 15 mm) | 60 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① For 0.5 ml vessels | **YE13.1** | 1 | 31,55 |
| ② For 1.5 ml vessels | **YE14.1** | 1 | 34,10 |
| ③ For 2.0 ml vessels | **YE15.1** | 1 | 35,95 |
| ④ For 13 ml vessels | **YE16.1** | 1 | 40,45 |



## Homogenisers

Made of borosilicate glass.
Distance between mortar and pestle: 0.15 to 0.25 mm.

| Effective capacity (ml) | Inner ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 8 | 120 | **TT57.1** | 1 | 30,00 |
| 5 | 12 | 135 | **TT58.1** | 1 | 33,45 |
| 10 | 15 | 150 | **TT59.1** | 1 | 35,60 |
| 15 | 16 | 155 | **TT60.1** | 1 | 36,90 |
| 30 | 25 | 175 | **TT61.1** | 1 | 42,80 |
| 50 | 32 | 195 | **TT62.1** | 1 | 51,10 |

## Pestles for homogenisers

Head made of **PTFE**, rod made of stainless steel.
Grooves on the lower edge. Rod ∅ 6.5 mm.

| Effective capacity (ml) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2 | 230 | **TT63.1** | 1 | 21,10 |
| 5 | 235 | **TT64.1** | 1 | 21,65 |
| 10 | 270 | **TT65.1** | 1 | 22,25 |
| 15 | 270 | **TT66.1** | 1 | 28,20 |
| 30 | 270 | **TT67.1** | 1 | 33,00 |
| 50 | 270 | **TT68.1** | 1 | 42,80 |




## Micro-tissue grinders

Made of borosilicate glass. With pestle. For pulverizing and homogenizing minute amounts, e.g. in histology. Autoclavable.

| Type | Height (mm) | Inside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| G 1, 10 - 25 µl | 30 | ~4 | **0296.1** | 1 | 96,25 |
| G 2, 25 - 100 µl | 40 | ~6 | **0297.1** | 1 | 96,25 |
| G 3, 100 - 1000 µl | 50 | ~8 | **0298.1** | 1 | 96,25 |




## Micro-blenders

By Wheaton. Made of Wheaton typed 33 borosilicate glass.
High product yield due to smaller friction area. For single use, prevents cross-contamination, e.g. when handling radioactive samples.

| Volume (ml) | Inner ∅ (mm) | Length (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,75 | 8 | 44 | 88 | **HLC0.1** | 25 | 219,30 |


- ▶ Homogenizers see page 1035
- ▶ Laboratory stirrers see page 1023

# Homogenisers and pestles



## Potter-Elvehjm homogenisers

Made of glass. For gentle disruption of soft tissue, e.g. for the extraction of cell organelles. Suitable for motor drive by laboratory stirrers.
Distance between mortar and pestle: 0.1 to 0.15 mm.

| Size | Volume (ml) | Pestle L x ∅ (mm) | Mortar L x ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 19 | 1 | 145 x 5 | 95 x 13 | **CXH1.1** | 1 | 113,45 |
| 21 | 5 | 205 x 6 | 140 x 16 | **CXH2.1** | 1 | 89,80 |
| 22 | 8 | 215 x 8 | 150 x 18 | **CXH3.1** | 1 | 100,30 |
| 23 | 17 | 265 x 10 | 175 x 25 | **CXH4.1** | 1 | 103,85 |
| 24 | 45 | 315 x 10 | 220 x 32 | **CXH5.1** | 1 | 111,30 |



## Dounce homogenisers

Made of glass. For grinding of cellular material while preserving the cell nucleus.
**Delivery incl.** two pestles, pestle A for coarse grinding, pestle B for fine grinding.

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5 | 37 | **CXC8.1** | 1 | 134,95 |
| 1 | 88 | **CXC9.1** | 1 | 134,95 |
| 2 | 60 | **CXE0.1** | 1 | 156,45 |
| 7 | 125 | **CXE1.1** | 1 | 150,30 |
| 15 | 157 | **CXE2.1** | 1 | 154,40 |
| 40 | 215 | **CXE3.1** | 1 | 150,50 |
| 100 | 232 | **CXE4.1** | 1 | 367,65 |




## Micro-blender acc. to Potter-Elvehjem

By Wheaton. Made of Wheaton typed 33 borosilicate glass. Micro-size for extremely precise work, reservoir and lip for pouring out the micro-sample. Can be autoclaved and sterilized to prevent cross-contamination.
Gap between pestle and vial: 0.1-0.15 mm.

| Usable volume (l) | Mortar L x ∅ (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1 | 65 x 4 | 110 | **HLC1.1** | 1 | 84,40 |

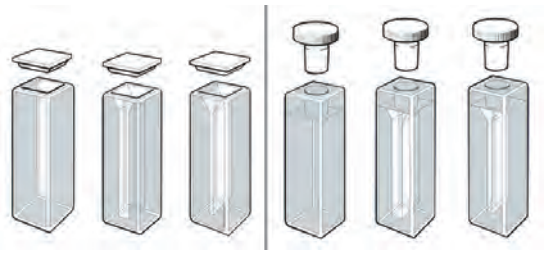


## Dual homogenisers

Made of glass.With tapered and cylindrical areas, for effective grinding and consistent homogenisation of tissue. Ideal for cellular tissue such as muscle, heart and lungs.
Distance between mortar and pestle: 0.1 to 0.15 mm.

| Volume (ml) | Pestle L x ∅ (mm) | Mortar L x ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 155 x 4,5 | 80 x 13 | **CXE5.1** | 1 | 128,90 |
| 3 | 210 x 6 | 120 x 16 | **CXE6.1** | 1 | 128,90 |
| 5 | 228 x 6 | 150 x 18 | **CXE7.1** | 1 | 128,90 |
| 15 | 268 x 6 | 175 x 25 | **CXE8.1** | 1 | 146,20 |
| 30 | 305 x 10 | 215 x 32 | **CXE9.1** | 1 | 155,90 |
| 50 | 330 x 10 | 225 x 38 | **CXH0.1** | 1 | 197,80 |

# Cuvettes / Cuvette racks



## Rotilabo®-precision glass cuvettes

Made of special optical glass or UV-permeable quartz glass.
Supplied either with PTFE-seamed lid or liquid tight PTFE-stopper.

- Gauged spectral
- 10 mm thick, tolerance ±0.01 mm
- 2 polished sides
- Transmission ≥80 %

Dimensions:
Model, double seam lid: L 12.5 x W 12.5 x H 45 mm
Model, stopper: L 12.5 x W 12.5 x H 48 mm

Passband:

- Special-purpose optical glass: 320 - 2500 nm
- Spectrosil®-quartz glass 190 - 2700 nm

**Macro**, capacity 3.5 ml, inner width 10 mm

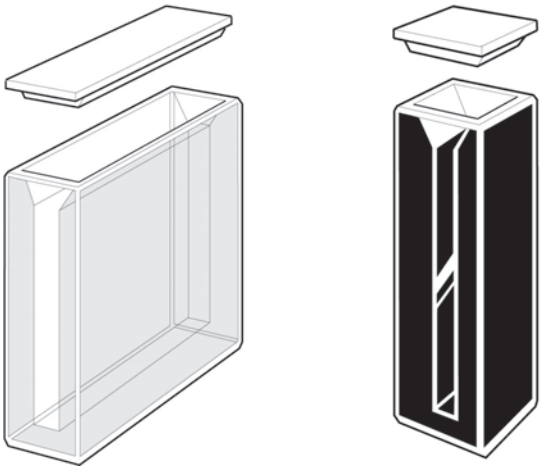
| Type | Cover | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Optical special-purpose glass | seamed lid | **X851.1** | 1 | 42,60 |
| Optical special-purpose glass | stopper | **Y030.1** | 1 | 82,10 |
| Quartz glass | seamed lid | **X852.1** | 1 | 82,25 |
| Quartz glass | stopper | **Y031.1** | 1 | 135,45 |

**Semi-micro,** capacity 1.4 ml, inner width 4 mm

| Type | Cover | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Optical special-purpose glass | seamed lid | **X853.1** | 1 | 65,35 |
| Optical special-purpose glass | stopper | **Y032.1** | 1 | 112,90 |
| Quartz glass | seamed lid | **X854.1** | 1 | 118,25 |
| Quartz glass | stopper | **Y033.1** | 1 | 167,70 |

**Micro,** capacity 0.7 ml, inner width 2 mm

| Type | Cover | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Optical special-purpose glass | seamed lid | **X855.1** | 1 | 72,95 |
| Optical special-purpose glass | stopper | **Y034.1** | 1 | 124,70 |
| Quarz glass | seamed lid | **X856.1** | 1 | 126,85 |
| Quarz glass | stopper | **Y035.1** | 1 | 170,95 |



## Rotilabo®-precision glass cells

Made of special optical glass. With PTFE seamed lid.

- Spectrally calibrated
- Layer thickness 50 mm, tolerance ±0.02 mm
- Two polished sides
- Transmission ≥80 %

Dimensions: L 52.5 x W 12.5 x H 45 mm.
UV transmittance range: 320-2500 nm.

| Volume (ml) | Inner width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 17,5 | 9,5 | **AHA7.1** | 1 | 115,05 |

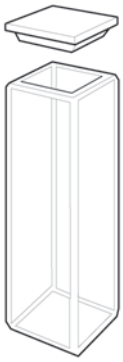
## Rotilabo®-precision glass cells, black

Made of UV-transmittant Spectrosil® quartz glass with sturdy black walls.
With PTFE seamed lid.

- Spectrally calibrated
- Layer thickness 10 mm, tolerance ±0.01 mm
- Two polished sides
- Transmission ≥80 %

Dimensions: L 12.5 x W 12.5 x H 45 mm.
UV transmittance range: 320-2500 nm.

| Type | Volume (ml) | Inner width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Semi-micro | 1,4 | 4 | **AHA5.1** | 1 | 203,20 |
| Micro | 0,7 | 2 | **AHA6.1** | 1 | 225,75 |



## Rotilabo®-glass fluorescence cell

Made of UV-transmittant Spectrosil® quartz glass, for fluorimetry.
With PTFE seamed lid.

- Spectrally calibrated
- Layer thickness 10 mm, tolerance ±0.01 mm
- Four polished sides and polished base
- Transmission ≥80 %

Dimensions: L 12.5 x W 12.5 x H 45 mm.
UV transmittance range: 190-2700 nm.

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Macro | 3,5 | **AHC0.1** | 1 | 163,40 |



## Single-use cells for fluorescence measurements

- Made of **PS** or **PMMA**, with 4 optical windows
- Volume 4 ml
- **PS** for measurements starting from 340 nm,
  **PMMA** for measurements starting from 300 nm
- Cavity-sorted production
- Layer thickness 10 mm
- Dimensions: L 12.5 x W 12.5 x H 45 mm

| Material | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PS | **NK49.1** | 100 | 17,10 |
| PMMA | **NK50.1** | 100 | 19,15 |




## Rotilabo®-single-use cuvettes

Made of **PS**, **PPMA** or special plastic.
- Two optical windows
- Extremely low deviation in absorbance values
- Outstanding optical transmission values
- Cavity-sorted production

Layer thickness 10 mm. Dimensions: L 12.5 x W 12.5 x H 45 mm.

**Polystyrene (PS)**
Range of application: 340 to 900 nm.

| Type | Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Semi-micro | 1,6 | 10 x 100 | **XK20.1** | 1000 | 73,05 |
| ② Macro | 4,0 | 10 x 100 | **XK21.1** | 1000 | 74,15 |

**Polymethylacrylate (PMMA)**
Range of application: 300 to 900 nm.

| Type | Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Semi-micro | 1,6 | 10 x 100 | **XK23.1** | 1000 | 85,95 |
| ② Macro | 4,0 | 10 x 100 | **XK24.1** | 1000 | 85,95 |

**Single-use UV**
For photometric measurements into the UV range.
Range of application: 220 to 900 nm.

| Type | Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Semi-micro | 1,6 | 1 x 100 | **XK26.1** | 100 | 29,60 |
| ② Macro | 4,0 | 1 x 100 | **XK27.1** | 100 | 26,80 |

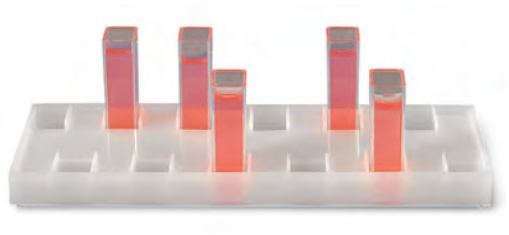
**Single-use, solvent resistant**
For substances containing polar solvents.
Range of application: 220 to 900 nm.

| Type | Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Semi-micro | 1,6 | 1 x 100 | **XK28.1** | 100 | 29,60 |
| ② Macro | 4,0 | 1 x 100 | **XK29.1** | 100 | 26,15 |

## Lids for single-use cuvettes

Made of **PP**. Suitable for all single-use cuvettes macro and semi-micro.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XK25.1** | 1000 | 32,20 |



## Rotilabo®-cuvette stand

Made of **PE**. For 12 cuvettes 10 mm thick. With staggered arrangement of holders. Low stand-depth for better observation of cuvette contents.
Dimensions: L 170 x W 50 x H 15 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9663.2** | 5 | 24,55 |



## Disposable cuvettes

By Brand. Made of **PS** or **PMMA**.
- Two optical windows
- Optically perfect transparency
- Sorted according to nest numbers to minimize extinction deviation
- Recessed windows to protect against scratching
- Arrow marks direction of irradiation

Standard-layer thickness 10 mm. Dimensions: 12.5 x 12.5 x 45 mm.
**Passband: PS: 340-900 nm. PMMA: 300-900 nm.**
Standard deviation:
- PS at 360 nm ≤0.005 extinction units.
- PMMA at 320 nm ≤0.004 extinction units.

**Polystyrol (PS)**

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Macro | 2,5-4,5 | **Y194.1** | 100 | 11,80 |
| Semi-micro | 1,5-3,0 | **Y195.1** | 100 | 12,40 |

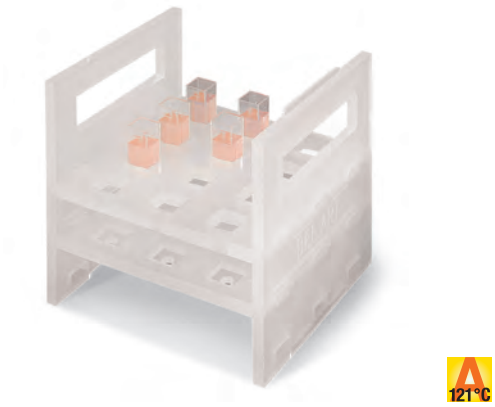
**Polymethylmethacrylate (PMMA)**

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Macro | 2,5-4,5 | **Y196.1** | 100 | 13,85 |
| Semi-micro | 1,5-3,0 | **Y197.1** | 100 | 14,90 |

## Lids for single-use cuvettes

Made of **PP**. Suitable for all single-use cuvettes macro and semi-micro.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XK25.1** | 1000 | 32,20 |

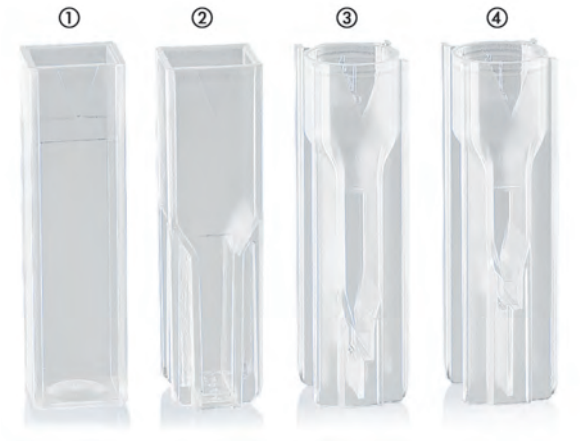



## Rotilabo®-cuvette rack

Made of **PP**. For 12 cuvettes 10 mm thick. Extremely robust design. The special design of the rack eliminates scratching of cuvette surface. Stackable. Dimensions: L 115 x W 110 x H 105 mm.
Temperature stable to 130 °C. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9664.1** | 1 | 42,95 |

# Cuvettes / Cuvette racks




## UV-cuvettes

By Brand. Made of plastic.
For UV-measurement in **wave range 230-900 nm**.
Specially developed for the photometrical determination of proteins, ssDNA, dsDNA, RNA and oligonucleotides in the UV-range.

- Disposable cuvettes - no danger of contamination during cleaning
- High chemical stability
- Two optical windows
- Optically perfect transparency
- Sorted according to nest numbers to minimize extinction deviation
- Recessed windows to protect against scratching
- Arrow marks direction of irradiation

Micro-cuvettes are ideal specially for small sample volumes from 70 µl and available in two different centric heights (8.5 and 15 mm).
Standard thickness: 10 mm, dimensions 12.5 x 12.5 x 45 mm

Standard deviation:

240 nm ≤±0.007 extinction units

300 nm ≤±0.005 extinction units

| Type | Volume | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① Macro | 2,5-4,5 ml | **Y198.1** | 100 | 33,50 |
| ② Semi-micro | 1,5-3,0 ml | **Y199.1** | 100 | 35,95 |
| ③ Micro (z = 8.5 mm) | 70-850 µl | **Y200.1** | 100 | 24,30 |
| ③ Micro (z = 8.5 mm), individually packed, DNase, DNA and RNase-free | 70-850 µl | **CNT6.1** | 100 | 61,15 |
| ④ Micro (z = 15 mm) | 70-550 µl | **Y201.1** | 100 | 24,30 |
| ④ Micro (z = 15 mm), individually packed, DNase, DNA and RNase-free | 70-550 µl | **CNT7.1** | 100 | 61,15 |

## Accessories:

Round cover made of **PE** for UV micro cells by Brand. Provides a secure seal and allows the storage of samples at temperatures down to -20 °C.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **Y202.1** | 100 | 13,05 |
| yellow | **CNT8.1** | 100 | 13,75 |
| green | **CNT9.1** | 100 | 13,75 |
| orange | **CNX0.1** | 100 | 13,75 |



121°C

## Cell stand

By BRAND. Made of **PP**. For 16 cells with a light path of 10 mm.
Numbered slots. Dimensions: L 210 x W 70 x H 38 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CNP5.1** | 1 | 13,95 |



## Cells with 4 optical windows

By Brand. Made of **PS** or UV-transparent plastic.
Ideal for fluorescence spectroscopy.

- Optically flawless radiographic area
- UV cells with minimal autofluorescence
- Four optical windows for precise measurements
- Matt handle, can be labelled
- Produced under controllable room conditions with fully automatic packaging
- Sorted by nest numbers, minimal deviation of extinction values

Capacity: 2.5-4 ml. Dimensions: L 12.5 x W 12.5 x H 45 mm, window: W 10 x H 35 mm. Thickness: 10 mm.

**Technical specifications:**

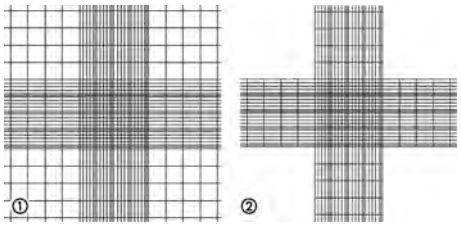
| **Material** | **Polystyrene (PS)** | **UV-transparent plastic** |
|---|---|---|
| **Operating range** | 340-900 nm | 230-900 nm |
| **Standard deviation** (extinction units) | 360 nm ≤±0.005 | 320 nm ≤±0.007<br>300 nm ≤±0.005 |
| **Chemical resistance** (short-term resistance, 30 min.) | Ammonia<br>Hydrofluoric acid, 10%<br>Isopropanol<br>Sodium hydroxide<br>Hydrochloric acid, 36% | Acetone<br>Ammonia<br>Benzaldehyde<br>Butanone<br>Dioxane<br>DMF<br>DMSO<br>Acetic acid, 100%<br>Ethylacetate<br>Hydrofluoric acid, 10%<br>Isopropanol<br>Sodium hydroxide<br>Nitric acid, 65%<br>Hydrochloric acid, 36% |
| **Not resistant against** | Chloroform<br>Hexane | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Polystyrene cells | **EXP1.1** | 100 | 15,35 |
| Polystyrene cells | **EXP2.1** | 500 | 54,05 |
| Cells made of UV-transparent plastic | **EXP3.1** | 100 | 39,80 |
| Cells made of UV-transparent plastic | **EXP4.1** | 500 | 179,55 |

## Lids for single-use cuvettes

Made of **PP**. Suitable for all single-use cuvettes macro and semi-micro.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XK25.1** | 1000 | 32,20 |



## ① Neubauer counting cells

By Marienfeld. Made of **special optical glass**, CE-certified, double grid.
Cell depth: 0.1 mm, large square: 1 mm², group square: 0.04 mm², smallest square: 0.0025 mm². Counting net with nine large squares. The large square in the centre is split into 16 group squares and these in turn are split into 16 least squares.
**Delivery incl.** two haemacytometer cover slips (20 x 26 mm).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| excl. spring clamps | **T728.1** | 1 | 46,25 |
| with 2 spring clamps | **PC74.1** | 1 | 68,70 |

## ① Neubauer counting chamber, bright-lined

Made of **special optical glass**, CE-certified, double graticule division.
Same as Neubauer but with rhodium-plated chamber base. Therefore bright counter grating during standard setting of microscope.
**Delivery incl.** 2 haemacytometer cover slips (20 x 26 mm).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without spring clamps | **T734.1** | 1 | 83,35 |

## ② Thoma counting chamber

Made of **special optical glass**, CE-certified, double graticule division.
**For thrombocyte and erythrocyte counting.**
Chamber depth: 0.1 mm, smallest square: 0.0025 mm², counter grating with 5 large squares (without corner sections). The large centre square is subdivided into 16 group squares which, in turn, are divided into 16 mini squares.
**Delivery incl.** 2 haemacytometer cover slips (20 x 26 mm).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without spring clamps | **T732.1** | 1 | 47,85 |

## ② Thoma new counting chamber

Made of **special optical glass**, CE-certified, double graticule division.
Same as Thoma. But without any lines in the boundary areas.
**Delivery incl.** 2 haemacytometer cover slips (20 x 26 mm).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without spring clamps | **T733.1** | 1 | 50,75 |

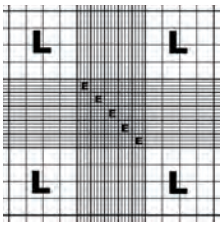
▶ For haemacytometer-cover slips see page 290




## C-Chip Neubauer improved

Disposable counting cell **made of optical plastic**, lightweight and unbreakable. Precise quantification, high reproducibility. Same cell configuration as Neubauer improved glass counting cells. Double net ruling. Cell thickness 0.1 mm. Cell volume 10 µl.
Dimensions: L 75 x W 25 x H 1.6 mm. Cover slips are not required.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK36.1** | 50 | 160,20 |



## Neubauer counting chamber improved

By Marienfeld. Made of **special optical glass**, CE-certified, double graticule division.
**For leucocyte, thrombocyte and erythrocyte counting.**
Chamber depth: 0.1 mm, large square: 1 mm², group square: 0.04 mm², smallest square: 0.0025 mm².
Counter grating with 9 large squares.The four corner squares are for leucocyte counting.The large square in the centre is subdivided into 25 group squares and these in turn into 16 smallest squares.
Five group squares are for erythrocyte counting.
**Delivery incl.** 2 haemacytometer cover slips (20 x 26 mm).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without spring clamps | **T729.1** | 1 | 45,05 |
| with 2 spring clamps | **PC72.1** | 1 | 68,70 |

## Neubauer counting chamber improved, bright-lined

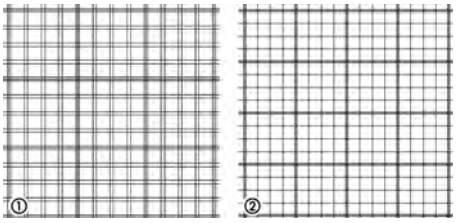
Same as Neubauer improved but with rhodium-plated chamber base. Therefore bright counter grating during standard setting of microscope.
**Delivery incl.** 2 haemacytometer cover slips (20 x 26 mm).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without spring clamps | **T735.1** | 1 | 80,65 |

## Neubauer counting chamber improved, with special depth

Same as Neubauer improved but chamber depth: 0.01 mm.
**Delivery incl.** 2 haemacytometer cover slips (20 x 26 mm).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without spring clamps | **PC73.1** | 1 | 149,45 |



## ① Bürkner counting chamber

By Marienfeld. Made of **special optical glass**, CE-certified, double graticule division.
**For leucocyte and erythrocyte counting.**
Chamber depth: 0.1 mm, large square: 1 mm², group square: 0.04 mm². Counter grating with 9 large squares. They are used for leucocyte counting. Each large square is subdivided into 16 group squares for erythrocyte counting. The group squares have no subdivisions.
**Delivery incl.** 2 haemacytometer cover slips (20 x 26 mm).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without spring clamps | **T730.1** | 1 | 48,40 |

## ② Fuchs-Rosenthal counting chamber

By Marienfeld. Made of **special optical glass**, CE-certified, double graticule division.
**For cell counting in liquor**.
Chamber depth: 0.2 mm, total surface: 16 mm².
Counter grating with 16 large squares. The total area is counted.
**Delivery incl.** 2 haemacytometer cover slips (20 x 26 mm).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without spring clamps | **T731.1** | 1 | 47,55 |

# Cover slips









## Cover slips

Acc. to ISO 8255-1, made of transparent borosilicate glass, hydrolytic class 1. Thickness no. 1 (0.13-0.16 mm).

- The visible spectral region is absorption-free
- Optically clean and free from smears, bubbles or streaks
- High chemical stability
- No interference from natural fluorescence even when working within short UV-range (e.g. 365 nm)
- Refractive index 1.5230

| Dimensions L x W (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 18 x 18 | 5 x 200 | **0657.2** | 1000 | 19,90 |
| 20 x 20 | 5 x 200 | **H873.2** | 1000 | 21,45 |
| 22 x 22 | 5 x 200 | **H874.2** | 1000 | 22,60 |
| 24 x 24 | 5 x 200 | **H875.2** | 1000 | 27,55 |
| 21 x 26 | 10 x 100 | **H876.2** | 1000 | 29,00 |
| 24 x 32 | 10 x 100 | **H877.2** | 1000 | 38,50 |
| 24 x 40 | 10 x 100 | **1870.2** | 1000 | 44,65 |
| 24 x 50 | 10 x 100 | **1871.2** | 1000 | 49,40 |
| 24 x 60 | 10 x 100 | **H878.2** | 1000 | 56,90 |
| ∅ 12 | 10 x 100 | **P231.1** | 1000 | 57,95 |
| ∅ 15 | 10 x 100 | **P232.1** | 1000 | 57,95 |
| ∅ 18 | 10 x 100 | **P233.1** | 1000 | 57,55 |
| ∅ 20 | 10 x 100 | **P234.1** | 1000 | 69,35 |
| ∅ 22 | 10 x 100 | **P235.1** | 1000 | 69,35 |

▶ Cover slip forceps see page 314




## Haemacytometre cover slips

For counting chambers. CE certified, faces have been polished to the same plane. 0.4 mm thick.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 | 26 | **L189.1** | 10 | 18,25 |
| 22 | 22 | **L190.1** | 10 | 19,15 |
| 24 | 24 | **L191.1** | 10 | 20,35 |

## Cover slips

By Marienfeld. Made of hydrolytic class 1 borosilicate glass. Strength No. 1 (0.13-0.16 mm).

- Absolutely colourless, completely clear, suitable for fluorescence microscopy
- Very even, especially smooth surfaces
- Ready to use
- Suitable for use in coverslippers
- Satisfies the requirements of DIN ISO 8255
- CE-certified to IVD Directive 98/97/EC

| Length (mm) | Width (mm) | ∅ (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 16 | 16 | | 10 x 100 | **HKE4.1** | 1000 | 19,15 |
| 18 | 18 | | 10 x 100 | **HKE5.1** | 1000 | 17,15 |
| 20 | 20 | | 10 x 100 | **HKE6.1** | 1000 | 22,60 |
| 22 | 22 | | 10 x 100 | **HKE7.1** | 1000 | 23,45 |
| 24 | 24 | | 10 x 100 | **HKE8.1** | 1000 | 30,00 |
| 22 | 40 | | 10 x 100 | **HKE9.1** | 1000 | 45,15 |
| 22 | 50 | | 10 x 100 | **HKH0.1** | 1000 | 51,50 |
| 24 | 32 | | 10 x 100 | **HKH1.1** | 1000 | 37,65 |
| 24 | 40 | | 10 x 100 | **HKH2.1** | 1000 | 46,45 |
| 24 | 50 | | 10 x 100 | **HKH3.1** | 1000 | 52,65 |
| 24 | 60 | | 10 x 100 | **HKH4.1** | 1000 | 60,95 |
| | | 12 | 10 x 100 | **HKH5.1** | 1000 | 59,70 |
| | | 15 | 10 x 100 | **HKH6.1** | 1000 | 63,35 |
| | | 18 | 10 x 100 | **HKH7.1** | 1000 | 68,70 |

## Precision cover slips

By Marienfeld. Made of hydrolytic class 1 borosilicate glass. **With defined thickness of 0.17 ±0.005 mm**, specially for high-resolution precision instruments. Refractive index 1.524 to 1.527 at 546.07 nm.

- Absolutely colourless, completely clear, suitable for fluorescence microscopy

Ideal for lenses with a high numeric aperture and high resolving power, e.g.:

- Dry lens (air immersion): N.A. > 0.7
- Water immersion lens: N.A. > 1.0
- Glycerine immersion lens: N.A. > 1.2
- Oil immersion lens: N.A. > 1.3

| Dimensions L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 18 x 18 | **LH22.1** | 200 | 10,70 |
| 22 x 22 | **LH24.1** | 200 | 14,55 |
| 24 x 50 | **LH25.1** | 100 | 16,60 |
| 24 x 60 | **LH26.1** | 100 | 19,90 |
| ∅ 10 mm | **YX02.1** | 100 | 17,10 |
| ∅ 12 mm | **YX03.1** | 100 | 17,65 |
| ∅ 18 mm | **LH23.1** | 100 | 19,90 |
| ∅ 24 mm | **PK26.1** | 100 | 26,35 |
| ∅ 25 mm | **YX04.1** | 100 | 27,35 |

## Siliconised cover slips

By Marienfeld. Made of hydrolytic class 1 borosilicate glass (0.13 to 0.16 mm thick). Colourless, clear, with hydrophobic surfaces, siliconised on both sides. Suitable for protein crystallisation and for fluorescence microscopy. CE-certified to IVD Directive 98/97/EC.

| Dimensions L x W (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12 x 12 | 10 x 100 | **TX71.1** | 1000 | 267,70 |
| 18 x 18 | 10 x 100 | **TX72.1** | 1000 | 267,70 |
| 22 x 22 | 10 x 100 | **TX73.1** | 1000 | 284,90 |
| ∅ 12 | 10 x 100 | **TX74.1** | 1000 | 307,45 |
| ∅ 18 | 10 x 100 | **TX75.1** | 1000 | 318,20 |
| ∅ 22 | 10 x 100 | **TX76.1** | 1000 | 335,40 |

# Microscope slides



## Plastic cover slips

Made of **vinyl**. Individual cover slips are separated from one another by paper sheets. Dimensions: 22 x 22 mm, thickness 0.157 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK27.1** | 1000 | 92,05 |




## Standard microscope slides

By Menzel. Made of soda-lime glass, 76 x 26 mm, 1 mm thick, acc. to ISO 8037/1. Partly with frosted edge of 20 mm width. Different edge styles serve different purposes: slides with cut edges are preferable for normal microscopy, and slides with 45° and 90° cut angles are better for for use in pathology, and histology, because they reduce risk of cutting injury. They are also good for use in automatic machines.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| cut | **0656.1** | 50 | 3,20 |
| cut / frosted edge | **H868.1** | 50 | 3,90 |
| ground 90° | **H869.1** | 50 | 4,25 |
| ground 90° / frosted edge | **H870.1** | 50 | 4,85 |
| ground 45° | **H871.1** | 50 | 4,25 |
| ground 45° / frosted edge | **H872.1** | 50 | 5,20 |



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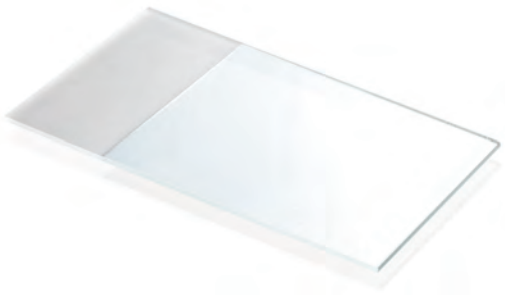
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WHEATON
KIMBLE

## Columbia staining dish

By Wheaton. Made of calcium soda glass. With white PP screw cap with PTFE-coated PE insert. For up to 4 coverslips B 17-23 mm, up to H 30 mm. Longer coverslips can also be inserted with the lid removed.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Columbia staining dish with lid | **HLA6.1** | 1 | 42,50 |

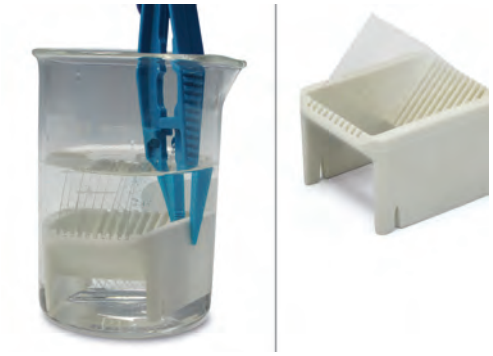
▶ Microscopes and stereo-microscopes
see page 748



## Microscope slide in special size 76 x 52 mm

By Marienfeld. Made of calcium soda glass. With cut or ground edges, pre-cleaned. Thickness 1 mm.
With CE mark, i.a.w. IVD directive 98/79/EC.

| Edges | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| cut | without frosted edge | **TX69.1** | 50 | 29,00 |
| cut | with frosted edge | **CEX1.1** | 50 | 30,75 |
| ground to 90° | without frosted edge | **TX70.1** | 50 | 35,45 |
| ground to 90° | with frosted edge | **CEX2.1** | 50 | 33,80 |



121°C

## Wash-N-Dry™ Coverslip rack

Made of **PP**. For 10 square or round cover slips from 18 to 25 mm. With grooves on the base for securing the cover slips, e.g. using rubber bands. Dimensions: L 39 x W 31 x H 24 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TH51.1** | 1 | 40,75 |

## Special size cover slips 75 x 50 mm

By Marienfeld. Made of borosilicate glass of hydrolytic class 1. Thickness 1 (0.13-0.16 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XT62.1** | 100 | 58,50 |

# Microscope slides




## DG microscope slides

Produced from hydrolytic class 3 high-quality float glass (soda-lime glass). Planarity and thickness distribution lie within very a tight tolerance band and are therefore ideally suited to microscopy applications (readjustment of the microscope is not necessary).

- Virtually free from surface defects, inclusions, streaks and bubbles
- The edges of the glass slides are uniform and crystal clear, reducing the risk of breakage along the edges
- Excellent wettability
- Dimensions 26 x 76 mm (to ISO 8037/1)
- Glass thickness 1.0 ±0.05 mm

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Cut | **NK72.1** | 50 | 3,35 |
| Cut edges, with matt strip | **NK73.1** | 50 | 3,90 |
| Edges ground to 90°, with white labelling surface | **NK74.1** | 50 | 5,40 |

## DG cover slips

Produced from hydrolytic class 1 borosilicate glass D263.

- Virtually free from surface defects, inclusions, streaks and bubbles and unwanted striation thanks to high optical homogeneity
- Highly transparent, colourless and nearly free from colour impurities
- Absorption-free within the visible spectrum
- Also suitable for fluorescence microscopy thanks to UV absorption
- High planarity
- High quality is assured through optimal cooling process
- Refractive indices matched to microscopy applications

| Length (mm) | Width (mm) | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 18 | 18 | No. 1 (0.13-0.16) | **NK75.1** | 10 x 100 | 14,00 |
| 22 | 22 | No. 1 (0.13-0.16) | **NK76.1** | 10 x 100 | 21,45 |
| 24 | 50 | No. 1 (0.13-0.16) | **NK77.1** | 10 x 100 | 44,70 |
| 24 | 50 | No. 1.5 (0.16-0.19) | **NK78.1** | 10 x 100 | 50,00 |
| 24 | 60 | No. 1 (0.13-0.16) | **NK79.1** | 10 x 100 | 51,70 |
| 24 | 60 | No. 1.5 (0.16-0.19) | **NK80.1** | 10 x 100 | 58,30 |



## Microscope slides with 45° ground corners

By Marienfeld. Made of soda lime glass, 76 x 26 mm, 1 mm thick, i.a.w. DIN ISO 8037/1. Ground edges with 45° or 90° angle, 4 ground corners to reduce risk of injury. Ideal for use in automatic systems.
With CE marking, i.a.w. IVD directive 98/79/EC.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without frosted edge | **CEX3.1** | 50 | 5,05 |
| with frosted edge (20 mm) | **CEX4.1** | 50 | 5,70 |




## Microscope slides SuperFrost®

By Menzel. Made of soda-lime glass.
The various coloured labelling areas (L 26 x W 19 mm) allow discrimination according to priority, research methods, staining techniques etc.
The solvent resistant coating (thickness 0.013 mm) of the labelling areas prevents the slides from being scratched and from sticking together.
Dimensions, acc. to ISO 8037/1: L 76 x W 26 mm, thickness 1 mm.

**Cut edges**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **1879.1** | 50 | 4,00 |
| blue | **2101.1** | 50 | 4,00 |
| pink | **2105.1** | 50 | 4,00 |
| yellow | **2106.1** | 50 | 4,00 |
| green | **2109.1** | 50 | 4,00 |
| orange | **L192.1** | 50 | 3,90 |

**Edges ground 90°**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **1880.1** | 50 | 5,35 |
| blue | **2111.1** | 50 | 5,35 |
| pink | **2116.1** | 50 | 5,35 |
| yellow | **2119.1** | 50 | 5,35 |

**Edges ground 45°**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **H879.1** | 50 | 5,35 |
| blue | **H880.1** | 50 | 5,35 |
| yellow | **H882.1** | 50 | 5,35 |
| green | **H883.1** | 50 | 5,35 |



121°C

## Diagnostic microscope slides

By Menzel. 75 x 25 x 1 mm, made of extra-white glass with permanent epoxy or PTFE-coating. Can withstand extreme stress conditions without losing their hydrophobic properties. With white frosted edge for labelling. 90° ground edges minimize possible injury risks. Autoclavable.

**Type Epoxy**

| No. of chambers | ∅ (mm) | Colour coating | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 8 | 6 | black | **L197.1** | 100 | 64,00 |
| 10 | 6,7 | black | **L198.1** | 100 | 64,00 |
| 12 | 5 | white | **L199.1** | 100 | 64,00 |

**Type PTFE**

| No. of chambers | ∅ (mm) | Colour coating | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 6,7 | black | **L203.1** | 100 | 85,80 |

# Adhesion slides

Made of soda-lime glass, with special adhesives for anchoring cells and tissues. Complex and expensive application of adhesives or protein layers is not necessary. No undesirable background staining. Ground edges 90° (except for ET08.1).
With labelling area.




**Programme extension!**

## Histobond®+ adhesion microscope slides

By Marienfeld. The silanized glass surface has a permanent positive charge which ensures that all types of tissue sections attach securely to the glass. Coloured labelling spaces offer potential uses in routine histology. Dimensions: L 76 x W 26 mm, thickness 1 mm.

**Suitable for:**
- In-situ hybridisation
- Problematic tissue samples, such as brain or spinal cord
- Multiple washing cycles, sections adhere firmly to the glass
- Microwave cooking

**Edges 90° grounded**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| neutral | **CEX0.1** | 100 | 30,00 |
| white | **PC66.1** | 100 | 31,10 |
| yellow | **PC67.1** | 100 | 32,05 |
| green | **PC68.1** | 100 | 32,05 |
| blue | **PC69.1** | 100 | 32,05 |
| pink | **PC70.1** | 100 | 32,05 |
| orange | **PC71.1** | 100 | 32,05 |

**Edges 90° grounded, 4 corners 45° bevelled**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| neutral | **HKH8.1** | 100 | 27,85 |
| white | **HKH9.1** | 100 | 29,60 |
| yellow | **HKK0.1** | 100 | 30,00 |
| green | **HKK1.1** | 100 | 30,00 |
| blue | **HKK2.1** | 100 | 30,00 |
| pink | **HKK3.1** | 100 | 30,00 |
| orange | **HKK4.1** | 100 | 30,00 |



## SuperFrost®/Plus adhesion microscope slides

By Menzel. Freshly frozen tissue sections and cytology preparations are attracted electrostatically to the microscope slides. Dimensions: L 75 x W 25 mm, thickness 1 mm.

**Suitable for:**
- Fixed tissue sections, embedded in paraffin (2-5 µm)
- Cell adhesions for cyto-centrifugal preparations in standard Papanicolaou smears
- Immuno-peroxidase hybridisation
- In-situ DNA hybridisation

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H867.1** | 72 | 22,80 |




## SuperFrost Ultra Plus®-adhesion microscope slides

By Menzel. Formaldehyde-fixed paraffin or resin tissue sections (2-5 µm), frozen sections and delicate cytologic samples are electrostatically attracted. Dimensions: L 75 x W 25 mm, thickness 1 mm.

**Suitable for:**
- Difficult cytologic samples
- Microwave staining
- Immunoperoxidase processes when applying heat-induced antigen/ epitope retrieval (HIER, HMAR or HTAR)
- Optimized tissue adhesion for in-situ hybridisation
- Improved standardization and reproducibility of diagnostic routine staining processes
- 45° ground edges particularly well-suited for automatic processing

| Edges | Art. No. | Pack Qty. | € |
|---|---|---|---|
| cut 90° | **ET07.1** | 72 | 24,00 |
| cut 45° | **ET08.1** | 72 | 24,00 |




## SuperFrost® Plus Gold adhesion microscope slides

By Menzel. Fresh frozen sections or frozen section fixed in formalin are attracted to the slide and then chemically fixed onto the glass surface. Dimensions: L 75 x W 25 mm, thickness 1 mm.

**Suitable for:**
- Special staining methods (toluidine blue staining, hematoxylin staining and quick-freeze eosin section staining)
- Tissue sections up to 20 µm
- Bone, frozen heart, brain, skin and other tissue sections that are normally difficult to bind
- Immunocytochemical and in-situ DNA-hybridisation of frozen tissue sections
- Selection counting for immunofluorescence analysis in the event of low tissue quantities

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ET09.2** | 72 | 66,45 |

# Adhesion slides




## Polysine®-adhesion microscope slides

By Menzel. The samples are initially attracted electrostatically and then bound biochemically. The permanent adhesive provides excellent cell and tissue adhesion on the microscope slides. Polysine® microscope slides are not affected by enzyme predigestion or heating.
Dimensions: L 75 x W 25 mm, thickness 1 mm.

**Ideally suitable for:**
- Fresh frozen sections
- Paraffin-embedded (2-5 µm, fixed with alcohol, formalin, bouins or non-crosslinking sections)
- Extended staining process
- Extended in-situ DNA hybridisation and immunocytochemical methods
- Cytocentrifuge preparations

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ET10.1** | 72 | 20,65 |



## Roti®-Bond Adhesion Slides

**Fast and highly efficient immobilisation of cellular material with optimal structure conservation.**

The new adhesive coating of the Roti®-Bond adhesion slides reacts to natural surface structures of cells and tissues, anchoring them securely to the glass surface. Due to this procedure, based on different binding principles, the cells do not lose their antigenicity, their cell functionality and their three-dimensional structure.

- Assays using only several hundred cells possible
- No cell loss even during harsh incubation procedures
- Excellent recovery rate
- Compatible with all standard and modern assay systems and all fluorescent dyes
- Particularly adapted to assays using stem cells

Dimensions: L 75 mm x W 25 mm, thickness 1 mm

**Roti®-Bond adhesion slides 50 and 100 are delivered in Rotilabo®-slide boxes.**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CL20.1** | 5 | 11,75 |
| **CL20.2** | 50 | 84,85 |
| **CL20.3** | 100 | 118,25 |



## Flexistrip spreading spatulas

Made of **PS**, for uniform spreading of blood smears on lens carriers. Usable on both sides. Dimensions: L 75 x W 26 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L430.1** | 50 | 33,90 |

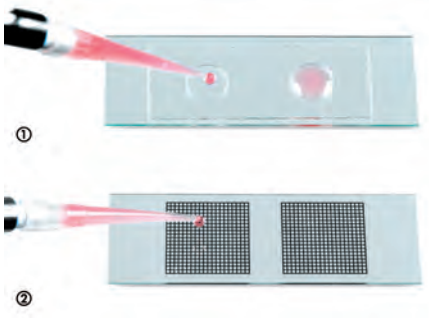


## Slides with moulds

By Menzel. Made of soda-lime glass, 76 x 26 mm. 1.2-1.5 mm thick with ground edges 90°. ∅ of mould 15 mm, depth approx. 0.6-0.8 mm.

| No. of moulds | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **H884.1** | 100 | 131,15 |
| 2 | **H885.1** | 100 | 202,10 |
| 3 | **H886.1** | 100 | 284,90 |

▶ Lab Markers for labelling microscope slides on page 743




## Self-adhesive marking films for microscope slides

Made of polyester. For microscopic examination or counting of cell cultures, yeasts, bacteria and other samples. Recesses and grids can also be used in combination. Depressions are made through recesses in the foil carrier.

**① With two ∅ 10 mm recesses**

| Depth (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,25 | **AXC3.1** | 25 | 64,30 |
| 0.50 | **AXC4.1** | 25 | 77,40 |

**② With two 20 x 20 mm grids, line spacing 1 mm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AXC5.1** | 40 | 42,95 |



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## Balsam glass

By Wheaton. Made of soda-lime glass, with loose ground cap and glass rod. Volume 100 ml. Dimensions: Ø 75 x H 100 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Balsam glass | **HHY5.1** | 6 | 218,25 |
| Spare glass rod | **HHY6.1** | 2 | 21,45 |

▶ Canada balsam, oil of cedar wood etc., see chapter histology/microscopy!



## Rotilabo®-Canada balsam bottle

60 ml, with loose ground cap and glass rod.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0708.1** | 1 | 29,60 |

## Cedar wood oil bottle

Volume 30 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0709.1** | 1 | 31,30 |



## Staining plates

Made of pressed glass. With rounded corners and frosted surface. 12 recesses, ∅ approx. 16 mm, depth approx. 2 mm. Dimensions: 79 mm long x 63 mm wide x 4 mm high.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CET6.1** | 10 | 141,90 |



## Boerner staining plates

Made of pressed glass. With optically polished, pressed and numbered recesses. 10 recesses, ∅ approx. 14 mm, depth approx. 2 mm. Dimensions: L 107 x W 57 x H 4 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CET7.1** | 6 | 82,25 |



## Microscopy bowls

Made of calcium soda-lime glass. With semicircular recess, ∅ 30 mm x depth 10 mm. Dimensions: L 40 x W 40 x H 16 mm.

**Delivery incl.** 40 x 40 x 2 mm cover plate.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Clear glass | **TK76.1** | 1 | 6,25 |
| Black glass | **TK77.1** | 1 | 8,90 |

# Transport boxes for microscope slides



## Rotilabo®-mailing boxes

Made of **PP**. For 5 microscope slides 76 x 26 mm. Ideal for storing, transport, mailing, etc. With 4 guiding rail inside the can to separate the slides and prevent them from sticking to each other. Tightly closing lid. Dimensions: L 80 x W 17 x H 30 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T208.1** | 25 | 15,60 |




## ① Mailing and storage boxes

Made of **PP**, for 5-10 microscope slides 76 x 26 mm, stable version. The microscope slides are easy to remove. Autoclavable.

| Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 90 | 40 | **2306.1** | 10 | 45,80 |

## ② Transport boxes

Made of **PP**, for microscope slides 76 x 26 mm, excellent for sending by mail. Autoclavable.

| Number of microscope slides | L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 50 x 100 | **2304.1** | 10 | 22,40 |
| 1-3 | 84 x 99 | **2305.1** | 10 | 26,15 |



## Carrier buckets with tamper evident closure

**PP** bucket and **HDPE** screw cap. Colour: transparent/light-pink. For storage, shipping or for staining of 4 standard lens carriers 76 x 26 mm. Guide rails prevent lens carriers from sticking. Bucket can be opened and closed several times. Tamper evident closure is activated by snapping a tab into place. Buckets can be colour-coded using coloured cap inserts. Please order separately. Dimensions: ∅ 35 x H 87 mm, volume 12 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KL89.1** | 100 | 46,20 |



## Mailing boxes for microscope slides

Made of **PS**. Ideal as a mailing box for individual microscope slides 76 x 26 mm. Also suitable for storage, as boxed can be stacked to any height. Can be closed easily and safely. Tilting mechanism enables easy removal of the slide. Temperature stable from -80 to +80 °C. Dimensions: L 89 x W 29 x H 6 mm.

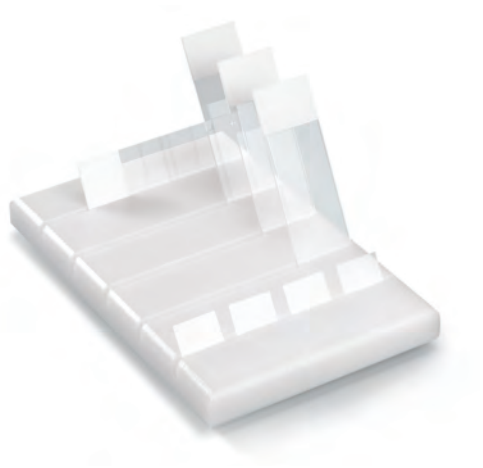
| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **AH01.1** | 50 | 16,05 |
| yellow | **AH02.1** | 50 | 16,05 |
| green | **AH03.1** | 50 | 16,05 |
| pink | **AH04.1** | 50 | 16,05 |
| white | **AH05.1** | 50 | 16,05 |



## Lid inserts

Made of **PP**. For colour-coded, easy identification of carrier buckets with tamper evident closure.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **CK72.1** | 500 | 13,55 |
| yellow | **CK73.1** | 500 | 13,55 |
| red | **CK74.1** | 500 | 13,55 |
| white | **CK75.1** | 500 | 13,55 |
| green | **CK76.1** | 500 | 13,55 |
| assorted colours | **CK77.1** | 500 | 13,55 |



## Slide holders

Made of **PE**. For microscope slides 76 x 26 mm. For storing, cleaning, drying microscope slides. Robust design with anti-slip rubber feet. Temperature resistant in the range -50 to +80 °C.

| Number of microscope slides | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 15 | 153 x 102 x 21 | **PC63.1** | 1 | 35,30 |
| 40 | 298 x 105 x 24 | **PC64.1** | 1 | 41,45 |
| 78 | 299 x 178 x 21 | **PC65.1** | 1 | 52,60 |

▶ Microscopes see page 748



## Rotilabo®-microscopic slide folders

Made of **PS**. Stackable.
For 20 microscope slides 76 x 26 mm. With numerical marking.
The transparent protective flaps can be turned backwards.
Simple removal of slides.
Temperature stable from -80 to +80 °C.
Dimensions: L 295 x W 192 x H 11 mm.

*For light-sensitive applications.

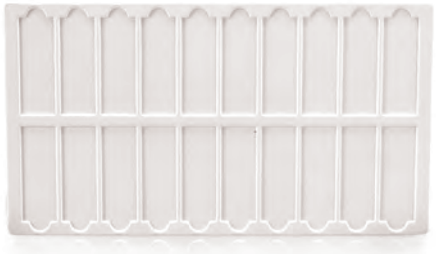
| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **AH10.1** | 1 | 14,95 |
| yellow | **AH11.1** | 1 | 14,95 |
| green | **AH12.1** | 1 | 14,95 |
| grey | **CXN4.1** | 1 | 13,95 |
| sorted (2 x blue, yellow, green, grey and white) | **CXN5.1** | 10 | 127,95 |
| white, opaque protective flaps* | **CXN6.1** | 1 | 13,95 |
| white | **AH13.1** | 1 | 14,95 |



## Rotilabo®-microscope slide tray

Made of **ABS**. For 20 microscope slides 76 x 26 mm. With slightly slanted base for easy removal of slides. Temperature stable from -80 to +100 °C.
Dimensions: L 299 x W 206 x H 18 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH09.1** | 1 | 6,35 |



## Storage and transport trays

Made of **PVC**, white, for microscope slides 76 x 26 mm.
The white bottom emphasized the staining.

| Number of microscope slides | L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 | 340 x 190 | **2296.1** | 1 | 12,15 |
| 40 | 680 x 190 | **2297.1** | 1 | 21,35 |



## Storage boxes

Made of **PS**, with separate lid. For microscope slides 76 x 26 mm, stackable, breakproof, easy to clean. The slots are individually numbered. With index card (loosely inserted).

| Number of microscope slides | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 98 x 83 x 38 | **2301.2** | 4 | 42,80 |
| 50 | 230 x 97 x 35 | **2302.1** | 1 | 19,60 |
| 100 | 230 x 180 x 35 | **2303.1** | 1 | 27,75 |

# Slide magazines







## Preparation folders

Made of cardboard. With two-piece cover, centre-folding. Coloured edges allow easier identification. For microscope slides 76 x 26 mm.

| Number of microscope slides | Colour | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | black | 208 x 341 x 9 | **AXK6.1** | 1 | 7,65 |
| 20 | blue | 208 x 341 x 9 | **AXK7.1** | 1 | 7,65 |
| 20 | green | 208 x 341 x 9 | **AXK8.1** | 1 | 7,65 |
| 20 | red | 208 x 341 x 9 | **AXK9.1** | 1 | 7,65 |
| 20 | yellow | 208 x 341 x 9 | **AXL0.1** | 1 | 7,65 |
| 30 | black | 281 x 328 x 10 | **AXL1.1** | 1 | 11,30 |

## Preparation folders and boards

Made of sturdy cardboard, with punched grid. Base is covered with white chromo paper. For microscope slides 76 x 26 mm.

**Folders come with a hinged cover and pasted list of contents**
Two piece cover, centre hinged; or one piece cover, side hinged.

| Cover | Number of microscope slides | L x W (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| two piece, with lock | 20 | 340 x 205 | 250 | **K326.2** | 10 | 131,15 |
| one piece | 20 | 340 x 205 | 220 | **K327.2** | 10 | 85,50 |
| one piece | 6 | 215 x 105 | 70 | **K329.2** | 10 | 71,95 |
| one piece | 2 | 100 x 90 | 30 | **K331.1** | 10 | 28,95 |

**Preparation boards, without cover**
With punched grid (for 20 microscope slides) or without individual subdivisions (with continuous edge and central divider).

| Cover | Number of microscope slides | L x W (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| without | 20 | 342 x 204 | 125 | **P957.2** | 10 | 64,30 |
| without | - | 342 x 204 | 110 | **CPT8.2** | 10 | 58,40 |



## Rack for preparation folders

Made of **ABS**. For 5 preparation folders each with 20 slides.
Easy and safe storage and removal of folders. Clamps with labelling area for quick identification also serve as a handle.
Temperature resistant in the range -10 to +90 °C. Stackable.
Dimensions: L 340 x W 226 x H 125 mm. Suitable for Art. No. AXK6.1ff.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PC61.1** | 1 | 42,50 |



## Rotilabo®-slide box

For 100 microscope slides 26 x 76 mm. Base and lid are attached to a wooden frame and the outside is covered with black paper. Wooden serrated strip with black printed numbers, the index card is loosely enclosed. The inside is made of moulded plastic (PS) with 2 tilting slats for easy removal of the miscroscope slides. 380 g net weight.
Dimensions: L 275 x W 185 x H 40 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K335.1** | 1 | 30,05 |



## Rotilabo®-microscope slide boxes

Made of **PS**, coloured. For 100 microscope slides 76 x 26 mm.
With hinged lid, nickel-plated lock and cork insert, to prevent damage to the slides inside. Affixed index card in lid. The numbers on the index card correspond to those embossed on the bottom of the box. Stackable.
Dimensions: L 208 x W 175 x H 34 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **K532.1** | 1 | 7,65 |
| green | **K533.1** | 1 | 7,65 |
| red | **K534.1** | 1 | 7,65 |
| yellow | **K535.1** | 1 | 7,65 |
| white | **K536.1** | 1 | 7,45 |



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A 121°C

## Freezing microscope slide box True North®

Made of **PC**. With foam insert and stainless steel closure for hinged-lid box. Index card integrated in the lid. Numbering on the index card matches the numbers stamped on the base of the box and on the labelling on the foam insert. Stackable. Temperature stable from -80 to +121 °C.

| Number of microscope slides | Type | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | Hinged-lid box | 208 x 175 x 34 | **PC56.1** | 1 | 24,70 |
| 25 | Slip-lid box | 141 x 88 x 35 | **ENL7.1** | 1 | 14,65 |



## Storage rack for microscope slide boxes

Made of acrylic. With 15 spaces for 50 or 100 slot microscope slide boxes.
Compartment dimensions: L 214 x W 171 x H 38 mm,
Overall dimensions: L 711 x W 171 x H 228 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TP32.1** | 1 | 289,20 |



## Rotilabo®-slide boxes

Made of **PS/ABS**, coloured, for 25 or 50 microscope slides 76 x 26 mm.
Push-on lid, cork inlet for protection of microscope slides from damaging.
Affixed index card in lid. The numbers on the index card correspond to the embossed numbers on the base of the box. Stackable.

**25 slots, box made of PS, dimensions: L 141 x W 88 x H 35 mm**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **K540.1** | 1 | 7,10 |
| green | **K541.1** | 1 | 7,10 |
| red | **K542.1** | 1 | 7,10 |
| white | **K544.1** | 1 | 7,10 |

**50 slots, box made of ABS, dimensions: L 209 x W 86 x H 35 mm**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **N952.1** | 1 | 7,80 |
| red | **N953.1** | 1 | 7,80 |
| white | **N954.1** | 1 | 7,80 |



## Microscope slide box for large microscope slides

Made of **ABS**. For 100 microscope slides of size 76 x 52 mm. With hinged lid, nickel-plated catch and cork inlay. Index card integrated in the lid.
The numbering of the index card matches the numbering embossed on the base of the box. Stackable. Dimensions: L 208 x W 175 x H 60 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TP28.1** | 1 | 23,15 |

# Slide magazines



## Drawer container

**Made of ABS.** With 5 drawers for the storage of up to 5000 microscope slides. Each drawer holds 10 containers for microscope slides (Art. No. 2299.2 + 2300.2). Optionally available with rollers for mobile use. Can be upgraded by adding drawers.
**Delivery incl.** 5 drawers and cover. Please order rollers separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Drawer container | **CPY1.1** | 1 | 241,90 |

Accessories:

| | | | |
|---|---|---|---|
| Rollers | **CPY2.1** | 4 | 16,70 |
| Drawer (L 420 x W 420 x H 140 mm) | **CPY3.1** | 1 | 70,85 |
| Cover for drawer (L 420 x B 420 x H 25 mm) | **CPY4.1** | 1 | 25,70 |



## Containers for microscope slides

Container made of **ABS**, lid made of PS.
For 100 microscope slides 76 x 26 mm.

| Type | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Container | 360 x 38 x 100 | **2299.2** | 2 | 33,85 |
| Lid for 2299.2 | 345 x 35 x 40 | **2300.2** | 2 | 18,10 |



## Microscope slides dispenser

Made of **ABS**. For 50 slides 76 x 26 mm. The slides can be stored protected from dust and taken out one after another by turning the knob.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **2298.1** | 1 | 34,15 |





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## Microscope slide magazines

Made of **PS.** For vertical storage of 76 x 26 mm microscope slides. Easy retrieval of preparations through option for tilting microscope slides inside slots.

- Coloured box with large labelling space
- Contents are easily recognisable through transparent hinged lid
- Removable insert with individually numbered slots
- Incl. numbered index card
- Stackable
- Temperature stable from -80 to +80 °C

**Microscope slide magazine, large**

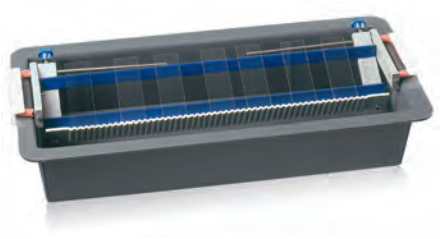
**For 100 microscope slides.** Up to 200 microscope slides can be stored by double use of slots. Up to 400 microscope slides can be stored in 3 rows by removing the insert.
Dimensions: L 245 x W 82 x H 86 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **X021.1** | 1 | 11,80 |
| green | **X022.1** | 1 | 11,80 |
| pink | **X023.1** | 1 | 11,80 |
| white | **X024.1** | 1 | 11,80 |
| yellow | **X025.1** | 1 | 11,80 |

**Microscope slide magazine, small**

**For 50 microscope slides.** Up to 100 microscope slides can be stored by double use of slots. Up to 200 microscope slides can be stored in 3 rows by removing the insert.
Dimensions: L 140 x W 82 x H 86 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **AEL4.1** | 1 | 8,50 |
| green | **AEL5.1** | 1 | 8,50 |
| pink | **AEL6.1** | 1 | 8,50 |
| white | **AEL7.1** | 1 | 8,50 |
| yellow | **AEL8.1** | 1 | 8,50 |



## Staining rack and tray

Made of **PVC**. Staining rack for custom adaptation to a variety of dishes and tanks. With 2 fixing clips and 2 handles, each extendable by 115 mm. For tilting and fixing in horizontal position. When used in combination with staining tray CEX6.1, a locking bolt holds the tray securely in the tilted position. The tray can also be fixed in the horizontal position using the second locking bolt. Overall length of staining rack: approx. 380 mm, inner dimensions of staining tray: L 380 x W 145 x H 75 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Staining rack | **CEX5.1** | 1 | 74,75 |
| Staining tray | **CEX6.1** | 1 | 40,35 |



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## Staining chamber

By Nalgene®. Made of **PMP** for staining, fixing, and bleaching membranes, electrophoresis gels etc. With lid made of **PP**-copolymer and leakproof drain plug made of **LDPE** for problem-free draining of liquid without gel manipulation. Chamber with handles on both side for easy transport. Capacity with gel under shaking conditions: 500 to 750 ml. Temperature stable from -70 to +70 °C.

**Not UV-transparent.**

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 125 x 125 x 50 | **H591.1** | 1 | 33,00 |



## Disposable staining chambers

Made of **PP** and **PE**. For staining, washing and drying up to eight microscope slides of size 76 x 26 mm.

- Chamber volume 38 ml
- With moulded handles for easy transportation and two nozzles
- Dark cover for light-sensitive applications
- Dimensions: L 305 x W 127 x H 30 mm

**Delivery incl.** four staining chambers and a cover.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **TP31.1** | 1 | 40,35 |



121 °C

## Wash-N-Dry™-microscope slide holder

Made of **PP**. For staining, washing and drying up to 12 microscope slides of size 76 x 26 mm. Ideal for 150 ml beakers, high form. Distance to stage 10 mm below the microscope slide for the use of magnetic stir bars. Dimensions: L 31.5 x W 38.4 x H 110 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AXC6.1** | 1 | 51,60 |



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## Stain Tray™-staining chambers

Made of **ABS**, lid available either in **ABS** or **PETG**. Suitable as staining chamber or as moisture chamber in immunohistology, haematology, cytology and microbiology.

- Microscope slides stick securely on the rubber strips
- Floor drain with stopper for simple emptying of chamber
- Stackable
- Transparent lid for sample observation
- Black lid for applications in fluorescence microscopy

① **For up to 20 microscope slides:**
Dimensions: L 380 x W 240 x H 45 mm.

| Lid material | Temperature resistance | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| PETG, transparent | -20 to +60 °C | **HA50.1** | 1 | 231,15 |
| ABS, black | -20 to +80 °C | **HA51.1** | 1 | 231,15 |

② **For up to 10 microscope slides:**
Dimensions: L 240 x W 240 x H 45 mm

| Lid material | Temperature resistance | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| PETG, transparent | -20 to +60 °C | **HL97.1** | 1 | 192,45 |
| ABS, black | -20 to +80 °C | **HL98.1** | 1 | 192,45 |

# Staining racks/Staining chambers



## Rotilabo®-staining boxes

Made of **acetal-polymer** (POM). Volume 80 ml. Resistant against most staining reagents, however irreversible discoloration possible.
Temperature resistant from -170 to +121 °C. Autoclavable.
Dimensions: L 64 x W 76 x H 92 mm.
**Delivery incl.** connector clips.
Without microscopic slide holder (please order separately).

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **HA44.1** | 1 | 13,25 |
| yellow | **HA45.1** | 1 | 13,25 |
| green | **HA46.1** | 1 | 13,25 |
| pink | **HA47.1** | 1 | 13,25 |
| white | **HA48.1** | 1 | 13,25 |

## Rotilabo®-microscope slide holders

Microscopic slide holders for 12 microscope slides 76 x 26 mm. Grey. Vertical storage of microscope slides prevents the labelling areas from coming in contact with the staining solution. Temperature resistant from -170 to +121 °C. Autoclavable. Dimensions: 60 x 64 x 97 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Microscope slide holders | **HA49.1** | 1 | 15,40 |



## Universal microscope slide cuvettes

For histology, cuvettes made of black **POM**.

- Clip on lid makes structure impermeable to light. There is a compartment in the lid for drying agent (for example bluegel), which can be closed with a plate that also serves as a note board for labelling slides. Easy to transport racks for 25 microscope slides of standard format, slots for slides are numbered. For volume approx. 250 ml, only 150 ml are needed. Closes airtight, important for volatile solutions.
- Contains no metal, no danger of corrosion when using aggressive solvents
- Easy to clean
- The exposition, development and second stain of samples can be done in a time saving way without changing microscope slides by transporting the slides in the rack.

**Staining cuvette**

consisting of staining trough 2286.1 and staining rack 2287.1.

| L x W x H (mm) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 x 87 x 51 | POM | **2285.1** | 1 | 19,15 |

**Staining trough**

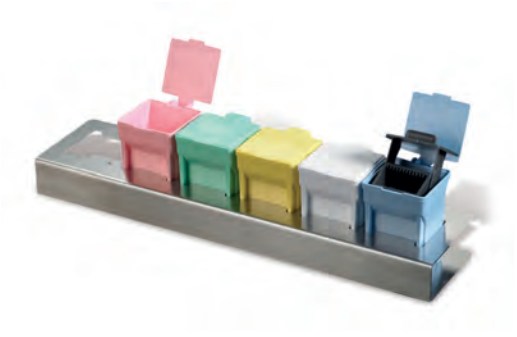
and/or storage container for 25 microscope slides.

| L x W x H (mm) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 x 87 x 51 | POM | **2286.1** | 1 | 13,75 |

**Staining rack**

(insert) for serial staining of 25 microscope slides.

| L x W x H (mm) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 91 x 79 x 38 | POM | **2287.1** | 1 | 5,95 |



## Rack for Rotilabo®-staining boxes

Made of aluminium. Holds up to six Rotilabo®-staining boxes HA44.1ff.
Dimensions: L 425 x W 105 x H 38 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AEK9.1** | 1 | 77,75 |



## Staining boxes and inserts

Staining boxes for microscope slides, made of **PMP**, clear, comes with two lids, one of which closels tightly, the other has a small opening for attaching the insert during staining. Insert made of PP, with handle, for 20 microscope slides 76 x 26 mm. Suitable for microwaves.

| Type | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Box | 101 x 81 x 70 | **2290.2** | 4 | 62,35 |
| Insert | 86 x 70 x 21 | **2291.2** | 2 | 14,25 |

▶ Microscope slides and cover slips on page 290



## Staining boxes

Made of **PMP**, with lid, for eight microscope slides 76 x 26 mm.
Dimensions: L 58 x W 54 x H 86 mm. Suitable for microwave.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2292.2** | 4 | 53,25 |



DURAN WHEATON KIMBLE

## Coplin staining jar

Made of lime-soda-glass. For 10 microscope slides 76 x 26 mm.
Outer ∅ 66 mm. Height 108 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H548.1** | 1 | 14,65 |



## Staining boxes acc. to Schiefferdecker

Made of **PMP**. Staining boxes with lid for 20 microscope slides (10 pairs) 76 x 26 mm. Dimensions: L 89 x W 70 x H 50 mm. Microwave safe.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XC73.1** | 4 | 49,45 |

Staining boxes and troughs made of soda-lime glass have a maximum usage temperature of approx. 100 °C. It is very important to avoid sudden changes in temperature as this type of glass does not have good thermal shock resistance. The temperature should not exceed 60 °C during cleaning. The use of neutral to slightly alkaline cleaning agents is recommended.



121°C

## Coplin staining jar

Made of **PP**. For 10 microscope slides 76 x 26 mm.
With screw cap, opening ∅ 53 mm for easy loading.
Dimensions: ∅ 60 x H 114 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC09.1** | 1 | 10,70 |



## Coplin staining jars, with screw cap

Made of sodium-lime glass, with screw cap made of plastic and PE foam insert. For 10 microscope slides 76 x 26 mm.

| Type | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| High form | 108 | **ETE2.1** | 6 | 77,95 |
| Low form | 85 | **ETE3.1** | 6 | 75,05 |

# Staining racks/Staining chambers



NEU NOUVEAU NEW

DURAN WHEATON KIMBLE

## Coplin staining dish

By Wheaton. Made of calcium soda glass. Screw top made of PP.
For 5 -10 microscope slides 76 x 26 mm.
Inner dimensions: L 26 x W 26 x D 90 mm. Storage capacity 60 ml.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Coplin staining dish, complete | **HLA7.1** | 1 | 32,55 |
| Spare screw cap for Coplin staining dish | **HLA8.1** | 1 | 11,60 |



NEU NOUVEAU NEW

DURAN WHEATON KIMBLE

## Slide boxes

By Wheaton. Made of PP, suitable for Wheaton staining dishes acc. to Coplin. For 5 microscope slides.
Safe and easy transfer of microscope slides for staining.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HLA9.1** | 2 | 39,55 |




## Staining boxes acc. to Hellendahl

Made of lime-soda-glass. For 8 microscope slides, 76 x 26 mm.

| Type | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① without extension | 93 x 43 x 97 | **H549.1** | 1 | 19,15 |
| ② with extension | 63 x 58 x 98 | **H550.1** | 1 | 14,55 |



121°C

## Staining boxes with lid

Made of glazed porcelain. For the protection of light-sensitive staining solutions. For 6 microscope slides of size 76 x 26 mm.
Lid dimensions: L 75 x W 48 x H 5 mm. Temperature stable up to 1000 °C.
Microwave safe. Autoclavable.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 70 x 40 x 86 | **XX63.1** | 2 | 43,65 |



## Staining box acc. to Schiefferdecker

Made of lime-soda-glass. For 20 microscope slides (10 pairs) 76 x 26 mm.
Dimensions: L 89 x W 71 x H 46 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H551.1** | 1 | 14,95 |



## Staining box and rack

Made of soda-lime glass.
For 10 microscope slides 76 x 26 mm or for all widths to 52 mm.

| Type | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Staining box with lid | 105 x 85 x 70 | **H554.1** | 1 | 15,20 |
| Staining rack | 85 x 60 x 45 | **H552.1** | 1 | 19,55 |
| Staining tray made of stainless steel | 80 x 55 x 53 | **CET8.1** | 1 | 21,40 |

**Accessories:**

| | | | | |
|---|---|---|---|---|
| Wire hanger made of stainless steel | for glass staining rack | **H553.1** | 1 | 2,40 |

▶ For information on lime-soda glass see page 303



NEU NOUVEAU NEW

DURAN WHEATON KIMBLE

## Staining system

By Wheaton. Made of calcium soda glass. For 50 microscope slides 76 x 26 mm, 76 x 38 mm and 76 x 52 mm. Frame made of stainless steel, folding handle to close the dish, and to insert and remove microscope slides. Inner dimensions at base: L 185 x W 88 x D 78 mm.

**Delivery incl.** staining box, lid and frame.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Staining system, complete | **HLA2.1** | 1 | 218,25 |

**Accessories:**

| | | | |
|---|---|---|---|
| Staining box | **HLA3.1** | 1 | 108,60 |
| Lid | **HLA4.1** | 1 | 72,85 |
| Stainless steel insert for 50 microscope slides, with handle attached | **HLA5.1** | 1 | 76,60 |



## Hauser/Gedigk staining troughs

Made of lime-soda-glass. For 60 microscopic slides 76 x 26 mm. Staining insert made of stainless steel.

| Type | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Glass box | 130 x 93 x 121 | **T725.1** | 1 | 34,95 |
| Lid | 130 x 93 x 3 | **T726.1** | 1 | 6,25 |
| Staining insert | - | **T727.1** | 1 | 77,30 |



DURAN WHEATON KIMBLE

Material DURAN®

## Preparation boxes

Made of DURAN®. With cut glass sheet. Extremely versatile, can be used as a storage box for preparations, TLC-separating chambers, etc.

| Length (mm) | Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 50 | 100 | **T067.1** | 1 | 35,25 |
| 100 | 50 | 120 | **T068.1** | 1 | 42,15 |
| 130 | 50 | 130 | **T069.1** | 1 | 56,10 |
| 150 | 50 | 150 | **T070.1** | 1 | 69,65 |
| 120 | 60 | 180 | **T071.1** | 1 | 57,95 |
| 210 | 100 | 210 | **T072.1** | 1 | 115,00 |
| 250 | 140 | 250 | **T073.1** | 1 | 166,00 |



## Glass boxes

Made of calcium soda glass. Ground rim.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 x 100 x 100 | **NY95.1** | 1 | 10,60 |
| 100 x 150 x 150 | **NY96.1** | 1 | 15,40 |
| 220 x 300 x 150 | **NY97.1** | 1 | 47,70 |
| 180 x 250 x 220 | **NY98.1** | 1 | 45,40 |
| 230 x 360 x 260 | **NY99.1** | 1 | 98,35 |



NEU NOUVEAU NEW

DURAN WHEATON KIMBLE

## Columbia staining dish

By Wheaton. Made of calcium soda glass. With white PP screw cap with PTFE-coated PE insert. For up to 4 coverslips B 17-23 mm, up to H 30 mm. Longer coverslips can also be inserted with the lid removed.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Columbia staining dish with lid | **HLA6.1** | 1 | 42,50 |



NEU NOUVEAU NEW

121 °C

## Staining dish, silicone

By Hammacher. Made of silicone, soft. Volume 160 ml. Temperature stable from -55 to +200 °C. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCY2.1** | 1 | 25,50 |

# Embedding cassettes and accessories




## Embedding cassettes

Made of special polymer with a high density.
Suitable for holding tissue samples during embedding or storage.
Solvent-proof. Large labelling area on front and sides.

① **Without lid**, fits standard metal lids.
Outer dimensions: L 40.5 x W 30 x H 6 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **H579.1** | 500 | 44,40 |
| pink | **H580.1** | 500 | 44,40 |
| green | **H581.1** | 500 | 44,40 |
| yellow | **H582.1** | 500 | 44,40 |
| blue | **H583.1** | 500 | 44,40 |
| grey | **AA79.1** | 500 | 41,15 |
| orange | **EH20.1** | 500 | 42,90 |

② **For biopsies,** with lid attached (the surface is penetrated with holes).
To close cassettes break off lid and secure it on the bottom. The cassettes can be opened repeatedly from the back and closed again securely.
Outer dimensions: L 40.5 x W 28.5 x H 7 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **E478.1** | 500 | 53,25 |
| pink | **AA78.1** | 500 | 49,15 |
| green | **E481.1** | 500 | 53,25 |
| yellow | **E480.1** | 500 | 53,25 |
| blue | **E479.1** | 500 | 53,25 |
| grey | **E483.1** | 500 | 53,25 |
| orange | **E482.1** | 500 | 53,25 |



## Rotilabo®-embedding cassettes

Made of **POM**. Ideal for routine embedding. With lid and labelling space.
Outer dimensions: 40 x 28 x 6.8 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **K113.1** | 500 | 58,90 |
| red | **PX06.1** | 500 | 58,90 |
| blue | **K114.1** | 500 | 58,90 |
| yellow | **K115.1** | 500 | 58,90 |
| green | **K116.1** | 500 | 58,90 |
| pink | **K117.1** | 500 | 58,90 |



## Swingsette™ biopsy embedding cassettes

Made of **Acetal Polymer**. Cassette and lid with small square compartments for processing, embedding and storage of tissue specimens.

- With hinged lid for easy use
- Lid can be opened and closed any number of times
- Textured labelling area on the front
- 45° angle for automated labelling systems
- Resistant to standard histological solvents

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **XY22.1** | 500 | 64,45 |
| pink | **XY23.1** | 500 | 64,45 |
| green | **XY24.1** | 500 | 64,45 |
| yellow | **XY25.1** | 500 | 64,45 |
| blue | **XY26.1** | 500 | 64,45 |
| purple | **XY27.1** | 500 | 64,45 |
| orange | **XY28.1** | 500 | 64,45 |
| turquoise | **XY29.1** | 500 | 64,45 |



## Biopsy embedding cassettes Micromesh™

Made from **Acetal Polymer**. Surface with 1676 square openings each offset by 0.38 mm, for improved fluid exchange and complete drainage.
Compartment size 27 mm.

- With hinged lid for easy use
- Lid can be opened and closed any number of times
- Textured labelling area on the front
- 45° angle for automated labelling systems
- Resistant to standard histological solvents

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **CXN2.1** | 250 | 70,15 |
| blue | **CXN3.1** | 250 | 70,15 |

▶ For further accessories for embedding see Microscopy/Histology.



121°C

## Embedding cassettes Macro

Made of special high-density polymer. **Extra high (12 mm), ideal for holding oversized tissue samples** during the embedding process or for storage. Solvent-proof. With lid and labelling area. Easy to open and can be closed repeatedly.
Outer dimensions: L 41 x W 27.5 x H 12 mm. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **EE16.1** | 250 | 85,50 |



## Rotilabo®-metal lids

Reusable, made of high-grade stainless steel. Ideal for closing standard embedding cassettes. With perforation for optimal liquid diffusion.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H950.1** | 5 | 20,35 |



## Metal embedding moulds

Made of stainless steel, with glossy finish, suitable for histology. Aids removing paraffin embeddings and allows ideal centring of findings in the paraffin block.

| Design | L x W x H outer (mm) | Inner L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Standard | 52 x 35 x 11 | 23 x 36 | **TT29.1** | 10 | 48,40 |
| For biopsies | 52 x 35 x 11,6 | 7 x 7 | **TT30.1** | 10 | 48,95 |



## Macro embedding moulds

Made of **PVC**. With smooth inner surface and rounded corners for easy sampling. Volume 5 ml. Dimensions outside: L 37 x W 24 x H 10 mm, inside: L 35 x W 22 x H 7 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AEK8.1** | 500 | 72,85 |



## Sponges for embedding cassettes

Synthetic sponge, for embedding in Rotilabo®-embedding cassettes. Colour: blue. With controlled porosity. Can easily be placed in embedding cassettes. Suitable for the preparation of biopsies.
Dimensions: L 32 x W 26 x H 2.5 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TT56.1** | 500 | 21,95 |




## Rotilabo®-storage systems

For keeping and storing up to 250 embedding cassettes. With large labelling area. Dimensions: L 405 x W 230 x H 51 mm.
- Type ①: Made of PS. Can be stacked easily.
- Type ②: Made of coated, water-resistant carton

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Drawer | **HT97.1** | 6 | 134,40 |
| ② Box | **HT98.1** | 12 | 76,35 |

# Precision tweezers




## Precision tweezers, straight with fine tips

By DUMONT®. Made of Inox or Dumoxel®, autoclavable.
LH57.1 and types 5XL and L5 have a serrated outer surface for extra grip.

*Inox02 is not autoclavable.

**Technical specifications:**

| Fig. | Type | Material (polished) | Tip | | Length (mm) | Art. No. |
|---|---|---|---|---|---|---|
| | | | Thickness (mm) | Width (mm) | | |
| ① | 3 | Dumoxel® | 0.04 | 0.08 | 120 | **LH71.1** |
| ① | 3 | Inox02* | 0.1 | 0.17 | 120 | **K339.1** |
| ② | 3 | Inox08 | 0.1 | 0.17 | 120 | **LH57.1** |
| ③ | 3C (type 3, short) | Inox02* | 0.1 | 0.17 | 110 | **K340.1** |
| ④ | 4 | Inox02* | 0.08 | 0.13 | 110 | **K341.1** |
| ④ | 4 | Dumoxel® | 0.02 | 0.06 | 110 | **LH68.1** |
| ⑤ | 5 | Inox08 | 0.06 | 0.1 | 110 | **K342.1** |
| ⑤ | 5 | Dumoxel® | 0.06 | 0.1 | 110 | **LH79.1** |
| ⑥ | 5XL (type 5, long) | Inox08 | 0.06 | 0.1 | 150 | **LH56.1** |
| ⑦ | SS135 | Inox02* | 0.12 | 0.2 | 135 | **TE68.1** |
| ⑦ | SS135 | Inox08 | 0.06 | 0.1 | 135 | **TE69.1** |
| ⑧ | SS | Inox08 | 0.12 | 0.2 | 135 | **LH59.1** |
| ⑨ | L5 | Inox08 | 0.06 | 0.1 | 110 | **LH55.1** |

| Fig. | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 3 | **LH71.1** | 1 | 31,00 |
| ① | 3 | **K339.1** | 1 | 27,75 |
| ② | 3 | **LH57.1** | 1 | 31,10 |
| ③ | 3C (type 3, short) | **K340.1** | 1 | 25,75 |
| ④ | 4 | **K341.1** | 1 | 26,80 |
| ④ | 4 | **LH68.1** | 1 | 31,20 |
| ⑤ | 5 | **K342.1** | 1 | 29,85 |
| ⑤ | 5 | **LH79.1** | 1 | 27,75 |
| ⑥ | 5XL (type 5, long) | **LH56.1** | 1 | 45,10 |
| ⑦ | SS135 | **TE68.1** | 1 | 29,25 |
| ⑦ | SS135 | **TE69.1** | 1 | 31,40 |
| ⑧ | SS | **LH59.1** | 1 | 30,00 |
| ⑨ | L5 | **LH55.1** | 1 | 52,15 |




## Precision tweezers, straight with extra fine tips

By DUMONT®. Made of Inox, Dumoxel® and Dumostar®, autoclavable.

**Technical specifications:**

| Fig. | Type | Material (polished) | Tip | | Length (mm) | Art. No. |
|---|---|---|---|---|---|---|
| | | | Thickness (mm) | Width (mm) | | |
| ① | 5SPSF | Inox08, unpolished | 0.005 | 0.025 | 110 | **LH52.1** |
| ① | 5 | Inox08 | 0.01 | 0.05 | 110 | **LH53.1** |
| ① | 5 | Dumoxel® | 0.01 | 0.05 | 110 | **LH66.1** |
| ① | 5 | Dumostar® | 0.01 | 0.05 | 110 | **LH75.1** |
| ② | 55 (type 5, lightweight grips) | Inox08 | 0.01 | 0.05 | 110 | **TE70.1** |
| ② | 55 (type 5, lightweight grips) | Dumostar® | 0.01 | 0.05 | 110 | **TE71.1** |
| ③ | M5 (type 5, small) | Dumoxel® | 0.01 | 0.05 | 85 | **TE72.1** |

| Fig. | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 5SPSF | **LH52.1** | 1 | 77,95 |
| ① | 5 | **LH53.1** | 1 | 35,30 |
| ① | 5 | **LH66.1** | 1 | 32,05 |
| ① | 5 | **LH75.1** | 1 | 49,05 |
| ② | 55 (type 5, lightweight grips) | **TE70.1** | 1 | 35,30 |
| ② | 55 (type 5, lightweight grips) | **TE71.1** | 1 | 50,45 |
| ③ | M5 (type 5, small) | **TE72.1** | 1 | 32,80 |




## Precision tweezers, Eco

By DUMONT®. Basic version, e.g. for student courses or routine applications.

**Made of Inox02.**

| Fig. | Type | Tip thickness (mm) | Tip width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| ① | 5 | 0,06 | 0,10 | 110 | **PK78.1** | 1 | 23,25 |
| ② | 3 | 0,10 | 0,17 | 120 | **TE62.1** | 1 | 23,60 |
| ③ | 7 | 0,10 | 0,17 | 115 | **TE63.1** | 1 | 26,70 |

**Antimagnetic steel**, epoxy coated.

| Fig. | Type | Tip thickness (mm) | Tip width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| ① | 5 | 0,06 | 0,10 | 110 | **LH63.1** | 1 | 21,00 |
| ③ | 7 | 0,10 | 0,17 | 115 | **LH65.1** | 1 | 22,60 |

# Precision tweezers




## Precision tweezers, straight, special shape

By DUMONT®. Made of Inox 08, satin. Single cast, with curved handle for easy cleaning and sterilization. Ergonomic shape, constant pressure for fatigue-free use. Autoclavable.

| Tip thickness (mm) | Tip width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.06 | 0,1 | 125 | **HEC0.1** | 1 | 32,20 |




## Precision tweezers, made of titanium

By DUMONT®. Extra lightweight. With fine tips, autoclavable.

| Fig. | Type | Tip thickness (mm) | Tip width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| ① | 5 | 0,01 | 0,05 | 110 | **TE59.1** | 1 | 39,65 |
| ② | 3 | 0,10 | 0,17 | 120 | **TE60.1** | 1 | 35,05 |
| ③ | 7 | 0,10 | 0,17 | 115 | **TE61.1** | 1 | 41,95 |




## Precision tweezers, straight with thick tips

By DUMONT®. Made of Inox, autoclavable.
Type PP have a serrated outer surface for extra grip.

*Inox02 is not autoclavable.

**Technical specifications:**

| Fig. | Type | Material (polished) | Tip | | Length (mm) | **Art. No.** |
|---|---|---|---|---|---|---|
| | | | Thickness (mm) | Width (mm) | | |
| ① | 1 | Inox02* | 0.12 | 0.2 | 120 | **K337.1** |
| ② | 2 | Inox02* | 0.14 | 0.34 | 120 | **K338.1** |
| ③ | AA | Inox02* | 0.2 | 0.4 | 125 | **TE66.1** |
| ③ | AA | Inox02, epoxy coated* | 0.2 | 0.4 | 125 | **TE67.1** |
| ④ | PP | Inox08 | 0.14 | 0.24 | 135 | **LH61.1** |

| Fig. | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 1 | **K337.1** | 1 | 26,80 |
| ② | 2 | **K338.1** | 1 | 26,80 |
| ③ | AA | **TE66.1** | 1 | 23,25 |
| ③ | AA | **TE67.1** | 1 | 26,85 |
| ④ | PP | **LH61.1** | 1 | 37,55 |

**Information on the various alloys in DUMONT® precision tweezers**

| Alloy | Antimagnetic | Temperature stability | Autoclavable | Special features |
|---|---|---|---|---|
| Steel (C, Mn, Si) | No | n. a. | No | Very hard for thick tips, not corrosion resistant |
| Inox02 (C, Mn, Cr, Si) | No | up to 400 °C (DIN 50914) | No | Standard stainless steel |
| Inox08 (C, Mn, Cr, Mo, V) | No | up to 400 °C (DIN 50914) | Yes (up to 180 °C) | Medical stainless steel, corrosion resistant, good resistance to salts |
| Antimagnetic steel (C, Cr, Ni, Mo) | 80 % | up to 400 °C (DIN 50914) | Yes (up to 270 °C) | Corrosion resistant |
| Dumoxel® (C, Cr, Ni, Mo, Cu) | 95 % | up to 400 °C (DIN 50914) | Yes (up to 270 °C) | Good resistance to corrosion, including mineral and organic acids |
| Dumostar® (C, Cr, Mo, Mn, Co, Ni, Si) | 100 % | up to 500 °C | Yes | Elastic, high resistance to corrosion, including mineral and organic acids, as well as salts |
| Titanium (C, Fe, O, H, N, Ti) | 100 % | up to 430 °C | Yes | Highest corrosion resistance to chemicals such as nitric acid, chlorides and salt water. More flexible and 40 % lighter than stainless steel |

# Precision tweezers




## Precision tweezers, angled

By DUMONT®. Made of Inox08 and Dumoxel®, autoclavable.
Type SS/45 has a serrated outer surface for extra grip.

**Technical specifications:**

| Fig. | Type | Material (polished) | Tip | | Length (mm) | Art. No. |
|---|---|---|---|---|---|---|
| | | | Thickness (mm) | Width (mm) | | |
| ① | 5/15 (type 5, 15°) | Inox08 | 0.06 | 0.1 | 105 | **TE73.1** |
| ② | 5/45 (type 5, 45°) | Inox08 | 0.06 | 0.1 | 109 | **K343.1** |
| ② | 5/45 (type 5, 45°) | Inox08 | 0.01 | 0.05 | 109 | **LH54.1** |
| ② | 5/45 (type 5, 45°) | Dumoxel® | 0.01 | 0.05 | 109 | **LH67.1** |
| ③ | 5/90 (type 5, 90°) | Inox08 | 0.06 | 0.1 | 106 | **TE74.1** |
| ④ | SS/45 (type SS, 45°) | Inox08 | 0.12 | 0.2 | 133 | **LH60.1** |
| ⑤ | 6 | Dumoxel® | 0.1 | 0.17 | 115 | **TE75.1** |

| Fig. | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 5/15 (type 5, 15°) | **TE73.1** | 1 | 33,35 |
| ② | 5/45 (type 5, 45°) | **K343.1** | 1 | 33,45 |
| ② | 5/45 (type 5, 45°) | **LH54.1** | 1 | 37,10 |
| ② | 5/45 (type 5, 45°) | **LH67.1** | 1 | 33,90 |
| ③ | 5/90 (type 5, 90°) | **TE74.1** | 1 | 34,95 |
| ④ | SS/45 (type 55, 45°) | **LH60.1** | 1 | 34,95 |
| ⑤ | 6 | **TE75.1** | 1 | 39,80 |




## Precision tweezers, special

By DUMONT®. Made of Dumoxel® and steel, epoxy coated.
Dumoxel® autoclavable.

**Technical specifications:**

| Fig. | Type | Material (polished) | Tip | | Length (mm) | Art. No. |
|---|---|---|---|---|---|---|
| | | | Thickness (mm) | Width (mm) | | |
| ① | 2E1/2 (tip ∅ 12.7 mm) | Dumoxel® | - | - | 118 | **LH74.1** |
| ② | 15A ESD (cutting) | steel, epoxy coated | 8.5 | 10.5 | 115 | **TE78.1** |

| Fig. | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 2E½ (tip ∅ 12.7 mm) | **LH74.1** | 1 | 37,60 |
| ② | 15A ESD (cutting) | **TE78.1** | 1 | 49,25 |




## Precision tweezers, curved

By DUMONT®. Made of Inox and Dumoxel®, autoclavable.
Types 7XL and 7B have a serrated outer surface and cross-ribbing on the inside of the tip for extra grip.

*Inox02 is not autoclavable.

**Technical specifications:**

| Fig. | Type | Material (polished) | Tip | | Length (mm) | Art. No. |
|---|---|---|---|---|---|---|
| | | | Thickness (mm) | Width (mm) | | |
| ① | 7 | Inox02* | 0.1 | 0.17 | 115 | **K344.1** |
| ① | 7 | Dumoxel® | 0.1 | 0.17 | 115 | **LH81.1** |
| ② | 7XL (type 7, long) | Inox08 | 0.14 | 0.24 | 150 | **TE76.1** |
| ③ | 7B | Inox02* | 0.1 | 0.17 | 115 | **TE77.1** |
| ④ | L7 | Inox08 | 0.1 | 0.17 | 115 | **LH58.1** |

| Fig. | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 7 | **K344.1** | 1 | 32,05 |
| ① | 7 | **LH81.1** | 1 | 30,00 |
| ② | 7XL (type 7, long) | **TE76.1** | 1 | 59,70 |
| ③ | 7B | **TE77.1** | 1 | 31,15 |
| ④ | L7 | **LH58.1** | 1 | 59,70 |




## Precision tweezers, self-closing

By DUMONT®. Made of Dumoxel®, autoclavable.

| Fig. | Type | Tip thickness (mm) | Tip width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| ① | N5 (type 5) | 0,01 | 0,05 | 108 | **TE64.1** | 1 | 42,50 |
| ② | N7 (type 7) | 0,03 | 0,07 | 115 | **TE65.1** | 1 | 47,10 |

# Precision tweezers




## Micro forceps

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

| Image | Type | Tip width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | No. 3, straight | 0,3 | 115 | **YE36.1** | 1 | 34,90 |
| ② | No. 4, straight | 0,4 | 110 | **YE37.1** | 1 | 38,40 |
| ③ | No. 5, straight | 0,15 | 110 | **YE38.1** | 1 | 40,00 |
| ④ | No. 5-45, angled 45° to the side | 0,3 | 110 | **YE39.1** | 1 | 40,00 |
| ⑤ | No. 7, curved | 0,2 | 115 | **YE40.1** | 1 | 41,90 |




## Microscopic forceps

By Hammacher. Made of Remanit 4024 stainless steel. With guide pin. Inside serrated tips. Autoclavable.

① **Straight**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **YK30.1** | 1 | 25,05 |
| 115 | **YK31.1** | 1 | 26,05 |
| 130 | **YK32.1** | 1 | 26,35 |

② **Bent**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **YK33.1** | 1 | 25,55 |
| 115 | **YK34.1** | 1 | 26,30 |

③ **Strongly bent**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 115 | **YK35.1** | 1 | 26,50 |




## Microscopic forceps

By Hammacher. Made of titanium. Strongly curved. Inside serrated tips, tip ∅ 0.7 mm. Length 100 mm. Autoclavable.

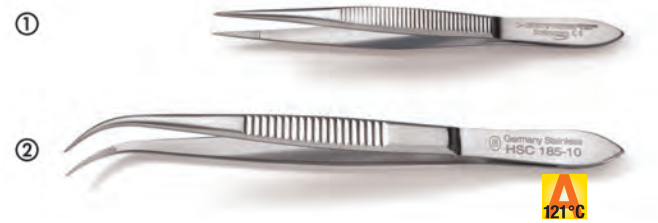
| Art. No. | Pack Qty. | € |
|---|---|---|
| **ETE0.1** | 1 | 58,30 |




## Dissecting tweezers

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel, 18 % chrome, 10-12 % nickel), stainless, anti magnetic, acid-resistant. Fine-tip tweezers. Length 100 mm. Autoclavable.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | straight | **EXC3.1** | 1 | 66,55 |
| ② | curved | **EXC4.1** | 1 | 65,90 |
| ③ | straight, crossed (self-closing) | **EXC5.1** | 1 | 59,75 |




## Dissecting forceps

By Hammacher. Made of Remanit 4024 stainless steel. Fine tips, inside serrated. Autoclavable.

① **Straight**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 80 | **YK39.1** | 1 | 16,85 |
| 105 | **YK40.1** | 1 | 18,50 |
| 115 | **YK41.1** | 1 | 19,85 |
| 130 | **YK42.1** | 1 | 22,45 |
| 145 | **YK43.1** | 1 | 23,90 |

② **Bent**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **YK44.1** | 1 | 18,65 |
| 115 | **YK45.1** | 1 | 21,05 |
| 130 | **YK46.1** | 1 | 23,05 |
| 145 | **YK47.1** | 1 | 24,10 |




## Micro forceps

By Hammacher. Made of titanium. Tips smooth inside. Tip ∅ 0.1 mm. Length 110 mm. Autoclavable.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | straight | **ETC5.1** | 1 | 78,60 |
| ② | angled, 45° | **ETC6.1** | 1 | 82,70 |
| ③ | curved, short tip | **ETC7.1** | 1 | 100,60 |

# Precision tweezers



## Fine forceps

By Hammacher. Made of stainless steel Remanit 4024.
With guide pin and long tip (inside serrated). Length 200 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE29.1** | 1 | 37,60 |



## Laboratory forceps, sharp tipped

By Hammacher. Made of stainless steel Remanit 4301.
Tips smooth on inside. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 120 | **YE33.1** | 1 | 23,40 |
| 140 | **YE34.1** | 1 | 24,95 |
| 160 | **YE35.1** | 1 | 26,30 |



## Precision tweezers, ESD

Made of stainless steel 18/10, with black, glare-free ESD coating.
Electrically dissipating. Fine tips, smooth inside.

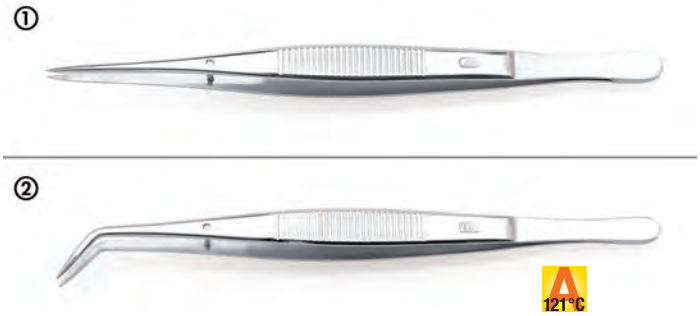
| Type | Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | straight | 110 | **EPN4.1** | 1 | 23,50 |
| ② | curved | 120 | **EPN5.1** | 1 | 26,35 |



## Precision tweezers, insulated

Made of high-strength spring steel, nickel-plated. Dip-insulated, tested to IEC 60900. Fine tips, ribbed inside.Length 150 mm.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | straight | **EPN6.1** | 1 | 27,90 |
| ② | curved | **EPN7.1** | 1 | 28,90 |



## Forceps with guide pin

Made of stainless steel Remanit 4301. Fine model. Autoclavable.

① **Straight**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **LT35.1** | 1 | 7,00 |
| 130 | **LT36.1** | 1 | 7,50 |

② **Bent**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **LT37.1** | 1 | 8,40 |
| 130 | **LT38.1** | 1 | 8,55 |



## Tweezers with fine tip

Made of stainless steel Remanit 4301. Precision ground tips. Autoclavable.

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① straight | 120 | **PX37.1** | 1 | 7,00 |
| ② curved | 120 | **PX39.1** | 1 | 10,45 |
| ③ straight, tower tip | 110 | **PX38.1** | 1 | 9,90 |



## Tweezers with insulated tips

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel, 18 % chrome, 10-12 % nickel), stainless, anti magnetic, acid-resistant. Tips angled 45°, for secure gripping of small parts. Autoclavable.

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 165 | **ETC8.1** | 1 | 20,65 |
| ② | 300 | **ETC9.1** | 1 | 31,50 |






## Adson micro hooked forceps

By Hammacher. Made of stainless steel Remanit 4024.
With 2:1 fine serrations for secure grip. Length 120 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE32.1** | 1 | 28,60 |






## Hooked forceps, fine

By Hammacher. Made of stainless steel Remanit 4301.
With 2:1 fine serrations for secure grip. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **YE30.1** | 1 | 40,50 |
| 115 | **YE31.1** | 1 | 41,05 |




## Hooked tip forceps

**Surgical.**
Made of stainless steel Remanit 4301.
With teeth 1 : 2 for securely fixing tissue pieces. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 115 | **2860.1** | 1 | 10,35 |
| 130 | **2861.1** | 1 | 10,35 |
| 145 | **2862.1** | 1 | 10,35 |
| 160 | **2863.1** | 1 | 10,35 |




## Adson anatomic forceps

By Hammacher. Made of Remanit 4024 stainless steel.
With fine tips, inside serrated. Autoclavable.

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Adson, fine | 120 | **YK36.1** | 1 | 26,40 |
| Adson, fine | 150 | **YK37.1** | 1 | 30,10 |
| Micro Adson | 120 | **YK38.1** | 1 | 27,95 |




## Splinter forceps

By Hammacher. Made of Remanit 4024 stainless steel. Autoclavable.

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 80 | **YK48.1** | 1 | 22,80 |
| ② | 105 | **YK49.1** | 1 | 24,90 |




## Laboratory tweezers

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Straight tip, ribbed inside. Length 155 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCL3.1** | 1 | 25,25 |




## Laboratory forceps, angled

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Length 150 mm. Autoclavable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Smooth tips | **HCL1.1** | 1 | 25,30 |
| Inside serrated tips | **HCL2.1** | 1 | 26,50 |

# Forceps




## Forceps

Made of stainless steel Remanit 4301. Inside of tip is fluted for secure grip. Autoclavable.

**① Straight, blunt, anatomical**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **2687.1** | 1 | 5,60 |
| 115 | **2688.1** | 1 | 6,05 |
| 130 | **2689.1** | 1 | 6,35 |
| 145 | **2690.1** | 1 | 6,60 |
| 160 | **2691.1** | 1 | 7,00 |
| 200 | **2692.1** | 1 | 11,75 |
| 250 | **2693.1** | 1 | 13,05 |

**② Straight, pointed**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **2695.1** | 1 | 7,10 |
| 115 | **2801.1** | 1 | 8,55 |
| 130 | **2802.1** | 1 | 9,15 |
| 145 | **2851.1** | 1 | 9,25 |
| 160 | **2852.1** | 1 | 9,65 |
| 200 | **2853.1** | 1 | 15,95 |

**③ Bent, pointed**

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **2854.1** | 1 | 7,30 |
| 115 | **2855.1** | 1 | 7,45 |
| 130 | **2856.1** | 1 | 8,75 |
| 145 | **2857.1** | 1 | 9,65 |
| 160 | **2858.1** | 1 | 10,25 |
| 200 | **2859.1** | 1 | 16,05 |

**Bent, blunt** (without fig.)

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 115 | **PX28.1** | 1 | 5,50 |
| 130 | **PX29.1** | 1 | 5,85 |
| 145 | **PX30.1** | 1 | 6,75 |
| 160 | **PX31.1** | 1 | 7,00 |
| 200 | **PX32.1** | 1 | 10,70 |



NEU
NOUVEAU
NEW

## Tweezers, round

Made of stainless steel with round tip, ribbed inside for safe grip. Length 145 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HEC7.1** | 1 | 8,10 |



Programme extension!

121°C

## Long forceps

Made of stainless steel Remanit 4301 (18/10). Blunt, length 300 mm. With 25 mm corrugated handles. Autoclavable.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| straight | **0951.1** | 1 | 16,05 |
| curved | **HHA0.1** | 1 | 15,00 |




## Automatic tensioning tweezers

Made of high-grade stainless steel 18/8. Automatic tensioning. Autoclavable.

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① curved | 105 | **HL63.1** | 1 | 6,35 |
| ② straight, pointed | 120 | **HL64.1** | 1 | 7,45 |




## Forceps for handling cover slips

Acc. to Kühne. Made of stainless steel Remanit 4301. Autoclavable.

| Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| straight | 115 | **K717.1** | 1 | 6,40 |
| curved | 115 | **K718.1** | 1 | 6,60 |
| curved | 130 | **K719.1** | 1 | 7,75 |
| curved | 145 | **K720.1** | 1 | 8,25 |

▶ Cover slips see page 290



## Gripper forceps

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel, 18 % chrome, 10-12 % nickel), stainless, anti magnetic, acid-resistant. Surface 5 mm wide tip. Autoclavable.

| Type | Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | straight | 145 | **EXC6.1** | 1 | 28,95 |
| ② | curved | 120 | **EXC7.1** | 1 | 28,25 |



## Forceps with ring-shaped tip

By Hammacher. Made of stainless steel Remanit 4301.
For handling soft tissue and fragile specimens. Autoclavable.

| Length (mm) | Outer ∅ (mm) | Inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 90 | 3 | 2,2 | **LL00.1** | 1 | 30,45 |
| 90 | 6 | 4,8 | **LL01.1** | 1 | 30,85 |



## Wafer tweezers

Made of stainless steel 18/10. Autoclavable.

| Model | Design | Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | PTFE-coated | 120 | 7 | **LX39.1** | 1 | 41,15 |
| ② | non-coated | 125 | 9 | **LX40.1** | 1 | 24,10 |
| ③ | non-coated | 125 | 12 | **LX41.1** | 1 | 23,60 |



## Forceps for filter paper

Made of 18/10 stainless steel. For handling filter papers, cover slips and other flat objects. Width 12 mm, length 125 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C828.1** | 1 | 10,25 |



## Forceps with ring-shaped tip

Made of stainless steel 18/10. Dimensions of tip: W 6.5 x ∅ 3.5 mm. Length 120 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LX48.1** | 1 | 17,50 |



## Special tweezers, inside of tip hollow

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. To pick up long objects with small diameters, e.g. droplet needles, pin needles and nerve broaches. With fixing lock. Length 145 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCL4.1** | 1 | 28,30 |



## Forceps made of spring steel

Lightweight.

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| pointed | 105 | **AL99.1** | 1 | 9,65 |
| blunt | 115 | **AN00.1** | 1 | 9,65 |



## Rotilabo®-weighing tweezers

Made of stainless steel, with PVC tips. Curved.
Length 90 mm. Weight 8 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YT63.1** | 1 | 6,25 |

# Forceps



## Rotilabo®-tweezers set

Four stainless steel tweezers (Remanit 4301) in a case.

**Contents:**

1 tweezer with fine tip, curved, 120 mm
1 straight tweezer, blunt tip, 130 mm
1 tweezer with guide pin, straight, 130 mm
1 coverslipper tweezer, curved, 115 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PX40.1** | 1 | 32,90 |



## Rotilabo®-tweezers set

Four tweezers made of stainless steel 18/10 (material 1.4301), in etui. Red PTFE coating with good anti-adhesive properties forms a separating layer between the tweezer material and the sample. Dull colour of the coating enables glare-free working under the bright lighting in microscopy. The chemical-resistant coating also protects against contact with the nickel contained in the stainless steel.

**Contents:**

1 tweezer with fine tip, curved, L 120 mm
1 pointed tweezer with guide pin, L 130 mm
1 pointed tweezer curved, L 130 mm
1 blunt tweezer, L 145 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ENX5.1** | 1 | 51,50 |




## aspirette® battery powered vacuum forceps

By Hirschmann. With vacuum pump. Ideal for handling small objects up to 70 g in weight. With one-button operation. Ergonomically designed. Suitable for handling membrane filters, optical lenses, microchips, cover slips, slides, etc. Rechargeable up to 1000 x.
**Delivery incl.** battery charger 230 V, 3 suction cups and 3 needles with ∅ 3.2 / 6 and 10 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A247.1** | 1 | 193,50 |

## Spare suction parts for aspirette®

Consists of 3 suction nozzles and cups ∅ 3.2 / 6 and 10 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N178.1** | 1 | 29,40 |



## Forceps with PTFE-coating

Made of stainless steel 18/10 (Remanit 4301), with resistant PTFE coating. Suitable for liquids such as acids, bases and solvents as long as coating is intact. Non adhesive. Black. Temperature stable from -200 to +260 °C. Autoclavable.

| Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| blunt | 115 | **C830.1** | 1 | 25,05 |
| blunt | 130 | **C831.1** | 1 | 25,05 |
| blunt | 145 | **C832.1** | 1 | 25,05 |
| pointed | 115 | **C833.2** | 1 | 25,05 |
| pointed | 130 | **C834.2** | 1 | 25,05 |
| pointed | 145 | **C835.2** | 1 | 25,05 |
| pointed/curved | 115 | **C836.2** | 1 | 25,05 |
| pointed/curved | 130 | **C837.2** | 1 | 25,05 |
| pointed/curved | 145 | **C838.2** | 1 | 25,05 |



## Long tweezers

Made of nylon, handle made of 18/10 stainless steel.
Heat resistant from -20 to +150 °C. Length 300 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PT95.1** | 1 | 11,80 |



## Rotilabo®-tweezers stand

Made of Remanit 4301, ESD coated. For safe storage of sensitive tweezers as well as for drying of tweezers after cleaning. Tweezers holder can be screwed upside down under a shelf for space-saving storage.
Dimensions: L 185 x W 60 x H 135 mm.
**Delivery without** tweezers.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PX20.1** | 1 | 56,80 |

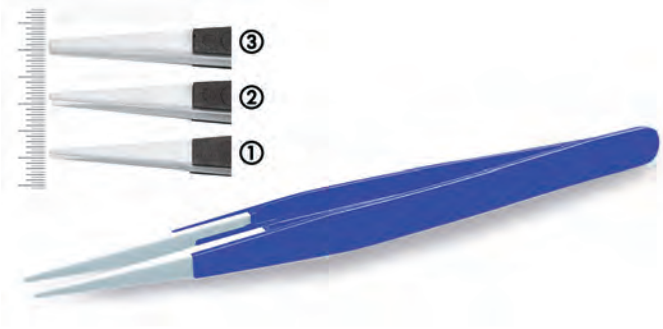



## Rotilabo®-disposable tweezers

**Sterile** (individually packed) or unsterile. Anatomical shape.
**Technical specifications:**

| Type | ① **sterile** | ② unsterile |
|---|---|---|
| Material | **ABS** | **PP**, glass-fibre reinforced |
| Length (mm) | 120 | 125 |
| Width of tip (mm) | 4 | 3 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① **sterile** | **KL05.1** | 100 | 38,50 |
| ② unsterile | **KL06.1** | 100 | 16,05 |




## Ceramic forceps

With ceramic tip and **PAA** handle. Stabilised for higher breaking strength. Metal-free and antimagnetic. Length 125 mm.

| Image | Design | Tip width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | Superfine | 0,5 | **PE65.1** | 1 | 21,45 |
| ② | Fine | 1,0 | **PE66.1** | 1 | 21,45 |
| ③ | Universal | 2,0 | **PE67.1** | 1 | 21,45 |



## Tweezers

Made of **POM**, yellow. Flexible, with rounded tips. Very good resilience.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 118 | **TT35.1** | 5 | 12,60 |
| 147 | **TT36.1** | 5 | 15,30 |
| 253 | **TT37.1** | 5 | 39,70 |




## Ceramic forceps

**Solid ceramics**
Heat resistant up to +700 °C. Resists acids and bases (except for HF). Anti-magnetic. With non-adhesive surface. Low friction factor. Low susceptibility to electrostatic charging.

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① sharp, straight tip | 120 | **5327.1** | 1 | 130,65 |
| ② sharp, curved tip | 125 | **5328.1** | 1 | 159,10 |




## Plastic forceps

Made of glass fibre reinforced **POM** with carbon fibres. Good chemical resistance. Antistatic. Very robust by glass fibre reinforcement. Length 110 mm. Temperature stable up to +90 °C.

| Type | Tip width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① Flat tips | 3,0 | **C317.1** | 3 | 33,55 |
| ② Very fine tips | 0,3 | **C318.1** | 3 | 33,55 |
| ③ Fine tips | 1,0 | **C319.1** | 3 | 33,55 |
| ④ Curved | 2,0 | **C320.1** | 3 | 33,55 |

# Scalpels/blades



## Plastic forceps

Made of **CTFE**. High chemical resistance, resistant to acids.
Suitable for chemical labs and in electronic workshops. Length 112 mm.
Temperatures up to +200 °C.

| Type | Tip width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Smooth tips | 3,0 | **C321.1** | 1 | 21,00 |
| Corrugated tips | 3,0 | **C322.1** | 1 | 21,45 |




## Plastic forceps

Made of **PTFE**. Extremely chemically and thermally stable.
Flexible, with smooth tips. Length 150 mm, weight 30 g. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0504.1** | 1 | 24,10 |



## Long wooden tweezers

Made of untreated beechwood.
Suitable for removing samples from liquid nitrogen.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 20 | **EET0.1** | 1 | 2,70 |
| 400 | 20 | **EET1.1** | 1 | 3,15 |




## Precision gripper

Made of chrome-vanadium steel with plastic handle. Smooth, polished gripping surfaces for precise work. Smooth-running double spring for soft, steady opening. Length 130 mm. Weight 61 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ETY7.1** | 1 | 52,60 |




## Blade holder

By Hammacher. Made of stainless steel Remanit® 4021.
Round handle, for microblades. Length 125 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCY3.1** | 1 | 47,00 |




## Accessories: Microblades

By Hammacher. Made of stainless steel Remanit® 4021.
Twin blade, straight. Length 35 mm. Autoclavable.
Suitable for blade holder HCY3.1.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Micro-Miniature sharp | **HCY4.1** | 6 | 120,40 |
| ② Micro-Miniature round | **HCY5.1** | 6 | 126,85 |
| ③ Micro, inclined | **HCY6.1** | 6 | 59,75 |




## Scalpels made of chrome steel

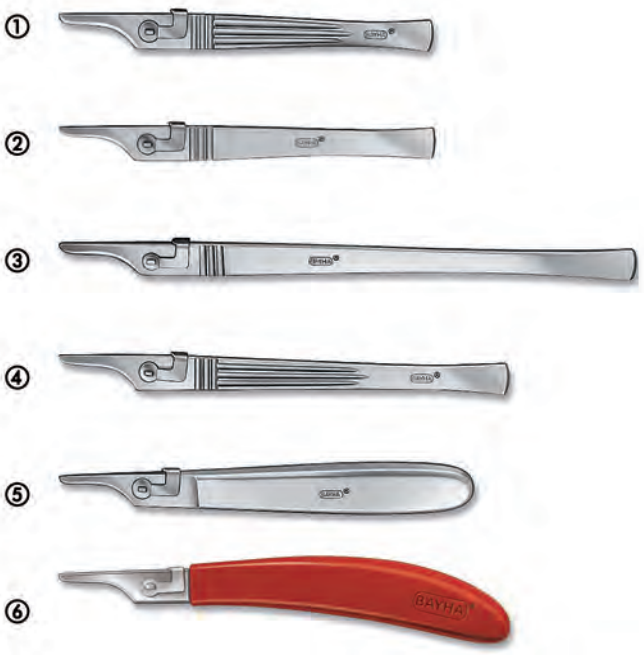
Length 125 mm. Autoclavable.

Made of chrome steel 1.4034

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① anatomic | **PX21.1** | 1 | 9,00 |

Made of chrome steel 1.4021

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ② pointed tip | **PX23.1** | 1 | 7,55 |
| ③ round tip | **PX22.1** | 1 | 7,55 |




## Scalpel handles

By BAYHA®. Made of stainless steel.
- With locking mechanism
- Replaceable blades
- Safe to handle since the blades are inserted into the handle at the side
- Type 3 is particularly well suited to sterile work due to its length
- Type 6 with ergonomic handle made of **PA** (non-sterilisable)
- Fits BAYHA® scalpel blades (Art. No. EX68.1ff)

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 130 | **EX64.1** | 1 | 15,60 |
| ② | 130 | **XP07.1** | 1 | 16,10 |
| ③ | 200 | **EX66.1** | 1 | 33,35 |
| ④ | 160 | **EX65.1** | 1 | 17,15 |
| ⑤ (hollow handle) | 150 | **EX67.1** | 1 | 35,95 |
| ⑥ (with plastic handle) | 160 | **XP08.1** | 1 | 30,75 |




## Scalpel blades

Made of carbon steel. For Art. No. EX64.1 to EX67.1.
**Sterile** (individually wrapped in special foil) or unsterile (individually wrapped in paper foil).

| | Sterile | | | Unsterile | | |
|---|---|---|---|---|---|---|
| Image | Art. No. | Pack Qty. | € | Art. No. | Pack Qty. | € |
| 11 | **EX68.1** | 12 | 6,90 | **EX82.1** | 12 | 5,85 |
| 15 | **EX69.1** | 12 | 6,90 | **EX83.1** | 12 | 5,85 |
| 16 | **EX70.1** | 12 | 6,90 | **EX84.1** | 12 | 5,85 |
| 18 | **EX71.1** | 12 | 6,90 | **EX85.1** | 12 | 5,85 |
| 19 | **EX72.1** | 12 | 6,90 | **EX86.1** | 12 | 5,85 |
| 20 | **EX73.1** | 12 | 6,90 | **EX87.1** | 12 | 5,85 |
| 21 | **EX74.1** | 12 | 6,90 | **EX88.1** | 12 | 5,85 |
| 22 | **EX75.1** | 12 | 6,90 | **EX89.1** | 12 | 5,85 |
| 23 | **EX76.1** | 12 | 6,90 | **EX90.1** | 12 | 5,85 |
| 24 | **EX77.1** | 12 | 6,90 | **EX91.1** | 12 | 5,85 |
| 26 | **EX78.1** | 12 | 6,90 | **EX92.1** | 12 | 5,85 |
| 27 | **EX79.1** | 12 | 6,90 | **EX93.1** | 12 | 6,00 |
| 28 | **EX80.1** | 12 | 6,90 | **EX94.1** | 12 | 6,00 |
| 29 | **EX81.1** | 12 | 6,90 | **EX95.1** | 12 | 6,00 |




## Scalpel protective cap

Made of **PP**. For BAYHA® scalpels (Art. No. EX64.1ff).
Dimensions: L 80 x W 20 x H 11 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XP09.1** | 1 | 4,00 |




## Rotilabo®-special blades, blunt

Made of carbon steel. For scalpel handles by Bayha® (Art. No. EX64.1ff).
Blunt scalpel blades for special applications, e.g. cutting DNA strands from agarose gels without scratching the transilluminator.
Individually packed in paper film. No CE mark.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 26 | **ATA9.1** | 12 | 5,90 |

# Scalpels/blades




## Scalpel handle

By Hammacher. Made of stainless steel Remanit® 4021. Hinge mechanism for inserting and removing the blade reduces the risk of injury. Suitable for scalpel blades types 10 to 15 (CE20.1ff and 3608.1ff). Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCY7.1** | 1 | 16,45 |



## Scalpels

For exchangeable blades. **Metal handle** (glossy) made of forged steel, chrome-plated. For heavy duty work.
**Plastic handle** made of shock-resistant **PS**. For light work.
Suitable for scalpel blades CE20.1ff and 3608.1 ff.

**For blade types 10 to 16**

| Material | Scope of supply | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Steel, chrome-plated | includes blade type 13 | **3607.1** | 1 | 12,80 |

**For blade types 18 to 36**

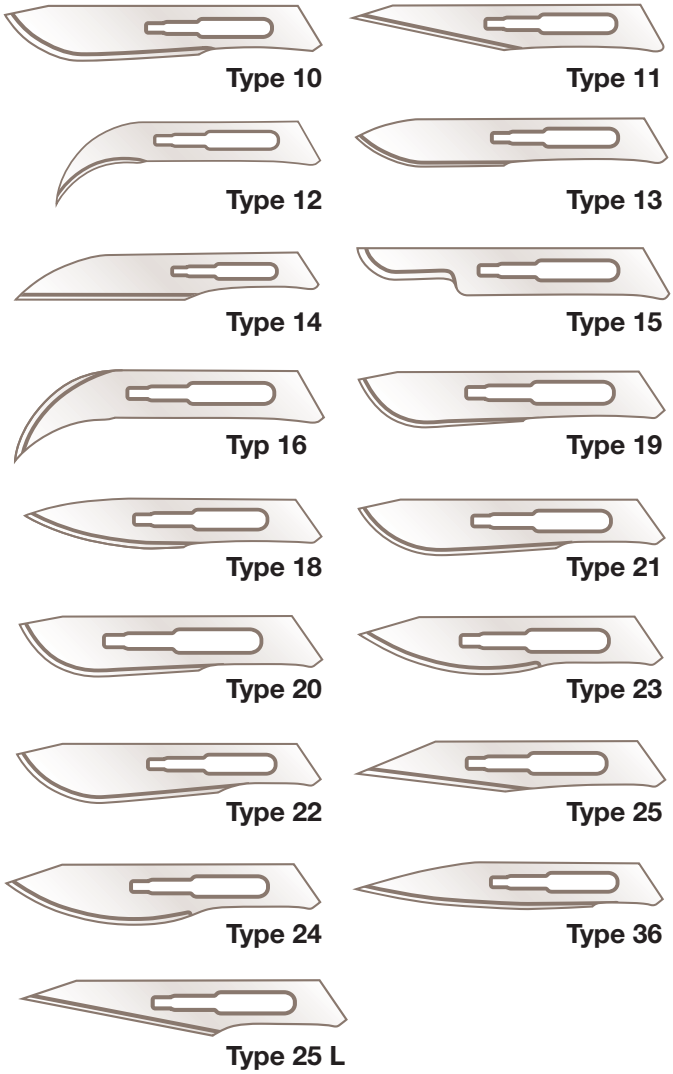
| Material | Scope of supply | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Steel, chrome-plated | includes blade type 21 | **H753.1** | 1 | 11,30 |
| Polystyrene | includes blade type 24 | **H752.1** | 1 | 3,55 |




## Rotilabo®-scalpel handles

Made of stainless steel, mat finished. Autoclavable.
Suitable for scalpel blades CE20.1ff and 3608.1 ff.

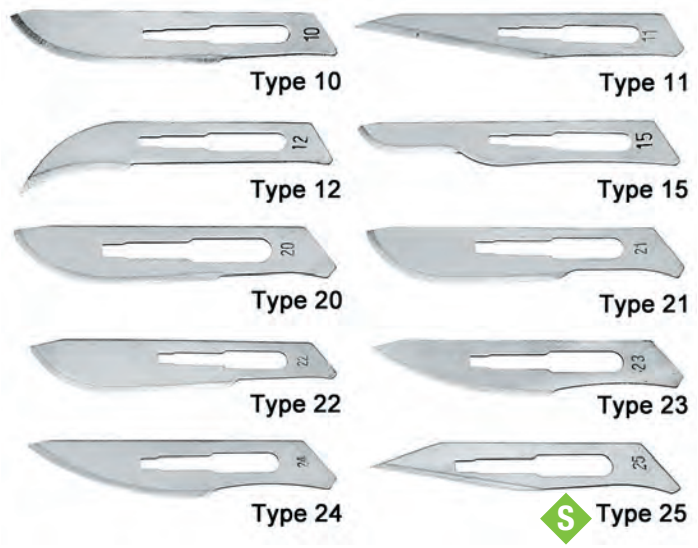
| Type | for blade-type | Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① Nr. 3 | 10-16 | short | 125 | **CE16.1** | 1 | 6,40 |
| ② Nr. 3 L | 10-16 | long | 208 | **CE17.1** | 1 | 16,10 |
| ③ Nr. 4 | 18-36 | short | 135 | **CE18.1** | 1 | 6,40 |
| ④ Nr. 4 L | 18-36 | long | 218 | **CE19.1** | 1 | 16,10 |




## Scalpel blades

Suitable for scalpels CE16.1ff and 3607.1 or H752.1f.

| Type | For scalpels | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | 3607.1/3596.1/no. 3 | **3608.1** | 10 | 8,55 |
| 11 | 3607.1/3596.1/no. 3 | **3621.1** | 10 | 8,55 |
| 12 | 3607.1/3596.1/no. 3 | **3613.1** | 10 | 8,55 |
| 13 | 3607.1/3596.1/no. 3 | **3609.1** | 10 | 8,55 |
| 14 | 3607.1/3596.1/no. 3 | **H754.1** | 10 | 9,05 |
| 15 | 3607.1/3596.1/no. 3 | **H755.1** | 10 | 8,55 |
| 16 | 3607.1/3596.1/no. 3 | **H756.1** | 10 | 8,85 |
| 18 | H752.1/H753.1/no. 4 | **H758.1** | 10 | 11,30 |
| 19 | H752.1/H753.1/no. 4 | **H759.1** | 10 | 8,85 |
| 20 | H752.1/H753.1/no. 4 | **H760.1** | 10 | 8,85 |
| 21 | H752.1/H753.1/no. 4 | **H761.1** | 10 | 8,85 |
| 22 | H752.1/H753.1/no. 4 | **H762.1** | 10 | 8,85 |
| 23 | H752.1/H753.1/no. 4 | **H763.1** | 10 | 8,85 |
| 24 | H752.1/H753.1/no. 4 | **H764.1** | 10 | 8,85 |
| 25 | H752.1/H753.1/no. 4 | **H765.1** | 10 | 8,85 |
| 25L | H752.1/H753.1/no. 4 | **H766.1** | 10 | 8,85 |
| 36 | H752.1/H753.1/no. 4 | **H767.1** | 10 | 11,75 |




## Rotilabo®-scalpel blades

Made of carbon steel (material 1.1545). **Sterile** (γ-sterilised and individually packed). Suitable for scalpels CE16.1 ff and 3607.1 f or H752.1 f.

| Type | for scalpel handle | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | No. 3 | **CE20.1** | 100 | 13,80 |
| 11 | No. 3 | **CE21.1** | 100 | 13,80 |
| 12 | No. 3 | **CE22.1** | 100 | 13,80 |
| 15 | No. 3 | **CE23.1** | 100 | 13,80 |
| 20 | No. 4 | **CE24.1** | 100 | 13,80 |
| 21 | No. 4 | **CE25.1** | 100 | 13,80 |
| 22 | No. 4 | **CE26.1** | 100 | 13,80 |
| 23 | No. 4 | **CE27.1** | 100 | 13,80 |
| 24 | No. 4 | **CE28.1** | 100 | 13,80 |
| 25 | No. 4 | **CE29.1** | 100 | 13,80 |

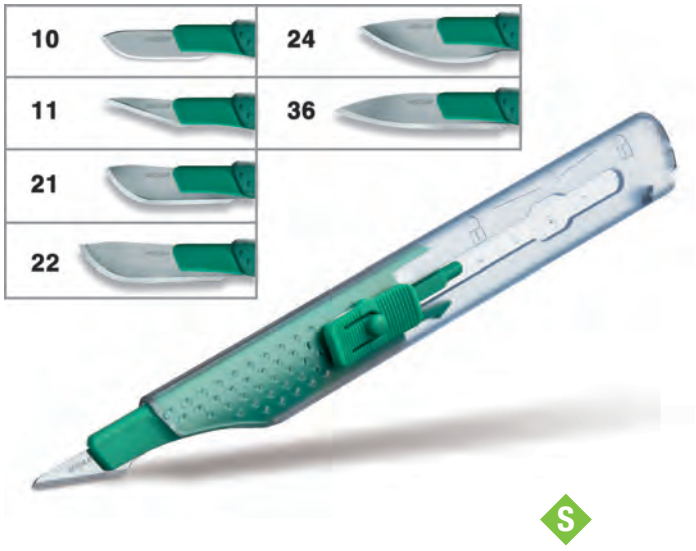



## Cutfix®-disposable scalpels

By B. Braun. **Sterile** (γ-sterilized and individually wrapped).

- With ergonomically formed handle made of plastic
- Double precision grinding of blade for a smooth, clean cut
- Tight blade for precision cutting
- With easy to remove protective cover

| Figure | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **T997.1** | 10 | 6,25 |
| 11 | **T998.1** | 10 | 6,25 |
| 12 | **T999.1** | 10 | 6,25 |
| 15 | **X001.1** | 10 | 6,25 |
| 20 | **X002.1** | 10 | 6,25 |
| 21 | **X003.1** | 10 | 6,25 |
| 22 | **X004.1** | 10 | 6,25 |
| 23 | **X005.1** | 10 | 6,25 |
| 24 | **X006.1** | 10 | 6,25 |




## Aesculap®-safety scalpels

By B. Braun. **Sterile** (individually packed). Locks securely in the disposal position to prevent cutting and piercing injuries. The mechanism is activated automatically by pushing back the blade with one hand.

| Figure | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **XC14.1** | 10 | 19,30 |
| 11 | **XC15.1** | 10 | 19,30 |
| 21 | **XC16.1** | 10 | 19,50 |
| 22 | **XC17.1** | 10 | 19,50 |
| 24 | **XC18.1** | 10 | 19,50 |
| 36 | **XC19.1** | 10 | 19,50 |



## TRIMMEX CUTTOGRAF scalpel blade

Plastic scalpel handle with fitted blade No. 11. User-friendly blade clamp holds the blade at any desired cutting depth. On completion of work, the blade retracts safely into the handle. Easy blade replacement.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XK01.1** | 1 | 8,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Scalpel blades, type 10 | **3608.1** | 10 | 8,55 |
| Scalpel blades, type 11 | **3621.1** | 10 | 8,55 |
| Scalpel blades, type 12 | **3613.1** | 10 | 8,55 |
| Scalpel blades, type 13 | **3609.1** | 10 | 8,55 |
| Scalpel blades, type 14 | **H754.1** | 10 | 9,05 |
| Scalpel blades, type 15 | **H755.1** | 10 | 8,55 |
| Scalpel blades, type 16 | **H756.1** | 10 | 8,85 |

# Scalpels/blades



## Scalpel blades with finger guide

Ergonomic shape with rubber coated grip on handle for comfortable handling, can be guided precisely with the forefinger. Ideal for delicate dissection work and preparation. With protective cap for safe storage. Assorted colours (yellow, pink, green).
Dimensions: L 104 x W 35 x H 20 mm, length without protective cap 98 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANY6.1** | 3 | 17,10 |

## Replacement blades

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| sharp | **AH89.1** | 10 | 3,50 |
| Machete | **AH90.1** | 10 | 4,20 |




## Scalpels

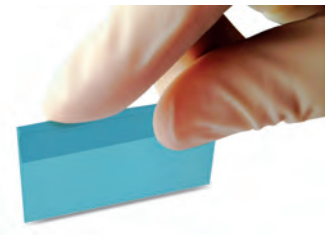
With replaceable steel blades. With aluminium handle. For precise cutting in paper, cardboard and foil. Length 148 mm. Incl. 3 spare blades, type 1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH88.1** | 1 | 4,95 |

## Spare blades

For scalpel order Art. No. AH88.1.

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | sharp | **AH89.1** | 10 | 3,50 |
| ② | Machete | **AH90.1** | 10 | 4,20 |



## Safety blades

Made of **PET**, thickness 0.22 mm. For cutting strips of agarose gel without scratching the transilluminator. Also suitable for cutting soft animal and plant tissue and for other applications where blunt blades reduce the risk of cutting injury. Blade length can be shortened by trimming.

| Length (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 38 | 19 | **AXH6.1** | 100 | 29,15 |
| 50 | 38 | **AXH7.1** | 100 | 36,50 |



## Microtome blades
## Premium Surgipath® DB80-series

By Leica®. Disposable microtome blades with chrome plating and finely honed edge along the full length of the blade for extra-thin sections of the highest quality. Extra-sharp, durable blades ensure consistently precise sectioning from the 1st to the 25th time. Cutting angle 35°.

**DB80 LS** - with narrow blade profile for routine sectioning in all types of tissue. Extra-thin sections for diagnostic analysis.
Dimensions: L 80 x W 8 mm.

**DB80 LX** - with narrow blade profile for extremely hard and thick tissue as well as routine sectioning. Extremely durable. Dimensions: L 80 x W 8 mm.

**DB80 HS** - with wide blade profile for all paraffin-embedded tissue specimens and for routines sectioning in all types of tissue.
Suitable for in situ specimen preparation. Dimensions: L 80 x W 14 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| DB80 LS | **PX78.1** | 50 | 145,15 |
| DB80 LX | **PX79.1** | 50 | 145,15 |
| DB80 HS | **PX80.1** | 50 | 145,15 |



## Razors

Blade length 64 mm.
**Delivery incl.** 10 spare blades (ground on both sides, 64 x 22 mm).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Plastic handle | **KX90.1** | 1 | 47,85 |
| Metal handle | **KX91.1** | 1 | 53,05 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare blades | **KX92.1** | 10 | 15,50 |




## Stirrup-shaped blades

By Apollo. Blades with practical handle made of chromium-plated steel. Suitable for cutting and scraping.

| Image | Length (mm) | Height (mm) | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | 57 | 24,8 | 0,28 | **CK08.1** | 5 | 7,50 |
| ② | 39 | 19,0 | 0,30 | **CK07.1** | 5 | 3,90 |



## Bone-cutting forceps

By Hammacher.

Made of stainless steel. Autoclavable.
Illustration shows TC38.1.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 120 | **TC38.1** | 1 | 48,75 |
| 130 | **TC39.1** | 1 | 51,45 |



## Bone forceps, fine

By Hammacher.

Made of steel, nickel plated and chrome plated. Non-autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **TC40.1** | 1 | 34,30 |
| 115 | **TC41.1** | 1 | 46,50 |

Made of stainless steel. Autoclavable.
Illustration shows TC42.1.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **TC42.1** | 1 | 59,75 |
| 115 | **TC43.1** | 1 | 66,50 |




## Bone scissors

Made of 18/0 nickel-free stainless steel. Length 250 mm.
Blade length 80 mm.

① Curved handle. With buffer spring. Autoclavable.

| Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 295 | **LT13.1** | 1 | 27,75 |

② Black POM handles with stainless steel rivets. With inner spring.

| Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 233 | **LT14.1** | 1 | 13,95 |



## Utility shears

By Hammacher. Made of stainless steel, plastic handles with soft rubber insert. Stable blade, serrated. Large handles for comfortable handling. Hygienic cleaning - shears are easy to disassemble. Dishwasher-safe. Length 215 mm, cutting length 55 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXA9.1** | 1 | 33,10 |



## Utility scissors

Made of stainless steel 18/0, with lacquered handle. Serrated counter blade ensures good cutting quality. Hygienic cleaning - shears are easy to disassemble. Length 220 mm. Blade length 100 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE80.1** | 1 | 17,10 |



## Scissors for foils and splints

By Hammacher. Made of stainless steel Remanit®, corrosion-free. Curved with fine serration. Length 105 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXA8.1** | 1 | 61,50 |



## Special scissors

Made of stainless steel 18/0. Suitable for cutting solid materials such as plant stems. Length 160 mm. Blade length 45 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE81.1** | 1 | 15,60 |

# Microscopy/Dissecting scissors




## Scissors

Made of steel, polished.

① **Pointed-blunt**

*Made of high grade steel, nickel plated.

| Length (mm) | Cutting length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 130* | 37 | **3543.1** | 1 | 11,80 |
| 145 | 38 | **3545.1** | 1 | 11,40 |
| 160 | 50 | **3551.1** | 1 | 11,40 |

② **Pointed-pointed**

| Length (mm) | Cutting length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 130 | 37 | **3569.1** | 1 | 11,40 |
| 140 | 38 | **3576.1** | 1 | 11,40 |
| 160 | 48 | **3577.1** | 1 | 11,40 |

③ **Blunt-blunt**

| Length (mm) | Cutting length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 130 | 37 | **3581.1** | 1 | 11,40 |
| 145 | 38 | **3582.1** | 1 | 11,40 |
| 160 | 48 | **3592.1** | 1 | 11,40 |

▶ More scissors see page 734



## Microscopy scissors

**Pointed-pointed.** Made of carbon steel, nickel-plated.

| Length (mm) | Type | Cutting length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | straight | 30 | **3534.1** | 1 | 14,55 |
| 100 | curved | 28 | **3539.1** | 1 | 15,80 |

## Dissecting scissors for microscopy, heavy duty

Made of carbon steel, nickel-plated.

| Type | Design | Length (mm) | Cutting length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Pointed-pointed | straight | 130 | 45 | **HEY6.1** | 1 | 10,65 |
| Pointed-pointed | curved | 130 | 45 | **HEY7.1** | 1 | 11,40 |
| Blunt-blunt | straight | 125 | 35 | **HEY8.1** | 1 | 12,60 |
| Blunt-blunt | curved | 125 | 35 | **HEY9.1** | 1 | 13,95 |




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## Scissors, physiology

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Autoclavable.

| Type | Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① pointed-blunt | straight | 130 | **HCT7.1** | 1 | 39,90 |
| ① pointed-blunt | straight | 145 | **HCT8.1** | 1 | 42,10 |
| ① pointed-blunt | straight | 160 | **HCT9.1** | 1 | 43,25 |
| ① pointed-blunt | curved | 130 | **HCX0.1** | 1 | 44,00 |
| ① pointed-blunt | curved | 160 | **HCX1.1** | 1 | 46,55 |
| ② pointed-pointed | straight | 130 | **HCX2.1** | 1 | 44,20 |
| ② pointed-pointed | straight | 145 | **HCX3.1** | 1 | 42,85 |
| ② pointed-pointed | straight | 160 | **HCX4.1** | 1 | 44,95 |
| ② pointed-pointed | curved | 130 | **HCX5.1** | 1 | 44,20 |
| ② pointed-pointed | curved | 145 | **HCX6.1** | 1 | 49,85 |
| ② pointed-pointed | curved | 160 | **HCX7.1** | 1 | 47,50 |




121°C

## Dissecting scissors

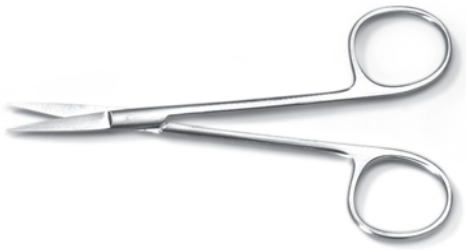
By Hammacher. Made of corrosion-free stainless steel 18/8. Autoclavable.

① **Microscopy scissors**
Angled. Cutting length 27 mm. Length 115 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sharp-sharp | **LT18.1** | 1 | 10,50 |

② **Incision scissors**
Probe-pointed tip. Length 145 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sharp probe-pointed | **LT19.1** | 1 | 9,85 |



## Dissecting scissors for microscopy

By Hammacher. Made of stainless steel, straight, sharp. Autoclavable.
Illustration shows TE27.1.

**With smooth blade**

| Scissors blade | Length (mm) | Cutting length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| angular | 90 | 18 | **TE25.1** | 1 | 34,65 |
| angular | 105 | 23 | **TE26.1** | 1 | 31,85 |
| round | 115 | 26 | **TE27.1** | 1 | 39,80 |

**With serrated blade** for easier cutting without slipping.

| Scissors blade | Length (mm) | Cutting length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| angular | 90 | 18 | **TE28.1** | 1 | 34,95 |
| angular | 105 | 23 | **TE29.1** | 1 | 31,85 |
| round | 115 | 26 | **TE30.1** | 1 | 44,20 |




## Dissecting scissors for microscopy, curved

By Hammacher. Made of Remanit® stainless steel (4021). Autoclavable.

| Scissors blade | Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| round | fine, sharp | 90 | **HCP5.1** | 1 | 31,70 |
| angular | sharp, pointed | 105 | **HCP6.1** | 1 | 28,20 |
| angular | sharp, pointed | 115 | **HCP7.1** | 1 | 33,80 |



## Micro scissor, type STEVENS

Made of stainless steel, material number 1.4117. Straight. Length 105 mm.
Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LX77.1** | 1 | 55,90 |




## Micro scissors, with spire tip

By Hammacher. Made of stainless steel Remanit® 4021. Very fine.
Length 115 mm. Autoclavable.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| straight | **LT28.1** | 1 | 48,90 |
| curved | **HCP9.1** | 1 | 52,00 |




## Preparation scissors, Stevens

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Pointed/pointed. Length 110 mm. Autoclavable.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| straight | **HCT0.1** | 1 | 50,85 |
| curved | **HCT1.1** | 1 | 54,70 |

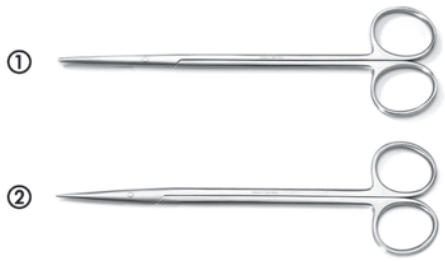



## Dissecting scissors with microsection

By Hammacher. Made of stainless steel, sharp.
For extra sharp cutting. Autoclavable.

| Design | Length (mm) | Cutting length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① straight | 105 | 24 | **TE35.1** | 1 | 51,75 |
| curved | 105 | 23 | **TE36.1** | 1 | 58,00 |
| offset | 105 | 28 | **TE37.1** | 1 | 60,50 |
| ② straight, type Joseph | 140 | 31 | **TE38.1** | 1 | 62,70 |
| ③ straight, type Kelly | 160 | 29 | **TE39.1** | 1 | 65,35 |

# Microscopy/Dissecting scissors




121°C

## Dissecting and suture scissors

By Hammacher. Made of stainless steel, straight, fine. Autoclavable.

| Type | Design | Length (mm) | Cutting length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① Baby-Metzenbaum | blunt-blunt | 145 | 32 | **TE31.1** | 1 | 51,90 |
| ① Baby-Metzenbaum | blunt-blunt | 180 | 33 | **TE32.1** | 1 | 72,85 |
| ② Metzenbaum fino | sharp-sharp | 145 | 34 | **TE33.1** | 1 | 77,00 |
| ② Metzenbaum fino | sharp-sharp | 180 | 33 | **TE34.1** | 1 | 88,35 |




121°C

## Special scissors

Made of stainless steel. Autoclavable.

| Type | Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① BEE-BEE | straight | 110 | **LX66.1** | 1 | 8,45 |
| ② SPENCER | straight | 120 | **LX67.1** | 1 | 9,35 |
| ③ KNOWLES | straight | 140 | **LX68.1** | 1 | 9,65 |
| ④ LISTER | offset | 110 | **LX69.1** | 1 | 8,95 |



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## Thread and vascular scissors

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Tip/blunt. Length 110 mm. Autoclavable.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| straight | **HCP0.1** | 1 | 39,90 |
| curved | **HCP1.1** | 1 | 42,65 |
| strongly curved | **HCP2.1** | 1 | 42,65 |



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## Dissecting scissors

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Pointed/pointed. Length 145 mm. Autoclavable.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| straight | **HCT5.1** | 1 | 62,70 |
| curved | **HCT6.1** | 1 | 64,20 |

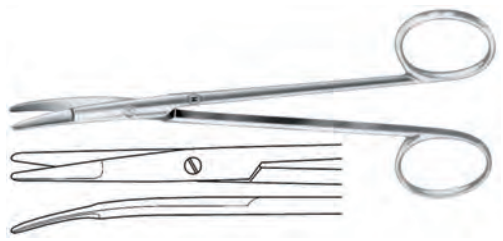


121°C

## Microscopy scissors, buttoned

Made of stainless steel, material number 1.4117. Ball-ended on one side. Length 115 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LX78.1** | 1 | 30,65 |



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121°C

## Dissecting scissors Kilner/Ragnell

By Hammacher. Made of Remanit® 4021. Curved, fine, blunt/blunt. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 120 | **HCT2.1** | 1 | 54,75 |
| 135 | **HCT3.1** | 1 | 57,45 |
| 150 | **HCT4.1** | 1 | 58,75 |



NEU NOUVEAU NEW

121°C

## Laboratory scissors Lister, angled

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 145 | **HCP3.1** | 1 | 36,55 |
| 180 | **HCP4.1** | 1 | 38,90 |

# Micro scissors




121°C

## Dissecting scissors with carbide inserts

By Hammacher. Made of stainless steel, straight, sharp.
For consistent cuts. Autoclavable.

| Type | Length (mm) | Cutting length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Standard | 115 | 26 | **TE40.1** | 1 | 138,70 |
| ② Standard | 145 | 47 | **TE41.1** | 1 | 131,60 |
| ③ Metzenbaum fino | 145 | 38 | **TE42.1** | 1 | 160,20 |



NEU
NOUVEAU
NEW

121°C

## Micro dissecting scissors

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Straight, sharp/sharp. Length 110 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCP8.1** | 1 | 44,20 |



121°C

## Micro scissors, type Mikro-Iris

By Hammacher. Made of stainless steel, sharp. Length 90 mm.
Cutting length 19 mm. Autoclavable. Illustration shows TE45.1.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| straight | **TE45.1** | 1 | 34,05 |
| curved | **TE46.1** | 1 | 35,85 |



## Micro scissors

Made of stainless steel (material 1.4021).
Overall length 120 mm, blade length 15 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EPA0.1** | 1 | 25,75 |

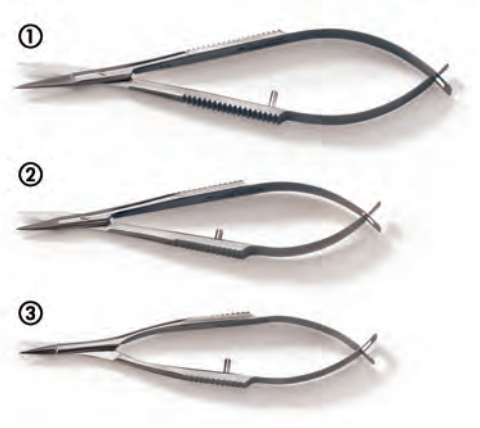


121°C

## Micro scissors, type IRIS

Made of stainless steel. Length 110 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LX76.1** | 1 | 64,45 |

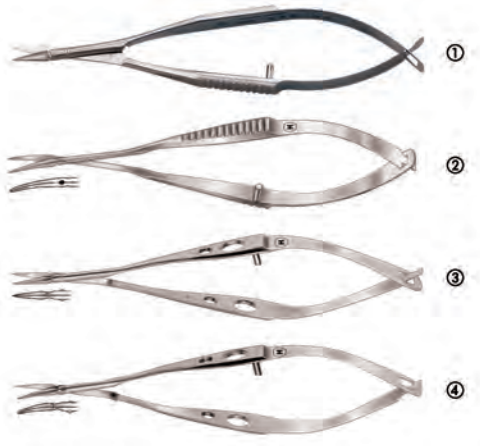



121°C

## Micro scissors, high precision

By Hammacher. Made of stainless steel, straight, tapered ends.
With very fine blades for precise and clean cuts. Autoclavable.

| Type | Length (mm) | Cutting length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Standard | 105 | 15 | **TE44.1** | 1 | 188,15 |
| ② Standard | 90 | 10 | **TE43.1** | 1 | 181,70 |
| ③ Vannas | 80 | 8,5 | **TE48.1** | 1 | 220,40 |




Programme extension!

121°C

## Micro scissors, model Tübingen

By Hammacher. Made of stainless steel, sharp.
With very fine blades for precise and clean cuts. Length 85 mm.
Cutting length 7 mm. Autoclavable.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① Standard | straight | **TE47.1** | 1 | 227,90 |
| ② Standard | curved | **HCY0.1** | 1 | 237,60 |
| ③ Very light (weight 2 g) | straight | **HCX8.1** | 1 | 233,30 |
| ④ Very light (weight 2 g) | curved | **HCX9.1** | 1 | 248,35 |

# Needles/clamps



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121°C

## Clamps, smooth gripping surface

By Hammacher. Made of stainless steel Remanit® 4021. Autoclavable.

| Jaw width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 8,4 | 160 | **HCN4.1** | 1 | 68,95 |
| 6,0 | 180 | **HCN5.1** | 1 | 72,00 |
| 7,7 | 200 | **HCN6.1** | 1 | 74,20 |



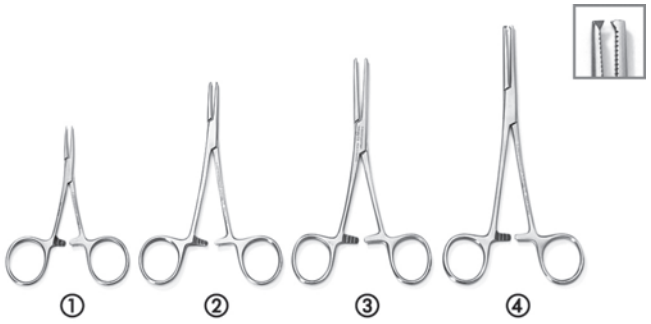

121°C

## Artery clamps, type Dieffenbach

By Hammacher. Made of stainless steel. Autoclavable.

| Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① straight | 28 | **TC83.1** | 1 | 44,40 |
| ② straight | 35 | **TC84.1** | 1 | 43,35 |
| straight | 50 | **TC85.1** | 1 | 43,25 |
| curved | 28 | **TC86.1** | 1 | 47,20 |
| ③ curved | 50 | **TC88.1** | 1 | 46,80 |

▶ Clamping scissors see page 378




121°C

## Artery and hose clamps

By Hammacher. Made of stainless steel. Autoclavable.

① **Type Baby-Mosquito**

| Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| straight | 90 | **TC89.1** | 1 | 44,75 |
| curved | 90 | **TC90.1** | 1 | 46,00 |

② **Type Halsted-Mosquito**

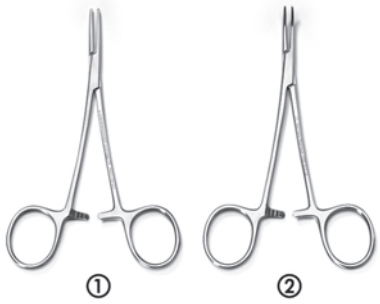
| Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| straight | 90 | **TC93.1** | 1 | 42,05 |
| straight | 120 | **TC94.1** | 1 | 44,65 |
| curved | 90 | **TC95.1** | 1 | 43,15 |
| curved | 120 | **TC96.1** | 1 | 44,65 |

③ **Type Pean**

| Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| straight | 130 | **TC97.1** | 1 | 42,70 |
| straight | 140 | **TC98.1** | 1 | 44,45 |
| curved | 130 | **TC99.1** | 1 | 46,10 |
| curved | 140 | **TE00.1** | 1 | 46,75 |

④ **Type Kocher (Ochsner)**
With 1:2 teeth for securing tissue.

| Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| straight | 140 | **TE01.1** | 1 | 47,85 |
| straight | 160 | **TE02.1** | 1 | 55,40 |
| curved | 140 | **TE03.1** | 1 | 52,05 |
| curved | 160 | **TE04.1** | 1 | 57,75 |




121°C

## Micro clamps, type Micro-Halsted

By Hammacher. Made of stainless steel, super fine. Length 125 mm. Autoclavable.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① straight | **TC91.1** | 1 | 43,00 |
| ② curved | **TC92.1** | 1 | 46,75 |

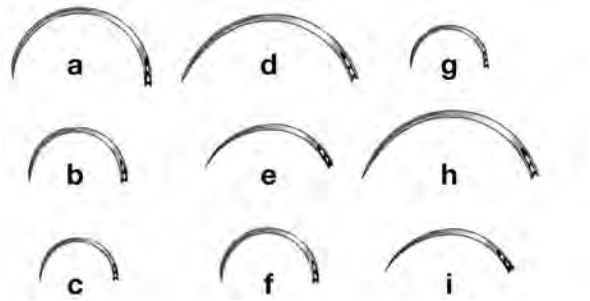



121°C

## Needle holder

Made of stainless steel. Autoclavable.

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① MAYO-HEGAR | 160 | **LX64.1** | 1 | 10,70 |
| ② MATHIEU | 140 | **LX65.1** | 1 | 15,00 |




121 °C

## Surgical needles

By Hammacher. Made of corrosion-free stainless steel 18/8. Autoclavable.

| Image | Needle shape | Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| a | rectangular | Fig. 11 | ½ circular | **LX55.1** | 12 | 15,50 |
| b | rectangular | Fig. 14 | ½ circular | **LX56.1** | 12 | 15,50 |
| c | rectangular | Fig. 16 | ½ circular | **LX57.1** | 12 | 15,50 |
| d | rectangular | Fig. 11 | ⅜ circular | **LX58.1** | 12 | 15,50 |
| e | rectangular | Fig. 14 | ⅜ circular | **LX59.1** | 12 | 15,50 |
| f | Round | Fig. 14 | ½ circular | **LX60.1** | 12 | 15,50 |
| g | Round | Fig. 16 | ½ circular | **LX61.1** | 12 | 15,50 |
| h | Round | Fig. 11 | ⅜ circular | **LX62.1** | 12 | 15,50 |
| i | Round | Fig. 14 | ⅜ circular | **LX63.1** | 12 | 15,50 |



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## Sterilising box for needles

By Hammacher. Made of Wironit® (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Needle sterilising box, complete with inside box. Round, ∅ 65 x H 15 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HEA4.1** | 1 | 40,50 |




S

## Needle-suture combinations

By B. Braun. Absorbable and non-absorbable suture materials, 300 grade stainless steel needles. **Sterile**, individually packed.

**Atraumatic needle-suture combination:** smooth transition between needle and suture ensures minimal wound trauma.

### Technical specifications of suture material:

| Suture type | Suture design | Material | Coating | Loss of tensile strength | Material absorption |
|---|---|---|---|---|---|
| **Safil®** | braided | Polyglycolic acid | Polyglyconate | 18 days 50 % | approx. 60-90 days |
| **Dafilon®** | Monofilament | Polyamide 6/6.6 | none | n.a. | non-absorbable |
| **Silkam®** | braided | Silk | Wax and silicone rubber | n.a. | non-absorbable |

### Technical specifications of needles:

| Needle type | Curvature | Body | Bow length* (mm) |
|---|---|---|---|
| **DS16** | 3/8 circle | Cutting | 16 |
| **DS19** | 3/8 circle | Cutting | 19 |

*Distance between needle tip and end of needle, measured along the outer curve of the needle.

### Needle-suture combinations

| Type | Colour | USP | metric | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| Safil® / DS16 | violet | 5/0 | 1 | 45 | **XC22.1** | 36 | 353,70 |
| Safil® / DS19 | uncoloured | 4/0 | 1,5 | 45 | **XC23.1** | 12 | 124,70 |
| Dafilon® / DS16 | blue | 4/0 | 1,5 | 45 | **XC26.1** | 36 | 177,40 |
| Dafilon® / DS16 | blue | 5/0 | 1 | 45 | **XC27.1** | 12 | 71,85 |
| Silkam® / DS16 | black | 4/0 | 1,5 | 45 | **XC29.1** | 36 | 246,20 |
| Silkam® / DS19 | black | 3/0 | 2 | 75 | **XC31.1** | 36 | 229,00 |

### Short sutures (PreCuts)

Without needle. **Sterile.** Can be removed individually.

| Type | Colour | USP | metric | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| Silkam® | black | 3/0 | 2 | 3 x 45 | **XC34.1** | 36 | 209,65 |
| Silkam® | black | 4/0 | 1,5 | 3 x 45 | **XC35.1** | 36 | 209,65 |

## Overview of suture and needle types

### Recommendations for use:

| Type | Properties | Indications |
|---|---|---|
| **Safil®** | - High tensile strength<br>- Minimal tissue trauma<br>- Smooth suture<br>- Low memory effect<br>- Ease to handle | Safil® is indicated for surgical applications requiring a braided, synthetic and absorbable suture material, particularly for procedures in the gastrointestinal tract area, in gynaecology and urology, in ophthalmic surgery, microsurgery, subcutaneous suturing and ligature. |
| **Dafilon®** | - Soft and supple<br>- Excellent knot security<br>- Minimal tissue trauma<br>- Low memory effect | Dafilon® is indicated for skin closure as interrupted or intracutaneous suture, and for securing drains and catheters, as well as dental procedures. It is used in microsurgery, ophthalmology and neurosurgery. Dafilon is not suitable for permanent placement in the body. |
| **Silkam®** | - Excellent handling properties<br>- Good knot security | Silkam® is indicated for surgical applications requiring the use of a non-absorbable suture material. Applications include general surgery, skin closure, dental surgery, neurosurgery and ligatures. |
| **Cutting needles (DS)** | Three edges run along the entire length of the needle to provide an effective and gentle piercing action. | Skin needles: the three-edged, outer-cutting needle body is indicated for suturing of coarse tissue. |

# Dissecting needles and probes




## Dissecting probes

Made of stainless steel. ∅ 5 mm. Autoclavable.

| Model | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | rectangular | **LX45.1** | 1 | 21,65 |
| ② | angled | **LX44.1** | 1 | 21,65 |
| ③ | curved | **LX43.1** | 1 | 21,65 |
| ④ | straight | **LX42.1** | 1 | 22,40 |




## Dissecting probes

By Hammacher. Handle made of stainless steel 1.4571. Tip made of stainless steel 1.4310. Dimensions: ∅ 9 mm, length 135 mm. Autoclavable.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | offset | **LX53.1** | 1 | 32,70 |
| ② | curved | **LX54.1** | 1 | 33,15 |




## Micro dissecting probes

By Hammacher. Made of stainless steel. Autoclavable.

| Type | ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 4.5 | 150 | **LX51.1** | 1 | 11,10 |
| ② | 5.5 | 155 | **LX52.1** | 1 | 11,10 |
| ③ | 4,5 | 160 | **PT69.1** | 1 | 15,75 |




## Dissecting needles

Made of Remanit 4301.

① **With stainless steel handle**

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| straight | **KX98.1** | 10 | 44,65 |
| curved | **KX99.1** | 10 | 47,30 |
| Lancets | **KY00.1** | 10 | 58,40 |

② **With plastic handle**

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| straight | **KX93.1** | 10 | 21,95 |
| curved | **KX94.1** | 10 | 24,10 |
| Lancets | **KX95.1** | 10 | 32,25 |

**With wooden handle** (not shown)

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| straight | **KX96.1** | 10 | 18,50 |
| curved | **KX97.1** | 10 | 21,05 |



## Solofix® blood lancets

By B. Braun. Made of stainless steel. **Sterile.** Puncturing lancets for capillary blood collection, optimal puncture depth.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ATK9.1** | 500 | 15,30 |



## Probes, blunt

Made of stainless steel, material number 1.4301. Autoclavable.

| ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 130 | **LX79.1** | 1 | 7,50 |
| 1,5 | 160 | **LX80.1** | 1 | 7,50 |



## Micro dissecting chisel

By Hammacher. Made of stainless steel. Length 125 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TC35.1** | 1 | 39,70 |



## Martini sharp double spoon

By Hammacher. Made of stainless steel. Spoon, round. Length 135 mm. Autoclavable.

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 3/3.5 | **TC28.1** | 1 | 48,25 |
| 3.5/4 | **TC29.1** | 1 | 48,25 |
| 4/4,5 | **TC30.1** | 1 | 48,25 |



## Retractor

By Hammacher. Made of stainless steel. Tines blunt. Length 160 mm. Autoclavable.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Single-tine, one-sided | **TC31.1** | 1 | 34,15 |
| ② | Double-tine, one-sided | **TC32.1** | 1 | 43,65 |



## Retractor

By Hammacher. Made of stainless steel. Length 100 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TC34.1** | 1 | 99,35 |



## Rotilabo®-embryo spoon Banivo

Made of stainless steel. To hold delicate structures.
Perforated spoon allows fluid to drain.
Dimensions: spoon ∅ 15 mm, depth 3 mm. Overall length 145 mm.
Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TL85.1** | 1 | 64,40 |



## Mini mirror

Plastic handle made of **POM**, white. Autoclavable.

| Length (mm) | Mirror ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 165 | 14 | **LX47.1** | 1 | 16,70 |




## Miniature mirror handle

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Hollow. Length 140 mm. ∅ 8 mm.
Matches miniature mirrors HCL6.1ff and HCL8.1ff. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCL5.1** | 1 | 11,05 |




## Miniature mirror

By Hammacher. Made of stainless steel Wironit (austenitic chrome-nickel steel with 18 % chrome and 10-12 % nickel), non-corrosive, anti magnetic, acid-resistant. Ideal for all types for cleaning and sterilization.
Mirror ∅ 22 mm. Matches miniature mirror handle HCL5.1
**Delivery without** mirror handle, please order separately.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Plan | Standard | **HCL6.1** | 12 | 28,70 |
| Plan | Rhodium Front | **HCL7.1** | 12 | 47,95 |
| Magnifying | Standard | **HCL8.1** | 12 | 29,70 |
| Magnifying | Rhodium Front | **HCL9.1** | 12 | 66,35 |



## Telescope rods

Chrome-plated. Form and size of rotatable pencil. With pocket clip.

| Type | max. length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Telescope magnet, very powerful | 600 | **0407.1** | 1 | 17,15 |
| Telescope mirror, 32 mm ∅, rotatable | 610 | **0408.1** | 1 | 16,10 |

# Dissecting accessories



121°C

## Ear punch, variable

By Hammacher. Made of 1.4021 stainless steel. For marking mice, rats and other small animals. Rugged design with rotatable disc for setting different hole sizes. (∅ 0,8 to 2 mm). Total length 170 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANP2.1** | 1 | 163,40 |



121°C

## Ear punches

By Hammacher. Made of Remanit® 4021. For marking mice, rats and other small animals. Marking ∅: 2 mm. Autoclavable

| Type | Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | straight | 100 | **TE89.1** | 1 | 47,50 |
| ② | angled (90°) | 110 | **ETE1.1** | 1 | 49,75 |



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121°C

## Tissue punches

By Hammacher. Made of stainless steel Remanit® 4021. Ideal for animal and plant tissues. More control through manual guide. Length 28 mm. Autoclavable.

| Inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 3 | **HCY8.1** | 1 | 48,75 |
| 4 | **HCY9.1** | 1 | 48,60 |
| 5 | **HEA0.1** | 1 | 48,75 |
| 6 | **HEA1.1** | 1 | 48,75 |



## T-shaped dissecting needles

Made of stainless steel, nickel plated. Length 51 mm.
Approx. 375 needles per box.

| Art. No. | Pack Qty. (box) | € |
|---|---|---|
| **CEC6.1** | 1 | 32,20 |



## Dissecting needles

With plastic handle made of **PS**. Length 30 mm, head ∅ 3 mm.
Assorted colours.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK47.1** | 100 | 2,80 |



121°C

## Mouse Restrainer

Made of **PMP**, transparent. With large opening to hold mice weighing from 18-35 g. The mouse can be inserted forwards or backwards. The mouse can be immobilised in two positions in the restrainer by a gate. When the mouse is in the restrainer, its dorsal skin is easily accessible from above, e.g. for performing subcutaneous injections. With tail first entry, the tail of the mouse can be conveniently positioned outside the restrainer for taking blood samples.
The restrainer mounted to a lab worktop or other surface (fastening material not included).
Dimensions: L 174 x W 100 x H 67 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK28.1** | 1 | 71,95 |




NEU NOUVEAU NEW

## Preparation surfaces, glass

By Hammacher.

| Type | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① Glass plate | 95 x 70 x 6 | **HEA2.1** | 1 | 7,50 |
| ② Glass block | 150 x 75 x 20 | **HEA3.1** | 1 | 32,75 |



## Preparation surfaces

**Made of HDPE.** Can be used on both sides, with a large preparation surface on one side and two smaller surfaces on the other side. Printed with helper lines and straight edges, as well as circles with diameters from 4 to 14 mm. With all-round drip channel and anti-slip rubber feet.

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 330 x 279 x 12,5 | **CXL9.1** | 1 | 94,75 |
| 575 x 400 x 12,5 | **CXN0.1** | 1 | 150,50 |



## Tray for preparation surfaces

Made of **PS.** Suitable for use with preparation surfaces CXN0.1. Collects liquid overflow as required. Slip-resistant. Can be stacked to elevate the preparation surfaces to a comfortable working height. Dimensions: L 656 x W 481 x H 91 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXN1.1** | 1 | 123,65 |



## Disposable preparation surfaces

Made of corrugated plastic, suitable for use on both sides. Printed with helper lines and rulers, as well as circles with diameters from 4 to 16 mm and 2 to 6 cm. Temperature stable from -27 to +71 °C.

| L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 152 x 203 | **CKP5.1** | 24 | 69,80 |
| 229 x 305 | **CTY6.1** | 12 | 52,80 |
| 305 x 483 | **CTY7.1** | 12 | 98,20 |



## Dissecting dishes

Made of **HDPE**, with flexible PVC dissecting mat. With slip-resistant base, non-corrosive, breakage-resistant and leak-proof. Dissecting mats are washable, durable and have a smooth surface.

| Type | Outer L x W (mm) | Inner L x W (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Small | 320 x 227 | 265 x 180 | 41 | **CEC7.1** | 1 | 17,00 |
| Large | 363 x 273 | 315 x 220 | 48 | **CEC8.1** | 1 | 24,40 |

## Covers for dissecting dishes

Made of transparent PET. For samples up to a height of 76 mm.

| for dissecting dish type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Small | **CEC9.1** | 1 | 7,50 |
| Large | **CEE0.1** | 1 | 9,15 |



## Rotilabo®-tweezers set

Four tweezers made of stainless steel 18/10 (material 1.4301), in etui. Red PTFE coating with good anti-adhesive properties forms a separating layer between the tweezer material and the sample. Dull colour of the coating enables glare-free working under the bright lighting in microscopy. The chemical-resistant coating also protects against contact with the nickel contained in the stainless steel.

**Contents:**

1 tweezer with fine tip, curved, L 120 mm
1 pointed tweezer with guide pin, L 130 mm
1 pointed tweezer curved, L 130 mm
1 blunt tweezer, L 145 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ENX5.1** | 1 | 51,50 |

# Dissecting sets for anatomy



## Rotilabo®-dissecting sets

In zip-up case, with elastic loops to hold instruments.

**Contents of small dissecting set for microscopy:**
1 dissecting scissors for microscopy, straight, L 115 mm
1 scalpel, pointed, L 155 mm, blade 40 mm
1 tweezer, pointed, straight, L 105 mm
1 lancet, straight, with plastic handle, L 140 mm
1 lancet with plastic handle, L 140 mm
1 spatula for easy lifting of tissues, L 160 mm, B 10 mm

**Contents of large dissecting set for microscopy additionally:**
1 dissecting scissors for microscopy, curved, L 115 mm
1 razor, folds out, with plastic handle
1 dissecting needle with plastic handle, L 140 mm

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Small dissecting set for microscopy | **ENY0.1** | 1 | 21,45 |
| Large dissecting set for microscopy | **ENY1.1** | 1 | 32,15 |



## Rotilabo®-dissecting sets for anatomy

In zip-up case, with elastic loops to hold instruments.
**Contents of small dissecting set:**
1 dissecting scissors for microscopy, straight, L 100 mm
1 scalpel, pointed, L 125 mm, blade 25 mm
1 tweezer, pointed, straight, L 105 mm
1 tweezer, blunt, straight, L 115 mm
1 tweezer made of spring steel, L 100 mm
1 dissecting needle with plastic handle, L 140 mm

**Contents of large dissecting set additionally:**
1 lancet with plastic handle, L 140 mm
1 dissecting scissors for microscopy, curved, L 100 mm
1 scissors, blunt tip, L 130 mm

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Small dissecting set: | **ENY2.1** | 1 | 37,85 |
| Large dissecting set | **ENY3.1** | 1 | 54,85 |



## Dissecting set

In zip-up case, with elastic loops to hold instruments.
**Contents:**
1 pair of scissors, sharp-blunt, L 140 mm
1 pair of small scissors, L 110 mm
1 pair of tweezers, blunt, L 140 mm
1 pair of tweezers, sharp, L 110 mm
1 scalpel handle No. 4
5 scalpel blades, type 23
2 dissecting needles, sharp

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CAL6.1** | 1 | 24,70 |



## Chemist set, large

By Hammacher. Instruments made of stainless steel, autoclavable.

*Scissors made of steel, nickel plated and coated, non-autoclavable.

In plastic box, dimensions: L 214 x W 102 x H 27 mm.
**Contents:**
1 micro double spatula, 130 mm
1 micro spoon spatula, spoon 5 x 7 mm
1 micro powder spatula, flexible, 185 mm
1 double spatula, rigid, 185 mm
1 tweezers, straight, sharp, 160 mm
1 scissors*, straight, serrated, 170 mm
1 Poly spoon, 180 mm
1 weighing spoon
1 double spatula, wide, round on both sides, 150 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TE20.1** | 1 | 69,70 |



## Dissecting sets for microscopy

In wooden box.

**Small.** Dimensions: L 195 x W 85 x H 32 mm.

**Contents:**

- All-metal scalpel, 35 mm
- Dissecting needle, pointed
- Dissecting needle, lance shaped
- Splinter forceps, 110 mm
- Section lifter, 45 x 8 mm
- Dissecting scissors, 110 mm, straight

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LX82.1** | 1 | 32,20 |

**Large.** Dimensions: L 195 x W 95 x H 35 mm.

**Contents same as LX82.1, plus:**

- Razor
- Dissecting probe, curved
- Dissecting scissors, 110 mm, curved

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LX83.1** | 1 | 39,60 |



## Dissecting set

In case, W 85 x L 195 x H 30 mm.

**Contents:**

1 scalpel handle No. 4 with 6 blades (type 21 + 23)
1 dissecting needle with plastic handle
1 self-closing tweezer, angled tip L 140 mm
1 coverslipper tweezer, L 160 mm
1 anatomic tweezer, blunt tip, L 140 mm
1 small scissors L 115 mm
1 scissors, blunt tip, L 130 mm
1 double spatula, L 170 mm
10 dissecting needles

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0829.1** | 1 | 46,80 |



## Dissecting set for anatomy, Premium

By Hammacher. Instruments made of stainless steel, autoclavable.

*Instruments with wooden handle are non-autoclavable.

In wooden box, dimensions: L 190 x W 100 x H 35 mm.

**Contents:**

1 scissors, buttoned, 145 mm
1 cartilage knife with scraper, wooden handle*, 180 mm
5 scalpel* with wooden handle, ball shaped, blade length 25-45 mm
1 tweezers, 105 mm, blunt
1 tweezers, 105 mm, sharp
1 muscle retractor, 100 mm
1 tube, double, straight
1 blunt probe, 130 mm, ∅ 1 mm
2 surgical needles, ½ circle

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TE19.1** | 1 | 331,35 |




## Instrument oil

By Hammacher. Synthetic oil, silicone-free. Odourless and transparent, leaves no brown marks on the instruments. Spot-on application through safety/anti-drop valve.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCY1.1** | Application bottle 12 ml | 16,45 |

▶ Microscopes from page 748

# Sterilisation and cleaning containers



## Instrument holders

Made of stainless steel 1.4301. For storage or precleaning of forceps, instruments and thermometers. Autoclavable.

| ∅ x H (mm) | ∅ Standfuß (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 30 x 90 | 70 | **YP55.1** | 1 | 19,50 |
| 50 x 130 | 90 | **YP56.1** | 1 | 26,35 |
| 80 x 175 | 125 | **YP57.1** | 1 | 39,75 |
| 100 x 200 | 135 | **YP58.1** | 1 | 48,30 |



## Instrument holders

Made of **PP**, white. For storage or precleaning of instruments and thermometers. Autoclavable.

| Vol. (ml) | Inner height (mm) | Outer height (mm) | Inside ∅ (mm) | Base ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 230 | 100 | 107 | 60 | 98 | **TT27.1** | 5 | 41,80 |
| 1100 | 190 | 200 | 89 | 147 | **TT28.1** | 5 | 56,75 |



**Programme extension!**

## Sterilisation containers polySteribox®

Transparent special plastic, can be used for approx. 1250 sterilization cycles. **For the sterilization and storage of instruments.** Suitable for steam, gas and plasma sterilization. Hydrophobic PTFE filter stops germs and bacteria (replace after approx. 250 sterilizations, includes date insert). A sterilization mark and protective seal can be used to check the sterility of the contents. Safety seal for safe transportation. Stackable. Dishwasher safe.
Acc. to DIN 58952, 58953, EN 868-1/868-8/554, ISO 11607 and DIN EN ISO 17664 and 11137-1. CE certified. Autoclavable up to 134 °C. **Delivery incl.** PTFE filter (12-month filter, polySteribox M with permanent filter). Permanent filter set is optional. Please order separately.

| Type | Outer dimensions: L x W x H (mm) | Inner dimensions: L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| polySteribox® SH | 208 x 111 x 55 | 177 x 76 x 44 | **X616.1** | 1 | 115,05 |
| polySteribox® M | 185 x 145 x 59 | 156 x 124 x 48 | **KP96.1** | 1 | 134,40 |
| polySteribox® L | 290 x 184 x 74 | 261 x 163 x 64 | **KP97.1** | 1 | 164,50 |
| polySteribox® XL | 497 x 122 x 65 | 465 x 90 x 54 | **TA78.1** | 1 | 226,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Sterilisation seal with indicator strip | **X617.1** | 1000 | 49,05 |
| Protective seals | **H653.1** | 500 | 46,70 |
| Non-slip silicon mat for polySteribox® SH | **H654.1** | 1 | 27,70 |
| Non-slip silicon mat for polySteribox® M | **TA79.1** | 1 | 32,20 |
| Non-slip silicon mat for polySteribox® L | **TA80.1** | 1 | 46,15 |
| Screen basket for polySteribox® SH | **HLE9.1** | 1 | 80,65 |
| Screen basket for polySteribox® M | **HLH0.1** | 1 | 83,35 |
| Screen basket for polySteribox® L | **HLH1.1** | 1 | 85,80 |
| Screen basket for polySteribox® L with lid | **HLH2.1** | 1 | 192,45 |
| Grid insert made of stainless steel for polySteribox® L | **HLH3.1** | 1 | 55,70 |
| Screen basket for polySteribox® XL with lid for 2 endoscopes | **HLH4.1** | 1 | 265,55 |
| Permanent filter set for polySteribox® SH | **TA85.1** | 1 | 20,45 |
| Permanent filter set for polySteribox® M | **TA86.1** | 1 | 24,20 |
| Permanent filter set for polySteribox® L/XL | **TA87.1** | 1 | 29,25 |

▶ Instrument trays see page 125

# Sampling, Pumps & Liquid Handling

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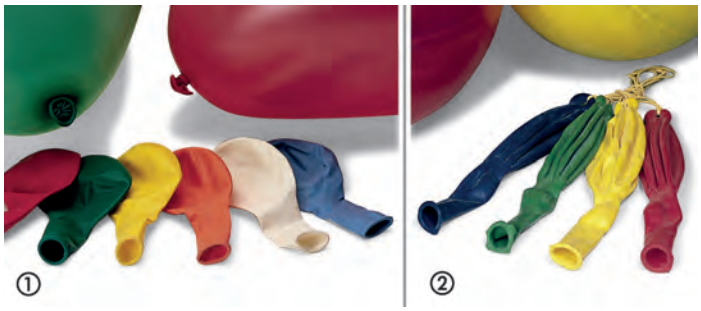

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# Gas equipment




## ① Rotilabo®-gas bag

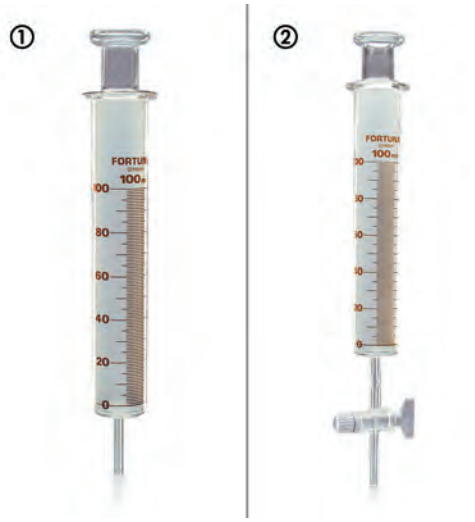
Made of natural rubber. Egg-shaped, ideal for mixing or short-term storage of gases. Max. circumference approx. 85 cm. Assorted colours.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0933.1** | 100 | 13,95 |

## ② Rotilabo®-gas bags maxi

Made of Latex. Ideal for testing air or gas intake and/or release from apparatus. Also for short-term storage of gases. When empty 22 cm long. Assorted colours.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA08.1** | 10 | 21,45 |




## Piston samplers

Made of Durobax®-glass. For carrying out gasometric experiments. Graduated. Acid and alkali resistant.

**Applications:** analysis of air and breathable air, identification of respiratory quotient, indirect water analysis, qualitative gas combustion, illuminating gas analysis etc.

**With capillary attachment,**
without spigot, inner ∅ approx. 2.5 mm, outer ∅ approx. 6.5 mm

| Design | Volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 25 | 0.5 | **HT27.1** | 1 | 59,15 |
| ① | 50 | 0.5 | **HT28.1** | 1 | 63,35 |
| ① | 100 | 1.0 | **HT29.1** | 1 | 69,35 |

**With capillary spigot,**
NS 12.5; 2.5 mm bore hole

| Design | Volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ② | 50 | 0.5 | **HT30.1** | 1 | 93,55 |
| ② | 100 | 1.0 | **HT31.1** | 1 | 102,80 |




## Plastigas®-bags

Made of multiple laminated aluminium foil, thermoplastically welded with inner polyethylene layer. Ideal for storing small amounts of gas under low pressure.

**Bag 2.5 l** with connection nozzle for bubble tubing.
Also with taped septum for removing samples with syringe.

**Bag 27.0 l** with screw-on valve and metal hose nozzle.
Also with septum for removing samples with syringe.

**Bubble tubing**, 80 cm long.

Accessories for Art. No. 0848.1 please order separately.

| Type | Volulme (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① Plastigas®-bags | 2,5 | **0848.1** | 1 | 29,00 |
| ② Plastigas®-bags | 27,0 | **0847.1** | 1 | 84,90 |
| ③ Bubble tubing | - | **H547.1** | 1 | 17,15 |



## Gas leak detector testo 316-1

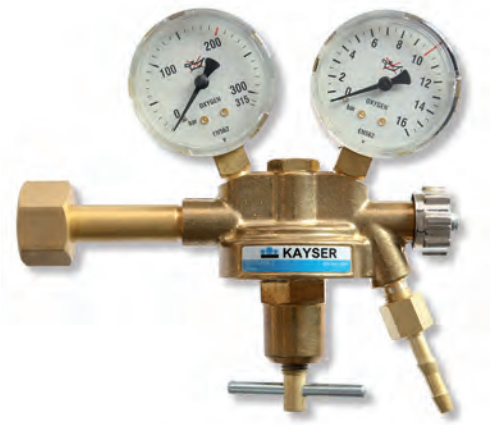
By Testo. Ideal for tracing leaks in pipes, flanges, screw connectors, gas pipes etc. For methane. With visual and acoustic alarm. Sensor has extremely short reaction time.

**Technical specifications:**

| | |
|---|---|
| Range | 0 to 10.000 ppm CH4 |
| Alarm threshold | >200 ppm LED yellow / >10.000 ppm LED red |
| Battery life | >5 h |
| Working temperature | 4 to 45 °C |
| Dimensions (L x W x H) | 190 x 57 x 42 mm |
| Weight | 300 g |

**Delivery incl.** battery (9 V).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P757.1** | 1 | 215,00 |




## Bottle pressure regulators, single-stage

By Kayser. Made of brass. Manufactured acc. to EN ISO 2503.
For safe emptying of gas from steel cylinders to max. 200 bar, with simultaneous reduction to required working pressure of 10 bar.
With safety valve (is triggered at 12 bar). Graduated in 0.5 bar increments.

**Technical specifications:**

| **Type of gas** | Connection for bottle | Connection for tube |
|---|---|---|
| **Compressed air** | G ⅝″ pressure screw | G ¼″ right |
| **Hydrogen** | W 21.8 x 1/14″ left | G ⅜″ left |
| **Oxygen** | G ¾″ right | G ¼″ right |
| **Nitrogen** | W 24.32 x 1/14″ right | G ¼″ right |
| **Calibrating gas** | M 19 x 1.5 left | G ⅜″ left |
| **Inert gases/$CO_2$** | W 21.8 x 1/14″ right | G ¼″ right |
| **Inert gases/$CO_2$ - vol.-strom 0-28/30 l/min*** | W 21.8 x 1/14″ right | G ¼″ right |
| **Purging gases - vol.-strom 0-50 l/min** | W 21.8 x 1/14″ left | G ⅜″ left |

* Work manometer with double scale (l/min and bar)

| Type of gas | Connection for bottle | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| For compressed air | G 5/8″ pressure screw | **0270.1** | 1 | 79,55 |
| For hydrogen | W 21.8 x 1/14″ left | **0284.1** | 1 | 79,55 |
| For oxygen | G ¾″ right | **0285.1** | 1 | 79,55 |
| For nitrogen | W 24.32 x 1/14″ right | **0288.1** | 1 | 79,55 |
| For calibrating gas | M 19 x 1,5 left | **0280.1** | 1 | 79,55 |
| For inert gases/$CO_2$ | W 21.8 x 1/14″ right | **0286.1** | 1 | 79,55 |
| For inert gases/$CO_2$ volume flow 0-28/30 l/min | W 21.8 x 1/14″ right | **0290.1** | 1 | 79,55 |
| For forming gas volume flow 0-50 l/min | W 21.8 x 1/14″ left | **0289.1** | 1 | 79,55 |




Material DURAN®

## Gas sampling tubes

Made of DURAN®. Acc. to DIN 12473-1, with two one-way cocks, standard ground joint 14.5 and sampling nozzle (Thread GL 14).
Capillary tube (Inner-∅ 2.7 mm, outer-∅ 8 mm) on the one side and olive (outer-∅ 8 mm) on the other side. With labelling area.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 350 | **KX55.1** | 1 | 88,45 |
| 500 | **KX56.1** | 1 | 98,70 |
| 1000 | **KX57.1** | 1 | 141,90 |




## Gas pressure regulators, two stage

By Air Liquide. Made of chrome-plated brass. Ideal for all high-purity gases and gas compounds except acetylene and corrosive gases.
Excellent for use wherever constant outlet pressure is required.

**Technical specifications:**

| | |
|---|---|
| Max. inlet pressure | 200 bar |
| Working temperature | -20 to +50 °C |
| Weight | 1.6 kg |
| Dimensions (L x W x H) | 180 x 98 x 135 mm |
| Contact inlet | bottle attachment acc. to DIN 477 |
| Contact outlet | clamping ring connection for 6 mm tube |
| Overal leakage rate | 3 x $10^{-7}$ mbar l/s |

**Back pressure 0.05-1 bar**. Graduated in 0.1 bar-increments.

| Type of gas | Connection for bottle | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Inert gases | W 21.8 x 1/14″ right | **C286.1** | 1 | 697,70 |
| Hydrogen | W 21.8 x 1/14″ left | **C287.1** | 1 | 697,70 |
| Oxygen | R ¾″ right | **C288.1** | 1 | 697,70 |
| Nitrogen | W 24.32 x 1/14″ right | **C289.1** | 1 | 697,70 |
| Calibrating gas | M 19 x 1.5 left | **C290.1** | 1 | 697,70 |

**Back pressure 0.1-3 bar**. Graduated in 0.1 bar-increments.

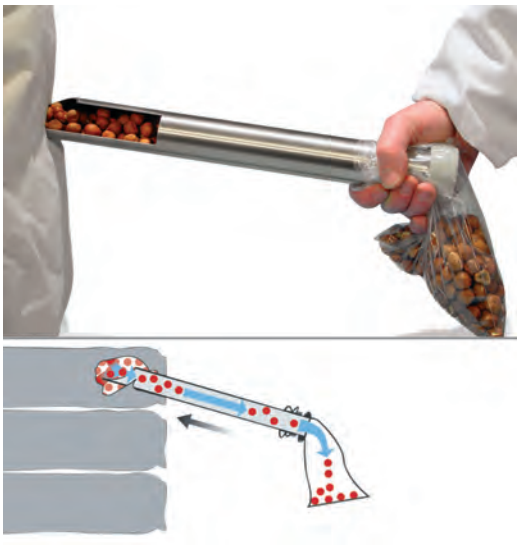
| Type of gas | Connection for bottle | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Inert gases | W 21.8 x 1/14″ right | **C291.1** | 1 | 697,70 |
| Hydrogen | W 21.8 x 1/14″ left | **C292.1** | 1 | 697,70 |
| Oxygen | R ¾″ right | **C293.1** | 1 | 697,70 |
| Nitrogen | W 24.32 x 1/14″ right | **C294.1** | 1 | 697,70 |
| Calibrating gas | M 19 x 1.5 left | **C295.1** | 1 | 697,70 |

**Back pressure 0.5-10 bar.** Graduated in 0.5 bar-increments.

| Type of gas | Connection for bottle | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Inert gases | W 21.8 x 1/14″ right | **C296.1** | 1 | 697,70 |
| Hydrogen | W 21.8 x 1/14″ left | **C297.1** | 1 | 697,70 |
| Oxygen | R ¾″ right | **C298.1** | 1 | 697,70 |
| Nitrogen | W 24.32 x 1/14″ right | **C299.1** | 1 | 697,70 |
| Calibrating gas | M 19 x 1.5 left | **C300.1** | 1 | 697,70 |


- For Sekuroka®-gas bottle supports, see page 717
- For steel cylinder transport trolley, see page 718

# Sampling for powders / granulates



## Tubus sampler

By Bürkle. Made of stainless steel (1.4404). Suitable for use with foodstuffs. For pourable bulk goods up to approx. 10 mm in diameter, e.g. hazel nuts, cereals, granulates, crystalline solids (e.g. sugar).
Insert Tubus into a sack to the desired sampling depth.
The sample flows directly through the open tube into the sampling bag.
Tube ∅ 40 mm. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 40 | **EP04.1** | 1 | 133,20 |
| 80 | **EP05.1** | 1 | 166,65 |



## QuickPicker samplers

By Bürkle. Made of transparent PP or stainless steel 1.4404, suitable for foodstuffs. For removal of bulk goods from bags and direct transfer into original sampling bottles. Insertion depth 300 mm. Total length 500 mm. Volume 75 ml. Tube ∅ 25 mm. Sampler is autoclavable (without bottle).
**Delivery incl.** two 250 ml LDPE sampling bottles and cleaning brush.

| Material | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PP | **YK99.1** | 1 | 140,85 |
| Stainless steel | **YL00.1** | 1 | 223,60 |

**Accessories:**

| | | | |
|---|---|---|---|
| Sampling bottle, LDPE, 250 ml | **YL01.1** | 1 | 2,90 |



## Powder and granulate sampler

By Bürkle. Made of stainless steel 1.4404. Suitable for use with foodstuffs. Conforms to EN ISO 707 and IDF (International Dairy Federation).
Suitable for sampling milk powder. The sampler is inserted into bags and the sample is removed using a semicircular profile lance.
Insertion depth 385 mm. Volume 150 ml. Total length 480 mm.
Outer ∅ approx. 28 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YL02.1** | 1 | 174,15 |



## SiloPicker

By Bürkle. Made of stainless steel (1.4404). For sampling bulk goods from silos, tanks, BigBags or other large containers.
Chamber volume: 100 ml. Length: 130 cm. Outer ∅ 50 mm. Autoclavable.

**Application:**
- Insert SiloPicker into bulk goods
- The closure sleeve automatically closes the collection container
- When the sampling depth has been reached, briefly pull back the SiloPicker
- The bulk goods flow into the collection container
- Pull out the SiloPicker
- Empty the sampler

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YX85.1** | 1 | 396,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Extension rod, 100 cm | **YX86.1** | 1 | 66,05 |


▶ Sampling bags from page 252
▶ Bottles from page 114
▶ For scoops see page 196

# Control seals






121 °C

## Zone samplers

By Bürkle. Made of aluminium, stainless steel (1.4404) or stainless steel (1.4404)/PTFE. For sampling bulk goods, e.g. from bags, drums, bins, BigBags and silos. Tube ∅ 25 mm. Suitable for use with foodstuffs. Autoclavable.

**Application:**
- Close the chambers by turning the handle
- Insert the sampler to the desired depth
- Open the chambers to allow the bulk goods to flow into the collector
- Close the chambers
- Withdraw the sampler
- Reseal the puncture using an adhesive seal

### ① All-layer samplers

Open inner tube for large sample volumes. Meets ISTA standard for seed lengths of 10 mm (wheat, oats) and 5 mm (flax, vetch).

**Technical specifications:**

| Material | Total length (cm) | Insertion depth (cm) | Number of chambers | Chamber volume (ml) |
|---|---|---|---|---|
| Aluminium | 55 | 43 | 3 | 70 |
| Aluminium | 85 | 71 | 3 | 130 |
| Aluminium | 150 | 135.5 | 5 | 260 |
| Stainless steel | 55 | 43 | 3 | 70 |
| Stainless steel | 85 | 71 | 3 | 130 |
| Stainless steel | 150 | 135.5 | 5 | 260 |

| Material | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Aluminium | 55 | **YH96.1** | 1 | 195,65 |
| Aluminium | 85 | **YH97.1** | 1 | 211,80 |
| Aluminium | 150 | **YH98.1** | 1 | 269,85 |
| Stainless steel | 55 | **YH99.1** | 1 | 589,10 |
| Stainless steel | 85 | **YK00.1** | 1 | 679,40 |
| Stainless steel | 150 | **YK01.1** | 1 | 818,10 |

### ② Multi-samplers

Inner tube with separate chambers.
For multi-taking target-point samples from various sample depths.

**Technical specifications:**

| Material | Total length (cm) | Insertion depth (cm) | Number of chambers | Chamber volume (ml) |
|---|---|---|---|---|
| Aluminium | 55 | 43 | 3 | 14 |
| Aluminium | 85 | 71 | 3 | 17 |
| Aluminium | 150 | 135.5 | 5 | 17 |
| Stainless steel/PTFE | 55 | 43 | 3 | 14 |
| Stainless steel/PTFE | 85 | 71 | 3 | 17 |
| Stainless steel/PTFE | 150 | 135.5 | 5 | 17 |

| Material | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Aluminium | 55 | **YK02.1** | 1 | 217,15 |
| Aluminium | 85 | **YK03.1** | 1 | 240,80 |
| Aluminium | 150 | **YK04.1** | 1 | 310,70 |
| Stainless steel/PTFE | 55 | **YK05.1** | 1 | 419,25 |
| Stainless steel/PTFE | 85 | **YK06.1** | 1 | 471,95 |
| Stainless steel/PTFE | 150 | **YK07.1** | 1 | 685,85 |

### ③ Uno-samplers

One closed sampling chamber.
For taking target-point samples from a specific sample depth.

**Technical specifications:**

| Material | Total length (cm) | Insertion depth (cm) | Number of chambers | Chamber volume (ml) |
|---|---|---|---|---|
| Stainless steel/PTFE | 55 | 43 | 1 | 17 |
| Stainless steel/PTFE | 85 | 71 | 1 | 17 |
| Stainless steel/PTFE | 150 | 135.5 | 1 | 17 |

| Material | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Stainless steel/PTFE | 55 | **YK08.1** | 1 | 427,85 |
| Stainless steel/PTFE | 85 | **YK09.1** | 1 | 478,40 |
| Stainless steel/PTFE | 150 | **YK10.1** | 1 | 699,85 |



## Accessories for zone samplers

**Emptying device for multi- and uno-samplers**
By Bürkle. Made of stainless steel (1.4301).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rack with 3 funnels, length 1 m | **YK11.1** | 1 | 346,15 |
| Funnel, single | **YK12.1** | 1 | 54,10 |

**Cleaning brush**
By Bürkle. Made of PVC and stainless steel. ∅ 25 mm. Length 100 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE50.1** | 1 | 45,45 |




## Control seals, metal-detectable

For hermetic sealing of pierced bags, cartons or BigBags after sampling. Barrier layer made of aluminium with extra-strong bonding layer, food-safe adhesive. Temperature-resistant from -20 °C to +70 °C, bonding temperature at least 0 °C. ∅ 95 mm. 1000 pieces on the roll.

| Label | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|
| QUALITÄTSKONTROLLE | **T457.1** | 1 | 120,40 |
| QUALITY CONTROL | **T513.1** | 1 | 120,40 |
| CONTRÔLE QUALITE - PRELEVE LE | **T514.1** | 1 | 120,40 |

# Sampling for pasty / compound substancess



## Security control seals, coloured

By Bürkle. Aluminium barrier layer. Foodstuff-compatible adhesive. Prevents products from leaking out after sampling. Suitable for foodstuffs, pharmaceuticals, cosmetics, dietary supplements and frozen food. Sealed gastight. Can be labelled indelibly.
Temperature stable from -20 up to max. +40 °C.
Label dispenser is optional, please order separately.

**Close-it food & pharma**

Label size: W 95 x H 95 mm. 500 labels per roll.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **YC60.1** | 500 | 61,85 |
| black | **YC61.1** | 500 | 61,85 |
| yellow | **YC62.1** | 500 | 61,85 |
| blue | **YC63.1** | 500 | 61,85 |
| green | **YC64.1** | 500 | 61,85 |
| white, unprinted | **YC65.1** | 500 | 61,85 |

Label size: W 150 x H 150 mm. 250 labels per roll.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **YC66.1** | 250 | 85,95 |
| black | **YC67.1** | 250 | 85,95 |
| yellow | **YC68.1** | 250 | 85,95 |
| blue | **YC69.1** | 250 | 85,95 |
| green | **YC70.1** | 250 | 85,95 |
| white, unprinted | **YC71.1** | 250 | 85,95 |

**Close-it tape food & pharma**

Continuous label roll, for cutting out. Colour: white. Roll length 50 m.

| Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 95 | **YC72.1** | 1 | 62,35 |
| 150 | **YC73.1** | 1 | 85,95 |

**Label dispenser**

| Suitable for label width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 95 | **YC74.1** | 1 | 91,00 |
| 150 | **YC75.1** | 1 | 129,00 |



## Plunge borers, conical

By Bürkle. Made of stainless steel 1.4301. Conically shaped with sharp edges and a solid handle. Suitable for use with foodstuffs. Acc. to EN ISO 707. For sampling soft and paste-like substances, such as cheese, butter, mud, clay, soap and wax. Insert the borer into the substance and turn it to cut out the sample material. Autoclavable.

| Insertion depth (mm) | Total length (cm) | Pipe-∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 120 | 18 | 10-15 | **YP34.1** | 1 | 65,95 |
| 170 | 22 | 11-18 | **YP35.1** | 1 | 97,85 |



## Plunge borer, cylindrical

By Bürkle. Made of stainless steel 1.4301. With sharp cutting crown. Suitable for use with foodstuffs. For sampling paste-like and semi-solid substances. Use the suction piston to push out the bored samples from the cylinder. Insertion depth 200 mm. Total length 260 mm.
Inner diameter approx. 8 mm. Outer diameter approx. 10 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YP36.1** | 1 | 133,30 |



## Pigment samplers

By Bürkle. Made of stainless steel 1.4404. With half-open groove for very adhesive substances or quarter-open groove for less adhesive substances. For sampling pigments, pastes and agglomerating bulk goods. Insert the lance to the desired depth. Turn the handle so that the sample is collected in the open groove. Withdraw the lance. Remove the sample.
Tube diameter 30 mm. Autoclavable.

| Length (mm) | Groove opening (%) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 300 | 25 | 145 | **YP37.1** | 1 | 202,10 |
| 300 | 50 | 85 | **YP38.1** | 1 | 223,60 |
| 600 | 25 | 312 | **YP39.1** | 1 | 292,40 |
| 600 | 50 | 179 | **YP40.1** | 1 | 317,15 |




## Samplers for viscous and liquid mediums

By Bürkle. Made of PP or PTFE/FEP (chemically inert).
Suitable for use with foodstuffs. Tube-∅ 25 mm, tip-∅ 32 mm.

① **Visco sampler**

Very strong suction power for sampling viscous, non-self-flowing substances such as mud, slime, watery clay and soil samples, oils, emulsions, creams. Samples are sucked and ejected via a suction piston.

② **Liqui sampler**

For liquid mediums. Compliant with DIN EN ISO 15 528. Practical push-button one-handed operation. For all-layer and target-point/soil sampling. For **all-layer sampling**, slowly plunge the liqui sampler into the liquid with the button pressed (valve open). Release the button, the valve closes. Withdraw the sampler and remove the sample.
For **target-point/soil sampling**, plunge the liqui sampler down to the target point/soil with the valve closed. Press the button, the valve opens and liquid flows in. Release the button, the valve closes. Withdraw the sampler and remove the sample.

| Type | Material | Length (mm) | Contents (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | PP | 60 | 160 | **YP46.1** | 1 | 251,55 |
| ① | PP | 100 | 300 | **YP47.1** | 1 | 298,85 |
| ① | PP | 200 | 650 | **YP48.1** | 1 | 442,90 |
| ① | PTFE/FEP | 60 | 160 | **YP49.1** | 1 | 339,70 |
| ① | PTFE/FEP | 100 | 300 | **EE48.1** | 1 | 406,35 |
| ① | PTFE/FEP | 200 | 650 | **EE49.1** | 1 | 559,00 |
| ② | PP | 60 | 150 | **YP50.1** | 1 | 163,40 |
| ② | PP | 100 | 250 | **YP51.1** | 1 | 217,15 |
| ② | PP | 200 | 500 | **YP52.1** | 1 | 325,75 |
| ② | PTFE/FEP | 60 | 150 | **YP53.1** | 1 | 251,55 |
| ② | PTFE/FEP | 100 | 250 | **EE46.1** | 1 | 356,90 |
| ② | PTFE/FEP | 200 | 500 | **EE47.1** | 1 | 493,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cleaning brush, length 100 cm | **EE50.1** | 1 | 45,45 |
| Drip tray safety wall bracket | **TL59.1** | 1 | 53,75 |




121°C

## Liquid samplers

By Bürkle. Made of stainless steel (1.4404). For sampling thin to viscous liquids. With discharge funnel for safe filling of sampling bottles. One-handed operation. Container ∅ 32 mm. Autoclavable.

| Image | Type | Total length (mm) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | Thumb hole | 460 | 50 | **YX81.1** | 1 | 174,15 |
| ① | Thumb hole | 540 | 100 | **YX82.1** | 1 | 190,30 |
| ② | Open by placing onto bottle | 455 | 50 | **YX83.1** | 1 | 214,80 |
| ② | Open by placing onto bottle | 535 | 100 | **YX84.1** | 1 | 240,80 |



## Plunging siphon made of PP

For easy removal of liquid samples. The top end features a stopcock and the bottom end has a ball valve. With transparent pipe for good visibility. For drums with a minimum opening ∅ of 22 mm. Suitable for foodstuffs.

Ideal for all-layer and target point sampling.
**All-layer sampling:** Plunge the siphon slowly into the liquid with the open stopcock. Close the valve. Withdraw the siphon and remove the sample. Empty sample into container via handle.
**Target point sampling:** Plunge the siphon with the closed stopcock down to the target point. Open the stopcock - the liquid will flow in. Close the stopcock. Withdraw the siphon and remove the sample. Empty sample into container via handle.

Model 3 is infinitely variable from 100 to 200 cm.

| Type | Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 140 | 50 | **EN97.1** | 1 | 46,15 |
| 2 | 280 | 100 | **EN98.1** | 1 | 48,35 |
| 3 | 560 | 200 | **EN99.1** | 1 | 57,95 |



121°C

## Mini visco samplers

By Bürkle. Made of stainless steel 1.4404. For sampling viscous substances such as pastes, muds, creams and oils. Ideal for the pharmaceutical and cosmetics industry. Samples are sucked and ejected via a suction piston. Suction point with 2 mm suction hole. Suction points available with a larger diameter for more viscous mediums, please order separately. Autoclavable.

| Length (mm) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 60 | 30 | **YP41.1** | 1 | 278,45 |
| 100 | 50 | **YP42.1** | 1 | 321,45 |
| 150 | 75 | **YP43.1** | 1 | 390,25 |

**Accessories:**

| | | | |
|---|---|---|---|
| Suction point, 4 mm suction hole | **YP44.1** | 1 | 44,10 |
| Suction point, 6 mm suction hole | **YP45.1** | 1 | 44,10 |
| Drip tray safety wall bracket | **TL59.1** | 1 | 53,75 |

# Liquid sampling




## Rotilabo®-sampling containers

For use with Rotilabo® telescope rods (please order separately).
**Delivery incl.** beaker holder.

① **Rotilabo®-swing beaker**
For sampling liquids, e.g. out of deep tanks, pans or narrow shafts.
Vessel swings into the horizontal position.
For opening ∅ from 150 mm (Art. No. NH30.1 from 130 mm).

| Volume (ml) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 600 | PP | **NH29.1** | 1 | 48,40 |
| 1000 | PP | **9244.1** | 1 | 48,95 |
| 2000 | PP | **9251.1** | 1 | 59,10 |
| 1000 | Stainless steel (1.4301) | **NH30.1** | 1 | 183,85 |

② **Rotilabo®-angle beaker**
Tilt angle is adjustable to 90° through quick adjustment of the joint.

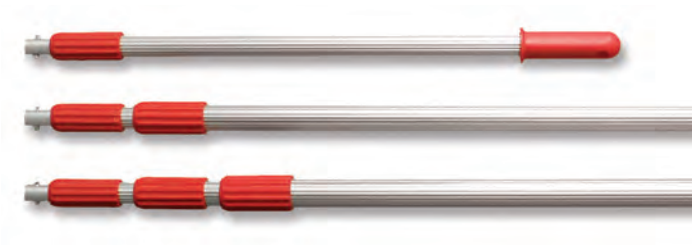
| Volume (ml) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 600 | PP | **N104.1** | 1 | 49,70 |
| 1000 | PP | **N105.1** | 1 | 50,80 |
| 2000 | PP | **N106.1** | 1 | 55,45 |

③ **Rotilabo®-beaker with digging edge**
For sampling of powders, granulates, pastes and sludge.

| Volume (ml) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1000 | Stainless steel (1.4301) | **NH31.1** | 1 | 138,70 |

④**Rotilabo®-bottle holder**
Fits bottles up to max. ∅ 88 mm. With quick-release clamp. Inclination angle is adjustable by up to 90° through quick adjustment of the joint.
**Delivery incl.** bottle with screw cap.

| Volume (ml) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 750 | Holder made of PP<br>Tightening strap made of PA<br>Bottle made of PE | **N107.1** | 1 | 57,70 |



## Rotilabo®-telescope rods

Made of aluminium and **PP**.
Can be combined with Rotilabo®-sampling containers.
Not suitable for aggressive liquids.

| Adjustable length | Art. No. | Pack Qty. | € |
|---|---|---|---|
| from 0.6 to 1.2 m | **9254.1** | 1 | 26,35 |
| from 1.25 to 2.5 m | **9255.1** | 1 | 33,90 |
| from 1.0 to 3.0 m | **9257.1** | 1 | 52,60 |
| from 1.65 to 4.5 m | **T251.1** | 1 | 73,30 |



## Rotilabo®-sample scoops

With solid handle bar, made of transparent **PP**.
For taking specific samples from tanks, tubs, galvanic baths, lakes, etc.
Length of handle 100 cm, ∅ 20 mm.

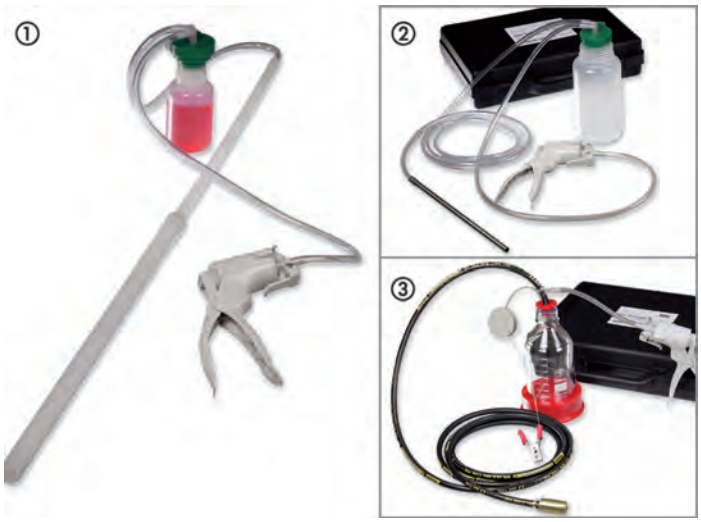
| Capacity (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 250 | **9220.1** | 1 | 61,20 |
| 600 | **9225.1** | 1 | 63,35 |
| 1000 | **9236.1** | 1 | 65,60 |

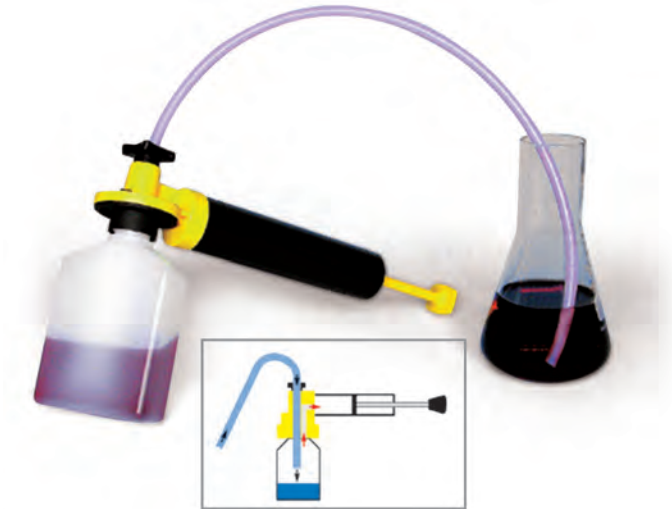


## Rotilabo®-chemo-sampler

Made of **PP**, grey. Length 100 cm. For safe sampling of aggressive liquids.
The sample is drawn up directly in the unscrewed bottle.
**Delivery incl.** sample bottle 1000 ml.
Accessories: Sample bottle made of **PE**, with screw-on cap.

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Chemo-Sampler | - | **T273.1** | 1 | 75,20 |
| Sample bottles | 500 | **T274.1** | 5 | 14,10 |
| Sample bottles | 1000 | **T275.1** | 5 | 15,50 |



## Liquid samplers UniSampler

By Bürkle. Easy to use: The sample is taken directly into the sample tube via a vacuum. There is no danger of contamination.

① **UniSampler with telescope lance**
For sampling liquids from specific depths.
Telescopic suction pipe can be pulled out variably from 100 cm to 150 cm.
Suction pipe made of PP, tube made of PVC.
**Delivery incl.** 5x250 ml and 5x500 ml sample vials made of PP and an adapter for all bottle sizes from 100 ml to 1 litre.
**Procedure:**
1. Pull out the suction lance to the desired sampling depth.
2. Fit the sample bottle onto the adapter.
3. Lower the suction lance into the medium.
4. Create a vacuum with the hand pump and take a sample.
5. Remove the filled sample bottle, close and label it.

② **UniSampler with hose**
Sampling system for deep, narrow and winding areas. The tube is pulled downwards by the heavy stainless steel pipe. PVC-tube, length 2.50 m.
**Delivery incl.** 1000 ml PP-bottle and adapter for all bottle sizes from 100 to 1000 ml, comes in a case for easy transport.
**Function**:
1. Lower suction tube to the desired depth.
2. Fit the sample bottle onto adapter.
3. Create a vacuum with the hand pump and take a sample.
4. Remove the filled sample bottle, close and label it.

③ **UniSampler Ex**
For sampling combustible liquids, Hazard Class A I (e.g. petrol).
The glass bottle and tube are electro-conductively connected and are grounded with an grounding cable. PTB-approval D-333-009 618/00.
**Delivery incl.** 4 m tube and 1000 ml glass bottle, in transport case.
**Function:**
1. Ground device.
2. Lower suction tube to the desired depth.
3. Fit the adapter onto the sample vial.
4. Create a vacuum with the hand pump, take a sample.
5. Remove the filled sample vial, close and mark it.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① UniSampler with telescopic lance | **AH45.1** | 1 | 251,55 |
| ② UniSampler with tube | **AH46.1** | 1 | 184,90 |
| ③ UniSampler Ex | **AH47.1** | 1 | 350,45 |

## Sampling pumps

Ideal for obtaining liquid samples even from difficult to reach areas.
Liquid only comes in contact with the PE-tube and the sample vessel.
Also suitable for viscous samples (e.g. oils). The sample vessel is screwed into the pump and can be sealed tightly after taking the sample.
Tube is easy to change and can be replaced quickly.
Procedure: a vacuum is produced by pullin up the pump.
The liquid is drawn off and collected in the PE-bottle.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Connector 22 | **C001.1** | 1 | 64,45 |
| Connector 28 | **E514.1** | 1 | 59,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| PE-bottle round, 250 ml (connector 22) | **C003.1** | 10 | 22,60 |
| PE-bottle round, 500 ml (connector 28) | **E515.1** | 10 | 24,55 |
| PE-bottle flat, 150 ml (connector 22) | **E517.1** | 10 | 24,55 |
| PE-bottle flat, 150 ml (connector 22) | **E517.2** | 220 | 363,35 |
| PE-bottle round, 50 ml (connector 22) | **E516.1** | 10 | 17,75 |
| PE-tube<br>∅ inner 4.5 mm, ∅ outer 6 mm, length 13 m | **C004.1** | 1 | 19,30 |

## Sampling set

**Delivery incl.** the model 22 sampling pump, 5 x 50 ml bottles, 2 x 250 ml bottles, 15 m of PE-tubing, and a transporting case (Art. No. CYX1.1).

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **C005.1** | 1 | 109,65 |

▶ Sampling bags from page 252
▶ Bottles from page 114

# Liquid sampling



## Rotilabo®-glass dipping bottle

Made from non-sparking materials. Nickel-plated brass dipping frame, closure made from electrically conductive polyamide, clear glass bottle, autoclavable.
For taking sludge and water samples as well as samples of group A petroleum products, explosion groups IIA and IIB.
Approved for use in EX safety zone 0.
Safe closure for rapid bottle exchange.
High weight for rapid lowering.
Dimensions: outer ∅ 148 mm, height 330 mm. Weight 3.3 kg.
Capacity 1000 ml.

**Delivery without** manual rope spool and lowering rope (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T266.1** | 1 | 461,20 |

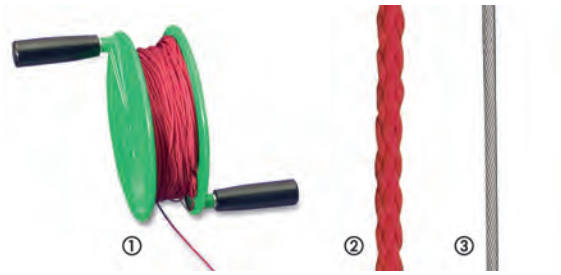


## Rotilabo®-dipping bottle Ex

Made from non-sparking brass, nickel-plated.
For sampling of group A petroleum products, explosion groups IIA, IIB and IIC. Approved for use in EX safety zone 0.
Removable bottle top for easy cleaning.
High weight for rapid lowering.
Dimensions: outer ∅ 89 mm, height 443 mm. Weight 3.2 kg.
Capacity 1000 ml.

**Delivery without** manual rope spool and lowering rope (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T267.1** | 1 | 470,85 |




## Accessories for dipping bottles

① **Manual rope spool** made of **PP**, excluding rope.
Spool ∅ 100 mm, total ∅ 180 mm, 55 mm wide.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T269.1** | 1 | 91,30 |

② **Lowering rope** made of **PP**, ∅ 2.3 mm, 10 m long.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T272.1** | 1 | 12,10 |

③ **Lowering rope** made of **V2A**, ∅ 1.25 mm, 10 m long.

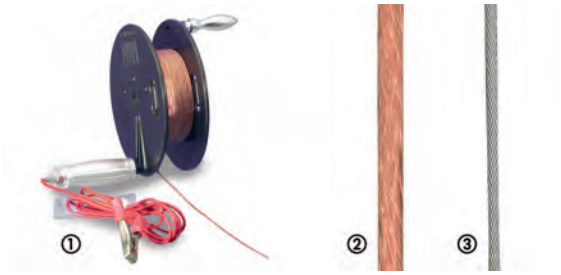
| Art. No. | Pack Qty. | € |
|---|---|---|
| **T271.1** | 1 | 31,10 |

**Use of dipping bottles**

- Lower the dipping bottle to the desired depth.
- To open the plug pull lowering rope with a short and powerful tug.
- After filling the bottle pull back the lowering rope.
- With T267.1, open the closure and drain the bottle.
- With T266.1, open the closure and remove the bottle.

**Notes on explosion protection**

Only electrically conductive manual rope spools with an earth connection and electrically conductive lowering ropes made of non-sparking materials for sampling flammable and highly flammable liquids.




## Accessories for dipping bottles, for highly flammable solutions

① **Manual rope spool** with earthing cable, without rope, made entirely from conductive plastic. Explosion groups II A and II B.
Spool ∅ 100 mm, total ∅ 180 mm, 55 mm wide.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EP11.1** | 1 | 222,55 |

② **Lowering rope** made of electrically conductive **4.5 copper**, 10 m long.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EP10.1** | 1 | 120,40 |

③ **Lowering rope** made of **V2A**, ∅ 1.25 mm, 10 m long.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T271.1** | 1 | 31,10 |



## SteriPlast®Bio sample scoops

By Bürkle. Made of green **PE**, **sterile**. For sampling powders, granulates and pastes. Sample scoop and packaging are made from renewable raw materials and fully recyclable. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 141 | **CPP9.1** | 10 | 20,30 |
| 50 | 160 | **CPT0.1** | 10 | 20,40 |
| 100 | 205 | **CPT1.1** | 10 | 21,00 |
| 150 | 216 | **CPT2.1** | 10 | 22,05 |



## Sample scoops SteriPlast®

By Bürkle. Made of **PS**, **sterile**, with transparent lid. For sterile and contamination-free sampling, e.g. of powders, granulates and pastes. Sample scoop can be sealed with lid after taking sample. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 142 | **CPP5.1** | 10 | 27,45 |
| 50 | 161 | **CPP6.1** | 10 | 29,35 |
| 100 | 206 | **CPP7.1** | 10 | 30,00 |
| 150 | 218 | **CPP8.1** | 10 | 30,45 |




## SteriPlast®-single-use samplers

By Bürkle. Made of PS, blue. **Sterile.** For sampling of powders, granulates, pastes and liquids, especially in the food, animal feed and pharmaceutical industries.
Compliant with the EU Food and FDA Regulations, applicable within the scope of HACCP/IFS foreign body management.
Cleanroom-manufactured (class 7), individually packed.

① **Food spoon**

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2,5 | 127 | **HET4.1** | 100 | 35,60 |
| 10 | 170 | **HET5.1** | 100 | 37,90 |

② **Food scoops**

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 205 | **HET6.1** | 10 | 17,55 |
| 150 | 216 | **HET7.1** | 10 | 17,95 |
| 250 | 232 | **HET8.1** | 10 | 21,95 |
| 500 | 280 | **HET9.1** | 10 | 38,75 |




## SteriPlast®-single-use sampler, detectable

By Bürkle. Made of PS, blue. **Sterile.** For sampling powders, granulates, pastes and liquids. Compliant with EU Food and FDA Regulations.
A special additive makes the single-use samplers visible in metal detectors or per X-rays and can be sorted out using regular systems for checking for foreign bodies.
Cleanroom-manufactured (class 7), individually packed.

① **Sample spoon**

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2,5 | 127 | **HEP8.1** | 100 | 46,20 |
| 10 | 170 | **HEP9.1** | 100 | 51,15 |

② **Sample scoops**

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 205 | **HET0.1** | 10 | 27,15 |
| 150 | 216 | **HET1.1** | 10 | 28,80 |
| 250 | 232 | **HET2.1** | 10 | 36,20 |
| 500 | 280 | **HET3.1** | 10 | 65,90 |

# Disposable sampling systems



## SteriPlast®Bio sample spoon

By Bürkle. Made of green **PE**, **sterile**. For sampling powders, granulates, pastes and liquids. Sample spoon and packaging are made from renewable raw materials and are fully recyclable. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

| Volume (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2,5 | 127 | **CPT3.1** | 100 | 45,15 |
| 10 | 170 | **CPT4.1** | 100 | 47,30 |



## Sample spatula SteriPlast®

By Bürkle. Made of **PS**, **sterile**. For sterile and contamination-free sampling, e.g. of powders, granulates and pastes. Insertion depth 150 mm. With long, sturdy handle and sharp blade for piercing paper and plastic bags etc. Sample spatula is optionally available with a lid made of PS which allows the sample to be sealed straight after it is taken. Cleanroom-manufactured (class 7), individually packed. Suitable for use with foodstuffs.

| Design | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Without lid | 263 | **CLT5.1** | 10 | 16,85 |
| With lid | 268 | **CLT6.1** | 10 | 24,70 |



## Disposable sample scoops

Made of **PS**, **sterile** (gamma-sterilised, individually packed).
With or without lid.

- Long handle allows safe distance between sample and hand
- Flat base for upright storage
- Usable as a weighing bottle

For sampling, analysis or conveyance of substances.

**With lid, white**.
Lid with tab. Spoon and sample container in one.

| Volume (ml) | Total length (mm) | Scoop L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 205 | 78 x 41 x 29 | **YC11.1** | 10 | 60,75 |

**Without lid, white**

| Volume (ml) | Total length (mm) | Scoop L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 205 | 78 x 41 x 29 | **YC15.1** | 100 | 148,35 |
| 125 | 221 | 94 x 51 x 33 | **YC14.1** | 100 | 188,15 |

**Without lid, red.**
Suitable for light-coloured substances, aids visibility.

| Volume (ml) | Total length (mm) | Scoop L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 205 | 78 x 41 x 29 | **YC16.1** | 100 | 191,35 |



## PP-sampling scoops with handle

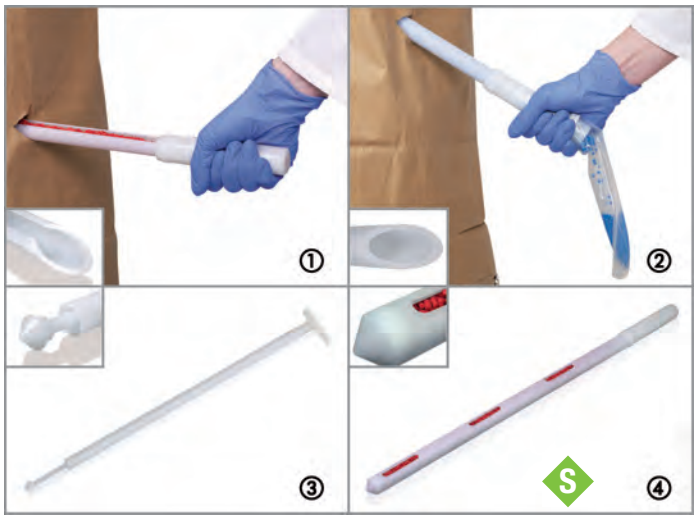
Made of break-proof, transparent **PP**. Screw cap made of **PE**.
**Sterile** (packed individually). Blue, suitable for the food industry. For sterile sampling and subsequent analysis, reduces cross-contamination.
Handle removable, L 240 mm.

| Vol. (ml) | Height of container (mm) | Container-∅ (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 40 | 70 | 30 | 275 | **HL41.1** | 250 | 225,75 |
| 125 | 74 | 52 | 275 | **HL42.1** | 100 | 123,65 |
| 180 | 102 | 52 | 305 | **HL43.1** | 100 | 117,20 |


▶ Spoons see page 196

▶ Pharmaceutical scoops made of stainless steel see page 195

# Disposable sampling systems




## Single-use samplers for solids

By Bürkle. Made of **HDPE**. For samples of bulk goods, powders and granulates. No contamination by other samples, no complicated and time-consuming cleaning. Manufactured under cleanroom conditions. Packed individually in film, unsterile or **sterile**.

① **Powder Dispo**
For cross-section samples of cohesive, powdery substances. Conically shaped sampler for BigBag or sack penetration.

| Length (mm) | Volume (ml) | ∅ (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 300 | 60 | 21 | unsterile | **ETX3.1** | 10 | 55,05 |
| 300 | 60 | 21 | **sterile** | **ETX4.1** | 10 | 63,95 |
| 500 | 100 | 21 | unsterile | **NH28.1** | 10 | 66,65 |
| 500 | 100 | 21 | **sterile** | **ETX5.1** | 10 | 71,65 |

② **DispoLance**
For free-flowing powder and fine granulates. Insert the lance down to the desired depth. Empty via the open end of the handle direct in the sample bag.

| Length (mm) | Volume (ml) | ∅ (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 300 | variable | 21 | unsterile | **ETX6.1** | 10 | 51,80 |
| 300 | variable | 21 | **sterile** | **ETX7.1** | 10 | 59,15 |
| 500 | variable | 21 | unsterile | **ETX8.1** | 10 | 65,55 |
| 500 | variable | 21 | **sterile** | **ETX9.1** | 10 | 69,75 |

③ **MicroDispo**
For target point samples of small quantities of free-flowing bulk materials up to a grain size of 0.5 mm. Insert the sampler, pull up the handle of the pull rod and take the sample. Press the handle down to empty the sample into a vessel.

| Length (mm) | Volume (ml) | ∅ (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 500 | 10 | 21 | unsterile | **HC55.1** | 10 | 67,35 |
| 500 | 10 | 21 | **sterile** | **ETY0.1** | 10 | 96,25 |
| 1000 | 10 | 21 | **sterile** | **ETY1.1** | 10 | 112,90 |

④ **ZoneDispo**
For cross-section samples of free-flowing bulk materials and fine granulates. Insert the closed zone sampler down to the desired depth and open; the bulk material flows in. Close the sampler, pull it out and empty via the opened chamber.
The sample can be secured and transported in the closed sampler.

| Length (mm) | Volume (ml) | ∅ (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 500 | 100 | 25 | unsterile | **HC58.1** | 10 | 91,40 |
| 500 | 100 | 25 | **sterile** | **ETY2.1** | 10 | 109,90 |
| 1000 | 200 | 25 | unsterile | **ETY3.1** | 10 | 116,10 |
| 1000 | 200 | 25 | **sterile** | **ETY4.1** | 10 | 131,15 |




## Single-use samplers for fluids

By Bürkle. Made of **HDPE**. For sampling viscous media and liquids. No contamination by other samples, no complicated and time-consuming cleaning. Manufactured under cleanroom conditions.
Packed individually in film, unsterile or **sterile**.

① **ViscoDispo**
For high-viscosity media up to max. 100 000 mPas. Insert the sampler into the liquid. Pull up the handle of the pull rod to take the sample. Then press the pull rod down to empty the sample into a vessel.

| Length (mm) | Volume (ml) | ∅ (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 500 | 100 | 21 | unsterile | **HC52.1** | 10 | 74,85 |
| 500 | 100 | 21 | **sterile** | **ETT5.1** | 10 | 74,75 |
| 1000 | 200 | 21 | unsterile | **HC53.1** | 10 | 85,80 |
| 1000 | 200 | 21 | **sterile** | **ETT6.1** | 10 | 96,65 |

② **LiquiDispo**
For low-viscosity liquids up to max. 2000 mPas. Insert the sampler into the liquid. Pull up the handle of the pull rod to take the sample. Then press the pull rod down to empty the sample into a vessel.

| Length (mm) | Volume (ml) | ∅ (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 500 | 100 | 21 | unsterile | **HC50.1** | 10 | 72,55 |
| 500 | 100 | 21 | **sterile** | **ETT7.1** | 10 | 74,75 |
| 1000 | 200 | 21 | unsterile | **HC51.1** | 10 | 82,45 |
| 1000 | 200 | 21 | **sterile** | **ETT8.1** | 10 | 96,65 |

③ **DispoPipette**
For cross-section and target point samples of liquids with a variety of viscosities (opening ∅ 2.5/5.5 mm). When the sampler is opened, the liquid flows in or out; when closed, it is held in the sampler.

| Length (mm) | Volume (ml) | ∅ (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 500 | 100 | 21 | unsterile | **ETT9.1** | 10 | 44,80 |
| 500 | 100 | 21 | **sterile** | **ETX0.1** | 10 | 55,55 |
| 1000 | 200 | 21 | unsterile | **ETX1.1** | 10 | 51,80 |
| 1000 | 200 | 21 | **sterile** | **ETX2.1** | 10 | 66,65 |


▶ Spoons see page 252
▶ Pharmaceutical scoops made of stainless steel see page 114

# Centrifugal pumps





## Rotary pumps

With magnetic clutch for circulating water.
Complete with 1.5 m cable and plug. Protective system IP 67.

**Please note:**

- Pumps must not be allowed to run dry
- Pumps are not self-priming and must always be installed below liquid level when used externally
- Temperature stable from -10 to +40 °C
- Can be used inside the pumping medium
- Output is non-adjustable

**Technical specifications:**

| **Model** | ① | ② | ③ | ④ |
|---|---|---|---|---|
| Flow rate max. (l/min) | 4.5 | 40 | 10 | 20 |
| Lift of pump max. (m) | 0.75 | 3.7 | 1.5 | 2.0 |
| Power input (W) | 4 | 65 | 10 | 28 |
| Tube connections: | | | | |
| Press. side (mm)<br>Thread (inch) | 13 | 18<br>¾ | 13<br>¼ | 13<br>⅜ |
| Suction side (mm)<br>Thread (inch) | 17 | 28<br>¾ | 13<br>⅜ | 17<br>½ |
| Dimensions L x W x H (mm) | 87 x 48 x 88 | 218 x 116 x 161 | 147 x 75 x 119 | 178 x 96 x 121 |
| Weight (kg) | 0.45 | 2.5 | 1.0 | 1.6 |
| Current | 230 V, 50 Hz | | | |
| Comments | Pressure pipe joints are rotatable | Universal pump, variable assembly possible, with safety tube connector. | | |

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **A908.1** | 1 | 63,45 |
| 2 | **Y492.1** | 1 | 226,85 |
| 3 | **E234.1** | 1 | 112,90 |
| 4 | **A906.1** | 1 | 148,35 |


▶ Stainless steel pumps see page 392
▶ Hoses see page 371




## Centrifugal pump

Medium contacting parts made of **PP**, **EPDM** and **ceramic**.
With magnetic clutch. Continuous running for transferring and circulating chemicals and gaseous liquids possible.
Adapter, outer thread ¼″. Magnetic resistance to fracture protects the motor against external interference. Economical in use of electricity, long-life due to low friction.
Not self-priming. Not suitable for dry operation.

**Technical specifications:**

| | |
|---|---|
| Flow rate | max. 13,8 l/min |
| Lift of pump | max. 2.3 m |
| Power input | 51 W |
| Power output | 10 W |
| Ideal for temperatures | from -20 to +85 °C |
| Dimensions (H x L x W) | 100 x 150 x 112 mm |
| Weight | ca. 1.7 kg |
| Current | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A902.1** | 1 | 278,45 |



## Centrifugal pump

Medium contacting parts made of **PP**, **EPDM** and **ceramic**.
With magnetic clutch. For aggressive chemicals, acids, alkalis and gaseous liquids.
Adapter, outer thread ½″. Continuous running possible.
No shaft sealing ring, therefore little friction and long-life of pump.
Not self-priming.

**Technical specifications:**

| | |
|---|---|
| Flow rate | max. 52 l/min |
| Lift of pump | max. 6.0 m |
| Ideal for temperatures | from -20 to +85 °C |
| Power input | 95 W |
| Dimensions (H x L x W) | 143 x 214 x 102 mm |
| Weight | ca. 3.0 kg |
| Current | 230 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A903.1** | 1 | 579,45 |

# Membrane liquid pumps




## Membrane liquid pumps LIQUIPORT®

By KNF. Ideal for delivering neutral and aggressive liquids.

- Flow rate can be adjusted from 10-100 % via knob with LED-display
- Standby-mode
- Maximum pressure control
- Selfpriming
- Dry running
- Long-life
- Protective system: IP65 (hoseproof)
- Permissible liquid temperature max. 80 °C
- Main supply 100-230 V, 50/60 Hz
- Membranes PTFE-coated, valves FFPM

All models are also available with external control, please check with our Sales Department.

**Technical specifications:**

| Model | NF 100 | NF 1.100 | NF 300 | NF 1.300 |
|---|---|---|---|---|
| Output (ml/min) | 200-1300 | | 500-3000 | |
| Suction lift (mWC) | 3 | | | |
| Pressure lift (mWC) | 10 | 60 | 10 | 60 |
| Tube connection ∅ inner (mm) | 8 | | 12 | |
| Output $P_1$ (W) | 12 | 18 | 24 | |
| Weight (kg) | 1.0 | | 1.5 | |
| Dimensions W x D x H (mm) | 99 x 130 x 177 | | 190 x 160 x 190 | |

| Model | Pump head | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| NF 100 KT.18 S | PP | **EL62.1** * | 1 | 605,25 |
| NF 100 TT.18 S | PVDF | **EL63.1** * | 1 | 742,85 |
| NF 100 FT.18 S | PTFE | **EL64.1** * | 1 | 1790,95 |
| NF 1.100 KT. 18 S10 | PP | **EL65.1** * | 1 | 706,30 |
| NF 1.100 TT. 18 S10 | PVDF | **EL66.1** * | 1 | 841,75 |
| NF 1.100 FT. 18 S10 | PTFE | **EL67.1** * | 1 | 1890,95 |
| NF 300 KT.18 S | PP | **EL68.1** * | 1 | 771,85 |
| NF 300 TT.18 S | PVDF | **EL69.1** * | 1 | 978,25 |
| NF 300 FT.18 S | PTFE | **EL70.1** * | 1 | 2291,90 |
| NF 1.300 KT.18 S | PP | **EL71.1** * | 1 | 833,15 |
| NF 1.300 TT.18 S | PVDF | **EL72.1** * | 1 | 1037,40 |
| NF 1.300 FT.18 S | PTFE | **EL73.1** * | 1 | 2352,10 |

* Longer delivery times possible. Please check with our Sales Department.




## SIMDOS® 10 metering pumps

By KNF. Suitable for pumping neutral and aggressive liquids.

- Optimised pump head geometry with safety feature prevents fluids from leaking into the pump drive.
- Operating modes: continuous pumping (unlimited time), continuous pumping with timed switch-off, volumetric metering and series metering
- With calibration function for better accuracy
- Adjustable pump characteristics (e. g. for vaporous, viscous liquids)
- Pause function without loss of data
- Dry-run safe, self-priming and maintenance-free
- EPDM diaphragm, PTFE-coated, valve plate/seals made of FFKM

All models are also available with external control, please check with our Sales Department.

**Technical specifications:**

| | |
|---|---|
| Delivery rate | 1-100 ml/min |
| Metering capacity | 1-1000 ml |
| Metering time | 1 s - 99 h 59 min |
| Max. suction head | 3 mWS |
| Max. pressure | 6 bar |
| Allowable medium temperatures | +5 to +80 °C |
| Connection for ID/AD hose | 4 / 6 mm |
| Power requirement | 24 W |
| Protection class | IP 65 |
| Noise level | <40 dBA |
| Dimensions W x D x H | 93 x 134 x 144 mm |
| Weight | 0.9 kg |
| Power supply | 100-240 V, 50/60 Hz |

**Delivery incl.** connection kit (hose and screw fitting) and intake filter.

| Model | Pump head | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FEM 1.10 KT.18 S2 | PP | **PA27.1** | 1 | 1395,35 |
| FEM 1.10 TT.18 S2 | PVDF | **PA28.1** | 1 | 1494,25 |
| FEM 1.10 FT.18 S2 | PTFE | **PA29.1** | 1 | 2570,35 |

# Peristaltic pumps




## Membrane dosing pumps

Powerful, speed-controlled stepper motor.
Constant, continuous dosing performance. Adjustment range up to 1:1000.
Traffic lights concept to indicate pump status.
**PTFE** membrane, universally resistant to chemicals.

**Technical specifications:**

| Model | DDE 6-10 | DDE 15-4 |
|---|---|---|
| Max. flow rate (l/h) | 6 | 15 |
| Suction lift (mWS) | 6 | |
| Max. pressure (bar) | 10 | 4 |
| Ambient temperature (°C) | 0 to 45 | |
| Temperature of medium (°C) | -10 to 45 | |
| Parts with media contact | PVC/FKM/ceramics | |
| For tubes ID/AD (mm) | 4/6 | 6/9 |
| Max. sound pressure level (dB(A)) | 60 | |
| Degree of protection (housing) | IP 65 | |
| Dimensions W x D x H (mm) | 102 x 251 x 196 | 102 x 251 x 200.5 |
| Weight (kg) | 2.4 | |
| Mains connection | 100-240 V, 50/60 Hz | |

**Delivery incl.** assembly plate as base or for wall mounting.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| DDE 6-10 | **PE71.1** | 1 | 514,95 |
| DDE 15-4 | **PE72.1** | 1 | 675,10 |

## Accessories: multifunction valve for diaphragm metering pump

Made of **PVDF**. To maintain the necessary counterpressure and vent the pump at start-up. Compact valve for connecting directly to the pump. Dimensions: L 139 x H 92 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE73.1** | 1 | 218,25 |




## Roth Cyclo II pericyclic pumps

Pumps for all applications in the laboratory, in chemical analysis and biotechnology.

- **1- or 2-channel head pumps** (∅ 62 mm)
- **3- or 6-roll pump head** for lower pulsation
- Simple operation with two knobs:
  Infinitely variable speed setting from 0 to 100 %
  adjustable left-hand/right-hand motion
- Tube can be changed easily in a few seconds
- Variable tube pressure
- With easy to disassemble pump head for problem-free cleaning
- Pump head can be turned by 90°
- Matching tube cassettes for 3 different tube sizes
- Temperature and current limiter for maximum reliability
- Stackable
- Tube with 1.6 mm wall thickness can be used

**Technical specifications:**

| | |
|---|---|
| Safe delivery pressure | 1 bar |
| Voltage | 100-230 V |
| Drive / Power | DC-motor / 10 W |
| Weight | 1.6 kg |
| Dimensions (W x D x H) | 134 x 190 x 131 mm |

**Flow rates are dependent on tubing size** (wall thickness 1.6 mm):

| Tube cassette | Y375.1 | Y376.1 | Incl. in delivery |
|---|---|---|---|
| Tube-inner-∅ (mm) | 1.6 | 3.2 | 4.8 |
| Pumping capacity<br>3-roll head (ml/min)<br>6-roll head (ml/min) | <br>1.5-30<br>1.2-24 | <br>6-110<br>4.4-88 | <br>12-240<br>9.6-192 |

**Standard model**:
**Delivery incl.** tube cassette for tube with inner-∅ 4.8 mm and wall thickness 1.6 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Cyclo II with 1-channel pump head, 3 rolls | **Y374.1** | 1 | 1309,35 |
| Cyclo II with 1-channel pump head, 6 rolls | **EP74.1** | 1 | 1287,85 |
| Cyclo II with 2-channel pump head, 3 rolls | **EP75.1** | 1 | 1392,15 |
| Cyclo II with 2-channel pump head, 6 rolls | **EP76.1** | 1 | 1538,35 |

Accessories:

| | | | |
|---|---|---|---|
| Tube cassette for tube inner-∅ 1.6 mm | **Y375.1** | 1 | 103,75 |
| Tube cassette for tube inner-∅ 3.2 mm | **Y376.1** | 1 | 103,75 |

# Peristaltic pumps






## Tube Pumps Sci-Q 323

By Watson-Marlow. Particularly suitable for applications in the laboratory and for research.

- Expansion and end pump head with 4 rolls for lower pulsation is available as an accessory
- Flow rate up to 2000 ml/min with 3 rolls
- Flow rate up to 1600 ml/min with 4 rolls
- Can be expanded with additional pump heads to up to 6 parallel channels
- Hose can be inserted quickly and easily with the flip-top-pump head
- Digital speed control
- Manually steerable
- Easy to read display and wipeable membrane keyboard
- Chemically stable housing
- Maintenance-free, quiet motor
- For use with 1.6 mm thick hoses (please order separately)

**Technical specifications:**

| Hose-ID (mm) | 0.5 | 0.8 | 1.6 | 3.2 | 4.8 | 6.4 | 8.0 |
|---|---|---|---|---|---|---|---|
| 3-Roll-head: Flow rate (ml/min) | 0.45-12 | 1.1-28 | 4.1-110 | 15-400 | 33-880 | 54-1400 | 75-2000 |
| 4-Roll-head: Flow rate (ml/min) | 0.45-12 | 0.90-24 | 3.8-100 | 13-340 | 29-760 | 45-1200 | 60-1600 |
| Max. number of pump heads (at 0.5 bar) | 6 | 6 | 4 | 2 | 2 | 1 | 1 |

| | |
|---|---|
| rpm | 15-400 rpm (adjustable in increments of 5) |
| Ideal for temperatures | 5-40 °C |
| Noise levell | <70 dBA |
| Weight | 4.7 kg |
| Dimensions (H x L x W) | 225 x 230 x 132 mm |
| Current | 230 V, 50/60 Hz - change-over to 120 V |

**Delivery incl.** one 3-roll-end-pump head.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y545.1** * | 1 | 3332,50 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| Extension pump head, 3-roll | **Y546.1** | 1 | 407,45 |
| Extension pump head, 4-roll | **Y547.1** | 1 | 407,45 |
| End-piece pump head, 4-roll | **Y548.1** | 1 | 407,45 |

## Peristaltic pumps set Hei-FLOW

By Heidolph. For conveying liquids.

- Analog speed adjustment
- Constant speed even under varying load
- Reversible direction of rotation (ccw/cw)
- Stackable housing (max. 2 pump drives)
- Pump drives Hei-FLOW Advantage 01 with maximum speed button for faster filling and drainage of tubing

**Characteristics of the pump head:**

- For tubing wall thickness of 1.6 mm
- Tubing outer diameters of between 4 mm and 9.5 mm are freely selectable
- Low pulsation is ensured by 5 rollers
- Easy and quick tubing replacement
- Stainless steel rollers and roller mounts

**Technical specifications:**

| **Type** (Hei-FLOW) | ① **Value 01** | ② **Advantage 01** |
|---|---|---|
| Delivery rate (ml/min) | 0.8-413 | 0.4-409 |
| Speed (rpm) | 10-120 | 5-120 |
| Control accuracy (%) | ±2 | ±0.5 |
| Analog interface | no | yes |
| Motor power (W) | 71 | 100 |
| Weight excluding pump head (kg) | 6.8 | 8.2 |
| Dimensions W x D x H (mm) | 166 x 256 x 225 | |

**Flow rates are dependent on tubing size** (wall thickness 1.6 mm):

| Inner ∅ (mm) | 0.8 | 1.7 | 3.1 | 4.8 | 6.3 |
|---|---|---|---|---|---|
| Outer ∅ (mm) | 4.0 | 4.9 | 6.3 | 8.0 | 9.5 |
| Delivery rate Value 01 (ml/min) | 0.8-9 | 3-41 | 11-134 | 25-292 | 36-413 |
| Delivery rate Advantage 01 (ml/min) | 0.4-9 | 2-40 | 5-126 | 12-233 | 17-409 |

**Delivery incl.** pump head SP quick 1.6 and 1 m of Tygon® and silicone rubber tubing (CH22.1 with inner ∅ 3.1 mm, EL51.1 with inner ∅ 0.8 mm).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Hei-FLOW Value 01 | **CH22.1** * | 1 | 1965,00 |
| ② Hei-FLOW Advantage 01 | **EL51.1** * | 1 | 2678,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Silicone pump hoses

Platinum treated silicone hose for hose pumps. Autoclavable. Ultra-smooth surface prevents bacterial growth and sediments or residue from sticking. Wall thickness 1.6 mm.

| Inside ∅ (mm) | Outside ∅ (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|
| 0,5 | 3,7 | **CH23.1** | 5 | 39,25 |
| 0,8 | 4,0 | **CH24.1** | 5 | 39,25 |
| 1,6 | 4,8 | **CH25.1** | 5 | 55,90 |
| 3,2 | 6,4 | **CH26.1** | 5 | 55,90 |
| 4,8 | 8,0 | **CH27.1** | 5 | 64,40 |
| 6,4 | 9,6 | **CH28.1** | 5 | 73,05 |
| 8,0 | 11,2 | **CH29.1** | 5 | 93,00 |

# Peristaltic pumps




## Hei-FLOW Precision peristaltic pumps

By Heidolph.
For conveying and metering liquids.

### Pump drives

- Digital display
- Dispensing volume 0.1-9999 ml
- Intermittent dispensing
- Simple calibration of delivery and dispensing volumes
- With maximum speed button for faster filling and drainage of tubing
- Constant speed even under varying load
- Reversible direction of rotation (ccw/cw)
- Stackable housing (max. 2 pump drives)
- Analog and digital (RS 232) interfaces
- Hei-FLOW Precision 01 pump drive suitable for multichannel operation

**Technical specifications of the pump drives:**

| Hei-FLOW model | Precision 01 | Precision 06 |
|---|---|---|
| Delivery rate in single-channel mode (ml/min) | 0.02-409 | 2-2072 |
| Speed (rpm) | 5-120 | 24-600 |
| Control accuracy (%) | ±0.5 | |
| Multichannel operation possible | yes | no |
| Motor power (W) | 100 | |
| Weight excluding pump head (kg) | 8.3 | 7.7 |
| Dimensions W x D x H (mm) | 166 x 256 x 225 | |

**Modular design:**
pump drive, pump head and pump hose are freely combinable (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Hei-FLOW Precision 01 pump drive | **CYC4.1** | 1 | 2911,00 |
| Hei-FLOW Precision 06 pump drive | **CYC5.1** | 1 | 2810,00 |

### Pump heads for Hei-FLOW Precision

**1-channel pump head SP quick for Hei-FLOW Precision 01 and 06**
- For standard tubing with a wall thickness of 1.6 mm
- Tubing outer diameters of between 4 mm and 9.5 mm are freely selectable
- Low pulsation is ensured by 5 rollers
- Easy and quick tubing replacement
- Stainless steel rollers and roller mounts

**Flow rates are dependent on tubing size (wall thickness 1.6 mm):**

| Inner ∅ (mm) | 0.6 | 1.7 | 3.1 | 4.8 | 6.3 |
|---|---|---|---|---|---|
| Delivery rate (ml/min) | | | | | |
| Precision 01 | 0.38-9 | 2-40 | 5-126 | 12-233 | 17-409 |
| Precision 06 | 2-33 | 8-186 | 26-653 | 59-1529 | 89-2072 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1-channel pump head SP quick (SWS 1.6 mm) | **CYC6.1** | 1 | 457,00 |

**4-channel pump head for Hei-FLOW Precision 01**
- For use with up to 4 hose cassettes, with snap lock for easy insertion during operation
- Low pulsation is ensured by 8 rollers
- For 2 stopper hoses with a wall thickness of 0.9 mm
- Tubing outer diameters of between 0.2 mm and 2.8 mm are freely selectable
- To feed and convey different volumes, hoses of different diameter can be inserted into the hose cassette
- Roller pressure can be adjusted using an adjustment screw

**Flow rates are dependent on tubing size (wall thickness 0.9 mm):**

| Inner ∅ (mm) | 0.2 | 0.5 | 0.9 | 1.4 | 2.8 |
|---|---|---|---|---|---|
| Delivery rate (ml/min) | | | | | |
| Precision 01 | 0.02-0.49 | 0.08-2 | 0.24-6 | 0.60-14 | 2-36 |

For multichannel operation of Hei-FLOW Precision 01, an adapter for multichannel pump heads and 1 to 4 hose cassettes (please order separately) are required in addition to the 4-channel pump head.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Adapter for multichannel pump heads | **CYC7.1** | 1 | 164,00 |
| ② 4-channel pump head | **CYC8.1** | 1 | 762,00 |
| ③ Hose cassette | **CYC9.1** | 1 | 243,00 |

## Accessories for Hei-FLOW Precision 01 in multichannel operation

**2-stopper hoses (2 x 105 stoppers)**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PharMed®, ID 0.2 mm, L 400 mm | **CYE0.1** | 1 | 91,20 |
| PharMed®, ID 0.5 mm, L 400 mm | **CYE1.1** | 1 | 91,20 |
| PharMed®, ID 0.9 mm, L 400 mm | **CYE2.1** | 1 | 91,20 |
| PharMed®, ID 1.4 mm, L 400 mm | **CYE3.1** | 1 | 91,20 |
| PharMed®, ID 2.8 mm, L 400 mm | **CYE4.1** | 1 | 91,20 |

**Extension hoses for stopper hoses**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PharMed®, ID 0.2 mm, L 2 m | **CYE5.1** | 1 | 21,85 |
| PharMed®, ID 0.5 mm, L 2 m | **CYE6.1** | 1 | 21,85 |
| PharMed®, ID 0.9 mm, L 2 m | **CYE7.1** | 1 | 21,85 |
| PharMed®, ID 1.4 mm, L 2 m | **CYE8.1** | 1 | 28,80 |
| PharMed®, ID 2.8 mm, L 2 m | **CYE9.1** | 1 | 21,85 |

**Hose connector made of PTFE** for connecting stopper and extension hoses

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For hoses with ID 0.2 to 2.8 mm | **CYH0.1** | 1 | 46,95 |


▶ Hoses for single-channel pump heads, see page 374

▶ Hoses for multi-channel pump heads, see page 374

# Peristaltic pumps




## HiClass rotarus® peristaltic pumps

By Hirschmann. The stainless-steel housing makes this pump ideal for use in pharmaceuticals and food production.
Choose from two different motor versions: 50i series for low flow rates or high viscosity media and 100i series for high flow rates.
Available with single-channel pump head or multichannel pump head. Alternatively, up to 3 single-channel pump heads can be connected in a daisychain for multichannel operation.

- Control panel directly on pump housing for quick and easy input of basic functions
- Quick-change pump heads
- Reversible direction of rotation (CW / CCW)
- Load-based speed control
- Suitable for continuous duty
- Stackable
- PC connectivity via USB and RS 232 ports

**Technical data on pump drives:**

| **Motor version** | **50i series** | **100i series** |
|---|---|---|
| Motor power (W) | 50 | 85 |
| Speed range (RPM) | 0.2-100 | 5.0-500 |
| Delivery rate depending on pump head (ml/min) | 0.0005-1200 | 0.025-6900 |
| Steps (RPM) | 0.1 | |
| Total power consumption (W) | 60 | 90 |
| Protection rating | IP 65 | |
| Weight (kg) | approx. 7.3 | approx. 10.1 |
| Dimensions (H x W x D) mm | 220 x 100 x 205 | 220 x 100 x 270 |
| Power supply | 115-240 V/ 50-60 Hz | |

**Technical data on pump models:**

| **rotarus® model** | **Standard** | **flow** | **volume** |
|---|---|---|---|
| Control panel on pump housing | x | x | x |
| External control panel with touchscreen | - | x | x |
| Memory for 20 methods | - | x | x |
| Calibration function | - | x | x |
| Pumps by speed | x | x | x |
| Pumps by flow rate | - | x | x |
| Pumps by target volume (feeding) | - | - | x |
| Autom. pump head detection | - | x | x |
| Autom. hose detection | - | x | x |
| Hose lifetime monitoring | - | x | x |
| Autom. hose leak and blockage detection | - | x | x |

**Characteristics of pump heads:**

| | |
|---|---|
| 1-channel pump head | - 3 stainless steel rollers<br>- Hose dimensions inner ∅ 0.8-12 mm, wall thickness 1.6 mm<br>- Cascadable<br>- Head and hose data recognition by RFID |
| 4-channel pump head | - 8 Polysulfon rollers<br>- Hose dimensions inner ∅ 0.19-2.79 mm, variable wall thickness<br>- Variable contact pressure<br>- Head and hose data recognition by RFID |

**Delivery rates in dependence on hose size:**

- **1-channel pump head**
  (with standard pump hoses, wall thickness 1.6 mm):

| Inner ∅ (mm) | Delivery rate **50i series** per channel (ml/min) | **Delivery rate 100i series** per channel (ml/min) |
|---|---|---|
| 1.6 | 0.08-40 | 1.9-200 |
| 3.2 | 0.32-160 | 0.8-850 |
| 8.0 | 1.7-840 | 42-3900 |
| 11.1 | 2.8-1500 | 69-5400 |

- **4-channel pump head** (with stopper hoses):

| Inner ∅ (mm) | Delivery rate **50i series** (ml/min) | **Delivery rate 100i series** (ml/min) |
|---|---|---|
| 0.19 | 0.001-0.40 | 0.021-0.90 |
| 0.25 | 0.0017-0.85 | 0.043-2.1 |
| 1.42 | 0.026-13.0 | 0.66-32.0 |
| 2.79 | 0.048-22.7 | 1.7-82.1 |

**Modular design:**
**pump drive, pump head and pump hose are freely combinable (please order separately).** Pump hoses are fitted with a chip which allows for automatic detection and lifetime monitoring of the rotarus® flow and rotarus® volume models. Alternatively, hoses can be used without a chip, in which case, however, the "automatic hose detection" and "hose lifetime monitoring" functions will not be available.

**Pump drives**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| rotarus® standard 50i | **AXN5.1** | 1 | 2128,50 |
| rotarus® standard 100i | **AXN6.1** | 1 | 2666,00 |
| rotarus® flow 50i | **AXN7.1** | 1 | 2773,50 |
| rotarus® flow 100i | **AXN8.1** | 1 | 3096,00 |
| rotarus® volume 50i | **AXN9.1** | 1 | 3311,00 |
| rotarus® volume 100i | **AXP0.1** | 1 | 3526,00 |

**Pump heads**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① 1-channel pump head rotarus® PK 10-16 | **AXP1.1** | 1 | 1058,90 |
| ② 4-channel pump head rotarus® MFK 4-8 | **AXP2.1** | 1 | 1245,95 |

## Accessories for HiClass rotarus® peristaltic pumps

**Standard pump hoses with chip for single-channel pump heads**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PharMed® BPT, ID 1.6 mm, L 7.5 m | **AXP3.1** | 1 | 126,85 |
| PharMed® BPT, ID 3.2 mm, L 7.5 m | **AXP4.1** | 1 | 146,20 |
| PharMed® BPT, ID 8.0 mm, L 7.5 m | **AXP5.1** | 1 | 153,75 |

**Stopper hoses (2 104 stoppers) with chip for multichannel pump heads**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PharMed® BPT, ID 0.25 mm, L 381 mm | **AXP6.1** | 6 | 65,60 |
| PharMed® BPT, ID 1.42 mm, L 381 mm | **AXP7.1** | 6 | 65,60 |
| PharMed® BPT, ID 2.79 mm, L 381 mm | **AXP8.1** | 6 | 65,60 |

**Extension hoses for stopper hoses**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PharMed® BPT, ID 0.25 mm, L 3 m | **AXP9.1** | 1 | 43,65 |
| PharMed® BPT, ID 1.42 mm, L 3 m | **AXT0.1** | 1 | 43,65 |
| PharMed® BPT, ID 2.79 mm, L 3 m | **AXT1.1** | 1 | 43,65 |

**Footswitch**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For starting and stopping | **AXT2.1** | 1 | 85,70 |

# Membrane controlled vacuum pumps



## Rotilabo®-piston pump CR-KP292

Compact pump for vacuum and pressure applications.
Suitable for pumping air and neutral gases.

**Applications:**
pressure filtration of aqueous solutions, use in vacuum ovens, vacuum drying and gas sampling.

**Technical specifications:**

| | |
|---|---|
| Delivery rate | 9.2 l/min |
| End vacuum (abs.) | 292 mbar |
| Pressure | 3.3 bar |
| Motor power | 25 W |
| Connections for hose ID | 6 mm |
| Dimensions (L x W x H) | 194 x 114 x 191 mm |
| Weight | 2.0 kg |
| Power supply | 230 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CYA9.1** | 1 | 307,45 |

**Conversion table for delivery rates**

| m³/s | m³/h | l/min | l/s |
|---|---|---|---|
| 1 | 3600 | 60000 | 1000 |
| 0.28 x $10^{-3}$ | 1 | 16.6667 | 0.2778 |
| 16.67 x $10^{-6}$ | 0.06 | 1 | 0.0167 |
| 1 x $10^{-3}$ | 3.6 | 60 | 1 |




**Programme extension!**

## Rotilabo®-diaphragm vacuum pump CR-MV100

For conveying and compressing neutral and aggressive gases and vapours in accordance with the resistance of the given materials.
Continuous manual vacuum adjustment.

**Application areas:** suitable for vacuum filtration, vacuum drying and solid phase extraction.

**Technical specifications:**

| | |
|---|---|
| Delivery rate | 10 l/min |
| End vacuum (abs.) | 100 mbar |
| Motor power | 48 W |
| Connections for hose ID | 6 mm |
| Vacuum regulators | Needle valve |
| Measurement range / scaling | 1000 to 1 mbar / 50 mbar |
| Dimensions (W x D x H) | 144 x 198 x 244 mm |
| Weight | 2.7 kg |
| Power supply | 90-260 V; 50/60 Hz |

**Materials of pump parts in contact with media:**

| | |
|---|---|
| Seal | EPDM |
| Hose nozzle / connecting part | PP |
| Valve | FKM |
| Diaphragm | PTFE-coated |
| Hose / separator | PVC |
| Connector head / pump head | Ryton |

**Delivery incl.** vacuum metering block with pressure gauge and exhaust silencer.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ECK4.1** | 1 | 763,25 |

**Accessories:**

| | | | |
|---|---|---|---|
| Hose nozzle for hoses ID 8 mm | **HLY8.1** | 1 | 21,30 |


- For Woulff' bottles see page 174
- For tubes see page 371
- Vacuum regulators on page 363
- Desiccators see page 54
- Filter systems see page 495

# Membrane controlled vacuum pumps





## LABOPORT®-membrane vacuum pumps

By KNF. Ideal for pumping and evacuating **air and neutral or slightly aggressive or corrosive gases and vapours.**

- Thermal switch and power fuse
- Gas and ambient temperature limit: 40 °C
- Suitable for continuous operation
- Very quiet and has minimal vibration
- Voltage frequency: 230 V, 50 Hz

Optional accessories:
- Fine regulator head: For adjustment of the vacuum. Scale: 50/100 mbar increments
- Silencer for all pump types to be assembled on delivery side
- Suction filter for K517.1, Y371.1 and L110.1, to be assembled on intake side

**Technical specifications:**

| Type | Output (l/min) | Vacuum abs. (mbar) | Overpress. (bar) | Power (W) | Weight (kg) | Connectors for hose ID (mm) |
|---|---|---|---|---|---|---|
| **N86KN.18** | 6.0 | 100 | 2.4 | 60 | 1.9 | 4 |
| **N86KT.18** | 5.5 | 160 | 2.5 | 60 | 1.9 | 4 |
| **N811KN.18** | 11.5 | 240 | 2.0 | 65 | 2.5 | 6 |
| **N816.3KN.18** | 16 | 15 | 0.5 | 100 | 3.95 | 6 |
| **N816.3KT.18** | 16 | 20 | 0.5 | 100 | 3.95 | 6 |
| **N816.1.2KT.18** | 30 | 160 | 0.5 | 100 | 3.95 | 6 |

**Materials:**

| Type | Pump head | Membrane | Valves |
|---|---|---|---|
| **N86KN.18** | PPS | EPDM | FPM |
| **N86KT.18** | PPS | PTFE-coated | FFPM |
| **N811KN.18** | PPS | EPDM | FPM |
| **N816.3KN.18** | PPS | EPDM | EPDM |
| **N816.3KT.18** | PPS | PTFE-coated | FFPM |
| **N816.1.2KT.18** | PPS | PTFE-coated | FFPM |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| N86KN.18 | **K517.1** | 1 | 334,35 |
| N86KT.18 | **Y371.1** | 1 | 402,05 |
| N811KN.18 | **L110.1** | 1 | 439,70 |
| N816.3KN.18 | **EH52.1** | 1 | 672,95 |
| N816.3KT.18 | **Y372.1** | 1 | 752,50 |
| N816.1.2KT.18 | **Y373.1** | 1 | 767,55 |

**Accessories:**

| | | | |
|---|---|---|---|
| Silencer | **C557.1** | 1 | 18,25 |
| Suction filter for K517.1, Y371.1 and L110.1 | **C558.1** | 1 | 16,05 |
| Hose stems for hose inner ∅ 8 mm | **EL44.1** | 1 | 5,95 |
| Fine control valve for K517.1, Y371.1, L110.1 | **HC49.1** | 1 | 72,05 |
| Fine control valve for EH52.1 and Y372.1 | **NP66.1** | 1 | 85,30 |



## Membrane controlled vacuum pumps and compressors

By KNF. Ideal for pumping, evacuating and compressing **air and neutral or slightly aggressive and/or corrosive gases and vapours.**
Generates oil-free air pressure and vacuum.
Assists in the analysis and measurement of gases.

- Pump head made of aluminium
- All AN models have a neoprene diaphragm, AT models (T789.1) are PTFE coated
- Max. gas and ambient temperature: 40 °C
- Units have been designed for continuous operation
- Very quiet
- Gas tight
- Non-corroding
- Following order numbers come with noise absorption and hose support C561.1, T356.1
- Power supply: 230 V/50 Hz

**Technical specifications:**

| Type | Output (l/min) | Vacuum abs. (mbar) | Overpress. (bar) | Power (W) | Weight (kg) | Connection for tube ID (mm) |
|---|---|---|---|---|---|---|
| **N022AN.18** | 15 | 100 | 4 | 100 | 4.0 | 6 |
| **N026.3AN.18** | 22 | 20 | - | 170 | 5.8 | 9 |
| **N035.3AN.18** | 30 | 13 | - | 300 | 11.3 | 9 |
| **N026.1.2AN.18** | 39 | 100 | 2 | 170 | 5.8 | 9 |
| **N035.1.2AN.18** | 55 | 100 | 4 | 300 | 11.3 | 9 |
| **N035.1.2AT.18** | 50 | 100 | 4 | 300 | 11.3 | 9 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| N022AN.18 | **C559.1** * | 1 | 618,15 |
| N026.3AN.18 | **C561.1** * | 1 | 900,85 |
| N035.3AN.18 | **T356.1** * | 1 | 960,00 |
| N026.1.2AN.18 | **C560.1** * | 1 | 924,50 |
| N035.1.2AN.18 | **T357.1** * | 1 | 993,30 |
| N035.1.2AT.18 | **T789.1** * | 1 | 1251,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| Noise absorption for C560.1, T357.1, T789.1 | **T842.1** * | 1 | 20,40 |

* Longer delivery times possible. Please check with our Sales Department.

# Membrane controlled vacuum pumps




Programme extension!

## LABOPORT® chemically resistant membrane vacuum pumps

By KNF.
For conveying and evacuating **aggressive gases and vapours**.

**Applications:** for vacuum filtration, drying, distillation, gel drying, SPE, rotation evaporator, vacuum furnace.

- Inner, media-contact area ATEX-compliant acc. to "ATEX II 2GB IIB+H2 T3X internal atmosphere only"
- High gas density
- Permissible media and ambient temperature +5 to +40 °C
- Max. operating pressure 1 bar
- Suitable for continuous duty
- Connections for hose with ID 10 mm
- Power supply: 230 V/50 Hz

**Materials:**
- Pump head: TFM™ PTFE
- Diaphragm: PTFE-coated
- Valves: FFPM

Models N810.3FT.18G, N820.3FT.18G, N840.3FT.18G with integrated gas ballast valve.

**Technical specifications:**

| Type | Output (l/min) | End vacuum (mbar abs.) without/with gas ballast | Power (W) | Weight (kg) |
|---|---|---|---|---|
| **N810FT.18** | 10 | 100 / - | 100 | 5.9 |
| **N810.3FT.18** | | 8 / - | 90 | 6.9 |
| **N810.3FT.18G** | | 8 / ≤30 | 90 | 6.9 |
| **N820FT.18** | 20 | 100 / - | 130 | 7.1 |
| **N820.3FT.18** | | 8 / - | 120 | 9.3 |
| **N820.3FT.18G** | | 8 / ≤15 | 120 | 9.3 |
| **N840FT.18** | 34 | 100 / - | 180 | 10.3 |
| **N840.3FT.18** | | 8 / - | 245 | 12.6 |
| **N840.3FT.18G** | | 8 / ≤12 | 245 | 12.6 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| N810FT.18 | **T350.1** * | 1 | 896,55 |
| N810.3FT.18 | **T351.1** * | 1 | 1339,45 |
| N810.3FT.18G | **HKC7.1** * | 1 | 1339,45 |
| N820FT.18 | **N149.1** * | 1 | 1130,90 |
| N820.3FT.18 | **C563.1** * | 1 | 1666,25 |
| N820.3FT.18G | **HKC8.1** * | 1 | 1666,25 |
| N840FT.18 | **T352.1** * | 1 | 1377,10 |
| N840.3FT.18 | **C564.1** * | 1 | 1823,20 |
| N840.3FT.18G | **HKC9.1** * | 1 | 1868,35 |

* Longer delivery times possible. Please check with our Sales Department.



## LABOPORT® SD automatic drying vacuum pumps for humid gases

By KNF. Chemically consistent, **for highly aggressive and corrosive gases and steam.**
The pump blows condensed fluid out of the pump heads at a high speed during evacuation. The vacuum in the vessel remains constant.

**Application:**
Ideal for e.g. steam sterilizers or for vacuum drying on vacuum drying cabinets to accelerate evacuation time considerably.

- With PTFE pump heads, PTFE-coated membranes, FFPM valves
- Two heads
- High steam and condensate compatibility
- Gas tight, leak rate approx. 6 x $10^{-3}$ mbar x l/s
- Max. gas and ambient temperature: +40 °C
- With thermal switch and main fuse
- Hose connection ID 10 mm
- Power supply: 230 V/50 Hz

**Technical specifications:**

| Type | N820.3FT.40.18 | N840.3FT.40.18 |
|---|---|---|
| Flow rate (l/min) | 20 | 34 |
| Final vacuum (mbar) | 10 | |
| Overpressure (bar) | 1 | |
| Weight (kg) | 9.6 | 12.9 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| N820.3FT.40.18 | **Y369.1** * | 1 | 1972,65 |
| N840.3FT.40.18 | **Y370.1** * | 1 | 2374,70 |

* Longer delivery times possible. Please check with our Sales Department.

# Membrane controlled vacuum pumps






## Membrane controlled vacuum pump N920 KT.29.18 G

By KNF. For all applications which require **high suction speed at low pressure.** For delivering and sucking air, gases and vapours, for withdrawing and evacuating samples from containers or systems.

**Properties:**
- **Flow rate can be adjusted** by regulating the speed with the potentiometer
- Very quiet and low on vibration
- Membrane stabilizing system for high suction speed at low vacuum range
- Model N920KT.29.18G with integrated gas ballast valve
- Max. gas and ambient temperature 40 °C
- Power supply: ~90-240 V, 50/60 Hz

**Application range:**
For a variety of procedures and processes, e.g. in laboratories, which need to be performed under vacuum conditions. Can also be used in the semiconductor and pharmaceutical industry, chemical and analytic engineering.

**Technical specifications:**

| | |
|---|---|
| Output (l/min) | 21 |
| Final vacuum (abs.mbar)<br>- without gas ballast<br>- with gas ballast | <br>2.0<br>5.0 |
| Max. working overpressure (bar) | 0.5 |
| Power output (W) | 135 |
| Adapters for hose inner-∅ (mm) | 10 |
| Weight (kg) | 8.6 |
| Pump head | PPS |
| Membrane | PTFE-coated |
| Valves | FFPM |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EP19.1** * | 1 | 2386,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| Muffler/suction filter | **EP20.1** * | 1 | 23,65 |

* Longer delivery times possible. Please check with our Sales Department.

## ME 1 and ME 1C vacuum membrane pumps

By Vacuubrand. Ideal for pumping and evacuating gases and vapours. High specific resistance (especially ME 1C).

**Applications:**
vacuum filtration for sample preparation in chemical, microbiology, waste water and other analytical processes.

- Simple to use with central power switch mounted on pump housing
- Whisper quiet and very low vibration
- Requires minimal benchtop space
- Long membrane lifetime
- Weight 5 kg
- Dimensions: L 247 x W 121 x H 145 mm
- Finely adjustable vacuum regulation valves are optionally available for ME 1 and ME 1C with manual vacuum control via leakage air. Regulation valve rotates in different directions for optimal visibility.

**Technical specifications:**

| Model | ME 1 | ME 1C |
|---|---|---|
| Number of heads / stages | 1/1 | |
| Max. pumping speed at 50/60 Hz ($m^3$/h) or (l/min) | 0.7/0.85 or 11.7/14.2 | |
| Vacuum abs.(mbar) | 100 | |
| Max. abs. back pressure (EX) (bar) | 1.1 | |
| Connection suction side (mm) | Hose nozzle DN 6/10 | Hose nozzle DN 10 |
| Connection pressure side (mm) | Silencer / G ⅛″ | Hose nozzle DN 10 |
| Rated motor power (kW) | 0.04 | |
| Parts contacting media | Aluminium, PTFE | ETFE, PTFE |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ME 1 | **NA17.1** | 1 | 612,75 |
| ME 1C | **NA18.1** | 1 | 811,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| Vacuum regulation valve with manometer for ME 1 | **NA19.1** | 1 | 115,05 |
| Vacuum regulation valve with manometer for ME 1C | **NA20.1** | 1 | 240,80 |

# Membrane controlled vacuum pumps



## Membrane pumps MD 1 and MD 1C

By Vacuubrand. For evacuating and conveying gases down to an extremely low end vacuum.

- **Three-stage, for high suction even at low pressures**
- Very quiet and low vibration
- Long service life
- Easy to replace membrane and valve

Available in two designs:
- **MD 1**: Wide range of applications for neutral gases
- **MD 1C**: Especially for aggressive gases through the use of chemical-resistant fluoroplastics, as well as excellent condensate compatibility due to built-in gas ballast valve

**Technical specifications:**

| **Model** | **MD 1** | **MD 1C** |
|---|---|---|
| Number of heads / stages | 4/3 | 4/3 |
| Max. pumping speed at 50/60 Hz<br>- in ($m^3$/h)<br>- in (l/min) | <br>1.2 / 1.4<br>20 / 23.3 | <br>1.3 / 1.5<br>21.7 / 25 |
| End vacuum abs. (mbar)<br>- with gas ballast | 1.5<br>- | 2<br>4 |
| Max. counterpressure abs. (bar) | 1.1 | 1.1 |
| Motor power (W) | 80 | 80 |
| Connection<br>- Suction side<br>- Pressure side | <br>Hose nozzle DN 6 mm<br>Silencer G 1/8″ | <br>Hose nozzle DN 8-10 mm<br>Hose nozzle DN 8 mm |
| Dimensions without grip<br>L x B x H (mm) | <br>303 x 143 x 163 | <br>316 x 143 x 175 |
| Weight (kg) | 6.5 | 6.9 |
| Power connection (V, Hz) | 230, 50/60 | 230, 50/60 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MD 1 | **ETY5.1** * | 1 | 1392,15 |
| MD 1C | **HC95.1** * | 1 | 2375,75 |

* Delivery times may apply to these products. Please ask our sales team.



## Membrane controlled pump ME 4 NT

By Vacuubrand. Ideal for analytic applications with **non-aggressive gases**, for the laboratory and industrial use.

- Continuous, oil-free pumping of gases
- Very low leakage rate due to extremely tight coupling technology
- Highly flexible **FPM**-double membranes with tissue reinforcement for long membrane life
- Compact drive system for extremely quiet and smooth running
- High life-cycle
- Easy changing of membrane and valve

**Technical specifications**:

| | |
|---|---|
| Max. suction speed 50/60 Hz ($m^3$/h) or (l/min) | 4.0/4.4 or 67/73 |
| Final pressure (mbar abs.) | 70 |
| Max. pressure difference between intake and outlet (bar) | 2 |
| Connection at suction side, hose shaft (mm) | 10 |
| Pressure side | Sound absorbers |
| Motor output (kW) | 0.18 |
| Dimensions L x W x H (mm) | 243 x 239 x 198 |
| Weight (kg) | 11 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ME 4 NT | **KH50.1** | 1 | 1300,75 |

# Rotary vane pumps



## MPC-series membrane controlled pumps

By Welch Vacuum. Ideal for conveying and compressing
**neutral and aggressive gases and vapours.**
Application range: In physical and chemical laboratories
for vacuum-filtration, -distillation, -drying, etc.

- Connection-/pump head made of PTFE with carbon fiber reinforcement
- Gasket EPDM, Screw connectors PVDF, valves PEEK, membrane disk NBR, connecting elements PP
- Max. supply pressure / max. outlet pressure 1 bar
- Inlet-/Outlet side for tube interior-∅ 8 mm
- Max. ambient level 40 °C
- Max. operating gas-temperature 80 °C
- Main supply 230 V, 50/60 Hz

**Technical specifications:**

| Type | MPC 101 Z (2-stage) | MPC 301 Z (2-stage) | MPC 601 T (3-stage) |
|---|---|---|---|
| Pumping capacity (l/min) | 16.7 | 38.3 | 75 |
| Final vacuum (mbar) | <8 | <8 | <2 |
| Power (kW) | 0.06 | 0.18 | 0.37 |
| Weight (kg) | 6.5 | 11.2 | 18.3 |
| Dimensions W x D x H (mm) | 195 x 235 x 145 | 230 x 265 x 169 | 230 x 380 x 169 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MPC 101 Z | **CE38.1** * | 1 | 1198,65 |
| MPC 301 Z | **CE39.1** * | 1 | 1639,40 |
| MPC 601 T | **CE40.1** * | 1 | 3251,90 |

* Longer delivery times possible. Please check with our Sales Department.



NEU
NOUVEAU
NEW

## Rotary vane pump packages CRVpro series

By Welch Vacuum.
Complete package with two-stage rotary vane pumps.

**Advantages:**
- Low operating temperature due to enhanced cooling geometry
- Coating of the pump body and the oil container as protection against chemical vapours
- Low oil consumption and corrosion inhibitor due to low heat development during operation
- Large oil reservoir reduces the concentration of chemicals, whereby the oil change intervals are increased

**Applications:**
- Freeze dryer (CRVpro 4/6/8)
- Vacuum centrifuge (CRVpro 6)
- Vacuum furnaces (CRVpro 8)
- Schlenk Technology (CRVpro 4)
- Glove Box (CRVpro 8)

**Technical specifications:**

| Type | CRVpro 4 | CRVpro 6 | CRV pro 8 |
|---|---|---|---|
| Pumping speed (at 50 Hz)<br>- $m^3/h$<br>- l/min | <br>3.8<br>63 | <br>5.1<br>85 | <br>7.3<br>122 |
| Ultimate total pressure<br>- without gas ballast (mbar)<br>- with gas ballast (mbar) | <br>$2 \times 10^{-37}$<br>$\times 10^{-2}$ | | |
| Connection flange DN | 16 KF | | |
| Sound level at 50 Hz (dB (A)) | 50 | | |
| Oil filling (l) | 1.15 | 1.15 | 1.0 |
| Motor power at 50 Hz (kW) | 0.37 | | |
| Weight (kg) | 21 | 22 | 22.5 |
| Dimensions: W x D x H (mm) | 463 x 157 x 230 | | |

**Delivery incl.** oil mist separator AKD 16, 2-way ball valve, adapter flange DN16KF-10/8 mm, vacuum hose (1.5 m), oil change set incl. 2 x 1 l oil, clamping and centring rings.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Pump package CRVpro 4 | **HKE0.1** * | 1 | 2359,65 |
| Pump package CRVpro 6 | **HKE1.1** * | 1 | 2628,40 |
| Pump package CRVpro 8 | **HKE2.1** * | 1 | 2993,90 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| Vacuum pump oil for CRVpro series (1 l) | **HKE3.1** | 1 | 26,80 |


- ▶ For Woulff' bottles see page 174
- ▶ For tubes see page 371
- ▶ Vacuum regulators on page 363
- ▶ Desiccators see page 54

# Rotary vane pumps



## XS rotary vacuum pumps

By Vacuubrand. For pressure ranges up to $10^{-3}$ mbar.

**Advantages:**

- High suction capacity, even at low ultimate pressure
- High water vapour tolerance
- Active corrosion protection against ingress of corrosive gases and oil components at standstill through vacuum-tight oil circuit
- New circulation lubrication system
- Compact design and low weight
- Starts reliably even at low temperatures
- Long oil change intervals thanks to high usable oil volume
- Easy maintenance thanks to telescopic design

### ① Single-stage version

**Technical specifications:**

| Type | RE 2.5 |
|---|---|
| Suction capacity | 2.3 / 2.8 $m^3/h$ |
| Ultimate total pressure<br>- without gas ballast<br>- with gas ballast | <br>2 x $10^{-3}$ mbar<br>1 x $10^{-2}$ mbar |
| Water vapour tolerance | 40 mbar |
| Min./max. oil fill | 0.18 / 0.51 l |
| Connection<br>- Suction side<br>- Pressure side | <br>DN 16 small flange<br>DN 10 hose nozzle |
| Dimensions (L x W x H) | 308 x 125 x 190 mm |
| Weight | 10.2 kg |
| Motor power | 0.18 kW |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** oil fill, thermal motor circuit-breaker, power cord (2 m long), clamping and centring ring for suction piece.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RE 2.5 | **CE14.1** * | 1 | 1472,75 |

* Longer delivery times possible. Please check with our Sales Department.

### ② Two-stage version

**Technical specifications:**

| Type | RZ 2.5 | RZ 6 | RZ 9 |
|---|---|---|---|
| Suction capacity ($m^3/h$) | 2.3 / 2.8 | 5.7 / 6.8 | 8.6 / 9.9 |
| Ultimate total pressure<br>- without gas ballast (mbar)<br>- with gas ballast (mbar) | <br>2 x $10^{-3}$<br>1 x $10^{-2}$ | <br>2 x $10^{-3}$<br>1 x $10^{-2}$ | <br>2 x $10^{-3}$<br>1 x $10^{-2}$ |
| Water vapour tolerance (mbar) | 40 | | |
| Min./max. oil fill (l) | 0.1 / 0.28 | 0.34 / 0.73 | 0.2 / 0.8 |
| Connection<br>- Suction side<br>- Pressure side | <br>DN 16 small flange<br>DN 10 hose nozzle | | <br>DN 25 small flange<br>DN 25 hose nozzle |
| Dimensions L x B x H (mm) | 308 x 125 x 190 | 370 x 142 x 207 | 460 x 152 x 232 |
| Weight (kg) | 11.4 | 16.4 | 24,2 |
| Motor power (kW) | 0.18 | 0.3 | 0.37 |
| Power supply | 230 V, 50/60 Hz | | |

**Delivery incl.** oil fill, thermal motor circuit-breaker, power cord (2 m long), clamping and centring ring for suction piece - can also be used for exhaust port with RZ 9.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RZ 2.5 | **CE15.1** * | 1 | 2015,65 |
| RZ 6 | **HC94.1** * | 1 | 2580,00 |
| RZ 9 | **CTL2.1** * | 1 | 3364,75 |

* Longer delivery times possible. Please check with our Sales Department.



## XS rotary pumps packages

By Vacuubrand.

**Package 1 + 2**

**Delivery incl.:**

- Two-stage pump with oil fill
- Exhaust filter FO for removing oil mist
- Butterfly valve VS 16 with extremely low leakage rate and low gas release
- PP adapter, small flange DN 16 on DN 10 hose nozzle. Clamping and centring rings

**Package 3**

**Delivery incl.:**

- Two-stage pump with oil fill
- Exhaust filter FO for removing oil mist
- Butterfly valve VS 16 with extremely low leakage rate and low gas release
- PP adapter, small flange DN 16 on DN 10 hose nozzle. Clamping and centring rings
- Set comprising vacuum meter DCP 3000 with pressure transducer VSK 3000

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Package 1 incl. RZ 2.5 + FO + VS 16 + SW DN 10 | **NA10.1** * | 1 | 2322,00 |
| Package 2 incl. RZ 6 + FO + VS 16 + SW DN 10 | **NA11.1** * | 1 | 2784,25 |
| Package 3 incl. RZ 6 + FO + VS 16 + SW DN 10 + set comprising DCP 3000 and VSP 3000 | **CTL3.1** * | 1 | 3741,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Vacuum meter




## Accessories for XS rotary pumps

By Vacuubrand.

① **Exhaust filter FO**
Provides optimal protection against oil-polluted air in the laboratory.
Receptacle made of PMP, highly resistant to chemicals.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| FO for RE 2.5, RZ 2.5 and RZ 6 | **N404.1** * | 1 | 299,95 |
| FO for RZ 9 | **CTL4.1** * | 1 | 352,60 |

② **VS butterfly straight way valves**
Made of stainless steel.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| VS 16, KF DN 16 | **CTL5.1** * | 1 | 333,25 |
| VS 25, KF DN 25 | **CTL6.1** * | 1 | 398,85 |

**PP adapter from small flange (KF) to hose nozzle (SW)**
For connecting hoses with inner ∅ 10 or 15 mm to the pumps.
*1 The smaller inner ∅ may result in a loss of suction.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PP adapter from KF 16 to SW 10 | **CTL7.1** * | 1 | 20,10 |
| PP adapter from KF 25 to SW 10*1 | **CTL8.1** * | 1 | 27,85 |
| PP adapter from KF 25 to SW 15 | **CTL9.1** * | 1 | 29,35 |

**AK suction side separator**
Retains particles and liquid droplets, e.g. when used on drying cabinets. Fits directly onto suction port. Clear catch tank allows optimal condensation control. Single condensate outlet.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ③ AK for RE 2.5, RZ 2.5 | **CTN0.1** * | 1 | 261,25 |
| AK for RZ 6 | **CTN1.1** * | 1 | 313,90 |
| ④ AK for RZ 9 | **CTN2.1** * | 1 | 326,80 |

⑤ **Main flow oil filter for RZ 9**
Filters microparticles out of the oil. This extends oil life and reduces servicing requirements. The maintenance indicator saves unnecessary filter changes.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Main flow oil filter for RZ 9 | **CTN3.1** * | 1 | 436,45 |

**Clamping and centring rings**
For attaching valves, hose nozzles etc. A single clamping ring and a single centring ring of the same size are required to ensure that a proper connection is made.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Aluminium clamping ring KF DN 10/16 | **CTN4.1** * | 1 | 17,00 |
| Outer centring ring KF DN 10/16 with NBR seal | **CTN5.1** * | 1 | 8,10 |
| Aluminium clamping ring KF DN 20/25 | **CTN6.1** * | 1 | 19,90 |
| Outer centring ring KF DN 20/25 with NBR seal | **CTN7.1** * | 1 | 9,15 |

**Pump oil**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 l pump oil | **N406.1** * | 1 | 32,60 |

* Delivery times may apply to these products. Please ask our sales staff.




## Vacuum regulator VAR and vacuum meter VAC

The units are connected to an vacuum pump in series on the pressure side.
- Connections for hose with inside ∅ 8 mm
- Stand mounting possible (using spring clamps on the back of the device)

① **Vacuum regulator VAR**
With regulator for controlling and maintaining the vacuum.
Continuously variable for variable vacuum level.

② **Vacuum meter VAC**
Ideal for displaying the current vacuum level.

**Technical specifications:**

| | |
|---|---|
| Measuring range | 1020 to 0 mbar |
| Graduation | 10 mbar |
| Dimensions (W x D x H) | 80 x 80 x 150 mm |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Vacuum regulator VAR | **Y457.1** | 1 | 209,65 |
| Vacuum meter VAC | **NA03.1** | 1 | 146,20 |




## Vacuum meter DVR 2

By Vacuubrand. With integrated pressure transducer made of aluminium oxide ceramics. Digital pressure indicator, with analogue illustration. Different units (mbar, hPa, Torr) can be set. Battery-powered meters. Adjustable on-time (1 to 1000 min) or permanent run settings. Battery change display. Mercury- and cadmium-free. With switch-on/off. With thread for support rod.

**Technical specifications:**

| | |
|---|---|
| Measuring range | 1080 to mbar (hPh)<br>810 to 1 Torr |
| Measuring accuracy | <1 mbar (0.75 Torr) |
| Vacuum connection | Small flange DN 16 and screw-on<br>staged tube shaft DN 6/10 (for tube with ID 6 or 10 mm) |
| Measuring principle | capacitive, absolute pressure measuring independent of gas type |
| Dimensions (L x W x H) | 115 x 115 x 66 mm |
| Weight | 375 g |

**Delivery incl.** 9 V lithium battery and support rod.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L111.1** | 1 | 602,00 |

# Vacuum meter







## Vacuum meter for coarse and fine vacuum

By Welch Vacuum. Digital multi-range vacuum meter for measuring absolute pressure in the coarse and fine vacuum ranges.
With chemically resistant combined sensor (PIEZO/PIRANI) for corrosive and aggressive gases and vapours.

- Automatic changeover between capacitive and PIRANI measurement ranges
- Temperature compensated for operating temperatures from 0 to + 60 °C
- Calibration of individual measured values
- With clamp for attaching to stand rods ∅ 8-12 mm.
- Battery or mains operation

**Technical specifications:**

| | |
|---|---|
| Measurement range | 1050 to $10^{-3}$ mbar absolute pressure |
| Resolution | 1 mbar (1050 to 100 mbar)<br>0.5 mbar (99 to 1 mbar)<br>0.1 mbar (0.9 to 0.1 mbar)<br>0.01 mbar (0.09 to 0.01 mbar)<br>0.001 mbar (0.009 to 0.001 mbar) |
| Measuring principle | capacitive<br>acc. to PIRANI |
| Measurement accuracy<br>capacitive acc. to PIRANI | 0.8 % full scale (5 to 1050 mbar)<br>±20 % of displayed value |
| Reproduction uncertainty | <0.5 % |
| Measuring lead | 3 m |
| Dimensions L x W x H (mm)<br>Display unit<br>Sensor | <br>80 x 36 x 125 mm<br>80 x 40 x 40 mm |
| Weight | 0.7 kg |
| Power supply | 90-260 V, 50/60 Hz |

**Delivery incl.** power adapter (9 V/200 mA), hose nozzle DN 8-10, clamp and 9 V battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CNL1.1** | 1 | 846,05 |

## Vacuum meter DCP 3000 with pressure transducer

By Vacuubrand. LCD graphic display with digital pressure indicator and bar graph representation. Different units (mbar, hPa, Torr) can be set. Separate pressure transducer with measurement cable for flexible positioning of meter (cable length 2 m). Can be used as a tabletop unit or with a support.

**Technical specifications:**

| **Model** | **① Pressure transducer VSK 3000** | **② Pressure transducer VSP 3000** |
|---|---|---|
| Measuring ranges | 1080 to 0.1 mbar<br>810 to 0.1 Torr | 1 x $10^{3}$ to 1 x $10^{-3}$ mbar<br>75 x $10^{2}$ to 1 x $10^{-3}$ Torr |
| Measurement accuracy | <±1 mbar | ±15 % of displayed value within the 0.01 to 10 mbar range |
| Resolution | 0.1 mbar | 10 % of displayed decade |
| Vacuum connection | for hoses with IDs 6, 8 or 10 mm | |
| Measuring principle | capacitive | Heat conduction according to PIRANI |
| Sensor material, contacting medium | Aluminium oxide ceramic | |
| Dimensions of display unit (L x W x H) | 124 x 124 x 114 mm | |
| Weight | 440 g | |
| Mains connection | 100-230 V, 50/60 Hz | |

**Delivery incl.** DCP 3000 vacuum meter with desired pressure transducer, measuring cable and support.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Vacuum meter DCP 3000 with pressure transducer VSK 3000 | **LY74.1** | 1 | 1118,00 |
| Vacuum meter DCP 3000 with pressure transducer VSP 3000 | **LY75.1** | 1 | 1096,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement/additional pressure transducer VSK 3000 | **LY76.1** | 1 | 410,65 |
| Replacement/additional pressure transducer VSP 3000 | **LY77.1** | 1 | 381,65 |
| Extension leads for pressure transducers VSK 3000 and VSP 3000, 10 m | **LY78.1** | 1 | 90,95 |




## Vacuum controllers CVC 3000 detect

By Vacuubrand. Two-point vacuum regulator with integrated ceramic diaphragm vacuum sensor.

- Backlit LCD graphic display with bargraph
- "Detect" function for automatic boiling pressure detection
- Vacuum measurement is integrated within the valve block - direct connection of CVC 3000 detect between pump and vacuum application
- Ten programs with vacuum and time presets, each storable in ten program steps
- Process time is adjustable from 1 to 1440 min
- Integrated venting valve - easy pressure equalisation or ventilation with inert gas at the end of the process
- Non-return valve - no interference with adjacent applications using a shared vacuum source

**Technical data:**

| | |
|---|---|
| Measurement ranges | 1081 to 0.1 mbar<br>810 to 0.1 Torr |
| Measurement accuracy | <±1 mbar |
| Resolution | 0.1 mbar |
| Vacuum connection | For hoses with ID 6/10 mm |
| Venting valve, connection | For hoses with ID 4-5 mm |
| Measuring principle | Capacitive, absolute pressure measurement independent of gas type |
| Display unit dimensions (L x W x H) | 181 x 162 x 174 mm |
| Weight | 1.5 kg |
| Power supply | 100-230 V, 50/60 Hz |

**Delivery incl.** vacuum controller CVC 3000 detect with vacuum valve, venting valve, non return valve, power supply and ① bench stand or ② stand mount.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① CVC 3000 detect benchtop unit | **AEP6.1** | 1 | 1988,75 |
| ② CVC 3000 detect stand-mounted unit | **AEP7.1** | 1 | 1988,75 |




## SC 920 G vacuum pump system with remote control

By KNF. Chemical-resistant, suitable for aggressive and corrosive gases and vapours.

- Can be controlled via a PC or remote control
- Increased safety: No need to open the fume cupboard to operate the vacuum system
- LCD screen displays actual and target values
- Automatic boiling point detection and boiling point tracking using integrated ramp function
- High recovery rates even with solutions that have very low boiling points
- Delivery rate (in %) can be adjusted via speed
- Integrated gas ballast valve
- Quiet operation

**Technical specifications:**

| | |
|---|---|
| Delivery rate | max. 21 l/min |
| End vacuum abs.<br>without gas ballast<br>with gas ballast | <br>max. 2 mbar<br>max. 5 mbar |
| Tube connection | ID 10 mm |
| Receiving flask | Made of coated glass (implosion-resistant), capacity: 500 ml |
| Port | Mini USB |
| Dimensions (W x H x D) | 366 x 423 x 294 mm |
| Total weight | 15.2 kg |
| Power supply | 100-240 V, 50/60 Hz |

**Materials of pump parts in contact with media:**

| | |
|---|---|
| Pump head | PPS |
| Diaphragms | PTFE-coated |
| Valves | FFPM |
| Seals | FPM |
| Tube shafts | PVDF |

**Radio remote control:**

| | |
|---|---|
| Display | LCD |
| Operation | Touchscreen/push-and-turn dial |
| Range | max. 50 m |
| Power supply | Batteries (4 x 1.2 V 2500 mAh AA) or power supply |
| Dimensions (W x H x D) | 90 x 205 x 55 mm |
| Weight | 0.51 kg |

**Delivery incl.** radio remote control with batteries and power supply, 2 Receiving flasks, 2 flask clamps, USB cable for connecting to a PC and software (compatible with Windows).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EHP1.1** | 1 | 4479,55 |

# Vakuumsystems






## Chemical-resistant LABOXACT®-SEM vacuum systems

By KNF. Ideal for application with rotary evaporators.

**Design:**
- **Digital-vacuum meter**, shows the current pressure in the system
- **Fine control valve** for infinitely adjustable vacuum regulation
- **Safety ventilation valve** enables the piston to be aired at any time to stop evaporation
- **Separate On/Off-switch** for pump
- **Inert gas supply**
- Connection for hose-ID 10 mm
- Power supply 230 V, 50 Hz
- Comes completely assembled

**Advantages:**
- Safe monitoring of evaporation
- High recovery rate, even when using low boiling solvents
- The closed system allows for gentle distillation
- Infinitely variable regulation of vacuum via fine control valve
- Once the desired vacuum has been achieved, the fine regulator valve can be closed and the pump switched off
- Maintenance-free and quiet

**Delivery incl.** base plate, separator, condenser, fine control valve, vacuum meter (digital), safety ventilation valve, cables and tubes.

## Chemical-resistant LABOPORT®-SC vacuum systems

By KNF. With separator, condenser and vacuum-controller.
For laboratories which require a clean and controlled vacuum.

**Examples of applications:**
- Vacuum distillation and -filtration
- Rotary evaporators
- Vacuum drying
- Vacuum impregnation
- Gel drying, etc.

**Design:**
- **Vacuum-Controller** for controlled vacuum processes
- The control unit switches the pump off or closes it, when the required vacuum has been achieved or exceeded
- Connection for hose-ID 10 mm
- Power supply 230 V, 50 Hz
- Comes completely assembled

**Advantages:**
- Automatic control of vacuum
- Controlled solvent recovery through high-performance condenser (delivery side)
- Collecting of particles in the system (suction side)
- Maintenance-free and quiet

**Delivery incl.** base plate, separator, condenser, vacuum-controller with control unit, cables and tubes.

| System | Flow rate capacity (l/min) | Vacuum abs (mbar) | Overpressure (bar) | Weight (kg) | L x W x H (mm) | Integral pump type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|---|
| SEM 810 | 10 | 8 | - | 12,1 | 442 x 305 x 481 | N 810.3 FT.18 | **AY11.1** * | 1 | 2710,10 |
| SEM 820 | 20 | 8 | - | 14,5 | 442 x 305 x 481 | N 820.3 FT.18 | **AY12.1** * | 1 | 2906,80 |
| SEM 840 | 34 | 8 | - | 17,8 | 442 x 305 x 481 | N 840.3 FT.18 | **AY13.1** * | 1 | 3261,55 |
| SEM 842 | 34 | 2 | - | 18,6 | 442 x 305 x 481 | N 842.3 FT.18 | **AY14.1** * | 1 | 4178,55 |
| SC 810 | 10 | 8 | 1 | 13,6 | 397 x 289 x 506 | N 810.3 FT.18 | **AY15.1** * | 1 | 4206,50 |
| SC 820 | 20 | 8 | 1 | 16,0 | 397 x 289 x 506 | N 820.3 FT.18 | **AY16.1** * | 1 | 4400,00 |
| SC 840 | 34 | 8 | 1 | 19,3 | 417 x 289 x 506 | N 840.3 FT.18 | **AY17.1** * | 1 | 4482,75 |
| SC 842 | 34 | 2 | 1 | 20,1 | 417 x 289 x 506 | N 842.3 FT.18 | **AY18.1** * | 1 | 5700,75 |

* Longer delivery times possible. Please check with our Sales Department.




## Laboratory vacuum system LVS 105 T-10 ef

By Welch Vacuum. Specially designed for rotary evaporators, distillation, filtration, vacuum ovens and vacuum drying. Chemical resistant diaphragm vacuum pump and vacuum controller. To provide a freely selectable vacuum of ±1 mbar, pump speed is continuously adapted to the gas load.

**Advantages:**

- Faster process results are ensured by constant evaporation and degassing
- Automatic vacuum adjustment and control
- Integrated solvents library with stored distillation-specific parameters or freely adjustable boiling points
- Multilingual digital display (languages include DE, FR, EN and ES)
- Low-noise operation through speed reduction

**Pump parts materials in contact with media:**

| | |
|---|---|
| Seal | EPDM |
| Screw coupling / terminals | PP, PVDF |
| Valve | PEEK |
| Diaphragm | PTFE backing |
| Vacuum hose | PTFE |
| Connector head / pump head | PTFE with carbon fibre reinforcement |

**Technical specifications:**

| | |
|---|---|
| Delivery rate | 20 l/min |
| Vacuum abs. | <2.0 mbar |
| Max. inlet/outlet pressure | 1 bar |
| Connections for ID hoses | 8 mm |
| Output | 830 W |
| Dimensions (W x D x H) | 250 x 260 x 435 mm |
| Weight | 9.5 kg |
| Power supply | 90-240 V, 50/60 Hz |

**Delivery incl.** chemical resistant diaphragm pump with gas ballast valve, built-in controller, ecoflex control unit, suction-side separator with 500 ml round bottom flask, pressure-side coil condenser with 500 ml round bottom flask and safety valve.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NH35.1** * | 1 | 3434,65 |

* Longer delivery times possible. Please check with our Sales Department.




## Safety suction system biovac 106

By Welch Vacuum. For safe and precise extraction of liquids, and non-explosive supernatants from microscopic slides, Petri dishes and other containers.

- Incl. highly durable chemical-resistant membrane pump
- The connection between the membrane pump and the handpiece are made with quick-coupling with double-sided stop valve
- Different pipettes or glass tips can be inserted via pipettor holder. Delivery includes 8-channel-suction screen
- Integrated 2 l drain bottle (autoclavable) with built-in float valve, closes automatically once max. filling level has been reached
- Has an integrated filter holder for the membrane filter between the drain bottle and membrane pump
- Membrane filters with max. 0.22 µm pore size, ∅ 55 mm can be used. Comes equipped ex works with: PTFE filter, 0.22 µm, ∅ 55 mm
- If desired, the pump can also be switched on/off via foot switch (available as an optional accessory)

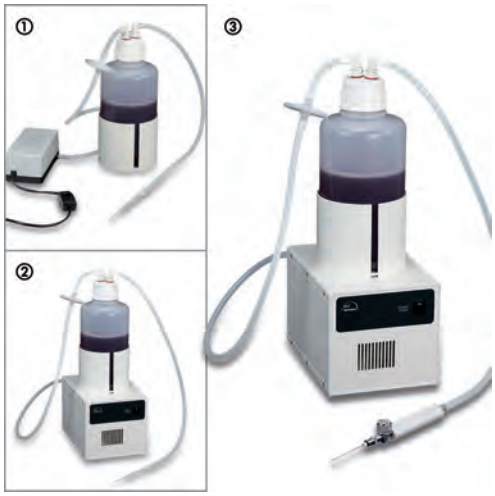
**Technical specifications:**

| | |
|---|---|
| Suction speed | 0.72 $m^3$/h or 12 l/min |
| Ultimate pressure | <100 mbar |
| Max. supply pressure | 1 bar |
| Max. outlet pressure | 1 bar |
| Ambient temperature | +10 to +40 °C |
| Media temperature | max. +40 °C |
| Dimensions (W x D x H) | 357 x 145 x 277 mm |
| Weight | 8 kg |
| Current | 50/60 Hz, 115 or 230 V (adjustable) |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Biovac 106 incl. extension | **KH49.1** * | 1 | 1747,95 |
| Foot switch | **EP49.1** * | 1 | 140,85 |

* Longer delivery times possible. Please check with our Sales Department.

# Suction systems




## Vacuum safety extraction systems AZ, AC, AA

By Hettich Benelux. For safe vacuum extraction of liquid residues.

**Basic equipment:**
- Vacuum pump
- Collecting bottle made of PP, vacuum resistant, autoclavable
- Screw cap with 2 quick release couplings for right sealing of the collecting bottle after the hoses are disconnected
- Aeration insert for pressure equalisation during autoclaving of collecting bottle
- Safety filter to protect the vacuum pump and environment
- 3 m silicone rubber hose for placing extraction system away from the workbench

**Technical specifications:**

| Type | ① AZ02 / AZ04 | ② AC02 / AC04 | ③ AA02 / AA04 |
|---|---|---|---|
| Suction capacity (l/min) | 8 | 25 | 17 |
| End vacuum (abs.) (mbar) | 700 | 250 | 100 |
| Additional sampling points (optional) | - | 1 | 1 to 3 |
| Housing dimensions W x D x H (mm) | 75 x 170 x 60 | 170 x 220 x 155 | 170 x 220 x 155 |
| Weight (kg) | 1.5 | 4.5 | 5.5 |
| Power supply | 230 V, 50 Hz | | |

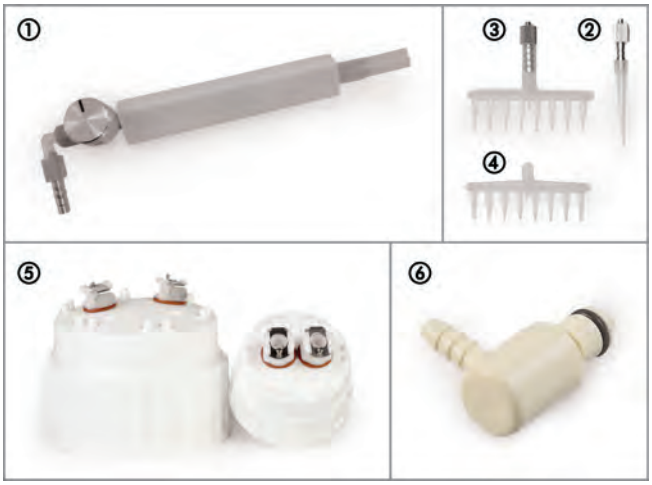
① **Type AZ**
- Simple system for extraction of small volumes
- Attachment of Pasteur pipettes or aspiration pipettes directly to the hose
- Please order metal stand for the collecting bottle separately

② + ③ **Type AC/AA**
- Lacquered aluminium housing
- Compact design, safety bottle holder mounted on high-performance vacuum pump
- Suitable for multiple sampling points

③ **Additional features of type AA**
- Handle with trumpet valve AH 01 for attaching various suction instruments and a mechanical flow rate control system; incl. adapter for Pasteur pipettes, adapter for 1 ml pipette tips and angle adapter
- Vacuum pump with automatic cut-out. The pump cuts out automatically on completion of extraction and when the terminal vacuum is reached

| Image | Type | Capacity of collecting bottle (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | AZ 02 | 2 | **CE30.1** * | 1 | 416,05 |
| ① | AZ 04 | 4 | **CE31.1** * | 1 | 437,55 |
| ② | AC 02 | 2 | **HA39.1** * | 1 | 964,30 |
| ② | AC 04 | 4 | **HA40.1** * | 1 | 985,80 |
| ③ | AA 02 | 2 | **CE32.1** * | 1 | 1402,90 |
| ③ | AA 04 | 4 | **CE33.1** * | 1 | 1413,65 |

* Longer delivery times possible. Please check with our Sales Department.




## Accessories for extraction systems AZ, AC and AA

By Hettich Benelux.

*1 Recommended for AZ system
*2 Included with AA system
*3 Recommended for AZ/AC systems

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| - | Metal stand for 2 l bottle *1 | **EA38.1** | 1 | 143,00 |
| - | Metal stand for 4 l bottle *1 | **EA39.1** | 1 | 148,35 |
| ① | Handle with trumpet valve AH 01, incl. adapter for Pasteur pipettes, adapter for 1 ml pipette tips, angle adapter *2 | **HA41.1** | 1 | 192,45 |
| - | Footswitch AF 01 for switching pump on and off *3 | **EA40.1** | 1 | 213,95 |
| ② | Adapter for pipette tips | **CE34.1** | 1 | 49,45 |
| ③ | Adapter incl. suction rake | **CE35.1** | 1 | 60,20 |
| ④ | Suction rake | **CE36.1** | 1 | 14,70 |
| - | Rotilabo® Y-pieces for connecting additional sampling pointRotilabo® Y-pieces for connecting additional sampling point | **E772.1** | 10 | 12,80 |
| ⑤ | Spare cover for EA36.1 | **PL94.1** | 1 | 109,65 |
| ⑤ | Spare cover for EA37.1 | **PL95.1** | 1 | 120,40 |
| - | 2 l spare bottle with quick closures | **EA36.1** | 1 | 175,25 |
| - | 4 l spare bottle with quick closures | **EA37.1** | 1 | 192,45 |
| ⑥ | Spare elbow hose nozzle with quick closures | **KA53.1** | 1 | 19,15 |
| - | Spare safety filter (Millex®-FG) | **CY06.1** | 10 | 129,00 |



## Aspiration pipettes

Made of **PS**. **Sterile.** Pipettes without cotton stopper, without graduation. Suitable for vacuum applications and liquid handling where high precision is not required. Safe alternative to pasteurizing pipettes made of glass.

| Volume (ml) | Design | Packaging | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | **sterile** | individually wrapped | 271 | **NA41.1** | 500 | 51,50 |
| 10 | **sterile** | individually wrapped | 295 | **NA42.1** | 200 | 57,00 |





## BioChemVacuuCenter BVC liquid extraction stations

By Vacuubrand. Safe, exact and effective extraction of liquids in all laboratory areas (chemistry, biochemistry and biology).
- Anatomically shaped VHC extraction handle with continuous tube, mechanism does not come into contact with fluids
- With swivelling pipette holder, for left and right handed users
- Lockable button for continuous extraction, µl precision extraction using thumbwheel
- Simultaneous extraction at 2 workstations is possible by connecting an optional second extraction handle
- Hydrophobic protective filter with 0.2 µm pore size for protection of the pump unit and the environment

① **BVC Basic**
- Without vacuum pump, for connecting to external vacuum sources
- With mechanical vacuum control for optimal working volume

② + ③ **BVC Control and BVC Professional**
- With high-performance, chemical resistant diaphragm pump ME 1C
- Continuous fine adjustment of vacuum/suction power electronically via touch panel
- Continuous vacuum with minimised pumping times by automatic pump activation/deactivation
- Very low noise level for a comfortable working environment

③ **BVC Professional**
- Also included: non-contact level sensor for electronic monitoring of the fluid level in the collection bottle
- Self-closing PVDF quick couplings for safe bottle changing

Note: when the quick couplings are fitted, unscrew the cap before autoclaving and place it on the bottle.

**Technical specifications of diaphragm pump ME 1C:**

| | |
|---|---|
| Max. vacuum abs. | 150 mbar (shutoff vacuum) |
| Max. suction capacity at 50/60 Hz | 0.7/0.85 $m^3$/h or 11.7/14.2 l/min |
| Motor rating | 0.04 kW |

**Delivery incl.:**
**BVC Basic**
Housing, 4 l **PP** collection bottle (vacuum resistant, autoclavable), sterilisable protective filter (0.2 µm pore size), extraction handle VHC$^{pro}$ (autoclavable), 3 adapters to hold various pipettes and tips, silicone rubber tube (2 m long).
**BVC Control and BVC Professional**
Also included: diaphragm pump and operating unit
**BVC Professional**
Also included: level sensor and quick couplings.

**Optional**
2 l borosilicate glass bottle for working with chemically aggressive solutions, plastic casing protects against mechanical damage and minimises loss of fluid in the event of glass breakage. An adapter is available to securely hold the glass bottle in the BVC Control and BVC Professional pump units. Self-closing quick couplings, made for PVDF for convenient and safe bottle changing.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| BVC Basic | **XE35.1** * | 1 | 752,50 |
| BVC Control | **XE36.1** * | 1 | 1542,65 |
| BVC Professional | **XE37.1** * | 1 | 2037,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| 4 l PP collection bottle | **XE38.1** * | 1 | 267,70 |
| 2 l borosilicate glass collection bottle | **XE39.1** * | 1 | 305,30 |
| Adapter for 2 l glass bottle | **XE40.1** * | 1 | 44,20 |
| Replacement/second suction handle VHC$^{pro}$ (incl. suction hose L 2.5 m, adapter for various pipettes/tips, wall mounting bracket) | **CYA7.1** * | 1 | 139,75 |
| Add-on kit for second VHC (hose clamp and inlet tube) | **XE41.1** | 1 | 38,85 |
| VHC$^{pro}$ 8-channel adapter for pipette tips with ejector (tip size 2-200 µl or 5-300 µl, suitable for 96-well microtiter plates) | **CYA8.1** * | 1 | 321,45 |
| Millex®-FG | **CY06.1** | 10 | 129,00 |
| Quick coupling for connecting the VHC extraction handle to the collection bottle | **XE42.1** * | 1 | 103,15 |
| Quick coupling for connecting the pump to the collection bottle | **XE43.1** * | 1 | 88,35 |

* Longer delivery times possible. Please check with our Sales Department



## Aspirator

By Brand. Bottle-top suction device, e.g. for cell culture. For safe and quick suction of liquid residue from bottles, test tubes and other storage. Items that touch the sample are made of **PP, PE and EPDM**.
- A vacuum pump is not required
- A vacuum is generated by pressing down the piston
- Suction volume per piston stroke max 25 ml
- Vacuum can be regulated with hand regulator
- GL 45 thread (with GL 45/32 and GL 45/S 40 thread adapters)
- Adapter and suction tube are autoclavable
- Can be disassembled easily for cleaning and maintenance
- Can also be used with pipettor tips, pasteur pipettes or capillary pipettes
- Incl. spare dosing unit

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y526.1** | 1 | 212,85 |

# Water jet pumps



## Water jet pump

Made of **PP**, ideal for sucking up liquids and vapours and for producing a vacuum. With integral non-return valve. Can be detached for easy cleaning.

**Tap connection via:**

Coupling nut R¾″ or
reducing adapter R½″ or
hose connection (olive) with outer-∅ 10-12 mm
Vacuum connection: Olive with outer-∅ 6-9 mm

Please order following accessories separately:
Adapters from R¾″ on M22 x 1 (perlator thread), with seal.

**Technical specifications:**

| | |
|---|---|
| Water consumption | approx. 190 l/h at 3.5 bar flow pressure |
| Pump capacity | approx. 400 l air/h at 3.5 bar flow pressure |
| Max. vacuum at 3.5 bar water pressure | approx. 16 mbar at +12 °C<br>approx. 24 mbar at + 20 °C |
| Length of water jet pumps at R¾″-connection | approx. 210 mm |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Water jet pump | **7366.1** | 1 | 48,70 |
| Adapter with Perlator thread | **N876.1** | 1 | 11,50 |



## Low pressure-water jet pumps

Made of nickel-plated brass with plastic sleeve. With vacuum strength 16 mbar (at 0.5 bar and +14 °C). Water consumption 4-12 l/min.
With integral no-return valve. Dimensions: H 185 x W 80 mm.
Weight approx. 250 g. Pump capacity at 5 bar water pressure 2.5 l/min.
Connection suction nozzle 9-14 mm.

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| With tubing connection and 2 hose clips | **9660.1** | 1 | 160,00 |
| With ½″ thread connection (20 mm) | **9661.1** | 1 | 169,00 |
| With ¾″ thread connection (26 mm) | **9662.1** | 1 | 169,00 |



## Rotilabo®-rubber tubes

Temperature range -10 to +50 °C. Red, made of natural rubber, not pressure resistant. Hardness: 45 Shore A.

**Standard tubes**

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 5 | 8 | 1,5 | **0674.1** | 10 | 15,50 |
| 6 | 10 | 2,0 | **0675.1** | 10 | 20,80 |
| 6 | 10 | 2,0 | **0675.2** | 25 | 44,20 |
| 8 | 12 | 2,0 | **0676.1** | 10 | 24,30 |
| 8 | 12 | 2,0 | **0676.2** | 25 | 52,65 |
| 10 | 14 | 2,0 | **0677.1** | 10 | 27,15 |
| 12 | 17 | 2,5 | **T981.1** | 12 | 43,15 |
| 14 | 20 | 3,0 | **T982.1** | 12 | 59,50 |
| 16 | 22 | 3,0 | **T983.1** | 12 | 77,35 |
| 20 | 28 | 4,0 | **T984.1** | 5 | 50,75 |

**Vacuum tubes**

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 5 | 15 | 5,0 | **0678.1** | 5 | 25,60 |
| 6 | 16 | 5,0 | **0679.1** | 5 | 27,75 |
| 6 | 16 | 5,0 | **0679.2** | 25 | 109,65 |
| 8 | 18 | 5,0 | **0680.1** | 5 | 33,10 |
| 8 | 18 | 5,0 | **0680.2** | 25 | 135,05 |
| 10 | 20 | 5,0 | **0681.1** | 5 | 34,85 |
| 12 | 22 | 5,0 | **T985.1** | 5 | 49,45 |
| 15 | 31 | 8,0 | **T986.1** | 5 | 103,40 |

## Rotilabo®-rubber tubing set

The set contains the following rubber tubes:

Standard lab tubes, each 10 m long:
Inner ∅ 6 mm, outer ∅ 10 mm
Inner ∅ 8 mm, outer ∅ 12 mm

Vacuum tubes, each 5 m long:
Inner ∅ 6 mm, outer ∅ 16 mm
Inner ∅ 8 mm, outer ∅ 18 mm

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **H279.1** | 1 | 92,35 |

▶ Tubing accessories see page 377



## Rotilabo®-PE tubes

Temperature range -40 to +80 °C, hard, odorless, transparent.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 1 | 1,8 | 0,4 | **9583.1** | 25 | 11,60 |
| 2 | 4 | 1 | **9584.1** | 25 | 20,40 |
| 3 | 5 | 1 | **9585.1** | 25 | 31,20 |
| 4 | 6 | 1 | **9586.1** | 25 | 25,70 |
| 5 | 7 | 1 | **9587.1** | 25 | 26,65 |
| 6 | 8 | 1 | **9589.1** | 25 | 28,40 |
| 7 | 9 | 1 | **9591.1** | 25 | 33,40 |
| 8 | 10 | 1 | **9593.1** | 25 | 37,10 |
| 9 | 11 | 1 | **9594.1** | 10 | 19,05 |
| 10 | 12 | 1 | **9595.1** | 10 | 21,85 |
| 12 | 14 | 1 | **9596.1** | 10 | 23,50 |




## Rotilabo®-FEP-tubes

Temperature range -270 to +205 °C. Flexible, pore-free, gasproof. Hardness: 55-60 Shore D. Transparent. Autoclavable.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 0,8 (1/32″) | 1,58 (1/16″) | 0,4 | **C022.1** | 10 | 20,90 |
| 1,58 (1/16″) | 3,18 (1/8″) | 0,8 | **Y504.1** | 5 | 31,10 |
| 2,0 | 4,0 | 1,0 | **C023.1** | 10 | 51,55 |
| 3,96 (5/32″) | 6,35 (1/4″) | 1,2 | **Y505.1** | 5 | 52,90 |
| 4,0 | 6,0 | 1,0 | **C024.1** | 10 | 81,20 |
| 4,35 (11/64″) | 6,35 (1/4″) | 1,0 | **Y506.1** | 5 | 45,70 |
| 6,0 | 8,0 | 1,0 | **C025.1** | 5 | 55,85 |
| 6,35 (1/4″) | 9,52 (3/8″) | 1,59 | **Y507.1** | 5 | 103,20 |
| 8,0 | 10,0 | 1,0 | **C026.1** | 5 | 70,85 |
| 9,52 (3/8″) | 12,7 (1/2″) | 1,59 | **Y508.1** | 5 | 132,25 |
| 10,0 | 12,0 | 1,0 | **C027.1** | 5 | 85,90 |




## Flex-tubes

Temperature range from -270 to +260 °C. Made of **PFA**, transparent. Resistant to chemicals, suitable for vacuums, pore-free. Autoclavable. Flexible, therefore ideal for narrow spaces and thermical extensions of length. The 40 mm long cylindrical endpieces can be connected e.g. to olives.

| Connection inner-∅ (mm) | Connection outer-∅ (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|
| 6 | 8 | **Y484.1** | 1 | 79,40 |
| 8 | 10 | **Y485.1** | 1 | 81,15 |
| 10 | 12 | **Y486.1** | 1 | 90,30 |
| 14 | 16 | **Y487.1** | 1 | 113,95 |
| 16 | 18 | **Y488.1** | 1 | 151,60 |
| 18 | 20 | **Y489.1** | 1 | 156,95 |




## Rotilabo®-PTFE tubes

Temperature range -200 to +260 °C, rigid, anti-adhesive, with low water absorption, chemical-proof, gas permeant. Hardness: 55 Shore D. Autoclavable.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 2 | 3 | 0,5 | **1173.1** | 5 | 15,00 |
| 2 | 4 | 1 | **1174.1** | 5 | 20,35 |
| 4 | 6 | 1 | **1175.1** | 5 | 24,30 |
| 5 | 7 | 1 | **1176.1** | 5 | 28,65 |
| 6 | 8 | 1 | **1177.1** | 5 | 34,35 |
| 8 | 10 | 1 | **1178.1** | 5 | 42,05 |
| 10 | 12 | 1 | **1179.1** | 5 | 44,30 |
| 12 | 14 | 1 | **XX06.1** | 5 | 49,45 |

# Tubing



## Rotilabo®-safety gas tubes

For supplying Bunsen burners that operate using gas in accordance with DIN 30665. With non-buckling, elastic coupling sleeve, suitable for all three gas groups acc. to DVGW-Worksheet G 260, controlled and tested as per DIN-DVGW-Reg.-No. DG - 4607 AU 2366.
Not suitable for connection to gas cylinders. Inner-∅ 9 mm.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 50 | **1716.1** | 1 | 35,10 |
| 60 | **A268.1** | 1 | 36,80 |
| 75 | **1717.1** | 1 | 41,00 |
| 100 | **1718.1** | 1 | 47,30 |
| 125 | **A269.1** | 1 | 53,35 |
| 150 | **1719.1** | 1 | 56,05 |
| 200 | **A270.1** | 1 | 69,45 |
| 300 | **A271.1** | 1 | 103,20 |



## Rotilabo®-PVC tubes

Temperature range -20 to +60 °C, flexible, fully transparent.
Hardness: 75 ±5 Shore A. Free of DEHP.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 1 | 1,8 | 0,4 | **9724.1** | 100 | 34,85 |
| 2 | 4 | 1 | **9725.1** | 100 | 25,40 |
| 3 | 5 | 1 | **9726.1** | 100 | 28,85 |
| 4 | 7 | 1,5 | **9727.1** | 100 | 45,70 |
| 5 | 8 | 1,5 | **9730.1** | 100 | 54,80 |
| 6 | 10 | 2 | **9732.1** | 50 | 49,15 |
| 7 | 11 | 2 | **9733.1** | 50 | 61,60 |
| 8 | 12 | 2 | **9736.1** | 50 | 62,90 |
| 12 | 16 | 2 | **XX05.1** | 50 | 79,75 |



## Rotilabo®-gas tubing

For laboratory gas burners that operate using gas in acc. with DIN 30665. Ideal for all 3 gas types, which are described in the German Municipal Services (DVGW). Pamphlet G260. Acc. to DIN 30664 Part 1, without casing and armouring. Suitable for pressures up to 100 mbar. Tested as per DIN-DVGW- Reg.- No. NG - 4607 AU 2362. Not suitable for connection to gas cylinders! ∅-inner 10 mm, ∅-outer 14 mm.

| Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 5 | **E485.1** | 1 | 48,00 |




## PVC-pressure tubes with tissue insert

By Nalgene®. Max. working temperature -21 to +82 °C.
Clear, shore-hardness 65. Gas- or chemically sterilisable.
Very good flexibility and pliable. Tasteless and approved for the food industry (FDA-approval). Suitable when working under pressure, for weak acids, alkaline solutions and salt solutions.
Inner-∅ and maximum working pressure are marked on tube.

| ∅ inside (mm (inch)) | Wall thickness (mm) | Max. pressure at 23 °C (bar) | Max. pressure at 52 °C (bar) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|---|
| 4,8 (3/16) | 2.4 | 19 | 9,5 | **CA88.1** | 15 | 80,65 |
| 6,4 (1/4) | 2.4 | 19 | 9,5 | **CA89.1** | 15 | 84,85 |
| 7,9 (5/16) | 2.4 | 19 | 9,5 | **CA90.1** | 15 | 87,55 |
| 9,5 (3/8) | 2.4 | 17 | 8,6 | **CA91.1** | 15 | 90,85 |
| 12,7 (1/2) | 3.2 | 15,8 | 7,9 | **CA92.1** | 15 | 120,40 |
| 15,9 (5/8) | 3.2 | 15,8 | 7,9 | **CA93.1** | 15 | 181,70 |
| 19,0 (3/4) | 3.2 | 12 | 6 | **CA94.1** | 15 | 203,20 |
| 25,4 (1) | 4,0 | 9,6 | 4,8 | **CA95.1** | 15 | 295,65 |


- ▶ Tubing accessories from page 377
- ▶ Hose brushes see page 1134



## Rotilabo®-silicone tubes

Temperature range -60 to +200 °C (for short periods up to +260 °C).
Hardness: 60 Shore A, soft, flexible, slightly opaque.
Suitable for peristaltic pumps. Autoclavable.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 0,5 | 2,5 | 1 | **9554.1** | 25 | 19,70 |
| 1 | 1,8 | 0,4 | **9555.1** | 25 | 14,60 |
| 1 | 3 | 1 | **9556.1** | 25 | 18,95 |
| 1,5 | 3,5 | 1 | **9557.1** | 25 | 17,70 |
| 2 | 4 | 1 | **9559.1** | 25 | 19,95 |
| 2 | 6 | 2 | **9560.1** | 25 | 44,40 |
| 2,5 | 4,5 | 1 | **9561.1** | 25 | 25,75 |
| 3 | 5 | 1 | **9562.1** | 25 | 26,30 |
| 3 | 6 | 1,5 | **9563.1** | 25 | 38,35 |
| 3 | 7 | 2 | **9565.1** | 25 | 55,50 |
| 4 | 6 | 1 | **9566.1** | 25 | 30,35 |
| 4 | 7 | 1,5 | **9568.1** | 25 | 44,10 |
| 4 | 8 | 2 | **N874.1** | 25 | 66,65 |
| 4 | 8 | 2 | **N875.1** | 5 | 15,00 |
| 5 | 7 | 1 | **9569.1** | 25 | 41,95 |
| 5 | 8 | 1,5 | **9571.1** | 25 | 54,85 |
| 6 | 9 | 1,5 | **9572.1** | 25 | 60,20 |
| 6 | 10 | 2 | **9573.1** | 10 | 36,35 |
| 7 | 10 | 1,5 | **9574.1** | 10 | 29,75 |
| 7 | 11 | 2 | **9575.1** | 10 | 40,00 |
| 8 | 11 | 1,5 | **9576.1** | 10 | 34,65 |
| 8 | 12 | 2 | **9577.1** | 10 | 45,00 |
| 9 | 12 | 1,5 | **9578.1** | 10 | 39,95 |
| 9 | 13 | 2 | **9580.1** | 10 | 50,00 |
| 10 | 14 | 2 | **9581.1** | 10 | 51,75 |
| 12 | 16 | 2 | **T975.1** | 5 | 27,85 |
| 14 | 20 | 3 | **T976.1** | 5 | 49,30 |
| 16 | 21 | 2,5 | **T977.1** | 5 | 44,60 |
| 18 | 24 | 3 | **T978.1** | 5 | 51,05 |
| 20 | 26 | 3 | **T979.1** | 5 | 64,85 |

## Rotilabo®-vacuum silicone tubes

Temperature range -60 to +180 °C (for short periods up to +260 °C).
Hardness: 55 Shore A, thick-walled, opaque. Autoclavable.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 3 | 9 | 3 | **9737.1** | 5 | 30,35 |
| 4 | 12 | 4 | **9738.1** | 5 | 39,20 |
| 5 | 15 | 5 | **9740.1** | 5 | 56,80 |
| 6 | 12 | 3 | **9742.1** | 5 | 37,30 |
| 7 | 15 | 4 | **9744.1** | 5 | 61,95 |
| 8 | 16 | 4 | **9746.1** | 5 | 68,65 |
| 10 | 20 | 5 | **9747.1** | 5 | 85,20 |
| 12 | 22 | 5 | **T980.1** | 5 | 91,95 |



## Silicone tubes Versilic®

By Saint-Gobain. Temperature range from -50 to +200 °C (short-term to +220 °C). Transparent, hardness 60 Shore A. Autoclavable. With peroxide cross-linked silicone. Biologically inert (USP XXIII Class 6), have no inhibitory effect on cell cultures.
In compliance with following standards:

- Ph. Eur. (2. Edition)
- Biological tests, US-Pharmacopeia Class VI
- Biocompatibility requirements of Standard ISO 10993,(General toxic irritation and sensitization, cytotoxicity, haemocompatibility)
- FDA- and BfR-Lists as well as in compliance with EU guidelines for quality tests conducted on foodstuffs
- Produced under GMP-conditions, ISO 9001 and EN 13485

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 1,0 | 3,0 | 1.0 | **HC61.1** | 50 | 42,50 |
| 2,0 | 4,0 | 1.0 | **HC62.1** | 50 | 57,00 |
| 3,0 | 5,0 | 1.0 | **HC63.2** | 10 | 35,45 |
| 3,0 | 5,0 | 1.0 | **HC63.1** | 50 | 61,65 |
| 3,0 | 6,0 | 1.5 | **HC64.2** | 10 | 38,50 |
| 3,0 | 6,0 | 1.5 | **HC64.1** | 50 | 91,35 |
| 4,0 | 6,0 | 1.0 | **HC65.2** | 10 | 36,05 |
| 4,0 | 6,0 | 1.0 | **HC65.1** | 50 | 69,80 |
| 5,0 | 8,0 | 1.5 | **HC66.2** | 10 | 46,20 |
| 5,0 | 8,0 | 1.5 | **HC66.1** | 25 | 62,30 |
| 6,0 | 9,0 | 1.5 | **HC67.2** | 10 | 53,25 |
| 6,0 | 9,0 | 1.5 | **HC67.1** | 25 | 73,10 |
| 6,0 | 12,0 | 3.0 | **HC68.2** | 10 | 124,70 |
| 6,0 | 12,0 | 3.0 | **HC68.1** | 25 | 156,95 |
| 7,0 | 10,0 | 1.5 | **HC69.2** | 10 | 60,95 |
| 7,0 | 10,0 | 1.5 | **HC69.1** | 25 | 79,05 |
| 8,0 | 12,0 | 2.0 | **HC70.2** | 10 | 92,35 |
| 8,0 | 12,0 | 2.0 | **HC70.1** | 25 | 120,40 |
| 8,0 | 14,0 | 3.0 | **HC71.1** | 25 | 195,65 |
| 10,0 | 14,0 | 2.0 | **HC72.2** | 10 | 107,50 |
| 10,0 | 14,0 | 2.0 | **HC72.1** | 25 | 138,70 |
| 10,0 | 18,0 | 4.0 | **HC73.2** | 10 | 246,20 |
| 10,0 | 18,0 | 4.0 | **HC73.1** | 25 | 306,40 |

## Silicone pump tubes

Working temperature -20 to +80 °C. Clear. Hardness 60 ±5 Shore A. Autoclavable. **Platinum-treated silicone hose for hose pumps**. Ultra-smooth surface prevents bacterial growth and sediments or residue from sticking. Acc. to USP Category VI, Eur.Ph. 6.5: 3.1.9 and FDA-Regulations 21 CFR 177.2600.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 0,5 | 3,7 | 1.6 | **CH23.1** | 5 | 39,25 |
| 0,8 | 4,0 | 1.6 | **CH24.1** | 5 | 39,25 |
| 1,6 | 4,8 | 1.6 | **CH25.1** | 5 | 55,90 |
| 3,2 | 6,4 | 1.6 | **CH26.1** | 5 | 55,90 |
| 4,8 | 8,0 | 1.6 | **CH27.1** | 5 | 64,40 |
| 6,4 | 9,6 | 1.6 | **CH28.1** | 5 | 73,05 |
| 8,0 | 11,2 | 1.6 | **CH29.1** | 5 | 93,00 |

# Tubing



## Pharmed®-tubes

By Saint-Gobain. Max. working temperature +135 °C, yellowish-brown, made of TPE, hardness 64 Shore. Excellent for fermentative processes, cultivation of cell cultures etc. Special tube **for peristaltic pumps**. Good chemical resistance. Low gas permeability and high ageing stability. Autoclavable.

| ∅ inside (mm (inch)) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 0,5 (0,02) | 3,7 | 1,6 | **Y534.1** | 7,5 | 75,05 |
| 0,8 (1/32) | 4,0 | 1,6 | **Y535.1** | 7,5 | 89,15 |
| 1,6 (1/16) | 4,8 | 1.6 | **H191.1** | 7,5 | 116,10 |
| 3,2 (1/8) | 6,4 | 1.6 | **H192.1** | 7,5 | 116,10 |
| 4,8 (3/16) | 8,0 | 1.6 | **H193.1** | 7,5 | 116,10 |
| 6,4 (1/4) | 9,5 | 1.6 | **H194.1** | 7,5 | 138,70 |
| 8,0 (5/16) | 11,2 | 1.6 | **H195.1** | 7,5 | 145,15 |
| 9,5 (3/8) | 15,9 | 3.2 | **H196.1** | 7,5 | 227,90 |
| 12,7 (1/2) | 19,0 | 3.2 | **H197.1** | 7,5 | 278,45 |




## Tygon®-hoses LMT-55

By Saint-Gobain. Temperature range from -50 to +74 °C. Transparent, DEHP-free, hardness 55 (Shore A). Smooth, polished inner wall. Good chemical resistance to many inorganic solutions. Autoclavable.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 1,6 (1/16″) | 3,2 (1/8″) | 0,8 (1/32″) | **CAN7.1** | 15 | 19,35 |
| 1,6 (1/16″) | 4,8 (3/16″) | 1,6 (1/16″) | **CAN8.1** | 15 | 37,65 |
| 2,4 (3/32″) | 5,6 (7/32″) | 1,6 (1/16″) | **CAN9.1** | 15 | 47,20 |
| 3,2 (1/8″) | 6,4 (1/4″) | 1,6 (1/16″) | **CAP0.1** | 15 | 55,90 |
| 4,8 (3/16″) | 7,9 (5/16″) | 1,6 (1/16″) | **CAP1.1** | 15 | 79,05 |
| 6,4 (1/4″) | 9,6 (3/8″) | 1,6 (1/16″) | **CAP2.1** | 15 | 90,85 |
| 6,4 (1/4″) | 11,1 (7/16″) | 2,4 (3/32″) | **CAP3.1** | 15 | 145,15 |
| 7,9 (5/16″) | 11,1 (7/16″) | 1,6 (1/16″) | **CAP4.1** | 15 | 107,30 |
| 7,9 (5/16″) | 12,7 (1/2″) | 2,4 (3/32″) | **CAP5.1** | 15 | 156,95 |
| 9,6 (3/8″) | 12,7 (1/2″) | 1,6 (1/16″) | **CAP6.1** | 15 | 125,80 |
| 9,6 (3/8″) | 15,9 (5/8″) | 3,2 (1/8″) | **CAP7.1** | 15 | 231,15 |
| 12,7 (1/2″) | 19,0 (3/4″) | 3,2 (1/8″) | **CAP8.1** | 15 | 275,20 |



## PharMed® BPT stopper hoses for peristaltic pumps

By Saint-Gobain. With biocompatible fluid surface specially for micro-biological applications. Temperature stable from -50 to +135 °C. Natural colours. Impervious to UV rays and light. Low gas permeability. In accordance with USP class VI, ISO 10993 and FDA. Hardness: 64 Shore A. Autoclavable.

**Stopper hoses**
- 2 stoppers
- Stopper spacing: 152 mm
- Overall length: 381 mm

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,51 | 2,31 | 0.90 | orange/yellow | **CYN7.1** | 6 | 67,10 |
| 0,76 | 2,46 | 0.85 | black/black | **CYN8.1** | 6 | 67,10 |
| 0,89 | 2,56 | 0.85 | orange/orange | **CYN9.1** | 6 | 68,05 |
| 1,52 | 3,22 | 0.85 | yellow/blue | **CYP0.1** | 6 | 67,10 |
| 2,06 | 3,76 | 0.85 | violet/violet | **CYP1.1** | 6 | 67,10 |
| 2,79 | 4,49 | 0.85 | violet/white | **CYP2.1** | 6 | 67,10 |

**Extension hoses for stopper hoses**
- Length: 3 m

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,51 | 2,31 | 0.90 | **CYP3.1** | 1 | 33,90 |
| 0,76 | 2,46 | 0.85 | **CYP4.1** | 1 | 33,90 |
| 0,89 | 2,56 | 0.85 | **CYP5.1** | 1 | 33,90 |
| 1,52 | 3,22 | 0.85 | **CYP6.1** | 1 | 33,90 |
| 2,06 | 3,76 | 0.85 | **CYP7.1** | 1 | 33,90 |
| 2,79 | 4,49 | 0.85 | **CYP8.1** | 1 | 33,90 |

## Tygon® LMT-55 stopper hoses for peristaltic pumps

By Saint-Gobain. Temperature range from -50 to +74 °C. Transparent, DEHP-free, hardness 55 Shore A. Smooth, polished inner wall. Good chemical resistance to many inorganic solutions. Autoclavable.

**Stopper hoses**
- 2 stoppers
- Stopper spacing: 152 mm
- Overall length: 381 mm

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,51 | 2,31 | 0.90 | orange/yellow | **CYP9.1** | 12 | 40,35 |
| 0,76 | 2,46 | 0.85 | black/black | **CYT0.1** | 12 | 40,35 |
| 0,89 | 2,56 | 0.85 | orange/orange | **CYT1.1** | 12 | 40,35 |
| 1,52 | 3,22 | 0.85 | yellow/blue | **CYT2.1** | 12 | 40,35 |
| 2,06 | 3,76 | 0.85 | violet/violet | **CYT3.1** | 12 | 40,35 |
| 2,79 | 4,49 | 0.85 | violet/white | **CYT4.1** | 12 | 40,35 |

**Extension hoses for stopper hoses**
- Length: 10 m

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,51 | 2,31 | 0.90 | **CYT5.1** | 1 | 53,55 |
| 0,76 | 2,46 | 0.85 | **CYT6.1** | 1 | 53,55 |
| 0,89 | 2,56 | 0.85 | **CYT7.1** | 1 | 53,55 |
| 1,52 | 3,22 | 0.85 | **CYT8.1** | 1 | 53,55 |
| 2,06 | 3,76 | 0.85 | **CYT9.1** | 1 | 53,55 |
| 2,79 | 4,49 | 0.85 | **CYX0.1** | 1 | 53,55 |



## Tygon®-hoses S3™ E-3603

By Saint-Gobain. Temperature range from -46 to +74 °C. Transparent.
DEHP-free. FDA-compliant. Hardness 56 shore A.
Very smooth, polished inner wall. Good chemical resistance. Autoclavable.

**Standard tubes**
For normal laboratory applications; also suitable for coolers, incubators and peristaltic pumps.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 1,6 (1/16″) | 3,2 (1/8″) | 0,8 (1/32″) | **YL81.1** | 15 | 19,90 |
| 1,6 (1/16″) | 4,8 (3/16″) | 1,6 (1/16″) | **YL82.1** | 15 | 39,25 |
| 2,4 (3/32″) | 4,0 (5/32″) | 0,8 (1/32″) | **EHE7.1** | 15 | 24,75 |
| 3,2 (1/8″) | 4,8 (3/16″) | 0,8 (1/32″) | **YL83.1** | 15 | 29,00 |
| 3,2 (1/8″) | 6,4 (1/4″) | 1,6 (1/16″) | **YL84.1** | 15 | 57,95 |
| 4,8 (3/16″) | 6,4 (1/4″) | 0,8 (1/32″) | **YL85.1** | 15 | 39,25 |
| 4,8 (3/16″) | 8,0 (5/16″) | 1,6 (1/16″) | **YL86.1** | 15 | 80,60 |
| 6,4 (1/4″) | 9,6 (3/8″) | 1,6 (1/16″) | **YL87.1** | 15 | 91,20 |
| 6,4 (1/4″) | 11,2 (7/16″) | 2,4 (3/32″) | **YL88.1** | 15 | 149,45 |
| 9,6 (3/8″) | 12,7 (1/2″) | 1,6 (1/16″) | **YL89.1** | 15 | 127,95 |
| 9,6 (3/8″) | 14,3 (9/16″) | 2,4 (3/32″) | **YL90.1** | 15 | 164,50 |
| 9,6 (3/8″) | 15,9 (5/8″) | 3,2 (1/8″) | **YL91.1** | 15 | 235,45 |
| 12,7 (1/2″) | 15,9 (5/8″) | 1,6 (1/16″) | **YL92.1** | 15 | 153,75 |
| 12,7 (1/2″) | 17,5 (11/16″) | 2,4 (3/32″) | **YL93.1** | 15 | 209,65 |
| 12,7 (1/2″) | 19,1 (3/4″) | 3,2 (1/8″) | **YL94.1** | 15 | 282,75 |
| 19,0 (3/4″) | 25,4 (1″) | 3,2 (1/8″) | **YL95.1** | 15 | 360,15 |

**Vacuum tubes**
For use with, for example, dessicators, filtration systems and vacuum pumps.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 4,8 (3/16″) | 14,4 (9/16″) | 4,8 (3/16″) | **YL96.1** | 15 | 281,65 |
| 6,4 (1/4″) | 15,9 (5/8″) | 4,8 (3/16″) | **YL97.1** | 15 | 331,10 |
| 9,6 (3/8″) | 22,3 (7/8″) | 6,4 (1/4″) | **YL98.1** | 15 | 535,35 |
| 12,7 (1/2″) | 28,7 (1-1/8″) | 8,0 (5/16″) | **YL99.1** | 15 | 857,85 |



## Tygon®-hoses 2001 ultra-pure

By Saint-Gobain. Temperature range -78 to +57 °C, transparent, made of **TPO**. Hardness 69 Shore A. Autoclavable.
Doesn't contain plasticizers and oils.
Very flexible, extremely good chemical resistance, durable.
Increased durability when used **in peristaltic pumps**.
Acc. to FDA-requirements.

| ∅ inside (mm (inch)) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 1,6 (1/16) | 4,8 | 1,6 | **EL12.1** | 15 | 96,25 |
| 3,2 (1/8) | 6,4 | 1,6 | **EL13.1** | 15 | 126,85 |
| 4,8 (3/16) | 8,0 | 1,6 | **EL14.1** | 15 | 138,70 |
| 6,4 (1/4) | 9,6 | 1,6 | **EL15.1** | 15 | 263,40 |
| 8,0 (5/16) | 11,2 | 1,6 | **EL16.1** | 15 | 289,20 |
| 9,5 (3/8) | 12,7 | 1,6 | **EL17.1** | 15 | 318,20 |



## Tygon®-hoses E-1000 Ultra-Soft

By Saint-Gobain. Transparent, DEHP-free.
Operating temperature -55 to +52 °C. Hardness: 40 Shore A.
Soft, pliable, stays flexible even at low temperatures (-55 °C).
Good alternative to silicone tubing with good chemical resistance.
Suitable for general laboratory applications and peristaltic pumps.

| ∅ inside (mm (inch)) | ∅ outside (mm (inch)) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 1,6 (1/16) | 4,8 (3/16) | 1.6 | **TP79.1** | 15 | 58,70 |
| 3,2 (1/8) | 6,4 (1/4) | 1.6 | **TP80.1** | 15 | 85,80 |
| 4,8 (3/16) | 8,0 (5/16) | 1.6 | **TP81.1** | 15 | 117,20 |
| 6,4 (1/4) | 9,6 (3/8) | 1.6 | **TP82.1** | 15 | 116,10 |
| 6,4 (1/4) | 12,7 (1/2) | 3.2 | **TP83.1** | 15 | 231,15 |
| 8,0 (5/16) | 11,2 (7/16) | 1.6 | **TP84.1** | 15 | 169,85 |
| 9,6 (3/8) | 12,7 (1/2) | 1.6 | **TP85.1** | 15 | 197,80 |
| 12,7 (1/2) | 15,9 (5/8) | 1.6 | **TP86.1** | 15 | 231,15 |



## Tygon®-hoses 2375

By Saint-Gobain. Temperature range from -59 to +54 °C.
Flexible, made of **TPO**. Hardness 75 Shore, transparent, without plasticizer.
Suitable for extreme chemical applications. Resists acids, bases, ketones (methyl ethyl ketone), salts and alcohols.
The smooth inside wall minimise particle deposits.

| ∅ inside (mm (inch)) | ∅ outside (mm (inch)) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 1,6 (1/16) | 4,8 (3/16) | 1.6 | **NA64.1** | 15 | 96,25 |
| 3,2 (1/8) | 6,4 (1/4) | 1.6 | **NA65.1** | 15 | 120,40 |
| 4,8 (3/16) | 8,0 (5/16) | 1.6 | **NA66.1** | 15 | 132,25 |
| 6,4 (1/4) | 9,6 (3/8) | 1.6 | **NA67.1** | 15 | 146,20 |
| 8,0 (5/16) | 11,2 (7/16) | 1.6 | **NA68.1** | 15 | 162,35 |
| 9,5 (3/8) | 12,7 (1/2) | 1.6 | **NA69.1** | 15 | 181,70 |
| 12,7 (1/2) | 19,1 (3/4) | 3.2 | **NA70.1** | 15 | 375,20 |

# Tubing



## Rotilabo®-Viton®-tubes

Temperature range -10 to +200 °C. **Fluorocaoutchouc (FPM)**, black. Highly resistant to ozone and weather as well as to benzene and mineral oils. Hardness approx. 75 Shore A.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 4 | 6 | 1 | **EX14.1** | 5 | 38,55 |
| 5 | 7 | 1 | **EX15.1** | 5 | 48,85 |
| 6 | 8 | 1 | **EX16.1** | 5 | 52,70 |
| 7 | 9 | 1 | **EX17.1** | 5 | 77,70 |
| 8 | 11 | 1.5 | **EX18.1** | 5 | 105,70 |
| 9 | 13 | 2 | **EX19.1** | 5 | 141,90 |
| 10 | 14 | 2 | **EX20.1** | 5 | 152,65 |

## Rotilabo®-butyl hoses

Made of **butyl rubber (IIR)**, black, without inlay.
Approx. 8x less air diffusion than other natural rubber hoses.
Good chemical resistance.
Durometer: 60 Shore A. Temperature resistant up to 100 °C.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 3 | 7 | 2 | **TE85.1** | 5 | 25,35 |
| 6 | 10 | 2 | **TE86.1** | 5 | 31,40 |
| 6 | 14 | 4 | **TE87.1** | 5 | 47,25 |




## Tygon®-hoses F-4040-A

Max. operating temperature +74 °C. For conveying petrol, kerosine, fuel oil and glycol-based coolants. No swelling and hardening.
Ozone and UV resistant. Yellowish, transparent. Hardness: 57 Shore A.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 3,2 (⅛″) | 6,4 (¼″) | 1.6 (1⁄16″) | **AEC4.1** | 15 | 69,85 |
| 4,8 (3⁄16″) | 8,0 (5⁄16″) | 1.6 (1⁄16″) | **AEC5.1** | 15 | 89,05 |
| 6,4 (¼″) | 9,6 (⅜″) | 1.6 (1⁄16″) | **AEC6.1** | 15 | 106,00 |
| 8,0 (5⁄16″) | 11,2 (7⁄16″) | 1.6 (1⁄16″) | **AEC7.1** | 15 | 123,65 |
| 9,6 (⅜″) | 12,7 (½″) | 1.6 (1⁄16″) | **AEC8.1** | 15 | 145,15 |
| 12,7 (½″) | 15,9 (⅝″) | 1.6 (1⁄16″) | **AEC9.1** | 15 | 213,95 |



## FLURAN®-tubes F-5500-A

By Saint-Gobain. Temperature range -51 to +204 °C,
**fluor caoutchouc**, black, hardness 60 Shore A.
Excellent resistance against caustic chemils, oils, benzenes, solvents and most acids. Resistant to ozone, sunlight and weather, tearproof and hard-wearing. Their pliability and elasticity make them suitable **for peristaltic pumps**.

| ∅ inside (mm (inch)) | ∅ outside (mm (inch)) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 1,6 (1⁄16) | 3,2 (⅛) | 0,8 | **EY77.1** * | 15 | 174,15 |
| 3,2 (⅛) | 6,4 (¼) | 1,6 | **EY78.1** * | 15 | 481,60 |
| 4,8 (3⁄16) | 8,0 (5⁄16) | 1,6 | **EY79.1** * | 15 | 639,65 |
| 6,4 (¼) | 9,6 (⅜) | 1,6 | **EY80.1** * | 15 | 808,40 |
| 8,0 (5⁄16) | 11,2 (7⁄16) | 1,6 | **EY81.1** * | 15 | 1051,35 |
| 9,5 (⅜) | 12,7 (½) | 1,6 | **EY82.1** * | 15 | 1034,15 |

* Longer delivery times possible. Please check with our Sales Department.

## Tygon®-hoses A-60-G

By Saint-Gobain. Temperature range -60 to 135 °C.
From **TPE**, Hardness 61 shore A. Black. Suitable **for peristaltic pumps** and for chemical and industrial applications. Ozone-stable.
Long service life, extremely weatherproof. Lower gas permeability than rubber tubes. Very high resistance to anorganic liquids.

| ∅ inside (mm (inch)) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 1,6 (1⁄16) | 4,8 | 1,6 | **AH61.1** | 15 | 54,85 |
| 3,2 (1⁄8) | 6,4 | 1,6 | **AH62.1** | 15 | 53,55 |
| 4,8 (3⁄16) | 8,0 | 1,6 | **AH63.1** | 15 | 66,60 |
| 6,4 (1⁄4) | 9,6 | 1,6 | **AH64.1** | 15 | 62,90 |
| 6,4 (1⁄4) | 11,2 | 2,4 | **AH65.1** | 15 | 94,50 |
| 8,0 (5⁄16) | 11,2 | 1,6 | **AH66.1** | 15 | 84,95 |
| 9,5 (3⁄8) | 12,7 | 1,6 | **AH67.1** | 15 | 89,80 |
| 11,1 (7⁄16) | 14,3 | 1,6 | **AH68.1** | 15 | 181,70 |
| 12,7 (1⁄2) | 17,5 | 2,4 | **AH69.1** | 15 | 192,45 |

## Iso-Versinic® Fluoroelastomer-tubes

By Saint-Gobain. Temperature range from -20 to +200 °C (short-term to +300 °C).
**Fluor caoutchouc**, black, hardness 60 Shore A (HC36.1 and HC37.1), hardness 70 Shore A (HC38.1 to HC42.1). Suitable for delivering very aggressive chemicals and for demanding applications in the laboratory and industry. Good resistance against hydrocarbons, oils, strong acids, oxidants, aromatic and chloric solvents. Non-aging and weatherproof. Flameproof.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 3,0 | 5,0 | 1,0 | **HC36.1** | 5 | 73,65 |
| 4,0 | 6,0 | 1,0 | **HC37.1** | 5 | 75,20 |
| 5,0 | 8,0 | 1,5 | **HC38.1** | 5 | 113,95 |
| 6,0 | 9,0 | 1,5 | **HC39.1** | 5 | 127,95 |
| 7,0 | 10,0 | 1,5 | **HC40.1** | 5 | 147,30 |
| 8,0 | 12,0 | 2,0 | **HC41.1** | 5 | 222,55 |
| 10,0 | 14,0 | 2,0 | **HC42.1** | 5 | 261,25 |



## Fastening tool

Made of metal. For fastening and cutting cable ties. The corrugated cable ties or fasteners are secured in a single operation and then cut.
The required tension can be individually set.
Colour: blue or red.
Assorted ties Art. No. 1729.1 and 1735.1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H977.1** | 1 | 90,20 |

## Rotilabo®-ties

Made of **PA**. Temperature stable from -40 to +85 °C.
Suitable for fastening tool H977.1.

| Length (mm) | Width (mm) | For binding to max | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 180 | 4,5 | ∅ 50 mm | **1729.1** | 100 | 10,00 |
| 102 | 2,5 | ∅ 22 mm | **1735.1** | 100 | 5,05 |




## Rotilabo®-tubing gauge

Ideal for determining inner or outer ∅ of hoses, glass tubes, etc.
For inner ∅ from 1-25 mm. For outer ∅ from 1.5-21 mm.
With easy-to-read engraved numbers. Dimensions: W 90 x L 165 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **4892.1** | 1 | 6,90 |



## Tube cutter

For all tubes with ∅ max. 13 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube cutter | **6737.1** | 1 | 19,75 |
| Spare blades for tube cutter | **6738.1** | 5 | 35,10 |



## Rotilabo®-hose- and tube-cutter

Made of stainless steel 18/10, with high gloss finish.
Ideal for cutting hoses and centrifuge tubes of max. outer ∅ 10 mm.
Blade length 2.5 cm. Total length 10 cm.
**Delivery incl.** artificial leather case.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CK56.1** | 1 | 19,35 |

# Tubing accessories



## Rotilabo®-tube clamps

Made of **POM**. Resistant against UV-rays and with good chemical properties. Temperature stable from -40 to +90 °C (and short-term up to +110 °C).

| Suitable for hoses with outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6,0 - 6,5 | **EX50.1** | 10 | 4,10 |
| 9,0 - 10,0 | **EX51.1** | 10 | 4,10 |
| 10,0 - 11,0 | **EX52.1** | 10 | 4,10 |
| 11,0 - 12,0 | **EX53.1** | 10 | 4,10 |
| 12,0 - 14,0 | **EX54.1** | 10 | 4,10 |
| 13,0 - 15,0 | **EX55.1** | 10 | 4,10 |
| 15,0 - 17,0 | **EX56.1** | 10 | 4,10 |
| 17,0 - 19,0 | **EX57.1** | 10 | 4,10 |
| 18,0 - 20,0 | **EX58.1** | 10 | 4,70 |
| 20,0 - 22,0 | **EX59.1** | 10 | 4,70 |
| 23,0 - 25,0 | **EX61.1** | 10 | 4,70 |



## Hose clamps, coloured

Made of **PVDF**. Steel band, galvanised. Continuously variable flow control for flexible hoses. Temperature stable up to max. 140 °C.

**For hoses with outer ∅ up to 10 mm**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **YE68.1** | 1 | 3,20 |
| yellow | **YE69.1** | 1 | 3,20 |
| blue | **YE70.1** | 1 | 3,20 |
| green | **YE71.1** | 1 | 3,20 |

**For hoses with outer ∅ up to 15 mm**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **YE72.1** | 1 | 4,65 |
| yellow | **YE73.1** | 1 | 4,65 |
| blue | **YE74.1** | 1 | 4,65 |
| green | **YE75.1** | 1 | 4,65 |

**For hoses with outer ∅ up to 20 mm**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **YE76.1** | 1 | 6,35 |
| yellow | **YE77.1** | 1 | 6,35 |
| blue | **YE78.1** | 1 | 6,35 |
| green | **YE79.1** | 1 | 6,35 |



## Worm drive hose clamps

Stainless steel band (1.4016), galvanised screw.

| Suitable for hoses with outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 8-12 | **AEH1.1** | 10 | 12,15 |
| 10-16 | **AEH2.1** | 10 | 12,00 |
| 12-20 | **AEH3.1** | 10 | 13,90 |
| 16-27 | **AEH4.1** | 10 | 14,20 |
| 20-32 | **AEH5.1** | 10 | 14,55 |



## Rotilabo®-tube clips

Ideal for securing hoses on pipes and stopcocks. With phosphor bronze band, anti-magnetic and mostly resistant to agressive liquids and vapours. Conductive.

| Span range (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 5-10 | **N042.1** | 10 | 26,85 |
| 7-12 | **N043.1** | 10 | 26,85 |
| 9-14 | **N044.1** | 10 | 26,85 |
| 12-17 | **5252.1** | 10 | 26,85 |
| 17-22 | **0784.1** | 10 | 26,85 |
| 22-27 | **N045.1** | 10 | 26,85 |
| 25-30 | **0785.1** | 10 | 26,85 |



## Rotilabo®-tube clamps

Made of nickel-plated steel, with pressed knurled screw. Temperature stable to +150 °C.

| Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **0564.1** | 6 | 14,65 |
| 15 | **0565.1** | 6 | 24,20 |
| 20 | **0566.1** | 6 | 30,35 |

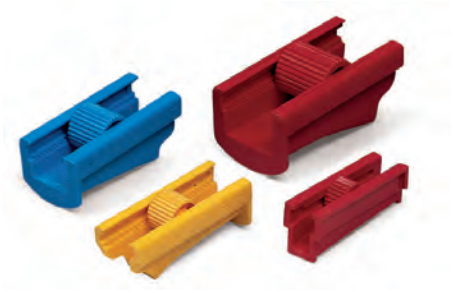
# Tubing accessories



## Rotilabo®-pinchcock

Made of **high-grade steel** with spring clip. Excellent for closing elastic tubes with an outer ∅ of 10 to 15 mm. Variably adjustable clamp for permanent opening if necessary. Tube is fixed securely to pinchcock via clamp. Single-handed operation possible.
**Delivery incl.** silicon tube 20 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H452.1** | 1 | 10,70 |



## Rotilabo®-tube clamps

Made of **PBT**. One-hand operation, can be operated with one hand. Variably adjustable up to total closing of tube.
Easy on tubes, can be sterilized to +160 °C.

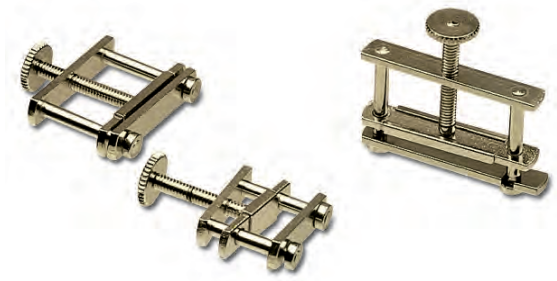
| for hose ∅ (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 14 | red | **1158.1** | 12 | 48,40 |
| 10 | blue | **1159.1** | 12 | 47,30 |
| 6 | yellow | **1160.1** | 12 | 45,15 |
| 4,5 | red | **1161.1** | 12 | 28,50 |



## Pinchcocks according to Mohr

Made of nickel-plated brass. One-hand operation.
Ideal for shutting off flexible hoses.

| Length (mm) | for hose ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | 20 | **KY01.1** | 5 | 28,50 |
| 60 | 25 | **KY02.1** | 5 | 29,90 |
| 70 | 30 | **KY03.1** | 5 | 30,80 |
| 80 | 35 | **KY04.1** | 5 | 31,95 |



## Rotilabo®-tube clamping screws

Acc. to Hoffmann. Made of chrome-plated metal, for fine regulation.
Hinged bottom bar can be swung open.

| Width/height of outlet approx. (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 13/13 | **1585.1** | 5 | 15,60 |
| 17/16 | **1586.1** | 5 | 16,15 |
| 20/16 | **1587.1** | 5 | 16,45 |
| 25/16 | **1588.1** | 5 | 18,15 |
| 30/16 | **1589.1** | 5 | 18,85 |



## Rotilabo®-clamping scissors

Made of fibre-glass reinforced **PA**. Ideal for clamping and holding tubing, etc. Mostly resistant to chemicals, highly robust and heat stable to +130 °C.

| Length (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 110 | with fine concrete edges | **LH90.1** | 10 | 12,80 |
| 130 | with offset jaws | **N141.1** | 10 | 10,25 |

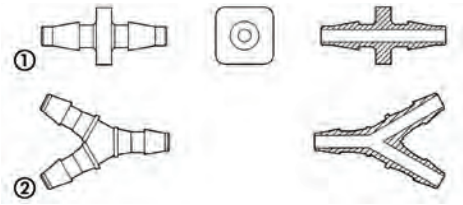



## Rotilabo®-tube clamps

For cut-off or setting flexible hoses with outer ∅ of up to 15 mm.
Width of clamping jaws 20 mm.

| Material | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Polysulfone (autoclavable) | **T764.1** | 5 | 42,90 |
| ② Delrin | **T765.1** | 5 | 38,60 |

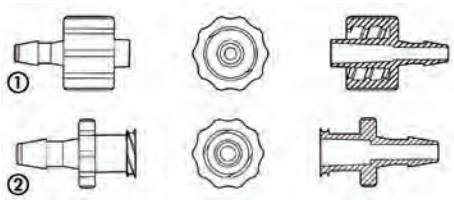
# Tubing connectors



## Rotilabo®-mini-tubing connectors

Made of **PP**, transparent.

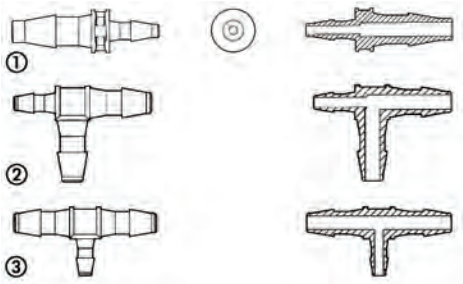
| Model | Type | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | straight | 1,6 | **CT33.1** | 10 | 15,60 |
| ① | straight | 2,4 | **CT34.1** | 10 | 15,60 |
| ① | straight | 3,2 | **CT35.1** | 10 | 15,60 |
| ② | Y-shape | 1,6 | **CT36.1** | 10 | 17,10 |
| ② | Y-shape | 2,4 | **CT37.1** | 10 | 17,10 |
| ② | Y-shape | 3,2 | **CT38.1** | 10 | 17,75 |



## Rotilabo®-Luer-tubing connectors

Made of **PP**, transparent.
LLM: Luer Lock male
LLF: Luer Lock female

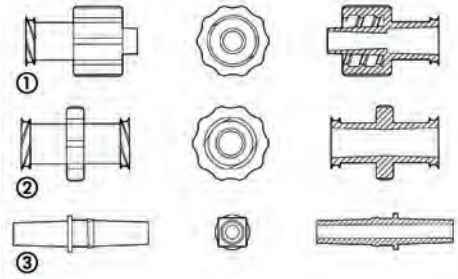
| Model | Luer-fitting | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | LLM | 1,6 | **CT58.1** | 10 | 12,85 |
| ① | LLM | 2,4 | **CT59.1** | 10 | 12,85 |
| ① | LLM | 3,2 | **CT60.1** | 10 | 12,85 |
| ① | LLM | 4,0 | **CT61.1** | 10 | 12,85 |
| ② | LLF | 1,6 | **CT62.1** | 10 | 12,85 |
| ② | LLF | 2,4 | **CT63.1** | 10 | 12,85 |
| ② | LLF | 3,2 | **CT64.1** | 10 | 12,85 |
| ② | LLF | 4,0 | **CT65.1** | 10 | 12,85 |



## Rotilabo®-mini tubing reducers

Made of **PP**, transparent.

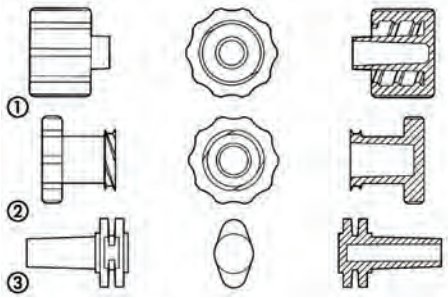
| Model | Type | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | straight | 1,6 - 4,0 | **CT42.1** | 10 | 17,10 |
| ① | straight | 2,4 - 4,0 | **CT43.1** | 10 | 17,10 |
| ① | straight | 3,2 - 4,0 | **CT44.1** | 10 | 17,10 |
| ① | straight | 1,6 - 4,8 | **CT45.1** | 10 | 17,10 |
| ① | straight | 2,4 - 4,8 | **CT46.1** | 10 | 17,10 |
| ① | straight | 3,2 - 4,8 | **CT47.1** | 10 | 20,00 |
| ① | straight | 4,0 - 4,8 | **CT48.1** | 10 | 20,35 |
| ② | T-shape | 1,6 - 2,4 - 2,4 | **CT49.1** | 10 | 22,40 |
| ② | T-shape | 1,6 - 3,2 - 3,2 | **CT50.1** | 10 | 23,60 |
| ② | T-shape | 2,4 - 3,2 - 3,2 | **CT51.1** | 10 | 23,60 |
| ③ | T-shape | 1,6 - 2,4 - 1,6 | **CT52.1** | 10 | 22,40 |
| ③ | T-shape | 1,6 - 3,2 - 1,6 | **CT53.1** | 10 | 23,60 |
| ③ | T-shape | 2,4 - 1,6 - 2,4 | **CT54.1** | 10 | 22,40 |
| ③ | T-shape | 2,4 - 3,2 - 2,4 | **CT55.1** | 10 | 23,60 |
| ③ | T-shape | 3,2 - 1,6 - 3,2 | **CT56.1** | 10 | 23,60 |
| ③ | T-shape | 3,2 - 2,4 - 3,2 | **CT57.1** | 10 | 23,60 |



## Rotilabo®-Luer-connectors

Made of **PP**, transparent.
LLM: Luer Lock male; LM: Luer male
LLF: Luer Lock female LF: Luer female

| Model | Luer-fitting | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | LLM on LF | **CT66.1** | 10 | 15,00 |
| ② | LLF on LLF | **CT67.1** | 10 | 15,00 |
| ③ | LM on LM | **CT68.1** | 10 | 15,00 |



## Rotilabo®-Luer-stoppers

Made of **PP**, transparent.
LLM: Luer Lock male; LM: Luer male
LLF: Luer Lock female LF: Luer female

| Model | Luer-fitting | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | LLM for LLF | **CT69.1** | 10 | 9,45 |
| ② | LLF for LLM | **CT70.1** | 10 | 11,75 |
| ③ | LM-slip for LF | **CT71.1** | 10 | 11,30 |



## Rotilabo®-T-shapes

Made of **PP**, natural, transparent. Autoclavable.

| Outside ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 3 | **E763.1** | 10 | 8,40 |
| 6 | 4-5 | **E764.1** | 10 | 9,60 |
| 8 | 6-7 | **E765.1** | 10 | 8,05 |
| 10 | 8-9 | **E766.1** | 10 | 10,25 |
| 12 | 10-11 | **E767.1** | 10 | 11,30 |
| 14 | 12-13 | **E768.1** | 10 | 14,55 |
| 16 | 14-15 | **E769.1** | 10 | 17,65 |



## Rotilabo®-L-shapes 90°

Made of **PP**, natural, transparent. Autoclavable.

| Outside ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 3 | **E784.1** | 10 | 6,10 |
| 6 | 4-5 | **E785.1** | 10 | 6,60 |
| 8 | 6-7 | **E786.1** | 10 | 9,15 |
| 10 | 8-9 | **E787.1** | 10 | 10,05 |
| 12 | 10-11 | **E788.1** | 10 | 12,10 |
| 14 | 12-13 | **E789.1** | 10 | 14,65 |
| 16 | 14-15 | **E790.1** | 10 | 19,25 |



## Rotilabo®-cross pieces

Made of **PP**, natural, transparent. Autoclavable.

| Outside ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 3 | **E777.1** | 10 | 15,35 |
| 6 | 4-5 | **E778.1** | 10 | 16,00 |
| 8 | 6-7 | **E779.1** | 10 | 16,75 |
| 10 | 8-9 | **E780.1** | 10 | 19,60 |
| 12 | 10-11 | **E781.1** | 10 | 20,60 |
| 14 | 12-13 | **E782.1** | 10 | 22,50 |
| 15 | 14-15 | **TT77.1** | 10 | 22,35 |



## Rotilabo®-Y-pieces

Made of **PP**. Autoclavable.

Natural, translucent, with straight ends.

| Outside ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 3 | **E770.1** | 10 | 8,40 |
| 6 | 4-5 | **E771.1** | 10 | 10,65 |
| 8 | 6-7 | **E772.1** | 10 | 12,80 |
| 10 | 8-9 | **E773.1** | 10 | 14,95 |
| 12 | 10-11 | **E774.1** | 10 | 18,85 |
| 14 | 12-13 | **E775.1** | 10 | 18,50 |
| 16 | 14-15 | **E776.1** | 10 | 22,05 |

White, with conical ends.

| Outside ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 / 5 | 3-5 | **TT50.1** | 10 | 13,15 |
| 5,5 / 7 | 5-7 | **TT51.1** | 10 | 15,20 |
| 7 / 9 | 7-9 | **TT52.1** | 10 | 17,40 |
| 10 / 11,5 | 9-11 | **TT53.1** | 10 | 18,95 |
| 12 / 14 | 11-13 | **TT54.1** | 10 | 20,55 |
| 14 / 15,5 | 13-15 | **TT55.1** | 10 | 24,15 |



## Rotilabo®-tubing connectors assortment

Consists of the most commonly used tube connectors (**PP/PE**) in different sizes.

**Delivery incl.** T-shape, Y-shape, straight connectors (mm, inches) and straight reduction connectors. Includes 25 individual parts.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **H975.1** | 1 | 22,40 |



## Rotilabo®-tubing connectors

Made of **HDPE**. Solid design, white.

| Outlet ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 7 | 10 | **E797.1** | 10 | 12,80 |
| 9 | 12 | **E798.1** | 10 | 13,95 |
| 15 | 19 | **E799.1** | 10 | 15,00 |
| 20 | 25 | **E800.1** | 10 | 9,15 |

# Tubing connectors



## Rotilabo®-reducing connectors

Made of **PP**, white with conical ends.
Length 87 mm, temperature stable to max. +130 °C. Autoclavable.

| Connector I outer-∅ (mm) | Connector II outer-∅ (mm) | outlet (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 8-12 | 4-8 | 4,6/1,6 | **E801.1** | 10 | 15,30 |
| 12-16 | 4-8 | 7,5/1,6 | **E802.1** | 10 | 16,95 |
| 12-16 | 8-12 | 7,5/4,6 | **E803.1** | 10 | 18,85 |



## Rotilabo®-tubing connectors

Made of **PP**, white with conical ends. Autoclavable.

| Outlet ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2 | 4-5 | **E791.1** | 10 | 8,10 |
| 3 | 5-7 | **E792.1** | 10 | 9,30 |
| 4 | 8-10 | **E793.1** | 10 | 9,85 |
| 6 | 10-12 | **E794.1** | 10 | 11,40 |
| 8 | 12-14 | **E795.1** | 10 | 12,75 |
| 10 | 14-16 | **E796.1** | 10 | 16,05 |




## Universal tubing connectors

Suitable for tubes with inner ∅ from 4 / 8 to 17 mm. With conical ends.
Autoclavable.

| Model | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | PP | **Y523.1** | 10 | 20,00 |
| ② | PVDF | **Y524.1** | 10 | 28,70 |




Material
DURAN®

## Hose connector made of glass

Made of DURAN®.

① **T-pieces with straight connectors**. Total length 115 mm.

| Outside ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 8 | 6-8 | **EKH1.1** | 1 | 4,65 |
| 10 | 8-10 | **EKH2.1** | 1 | 5,55 |

② **Y-pieces with straight connectors**. Total length 115 mm.

| Outside ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 8 | 6-8 | **EKH3.1** | 1 | 4,95 |
| 10 | 8-10 | **EKH4.1** | 1 | 5,90 |

③ **Universal connector with conical connectors**. Total length 110 mm.

| Outside ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6-14 | 6-14 | **EKH5.1** | 1 | 7,40 |



## Rotilabo®-check valves

Made of **PP**, natural/transparent. Ideal for liquids. Consists of 2 parts.
Prevents pressure drop or backflow. With conical ends.
Temperature stable to +100 °C.

| Length (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 60 | 7,8-10 | **E804.1** | 5 | 16,70 |
| 70 | 9,5-12,5 | **E805.1** | 5 | 25,75 |

# Tubing connectors



## Rotilabo®-tubing quick disconnectors

Made of **PE**, natural/transparent. High sealing quality. Easy to disconnect. With conical ends. Temperature stable to +100 °C.

| Outlet ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2 | 4-5 | **E806.1** | 10 | 14,70 |
| 3 | 6-7 | **E807.1** | 10 | 16,70 |
| 4 | 8-9 | **E808.1** | 10 | 18,60 |
| 6 | 9-12 | **E809.1** | 10 | 20,10 |
| 7 | 11-14 | **E810.1** | 10 | 22,70 |




121°C

## Metal tube connectors

Made of high-quality nickel-plated and bright chromium-plated brass. Can be autoclaved at 134 °C. Ideal for connecting needles, syringes and stopcocks with tubing. Extensions for Luer-Lock female (LLF) and male (LLM) fittings.

| Tube connection inner-∅ | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① 1,5 mm LLF | **P334.1** | 1 | 12,40 |
| ④ 3,0 mm LLF | **P335.1** | 1 | 10,55 |
| ② 1,5 mm LLM | **P336.1** | 1 | 14,55 |
| ③ 3,0 mm LLM | **P343.1** | 1 | 11,80 |

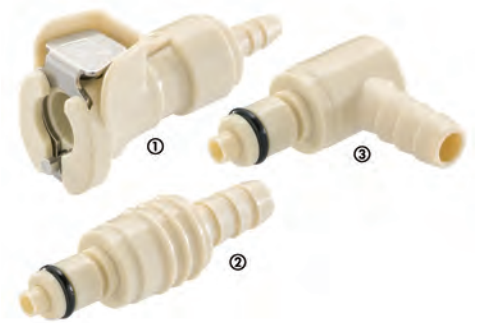



121°C

## Metal tube extensions, conical

Made of high-quality nickel-plated and bright chromium-plated brass. Can be autoclaved at 134 °C. Ideal for connecting needles, syringes and stopcocks with tubing. Extensions for Luer-Lock female (LLF) and male (LLM) fittings.

| Tube connection inner-∅ | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① 2-6 mm LLF | **P337.1** | 1 | 24,20 |
| ③ 5-9 mm LLF | **P338.1** | 1 | 24,20 |
| ② 2-6 mm LLM | **P341.1** | 1 | 24,75 |
| ④ 5-9 mm LLM | **P342.1** | 1 | 26,45 |




## Quick-release couplings

For easy, leak-free connection and disconnection of hoses. With hose connectors. Optionally with shut-off, stops the flow automatically upon disconnection. Can be sterilised with gamma rays.

**Technical specifications:**

| | |
|---|---|
| Flow opening NW | 3.2 mm |
| Operating temperature | 0 to +71 °C |
| Operating pressure | Vacuum up to 8.3 bar |
| Materials in contact with media | PP, EPDM and stainless steel |

**① Female connection, straight**

| For hoses with inner ∅ (mm) | Shut-off | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1,6 | without | **HAH5.1** | 1 | 13,80 |
| 1,6 | with | **HAH6.1** | 1 | 15,00 |
| 3,2 | without | **HAH7.1** | 1 | 13,55 |
| 3,2 | with | **HAH8.1** | 1 | 15,00 |
| 6,4 | without | **HAH9.1** | 1 | 13,80 |
| 6,4 | with | **HAK0.1** | 1 | 15,00 |

**② Male connection, straight**

| For hoses with inner ∅ (mm) | Shut-off | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1,6 | without | **HAK1.1** | 1 | 4,95 |
| 1,6 | with | **HAK2.1** | 1 | 13,55 |
| 3,2 | without | **HAK3.1** | 1 | 4,95 |
| 3,2 | with | **HAK4.1** | 1 | 13,55 |
| 6,4 | without | **HAK5.1** | 1 | 4,95 |
| 6,4 | with | **HAK6.1** | 1 | 13,55 |

**③ Male connection, angled**

| For hoses with inner ∅ (mm) | Shut-off | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3,2 | without | **HAK7.1** | 1 | 10,55 |
| 3,2 | with | **HAK8.1** | 1 | 15,00 |
| 6,4 | without | **KA53.1** | 1 | 19,15 |
| 6,4 | with | **HAK9.1** | 1 | 15,00 |



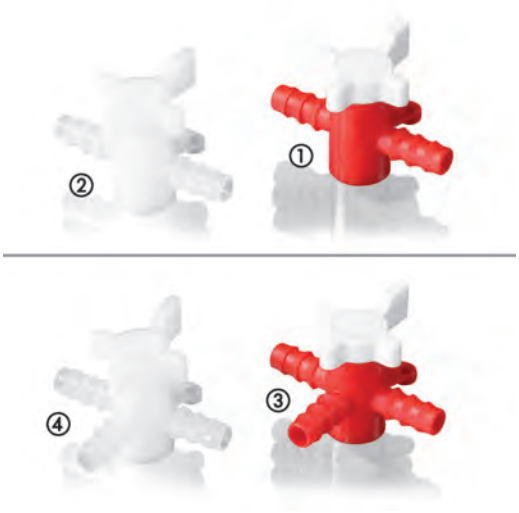
121°C

## Metal stopcocks

Made of high-quality brass, nickel-plated and bright chromium-plated. Can be autoclaved at 134 °C. Luer-Lock female (LLF) to male (LLM), 3-way cocks female on the side. Suitable or pressures to max. 3 bar.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① 2-way cock | **P339.1** | 1 | 38,70 |
| ② 3-way cock | **P340.1** | 1 | 46,25 |

# Tubing connectors




## Rotilabo® hose valves

For the transfer of liquids or gases. Max. pressure 1 bar.
Operating temperature +5 to +40 °C. Available in various materials:
PVDF (natural colours) offers better chemical resistance than
PP/PE (red/white).

**2-way valves**

| Material | Outlet ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① PP/PE | 4 | 5-7 | **1015.1** | 1 | 7,50 |
| ① PP/PE | 6 | 7-9 | **1016.1** | 1 | 8,55 |
| ① PP/PE | 8 | 9-11 | **1017.1** | 1 | 9,65 |
| ① PP/PE | 8 | 11-13 | **CPH6.1** | 1 | 9,65 |
| ② PVDF | 4 | 5-7 | **1761.1** | 1 | 13,25 |
| ② PVDF | 6 | 7-9 | **1762.1** | 1 | 15,40 |
| ② PVDF | 8 | 9-11 | **1763.1** | 1 | 18,40 |
| ② PVDF | 8 | 11-13 | **CPH7.1** | 1 | 16,10 |

**3-way valves**

| Material | Outlet ∅ (mm) | For hoses with inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ③ PP/PE | 4 | 5-7 | **1018.1** | 1 | 12,70 |
| ③ PP/PE | 6 | 7-9 | **1019.1** | 1 | 14,65 |
| ③ PP/PE | 8 | 9-11 | **1020.1** | 1 | 16,35 |
| ③ PP/PE | 8 | 11-13 | **CPH8.1** | 1 | 16,10 |
| ④ PVDF | 4 | 5-7 | **1766.1** | 1 | 20,70 |
| ④ PVDF | 6 | 7-9 | **1767.1** | 1 | 22,60 |
| ④ PVDF | 8 | 9-11 | **1768.1** | 1 | 24,75 |
| ④ PVDF | 8 | 11-13 | **CPH9.1** | 1 | 21,45 |

▶ For different tubes, see page 371



## Rotilabo®-tubing connectors

Made of natural coloured **PE**.
**Stopcock connectors**, pressure load to 0.3 bar.

| Connection | Outside ∅ (mm) | Length (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Both sides ⅜″ (outer-∅ 10 mm) | 10 | 70 | 6 | **1622.1** | 5 | 20,65 |
| Both sides ½″ (outer-∅ 14 mm) | 14 | 95 | 17 | **1623.1** | 5 | 25,40 |




## Rotilabo®-tubing sleeve connectors

Keck system, made of **PBT**, with **EPDM** seal. Outer ∅ 9 mm, length 43 mm. Lightblue. Adapters for tubing sleeve connectors - Keck system, white. Outlet 8 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rotilabo®-tubing sleeve connectors | **0354.1** | 10 | 27,85 |
| Rotilabo®-tubing connectors | **0343.1** | 5 | 17,15 |



## Rotilabo®-tubing connectors system Keck

Made of **PBT** with **EPDM** flat seal. Ideal for fast, safe and leakproof connections of tubing to glass hose connectors and glass threads. High chemical resistance. Temperature stable to max. +130 °C.

**For glass olives** (clamp. ring, thread cap, tubing sleeve connector, seals)

| suitable for | Tubing sleeve connector outer-∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| GL 14 (Schott) yellow | 9 | **H072.1** | 10 | 75,20 |
| GL 14 (Schott) yellow | 4,5 | **H073.1** | 10 | 75,20 |

**For glass thread** (thread cap, tubing sleeve connector, seals)

| suitable for | Tubing sleeve connector outer-∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| GL 14 (Schott) yellow | 9 | **H075.1** | 10 | 57,95 |
| GL 14 (Schott) yellow | 4,5 | **H076.1** | 10 | 57,95 |



## Draincocks

Made of **PE**, with separate air vent canal. With variable speed regulation of flow. Sealing made of aveolite. Not suitable for glass threads.

| Lock | Art. No. | Pack Qty. | € |
|---|---|---|---|
| DIN 51 | **5665.1** | 3 | 22,05 |
| DIN 45 | **X530.1** | 3 | 23,45 |
| DIN 50 | **X531.1** | 3 | 28,85 |
| DIN 61 | **5666.2** | 4 | 29,55 |




## FLUXX®-dispensing taps

Made of **PE**. The patented ventilation system allows easy, clean and fast filling and transfer of fluids without gurgling.

- Dispenses fluids cleanly and empties containers completely
- High leak tightness

Not suitable for glass threads.

**For bottles**

| Cap size | Outlet ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| DIN 38 | 13 | **XP70.1** | 10 | 21,45 |

**For canisters**

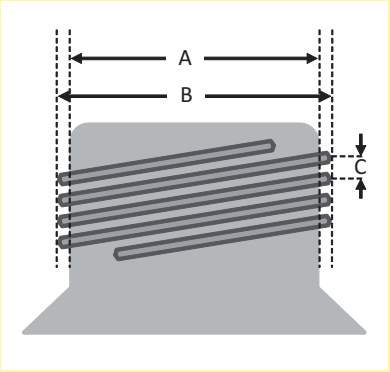
| Cap size | Outlet ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| DIN 51/DIN 40 | 13 | **T358.1** | 3 | 11,30 |
| DIN 61/DIN 40 | 13 | **T359.1** | 3 | 13,05 |

**For drums** with ¾″ or 2″ internal threads

| Cap size | Outlet ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ¾″ (BSP) external thread | 23 | **XP74.1** | 2 | 8,40 |
| 2″ Tri-Sure® course-pitch thread | 23 | **XP75.1** | 2 | 8,40 |
| 2″ Tri-Sure® fine-pitch thread | 23 | **XP76.1** | 2 | 8,40 |

## Information on threads

The thread on a drum is defined, among other things, by diameter (A and B) and thread pitch (C). The values given in the table give a rough indication of the thread type, however this cannot reliably be determined by measuring the thread using a sliding caliper alone. Manufacturer-specific threads are also available in addition to the standard threads. The drum supplier can generally provide information on the thread type.




We will be happy to provide you with information on containers which you purchase through us.

| Thread | Diameter excl. thread A (mm) | Diameter incl. thread B (mm) | Thread pitch C (mm) |
|---|---|---|---|
| DIN 38 | 34.6 | 36.6 | 9 |
| DIN 40 | 38.8 | 42.2 | 4 |
| DIN 45 | 41.1 | 44.7 | 4 |
| DIN 50 | 46.1 | 50.1 | 4 |
| DIN 51 | 50.2 | 54.8 | 5 |
| DIN 60 | 55.3 | 60.3 | 6 |
| DIN 61 | 55.6 | 60.5 | 5 |
| DIN 71 | 67.0 | 72.3 | 7 |



## Spouts

Flexible **PE** pouring tube with snap lid, screwed into a screw cap. With Alkozell seal and riser tube for smooth pouring. Not suitable for glass-threads.

| Lock | Art. No. | Pack Qty. | € |
|---|---|---|---|
| DIN 45 | **TE90.1** | 2 | 16,15 |
| DIN 51 | **TE91.1** | 2 | 16,70 |
| DIN 61 | **TE92.1** | 2 | 18,05 |

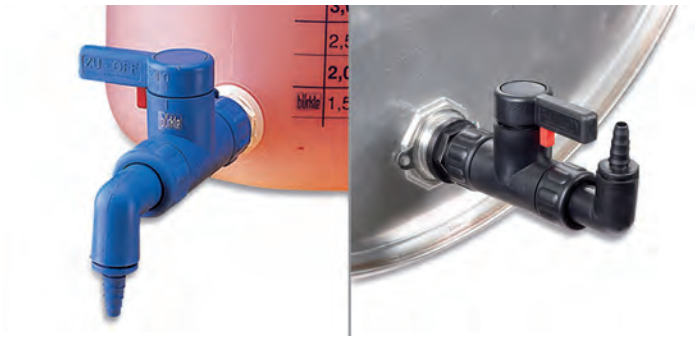
# Stopcocks



## Compact draincock

Made of **PP**, seals made of **PE/PTFE**. Tightly closing. Connection with R¾″ cap nut. Easy to open and close. Can be operated single-handed. Space-efficient design: tap does not protrude beyond base of the container and need not be removed when storing the container.
Optimized drainage spout for uniform, non-splashing flow.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE42.1** | 1 | 15,00 |



## Draincocks

By Bürkle. Tightly closing. With ¾″-internal screw thread.
Easy to open and close. Can be operated single-handed.
With rotatable anti-drip and dosing scale.
**Delivery incl.** smaller drainage spout (outer-∅ 6-8 mm) for narrow bottle mouths. Adapter for ¾″-internal screw thread (only for Art. No. LP75.1).

| Image | Material | Seal | Conductivity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | PP | PE/PTFE | no | **2683.1** | 1 | 24,20 |
| ② | PA | PTFE | yes | **LP75.1** | 1 | 25,45 |

## Adapters

| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Inner thread coarse, ∅ approx. 2.2 cm (e.g. Bürkle, Hünersdorf) | **P215.1** | 1 | 6,25 |
| Inner thread coarse, ∅ approx. 2.05 cm (e.g. Bürkle, Kautex) | **P216.1** | 1 | 6,25 |
| Barrel inner thread, cylindric, R¾″ ∅ 2.55 cm | **P217.1** | 1 | 6,25 |
| Coarse thread, inner, Tri-Sure® 2″ | **P218.1** | 1 | 14,55 |
| Fine thread, inner, 2″ | **P219.1** | 1 | 14,55 |


- ▶ PTFE-thread tape see page 1145
- ▶ Rotilabo®-space-saving canister see page 93




## Air drum draincock

Made of **PE**. Self-venting. Thread connector outside ¾″. NW 13 mm.
**Suitable for Rotitainer®-cans** in combination with adapter P944.1.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white/red | **Y496.1** | 3 | 15,95 |



## Drum ball valve

Made of **PP**. For drums in horizontal position with threaded connection.
Inlet thread ¾″ inside, outlet thread ¾″ outside. Sealing with threading tape.
Supplied without hose nozzle, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Drum ball valve | **P943.1** | 1 | 52,80 |
| Hoze nozzle, curved 90°, ∅ 12 mm | **P946.1** | 1 | 3,20 |
| Hoze nozzle, straight, ∅ 12 mm | **P947.1** | 1 | 2,20 |
| Thread adapter Tri-Sure® fine-pitch thread, suitable for Rotitainer® | **P944.1** | 1 | 10,35 |
| Thread adapter Tri-Sure® 2″, coarse-pitch thread | **P945.1** | 1 | 3,10 |



## Spigot extension set

Extends the distance between the spigot and the wall of the container.
Suitable for air drum draincock Art.-No. Y496.1 and barrel ball valve P943.1.
**A set consists of:**
1 Pipe extension 150 mm, material **PP**, 2 x ¾″
1 Bosshead, material **PP**, inner thread 2 x ¾″
2 Flat gaskets for inner thread ¾″

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **AH28.1** | 2 | 21,45 |



## Dosing pumps with screw cap

Made of **HDPE.** For canisters 10 to 30 l with matching DIN-closure.

| Lock | Delivery rate (ml/stroke) | Length lifting tube (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| DIN 50 | 30 | 175 | **P241.1** | 1 | 13,60 |
| DIN 60 | 100 | 398 | **P242.1** | 1 | 59,45 |




## Siphon with stopcock

By Bürkle. Made of **LDPE/PVC**. Stopcock made of **PP**.
For rapid filling of aqueous fluids.
Delivery rate: 9 l/min, immersion depth: 100 cm, hose inner ∅: 15 mm.
**Delivery incl.** hose with kink protection and lifting eye.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC59.1** | 1 | 49,95 |



## Pump-it® canister pump

By Bürkle. Ideal for rapid and clean emptying of canisters and small barrels. Exact dosing, no dripping. Please order matching thread adapter separately. For liquids up to a maximum viscosity of 500 mPa · s at 20 °C.

**Technical specifications:**

| | |
|---|---|
| Flow rate | max. 6 l/min |
| Material pump | PP |
| Material seals | FKM |
| Thread | 64 mm (BSI) |
| Weight | 310 g |
| Size | 60 cm |
| Lifting tube length | 100 cm |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1601.1** | 1 | 123,65 |




## Accessories for Pump-it®-canister pump

Made of **PP**.

**Thread adapters for inner threads**

| Image | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 2″ steel-fine thread | **1603.1** | 1 | 15,30 |
| ② | 2″ Mauser-coarse thread | **1604.1** | 1 | 15,30 |
| ③ | 2″ Tri-Sure®-coarse thread | **1606.1** | 1 | 14,85 |

**Thread adapters for outer threads**

| Image | Thread | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ④ | DIN 60 | **1605.1** | 1 | 20,35 |
| ⑤ | DIN 51 | **H071.1** | 1 | 22,05 |
| ⑥ | DIN 61 | **T236.1** | 1 | 24,00 |

**Thread adapter set,** consists of one each of 1603.1 (blue), 1604.1 (green), 1606.1 (brown), 1605.1 (black) and H071.1 (black).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1602.1** | 1 | 55,90 |

**Telescope transporting tube 52 - 104 cm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1607.1** | 1 | 13,45 |

# Barrel pumps



## OTAL®-Dispensing pumps

By Bürkle. Foot/hand pumps work on using air pressure.
Foot pumps with bellows and air hose for filling containers standing at a distance. Stoppers made of **PVC**.
Foot or hand pumps available in different designs:

- Telescope feed tube made of **PP** or **PVDF**; PVDF has better chemical resistance than PP
- With outlet pipe or with flexible hose with stopcock

**Technical specifications:**

| Model | Foot pumps | Hand pumps |
|---|---|---|
| For containers max. | approx. 120 l | approx. 60 l |
| Flow rate | 26 or 12 l/min | |
| Telescope feed tube, max. immersion depth | 70 cm | |
| Air hose, length | 1.5 m | - |
| Outlet pipe, length | 20 cm | |
| PVC-stoppers for bung width from | ∅ 30 to 70 mm | |

**Foot pumps**

| Type | Feed tube | Flow rate capacity (l/min) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① with bent outlet pipe | PP, ∅ 18 mm | 26 | **1847.1** | 1 | 93,55 |
| ② with bent outlet pipe | PVDF, ∅ 16 mm | 16 | **HT03.1** | 1 | 149,45 |
| ③ Hose with stopcock | PP, ∅ 12 mm | 12 | **AN74.1** | 1 | 92,35 |

**Hand pumps**

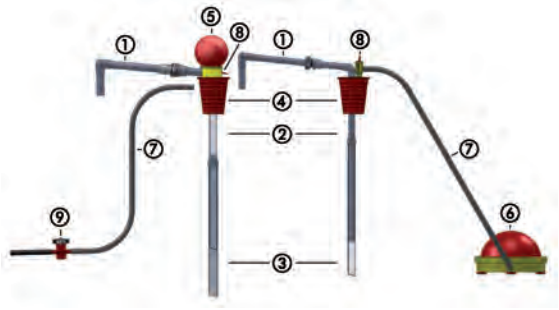
| Type | Feed tube | Flow rate capacity (l/min) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ④ with bent outlet pipe | PP, ∅ 18 mm | 26 | **1720.1** | 1 | 79,45 |
| ⑤ with bent outlet pipe | PVDF, ∅ 16 mm | 20 | **HT04.1** | 1 | 141,90 |
| ⑥ Hose with stopcock | PP, ∅ 12 mm | 12 | **AN75.1** | 1 | 78,40 |



## Mini-dispensing pump

Made of **PP**. With standard stopper for openings of ∅ 20 to 36 mm.
Ideal for filling smaller amounts. Flow rate max. 4 l/min.
Transporting tube: length 45 cm, ∅ 10 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E335.1** | 1 | 53,05 |




## Spare parts for OTAL® filling pumps

By Bürkle.

*A pipe set consists of an outlet elbow, riser tube, draw tube (330 mm) and connecting pieces.

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Outlet elbow ∅ 18 mm | **K630.1** | 1 | 18,50 |
| ① | Outlet elbow ∅ 12 mm | **ANX7.1** | 1 | 16,40 |
| ② | Riser tube ∅ 18 mm, L 410 mm | **K628.1** | 1 | 18,50 |
| ② | Riser tube ∅ 12 mm, L 410 mm | **ANX8.1** | 1 | 16,40 |
| ③ | Draw tube ∅ 18 mm, L 330 mm | **K629.1** | 1 | 9,90 |
| ③ | Draw tube ∅ 18 mm, L 900 mm | **K631.1** | 1 | 18,85 |
| ③ | Draw tube ∅ 12 mm, L 330 mm | **ANX9.1** | 1 | 8,25 |
| - | Pipe set ∅ 18 mm* | **H983.1** | 1 | 42,65 |
| - | Pipe set ∅ 16 mm, all-PVDF* | **ANY0.1** | 1 | 47,10 |
| - | Pipe set ∅ 12 mm* | **ANY1.1** | 1 | 30,65 |
| ④ | PVC plug for ∅ 18 mm, red | **N553.1** | 1 | 19,25 |
| ④ | PVC plug for ∅ 16 mm, red | **ANY2.1** | 1 | 19,70 |
| ④ | PVC plug for ∅ 12 mm, red | **ANY3.1** | 1 | 19,70 |
| ⑤ + ⑧ | Hand pump ball with stop valve | **P675.1** | 1 | 43,00 |
| ⑥ | Foot pump (without PVC hose and stop valve) | **P677.1** | 1 | 45,05 |
| ⑦ | PVC hose, L 1.5 m | **P676.1** | 1 | 13,95 |
| ⑧ | Stop valve for hand pumps and foot pumps | **P678.1** | 1 | 19,05 |
| ⑨ | 2-way valve | **1017.1** | 1 | 9,65 |



## Gas-tight barrel and container pump

By Bürkle. Made of **PP**, with tubing made of **PVC**.
Pump capacity 200 ml/stroke. Gases emerging from the container are led back to the main container with the aid of a gas dispensing tube, preventing contamination of surroundings while pumping. Also attach a stopcock to the gas and liquid line. Universal adapter for openings from 30 to 70 mm.
Ideal for container heights from 40 to 70 cm. Tubing length approx. 120 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E013.1** | 1 | 235,45 |



## Barrel pumps made of PP

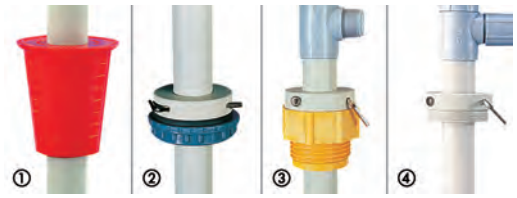
By Bürkle. For safe dispensing of liquids from barrels, canisters and tanks. Available either with rigid funnel or with flexible dispensing tube **(PVC)** with stopcock. Immersion tube ∅ 32 mm. Barrel screw connections must be ordered separately.

**With curved nozzle**

| Immersion depth (mm) | Total length (mm) | Delivery rate (ml/stroke) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 500 | 600 | 200 | **Y958.1** | 1 | 148,35 |
| 650 | 740 | 230 | **Y959.1** | 1 | 148,35 |
| 800 | 900 | 260 | **Y960.1** | 1 | 153,75 |
| 1000 | 1090 | 300 | **Y961.1** | 1 | 169,85 |
| 1250 | 1340 | 300 | **Y962.1** | 1 | 190,30 |
| 1500 | 1590 | 300 | **Y963.1** | 1 | 196,75 |

**With dispensing tube and stopcock**

| Immersion depth (mm) | Total length (mm) | Delivery rate (ml/stroke) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 500 | 600 | 200 | **Y964.1** | 1 | 149,45 |
| 650 | 740 | 230 | **Y965.1** | 1 | 149,45 |
| 800 | 900 | 260 | **Y966.1** | 1 | 153,75 |
| 1000 | 1090 | 300 | **Y967.1** | 1 | 169,85 |
| 1250 | 1340 | 300 | **Y968.1** | 1 | 190,30 |
| 1500 | 1590 | 300 | **Y969.1** | 1 | 195,65 |




## Accessories for barrel pumps PP and PTFE

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| - | Discharge tube for barrel pumps PP Y958.1 ff | **Y970.1** | 1 | 33,95 |
| - | Discharge hose, PVC, 1.2 m with stopcock; for barrel pumps PP Y964.1 ff | **1788.1** | 1 | 30,00 |
| ① | Barrel plug, PVC, for hole-∅ 40 to 70 mm | **9276.1** | 1 | 23,60 |
| ② | Barrel screw joint made of PP, for 2″ fine steel thread | **1789.1** | 1 | 30,65 |
| ③ | Barrel screw joint made of PP, for 2″ internal fine steel thread and adapter for Tri-Sure® internal course thread | **T243.1** | 1 | 38,20 |
| ④ | Container screw joint with locknut (2″ fine steel thread); for attaching in any position; 60 mm mounting hole | **T244.1** | 1 | 36,80 |
| - | Barrel adapter made of PP, internal thread DIN 51-2″BSP | **YK28.1** | 1 | 20,10 |
| - | Barrel adapter made of PP, internal thread DIN 61-2″BSP | **YK29.1** | 1 | 18,40 |




## PTFE barrel pumps

By Bürkle. Made of **PTFE** and **FEP**. Excellent chemical resistance for safe filling of ultrapure and aggressive liquids. Stopcock stops liquids from dripping and prevents hazardous vapours from escaping. Immersion tube ∅ 32 mm. Please order barrel screw fittings separately.

**① With discharge tube**

| Immersion depth (mm) | Delivery rate (ml/stroke) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 600 | 270 | **LY53.1** | 1 | 390,25 |
| 950 | 400 | **AH27.1** | 1 | 412,80 |

**② With outlet hose**

| Immersion depth (mm) | Delivery rate (ml/stroke) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 600 | 270 | **NH33.1** | 1 | 380,55 |
| 950 | 400 | **NH34.1** | 1 | 412,80 |



## Acid and alkali pumps

Made of **PP**, **PTFE**, **Hastelloy**. Battery operated. Ideal for safe emptying and transfering of water-like liquids (for most acids and alkalis etc.). General purpose and easy-to-use. High flow rate (up to 6 l/min) and light (weight approx. 500 g including batteries). ∅ of dip tube 25 mm. 2 rechargeable batteries (Mono 1.5 V) are recommended for use. **Delivery without** Akku (please order separately).

| Suction pipe length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 400 | **E490.1** | 1 | 360,15 |
| 600 | **E491.1** | 1 | 392,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| Akku Mono D | **X228.2** | 2 | 18,25 |

# Electro barrel pumps





## Barrel pumps AccuOne and EnergyOne

By Bürkle.

- Parts in contact with medium are made of **Hastelloy C**, **PP, PVDF** and **PTFE**
- Unique hybrid system allows fast and versatile filling of liquids, the supply units can be changed to use either with battery or power pack.
- The drive can be disconnected easily via a clip lock. This makes it possible to use one drive for filling at several stationary pump stations.
- Flow rate 12 l/min. Can be regulated continuously via TouchPanel from 0.4 l/min to 12 l/min
- Please order barrel screw fittings separately
- Drainage hose with nozzle is optionally available. Drainage hose connection ¾″

**AccuOne**

- Barrel pump driven by rechargeable battery (offers versatility and independence from the power supply)
- Lithium-ion rechargeable battery, 14.4 V, 1.5 Ah
- Up to 600 litres of delivery volume per battery charge
- Weight 750 g

**Delivery incl.** fixed drainage elbow, rechargeable battery and power outlet adapter.

| Immersion depth (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 500 | **PL80.1** | 1 | 470,85 |
| 700 | **PL81.1** | 1 | 485,90 |
| 1000 | **PL82.1** | 1 | 498,80 |

**EnergyOne**

- Outlet operated barrel pump (offers versatility and independence from the battery charge)
- Power outlet adapter 230 V
- Unlimited filling duration
- Weight 580 g

**Delivery incl.** fixed drainage elbow, power outlet adapter and international socket adapter.

| Immersion depth (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 500 | **PL83.1** | 1 | 398,85 |
| 700 | **PL84.1** | 1 | 412,80 |
| 1000 | **PL85.1** | 1 | 425,70 |

Accessories:

| | | | |
|---|---|---|---|
| Rechargeable battery without outlet adapter | **PL86.1** | 1 | 116,10 |
| Outlet adapter | **PL87.1** | 1 | 64,20 |
| Outlet adapter incl. plug | **PL88.1** | 1 | 131,15 |
| Outlet hose with nozzle | **PL89.1** | 1 | 73,10 |
| Pump station with immersion pipe length 500 mm | **PL90.1** | 1 | 133,30 |
| Pump station with immersion pipe length 700 mm | **PL91.1** | 1 | 136,55 |
| Pump station with immersion pipe length 1000 mm | **PL92.1** | 1 | 141,90 |
| Barrel screw joint made of PP, for 2″ fine steel thread | **1789.1** | 1 | 30,65 |
| Container screw joint with locknut (2″ fine steel thread); for attaching in any position; 60 mm mounting hole | **T244.1** | 1 | 36,80 |
| Barrel plug, PVC, for hole-∅ 40 to 70 mm | **9276.1** | 1 | 23,60 |
| Mauser 2″, coarse thread, inside | **PL93.1** | 1 | 37,90 |
| Barrel screw joint made of PP, for 2″ internal fine steel thread and adapter for Tri-Sure® internal course thread | **T243.1** | 1 | 38,20 |





## Electro barrel pumps

By Lutz. For pumping liquid media out of bulk storage containers.

**Application:**

- **Set 1 and 2**: **aqueous liquids**, diluted acids and alkaline solution, hydrogen peroxide etc.
- **Set 3**: low-viscosity **alkaline** solution, sodium hydroxide, potassium hydroxide, ammonia water, formic acid, acetic acid, etc.
- **Set 4**: most **concentrated acids and alkaline solutions** such as hydrochloric acid, sulphuric acid, hydrofluoric acid etc.
- **Set 5 Explosion-proof**: **highly flammable hydrocarbons such as** ethanol, gasoline, isopropanol, kerosine, methanol, crude petroleum, etc.
- **Set 6 Explosion-proof: explosive liquids such as** acetone, concentrated Formic acid, ethyl acetate, buthyl acetate, concentrated Acetic acid, nicotine, toluene, styrene, etc.

**Technical specifications:**

| Set | 1 | 2 | 3 | 4 | 5 Explosion-proof | 6 Explosion-proof |
|---|---|---|---|---|---|---|
| Motor explosion-proof | no | | | | yes | |
| Output (W) | 200 | | 500 | 575 | 460 | |
| Immersion depth of pipe (mm) | 650 | 1000 | | | | |
| Material of nozzle | PP | | PP/FEP | PVDF | Brass / PTFE | Niro / FEP |
| Material of immersion pipe | PP | | | PVDF | Stainless steel | |
| Flow rate max (l/min) | 75 | | 85 | 80 | 95 | |
| Delivery height max (mWs) | 7 | | 19 | 17 | 14 | |
| Density max (kg/dm³) | 1.3 | | 1.4 | 1.8 | 1.6 | |
| Viscosity max (mPas) | 300 | | | 800 | 350 | |
| Cable length (m) | 3 | 5 | | | | |
| Mains supply | 230 V AC / 50 Hz | | | | | |

**Set 1 and 2:**
**Delivery incl.** 1.5 m PVC-tube ¾",
one-hand nozzle valve PP, hanging device.
**Set 3:**
**Delivery incl.** 2.0 m PVC-coil tube¾" (DN 19),
nozzle PP, barrel adapter (PP).
**Set 4:**
**Delivery incl.** 2.0 m special chemical tube ¾" (DN 19),
nozzle PVDF, barrel adapter (PP).
**Set 5 explosion-proof:**
**Delivery incl.** 2.0 m solvent tube ¾" (DN 19) conductive hose attachments, nozzle brass/PTFE, potential equalization cable, barrel adapter PP, safety plug not explosion-proof. All-purpose motor, explosion-proof in compliance with type of protection II 2 G EEx de IIC T6 (ATEX), stainless steel pumping station, explosion-proof Ex II 1/2 G IIB T4 (ATEX).
**Set 6 explosion-proof:**
**Delivery incl.** 2.0 m chemical tube ¾" (DN 19) conductive hose attachments, nozzle Niro/FEP, potential equalization cable, barrel adapter PP, safety plug not explosion-proof, all-purpose motor, explosion-proof in compliance with type of protection II 2 G EEx de IIC T6 (ATEX), stainless steel pumping statio, explosion-proof Ex II 1/2 G IIB T4 (ATEX).

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Set 1 | **KH51.1** * | 1 | 628,90 |
| Set 2 | **KH52.1** * | 1 | 661,15 |
| Set 3 | **KA12.1** * | 1 | 1020,20 |
| Set 4 | **X352.1** * | 1 | 2037,15 |
| Set 5 Ex | **KA13.1** * | 1 | 2252,15 |
| Set 6 Ex | **KA14.1** * | 1 | 2897,15 |

* Longer delivery times possible. Please check with our Sales Department.



## Mini solvent pump

By Bürkle. Hand pump for small drums up to 5 l.

- For high-purity fluids as well as flammable media
- Parts in contact with media are made from **PTFE** and **stainless steel**
- Delivery rate: approx. 1.8 l/min
- Earthing cable connection for dissipating electrostatic charge
- Works on the over-pressure principle, pressure relief valve protects against excessive pressure build-up
- Transfer of medium at the touch of a button
- Integrated spout (outer ∅ 7 mm) prevents dripping and allows for hose attachment
- With GL 45 thread

**Delivery incl.** earthing cable and PTFE riser tube (inner ∅ 6 mm, wall thickness 1 mm, length 400 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **APE4.1** | 1 | 402,05 |

**Accessories:**

| | | | |
|---|---|---|---|
| Threaded adapter, PTFE, GL 45 / S 40 | **APE5.1** | 1 | 32,15 |
| Threaded adapter, ETFE, GL 45 / GL 38 | **APE6.1** | 1 | 32,15 |
| Threaded adapter, ETFE, GL 45 / GL 32 | **APE7.1** | 1 | 32,15 |



## Drip tray safety wall bracket

For safe collection of residual liquids from pump tubes or samplers. Resistant to diluted alkalis and acids. The collecting tank can be filled with a neutralisation medium which dilutes and neutralises the residual liquid. The upright tube is securely mounted to the wall using sturdy tube clamps. The tube clamps can easily be opened to take out the safety stand. The collecting tank can be used to drain off the liquid. Dimensions: length 1000 mm. Inner ∅ 35 mm. Suitable for barrel pumps Y958.1ff, Y964.1ff, AH27.1f and NH33.1f.

**Delivery incl.** safety stand, collecting tank, tube clamps, mounting hardware.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TL59.1** | 1 | 53,75 |



## Solvent pump

For filling of high-purity liquids.

- **Delivery incl.** two immersion tubes for 10 l and 25 l stainless steel drums with 2″ steel fine pitch thread
- Fixed drainage elbow with stopcock
- Pump can be shut off hermetically by two ball valves
- Works according to excess pressure principle

**Note:** the drum and the pump must be grounded using the Roth antistatic set (Art. No. 0213.1) during filling of flammable liquids.

**Technical specifications:**

| | |
|---|---|
| For drum sizes | 10 l and 25 l |
| Immersion depths | 275 mm and 435 mm |
| Overall length incl. pump ball | 450 mm and 600 mm |
| Weight | approx. 1.2 kg |
| Compression gland thread type | 2" steel fine pitch thread |
| Parts with media contact | Stainless steel (1.4301) and PTFE |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N103.1** | 1 | 392,40 |

**Warning:**
Corrosion through acidification can occur when using chlorinated solvents. If the required safety precautions are taken (immediate washing and removal from drum), the pump can be carefully used, with such solvents. Not for use with acids.
To prevent crystallization, pump should be rinsed with water after use with alkalis.

# Solvent pumps



## Sekuroka® stainless steel safety pumps

For filling of flammable liquids.
- Immersion tube is infinitely adjustable to drum depth
- Near-complete emptying of drums
- Works according to piston stroke principle
- Removable drainage elbow for connecting a drainage hose with stopcock (please order separately)

**Note:** the drum and the pump must be grounded using the Roth antistatic set (Art. No. 0213.1) during filling of flammable liquids.

**Technical specifications:**

| Model | Type I | Type II |
|---|---|---|
| For drum size (l) | up to 50 | up to 200 |
| Delivery rate (ml/stroke) | 140 | 200 |
| Immersion depth (mm) | 570 | 910 |
| Overall length (mm) | 680 | 1020 |
| Weight (kg) | 1.2 | 1.8 |
| Compression gland thread type | 2" steel fine pitch thread | |
| Parts with media contact | Stainless steel (1.4301, 1.4305) and PTFE | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| I | **N502.1** | 1 | 220,40 |
| II | **N503.1** | 1 | 240,80 |

## Accessories for stainless steel safety pump

**Drainage hose with stopcock** .
DN 8 ball valve made of stainless steel, 12.8 mm bushing.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T276.1** | 1 | 206,40 |

**Drum plug made of PVC** for openings from 40 to 70 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9276.1** | 1 | 23,60 |

**Replacement parts set** : knurled bush, two O-rings, guide bush, stop neck, disc

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9599.1** | 1 | 28,70 |




## Solvent pumps, foot operated

By Bürkle. For filling drums with high purity liquids such as solvents.
- A compression gland and stopcock allow the drum and pump to be hermetically sealed
- Immersion tube is infinitely adjustable to drum depth
- Available in two types:
  ① With discharge tube
  ② With outlet hose and stopcock

**Note:** the drum and the pump must be grounded using the Roth antistatic set (Art. No. 0213.1) during filling of flammable liquids.

**Technical specifications:**

| | |
|---|---|
| Delivery rate | approx. 20 l/min |
| Immersion depth | 950 mm |
| Overall length | 1485 mm |
| For drum sizes up to | 220 l |
| Weight | Type ① approx. 3.5 kg / ② approx. 4.4 kg |
| Compression gland thread type | 2" steel fine pitch thread |
| Parts with media contact | Stainless steel (1.4301) and PTFE |

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① With discharge tube | **CPT5.1** | 1 | 464,40 |
| ② With outlet hose and stopcock | **CPT6.1** | 1 | 622,45 |




## Roth antistatic-set

Prevents fire and explosion caused by electrostatic charge. Consists of two insulated cables 3 mm / 3 m with vice grip wrenches on both sides and a blank copper wire 2 mm / 3 m with a vice grip wrench on one side.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0213.1** | 1 | 53,70 |




## Mini-Dispenser Piccolo

By Vitlab. With two fixed volumes. Ideally suited to dispensing long series. Manual push-button delivery, automatic refilling. Good chemical resistance thanks to high-quality materials, but not suitable for vapourous media.

- Precise media delivery
- Freely rotatable discharge tube on the bottle
- Choice of 2 fixed volumes
- Thread GL 28
- **Parts in contact with media:** PTFE, FEP, ETFE, PFA, borosilicate glass, Pt-Ir

| Volume (µl) | Accuracy (%) | Precision (%) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 / 250 | 2.0 | 0.4 | **Y697.1** | 1 | 220,40 |
| 500 / 1000 | 1.0 | 0.2 | **Y698.1** | 1 | 220,40 |
| 1000 / 2000 | 1.0 | 0.2 | **Y699.1** | 1 | 220,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| Threaded adapter, PP, GL 28/32 | **Y700.1** | 1 | 14,75 |



Material
DURAN®

## Automatic pipettes

Dispenser made of DURAN®, adjusted to „Ex“. Neck NS 29/32. Inscription in green overglaze colour. Ideal for dosing suspensions. Please order bottle separately.

| Volume (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 | 1,0 | **Y446.1** | 1 | 50,40 |
| 10 | 1,0 | **Y447.1** | 1 | 52,25 |
| 20 | 2,0 | **Y448.1** | 1 | 55,70 |
| 25 | 2,5 | **Y449.1** | 1 | 58,60 |
| 50 | 5,0 | **Y450.1** | 1 | 78,50 |
| 100 | 10 | **Y451.1** | 1 | 81,60 |

**Accessories**:
Narrow neck storage bottles of soda-lime glass, clear, acc. to DIN 12036, ISO 4796. With glass stopper NS 29/32.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1000 | **H058.1** | 1 | 14,20 |




121 °C

## Rotilabo® II dispenser

- Direct displacing piston with wiping PFA lip seal reduces crystallisation of liquids
- Improved volume adjustment due to internal toothed strip, volumes can be set quickly and precisely
- Valve block rotatable by 360° on the bottle, with GL 45 thread
- Swivelling cap does not obstruct dispensing
- Vent valve with safety bulb closes dosing channel when vent cannula not fitted
- Screwable ventilation stoppers for quick assembly of a drying tube
- Telescopic intake tube, infinitely adjustable to different bottle heights
- Suitable for calibration in conjunction with measuring instrument inspection according to ISO 9001 and GLP; change to factory calibration is displayed
- Autoclavable at 121 °C (2 bar), according to DIN EN 285, without disassembly
- Marked as DE-M, according to DIN EN ISO 8655-5

**Materials in contact with media:** Borosilicate glass, $Al_2O_3$ ceramic, ETFE, FEP, PFA, PTFE, platinum-iridium, PP (cap)

**Usage limits:** Temperature from +15 °C to +40 °C, steam pressure up to max. 500 mbar, kinematic viscosity up to 500 $mm^2/s$, density up to 2.2 $g/cm^3$

**Specifications of supplied threaded adapters and suction tubes:**

| Nominal capacity (ml) | Bottle thread adapter | Suction tube, length (mm) |
|---|---|---|
| 2, 5, 10 | GL 25, GL 28/S 28, GL 32, GL 38, S 40 | 125-240 |
| 25, 50. 100 | GL 32, GL 38, S 40 | 170-330 |

**Delivery incl.** certificate of quality, telescopic suction tube, assembly spanner and threaded adapter made of PP.

| Vol. (ml) | Graduations (ml) | Accuracy/coefficient of variation (±µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2-2 | 0.05 | 10 / 2 | **HAC6.1** | 1 | 254,80 |
| 0,5-5 | 0.10 | 25 / 5 | **HAC7.1** | 1 | 254,80 |
| 1-10 | 0.20 | 50 /10 | **HAC8.1** | 1 | 254,80 |
| 2,5-25 | 0.50 | 125 / 25 | **HAC9.1** | 1 | 338,65 |
| 5-50 | 1.0 | 250 / 50 | **HAE0.1** | 1 | 369,80 |
| 10-100 | 1.0 | 500 / 100 | **HAE1.1** | 1 | 502,05 |

# Dispensers




## Dispensette® *S* / Dispensette® *S* Organic

By BRAND. For accurate dispensing aggressive and non-aggressive media. Suitable for sterile dispensing.

**Models:**
- ① **Digital** - Easy-to-read digital display via mechanical counting mechanism; Easy Calibration technology for quick calibration
- ② **Analog** - Quick adjustment of dispensing volume, safe and reliable volume setting through internal rack
- ③ **Fix** - Non-adjustable dispensing volume for routine applications

**Features:**
- Easy dispensing and quick ventilation through floating piston
- Rapid ventilation through improved fluid mechanics
- Valves without additional seals for easier cleaning
- Rotates through 360°, valve block with GL 45 thread
- Dispensing syringe with swivel-mounted screw cap for protection against media contact
- Telescopic suction tube adjustable to different bottle sizes
- Recirculation valve prevents loss of reagent and allows quick, bubble-free ventilation
- DE-M approved
- Suitable for calibration in conjunction with measuring instrument inspection according to ISO 9011 and GLP
- Alteration of factory calibration is indicated
- Easy to disassemble for cleaning
- Fully autoclavable at 121 °C
- Microfilter can be connected to the ventilation opening for sterile dispensing

**Limits of use:**
Max. vapour pressure 600 mbar; max. viscosity 500 $mm^2/s$; max. temperature 40 °C; max. density 2.2 $g/cm^3$.

**Limits of error:**

| Nominal volume (ml) | Accuracy (±µl) | Variation coefficient (±µl) |
|---|---|---|
| 1 | 6 | 2 |
| 2 | 10 | 2 |
| 5 | 25 | 5 |
| 10 | 50 | 10 |
| 25 | 125 | 25 |
| 50 | 250 | 50 |
| 100 | 500 | 100 |

**Delivery incl.:** certificate of quality, telescopic suction tube, recirculation valve and recirculation tube, assembly spanner and threaded adapter made of PP.

**Specifications of supplied threaded adapters and suction tubes:**

| Nominal capacity (ml) | Bottle thread adapter | Suction tube length (mm) |
|---|---|---|
| 1, 2, 5, 10 | GL 24-25, GL 28/S, GL32-33, GL 38, S 40 | 125-240 |
| 25, 50. 100 | GL 32-33, GL 38, S 40 | 170-330 |

## Dispensette® S

**Range of applications:**
colour code: red. For dispensing aggressive reagents directly from the supply bottle: e.g. concentrated alkalis and acids such as $H_3PO_4$. $H_2SO_4$ (excluding, e.g., HCl, $HNO_3$ and HF), saline solutions and a wide range of organic solvents.

**Materials in contact with media:**
borosilicate glass, $Al_2O_3$ ceramics, platinum-iridium, ETFE, FEP, PFA, PTFE and PP.

**Dispensette® S, Digital**

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,2-2 | 0,01 | **ECL4.1** | 1 | 376,25 |
| 0,5-5 | 0,02 | **ECL5.1** | 1 | 376,25 |
| 1-10 | 0,05 | **ECL6.1** | 1 | 376,25 |
| 2,5-25 | 0,1 | **ECL7.1** | 1 | 469,80 |
| 5-50 | 0,2 | **ECL8.1** | 1 | 481,60 |

**Dispensette® S, analog**

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,2-2 | 0,05 | **ECL9.1** | 1 | 333,25 |
| 0,5-5 | 0,1 | **ECN0.1** | 1 | 333,25 |
| 1-10 | 0,2 | **ECN1.1** | 1 | 333,25 |
| 2,5-25 | 0,5 | **ECN2.1** | 1 | 424,65 |
| 5-50 | 1,0 | **ECN3.1** | 1 | 451,50 |
| 10-100 | 1,0 | **ECN4.1** | 1 | 598,80 |

**Dispensette® S, Fix**

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **ECN5.1** | 1 | 333,25 |
| 2 | **ECN6.1** | 1 | 333,25 |
| 5 | **ECN7.1** | 1 | 333,25 |
| 10 | **ECN8.1** | 1 | 333,25 |

## Dispensette® S Organic

**Range of applications:**
colour code: yellow. Ideal for dispensing organic solvents, e.g. chlorinated and fluorinated hydrocarbons such as trichlorofluoroethane and dichloromethane, acids such as concentrated HCl and $HNO_3$ (excluding HF) as well as for trifluoroacetic acid (TFA), tetrahydrofuran (THF) and peroxides.

**Materials in contact with media:**
borosilicate glass, $Al_2O_3$-ceramics, tantalum, ETFE, FEP, PFA, PTFE and PP.

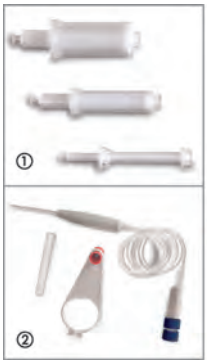
**Dispensette® S Organic, analog**

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5-5 | 0,1 | **ECN9.1** | 1 | 333,25 |
| 1-10 | 0,2 | **ECP0.1** | 1 | 333,25 |
| 2,5-25 | 0,5 | **ECP1.1** | 1 | 424,65 |
| 5-50 | 1,0 | **ECP2.1** | 1 | 451,50 |
| 10-100 | 1,0 | **ECP3.1** | 1 | 598,80 |

## Telescopic suction tubes

By Brand. For Dispensette®, seripettor® *pro* and Titrette®.
Made of FEP, individually adjustable length.

| Nominal capacity (ml) | Outer ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 / 2 / 5 / 10 | 6 | 70-140 | **PP81.1** | 1 | 13,50 |
| 1 / 2 / 5 / 10 | 6 | 125-240 | **PP82.1** | 1 | 17,75 |
| 1 / 2 / 5 / 10 | 6 | 195-350 | **PP83.1** | 1 | 25,75 |
| 1 / 2 / 5 / 10 | 6 | 250-480 | **PP84.1** | 1 | 20,00 |
| 25 / 50 / 100 | 7,6 | 170-330 | **PP85.1** | 1 | 25,75 |
| 25 / 50 / 100 | 7,6 | 250-480 | **PP86.1** | 1 | 26,55 |






## seripettor®/seripettor® *pro* dispenser

By Brand.

- Dispensing: push plunger down, fills automatically
- Suitable for serial dispensing by means of flexible dispensing hose made of PTFE with safety handle, length approx. 800 mm (please order separately)
- **Suitable for dispensing sterile media:** screw the valve block with suction tube onto the filled bottle, seal the valve block with the cap, attach the autoclavable sterile filter (0.2 µm) at the side and autoclave at 121 °C. Remove the cap from the valve block under clean bench conditions, screw in the sterile dispensing unit and attach the actuating unit
- If the snug fitting plunger seal is worn, the dispensing unit can be interchanged
- GL 45 thread

**Materials in contact with media:**

- seripettor®: FEP, PP, PE, EPDM
- seriipettor ® pro: PP, PE, Borosilicate glass, $Al_2O_3$-ceramic , ETFE, PFA, FEP, PTFE, Pt-Ir

**Limits of use:** 15 to 40 °C, vapour pressure max. 500 mbar, max. density 2.2 g/cm³, viscosity 300 mm²/s (2 ml device), 150 mm²/s (10 ml device) or 75 mm²/s (25 ml device)

**Limits of error:**

| Nominal volume (ml) | Accuracy (±µl) | Variation coefficient (±µl) |
|---|---|---|
| 2 | 24 | 4 |
| 10 | 120 | 20 |
| 25 | 300 | 50 |

**Delivery incl.** dispensing syringe, suction tube, replacement dispensing unit and PP adapter (GL 32, S 40).

**seripettor®**

For dispensing aqueous solutions, buffer solutions, culture media, diluted, non-oxidising acids and agars up to max. 60 °C.

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,2-2 | 0,04 | **PP91.1** | 1 | 138,70 |
| 1-10 | 0,2 | **PP92.1** | 1 | 138,70 |
| 2,5-25 | 0,5 | **PP93.1** | 1 | 163,40 |

**seripettor®** *pro*

For dispensing aqueous solutions, buffer solutions, culture media, acids (e.g. concentrated HCl), polar solvents (e.g. acetone), etheric oils and UV-sensitive media.

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,2-2 | 0,04 | **PP94.1** | 1 | 247,25 |
| 1-10 | 0,2 | **HX64.1** | 1 | 263,40 |
| 2,5-25 | 0,5 | **HX65.1** | 1 | 348,30 |

Accessories:

| | | | |
|---|---|---|---|
| ① 2 ml dispensing unit, non-sterile | **PP95.1** | 3 | 27,10 |
| ① 10 ml dispensing unit, non-sterile | **HX66.1** | 3 | 29,05 |
| ① 25 ml dispensing unit, non-sterile | **HX67.1** | 3 | 41,35 |
| ① 2 ml dispensing unit, **sterile** | **PP96.1** | 7 | 65,15 |
| ① 10 ml dispensing unit, **sterile** | **HX68.1** | 7 | 73,55 |
| ① 25 ml dispensing unit, **sterile** | **HX69.1** | 5 | 77,90 |
| ② 2 + 10 ml dispensing hose, flexible with handle | **HX70.1** | 1 | 81,65 |
| ② 25 ml dispensing hose, flexible with handle | **HX71.1** | 1 | 84,50 |
| Syringe filter "RC", 0.2 µm pore size | **EE80.1** | 100 | 122,00 |



## Dispensette® S Trace Analysis, analog

By BRAND.

**Range of applications:**

- For accurate dispensing of highly pure media in trace analysis
- Dispensing of metal traces, usually in the low ppb range - or even in the ppt range, depending on application
- The established cleaning process for use in trace analysis is explained in the operating instructions
- Usable as a hydrofluoric acid dispenser with platinum-iridium valve spring

**Models:**

- Dispensing needle with recirculation valve: prevents loss of reagent and allows fast, bubble-free ventilation
- Dispensing needle without recirculation valve: prevents contamination of the bottle contents

**Features:**

- Depending on requirements, the spring material is made of platinum-iridium or tantalum
- Valves without additional ring seals for easier cleaning
- Dispensing plunger with snug fitting seal
- Complete dispensing unit is easy to replace in case of wear
- Reliable volume control through inner rack mechanism
- Rotates through 360°, valve block with GL 45 thread
- Dispensing needle with swivel-mounted screw cap for protection against media contact
- Telescopic suction tube adjustable to different bottle sizes
- DE-M approved
- Suitable for calibration in conjunction with measuring instrument inspection according to ISO 9011 and GLP
- Alteration of factory calibration is indicated
- Microfilter can be connected for sterile dispensing

**Materials in contact with media:**
High-purity plastics (PTFE, ETFE, PCTFE, FEP and PFA), sapphire valves, platinum-iridium or tantalum spring material.

**Limits of use:**
Max. vapour pressure 600 mbar; max. viscosity 500 mm²/s; max. temperature +40 °C; max. density 3.8 g/cm³.

**Limits of error:**

| Nominal volume (ml) | Accuracy (±µl) | Variation coefficient (±µl) |
|---|---|---|
| 10 | 50 | 10 |

**Delivery incl.** certificate of quality, telescopic suction tube, assembly spanner and threaded adapter GL 28 / S 28 (ETFE), GL 32 (ETFE) and S 40 (PTFE). Version with recirculation valve also includes a recirculation tube.

| Type | Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Platinum-iridium, without RDV | 1-10 | 0,2 | **ECX1.1** | 1 | 676,20 |
| Platinum-iridium, with RDV | 1-10 | 0,2 | **ECX2.1** | 1 | 720,25 |
| Tantalum, without RDV | 1-10 | 0,2 | **ECX3.1** | 1 | 676,20 |
| Tantalum, with RDV | 1-10 | 0,2 | **ECX4.1** | 1 | 720,25 |

## Accessories for Dispensette® S Trace Analysis, analog

**Replacement dispensing unit with retaining ring**

Easy replacement with no need for additional tools. Nominal capacity 10 ml. Calibrated, including certificate of quality.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ECX5.1** | 1 | 330,05 |

# Dispensers




## Dispenser FORTUNA® POLYFIX®

By Poulten & Graf.
- Conformity certified
- Precision dispensing plunger
- Quick adjustment with easy action
- Rotatable fine adjustment
- GL 32 thread

**Delivery incl.** dispensing syringe set, suction hose made of PTFE, two GL 40 and GL 45 threaded adapters made of PP.

**With glass plunger and clear glass cylinder.**
For dispensing aqueous media.

| Volume (ml) | Graduations (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2-10 | 0,2 | 0,04 | **P312.1** | 1 | 132,25 |
| 10-50 | 1,0 | 0,2 | **P313.1** | 1 | 149,45 |

**With PTFE-encased plunger and clear glass cylinder.**
For dispensing weak acids and alkalis.

| Volume (ml) | Graduations (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2-10 | 0,2 | 0,04 | **PK97.1** | 1 | 175,25 |
| 10-50 | 1,0 | 0,2 | **PK98.1** | 1 | 193,50 |

**With glass plunger and brown glass cylinder.**
For dispensing light-sensitive media.

| Volume (ml) | Graduations (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2-10 | 0,2 | 0,04 | **PK99.1** | 1 | 176,30 |
| 10-50 | 1,0 | 0,2 | **PL00.1** | 1 | 194,60 |



## Bottle holder for dispensers

By BRAND. **Made of PP.** For secure attachment of bottle top dispensers or digital burettes during work with small storage bottles. Completely made from plastic and therefore ideal for trace analysis and use in aggressive environments (e.g. acid vapours in extractor).
Base plate L 220 x W 160 mm, length of stand rod 325 mm.
Weight: approx. 1.1 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CNN2.1** | 1 | 164,50 |




## Dispenser FORTUNA® OPTIFIX® series

By Poulten & Graf.

**Properties:**
- Ergonomic design with colour-code system
- Resistant to abrasion, UV radiation, acids and acid vapours
- Valve block without metal springs; no contamination of the dispensed liquid
- Quick volume adjustment with easy action and rotatable fine adjustment
- Visually recognisable dosing direction
- Screws directly onto bottle with thread GL 32
- Easy to dismantle and clean.
- Conformity testing acc. to DIN EN ISO 8655-5

**Tolerances:**

| Nominal capacity (ml) | Accuracy (±ml) | Variation coefficient (±ml) |
|---|---|---|
| 2 | 0.012 | 0.004 |
| 5 | 0.030 | 0.010 |
| 10 | 0.060 | 0.020 |
| 30 | 0.180 | 0.060 |
| 50 | 0.300 | 0.100 |
| 100 | 0.600 | 0.200 |
| 200 | 1.200 | 0.400 |
| 300 | 1.800 | 0.600 |
| 500 | 3.000 | 1.000 |

## Dispenser FORTUNA® OPTIFIX® BASIC

For dosing **aqueous media, crystallizing substances and diluted acids and alkalises.**
Dispensing cylinder made of glass, plastic-coated.
Dosing cylinder made of glass, PTFE-coated. Autoclavable.

**Delivery incl.** suction hose made of PTFE, two threaded adaptors (GL 40 and GL 45) made of PP.

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5-2 | 0.1 | **E821.1** | 1 | 297,80 |
| 1-5 | 0.1 | **E822.1** | 1 | 297,80 |
| 2-10 | 0.2 | **E823.1** | 1 | 297,80 |
| 5-30 | 0.5 | **E824.1** | 1 | 409,60 |
| 10-50 | 1 | **E825.1** | 1 | 449,35 |
| 20-100 | 2 | **E826.1** | 1 | 754,65 |
| 40-200 | 5 | **E827.1** | 1 | 1129,85 |
| 60-300 | 5 | **E828.1** | 1 | 1574,90 |
| 100-500 | 5 | **E829.1** | 1 | 1766,25 |

## Dispenser FORTUNA® OPTIFIX® SOLVENT

For dosing **solvents and low-viscosity media (up to 100 mPa · s).**
Dispensing cylinder made of glass, plastic-coated.
Dosing piston made of glass, without coating. Autoclavable.

**Delivery incl.** suction hose made of PTFE, two threaded adaptors (GL 40 and GL 45) made of PP.

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5-2 | 0.1 | **E833.1** | 1 | 297,80 |
| 1-5 | 0.1 | **E834.1** | 1 | 297,80 |
| 2-10 | 0.2 | **E835.1** | 1 | 297,80 |
| 5-30 | 0.5 | **E836.1** | 1 | 410,65 |
| 10-50 | 1 | **E837.1** | 1 | 449,35 |
| 20-100 | 2 | **E838.1** | 1 | 754,65 |
| 40-200 | 5 | **E839.1** | 1 | 1122,30 |
| 60-300 | 5 | **E840.1** | 1 | 1585,65 |
| 100-500 | 5 | **E841.1** | 1 | 1777,00 |

## Dispenser FORTUNA® OPTIFIX® SAFETY

For dosing **strong acids and aggressive chemicals**.
Dispensing cylinder made of glass, plastic-coated.
Dosing cylinder made of glass, PTFE-coated with sealing lip.

**Delivery incl.** suction hose made of PTFE, two threaded adapters (GL 40 and GL 45) made of PTFE.

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5-2 | 0.1 | **E842.1** | 1 | 388,10 |
| 1-5 | 0.1 | **E843.1** | 1 | 388,10 |
| 2-10 | 0.2 | **E844.1** | 1 | 388,10 |
| 5-30 | 0.5 | **E845.1** | 1 | 532,15 |
| 10-50 | 1 | **E846.1** | 1 | 581,60 |
| 20-100 | 2 | **E847.1** | 1 | 825,60 |

## Dispenser FORTUNA® OPTIFIX® SAFETY S

For dispensing **fuming acids and other aggressive chemicals as well as odorous liquids**.
Dispensing cylinder made of glass, plastic-coated.
Dispensing piston made of glass, PTFE-coated with sealing lip.
With safety stopcock at the output channel and additional safety valve in the ventilation tube.

**Delivery incl.** suction hose made of PTFE, two threaded adaptors (GL 40 and GL 45) made of PTFE.

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5-2 | 0.1 | **PL11.1** | 1 | 477,30 |
| 1-5 | 0.1 | **PL12.1** | 1 | 477,30 |
| 2-10 | 0.2 | **PL13.1** | 1 | 477,30 |
| 5-30 | 0.5 | **PL14.1** | 1 | 643,95 |
| 10-50 | 1 | **PL15.1** | 1 | 694,45 |
| 20-100 | 2 | **PL16.1** | 1 | 938,50 |

## Dispenser FORTUNA® OPTIFIX® HF

For dispensing **highly aggressive and toxic chemicals (e.g. liquid acid).**
Dispensing cylinder made of PTFE.
Dosing cylinder made of glass, PTFE-coated with sealing lip.

**Delivery incl.** suction hose made of PTFE, two threaded adapters (GL 40 and GL 45) made of PTFE.

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-5 | 0.1 | **PL17.1** | 1 | 695,55 |
| 2-10 | 0.2 | **PL18.1** | 1 | 695,55 |
| 6-30 | 0.5 | **PL19.1** | 1 | 1032,00 |
| 10-50 | 1 | **PL20.1** | 1 | 1538,35 |



## Thread-adapters for all FORTUNA® OPTIFIX® dispensers

For dispensers with thread GL 32.

| Thread (drum) | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| GL 45 | PTFE | **L903.1** | 1 | 75,45 |
| GL 25 | PP | **L896.1** | 1 | 12,20 |
| GL 38 | PP | **L897.1** | 1 | 13,60 |
| GL 40 | PP | **L898.1** | 1 | 15,05 |
| GL 45 | PP | **L899.1** | 1 | 15,80 |



## Thread adapter for dispenser

| Material | Thread (drum) | Thread (Dispenser) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Brass | 2″ Tri-Sure®-finethread | GL 32 | **1751.1** | | 49,35 |
| Fluororubber | GL 40 | GL 45 | **P321.1** | 1 | 21,45 |
| PTFE | GL 40 | GL 45 | **KY92.1** | 1 | 88,35 |
| PTFE | S38-430, suitable for ex. for AE00.3, HN44.3, HN60.3, HN54.1 | GL 45 | **KY68.1** | 1 | 53,20 |

▶ Further thread adapters see p. 50

# Dispensers




## Dispensers ceramus® classic

By Hirschmann.

- **Ceramic piston:** no wear by friction, no swelling, no thermal problems, high chemical stability
- Variable volume setting
- Suction tube is screwed on tightly, therefore completely leakproof
- Absolutely reproducible work
- Quick and safe setting of volume
- Parts can be replaced easily
- Thread A32
- Without dismantling, steam sterilizable at 121 °C/2 bar
- Certificate of conformity

**Delivery incl.** 3 thread adapters (A28/S40/A45), 1 installation wrench, certificate of quality.

| Volume (ml) | Graduations (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2-1 | 0,05 | 0,01 | **1591.1** | 1 | 278,45 |
| 0,4-2 | 0,05 | 0,02 | **1592.1** | 1 | 278,45 |
| 1-5 | 0,10 | 0,05 | **1593.1** | 1 | 278,45 |
| 2-10 | 0,25 | 0,10 | **1594.1** | 1 | 278,45 |
| 5-30 | 0,50 | 0,30 | **1595.1** | 1 | 366,60 |
| 10-60 | 1,00 | 0,60 | **1596.1** | 1 | 401,00 |




## Dispensers made of PP

By Hirschmann. With glass flask for dosing aqueous and organic media. Sterilisable up to 121 °C, with A32 screw thread. Certificate of conformity.

**Delivery incl.** 3 thread adapters (A28, S40, A45), certificate of quality.

| Volume (ml) | Graduations (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2-10 | 0,25 | 0,10 | **P207.1** | 1 | 205,35 |
| 10-60 | 1,00 | 0,60 | **P208.1** | 1 | 297,80 |




## ceramus® dispenser

By Hirschmann.

- **Media backflow system**
- **Ceramic piston:** no wear by friction, no swelling, no thermal problems, high chemical stability
- Suction tube is screwed on tightly, therefore completely leakproof
- The dispenser on the bottle is freely rotatable
- Luer-Lock connection on the back
- Ergonomic grip
- Quick and safe setting of volume
- Absolutely reproducible work
- Parts can be replaced easily
- A45 thread
- Without dismantling, steam sterilizable at 121 °C / 2 bar
- Certificate of conformity

**Delivery incl.** 3 thread adapters (A32/A38/S40), 1 assembly wrench, with certificate of quality.

### Variable volume setting

| Volume (ml) | Graduations (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2-1 | 0,05 | 0,01 | **T300.1** | 1 | 319,30 |
| 0,4-2 | 0,05 | 0,02 | **T301.1** | 1 | 319,30 |
| 1-5 | 0,10 | 0,05 | **T302.1** | 1 | 319,30 |
| 2-10 | 0,25 | 0,10 | **T303.1** | 1 | 319,30 |
| 5-30 | 0,50 | 0,30 | **T304.1** | 1 | 409,60 |
| 10-60 | 1,00 | 0,60 | **T305.1** | 1 | 444,00 |

### Fixed volume setting

| Volume (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 0,01 | **T326.1** | 1 | 309,60 |
| 2 | 0,02 | **T327.1** | 1 | 309,60 |
| 5 | 0,05 | **T328.1** | 1 | 309,60 |
| 10 | 0,10 | **T329.1** | 1 | 309,60 |
| 25 | 0,25 | **T330.1** | 1 | 394,55 |
| 50 | 0,5 | **T331.1** | 1 | 420,35 |

### Special version for problematic media

For dosing hydrofluoric acid and other problematic media.
Pistons, cylinders, valve seats and balls made of ceramic, valve springs made of plating/iridium.

| Volume (ml) | Graduations (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2-10 | 0,25 | 0,1 | **T306.1** | 1 | 798,75 |

# Digital dispenser



## Ultra / Ultra HF dispenser

For dispensing highly pure acids and alkalis.
Suitable for use in ultra trace analysis.

**Features:**
- **Free of metals**
- Made of high quality and highly pure plastics (PTFE, TFM and PFA)
- Calibrated and mechanically tested for precision and accuracy
- 38-430 thread (fits ROTIPURAN® Ultra products)

**Special features of Ultra dispenser:**
- Acid cleansed
- Manufactured in cleanroom (class 100)

**Special features of Ultra HF dispenser:**
- Specially for dispensing hydrofluoric acids
- Also suitable for analytical acids

When using bottles with a GL45 thread, please order fastening for dispenser KK11.1 separately.

| Model | Volume (ml) | Graduation (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Ultra | 0,5-5 | 0,5 | 0,02 | **KK97.1** | 1 piece | 2234,95 |
| Ultra HF | 0,5-5 | 0,5 | 0,02 | **KK98.1** | 1 piece | 1757,65 |

## Accessories for Ultra/Ultra HF dispenser

**Bottle holder**

Stabilises bottles when using a dispenser.
The four-screw system is suitable for both square bottles and round bottles.
The bottle holder is designed for ROTIPURAN® Supra and Ultra bottles with capacities from 250 ml to 2 litres.

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Bottle holder | **KK99.1** | 1 piece | 93,00 |

**Fastening for Ultra/Ultra HF dispenser to GL45**

Made of PTFE. For bottles with GL45 thread, specially for the use of ROTIPURAN® Supra products with Ultra and Ultra HF dispensers.

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fastening for ROTIPURAN® Supra (GL45) | **KK11.1** | 1 piece | 256,95 |

▶ Further accessories for the opus® dispenser see p. 404



## Digital dispenser opus® dispenser

By Hirschmann. For motor-driven dosing directly from the lab bottle. Microprocessor-controlled piston stroke system guarantees highest accuracy and precise, reproducible results.
- Safe and easy handling via external touch screen with clearly arranged menu keys; with quick-cal function for simple calibration of other temperatures or other media
- High media flexibility thanks to highly resistant, inert materials (ECTFE, borosilicate glass 3.3, Hastelloy, FEP, PTFE)
- Media carrying parts are steam sterilisable (121 °C)
- Time-controlled serial dosing up to 9999 reruns, enables integration in automated process runs
- Methods memory for 9 different procedures
- Media feedback system for ventilation without loss of reagent
- Universal Luer-connection for dry pipes, filters etc.
- Can be battery or socket operated (storage batteries not included in the delivery; please order separately)
- Stepper function for delivery of up to 10 different partial quantities
- Sucking and draining speeds can be set
- 4 languages (G, E, F, S) integrated by default
- Optional system platform for secure standing, please order separately

**Technical specifications:**

| **Model** | **10 ml** | **20 ml** | **50 ml** |
|---|---|---|---|
| **Basic unit** | | | |
| Volume range | 0.010 to 99.999 ml | 0.10 to 200 ml | 1.00 to 500 ml |
| Resolution | <1 µl | | <2 µl |
| Maximum piston stroke | 10 ml | 20 ml | 50 ml |
| Dispenser accuracy | R = 0.6 %, CV = 0.2 % | | |
| Stepper accuracy | R = 0.5 % CV = 0.2 % | | R = 0.5 %, CV = 0.2 % |
| Working temperature range | +4 to +40 °C | | |
| Connection voltage | 230 V, plug-in power pack 15 V, 850 mA | | |
| Dimensions (W x D x H) | 63 x 80 x 320 mm | | |
| Weight | 660 g | | |
| **Control panel:** | | | |
| Touch screen | 3.5″ with 320 x 240 pixels | | |
| PC interface | USB or RS 232 | | |
| Dimensions (W x D x H) | 110 x 130 x 55 mm | | |
| Weight without storage battery | 230 g | | |

**Delivery incl.** digital dispenser opus® dispenser with A 45 internal thread, thread adapters A 32, A 38 and S 40, suction hose, feedback hose, output unit dispenser, spanner for fixing valve, touch screen panel, power supply unit, data power cable, certificate of quality according to DIN EN ISO 8655.

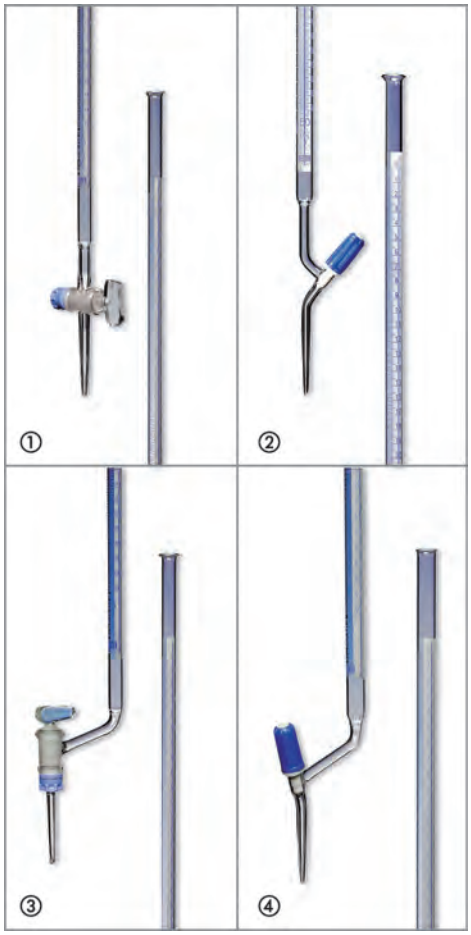
| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 ml | **PA71.1** * | 1 | 1752,25 |
| 20 ml | **LK06.1** * | 1 | 1752,25 |
| 50 ml | **LK07.1** * | 1 | 1752,25 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| Battery | **LK16.1** | 1 | 99,95 |
| Touch screen film (protective film for display) | **PA72.1** | 2 | 7,50 |
| System platform | **LK15.1** | 1 | 123,65 |

# Burettes




Material
DURAN®

## Burettes with Schellbach stripes, Class B

By Hirschmann. Made of DURAN®.
With line graduations. Scale length 500 mm.
**Blue graduations.**

① **With straight glass stopcock NS 12.5/28.** Acc. to DIN EN ISO 385.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,03 | **ET57.1** | 2 | 77,55 |
| 25 | 0,05 | 0,045 | **ET58.1** | 2 | 77,55 |
| 50 | 0,1 | 0,075 | **ET59.1** | 2 | 78,30 |

② **With straight valve spout and PTFE-spindle.** Acc. to DIN EN ISO 385.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,03 | **ET60.1** | 2 | 102,15 |
| 25 | 0,05 | 0,045 | **ET61.1** | 2 | 102,15 |
| 50 | 0,1 | 0,075 | **ET62.1** | 2 | 102,15 |

③ **With glass stopcock on the side NS 12.5/28.** Acc. to DIN EN ISO 385.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,03 | **ET78.1** | 2 | 87,30 |
| 25 | 0,05 | 0,045 | **ET79.1** | 2 | 87,30 |
| 50 | 0,1 | 0,075 | **ET80.1** | 2 | 87,30 |

④ **With valve spout on the side and PTFE-spindle.**
Acc. to DIN EN ISO 385.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,03 | **ET81.1** | 2 | 123,65 |
| 25 | 0,05 | 0,045 | **ET82.1** | 2 | 123,65 |
| 50 | 0,1 | 0,075 | **ET83.1** | 2 | 123,65 |


- ▶ Material for stands and burette holders on page 209
- ▶ Greases see page 1138


## Spare spouts for burettes

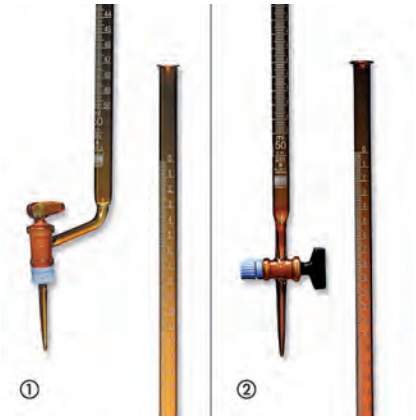
By Hirschmann. Made of DURAN®. Clear glass.

① **Side burette stopcocks with glass plugs.**

| For burettes (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **AC73.1** | 1 | 24,65 |
| 25 | **AC74.1** | 1 | 24,65 |
| 50 | **AC75.1** | 1 | 24,65 |

② **Side valve spouts with PTFE-spindle.**

| For burettes (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **AC76.1** | 1 | 35,15 |
| 25 | **AC77.1** | 1 | 35,15 |
| 50 | **AC78.1** | 1 | 35,15 |




Material
DURAN®

## Burettes, Class B

By Hirschmann. Made of DURAN®. **Brown glass**.
With line graduations. Scale length 500 mm.
**White graduations.**

① **With side glass stopcock.** Acc. to DIN EN ISO 385.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,03 | **ET84.1** | 2 | 123,65 |
| 25 | 0,05 | 0,045 | **ET85.1** | 2 | 123,65 |
| 50 | 0,1 | 0,075 | **ET86.1** | 2 | 123,65 |

② **With straight glass stopcock.** Acc. to DIN EN ISO 385.

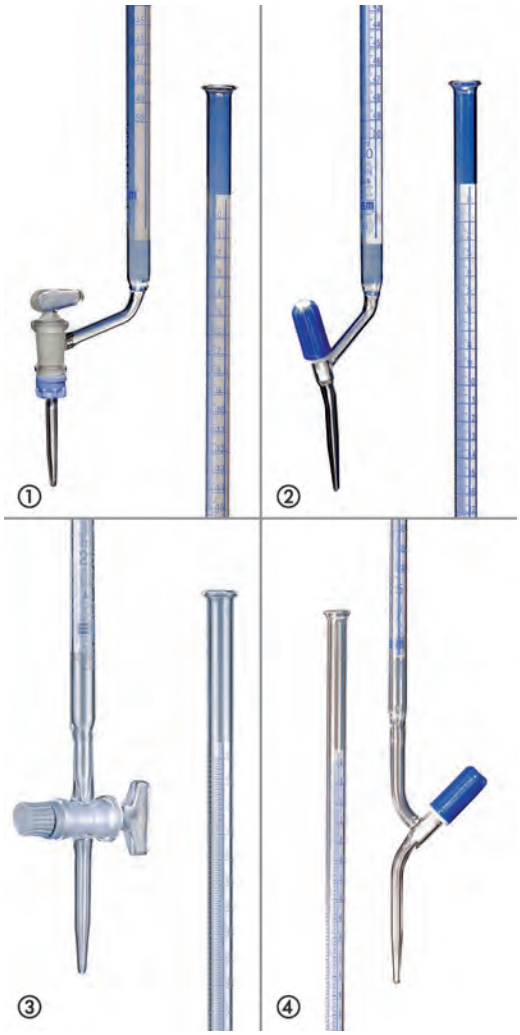
| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,03 | **ET63.1** | 2 | 106,45 |
| 25 | 0,05 | 0,045 | **ET64.1** | 2 | 106,45 |
| 50 | 0,1 | 0,075 | **ET65.1** | 2 | 106,45 |



## Plastic burettes

Acc. to DIN 12700. Class B. With 0.1 ml line graduations.
Burette tube of transparent **PVC**. Burette stopcock of clear **PMP**, with self-lubricating **FEP** plugs. Reduced risk of breakage and injury.
Suitable for routine use.

| Volume (ml) | Schellbach stripes | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | no | 570 | **9717.1** | 1 | 78,50 |
| 50 | no | 740 | **XC74.1** | 1 | 82,45 |




Material DURAN®

## Burettes with Schellbach stripes, Class AS

By Hirschmann. Made of DURAN®. **Certificate of Conformity**, with dated batch identification and principal point ring graduation. Adjusted to ex. **Blue graduations.** Scale length 500 mm.

① **With glass stopcock on the side** NS 12.5/28. Acc. to DIN EN ISO 385.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,02 | **T736.1** | 2 | 120,40 |
| 25 | 0,05 | 0,03 | **T737.1** | 2 | 120,40 |
| 50 | 0,1 | 0,05 | **T738.1** | 2 | 120,40 |

② **With valve spout on the side and PTFE-spindle.** Acc. to DIN EN ISO 385.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,02 | **T739.2** | 2 | 155,90 |
| 25 | 0,05 | 0,03 | **T740.2** | 2 | 155,90 |
| 50 | 0,1 | 0,05 | **T741.2** | 2 | 155,90 |

③ **With straight glass stopcock** NS 12.5/28. Acc. to DIN EN ISO 385.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,02 | **ET66.1** | 2 | 106,45 |
| 25 | 0,05 | 0,03 | **ET67.1** | 2 | 106,45 |
| 50 | 0,1 | 0,05 | **ET68.1** | 2 | 106,45 |

④ **With straight valve spout and PTFE-spindle.** Acc. to DIN EN ISO 385.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,02 | **ET69.1** | 2 | 132,25 |
| 25 | 0,05 | 0,03 | **ET70.1** | 2 | 132,25 |
| 50 | 0,1 | 0,05 | **ET71.1** | 2 | 132,25 |




Material DURAN®

## Burettes

By Hirschmann. Made of DURAN®. **Certificate of Conformity**, with dated charge identification. **Brown glass.** Principal point ring graduation. Scale length 500 mm. Acc. to DIN EN ISO 385. **Graduated with white markings**.

① **With straight glass stopcock.**

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,02 | **ET72.1** | 2 | 153,75 |
| 25 | 0,05 | 0,03 | **ET73.1** | 2 | 153,75 |
| 50 | 0,1 | 0,05 | **ET74.1** | 2 | 153,75 |

② **With straight valve spout and PTFE-spindle.**

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,02 | **ET75.1** | 2 | 174,15 |
| 25 | 0,05 | 0,03 | **ET76.1** | 2 | 174,15 |
| 50 | 0,1 | 0,05 | **ET77.1** | 2 | 174,15 |



## Burette bottles

By Hirschmann. For titrating apparatus. Made of soda-lime glass. With ground glass joint 29/32. Capacity 2000 ml.

| Design | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| clear glass | 2000 | **ET96.1** | 1 | 27,75 |
| brown glass | 2000 | **ET97.1** | 1 | 30,00 |
| clear glass | 2000 | **ET96.1** | 1 | 27,75 |
| brown glass | 2000 | **ET97.1** | 1 | 30,00 |



## Rubber pump

Made of soft **PVC**. For titrating apparatus. Tube length 25 cm. Total length 34 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ET98.1** | 1 | 11,60 |

# Burettes



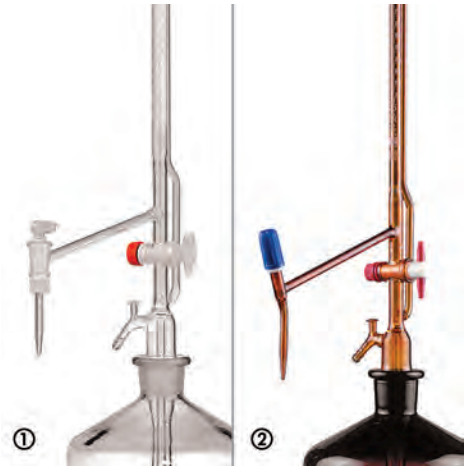
Material
DURAN®

## Pellet titrating apparatus, Class B

By Hirschmann. Made of DURAN®. **Brown glass.** With line graduation.
Scale length 500 mm. According to DIN EN ISO 385.
**Delivery incl.** 2 l glass bottle. Please order rubber pump separately.

**With glass stopcock on side and intermediate valve cock. White graduation.**

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,03 | **ET87.1** | 1 | 233,30 |
| 25 | 0,05 | 0,045 | **ET88.1** | 1 | 233,30 |
| 50 | 0,1 | 0,075 | **ET89.1** | 1 | 233,30 |




Material
DURAN®

## Pellet titrating apparatus, Class AS

By Hirschmann. Made of DURAN®. **Certificate of Conformity**, with dated batch identification. With axial ring division.
Scale length 500 mm. Acc. to DIN EN ISO 385.
**Delivery incl.** 2 l glass bottle. Please order rubber pump separately.

① **With glass stop-cock on the side and intermediate stop-cock. Blue graduations.**

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,02 | **ET90.1** | 1 | 233,30 |
| 25 | 0,05 | 0,03 | **ET91.1** | 1 | 233,30 |
| 50 | 0,1 | 0,05 | **ET92.1** | 1 | 233,30 |

② **With PTFE-spindle stop-cock on the side and intermediate stop-cock. Brown glass, white graduations.**

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,02 | 0,02 | **ET93.1** | 1 | 327,90 |
| 25 | 0,05 | 0,03 | **ET94.1** | 1 | 327,90 |
| 50 | 0,1 | 0,05 | **ET95.1** | 1 | 327,90 |




## Automatic titrating burettes

Acc. to Schilling. Made of **PE**, burette made of borosilicate glass 3.3, with Schellbach stripes. No danger of breakage and high chemical resistance. With feet on bottle for enhanced stability.
With blue ring graduation, calibrated to "Ex". Press button for precise dosing, fine titration with microscrew and exact spout tip, finest droplets.
Graduation corresponds to Class B (tolerances acc. to DIN ISO 385).
The burette is a universal helper in laboratories, electroplating applications, water processing stations, sewage plants and in field tests, etc.

| Volume (ml) | Graduations (ml) | Accuracy (±ml) | Bottle volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 0.05 | 0.015 | 500 | **8226.1** | 1 | 50,35 |
| 10 | 0.05 | 0.030 | 500 | **8227.1** | 1 | 50,35 |
| 15 | 0.10 | 0.045 | 500 | **8228.1** | 1 | 50,35 |
| 25 | 0.10 | 0.045 | 1000 | **8229.1** | 1 | 50,35 |
| 50 | 0.10 | 0.045 | 1000 | **8230.1** | 1 | 59,05 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare bottle 500 ml | **PK05.1** | 1 | 3,80 |
| Spare bottle 1000 ml | **PK06.1** | 1 | 5,75 |
| Spare outlet nozzle | **PK07.1** | 1 | 3,45 |
| Spare tubing made of PE | **YT74.1** | 1 | 7,40 |
| Spare hose made of latex, 1 m, for lever tap | **YT75.1** | 1 | 5,75 |

## Titrating burettes with splitter protection

Acc. to Schilling. Glass burette with Schellbach stripes and splitter protection coating. No danger of breakage and high chemical resistance. Enhanced stability due to foot on bottle. Calibrated to Ex.
Press button for precise dosing, fine titration with micro screw and narrow spout tip, finest droplets.
Contacted materials: PE, PP,
Natural rubber and borosilicate glass 3.3.

| Volume (ml) | Graduations (ml) | Accuracy (±ml) | Bottle volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 15 | 0.1 | 0.045 | 500 | **HEX0.1** | 1 | 65,90 |
| 25 | 0.1 | 0.045 | 1000 | **HEX1.1** | 1 | 64,30 |
| 50 | 0.1 | 0.075 | 1000 | **HEX2.1** | 1 | 75,80 |

# Digital burettes





## Digital burettes continuous E and RS

By Vitlab. Pulse-free dispensing. Continuous delivery of desired volume without drawing up reserves. Easy and fatigue-free operation of the control elements. Volume dispensed per turn of the handwheels: 2.5 ml (continuous E) or 5.0 ml (continuous RS).

- Specially developed return dosing system for ventilation without loss of reagent
- Power supply with longlife, easy-to-change 1.5 V micro batteries and charge indicator
- Electronics removable as a unit, service friendly modular design
- Dispensing range 0.01 ml to 999.9 ml
- Discharge tube rotatable through 360°
- Vertically and horizontally adjustable discharge tube
- Digital burette with safety valve
- Telescopic suction tube for different bottle sizes from 200 to 350 mm
- Simple calibration program
- Connection for drying tube
- The defined limits of error according to DIN EN ISO 8655-3 are not exceeded even when dispensing partial volumes
- Not suitable for crystallising media

**Delivery incl.** 1 continuous E or RS digital burette (GL 45 standard thread), 3 PP adapter (GL 32, GL 38, S40), certificate of quality containing test values, 1 telescopic suction tube, 1 discharge tube, 2 1.5 V micro/AAA batteries.

| Type | Volume/turn (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Digital burette continuous E | 2,5 | **AA89.1** | 1 | 705,20 |
| Digital burette continuous RS | 5,0 | **AA90.1** | 1 | 705,20 |

## Accessories for digital burettes continuous E / RS

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dry pipe (without filling) | **AA91.1** | 1 | 35,40 |
| Telescopic suction pipe made of FEP/ETFE, L 200-350 mm | **AA92.1** | 1 | 31,10 |
| Ejection cannula incl. reverse dosing valve | **AA93.1** | 1 | 27,75 |

▶ Glass bottles see page 32

## Titrette®-digital burettes

By Brand. Bottle-top burette for quick and reliable titration. High accuracy provides results within class A accuracy limits to DIN EN ISO 385.

- Smooth-acting gear for accurate trickle titration
- Lightweight and stable thanks to compact design
- Freely rotatable valve block, GL 45 thread
- Titrating tube is horizontally and vertically adjustable for flexible positioning
- Easy to use, no switching over between filling and titrating
- Can be removed for cleaning
- Can be calibrated without tools
- The next calibration due date can be stored
- The current displayed value can be stored with automatic stop
- Adjustable up to 20 ml to three decimal places
- Parts in contact with media are made of borosilicate glass, $Al_2O_3$, ETFE, PFA, FEP, PTFE, platinum-iridium, PP
- DE-M
- **Permissible conditions of use:** temperature +15 to +40 °C, vapour pressure up to max. 500 mbar, viscosity up to 500 $mm^2/s$
- Optionally available with PC interface

**Technical specifications:**

| Capacity (ml) | Partial volume (ml) | Correctness (≤%) | Variation coefficient (≤%) |
|---|---|---|---|
| 10 | 10 | 0,10 | 0.05 |
| | 5 | 0,20 | 0.10 |
| | 1 | 1,00 | 0.50 |
| 25 | 25 | 0.07 | 0.025 |
| | 12.5 | 0.14 | 0.05 |
| | 2.5 | 0.70 | 0.25 |
| 50 | 50 | 0.06 | 0.02 |
| | 25 | 0.12 | 0.04 |
| | 5 | 0.60 | 0.20 |

**Delivery incl.** certificate of quality, telescopic suction tube made of FEP (170-330 mm), recirculation tube, 2 micro batteries, 3 PP threaded adapters (GL 32, S 40 and NS 29/32), 2 coloured light screens.

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Standard Titrette® | 10 | **NN43.1** | 1 | 760,05 |
| Standard Titrette® | 25 | **PP87.1** | 1 | 760,05 |
| Standard Titrette® | 50 | **PP88.1** | 1 | 760,05 |
| Titrette® with RS 232 port | 10 | **NN44.1** | 1 | 971,80 |
| Titrette® with RS 232 port | 25 | **PP89.1** | 1 | 977,20 |
| Titrette® with RS 232 port | 50 | **PP90.1** | 1 | 977,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| Telescopic suction tube 170-330 mm | **PP85.1** | 1 | 25,75 |
| Telescopic suction tube 250-480 mm | **PP86.1** | 1 | 26,55 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Digital burettes





## Digital burettes opus® titration

By Hirschmann. For motor-driven titration directly from the lab bottle. Microprocessor-controlled piston stroke system guarantees highest accuracy and precise, reproducible results.

- Safe and easy handling via external touchscreen with clearly arranged menu keys; with quick-cal-function for simple calibration of other temperatures or other media
- High media flexibility thanks to highly resistant, inert materials (ECTFE, borosilicate glass 3.3, Hastelloy, FEP, PTFE)
- Media carrying parts are steam sterilisable (121 °C)
- Serial dosing function enables integration in automated process runs
- Methods memory for 9 different titration procedures
- Media feedback system for ventilation without loss of reagent
- Universal Luer-connection for dry pipes, filters etc.
- Can be battery or power operated (storage batteries not included in the delivery; please order separately)
- Possible to choose between volume pre-selection, quick and drop titration
- Sucking and draining speeds can be set
- 4 languages (G, E, F, S) integrated by default

**Technical specifications:**

| Model | 10 ml | 20 ml | 50 ml |
|---|---|---|---|
| **Basic unit** | | | |
| Volume range | 0.010 to 99.999 ml | 0.10 to 200 ml | 1.00 to 500 ml |
| Resolution | <1 µl | | <2 µl |
| Maximum piston stroke | 10 ml | 20 ml | 50 ml |
| Accuracy | R = 0.2 %, CV = 0.07 % | | R = 0.2 % CV = 0.07 % |
| Working temperature range | +4 to +40 °C | | |
| Mains voltage | 230 V, universal AC adapter 15 V, 850 mA | | |
| Dimensions (W x D x H) | 63 x 80 x 320 mm | | |
| Weight | 660 g | | |
| **Operating panel:** | | | |
| Touchscreen | 3.5″ with 320 x 240 pixel | | |
| PC-interface | USB or RS 232 | | |
| Dimensions (W x D x H) | 110 x 130 x 55 mm | | |
| Weight without storage battery | 230 g | | |

**Delivery incl.** digital burette opus® titration with A 45 internal thread, thread adapters A 32, A 38 and S 40, suction hose, feedback hose, output unit titration, spanner for fixing valve, touchscreen panel, power supply unit, data power cable, certificate of quality according to DIN EN ISO 8655.

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 ml | **PA73.1** * | 1 | 1423,30 |
| 20 ml | **LK08.1** * | 1 | 1423,30 |
| 50 ml | **LK09.1** * | 1 | 1423,30 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| Battery | **LK16.1** | 1 | 99,95 |
| Touch screen film (protective film for display) | **PA72.1** | 2 | 7,50 |
| System platform | **LK15.1** | 1 | 123,65 |

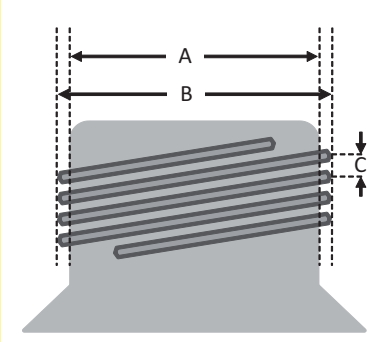
## Ejection units for opus® titration and opus® dispenser

By Hirschmann. Even finer tip for extremely precise droplet titration. Variable ejection unit and spiral ejection unit with fine tip for on-demand use in almost any area of application.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Ejection unit, fine | **PA74.1** | 1 | 37,55 |
| Flexible ejection unit, spiral shaped, inside diameter ∅ 1.5 mm | **PA75.1** | 1 | 71,85 |
| Ejection unit for titration, variable | **PA76.1** | 1 | 45,10 |

### Information on threads

The thread on a drum is defined, among other things, by diameter (A and B) and thread pitch (C). The values given in the table give a rough indication of the thread type, however this cannot reliably be determined by measuring the thread using a sliding caliper alone. Manufacturer-specific threads are also available in addition to the standard threads. The drum supplier can generally provide information on the thread type.




We will be happy to provide you with information on containers which you purchase through us.

| Thread | Diameter excl. thread A (mm) | Diameter incl. thread B (mm) | Thread pitch C (mm) |
|---|---|---|---|
| DIN 38 | 34.6 | 36.6 | 9 |
| DIN 40 | 38.8 | 42.2 | 4 |
| DIN 45 | 41.1 | 44.7 | 4 |
| DIN 50 | 46.1 | 50.1 | 4 |
| DIN 51 | 50.2 | 54.8 | 5 |
| DIN 60 | 55.3 | 60.3 | 6 |
| DIN 61 | 55.6 | 60.5 | 5 |
| DIN 71 | 67.0 | 72.3 | 7 |



**Programme extension!**

## Digital burettes solarus®

By Hirschmann.

- Sustainable power supply via solar cell, i.e. no batteries, no charging
- Large display, display from 0.01 to 99.99 ml
- 2-button operator guidance
- "Quick-Cal" function for individual calibration
- Bidirectional RS 232 interface
- Valves are easy to replace, valve block rotates freely, thread GL 45
- Handwheels with soft-touch surface
- No reagent loss through return system
- Parts that come into contact with medium are made of highly resistance fluoroplastics: Valve block and housing made of ECTFE, intake and output hose made of FEP
- Media-transporting parts including the output unit steam-sterilisable at 121 °C / 2 bar

**Technical specifications:**

| Volume (ml) | Correctness (≤%) | Variation coefficient (≤%) |
|---|---|---|
| 10 | 0.3 | 0.1 |
| 20 | 0.2 | 0.1 |
| 50 | 0.2 | 0.1 |

**Delivery incl.** basic unit with A45 screw thread and output unit, 3 thread adapters A32, A38, S40, intake hose (L 310 mm), return hose and quality certificate acc. to DIN EN ISO 8655.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Basic device 10 ml | **HLY7.1** * | 1 | 789,05 |
| Basic device 20 ml | **Y063.1** * | 1 | 789,05 |
| Basic device 50 ml | **Y064.1** * | 1 | 789,05 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| Titration output unit | **X607.1** | 1 | 27,45 |
| Replacement return hose | **X609.1** | 1 | 7,65 |
| Replacement suction hose 310 mm | **L477.1** | 1 | 13,05 |
| Replacement suction hose 400 mm | **L478.1** | 1 | 16,35 |



## TitroLine® 5000

By SI Analytics. Very easy to use automatic titrator for pH and mV titration: Select saved standard method, connect electrodes and press Start. In just a few minutes, the sample is titrated and the result is displayed on the screen. Result can also be output as a PDF file to USB.

**Range of applications:**

- Current acid-alkali titration such as acid capacity, nitrogen according to Kjeldahl and total acid in wine and beverages (Set 2)
- Titration of chloride and sodium chloride (salt) in foods such as mustard, cheese, milk, water and other samples (Set 3)
- Current redox titration such as iodine and peroxide value, permanganate index, CSB and other applications (Set 1 + metal combination electrode Pt 62 RG)

**Technical specifications:**

| | | |
|---|---|---|
| Dosing attachment | | 20 ml |
| Volume indicator | | 0.000 to 9999.999 ml |
| Display resolution | | 0.005 to 0.025 ml |
| Dosing speed | | max. 40 ml/min |
| Filling time | | 30 to 999 s (based on cylinder volume) |
| Dosing accuracy<br>• systematic<br>• random | | <br>0.15%<br>0.05% |
| Measuring range/resolution | pH<br>mV<br>°C | -3.00 to 17.00<br>±1900<br>-30 to +115 |
| Accuracy | pH<br>mV<br>°C | ±0.05<br>±1<br>±0.5 |
| Connections | pH/mV<br>°C | DIN 19262<br>2 x 4 mm Banane (NTC 30 kΩ, PT 1000) |
| Calibration (for pH) | | Automatic 1/2/3 point calibration |
| Interfaces | | 2 x RS 232-C, 1 x USB A, 1 x USB B |
| Dimensions W x H x D (without shaker) | | 135 x 310 x 205 mm |
| Power supply | | 100 to 240 V, 50/60 Hz |

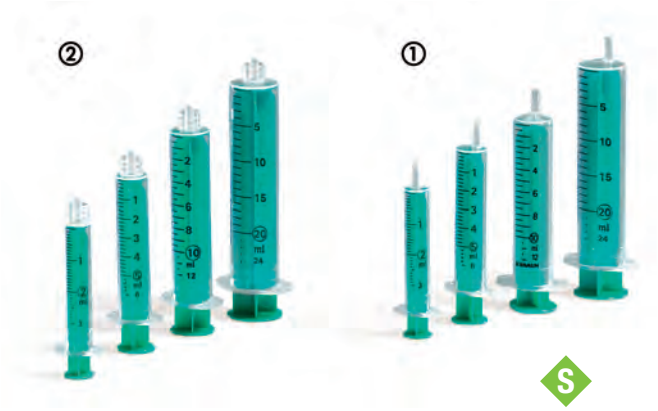
**Delivery incl.** support rod, electrode/burette tip holder, hose kit and titration syringe, test tubes, magnetic stirrer, magnetic stirring rod, screw cap with GL 45 thread, adapter NS 14.5/M8x1, drying tube, USB data cable and mains adapter.

| Set | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | without electrode | **HAN4.1** | 1 | 2870,25 |
| 2 | with pH combination electrode A7780 and pH buffer set (pH 4.00 and 7.00) | **HAN5.1** | 1 | 3069,15 |
| 3 | with metal combination electrode AgCl 62 RG and connection cable | **HAN6.1** | 1 | 3144,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| pH combination electrode A7780 with integrated temperature sensor and fixed cable length 1 m (DIN 19262 + Banane 1x4 mm) | **HAN7.1** | 1 | 272,00 |
| Metal combination electrode AgCl 62 RG with plug head, please order connection cable separately | **HAN8.1** | 1 | 317,15 |
| Metal combination electrode Pt 62 RG with plug head, please order connection cable separately | **HAN9.1** | 1 | 281,65 |
| Connection cable for metal combination electrode, length 1 m (DIN 19262) | **HAP0.1** | 1 | 52,70 |

# Syringes/needles




## Disposable syringes Inject®

By B. Braun. Acc. to ISO 7886-1. 2-piece, cylinder made of **PP**, piston rod made of **PE**. **Sterile** (EO-sterilised, individually wrapped). Smudge-proof, black graduation. The scale goes beyond the nominal volume. Safe piston stopper for smooth filling up to maximum volume. Latex-, PVC- and silicone-free.

① **Luer-connection**

| Nominal capacity (ml) | Max. volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 3 | 0,1 | **0056.1** | 100 | 7,00 |
| 5 | 6 | 0,2 | **0057.1** | 100 | 9,15 |
| 10 | 12 | 0,5 | **0058.1** | 100 | 14,75 |
| 20 | 24 | 1,0 | **0059.1** | 100 | 20,10 |

② **Luer-Lock-connection, suitable for zytostatica**

| Nominal capacity (ml) | Max. volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 3 | 0,1 | **EP95.1** | 100 | 22,40 |
| 5 | 6 | 0,2 | **EP96.1** | 100 | 26,80 |
| 10 | 12 | 0,5 | **EP97.1** | 100 | 38,10 |
| 20 | 24 | 1,0 | **EP98.1** | 100 | 83,85 |



## Disposable syringes Inject®-F

By B. Braun. 2-piece fine dosage syringes.
Volume 1 ml, graduation 0.01 ml.

Made of **PP/PE**. Sterile (individually wrapped), latex-free and PVC-free. Green piston rod, black graduation, smudge-proof.

**With efficiency pin** on piston rod for reducing rest volume.
Centric Luer-attachment.

| Volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 0,01 | **T987.1** | 100 | 19,15 |




## Omnifix® disposable syringes

By B. Braun. Acc. to ISO 7886-1. 3-part, made of **PP**.
**Sterile** (EO-sterilized, individually wrapped). Black graduation, smudge-proof. Reliable piston stopper prevents accidental removal of piston rod.

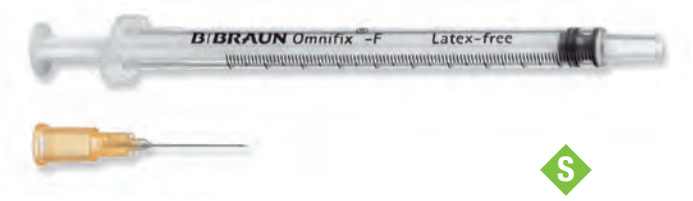
Smooth-running piston with double sealing ring for slow and bubble-free filling and injecting. Particularly ideal for dosing smaller volumes.
Made of synthetic rubber, latex-free, acc. to ISO 10993 and DIN EN 90993. PVC-free.

① **Luer-fitting**

| Volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 0,1 | **LY22.1** | 100 | 9,60 |
| 5 | 0,2 | **C537.1** | 100 | 15,95 |
| 10 | 0,5 | **C538.1** | 100 | 21,30 |
| 20 | 1,0 | **C539.1** | 100 | 33,55 |
| 30 | 1,0 | **T548.1** | 100 | 88,70 |
| 50 | 1,0 | **T549.1** | 1 | 2,60 |
| 50 | 1,0 | **T549.2** | 100 | 168,80 |

② **Luer-Lock fitting**

| Volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 0,1 | **LY21.1** | 100 | 36,25 |
| 5 | 0,2 | **C541.1** | 100 | 41,85 |
| 10 | 0,5 | **C542.1** | 100 | 46,90 |
| 20 | 1,0 | **T550.1** | 100 | 78,50 |
| 30 | 1,0 | **T551.1** | 100 | 101,05 |
| 50 | 1,0 | **T552.1** | 1 | 2,45 |
| 50 | 1,0 | **T552.2** | 100 | 177,40 |




## Disposable syringes Omnifix®-F

By B. Braun. 3-piece fine dosage syringes.
Volume 1 ml, graduation 0.01 ml.

Made of **PP/PS**, **sterile** (individually wrapped), latex-fee and PVC-free. Piston stopper made of synthetic rubber, black graduation, smudge-proof. Centric Luer-attachment.

Smooth-running with double gasket, for dosing very small volumes. Ideal for extremely slow filling and injecting. Minimal rest volume.
Outer- ∅ 0.5 mm, length 16 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| With needle 25 G | **0053.1** | 100 | 36,50 |
| Without needle | **H999.1** | 100 | 17,75 |




## Omnican®-insulin syringes

By B. Braun. Acc. to EN ISO 8537. **Sterile** (EO-sterilised).
Three piece syringe with integrated plunger stop. Latex and PVC free.
Integrated stainless steel cannula for minimal loss of fluid.
With triple facet bevel and silicone coating. ∅ 0.30 mm (30 G), L 12 mm.
**Delivery incl.** protective caps.

| For insulin | Volume (I.E.) | Graduations (I.E.) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| U-40 | 40 | 1,0 | **AKN8.1** | 10 x 10 | 35,40 |
| U-50 | 50 | 1,0 | **AKN9.1** | 10 x 10 | 35,40 |
| U-100 | 100 | 2,0 | **AKP0.1** | 10 x 10 | 35,40 |




## Disposable syringes

By B. Braun. Three-part syringe made of **PP**, **sterile**, smooth-moving piston stopper with double seal ring. Secure piston stopper. With easy-to-read, smudge-proof graduation. Centric catheter attachment ∅ 7-10 mm.
**Delivery incl.** Luer adapter.

| Volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 2,0 | **HY16.1** | 1 | 5,70 |



## Glass syringes

Made of Durobax®- glass. With exact-fitting plunger.
Imprinted brown graduation. Autoclavable to 134 °C.

### With glass cone and Luer-fitting

| Volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 0,05 | **C676.1** | 1 | 8,10 |
| 2 | 0,1 | **C677.1** | 1 | 8,10 |
| 3 | 0,1 | **C678.1** | 1 | 8,10 |
| 5 | 0,2 | **C679.1** | 1 | 8,10 |
| 10 | 0,2 | **C680.1** | 1 | 10,65 |
| 20 | 1,0 | **C681.1** | 1 | 15,90 |
| 30 | 1,0 | **C682.1** | 1 | 20,10 |
| 50 | 2,0 | **C683.1** | 1 | 35,45 |
| 100 | 4,0 | **C684.1** | 1 | 57,75 |

### With metal cone and Luer-Lock-fitting

| Volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 0,05 | **C685.1** | 1 | 11,00 |
| 2 | 0,1 | **C686.1** | 1 | 11,00 |
| 3 | 0,1 | **C687.1** | 1 | 11,40 |
| 5 | 0,2 | **C688.1** | 1 | 11,40 |
| 10 | 0,2 | **C689.1** | 1 | 13,60 |
| 20 | 1,0 | **C690.1** | 1 | 20,40 |
| 30 | 1,0 | **C691.1** | 1 | 24,75 |
| 50 | 2,0 | **C692.1** | 1 | 38,85 |
| 100 | 4,0 | **C693.1** | 1 | 76,35 |




## Dosys™ glass syringes

By Socorex. Made of borosilicate glass. Fused brown scale, permanent and easy to read. Precision piston and cylinder can be exchanged. Impervious to fluids. Sterilisable up to 160 °C.
**Suitable for:** simple infusions, dilutions, sampling, viscous liquids, corrosive reagents, dyes, etc.

### Glass Luer fitting

| Volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-1 | 0,05 | **HKL8.1** | 3 | 28,50 |
| 0,2-5 | 0,2 | **HKL9.1** | 3 | 28,50 |
| 1-10 | 0,2 | **HKN0.1** | 3 | 33,35 |
| 1-20 | 1 | **HKN1.1** | 2 | 34,40 |
| 10-100 | 10 | **HKN2.1** | 1 | 47,85 |

### Metal Luer-Lock fitting

| Volume (ml) | Graduation (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-1 | 0,05 | **HKN3.1** | 3 | 31,20 |
| 0,5-2 | 0,1 | **HKN4.1** | 3 | 31,20 |
| 0,2-5 | 0,2 | **HKN5.1** | 3 | 33,35 |
| 1-10 | 0,2 | **HKN6.1** | 3 | 36,55 |
| 1-20 | 1 | **HKN7.1** | 2 | 37,65 |
| 1-50 | 2 | **HKN8.1** | 1 | 41,40 |
| 10-100 | 10 | **HKN9.1** | 1 | 53,75 |
| 10-150 | 10 | **HKP0.1** | 1 | 392,40 |
| 10-200 | 10 | **HKP1.1** | 1 | 406,35 |
| 10-250 | 10 | **HKP2.1** | 1 | 421,40 |



## Sterican® disposable needles

By B. Braun. Made from nickel chromium steel with silicone coating, Luer-lock fitting made of **PP**. **Sterile** (individually wrapped), 100 needles in dispenser box.

**Long edge**

| Colour | Outer ∅ (mm) | Length (mm) | Gauge | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| grey | 0,40 | 20 | 27 G | **X133.1** | 100 | 5,70 |
| brown | 0,45 | 25 | 26 G | **C718.1** | 100 | 6,85 |
| violet | 0,55 | 25 | 24 G | **X132.1** | 100 | 5,70 |
| blue | 0,60 | 25 | 23 G | **C719.1** | 100 | 6,85 |
| blue | 0,60 | 30 | 23 G | **X129.1** | 100 | 5,70 |
| blue | 0,60 | 60 | 23 G | **C720.1** | 100 | 11,00 |
| blue | 0,60 | 80 | 23 G | **C629.1** | 100 | 16,70 |
| black | 0,70 | 30 | 22 G | **X128.1** | 100 | 5,70 |
| green | 0,80 | 40 | 21 G | **X127.1** | 100 | 5,70 |
| green | 0,80 | 50 | 21 G | **0060.1** | 100 | 11,20 |
| green | 0,80 | 120 | 21 G | **C630.1** | 100 | 30,45 |
| yellow | 0,90 | 40 | 20 G | **C721.1** | 100 | 6,85 |
| yellow | 0,90 | 70 | 20 G | **C722.1** | 100 | 12,15 |
| grey | 1,10 | 50 | 19 G | **C723.1** | 100 | 11,00 |

**Short edge**

| Colour | Outer ∅ (mm) | Length (mm) | Gauge | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| pink | 1,20 | 40 | 18 G | **C724.1** | 100 | 11,00 |

**Blunt edge**

| Colour | Outer ∅ (mm) | Length (mm) | Gauge | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| green | 0,80 | 22 | 21 G | **X134.1** | 100 | 9,80 |
| grey | 0,40 | 25 | 27 G | **HY15.1** | 100 | 18,85 |



## Injection needles

Suitable for all syringes with a Luer-Lock cone. Rustproof stainless steel. Autoclavable. With polished ground section.

| Outside ∅ (mm) | Length (mm) | Gauge | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,45 | 18 | 26 G | **X801.1** | 12 | 12,70 |
| 0,45 | 21 | 26 G | **X802.1** | 12 | 12,70 |
| 0,50 | 23 | 25 G | **X803.1** | 12 | 12,70 |
| 0,55 | 25 | 24 G | **X804.1** | 12 | 12,70 |
| 0,60 | 25 | 23 G | **X805.1** | 12 | 12,70 |
| 0,65 | 30 | - | **X806.1** | 12 | 12,70 |
| 0,70 | 32 | 22 G | **X807.1** | 12 | 12,70 |
| 0,80 | 35 | 21 G | **X808.1** | 12 | 12,70 |
| 0,90 | 38 | 20 G | **X809.1** | 12 | 12,70 |
| 1,00 | 60 | 19 G | **X810.1** | 12 | 32,05 |
| 1,20 | 40 | 18 G | **X811.1** | 12 | 24,65 |

# Microlitre syringes by HAMILTON

## Technical specifications:

| | |
|---|---|
| Accuracy | ≤ ±1 % of nominal volume |
| Test pressure | 0.6 MPa |
| Working temperature | -10 to +50 °C |
| Material of body | Borosilicate glass |
| Tip type 2 | **12° grinding**, bent slightly inwards; for piercing septum, in all chromatographic methods. |
| Tip type 3 | **90° grinding, blunt**; for HPLC-applications or for exact dosing e.g. for thin-layer chromatography. |



## Series 700 MICROLITER®-syringes

By HAMILTON. For dosing liquids.
The piston is firmly fixed in the glass body.
Needle and piston are made of stainless steel.
Needle 51 mm, bent slightly inwards, sealed in wall.

**Technical specifications:**

**Tip type 2:**

| Model | Volume (µl) | Pitch (µl) | Needle-∅ inside (mm) | Needle-∅ outside (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 701 N | 10 | 0,1 | 0,13 | 0,47 | **X033.1** | 1 | 36,80 |
| 702 N | 25 | 0,5 | 0,15 | 0,72 | **X034.1** | 1 | 49,40 |
| 705 N | 50 | 1,0 | 0,15 | 0,72 | **X035.1** | 1 | 60,20 |
| 710 N | 100 | 1,0 | 0,15 | 0,72 | **X036.1** | 1 | 71,45 |
| 725 N | 250 | 5,0 | 0,15 | 0,72 | **X038.1** | 1 | 79,70 |
| 750 N | 500 | 10,0 | 0,41 | 0,72 | **X039.1** | 1 | 90,35 |

**Tip type 3:**

| Model | Volume (µl) | Pitch (µl) | Needle-∅ inside (mm) | Needle-∅ outside (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 701 NR | 10 | 0,1 | 0,13 | 0,47 | **EY37.1** | 1 | 50,85 |
| 702 NR | 25 | 0,5 | 0,15 | 0,72 | **EY38.1** | 1 | 52,70 |
| 705 NR | 50 | 1,0 | 0,15 | 0,72 | **EY39.1** | 1 | 57,85 |
| 710 NR | 100 | 1,0 | 0,15 | 0,72 | **EY40.1** | 1 | 74,35 |
| 725 NR | 250 | 5,0 | 0,41 | 0,72 | **EY41.1** | 1 | 74,95 |
| 750 NR | 500 | 10,0 | 0,41 | 0,72 | **EY42.1** | 1 | 87,60 |



## Series 700 Standard-GC-syringes

By HAMILTON. For dosing liquids in autosamplers HP 7683 / HP 7673. The piston is firmly fixed in the glass body. Needle and piston are made of stainless steel. Needle 43 mm, with an 8° bevel (special tapered tip for autosampler vials) sealed in the tube wall.

| Model | Volume (µl) | Needle-∅ inside (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 701 ASN 23S | 10 | 0,34 | **X060.1** | 1 | 56,20 |
| 701 ASN 26S | 10 | 0,13 | **X061.1** | 1 | 58,90 |

# Microlitre syringes



## Series 7000 MICROLITER®-syringes

By HAMILTON. For dead volume-free dosing of liquids with a very small nominal volume. The stainless steel needle and Wolfram piston are exactly coordinated. Volume dosing takes place in the needle. Needle 70 mm.

**Tip type 2:**

| Model | Volume (µl) | Pitch (µl) | Needle-∅ outside (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 7000.5 KH | 0,5 | 0,005 | 0,50 | **X056.1** | 1 | 119,35 |
| 7001 KH | 1,0 | 0,01 | 0,47 | **X057.1** | 1 | 90,20 |
| 7002 KH | 2,0 | 0,02 | 0,50 | **X058.1** | 1 | 112,90 |
| 7105 KH | 5,0 | 0,05 | 0,56 | **X059.1** | 1 | 103,55 |

**Tip type 3:**

| Model | Volume (µl) | Pitch (µl) | Needle-∅ outside (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 7000.5 KH | 0,5 | 0,005 | 0,50 | **EY52.1** | 1 | 119,35 |
| 7001 KH | 1,0 | 0,01 | 0,47 | **EY53.1** | 1 | 92,70 |
| 7002 KH | 2,0 | 0,02 | 0,50 | **EY54.1** | 1 | 116,10 |
| 7105 KH | 5,0 | 0,05 | 0,56 | **EY55.1** | 1 | 106,45 |



## Series 1000 GASTIGHT®-syringes

By HAMILTON. For dosing liquids and media with a high vapour pressure. Glass body and piston are replaceable. With Luer-Lock-connection made of PTFE. Piston made of PTFE-coated aluminium.
**Delivery without** needle, please order separately.

| Model | Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1001 TLL | 1,0 | 0,01 | **X041.1** | 1 | 76,40 |
| 1002 TLL | 2,5 | 0,05 | **X042.1** | 1 | 73,45 |
| 1005 TLL | 5,0 | 0,10 | **X043.1** | 1 | 89,20 |
| 1010 TLL | 10,0 | 0,20 | **X044.1** | 1 | 98,35 |

## Needles KF

By HAMILTON. Made of stainless steel, 51 mm, Luer-connection PCTFE, 22G. Inner-∅ 0.41 mm, outer-∅ 0.72 mm.

| Tip type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2 | **X045.2** | 6 | 110,95 |
| 3 | **EY43.1** | 6 | 105,75 |



## Series 1700 GASTIGHT®-syringes

By HAMILTON. For dosing liquids and gases. Glass body and piston are replaceable. Stainless steel pistons with PTFE-seal.
Needle made of stainless steel, 51 mm, exchangeable.

**Tip type 2:**

| Model | Volume (µl) | Pitch (µl) | Needle-∅ inside (mm) | Needle-∅ outside (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 1701 RN | 10 | 0,1 | 0,13 | 0,47 | **X046.1** | 1 | 66,80 |
| 1702 RN | 25 | 0,5 | 0,15 | 0,72 | **X047.1** | 1 | 72,25 |
| 1705 RN | 50 | 1,0 | 0,15 | 0,72 | **X048.1** | 1 | 72,25 |
| 1710 RN | 100 | 1,0 | 0,15 | 0,72 | **X049.1** | 1 | 76,90 |
| 1725 RN | 250 | 5,0 | 0,15 | 0,72 | **X050.1** | 1 | 76,80 |
| 1750 RN | 500 | 10,0 | 0,41 | 0,72 | **X051.1** | 1 | 76,80 |

**Tip type 3:**

| Model | Volume (µl) | Pitch (µl) | Needle-∅ inside (mm) | Needle-∅ outside (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 1701 RNR | 10 | 0,1 | 0,15 | 0,72 | **EY44.1** | 1 | 70,45 |
| 1702 RNR | 25 | 0,5 | 0,15 | 0,72 | **EY45.1** | 1 | 70,45 |
| 1705 RNR | 50 | 1,0 | 0,15 | 0,72 | **EY46.1** | 1 | 73,65 |
| 1710 RNR | 100 | 1,0 | 0,15 | 0,72 | **EY47.1** | 1 | 79,55 |
| 1725 RNR | 250 | 5,0 | 0,41 | 0,72 | **EY48.1** | 1 | 76,90 |
| 1750 RNR | 500 | 10,0 | 0,41 | 0,72 | **EY49.1** | 1 | 76,90 |

## Spare needles

By HAMILTON.

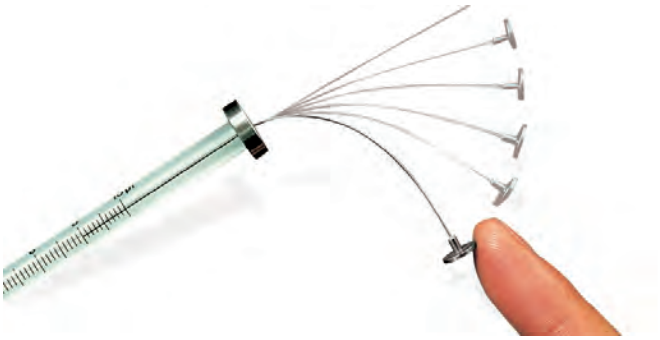
| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tip type 2; 10 µl | **X052.2** | 6 | 59,15 |
| Tip type 2; 25-100 µl | **X053.2** | 6 | 59,15 |
| Tip type 2; 250 µl | **X054.2** | 6 | 72,90 |
| Tip type 2; 500 µl | **X055.2** | 6 | 75,80 |
| Tip type 3; 10-100 µl | **EY50.1** | 6 | 63,45 |
| Tip type 3; 250-500 µl | **EY51.1** | 6 | 53,55 |

# Microlitre syringes

A variety of models available for different applications.

- Tested up to 3.0 bar liquid pressure
- Calibrated with an accuracy of ±1 %
- Precise and easy to read scale
- Precise workmanship prevents, as far as possible, air bubbles from forming

**General instructions for use:**
Micolitre syringes should be washed with an organic solvent immediately after use. Drying temperature may not exceed 60 °C. When dry, the syringes should be stored at room temperature. Never touch the flask with the naked hand!



## Microlitre syringes with super-elastic plunger

Cannot be permanently bent. Plunger will return into previous form.

**Syringe volume 5 µl**

| Range of application | Pitch (µl) | Needle-∅ outside (mm) | Needle-∅ inside (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| GC | 0,1 | 0,52 | 0,13 | 50 | **E108.1** | 1 | 61,95 |
| HPLC | 0,1 | 0,715 | 0,18 | 51 | **E110.1** | 1 | 84,60 |
| HPLC | 0,1 | 0,51 | 0,13 | 50 | **E112.1** | 1 | 84,60 |

**Syringe volume 10 µl**

| Range of application | Pitch (µl) | Needle-∅ outside (mm) | Needle-∅ inside (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| GC | 0,2 | 0,52 | 0,13 | 50 | **E109.1** | 1 | 38,65 |
| Rheodyne | 0,2 | 0,715 | 0,18 | 51 | **E111.1** | 1 | 42,50 |
| Waters | 0,2 | 0,51 | 0,13 | 50 | **E113.1** | 1 | 45,10 |



## Standard microlitre syringes

Needle with slanted tip, tight, length 50 mm. Parts that touch sample are made of high-grade steel and glass. Syringes must not be used with fluorine or highly acidic liquids.

| Volume (µl) | Graduation (ml) | Unused volume (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | 0,1 | 0,0±0,3 | **E114.1** | 1 | 42,95 |
| 10 | 0,1 | 0,9±0,3 | **E115.1** | 1 | 33,90 |
| 25 | 0,5 | 1,7±0,3 | **E116.1** | 1 | 42,50 |
| 50 | 1 | 1,7±0,3 | **E117.1** | 1 | 42,80 |
| 100 | 2 | 1,7±0,3 | **E118.1** | 1 | 50,50 |
| 250 | 5 | 3,6±0,3 | **E119.1** | 1 | 59,15 |
| 500 | 10 | 3,6±0,3 | **E120.1** | 1 | 63,45 |



## Microlitre syringes for automatic sampler

For Agilent (HP) Model 7673A. The models with the super elastic plunger have longer working life. Needle caliber 23G, needle-∅ inner 0.15 mm, outer 0.64 mm. Needle length 43 mm, conical tip. Fixed needle.

| Plunger material | Volume (µl) | Graduation (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Rustproof stainless steel | 5 | 0,1 | **H136.1** | 1 | 69,90 |
| Rustproof stainless steel | 10 | 0,2 | **H138.1** | 1 | 51,40 |
| Super elastic plunger | 5 | 0,1 | **H140.1** | 1 | 86,00 |
| Super elastic plunger | 10 | 0,2 | **H142.1** | 1 | 65,70 |



## HPLC microlitre syringes

For Rheodyne-valves. Specially polished blunt needle tips ensure tight fit and prevent damage of seal and rotor. Needle length 51 mm.
Needle inner ∅ 0.18 mm, outer ∅ 0.715 mm.

| Volume (µl) | Subdivisions (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 0,5 | **E121.1** | 1 | 42,50 |
| 50 | 1 | **E122.1** | 1 | 42,50 |
| 100 | 2 | **E123.1** | 1 | 48,00 |
| 250 | 5 | **E124.1** | 1 | 61,10 |
| 500 | 10 | **E125.1** | 1 | 73,40 |



## Microlitre syringes with plunger guide

Capacity 10 µl. Graduated in 0.1 µl steps. With slanted needle, length 50 mm, inner-∅ 0.18 mm, outer-∅ 0.52 mm. Precision ±1 %.

**With variable external guide.**
Locking screw enables reproducible injections of same volumes.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E126.1** | 1 | 68,30 |

**With PTFE-tube**. For added plunger protection.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E127.1** | 1 | 64,00 |



## Gastight syringes

With specially polished syringe hole and plunger needle made of PTFE. Gas- and liquid tight up to a maximum pressure of 5.0 kg/cm². Accuracy and reproducibility better than ±1 %. Replaceable needle with slanted tip.

**Syringe with screw head fitting**
Needle length 30 mm, ∅ inside 0.30 mm, ∅ outside 0.56 mm.
Unused volume 2.2 ±0.3 µl. **Needle included.**

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 0,02 | **E128.1** | 1 | 145,15 |
| 2,5 | 0,05 | **E129.1** | 1 | 145,15 |
| 5 | 0,1 | **E130.1** | 1 | 145,15 |
| 10 | 0,2 | **E131.1** | 1 | 174,15 |

**Syringe with Luer-Lock-fitting.**
All parts in contact with media are made of borosilicate glass and PTFE. Particularly ideal for applications that require extremely inert materials.
**Doesn't include needle**.

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 0,02 | **E133.1** | 1 | 108,60 |
| 2,5 | 0,05 | **E134.1** | 1 | 112,90 |
| 5 | 0,1 | **E135.1** | 1 | 122,55 |
| 10 | 0,2 | **E136.1** | 1 | 122,55 |

## Accessories for gastight syringes

**Replacement needle** with screw head fitting.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E132.1** | 5 | 74,75 |

**Needle with Luer-Lock-connector** and chamfered tip.
Length 50 mm, ∅-inner 0.30 mm, ∅-outer 0.56 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E137.1** | 5 | 73,65 |



## Disposable micro hematocrit capillary tubes

By Marienfeld.
- Made of AR-glass
- CE to IVD 98/79 EG
- Acc. to ISO 12772
- Length: 75 ±0.5 mm, thickness: 0.2 ±0.025 mm.
- For centrifuging blood samples
- With or without heparinisation. Sodium-heparin (80 iu/ml ±30 %) applied as a thin, homogeneous film delays coagulation of blood.
- Colour-coded end is fire polished to reduce centrifuge wear.

**With sodium heparinisation**

| Volume (µl) | Inside ∅ (mm) | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 0,9-1,2 | 1,3-1,4 | **TX79.1** | 10 x 100 | 27,45 |
| 75 | 1,1-1,2 | 1,5-1,6 | **TX80.1** | 10 x 100 | 26,80 |

**Without heparinisation**
Seal with wax immediately after filling and centrifuge.

| Volume (µl) | Inside ∅ (mm) | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 0,9-1,0 | 1,3-1,4 | **TX77.1** | 10 x 100 | 24,30 |
| 75 | 1,1-1,2 | 1,5-1,6 | **TX78.1** | 10 x 100 | 23,55 |



## Accessories for micro hematocrit capillary tubes

By Marienfeld. Wax plates for sealing micro hematocrit capillary tubes. Numbered from 1 to 48.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TX82.1** | 6 | 26,35 |

# Capillary pipettes




## minicaps disposable capillary pipettes

By Hirschmann.

- Made of Borosilicate glass 3.3
- Not heparinised
- Certificate of Conformity
- CE acc to IVD 98/79 EG
- In acc. with ISO 7550
- Tolerance 0,5 %
- Variation coefficient 1 %
- Independent filling via capillary action (end-to-end)

| Volume (µl) | Colour code | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5 | black | 30-32 | **L918.2** | 10 x 100 | 90,15 |
| 1 | blue | 30-32 | **0771.2** | 10 x 100 | 90,25 |
| 2 | red | 30-32 | **L919.2** | 10 x 100 | 90,15 |
| 3 | yellow | 30-32 | **L920.2** | 10 x 100 | 90,15 |
| 3,33 | yellow | 36 | **L921.2** | 10 x 100 | 90,15 |
| 4 | green | 30-32 | **L922.2** | 10 x 100 | 90,15 |
| 5 | white | 30-32 | **L923.2** | 10 x 100 | 90,15 |
| 6,66 | natural | 72 | **L924.2** | 10 x 100 | 90,15 |
| 10 | orange | 30-32 | **L925.2** | 10 x 100 | 90,15 |
| 20 | black | 30 ±0,5 | **L926.2** | 10 x 100 | 90,15 |




## ringcaps® disposable capillary pipettes

By Hirschmann.

- Made of Borosilicate glass 3.3
- Not heparinised
- Comes with certificate of conformity
- CE acc. to IVD 98/79 EG
- Acc. to ISO 7550
- Length approx. 12.5 cm
- Tolerance to 5 µl 0.3 %, 0.25 %
- Variation coefficient to 5 µl 0.60 %, from 10 µl 0.50 %
- Autoclavable

| Volume (µl) | No. of marks | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1/2/3/4/5 | 5 | **A756.1** | 4 x 250 | 109,65 |
| 10 | 1 | **A757.1** | 4 x 250 | 100,55 |
| 20 | 1 | **A758.1** | 4 x 250 | 100,55 |
| 25 | 1 | **A759.1** | 4 x 250 | 100,55 |
| 40 | 1 | **A760.1** | 4 x 250 | 100,55 |
| 50 | 1 | **A761.1** | 4 x 250 | 100,55 |
| 100 | 1 | **A762.1** | 4 x 250 | 100,55 |
| 5/10 | 2 | **A764.1** | 4 x 250 | 100,55 |
| 20/40 | 2 | **A765.1** | 4 x 250 | 100,55 |
| 50/100 | 2 | **A766.1** | 4 x 250 | 100,55 |
| 100/200 | 2 | **A767.1** | 4 x 100 | 65,60 |



## minicaps-pipettor aids

By Hirschmann. Ideal for emptying disposable capillary pipettes minicaps.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T749.1** | 2 | 5,95 |




## ringcaps®-micropipetter pipetting aid

By Hirschmann. Manual pipetting aid for disposable capillary pipettes with ring marks (e.g. ringcaps®), with two replaceable adapters for optimal fit to the pipette size. For volumes from 1-200 µl. CE acc. to IVD 98/79 EG.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH26.1** | 1 | 27,85 |

# Pasteur pipettes/Disposal pipettes



## Pasteur pipettes

Made of lime soda clear glass. Hydrolytic class 3. **Sterile** or non sterile. Uniformly shaped. Wall thickness 0.55-0.8 mm.
With neck for cotton stoppers. Autoclavable.

For one-time use in serological and microbiological laboratories.
Also suitable for filling and draining NMR vials.

**Without cotton stoppers, non sterile.**
**With open tip.**

| Total length (mm) | Length of tip (mm) | Tip outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 150 | 60 | 1,3 | **4518.1** | 1000 | 48,60 |
| 230 | 140 | 1,3 | **4522.1** | 1000 | 55,15 |
| 270 | 160 | 1,3 | **HX77.1** | 1000 | 117,20 |
| 300 | 195 | 1,5 | **HX78.1** | 500 | 66,15 |
| 350 | 230 | 1,5 | **HX79.1** | 1000 | 281,65 |

**Complete with cotton stoppers, non sterile.**
**With open tip.**

| Total length (mm) | Length of tip (mm) | Tip outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 150 | 60 | 1,3 | **E326.1** | 1000 | 104,65 |
| 230 | 140 | 1,3 | **E327.1** | 1000 | 108,60 |

**Complete with cotton stoppers, sterile.**
**With closed tip.**

| Total length (mm) | Length of tip (mm) | Tip outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 150 | 60 | 1,3 | **AHA3.1** | 1000 | 151,60 |
| 230 | 140 | 1,3 | **AHA4.1** | 1000 | 143,00 |



## Pasteur pipettes, plastic

Made of **PS**. Sterile, individually packed. With fine extended tip. For use with pipette bulbs or as aspiration pipettes in combination with suction systems. Safe alternative to Pasteur pipettes made of glass.
Outer ∅ 6 mm, Outer ∅ Tip 1.5 mm.

| Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 145 | **EKN7.1** | 200 (4 x 50) | 59,90 |
| 230 | **EKN8.1** | 200 (4 x 50) | 69,80 |



## Aspiration pipettes

Made of **PS**. **Sterile.** Pipettes without cotton stopper, without graduation. Suitable for vacuum applications and liquid handling where high precision is not required. Safe alternative to pasteurizing pipettes made of glass.

| Volume (ml) | Design | Packaging | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | **sterile** | individually wrapped | 271 | **NA41.1** | 500 | 51,50 |
| 10 | **sterile** | individually wrapped | 295 | **NA42.1** | 200 | 57,00 |



## Suction cup

For Pasteur pipettes, graduated and volumetric pipettes with a capacity of up to 10 ml.

*Suitable for Pasteur pipettes

| Suction capacity (ml) | Hole ∅ (mm) | Colour | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1,8 | 5* | transparent | Natural rubber/latex | **8404.1** | 100 | 30,10 |
| 2 | 5* | red | Natural rubber | **YX53.1** | 100 | 58,75 |
| 5 | 6 | transparent | Natural rubber/latex | **ATN7.1** | 5 | 15,05 |
| 10 | 6 | red | Natural rubber | **ATN8.1** | 3 | 13,75 |



## Pipette bulbs

Made of silicone. Autoclavable.

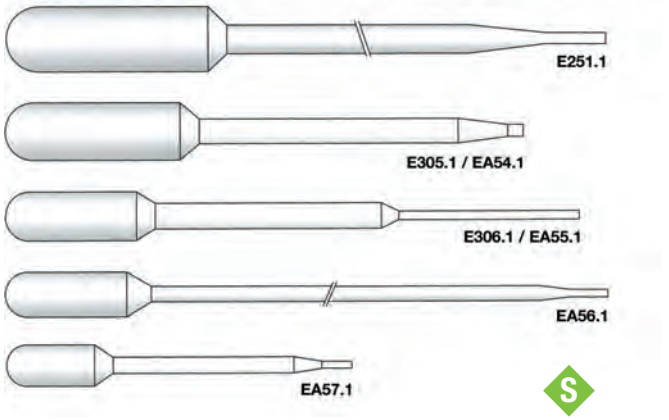
*Suitable for Pasteur pipettes.

| Suction capacity (ml) | Length (mm) | ∅ of openings (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 40 | 5* | **C529.1** | 10 | 13,45 |
| 2 | 53 | 6* | **C530.1** | 5 | 10,60 |
| 5 | 56 | 8 | **C531.1** | 5 | 18,85 |
| 10 | 69 | 8 | **C532.1** | 5 | 30,75 |

# Disposable pasteur pipettes

Made of transparent **LDPE** precision-formed, unbreakable, non toxic.
Enables precise, repeatable dosing.

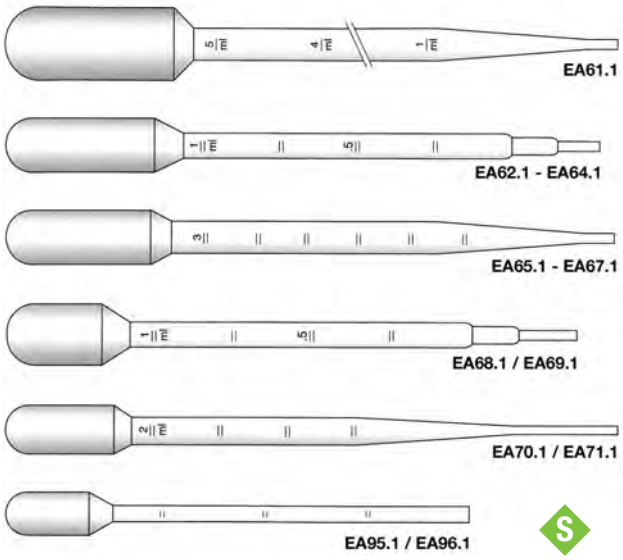





## Standard pasteur pipettes, not graduated

Made of transparent polyethylene (LDPE), **sterile** or unsterile, precision-formed, unbreakable, non toxic and with controlled, reproducible drop size.

| Design | Filling capacity (ml) | Drop size (µl) | Drops per ml | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| unsterile, very long | 7,3 | 50 | 20 | 300 | **E251.1** | 100 | 30,50 |
| **sterile**, single/pack | 7,3 | 50 | 20 | 300 | **AEA7.1** | 100 | 64,30 |
| unsterile, wide opening | 4,8 | 62 | 16 | 137 | **E305.1** | 250 | 22,80 |
| **sterile**, single/pack, for cell culture, wide opening | 4,8 | 62 | 16 | 137 | **EA54.1** | 250 | 59,15 |
| unsterile | 3,0 | 34 | 29 | 155 | **E306.1** | 500 | 37,10 |
| **sterile**, 10 per pack. | 3,0 | 34 | 29 | 155 | **EA55.1** | 500 | 54,95 |
| unsterile, very long | 2,3 | 40 | 25 | 225 | **EA56.1** | 400 | 27,70 |
| **sterile**, single/pack, very long | 2,3 | 40 | 25 | 225 | **AEA8.1** | 400 | 81,65 |
| unsterile, short | 0,9 | 40 | 25 | 87 | **EA57.1** | 500 | 24,20 |

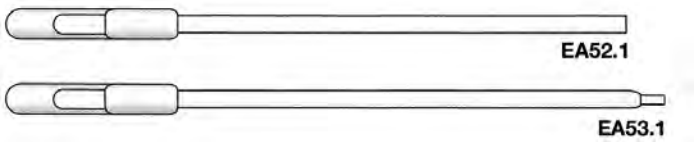



## Disposable pasteur pipettes, graduated

Made of transparent **LDPE**, **sterile** or unsterile, precision-formed, unbreakable, non toxic and with controlled, reproducible drop size. Graduation see figure.

*A filling capacity of 1.8 ml is achieved by pressing the suction ball.
To achieve a filling capacity 2 ml, the stem must also be squeezed.

| Design | Filling vol./grad. to (ml) | Drop size (µl) | Drops per ml | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| unsterile | 6,2/5 | 54 | 19 | 217 | **EA61.1** | 250 | 21,50 |
| **sterile**, 20 per pack. | 6,2/5 | 54 | 19 | 217 | **AEA4.1** | 240 | 39,35 |
| unsterile | 3,4/1 | 40 | 25 | 155 | **EA62.1** | 500 | 17,65 |
| **sterile**, single/pack. | 3,4/1 | 40 | 25 | 155 | **EA63.1** | 500 | 74,00 |
| **sterile**, 20 per pack. | 3,4/1 | 40 | 25 | 155 | **EA64.1** | 500 | 36,25 |
| unsterile | 3,2/3 | 50 | 20 | 155 | **EA65.1** | 500 | 16,80 |
| **sterile**, single/pack. | 3,2/3 | 50 | 20 | 155 | **EA66.1** | 500 | 74,15 |
| **sterile**, 20 per pack. | 3,2/3 | 50 | 20 | 155 | **EA67.1** | 500 | 39,70 |
| unsterile | 2,2/1 | 40 | 25 | 140 | **EA68.1** | 500 | 27,15 |
| **sterile**, 20 per pack. | 2,2/1 | 40 | 25 | 140 | **EA69.1** | 500 | 42,95 |
| unsterile | 1,8/2* | 41 | 24 | 152 | **EA70.1** | 500 | 29,15 |
| **sterile**, 20 per pack. | 1,8/2* | 41 | 24 | 152 | **EA71.1** | 500 | 48,25 |
| unsterile | 0,8/0,3 | 47 | 21 | 116 | **EA95.1** | 500 | 29,85 |
| **sterile**, 20 per pack. | 0,8/0,3 | 47 | 21 | 116 | **EA96.1** | 500 | 43,60 |

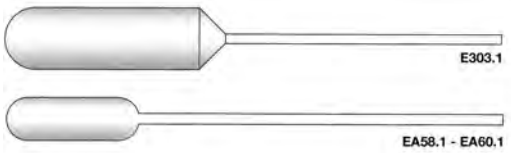



## Disposable mixing pipettes, not graduated

Made of transparent **LDPE** precision-formed, unbreakable, non toxic and with controlled, reproducible drop size.

| Design | Filling capacity (ml) | Drop size (µl) | Drops per ml | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| unsterile | 0,2 | 50 | 20 | 124 | **EA52.1** | 500 | 23,40 |
| unsterile, fine | 0,2 | 25 | 40 | 131 | **EA53.1** | 500 | 24,15 |

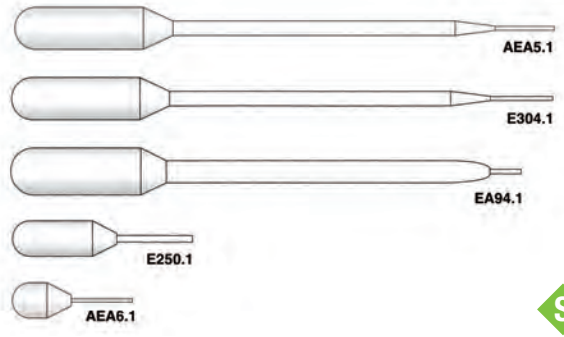
# Pasteur pipettes/Disposal pipettes




## Pasteur pipettes with long, thin tip, not graduated

Made of transparent polyethylene (LDPE), **sterile** or unsterile, precision-formed, unbreakable, non toxic and with controlled, reproducible drop size.

| Design | Filling capacity (ml) | Drop size (µl) | Drops per ml | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| unsterile | 8,0 | 52 | 19 | 155 | **E303.1** | 250 | 29,95 |
| unsterile | 3,3 | 40 | 25 | 155 | **EA58.1** | 500 | 19,75 |




## Pasteur pipettes with ultra-thin tip, ungraduated

Made of transparent polyethylene (LDPE) precision-formed, unbreakable, non toxic and with controlled, reproducible drop size.
**Sterile** or unsterile, Outer-∅ tip 1,1 mm (E250.1 ∅ 1.5 mm).

| Design | Filling capacity (ml) | Drop size (µl) | Drops per ml | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| **sterile**, single/pack. | 3,5 | 20 | 50 | 157 | **AEA5.1** | 400 | 85,50 |
| unsterile | 3,5 | 20 | 50 | 157 | **E304.1** | 500 | 48,25 |
| unsterile | 3,3 | 18 | 55 | 147 | **EA94.1** | 500 | 43,95 |
| unsterile | 1,0 | 22 | 45 | 51 | **E250.1** | 500 | 41,20 |
| unsterile | 0,5 | 25 | 40 | 36 | **AEA6.1** | 500 | 36,25 |



## Disposable Pasteur pipettes with bellows

Made of **PE**, with graduation and built-in bellows.

| Filling capacity (ml) | Graduation (ml) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1,5 | 0,5 | 134 | **TT22.1** | 100 | 15,00 |
| 5,0 | 1,0 | 195 | **TT23.1** | 100 | 17,15 |



## Disposable pipettes

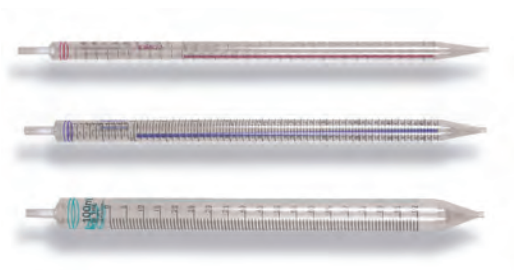
Made of biologically inert **PS** (with colour-coded cotton stopper). **Sterile** or unsterile. Easy- to- read graduation. The sterile pipettes are RNase-/DNase-free, pyrogen-free, non toxic and are not hemolytic.

**Standard pipettes,** length 27-30 cm. Art. No. ET25.2: Length 35 cm.

| Volume (ml) | Stopper colour | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | yellow | **sterile** | individually wrapped | **N231.1** | 500 | 57,55 |
| 1 | yellow | **sterile** | 25 per pack | **N232.1** | 1000 | 96,25 |
| 1 | yellow | non-sterile | loose | **N233.2** | 2000 | 160,20 |
| 2 | green | **sterile** | individually wrapped | **N236.1** | 500 | 59,70 |
| 2 | green | **sterile** | 25 per pack | **N237.1** | 1000 | 100,55 |
| 2 | green | non-sterile | loose | **N238.1** | 1000 | 89,80 |
| 5 | blue | **sterile** | individually wrapped | **N239.1** | 250 | 50,45 |
| 5 | blue | **sterile** | 25 per pack | **N240.1** | 375 | 70,55 |
| 5 | blue | non-sterile | loose | **N241.1** | 400 | 66,15 |
| 10 | orange | **sterile** | individually wrapped | **N242.1** | 200 | 42,95 |
| 10 | orange | **sterile** | 25 per pack | **N243.1** | 250 | 50,55 |
| 10 | orange | non-sterile | loose | **N244.1** | 250 | 42,15 |
| 25 | red | **sterile** | individually wrapped | **N245.2** | 100 | 55,40 |
| 25 | red | **sterile** | 10 per pack | **ET23.1** | 100 | 54,85 |
| 25 | red | non-sterile | loose | **ET24.1** | 100 | 44,10 |
| 50 | purple | **sterile** | individually wrapped | **ET25.2** | 100 | 170,95 |

**Short pipette shaft**
Length 22 cm. For working under the sterile bench.

| Volume (ml) | Stopper colour | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | blue | **sterile** | individually wrapped | **ET26.1** | 200 | 103,20 |
| 10 | orange | **sterile** | individually wrapped | **ET27.1** | 100 | 70,25 |



## Single-use pipettes

Made of **PS**, transparent. **Sterile**, individually packed.
For aqueous solutions.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 25 | **CPP2.1** | 50 | 110,75 |
| 50 | **CPP3.1** | 25 | 94,30 |
| 100 | **CPP4.1** | 10 | 209,65 |

# Volumetric / Graduated pipettes



## Disposable pipettes with large opening

**For pipetting viscous liquids and for cell culture.**
Made of biologically inert **PS** (with colour-coded cotton stopper).
**Sterile.** Easy-to-read graduation. RNase-/DNase-free, non-pyrogenic, non-cytotoxic and non-haemolytic.

| Volume (ml) | Stopper colour | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 | Blue | Individual | **ET28.1** | 250 | 50,00 |
| 5 | Blue | 25 per pack | **ET29.1** | 375 | 67,55 |
| 10 | Orange | Individual | **ET30.1** | 200 | 41,90 |
| 10 | Orange | 25 per pack | **ET31.1** | 250 | 48,40 |



## Disposable pipettes without tip

**Straight pipettes for highly viscous liquids or suspensions.**
Made of biologically inert **PS** (with colour-coded cotton stopper).
**Sterile.** Easy-to-read graduation. RNase-/DNase-free, non-pyrogenic, non-cytotoxic and non-haemolytic.

| Volume (ml) | Stopper colour | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | Orange | Individual | **NA48.1** | 200 | 42,65 |



## Disposable demeter pipettes

**Dilution pipettes for bacteriological examinations in food laboratories and in the dairy products industry.**
Made of biologically inert **PS** (with colour-coded cotton stopper).
**Sterile.** Easy-to-read graduation. RNase-/DNase-free, non-pyrogenic, non-cytotoxic and non-haemolytic.

1.1 ml pipettes graduated at 0.5 ml, 1 ml and 1.1 ml.
2.2 ml pipettes graduated at 0.5 ml, 1 ml, 2 ml, 2.1 ml and 2.2 ml.

| Volume (ml) | Stopper colour | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1,1 | yellow | Individual | **N234.1** | 500 | 60,00 |
| 1,1 | yellow | 25 per pack | **N235.1** | 1000 | 96,25 |
| 2,2 | green | Individual | **NA43.1** | 500 | 58,95 |
| 2,2 | green | 25 per pack | **NA44.1** | 1000 | 94,50 |



## Plastic graduated pipettes

By Vitlab. Made of **PP**, transparent.Shatter-proof. EX-calibrated.
Suction tube end outer ∅ max. 8 mm (XY60.1 10 mm).
Cleaning with low alkaline cleaning agents is recommended up to a max. temperature of 60 °C in order to avoid changes in volume.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 0.1 | 0,02 | 300 | **XY57.1** | 12 | 130,10 |
| 2 | 0.1 | 0,02 | 300 | **XY58.1** | 12 | 132,25 |
| 5 | 0.1 | 0,05 | 330 | **XY59.1** | 12 | 138,70 |
| 10 | 0.1 | 0,10 | 330 | **XY60.1** | 12 | 168,80 |
| 10 | 0.1 | 0,10 | 320 | **XY61.1** | 12 | 222,55 |



## Plastic volumetric pipettes

By Vitlab. Made of **PP**, transparent. Shatter-proof. EX-calibrated.
Cleaning with low alkaline cleaning agents is recommended up to a max. temperature of 60 °C in order to avoid changes in volume.

| Volume (ml) | Limit of error (±ml) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 0,02 | 300 | **YA06.1** | 12 | 127,95 |
| 2 | 0,02 | 300 | **YA07.1** | 12 | 136,55 |
| 5 | 0,03 | 300 | **YA08.1** | 6 | 123,65 |
| 10 | 0,04 | 440 | **YA09.1** | 6 | 127,95 |
| 25 | 0,05 | 450 | **YA10.1** | 6 | 136,55 |
| 50 | 0,10 | 460 | **YA11.1** | 6 | 140,85 |



## Suction piston graduated pipettes

By Hirschmann. Made of AR®-glass. With principal point ring division.
**With brown graduation.** Graduated to tip. Zero point at the top.

| Volume (ml) | Graduations (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 0,01 | **T742.1** | 1 | 18,20 |
| 2 | 0,02 | **T743.1** | 1 | 18,55 |
| 5 | 0,05 | **T744.1** | 1 | 21,75 |
| 10 | 0,1 | **T745.1** | 1 | 23,45 |
| 20 | 0,1 | **T746.1** | 1 | 28,95 |
| 25 | 0,1 | **T747.1** | 1 | 30,00 |
| 50 | 0,2 | **T748.1** | 1 | 55,90 |

▶ Greases see page 1138

# Volumetric / Graduated pipettes



## Graduated pipettes class AS

By Hirschmann. Made of AR®-glass. Type 3. EX-adjusted.
**Certified of conformity.** With principal point ring division.
Zero point at the top. Graduated to tip. With dated charge identification.
**With blue graduations**. Autoclavable. Acc. to DIN EN ISO 835.
From 5 ml comes with cotton stopper ends.

*In supplementation to DIN.

| Volume (ml) | Graduation (ml) | Limit of error (±ml) | Total length ±5 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,5 | 0,01 | 0,005 | 360 | **E950.1** | 12 | 45,40 |
| 1 | 0,01 | 0,007 | 360 | **E951.2** | 6 | 39,25 |
| 1 | 0,01 | 0,007 | 360 | **E951.1** | 12 | 44,90 |
| 2 | 0,02 | 0,01 | 360 | **E952.2** | 6 | 39,75 |
| 2 | 0,02 | 0,01 | 360 | **E952.1** | 12 | 44,90 |
| 5 | 0,05 | 0,03 | 360 | **E953.2** | 6 | 45,05 |
| 5 | 0,05 | 0,03 | 360 | **E953.1** | 12 | 49,90 |
| 5* | 0,1 | 0,03 | 360 | **E954.1** | 12 | 49,80 |
| 10 | 0,1 | 0,05 | 360 | **E955.2** | 6 | 44,65 |
| 10 | 0,1 | 0,05 | 360 | **E955.1** | 12 | 50,15 |
| 20* | 0,1 | 0,1 | 360 | **E956.2** | 3 | 44,05 |
| 20* | 0,1 | 0,1 | 360 | **E956.1** | 6 | 49,05 |
| 25 | 0,1 | 0,1 | 450 | **E957.2** | 3 | 44,10 |
| 25 | 0,1 | 0,1 | 450 | **E957.1** | 6 | 49,85 |
| 50* | 0,2 | 0,2 | 450 | **E958.2** | 3 | 76,35 |
| 50* | 0,2 | 0,2 | 450 | **E958.1** | 6 | 87,90 |



## Graduated pipettes class B

By Hirschmann. Made of AR®-glass. Type 3. EX-adjusted. The indicated volume can be obtained via normal discharge of volumetric pipette. Graduated up to tip, zero point at the top. **Brown graduation.** Autoclavable. Acc. to DIN EN ISO 835. From 5 ml comes with cotton wool stopper ends.

*In supplementation to DIN.

| Volume (ml) | Graduation (ml) | Limit of error (±ml) | Total length ±5 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,5* | 0,01 | 0,0075 | 360 | **E941.1** | 12 | 33,35 |
| 1 | 0,01 | 0,01 | 360 | **E942.1** | 12 | 29,60 |
| 2 | 0,02 | 0,015 | 360 | **E943.1** | 12 | 29,60 |
| 5 | 0,05 | 0,045 | 360 | **E944.1** | 12 | 44,00 |
| 5* | 0,1 | 0,045 | 360 | **E945.1** | 12 | 33,95 |
| 10 | 0,1 | 0,075 | 360 | **E946.1** | 12 | 36,95 |
| 20* | 0,1 | 0,15 | 360 | **E947.1** | 6 | 31,10 |
| 25 | 0,1 | 0,15 | 450 | **E948.1** | 6 | 35,00 |
| 50* | 0,2 | 0,3 | 450 | **E949.1** | 6 | 57,55 |


- For pipette containers and sterilization containers for pipettes see page 261
- Measuring cylinders and volumetric flasks from p. 20

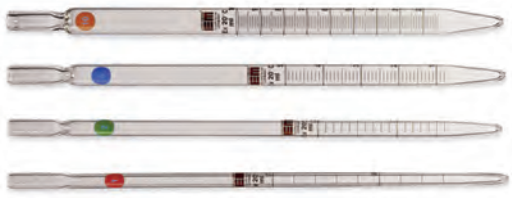



## Graduated pipettes, class AS

By Hirschmann. Made of AR®-glass. Type 3. **Certificate of conformity included.** With dated batch identification. Zeroed at the top, with rings marking main volumes. Adjusted to EX, in acc. with DIN EN ISO 835. With permanent colour diffusion. **Brown graduated**.
From 5 ml comes with cotton stopper ends.

*In supplementation to DIN.

| Volume (ml) | Graduation (ml) | Limit of error (±ml) | Total length ±5 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,5 | 0,01 | 0,005 | 360 | **AH36.1** | 12 | 60,75 |
| 1 | 0,01 | 0,007 | 360 | **AH37.1** | 12 | 53,70 |
| 2 | 0,02 | 0,01 | 360 | **AH38.1** | 12 | 53,70 |
| 5 | 0,05 | 0,03 | 360 | **AH39.1** | 12 | 61,20 |
| 5* | 0,1 | 0,03 | 360 | **AH40.1** | 12 | 59,05 |
| 10 | 0,1 | 0,05 | 360 | **AH41.1** | 12 | 59,70 |
| 20* | 0,1 | 0,1 | 360 | **AH42.1** | 6 | 59,70 |
| 25 | 0,1 | 0,1 | 450 | **AH43.1** | 6 | 61,30 |
| 50* | 0,2 | 0,2 | 450 | **AH44.1** | 6 | 107,00 |



## Graduated pipettes for tissue culture

By Hirschmann. Made of AR®-glass with principal point ring division. Short form. Specially designed for use in sterile benches. With cotton stopper ends. Zero point at the bottom. Adjusted to ex. **With brown graduation.**

| Volume (ml) | Graduations (ml) | Total length ±3 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 0,1 | 230 | **X157.1** | 12 | 64,20 |
| 2 | 0,1 | 230 | **X158.1** | 12 | 64,20 |
| 5 | 0,1 | 230 | **X159.1** | 12 | 64,20 |
| 10 | 0,1 | 230 | **X160.1** | 12 | 77,40 |
| 25 | 0,2 | 230 | **X162.1** | 12 | 125,80 |



NEU
NOUVEAU
NEW

## Graduated pipettes, wide opening

By Hirschmann. Made of AR® glass. With wide opening for tissue cultures or viscous media. Zero point at the top, graduated to the tip.
**Brown graduated.** From 5 ml, with cotton plug as standard.

| Volume (ml) | Graduations (ml) | Limit of error (±ml) | Total length ±5 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 0,01 | 0,01 | 360 | **HLC3.1** | 12 | 63,75 |
| 2 | 0,02 | 0,015 | 360 | **HLC4.1** | 12 | 63,75 |
| 5 | 0,1 | 0,045 | 360 | **HLC5.1** | 12 | 65,60 |
| 10 | 0,1 | 0,075 | 360 | **HLC6.1** | 12 | 72,75 |
| 25 | 0,1 | 0,15 | 450 | **HLC7.1** | 6 | 68,45 |

# Volumetric / Graduated pipettes




121°C

## Volumetric pipettes class AS

By Hirschmann. Made of AR®-glass. **Certificate of conformity included.**
With dated batch identification and with volume mark.
Adjusted to EX, in acc. with DIN EN ISO 648.
With permanent silver diffusion colour **graduated brown**.

*In supplementation to DIN.

| Volume (ml) | Limit of error (±ml) | Total length ±10 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5 | 0,005 | 325 | **AC84.1** | 12 | 54,85 |
| 1 | 0,008 | 325 | **AC85.1** | 12 | 54,85 |
| 2 | 0,01 | 350 | **AC86.1** | 12 | 54,85 |
| 3* | 0,01 | 350 | **AC87.1** | 6 | 32,20 |
| 4* | 0,015 | 410 | **AC88.1** | 6 | 36,80 |
| 5 | 0,015 | 410 | **AC89.1** | 6 | 34,65 |
| 10 | 0,02 | 450 | **AC90.1** | 6 | 39,15 |
| 15* | 0,03 | 520 | **AC91.1** | 6 | 41,30 |
| 20 | 0,03 | 520 | **AC92.1** | 6 | 48,85 |
| 25 | 0,03 | 530 | **AC93.1** | 6 | 49,35 |
| 30* | 0,03 | 530 | **AC94.1** | 6 | 58,05 |
| 40* | 0,05 | 550 | **AH33.1** | 6 | 63,40 |
| 50 | 0,05 | 550 | **AH34.1** | 6 | 63,65 |
| 100 | 0,08 | 600 | **AH35.1** | 6 | 87,10 |



121°C

## Volumetric pipettes class B

By Hirschmann. Made of AR®-glass. With a ring mark. EX-adjusted.
**With brown graduation**. Autoclavable. Acc. to DIN EN ISO 648.

| Volume (ml) | Limit of error (±ml) | Total length ±10 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 0,012 | 325 | **E960.1** | 12 | 39,80 |
| 2 | 0,015 | 350 | **E961.1** | 12 | 45,90 |
| 5 | 0,023 | 410 | **E964.1** | 6 | 27,45 |
| 10 | 0,03 | 450 | **E965.1** | 6 | 34,65 |
| 20 | 0,045 | 520 | **E967.1** | 6 | 42,30 |
| 25 | 0,045 | 530 | **E968.1** | 6 | 43,95 |
| 50 | 0,075 | 550 | **E969.1** | 6 | 53,20 |
| 100 | 0,12 | 600 | **E970.1** | 6 | 72,90 |



Programme extension!

121°C

## Volumetric pipettes class AS

By Hirschmann. Made of AR®-glass. With dated charge identification.
**Certificate of conformity included**. **With blue graduation**.
Autoclavable. EX-adjusted acc. to DIN EN ISO 648. With a ring mark.

*In supplementation to DIN.

| Volume (ml) | Limit of error (±ml) | Total length ±10 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 0,008 | 325 | **E972.2** | 6 | 40,80 |
| 1 | 0,008 | 325 | **E972.1** | 12 | 52,20 |
| 2 | 0,01 | 350 | **E973.2** | 6 | 45,15 |
| 2 | 0,01 | 350 | **E973.1** | 12 | 56,15 |
| 2,5 | 0,01 | 350 | **HLH7.1** | 6 | 40,65 |
| 3* | 0,01 | 350 | **E974.1** | 6 | 30,30 |
| 5 | 0,015 | 410 | **E976.2** | 3 | 23,15 |
| 5 | 0,015 | 410 | **E976.1** | 6 | 34,20 |
| 10 | 0,02 | 410 | **E977.2** | 3 | 27,75 |
| 10 | 0,02 | 450 | **E977.1** | 6 | 37,45 |
| 15* | 0,03 | 520 | **E978.1** | 6 | 39,20 |
| 20 | 0,03 | 520 | **E979.2** | 3 | 33,35 |
| 20 | 0,03 | 520 | **E979.1** | 6 | 45,00 |
| 25 | 0,03 | 530 | **E980.2** | 3 | 33,90 |
| 25 | 0,03 | 530 | **E980.1** | 6 | 46,35 |
| 50 | 0,05 | 550 | **E983.2** | 3 | 41,95 |
| 50 | 0,05 | 550 | **E983.1** | 6 | 61,40 |
| 100 | 0,08 | 600 | **E984.2** | 3 | 59,35 |
| 100 | 0,08 | 600 | **E984.1** | 6 | 81,55 |



NEU
NOUVEAU
NEW

## Bulb pipettes Class AS, 2 volumetric markings

By Hirschmann. Made of AR® glass. **Conformity certified**. With two ring markings, lower ring marking as zero point. Partial drain, volumetric marking between both markings. For media with special draining behaviour.
**Brown graduated.** DIN EN ISO 648 certified.

*in addition to DIN

| Volume (ml) | Limit of error (±ml) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5 | 0,005 | 300 | **HLC8.1** | 12 | 68,45 |
| 1 | 0,008 | 325 | **HLC9.1** | 12 | 64,50 |
| 2 | 0,01 | 350 | **HLE0.1** | 12 | 92,45 |
| 3* | 0,01 | 350 | **HLE1.1** | 6 | 48,40 |
| 5 | 0,015 | 410 | **HLE2.1** | 6 | 53,75 |
| 10 | 0,02 | 450 | **HLE3.1** | 6 | 57,85 |
| 15* | 0,03 | 520 | **HLE4.1** | 6 | 68,80 |
| 20 | 0,03 | 520 | **HLE5.1** | 6 | 72,70 |
| 25 | 0,03 | 530 | **HLE6.1** | 6 | 75,05 |
| 50 | 0,05 | 550 | **HLE7.1** | 6 | 88,70 |
| 100 | 0,08 | 600 | **HLE8.1** | 6 | 117,20 |



## Rotilabo®-safety pipette bulbs

Made of natural rubber. For volumetric and graduated pipettes.
Glass ball valve is opened by pressing marked point.

**Standard model**
For pipettes up to 10 ml. Total length 125 mm, weight 50 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0251.1** | 1 | 7,15 |

**Universal model**
For pipettes up to 100 ml, with ∅ up to 9 mm.
Total length 152 mm, weight 58 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PC78.1** | 1 | 6,75 |



## Multi-coloured pipette bulb

Hand-made of natural rubber. Ideal for pipetting, distributing and measuring with volumetric or graduated pipettes.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L960.1** | 1 | 15,50 |



## Rotilabo®-safety pipette bulbs Flip

Made of natural rubber. With detachable safety valve.
Evacuating via removable automatic valve. Can be cleaned inside.
Suction and emptying with the aid of two operating points. Suitable for volumetric and graduated pipettes from 10-100 ml with ∅ from 6-8 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **C261.1** | 1 | 10,25 |
| yellow | **C262.1** | 1 | 10,25 |
| green | **C263.1** | 1 | 10,25 |
| blue | **C264.1** | 1 | 10,25 |
| assorted (red, yellow, blue, green) | **ETY6.1** | 4 | 39,30 |



## Pipette bulbs

Made of soft PVC. Ideal for volumetric, graduated or pasteur pipettes.
Neck bore ∅ 6 mm.

| Suction capacity (ml) | Ball-∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 | 25 (oval) | **C260.1** | 5 | 16,45 |
| 7,5 | 30 | **H616.1** | 5 | 20,75 |
| 20 | 42 | **H617.1** | 5 | 22,60 |
| 30 | 48 | **H618.1** | 5 | 30,40 |
| 85 | 62 | **H619.1** | 2 | 14,00 |
| 140 | 72 | **H620.1** | 2 | 19,35 |
| 220 | 84 | **H621.1** | 2 | 23,80 |
| 340 | 94 | **H622.1** | 1 | 14,55 |

▶ Graduated and volumentric pipettes, see page 416

# Manual pipetting aids



## Pipetting aids macro

By Brand.

- For graduated, volumetric and delivery pipettes from 0.1 to 200 ml
- Suction of up to 50 ml in 11 seconds following one-time ventilation
- Single-level operation for sucking and delivering liquid
- Spring-loaded control lever for delicate pipetting
- Blow-out function
- Drip stop via hydrophobic membrane filter (3 µm)
- Membrane filter: PP housing; PTFE membrane
- Fully autoclavable at 121 °C (2 bar) according to DIN EN 285
- Replaceable valve system

Effortless pipetting: The further up the pipette lever is operated, the faster the pipette is filled. To deliver the liquid, move the pipette lever fully downward. Even when flowing freely, the pipette's volume accuracy is not affected.

**Delivery incl.** spare filter.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Neutral | **X478.1** | 1 | 53,25 |
| blue | **X479.1** | 1 | 53,25 |
| magenta | **X480.1** | 1 | 53,25 |
| green | **X482.1** | 1 | 53,25 |

**Accessories:**

| | | | |
|---|---|---|---|
| Unsterilised spare membrane filter | **X484.1** | 1 | 8,20 |
| Unsterilised spare membrane filter | **X485.1** | 10 | 58,40 |
| Spare valve system (PP, PTFE, silicone) | **X486.1** | 1 | 28,80 |
| Spare adapter (silicone), length 44 mm | **AK02.1** | 1 | 6,95 |



## Pipetting aid

Head and bottom part made of synthetic rubber.
Suction bulb made of PE. With 3-point operation. For graduated and volumetric pipettes from 1 to 50 ml. Can be taken apart for cleaning.
Advantage: filling can be accelerated by pulling head part.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C614.1** | 1 | 23,45 |



## Pipette fillers pi-pump® 2500

Made of acid-resistant plastic. Safe and precise. Thumbwheel for drawing and dispensing liquid. Size 2-25 ml with venting lever for fast emptying.

| Colour | Size | for pipettes up to (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| red | 25 | 25 | **0387.1** | 1 | 17,50 |
| green | 10 | 10 | **0388.1** | 1 | 15,60 |
| blue | 2 | 2 | **0389.1** | 1 | 15,60 |
| yellow | 0 | 0,2 | **0390.1** | 1 | 16,10 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare cone, rubber | **E385.1** | 1 | 4,30 |




## pipetus® junior

By Hirschmann. **Manual pipetting aids** for all standard graduated- and volumetric pipettes from 0.5-100 ml. Easy and safe to use.
Weighs only 115 g. Defined lifting capacity app. 2 ml when full. With hydrophobic PTFE-membrane filter 0.2 µm for integral overflow protection.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L468.1** | 1 | 139,75 |




## pipetus®

By Hirschmann. **Battery-operated pipetting aid**

- For pasteur-, graduated- and volumetric pipettes with volumes between 0.1 and 200 ml
- Easy-to-read colour display for optical control of all functions
- Permanent rechargeable-battery capacity display
- Preset pipetting mode (EX or Blow-out)
- Display for set pipetting speed (5 speeds available)
- Safety check valve integrated
- Non-stop working capacity up to 1 week
- Audible signal when battery capacity is under 10 %
- Recharging via charging station or directly with battery charger, overload protection
- Pipettor can be sterilized (excluding PTFE-filter) at 121 °C
- Weight 200 g

**Delivery incl.** 2 sterile round filters, 1 safety valve, power pointcharger and inductive charging station.

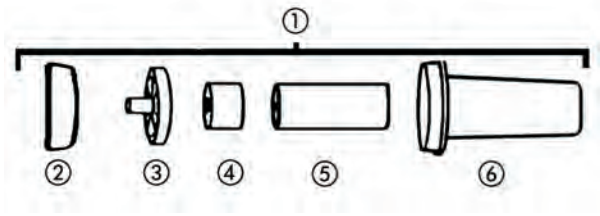
| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| pipetus® | **N472.1** | 1 | 428,95 |




## pipetus® standard

By Hirschmann. **Electric pipetting aids** consisting of ergonomically formed handle, double hose and pump with mains cable. Ideal for all standard pipettes 0.1 to 100 ml. For effective working with EX or Blow-out pipettes. Pipetting speed can be preset directly on the pump.
Built-in safety valve prevents overfilling. Integral PTFE-membrane filter 0.2 µm and additional high-capacity filter on pump part.
Hose length 150 cm. Cable length 140 cm.
Connected load 220 V / 50 Hz / 2 W.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| without sterile filter | **1534.1** | 1 | 250,50 |
| with sterile filter | **B010.1** | 1 | 292,40 |




## Spare parts for pipetus® models

By Hirschmann.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Pipette holder complete | **N473.1** | 1 | 76,85 |
| ② Spigot nut | **N474.1** | 1 | 16,30 |
| ③ 5 round filters | **K450.1** | 1 | 48,00 |
| ④ Safety valve | **K451.1** | 1 | 45,45 |
| ⑤ Rubber adapters (silicone) | **E388.1** | 1 | 13,05 |
| ⑥ Pipette holder box | **N475.1** | 1 | 34,00 |
| Seal ring | **KT19.1** | 5 | 12,10 |

▶ For graduated and volumetric pipettes, see page 416

# Cordless pipette fillers



## accu-jet® *pro*

By Brand. **Battery-operated pipette controller**

- For glass and plastic pipettes from 0.1-200 ml
- Ergonomic design, excellently balanced
- Continuously-adjustable control of the pipetting speed
- Robust, powerful pump for fast filling (50 ml in 10 seconds)
- LED lights up when there are approx. two hours of battery-power left
- 8 hours of continuous pipetting with a 10 ml pipette without recharging
- Corrosion protection through active pressure compensation
- Safety valve / membrane filter against liquid penetration
- Select either gravity-delivery or motorized blow-out as liquid delivery mode
- Weight 190 g

Single-handed operation: select gravity-delivery or motorized blow-out, and adjust the motor speed range with one hand. Pipetting buttons for sensitive control of filling and dispensing rates, especially for lower volume pipettes.

**Delivery incl.** nickel-metal hybrid battery (230 V/50 Hz), 2 battery compartment covers, wall support, 2 spare membrane filters 0.2 µm, sterile.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| dark blue | **NA54.1** | 1 | 437,55 |
| magenta | **NA55.1** | 1 | 437,55 |
| green | **NA56.1** | 1 | 437,55 |
| royal blue | **NA57.1** | 1 | 437,55 |

## Spare parts for accu-jet® *pro*

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Diaphragm filter 0.2 µm, sterile | **NA58.1** | 1 | 7,75 |
| Pipette adapter with check valve | **NA59.1** | 1 | 15,00 |
| Nickel-metal hybrid battery pack | **NA60.1** | 1 | 18,40 |



## RF 3000™ battery operated pipetting aid

**Battery operated.** Pipette holder made of PP, interchangeable PTFE membrane filter prevents contamination. Autoclavable.

- For glass and plastic pipettes between 1 and 100 ml
- Ergonomically shaped housing for fatigue-free working
- UV-resistant housing material
- 2 pipetting speeds (High or Low Speed)
- Gravity mode, for non-motorised fluid drainage
- 20 h continuous duty, can be used while charging is in progress
- LED-based low battery indicator
- User friendly thanks to concave shaped finger pads
- With labelling space on the side
- Five-coloured pipette holder for distinguishing between apparatus
- Additional pipette adapter for low pipetting volumes
- Weight approx. 200 g.

**Delivery incl.** power supply (100-240 V, 50/60 Hz), lithium ion battery, 3 spare membrane filters (PTFE 0.45 µm), 5 pipette holders, silicone-adapter, stand and wall mount.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TC16.1** | 1 | 263,40 |

## Replacement parts for RF 3000™

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Replacement membrane filter | **AN90.1** | 5 | 32,60 |
| Replacement charger | **TC17.1** | 1 | 63,35 |
| Replacement lithium ion battery | **TC18.1** | 1 | 34,95 |
| Replacement pipette adapter, made of silicone | **TC19.1** | 1 | 23,90 |
| Replacement pipette holder, coloured | **TC20.1** | 5 | 61,20 |



## Rotilabo®-drawer tray, 9 compartments

Made of **PVC**, with subdivided lengthwise. Ideal for pipettes, thermometers, columns, etc. Outer dimensions: L 355 x W 300 x H 45 mm. Dimensions of the compartments: L 345 x W 27 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **8111.1** | 1 | 50,35 |



## SONOREX PR 140 D/DH ultrasonic pipette cleaner

By Bandelin. Ultrasonic pipette cleaner to gently clean volumetric glass or plastic devices up to a length of 755 mm.

- Short cleaning times
- Timer (1, 2, 3, 4, 5, 10, 15, 30 min or continuous run)
- Particularly robust thanks to the V4A stainless steel tray (1.4571)
- Drop handles for easier transportation
- Ball valve means that it can be emptied quickly and easily
- Model PR 140 DH with optional heating (can be adjusted from 20-80 °C) to increase the cleaning effect, e.g. in the case of grease residue and stubborn soiling

**Technical specifications:**

| Model | PR 140 D | PR 140 DH |
|---|---|---|
| Capacity | Min. 9 to max. 18 l | |
| Inner dimensions (L x W x H) | 150 x 150 x 895 mm (useful depth 850 mm) | |
| Outer dimensions (L x W x H) | 330 x 330 x 1003 mm | |
| Operating frequency | 35 kHz | |
| Peak ultrasonic output | 860 W | |
| HF power | 200 $W_{eff}$ | |
| Heating output | - | 700 W |
| Weight | 19.5 kg | 19.7 kg |
| Power supply | 230 V, alternatively 115 V, 50/60 Hz | |

Number of pipettes to be cleaned in the pipette basket:
9 mm ∅ - approx. 90 pcs; 10.7 mm ∅ - approx. 55 pcs; 14 mm ∅ - approx. 35 pcs; 20.0 mm ∅ - approx. 15 pcs; 29 mm ∅ - approx. 10 pcs.

**Delivery incl.** stainless steel lid and PE pipette basket (inner dimensions: ∅ x H 120 x 275 mm).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Model PR 140 D | **ECX9.1** * | 1 | 3086,35 |
| Model PR 140 DH | **ECY0.1** * | 1 | 3430,35 |

* Longer delivery times possible. Please check with our Sales Department.




## Rotilabo®-washing system for pipettes

Made of **HDPE**. Washing system for gentle cleaning of pipettes based on pipetting principle. A complete system consists of a washing unit and/or cleaning vessel and a pipette basket.

**All individual components must be ordered separately.**
**Delivery without tube.**

- ① **Washing unit** with draining siphon for automatic water change. Suitable for use with pipette baskets.
- ② **Cleaning vessel** for pre-washing pipettes or brushes with cleaning solution.
- ③ **Pipette baskets** for immersing pipettes in the cleaning vessels or washing units and for transporting the pipettes. Height of basket 300 mm. Optional extension piece is also available which enables the basket (Art. No. Y813.1) length to be extented from 650 to 870 mm.

① **Washing unit**

| For pipette length (mm) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 600 | 170 x 990 | **Y809.1** | 1 | 160,20 |
| 460 | 170 x 735 | **Y810.1** | 1 | 160,20 |

② **Cleaning vessel**

| For pipette length (mm) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 600 | 162 x 650 | **Y811.1** | 1 | 73,10 |
| 460 | 162 x 505 | **Y812.1** | 1 | 73,10 |

③ **Pipette basket**

| For pipette length (mm) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 600 | 145 x 650 | **Y813.1** | 1 | 38,20 |
| 460 | 145 x 500 | **Y814.1** | 1 | 36,25 |

Accessories:

| | | | |
|---|---|---|---|
| Extension piece for pipette basket Y813.1 | **Y815.1** | 2 | 15,80 |
| Silicone hose, 10 m | **9581.1** | 1 | 51,75 |



## Rotilabo®-pipette tray

Made of **PVC**. For pipettes from 120 mm in length.
Dimensions: L 300 x W 220 x H 38 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **7220.1** | 1 | 19,25 |

# Pipette accessories




## Pipette cleaning container

Made from **LDPE**. For gentle cleaning of volumetric and graduated pipettes. Versatile, also suitable for storing and wetting pipettes.

① **Cleaning cylinder**
Leakproof pipette cylinder with sturdy wide base.

| For | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Cleaning basket **CXT0.1** | 152 x 460 | **CXP8.1** | 1 | 112,90 |
| Cleaning basket **CXT1.1** | 152 x 610 | **CXP9.1** | 1 | 119,35 |

② **Cleaning basket**
Pipette basket with drainage holes. Inner foam padding prevents damage to pipettes.

| For | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Pipette length 460 mm | 102 x 580 | **CXT0.1** | 1 | 143,00 |
| Pipette length 610 mm | 102 x 810 | **CXT1.1** | 1 | 155,90 |




## ① Pipette stand

Made of **PP**. 16 spaces: For 8 pipettes up to 8 mm ∅ and 8 pipettes up to 16 mm ∅. Small holes in the base allow the liquid to run out.
Dimensions: L 200 x W 75 x H 150 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HX82.1** | 1 | 12,85 |

## ② Pipette stands with foot

Made of **PP**. 28 spaces: For 18 pipettes up to 10 mm ∅ and 10 pipettes up to 15 mm ∅. Small bore holes in the base allow the liquid do run out.
Top part can also be used separately, please order base with PVC bar separately. The top section of the complete system is height-adjustable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Stand top part with 28 spaces, ∅ 175 mm | **HX80.1** | 1 | 23,55 |
| Foot with PVC rod, ∅ foot 230 mm | **HX81.1** | 1 | 15,75 |




## Pipette container

Made of aluminium. For the storage of plastic pipettes and glassware between 150 and 480 mm in length, e.g. stirring bars, serological, Pasteur pipettes, volumetric pipettes and graduated pipettes. With silicone inner padding and lid for protection of the stored glass pipettes. Autoclavable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 160-200 | **CLN4.1** | 1 | 32,15 |
| 235-305 | **CLN5.1** | 1 | 37,45 |
| 315-385 | **CLN6.1** | 1 | 40,55 |
| 315-485 | **CLN7.1** | 1 | 42,80 |

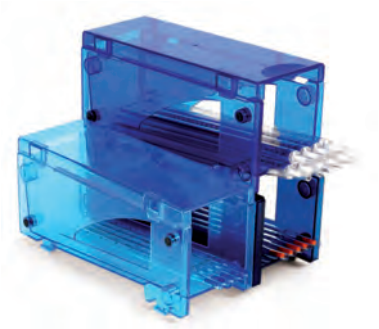


## Rotilabo®-pipette stand

Made of **PP**. Rotating. With 94 ports of different ∅ for graduated and bulb pipettes on various sizes with a maximum ∅ of 13 mm. With reinforced base and additional turntable disk to protect pipette tips.
Dimensions: H 470 mm, ∅ 230 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **7364.1** | 1 | 50,00 |

▶ For further pipette containers and sterilization containers for pipettes see page 261



## Pipette combi rack

Made of **ABS**. For storage of measuring pipettes and serological pipettes under a laminar flow container or fume hood. Racks can be combined horizontally or vertically. Magnets on both sides for mounting the racks to metal walls. Inclined position of pipettes for safe storage; straight lid can be used as additional storage surface.
Dimensions: L 301 x W 100 x H 127.5 mm.

**Delivery incl.** three pipette racks in matching blue colour tones.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **NA53.1** | 1 | 81,60 |



## Rotilabo®-Pipette racks

Robust pipette rack with 4 levels for holding graduated pipettes from 0.1 to 25 ml. Dimensions: L 291 x W 88 x H 401 mm.

- Available in two designs: Acrylic glass or ABS
- ABS-pipette racks with additional holders on both long sides for manual pipetting aids and pipette fillers

| Design | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Acrylic glass | colourless | **CX88.1** | 1 | 153,65 |
| ABS | blue | **CX89.1** | 1 | 102,15 |
| ABS | red | **CX90.1** | 1 | 102,15 |



## Rotilabo®-pipette tray

Made of **PVC**, fits most drawers. Divided lengthways into 4 parts.
Dimensions: L 420 x W 300 x H 40 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **7230.1** | 1 | 32,95 |

▶ Further drawer inserts, see page 729




## Stem pipettor Acura® *manual* 810

By Socorex. **Microlitre pipettor for 1:10 dilution**

Air suspension pipettor with two pre-calibrated fixed volumes in one piston stroke enables sequential delivery of 1 and 0.1 ml of same liquid. For more flexibility, the volumes can be used either individually or together for dilution.The metal cone guarantees perfect fit of the long PP stem tips, which is of great advantage when removing samples from narrow vessels, Stomacher® - and other homogenizing bags. The Acura® manual 810 is an ideal alternative to standard graduated pipettors for serial 1:10 dilution in bacteriology.

**Stem tips:** Made of **PP** (inner-∅ 4 mm), **sterile.**

**Protection filters**: For protection against intrusion of liquid and any risk of contamination. The protection filters are easy to change and to remove.

**Properties:**

- Two pre-calibrated fixed volumes - no setting-up required
- Both volumes 1 and 0.1 ml can be calibrated separately from each other
- Simple carrying out of all functions
- Excellent ergonomics, light weight
- The metal shaft enables long stem tips to be used
- Justip™ system for height adjustment of tip ejection
- Simple and faultless ejection of stem tips
- Completely autoclavable at 121 °C
- Replaceable PE protection filter

**Technical specifications:**

The values were obtained with distilled water at a constant (±0.5 °C) room temperature between 20 and 25 °C, acc. to EN ISO 8655.

| Volume (µl) | Inaccuracy (E %) | Non-precision (CV %) |
|---|---|---|
| 100 | <±2.0 | <2.5 |
| 1000 | <±0.5 | <0.4 |

| Volume (µl) | Tip type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 + 1000 | Stem tip | **HK00.1** | 1 | 253,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Stem tips made of PP, L 190 mm, **sterile** | **HK01.2** | 1000 (40 x 25) | 70,95 |
| Protection filters made of PE | **HK02.1** | 100 | 25,30 |
| Pipettor stands for 3 pipettors, light grey | **EP93.1** | 1 | 100,00 |
| Rack pipette holder for 2 pipettes, blue | **TY58.1** | 1 | 19,90 |

▶ Homogenizing bags, see page 253

# Piston pipettors






## Micro-dispensing pipettors Acura® 865

By Socorex.
Manual dispensing pipettors for serial dosing in the microliter range.

- Three-way valve enables continuous dosing
- Low weight and ergonomic design for fatigue-free working
- Easy to operate function keys
- Gentle piston stroke activation
- Large volume display window
- The valve unit can be rotated
- Liquid can be supplied from hose, syringe or optionally via the bottle
- Simple calibration system
- With customised serial number and test certificate
- Can be autoclaved fully assembled at 121 °C

**Technical specifications:**

| Capacity (µl) | Graduation (µl) | Non accuracy (%) | Non precision (%) |
|---|---|---|---|
| **5-50** | 0.1 | 5 µl <±5.0 | 5 µl <±2.0 |
| | | 50 µl <±1.5 | 50 µl <±0.4 |
| **20-200** | 0.2 | 20 µl <±2.5 | 20 µl <±1.5 |
| | | 200 µl <±1.0 | 200 µl <±0.3 |
| **100-1000** | 1 | 100 µl <±1.5 | 100 µl <±0.6 |
| | | 1000 µl <±0.6 | 1000 µl <±0.2 |

**Delivery incl.** silicone hose, single-channel dosing cannula made of stainless steel, valve cap for drawing-off liquid from a disposable syringe.

| Volume (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 5-50 | **EP88.1** | 1 | 396,70 |
| 20-200 | **EP89.1** | 1 | 363,35 |
| 100-1000 | **EP90.1** | 1 | 339,70 |

## Accessories for micro dispensing pipettors Acura® 865

**Ideal for sucking up liquid from bottle:**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Bottle with Luer-adapter, made of PP, 30 ml | **EP91.1** | 1 | 46,20 |

**Further accessories:**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 8-channel cannulas made of stainless steel with Luer-lock adapter | **EP92.1** | 1 | 151,60 |
| Pipettor stands for 3 pipettors, light grey | **EP93.1** | 1 | 100,00 |
| Rack pipette holder for 2 pipettes, blue | **TY58.1** | 1 | 19,90 |

## Dispensertips

Classic dispensertips, suitable for Ripette®, Ripette® pro, HandyStep®, Distriman®, Multipette® 4780 and other compatible dosing systems. Comply with DIN EN ISO 8655. Sterile models are DNA/RNase/ATP free.

**Technical specifications:**

| Control wheel | 1 | 2 | 3 | 4 | 5 | | |
|---|---|---|---|---|---|---|---|
| Increments | 48 | 23 | 15 | 11 | 8 | | |
| **Tips (ml)** | Capacity (µl) | | | | | Non accuracy | Non precision |
| 0.05 | 1 | 2 | 3 | 4 | 5 | ±2.5 % | ≤5 % |
| 1.25 | 25 | 50 | 75 | 100 | 125 | ±0.8 % | ≤0.5 % |
| 12.5 | 250 | 500 | 750 | 1000 | 1250 | ±0.3 % | ≤0.3 % |

*Optimal use only in combination with 10 µl pipettor tips

**Unsteril**

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,05* | **H679.1** | 100 | 95,70 |
| 0,5 | **H680.1** | 100 | 68,80 |
| 1,25 | **H681.1** | 100 | 68,80 |
| 2,5 | **H682.1** | 100 | 68,80 |
| 5 | **H683.1** | 100 | 68,80 |
| 12,5 | **H684.1** | 100 | 68,80 |
| 25 | **H685.2** | 25 | 23,15 |
| 50 | **H686.2** | 25 | 23,15 |

**Sterile** (Bioclean®, einzeln verpackt)

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,5 | **H688.1** | 100 | 116,10 |
| 1,25 | **H689.1** | 100 | 116,10 |
| 2,5 | **H690.1** | 100 | 116,10 |
| 5 | **H691.1** | 100 | 116,10 |
| 12,5 | **H692.1** | 100 | 116,10 |
| 25 | **H693.2** | 25 | 38,70 |
| 50 | **H694.2** | 25 | 38,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Ritips® professional adapter 25 ml, red | **CKX5.1** | 1 | 5,35 |
| Ritips® professional adapter 50 ml, grey | **CKX6.1** | 1 | 5,35 |



**Programme extension!**

## Ripette®

Adjustable piston pipettor for serial pipetting in the voume range from 1 µl to 5 ml without refilling, with up to 48 dispensing settings.
Tested to DIN EN ISO 8655, with Certificate of Conformity.
Easy to operate setting device cuts down on fatigue during long-term use.
Light, robust construction, ergonomic design.

**Technical specifications:**

| Program | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Number of steps | 48 | 23 | 15 | 11 | 8 |
| **Tip size (ml)** | **Dispensing volume (µl)** | | | | |
| **0.05** | 1 | 2 | 3 | 4 | 5 |
| **0.10** | 2 | 4 | 6 | 8 | 10 |
| **0.20** | 4 | 8 | 12 | 16 | 20 |
| **0.50** | 10 | 20 | 30 | 40 | 50 |
| **1.00** | 20 | 40 | 60 | 80 | 100 |
| **1.25** | 25 | 50 | 75 | 100 | 125 |
| **2.50** | 50 | 100 | 150 | 200 | 250 |
| **5.00** | 100 | 200 | 300 | 400 | 500 |
| **10.00** | 200 | 400 | 600 | 800 | 1000 |
| **12.50** | 250 | 500 | 750 | 1000 | 1250 |
| **25.00** | 500 | 1000 | 1500 | 2000 | 2500 |
| **50.00** | 1000 | 2000 | 3000 | 4000 | 5000 |

**Delivery incl.** adapter for 25 and 50 ml dispenser tips.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Ripette® red | **H768.1** | 1 | 213,95 |
| Ripette® pink | **HLK5.1** | 1 | 213,95 |
| Ripette® blue | **HLK6.1** | 1 | 213,95 |
| Ripette® gray | **HLK7.1** | 1 | 213,95 |




## Ripette® pro

Manual series dispenser with sight glass for easy tip selection and setting the dispensing volume.

- Stroke setting wheel with 10 positions
- 10 program numbers and 12 tip sizes give you a choice of 120 different setting options
- Straightforward display of stroke setting and dispensing volume in sight glass
- Anatomical design, easy-action dispensing button, low weight
- Good chemical resistance
- Suitable for Dispenser tips, Ritips® professional, PD-Tips from Brand, Combitips®, Combitips® plus
- Includes a certificate of quality
- Conformity certified, with serial number

**Technical specifications:**

| Program | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of steps | 50 | 25 | 16 | 12 | 10 | 8 | 7 | 6 | 5 | 5 |
| **Tip size (ml)** | **Dispensing volume (µl)** | | | | | | | | | |
| **0.05** | 1 | 1,5 | 2 | 2,5 | 3 | 3,5 | 4 | 4,5 | 5 | 5,5 |
| **0.10** | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| **0.20** | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 |
| **0.50** | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| **1,00** | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 |
| **1,25** | 25 | 37,5 | 50 | 62,5 | 75 | 87,5 | 100 | 112,5 | 125 | 137,5 |
| **2,50** | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
| **5,00** | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| **10.00** | 200 | 400 | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 1800 | 2000 |
| **12,50** | 250 | 375 | 500 | 625 | 750 | 875 | 1000 | 1125 | 1250 | 1375 |
| **25,00** | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 |
| **50.00** | 1000 | 2000 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 9000 | 10000 |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YK24.1** | 1 | 263,40 |

# Piston pipettors



## HandyStep® S

By Brand. Manual multi-dispenser for fast, repetitive dispensing of liquids. The PD-Tips allow volumes of between 2 µl and 5 ml to be dispensed in up to 49 steps with a single filling. HandyStep® S and PD-Tips work on the positive displacement principle. High viscosity, high density and high vapour pressure liquids can be dispensed with extremely high precision. Direct displacement allows contamination-free operation since no aerosols are formed.

**Properties:**
- Ergonomic design
- Stroke length setting wheel with 9 positions
- Easy tip attachment - the PD-Tips are inserted straight from below
- Safe tip removal at the touch of a button - no need to touch the dispenser tips
- Easy-to-read display, no battery required
- Innovative plastics provide increased resistance to chemicals
- For use with PD-Tips, Combitips®, Combitips® plus, Ritips®, Repet Tips, Encode™ Tips and other compatible tips
- Working temperature range: 15 to 40 °C
- Maintenance free, factory calibrated
- Includes a certificate of quality
- DE-M approved

**Technical specifications:**
(accuracy table for HandyStep® S when used in combination with PD-Tips)

| PD tip size | Volume range (µl) | Accuracy≤± % stroke adjustment = % of nominal capacity | | Variation coefficient ≤± % stroke adjustment =% of nominal capacity | |
|---|---|---|---|---|---|
| | | 10 % | 2 % | 10 % | 2 % |
| 0.1 ml | 2-10 | 1.6 | 8.0 | 2.0 | 5.0 |
| 0.5 ml | 10-50 | 0.8 | 4.0 | 0.6 | 1.4 |
| 1.0 ml | 20-100 | 0.8 | 4.0 | 0.4 | 1.0 |
| 1.25 ml | 25-125 | 0.8 | 4.0 | 0.3 | 0.8 |
| 2.5 ml | 50-250 | 0.7 | 3.5 | 0.2 | 0.8 |
| 5.0 ml | 100-500 | 0.5 | 2.5 | 0.2 | 0.6 |
| 10.0 ml | 200-1000 | 0.4 | 1.5 | 0.2 | 0.5 |
| 12.5 ml | 250-1250 | 0.3 | 1.5 | 0.2 | 0.4 |
| 25 ml | 500-2500 | 0.3 | 1.5 | 0.2 | 0.4 |
| 50 ml | 1000-5000 | 0.3 | 1.5 | 0.15 | 0.4 |

Limits of error referred to the dispensing volume set according to PD-tip size with the instrument, tip, environment and distilled water at a constant temperature of 20 °C and under smooth and steady operation. This test is performed in accordance with DIN EN ISO 8655-5. The nominal capacity ist the maximum volume printed on the PD-tip.

**Delivery incl.** shelf/rack mount and 3 PD tips: 0.1, 1 and 10 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH21.1** | 1 | 222,55 |



## HandyStep® electronic

By Brand. Microprocessor-controlled, storage battery operated hand-held dispenser. Ergonomic design enables fatigue-proof serial dosing.

**Three functions:**
- Dispensing
- Automatic dispensing (the unit calculates the temporal mean value between three dispensing stages and automatically continues working at the same rhythm)
- Pipetting

**Properties:**
- Variable volume adjustment between 1 µl and 50 ml
- Automatic size recognition of PD-Tips from Brand with type coding
- One-hand operation
- Can be used with almost all other standard dispenser tips
- With Certificate of Quality
- DE-M approved

**Technical data:**
(table of accuracy for HandyStep® electronic in combination with PD-tips).

| PD-tip size | Volume range | Sub-divisions | Nominal volume (Accuracy ≤±%) | | Nominal volume (Variation coefficient ≤%) | |
|---|---|---|---|---|---|---|
| | | | 100 % | 10 % | 100 % | 10 % |
| 0.1 ml | 1 µl-100 µl | 0.1 µl | 1.0 | 1.6 | 0.5 | 2.0 |
| 0.5 ml | 5 µl-100 µl<br>100 µl-500 µl | 0.1 µl<br>1 µl | 0.9 | 0.9 | 0.25 | 1.0 |
| 1.25 ml | 12.5 µl-100 µl<br>100 µl-1000 µl<br>1 ml-1.25 ml | 0.5 µl<br>1 µl<br>10 µl | 0.6 | 0.9 | 0.15 | 0.6 |
| 2.5 ml | 25 µl-1000 µl<br>1 ml-2.5 ml | 1 µl<br>10 µl | 0.5 | 0.8 | 0.1 | 0.4 |
| 5.0 ml | 50 µl-1000 µl<br>1 ml-5 ml | 1 µl<br>10 µl | 0.5 | 0.8 | 0.08 | 0.3 |
| 12.5 ml | 125 µl-1000 µl<br>1 ml-10 ml<br>10 ml-12.5 ml | 5 µl<br>10 µl<br>100 µl | 0.4 | 0.5 | 0.08 | 0.25 |
| 25 ml | 250 µl-10 ml<br>10 ml-25 ml | 10 µl<br>100 µl | 0.3 | 0.3 | 0.08 | 0.25 |
| 50 ml | 500 µl-10 ml<br>10 ml-50 ml | 10 µl<br>100 µl | 0.3 | 0.3 | 0.08 | 0.25 |

Limit of error referred to the nominal capacity and partial volumes according to PD tip with the instrument, environment and distilled water at a constant temperature of 20 °C and under smooth and steady operation. The limits of error specified in ISO 8655 are not exceeded. The nominal capacity is the maximum volume printed on the PD tip.

**Delivery incl.** charging station with power adapter (230 V/50 Hz) and NiMH battery pack (can be recharged in unit or separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| HandyStep® electronic | **EH22.1** | 1 | 651,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare-NiMH storage battery pack | **EH44.1** | 1 | 41,70 |
| Spare charging station, without power unit | **EH45.1** | 1 | 134,40 |
| Spare power unit | **EH46.1** | 1 | 64,15 |



## PD-Tips

By Brand. Precision dispenser tips with patented type coding, **PP** cylinder, **HDPE** piston (0.1 ml made of LCP). Suitable for various compatible metering systems, e.g. HandyStep® electronic, Gilson® Repetman®, Rainin AutoRep™ E (with automatic size recognition); HandyStep®, Rainin AutoRep™ M, Eppendorf® Multipette® 4780 and EDOS® 5221 (without automatic size recognition). In conformity with ISO 8655, with batch certificate.

CE marked in accordance with IVD directive 98/79 EC.

**Technical specifications:**

| Setting of stroke | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
|---|---|---|---|---|---|---|---|---|---|
| Number of steps | 49 | 32 | 24 | 19 | 15 | 13 | 11 | 10 | 9 |
| **PD-Tips (ml)** | Dosing volume (µl) | | | | | | | | |
| **0.1** | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| **0.5** | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
| **1** | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| **1.25** | 25 | 37.5 | 50 | 62.5 | 75 | 87.5 | 100 | 112.5 | 125 |
| **2.5** | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
| **5.0** | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
| **10** | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| **12.5** | 250 | 375 | 500 | 625 | 750 | 875 | 1000 | 1125 | 1250 |
| **25** | 500 | 750 | 1000 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 |
| **50** | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 |

**Unsterile**

| Volume (ml) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1 | | **EH23.1** | 100 | 76,95 |
| 0,5 | | **EH24.1** | 100 | 70,45 |
| 1 | | **PP97.1** | 100 | 74,55 |
| 1,25 | | **EH25.1** | 100 | 70,45 |
| 2,5 | | **EH26.1** | 100 | 70,45 |
| 5 | | **EH27.1** | 100 | 70,45 |
| 10 | | **PP98.1** | 100 | 74,55 |
| 12,5 | | **EH28.1** | 100 | 70,45 |
| 25 | incl. 1 adapter | **EH29.1** | 50 | 40,10 |
| 50 | incl. 1 adapter | **EH30.1** | 25 | 21,95 |

**Sterile** (endotoxin-free, individually wrapped)

| Volume (ml) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1 | | **EH31.1** | 100 | 152,65 |
| 0,5 | | **EH32.1** | 100 | 134,40 |
| 1 | | **PP99.1** | 100 | 134,40 |
| 1,25 | | **EH33.1** | 100 | 134,40 |
| 2,5 | | **EH34.1** | 100 | 134,40 |
| 5 | | **EH35.1** | 100 | 134,40 |
| 10 | | **PT00.1** | 100 | 134,40 |
| 12,5 | | **EH36.1** | 100 | 134,40 |
| 25 | incl. 1 adapter | **EH37.1** | 25 | 39,65 |
| 50 | incl. 1 adapter | **EH38.1** | 25 | 40,75 |

**Bio-Cert® model** (**sterile**, DNA-/RNase-/ATP- and endotoxin-free, individually wrapped)

| Volume (ml) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1 | | **EH39.1** | 100 | 167,70 |
| 0,5 | | **EH40.1** | 100 | 148,35 |
| 1 | | **PT01.1** | 100 | 148,35 |
| 1,25 | | **EH41.1** | 100 | 148,35 |
| 2,5 | | **EH42.1** | 100 | 148,35 |
| 5 | | **EH43.1** | 100 | 148,35 |
| 10 | | **PT02.1** | 100 | 148,35 |
| 12,5 | | **EH50.1** | 100 | 148,35 |
| 25 | incl. 1 adapter | **EH51.1** | 25 | 42,55 |
| 50 | incl. 1 adapter | **EH55.1** | 25 | 44,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare adapter, **sterile** | **EH57.1** | 5 | 20,55 |
| Spare adapter, non-sterile | **EH56.1** | 10 | 19,75 |

## PD-Tip-set

20 PD-tips in sizes of 0.5, 1, 1.25, 2.5, 5, 10 and 12.5 ml.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **CNT1.1** | 1 | 99,25 |



## Stepper™ 411

By Socorex. For precise serial pipetting.

- 4-finger activation function eliminates thumb fatigue
- Stop mechanism: Self-locking mechanism prevents false delivery
- Dose range: 53 volumes from 10 to 5000 µl
- Only 3 different tip sizes, colour-coded
- Up to 73 doses per filling
- Enables fast work rates, up to 2 doses per second
- Individually calibrated with test certificate

An separate adjustable head of matching colour is available for each tip size; it displays the dosing volume and number for a filled tip.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **6952.1** | 1 | 282,75 |

**Accessories:**

| | | | |
|---|---|---|---|
| Stand for one stepper | **6993.1** | 1 | 52,15 |
| Adapter for 37.5 ml tips | **P198.1** | 5 | 12,40 |

## Ecostep™ disposable tips for Stepper™ 411

Made of **PP**, colour coded, autoclavable.

| Volume (ml) | Range (µl) | Graduation (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,75 | 10-100 | 5 | **6953.1** | 100 | 113,95 |
| 3,75 | 50-500 | 25 | **6969.1** | 100 | 113,95 |
| 37,50 | 500-5000 | 250 | **6987.1** | 100 | 154,80 |

# Positive displacement pipettors




## Piston pipettors, digital Transferpettor

By Brand. **Positive displacement pipettors for difficult media**

For foaming media (e.g. tenside solutions), high-vapor-pressure media (e.g. alcohols, ether, hydrocarbons), viscous media and high-density media (e.g. concentrated protein solutions, oils, resins, fats, glycerine, mercury, sulphuric acid).

Unlike air displacement pipettes, the Transferpettor piston is in direct contact with the aspirated liquid to be expelled. This principle always provides precise, reproducible results, regardless of the pipetting speed and the ambient conditions. Capillaries and tips can be reused, since the minimal residual wetting is negligible for most applications. Where carry-over is not permitted, such as with infectious or radioactive media, an air displacement pipette with disposable tips should be used.

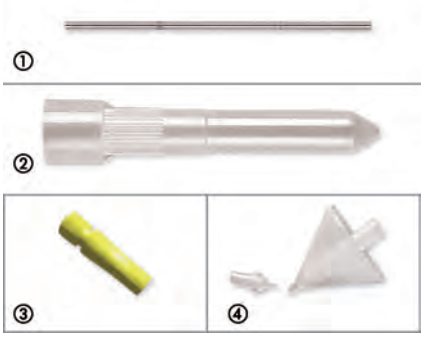
**Range of application:**
- Media with densities up to 13.6 g/cm$^3$
- Viscosity up to 140 000 mm$^2$/s (depending on size of apparatus)
- Vapour pressure up to 500 mbar
- Working temperature range 15 to 40 °C

DE-M approved, with Certificate of Quality.

**Technical specifications:**

| Capacity (µl) | Correctives (%) | Variation coefficient (%) |
|---|---|---|
| **2.5-10** | 10 µl ≤1.0 | 10 µl ≤ 0.8 |
| **5-25** | 25 µl ≤0.8 | 25 µl ≤ 0.5 |
| **10-50** | 50 µl ≤0.6 | 50 µl ≤ 0.4 |
| **20-100** | 100 µl ≤0.6 | 100 µl ≤0.4 |
| **100-500** | 500 µl ≤0.5 | 500 µl ≤ 0.2 |
| **200-1000** | 1000 µl ≤0.5 | 1000 µl ≤ 0.2 |
| **1000-5000** | 5000 µl ≤0.5 | 5000 µl ≤ 0.2 |
| **2000-10 000** | 10 000 µl ≤0.5 | 10 000 µl ≤ 0.2 |

| Volume (µl) | Pitch (µl) | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2,5-10 | 0,01 | orange | **NA87.1** | 1 | 336,50 |
| 5-25 | 0,1 | 2 x white | **NA88.1** | 1 | 336,50 |
| 10-50 | 0,1 | green | **NA89.1** | 1 | 336,50 |
| 20-100 | 0,1 | blue | **NA90.1** | 1 | 336,50 |
| 100-500 | 1,0 | green | **NA91.1** | 1 | 336,50 |
| 200-1000 | 1,0 | yellow | **NA92.1** | 1 | 336,50 |
| 1000-5000 | 10,0 | red | **NA93.1** | 1 | 336,50 |
| 2000-10 000 | 10,0 | orange | **NA94.1** | 1 | 336,50 |




## Accessories for digital Transferpettor

DE-M approved.

**Caps**

| Image | Type | for capacity (µl) | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | Glass | 1, 2, 5 | white | **NA95.1** | 100 | 30,70 |
| ① | Glass | 10 | orange | **NA96.1** | 100 | 30,70 |
| ① | Glass | 20 | black | **NA97.1** | 100 | 30,70 |
| ① | Glass | 25 | 2 x white | **NA98.1** | 100 | 30,70 |
| ① | Glass | 50 | green | **NA99.1** | 100 | 30,70 |
| ① | Glass | 100 / 200 | blue / red | **PA00.1** | 50 | 16,60 |
| ② | PP | 100-500 | green | **PA01.1** | 10 | 26,80 |
| ② | PP | 200-1000 | yellow | **PA02.1** | 10 | 26,80 |
| ② | PP | 1000-5000 | red | **PA03.1** | 10 | 26,80 |
| ② | PP | 2000-10 000 | orange | **PA04.1** | 10 | 26,80 |

**Seals**

| Image | Type | for capacity (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ③ | PTFE | 20, 25 | **PA05.1** | 3 | 17,15 |
| ③ | PTFE | 50 | **PA06.1** | 3 | 17,15 |
| ③ | PTFE | 100, 200 | **PA07.1** | 3 | 17,15 |
| ④ | PE | 100-500 | **PA08.1** | 10 | 21,90 |
| ④ | PE | 200-1000 | **PA09.1** | 10 | 21,90 |
| ④ | PE | 1000-5000 | **PA10.1** | 10 | 21,90 |
| ④ | PE | 2000-10 000 | **PA11.1** | 10 | 21,90 |

**Repair sets, conformity certification**

| Type | for capacity (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Set | 1, 2, 5 | **PA12.1** | 1 | 29,40 |
| Set | 10 | **PA13.1** | 1 | 29,40 |
| Set | 20, 25 | **PA14.1** | 1 | 32,80 |
| Set | 50 | **PA15.1** | 1 | 32,80 |
| Set | 100, 200 | **PA16.1** | 1 | 32,80 |




## Transferpettor stations

For storing 2 or 4 devices, incl. accessories.

| Image | for capacity (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ⑤ | 500-10 000 | **PA17.1** | 1 | 101,45 |
| ⑥ | max. 200 | **PA18.1** | 1 | 120,40 |

# Positive displacement pipettors





## Positive displacement pipettes MICROMAN® E

By Gilson. Positive displacement system without air cushion between sample and piston prevents contamination as well as aerosol formation and produces precise and reproducible pipetting results. Caps fit straight out of the box, pistons and capillaries lock into place automatically ("QuickSnap System").

**For difficult-to-process media, e.g.:**
- Viscous media, e.g. oils, glycerol, gel loading buffer
- Media with a high vapour pressure (acetone, hexane or other solvents)
- Sterile media
- PCR/qPCR preparations
- Radioactive media
- Cold/warm solutions

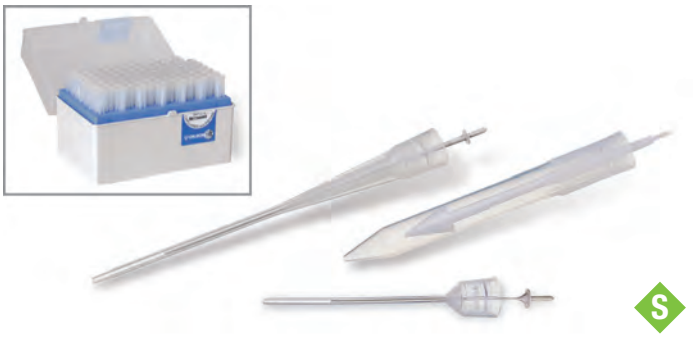
**Advantages:**
- QuickSnap system for easy handling
- Volume lock for safe pipetting
- Ergonomically designed and comfortable handle
- Lightweight and narrow CP tips for narrow vessels

Conformity certified to DIN EN ISO 8655 with inspection certificate.
CE/IVD approved.

**Technical specifications:**

| Model | Capacity (µl) | Systematic deviation (µl) | Random deviation (µl) |
|---|---|---|---|
| **M10E** | 1 | ±0.09 | ≤0.03 |
| | 5 | ±0.10 | ≤0.03 |
| | 10 | ±0.15 | ≤0.06 |
| **M25E** | 3 | ±0.25 | ≤0.08 |
| | 10 | ±0.27 | ≤0.08 |
| | 25 | ±0.30 | ≤0.10 |
| **M50E** | 20 | ±0.34 | ≤0.20 |
| | 50 | ±0.70 | ≤0.30 |
| **M100E** | 10 | ±0.50 | ≤0.20 |
| | 50 | ±0.75 | ≤0.30 |
| | 100 | ±1.00 | ≤0.40 |
| **M250E** | 50 | ±1,50 | ≤0.30 |
| | 100 | ±1.70 | ≤0.30 |
| | 250 | ±2.50 | ≤0.50 |
| **M1000E** | 100 | ±3.00 | ≤1.60 |
| | 500 | ±5.00 | ≤2.50 |
| | 1000 | ±8.00 | ≤4.00 |

| Model | Volume (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| M10E | 1-10 | **CTT1.1** | 1 | 256,95 |
| M25E | 3-25 | **CTT2.1** | 1 | 256,95 |
| M50E | 20-50 | **CTT3.1** | 1 | 256,95 |
| M100E | 10-100 | **CTT4.1** | 1 | 256,95 |
| M250E | 50-250 | **CTT5.1** | 1 | 256,95 |
| M1000E | 100-1000 | **CTT6.1** | 1 | 256,95 |



## CP-tips for MICROMAN® E positive displacement pipettes

Made of **PP** and polyester (types CP100/CP100ST and CP250/CP250ST are made of PP and PE). **Sterile** or non-sterile.
Sterile versions free of detectable DNA, RNA, DNase, RNase, ATP and pyrogens. Capillary Piston Tips, suitable for Gilson MICROMAN® and MICROMAN® E.

| Type | For model | Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| CP10 | M10E | 1-10 | in rack, non-sterile | **CTT7.1** | 192 | 67,40 |
| CP10ST | M10E | 1-10 | in rack, **sterile** | **CTT8.1** | 192 | 77,85 |
| CP25 | M25E | 3-25 | loose in bag, non-sterile | **CTT9.1** | 200 | 61,60 |
| CP25 | M25E | 3-25 | in rack, non-sterile | **CTX0.1** | 960 | 319,85 |
| CP25ST | M25E | 3-25 | in rack, **sterile** | **CTX1.1** | 576 | 231,70 |
| CP50 | M50E | 20-50 | loose in bag, non-sterile | **CTX2.1** | 200 | 61,60 |
| CP50 | M50E | 20-50 | in rack, non-sterile | **CTX3.1** | 960 | 319,85 |
| CP50ST | M50E | 20-50 | in rack, **sterile** | **CTX4.1** | 576 | 231,70 |
| CP100 | M100E | 10-100 | in rack, non-sterile | **CTX5.1** | 192 | 67,40 |
| CP100ST | M100E | 10-100 | in rack, **sterile** | **CTX6.1** | 192 | 77,85 |
| CP250 | M250E | 50-250 | loose in bag, non-sterile | **CTX7.1** | 200 | 61,60 |
| CP250 | M250E | 50-250 | in rack, non-sterile | **CTX8.1** | 960 | 319,85 |
| CP250ST | M250E | 50-250 | in rack, **sterile** | **CTX9.1** | 576 | 231,70 |
| CP1000 | M1000E | 100-1000 | in rack, non-sterile | **CTY0.1** | 182 | 67,40 |
| CP1000ST | M1000E | 100-1000 | in rack, **sterile** | **CTY1.1** | 182 | 77,85 |

# Microlitre pipettors, Roth








## Accessories for Rotilabo®-microlitre pipettors

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rack mount for 1 pipettor | **TA28.1** | 1 | 16,10 |
| Table stand, rotatable, for 6 pipettors | **TA29.1** | 1 | 77,40 |
| Filter for 5 ml pipettor | **TA30.1** | 25 | 8,40 |
| Filter for 10 ml pipettor | **TA31.1** | 25 | 13,60 |
| Silicone fat for pipettors up to 1000 µl | **TA32.1** | 1 | 12,20 |
| Silicone fat for 5 ml/10 ml pipettors | **TA33.1** | 1 | 16,10 |

## Rotilabo®-microlitre pipettors

Robust quality pipettors with variable volume for routine work and demanding applications.

- Ergonomic finger rest for comfortable handling and one-handed operation
- Separate tip eject button
- Central, large pipettor button for smooth piston movement
- Separate volume adjustment, for left and right handed users
- Easy-to-read display
- Integrated calibration function for easy adjustment without tools
- Corrosion-resistant piston and ejector
- Slim shaft
- DE-M approved, with certificate of quality
- CE-IVD-approved
- Completely autoclavable at 121 °C (2 bar) according to DIN EN 285
- A filter for protection of the pipettors is optional with volumes of 5 ml and higher, please order separately

**Technical specifications:**

| **Volume (µl)** | Accuracy* (%) | Variation coefficient* (%) |
|---|---|---|
| **0.5-10** | 10 µl <±1.0 | 10 µl≤0.5 |
| **2-20** | 20 µl <±0.8 | 20 µl≤0.4 |
| **10-100** | 100 µl <±0.6 | 100 µl≤0.2 |
| **20-200** | 200 µl <±0.6 | 200 µl≤0.2 |
| **100-1000** | 1000 µl <±0.6 | 1000 µl≤ 0.2 |
| **500-5000** | 5000 µl <±0.6 | 5000 µl≤ 0.2 |
| **1000-10 000** | 10 000 µl <±0.6 | 10 000 µl≤ 0.2 |

* Calibrated to deliver ‚Ex'. Error limits are based on the nominal capacity (= maximum volume) indicated on the instrument, obtained with instrument and distilled water at equilibrium with ambient temperature at 20 °C, during smooth, steady operation. The error limits are within the limits of DIN EN ISO 8655-2. A = Accuracy, CV = Coefficient of variation.

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5-10 | 0,01 | 20 | **TA21.1** | 1 | 222,55 |
| 2-20 | 0,02 | 200 | **TA22.1** | 1 | 203,20 |
| 10-100 | 0,1 | 200/300 | **TA23.1** | 1 | 203,20 |
| 20-200 | 0,2 | 200/300 | **TA24.1** | 1 | 203,20 |
| 100-1000 | 1 | 1000 | **TA25.1** | 1 | 203,20 |
| 500-5000 | 5 | 5000 | **TA26.1** | 1 | 220,40 |
| 1000-10 000 | 10 | 10 000 | **TA27.1** | 1 | 220,40 |

▶ Qualitatively high-value pipettor tips from page 449

## Rotilabo®-microlitre pipettors

| **Suitable pipettor tips** | | | | **Pipettors Art.-No.** (****.1) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Volume range of tips** | **Tip No.** | | | **TA21** | **TA22 TA23** | **TA24** | **TA25** | **TA26** | **TA27** |
| **0,1-10 µl** | 28 | | | x | | | | | |
| | 32 | 33 | | x | | | | | |
| | 63 | | | x | | | | | |
| | 43 | 45 | | x | | | | | |
| **0,5-10 µl** | 34 | | | x | | | | | |
| | 46 | | | x | | | | | |
| **0,1-20 µl** | 20 | 21 | | x | | | | | |
| | 56 | 60 | | x | | | | | |
| **1-20 µl** | 29 | | | x | | | | | |
| | 47 | | | x | | | | | |
| **1-50 µl** | 22 | | | x | | | | | |
| **1-100 µl** | 48 | | | x | x | | | | |
| **1-200 µl** | 3 | 4 | 5 | | x | x | | | |
| | 6 | | | | x | x | | | |
| | 23 | 24 | | | x | x | | | |
| | 30 | | | | x | x | | | |
| | 35 | 36 | | | x | x | | | |
| | 37 | 38 | | | x | x | | | |
| | 66 | 67 | 68 | | x | | | | |
| | 52 | | | | x | | | | |
| **1-300 µl** | 25 | | | | x | x | | | |
| | 39 | | | | | x | | | |
| | 51 | | | | | x | | | |
| | 57 | 61 | | | | x | | | |
| **100-1250 µl** | 9 | 10 | | | | | x | | |
| | 26 | 27 | | | | | x | | |
| | 31 | | | | | | x | | |
| | 40 | 41 | 42 | | | | x | | |
| | 53 | 54 | | | | | x | | |
| **1-5 ml** | 17 | | | | | | | x | |
| **1-10 ml** | 19 | | | | | | | | x |

# Microlitre pipettors, BRAND



## Microlitre pipettors Transferpette® electronic

By BRAND. Microprocessor-controlled piston pipettors.

- Ergonomic control for easy operation
- Height-adjustable finger rest for optimal position of hand to operating keys
- 5 Functions: Pipetting, mixing, reverse pipetting, dispensing, gel-electrophoresis mode
- High pipetting speed
- 8-hour continuous pipetting possible
- Ready for use during charging cycle
- Referesh mode for increasing battery life
- Slim pipette shaft enables pipetting in narrow tubes
- Easy Calibration Function - Adjusting without tools, in accordance with ISO 9001 and GLP/GMP
- Pipettor shaft is completely autoclavable
- DE-M approved
- With Certificate of Quality
- CE/IVD-compliant

**Technical specifications:**

| Capacity (µl) | Accuracy (%) | Variation coefficient (%) |
|---|---|---|
| **0.5-10** | 10 µl ≤±1.0 | 10 µl ≤0.4 |
| **2-20** | 20 µl ≤±1.0 | 20 µl ≤0.4 |
| **10-200** | 200 µl ≤±0.8 | 200 µl ≤0.2 |
| **50-1000** | 1000 µl ≤±0.6 | 1000 µl ≤0.2 |
| **250-5000** | 5000 µl ≤±0.6 | 5000 µl ≤0.2 |

**1-channel, with power supply unit 230 V/50 Hz**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5-10 | 0,01 | 10/20 | **CH82.1** | 1 | 337,55 |
| 2-20 | 0,02 | 20 | **AA39.1** | 1 | 338,65 |
| 10-200 | 0,2 | 200/300 | **AA40.1** | 1 | 338,65 |
| 50-1000 | 1 | 1000/1250 | **AA41.1** | 1 | 338,65 |
| 250-5000 | 5 | 5000 | **CH83.1** | 1 | 337,55 |

**1-channel, without power supply unit**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5-10 | 0,01 | 10/20 | **CH84.1** | 1 | 321,45 |
| 2-20 | 0,02 | 20 | **AA42.1** | 1 | 320,35 |
| 10-200 | 0,2 | 200/300 | **AA43.1** | 1 | 320,35 |
| 50-1000 | 1 | 1000/1250 | **AA44.1** | 1 | 320,35 |
| 250-5000 | 5 | 5000 | **CH85.1** | 1 | 321,45 |

**8-channel, with power supply unit 230 V/50 Hz**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5-10 | 0,01 | 10/20 | **CNL2.1** | 1 | 824,55 |
| 1-20 | 0,02 | 10/20 | **CNL3.1** | 1 | 824,55 |
| 5-100 | 0,1 | 200/300 | **CNL4.1** | 1 | 824,55 |
| 10-200 | 0,2 | 200/300 | **CNL5.1** | 1 | 824,55 |
| 15-300 | 0,5 | 200/300 | **CNL6.1** | 1 | 824,55 |

**12-channel, with power supply unit 230 V/50 Hz**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5-10 | 0,01 | 10/20 | **CNL7.1** | 1 | 885,80 |
| 1-20 | 0,02 | 10/20 | **CNL8.1** | 1 | 885,80 |
| 5-100 | 0,1 | 200/300 | **CNL9.1** | 1 | 903,00 |
| 10-200 | 0,2 | 200/300 | **CNN0.1** | 1 | 885,80 |
| 15-300 | 0,5 | 200/300 | **CNN1.1** | 1 | 885,80 |

Accessories:

| | | | | |
|---|---|---|---|---|
| 3-stands incl. power unit 230 V, 50 Hz | **AA45.1** | 1 | 169,85 |

▶ Further pipettor tips from page 452

## Microlitre pipettors Transferpette® electronic

| Suitable pipettor tips | | | | Pipettors Art.-No. (****.1) | | | | |
|---|---|---|---|---|---|---|---|---|
| Volume range of tips | Tip. No. | | | CH82 CH84 CNL2 CNL3 CNL7 CNL8 | AA39 AA42 | AA40 AA43 CNL4 CNL5 CNL6 CNL9 CNN0 CNN1 | AA41 AA44 | CH83 CH85 |
| 0,1-10 µl | 1 | | | x | | | | |
| | 28 | | | x | x | | | |
| | 32 | 33 | | | x | | | |
| | 43 | 45 | | | x | | | |
| | 63 | | | | x | | | |
| 0,5-10 µl | 33 | | | | x | | | |
| | 46 | | | x | x | | | |
| 1-20 µl | 20 | 21 | | x | x | | | |
| | 29 | | | | x | | | |
| | 47 | | | | | x | | |
| | 56 | 60 | | x | x | | | |
| 1-100 µl | 48 | | | | | x | | |
| 1-200 µl | 6 | | | | | x | | |
| | 23 | 24 | | | | x | | |
| | 30 | | | | | x | | |
| | 35 | 36 | | | | x | | |
| | 37 | 38 | | | | x | | |
| | 52 | | | | | x | | |
| | 66 | 67 | 68 | | | x | | |
| 1-300 µl | 8 | | | | | x | | |
| | 25 | | | | | x | | |
| | 39 | | | | | x | | |
| | 51 | | | | | x | | |
| | 57 | 61 | | | | x | | |
| 100-1000 µl | 26 | 27 | | | | | x | |
| | 31 | | | | | | x | |
| | 40 | 41 | | | | | x | |
| | 53 | | | | | | x | |
| 1-5 ml | 16 | 17 | | | | | | x |

# Microlitre pipettors, BRAND



## Microlitre pipettes Transferpette® S

By BRAND. Manual positive displacement pipettes for demanding applications.

- Anatomically shaped finger hook for comfortable handling
- Central pipetting button and separate ejection function
- One-handed operation for both left and right handers
- Corrosion-resistant piston and ejector
- Fully autoclavable at 121 °C (2 bar), acc. to DIN EN 285
- DE-M approved
- CE mark (IVD)
- Volume change protection
- Multichannel pipettes with freely rotatable pipetting unit (360°)

**Transferpette® S, variable:**
- 4-digit volume display for maximum precision, always clearly visible
- Featuring Easy Calibration technology for readjustment without special tools

**Technical specifications:**

| Model | Volume (µl) | Correctives* (%) | Variation coefficient* (%) |
|---|---|---|---|
| **D-1** | 0.1-1 | 1 µl ≤±2.0 | 1 µl ≤1.2 |
| **D-2.5** | 0.1-2.5 | 2.5 µl ≤±1.4 | 2.5 µl ≤0.7 |
| **D-10** | 0.5-10 | 10 µl ≤±1.0 | 10 µl≤ 0.8 |
| **D-20** | 2-20 | 20 µl ≤±0.8 | 20 µl≤0.4 |
| **D-50** | 5-50 | 50 µl ≤±0,8 | 50 µl ≤0,3 |
| **D-100** | 10-100 | 100 µl ≤±0.6 | 100 µl≤0.2 |
| **D-200** | 20-200 | 200 µl ≤±0.6 | 200 µl≤0.2 |
| **D-1000** | 100-1000 | 1000 µl ≤±0.6 | 1000 µl≤ 0.2 |
| **D-5000** | 500-5000 | 5000 µl ≤±0.6 | 5000 µl≤ 0.2 |
| **D-10000** | 1000-10000 | 10000 µl ≤±0.6 | 10000 µl ≤0.2 |

| | | | |
|---|---|---|---|
| **F-10** | 10 | ≤±1.0 | ≤0.5 |
| **F-20** | 20 | ≤±0.8 | ≤0.4 |
| **F-25** | 25 | ≤±0.8 | ≤0.4 |
| **F-50** | 50 | ≤±0.8 | ≤0.4 |
| **F-100** | 100 | ≤±0.6 | ≤0.2 |
| **F-200** | 200 | ≤±0.6 | ≤0.2 |
| **F-500** | 500 | ≤±0.6 | ≤0.2 |
| **F-1000** | 1000 | ≤±0.6 | ≤0.2 |

| | | | |
|---|---|---|---|
| **M8-10/M12-10** | 0.5-10 | 10 µl ≤±1.6 | 10 µl≤1.0 |
| **M8-50/M12-50** | 5-50 | 50 µl ≤±0.8 | 20 µl≤0.4 |
| **M8-100/M12-100** | 10-100 | 100 µl ≤±0.8 | 100 µl ≤0.3 |
| **M8-200/M12-200** | 20-200 | 200 µl ≤±0.8 | 200 µl ≤0.3 |
| **M8-300/M12-300** | 30-300 | 300 µl ≤±0.6 | 300 µl ≤0.3 |

*Adjusted to 'Ex'. Margins of error refer to the nominal volume (= max. volume) printed on the instrument, assuming that the instrument, ambient air and distilled water are at the same temperature (20 °C), and that the instrument is operated evenly and smoothly.

**1-channel, variable**

**Delivery incl.** certificate of quality and shelf/rack mount.

| Model | Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **D-1** | 0,1-1 | 0,001 | 10/20 | **HL21.1** | 1 | 265,55 |
| **D-2,5** | 0,1-2,5 | 0,002 | 10/20/50 | **CNN3.1** | 1 | 265,55 |
| **D-10** | 0,5-10 | 0,01 | 10/20/50 | **HL22.1** | 1 | 265,55 |
| **D-20** | 2-20 | 0,02 | 200/300 | **HL23.1** | 1 | 238,65 |
| **D-50** | 5-50 | 0,05 | 200/300 | **ECX8.1** | 1 | 238,65 |
| **D-100** | 10-100 | 0,1 | 200/300 | **HL24.1** | 1 | 238,65 |
| **D-200** | 20-200 | 0,2 | 200/300 | **HL25.1** | 1 | 238,65 |
| **D-1000** | 100-1000 | 1 | 1000/1250 | **HL26.1** | 1 | 238,65 |
| **D-5000** | 500-5000 | 5 | 5000 | **HL27.1** | 1 | 265,55 |
| **D-10 000** | 1000-10 000 | 10 | 10 000 | **HL28.1** | 1 | 265,55 |

**1-channel, fixed volume**

**Delivery incl.** certificate of quality and shelf/rack mount.

| Model | Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **F-10** | 10 | Fix | 20 | **HL34.1** | 1 | 151,60 |
| **F-20** | 20 | Fix | 200 | **HL35.1** | 1 | 151,60 |
| **F-25** | 25 | Fix | 200 | **CNN4.1** | 1 | 150,50 |
| **F-50** | 50 | Fix | 200 | **HL36.1** | 1 | 151,60 |
| **F-100** | 100 | Fix | 200 | **HL37.1** | 1 | 151,60 |
| **F-200** | 200 | Fix | 200 | **HL38.1** | 1 | 151,60 |
| **F-500** | 500 | Fix | 1000/1250 | **HL39.1** | 1 | 151,60 |
| **F-1000** | 1000 | Fix | 1000/1250 | **HL40.1** | 1 | 151,60 |

**8-channel, variable**

**Delivery incl.** certificate of quality, 2 x TipBox filled with BRAND® pipette tips, 1 shelf/rack mount, 1 reagent reservoir, 1 set of FKM shaft seals, 1 assembly key and silicone oil.

| Model | Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **M8-10** | 0,5-10 | 0,01 | 10/20 | **CNN5.1** | 1 | 624,60 |
| **M8-50** | 5-50 | 0,1 | 200/300 | **CNN6.1** | 1 | 624,60 |
| **M8-100** | 10-100 | 0,2 | 200/300 | **CNN7.1** | 1 | 624,60 |
| **M8-200** | 20-200 | 0,2 | 200/300 | **CNN8.1** | 1 | 624,60 |
| **M8-300** | 30-300 | 0,5 | 1000/1250 | **CNN9.1** | 1 | 624,60 |

**12-channel, variable**

**Delivery incl.** certificate of quality, 2 x TipBox filled with BRAND® pipette tips, 1 shelf/rack mount, 1 reagent reservoir, 1 set of FKM shaft seals, 1 assembly key and silicone oil.

| Model | Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **M12-10** | 0,5-10 | 0,01 | 10/20 | **CNP0.1** | 1 | 715,95 |
| **M12-50** | 5-50 | 0,1 | 200/300 | **CNP1.1** | 1 | 715,95 |
| **M12-100** | 10-100 | 0,2 | 200/300 | **CNP2.1** | 1 | 715,95 |
| **M12-200** | 20-200 | 0,2 | 200/300 | **CNP3.1** | 1 | 715,95 |
| **M12-300** | 30-300 | 0,5 | 1000/1250 | **CNP4.1** | 1 | 715,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| Table stand for Transferpette® S, 6 holders | **HL32.1** | 1 | 70,00 |
| Shelf holder for Transferpette® S, 1 holder | **HL33.1** | 1 | 13,65 |

▶ Pipette stands see page 447

# Microlitre pipettors, BRAND



121°C

## Starter kits Transferpette® S, variable

**Delivery incl.** 3 Transferpette® S, variable, 3 boxes filled with pipette tips and 3 shelf holders.

| Type | Model | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Micro starter kit | D-1, D-10, D-100 | **HL29.1** | 1 | 726,70 |
| Standard starter kit | D-10, D-100, D-1000 | **NA40.1** | 1 | 704,15 |
| Midi starter kit | D-20, D-200, D-1000 | **HL30.1** | 1 | 686,95 |
| Macro starter kit | D-1000, D-5000, D-10 000 | **HL31.1** | 1 | 726,70 |

## Pipette tip coding

| Pipette tip No. | Pipette tip designation | Pipette tip type | Catalogue page |
|---|---|---|---|
| 1-19 | Standard | Standard quality for general laboratory applications | 449-451 |
| 20-27 | Pipette tips by Brand | Pipette tips produced in a cleanroom environment | 452 |
| 28-31 | Filter tips by Brand | Pipette tips with aerosol filter produced in a cleanroom environment | 453 |
| 32-42 | MultiPrecision | Pipette tips by Sorenson | 454-455 |
| 43-54 | MultiGuard | Pipette tips by Sorenson with aerosol filter | 456-457 |
| 55-62 | Multi OneTouch | Pipette tips by Sorenson with flexible stem | 458 |
| 63-68 | MultiFlex | Gelloading pipette tips by Sorenson | 459 |
| 69-70 | Cell Saver Tips | Pipette tips with large opening | 460 |

## Transferpette®/Transferpette® S

| Suitable pipettor tips | | | | Pipettors Art.-No. (****.1) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | HL21 HL34 | HL22 CNN5 CNP0 | HL23 ECX8 HL24 HL35 HL36 HL37 | CNN6 CNN7 CNN8 CNN9 CNP1 CNP2 CNP3 CNP4 | HL25 HL38 | HL26 HL39 HL40 | HL27 | HL28 |
| 0,1-10 µl | 28 | | | x | x | | | | | | |
| | 32 | 33 | | | x | | | | | | |
| | 63 | | | | x | | | | | | |
| | 43 | 45 | | | x | | | | | | |
| 0,5-10 µl | 34 | | | | x | | | | | | |
| | 46 | | | | x | | | | | | |
| 0,1-20 µl | 21 | | | x | x | | | | | | |
| | 56 | | | x | x | | | | | | |
| | 60 | | | | x | | | | | | |
| 1-20 µl | 29 | | | | x | | | | | | |
| | 47 | | | | x | | | | | | |
| 1-50 µl | 22 | | | | x | | | | | | |
| 1-100 µl | 48 | | | | x | x | | | | | |
| 1-200 µl | 3 | 4 | 5 | | | x | x | x | | | |
| | 6 | | | | | x | x | x | | | |
| | 23 | 24 | | | | x | x | x | | | |
| | 30 | | | | | x | x | x | | | |
| | 35 | 36 | | | | x | x | x | | | |
| | 37 | 38 | | | | x | x | x | | | |
| | 66 | 67 | 68 | | | x | x | | | | |
| | 52 | | | | | x | x | | | | |
| 1-300 µl | 25 | | | | | x | x | x | | | |
| | 39 | | | | | | | x | | | |
| | 51 | | | | | | | x | | | |
| | 57 | 61 | | | | | | x | | | |
| 100-1250 µl | 9 | 10 | | | | | | | x | | |
| | 26 | 27 | | | | | | | x | | |
| | 31 | | | | | | | | x | | |
| | 40 | 41 | 42 | | | | | | x | | |
| | 53 | | | | | | | | x | | |
| 1-5 ml | 16 | 17 | | | | | | | | x | |
| 1-10 ml | 19 | | | | | | | | | | x |

# Microlitre pipettors, Gilson



## Pipetman® Neo

By Gilson. Infinitely adjustable air cushion pipettor.
Robust, durable, precise and easy to maintain.

- Grease-free sealing system
- Clip tip ejector made of metal for easy dismantling and secure grip
- Multichannel pipettes with patented piston stroke mechanism which eliminates differences in volume between individual channels
- With Certificate of Conformity in accordance with DIN EN ISO 8655 with Test Protocol
- CE-mark in accordance with IVD

**Technical specifications:**

| Model | Volume (µl) | Systematic error (± µl) | Random deviation (≤ µl) |
|---|---|---|---|
| **P2N** | 0,2<br>0,5<br>2 | 0,024<br>0,025<br>0,03 | 0,012<br>0,012<br>0,014 |
| **P10N** | 1<br>5<br>10 | 0,025<br>0,075<br>0,1 | 0,012<br>0,03<br>0,04 |
| **P20N** | 2<br>10<br>20 | 0,1<br>0,1<br>0,2 | 0,03<br>0,05<br>0,06 |
| **P20N 8x20 12x20** | 2<br>10<br>20 | 0,1<br>0,2<br>0,4 | 0,08<br>0,1<br>0,2 |
| **P100N** | 10<br>50<br>100 | 0,35<br>0,4<br>0,8 | 0,1<br>0,12<br>0,15 |
| **P200N** | 20<br>100<br>200 | 0,5<br>0,8<br>1,6 | 0,2<br>0,25<br>0,3 |
| **P200N 8x20 12x20** | 20<br>100<br>200 | 0,5<br>1<br>2 | 0,25<br>0,4<br>0,6 |
| **P1000N** | 100<br>500<br>1000 | 3<br>4<br>8 | 0,6<br>1<br>1,5 |

**1-channel**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2-2 | 0,002 | 10 | **HY83.1** | 1 | 268,75 |
| 1-10 | 0,02 | 10 | **HY84.1** | 1 | 268,75 |
| 2-20 | 0,02 | 200 | **HY85.1** | 1 | 227,90 |
| 10-100 | 0,2 | 200 | **HY86.1** | 1 | 227,90 |
| 20-200 | 0,2 | 200 | **HY87.1** | 1 | 227,90 |
| 100-1000 | 2,0 | 1000 | **HY88.1** | 1 | 227,90 |

**8-channel**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2-20 | 0,02 | 200 | **TT05.1** | 1 | 634,25 |
| 20-200 | 0,2 | 200 | **TT06.1** | 1 | 634,25 |

**12-channel**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2-20 | 0,02 | 200 | **TT07.1** | 1 | 765,40 |
| 20-200 | 0,2 | 200 | **TT08.1** | 1 | 765,40 |

## Pipetman® Neo starter kits

**Delivery incl.** 3 microliter pipettes Pipetman® Neo, 2 or 3 boxes filled with pipette tips and 3 single pipette holders.

| Type | Model | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Starter kit Neo | P20N, P200N, P1000N | **NA61.1** | 1 | 686,95 |
| PCR kit Neo | P10N, P100N, P1000N | **NA62.1** | 1 | 801,95 |



## Accessories for Pipetman® Neo

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Single pipette holder, 1 holder | **HY79.1** | 1 | 14,20 |
| Multi channel pipettor holder, 1 holder | **TT09.1** | 1 | 32,45 |
| Pipette carousel, 7 holders | **HY80.1** | 1 | 95,65 |
| Coloris™ Clips (5 colours, sorted) | **HY81.1** | 10 | 12,85 |

## Gilson multichannel pipettors Pipetman® Neo

| Suitable pipettor tips | Pipettors Art.-No. (****.1) | | | | |
|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | TT05 TT07 | TT06 TT07 |
| 1-20 µl | 47 | | | x | |
| 1-100 µl | 48 | | | x | |
| 1-200 µl | 4 | | | | x |
| | 23 | 24 | | x | x |
| | 35 | | | | x |
| | 36 | 37 | 38 | x | x |
| | 49 | | | | x |
| | 50 | | | | x |
| 1-350 µl | 7 | | | | x |
| | 39 | | | x | x |
| | 57 | 61 | | | x |
| 40-350 µl | 8 | | | | x |

# Microlitre pipettors, Gilson



## Pipetman® G

By Gilson. Variable air-displacement pipette offering one of the lowest pipetting forces on the market. Equipped with a clip ejector made of metal for an easy tip removal. These pipette models are noted for their robustness, accuracy, ease of maintenance and long life.

- Easy dismantling and maintenance
- Despite the low pipetting force, the initial pressure point is easy to feel during pipetting
- P5000G and P10 ml G pipettes come with a protective filter which protects the piston and prevents contamination
- Conformity certified to DIN EN ISO 8655 with inspection certificate
- CE mark to IVD

**Technical specifications:**

| Model | Capacity (µl) | Systematic deviation (± µl) | Random deviation (± µl) |
|---|---|---|---|
| **P2G** | 0.2<br>0.5<br>2 | 0.024<br>0.025<br>0.03 | 0.012<br>0.012<br>0.014 |
| **P10G** | 1<br>5<br>10 | 0.025<br>0.075<br>0.1 | 0.012<br>0.03<br>0.04 |
| **P20G** | 2<br>10<br>20 | 0.1<br>0.1<br>0.2 | 0.03<br>0.05<br>0.06 |
| **P100G** | 10<br>50<br>100 | 0.35<br>0.4<br>0.8 | 0.1<br>0.12<br>0.15 |
| **P200G** | 20<br>100<br>200 | 0.5<br>0.8<br>1.6 | 0.2<br>0.25<br>0.3 |
| **P1000G** | 100<br>500<br>1000 | 3<br>4<br>8 | 0.6<br>1<br>1.5 |
| **P5000G** | 500<br>2500<br>5000 | 12<br>15<br>30 | 3<br>5<br>8 |
| **P10 ml G** | 1 ml<br>5 ml<br>10 ml | 30<br>40<br>60 | 6<br>10<br>16 |

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2-2 | 0,002 | 10 | **TP68.1** | 1 | 268,75 |
| 1-10 | 0,02 | 10 | **TP69.1** | 1 | 268,75 |
| 2-20 | 0,02 | 200 | **TP70.1** | 1 | 227,90 |
| 10-100 | 0,2 | 200 | **TP71.1** | 1 | 227,90 |
| 20-200 | 0,2 | 200 | **TP72.1** | 1 | 227,90 |
| 100-1000 | 2,0 | 1000 | **TP73.1** | 1 | 227,90 |
| 1000-5000 | 2,0 | 5000 | **TP74.1** | 1 | 268,75 |
| 1-10 ml | 20,0 | 10 ml | **TP75.1** | 1 | 268,75 |

## Pipetman® G Starter Kits

**Delivery incl.** 3 Pipetman® G microlitre pipettes, 2 boxes filled with pipette tips, 3 single-pipette holders and 3 plastic ejectors.

| Type | Model | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Starter Kit G | P20G, P200G, P1000G | **TP76.1** | 1 | 657,90 |
| Micro Volume Kit G | P2G, P10G, P100G | **TP77.1** | 1 | 747,15 |



## Accessories for Pipetman® G + L

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Single pipette holder, 1 holder | **HY79.1** | 1 | 14,20 |
| Pipette carousel, 7 holders | **HY80.1** | 1 | 95,65 |
| Coloris™ Clips (5 colours, sorted) | **HY81.1** | 10 | 12,85 |
| Protective filter for P5000 and P10 ml | **HY78.1** | 100 | 26,20 |
| Pipette grease for Pipetman® M, L and G (1 g) | **TP78.1** | 1 | 18,55 |

## Gilson microlitre pipettors Pipetman®Neo / Pipetman® G

| Suitable pipettor tips | | | | Pipettors Art.-No. (****.1) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | HY83 TP68 | HY84 TP69 | HY85 TP70 | HY86 TP71 | HY87 TP72 | HY88 TP73 | TP74 | TP75 |
| 0,1-10 µl | 1 | | | x | x | | | | | | |
| | 28 | | | x | | | | | | | |
| | 32 | 33 | 34 | x | x | | | | | | |
| | 43 | 44 | 45 | x | x | | | | | | |
| | 63 | 64 | 65 | x | x | | | | | | |
| 0,5-10 µl | 46 | | | | x | | | | | | |
| 0,1-20 µl | 20 | | | x | | | | | | | |
| | 56 | 60 | | x | x | x | | | | | |
| 1-20 µl | 47 | | | | | x | | | | | |
| 1-100 µl | 48 | | | | | x | | | | | |
| 1-200 µl | 4 | 5 | 6 | | | x | x | x | | | |
| | 35 | 36 | 37 | | | x | x | x | | | |
| | 38 | | | | | x | x | x | | | |
| | 66 | 67 | 68 | | | x | x | x | | | |
| | 50 | | | | | | | x | | | |
| | 52 | | | | | | x | | | | |
| 1-300 µl | 39 | | | | | x | x | x | | | |
| | 51 | | | | | | x | x | | | |
| | 57 | 61 | | | | | | x | | | |
| 100-1000 µl | 9 | 10 | | | | | | | x | | |
| | 40 | 41 | 42 | | | | | | x | | |
| | 53 | 54 | | | | | | | x | | |
| | 58 | 62 | | | | | | | x | | |
| 1-5 ml | 14 | | | | | | | | | x | |
| 1-10 ml | 19 | | | | | | | | | | x |

# Microlitre pipettors, Gilson




121°C

## Pipetman® L

By Gilson. Lightweight and safe yet robust quality pipette.
**Pipette with greatly reduced pipetting forces** - increases throughput without compromising on comfort.

- Patented Lock/Unlock System for safe pipetting
- The set volume is locked during the first pipetting operation
- Easy release of the volume adjustment lock
- Ergonomic handle
- Adjustable tip ejector for left- and right-handed users
- Plastic tip ejector
- 2D identification code
- Completely autoclavable

**Technical specifications:**

| Model | Capacity (µl) | Systematic deviation (± µl) | Random deviation (± µl) |
|---|---|---|---|
| **P2LA** | 0.2<br>0.5<br>2 | 0.024<br>0.025<br>0.03 | 0.012<br>0.012<br>0.014 |
| **P10LA** | 1<br>5<br>10 | 0.025<br>0.075<br>0.1 | 0.012<br>0.03<br>0.04 |
| **P20LA** | 2<br>10<br>20 | 0.1<br>0.1<br>0.2 | 0.03<br>0.05<br>0.06 |
| **P100LA** | 10<br>50<br>100 | 0.35<br>0.4<br>0.8 | 0.1<br>0.12<br>0.15 |
| **P200LA** | 20<br>100<br>200 | 0.5<br>0.8<br>1.6 | 0.2<br>0.25<br>0.3 |
| **P1000LA** | 100<br>500<br>1000 | 3<br>4<br>8 | 0.6<br>1<br>1.5 |
| **P5000LA** | 500<br>2500<br>5000 | 12<br>15<br>30 | 3<br>5<br>8 |
| **P10 ml LA** | 1 ml<br>5 ml<br>10 ml | 30<br>40<br>60 | 6<br>10<br>16 |

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2-2 | 0,002 | 10 | **TP97.1** | 1 | 274,15 |
| 0,5-10 | 0,02 | 10 | **TP98.1** | 1 | 274,15 |
| 2-20 | 0,02 | 200 | **TP99.1** | 1 | 274,15 |
| 10-100 | 0,2 | 200 | **TT00.1** | 1 | 274,15 |
| 50-200 | 0,2 | 200 | **TT01.1** | 1 | 274,15 |
| 100-1000 | 2,0 | 1000 | **TT02.1** | 1 | 274,15 |
| 1000-5000 | 2,0 | 5000 | **TT03.1** | 1 | 274,15 |
| 1-10 ml | 20,0 | 10 ml | **TT04.1** | 1 | 274,15 |

## Starter kits Pipetman® L

**Delivery incl.** 3 Pipetman® L microlitre pipettes, 2 boxes filled with pipette tips and 3 pipette holders.

| Type | Model | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Starter kit L | P20LA, P200LA, P1000LA | **CTY2.1** | 1 | 789,05 |
| Micro Volume Kit L | P2LA, P10LA, P100LA | **CTY3.1** | 1 | 822,40 |



## Accessories for Pipetman® G + L

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Single pipette holder, 1 holder | **HY79.1** | 1 | 14,20 |
| Pipette carousel, 7 holders | **HY80.1** | 1 | 95,65 |
| Coloris™ Clips (5 colours, sorted) | **HY81.1** | 10 | 12,85 |
| Protective filter for P5000 and P10 ml | **HY78.1** | 100 | 26,20 |
| Pipette grease for Pipetman® M, L and G (1 g) | **TP78.1** | 1 | 18,55 |

## Gilson microlitre pipettors Pipetman® L

| Suitable pipettor tips | | | | Pipettors Art.-No. (****.1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | TP97 | TP98 | TP99 | TT00 | TT01 | TT02 | TT03 | TT04 |
| 0,1-10 µl | 1 | | | x | x | | | | | | |
| | 28 | | | x | | | | | | | |
| | 32 | 33 | 34 | x | x | | | | | | |
| | 43 | 44 | 45 | x | x | | | | | | |
| | 63 | 64 | 65 | x | x | | | | | | |
| 0,5-10 µl | 46 | | | | x | | | | | | |
| 0,1-20 µl | 20 | | | x | | | | | | | |
| | 56 | 60 | | x | x | x | | | | | |
| 1-20 µl | 47 | | | | | x | | | | | |
| 1-100 µl | 48 | | | | | x | | | | | |
| 1-200 µl | 4 | 5 | 6 | | | x | x | x | | | |
| | 35 | 36 | 37 | | | x | x | x | | | |
| | 38 | | | | | x | x | x | | | |
| | 66 | 67 | 68 | | | x | x | x | | | |
| | 50 | | | | | | | x | | | |
| | 52 | | | | | | x | | | | |
| 1-300 µl | 39 | | | | | x | x | x | | | |
| | 51 | | | | | | x | x | | | |
| | 58 | 62 | | | | | | x | | | |
| 100-1000 µl | 9 | 10 | | | | | | | x | | |
| | 40 | 41 | 42 | | | | | | x | | |
| | 53 | 54 | | | | | | | x | | |
| | 58 | 62 | | | | | | | x | | |
| 1-5 ml | 14 | | | | | | | | | x | |
| 1-10 ml | 19 | | | | | | | | | | x |

# Microlitre pipettors, Socorex



## Micro/macrolitre pipettors Calibra® *digital*

By Socorex. A reliable pipette line noted for its mechanical precision, ergonomics and user friendliness. The setting ring (step gauge) minimises the risk of maladjustment during pipetting and keeps adjustment work to a minimum.

- Super-fast volume adjustment
- Fully autoclavable
- Separate tip ejector
- Narrow shaft, light weight and soft piston action for optimal ease of use
- Attractive colour coding caps for differentiation between the various pipettes
- Resistant to shock, heat, chemicals and UV light
- Each pipette is individually calibrated and delivered with an inspection certificate

**Multichannel pipettors:**
- Turns on the handpiece by 360° and can be adjusted as desired

**Technical specifications:**

| Type | Capacity (µl) | Inaccuracy | Imprecision |
|---|---|---|---|
| 822 | **0.2 - 2** | 0.5 µl <±6 %<br>2 µl <±2 % | 0.5 µl <±5 %<br>2 µl <±1.5 % |
| 822 | **1-10** | 1 µl <±2.5 %<br>10 µl <±1 % | 1 µl <±2 %<br>10 µl <±0.5 % |
| 822 | **2 - 20** | 2 µl <±2.5 %<br>20 µl <±1 % | 2 µl <±1.7 %<br>20 µl <±0.5 % |
| 822 | **10 - 100** | 10 µl <±1.5 %<br>100 µl <±0.8 % | 10 µl <±1 %<br>100 µl <±0.2 % |
| 822 | **20 - 200** | 20 µl <±1.5 %<br>200 µl <±0.6 % | 20 µl <±0.6 %<br>200 µl <±0.2 % |
| 822 | **100 - 1000** | 100 µl <±1.5 %<br>1000 µl <±0.5 % | 100 µl <±0.5 %<br>1000 µl <±0.2 % |
| 832 | **200 - 2000** | 0.2 ml <±1.5 %<br>2 ml <±0.5 % | 0.2 ml <±0.5 %<br>2 ml <±0.2 % |
| 832 | **1000 - 10000** | 1 ml <±1.5 %<br>10 ml <±0.5 % | 1 ml <±0.3 %<br>10 ml <±0.15 % |
| 852 | **1 - 10** | 1 µl <±5.0 %<br>10 µl <±2.0 % | 1 µl <±5.0 %<br>10 µl <±1.5 % |
| 852 | **10 - 100** | 10 µl <±1.0 %<br>100 µl <±0.7 % | 10 µl <±1.0 %<br>100 µl <±0.4 % |
| 852 | **20 - 200** | 20 µl <±0.9 %<br>200 µl <±0.7 % | 20 µl <±0.6 %<br>200 µl <±0.3 % |

**Micro/macrolitre pipettors Calibra® digital 822/832**

| Model | Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1-channel | 0,2-2 | 0,1 | 10 | **K307.1** | 1 | 307,45 |
| 1-channel | 1-10 | 0,05 | 10 | **K308.1** | 1 | 307,45 |
| 1-channel | 2-20 | 0,1 | 200 | **K309.1** | 1 | 317,15 |
| 1-channel | 10-100 | 0,5 | 200 | **K310.1** | 1 | 317,15 |
| 1-channel | 20-200 | 1,0 | 200 | **K311.1** | 1 | 317,15 |
| 1-channel | 100-1000 | 5,0 | 1000 | **K312.1** | 1 | 317,15 |
| 1-channel | 200-2000 | 10,0 | 2000 | **K313.1** | 1 | 335,40 |
| 1-channel | 1000-10000 | 100,0 | 10000 | **K314.1** | 1 | 335,40 |

**Multichannel pipettors Calibra® digital 852**

| Model | Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 8-channel | 1-10 | 0,05 | 10 | **P320.1** | 1 | 817,00 |
| 8-channel | 10-100 | 0,5 | 200, 300 | **L662.1** | 1 | 766,50 |
| 8-channel | 20-200 | 1,0 | 200, 300 | **L663.1** | 1 | 766,50 |
| 12-channel | 10-100 | 0,5 | 200, 300 | **L664.1** | 1 | 879,35 |
| 12-channel | 20-200 | 1,0 | 200, 300 | **L665.1** | 1 | 879,35 |

## Disposable filters

For Calibra®-pipettors. Filter K317.1 is also suitable for 10 ml Acura pipettes. Protect against contamination of the pipettor and sample.

| For | Material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Pipettes 2 ml, | Cellulose | **K316.1** | 250 | 40,80 |
| Pipettors 10 ml | PP | **K317.1** | 100 | 33,35 |

## Pipettor stands

By Socorex. Made of **PA**. For max. 3 one-/ or multichannel pipettors from Socorex, Models Calibra® and Acura®. Suitable for microdispenser pipettors Acura® 865 and stem pipettors Acura® manual 810.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EP93.1** | 1 | 100,00 |

## Air cushion-piston pipettors Calibra® *digital*

| Suitable pipettor tips | | | | Pipettors Art.-No. (****.1) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | K307 | K308 | K309 | K310<br>K311 | K312 | K313 | K314 |
| 0,1-10 µl | 32 | | | | x | | | | | |
| | 43 | 45 | | x | x | | | | | |
| | 63 | 64 | 65 | x | x | | | | | |
| 0,5-10 µl | 2 | | | x | x | | | | | |
| | 34 | | | x | x | | | | | |
| | 46 | | | x | x | | | | | |
| 1-20 µl | 47 | | | | | | x | | | |
| 1-100 µl | 48 | | | | | | x | | | |
| 1-200 µl | 3 | | | | | | x | | | |
| | 5 | 6 | | | | x | x | | | |
| | 35 | 36 | | | | x | x | | | |
| | 37 | 38 | | | | x | x | | | |
| | 52 | | | | | x | x | | | |
| | 66 | 67 | 68 | | | x | x | | | |
| 1-300 µl | 39 | | | | | | x | | | |
| 100- 1000 µl | 9 | 10 | | | | | | x | | |
| | 40 | 41 | | | | | | x | | |
| | 53 | | | | | | | x | | |
| 0,1-2 ml | 12 | | | | | | | | x | |
| 1-10 ml | 18 | | | | | | | | | x |

## Multichannel pipettors Calibra® *digital*

| Suitable pipettor tips | | | | Pipettors Art.-No. (****.1) | |
|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | P320 | L662<br>L663<br>L664<br>L665 |
| 0,1-10 µl | 32 | | | x | |
| | 63 | 64 | 65 | x | |
| 0,5-10 µl | 2 | | | x | |
| | 34 | | | x | |
| 1-200 µl | 3 | 5 | 6 | | x |
| | 35 | 36 | | | x |
| | 37 | 38 | | | x |
| | 66 | 67 | 68 | | x |
| 1-300 µl | 39 | | | | x |

# Microlitre pipettors, Socorex



121 °C

## Acura®-microlitre pipettes *manual* XS 826

By Socorex. Features: see Acura® 825 microlitre pipettes.

**Additional features:**

- Innovative calibration system (Swift-Set)
- Tamper-proof seal label for protection of the calibrator
- Outstanding ergonomic profile
- Extremely gentle pipetting action, easier on the hands
- Reduced weight (to 83 from 88 g)
- Reduced stem length allows optimised instrument guidance
- Conical stem end for easy access to reaction vessels

**Technical specifications:**

| Capacity (µl) | Inaccuracy (%) | Non-precision (%) |
|---|---|---|
| **0.1-2** | 0.5 µl <±6.0<br>2.0 µl <±2.0 | 0.5 µl <5.0<br>2.0 µl <1.5 |
| **0.5-10** | 1.0 µl <±2.5<br>10 µl <±1.0 | 1.0 µl <1.8<br>10 µl <0.5 |
| **1-10** | 1.0 µl <±2.5<br>10 µl <±1.0 | 1.0 µl <2.5<br>10 µl <0.7 |
| **2-20** | 2.0 µl <±2.5<br>20 µl <±1.0 | 2.0 µl <1.7<br>20 µl <0.5 |
| **5-50** | 5.0 µl <±1.5<br>50 µl <±1.0 | 5.0 µl <1.0<br>50 µl <0.4 |
| **10-100** | 10 µl <±1.5<br>100 µl <±0.8 | 10 µl <1.0<br>100 µl <0.2 |
| **20-200** | 20 µl <±1.5<br>200 µl <±0.8 | 20 µl <0.6<br>200 µl <0.2 |
| **100-1000** | 100 µl <±1.5<br>1000 µl <±0.5 | 100 µl <0.5<br>1000 µl <0.2 |

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1-2 | 0,002 | 10 | **TX47.1** | 1 | 307,45 |
| 0,5-10 | 0,01 | 10 | **TX48.1** | 1 | 307,45 |
| 1-10 | 0,01 | 200 | **TX49.1** | 1 | 285,95 |
| 2-20 | 0,02 | 200 | **TX50.1** | 1 | 285,95 |
| 5-50 | 0,1 | 200 | **TX51.1** | 1 | 285,95 |
| 10-100 | 0,1 | 200 | **TX52.1** | 1 | 285,95 |
| 20-200 | 0,2 | 200 | **TX53.1** | 1 | 285,95 |
| 100-1000 | 1 | 1000 | **TX54.1** | 1 | 285,95 |

## TwiXS Packs

**Delivery incl.** 2 Acura® *manual* XS pipettes, shelf/rack mount for 2 pipettes and inspection certificate.

| Set | Design | Art. No. | Pack Qty. (set) | € |
|---|---|---|---|---|
| ① | 0.1-2 / 2-20 µl | **TX55.1** | 1 | 533,20 |
| ② | 0.5-10 / 10-100 µl | **TX56.1** | 1 | 533,20 |
| ③ | 2-20 / 20-200 µl | **TX57.1** | 1 | 533,20 |
| ④ | 5-50 / 20-200 µl | **TX58.1** | 1 | 533,20 |
| ⑤ | 10-100 / 100-1000 µl | **TX59.1** | 1 | 533,20 |
| ⑥ | 20-200 / 100-1000 µl | **TX60.1** | 1 | 533,20 |

## Rack pipette holder

By Socorex. Made of **PC**. For two Calibra® or Acura® pipettes.
With self-adhesive strips for secure adhesion to many surfaces.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TY58.1** | 1 | 19,90 |

## Micro-/macrolitre pipettors Acura® /Acura® XS

| Suitable pipettor tips | | | | Pipettors Art.-No. (****.1) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | AT26 TX47 | AN94 AN95 AN96 AT27 TX48 | AT28 AT29 TX49 TX50 | AN97 AN98 AN99 AP00 AP01 AT30 AT32 TX51 TX53 | AT31 TX52 | AP02 AP03 AP04 AT33 TX54 | AP06 AP07 AT34 | AP05 | AP08 AT35 |
| 0,1-10 µl | 32 | | | | x | | | | | | | |
| | 43 | 44 | | x | x | | | | | | | |
| | 63 | 64 | 65 | x | x | | | | | | | |
| 0,5-10 µl | 2 | | | x | x | | | | | | | |
| | 34 | | | x | x | | | | | | | |
| | 46 | | | x | x | | | | | | | |
| 1-20 µl | 47 | | | | | | x | x | | | | |
| | 56 | 60 | | x | | | | | | | | |
| 1-100 µl | 48 | | | | | | x | x | | | | |
| 1-200 µl | 3 | | | | | | x | | | | | |
| | 4 | 5 | 6 | | | x | x | x | | | | |
| | 35 | 36 | | | | x | x | | | | | |
| | 37 | 38 | | | | x | x | | | | | |
| | 52 | | | | | x | x | x | | | | |
| | 66 | 67 | 68 | | | x | x | x | | | | |
| 1-300 µl | 57 | | | | | | x | x | | | | |
| 100-1000 µl | 9 | 10 | | | | | | | x | | | |
| | 40 | 41 | | | | | | | x | | | |
| | 53 | | | | | | | | x | | | |
| | 58 | 62 | | | | | | | x | | | |
| 0,1-2 ml | 12 | | | | | | | | | | x | |
| 1-5 ml | 15 | | | | | | | | | x | | |
| 1-10 ml | 18 | | | | | | | | | | | x |

## Multichannel pipettors Acura® 855

| Suitable pipettor tips | | | | Pipettors Art.-No. (****.1) | | |
|---|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | AT43 AT46 | AT44 AT47 | AT45 AT48 |
| 0,1-10 µl | 32 | | | x | | |
| | 43 | 44 | | x | | |
| | 63 | 64 | 65 | x | | |
| 0,5-10 µl | 2 | | | x | | |
| | 34 | | | x | | |
| | 46 | | | x | | |
| 1-20 µl | 47 | 51 | | | x | |
| 1-100 µl | 48 | | | | x | |
| 1-200 µl | 3 | | | | x | |
| | 5 | 6 | | | x | |
| | 35 | 36 | | | x | |
| | 37 | 38 | | | x | |
| | 52 | | | | x | |
| | 66 | 67 | 68 | | x | |
| 1-300 µl | 39 | | | | x | |
| 40-350 µl | 8 | | | | | x |

# Microlitre pipettors, Socorex



121°C

## Micro-/macrolitre pipettors Acura®

By Socorex. Acura® the manual range of pipettors excels for its speedy and reliable volume setting. It possesses all the features typical for the new generation of instruments and offers extremely high pipetting comfort.

- Completely autoclavable
- Lightweight
- Extremely gentle piston activation
- Separate, large tip ejector button
- Easy tip ejection
- Slim pipettor shaft
- All function buttons are easy to operate
- Justip™-tip adjustment-system enables exact adjustment of shaft height
- Innovative and rapid calibration system with integral spanners
- Original serial number and control certificate

**Multichannel pipettors:**
- Housing can be rotated by 360° for optimal working comfort
- Step-by-step tip ejection

**Technical specifications Acura® 825/835, variable:**

| Typ | Capacity (µl) | Non accuracy (%) | Non precision (%) |
|---|---|---|---|
| 825 | **0.1-2** | 0.5 µl <±6.0<br>2.0 µl <±2.0 | 0.5 µl <5.0<br>2.0 µl <1.5 |
| 825 | **0.5-10** | 1.0 µl <±2.0<br>10 µl <±1.0 | 1.0 µl <1.8<br>10 µl <0.5 |
| 825 | **1-10** | 1.0 µl <±2.0<br>10 µl <±1.0 | 1.0 µl <2.5<br>10 µl <0.7 |
| 825 | **2-20** | 2.0 µl <±2.0<br>20 µl <±1.0 | 2.0 µl <1.7<br>20 µl <0.5 |
| 825 | **5-50** | 5.0 µl <±1.4<br>50 µl <±1.0 | 5.0 µl <1.0<br>50 µl <0.5 |
| 825 | **10-100** | 10 µl <±1.0<br>100 µl <±0.8 | 10 µl <1.0<br>100 µl <0.2 |
| 825 | **20-200** | 20 µl <±1.0<br>200 µl <±0.8 | 20 µl <0.6<br>200 µl <0.2 |
| 825 | **100-1000** | 100 µl <±0.7<br>1000 µl <± 0.5 | 100 µl <0.5<br>1000 µl <0.2 |
| 835 | **500-5000** | 500 µl <±1.0<br>5000 µl <±0.7 | 500 µl <0.6<br>5000 µl <0.4 |
| 835 | **1000-10 000** | 1000 µl <±0.8<br>10 000 µl <±0.5 | 1000 µl <0.4<br>10 000 µl <0.2 |

**Technical specifications Acura® 855, multichannel pipettors:**

| Capacity (µl) | Non accuracy (%) | Non precision (%) |
|---|---|---|
| **0.5-10** | 1 µl <±3.5<br>10 µl <±1.5 | 0.5 µl <3.0<br>10 µl <1.0 |
| **5-50** | 5 µl <±1.0<br>50 µl <±0.8 | 5 µl <1.0<br>50 µl <0.4 |
| **40-350** | 40 µl <±1.0<br>350 µl <±0.8 | 40 µl <0.6<br>350 µl <0.3 |

**Technical specifications Acura® 815/835 F, fix volume:**

| Capacity (µl) | Non accuracy (%) | Non precision (%) |
|---|---|---|
| **1**<br>**5**<br>**10** | <±2.0<br><±1.4<br><±0.7 | <2.0<br><1.0<br><0.7 |
| **20**<br>**25**<br>**50** | <±0.7<br><±0.7<br><±0.7 | <0.5<br><0.6<br><0.5 |
| **100**<br>**200**<br>**250** | <±0.7<br><±0.7<br><±0.7 | <0.3<br><0.4<br><0.4 |
| **500**<br>**1000**<br>**2000** | <±0.7<br><±0.6<br><±0.8 | <0.3<br><0.2<br><0.5 |
| **2500**<br>**5000**<br>**10 000** | <±0.8<br><±0.7<br><±0.5 | <0.5<br><0.4<br><0.2 |

**Acura® 825/835 variable**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1-2 | 0,002 | 10 | **AT26.1** | 1 | 270,90 |
| 0,5-10 | 0,01 | 10 | **AT27.1** | 1 | 270,90 |
| 1-10 | 0,01 | 200 | **AT28.1** | 1 | 254,80 |
| 2-20 | 0,02 | 200 | **AT29.1** | 1 | 254,80 |
| 5-50 | 0,1 | 200 | **AT30.1** | 1 | 254,80 |
| 10-100 | 0,1 | 200 | **AT31.1** | 1 | 254,80 |
| 20-200 | 0,2 | 200 | **AT32.1** | 1 | 254,80 |
| 100-1000 | 1,0 | 1000 | **AT33.1** | 1 | 254,80 |
| 500-5000 | 10,0 | 5000 | **AT34.1** | 1 | 278,45 |
| 1000-10 000 | 10,0 | 10 000 | **AT35.1** | 1 | 278,45 |

**Acura® 855, multichannel pipettors 8-channel**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5-10 | 0,01 | 10 | **AT43.1** | 1 | 693,40 |
| 5-50 | 0,10 | 200, 300 | **AT44.1** | 1 | 651,45 |
| 40-350 | 0,40 | 350 | **AT45.1** | 1 | 651,45 |

**Acura® 855, multichannel pipettors 12-channel**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5-10 | 0,01 | 10 | **AT46.1** | 1 | 797,65 |
| 5-50 | 0,10 | 200, 300 | **AT47.1** | 1 | 748,20 |
| 40-350 | 0,40 | 350 | **AT48.1** | 1 | 748,20 |

**Acura® 815/835F, fix volume**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | Fix | 10 | **AN94.1** | 1 | 174,15 |
| 5 | Fix | 10 | **AN95.1** | 1 | 174,15 |
| 10 | Fix | 10 | **AN96.1** | 1 | 174,15 |
| 20 | Fix | 200, 300 | **AN97.1** | 1 | 174,15 |
| 25 | Fix | 200, 300 | **AN98.1** | 1 | 174,15 |
| 50 | Fix | 200, 300 | **AN99.1** | 1 | 174,15 |
| 100 | Fix | 200, 300 | **AP00.1** | 1 | 174,15 |
| 200 | Fix | 200, 300 | **AP01.1** | 1 | 174,15 |
| 250 | Fix | 1000 | **AP02.1** | 1 | 174,15 |
| 500 | Fix | 1000 | **AP03.1** | 1 | 174,15 |
| 1000 | Fix | 1000 | **AP04.1** | 1 | 174,15 |
| 2000 | Fix | 2000 | **AP05.1** | 1 | 207,50 |
| 2500 | Fix | 5000 | **AP06.1** | 1 | 207,50 |
| 5000 | Fix | 5000 | **AP07.1** | 1 | 207,50 |
| 10 000 | Fix | 10 000 | **AP08.1** | 1 | 207,50 |

## TrioPack Acura® 825 and 835

**Delivery incl.** 3 Acura® pipettes and inspection certificate.

| Set | Design | Art. No. | Pack Qty. (set) | € |
|---|---|---|---|---|
| ① | 0.1-2 / 0.5-10 / 5-50 µl | **TY62.1** | 1 | 711,65 |
| ② | 0.1-2 / 2-20 / 20-200 µl | **TY63.1** | 1 | 696,60 |
| ③ | 1-10 / 5-50 / 20-200 µl | **TY64.1** | 1 | 682,65 |
| ④ | 0.5-10 / 10-100 / 100-1000 µl | **TY65.1** | 1 | 696,60 |
| ⑤ | 1-10 / 10-100 / 100-1000 µl | **TY66.1** | 1 | 682,65 |
| ⑥ | 2-20 / 20-200 / 100-1000 µl | **TY67.1** | 1 | 682,65 |
| ⑦ | 5-50 / 20-200 / 100-1000 µl | **TY68.1** | 1 | 682,65 |
| ⑧ | 10-100 / 100-1000 µl / 0.5-5 ml | **TY69.1** | 1 | 704,15 |
| ⑨ | 100-1000 µl / 0.5-5 / 1-10 ml | **TY70.1** | 1 | 726,70 |

# Microlitre pipettors, Sartorius



## Air cushion-piston pipettors mLINE®, variable

By Sartorius. mLINE®-one-channel pipettors require very little force for pipetting or tip ejection and are characterized by their extremely low weight.

- Completely autoclavable once the Safe-Cone-filter has been removed.
- Ergonomic design enables fatigue-free operation
- Thermo-insulation of inner components improves accuracy
- Easy-to-read display
- Opti-load tip loading mechanism for simple tip ejection
- The start knob makes automatic Safe-Cone filter ejection possible
- Ergonomically designed bow-shaped finger rest with ID-window for individual marking
- Five different coloured knob covers for colour coding
- Certificate of conformity, with test protocol
- Safe-Cone filter prevents contamination of pipettor and sample material (suitable for pipettes from 10 µl on). Please order separately.

**Technical specifications:**

| Volume (µl) | Test volume (µl) | Inaccuracy (%) | Non-precision (%) |
|---|---|---|---|
| **0.1-3** | 0.3<br>1.5<br>3 | 10<br>2.4<br>1.3 | 6<br>1.6<br>0.8 |
| **0.5-10** | 0.5<br>1<br>5<br>10 | 5.00<br>2.50<br>1.50<br>1.00 | 4.00<br>1.50<br>1.00<br>0.60 |
| **2-20** | 2<br>10<br>20 | 3.00<br>1.20<br>0.90 | 2.00<br>1.00<br>0.40 |
| **10-100** | 10<br>50<br>100 | 2.00<br>1.00<br>0.80 | 1.00<br>0.40<br>0.15 |
| **20-200** | 20<br>100<br>200 | 2.00<br>0.80<br>0.60 | 0.80<br>0.30<br>0.15 |
| **100-1000** | 100<br>500<br>1000 | 1.50<br>0.70<br>0.60 | 0.70<br>0.25<br>0.20 |
| **500-5000** | 500<br>2500<br>5000 | 1.50<br>0.60<br>0.50 | 0.60<br>0.30<br>0.15 |

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1-3 | 0,002 | 10/20 | **KC10.1** | 1 | 296,00 |
| 0,5-10 | 0,01 | 10/20 | **AN21.1** | 1 | 269,00 |
| 2-20 | 0,02 | 200, 300 | **AN22.1** | 1 | 269,00 |
| 10-100 | 0,1 | 200, 300 | **AN23.1** | 1 | 269,00 |
| 20-200 | 0,2 | 200, 300 | **AN24.1** | 1 | 269,00 |
| 100-1000 | 1 | 1000 | **AN25.1** | 1 | 269,00 |
| 500-5000 | 10 | 5000 | **AN26.1** | 1 | 269,00 |

## Revolving stand

By Sartorius. Made of **ABS**. For 6 Sartorius-pipettors, series mLINE®.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AL16.1** | 1 | 120,00 |

## Air cushion-piston pipettors mLINE®, variable

| Suitable pipettor tips | | | | Pipettors Art.-No. (****.1) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | KC10 | AN21 | AN22 AN23 | AN24 | AN25 | AN26 |
| 0,1-10 µl | 1 | | | x | | | | | |
| | 28 | | | x | x | | | | |
| | 32 | 33 | | x | x | | | | |
| | 43 | 45 | | x | x | | | | |
| | 63 | 64 | 65 | x | x | | | | |
| 0,5-10 µl | 34 | | | x | x | | | | |
| | 46 | | | x | x | | | | |
| 0,1-20 µl | 20 | | | | x | | | | |
| | 47 | | | | | | x | | |
| | 56 | 60 | | x | x | | | | |
| 1-200 µl | 4 | 5 | | | | x | x | | |
| | 6 | | | | | x | | | |
| | 35 | 36 | | | | x | x | | |
| | 37 | 38 | | | | x | x | | |
| | 49 | 52 | | | | | x | | |
| | 66 | 67 | 68 | | | x | x | | |
| 1-300 µl | 39 | | | | | x | x | | |
| | 51 | | | | | | x | | |
| | 57 | 61 | | | | | x | | |
| 100-1000 µl | 9 | 10 | | | | | | x | |
| | 26 | 27 | | | | | | x | |
| | 40 | 41 | | | | | | x | |
| | 53 | | | | | | | x | |
| 50-1250 µl | 42 | | | | | | | x | |
| | 58 | 62 | | | | | | x | |
| 1-5 ml | 13 | | | | | | | | x |

## Microlitre pipettors eLINE® electronic

| Suitable pipettor tips | | | | Pipettors Art.-No. (****.1) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | LP77 LP82 LP86 | LP78 LP83 LP87 | LP79 | LP84 LP88 | LP80 | LP81 | LP85 LP89 |
| 0,1-10 µl | 1 | | | x | | | | | | |
| | 32 | 33 | | x | | | | | | |
| | 43 | 44 | 45 | x | | | | | | |
| | 63 | 64 | 65 | x | | | | | | |
| 0,5-10 µl | 2 | | | x | | | | | | |
| | 34 | | | x | | | | | | |
| | 46 | | | x | | | | | | |
| 1-20 µl | 47 | | | | | x | x | | | |
| 1-200 µl | 4 | 5 | 6 | | x | x | x | | | |
| | 35 | 36 | 37 | | x | x | x | | | |
| | 38 | | | | x | x | x | | | |
| | 49 | 50 | 52 | | | x | x | | | |
| | 66 | 67 | 68 | | x | x | x | | | |
| 1-300 µl | 7 | | | | | x | x | | | |
| | 39 | | | | x | x | | | | |
| | 51 | | | | | x | x | | | |
| | 57 | 61 | | | | x | x | | | |
| 100-1000 µl | 9 | 10 | | | | | | x | | |
| | 40 | 41 | | | | | | x | | |
| | 53 | | | | | | | x | | |
| 50-1250 µl | 11 | | | | | | | | | x |
| | 42 | | | | | | | x | | |
| 1-5 ml | 13 | | | | | | | | x | |

# Microlitre pipettors, Sartorius



## Microlitre pipettors eLINE® electronic

By Sartorius. Electronic microlitre pipettors.

- Twice as fast as mechanical pipettors
- Covers the volume range of two mechanical pipettors
- Reduced effort when pipetting
- Electronically-controlled tip ejection, tip ejection button for both right and left-hand users
- Improved pipetting reproducibility, for user-independent result
- Ergonomic design
- Optiload tip loading mechanism
- Rotatable dispensing head
- Typical applications: PCR, ELISA
- Pipetting still possible while loading
- Multi-channel models with Optiload tip-loading mechanism and rotatable dispensing head
- Articles LP85.1 and LP89.1 with autoclavable dispening head

**Functions:**
- Pipetting, reverse pipetting
- Pipetting with mixing / cycle counter
- Dispensing: Multiple dispensing, sequential dispensing
- Diluting, diluting with mixing, multi-aspiratung
- 6 memory settings
- 9 speeds for suction and dispensing
- Single point calibration

**Technical specifications microlitre pipettors 1-channel:**

| Volume (µl) | Test volume (µl) | Inaccuracy (%) | Non-precision (%) | Safe-Cone Filter Standard | Safe-Cone Filter Plus |
|---|---|---|---|---|---|
| 0,2-10 | 10<br>1 | 0.90<br>2.50 | 0.40<br>1.50 | - | - |
| 5-120 | 120<br>12 | 0.40<br>2.00 | 0.15<br>1.00 | X230.1 | AL18.1 |
| 10-300 | 300<br>30 | 0.40<br>1.50 | 0.15<br>0.80 | X229.1 | AL19.1 |
| 50-1000 | 1000<br>100 | 0.40<br>1.50 | 0.15<br>0.50 | K776.1 | AL20.1 |
| 100-5000 | 5000<br>500 | 0.50<br>1.00 | 0.15<br>0.40 | K776.1 | AL20.1 |

**Technical specifications multichannel pipettors:**

| Volume (µl) | Test volume (µl) | Inaccuracy (%) | Non-precision (%) | Safe-Cone Filter Standard | Safe-Cone Filter Plus |
|---|---|---|---|---|---|
| 0,2-10 | 10<br>1 | 0.90<br>4.00 | 0.50<br>3.00 | - | - |
| 5-120 | 120<br>12 | 0.50<br>2.00 | 0.20<br>1.50 | X230.1 | AL18.1 |
| 10-300 | 300<br>30 | 0.50<br>2.00 | 0.20<br>1.00 | X229.1 | AL19.1 |
| 50-1200 | 1200<br>120 | 0.50<br>2.50 | 0.20<br>1.00 | K776.1 | AL20.1 |

**Delivery incl.** charging station.

**1-channel**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2-10 | 0,05 | 10 | **LP77.1** | 1 | 532,00 |
| 5-120 | 0,5 | 300, 350 | **LP78.1** | 1 | 522,00 |
| 10-300 | 1 | 350 | **LP79.1** | 1 | 522,00 |
| 50-1000 | 5 | 1000 | **LP80.1** | 1 | 522,00 |
| 100-5000 | 10 | 5000 | **LP81.1** | 1 | 522,00 |

**8-channel**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2-10 | 0,05 | 10 | **LP82.1** | 1 | 835,00 |
| 5-120 | 0,50 | 300, 350 | **LP83.1** | 1 | 835,00 |
| 10-300 | 1,00 | 350 | **LP84.1** | 1 | 835,00 |
| 50-1200 | 5,00 | 1200 | **LP85.1** | 1 | 835,00 |

**12-channel**

| Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2-10 | 0,05 | 10 | **LP86.1** | 1 | 1040,00 |
| 5-120 | 0,50 | 300, 350 | **LP87.1** | 1 | 1040,00 |
| 10-300 | 1,00 | 350 | **LP88.1** | 1 | 1040,00 |
| 50-1200 | 5,00 | 1200 | **LP89.1** | 1 | 1040,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Charging station for 1 pipette, incl. power unit | **LP90.1** | 1 | 221,00 |
| Charging station for 4 pipettes, incl. power unit | **LP91.1** | 1 | 508,00 |

## Safe-Cone-Filters

For Sartorius-pipettes from 10 µl. The replaceable filters serve as a barrier against liquid permeation and harmful vapours and therefore also protect the pipettor interior, e.g. against radioactive, biologically dangerous or corrosive samples. They also protect against cross-contamination.
The safe-cone-filters should be replaced at regular intervals (after 50-250 pipetting actions) or immediately in the event of overpipetting.
**Two models available:**
**Safe-Cone-Filter Plus** for highly demanding applications such as cell culture, bacteriological and virological work and in microbiology.
**Safe-Cone-Filter Standard** for normal applications to prevent against contamination of the pipettor and the sample material.

| | | Suitable for | | Suitable for | |
|---|---|---|---|---|---|
| **FilterStandard** | **Filter Plus** | **Proline® Plus** | | **mLINE®** and **eLINE®** | |
| | | Vol. (µl) | Best.-Nr. | Vol. (µl) | Art. No. |
| **(max 20 µl)**<br>AN27 | | 2-20 | NA73.1 | 0.5-10 | AN21.1 |
| **(max 100 µl)**<br>X230 | **(max 100 µl)**<br>AL18 | 10-100 | NA74.1<br>NA80.1<br>NA83.1 | 10-100 | AN23.1<br>LP83.1<br>LP78.1<br>LP87.1 |
| **(max 200 µl)**<br>X229 | **(max 200 µl)**<br>AL19 | 20-200 | NA75.1<br>NA81.1<br>NA84.1 | 20-200 | AN24.1<br>LP84.1<br>LP88.1<br>LP79.1 |
| **(max 1000 µl)**<br>K776 | **(max 1000 µl)**<br>AL20 | 100-1000 | NA76.1 | 100-1000 | AN25.1<br>LP85.1<br>LP89.1<br>LP80.1 |
| **(max 10 ml)**<br>K777 | **(max 10 ml)**<br>AL21 | 500-5000<br>1-10 ml | NA77.1<br>NA78.1 | 500-5000 | AN26.1 |

| Filter type | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Standard (max 20 µl) | 1,83 | **AN27.1** | 50 | 56,95 |
| Standard (up to 100 µl) | 2,51 | **X230.1** | 50 | 61,50 |
| Standard (max 200 µl) | 3,15 | **X229.1** | 50 | 61,50 |
| Standard (max 1000 µl) | 5,33 | **K776.1** | 50 | 49,80 |
| Standard (max 10 ml) | 6,73 | **K777.1** | 50 | 57,00 |
| Plus (max 100 µl) | 2,51 | **AL18.1** | 50 | 66,00 |
| Plus (max 200 µl) | 3,15 | **AL19.1** | 50 | 66,00 |
| Plus (max 1000 µl) | 5,33 | **AL20.1** | 50 | 66,00 |
| Plus (max 10 ml) | 6,73 | **AL21.1** | 50 | 66,00 |

# Microlitre pipettors, Sartorius



121°C

## Microlitre pipettors Proline® Plus, variable

By Sartorius. Suitable for all types of routine laboratory applications.
Ergonomic design allows fatigue-free operations and minimizes work effort.

- Fully autoclavable when Safe-Cone filters are removed
- Robust, yet light and easy to use
- Volume setting by click stops, easy-to-read display
- Thermal insulation of inside components for improved accuracy
- Highly resistant to chemicals and UV light
- Multichannel pipettes with Optiload tip loading mechanism
- Compatible with numerous tips
- Long shaft for narrow laboratory tubes
- Easy to clean; no tools required for disassembling
- With calibrating tools for easy self-calibration
- Suitable for both left-handed and right-handed users
- Replaceable Safe-Cone filter to prevent contamination of pipette and sample (for pipettes from 10 µl). Please order separately.
- High-level accuracy and precision according to ISO 8655
- CE/IVD marking
- Individual Certificate of Quality

**Technical specifications singlechannel:**

| Capacity (µl) | Test capacity (µl) | Inaccuracy (%) | Non-precision (%) | Safe-Cone Filter Standard | Safe-Cone-Filter Plus |
|---|---|---|---|---|---|
| **0.1-3** | 3<br>0.3 | 1.30<br>10.00 | 0.80<br>6.00 | - | - |
| **0.5-10** | 10<br>0.5 | 1.00<br>5.00 | 0.60<br>4.00 | - | - |
| **2-20** | 20<br>2 | 0.90<br>3.00 | 0.40<br>2.00 | AN27.1 | - |
| **10-100** | 100<br>10 | 0.80<br>2.00 | 0.15<br>1.00 | X230.1 | AL18.1 |
| **20-200** | 200<br>20 | 0.60<br>2.00 | 0.15<br>0.80 | X229.1 | AL19.1 |
| **100-1000** | 1000<br>100 | 0.60<br>1.00 | 0.20<br>0.40 | K776.1 | AL20.1 |
| **500-5000** | 5000<br>500 | 0.50<br>2.00 | 0.20<br>0.60 | K777.1 | AL21.1 |
| **1-10 ml** | 10000<br>1000 | 0.60<br>3.00 | 0.20<br>0.60 | K777.1 | AL21.1 |

**Technical specifications multichannel:**

| Capacity (µl) | Test capacity (µl) | Inaccuracy (%) | Non-precision (%) | Safe-Cone Filter Standard | Safe-Cone Filter Plus |
|---|---|---|---|---|---|
| **0.5-10** | 10<br>5<br>1 | 1.50<br>2.50<br>4.00 | 1.00<br>2.50<br>4.00 | - | - |
| **10-100** | 100<br>50<br>10 | 0.70<br>1.00<br>3.00 | 0.25<br>0.70<br>1.50 | X230.1 | AL18.1 |
| **30-300** | 300<br>150<br>30 | 0.60<br>1.00<br>2.00 | 0.25<br>0.50<br>1.00 | X229.1 | AL19.1 |

**1-channel**

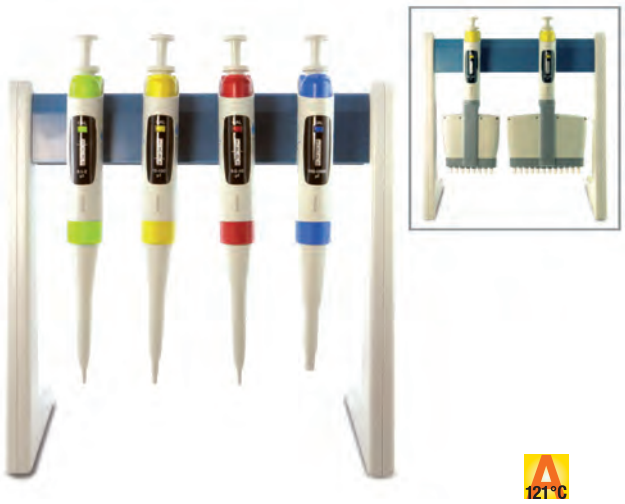
| Type | Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1-channel | 0,1-3 | 0,002 | 10 | **NA71.1** | 1 | 217,00 |
| 1-channel | 0,5-10 | 0,01 | 10 | **NA72.1** | 1 | 217,00 |
| 1-channel | 2-20 | 0,02 | 200, 300 | **NA73.1** | 1 | 217,00 |
| 1-channel | 10-100 | 0,10 | 200, 300, 350 | **NA74.1** | 1 | 217,00 |
| 1-channel | 20-200 | 0,20 | 200, 300, 350 | **NA75.1** | 1 | 217,00 |
| 1-channel | 100-1000 | 1,00 | 1000 | **NA76.1** | 1 | 217,00 |
| 1-channel | 500-5000 | 10,00 | 5000 | **NA77.1** | 1 | 217,00 |
| 1-channel | 1-10 ml | 20,00 | 10000 | **NA78.1** | 1 | 217,00 |

**Multichannel**

| Type | Volume (µl) | Pitch (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 8-channel | 0,5-10 | 0,01 | 10 | **NA79.1** | 1 | 635,00 |
| 8-channel | 10-100 | 0,10 | 200, 300, 350 | **NA80.1** | 1 | 635,00 |
| 8-channel | 30-300 | 0,20 | 300, 350 | **NA81.1** | 1 | 635,00 |
| 12-channel | 0,5-10 | 0,01 | 10 | **NA82.1** | 1 | 694,00 |
| 12-channel | 10-100 | 0,10 | 200, 300, 350 | **NA83.1** | 1 | 694,00 |
| 12-channel | 30-300 | 0,20 | 300, 350 | **NA84.1** | 1 | 694,00 |

## Microlitre pipettors Proline® Plus

| Suitable pipettor tips | | | | Pipettors Art.-No. (****.1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | NA71 | NA72 | NA73 | NA74 NA75 | NA76 | NA77 | NA78 | NA79 NA82 | NA80 NA81 NA83 NA84 |
| 0,1-10 µl | 1 | | | x | | | | | | | x | |
| | 28 | | | x | x | | | | | | | |
| | 32 | | | x | x | | | | | | x | |
| | 33 | | | | x | | | | | | x | |
| | 43 | 44 | 45 | x | x | | | | | | x | |
| | 63 | 64 | 65 | x | x | | | | | | | |
| 0,5-10 µl | 2 | | | | x | | | | | | | |
| | 46 | | | x | | | | | | | | |
| 1-20 µl | 20 | | | x | x | | | | | | | |
| | 47 | | | | | | x | | | | | |
| | 56 | 60 | | x | x | | | | | | | |
| 1-100 µl | 48 | | | | | | x | | | | | |
| 1-200 µl | 4 | 5 | 6 | | x | x | x | | | | | |
| | 35 | 36 | | | x | x | x | | | | | |
| | 37 | 38 | | | x | x | x | | | | | |
| | 52 | | | | | | x | | | | | |
| | 66 | 67 | 68 | | x | x | | | | | | |
| 1-300 µl | 39 | | | | x | x | x | | | | | x |
| | 51 | | | | | | x | | | | | |
| | 57 | 61 | | | | | x | | | | | |
| 100-1000 µl | 9 | 10 | | | | | | x | | | | |
| | 40 | 41 | | | | | | x | | | | |
| | 53 | | | | | | | x | | | | |
| 50-1250 µl | 42 | | | | | | | x | | | | |
| | 54 | | | | | | | x | | | | |
| | 58 | 62 | | | | | | x | | | | |
| 1-5 ml | 13 | 15 | | | | | | | x | | | |
| 1-10 ml | 19 | | | | | | | | | x | | |



## OneTouch Pro microlitre pipettes

By Sorenson. Air cushion pipettes for routine laboratory work.
Fully compatible with OneTouch pipette tips.
Pipette design matches the colour of the tips to enable quick identification.

- Ergonomic design means the pipettes are comfortable to use
- Smooth tip release
- Quick volume adjustment, even when wearing gloves
- Volume change protection
- Very lightweight to make pipetting extremely comfortable
- UV-resistant body
- Fully autoclavable

**Single-channel**

| Volume (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-2 | 3 | **HAP5.1** | 1 | 206,40 |
| 0,5-10 | 20 | **HAP6.1** | 1 | 206,40 |
| 2-20 | 350 | **HAP7.1** | 1 | 206,40 |
| 10-100 | 350 | **HAP8.1** | 1 | 206,40 |
| 20-200 | 350 | **HAP9.1** | 1 | 206,40 |
| 100-1000 | 1250 | **HAT0.1** | 1 | 206,40 |

**8-channel**

| Volume (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-10 | 20 | **HAT1.1** | 1 | 471,95 |
| 5-50 | 350 | **HAT2.1** | 1 | 471,95 |
| 20-200 | 350 | **HAT3.1** | 1 | 471,95 |
| 50-300 | 350 | **HAT4.1** | 1 | 471,95 |

**12-channel**

| Volume (µl) | Tip type (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-10 | 20 | **HAT5.1** | 1 | 619,20 |
| 5-50 | 350 | **HAT6.1** | 1 | 619,20 |
| 20-200 | 350 | **HAT7.1** | 1 | 619,20 |
| 50-300 | 350 | **HAT8.1** | 1 | 619,20 |

# Pipettor tips, Sorenson Multi® OneTouch

- **Sterile** or unsterile
- **Elastic shaft** made of TPE, rigid body made of PP
- Graduated
- Tips in plastic rack are autoclavable
- **RNase-/DNase-** and **pyrogen-free**
- **Free of human DNA** and **PCR inhibitors**




## 55 Multi® OneTouch 0.1-3 µl

Green shaft. Compatible with numerous commonly available pipette models.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-3 | Plastic rack, non-sterile | **HAT9.1** | 10 x 96 | 54,50 |
| 0,1-3 | Plastic rack, **sterile** | **HAX0.1** | 10 x 96 | 57,00 |

## 56 Multi® OneTouch 0.1-20 µl

Red shaft. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Roth, Sartorius, Socorex.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-20 | Plastic rack, unsterile | **KT09.1** | 10 x 96 | 59,70 |
| 0,1-20 | Plastic rack, **sterile** | **KT10.1** | 10 x 96 | 63,40 |
| 0,1-20 | Cardboard rack, **sterile** | **KT11.1** | 10 x 96 | 63,40 |

## 57 Multi® OneTouch 1-350 µl

Yellow shaft. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Roth, Sartorius, Socorex.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-350 | Plastic rack, unsterile | **KP90.1** | 10 x 96 | 59,70 |
| 1-350 | Plastic rack, **sterile** | **KP91.1** | 10 x 96 | 63,40 |
| 1-350 | Cardboard rack, **sterile** | **KP92.1** | 10 x 96 | 63,40 |

## 58 Multi® OneTouch 50-1250 µl

Blue shaft. Suitable for Eppendorf, Finnpipette®, Gilson, Sartorius, Socorex.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50-1250 | Plastic rack with hinged lid, unsterile | **KT14.1** | 8 x 96 | 59,70 |
| 50-1250 | Plastic rack with hinged lid, **sterile** | **KT15.1** | 8 x 96 | 63,40 |
| 50-1250 | Cardboard rack, **sterile** | **KT16.1** | 12 x 64 | 70,80 |

▶ Multi® One Touch filter tips see page 458

# Microlitre pipettors - Accessories

## Microlitre pipettors: Eppendorf

| Suitable pipettor tip | | | | Volume range of Eppendorf-microlitre pipettors | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Volume range of tips | Tip No. | | | 0,5-10 µl | 10-100 µl | 20-200 µl | 100-1000 µl | 200-2000 µl | 1-5 ml | 1-10 ml |
| 0,1-10 µl | 28 | | | x | | | | | | |
| | 43 | 44 | 45 | x | | | | | | |
| | 63 | 64 | 65 | x | | | | | | |
| 0,5-10 µl | 2 | | | x | | | | | | |
| | 34 | | | x | | | | | | |
| | 46 | | | x | | | | | | |
| 1-20 µl | 20 | | | x | | | | | | |
| | 47 | | | x | | | | | | |
| 1-100 µl | 48 | | | x | | | | | | |
| 1-200 µl | 3 | 5 | 6 | | x | | | | | |
| | 35 | 36 | | | x | | | | | |
| | 37 | 38 | | | x | | | | | |
| | 49 | 52 | | | x | x | | | | |
| | 50 | | | | | x | | | | |
| | 66 | 67 | 68 | | x | | | | | |
| 1-300 µl | 39 | | | | x | | | | | |
| | 51 | | | | x | x | | | | |
| 100-1000 µl | 9 | 10 | | | | x | x | | | |
| | 40 | 41 | | | | x | x | | | |
| | 53 | | | | | | x | | | |
| 50-1250 µl | 42 | | | | | | x | | | |
| | 54 | | | | | | x | | | |
| 100-2000 µl | 12 | | | | | | | x | | |
| 1-5 ml | 15 | | | | | | | | x | |
| 1-10 ml | 19 | | | | | | | | | x |

The pipette tip fitting tables for all microlitre pipettor models can be found on pages 432-446.

Fitting information is provided as general recommendations. It is recommended that a check be made by the user.
Pipette tip samples are available on request.



### Pipette carousels Twister™ universal 336

By Socorex. Made of **PA**, coloured parts made of **PC**. Carousel stand for six pipettes of all well-known brands. 360° axial rotation allows easy access to instruments.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **TX62.1** | 1 | 117,20 |
| green | **TX63.1** | 1 | 117,20 |
| orange | **TX64.1** | 1 | 117,20 |
| grey | **TX65.1** | 1 | 117,20 |
| red | **TX66.1** | 1 | 117,20 |
| white | **TX67.1** | 1 | 117,20 |
| yellow | **TX68.1** | 1 | 117,20 |

## Microlitre pipettors: Finnpipette®

| Suitable pipettor tips | | | | Volume range of Finnpipette® | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Max. tip volume | Tip No. | | | 0,5-10 µl | 10-100 µl | 20-200 µl | 100-1000 µl | 1-5 ml | 1-10 ml |
| 0,1-10 µl | 28 | | | x | | | | | |
| | 43 | 44 | 45 | x | | | | | |
| | 63 | 64 | 65 | x | | | | | |
| 0,5-10 µl | 46 | | | x | | | | | |
| 0,1-20 µl | 20 | | | x | | | | | |
| | 47 | | | | x | x | | | |
| 1-100 µl | 48 | | | | x | x | | | |
| 1-200 µl | 5 | | | x | x | x | | | |
| | 35 | 36 | | x | x | x | | | |
| | 37 | 38 | | x | x | x | | | |
| | 49 | 52 | | | x | x | | | |
| | 50 | | | | x | x | | | |
| | 66 | 67 | 68 | x | x | x | | | |
| 1-300 µl | 39 | | | | x | x | | | |
| | 51 | | | | x | x | | | |
| 100- 1000 µl | 40 | 41 | | | | | x | | |
| | 53 | | | | | | x | | |
| 50-1250 µl | 42 | | | | | | x | | |
| | 54 | | | | | | x | | |
| 1-5 ml | 16 | | | | | | | x | |
| 1-10 ml | 18 | | | | | | | | x |



### Flip & Grip™-pipette carousels

Carousel stands for the most common pipette brands. Holds up to 12 single-channel pipettes (6 on the handle + 6 attached to the pipetting button) or 3 multichannel plus 3 single-channel pipettes. With heavy base for secure positioning on laboratory benchtops. Pipette holder can be bolted upside down under a rack for space-saving storage.
Dimensions: ∅ 332 mm x H 193 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **XT82.1** | 1 | 74,10 |
| mint green | **XT83.1** | 1 | 74,10 |
| magenta | **XT84.1** | 1 | 74,10 |



## Rotilabo®-pipettor stand

Made of acrylic glass. Suitable for all standard pipettors.
Secure and stable stand, breakproof.
Dimensions: W 280 x H 165 x D 80 mm. ∅ of openings 20 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A804.1** | 1 | 102,15 |




## Rotilabo®-pipettor stands

Made of acrylic glass. Suitable for all conventional pipettes with finger support. Rubber feet for stability.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4 slots | **HEC1.1** | 1 | 38,60 |
| 1 slot | **HEC2.1** | 1 | 23,20 |



## Table-pipettor stands

By Socorex. Made of **PA**. Ideal for 7 standard microlitre pipettors.
Space-saving.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| light grey | **T277.1** | 1 | 95,70 |
| ice-blue | **T278.1** | 1 | 95,70 |
| mint green | **T279.1** | 1 | 95,70 |
| vanilla-yellow | **T280.1** | 1 | 95,70 |



## Universal holder for pipettors

Ideal for attaching to shelves, lab benches, etc.
Plastic screw enables speedy attaching and removal.
Span width max. 3 cm. Holder opening: width 2.4 cm x length 5 cm.
Suitable for all standard pipettors.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P202.1** | 1 | 17,95 |



## Pipettor stands

Made of **ABS**. Suitable for holding 6 small pipettes.
Top cut-out: W 25 mm, bottom cut-out: W 20 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N949.1** | 1 | 37,85 |

# Boxes for pipettor tips

## Pipettor tip overview table

Suitable refill boxes for pipettor tips at a glance!

Other boxes for pipette tips are listed under the respective tip types.

| Boxes for pipettor tips, empty | | Suitable pipettor tips (Tip-No.) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Box name** | **Art. No. Box + insert** | 1 | 2 | 3 | 4 5 6 | 20 | 32 | 33 | 34 | 35 37 38 |
| **Multibox** with transfer racks 10/200 µl | 2681.1 + H609.1 | x | x | x | x | x | x | | x | |
| **MµlTi®-Racks** with slip lid, 10/200 µl | T688.1 | x | | x | x | x | x | x | | x |
| **MµlTi®-Racks** with hinged lid, 10/200 µl | T689.1 | x | | x | x | x | x | x | | x |

| Boxes für pipettor tips, filled | | Suitable pipettor tips (Tip no.) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Box name** | **Art. No.** | 1 2 | 3 | 8 | 15 | 17 | 19 | 20 | 23 | 26 | 32 | 35 37 38 | 40 41 | 66 |
| **TipBox** (low form), 20 µl | HL65.1 | x | | | | | | x | | | x | | | |
| **TipBox** (low form), 200 µl | HL68.1 | | x | | | | | | x | | | x | | |
| **Rack** for MµltiFlex-tips 200 µl | 6144.1 | | | | | | | | | | | | | x |
| **Rack** for tips 350 µl | AT50.1 | | | x | | | | | | | | | | |
| **TipBox** (high Form), 1000 µl | HL71.1 | | | | | | | | | x | | | | |
| **MµlTi®-Rack** with slip lid, 1000 µl | 8161.1, 8162.1 | | | | | | | | | | | | x | |
| **TipBox** 5 ml | HL74.1 | | | | | x | | | | | | | | |
| **TipBox** 10 ml | HL76.1 | | | | | | x | | | | | | | |
| **Rack** for tips 5 ml | AT52.1 | | | | x | | | | | | | | | |



121 °C

### Rotilabo®-Multibox

Made of **PC**.
- Without rack insert
- With sliding lid
- For pipettor tips in racked insert or MultiTray-insert
- Temperature stable from -135 to +125 °C
- Stackable
- Dimensions: 12 x 7.5 x 9 cm
- Repeatedly autoclavable

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2681.1** | 1 | 18,25 |

### Rack inserts for Rotilabo®-Multibox

Made of **PP**, empty. For tips 0.1-10 µl and 0.1-200 µl (format 8 x 12).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H609.1** | 5 | 9,15 |




121 °C

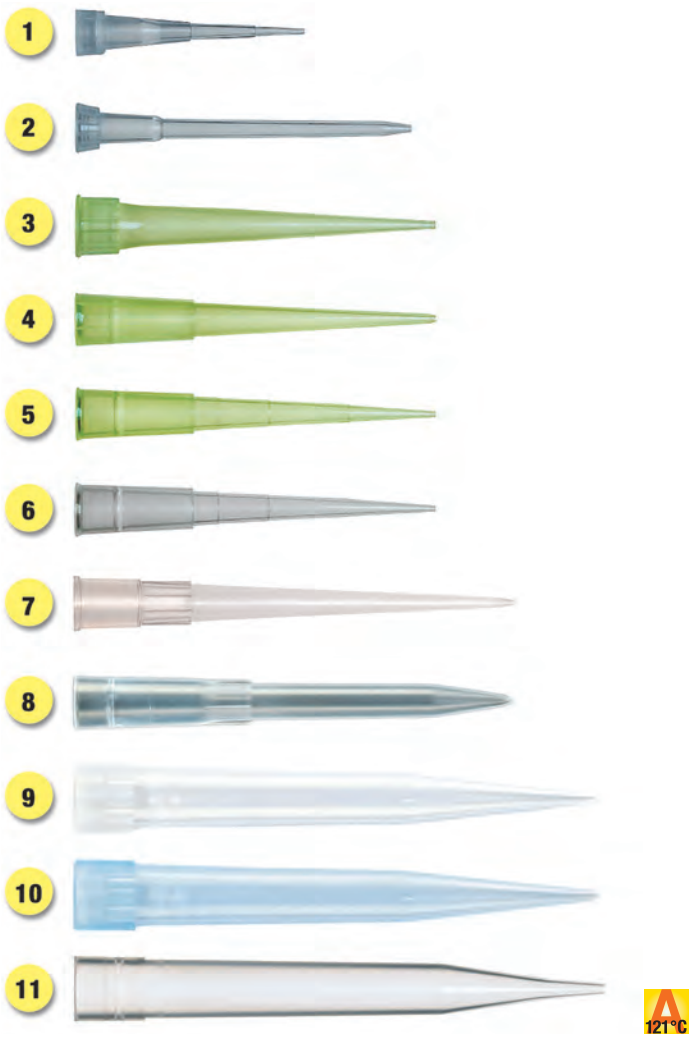
### MµlTi®-Racks

By Sorenson.
- With slip lid
- Stackable
- Empty, for tips 10/200 µl
- Autoclavable

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T688.1** | 10 | 32,50 |

# Pipettor tips, standard

Made of PP. Autoclavable.




## 1 Standard MIKRO 0.1-10 µl

Colourless, graduated. Suitable for Brand, Sartorius. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-10 | bulk-packed (bag), unsterile | **K138.1** | 1000 | 18,25 |
| 0,1-10 | in MultiTray-insert, unsterile | **KE22.1** | 10 x 96 | 38,95 |
| 0,1-10 | in hinged lid rack, unsterile | **CLC9.1** | 10 x 96 | 47,20 |

## 2 Standard KRISTALL 0.5-10 µl

Colourless, short. Suitable for Eppendorf, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5-10 | bulk-packed (bag), unsterile | **9260.1** | 1000 | 18,50 |
| 0,5-10 | in MultiTray-insert, unsterile | **CLE0.1** | 10 x 96 | 39,75 |
| 0,5-10 | in hinged lid rack, unsterile | **CLE1.1** | 10 x 96 | 46,80 |

## 3 Standard UNIVERSAL 10-100 µl

Yellow. Suitable for Roth, Brand, Eppendorf, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10-100 | bulk-packed (bag), unsterile | **2395.2** | 500 | 8,55 |
| 10-100 | in inverted tray rack, unsterile | **CLX9.1** | 10 x 96 | 41,60 |

## 4 Standard UNIVERSAL 10-200 µl

Yellow. Suitable for Brand, Gilson, Roth, Sartorius. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10-200 | bulk-packed (bag), unsterile | **5889.2** | 500 | 8,55 |
| 10-200 | in inverted tray rack, unsterile | **CLY0.1** | 10 x 96 | 43,30 |

## 5 Standard UNIVERSAL 10-200 µl

Yellow, graduated. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10-200 | bulk-packed (bag), unsterile | **B007.2** | 500 | 12,85 |
| 10-200 | in inverted tray rack, unsterile | **CLY1.1** | 10 x 96 | 43,30 |

## 6 Standard UNIVERSAL 5-200 µl

Colourless, graduated. Suitable for Brand, Eppendorf, Gilson, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5-200 | bulk-packed (bag), unsterile | **B002.1** | 1000 | 17,75 |
| 5-200 | in inverted tray rack, unsterile | **CPX3.1** | 10 x 96 | 58,60 |

## 7 Standard UNIVERSAL 1-300 µl

Colourless. Suitable for Brand, Eppendorf, Gilson, Sartorius. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-300 | loose in bag, unsterile | **XC75.1** | 1000 | 21,25 |
| 1-300 | in MultiTray, unsterile | **XC76.1** | 10 x 96 | 42,70 |
| 1-300 | Hinged racks, unsterile | **XC77.1** | 10 x 96 | 52,20 |

## 8 Standard UNIVERSAL 40-350 µl

Colourless. Suitable for Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 40-350 | bulk-packed (bag), unsterile | **AT49.1** | 1000 | 69,90 |
| 40-350 | in rack, unsterile | **AT50.1** | 10 x 96 | 123,65 |

## 9 Standard UNIVERSAL 100-1200 µl

Colourless. Suitable for Brand, Eppendorf, Gilson, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100-1200 | bulk-packed (bag), unsterile | **B006.1** | 1000 | 14,85 |
| 100-1200 | in MultiTray-insert, unsterile | **KE23.1** | 16 x 60 | 44,65 |
| 100-1200 | in hinged lid rack, unsterile | **CLE2.1** | 10 x 60 | 34,95 |

## 10 Standard UNIVERSAL 100-1200 µl

Blue. Suitable for Brand, Eppendorf, Gilson, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100-1200 | bulk-packed (bag), unsterile | **2679.1** | 1000 | 12,85 |
| 100-1200 | in MultiTray-insert unsterile | **KE24.1** | 16 x 60 | 45,15 |
| 100-1200 | in hinged lid rack, unsterile | **CLE3.1** | 10 x 60 | 31,15 |

## 11 Standard 50-1200 µl

Colourless. Suitable for Sartorius eLINE® LP85.1 and LP89.1. Autoclavable.

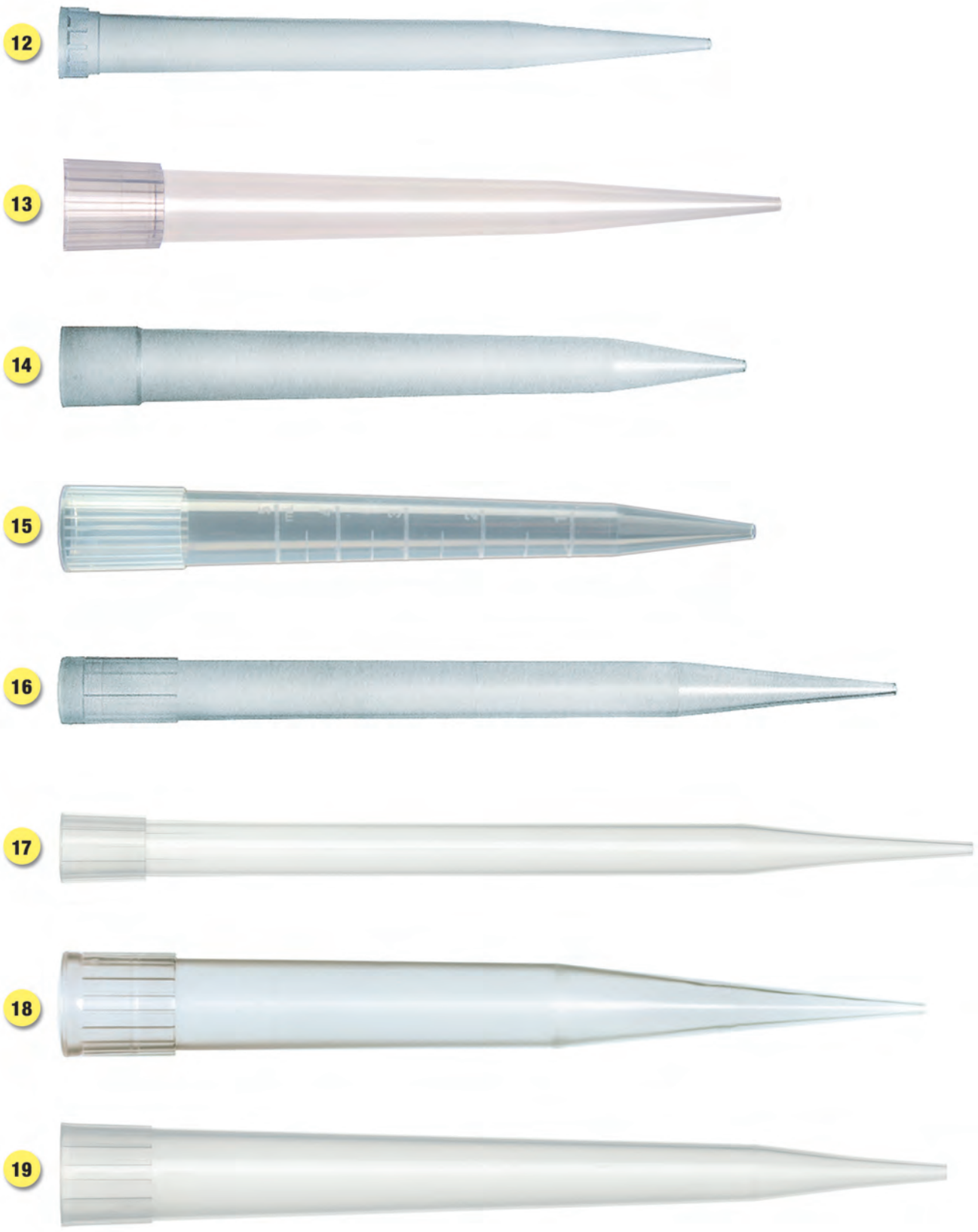
| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50-1200 | bulk-packed (bag), unsterile | **LT33.2** | 480 | 23,20 |
| 50-1200 | in hinged lid rack, unsterile | **LT34.1** | 10 x 96 | 81,00 |

The pipette tip fitting tables for all microlitre pipettor models can be found on pages 432-446.

Fitting information is provided as general recommendations. It is recommended that a check be made by the user.
Pipette tip samples are available on request.

## Pipettor tips, standard

Made of PP. Autoclavable.




121°C

## 12 Standard MAKRO 0.1-2 ml

Colourless. Length 115 mm. Suitable for Eppendorf, Socorex. Autoclavable.

| Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-2 | bulk-packed (bag), unsterile | **K315.1** | 250 | 47,20 |

## 13 Standard MAKRO 1-5 ml

Colourless. Length 134 mm. Suitable for Sartorius, Socorex, Labmate and Roth. Autoclavable.

| Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-5 | bulk-packed (bag), unsterile | **CX70.1** | 300 | 31,15 |
| 1-5 | in rack, unsterile | **XP91.1** | 1 x 50 | 24,95 |

## 14 Standard MAKRO 1-5 ml

Colourless. Length 120 mm. Suitable for Starlab, Gilson, Oxford. Autoclavable.

| Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-5 | bulk-packed (bag), unsterile | **5846.1** | 250 | 22,40 |
| 1-5 | in rack, unsterile | **XP92.1** | 1 x 50 | 24,95 |

## 15 Standard MAKRO 1-5 ml

Colourless. Graduated. Suitable for Eppendorf, Sartorius, Socorex. Autoclavable.

| Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-5 | bulk-packed (bag), unsterile | **AT51.1** | 2 x 250 | 91,40 |
| 1-5 | in rack, unsterile | **AT52.1** | 2 x 50 | 70,95 |

## 16 Standard MAKRO 1-5 ml

Colourless. Length 148 mm. Suitable for Finnpipette® and Brand. Autoclavable.

| Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-5 | bulk-packed (box), unsterile | **6946.1** | 75 | 13,95 |
| 1-5 | bulk-packed (bag), unsterile | **6946.2** | 500 | 51,10 |
| 1-5 | in rack, unsterile | **XP93.1** | 1 x 50 | 24,95 |

## 17 Standard 0.5-5 ml

Transparent. Length 160 mm. Suitable for Roth, Brand. CE-Identification (IVD). Autoclavable.

| Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5-5 | bulk-packed (bag), unsterile | **HL73.1** | 200 | 24,30 |
| 0,5-5 | in TipBox for 5 ml tips, unsterile | **HL74.1** | 1 x 28 | 40,75 |

## 18 Standard MAKRO 1-10 ml

Colourless. Length 150 mm. Suitable for Socorex and Finnpipette®. Autoclavable.

| Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-10 | bulk-packed (bag), unsterile | **E736.1** | 100 | 37,55 |
| 1-10 | in hinged lid rack, unsterile | **PC77.1** | 1 x 24 | 27,85 |

## 19 Standard MAKRO 1-10 ml

Transparent. Length 156.5 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Sartorius. CE-Identification (IVD). Autoclavable.

| Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-10 | bulk-packed (bag), unsterile | **HL75.1** | 100 | 22,05 |
| 1-10 | in TipBox for 10 ml tips, unsterile | **HL76.1** | 1 x 18 | 52,50 |

## Pipette tip coding

| Pipette tip No. | Pipette tip designation | Pipette tip type | Catalogue page |
|---|---|---|---|
| **1-19** | **Standard** | Standard quality for general laboratory applications | 449-451 |
| **20-27** | **Pipette tips by Brand** | Pipette tips produced in a cleanroom environment | 452 |
| **28-31** | **Filter tips by Brand** | Pipette tips with aerosol filter produced in a cleanroom environment | 453 |
| **32-42** | **MµltiPrecision** | Pipette tips by Sorenson | 454-455 |
| **43-54** | **MµltiGuard** | Pipette tips by Sorenson with aerosol filter | 456-457 |
| **55-62** | **Mµlti OneTouch** | Pipette tips by Sorenson with flexible stem | 458 |
| **63-68** | **MµltiFlex** | Gelloading pipette tips by Sorenson | 459 |
| **69-70** | **Cell Saver Tips** | Pipette tips with large opening | 460 |

▶ To find appropriate tips for each pipettor and appropriate pipettors for every tip - refer to the fitting table on page 432




## TipBox 5 ml / 10 ml

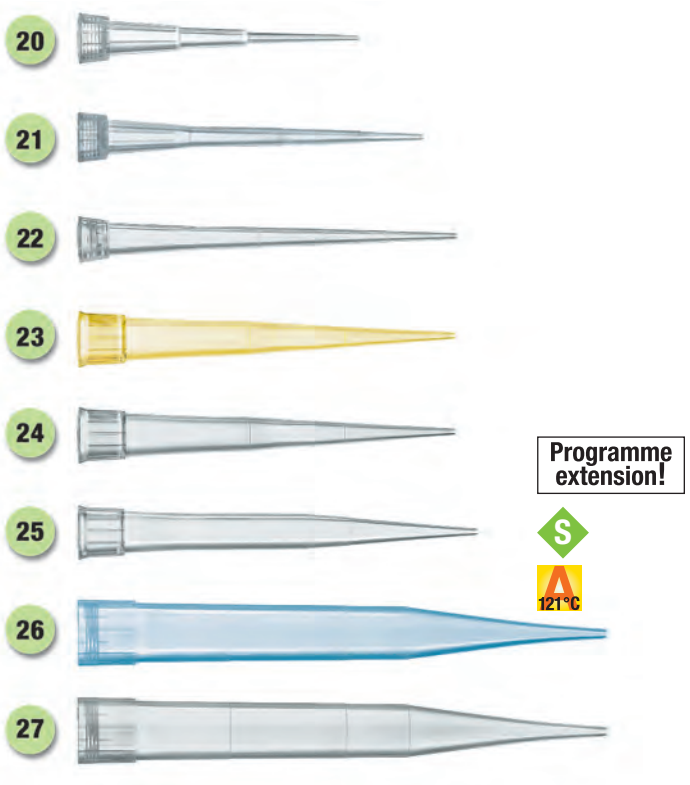
By Brand.

- Made of **PP**
- Unsterile
- Round with lid
- For 5 ml or 10 ml pipettor tips
- Filled with pipettor tips (HL74.1 (17), HL76.1 (19))
- Autoclavable

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HL74.1** | 1 x 28 | 40,75 |
| **HL76.1** | 1 x 18 | 52,50 |

# Pipette tips, Brand

- **Sterile** or unsterile
- Produced in a cleanroom environment, automatically palletised and packaged
- High-quality polypropylene types, free of DiHEMDA and Oleamid
- Produced without plasticizer, cadmium-free colour pigments
- Graduated for quick volume identification
- **Palletised tips and filter tips free of DNA, RNases, endotoxins and ATP**
- **Sterile tips incl. BIO-CERT® grade packaging: sterile** in accordance with ISO 11 137 and AAMI guidelines, an SAL of $10^{-6}$ is guaranteed, with certificate
- Autoclavable at 121 °C (2 bar), according to DIN EN 285
- CE marked in accordance with IVD directive 98/79 EC




## 20 pipette tips Brand 0.1-20 µl

By Brand. Colourless. Length 37 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. Specially designed for nanoscale applications. CE mark (IVD). Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1-20 | Standard | loose in bag, unsterile | **AL17.1** | 1000 | 35,45 |
| 0,1-20 | Standard | palletised, unsterile | **ALT4.1** | 10 x 96 | 59,70 |
| 0,1-20 | Standard | in TipBox, unsterile | **HL65.1** | 5 x 96 | 47,20 |
| 0,1-20 | Standard | in TipBox, **sterile** | **ALT5.1** | 10 x 96 | 107,00 |
| 0,1-20 | Ultra Low Retention | in TipBox, unsterile | **ALT6.1** | 5 x 96 | 62,25 |
| 0,1-20 | Ultra Low Retention | in TipBox, **sterile** | **ALT7.1** | 10 x 96 | 119,35 |

## 21 Brand pipette tips 0.5-20 µl

By Brand. Colourless. Length 46 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5-20 | Standard | loose in bag, non-sterile | **HKA4.1** | 1000 | 32,25 |
| 0,5-20 | Standard | palletised, non-sterile | **HKA5.1** | 10 x 96 | 50,15 |
| 0,5-20 | Standard | in TipBox, non-sterile | **HKA6.1** | 5 x 96 | 44,95 |

## 22 pipette tips Brand 1-50 µl

By Brand. Colourless. Length 50 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 2.5 µl, 10, 25 and 50 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-50 | Standard | loose in bag, unsterile | **ALT8.1** | 1000 | 19,05 |
| 1-50 | Standard | palletised, unsterile | **ALT9.1** | 10 x 96 | 55,40 |
| 1-50 | Standard | in TipBox, unsterile | **ALX0.1** | 5 x 96 | 48,50 |
| 1-50 | Standard | in TipBox, **sterile** | **ALX1.1** | 10 x 96 | 104,85 |
| 1-50 | Ultra Low Retention | in TipBox, unsterile | **ALX2.1** | 5 x 96 | 56,95 |
| 1-50 | Ultra Low Retention | in TipBox, **sterile** | **ALX3.1** | 10 x 96 | 123,10 |

## 23 pipette tips Brand 2-200 µl

By Brand. Yellow. Length 50 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 20 µl and 100 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2-200 | Standard | loose in bag, unsterile | **HL67.1** | 1000 | 19,30 |

## 24 pipette tips Brand 2-200 µl

By Brand. Colourless. Length 50 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 20 µl and 100 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2-200 | Standard | palletised, unsterile | **ALX4.1** | 10 x 96 | 51,55 |
| 2-200 | Standard | in TipBox, unsterile | **HL68.1** | 5 x 96 | 41,90 |
| 2-200 | Standard | in TipBox, **sterile** | **ALX5.1** | 10 x 96 | 97,85 |
| 2-200 | Ultra Low Retention | in TipBox, unsterile | **ALX6.1** | 5 x 96 | 54,80 |
| 2-200 | Ultra Low Retention | in TipBox, **sterile** | **ALX7.1** | 10 x 96 | 112,90 |

## 25 pipette tips Brand 5-300 µl

By Brand. Colourless. Length 53 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 50 µl, 100 µl and 300 µl graduations for quick volume identification. Thin-walled tip, suitable for reverse pipetting. Ideal for working with multichannel pipettes. CE mark (IVD). Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5-300 | Standard | loose in bag, unsterile | **ALX8.1** | 1000 | 23,25 |
| 5-300 | Standard | palletised, unsterile | **ALX9.1** | 10 x 96 | 51,55 |
| 5-300 | Standard | in TipBox, unsterile | **ALY0.1** | 5 x 96 | 46,70 |
| 5-300 | Standard | in TipBox, **sterile** | **ALY1.1** | 10 x 96 | 96,65 |
| 5-300 | Ultra Low Retention | in TipBox, unsterile | **ALY2.1** | 5 x 96 | 54,80 |
| 5-300 | Ultra Low Retention | in TipBox, **sterile** | **ALY3.1** | 10 x 96 | 112,90 |

## 26 pipette tips Brand 50-1000 µl

By Brand. Blue. Length 70 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 250 µl, 500 µl and 1000 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50-1000 | Standard | loose in bag, unsterile | **HL70.1** | 2 x 500 | 23,15 |
| 50-1000 | Standard | loose in bag, unsterile | **HL70.2** | 10 x 500 | 92,90 |

## 27 pipette tips Brand 50-1000 µl

By Brand. Colourless. Length 70 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 250 µl, 500 µl and 1000 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50-1000 | Standard | palletised, unsterile | **ALY4.1** | 10 x 96 | 52,60 |
| 50-1000 | Standard | in TipBox, unsterile | **HL71.1** | 5 x 96 | 42,80 |
| 50-1000 | Standard | in TipBox, **sterile** | **ALY5.1** | 10 x 96 | 108,60 |
| 50-1000 | Ultra Low Retention | in TipBox, unsterile | **ALY6.1** | 5 x 96 | 56,35 |
| 50-1000 | Ultra Low Retention | in TipBox, **sterile** | **ALY7.1** | 10 x 96 | 126,85 |

## Ultra Low Retention pipette tips

The surfaces of the Ultra Low Retention tips by Brand are produced through a special, patented physicochemical process. The homogeneous, defect-free surfaces thus produced have extremely low surface tension - over 50 % less than PTFE. This significantly reduces sample loss and provides substantially higher reproducibility when working with critical medias.

- Ideal for biological samples that contain detergents such as Triton® X-100, SDS, Tween etc.
- No additives that can be leached out! No siliconisation of the surface!
- High chemical resistance. Ideal for working with solvents
- Autoclaved at 121 °C (2 bar) without any detrimental effect on material properties



## Palletised pipette tips TipRacks

By Brand.
- Palletised pipette tips in refill units (TipRacks)
- Produces less waste than filled TipBoxes
- Tips and filter tips up to 1000 µl, free from DNA, RNase, endotoxins and ATP
- **Delivery incl.** transfer aid for easy transfer in TipBoxes



121°C

## TipBox

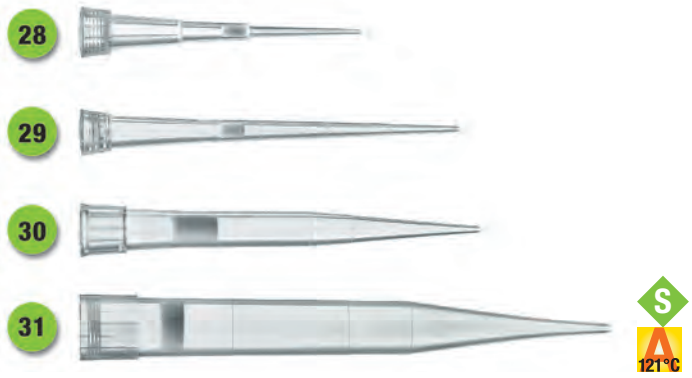
By Brand.
- Made of **PP**
- With flap-/slip lid
- Stackable
- Available in two different heights
- Low form for 96 tips max. 300 µl (HL65.1 (2), HL68.1 (9))
- Tall form for 100 tips max. 1000 µl or 1250 µl (HL71.1 (15))
- Filled with pipettor tips
- Autoclavable

## Filter tips

Non-self sealing filter tips by Brand have a PE filter that is free from chemical additives. The combination of pore diameter and filter length prevents the passage of aerosols to the tip shaft. The filter reliably serves this function. On the other hand, a liquid can pass very slowly should it accidentally come into contact with the filter. Since the filter does not swell, the sample can be recovered from the filter by simply actuating the pipette's blow-out function, or by centrifugation if necessary. This is a major advantage when working with valuable samples. An added advantage is that the sample is protected from contamination as the filter contains no additives!



# Filter tips, Brand




## 28 filter tips Brand 0.1-1 µl

By Brand. Colourless. With PE filter. Length 37 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. Specially designed for nanoscale applications. CE mark (IVD). Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1-1 | Standard | loose in bag, unsterile | **ALY8.1** | 960 | 86,55 |
| 0,1-1 | Standard | palletised, unsterile | **ALY9.1** | 10 x 96 | 110,75 |
| 0,1-1 | Standard | in TipBox, **sterile** | **ANA0.1** | 10 x 96 | 141,90 |
| 0,1-1 | Ultra Low Retention | in TipBox, unsterile | **ANA1.1** | 5 x 96 | 78,75 |
| 0,1-1 | Ultra Low Retention | in TipBox, **sterile** | **ANA2.1** | 10 x 96 | 188,15 |

## 29 filter tips Brand 1-20 µl

By Brand. Colourless. With PE filter. Length 50 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. CE mark (IVD). Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-20 | Standard | loose in bag, unsterile | **ANA3.1** | 960 | 81,40 |
| 1-20 | Standard | palletised, unsterile | **ANA4.1** | 10 x 96 | 102,05 |
| 1-20 | Standard | in TipBox, **sterile** | **ANA5.1** | 10 x 96 | 133,30 |
| 1-20 | Ultra Low Retention | in TipBox, unsterile | **ANA6.1** | 5 x 96 | 66,60 |
| 1-20 | Ultra Low Retention | in TipBox, **sterile** | **ANA7.1** | 10 x 96 | 155,90 |

## 30 filter tips Brand 5-200 µl

By Brand. Colourless. With PE filter. Length 50 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 20 µl and 100 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5-200 | Standard | loose in bag, unsterile | **ANA8.1** | 960 | 74,20 |
| 5-200 | Standard | palletised, unsterile | **ANA9.1** | 10 x 96 | 90,00 |
| 5-200 | Standard | in TipBox, **sterile** | **ANC0.1** | 10 x 96 | 118,25 |
| 5-200 | Ultra Low Retention | in TipBox, unsterile | **ANC1.1** | 5 x 96 | 66,15 |
| 5-200 | Ultra Low Retention | in TipBox, **sterile** | **ANC2.1** | 10 x 96 | 138,70 |

## 31 filter tips Brand 50-1000 µl

By Brand. Colourless. With PE filter. Length 70 mm. Suitable for Roth, Brand, Eppendorf, Gilson, Finnpipette®, Sartorius. 250 µl, 500 µl and 100 µl graduations for quick volume identification. CE mark (IVD). Autoclavable.

| Vol. (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50-1000 | Standard | loose in bag, unsterile | **ANC3.1** | 960 | 94,40 |
| 50-1000 | Standard | palletised, unsterile | **ANC4.1** | 10 x 96 | 112,90 |
| 50-1000 | Standard | in TipBox, **sterile** | **ANC5.1** | 10 x 96 | 135,45 |
| 50-1000 | Ultra Low Retention | in TipBox, unsterile | **ANC6.1** | 5 x 96 | 73,10 |
| 50-1000 | Ultra Low Retention | in TipBox, **sterile** | **ANC7.1** | 10 x 96 | 146,20 |

# Pipettor tips, Sorenson MµltiPrecision

- **Sterile** or unsterile
- Positioning rings in tip neck for better grip on the pipettor
- Very high transparency
- Tapered tip
- **Free of RNAse/DNAse** and **pyrogens**
- **Free of human DNA** and **PCR inhibitors**
- Colourless tips free of metals and cadmium
- Autoclavable




## 32 MµltiPette® MICRO ULTRA G 0.1-10 µl

Colourless, graduated. Suitable for Brand, Eppendorf, Gilson, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1-10 | Standard | bulk-packed (bag), unsterile | **P866.1** | 1000 | 26,45 |
| 0,1-10 | Standard | Racks, unsterile | **P867.1** | 10 x 96 | 65,05 |
| 0,1-10 | Standard | Racks, **sterile** | **P868.1** | 10 x 96 | 69,05 |
| 0,1-10 | LowBinding | bulk-packed (bag), unsterile | **NL51.1** | 1000 | 34,75 |
| 0,1-10 | LowBinding | Racks, unsterile | **X590.1** | 10 x 96 | 64,50 |
| 0,1-10 | LowBinding | Racks, **sterile** | **PC91.1** | 10 x 96 | 70,55 |

## 33 MµltiPette® Long Reach 0.1-10 µl

Colourless, graduated. Length 45.1 mm. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1-10 | Standard | bulk-packed (bag), unsterile | **KP26.1** | 1000 | 27,90 |
| 0,1-10 | Standard | Racks, unsterile | **KP27.1** | 10 x 96 | 60,00 |
| 0,1-10 | Standard | Racks, **sterile** | **KP28.1** | 10 x 96 | 68,80 |

## 34 MµltiPette® CRYSTAL 0.5-10 µl

Colourless. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5-10 | Standard | bulk-packed (bag), unsterile | **2393.1** | 1000 | 27,75 |
| 0,5-10 | Standard | Racks, unsterile | **8144.1** | 10 x 96 | 72,25 |
| 0,5-10 | Standard | Racks, **sterile** | **8148.1** | 10 x 96 | 79,15 |
| 0,5-10 | LowBinding | bulk-packed (bag), unsterile | **NL52.1** | 1000 | 32,70 |
| 0,5-10 | LowBinding | Racks, unsterile | **X591.1** | 10 x 96 | 64,50 |
| 0,5-10 | LowBinding | Rack, **sterile** | **PC92.1** | 10 x 96 | 71,30 |

## 35 MµltiPette® UNIVERSAL 1-200 µl

Colourless. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-200 | Standard | bulk-packed (bag), unsterile | **7058.1** | 1000 | 16,80 |
| 1-200 | Standard | Racks, unsterile | **8151.1** | 10 x 96 | 45,10 |
| 1-200 | Standard | Racks, **sterile** | **8154.1** | 10 x 96 | 54,85 |

## 36 MµltiPette® UNIVERSAL 1-200 µl

Colourless, graduated. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-200 | Standard | bulk-packed (bag), unsterile | **PP71.1** | 1000 | 24,65 |
| 1-200 | Standard | Racks, unsterile | **EC33.1** | 10 x 96 | 44,75 |
| 1-200 | Standard | Racks, **sterile** | **EL96.1** | 10 x 96 | 53,65 |
| 1-200 | LowBinding | bulk-packed (bag), unsterile | **NL53.1** | 1000 | 27,95 |
| 1-200 | LowBinding | Racks, unsterile | **X592.1** | 10 x 96 | 48,30 |
| 1-200 | LowBinding | Rack, **sterile** | **PC93.1** | 10 x 96 | 58,60 |

## 37 MµltiPette® UNIVERSAL 1-200 µl

Yellow. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-200 | Standard | bulk-packed (bag), unsterile | **8156.1** | 1000 | 15,30 |
| 1-200 | Standard | Racks, unsterile | **8157.1** | 10 x 96 | 45,10 |
| 1-200 | Standard | Racks, **sterile** | **8159.1** | 10 x 96 | 49,85 |

## 38 MµltiPette® UNIVERSAL 1-200 µl

Yellow, graduated. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-200 | Standard | bulk-packed (bag), unsterile | **E707.1** | 1000 | 24,95 |
| 1-200 | Standard | Racks, unsterile | **NL55.1** | 10 x 96 | 44,55 |
| 1-200 | Standard | Racks, **sterile** | **NL56.1** | 10 x 96 | 50,40 |



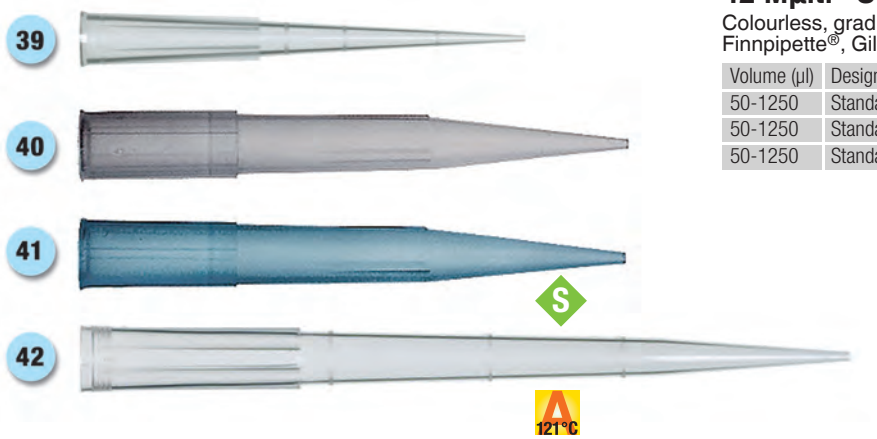

## MµltiPette®-Racks

By Sorenson.
- With slip lid
- Stackable
- Empty
- Autoclavable

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T688.1** | 10 | 32,50 |

# Pipettor tips, Sorenson MµltiPrecision

- **Sterile** or unsterile
- Positioning rings in tip neck for better grip on the pipettor
- Very high transparency
- Tapered tip
- **Free of RNAse/DNAse** and **pyrogens**
- **Free of human DNA** and **PCR inhibitors**
- Colourless tips free of metals and cadmium
- Autoclavable




## 39 MµltiUNIVERSAL 1-300 µl

Transparent. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-300 | Standard | bulk-packed (bag), unsterile | **KC07.1** | 1000 | 21,70 |
| 1-300 | Standard | Racks, unsterile | **KC08.1** | 10 x 96 | 44,95 |
| 1-300 | Standard | Racks, **sterile** | **KC09.1** | 10 x 96 | 53,70 |

The pipette tip fitting tables for all microlitre pipettor models can be found on pages 432-446.

Fitting information is provided as general recommendations. It is recommended that a check be made by the user.
Pipette tip samples are available on request.

## 40 MµltiUNIVERSAL 100-1000 µl

Colourless. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100-1000 | Standard | bulk-packed (bag), unsterile | **8163.1** | 1000 | 25,10 |
| 100-1000 | Standard | Racks, unsterile | **8164.1** | 10 x 100 | 53,25 |
| 100-1000 | Standard | Racks, **sterile** | **8165.1** | 10 x 100 | 64,00 |
| 100-1000 | LowBinding | bulk-packed (bag), unsterile | **NL54.1** | 1000 | 28,65 |
| 100-1000 | LowBinding | Racks, unsterile | **X594.1** | 10 x 100 | 57,45 |
| 100-1000 | LowBinding | Rack, **sterile** | **PC94.1** | 10 x 100 | 62,70 |

## 41 MµltiUNIVERSAL 100-1000 µl

Blue. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100-1000 | Standard | bulk-packed (bag), unsterile | **8160.1** | 1000 | 26,55 |
| 100-1000 | Standard | Racks, unsterile | **8161.1** | 10 x 100 | 52,85 |
| 100-1000 | Standard | Racks, **sterile** | **8162.1** | 10 x 100 | 60,10 |

## 42 MµltiUNIVERSAL 50-1250 µl

Colourless, graduated. Length 103 mm. Suitable for Eppendorf, Finnpipette®, Gilson, Oxford, Sartorius. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50-1250 | Standard | bulk-packed (bag), unsterile | **NL57.1** | 768 | 25,30 |
| 50-1250 | Standard | Hinged lid racks, unsterile | **EL23.1** | 8 x 96 | 61,40 |
| 50-1250 | Standard | Hinged lid racks, **sterile** | **EL24.1** | 8 x 96 | 78,95 |

## MµltiLowBinding® pipettor tips

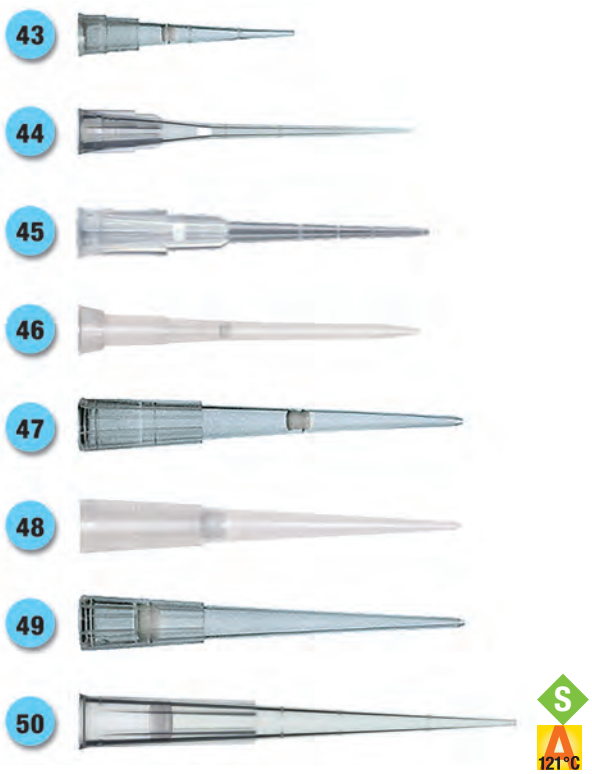
- **Surface optimized** through **LowBinding polymer coating** for minimum sample adhesion
- Maximum accuracy on quantitive analysis **minimizes sample loss** and reduces absolute error
- Chemically resistant coating
- Loseless pipetting of DNA, peptides, proteins, highly viscous samples
- Without the use of disruptive silicones



**Conventional tip** **LowBinding tip**

# Filtertips, Sorenson MµltiGuard®-tips

- **Sterile**
- Specially developed **hydrophobic membranes for protection against contamination** from bio-hazardous, toxic or radioactive substances
- Made of completely inert material - to eliminate "incorrect signals" during PCR experiments
- **Free of RNAse/DNAse** and **pyrogens**
- **Free of human DNA** and **PCR inhibitors**
- Autoclavable




## 43 MµltiGuard® tips 0.1-10 µl

Colourless, with aerosol filter, graduated. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1-10 | Standard | Racks, **sterile** | **T613.1** | 10 x 96 | 75,20 |
| 0,1-10 | LowBinding | Racks, **sterile** | **X595.1** | 10 x 96 | 94,75 |

## 44 MµltiGuard® tips 0.1-10 µl

Colourless, graduated. Extra long. With aerosol filter. Length 45 mm. Suitable for Eppendorf, Finnpipette®, Gilson, Oxford, Sartorius. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1-10 | Standard | Hinged lid rack, **sterile** | **EL28.1** | 10 x 96 | 78,40 |

## 45 MµltiGuard® tips 0.1-10 µl

Colourless, with aerosol filter, graduated, long. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1-10 | Standard | Racks, **sterile** | **Y816.1** | 10 x 96 | 90,30 |

## 46 MµltiGuard® tips 0.5-10 µl

Colourless, with aerosol filter. Suitable for Brand, Eppendorf, Gilson, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5-10 | Standard | Racks, **sterile** | **A567.1** | 10 x 96 | 81,60 |
| 0,5-10 | LowBinding | Racks, **sterile** | **X596.1** | 10 x 96 | 94,75 |

## 47 MµltiGuard® tips 1-20 µl

Colourless, with aerosol filter. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-20 | Standard | Racks, **sterile** | **9770.1** | 10 x 96 | 81,60 |
| 1-20 | LowBinding | Racks, **sterile** | **X597.1** | 10 x 96 | 94,75 |

## 48 MµltiGuard® tips 1-100 µl

Colourless, with aerosol filter. Suitable for Brand, Eppendorf, Gilson, Finnpipette®, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-100 | Standard | Racks, **sterile** | **XC78.1** | 10 x 96 | 85,15 |

## 49 MµltiGuard® tips 1-200 µl

Colourless, with aerosol filter. Suitable for Finnpipette®, Oxford, Sartorius. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-200 | Standard | Racks, **sterile** | **9771.1** | 10 x 96 | 81,60 |

## 50 MµltiGuard® NX 1-200 µl

Colourless, graduated. With aerosol filter. Length 59 mm.
Suitable for Eppendorf, Finnpipette®, Gilson, Oxford. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-200 | LowBinding | Racks, **sterile** | **EL27.1** | 10 x 96 | 103,00 |



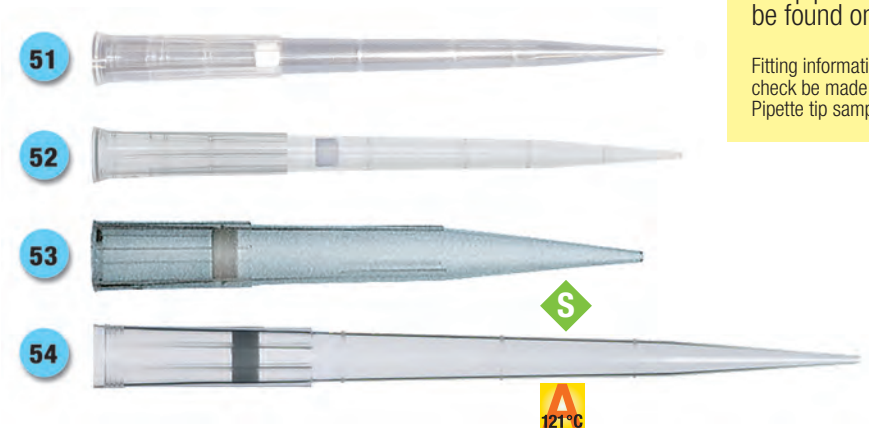
## Mµlti®-hinged lid racks

By Sorenson.
- With hinged lid
- Stackable
- Empty, for tips 10/200 µl
- Autoclavable

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T689.1** | 10 | 32,50 |

# Filtertips, Sorenson MµltiGuard®-tips

- **Sterile**
- Specially developed **hydrophobic membranes for protection against contamination** from bio-hazardous, toxic or radioactive substances
- Made of completely inert material - to eliminate "incorrect signals" during PCR experiments
- **Free of RNAse/DNAse** and **pyrogens**
- **Free of human DNA** and **PCR inhibitors**
- Autoclavable




## 51 MµltiGuard® tips 1-300 µl

Colourless, graduated, with aerosol filter. Length 77 mm. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Sartorius. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-300 | Standard | Racks, **sterile** | **KL03.1** | 10 x 96 | 94,50 |
| 1-300 | LowBinding | Racks, **sterile** | **KL04.1** | 10 x 96 | 100,45 |

## 52 MµltiGuard® tips 1-200 µl

Colourless, graduated. With aerosol filter. Length 77,8 mm. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1-200 | Standard | Racks, **sterile** | **H698.1** | 10 x 96 | 78,40 |
| 1-200 | LowBinding | Rack, **sterile** | **X599.1** | 10 x 96 | 94,75 |

## 53 MµltiGuard® tips 100-1000 µl

Colourless, with aerosol filter. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100-1000 | Standard | Racks, **sterile** | **9773.1** | 10 x 100 | 81,60 |
| 100-1000 | LowBinding | Rack, **sterile** | **X601.1** | 10 x 100 | 94,75 |

## 54 MµltiGuard®-tips 50-1250 µl

Colourless, graduated. With aerosol filter. Length 102 mm. Suitable for Eppendorf, Finnpipette®, Gilson, Oxford, Sartorius. Autoclavable.

| Volume (µl) | Design | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50-1250 | Standard | Hinged lid racks, **sterile** | **EL25.1** | 8 x 96 | 80,55 |

The pipette tip fitting tables for all microlitre pipettor models can be found on pages 432-446.

Fitting information is provided as general recommendations. It is recommended that a check be made by the user.
Pipette tip samples are available on request.

## MµltiLowBinding® pipettor tips

- **Surface optimized** through **LowBinding polymer coating** for minimum sample adhesion
- Maximum accuracy on quantitive analysis **minimizes sample loss** and reduces absolute error
- Chemically resistant coating
- Loseless pipetting of DNA, peptides, proteins, highly viscous samples
- Without the use of disruptive silicones

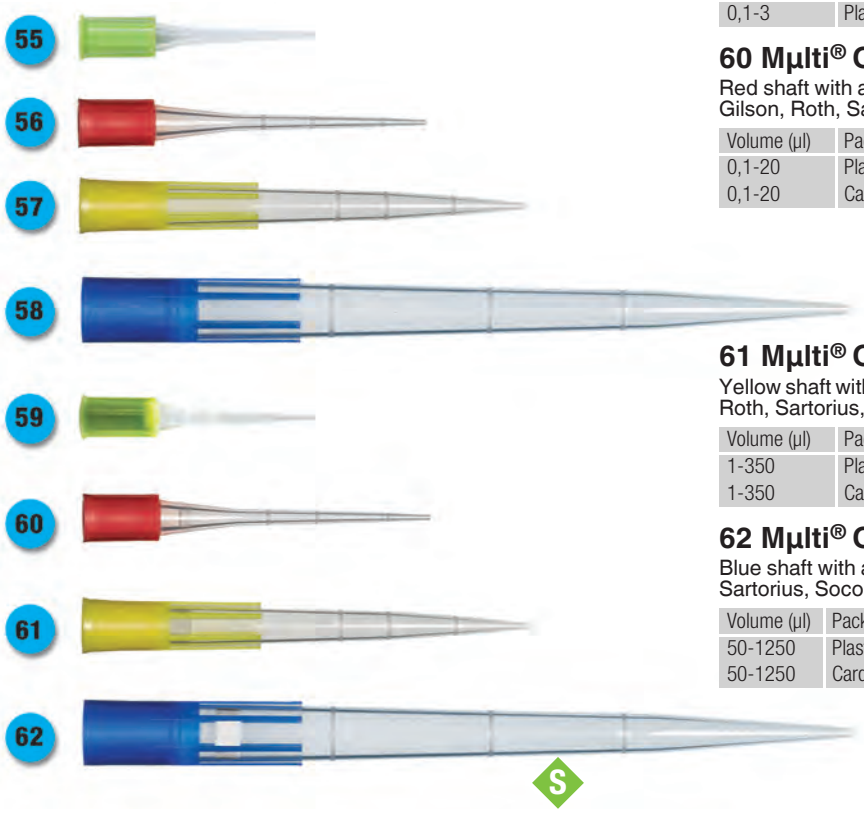


**Conventional tip** **LowBinding tip**

# Pipettor tips, Sorenson MµlTi® OneTouch

**Only one tip required for numerous pipettor models**

- **Sterile** or unsterile
- **Elastic shaft** made of TPE, rigid body made of PP
- Graduated
- Tips in plastic rack are autoclavable
- **RNase-/DNase-** and **pyrogen-free**
- **Free of human DNA** and **PCR inhibitors**
- With or without **aerosol filter**




## 55 MµlTi® OneTouch 0.1-3 µl

Green shaft. Compatible with numerous commonly available pipette models.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-3 | Plastic rack, non-sterile | **HAT9.1** | 10 x 96 | 54,50 |
| 0,1-3 | Plastic rack, **sterile** | **HAX0.1** | 10 x 96 | 57,00 |

## 56 MµlTi® OneTouch 0.1-20 µl

Red shaft. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Roth, Sartorius, Socorex.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-20 | Plastic rack, unsterile | **KT09.1** | 10 x 96 | 59,70 |
| 0,1-20 | Plastic rack, **sterile** | **KT10.1** | 10 x 96 | 63,40 |
| 0,1-20 | Cardboard rack, **sterile** | **KT11.1** | 10 x 96 | 63,40 |

## 57 MµlTi® OneTouch 1-350 µl

Yellow shaft. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Roth, Sartorius, Socorex.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-350 | Plastic rack, unsterile | **KP90.1** | 10 x 96 | 59,70 |
| 1-350 | Plastic rack, **sterile** | **KP91.1** | 10 x 96 | 63,40 |
| 1-350 | Cardboard rack, **sterile** | **KP92.1** | 10 x 96 | 63,40 |

## 58 MµlTi® OneTouch 50-1250 µl

Blue shaft. Suitable for Eppendorf, Finnpipette®, Gilson, Sartorius, Socorex.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50-1250 | Plastic rack with hinged lid, unsterile | **KT14.1** | 8 x 96 | 59,70 |
| 50-1250 | Plastic rack with hinged lid, **sterile** | **KT15.1** | 8 x 96 | 63,40 |
| 50-1250 | Cardboard rack, **sterile** | **KT16.1** | 12 x 64 | 70,80 |

## 59 MµlTi® OneTouch 0.1-3 µl

Green shaft with aerosol filter.
Compatible with numerous commonly available pipette models.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-3 | Plastic rack, **sterile** | **HAX1.1** | 10 x 96 | 91,30 |

## 60 MµlTi® OneTouch 0.1-20 µl

Red shaft with aerosol filter. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Roth, Sartorius, Socorex.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-20 | Plastic rack, **sterile** | **KT12.1** | 10 x 96 | 105,90 |
| 0,1-20 | Cardboard rack, **sterile** | **KT13.1** | 10 x 96 | 105,90 |

## 61 MµlTi® OneTouch 1-350 µl

Yellow shaft with aerosol filter. Suitable for Brand, Eppendorf, Finnpipette®, Roth, Sartorius, Socorex.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-350 | Plastic rack, **sterile** | **KP93.1** | 10 x 96 | 105,90 |
| 1-350 | Cardboard rack, **sterile** | **KP94.1** | 10 x 96 | 105,90 |

## 62 MµlTi® OneTouch 50-1250 µl

Blue shaft with aerosol filter. Suitable for Eppendorf, Finnpipette®, Gilson, Sartorius, Socorex.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50-1250 | Plastic rack with hinged lid, **sterile** | **KT17.1** | 8 x 96 | 105,90 |
| 50-1250 | Cardboard rack, **sterile** | **KT18.1** | 12 x 64 | 105,90 |

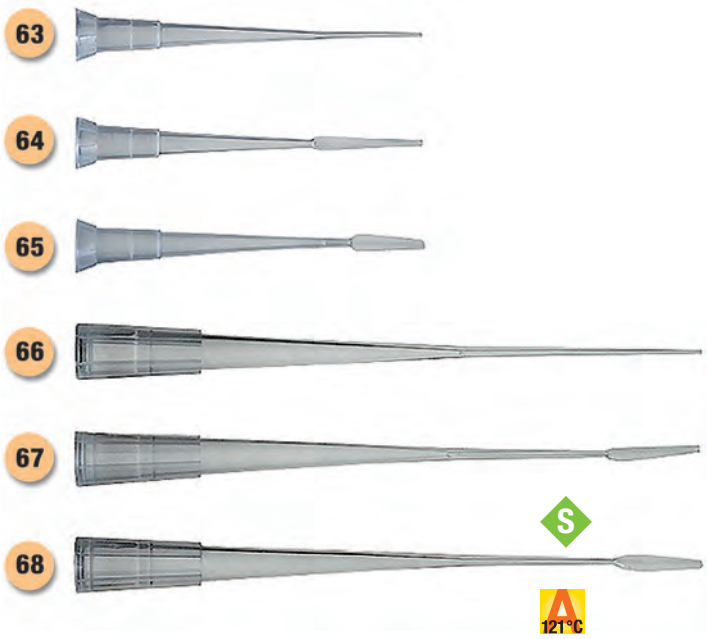



## Ecological cardboard box racks

- Cardboard raw material from sustainable forestry
- Ink print on a soja base
- Used racks can be folded, easy to recycle
- Reduce plastic waste

# Pipettor tips, Sorenson MµltiMiniFlex®-tips, MµltiFlex®-tips

- **Sterile** or unsterile
- Suitable for **loading SDS page protein gels, horizontal agarose** and **DNA sequencing gels**
- Precise pipetting of minute samples at the lower end of the micron range (restriction enzyme digestion, nick translation, enzyme assay, immune precipitation and DNA sequencing reaction)
- For checking the precision of pipettors: (63)-(65) graduation with 2 µl, (66)-(68) graduation of 5 µl
- **Free of RNAse/DNAse** and **pyrogens**
- **Free of human DNA** and **PCR inhibitors**
- Autoclavable




## 63 MµltiMiniFlex® tips 0,1-10 µl

Colourless, round. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-10 | Rack | **A569.1** | 200 | 32,40 |
| 0,1-10 | Rack, sterile | **NL58.1** | 200 | 35,15 |

## 64 MµltiMiniFlex® tips 0.1-10 µl

Colourless, flat 0.4 mm. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-10 | Racks, unsterile | **A570.1** | 200 | 64,40 |

## 65 MµltiMiniFlex® tips 0.1-10 µl

Colourless, flat 0.2 mm. Suitable for Eppendorf, Finnpipette®, Gilson, Oxford, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1-10 | Racks, unsterile | **A571.1** | 200 | 88,05 |

## 66 MµltiFlex®-tips 1-200 µl

Colourless, round. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-200 | bulk-packed (bag) | **Y419.1** | 1000 | 45,40 |
| 1-200 | Rack, unsterile | **6144.1** | 200 | 33,35 |
| 1-200 | Rack, sterile | **NL60.1** | 200 | 37,95 |

## 67 MµltiFlex®-tips 1-200 µl

Colourless, flat 0.4 mm. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5-200 | Racks, unsterile | **6128.1** | 200 | 63,90 |

## 68 MµltiFlex®-tips 1-200 µl

Colourless, flat 0.2 mm. Suitable for Brand, Eppendorf, Finnpipette®, Gilson, Oxford, Roth, Sartorius, Socorex. Autoclavable.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5-200 | Racks, unsterile | **6124.1** | 200 | 85,90 |

The pipette tip fitting tables for all microlitre pipettor models can be found on pages 432-446.

Fitting information is provided as general recommendations. It is recommended that a check be made by the user.
Pipette tip samples are available on request.

## Cell-Saver Tips
## Pipettor tips with large opening

- Made of **PP**
- **Sterile** or unsterile
- With extra-large opening for the protection of cells
- Suitable for pipetting of suspensions or for viscous liquids
- With or without **aerosol filter**
- **RNase/DNase free**
- **Filter tips free of human DNA, pyrogen free**
- Autoclavable




### 69 Cell-Saver 1-200 µl

Colourless. Suitable for Roth, Brand, Eppendorf, Gilson.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-200 | loose in bag, unsterile | **AEA9.1** | 1000 | 41,60 |

### 70 Cell-Saver 100-1000 µl

Colourless, **with aerosol filter**. Suitable for Eppendorf, Finnpipette®, Gilson, Rainin®, Sartorius.

| Volume (µl) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100-1000 | Racks, **sterile** | **CHC6.1** | 6 x 96 | 87,65 |

## Gel Cutting Tips
## Pipette tips for cloning applications

- **Made of PP**
- For cutting DNA or protein bands out of agarose or SDS-PAGE gels
- Suitable for most commonly available 1000 µl pipettes
- Ideal for precision cutting of protein bands, which can be transferred to a reaction vial using a pipette plunger
- **RNase/DNase free**
- Autoclavable




### 71 Gel Cutting Tips 4 x 1 mm

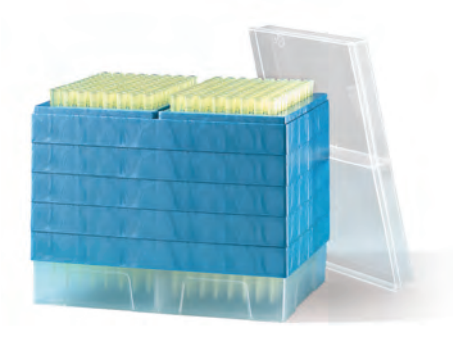
Colourless.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| loose in bag,unsterile | **CHA9.1** | 250 | 174,15 |
| in rack, unsterile | **CHC0.1** | 5 x 48 | 355,85 |

### 72 Gel Cutting Tips 6.5 x 1 mm

Colourless.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| loose in bag, unsterile | **CHC1.1** | 250 | 174,15 |
| in rack, unsterile | **CHC2.1** | 5 x 48 | 355,85 |



## MµltiⓇ-Tip stations

By Sorenson. 5-tier pipettor tip station made of **PP**.
Ideal for loading multichannel pipettors.

- 960 pipettor tips in one MµltiⓇ-Tip station
- Each with 2 x 96 (=192) pipettor tips per tier
- Lid can be placed over half of tier (96 tips) to avoid any risk of contamination
- Made of 100 % recycling plastic
- Space-saving

**Models:**
- **Sterile** or unsterile
- MµltiⓇPrecisionⓇ quality
- MµltiLowBindingⓇ-pipettor tip quality
- Graduated
- Volume range: 0.1-10 µl and 1-200 µl

| Vol. (µl) | Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1-10 | MµltiLowBindingⓇ, colourless, extra long | **sterile** | **EL29.1** | 5 x 960 | 212,85 |
| 0,1-10 | MµltiⓇPrecisionⓇ, colourless, extra long | unsterile | **EL30.1** | 5 x 960 | 191,35 |
| 1-200 | MµltiⓇPrecisionⓇ, yellow | **sterile** | **EL33.1** | 5 x 960 | 181,70 |
| 1-200 | MµltiⓇPrecisionⓇ, yellow | unsterile | **EL34.1** | 5 x 960 | 181,70 |



## Platinum Reload System
## Refill systems for pipettor tips

By Sorenson. Pipettor tips in pre-assembled inserts. Easy to use: transfer the inserts with tips into the empty rack, and the tips are ready for use. Top quality Mµlti-Precision. Reusable racks with hinged lid, stackable. Free of human DNA and PCR inhibitors, RNase/DNase free and pyrogen free. Autoclavable.

**Starter Kits Reload System**
**Delivery incl.** Reload System and 10 racks (8 racks for PK21.1).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0.1-10 µl (tip No. 33) | **PK18.1** | 10 x 96 | 58,50 |
| 1-200 µl (tip No. 38, yellow) | **PK19.1** | 10 x 96 | 55,85 |
| 1-200 µl (tip No. 36, colourless) | **NL65.1** | 10 x 96 | 53,25 |
| 1-300 µl (tip No. 39) | **PK20.1** | 10 x 96 | 74,10 |
| 50-1250 µl (tip No. 42) | **PK21.1** | 8 x 96 | 62,70 |

## Refill sets Platinum Reload System

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0.1-10 µl (tip No. 33) | **PK22.1** | 4 x 960 | 133,30 |
| 1-200 µl (tip No. 38, yellow) | **PK23.1** | 4 x 960 | 120,40 |
| 1-200 µl (tip No. 36, colourless) | **NL66.1** | 4 x 960 | 120,40 |
| 1-200 µl (tip No. 36, colourless, LowBinding) | **NL67.1** | 4 x 960 | 136,55 |
| 1-300 µl (tip No. 39) | **PK24.1** | 4 x 960 | 159,10 |
| 50-1250 µl (tip No. 42) | **PK25.1** | 4 x 768 | 174,15 |




## MµltiⓇ-QuickRack Transfer System

By Sorenson. **Refill system for pipettor tips**

For filling empty racks with 96 pipettor tips. Simply place the transfer plate in the top layer of the tips, lift the tips and place them into the available rack - now they're ready. Tips are autoclavable and RNase/DNase-free.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| QuickRack 0.1-10 µl MIKRO colourless (Tip No. 32) | **NL61.1** | 10 x 96 | 35,70 |
| QuickRack 0.1-10 µl colourless (Tip No. 33) | **KP34.1** | 10 x 96 | 37,30 |
| QuickRack with tips 1- 200 µl colourless (Tip No. 35) | **T686.1** | 10 x 96 | 31,95 |
| QuickRack with tips 1- 200 µl yellow (Tip No. 37) | **T687.1** | 10 x 96 | 31,95 |
| QuickRack with tips 1- 200 µl yellow, graduated (Tip No. 38) | **NL63.1** | 10 x 96 | 30,25 |
| Standard boxes, empty | **T688.1** | 10 | 32,50 |
| Racks with hinged lid, empty | **T689.1** | 10 | 32,50 |

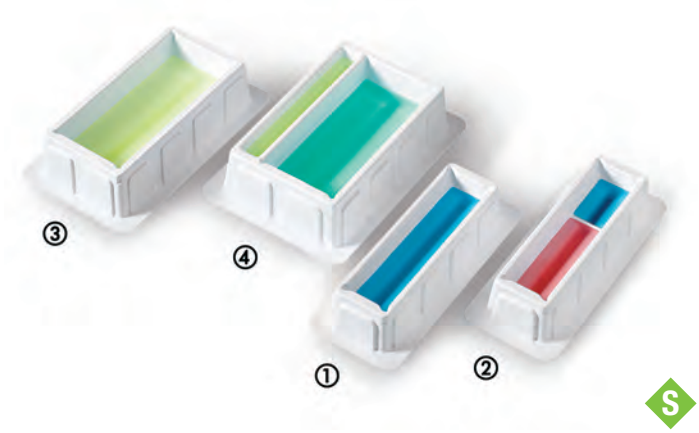


## MµltiⓇ-hinged lid racks

By Sorenson.
- With hinged lid
- Stackable
- Empty, for tips 10/200 µl
- Autoclavable

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T689.1** | 10 | 32,50 |

# Reagent reservoirs




## Single-use reagent reservoir

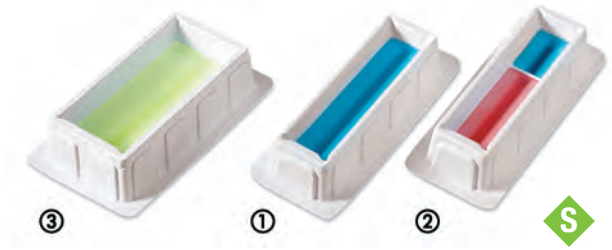
- Made of **PS**, colour: white
- **Sterile** or unsterile
- With conical overflow channel on base for minimal reagent loss
- Graduated volume markings on the inner wall
- Reinforced side walls and wider base for better stability

**Volume: 25 ml**

| Image | Design | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | non-sterile | 146 x 57 x 26 | **CYN5.1** | 100 (10 x 10) | 88,70 |
| ① | **sterile** | 146 x 57 x 26 | **HT65.1** | 100 (10 x 10) | 104,10 |
| ① | **sterile**, 1 per pack | 146 x 57 x 26 | **HT66.1** | 50 (50 x 1) | 95,25 |
| ② | subdivided, non-sterile | 146 x 57 x 26 | **CYN4.1** | 100 (10 x 10) | 88,70 |
| ② | subdivided, **sterile** | 146 x 57 x 26 | **HT67.1** | 100 (10 x 10) | 105,35 |
| ② | subdivided, **sterile**, 1 per pack | 146 x 57 x 26 | **HT68.1** | 50 (50 x 1) | 89,25 |

**Volume: 100 ml**

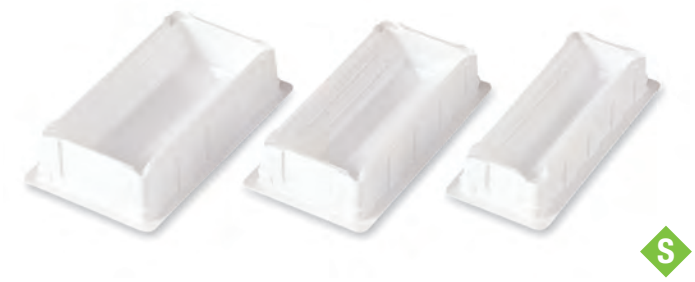
| Image | Design | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ③ | non-sterile | 146 x 83 x 32 | **CYN6.1** | 100 (10 x 10) | 145,15 |
| ③ | **sterile** | 146 x 83 x 32 | **HT69.1** | 100 (10 x 10) | 121,50 |
| ③ | **sterile**, 1 per pack | 146 x 83 x 32 | **HT70.1** | 50 (50 x 1) | 107,30 |
| ④ | with side 20 ml reservoir, **sterile** | 146 x 102 x 32 | **HT71.1** | 100 (10 x 10) | 123,65 |




## Single-use reagent reservoirs Bio-pure™

- Made of **biodegradable PET**, colour: white
- **Sterile**
- With conical overflow channel on base for minimal reagent loss
- Reinforced side walls and wider base for better stability
- Model ② is suitable for 4 and 8 channel pipettes through partitions

| Image | Vol. (ml) | Design | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | 25 | 10 per pack | 146 x 57 x 26 | **AXC7.1** | 100 | 89,55 |
| ② | 25 | subdivided, 10 per pack | 146 x 57 x 26 | **AXC8.1** | 100 | 89,55 |
| ③ | 100 | 10 per pack | 146 x 83 x 32 | **AXC9.1** | 100 | 112,90 |



## Single-use reagent reservoir

Made of **PS**. **Sterile** or non-sterile.

- Compatible with 8 and 12-channel pipettes
- Robust design for safe handling
- V-shaped base for non-loss pipetting
- Graduations on the inside wall
- Spouts at the corners
- **RNase-/DNase free, pyrogen-free**

| Volume (ml) | Design | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | non-sterile | 147 x 61 x 25 | **EKT6.1** | 100 | 36,90 |
| 25 | **sterile** | 147 x 61 x 25 | **EKT7.1** | 100 (20 x 5) | 45,50 |
| 25 | **sterile** | 147 x 61 x 25 | **EKT8.1** | 50 (50 x 1) | 32,60 |
| 50 | non-sterile | 147 x 76 x 28 | **EKT9.1** | 100 | 39,00 |
| 50 | **sterile** | 147 x 76 x 28 | **EKX0.1** | 100 (20 x 5) | 49,90 |
| 50 | **sterile** | 147 x 76 x 28 | **EKX1.1** | 50 (50 x 1) | 34,75 |
| 100 | non-sterile | 147 x 80 x 32 | **EKX2.1** | 100 | 41,20 |
| 100 | **sterile** | 147 x 80 x 32 | **EKX3.1** | 100 (20 x 5) | 51,80 |
| 100 | **sterile** | 147 x 80 x 32 | **EKX4.1** | 50 (50 x 1) | 36,90 |



## Rotilabo®-liquid reservoirs

**Sterile** (individually wrapped) or unsterile. With special design for 4, 8 and 12 channel pipettors. The bevelled sides and V-shaped base enable almost total withdrawal of liquid. Sterile vessels are individually wrapped.
**Sterile designs are DNAse/RNase-free and non-pyrogenic.**

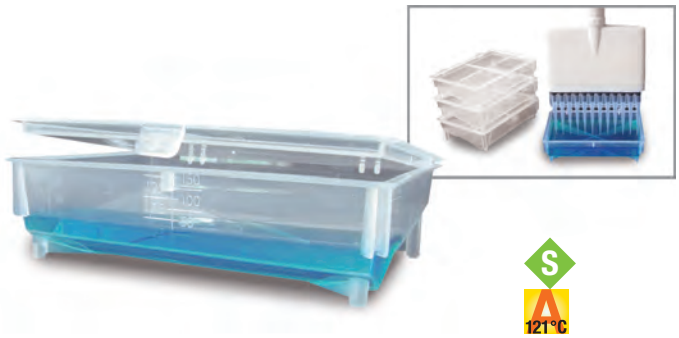
| Volume (ml) | Material | Design | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 55 | PVC | unsterile | 143 x 70 x 25 | **E830.2** | 100 | 92,45 |
| 55 | PS | **sterile** | 143 x 70 x 25 | **E831.2** | 80 | 165,55 |

## Accessories for Rotilabo®-liquid reservoirs

Lid made of PET. **Sterile** (individually wrapped).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EL53.1** | 20 | 40,75 |

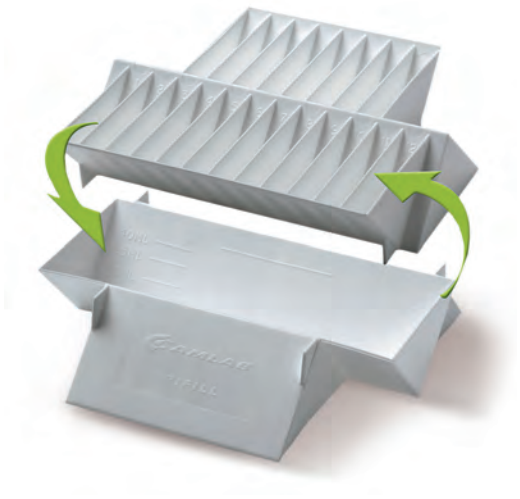
# Reagent reservoirs



## Reagent reservoirs

Made from transparent **PP**. **Sterile** or unsterile.
- Volume: 175 ml
- With graduations of 25, 50, 75, 100, 125 and 150 ml
- Good stability
- Reusable
- Compatible with 8 and 12 channel pipettes
- Removable lids, easy to open
- Autoclavable

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| with lid | **sterile** | **APX0.1** | 100 (20 x 5) | 195,65 |
| with lid | non-sterile | **APX1.1** | 100 (10 x 10) | 137,60 |
| without lid | **sterile** | **APX2.1** | 100 (20 x 5) | 170,95 |
| without lid | non-sterile | **APX3.1** | 100 (10 x 10) | 113,95 |



## Multi-channel pipettor Trifill reservoirs

Made of **PP**, white. Autoclavable. Trifill is a combination of three reservoir units. With V-shaped, graduated liquid container, volume max. 50 ml, and 8- and 12-space liquid reservoirs.

Max. filling capacity of 5 ml per numbered, V-shaped chamber.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AA87.1** | 10 | 37,20 |

▶ Multi-channel pipettors see page 433



## Reagent reservoir for 8-channel pipettors

Made of **PS**, colour: white. Single compartments with round base for minimal reagent loss. Capacity per well approx. 7 ml.

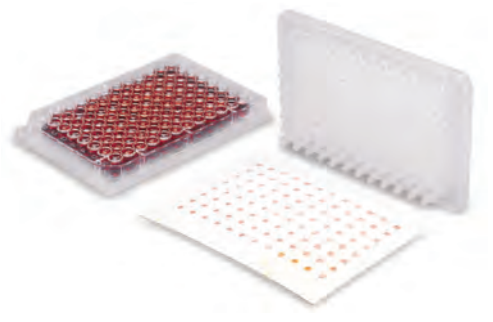
| Art. No. | Pack Qty. | € |
|---|---|---|
| **NA12.1** | 100 | 77,35 |



## Reagent reservoir for 8/12-channel pipettes

Made of **PP**. **Sterile** or non-sterile, individually packed.
With 12 numbered, V-shaped wells. Capacity per well approx. 5 ml.
Temperature stable from -80 to +121 °C. Autoclavable.
**Delivery incl.** lid.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **sterile** | **EKT4.1** | 20 | 36,95 |
| non-sterile | **EKT5.1** | 50 | 49,90 |



## Bel-Blotter™ 96-well replication plate

Made of **PC**, with 96 pipette tips. **Simultaneous taking of approx. 10 µl samples per tip.** Place cover on plate with medium, fill tips using capillary effect: if necessary, drain by centrifuging. Samples can be transferred to microtest plates, PCR plates or filter membranes.
Suitable for creating DNA libraries, for hybridisations or phage typifications.
Suitable for all 96-well microtiter plates or PCR plates. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YA93.1** | 1 | 26,15 |

# Microtiter plates and Accessories



## Microtitration plates BRAND*plates*®

By Brand. Manufactured according to ANSI/SBS standards 1 to 4 - 2004 to ensure compatibility when carrying out manual processes and, in particular, automatic processes.
- 96 well standard format
- Clearly distinguishable by embossed alphanumeric colour code: grey for standard plates, blue for immunology, orange for the cell culture
- **Free of endotoxins, DNase, DNA, RNase, non-cytotoxic**

### Microtiter plates pureGrade™ S

Made of transparent **PS**. Untreated surface.
- **Sterile** (individually packed, with cover) or non-sterile
- Chimney shaped 96 well cavities, with alphanumeric labelling
- F profile (flat bottom shape) for precision optical measurements
- Sterile type is ideal for bacteriological assays
- Non-sterile type designed, in particular, for homogeneous assays, screenings and storage

| Volume per well (µl) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350 | F-profile, **sterile** | **XT64.1** | 50 | 122,55 |
| 350 | F-profile, non-sterile | **CNP7.1** | 100 | 94,50 |

### Microtitration plates immunoGrade™

Made of **PS**. For optimal binding of IgG.
- Non-sterile
- Highest binding capacity for molecules with hydrophilic and hydrophobic regions
- Ideal surface for most standard ELISA assays
- Suitable for solid phase immunoassays
- Equivalent to high-binding products from other manufacturers

| Volume per well (µl) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350 | transparent, F-bottom | **XT66.1** | 100 | 155,90 |
| 330 | white, U-bottom | **XT67.1** | 100 | 307,45 |
| 330 | black, U-bottom | **XT69.1** | 100 | 307,45 |
| 330 | black, transparent F-bottom | **XT71.1** | 100 | 749,30 |

### Microtitration plates pureGrade™ UV

Made of **UV polymer**, slightly hydrophilised. **PS** frame.
- Non-sterile
- Bottom: UV-transparent film, wall thickness 25 µm
- Transmission at 240 nm is 80 %
- Suitable for the determination of nucleic acid and protein concentrations (at 260 and 280 nm respectively)

| Volume per well (µl) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350 | F-bottom | **XT65.1** | 50 | 637,50 |

### Microtitration plates cellGrade™

Made of **PS**.
- **Sterile** (individually packed, with cover)
- Standard plate for cultivating adherent cell cultures
- PS surface with various freely accessible chemical groups, e.g. carboxyl and hydroxyl groups
- Surface is hydrophilic (untreated PS is non-hydrophilic)
- Serum constituents are bound to the free chemical groups which allow indirect adhesion of cells

| Volume per well (µl) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350 | transparent, F-bottom | **CNP6.1** | 50 | 131,15 |
| 350 | white, F-bottom | **XT72.1** | 50 | 246,20 |
| 350 | black, F-bottom | **XT73.1** | 50 | 246,20 |
| 330 | white, with transparent F-bottom | **XT74.1** | 50 | 600,95 |
| 330 | black, with transparent F-bottom | **XT75.1** | 50 | 600,95 |

### Microtitration plates, inertGrade™

Made of **PS**.
- **Sterile** (individually packed, with cover)
- Suitable for cultivating suspension cell cultures
- Ideal for cell cultures if cell adhesion is to be avoided
- Optimised surface properties minimise cell binding, protein absorption, enzyme activation and cellular activation
- This allows, for example, premature differentiation of stem cells to be inhibited

| Volume per well (µl) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 330 | 96 well, transparent, U-bottom | **XT76.1** | 40 | 450,45 |
| 350 | 96 well, transparent, F-bottom | **XT77.1** | 40 | 450,45 |

## Covers for microtitration plates BRAND*plates*®

By Brand. Made of transparent **PS**. Non-sterile. For protection against contamination and evaporation.
Type 1, for 96 well standard plates
Type 2, for microtitration plates with transparent bottom, pureGrade™.

| Type | Condensation rings | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | Yes | 8 | **XT79.1** | 100 (20 x 5) | 66,45 |
| 1 | No | 8 | **XT80.1** | 100 (20 x 5) | 66,50 |
| 2 | No | 4,5 | **XT81.1** | 50 (5 x 10) | 64,40 |

## Overview of microtitration plates BRANDplates®

BRAND*plates*® Microtitration plates in 96 well standard format have a so-called chimney shape. The individual wells are separated from one another by a gap so as to avoid contamination. This, in combination with the condensation rings on the cover, significantly reduces evaporation.

**U-bottom**
Round bottomed wells. Since the wells do not have corners, this bottom shape is ideal for mixing and washing samples. Applications for this bottom shape include agglutination tests.
**F-bottom**
Flat bottom shape. F bottom is mainly used for precision optical measurements and is ideal for colorimetric determination, but also for microscopy. F bottom can, for example, also be used in cell culture.
**C-bottom**
Flat bottom shape with raised corners. C bottom combines the advantages of the U and F bottoms. Raised corners allow much better sample mixing in the wells. The flat bottom in the centre of the wells also allows precision optical measurements to be performed. C bottom is ideal for immunoassays in which optical measurement and thorough sample mixing are key factors influencing the precision of the test result.

**Transparent**
Transparent plates are ideal for precision optical measurements because of their excellent optical properties. This is why these plates are mainly used for colorimetric assays, but also in cell culture and storage.
**White**
White pigmented plates are optimised for luminescence measurements. Due to their white coloration, the plates provide maximum reflection of luminescence signals and minimise well-to-well crosstalk.
**Black**
Black pigmented plates are optimised for fluorescence measurements. Due to their black coloration, the plates minimise autofluorescence (even at low wavelengths) and well-to-well crosstalk.

**Microtitration plates with transparent bottom**
These plates are made of white or black PS and have a transparent bottom made of PS. Generally, these plates are suitable for applications requiring a transparent bottom, such as luminescence and fluorescence measurements. The transparent bottom provides a clear view of the well contents and enables transmitted light measurements to be performed. In addition, the plates can be examined directly under a microscope, which is particularly important for cell-bottomed applications. The white or black pigmented structure of the frame minimises well-to-well crosstalk.



## Cell culture plates

Made of **PS**. **Sterile** (Gamma sterilised), individually packed, with cover. Hydrophilic, negatively-charged surface through plasma treatment for uniform cell adhesion and cell growth.

- F profile (flat-shaped base)
- Optically clear for good cell visualisation
- Increased well edge reduces evaporation
- Condensation rings in the lid reduce cross-contamination
- Alphanumeric numbering
- Non-pyrogenic

| Wells | Volume per well (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 17 | **EKX5.1** | 100 | 149,00 |
| 12 | 6,8 | **EKX6.1** | 100 | 159,00 |
| 24 | 3,5 | **EKX7.1** | 100 | 159,00 |
| 96 | 0,39 | **EKX8.1** | 100 | 159,00 |



## Cell culture Multiwell plates

By Greiner Bio-One. Made of **PS**. **Sterile** (individually packed, cover plate for adherent cell cultures). TC-surface treated. Non-pyrogenic.
**Free of detectable DNase, RNase and human DNA.**
**Free of detectable endotoxins, free of zytotoxic substances.**
Alphanumeric well coding. F-bottom. Max. centrifuging: 4800 x g.

| Wells | Growth surface per well ($cm^2$) | Working volume per well (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 6 | 9,6 | 2-5 | **CE54.1** | 100 | 184,90 |
| 12 | 3,9 | 2-4 | **CE55.1** | 100 | 234,35 |
| 24 | 1,9 | 0,5-1,5 | **CE56.1** | 100 | 206,40 |
| 48 | 1,0 | 0,5-1 | **CE57.1** | 100 | 273,05 |
| 96 | 0,34 | 0,025-0,34 | **KL43.1** | 100 | 218,25 |

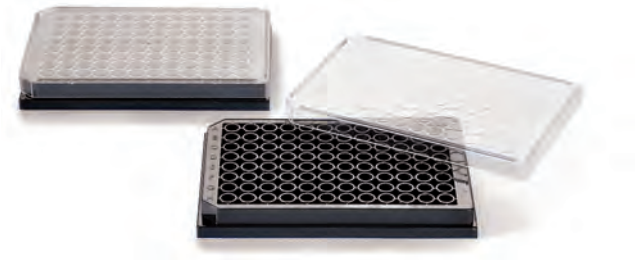


## Microtest plates, sterile

Made of **PS** and **PE**. **Sterile** (Gamma sterilized), individually packed, with cover.

- F profile (flat-shaped base)
- Optically clear for good visualization
- Increased rim edge reduced evaporation
- Condensation rings in the lid reduce cross-contamination
- Alphanumeric numbering
- Non-pyrogenic

| Wells | Volume per well (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 96 | 0,39 | **EKL9.1** | 100 | 210,00 |



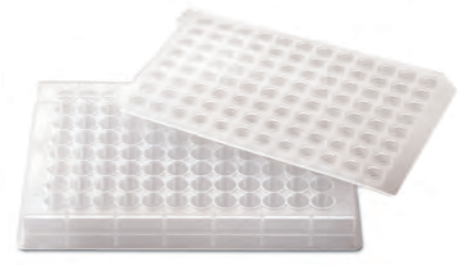
## Rotilabo®-microtest plates, black

Made of **PS**. Black plates for low background and reduced light scatter during applications in fluorescence microscopy. With 96 alphanumerically coded cavities with flat bottom. "Chimney top" well design reduces the risk of contamination. SBS dimensions. **RNase, DNase and human DNA free.**

| Volume per well (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 350 | **CEK8.1** | 100 | 328,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cover plates | **CEK9.1** | 80 | 121,50 |



## Rotilabo®-polypropylene microtest plates

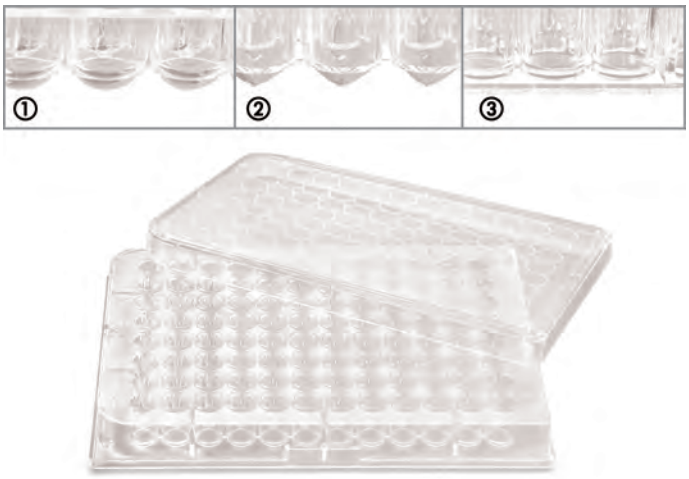
Made of **PP**. With 96 wells in a round U-profile for maximum sample recovery with reduced capillary effect. SBS dimensions, suitable for robot systems. Good chemical resistance, e.g. against DMSO, phenol and chloroform.
**RNase, DNase and human DNA free.** Autoclavable.

| Volume per well (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 350 | **CEL3.1** | 100 | 163,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| Silicone rubber sealing mats | **CEL4.1** | 50 | 219,30 |

# Microtiter plates and Accessories




## Rotilabo®-microtest plates

Made of transparent **PS**. With 96 alphanumerically coded cavities. Different base profiles available. Produced under sterile working conditions. Stackable.
Dimensions: L 128 x W 85 x H 15 mm.

**Delivery without** cover plate, please order separately.

| Type | Volume per well (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① U-profile (round) | 345 | **9291.1** | 100 | 46,25 |
| ② V-profile (conical) | 335 | **9292.1** | 100 | 52,70 |
| ③ F-profile (flat) | 405 | **9293.1** | 100 | 57,00 |

## Cover plates for Rotilabo®-microtest plates

Made of **PS**. Prevents contaminations and liquid loss.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9297.1** | 100 | 42,20 |



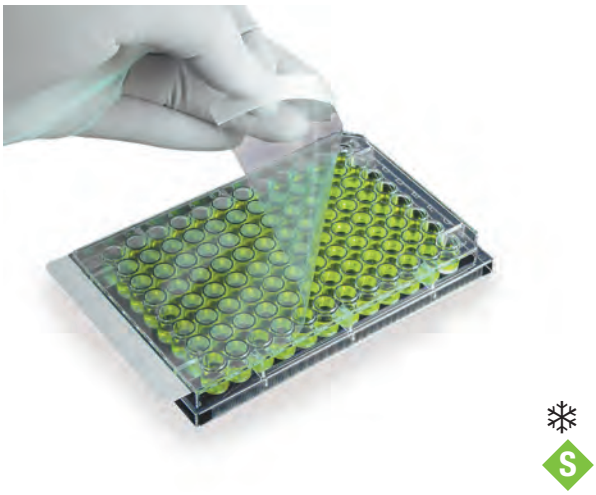
## 6-well macroplates

Made of **PS**. For all bacteriological applications which require a subdivided culture dish. Simple and space-saving alternative to six conventional 35 mm petri dishes.
Dimensions: L 128 x W 85 x H 20 mm.

- Manufactured under aseptic conditions
- With 6 alphanumeric-labelled wells, well ∅ 35 mm
- Working volume 2-5 ml
- Maximum well volume: 15 ml
- Centrifugable to 4500 g
- Temperature stable from -20 to approx. +60 °C

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ATC0.1** | 100 | 82,80 |


▶ For multichannel pipettors, see page 433
▶ Labels for microtiter plates, see page 683

## Rotilabo®-sealing films for microtest plates

Self-adhesive. **Sterile** or unsterile. Minimizes cross-contamination of samples during handling and transport. With perforated ends for simple and speedy application.

**Types 1 and 2**
Made of **polyester**. Also suitable for ELISA-plates. Minimize evaporation. Type 1 can be pierced with a single-channel pipettor.

**Type 3**
Made of **aluminium-coated paper**. Good diffusion barrier. Produced under almost germ-free conditions.

**Technical specifications:**

| **Type** | **1** | **2** | **3** |
|---|---|---|---|
| Thickness (µm) | 25 | 50 | 65 |
| Dimensions L x W (mm) | 141 x 79.4 | 146 x 79.4 | 130 x 78 |
| Temperature-stable (°C) | -40 to +120 | -40 to +120 | -20 to +80 |
| Piercable | yes | no | no |

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | unsterile | **H769.1** | 100 | 70,95 |
| 1 | **sterile** | **H770.1** | 100 | 93,55 |
| 2 | unsterile | **EN76.1** | 100 | 47,30 |
| 2 | **sterile** | **EN77.1** | 100 | 70,95 |
| 3 | unsterile | **X172.1** | 100 | 40,35 |



## Rotilabo®-384-well microtest plates

Made of **PS**. With 384 alphanumerically coded cavities with flat bottom. Working volume 120 µl. SBS dimensions Black plates for low background and reduced light scatter during applications in fluorescence microscopy. Reduced capillary effect thanks to rounded corners.
**RNase, DNase and human DNA free.**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| colourless | **CEL0.1** | 100 | 299,95 |
| black | **CEL1.1** | 100 | 312,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cover plates | **CEL2.1** | 100 | 163,40 |



## Gas-permeable sealing film

**Self-adhesive film, made on a polyurethane base.**

- **Sterile** and non-cytotoxic
- For sealing microtitre plates
- Prevents contamination from cavity to cavity
- Ensures an even exchange of oxygen and carbon dioxide
- Excellent for aerobic cell cultures, biological and immunological cellular preparation and selection, screening, etc.
- Does not inhibit cellular growth or the separation of human fibroblasts
- FDA-tested

**Technical specifications:**

| | |
|---|---|
| Thickness | 25 µm |
| Dimensions (L x W) | 153 x 78 mm |
| Temperature-resistant | -80 to +100 °C |
| Pierceable | yes |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T093.1** | 100 | 134,40 |



## Rotilabo®-cling film for cell cultures

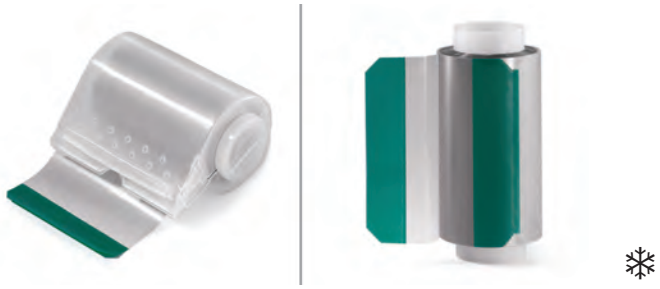
Made of **rayon. Sterile** or unsterile. Self-adhesive hydrophobic cling film for cell culture and deep well plates.

- Gas-permeable, for a steady exchange of air and carbon dioxide
- Minimises evaporation and cross-contamination
- With perforated ends for simple and speedy application
- Non-cytotoxic

**Technical specifications:**

| | |
|---|---|
| Thickness | 114 µm |
| Dimensions (L x W) | 142.9 x 82.6 mm |
| Temperature-resistant | -20 to +80 °C |
| Pierceable | yes |

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| unsterile | **EN84.1** | 100 | 83,45 |
| **sterile** | **EN85.1** | 50 | 58,05 |



## Protective sheets on rolls

Made of polyester, self-adhesive. For sealing micro test plates. Minimises cross-contamination of samples during incubation, transportation and temporary storage. Also suitable for ELISA plates. Without intermediate paper backing, for fast handling. 100 individual sheets per roll.

**Technical specifications:**

| | |
|---|---|
| Thickness | 38 µm |
| Dimensions of individual sheet (L x W) | 122 x 79 mm |
| Heat resistant | -40 to +120 °C |
| Pierceable | no |

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **APT6.1** | 2 | 101,05 |

## Dispenser for protective sheets on rolls

Made of PP. Handy dispenser for fast dispensing and application of protective sheets on rolls. Dimensions: L 80 x W 105 mm.
**Delivery incl.** 2 rolls of protective sheets (APT6.1).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **APT7.1** | 1 | 109,65 |



## Rotilabo®-sealing roller

Frame made of **metal**, with **rubber** roller. For more effective sealing of microtest-, PCR- and Deep-Well-plates with sealing foil or sealing mats because the roller presses them on more evenly. Also usable for evenly smoothing out gel, transfer membrane and blotting-paper during blot-assembly. Roll width: 100 mm, ∅ roll: 30 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HE23.1** | 1 | 37,85 |

## Labels for microtest plates

Made of chemically inert polyester. Tearproof. Sticks to all plastic types without drying out or falling off. Useable during steam sterilisation, in waterbaths, freezers (to max. -40 °C), etc. Almost all types of markers and pens may be used for labelling. Dimensions: 6 x 38 mm, therefore excellent for use on the sides of microtest plates or petri dishes. Per roll 1000 labels.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K435.1** | 1 | 40,85 |

# Microcentrifuge tubes syst. and sample storage



Programme extension!

## Riplate® deepwell plates

Made of **PP**. **Sterile** (individually packed) or non-sterile.
Suitable for all conventional automation systems,
1 and 2 ml plates suitable for multi-channel pipettes.
**Riplate® plus** with increased well. Reduction of cross-contamination, enhanced fusing or sealing with adhesive film.
**Riplate® medio** for sample storage, requires 50 % less storage space due to increased height.
**Black plates** for light-sensitive applications.

- Alphanumeric well identification
- Includes angled corner for proper orientation
- Stackable
- SBS dimensions
- Optimised base structure minimises specimen losses
- Temperature stable up to -85 °C
- Centrifugable to 3000 x g

**Applications:** High Throughput Screening (HTS), general analysis necessitating the use of a stock plate; serial dilution; reagent transfer; cell and tissue cultures; specimen storage.

**Technical specifications:**

| Type | Total vol./well (µl) | Working vol./well (µl) | Plate format | L x W x H (mm) | Design/ well base |
|---|---|---|---|---|---|
| **Riplate® RW 1 ml** | 1200 | 50-1000 | 8 x 12 | 127.3 x 84.7 x 41.2 | round/round |
| **Riplate® RW 1 ml** | 1200 | 50-1000 | 8 x 12 | 127.8 x 85.5 x 41.0 | round/round |
| **Riplate® medio1 ml** | 1200 | 50-1000 | 8 x 12 | 127.8 x 85.5 x 27.0 | round/round |
| **Riplate® sw 2 ml** | 2500 | 50-2400 | 8 x 12 | 127.8 x 85.5 x 44.0 | rectangular/ round |
| **Riplate® sw 2 ml** | 2200 | 1900 | 8 x 12 | 127.8 x 85.5 x 44.0 | round/round |
| **Riplate® sw 5 ml** | 5000 | 50-4900 | 8 x 6 | 127.8 x 85.5 x 44.0 | rectangular/ V-shaped |
| **Riplate® sw 10 ml** | 10 000 | 50-9900 | 4 x 6 | 127.8 x 85.5 x 44.0 | rectangular/ V-shaped |

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Riplate® RW 1 ml | non-sterile | **EN06.1** | 20 | 87,10 |
| Riplate® RW 1 ml plus | non-sterile | **TC21.1** | 20 | 85,60 |
| Riplate® RW 1 ml plus, black | non-sterile | **HLH5.1** | 20 | 82,00 |
| Riplate® 1 ml medio | non-sterile | **TC22.1** | 32 | 132,25 |
| Riplate® sw 2 ml | non-sterile | **EN07.1** | 20 | 98,50 |
| Riplate® sw 2 ml | **sterile** | **YP61.1** | 10 | 73,45 |
| Riplate® rw 2 ml | non-sterile | **CEX7.1** | 20 | 93,35 |
| Riplate® sw 2 ml plus, black | non-sterile | **HLH6.1** | 20 | 88,50 |
| Riplate® sw 5 ml | non-sterile | **EN08.1** | 20 | 110,75 |
| Riplate® sw 5 ml | **sterile** | **YP62.1** | 10 | 78,95 |
| Riplate® sw 10 ml | non-sterile | **TC23.1** | 20 | 110,75 |

## Accessories for riplate® deepwell plates

**Sealing mats.**

| For | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| riplate® 1 ml / riplate® 1 ml plus | unsterile | **EN09.1** | 20 | 52,60 |
| riplate® 1 ml medio / riplate® rw 2 ml | unsterile | **CEX8.1** | 20 | 52,45 |
| riplate® sw 2 ml | unsterile | **EN10.1** | 20 | 53,60 |
| riplate® sw 5 ml | unsterile | **TC24.1** | 20 | 58,50 |
| riplate® sw 10 ml | unsterile | **TC25.1** | 20 | 62,05 |



NEU NOUVEAU NEW

## Deepwell plates Riplate® magnetic

Made of **PP**. For cleaning, mixing, centrifuging samples. For storing and preparing substances. For cleaning proteins as well as for DNA extraction via automatic magnet separation. Corresponds to the SBS standard (Society for Biomolecular Screening).

- Resistant to common chemicals. solvents and alcohols
- High stability also when centrifuging
- Cylindrical wells for optimum sample mixing
- Slightly raised rim of the well prevents cross-contamination
- Alphanumeric marking for registering and identifying the samples
- Production under clean room conditions Class 8

**Applications:**
Developed especially for automatic magnetic separation machines: An automated magnetic separator is often used to purify proteins and to extract DNA. This technology that is based on magnetic particles enables fast and efficient preparation of samples with high throughput. In order to perform this separation process reproducibly in the long-term, precise plastic plates made of ultrapure polypropylene were developed, the Riplate® magnetic. Production under Class 8 clean room conditions ensures the sustainability of these products as well as reliable analysis results.

**Suitable for:**
KingFisher™ 96 Flex Magnetic Particle Processors.

| Type | Total vol./well (ml) | Working vol./well (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Riplate® 96 SRW magnetic, 0.2 ml | 200 | 20-100 | **HLK2.1** | 600 (10 x 60) | 2147,85 |
| Riplate® 96 SRW magnetic, 2 ml | 2000 | 20-1000 | **HLK3.1** | 600 (10 x 60) | 2236,00 |
| Riplate® 96 tip comb | - | - | **HLK4.1** | 600 (10 x 60) | 3160,50 |



## Autotube racks

Made of **PP**, **sterile** or unsterile. Ideal for storing, transporting and freezing samples as well as for use in many biological tests, e.g. PCR, radio immunoassays (RIA), enzyme immunoassays (EIA) or cell growth studies. Racks can be removed from their base, e.g. for homogeneous heating of vials in a water bath.

- 1.2 ml vials, made of PP, arranged in microtitration plate format 8 x 12
- Suitable for working with multichannel pipettors
- With alphanumeric marking on outside of rack
- Label inside rack
- Temperature stable up to -90 °C
- Autoclavable

**Delivery without** cap strips. Please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rack with 96 vials, unsterile | **EC05.1** | 10 | 64,30 |
| Rack with 96 vials, **sterile** | **EC06.1** | 10 | 68,70 |

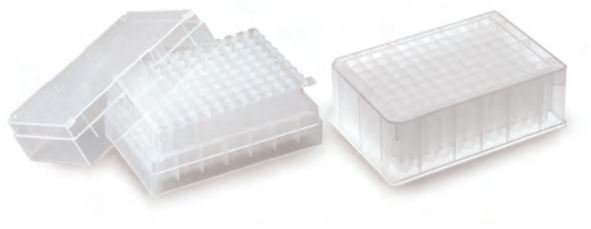


## Refill vials and caps for Autotube racks

1.2 ml vials made of **PP**, cap strips made of. **Sterile** or non-sterile.
Only vials are autoclavable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Vials, 1.2 ml, individual, loose, unsterile | **EC07.1** | 960 | 26,90 |
| Vials, 1.2 ml, 8 vial strips, individual, loose, unsterile | **YC41.1** | 120 | 23,65 |
| Cap strips, 8 cap strips, individual, loose, unsterile | **EC08.1** | 120 | 21,40 |
| Cap strips, 8 cap strips, loose, **sterile** | **EC09.1** | 120 | 22,60 |


▶ Mulitchannel pipettors see page 433
▶ Reagent reservoirs see page 462

## Micro Racks

Made of **PP**, with lid. Racks with 96 micro tubes, filled or unfilled.
Tubes are optionally available with a number code on the base or uncoded.
Pressure tested for leak tightness.

**Reusable micro racks**

- SBS standard micro test plate format (8 x 12)
- For use with micro tubes
- Angled corner on rack for clear positioning of refill unit
- Sides can be labelled, e.g. with a barcode
- Suitable for use in combination with automatic dispensing systems and robots
- Racks are stackable and suitable for stacker systems
- Temperature-resistant up to -80 °C. Autoclavable

| Volume (ml) | Type | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,65 | filled, coded | 127,76 x 85,48 x 20,4 | **XK05.1** | 50 | 441,85 |
| 1,2 | filled, coded | 127,76 x 85,48 x 28,4 | **XK08.1** | 50 | 441,85 |



## Micro Tubes

Made of **PP**, with round base. As single tubes or 8 tube strips for use in micro racks.

| Volume (ml) | ∅ x H (mm) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,65 | 8.3 x 28 | individually wrapped | **XK10.1** | 5 x 1000 | 177,40 |
| 0,65 | 8.3 x 28 | 8 tube strip | **XK11.1** | 5 x 120 | 183,85 |
| 1,2 | 8.3 x 44,1 | individually wrapped | **XK12.1** | 5 x 1000 | 177,40 |
| 1,2 | 8.3 x 44,1 | 8 vial strip | **XK13.1** | 5 x 120 | 183,85 |



## Sealing accessories for micro tubes

Made of **TPE**. For sealing 0.65 and 1.2 ml micro tubes.
Can be punctured with syringe needles for sampling and filling.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 8 tube cap strip | **XK18.1** | 1000 | 161,25 |
| 8 x 12 sealing mats | **XK19.1** | 100 | 221,45 |

# PCR-trays and containers



## Rotilabo®-sealing films for PCR-plates

Made of **PP** or **aluminium**. Self-adhesive. **Sterile** or unsterile.
For sealing PCR-plates.
- Suitable for use in thermocyclers
- Perforated ends for simple and speedy application
- **Nucleic acid-free**
- **RNase-/DNase-free**

**Technical specifications:**

| **Type** | **1** | **2** |
|---|---|---|
| Material | aluminium | PP |
| Thickness (µm) | 38 | 50 |
| Dimensions L x W (mm) | 142.9 x 82.6 | 135.1 x 79.4 |
| Temperature stability (°C) | -80 to +120 | -40 to +125 |
| Piercable | yes | no |

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 (Alu) | unsterile | **EN80.1** | 100 | 90,85 |
| 1 (Alu) | **sterile** | **EN81.1** | 50 (2 x 25) | 75,25 |
| 2 (PP) | unsterile | **EN82.1** | 100 | 73,35 |
| 2 (PP) | **sterile** | **EN83.1** | 100 | 94,40 |

## Sealing films for RT PCR

Made from optically clear polyester; with strong, non-absorbent and non-fluorescent adhesive.
Suitable for ELISA, real-time qPCR applications and protein crystallisation.
Plastic backing film, easily removable.
Length between perforations: 121.9 mm.
**RNase-, DNase- and Nucleic acid-free**.

**Technical specifications:**

| | |
|---|---|
| Material | Polyester |
| Thickness | 50 µm |
| Dimensions (L x W) | 142.9 x 79.4 mm |
| Heat resistant | -40 to +120 °C |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **APT8.1** | 100 | 120,40 |

## Sealing films with special adhesive

Made from optically clear polyolefin; with inert, encapsulated silicone adhesive. The initially non-tacky adhesive is activated by applying pressure to the PCR plate, thus providing a perfectly tight seal, while the area directly above the wells is unchanged. The high optical clarity in these areas ensures reproducible results. Low autofluorescence, suitable for ELISA, quantitative DNA amplification, real-time qPCR applications and protein crystallisation. Length between perforations: 113 mm.
**DNase, RNase and DNA free.** Resistant to DMSO.

**Technical specifications:**

| | |
|---|---|
| Material | Polyolefin |
| Thickness | 50 µm |
| Dimensions (L x W) | 139.7 x 78.6 mm |
| Heat resistant | -70 to +100 °C |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **APT9.1** | 100 | 181,70 |



## Rotilabo®-PCR trays

Made of **PP**. With black alphanumeric print for sample differentiation.
Thin-walled for optimal heat transfer between thermocycler and sample.
Cavities with raised edge to aid covering with PCR film.
Suitable for most standard thermocyclers.
**RNase, DNase and human DNA free**. Autoclavable.

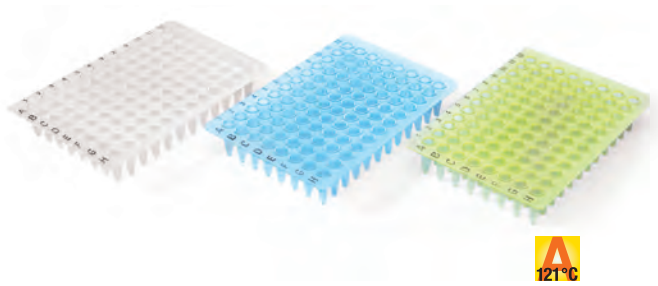
| Design | Filling volume (µl) | Working volume (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Standard, with half frame | 300 | 250 | **CEN0.1** | 50 | 140,85 |
| Low profile, with full frame | 200 | 150 | **CEN1.1** | 50 | 140,85 |



## 96-well PCR trays, with frame

By Brand.
- Made of thin PP
- Blue, alphanumeric coding
- Cut corner for easier orientation
- Even, fast and precise heat transfer
- Smooth, inert container inner
- Reduced formation of enzymes and nucleic acids
- Reliable sealing with associated sealing mats
- Frame suitable for labelling
- Suitable for real-time PCR
- **Free from DNase/RNase, DNA and endotoxins**
- Autoclavable at 121 °C (2 bar), according to DIN EN 285

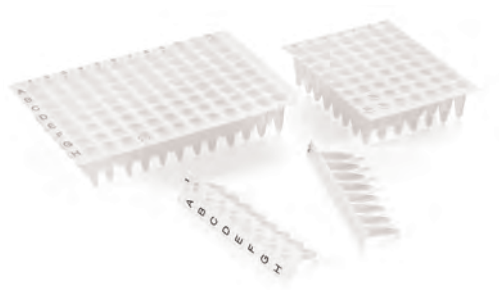
| Design | Filling volume (µl) | Cut corner | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Standard | 200 | A12 | **EYT4.1** | 50 (10 x 5) | 159,10 |
| Low profile, higher frame | 150 | A1 | **EYT5.1** | 50 (10 x 5) | 159,10 |



## Rotilabo®-PCR trays

Made of **PP**, without frame. With black alphanumeric print for sample differentiation. Volume 0.3 ml (max. working volume 250 µl, max. filling volume 300 µl). Thin-walled for optimal heat transfer between thermocycler and sample. Cavities with raised edge to aid covering with PCR film. Suitable for most standard thermocyclers.
**RNase, DNase and human DNA free.** Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| colourless | **CEL7.1** | 50 | 140,85 |
| blue | **CEL8.1** | 50 | 140,85 |
| yellow | **CEL9.1** | 50 | 140,85 |



## Rotilabo®-PCR trays, with partitioning

**Made of PP**, without frame. With perforation, separable into individual PCR strips or smaller trays. With black alphanumeric print for sample analysis. Volume 0.3 ml (max. working volume 250 µl, max. filling volume 300 µl). Thin-walled for optimal heat transfer between thermocycler and sample. Cavities with raised edge to aid covering with PCR film. Suitable for most standard thermocyclers.
**RNase, DNase and human DNA free.** Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CEN2.1** | 50 | 151,60 |



## 96-well PCR trays without frame

By Brand.
- Made of thin PP
- Blue, alphanumeric coding
- Cut corner for easier orientation
- Even, fast and precise heat transfer
- Smooth, inert container inner
- Reduced formation of enzymes and nucleic acids
- Reliable sealing with associated sealing mats
- Suitable for all current thermocyclers
- Suitable for real-time PCR
- **Free from DNase/RNase, DNA and endotoxins**
- Autoclavable at 121 °C (2 bar), according to DIN EN 285

| Design | Filling volume (µl) | Cut corner | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Standard | 200 | A12 | **HAE6.1** | 50 (10 x 5) | 159,10 |
| Low profile | 150 | H12 | **HAE7.1** | 50 (10 x 5) | 159,10 |



## PCR trays, 24-/48-/384-well

By Brand.
- Made from **PP**, extra-thin, even wall thickness, for optimal heat transfer and short cycle times
- Thin-walled PCR trays for constant, fast and precise heat transfer
- Tubes have smooth and inert inner surfaces to minimise binding of enzymes and nucleic acids
- Wells have raised rims for protection against cross-contamination and reliable sealing with suitable sealing mats
- Suitable for all standard quantitative real-time thermocyclers
- **DNase, DNA and RNase free**
- Autoclavable

### 24/48/96-well PCR trays

0.2 ml tubes.

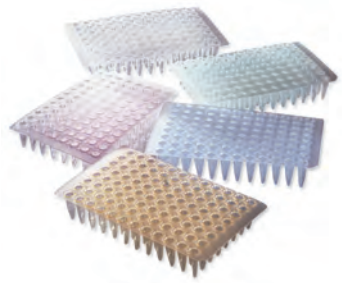
| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 24-well, without rack | **XT94.1** | 40 (8 x 5) | 64,25 |
| 48-well, without rack | **XT95.1** | 20 (4 x 5) | 62,25 |

### 384-well PCR trays

40 µl tubes, for specimen volumes ranging from 2 to 30 µl. The trays can be filled using conventional multichannel pipettes or robot systems.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 384-well, with complete rack | **XT98.1** | 50 (5 x 10) | 254,80 |

# PCR-trays and containers



## Mμlti®-Rigid Ultra Plates

By Sorenson. Made of **PP**. One-piece plates in microtitre plate format (8 x 12). Supplied with 96 extremely thin-walled micro-centrifuge tubes 0.2 ml. Thin walls guarantee steady heat transfer and shorter cycle duration during PCR-experiments. Can be easily closed with micromats, lid strips, or sealing foil. With alphanumeric coding for easy sample identification. Fit all standard thermocyclers. **DNase/RNase free**. Autoclavable.

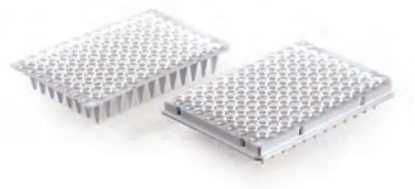
| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| natural | **N421.1** | 25 | 106,45 |
| red | **N422.1** | 25 | 106,45 |
| blue | **N423.1** | 25 | 106,45 |
| green | **N424.1** | 25 | 106,45 |
| yellow | **N425.1** | 25 | 106,45 |

## Micromats

By Sorenson. Made of silicon rubber.
Autoclavable, for closing Mμlti®-Ultra Plates.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K119.1** | 5 | 84,30 |





## PCR products for real time PCR

By Brand.
- Made of **PP**, white. For qPCR
- Significantly better results than clear 8-tube strips or trays in fluorescence measurements.
- Evenly dyed with titanium dioxide in combination with smooth surfaces for optimal reflection of fluorescence signals.

**PCR tube strips (8 tubes per strip)**

0.2 ml tubes. Separate clear caps, flat, easy to open and close (please order separately). Tubes have tab at one end. Capped strips with a small lip on the side of each cap for careful, contamination-free opening.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tubes without capped strips | **XX01.1** | 125 | 95,85 |
| 8 cap strips, flat | **XT93.1** | 125 | 36,35 |

**96-well PCR trays**

0.2 ml tubes.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Without rack | **XX02.1** | 50 | 192,45 |
| With half rack | **XX03.1** | 50 | 192,45 |



## PCR-strips 12 tubes

Made of **PP**. Volume 0.2 ml. Autoclavable.

- PCR-micro-centrifuge strips with 12 micro-centrifuge tubes
- Thin-walled PCR-tubes guarantee optimal temperature exchange during heating and cooling PCR-cycles
- **Certified DNase-, RNase- and DNA-free**

**Delivery without** lid strips, please order separately.

| Colour | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| colourless | 0,2 | **EL74.1** | 125 | 123,65 |

## Accessories for PCR-strips 12 tubes

Lid strips made of **PP**. Curved lids. Suitable for PCR-centrifuge strips each with 12 centrifuge tubes. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| colourless | **EL79.1** | 125 | 50,45 |



## PCR-strips 8 tubes

Made of **PP**. Volume 0.2 ml. Autoclavable.

- PCR-micro-centrifuge strips with 8 micro-centrifuge tubes
- **Lids, which can be opened or closed individually**, are available in two designs: flat or curved
- Flat lid puncturable with cannula
- Extremely thin-walled PCR-tubes guarantee optimal temperature exchange when heating and cooling during PCR-cycles
- **DNase-, RNase- and DNA-free**

**Tubes with lids for individual attachment (flat)**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| colourless | **CH87.1** | 125 | 102,15 |
| blue | **CH88.1** | 125 | 102,15 |
| green | **CH89.1** | 125 | 102,15 |
| red | **CH90.1** | 125 | 102,15 |
| yellow | **CH91.1** | 125 | 102,15 |

**Tubes with lids for individual attachment (curved)**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| colourless | **CH92.1** | 125 | 102,15 |
| blue | **CH93.1** | 125 | 102,15 |
| green | **CH94.1** | 125 | 102,15 |
| red | **CH95.1** | 125 | 102,15 |
| yellow | **CH96.1** | 125 | 102,15 |



## Rotilabo®-8-strip PCR reaction vials

Made of **PP**. colourless, with numberings from 1 to 8 for sample differentiation (type ③ not numbered). Volume 0.2 ml (max. working volume 250 µl, max. filling volume 300 µl). Thin-walled for optimal heat transfer between thermocycler and sample. Suitable for most standard thermocyclers. **RNase, DNase and human DNA free**. Autoclavable. **Delivery incl.** cap strips (flat or convex) or attachable single caps.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① PCR strips with convex cap strips | **CEN3.1** | 125 | 95,70 |
| ② PCR strips with flat cap strips | **CEN4.1** | 125 | 95,70 |
| ③ PCR strips, attachable flat single caps | **CEN5.1** | 120 | 95,70 |

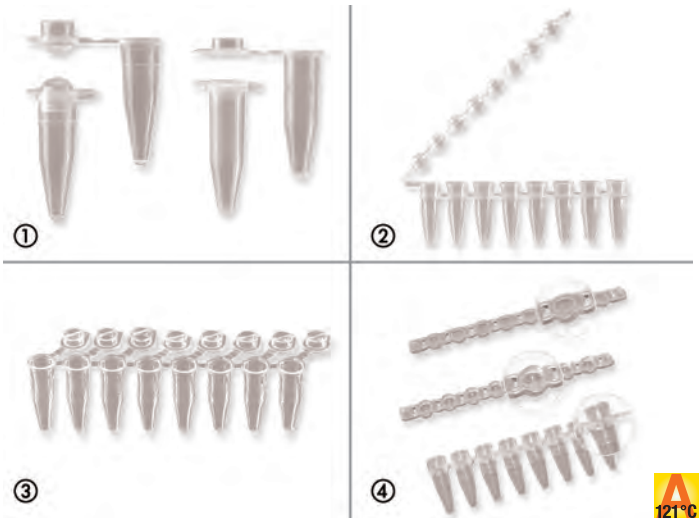


## PCR-strips 8 tubes with attached lid

Made of **PP**. Capacity 0.2 ml. Autoclavable.

- PCR-micro-centrifuge strips with 8 micro-centrifuge tubes
- **Attached lid strips** enable easy opening and closing
- Lids curved
- Thin-walled PCR-tubes guarantee optimal temperature exchange when heating and cooling during PCR-cycles
- **DNase-, RNase- and DNA-free**

| Colour | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| colourless | 0,2 | **CK82.1** | 125 | 96,65 |
| blue | 0,2 | **CK83.1** | 125 | 96,65 |
| green | 0,2 | **CK84.1** | 125 | 96,65 |
| pink | 0,2 | **CK85.1** | 125 | 96,65 |
| yellow | 0,2 | **CK86.1** | 125 | 96,65 |




## PCR-reaction vials

By Brand.

- Made of **PP**. Colourless. Extra-thin, even wall thickness, for optimal heat transfer and short cycle times
- Made of high-grade pure plastics containing no additives
- Produced under clean room conditions according to ISO 14 644-1 Class 5, 7 and 8
- **DNase, DNA- and RNase free**
- Suitable for all standard thermocyclers
- Caps are easy to open and close
- Autoclavable at 121 °C (2 bar), according to DIN EN 285
- **Containers with flat lids, suitable for real-time PCR**

**① PCR-individual vials with attached cap**

Convex or flat cap, tight-fitting for minimal loss of fluid through evaporation.

**② PCR-vials, 8 tube strips with attached cap strip**

Convex cap.

**③ PCR-vials, 8 tube strips with attached single caps**

Flat single cap for optimal protection against contamination.

**④ PCR-vials, 8 tube strips with separate 8 cap strip**

Vials with retaining tab on one end.
Cap strip with convex or flat cap and small step on side of each cap for careful, contamination-free opening.

| Type | Design | Vol. (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | Vials, attached convex caps | 0,2 | **XT86.1** | 1000 | 61,15 |
| ① | Vials, attached flat caps | 0,2 | **XT87.1** | 1000 | 50,50 |
| ① | Vials, attached flat caps | 0,5 | **XT88.1** | 1000 | 47,65 |
| ② | Vials, 8 tube strips, attached convex cap strips | 0,2 | **XT89.1** | 125 | 123,65 |
| ③ | Vials, 8 tube strips, attached flat single caps | 0,2 | **XT90.1** | 120 | 136,55 |
| ④ | Vials, 8 tube strips + 8 pack of cover strips, curved | 0,2 | **HAE8.1** | 250 | 201,05 |
| ④ | Vials, 8 tube strips + 8-pack of cover strips, flat | 0,2 | **HAE9.1** | 250 | 213,95 |
| ④ | Vials, 8 tube strips, without cap | 0,2 | **XT91.1** | 125 | 85,25 |
| ④ | 8 cap strips, convex | 0,2 | **XT92.1** | 125 | 28,55 |
| ④ | 8 cap strips, flat | 0,2 | **XT93.1** | 125 | 36,35 |

▶ Pipettor tips see page 449
▶ Microlitre pipettors see page 432
▶ Cooling racks for PCR-trays and containers see page 234

# Microcentrifuge tubes



## MµlTi®-UltraStrips 8-tubes

By Sorenson. Made of thin-walled **PP**. **Sterile** (incl. lid strips) or unsterile. 8 micro-centrifuge tubes with 200 µl per strip. Fit all standard thermocyclers, e.g. Perkin Elmer, Biometra. The SafeSeal® design of the caps ensures tight closing. Due to the very smooth and transparent inner and outer surfaces, even the smallest volumes are clearly visible.
**RNase-/DNase-free, pyrogen-free.** Autoclavable.

| Colour | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| colourless | **sterile** | **E712.1** | 120 | 170,95 |
| colourless | unsterile | **E717.1** | 120 | 155,90 |

## Lid strips, curved

For closing MµlTi®-Ultra Plates and MµlTi®Ultra Strips 0.2 ml.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| cannot be pierced, curved lid | **H997.1** | 120 | 76,35 |



## PCR reaction vials, strip of 8, low profile

By Brand. Made of PP. Volume 0.15 ml. PCR reaction vial strip with 8 interconnected vials. Flat single caps attached, highly transparent and so suitable for real time PCR.
**DNase, DNA- and RNase free**.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CNT0.1** | 120 | 140,85 |




## Rotilabo®-PCR reaction vials 0.2 ml

Made of **PP**. Colourless. Volume 0.2 ml (max. working volume 250 µl, max. filling volume 300 µl). Thin-walled for optimal heat transfer between thermocycler and sample. Suitable for all standard thermocyclers.
**RNase, DNase and human DNA free**. Autoclavable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① PCR tubes with convex cap | **CEL5.1** | 1000 | 54,85 |
| ② PCR tubes with flat cap | **CEL6.1** | 1000 | 54,85 |



## MµlTi®-Ultra PCR tubes 0.2 ml

By Sorenson. Made of **PP**. With flat lid. Extremely thin walls enable heat to be transferred more quickly and more evenly.
Fits all standard thermocyclers.
**Pyrogen free, DNase- /RNase-free** and autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| natural | **H560.1** | 1000 | 108,60 |
| red | **H561.1** | 1000 | 108,60 |
| blue | **H562.1** | 1000 | 108,60 |
| green | **H563.1** | 1000 | 108,60 |
| yellow | **H564.1** | 1000 | 108,60 |



## MµlTi®-Ultra PCR tubes 0.65 ml

By Sorenson. Made of clear **PP**. Very thin walls enable heat to be transferred more quickly and more evenly. Can be centrifuged up to 10 000 x g. Flat, roughened lid for labelling. The piercing area in the lid makes the transfer of hazardous materials with a syringe easier.
**DNase- and RNase-, endotoxin- and heavy metal-free.** Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A774.1** | 1000 | 56,65 |



## Rotilabo®-microcentrifuge tubes

Made of **PP**. Capacity 1.5 ml. With dull finish labelling area. Graduated. Can be centrifuged up to 18 000 x g.
Temperature stable from -70 °C to 121 °C. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| colourless | **4182.1** | 1000 | 17,15 |
| red | **4189.1** | 1000 | 18,75 |
| blue | **4190.1** | 1000 | 18,75 |
| yellow | **4204.1** | 1000 | 18,75 |
| green | **4209.1** | 1000 | 18,75 |
| assorted colours (5 x 1000 pieces) | **5913.1** | 5000 | 81,50 |

# Microcentrifuge tubes



## Rotilabo® reaction vials

Made of **PP**. **Sterile** or non-sterile.
- With graduations
- Additional volume above the last graduation allows for liquid expansion
- Matt labelling space on the side and on the lid
- Ergonomic lid, easy and safety opening and closing
- One-handed operation with quick-release lock
- Puncturable lid
- **RNase/DNase-free, pyrogen-free, PCR inhibitor-free, metal-free**
- Centrifugability:
  Fixed angle rotor: 25 000 x g
  Tilting rotor: 70 000 x g

Temperature stable from -20 to +121 °C. Autoclavable.

| Volume (ml) | Colour | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5 | colourless | non-sterile | **ENE7.1** | 1000 | 25,50 |
| 1,5 | colourless | **sterile** | **ENE8.1** | 1000 | 22,70 |
| 1,5 | colourless | non-sterile | **ENE9.1** | 1000 | 21,10 |
| 1,5 | black | non-sterile | **ENH0.1** | 1000 | 21,95 |
| 2,0 | colourless | **sterile** | **ENH1.1** | 1000 | 24,75 |
| 2,0 | colourless | non-sterile | **ENH2.1** | 1000 | 23,25 |



## Mircocentrifuge tubes 1.5 ml

By Brand. Made of **PP**. **Sterile** or unsterile. Volume 1.5 ml, graduated.

- Centrifugable up to 20 000 x g at 20 °C, max. 20 min
- With mat-finished labelling area on the side
- Lid membrane ∅ 8.5 mm, with a uniform thickness of approx. 0.3 mm, can be pierced by analyzer
- **BIO-CERT®-quality**, sterile and free from endotoxins, DNA, RNase and ATP, with batch certificate

Dimensions: outer ∅ 10.75 x H 40.8 mm. Autoclavable.

*Brown reaction vials are ideal for light-sensitive reactions.

| Colour | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| natural BIO-CERT® | **sterile** | **CH75.1** | 30 x 15 | 103,50 |
| natural | unsterile | **CH76.1** | 500 | 14,25 |
| natural | unsterile | **CNT2.1** | 3000 | 70,55 |
| yellow | unsterile | **CH77.1** | 500 | 16,00 |
| blue | unsterile | **CH78.1** | 500 | 16,00 |
| green | unsterile | **CH79.1** | 500 | 16,00 |
| orange | unsterile | **CH80.1** | 500 | 16,00 |
| brown (amber)* | unsterile | **CH81.1** | 500 | 16,00 |



## Rotilabo®-safety reaction tubes

Made of **PP**. Colourless, with graduations and labelling space.
Tight plug seat, e.g. for applications under thermal stress. Cap membrane is pierceable. Vessel base of 2.0 ml tubes is rounded on the inside to enhance pellet formation. Centrifugable to 18000 x g.
Heat resistant from -70 to 121 °C. Autoclavable.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,5 | **XC62.1** | 1000 | 15,00 |
| 1,5 | **XC63.1** | 1000 | 18,25 |
| 2,0 | **NA16.1** | 1000 | 17,15 |



## Reaction vials with lid lock

By Brand. Made of PP. Additional lid lock for extra tightness, prevents unintentional opening of the lid. The wide lid rim allows easy handling using only one hand. With frosted labelling space and graduations for reading the approximate volume.

- Manufactured from high quality medical grade polypropylene
- Produced under cleanroom conditions to ISO 14 644-1 Class 8
- **Free of RNase, DNase, DNA and endotoxins**
- Centrifugable to 30 000 x g.
- Autoclavable at 121 °C and 2 bar (DIN EN 285)

| Volume (ml) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5 | 10 | 30 | **CNT3.1** | 500 | 25,25 |
| 1,5 | 10,75 | 40,8 | **CNT4.1** | 1000 | 42,80 |
| 2,0 | 12,8 | 40 | **CNT5.1** | 500 | 26,20 |

▶ Stands for centrifuge tubes see page 231

# Microcentrifuge tubes




## Rotilabo®-microcentrifuge tubes

Made of **PP**. Colourless, temperature stable from -90 to +121 °C, autoclavable. Can be centrifuged up to 17 000 x g.

| Image | Volume | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 250 µl | not graduated | **EA82.1** | 1000 | 56,55 |
| ③ | 500 µl | graduated | **EA83.1** | 1000 | 46,15 |
| ④ | 1,5 ml | graduated | **EA84.1** | 1000 | 52,60 |
| ⑤ | 1,9 ml | graduated | **EA85.1** | 1000 | 67,75 |

## Rotilabo®-microcentrifuge tubes

Made of **LDPE**. Colourless, not graduated.
Temperature stable from -90 to +121 °C

| Image | Volume | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ② | 400 µl | **EA86.1** | 1000 | 55,90 |

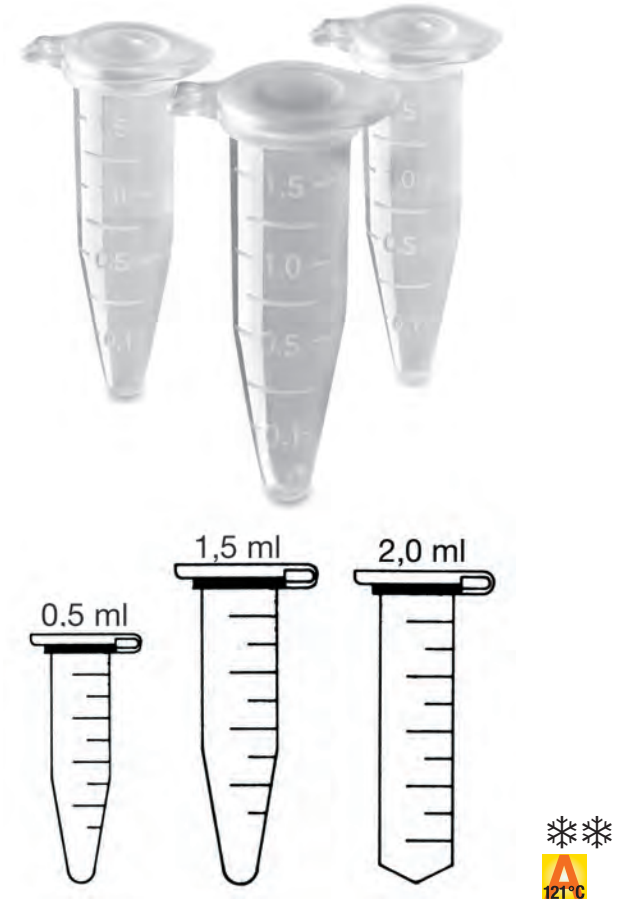


## FlipTube®-microcentrifuge tubes

Made of highly transparent **PP**. Volume 1.5 ml, graduated. Autoclavable.
Special FlipTube® Closure: Tubes are usable single-handed.
Prevents contaminations and aerosols when opened.

- Can be centrifuged up to 20 000 x g
- Frosted labeling area on side and top
- Lid membrane ∅ 8 mm, pierceable

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| transparent | **LH82.1** | 500 | 22,50 |
| blue | **LH83.1** | 500 | 23,15 |
| yellow | **LH84.1** | 500 | 23,15 |
| green | **LH85.1** | 500 | 23,15 |
| red | **LH86.1** | 500 | 23,15 |




## Mµlti®-safety microcentrifuge tubes

**SafeSeal® Tubes**

- By Sorenson
- Can be centrifuged up to 25 000 x g
- Highly transparent **PP**
- Graduated at 250 µl
- Etched labelling surface
- Tightly fitting cap
- Flat lid, suitable for labelling
- **LowBinding version:** Surface-optimized with a polymer coating, thereby minimal adhesion of sample
- Colour range: red, blue, green, yellow, lilac
- Temperature stable from -80 to 121 °C
- Autoclavable

- **RNase/DNase-free**
- **Human-DNA-free**
- **PCR-inhibitor-free**
- **Pyrogen-free**

| Nominal capacity (ml) | Filling capacity (ml) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5 | 0,65 | natural | **7060.1** | 1000 | 22,60 |
| 0,5 | 0,65 | assorted colours | **7096.1** | 1000 | 48,20 |
| 0,5 | 0,65 | clear, LowBinding | **7137.1** | 1000 | 79,80 |
| 1,5 | 1,7 | colourless | **7080.1** | 1000 | 31,40 |
| 1,5 | 1,7 | assorted colours | **7110.1** | 1000 | 51,40 |
| 1,5 | 1,7 | clear, LowBinding | **7154.1** | 1000 | 79,80 |
| 2,0 | 2,0 | colourless | **7083.1** | 800 | 46,45 |
| 2,0 | 2,0 | assorted colours | **N457.1** | 800 | 55,90 |
| 2,0 | 2,0 | clear, LowBinding | **7181.1** | 1000 | 87,85 |

# Microcentrifuge tubes



## Microcentrifuge tubes 1.5 ml, without lid

Made of **PP**. Colourless. Volume 1.5 ml. Autoclavable.

- Centrifugable up to 6000 x g at 20 °C, max. 20 min
- With dull finish labelling area on the side
- Outer-∅ x total height: 11 x 39.5 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CK05.2** | 1000 | 22,50 |



## Microcentrifuge tubes 2 ml

By Brand. Made of **PP**. Volume 2 ml, graduated.

- Centrifugable up to 20 000 x g at 20 °C, max. 20 min
- With dull finish labelling area on the side
- The lid membrane, which is approx. 0.3 mm thick throughout, can be pierced by the analyzer
- **Free of RNase, DNase, DNA and endotoxins**
- Autoclavable

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| colourless | **CK06.1** | 500 | 29,85 |



## Rotilabo®-microcentrifuge tubes, black

Made of **PP**, black. 1.5 ml, graduated. Autoclavable. Temperature stable from -80 to +121 °C. Can be centrifuged up to 15 000 x g. Ideal for storing light-sensitive samples.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AA80.1** | 500 | 24,20 |



## 5 ml reaction vials

Made of **PP**. **Sterile** or non-sterile. Autoclavable.

- Easy to open lock for simple handling
- Labelling space on side of vessel and lid
- Centrifugable to 5000 g
- **RNase-/DNase free, pyrogen-free**
- Vial ∅ 15 mm (incl. edge 18 mm) x H 61 mm
- Temperature stable from -90 to +121 °C

| Colour | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| colourless | **sterile** | **EKY3.1** | 200 (10 x 20) | 44,20 |
| colourless | non-sterile | **EKY4.1** | 200 | 33,90 |
| blue | non-sterile | **EKY5.1** | 200 | 33,90 |
| green | non-sterile | **EKY6.1** | 200 | 33,90 |
| yellow | non-sterile | **EKY7.1** | 200 | 33,90 |
| pink | non-sterile | **EKY8.1** | 200 | 33,90 |
| black | non-sterile | **EKY9.1** | 200 | 33,90 |



## Mµlti®-safety microcentrifuge tubes 2 ml

By Sorenson. Made of **PP**. With special design for alleviating sample removal, particularly during DNA-/RNA-centrifugation.

- Flat lid with piercing zone for syringes
- Can be centrifuged up to 15 000 x g
- Temperature stable from -80 to +121 °C
- Flat lid and rough surface for easy marking of tubes
- **DNase-/RNase-free**
- Autoclavable

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E708.1** | 1000 | 52,35 |

# Microcentrifuge tubes



## Rotilabo®-microcentrifuge tubes 5 ml

Made of **PP**, graduated. Autoclavable.

- Leak-tight closure
- Labelling space on side of vessel and lid
- Centrifugable to 5000 g
- Temperature resistant in the range -80 to 121 °C
- Vessel-∅ 15 (incl. rim 18 mm) x H 60 mm

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| colourless | **PE68.1** | 250 | 47,30 |
| black | **PE69.1** | 250 | 47,30 |



## Mµlti®-lid locks

By Sorenson. For microcentrifuge tubes 1.5/1.7 ml. Tubes are closed securely in water baths, autoclaves, ice baths, liquid nitrogen.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T600.1** | 100 | 22,50 |



## Rotilabo®-sealing clips

For microcentrifuge tubes. Safe closure of vessels during boiling or freezing. With grip end for easy loading and removal of tubes. Reusable. Assorted colours.

| For containers | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,5 ml | **N216.1** | 100 | 42,95 |
| 1,5 / 2 ml | **N217.1** | 100 | 42,95 |





## SnapTwist™-reaction vials

Made of **PP**. **RNase, DNase, DNA and pyrogen free.** Autoclavable.

- **Timesaving closure:** just press to safely seal vial, twist just a ¼ turn to open.
- With clear polished surface
- Leak-proof lip seal on closure
- Conical reaction vials are centrifugable up to 20 000 x g
- Temperature stable from -90 to +100 °C

**Vials with fitted screw cap, sterile**

| Volume (ml) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1,5 | Conical, with transparent lid | **ATC4.1** | 500 | 165,55 |

**Vials without cap, non sterile**

| Volume (ml) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1,5 | Free-standing | **YK13.1** | 1000 | 56,75 |
| 1,5 | Conical | **YK14.1** | 1000 | 56,75 |
| 1,8 | Free-standing | **YK15.1** | 1000 | 56,75 |
| 1,8 | Conical | **YK16.1** | 1000 | 56,75 |

## Lids for SnapTwist™-reaction vials

Made of **HDPE**. Lid inserts for identification are optional (CK72.1ff). Non-autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| transparent | **YK17.1** | 1000 | 65,60 |
| blue | **YK18.1** | 1000 | 65,60 |
| green | **YK19.1** | 1000 | 65,60 |
| violet | **YK20.1** | 1000 | 65,60 |
| red | **YK21.1** | 1000 | 65,60 |
| yellow | **YK22.1** | 1000 | 65,60 |
| white | **YK23.1** | 1000 | 65,60 |



## Rotilabo®-microcentrifuge tube openers

Opens and closes 0.2- to 2.2-ml-tubes. The opener only touches the outer edge of the lid thereby reducing the risk of contamination. Assorted colours.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AA94.1** | 10 | 15,60 |

# Screw Cap tubes



## Screw cap tubes, brown

Made of **PP**. Autoclavable.

- Volume 0.5 / 1.5 / 2.0 ml
- Brown screw cap tubes for storage of light-sensitive samples
- Temperature stable from -196 to 121 °C
- Conical micro-centrifuge tubes can be centrifuged up to 20 000 x g
- **RNase-/DNase-/DNA- and pyrogen free**
- Screw-on lid made of PP with silicone sealing
- Only 1¼ turns needed for speedy opening and closing of lid
- Lid inserts are also available for easy identification (see CK72.1 ff.)

**Delivery without** lids, please order separately!

| Volume (ml) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5 | self-standing | **CK47.1** | 1000 | 79,00 |
| 1,5 | self-standing | **CK48.1** | 1000 | 79,00 |
| 1,5 | conical | **CK49.1** | 1000 | 79,00 |
| 2,0 | self-standing | **CK50.1** | 1000 | 79,00 |
| 2,0 | conical | **CK51.1** | 1000 | 79,00 |

## Screw-on lids (PP) with silicone sealing

Suitable for screw cap tubes, brown.

| Colour | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| red | attached | **CK52.1** | 1000 | 112,90 |
| white | attached | **CK53.1** | 1000 | 112,90 |
| brown | loose | **AEK2.1** | 1000 | 107,30 |
| red | loose | **CK54.1** | 1000 | 106,45 |
| white | loose | **CK55.1** | 1000 | 106,45 |



## Lid inserts

Made of **PP**. For colour-coded, easy identification of reaction vials (Art. No. CK47.1 ff, CK57.1 ff).

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **CK72.1** | 500 | 13,55 |
| yellow | **CK73.1** | 500 | 13,55 |
| red | **CK74.1** | 500 | 13,55 |
| white | **CK75.1** | 500 | 13,55 |
| green | **CK76.1** | 500 | 13,55 |
| assorted colours | **CK77.1** | 500 | 13,55 |



## Rotilabo®-screw cap tubes with hang-on screw lid

Made of **PP**. With hang-on (PP) screw lid with silicone seal.
**Sterile** or unsterile. Autoclavable.

- Volume: 0.5 / 1.5 / 2.0 ml
- Clear, optionally available with subdivisions and labelling space
- Only 1¼ turns are needed for speedy opening and closing of the lid
- Temperature stable from -196 to +121 °C
- Outer-∅ x total height: 13 x 47 mm
- Conical micro-centrifuge tubes can be centrifuged up to 20 000 x g
- Lid inserts are also available for easy identification (see CK72.1 ff.)
- **RNase-/DNase-/DNA- and pyrogen free**

**Microcentrifuge tubes with hang-on screw lid (separately packed) - unsterile**

| Volume (ml) | Type | Graduations | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5 | self-standing | no | **CK57.1** | 1000 | 149,45 |
| 1,5 | self-standing | no | **CK58.1** | 1000 | 149,45 |
| 1,5 | conical | no | **CK59.1** | 1000 | 149,45 |
| 2,0 | self-standing | no | **CK60.1** | 1000 | 149,45 |
| 2,0 | conical | no | **CK61.1** | 1000 | 149,45 |

**Microcentrifuge tubes with hang-on screw lid (attached) - sterile**

| Volume (ml) | Type | Graduations | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5 | self-standing | no | **CK62.1** | 500 | 106,45 |
| 1,5 | self-standing | no | **CK63.1** | 500 | 106,45 |
| 1,5 | conical | no | **CK64.1** | 500 | 106,45 |
| 2,0 | self-standing | no | **CK65.1** | 500 | 106,45 |
| 2,0 | conical | no | **CK66.1** | 500 | 106,45 |

**Graduated microcentrifuge tubes with hang-on screw lid (attached) - sterile**

| Volume (ml) | Type | Graduations | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5 | self-standing | yes | **CK67.1** | 500 | 138,70 |
| 1,5 | self-standing | yes | **CK68.1** | 500 | 138,70 |
| 1,5 | conical | yes | **CK69.1** | 500 | 138,70 |
| 2,0 | self-standing | yes | **CK70.1** | 500 | 138,70 |
| 2,0 | conical | yes | **CK71.1** | 500 | 138,70 |

# Screw Cap tubes





## Reaction vials with screw cap

Made of **PP**. **Sterile** or non sterile. Ideal for storage in freezers, applications in a boiling water bath or for centrifuging. Tight sealing due to combination of lip seal and silicone ring in cap. Single-handed opening in suitable racks (e.g. AEN2.1ff) through longitudinal grooves on the upper edge and locking system on self-standing vials.

- With graduations and large labelling space
- Quick opening and closing with only 1 1/4 turns of cap
- Conical vials, centrifugable up to 20 000 x g
- Thick-walled for high stability
- Excellent visual clarity
- Outer ∅ x overall height: 13 x 47 mm
- **RNase/DNase/DNA and pyrogen free**
- Temperature stable from -196 to +121 °C
- Autoclavable

**Vials with screw cap, sterile**

| Volume (ml) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5 | Freestanding | **AET3.1** | 500 (10 x 50) | 124,70 |
| 1,5 | Freestanding | **AET4.1** | 500 (10 x 50) | 124,70 |
| 1,5 | Conical | **AET5.1** | 500 (10 x 50) | 124,70 |
| 2,0 | Freestanding | **AET6.1** | 500 (10 x 50) | 124,70 |

**Vials without cap, non sterile**

| Volume (ml) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,5 | Freestanding | **AET7.1** | 1000 | 94,15 |
| 1,5 | Freestanding | **AET8.1** | 1000 | 94,15 |
| 1,5 | Conical | **AET9.1** | 1000 | 94,15 |
| 2,0 | Freestanding | **AEX0.1** | 1000 | 94,15 |

## Caps for reaction vials, non sterile

Flat caps, suitable for automatic packaging machines.
With lip seal and integrated silicone ring. Suitable for vials AET7.1ff.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| yellow | **AEX1.1** | 1000 | 97,00 |
| red | **AEX2.1** | 1000 | 97,00 |
| green | **AEX3.1** | 1000 | 97,00 |
| blue | **AEX4.1** | 1000 | 97,00 |
| white | **AEX5.1** | 1000 | 97,00 |
| transparent | **AEX6.1** | 1000 | 97,00 |
| sorted (200 pc. in each colour: yellow, red, green, blue, white) | **AEX7.1** | 1000 | 97,00 |



## Reaction tubes with screw cap

Made of **PP**. **HDPE** screw cap with **TPS** ring seal. Autoclavable.

- **Sterile**
- Conical bottomed vessels are centrifugable up to 25 000 x g
- 1.5 and 2.0 ml reaction vials with labelling space
- Temperature resistant in the range -80 to +121 °C
- Screw cap ∅ 13 mm
- **RNase-/DNase free, pyrogen-free**
- CE-IVD compliant

| Vol. (ml) | Type | Graduations | Vessel ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,5 | Conical | none | 8 x 47 | **XC79.1** | 200 | 40,85 |
| 0,5 | Free-standing | none | 10,5 x 48 | **XC80.1** | 200 | 40,85 |
| 1,5 | Conical | up to 1.0 ml | 10,5 x 47 | **XC81.1** | 200 | 40,85 |
| 1,5 | Free-standing | up to 1.0 ml | 10,5 x 48 | **XC82.1** | 200 | 40,85 |
| 2,0 | Conical | up to 1.2 ml | 11,5 x 47 | **XC83.1** | 200 | 40,85 |
| 2,0 | Free-standing | up to 1.2 ml | 10,5 x 48 | **XC84.1** | 200 | 40,85 |





## Reaction vials with septum screw caps

Made of **PP**.

- With graduations and labelling space
- Conical tubes, centrifugable up to 20 000 x g
- Outer ∅ x height: 11 x 44 mm
- **RNase/DNase/DNA and pyrogen free**
- Temperature stable from -196 to +121 °C
- Autoclavable

**Reaction vials, graduated, without closure**

| Volume (ml) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1,5 | Freestanding | **AEK4.1** | 1000 | 99,40 |
| 1,5 | Conical | **AEK5.1** | 1000 | 99,40 |
| 2,0 | Freestanding | **AEK6.1** | 1000 | 90,00 |

## Screw caps with septum

Made of **PP**. Tight sealing due to integrated PTFE/silicone septum.
Easy to pierce with pipette tips or cannulas. Suitable for vials AEK4.1ff.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AEK7.1** | 250 | 107,30 |



Programme extension!

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## Cryogenic vials

Made of **PP**. **Sterile** (gamma-sterilised). ∅ 12.5 mm. Autoclavable. Suitable for the storage of cell cultures, sera, blood components, bacteriological cultures and other liquids at low temperatures in fridges or nitrogen tanks. Temperature stable up to -196 °C (suitable for storing samples in the liquid nitrogen gas phase).

- **RNase/DNase/DNA and pyrogen free**
- Vertical strip => easy-grip cap
- 1¼ turn closure => fast opening and closing
- **White labelling space** and coloured cap inserts => easy sample identification (please order cap inserts separately)
- Freestanding vessels with thread on base => **suitable for single-handed use** in racks with locking system
- Cap and vessel made from same material (PP) => **uniform expansion of contents**, no danger of explosion
- High transparency => **sample is easily visible**
- Round inside bottom => contents **can be completely drained**

**With internal thread and silicone seal**

Takes up little storage space. Vials with round bottom centrifugable up to 17 000 x g

| Volume (ml) | Type | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1,2 | Freestanding | 43 | 12,5 | **E308.1** | 100 | 34,95 |
| 2 | Freestanding | 49 | 12,5 | **E309.1** | 100 | 34,95 |
| 2 | Round bottom | 48 | 12,5 | **E310.1** | 100 | 34,95 |
| 4 | Round bottom | 72 | 12,5 | **E311.1** | 100 | 40,35 |
| 4 | Freestanding | 78 | 12,5 | **E312.1** | 100 | 40,35 |
| 5 | Round bottom | 92 | 12,5 | **E313.1** | 100 | 40,35 |

**With outer thread and lip seal**

Vials with round bottom centrifugable up to 17 000 x g

| Volume (ml) | Type | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1,2 | Freestanding | 43 | 12,5 | **E290.1** | 100 | 28,95 |
| 2 | Round bottom | 48 | 12,5 | **E291.1** | 100 | 28,95 |
| 2 | Freestanding | 49 | 12,5 | **E292.1** | 100 | 28,95 |
| 3 | Freestanding | 72 | 12,5 | **E293.1** | 100 | 30,00 |
| 4 | Freestanding | 78 | 12,5 | **E294.1** | 100 | 32,70 |
| 5 | Freestanding | 92 | 12,5 | **E295.1** | 100 | 36,35 |

**With outer thread and silicone seal**

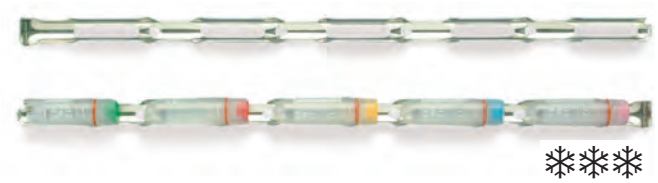
Vials with round bottom centrifugable up to 17 000 x g.
Article P168.1 with **HDPE** cap.

| Volume (ml) | Type | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1,2 | Freestanding | 43 | 12,5 | **E314.1** | 100 | 38,20 |
| 2 | Round bottom | 48 | 12,5 | **E315.1** | 100 | 38,20 |
| 2 | Freestanding | 49 | 12,5 | **E316.1** | 100 | 38,20 |
| 3 | Freestanding | 72 | 12,5 | **E317.1** | 100 | 41,40 |
| 4 | Freestanding | 78 | 12,5 | **E318.1** | 100 | 41,40 |
| 5 | Freestanding | 92 | 12,5 | **E319.1** | 100 | 42,80 |
| 10 | Freestanding | 84 | 17 | **P168.1** | 50 | 25,70 |
| 10 | Freestanding | 84 | 17 | **P168.2** | 500 (10 x 50) | 246,20 |

**With outer thread, lip seal and silicone seal**

Vials with round bottom centrifugable up to 17 000 x g.

| Volume (ml) | Type | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1,2 | Freestanding | 43 | 12,5 | **AEH6.1** | 100 | 33,95 |
| 2 | Round bottom | 48 | 12,5 | **AEH7.1** | 100 | 33,95 |
| 2 | Freestanding | 49 | 12,5 | **AEH8.1** | 100 | 33,95 |
| 3 | Freestanding | 72 | 12,5 | **AEH9.1** | 100 | 36,80 |
| 4 | Freestanding | 78 | 12,5 | **AEK0.1** | 100 | 39,70 |
| 5 | Freestanding | 92 | 12,5 | **AEK1.1** | 100 | 42,60 |



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## Rotilabo®-aluminium holders

Ideal for storing max. 5 cryo vials 1.2 ml or 2 ml in liquid nitrogen containers and Dewar vessels. Length 290 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P169.1** | 12 | 13,95 |



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## Cap inserts for cryo vials

For colour coding and simple identification of samples.
Suitable for 1.2 to 5 ml cryo vials (Art. no. E308.1ff).

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **E320.1** | 500 | 16,70 |
| blue | **E321.1** | 500 | 16,70 |
| red | **E322.1** | 500 | 16,70 |
| green | **E323.1** | 500 | 16,70 |
| yellow | **E324.1** | 500 | 16,70 |
| sorted (5 x 100 pieces) | **E325.1** | 500 | 16,70 |

▶ For stands for cryo vials, see page 233
▶ For matching cryo boxes, see page 237

# Screw Cap tubes



## Cryo tubes Cryo.s™

By Greiner Bio-One. Made of transparent **PP**, USP class VI-certified. **Sterile**. Temperature stable from -196 to +121 °C

- For sample storage at -20 °C, -80 °C and in the gas phase above $LN_2$
- Suitable for shipping via air freight
- With white, scratch-resistant label field
- CE mark (CE/IVD)
  Free of detectable DNase, RNase and human DNA
  Free of detectable endotoxins, free of zytotoxic substances
- Free of heavy metals
- Colour of screw cap: natural

**Delivery incl**. 150 (volume 1-2 ml) and/or 100 (volume 5 ml) cap inserts for additional marking of the closures.

**Inner thread, with silicone seal**

| Volume (ml) | Design | Length (mm) | ∅ (mm) | Art. No. | Packaging | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 1 | Star foot | 42 | 12.5 | **HLX0.1** | 100/bag | 500 | 181,70 |
| 2 | Conical bottom | 48 | 12.5 | **HLX1.1** | 100/bag | 500 | 181,70 |
| 2 | Star foot | 48 | 12.5 | **HLX2.1** | 100/bag | 500 | 181,70 |
| 5 | Conical bottom | 86 | 12.5 | **HLX3.1** | 50/bag | 300 | 123,65 |

**Outer thread**

| Volume (ml) | Design | Length (mm) | ∅ (mm) | Art. No. | Packaging | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 2 | Star foot | 47 | 12.5 | **HLX4.1** | 100/bag | 500 | 181,70 |
| 3 | Star foot | 83 | 12.5 | **HLX5.1** | 50/bag | 300 | 123,65 |




## Laboratory markers

By Marienfeld. Permanent marker suitable for nearly all surfaces made of glass, plastic and paper. Suitable for indelible labelling of microscope slides, embedding cassettes and Petri dishes.

- Ultrafine tip
- High-contrast black ink
- Writes without pretreatment of surfaces
- Waterproof, resistant to most laboratory chemicals
- Odourless
- Non-toxic
- Non-dry, long-lasting

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CET9.1** | 12 | 36,35 |



## True North® cryo vials

Made of **PP**. **Sterile.** Lid and vessel with identical ∅ (13 mm), therefore also suitable for 10 x 10 cryo box format. Suitable for storage in deep freezers or liquid nitrogen (gas phase). Temperature stable from -196 to +121 °C. Autoclavable.

- Lid with external thread and silicon seal
- With labelling space and graduations
- **RNase/DNase-free, non-pyrogenic and non-cytotoxic**

| Volume (ml) | Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | Sorted (lid colour blue, red, green, violet, grey) | 49 | **TP67.1** | 500 (10 x 50) | 149,45 |
| 2 | transparent | 49 | **XT57.1** | 500 (10 x 50) | 149,45 |



## Cryo-labels on sheets

Made with acrylate. Sticks to plastic, glass or metal without drying out or peeling off. Glass and metal surfaces must be completely free of grease. Can also be used in boiling water baths, in refrigerators, under cryo-conditions (liquid nitrogen). Temperature stable from **-196 to +100 °C**. Can be removed without leaving any traces. Sheets are printable with a laser printer.

**Sheet size (US-Letter) 21.6 x 27.9 cm.**

**White**

| Length (mm) | Width (mm) | For | Labels/ Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|
| 38 | 6 | Microtiter-plates | 156 | **X545.1** | 20 | 76,55 |
| 24 | 13 | 0.5 ml tubes | 119 | **X547.1** | 20 | 76,55 |
| 33 | 13 | 1.5-2 ml tubes | 85 | **X548.1** | 20 | 76,55 |
| 25 | 25 | Microscope slides | 80 | **EL06.1** | 20 | 73,65 |
| 38 | 19 | Cryo-vials | 60 | **X549.1** | 20 | 76,55 |
| 64 | 13 | 0.5-2 ml tubes | 60 | **EL07.1** | 20 | 73,65 |
| 43 | 19 | Cryo vials | 52 | **EL08.1** | 20 | 73,65 |
| 29 | 44 | Centrifuge tubes | 42 | **EL09.1** | 20 | 73,65 |
| 67 | 25 | Racks, boxes | 30 | **X550.1** | 20 | 76,55 |
| 76 | 51 | Bottles, glasses | 12 | **X551.1** | 20 | 76,55 |

## Cryo-labels on the roll, colour white

**White, for manually marking**

| Length (mm) | Width (mm) | For | Labels/ Roll | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|---|
| 24 | 13 | 0.5 ml tubes | 1000 | **HX56.1** | 1 | 39,80 |
| 38 | 19 | Cryo vials | 1000 | **L673.1** | 1 | 39,70 |
| 33 | 13 | 1.5-2 ml tubes | 1000 | **L672.1** | 1 | 39,70 |



# Filtration, Water Purification and Dialysis


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# Syringe filters




## Rotilabo®-syringe filters

With hydrophilic or hydrophobic membranes.

**Hydrophilic membrane: Polyethersulfone (PES)**
For removing finest particles from **aqueous** solutions.

**Hydrophilic membrane: Cellulose mixed ester (CME = Cellulose acetate and -nitrate)**
For clear filtration of **aqueous** solutions.

**Hydrophilic membrane: Polyvinylidene fluoride (PVDF)**
For clear filtration of **aqueous and slightly organic** solutions.

**Hydrophilic membrane: Nylon**
For clear filtration of **aqueous and organic** solutions.

**Hydrophobic membrane: Polytetrafluoroethylene (PTFE)**
For clear filtration of **organic** solutions and for air filtration.

**Technical specifications:**

| Nominal-∅ (mm) | 13 | 25 | 33 |
|---|---|---|---|
| Sample capacity (ml) | up to 10 | up to 100 | up to 100 |
| Dead capacity (µl) | <15 | <100 | <80 |
| Max. Input pressure (bar) | 10 | 5 | 8.6 |
| Max. operating temperature (°C) | 45 | 45 | 45 |
| Filter surface ($cm^2$) | 0,8 | 3,9 | 4,52 |
| Connection | Luer-Lock inlet / Luer outlet | | |

**Unsterile, nominal-∅ 13 mm, ∅ outer 19 mm**

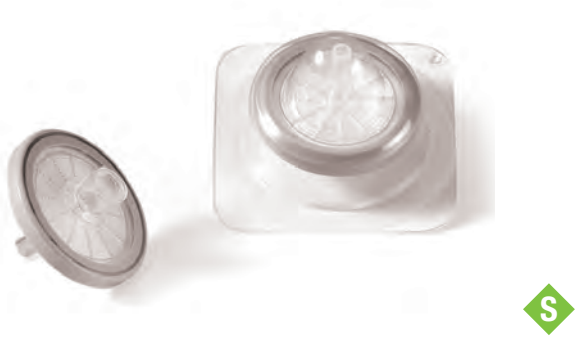
| Pore size (µm) | Membrane material | Material housing | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,20 | nylon | PP | **CCX8.1** | 100 | 136,55 |
| 0,45 | nylon | PP | **CCX9.1** | 100 | 136,55 |
| 0,22 | PVDF | PP | **CCY0.1** | 100 | 136,55 |
| 0,45 | PVDF | PP | **CCY1.1** | 100 | 136,55 |
| 0,20 | PTFE | PP | **CCY2.1** | 100 | 136,55 |
| 0,45 | PTFE | PP | **CCY3.1** | 100 | 136,55 |

**Unsterile, nominal-∅ 25 mm, ∅ outer 29 mm**

| Pore size (µm) | Membrane material | Material housing | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,20 | PTFE | PE | **P815.1** | 100 | 138,70 |
| 0,45 | PTFE | PE | **P816.1** | 100 | 138,70 |
| 5,0 | PTFE | PE | **P817.1** | 100 | 138,70 |
| 0,22 | CME | PVC | **P818.1** | 100 | 132,25 |
| 0,45 | CME | PVC | **P819.1** | 100 | 132,25 |
| 0,8 | CME | PVC | **P820.1** | 100 | 132,25 |

**Unsterile, ∅ outer 33 mm.** Increased speed of flow due to larger filter surface and higher allowable operating pressure.

| Pore size (µm) | Membrane material | Material housing | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,22 | PES | co-polymer | **P821.1** | 100 | 132,25 |
| 0,20 | Nylon | PP | **KY61.1** | 100 | 136,55 |
| 0,45 | Nylon | PP | **KY64.1** | 100 | 136,55 |
| 0,22 | PVDF | PP | **KY62.1** | 100 | 136,55 |
| 0,45 | PVDF | PP | **KY63.1** | 100 | 136,55 |



## Rotilabo®-syringe filters

**Sterile** (individually packed), **∅ outer 33 mm**.
Luer-Lock inlet/Luer outlet.

**Polyethersulfone (PES):**
For ultra-quick filtration of tissue culture media, -additives and other aqueous solutions.

**Cellulose mixed ester (CME):**
For filtration of additives, tissue culture media, antibiotics.

**Polyvinylidene fluoride (PVDF):**
For filtration of protein solutions, tissue culture media, additives, antibiotics, alcoholic solutions.

| Pore size (µm) | Membrane material | Material housing | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,22 | CME | acrylic polymer | **KH54.1** | 50 | 71,50 |
| 0,45 | CME | acrylic polymer | **KH55.1** | 50 | 71,50 |
| 0,22 | PVDF | acrylic polymer | **P666.1** | 50 | 73,10 |
| 0,45 | PVDF | acrylic polymer | **P667.1** | 50 | 73,10 |
| 0,22 | PES | acrylic polymer | **P668.1** | 50 | 73,10 |



## Rotilabo®-fibre glass syringe filters

Ideal for pre-filtration of samples with high particle load.
Retention range 1-2 µm, free from binding agents. **Unsterile.**

**Technical specifications:**

| Membrane ∅ (mm) | 15 | 25 | 30 |
|---|---|---|---|
| Housing ∅ (mm) | 20 | 30 | 34 |
| Housing | ultrasound welded | injection moulded | |
| Housing material | PP | | PC |
| Sample volume (ml) | 1-10 | 10-100 | > 100 |
| Dead volume (µl) | < 25 | < 65 | < 170 |
| Total filtration capacity (ml) | 0.335 | 0.6 | 0.864 |
| Filtration area ($mm^2$) | 177 | 490 | 707 |
| Max. operating pressure (bar) | 7 | 7 | 6 |
| Inlet connection | Luer-Lock | | |
| Outlet connection | Luer Slip | | |

| Membrane ∅ (mm) | Material housing | Pack Qty. | Art. No. | € |
|---|---|---|---|---|
| 15 | PP | 100 | **KC98.1** | 60,95 |
| 25 | PP | 100 | **KC99.1** | 103,00 |
| 30 | PC | 100 | **KE00.1** | 160,85 |

# Syringe filters



## Rotilabo®-syringe filters

With pressure and chemical resistant casings made of PP or PC.
**Sterile** (individually packed) or non-sterile.

**Regenerated cellulose (RC)**
Hydrophilic membrane with low non-specific protein adsorption (<10 µg/cm²). For filtration of biological solutions as well as sample preparation and degassing of eluants for HPLC.
Good resistance to aqueous and organic solutions.

**Polytetrafluoroethylene (PTFE)**
Hydrophobic membrane for filtration of aggressive chemicals, acids and nonpolar solvents. Low resistance to gas flow allows applications in air and gas filtration (e.g. for ventilation tasks and sterile gas exchange).

**Polyvinyl difluoride (PVDF)**
Slightly hydrophobic membrane for clear and sterile filtration of organic and partially organic solutions. Protein adsorption 125 µg/cm².

**Polyamide (Nylon)**
For filtration of HPLC and GC solvents as well as for the clarification and sterile filtration of aqueous, alkaline and organic solutions.
Hydrophilic, resistant to many solvents. High mechanical stability.

**Polypropylene (PP)**
Low-hydrophobic all-round membrane for aqueous and organic media.

**Polyether sulfone (PES)**
Hydrophilic membrane with low protein binding (< 20 µg/cm²) and high flow rates. Suitable for aqueous and partially organic media, e.g. for biological sample preparation.

**Polyester (PET)**
Hydrophilic membrane for aqueous and organic solvents.
For HPLC sample preparation and for cell culture applications.

**Cellulose ester composite (CME)**
Hydrophilic membrane with high non-specific adsorption capacity for preparation of aqueous media samples and for separation of microbiological substances (bacteria, fungi, etc.).

**Cellulose acetate (CA)**
Hydrophilic membrane with very low protein adsorption (3.8 µg/cm²) for biological samples (e.g. enzyme solutions, biological macromolecules) as well as for clear and sterile filtration of aqueous solutions.

**Technical specifications:**

| **Membrane ∅ (mm)** | **15** | **25** | **30** |
|---|---|---|---|
| Housing ∅ (mm) | 20 | 30 | 34 |
| Housing | ultrasound welded | injection moulded | |
| Housing material | PP | | PC |
| Sample volume (ml) | 1-10 | 10-100 | > 100 |
| Dead volume (µl) | < 25 | < 65 | < 170 |
| Total filtration capacity (ml) | 0.335 | 0.6 | 0.864 |
| Filtration area (mm²) | 177 | 490 | 707 |
| Max. operating pressure (bar) | 7 | 7 | 6 |
| Inlet connection | Luer-Lock | | |
| Outlet connection | Luer Slip | | |

**Unsterile, ∅ 15 mm, housing made of PP, ultrasonic welded, colourless**

| Pore size (µm) | Membrane material | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.2 | RC | colourless | **KC90.1** | 100 | 95,70 |
| 0.45 | RC | colourless | **KC91.1** | 100 | 95,70 |
| 0.2 | Nylon | colourless | **KC92.1** | 100 | 69,65 |
| 0.45 | Nylon | colourless | **KC93.1** | 100 | 69,65 |
| 0.2 | PTFE | colourless | **KC94.1** | 100 | 69,65 |
| 0.45 | PTFE | colourless | **KC95.1** | 100 | 69,65 |
| 0.2 | PVDF | colourless | **KC96.1** | 100 | 87,95 |
| 0.45 | PVDF | colourless | **KC97.1** | 100 | 87,95 |

**Sterile, ∅ 15 mm, housing made of PP, ultrasonic welded, colourless**

| Pore size (µm) | Membrane material | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2 | RC | colourless | **PA49.1** | 100 | 116,10 |
| 0,45 | RC | colourless | **PA50.1** | 100 | 116,10 |
| 0,2 | Nylon | colourless | **PA51.1** | 100 | 84,40 |
| 0,45 | Nylon | colourless | **PA52.1** | 100 | 84,40 |
| 0,2 | PTFE | colourless | **PA53.1** | 100 | 84,40 |
| 0,45 | PTFE | colourless | **PA54.1** | 100 | 84,40 |
| 0,2 | PVDF | colourless | **PA55.1** | 100 | 100,85 |
| 0,45 | PVDF | colourless | **PA56.1** | 100 | 100,85 |
| 0,2 | PP | colourless | **PA57.1** | 100 | 98,90 |
| 0,45 | PP | colourless | **PA58.1** | 100 | 98,90 |
| 0,2 | PES | colourless | **PA59.1** | 100 | 80,65 |
| 0,45 | PES | colourless | **PA60.1** | 100 | 80,65 |
| 0,45 | PET | colourless | **PA62.1** | 100 | 107,00 |
| 0,2 | CME | colourless | **PA63.1** | 100 | 84,40 |
| 0,45 | CME | colourless | **PA64.1** | 100 | 84,40 |

**Unsterile, ∅ 25 mm, housing made of PP, with coloured rim**

| Pore size (µm) | Membrane material | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.2 | CA | light grey | **KC60.1** | 100 | 117,20 |
| 0.45 | CA | grey | **KC61.1** | 100 | 112,90 |
| 0.2 | RC | orange | **KC62.1** | 100 | 149,45 |
| 0.45 | RC | red | **KC63.1** | 100 | 153,75 |
| 0.2 | Nylon | yellow | **KC64.1** | 100 | 121,50 |
| 0.45 | Nylon | light orange | **KC65.1** | 100 | 121,50 |
| 0.2 | PTFE | magenta | **KC66.1** | 100 | 132,25 |
| 0.45 | PTFE | purple | **KC67.1** | 100 | 132,25 |
| 0.2 | PVDF | violet | **KC68.1** | 100 | 127,95 |
| 0.45 | PVDF | blue | **KC69.1** | 100 | 127,95 |
| 0.2 | PES | blue | **NA21.1** | 100 | 110,75 |

**Sterile, ∅ 25 mm, housing made of PP with coloured rim**

| Pore size (µm) | Membrane material | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.2 | CA | light grey | **KC70.1** | 100 | 134,40 |
| 0.45 | CA | grey | **KC71.1** | 100 | 131,15 |
| 0.2 | RC | orange | **KC72.1** | 100 | 175,25 |
| 0.45 | RC | red | **KC73.1** | 100 | 181,70 |
| 0.2 | Nylon | yellow | **KC74.1** | 100 | 146,20 |
| 0.45 | Nylon | light orange | **KC75.1** | 100 | 146,20 |
| 0.2 | PTFE | magenta | **KC76.1** | 100 | 146,20 |
| 0.45 | PTFE | purple | **KC77.1** | 100 | 146,20 |
| 0.2 | PVDF | violet | **KC78.1** | 100 | 160,20 |
| 0.45 | PVDF | blue | **KC79.1** | 100 | 160,20 |

**Unsterile, ∅ 30 mm, housing made of PC with coloured rim**

| Pore size (µm) | Membrane material | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.2 | CA | light grey | **KC80.1** | 100 | 181,70 |
| 0.45 | CA | grey | **KC81.1** | 100 | 189,20 |
| 0.2 | RC | orange | **KC82.1** | 100 | 237,60 |
| 0.45 | RC | red | **KC83.1** | 100 | 237,60 |
| 0.2 | Nylon | yellow | **KC84.1** | 100 | 182,75 |
| 0.45 | Nylon | light orange | **KC85.1** | 100 | 182,75 |
| 0.2 | PTFE | magenta | **KC86.1** | 100 | 182,75 |
| 0.45 | PTFE | purple | **KC87.1** | 100 | 182,75 |
| 0.2 | PVDF | violet | **KC88.1** | 100 | 213,95 |
| 0.45 | PVDF | blue | **KC89.1** | 100 | 213,95 |

# Syringe filters






121°C

## Rotilabo®-syringe filters Mini-Tip

**Unsterile, 15 mm, housing made of PP, ultrasonic welded, colourless.**
Ideally suited for HPLC-samples. The Mini-Tip opening is ideal for filtering in very small sample containers or vials.

**Regenerated cellulose (RC)**
Hydrophilic membrane with low non-specific protein adsorption (<10 µg/cm²). For filtration of biological solutions as well as sample preparation and degassing of eluants for HPLC.
Good resistance to aqueous and organic solutions.

**Polytetrafluoroethylene (PTFE)**
Hydrophobic membrane for filtration of aggressive chemicals, acids and nonpolar solvents. Low resistance to gas flow allows applications in air and gas filtration (e.g. for ventilation tasks and sterile gas exchange).

**Polyvinyl difluoride (PVDF)**
Slightly hydrophobic membrane for clear and sterile filtration of organic and partially organic solutions. Protein adsorption 125 µg/cm².

**Polyamide (Nylon)**
For filtration of HPLC and GC solvents as well as for the clarification and sterile filtration of aqueous, alkaline and organic solutions.
Hydrophilic, resistant to many solvents. High mechanical stability.

**Cellulose acetate (CA)**
Hydrophilic membrane with very low protein adsorption (3.8 µg/cm²) for biological samples (e.g. enzyme solutions, biological macromolecules) as well as for clear and sterile filtration of aqueous solutions.

**Technical specifications:**

| **Membrane ∅ (mm)** | **15** |
|---|---|
| Housing ∅ (mm) | 20 |
| Housing | ultrasound welded |
| Housing material | PP |
| Sample volume (ml) | 1-10 |
| Dead volume (µl) | < 25 |
| Total filtration capacity (ml) | 0.335 |
| Filtration area (mm²) | 177 |
| Max. operating pressure (bar) | 7 |
| Inlet connection | Luer-Lock |
| Outlet connection | Luer Slip |

| Pore size (µm) | Membrane material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,2 | RC | **PP41.1** | 100 | 100,55 |
| 0,45 | RC | **PP42.1** | 100 | 100,55 |
| 0,2 | Nylon | **PP43.1** | 100 | 68,05 |
| 0,45 | Nylon | **PP44.1** | 100 | 68,05 |
| 0,2 | PTFE | **PP45.1** | 100 | 68,05 |
| 0,45 | PTFE | **PP46.1** | 100 | 68,05 |
| 0,2 | PVDF | **PP47.1** | 100 | 91,60 |
| 0,45 | PVDF | **PP48.1** | 100 | 91,60 |
| 0,2 | CA | **PP52.1** | 100 | 66,45 |
| 0,45 | CA | **PP53.1** | 100 | 66,45 |


- ▶ Luer-connectors see page 380
- ▶ Membrane filters see page 505


## Cameo™ syringe filters

**Non-sterile**.

**Nylon**
Hydrophilic. Good chemical resistance, very low extractable substances content. For the filtration of organic solvents, for HPLC sample preparation and for sterile and clear filtration of biological media.
High protein binding (approx. 120 µg/cm²).

**Cellulose acetate (CA)**
Hydrophilic. Very low protein binding (approx. 3.8 µg/cm²). For sterile filtration of biological media (proteins, enzymes, buffer, cell culture etc.), as well as for particle extraction from aqueous and alcohol-based solutions.

**PTFE**
Hydrophobic. Excellent chemical resistance.
For filtration of aggressive substances, solvent, gases and aerosols.

**Technical specifications:**

| **Membrane ∅** (mm) | **17** | **25** | **30** |
|---|---|---|---|
| Housing material | PP | Acrylic | PP |
| Sample volume (ml) | approx. 10 | approx. 100 | approx. 120 |
| Retention capacity (µl) | < 15 | < 60 | < 60 |
| Filtration area (cm²) | 1,4 | 4,1 | 4,8 |
| Max. working temperature (°C) | 80 | 55 | 80 |
| Max. working pressure (bar) | 8 | 5 | 8 |
| Autoclavable | yes | no | yes |
| Connection | Luer lock inlet / Luer outlet | | |

**Non-sterile, membrane-∅ 17 mm, outer ∅ 22 mm**

| Pore size (µm) | Membrane material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.22 | PTFE | **A075.2** | 50 | 91,40 |
| 0.45 | PTFE | **A076.2** | 50 | 91,40 |

**Non-sterile, membrane ∅ 30 mm, outer ∅ 34 mm**

| Pore size (µm) | Membrane material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.22 | CA | **AH52.1** | 50 | 118,25 |
| 0.45 | CA | **AH53.1** | 50 | 118,25 |
| 0.8 | CA | **AH54.1** | 50 | 118,25 |
| 0.22 | Nylon | **A068.2** | 50 | 106,35 |
| 0.45 | Nylon | **A069.2** | 50 | 106,35 |
| 1.2 | Nylon | **AH50.1** | 50 | 118,25 |
| 5,0 | Nylon | **A070.2** | 50 | 106,35 |
| 0.22 | PTFE | **A077.2** | 50 | 127,95 |
| 0.45 | PTFE | **A078.2** | 50 | 127,95 |




## Millex®-filter units

By MERCK MILLIPORE.

**Hydrophilic PES membrane**
- For filtration of aqueous solutions

**Durapore® membrane (hydrophilic PVDF)**
- For clear filtration of aqueous and slightly organic solutions, membrane has very low protein binding ratios

**Hydrophilic nylon membrane**
- For clear filtration of aqueous and organic solutions

**Hydrophilic LCR (PTFE) membrane**
- Low protein binding for clear filtration of aqueous and organic solutions

**Hydrophobic Fluoropore (PTFE) membrane**
- For clear filtration of organic solvents

**Technical specifications:**

| Membrane ∅ (mm) | 4 | 13 | 25 | 33 |
|---|---|---|---|---|
| Type | unsterile | | | |
| Housing material | HDPE | | | PP |
| Specimen volume (ml) | up to 1 | up to 10 | up to 100 | |
| Dead volume (µl) | < 10 | < 25 | < 100 | |
| Filtration surface area ($cm^2$) | 0.1 | 0.65 | 3.9 | 4,5 |
| Max. inlet pressure (bar) | 14 | 7 | 7 | 8,6 |
| Max. working temperature (°C) | 45 | | | |
| Inlet connection | Luer-Lock connector | | | |
| Outlet connection | Luer cone connector, stepped | Luer/*Luer cone connector with extended outlet | Luer connector | |

**① Millex®-filter units, 4 mm**

| Type | Pore size (µm) | Membrane material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Millex®-GV | 0.22 | PVDF | **XE04.1** | 100 | 191,35 |
| Millex®-HV | 0.45 | PVDF | **XE05.1** | 100 | 193,50 |
| Millex®-LG | 0.2 | Hydrophilic PTFE | **XE06.1** | 100 | 191,35 |
| Millex®-LH | 0.45 | Hydrophilic PTFE | **XE07.1** | 100 | 191,35 |
| Millex®-FG | 0.2 | Hydrophobic PTFE | **XE08.1** | 100 | 184,90 |
| Millex®-FH | 0.45 | Hydrophobic PTFE | **XE09.1** | 100 | 184,90 |

**② Millex®-filter units, 13 mm**

Incl. a Luer or *Luer cone connector with extended outlet allowing filtration into vessels with small openings.

| Type | Pore size (µm) | Membrane material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Millex®-GP | 0.22 | PES | **XE10.1** | 100 | 252,65 |
| Millex®-HP | 0.45 | PES | **XE11.1** | 100 | 252,65 |
| Millex®-GV | 0.22 | PVDF | **XE12.1** | 100 | 269,85 |
| Millex®-GV | 0.22* | PVDF | **XE13.1** | 100 | 279,50 |
| Millex®-HV | 0.45 | PVDF | **XE14.1** | 100 | 269,85 |
| Millex®-HV | 0.45* | PVDF | **XE15.1** | 100 | 279,50 |
| Millex®-GN | 0.2 | Nylon | **XE16.1** | 100 | 253,70 |
| Millex®-GN | 0.2* | Nylon | **XE17.1** | 100 | 259,10 |
| Millex®-HN | 0.45 | Nylon | **XE18.1** | 100 | 253,70 |
| Millex®-HN | 0.45* | Nylon | **XE19.1** | 100 | 259,10 |
| Millex®-LCR | 0.45 | Hydrophilic PTFE | **XE20.1** | 100 | 299,95 |
| Millex®-LCR | 0.45* | Hydrophilic PTFE | **XE21.1** | 100 | 315,00 |
| Millex®-FG | 0.2 | Hydrophobic PTFE | **XE22.1** | 100 | 264,45 |
| Millex®-FG | 0.2* | Hydrophobic PTFE | **XE23.1** | 100 | 285,95 |
| Millex®-FH | 0.45 | Hydrophobic PTFE | **XE24.1** | 100 | 264,45 |
| Millex®-FH | 0.45* | Hydrophobic PTFE | **XE25.1** | 100 | 285,95 |

**③ Millex®-filter units, 25 mm**

| Type | Pore size (µm) | Membrane material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Millex®-LCR | 0.45 | Hydrophilic PTFE | **XE26.1** | 50 | 223,60 |
| Millex®-FG | 0.2 | Hydrophobic PTFE | **XE27.1** | 50 | 263,40 |
| Millex®-FH | 0.45 | Hydrophobic PTFE | **XE28.1** | 50 | 218,25 |

**Millex®-filter units, 33 mm**

| Type | Pore size (µm) | Membrane material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Millex®-GP | 0.22 | PES | **XC98.1** | 100 | 198,90 |
| Millex®-HP | 0.45 | PES | **XC99.1** | 100 | 188,15 |
| Millex®-GV | 0.22 | PVDF | **XE00.1** | 100 | 197,80 |
| Millex®-HV | 0.45 | PVDF | **XE01.1** | 100 | 199,95 |
| Millex®-GN | 0.20 | Nylon | **XE02.1** | 100 | 192,45 |
| Millex®-HN | 0.45 | Nylon | **XE03.1** | 100 | 192,45 |



## Millex®-filter units 33 mm

By MERCK MILLIPORE.
**CE-certified, sterile** (individually packed).

**Mixed Cellulose Ester (MCE) membrane**
- Application: 0.2 µm filter units for the sterilisation of aqueous solutions, large pore sizes for prefiltration and clear filtration
- Colour code: blue
- Working capacity: max. 100 ml

**Durapore® membrane (hydrophilic PVDF)**
- Application: sterilisation of aqueous and protein solutions, syringe filter with lowest protein binding ratio
- Colour code: yellow
- Working capacity: max. 100 ml

**Millipore Express® membrane (PES)**
- Application: sterilisation of tissue culture media and additives, buffers, protein solutions, virus suspensions, DNA and other aqueous solutions
- Colour code: green
- Working capacity: max. 200 ml

**Technical specifications:**

| Membrane ∅ | 33 mm |
|---|---|
| Type | **sterile** (individually packed) |
| Housing material | Modify acrylic |
| Dead volume | <100 µl |
| Filtration surface area | 4.5 $cm^2$ |
| Max. inlet pressure | 10 bar |
| Max. working temperature | 45 °C |
| Inlet connection | Luer-Lock |
| Outlet connection | Luer |

| Type | Pore size (µm) | Membrane material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Millex®-GS | 0.22 | MCE | **XC55.1** | 50 | 156,95 |
| Millex®-HA | 0.45 | MCE | **XC56.1** | 50 | 159,10 |
| Millex®-AA | 0.8 | MCE | **XC57.1** | 50 | 158,05 |
| Millex®-VV | 0.1 | PVDF | **XC58.1** | 50 | 189,20 |
| Millex®-GV | 0.22 | PVDF | **XC59.1** | 50 | 187,05 |
| Millex®-HV | 0.45 | PVDF | **XC60.1** | 50 | 187,05 |
| Millex®-GP | 0.22 | PES | **XC61.1** | 50 | 187,05 |
| Millex®-HP | 0.45 | PES | **XE79.1** | 50 | 173,10 |

# CHROMAFIL® syringe filters

By Macherey-Nagel.

- For clear or sterile filtration of liquids or gases, as well as for preparation of samples for use in HPLC, GC, ICP, AAS, TOC, DOC, IR, NMR, photometry, spectroscopy, etc.
- Compacted **PP** housing with very low extractable substances content and good chemical resistance.
- Autoclavable at 121 °C and 1.1 bar for 30 min.

### Technical specifications:

| **Membrane ∅ (mm)** | **3** | **15** | **25** |
|---|---|---|---|
| Outer ∅ (mm) | approx. 6 | approx. 25 | approx. 30 |
| Sample volume (ml) | ≤1 | 1-5 | 5-100 |
| Dead capacity (µl) | approx. 5 | approx. 35 | approx. 80 |
| Max. inlet pressure (bar) | CHROMAFIL®: 6; CHROMAFIL® Xtra: 12 | | |
| Max. operating temperature (°C) | 55 | | |
| Filtration area ($cm^2$) | approx. 0.07 | approx. 1.6 | approx. 4.9 |
| Connection | Luer lock inlet/Luer or Mini-Spike outlet (MS) | | |



## CHROMAFIL® CA and CA Xtra

By Macherey-Nagel. Hydrophilic cellulose acetate membrane for filtration of aqueous solutions. Ideal for use with biological macromolecules, water soluble oligomers and polymers.
Extremely low protein binding capacity (21 µg per 25-mm filter).

**CA,** unsterile

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| CA-20/25 | 0.20 | 25 | **XH38.1** | 100 | 122,00 |
| CA-20/25 | 0.20 | 25 | **XH38.2** | 400 | 488,00 |
| CA-45/25 | 0.45 | 25 | **XH39.1** | 100 | 122,00 |
| CA-45/25 | 0.45 | 25 | **XH39.2** | 400 | 488,00 |

**CA sterile** (individually packed)

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| CA-20/15 MS (S) | 0.20 | 15 | **XH40.1** | 50 | 95,00 |
| CA-45/15 MS (S) | 0.45 | 15 | **XH41.1** | 50 | 95,00 |
| CA-20/25 (S) | 0.20 | 25 | **XH42.1** | 50 | 95,00 |
| CA-45/25 (S) | 0.45 | 25 | **XH43.1** | 50 | 95,00 |

**CA Xtra,** unsterile

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| CA-20/25 | 0.20 | 25 | **XH44.1** | 100 | 122,00 |
| CA-20/25 | 0.20 | 25 | **XH44.2** | 400 | 488,00 |

## CHROMAFIL® RC and RC Xtra

By Macherey-Nagel. Regenerated cellulose hydrophilic membrane with very low adsorption. For filtration of aqueous and organic-aqueous solutions. Protein binding capacity: 84 µg per 25-mm filter. Unsterile.

**RC**

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| RC-20/15 MS | 0.20 | 15 | **XH45.1** | 100 | 122,00 |
| RC-20/15 MS | 0.20 | 15 | **XH45.2** | 800 | 976,00 |
| RC-45/15 MS | 0.45 | 15 | **XH46.1** | 100 | 122,00 |
| RC-45/15 MS | 0.45 | 15 | **XH46.2** | 800 | 976,00 |
| RC-20/25 | 0.20 | 25 | **EE80.1** | 100 | 122,00 |
| RC-20/25 | 0.20 | 25 | **EE80.2** | 400 | 488,00 |
| RC-45/25 | 0.45 | 25 | **EE81.2** | 400 | 488,00 |
| RC-45/25 | 0.45 | 25 | **EE81.1** | 100 | 122,00 |

**RC Xtra**

Uncoloured, low bleed 100% PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| RC-20/25 | 0.20 | 25 | **XH47.1** | 100 | 122,00 |
| RC-20/25 | 0.20 | 25 | **XH47.2** | 400 | 488,00 |
| RC-45/25 | 0.45 | 25 | **XH48.1** | 100 | 122,00 |
| RC-45/25 | 0.45 | 25 | **XH48.2** | 400 | 488,00 |

## CHROMAFIL® MV and MV Xtra

By Macherey-Nagel. Hydrophilic cellulose ester composite membrane with very low adsorption for the filtration of aqueous and polar solutions. Unsterile.

**MV**

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| MV A-20/25 | 0.20 | 25 | **XH49.1** | 100 | 122,00 |
| MV A-20/25 | 0.20 | 25 | **XH49.2** | 400 | 488,00 |
| MV A-45/25 | 0.45 | 25 | **XH50.1** | 100 | 122,00 |
| MV A-45/25 | 0.45 | 25 | **XH50.2** | 400 | 488,00 |

**MV Xtra**

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| MV-20/25 | 0.20 | 25 | **XH51.1** | 100 | 122,00 |
| MV-20/25 | 0.20 | 25 | **XH51.2** | 400 | 488,00 |
| MV-45/25 | 0.45 | 25 | **XH52.1** | 100 | 122,00 |
| MV-45/25 | 0.45 | 25 | **XH52.2** | 400 | 488,00 |

## CHROMAFIL® PVDF and PVDF Xtra

By Macherey-Nagel. Hydrophilic PVDF membrane for polar and nonpolar solutions, water soluble oligomers, proteins and other polymers.
Protein binding capacity: 82 µg per 25-mm filter. Unsterile.

**PVDF**

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PVDF-20/15 MS | 0.20 | 15 | **XH69.1** | 100 | 122,00 |
| PVDF-45/15 MS | 0.45 | 15 | **XH70.1** | 100 | 122,00 |

**PVDF Xtra**

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Xtra PVDF-20/25 | 0.20 | 25 | **XH71.1** | 100 | 122,00 |
| Xtra PVDF-45/25 | 0.45 | 25 | **XH72.1** | 100 | 122,00 |



## CHROMAFIL® PES Xtra

By Macherey-Nagel. Hydrophilic PES membrane for aqueous and slightly organic solutions. Very low adsorption of proteins, good resistance to acids and bases. Protein binding capacity: 29 µg per 25-mm filter.
Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size. Unsterile.

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PES-20/25 | 0.20 | 25 | **XH73.1** | 100 | 122,00 |
| PES-20/25 | 0.20 | 25 | **XH73.2** | 400 | 488,00 |
| PES-45/25 | 0.45 | 25 | **XH74.1** | 100 | 122,00 |
| PES-45/25 | 0.45 | 25 | **XH74.2** | 400 | 488,00 |
| PES-500/25 | 5.0 | 25 | **XH75.1** | 100 | 122,00 |
| PES-500/25 | 5.0 | 25 | **XH75.2** | 400 | 488,00 |

## CHROMAFIL® PET and PET Xtra

By Macherey-Nagel. Hydrophilic PET all-round membrane for polar and nonpolar solutions. Ideal for filtering eluents from water and organic solvents for HPLC and for the preparation of samples for TOC/DOC determination.
Non-cytotoxic, does not inhibit the growth of micro-organisms and higher eucaryotic cells. Unsterile.

**PET**

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PET-20/15 MS | 0.20 | 15 | **P300.1** | 100 | 122,00 |
| PET-45/15 MS | 0.45 | 15 | **P301.1** | 100 | 122,00 |
| PET-20/25 | 0.20 | 25 | **P298.1** | 100 | 122,00 |
| PET-20/25 | 0.20 | 25 | **P298.2** | 400 | 488,00 |
| PET-45/25 | 0.45 | 25 | **P299.1** | 100 | 122,00 |
| PET-45/25 | 0.45 | 25 | **P299.2** | 400 | 488,00 |

**PET Xtra**

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PET-20/25 | 0.20 | 25 | **XH76.1** | 100 | 122,00 |
| PET-20/25 | 0.20 | 25 | **XH76.2** | 400 | 488,00 |
| PET-45/25 | 0.45 | 25 | **XH77.1** | 100 | 122,00 |
| PET-45/25 | 0.45 | 25 | **XH77.2** | 400 | 488,00 |

## CHROMAFIL® GF/PET

By Macherey-Nagel. Hydrophilic PET all-round membrane for polar and nonpolar solutions. Ideal for filtering eluents from water and organic solvents.
Recommended for solutions with a high suspended matter load or high viscosity solutions; the glass-fibre membrane removes coarse particulate matter and prevents clogging of the membrane. This improves filtration efficiency, increases filtrate yield and aids clarification of solutions with a high particulate matter load. Unsterile.

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| GF/PET-20/25 | 1.0/0.20 | 25 | **EE78.1** | 100 | 159,00 |
| GF/PET-45/25 | 1.0/0.45 | 25 | **EE79.1** | 100 | 159,00 |



## CHROMAFIL® Nylon PA and PA Xtra

By Macherey-Nagel. PA (Nylon) membrane for the filtration of medium polar organic-aqueous liquids. Unsterile.

**PA**

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| AO-20/3 | 0.20 | 3 | **XH53.1** | 100 | 148,00 |
| AO-45/3 | 0.45 | 3 | **XH54.1** | 100 | 148,00 |
| AO-20/15 MS | 0.20 | 15 | **XH55.1** | 100 | 122,00 |
| AO-45/15 MS | 0.45 | 15 | **XH56.1** | 100 | 122,00 |
| AO-20/25 | 0.20 | 25 | **XH57.1** | 100 | 122,00 |
| AO-20/25 | 0.20 | 25 | **XH57.2** | 400 | 488,00 |
| AO-45/25 | 0.45 | 25 | **XH58.1** | 100 | 122,00 |
| AO-45/25 | 0.45 | 25 | **XH58.2** | 400 | 488,00 |

**PA Xtra**

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PA-20/25 | 0.20 | 25 | **XH59.1** | 100 | 122,00 |
| PA-20/25 | 0.20 | 25 | **XH59.2** | 400 | 488,00 |
| PA-45/25 | 0.45 | 25 | **XH60.1** | 100 | 122,00 |
| PA-45/25 | 0.45 | 25 | **XH60.2** | 400 | 488,00 |

## CHROMAFIL® PTFE and PTFE Xtra

By Macherey-Nagel. Hydrophobic PTFE membrane for nonpolar liquids and gases. Highly resistant to solvents, acids and bases. Unsterile.
**Note:** the membrane can be wetted with water by rinsing with alcohol and subsequently with water.

**PTFE**

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| O-20/3 | 0.20 | 3 | **XH61.1** | 100 | 148,00 |
| O-45/3 | 0.45 | 3 | **XH62.1** | 100 | 148,00 |
| O-20/15 MS | 0.20 | 15 | **XH63.1** | 100 | 122,00 |
| O-45/15 MS | 0.45 | 15 | **XH64.1** | 100 | 122,00 |
| O-20/25 | 0.20 | 25 | **XH65.1** | 100 | 122,00 |
| O-20/25 | 0.20 | 25 | **XH65.2** | 400 | 488,00 |

**PTFE Xtra**

Uncoloured, low bleed 100 % PP housing for method validation and certification. Imprint for quick and easy identification of membrane type, diameter and pore size.

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PTFE-20/25 | 0.20 | 25 | **XH66.1** | 100 | 122,00 |
| PTFE-20/25 | 0.20 | 25 | **XH66.2** | 400 | 488,00 |
| PTFE-45/25 | 0.45 | 25 | **XH67.1** | 100 | 122,00 |
| PTFE-100/25 | 1.0 | 25 | **XH68.1** | 100 | 122,00 |

▶ Glass syringes see page 407
▶ Disposable syringes see page 406

# Syringe filters



## SPARTAN®-syringe filters

By Whatman. Certified for HPLC.
**Hydrophilic.** Specially developed for purifying HPLC-samples.
Ideal for filtering aqueous and organic solutions.

**Technical specifications:**

| **Membrane-∅ (mm)** | **13** | **30** |
|---|---|---|
| Sample capacity (ml) | max. 5 | max. 100 |
| Dead capacity (µl) | 10 | 50 |
| Filter surface ($cm^2$) | 0.75 | 5.7 |
| Max. working pressure (bar) | 7.0 | |
| Max. working temperature ( °C) | 80 | |
| Connection | Luer-Lock inlet / Luer outlet | |

**Nominal-∅ 13 mm, ∅ outer 17 mm**

| Pore size (µm) | Membrane material | Colour code | Material housing | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,2 | reg. Cellulose | dark brown | PP | **5989.2** | 100 | 204,00 |
| 0,45 | reg. Cellulose | light brown | PP | **5992.2** | 100 | 204,00 |

**Nominal-∅ 30 mm, ∅ outer 34 mm**

| Pore size (µm) | Membrane material | Colour code | Material housing | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,2 | reg. Cellulose | dark brown | PP | **5824.2** | 100 | 235,00 |
| 0,45 | reg. Cellulose | light brown | PP | **0062.2** | 100 | 232,00 |



## ReZist®-syringe filters

By Whatman. **Hydrophobic.** Ideal for ventilation, gas filtration and HPLC-sample preparation of organic solvents. Luer-Lock inlet/Luer outlet.
**Membrane-∅ 30 mm, outer 34 mm**

| Pore size (µm) | Membrane material | Colour code | Material housing | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,2 | PTFE | white | PP | **5994.2** | 100 | 320,00 |
| 0,45 | PTFE | green | PP | **5996.2** | 100 | 320,00 |
| 1 | PTFE | yellow | PP | **5998.2** | 100 | 320,00 |
| 5 | PTFE | grey | PP | **6000.2** | 100 | 320,00 |




## Millex®-PTFE-filter units IC

By MERCK MILLIPORE. **IC-certified.**
Specially designed for sample preparation in ion chromatography.

- Low extractable substances content
- Low-binding hydrophilic PTFE membrane
- For clear filtration of aqueous and slightly organic solutions

**Technical specifications:**

| **Membrane ∅ (mm)** | **13** | **25** |
|---|---|---|
| Type | **unsterile** | |
| Housing material | HDPE | |
| Sample volume (ml) | up to 10 | up to 100 |
| Dead volume (µl) | < 25 | < 100 |
| Max. inlet pressure (bar) | 7 | |
| Max. working temperature (°C) | 45 | |
| Inlet connection | Luer-Lock | |
| Outlet connection | Luer | |

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Millex®-LG | 0.20 | 13 | **XE82.1** | 100 | 302,10 |
| Millex®-LG | 0.20 | 25 | **XE83.1** | 50 | 241,90 |
| Millex®-LH | 0.45 | 13 | **XE84.1** | 100 | 307,45 |
| Millex®-LH | 0.45 | 25 | **XE85.1** | 50 | 297,80 |




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121 °C

## PTFE-inline filter

For gas filtration, ventilation and venting as well as for filtration of large amounts of liquid.

**Technical specifications:**

| | |
|---|---|
| Housing material | PP, ultrasonically welded |
| Diaphragm | PTFE (hydrophobe) |
| Filtration area | 17.35 $cm^2$ |
| Inlet and outlet connection | staged hose connection (∅ 6-12 mm) |

**Non-sterile**

| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.2 | 47 | **HLL7.1** | 50 | 375,20 |
| 0.45 | 47 | **HLL8.1** | 50 | 375,20 |

**Sterile,** individually packed

| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.2 | 47 | **HLL9.1** | 50 | 418,20 |
| 0.45 | 47 | **HLN0.1** | 50 | 418,20 |

## Millex®-PTFE-filter units

By MERCK MILLIPORE. For sterile filtration of gases, sterile venting of containers and for sterilisation and clear filtration of organic solutions. Also suitable for preventing ingress of fluid contamination in following pumps an other instruments.

**Technical specifications:**

| | |
|---|---|
| Version | **unsterile** |
| Housing material | PP |
| Membrane | PTFE |
| Filtration surface | 19.6 $cm^2$ |
| Max. temperature | 121 °C |
| Max. pressure | 4 bar |
| Input and output connection | graded hose connection (Latex) (∅ 6-13 mm) with Luer-cone inside |

| Type | Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Millex®-FG | 0,22 | 50 | **CY06.1** | 10 | 129,00 |
| Millex®-FH | 0,45 | 50 | **CY07.1** | 10 | 129,00 |
| Millex®-FA | 1.0 | 50 | **CY08.1** | 10 | 129,00 |

## Millex®-fibre-glass filter units

By MERCK MILLIPORE. Ideal for prefiltrering difficult-to-filter solutions and liquids with high particle densities. Protects downstream membranes from rapid blocking. Retention range ca. 2,0 µm.

**Technical specifications:**

| **Membrane-∅** | **25 mm** | **50 mm** |
|---|---|---|
| Model | **unsterile** | |
| Filtration volume (ml) | 100 | 4000 |
| Housing material | PVC | |
| Membrane | Fibre-glass | |
| Filtration surface ($cm^2$) | 3.9 | 19.6 |
| Dead volume (µl) | <100 | <1000 |
| Max. working temperature (°C) | 45 | |
| Max. pressure (bar) | 5 | 4.1 |
| Input connection | female Luer-Lock inside | graded hose connection with Luer-cone inside |
| Output connection | male Luer-cone outside | graded hose connection (∅ 6-13 mm) with Luer-cone inside |

| Type | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Millex®-AP | 25 | **CY09.1** | 50 | 110,75 |
| Millex®-AP | 50 | **CY10.1** | 10 | 60,75 |

# Filter units



## Millex®-HPF filter units

By MERCK MILLIPORE.
**For clear filtration of solutions with a high particle load prior to instrument based assay.**

- With graduated glass fibre prefilter (10.0 to 0.7 µm)
- Two to four times the throughput of syringe filters without a prefilter
- Polyethylene housing with a low extractable substances content

**Hydrophilic nylon membrane**
- With glass fibre prefilter for clear filtration of aqueous and slightly organic solutions with a high particle load

**Durapore® membrane (hydrophilic PVDF)**
- Very low protein binding
- With glass fibre prefilter for clear filtration of protein solutions with a high particle load

**Hydrophilic PTFE membrane**
- Low protein binding
- With glass fibre prefilter for clear filtration of aqueous and organic solutions with a high particle load

**Technical specifications:**

| | |
|---|---|
| **Membrane ∅** | **25 mm** |
| Type | **unsterile** |
| Housing material | HDPE |
| Specimen volume | up to 100 ml |
| Dead volume | < 250 µl |
| Filtration surface area | 3.9 $cm^2$ |
| Max. inlet pressure | 7 bar |
| Max. working temperature | 45 °C |
| Inlet connection | Luer-Lock |
| Outlet connection | Luer |

| Type | Pore size (µm) | Membrane material | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Millex®-GN | 0.2 | Nylon | **XE30.1** | 50 | 186,00 |
| Millex®-HN | 0.45 | Nylon | **XE31.1** | 50 | 204,25 |
| Millex®-HV | 0.45 | PVDF | **XE32.1** | 50 | 204,25 |
| Millex®-LLG | 0.2 | PTFE | **XE33.1** | 50 | 190,30 |
| Millex®-LCR | 0.45 | PTFE | **XE34.1** | 50 | 188,15 |



## Millex®-PES-filter units

By MERCK MILLIPORE. Express® (PES) membranes, with low protein binding and high flow speed. For sterile filtration of cell culture media or other aqueous solutions. Filling cone optional, reduces the risk of contamination.

**Technical specifications:**

| | |
|---|---|
| Version | **sterile** |
| Housing material | MBS |
| Membrane | PES |
| Filtration surface | 19.6 $cm^2$ |
| Dead volume | < 1000 µl after emptying with air |
| Max. temperature | 45 °C |
| Max. pressure | 3.4 bar |
| Input and output connection | graded hose connection (∅ 6-13 mm) and Luer-cone inside |

| Type | Membrane ∅ (mm) | Filtration-volume (l) | Pore size (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Millex®-GP | 50 | 4 | 0,22 | **CY11.1** | 10 | 133,30 |
| Millex®-GP with filling cone | 50 | 4 | 0,22 | **CY12.1** | 10 | 148,35 |



## Sterivex™-filter units

By MERCK MILLIPORE. For sterile filtration of aqueous liquids for volumes up to 1 or 2 l. Filter units can be operated with syringes or hose pumps. Filling cone optional, to reduce the risk of contamination.

**Technical specifications:**

| Model | **sterile (gamma sterilised)** |
|---|---|
| Housing material | Eastar® |
| Filtration surface | 10 $cm^2$ |
| Dead volume | < 200 µl after emptying with air |
| Max. temperature | 45 °C |
| Max. pressure | 3 bar |
| Input connection | female Luer-Lock |
| Output connection | with or without filling cone (male Luer-Lock) |

**Durapore® (PVDF) membrane** with extremely low protein binding, filtration volume 1 l.

| Type | Pore size (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Sterivex™-GV with filling cone | 0,22 | **CT79.1** | 10 | 141,90 |
| Sterivex™-GV without filling cone | 0,22 | **CT80.1** | 15 | 172,00 |
| Sterivex™-HV with filling cone | 0,45 | **CT81.1** | 10 | 141,90 |
| Sterivex™-HV without filling cone | 0,45 | **CT82.1** | 15 | 172,00 |

**Millipore Express® (PES) membrane** with low protein binding and high rate of flow, filtration volume 2 l.

| Type | Pore size (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Sterivex™-GP with filling cone | 0,22 | **CT83.1** | 10 | 132,25 |
| Sterivex™-GP without filling cone | 0,22 | **CT84.1** | 15 | 172,00 |



## Steripak™-filter units

By MERCK MILLIPORE. **For sterile filtration of volumes up to 20 l.** With Millipore Express® (PES) membranes with high rates of flow and low protein binding. **Sterile** and ready-to-use in operations with hose pumps or pressure chambers.

- The filling cone on the output side of unit makes the sterilisation process safer
- Manual air vent prevent air blocking of membrane
- For sterile filtration of tissue culture media, buffers and other aqueous solutions

**Technical specifications:**

| Version | **sterile** |
|---|---|
| Housing material | SAN |
| Membrane | PES (hydrophilic polyether sulfone) |
| ∅ | 76 mm |
| Dead volume | < 2700 µl after emptying with air |
| Max. temperature | 45 °C |
| Max. pressure | 5.2 bar (in direction of flow) |
| Input connection | graded hose connection (∅ 6-8 mm) |
| Output connection | graded hose connection and filling cone |

**Millipore Express® (PES) membrane**
With low protein formation and high flow speed, sterile.

| Filtrationvolume (l) | Pore size (µm) | Filtration surface ($cm^2$) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,22 | 100 | **CT85.1** | 3 | 167,70 |
| 20 | 0,22 | 200 | **CT86.1** | 3 | 207,50 |

▶ Tube pumps see page 351
▶ Vacuumpumps see page 356

# Centrifuge filter systems



## Ultrafree filtration systems for laboratory centrifuges

By MERCK MILLIPORE. **Sterile** or unsterile. Centrifuge filter systems for sample volumes of 0.5 or 2.0 ml. Use in fixed-angle rotors for 1.5 or 15 ml sample tubes. Filter unit and collector tube are made of PP.

- **Hydrophilic Durapore® PVDF membrane:** extremely low protein binding. Suitable for removal of particulate matter and precipitate from aqueous samples, and for protein and nucleic acid applications
- **Hydrophilic PTFE membrane:** for removal of precipitate from solvent-based samples

**Technical specifications:**

| Type | Ultrafree-MC | Ultrafree-CL |
|---|---|---|
| Volume of filter insert, max. (ml) | 0.5 | 2 |
| Volume of collection tube (ml) | 1.5 | 5 |
| Centrifugable to | 12000 x g | 5000 x g |
| Dead volume (µl) | 5 | 30 |
| Membrane surface area ($cm^2$) | 0.2 | 0.8 |
| Outer ∅ (mm) | 11 | 16.3 |
| Length (mm) | 45 | 77 |

**Procedure:**
- Open the attached lid of the filter unit
- Place the insert in the housing
- Close the filtration unit and place it in the centrifuge
- On completion of centrifuging, remove the filtration unit, open the lid and remove the insert
- The insert contains the residue and the sealable housing contains the filtrate

**Ultrafree-MC to 0.5 ml, PVDF membrane**

| Pore size (µm) | Design | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.1 | unsterile | orange | **T341.1** | 25 | 134,40 |
| 0.22 | unsterile | yellow | **T342.1** | 25 | 134,40 |
| 0.22 | sterile | yellow | **XH78.1** | 50 | 254,80 |
| 0.45 | unsterile | red | **T343.1** | 25 | 134,40 |
| 0.65 | unsterile | purple | **T344.1** | 25 | 134,40 |
| 0.65 | sterile | purple | **XH79.1** | 50 | 249,40 |
| 5.0 | unsterile | dark green | **XH80.1** | 100 | 423,55 |

**Ultrafree-MC to 0.5 ml, PTFE membrane**

| Pore size (µm) | Design | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.2 | unsterile | yellow | **XH81.1** | 25 | 162,35 |
| 0.45 | unsterile | red | **XH82.1** | 25 | 162,35 |

**Ultrafree-CL to 2.0 ml, PVDF membrane**

| Pore size (µm) | Design | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.1 | unsterile | orange | **T345.1** | 25 | 165,55 |
| 0.22 | unsterile | yellow | **T346.1** | 25 | 165,55 |
| 0.22 | sterile | yellow | **XH83.1** | 50 | 302,10 |
| 0.45 | unsterile | red | **T347.1** | 25 | 165,55 |
| 0.65 | unsterile | purple | **XH84.1** | 25 | 165,55 |
| 5.0 | unsterile | dark green | **XH85.1** | 25 | 165,55 |

**Ultrafree-CL to 2.0 ml, PTFE membrane**

| Pore size (µm) | Design | Colour code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.22 | unsterile | yellow | **XH86.1** | 25 | 165,55 |
| 0.45 | unsterile | red | **XH87.1** | 25 | 165,55 |



## Steriflip®-vacuum filter units

By MERCK MILLIPORE. **Sterile filter units for volumes of up to 50 ml.**

- **Millipore Express® PES membrane** with high flow rate and low protein binding: for routine sterile filtration of tissue culture media, sera,
- buffers and other aqueous solutions
- **Durapore® PVDF membrane** with very low protein binding: For sterile and clear filtration of aqueous solutions
- **Hydrophilic Nylon mesh filter:** for removing coarse particulate matter

**Technical specifications:**

| Type | sterile |
|---|---|
| Housing material | MBS/PP (modified acrylic/PP) housing |
| Filtration area | 7 $cm^2$ |
| Filtration volume | max. 50 ml |
| Membrane surface area ($cm^2$) | 0.2 |
| Dead volume | 600 µl |
| Max. operating temperature | 45 °C |

**Procedure:**
- Connect the filter unit to the centrifuge tube containing the sample. Rotate the filter unit through 180° and apply vacuum.
- An alternative option: screw the funnel attachment onto the sterile filter unit, fill with sample and apply vacuum
- No need for filtrate transfer - Steriflip® filter unit filters directly into a sterile 50 ml centrifuge tube

**Delivery incl.** sterile filter units with connected 50 ml centrifuge tube and lid (each packed separately) and a single tube holder (blue).
The 50 ml centrifuge tube and funnel attachment are optional (please order separately).

| Membrane material | Pore size (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| PES | 0.22 | **X348.1** | 25 | 168,80 |
| PVDF | 0.22 | **XE99.1** | 25 | 190,30 |
| PVDF | 0.45 | **XH00.1** | 25 | 190,30 |
| Nylon mesh | 20 | **XH01.1** | 25 | 189,20 |
| Nylon mesh | 40 | **XH02.1** | 25 | 189,20 |
| Nylon mesh | 60 | **XH03.1** | 25 | 189,20 |
| Nylon mesh | 100 | **XH04.1** | 25 | 189,20 |

Accessories:

| | | | |
|---|---|---|---|
| 50 ml centrifuge tube | **N462.1** | 500 | 131,15 |
| Funnel attachment, 50 ml, PP, unsterile | **XH05.1** | 25 | 109,65 |




## Steritop™-bottle top filters

By MERCK MILLIPORE.

- Casing made of polystyrene
- **Sterile**
- For sterile filtration of tissue culture media, serum, additives, buffers and other aqueous solutions
- Low protein binding
- High flow rates, short filtration times
- Can be used with screw thread bottles 45 mm suitable for vacuum or GL 45
- Filtration surface 40 $cm^2$

**MILLIPORE Express® PLUS (PES)-membrane**

| Pore size (µm) | Funnel capacity (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.22 | 150 | **X334.1** | 12 | 87,65 |
| 0.22 | 250 | **X335.1** | 12 | 105,35 |
| 0.22 | 500 | **X336.1** | 12 | 127,95 |
| 0.22 | 1000 | **X337.1** | 12 | 205,35 |

**Durapore® (PVDF)-membrane**

| Pore size (µm) | Funnel capacity (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.22 | 500 | **CT99.1** | 12 | 129,00 |



## Stericup®-bottles

By MERCK MILLIPORE.

**Filtrate collecting bottles for Steritop™ and Stericup® filter systems.**

Made of PS. **Sterile.** Screw cap made of PE. Thread 45 mm.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 250 | **CX04.1** | 12 | 51,10 |
| 500 | **CX05.1** | 12 | 65,60 |
| 1000 | **CX06.1** | 12 | 105,35 |




## Stericup®-vacuum filter systems

By MERCK MILLIPORE.

**Combination of bottle top filter and collecting bottle.**

- For routine sterile filtration of tissue culture media, serum, additives and other aqueous solutions
- Low protein binding
- High flow rates, short filtration times
- For volumes of 150 to 1000 ml
- The compact form makes it ideal for use under laminar flow conditions
- 0.1 µm pore size for mycoplasma-precipitation
- Bottles are stackable

**Technical specifications:**

| Membrane | Express® Plus Membrane (PES) | Durapore® (PVDF)-Membrane |
|---|---|---|
| Pore size (µm) | 0.1*/ 0.22 | 0.22 / 0.45 |
| Design | **sterile** | |
| Housing material/Lid | PS/PE | |
| Membrane-∅ (mm) | 73 | |
| Filtration surface ($cm^2$) | 40 | |
| Max. temperature (°C) | 50 | |
| Connection | Vacuum tube connection ∅ 6.5 - 12 mm | |

*Millipore Express Membrane (PES)

**MILLIPORE Express® PLUS (PES)-membrane**

| Pore size (µm) | Funnel capacity (ml) | Dripbottle (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1* | 250 | 250 | **CX01.1** | 12 | 140,85 |
| 0,22 | 150 | 150 | **X338.1** | 12 | 105,35 |
| 0,22 | 250 | 250 | **X339.1** | 12 | 126,85 |
| 0,22 | 500 | 500 | **X340.1** | 12 | 192,45 |
| 0,22 | 500 | 1000 | **X341.1** | 12 | 267,70 |
| 0,22 | 1000 | 1000 | **X342.1** | 12 | 278,45 |

**Durapore® (PVDF)-membrane with extremely low protein binding**

| Pore size (µm) | Funnel capacity (ml) | Dripbottle (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,22 | 150 | 150 | **CT87.1** | 12 | 105,35 |
| 0,22 | 250 | 250 | **CT88.1** | 12 | 132,25 |
| 0,22 | 500 | 500 | **CT89.1** | 12 | 199,95 |
| 0,22 | 500 | 1000 | **CT90.1** | 12 | 272,00 |
| 0,22 | 1000 | 1000 | **CT91.1** | 12 | 282,75 |
| 0,45 | 150 | 150 | **CT92.1** | 12 | 105,35 |
| 0,45 | 250 | 250 | **CT93.1** | 12 | 130,10 |
| 0,45 | 500 | 500 | **CT94.1** | 12 | 198,90 |
| 0,45 | 1000 | 1000 | **CT96.1** | 12 | 287,05 |

# Bottle-Top filter systems




## Filter units with cellulose nitrate membrane

By Nalgene®. Triton-free cellulose nitrate membrane **(CN)** with excellent active surface properties and high flow rates for aqueous solutions. For cold-sterilization, clear-filtration, pre-filtration and ultra-filtration of buffers, microbiological nutrient media and other aqueous solutions.

**Design:**
- Green colour coding
- Filter units made of PS
- Graduated filter tops and filter bottles
- With quick-connect tube adapter and cotton stopper
- Leakproof screw-cap
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

*each box contains 12 glass fiber preliminary filters

| Pore size (µm) | Membrane ∅ (mm) | Volume (ml) Filter top/Filter bottle | Colour of membrane/Grid | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,2 | 50 | 150/150 | white/none | **AC48.1** | 12 | 111,80 |
| 0,45 | 50 | 150/150 | white/green | **AC49.1** | 12 | 111,80 |
| 0,8 | 50 | 150/150 | white/black | **AC50.1** | 12 | 111,80 |
| 0,2 | 50 | 250/250 | white/none | **AC51.1** | 12 | 124,70 |
| 0,45 | 50 | 250/250 | white/green | **AC52.1** | 12 | 124,70 |
| 0,8 | 50 | 250/250 | white/black | **AC53.1** | 12 | 124,70 |
| 0,2* | 75 | 500/500 | white/none | **AC54.1** | 12 | 201,05 |
| 0,45* | 75 | 500/500 | white/green | **AC55.1** | 12 | 201,05 |
| 0,8* | 75 | 500/500 | white/black | **AC56.1** | 12 | 201,05 |
| 0,2* | 75 | 500/1000 | white/none | **AC57.1** | 12 | 249,40 |
| 0,45* | 75 | 500/1000 | white/green | **AC58.1** | 12 | 249,40 |
| 0,8* | 75 | 500/1000 | white/black | **AC59.1** | 12 | 249,40 |




## Filter units with SFCA-membrane

By Nalgene®. Membranes made from cellulose acetate that is free of active surface agents (SF**CA**) with extremely low protein binding and low viscosity. SFCA is ideal when working with tissue culture and when filtering protein-containing serum as there are no active surface agents in the membranes which could have a toxic effect on the cells.

**Design:**
- Yellow colour coding
- Filter units made of PS
- Graduated filter tops and filter bottles
- With quick-connect tube adapter and cotton stopper
- Leakproof screw-cap
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

*each box contains 12 glass fiber preliminary filters

| Pore size (µm) | Membrane ∅ (mm) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2 | 50 | 150 | **AC23.1** | 12 | 115,05 |
| 0,45 | 50 | 150 | **AC24.1** | 12 | 115,05 |
| 0,2 | 50 | 250 | **AC25.1** | 12 | 124,70 |
| 0,45 | 50 | 250 | **AC26.1** | 12 | 124,70 |
| 0,2* | 75 | 500 | **AC27.1** | 12 | 204,25 |
| 0,45* | 75 | 500 | **AC28.1** | 12 | 204,25 |
| 0,2 | 90 | 500 | **AC29.1** | 12 | 244,05 |
| 0,45 | 90 | 500 | **AC30.1** | 12 | 244,05 |
| 0,2 | 90 | 1000 | **AC31.1** | 12 | 295,65 |
| 0,45 | 90 | 1000 | **AC32.1** | 12 | 295,65 |



## Filtrate bottles for bottle-top-filter

By Nalgene®. Made of **PS**. Thread 45 mm. Screw cap made of PE, closed with 1½ turns. Non-pyrogen, non-cytotoxic, γ-**sterile. Suitable for all bottle-top filters and filtration devices, Art. No. AC08.1 to AC59.1.**

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 150 | **AC60.1** | 24 | 107,50 |
| 250 | **AC61.1** | 24 | 118,25 |
| 500 | **AC62.1** | 12 | 84,50 |
| 1000 | **AC63.1** | 12 | 122,55 |




## Bottle-top filters with SFCA-membrane

By Nalgene®. Filter with SF**CA**-membrane for screwing on bottles with 45 mm thread or GL 45. The leakproof screw-on top enables vacuum filtration directly into a sterile bottle.

**Design:**
- Yellow colour coding
- Graduated filter top
- Quick-connect tube adapter for tubes with inner ∅ 6-8 mm
- Leakproof screwing for vacuum filtration
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

| Pore size (µm) | Membrane ∅ (mm) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2 | 50 | 150 | **AC33.1** | 12 | 85,70 |
| 0,45 | 50 | 150 | **AC34.1** | 12 | 85,70 |
| 0,2 | 75 | 500 | **AC35.1** | 12 | 122,55 |
| 0,45 | 75 | 500 | **AC36.1** | 12 | 122,55 |
| 0,2 | 90 | 1000 | **AC37.1** | 12 | 213,95 |

# Bottle-Top filter systems



## Filter units with PES-membrane

By Nalgene®. With hydrophilic Polyethersulfone membranes **(PES)** for biological sterile filtrations. Low protein binding properties, high chemical stability and high flow rates. No undesired substances are released in the media as the membranes contain no active surface agents or softeners.

**Design:**
- Blue colour coding
- Filter units made of PS
- Graduated filter tops and filter bottles
- With quick-connect tube adapter and cotton stopper
- Leakproof screw-cap
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

*with Supor® PES-Membrane

| Pore size (µm) | Membrane ∅ (mm) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2* | 50 | 150 | **AC08.1** | 12 | 109,65 |
| 0,45 | 50 | 150 | **AC09.1** | 12 | 117,20 |
| 0,2* | 50 | 250 | **AC10.1** | 12 | 123,65 |
| 0,45 | 50 | 250 | **AC11.1** | 12 | 132,25 |
| 0,2* | 75 | 500 | **AC12.1** | 12 | 196,75 |
| 0,45 | 75 | 500 | **AC13.1** | 12 | 206,40 |
| 0,2* | 90 | 500 | **AC14.1** | 12 | 230,05 |
| 0,45 | 90 | 500 | **AC15.1** | 12 | 240,80 |
| 0,2* | 90 | 1000 | **AC16.1** | 12 | 247,25 |
| 0,45 | 90 | 1000 | **AC17.1** | 12 | 261,25 |



## Filter units with nylon membrane

By Nalgene®. Suitable for sterile filtration of nutrient media or sensitive cell and tissue cultures. Alcohol-resistant **nylon** membranes with extremely low content (<0.5 weight percentage) of extractable substances and high flow rates at short filtration times. Hydrophilic and free from active surface agents.

**Design:**
- Red colour coding
- Filter units made of PS
- Graduated filter tops and filter bottles
- With quick-connect tube adapter and cotton stopper
- Leakproof screw-cap
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

*each box contains 12 glass fiber preliminary filters

| Pore size (µm) | Membrane ∅ (mm) | Volume (ml) Filter top/Filter bottle | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2 | 50 | 150/150 | **AC38.1** | 12 | 140,85 |
| 0,45 | 50 | 150/150 | **AC39.1** | 12 | 140,85 |
| 0,2 | 50 | 250/250 | **AC40.1** | 12 | 151,60 |
| 0,45 | 50 | 250/250 | **AC41.1** | 12 | 151,60 |
| 0,2* | 75 | 500/500 | **AC42.1** | 12 | 237,60 |
| 0,45* | 75 | 500/500 | **AC43.1** | 12 | 237,60 |
| 0,2* | 75 | 500/1000 | **AC44.1** | 12 | 295,65 |
| 0,45* | 75 | 500/1000 | **AC45.1** | 12 | 295,65 |
| 0,2 | 90 | 500/500 | **AC46.1** | 12 | 295,65 |
| 0,2 | 90 | 1000/1000 | **AC47.1** | 12 | 328,95 |



## Bottle-top filters with PES-membrane

By Nalgene®. Filter with **PES**-membrane for bottles with 45 mm thread or GL45. The leakproof screw top enables vacuum filtration directly into a sterile bottle.

**Design:**
- Blue colour coding
- Graduated filter top
- Quick-connect tube adapter for tubes with inner ∅ 6-8 mm
- Leakproof screwing for vacuum filtration
- Filtration units are non pyrogenic, non cytotoxic and **sterile**

*with a Supor® PES-Membrane

| Pore size (µm) | Membrane ∅ (mm) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,2* | 50 | 150 | **AC18.1** | 12 | 85,40 |
| 0,45 | 50 | 150 | **AC19.1** | 12 | 91,40 |
| 0,2* | 75 | 500 | **AC20.1** | 12 | 111,80 |
| 0,45 | 75 | 500 | **AC21.1** | 12 | 118,25 |
| 0,2* | 90 | 1000 | **AC22.1** | 12 | 229,00 |

# Bottle-Top filter systems



## Filter funnels

By Nalgene®. Made of **PSF**. Graduated.
Suitable for use with 47 to 50 mm diaphragms. Autoclavable.
**Delivery incl.** suction sleeve, fits suction bottles with neck inner ∅ 30 to 38 mm.

| Funnel capacity (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 250 | **ATC8.1** | 1 | 133,30 |
| 500 | **ATC9.1** | 1 | 188,15 |

## Replacement suction sleeves

Made of thermoplastic elastomer. Outer ∅ 40 mm at top, 28 mm at bottom. Height 30 mm, wall thickness 3 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ATE0.1** | 6 | 59,25 |



## Reusable bottle-top filter holders

By Nalgene®. Made of **PSF**. For screwing on vacuum-tight bottles with thread size 33 mm or 45 mm.Filter holder with 45 mm thread, also suitable for bottles with thread GL 45. Suitable for vacuum filtration with 47 mm or 50 mm membranes. With graduation. Tube connection for tubes with inner-∅ 6-8 mm. Autoclavable.

| Volume of upper part (ml) | for thread (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 | 33 | **KA89.1** | 1 | 192,45 |
| 500 | 45 | **KA90.1** | 1 | 192,45 |



## Reusable filtration systems

By Nalgene®. Filter holders with filtrate bottle made of **PSF**, with graduation.
Suitable for vacuum filtration with 47 mm or 50 mm membranes.
2 tube connectors for tubes with inner-∅ 6-8 mm.
With cap for sterile storage of filtrate. Autoclavable.
**Delivery incl.** filter holder and -bottle.

| Volume of upper part (ml) | Volume of collecting bottle (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 250 | 250 | **KA84.1** | 1 | 132,25 |
| 500 | 500 | **KA85.1** | 1 | 191,35 |
| 500 | 1000 | **KA86.1** | 1 | 240,80 |

▶ Vacuum and compression-proof screw neck bottles see page 40

# Filter units and filter holder



DURAN WHEATON KIMBLE

Material DURAN®

121°C

## Filters made of DURAN®

- Interchangeable filter plates available in 4 different porosities
- Easy and safe removal of filtered medium
- Filter plates can be cleaned on both sides
- Attention: insert disc between two Viton®-seals
- Optional: Slit sieve plates can be inserted into 250 ml filters to hold membrane and paper filters

**Delivery incl.** Filter attachment made of DURAN® with PP funnel and 2 Viton®-sealing gaskets.

Please order filter plates separately.

| Volume (ml) | for plate (mm) | Thread (mm) | Filtershaft outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 30 | 24 | 28 | 10 | **1631.1** | 1 | 18,60 |
| 250 | 50 | 54 | 12 | **1632.1** | 1 | 43,90 |
| 1000 | 90 | 95 | 18 | **CT08.1** | 1 | 100,00 |

## Slit sieve plate

Ideal as holder for membrane and paper filters with ∅ 47 mm. Suitable for 1632.1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N886.1** | 1 | 23,95 |

## Filter plates

With glass rim.

**For 30-ml unit**; for filter-∅ 25 mm.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 (100-160 µm) | **1633.1** | 1 | 24,25 |
| 2 (40-100 µm) | **1634.1** | 1 | 24,25 |
| 3 (16-40 µm) | **1635.1** | 1 | 24,25 |
| 4 (10-16 µm) | **1636.1** | 1 | 26,40 |

**For 250-ml unit**; for filter-∅ 50 mm.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 (100-160 µm) | **1637.1** | 1 | 34,10 |
| 2 (40-100 µm) | **1638.1** | 1 | 34,10 |
| 3 (16-40 µm) | **1639.1** | 1 | 34,10 |
| 4 (10-16 µm) | **1640.1** | 1 | 36,10 |

**For 1000-ml unit**; for filter-∅ 90 mm.

| Porosity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 (100-160 µm) | **CT09.1** | 1 | 45,85 |
| 2 (40-100 µm) | **CT10.1** | 1 | 45,85 |
| 3 (16-40 µm) | **CT11.1** | 1 | 45,85 |
| 4 (10-16 µm) | **CT12.1** | 1 | 49,00 |

## Spare filter attachments made of DURAN®

For filters.

| For volumes (ml) | for plate (mm) | Thread (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 24 | 28 | **CX98.1** | 1 | 12,55 |
| 250 | 50 | 54 | **CX99.1** | 1 | 35,90 |
| 1000 | 90 | 95 | **CY00.1** | 1 | 92,60 |

## Spare sealing gaskets made of Viton®

For filters made of DURAN®.

| For volumes (ml) | for plate (mm) | Thread (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 24 | 28 | **CT13.1** | 10 | 12,00 |
| 250 | 50 | 54 | **CT14.1** | 10 | 31,30 |
| 1000 | 90 | 95 | **CT15.1** | 10 | 62,30 |



121°C

## 25 mm vacuum filtration unit

By Wheaton. Made of borosilicate glass according to ASTM E 438 Type I, Class A. For filtration of small volumes, e.g. in microbiology or particle analysis. For filter diameters of 25 mm. Autoclavable.

**Delivery incl.** 15 ml funnel attachment, funnel bottom section with glass frit as filter support (porosity 40-60 µm), aluminium bracket and silicone stopper. Please order flask separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYA0.1** | 1 | 182,75 |

## Replacement parts and accessories for 25 mm vacuum filtration unit

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 15 ml funnel attachment | **EYA1.1** | 1 | 54,50 |
| 50 ml funnel attachment | **EYA2.1** | 1 | 71,55 |
| Funnel bottom section with glass frit | **EYA3.1** | 1 | 96,35 |
| Aluminium bracket | **EYA4.1** | 1 | 52,25 |
| Silicone stopper (∅ at base 24 mm, ∅ at top 28 mm, height 25 mm, bore ∅ 8.5 mm) | **EYA5.1** | 6 | 69,65 |
| 125 ml flask with vacuum connection (∅ 6 mm) | **EYA6.1** | 1 | 53,30 |

# Filter units and filter holder




121 °C

## 47 mm vacuum filtration unit

By Wheaton. Made of borosilicate glass according to ASTM E 438 1 Type I, Class A. For filtration of volumes up to approx. 1 litre, e.g. in microbiology or particle analysis. For filter diameters of 47 mm. Autoclavable.

**Delivery incl.** 300 ml funnel attachment, funnel bottom section with glass frit (porosity 40-60 µm) as filter support, aluminium bracket and silicon stopper. Please order flask separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYA7.1** | 1 | 190,30 |

## Replacement parts and accessories for 47 mm vacuum filtration unit

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 ml funnel attachment | **EYA8.1** | 1 | 67,40 |
| 300 ml funnel attachment | **EYA9.1** | 1 | 75,90 |
| 500 ml funnel attachment | **EYC0.1** | 1 | 83,10 |
| 1000 ml funnel attachment | **EYC1.1** | 1 | 92,70 |
| Funnel bottom section with glass frit | **EYC2.1** | 1 | 109,65 |
| Aluminium bracket | **EYC3.1** | 1 | 59,30 |
| Silicone stopper (∅ at base 33 mm, ∅ at top 41 mm, H 25 mm, ∅ of bore 14 mm) | **EYC4.1** | 6 | 78,30 |
| 1000 ml flask with vacuum connection (∅ 6 mm) | **EYC5.1** | 1 | 89,35 |
| 2000 ml flask with vacuum connection (∅ 6 mm) | **EYC6.1** | 1 | 129,00 |



Material DURAN®

121 °C

## Vacuum filter system GV 050/0

By Whatman. Made of DURAN®. Non-corrosive, biologically inert and autoclavable to 121 °C and 1.1 bar overpressure (20 mins).
**For filter-∅ 47-50 mm** and prefilter ∅ 37 mm. Filtershaft-∅ ~14.75 mm.

**Applications:** in analytic biochemical and radiochemical operations or for particle control in micro-electronics.

**Delivery incl.** 250 ml vessel, fritted glass disc as filter support, glass support, spring clamp, a rubber lid and PTFE-ring.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H434.1** | 1 | 345,00 |

## Spare parts for filter system GV 050/0

Glass vessel 250 ml

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H427.1** | 1 | 110,00 |

Base made of glass for rubber stopper

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X812.1** | 1 | 73,50 |

Glass frit ∅ 40 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H430.1** | 1 | 49,80 |

PTFE-centering ring, inner-∅ 40 mm, outer-∅ 57 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H431.1** | 1 | 19,30 |

Spring clamp

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H433.1** | 1 | 115,00 |

# Filter units and filter holder



Programme extension!

DURAN WHEATON KIMBLE

121°C

## Vacuum filtration units

Made of borosilicate glass. For coarse and membrane filtration, residue analysis, particulate monitoring, microbiology as well as filtration of alkaline and aggressive media.
Suitable for use with filter papers, membrane filters or glass filters.
Temperature stable up to +180 °C. Autoclavable.

- Parts in contact with media are made of glass and PTFE, suitable for universal use, biologically inert and corrosion resistant
- Scaled reservoir for easier metering and evaluation
- Plates are optionally available in porosity grades of 1-4, which means they are also suitable for analytical filtration
- Fast and easy to clean

**Technical specifications:**

| Model | Filtration unit 1000 ml | Filtration unit 2000 ml |
|---|---|---|
| Funnel capacity (ml) | 250 | 500 |
| Bottle capacity (ml) | 1000 | 2000 |
| Filter size ∅ (mm) | 47 / 50 | |
| Connections | Olive, suitable for hoses of 5-8 mm inner ∅ | |

**Delivery incl.** slotted sieve plate as filter holder and glass filter plate, por. grade 2.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| DURAN®-filtration unit, 1000 ml / 250 ml | **XT09.1** | 1 | 455,00 |
| DURAN®-filtration unit, 2000 ml / 500 ml | **HKL5.1** | 1 | 537,00 |

**DURAN®-adapter from NS 45/40 to GL 45 for vacuum filtration unit**
Made of **PTFE**. Allows use of the DURAN®-filtration unit (NS 45/40 connection) with vacuum resistant GL 45 laboratory bottles.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| DURAN®-adapter NS 45/40 | **CCX4.1** | 1 | 95,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement reservoir with scale, 250 ml | **XT10.1** | 1 | 112,00 |
| Replacement reservoir with scale, 500 ml | **HKL6.1** | 1 | 130,00 |
| Replacement PTFE adapter plate | **XT11.1** | 1 | 76,45 |
| Replacement clamp (anodised aluminium) | **XT12.1** | 1 | 92,80 |
| Replacement attachment NS 45/40 | **XT13.1** | 1 | 116,00 |
| Replacement DURAN®-suction bottle NS 45/50, 1000 ml | **XT14.1** | 1 | 58,95 |
| Replacement DURAN®-suction bottle NS 45/50, 2000 ml | **HKL7.1** | 1 | 143,00 |
| Replacement plastic hose connection with silicone seal, straight, GL 14, outer- ∅ 8.6 mm | **L992.1** | 2 | 3,25 |
| Replacement screw caps, red, PBT, GL 14, hole ∅ 9.5 mm | **L993.1** | 2 | 3,40 |
| Replacement DURAN®-slotted sieve plate, ∅ 48 mm | **N886.1** | 1 | 23,95 |
| DURAN®-glass filter plate, ∅ 50 mm, por. grade 1 (100-160 µm) | **1637.1** | 1 | 34,10 |
| DURAN®-glass filter plate, ∅ 50 mm, por. grade 2 (40-100 µm) | **1638.1** | 1 | 34,10 |
| DURAN®-glass filter plate, ∅ 50 mm, por. grade 3 (16-40 µm) | **1639.1** | 1 | 34,10 |
| DURAN®-glass filter plate, ∅ 50 mm, por. grade 4 (10-16 µm) | **1640.1** | 1 | 36,10 |



NEU NOUVEAU NEW

121°C

## 47 mm vacuum filtration unit with ground glass joint

By Wheaton. Made of borosilicate glass in accordance with ASTM E 438 Type I, Class A. For filtration of solvents, acids, bases and other aggressive liquids. For filter diameters of 47 mm. Autoclavable.

**Delivery incl.** 500 ml funnel attachment, funnel bottom section with ground joint sleeve 40/35, vacuum connection (∅ 6 mm) and glass frit (porosity 40-60 µm) as filter support, aluminium bracket and 2000 ml flask.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYC7.1** | 1 | 535,35 |

## Replacement parts and accessories for 47 mm vacuum filtration unit

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 ml funnel attachment | **EYA8.1** | 1 | 67,40 |
| 300 ml funnel attachment | **EYA9.1** | 1 | 75,90 |
| 500 ml funnel attachment | **EYC0.1** | 1 | 83,10 |
| 1000 ml funnel attachment | **EYC1.1** | 1 | 92,70 |
| Funnel bottom section with glass frit, vacuum connection (∅ 6 mm) and 40/35 ground joint sleeve | **EYC8.1** | 1 | 209,65 |
| Aluminium bracket | **EYC3.1** | 1 | 59,30 |
| Flask with core 40/35, 1000 ml | **EYC9.1** | 1 | 156,95 |
| Flask with core 40/35, 2000 ml | **EYE0.1** | 1 | 230,05 |

# Filter units and filter holder



Material
DURAN®
121 °C

## Vacuum filter unit GV 050/2

By Whatman. Made of DURAN®. With glass frit as filter support. Especially suitable for analysis of microscopic residue, particle control, filtration of alkaline and aggressive solutions and buffer solutions for HPLC. Biologically inert and non-corrosive. Autoclavable.

**Technical specifications:**

| | |
|---|---|
| Funnel capacity | 250 ml |
| Flask capacity | 1000 ml |
| For filters ∅ | 47/50 mm |
| Connectors | suitable for tubes 5 - 8 mm ∅ inner |
| Size (Length x ∅) | 450 x 135 mm (without clip) |
| Weight | 1122 g |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5986.1** | 1 | 578,00 |

## Spare parts for filter unit GV 050/2

Glass vessel 250 ml

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H427.1** | 1 | 110,00 |

Glass frit ∅ 40 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H430.1** | 1 | 49,80 |

PTFE-centering ring, inner-∅ 40 mm, outer-∅ 57 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H431.1** | 1 | 19,30 |

Spring clamp

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H433.1** | 1 | 115,00 |

Bottom part with ground-in sleeve NS 45

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H428.1** | 1 | 149,00 |

Erlenmeyer 1000 ml with ground cone NS 45

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H429.1** | 1 | 160,00 |

Plastic-olive, straight

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L992.1** | 2 | 3,25 |

Screw cap for plastic olive GL 14

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L993.1** | 2 | 3,40 |




121 °C

## 90 mm vacuum filtration unit

By Wheaton. Made of borosilicate glass in accordance with ASTM E 438 Type I, Class A.
For filtration of large volumes of particle-laden or viscous liquids.
For filter diameters of 90 mm. Autoclavable.

**Delivery incl.** 1000 ml funnel attachment with screw clip, funnel bottom section, glass frit (porosity 40-60 µm) as filtering support and silicon stopper. Please order flask separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYE1.1** | 1 | 548,25 |

## Replacement parts and accessories for 90 mm vacuum filtration unit

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1000 ml funnel attachment with screw clip | **EYE2.1** | 1 | 229,00 |
| Funnel bottom section | **EYE3.1** | 1 | 206,40 |
| 40-60 µm glass frit | **EYE4.1** | 1 | 249,40 |
| 122 µm stainless steel frit | **EYE5.1** | 1 | 304,25 |
| 1575 µm PTFE frit | **EYE6.1** | 1 | 160,20 |
| Silicone stopper (∅ at base 33 mm, ∅ at top 41 mm, H 25 mm, ∅ of bore 14 mm) | **EYC4.1** | 6 | 78,30 |
| 1000 ml flask with vacuum connection (∅ 6 mm) | **EYC5.1** | 1 | 89,35 |
| 2000 ml flask with vacuum connection (∅ 6 mm) | **EYC6.1** | 1 | 129,00 |



## 90 mm vacuum filtration unit with ground glass joint

By Wheaton. Made of borosilicate glass in accordance with ASTM E 438 Type I, Class A.
For filtration of large volumes, HPLC solvents and other aggressive liquids.
For filter diameters of 90 mm. Autoclavable.

**Delivery incl.** 1000 ml funnel attachment with screw clip, funnel bottom section with 40/35 ground joint sleeve, vacuum connection (∅ 6 mm) and glass frit (porosity 40-60 µm) as filtering support.
Please order flask separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXP5.1** | 1 | 631,05 |

## Replacement parts and accessories for 90 mm vacuum filtration unit

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1000 ml funnel attachment with screw clip | **EYE2.1** | 1 | 229,00 |
| Funnel bottom section with vacuum connection (∅ 6 mm) and 40/35 ground joint sleeve | **EXP6.1** | 1 | 275,20 |
| 40-60 µm glass frit | **EYE4.1** | 1 | 249,40 |
| 122 µm stainless steel frit | **EYE5.1** | 1 | 304,25 |
| 1575 µm PTFE frit | **EYE6.1** | 1 | 160,20 |
| Flask with core 40/35, 1000 ml | **EYC9.1** | 1 | 156,95 |
| Flask with core 40/35, 2000 ml | **EYE0.1** | 1 | 230,05 |


- ▶ Membrane vacuum pumps see page 359
- ▶ Vacuum tubes see page 375
- ▶ Tubing accessories see page 377
- ▶ Filter crucibles see page 170
- ▶ Fritted filter funnel see page 169





## Vacuum filter units - Series MV 050

By Whatman. Made of stainless steel, chemically resistant against a lot of aqueous and organic solutions.
For **membrane filter 47/50 mm** and pre-filter 40 mm.
The devices have a punched sieve to support filtering.
Alternative use of steel frits, please order separately. Autoclavable.

| Type | Funnel capacity (ml) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **MV 050/0**, with spring clamp | 500 | 110 x 320 | **CC09.1** | 1 | 889,00 |
| **MV 050A/0**, with quick-close | 500 | 110 x 320 | **CC10.1** | 1 | 972,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Stainless steel frit with ring, pore size 80 µm | **CC12.1** | 1 | 85,50 |

## Suction dome

With tubing olive made of PP and stoppers made of natural rubber, with 9-mm-bore hole. Screw plug sizes GL 45. Autoclavable to 121 °C.
Vacuum-/compression-proof screw thread bottle please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CC56.1** | 1 | 34,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| DURAN®-pressure plus-screw thread bottle, 250 ml | **CK34.1** | 1 | 8,75 |
| DURAN®-pressure plus-screw thread bottle, 500 ml | **CK35.1** | 1 | 11,70 |
| DURAN®-pressure plus-screw thread bottle, 1000 ml | **H995.1** | 1 | 13,90 |



## Multiple vacuum filter units AS-series

By Whatman. Stainless steel holder for 3 or 6 attachments, complete with 500 ml-stainless steel attachments. Each attachment can be operated with a separate stopcock. With quick-lock system. The devices are heat-stable up to 180 °C and autoclavable. Only suitable for vacuum, connection via tube olive for tubes with inner-∅ 8-10 mm.
For **filter 47/50 mm** and 40 mm prelimenary filter.
**Delivery incl.** punched sieve to support filtering.
**Applications:** microbiological quality control, residual analysis and series filtration.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Three-fold filter unit AS 310/3 | **CC32.1** * | 1 | 3274,00 |
| Six-fold filter unit AS 610/3 | **CC33.1** * | 1 | 5806,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Filter units and filter holder



## Filter holders for syringes

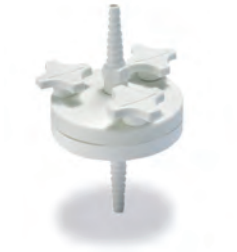
By Whatman. Made of **polysulfone** or **stainless steel**.
With silicone-O-ring. Suitable for repeated use with membrane-, paper-, or glass fiber round filters.
Maximal presure laod 7 bar.
Temperature stable: Polysulfone 180 °C; Stainless steel 200 °C.
Connections: Luer or tubing olive (outer-∅ 11 mm), unscrewble.
**Application:**
For clear and sterile filtration of biological media, reagents and buffer solutions as well as for aqueous solutions and gases.

**Polysulfone**

| Filter holders | Filters- ∅ (mm) | Connections (Input/output) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| FP 025/1 | 25 | Luer-Lock/Luer | 30 x 34 | **CC19.1** | 10 | 117,00 |
| FP 050/0 | 47/50 | Luer-Lock/tubing olive | 65 x 80 | **CC20.1** | 1 | 68,90 |
| FP 050/1 | 47/50 | Tubing olive/tubing olive | 65 x 95 | **CC21.1** | 1 | 68,90 |

**Stainless steel**

| Filter holders | Filters- ∅ (mm) | Connections (Input/output) | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| FM 025/0 | 25 | Luer-Lock/Luer | 30 x 26 | **CC23.1** | 1 | 238,00 |



## In-Line filter holder

By MERCK MILLIPORE.
Made of reinforced **PP**, **Nylon** hand knobs. For 47 mm filter discs.
For pressure filtration of liquids or gases.
- Suitable for multiple use
- With stepped hose connectors

**Technical specifications:**

| | |
|---|---|
| Filter ∅ | 47 mm |
| Filtration area | 13.8 $cm^2$ |
| Max. inlet pressure | 5.5 bar |
| Max. working temperature | 70 °C |
| Dimensions: L x ∅ | 12 x 7.6 cm |
| Prefilter ∅ | 42 mm (thick depth prefilter) or 47 mm (membrane filter) |
| Inlet/outlet fittings | 1/4″ NPTF: connector for 6 mm to 9.5 mm tubing ID |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XE95.1** | 1 | 253,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement O-rings (silicone rubber) | **XE96.1** | 6 | 140,85 |
| Spare filter holder plates, 47 mm, PP | **XE92.1** | 1 | 27,60 |
| Hand knobs, Nylon | **XE98.1** | 3 | 79,90 |

▶ PTFE tubes see page 371



## Swinnex®-filter holders

By MERCK MILLIPORE.
Made of **PP**. For the filtration, purification or sterile filtration of small quantities of fluid using a syringe. Swinnex® 47 mm filter holder can also be used with a hose connector.
- For 13. 25 and 47 mm filter discs
- Autoclavable with the filter inserted
- Suitable for multiple use

**Technical specifications:**

| Type | **Swinnex® 13** | **Swinnex® 25** | **Swinnex® 47** |
|---|---|---|---|
| Gaskets | Silicone rubber | | |
| Max. differential pressure (bar) | 3.5 | | 5 |
| Dimensions: L x ∅ (cm) | 3.5 x 1.7 | 3.7 x 3.2 | 5.4 x 5.7 |
| Filter ∅ (mm) | 13 | 25 | 47 |
| Prefilter ∅ (mm) | 10 (thick depth prefilter) | 22 (thick depth prefilter) | 42 (thick depth prefilter) or 47 (membrane filter) |
| Filtration area ($cm^2$) | 0.7 | 3.4 | 13.8 |
| Inlet connection | Luer-Lock | | 1/4″-NPTM/ female Luer lock |
| Outlet connection | Luer | | 1/4″-hose connection/ female Luer lock |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Swinnex® 13 | **XE86.1** | 10 | 94,75 |
| Swinnex® 25 | **XE87.1** | 12 | 197,80 |
| Swinnex® 47 | **XE88.1** | 8 | 456,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare silicone rubber gaskets for Swinnex®, 13 mm | **XE89.1** | 100 | 64,00 |
| Spare silicone rubber gaskets for Swinnex®, 25 mm | **XE90.1** | 100 | 134,40 |
| Spare filter holder plates, 25 mm, PP | **XE91.1** | 30 | 218,25 |
| Spare filter holder plates, 47 mm, PP | **XE92.1** | 1 | 27,60 |
| Spare silicone rubber O-rings for Swinnex®, 47 mm | **XE93.1** | 10 | 71,95 |
| Spare silicone rubber O-rings for Swinnex®-bottom section, 47 mm | **XE94.1** | 5 | 70,50 |



## Syringe filter adapters

Made of **PTFE**. No release of trace elements into the media to be filtered. Filter membrane can be replaced easily by simply unscrewing it. Luer-Lock connection on both sides. Pressure resistant to max 2 bar. Autoclavable. Anti-adhesive surface enables easy cleaning.
Please order filter membranes separately.

| Filter membrane ∅ (mm) | Filter surface ($cm^2$) | Outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 13 | 0,78 | 21 | **Y933.1** | 1 | 168,80 |
| 25 | 3,80 | 34 | **Y934.1** | 1 | 177,40 |



## Flow-through filters

Made of **PTFE**. Suitable for overpressure or vacuum up to about 5 bar. No release of trace elements into media to be filtered. Filter membrane can be replaced easily by unscrewing the sample funnel. Plastic tubing can be connected with olives. Matching adapter for 2 x tube sizes included. Autoclavable. Anti-adhesive surface allows easy cleaning.
**Delivery without** filter membranes, please order separately.

| Filter membrane ∅ (mm) | Filter surface ($cm^2$) | Filter surface ($cm^2$) | for hose with outer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 3,1 | GL 14 | 3,2 and 6 | **Y935.1** | 1 | 276,30 |
| 47 | 13,8 | GL 18 | 6 and 8 | **Y936.1** | 1 | 345,10 |
| 90 | 52,0 | GL 25 | 8 and 10 | **Y937.1** | 1 | 697,70 |



## PTFE filter membranes

**Hydrophobic** made of micro-porous PTFE. Thickness of membrane is 0.2 mm. Temperature range from -200 to 250 °C. Autoclavable. Suitable for syringe filter adapters (Y933.1-Y934.1) and flow-through filters (Y935.1-Y936.1).

### Filter membranes ∅ 13 mm

| Pore size (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,05 | **Y938.1** | 10 | 26,30 |

### Filter membranes ∅ 25 mm

| Pore size (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,05 | **Y943.1** | 10 | 38,25 |

### Filter membranes ∅ 47 mm

| Pore size (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,05 | **Y948.1** | 10 | 60,70 |
| 0,2 | **Y949.1** | 10 | 53,70 |
| 0,45 | **Y950.1** | 10 | 64,40 |
| 1 | **Y951.1** | 10 | 49,05 |
| 5 | **Y952.1** | 10 | 48,90 |



## Membrane filters

Hydrophilic. **Sterile** or unsterile.

**Nitrocellulose**
High flow rates. Biologically inert, non-cytotoxic. Maximum usage temperature 180 °C. Protein binding approx. 160 µg/$cm^2$. Autoclavable. Wide range of applications: gravimetric analysis, particle analysis, microbiological analysis, sterile filtration of aqueous solutions.

**Nylon**
Very low extractable substances content, wetting agent free. Good chemical resistance, polyester reinforcement for higher mechanical stability. Protein binding approx. 120 µg/$cm^2$. Maximum usage temperature 180 °C. Application: solvent filtration (HPLC), sample preparation (HPLC, GC), sterile filtration of aqueous and organic solutions.

**Track etched polycarbonate**
Exact pore size, very smooth surface. Very low extractable substances content. Low protein binding <5 µg/$cm^2$, incineration residue approx. 0.92 µg/$cm^2$. Maximum usage temperature 140 °C. Autoclavable. Application: particle analysis, microscopy, electron microscopy.

**Nitrocellulose**, unsterile

**Danger** H228

| Pore size (µm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.22 | 47 | **A009.1** | 100 | 93,50 |
| 0.45 | 47 | **A012.1** | 100 | 91,85 |
| 0.45 | 90 | **A014.1** | 25 | 57,85 |
| 1.2 | 47 | **A021.1** | 100 | 100,55 |

**Nitrocellulose**, **sterile,** individually packed, with mesh

**Danger** H228

| Pore size (µm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.45 | 47 | **A023.1** | 200 | 99,45 |

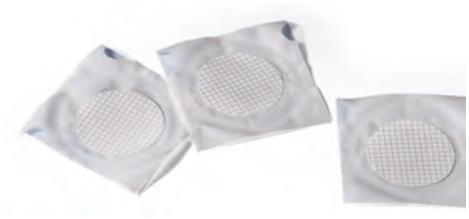
**Nylon**, unsterile

| Pore size (µm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.22 | 47 | **A026.1** | 100 | 92,35 |
| 0.45 | 47 | **A031.1** | 100 | 95,70 |
| 0.45 | 13 | **A029.1** | 100 | 61,20 |

**Track etched polycarbonate**, unsterile

| Pore size (µm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.2 | 25 | **A044.1** | 100 | 60,10 |
| 0.45 | 25 | **A045.1** | 100 | 59,25 |
| 0.45 | 47 | **A046.1** | 100 | 90,20 |

# Membrane filters



## Cellulose mixed ester membrane filters

By Whatman. Versatile hydrophilic membrane made of mixed ester of cellulose acetate and cellulose nitrate. **Applications:** e.g. sterile and clear filtration, particle separation and analysis, microbiological analysis, counting germs, yeasts, fungi and particles, foodstuffs biology, airborne pollutant measurements etc.
Max. usage temperature 130 °C. Autoclavable.

- High dirt absorbing capacity prevents rapid clogging of the membrane
- Uniform membrane structure ensures high flow rates
- Very smooth and even surface aids microscopic evaluation
- Biologically inert and free of surfactants

Gridded membranes **(line spacing 3.1 mm)** make it easier to count particles and microorganisms; the dyes used are non-toxic and free of antibacterial substances.

**Unsterile**

**Danger**

| Pore size (µm) | ∅ (mm) | Surface | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.2 | 47 | white | **NH80.1** | 100 | 127,00 |
| 0.2 | 142 | white | **ECT7.1** | 25 | 148,00 |
| 0.45 | 47 | white | **NH81.1** | 100 | 127,00 |
| 0.45 | 47 | white, gridded | **NH82.1** | 100 | 127,00 |
| 0.45 | 142 | white | **ECT8.1** | 25 | 148,00 |

**Sterile**, individually packed

**Danger**

| Pore size (µm) | ∅ (mm) | Surface | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.2 | 47 | white | **NH83.1** | 100 | 139,00 |
| 0.2 | 47 | white, gridded | **NH84.1** | 100 | 139,00 |
| 0.45 | 47 | white | **NH85.1** | 100 | 139,00 |



## Cellulose nitrate membrane filters

By Whatman. Versatile hydrophilic standard membrane.
**Applications:** filtration of aqueous solutions, sample preparation, microbiological studies etc. High stability and flexibility, low extractable substances content. Max. usage temperature 80 °C. Autoclavable.
Gridded membranes **(line spacing 3.1 mm)** make it easier to count particles and microorganisms; the dyes used are non-toxic and free of antibacterial substances.

**Unsterile**

**Danger** H228

| Pore size (µm) | ∅ (mm) | Surface | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.1 | 47 | white | **NH68.1** | 100 | 177,00 |
| 0.2 | 47 | white | **NH69.1** | 100 | 155,00 |
| 0.2 | 142 | white | **ECT9.1** | 25 | 243,00 |
| 0.45 | 47 | white | **NH70.1** | 100 | 149,00 |
| 0.45 | 47 | white, gridded | **NH71.1** | 100 | 164,00 |
| 0.45 | 142 | white | **ECX0.1** | 25 | 237,00 |
| 0.65 | 47 | white | **NH72.1** | 100 | 164,00 |
| 0.8 | 47 | white | **NH73.1** | 100 | 156,00 |
| 1 | 47 | white | **NH74.1** | 100 | 165,00 |
| 3 | 47 | white | **NH75.1** | 100 | 165,00 |
| 5 | 47 | white | **NH76.1** | 100 | 154,00 |

**Sterile**, individually packed

**Danger** H228

| Pore size (µm) | ∅ (mm) | Surface | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0.2 | 47 | white | **NH77.1** | 100 | 102,00 |
| 0.45 | 47 | white, gridded | **NH78.1** | 100 | 100,00 |
| 0.45 | 47 | white, gridded | **NH79.1** | 200 | 148,00 |

## RC-membrane filters

By Whatman. Made of regenerated cellulose with PP-support. ∅ 50 mm, thickness 155 µm. Suitable for aqueous and organic media. Hydrophilic. Autoclavable at 121 °C.

| Pore size (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,2 | **5987.1** | 100 | 243,00 |
| 0,45 | **5988.1** | 100 | 243,00 |



## CA-membrane filters

Made of cellulose acetate.
**Applications:** filtration of aqueous samples.
- Hydrophilic surface
- Low protein adsorption of 3.8 µg/m²
- High flow rate
- Diaphragm thickness: 65-110 µm
- Max. working temperature: 135 °C
- Surface: white
- Autoclavable

| Pore size (µm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.2 | 25 | **PT82.1** | 100 | 53,65 |
| 0,45 | 25 | **PT83.1** | 100 | 53,65 |
| 0,2 | 47 | **PT84.1** | 100 | 94,55 |
| 0,45 | 47 | **PT85.1** | 100 | 94,55 |

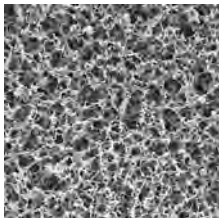

▶ Other membrane filters see page 510

▶ For vacuum and compression proof screw neck bottles, see page 40

▶ Vaccuum tubes see page 375

## General overview of Millipore®-membrane filters

| Membrane type | Membrane- properties | Proteinbinding | For aqueous samples | For alcohol samples | For organic solutions | Flow rate |
|---|---|---|---|---|---|---|
| **CME (Cellulose mixed ester)** | hydrophilic | high | yes | no | no | medium |
| **Nylon** | hydrophilic | high | yes | no | yes | high |
| **PES** | hydrophilic | low | yes | no | no | very high |
| **Polycarbonate** | hydrophilic | low | yes | yes | no | low |
| **PTFE** | hydrophobic | low | no | yes | yes | high |
| **PTFE** | hydrophilic | low | yes | yes | yes | high |
| **PVDF** | hydrophobic | high | no | yes | no | medium |
| **PVDF** | hydrophilic | very low | yes | yes | no | medium |



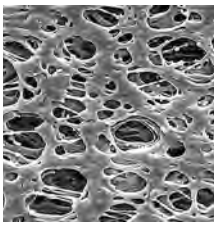
121 °C

## Cellulose mixed ester (CME) membrane filters

By MERCK MILLIPORE. **Standard membrane filter hydrophilic for a broad range of applications**

- **Application:** Sewage filtration and sterile filtration of liquids, air and particle analysis, contamination analysis of fuel and hydraulic liquids to determine particle load, biological applications e.g. harvesting or washing cells, microdialysis
- Material: cellulose nitrate and cellulose acetate
- Protein binding: 150 µg/cm$^2$
- Membrane strength: 105-150 µm
- Colour: white
- **Surface: smooth or gridded**
- Autoclavable

| Pore size (µm) | Membrane ∅ (mm) | Surface | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,025 | 13 | smooth | **CY35.1** | 100 | 235,45 |
| 0,025 | 25 | smooth | **CY36.1** | 100 | 299,95 |
| 0,025 | 47 | smooth | **CY37.1** | 100 | 380,55 |
| 0,025 | 90 | smooth | **CY38.1** | 25 | 350,45 |
| 0,22 | 13 | smooth | **CY39.1** | 100 | 110,75 |
| 0,22 | 25 | smooth | **CY40.1** | 100 | 126,85 |
| 0,22 | 47 | smooth | **CY41.1** | 100 | 167,70 |
| 0,22 | 90 | smooth | **CY42.1** | 100 | 448,30 |
| 0,45 | 13 | smooth | **CY43.1** | 100 | 109,65 |
| 0,45 | 13 | gridded | **CY44.1** | 100 | 123,65 |
| 0,45 | 25 | smooth | **CY45.1** | 100 | 115,05 |
| 0,45 | 25 | gridded | **CY46.1** | 100 | 136,55 |
| 0,45 | 47 | smooth | **CY47.1** | 100 | 166,65 |
| 0,45 | 47 | gridded | **CY48.1** | 100 | 187,05 |
| 0,45 | 90 | smooth | **CY49.1** | 100 | 442,90 |
| 0,65 | 13 | smooth | **CY50.1** | 100 | 109,65 |
| 0,65 | 25 | smooth | **CY51.1** | 100 | 127,95 |
| 0,65 | 47 | smooth | **CY52.1** | 100 | 174,15 |
| 0,65 | 90 | smooth | **CY53.1** | 25 | 139,75 |
| 0,8 | 13 | smooth | **CY54.1** | 100 | 110,75 |
| 0,8 | 13 | gridded | **CY55.1** | 100 | 118,25 |
| 0,8 | 25 | smooth | **CY56.1** | 100 | 124,70 |
| 0,8 | 25 | gridded | **CY57.1** | 100 | 137,60 |
| 0,8 | 47 | smooth | **CY58.1** | 100 | 167,70 |
| 0,8 | 47 | gridded | **CY59.1** | 100 | 178,45 |
| 0,8 | 90 | smooth | **CY60.1** | 100 | 409,60 |
| 8,0 | 13 | smooth | **CY61.1** | 100 | 102,95 |
| 8,0 | 25 | smooth | **CY62.1** | 100 | 125,80 |
| 8,0 | 47 | smooth | **CY63.1** | 100 | 172,00 |
| 8,0 | 90 | smooth | **CY64.1** | 25 | 151,60 |



121 °C

## PES-membrane filters

By MERCK MILLIPORE.
**Surface-modified hydrophilic polyethersulfone**

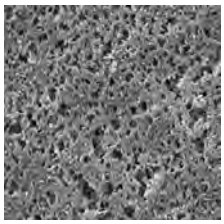
- **Application:** ultrafast filtration of tissue culture media, buffers and other aqueous solutions
- High flow rates and high output
- Low protein binding
- Membrane strength: ≥ 150 µm and ≤ 200 µm
- Colour: white
- Surface: smooth
- Autoclavable

| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,22 | 13 | **CX07.1** | 100 | 124,70 |
| 0,22 | 25 | **CX08.1** | 100 | 153,75 |
| 0,22 | 47 | **CX09.1** | 100 | 212,85 |
| 0,22 | 90 | **CX10.1** | 50 | 256,95 |
| 0,22 | 142 | **XA42.1** | 50 | 468,70 |
| 0,45 | 13 | **XA43.1** | 100 | 112,90 |
| 0,45 | 25 | **XA44.1** | 100 | 151,60 |
| 0,45 | 47 | **XA45.1** | 100 | 196,75 |
| 0,45 | 90 | **XA46.1** | 50 | 230,05 |
| 0,45 | 142 | **XA47.1** | 50 | 480,55 |

**Microdialysis by Membrane Filter (Drop Dialysis)**

Microvolumes of sample (5-100 µl) can also be dialysed by membrane filter discs made of cellulose mixed ester (pore size 0,025 µm, Art. No. CY35.1-CY37.1):
Fill a Petri dish with dialysis buffer. Place the membrane filter disc on the surface of the solution (shiny side up, avoid bubbles under the filter) by using a stainless steel forceps. Float the membrane for ca. 5 min until it is completely soaked. Pipette the sample on the center of the filter. Due to the open pore structure of the membrane filter and the high surface-to-volume ratio the dialysis is done within a short time (mostly < 30 min). To avoid evaporation of the sample seal the Petri dish tightly during the procedure. In this way the sample volume remains nearly constant.

# Membrane filters

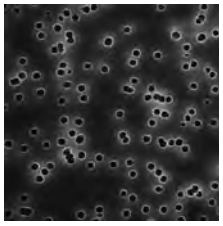


## Nylon membrane filters

By MERCK MILLIPORE.
**Hydrophilic nylon membrane filter with high solvent compatibility.**

- **Applications:** sterile filtration, bioassays, filtration of solvents, clear filtration of aqueous solutions, particle separation and analysis
- Membrane thickness: 170 µm
- Colour: white
- Surface: smooth
- Wettability: hydrophilic
- Sterilisation: compatible with gamma or EO sterilisation
- Max. working temperature: 75 °C

| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.20 | 25 | **XA48.1** | 100 | 141,90 |
| 0.20 | 47 | **XA49.1** | 100 | 174,15 |
| 0.45 | 25 | **XA50.1** | 100 | 136,55 |
| 0.45 | 47 | **XA51.1** | 100 | 189,20 |
| 0.8 | 25 | **XA52.1** | 100 | 115,05 |
| 0.8 | 47 | **XA53.1** | 100 | 156,95 |
| 1.2 | 25 | **XA54.1** | 100 | 115,05 |
| 1.2 | 47 | **XA55.1** | 100 | 159,10 |



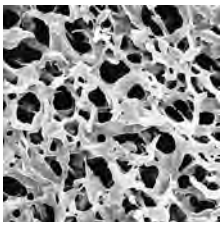
121°C

## Polycarbonate-membrane filters

By MERCK MILLIPORE. **Smooth surface facilitates suitable for microscopic analysis**

- **Application:** chemotaxis studies, analysing beverages, sterility tests, cell culture-/cell biology, bioassays, cytology, environmental/air analysis, epifluorescence (black membranes)
- Material Polycarbonate film, hydrophilic, non-hygroscopic
- Membrane strength: 9-10 µm
- Max. operating temperature: 140 °C, autoclavable
- Colour: white or black

| Pore size (µm) | Membrane ∅ (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,1 | 13 | white | **CY17.1** | 100 | 336,50 |
| 0,1 | 25 | white | **CY18.1** | 100 | 295,65 |
| 0,1 | 47 | white | **CY19.1** | 100 | 445,05 |
| 0,22 | 13 | white | **CY20.1** | 100 | 124,70 |
| 0,22 | 25 | white | **CY21.1** | 100 | 190,30 |
| 0,22 | 47 | white | **CY22.1** | 100 | 230,05 |
| 0,22 | 90 | white | **CY23.1** | 30 | 178,45 |
| 0,22 | 13 | black | **CY24.1** | 100 | 129,00 |
| 0,22 | 25 | black | **CY25.1** | 100 | 291,35 |
| 0,22 | 47 | black | **CY26.1** | 100 | 438,60 |
| 0,4 | 13 | white | **CY28.1** | 100 | 130,10 |
| 0,4 | 25 | white | **CY29.1** | 100 | 225,75 |
| 0,4 | 47 | white | **CY30.1** | 100 | 241,90 |
| 0,4 | 90 | white | **CY31.1** | 30 | 184,90 |
| 0,4 | 13 | black | **CY32.1** | 100 | 127,95 |
| 0,4 | 25 | black | **CY33.1** | 100 | 224,70 |
| 0,4 | 47 | black | **CY34.1** | 100 | 559,00 |



121°C

## PVDF-membrane filters, hydrophilic

By MERCK MILLIPORE. **Surface-modified polyvinylidene fluoride with minimal protein bonding**

- **Applications:** sterile filtration of protein solutions, tissue culture media, additives, antibiotics and alcoholic solutions; removal of particles, biological assays (e.g. recipe-bonding studies, TCA-precipitation)
- Protein binding: 4 µg/cm²
- Membrane strength: approx. 125 µm
- Colour: white
- Surface: smooth
- Max. working temperature: 85 °C
- Autoclavable

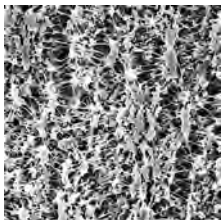
| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1 | 13 | **CX11.1** | 100 | 119,35 |
| 0,1 | 25 | **CX12.1** | 100 | 146,20 |
| 0,1 | 47 | **CX13.1** | 100 | 203,20 |
| 0,1 | 90 | **CX14.1** | 50 | 312,85 |
| 0,22 | 13 | **CX15.1** | 100 | 124,70 |
| 0,22 | 25 | **CX16.1** | 100 | 152,65 |
| 0,22 | 47 | **CX17.1** | 100 | 213,95 |
| 0,22 | 90 | **CX18.1** | 50 | 291,35 |
| 0,45 | 13 | **CX19.1** | 100 | 124,70 |
| 0,45 | 25 | **CX20.1** | 100 | 151,60 |
| 0,45 | 47 | **CX21.1** | 100 | 212,85 |
| 0,45 | 90 | **CX22.1** | 50 | 324,65 |
| 0,65 | 13 | **CX23.1** | 100 | 124,70 |
| 0,65 | 25 | **CX24.1** | 100 | 149,45 |
| 0,65 | 47 | **CX25.1** | 100 | 197,80 |
| 0,65 | 90 | **CX26.1** | 50 | 288,10 |
| 5,0 | 13 | **CX27.1** | 100 | 122,55 |
| 5,0 | 25 | **CX28.1** | 100 | 152,65 |
| 5,0 | 47 | **CX29.1** | 100 | 236,50 |

## PVDF-membrane filters, hydrophobic

By MERCK MILLIPORE. **Hydrophobic polyvinylidene fluoride**

- **Applications:** clear filtration of air/gases, sterile filtration of gases
- Protein binding: 150 µg/cm²
- Membrane strength: approx. 125 µm
- Colour: white
- Surface: smooth
- Max. working temperature: 85 °C
- Autoclavable

| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,1 | 47 | **CX31.1** | 100 | 279,50 |
| 0,22 | 13 | **CX32.1** | 100 | 169,85 |
| 0,22 | 25 | **CX33.1** | 100 | 212,85 |
| 0,22 | 47 | **CX34.1** | 100 | 301,00 |
| 0,22 | 90 | **CX35.1** | 50 | 392,40 |
| 0,45 | 13 | **CX36.1** | 100 | 181,70 |
| 0,45 | 25 | **CX37.1** | 100 | 212,85 |
| 0,45 | 47 | **CX38.1** | 100 | 308,55 |
| 0,45 | 90 | **CX39.1** | 50 | 399,90 |

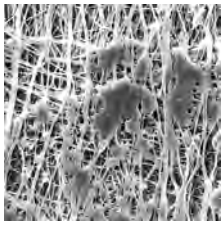


## PTFE-membrane filters, hydrophilic

By MERCK MILLIPORE. **Hydrophilic PTFE enables filtration of aqueous solutions without previous wetting. Can be used with all standard HPLC-solvents**

- **Application:** clear filtration of acids, bases, cryogenic liquids and fuel, analysis of hydraulic liquids RNA-isolation
- Very low ionic extractables suitable for IC
- Membrane: hydrophilic
- Membrane strength: 150 µm
- Max. working temperature: 130 °C, autoclavable
- Colour: white

| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,45 | 13 | **CX67.1** | 100 | 279,50 |
| 0,45 | 25 | **CX68.1** | 100 | 388,10 |
| 0,45 | 47 | **CX69.1** | 100 | 496,65 |

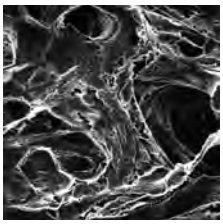


## PTFE-membrane filters with laminated support

By MERCK MILLIPORE. **Hydrophobic membrane filters made of PTFE (polytetrafluoroethylene) - bonded to a high-density polyethylene support**

- **Application:** clear filtration of acids, alkali, solvents and alcoholic solutions, gas-/air filtration, UV-spectroscopy
- If wetted beforehand with methanol or ethanol, aqueous solutions can also be filtered.
- Membrane strength: 150 µm
- Max. operating temperature: 130 °C, autoclavable
- Colour: white

| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,22 | 13 | **CX44.1** | 100 | 267,70 |
| 0,22 | 25 | **CX45.1** | 100 | 377,35 |
| 0,22 | 47 | **CX46.1** | 100 | 465,50 |
| 0,22 | 90 | **CX47.1** | 50 | 672,95 |
| 0,5 | 13 | **CX48.1** | 100 | 269,85 |
| 0,5 | 25 | **CX49.1** | 100 | 366,60 |
| 0,5 | 47 | **CX50.1** | 100 | 481,60 |
| 0,5 | 90 | **CX51.1** | 50 | 729,95 |
| 1.0 | 13 | **CX52.1** | 100 | 277,35 |
| 1.0 | 25 | **CX53.1** | 100 | 367,65 |
| 1.0 | 47 | **CX54.1** | 100 | 453,65 |
| 3,0 | 25 | **CX56.1** | 100 | 407,45 |
| 3,0 | 47 | **CX57.1** | 100 | 517,10 |
| 3,0 | 90 | **CX58.1** | 25 | 500,95 |



## PTFE-membrane filters without support structure

By MERCK MILLIPORE. **Hydrophobic PTFE-membrane filters**

- **Application:** Filtration under extreme chemical or thermal conditions, clear filtration of acids, lyes, cryogenic liquids and fuels, analysis of hydraulic liquids, RNA-isolation
- If wetted beforehand with methanol or ethanol, aqueous solutions can also be filtered.
- Membrane strength: 130-140 µm
- Max. operating temperature: 260 °C, autoclavable
- Colour: white

| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5,0 | 13 | **CX59.1** | 100 | 294,55 |
| 5,0 | 25 | **CX60.1** | 100 | 332,20 |
| 5,0 | 47 | **CX61.1** | 100 | 535,35 |
| 5,0 | 90 | **CX62.1** | 25 | 414,95 |
| 10,0 | 13 | **CX63.1** | 100 | 290,25 |
| 10,0 | 25 | **CX64.1** | 100 | 320,35 |
| 10,0 | 47 | **CX65.1** | 100 | 504,20 |
| 10,0 | 90 | **CX66.1** | 25 | 407,45 |




## Zitex®-PTFE filters

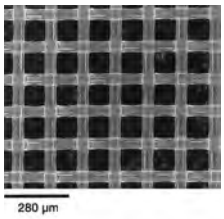
Deep-bed filter made of hydrophobic PTFE with high particle retention capacity and uniform pore size distribution.
Heat resistant up to approx. 200 °C.
For the filtration of solvents, aggressive liquids and gases, or for ventilation.
If wetted beforehand with methanol or ethanol, aqueous solutions can also be filtered. Stable anti-adhesive structure allows quantitative separation of filter cake without damaging the membrane. Autoclavable.

**Technical specifications:**

| **Type** | **G110:** ultra fine | **G108:** fine |
|---|---|---|
| Retention range (µm) | 1-3 | 3-5 |
| Thickness (µm) | 200-300 | 150-250 |
| Water flow rate (ml/min/cm$^2$) | 80-120 | 120-200 |
| Water breakthrough pressure (bar) | 0.36-0.42 | 0.23-0.30 |
| Ethanol bubble point (bar) | 0.07-0.10 | 0.06-0.08 |
| Average pore volume (%) | 40 | 45 |

| Type | Retention range (µm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| G110 (ultra fine) | 1-3 | 47 | **YY91.1** | 10 | 57,00 |
| G108 (fine) | 3-5 | 47 | **YY92.1** | 10 | 59,15 |
| G110 (ultra fine) | 1-3 | 90 | **YY95.1** | 10 | 67,70 |
| G108 (fine) | 3-5 | 90 | **YY96.1** | 10 | 78,50 |

# Membrane filters




## Nylon mesh filters

By MERCK MILLIPORE.
**Hydrophilic nylon mesh filter with high solvent compatibility.**
- **Applications:** collection of algae and cells, particle analysis, separation of large particles, background filter for use in monitoring by automatic particle imaging systems, prefiltration of solvents, monitoring of contamination in paints and lacquers
- Colour: white
- Surface: smooth
- Wettability: hydrophilic
- Sterilisation: compatible with gamma or EO sterilisation
- Max. working temperature: 100 °C

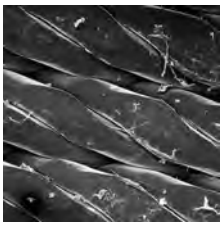
**Round filter**

| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | 25 | **XA56.1** | 100 | 91,95 |
| 10 | 47 | **XA57.1** | 100 | 115,05 |
| 10 | 90 | **XA58.1** | 50 | 236,50 |
| 11 | 25 | **XA59.1** | 100 | 116,10 |
| 11 | 47 | **XA60.1** | 100 | 139,75 |
| 11 | 90 | **XA61.1** | 50 | 270,90 |
| 20 | 25 | **XA62.1** | 100 | 115,05 |
| 20 | 47 | **XA63.1** | 100 | 137,60 |
| 20 | 90 | **XA64.1** | 50 | 305,30 |
| 30 | 25 | **XA65.1** | 100 | 116,10 |
| 30 | 47 | **XA66.1** | 100 | 137,60 |
| 30 | 90 | **XA67.1** | 50 | 270,90 |
| 41 | 25 | **XA68.1** | 100 | 116,10 |
| 41 | 47 | **XA69.1** | 100 | 143,00 |
| 41 | 90 | **XA70.1** | 50 | 270,90 |
| 60 | 25 | **XA71.1** | 100 | 116,10 |
| 60 | 47 | **XA72.1** | 100 | 137,60 |
| 60 | 90 | **XA73.1** | 50 | 274,15 |
| 80 | 25 | **XA74.1** | 100 | 116,10 |
| 80 | 47 | **XA75.1** | 100 | 138,70 |
| 80 | 90 | **XA76.1** | 50 | 270,90 |
| 100 | 25 | **XA77.1** | 100 | 116,10 |
| 100 | 47 | **XA78.1** | 100 | 138,70 |
| 100 | 90 | **XA79.1** | 50 | 270,90 |
| 120 | 25 | **XA80.1** | 100 | 116,10 |
| 120 | 47 | **XA81.1** | 100 | 138,70 |
| 120 | 90 | **XA82.1** | 50 | 270,90 |
| 140 | 25 | **XA83.1** | 100 | 116,10 |
| 140 | 47 | **XA84.1** | 100 | 137,60 |
| 140 | 90 | **XA85.1** | 50 | 253,70 |
| 160 | 25 | **XA86.1** | 100 | 116,10 |
| 160 | 47 | **XA87.1** | 100 | 138,70 |
| 160 | 90 | **XA88.1** | 50 | 270,90 |
| 180 | 25 | **XA89.1** | 100 | 116,10 |
| 180 | 47 | **XA90.1** | 100 | 137,60 |
| 180 | 90 | **XA91.1** | 50 | 270,90 |

**Filterrolls**

Dimensions: W 30 x L 300 cm

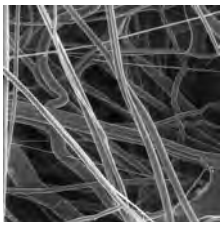
| Pore size (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 11 | **XA92.1** | 1 | 528,90 |
| 20 | **XA93.1** | 1 | 504,20 |
| 41 | **XA94.1** | 1 | 485,90 |
| 60 | **XA95.1** | 1 | 484,85 |
| 100 | **XA96.1** | 1 | 504,20 |
| 160 | **XA97.1** | 1 | 573,00 |



## PP mesh filters

By MERCK MILLIPORE.
**Hydrophilic PP mesh filter made of 100 % pure polypropylene**
- **Application:** clear filtration, collection of cells and protein precipitates, separation of large particles, analysis of particulate impurities
- Colour: white
- Surface: smooth
- Wettability: hydrophilic
- Sterilisation: compatible with gamma or EO sterilisation
- Max. working temperature: 100 °C

| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 25 | **XC04.1** | 100 | 125,80 |
| 25 | 47 | **XC05.1** | 100 | 170,95 |
| 45 | 25 | **XC06.1** | 100 | 130,10 |
| 45 | 47 | **XC07.1** | 100 | 167,70 |



## PP prefilters

By MERCK MILLIPORE.
**Hydrophobic PP prefilter made of 100 % pure polypropylene**
- **Application:** prefilter with high particle retention capacity, high dirt holding capacity and low pressure drop. Suitable for filtration of numerous organic solvents.
- Filter type: deep-bed filter
- Colour: white
- Surface: smooth
- Wettability: hydrophobic
- Sterilisation: compatible with gamma or EO sterilisation
- Max. working temperature: 90 °C

| Pore size (µm) | Membrane ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,6 | 47 | **XA98.1** | 100 | 149,45 |
| 1,2 | 47 | **XA99.1** | 100 | 149,45 |
| 2,5 | 47 | **XC00.1** | 100 | 149,45 |
| 5 | 47 | **XC01.1** | 100 | 159,10 |
| 10 | 47 | **XC02.1** | 100 | 167,70 |
| 30 | 47 | **XC03.1** | 100 | 155,90 |

# Glass and quartz fibre filters



## Glass fibre filter paper - Round filters

By Whatman. Made of borosilicate glass fibre and inorganic bonding agents.

**Properties:**
- Chemically resistant to most organic and inorganic solvents, aggressive chemicals and concentrated bases (Not resistant to hydrofluoric acid)
- Constant weight, also in case of fluctuations in air humidity
- Mechanically stable (limited bending resistance)

Filter units and clamping fixtures must have flexible sealings.

**Type GF 6**
- Filtration speed low
- Retention rate: 99.97 %
- Retention range: <1 micron
- Surface weight: 80 g/m²

**Application:** environmental analysis, biology, physics, beverage industry.
**Use:** Gas/air monitoring, water and waste water investigations.

| ∅ (mm) | Type | Thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | GF 6 | 350 | **AY36.1** | 200 | 48,50 |
| 47 | GF 6 | 350 | **AY39.1** | 200 | 73,90 |
| 50 | GF 6 | 350 | **AY40.1** | 200 | 82,50 |
| 55 | GF 6 | 350 | **AY41.1** | 100 | 75,90 |
| 70 | GF 6 | 350 | **AY42.1** | 100 | 95,95 |
| 90 | GF 6 | 350 | **AY43.1** | 100 | 133,50 |
| 100 | GF 6 | 350 | **AY44.1** | 100 | 211,00 |
| 110 | GF 6 | 350 | **AY45.1** | 100 | 218,00 |
| 125 | GF 6 | 350 | **AY46.1** | 100 | 228,00 |
| 150 | GF 6 | 350 | **AY47.1** | 100 | 313,00 |
| 185 | GF 6 | 350 | **AY48.1** | 100 | 350,00 |
| 200 | GF 6 | 350 | **Y716.1** | 100 | 403,00 |
| 240 | GF 6 | 350 | **AY49.1** | 100 | 456,00 |

**Type GF 8**
- Filtration speed high
- Retention rate: 99 %
- Retention range: 3 µm
- Surface weight: 80 g/m²

**Application:** environmental analysis, industry
**Use:** Determining PCB, DDE, DDT, furane and dioxin levels in the air.

| ∅ (mm) | Type | Thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 90 | GF 8 | 350 | **AY51.1** | 100 | 132,00 |

**Type GF 92**
- Filtration speed medium
- Surface weight: 70 g/m²
- Retention range: 2-3 µm

**Application:** environmental analysis, biology, beverage industry.
**Use:** Membrane pre-filter, soot extraction from gas analysers.

| ∅ (mm) | Type | Thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 47 | GF 92 | 350 | **AY55.1** | 200 | 117,00 |
| 50 | GF 92 | 350 | **AY56.1** | 200 | 119,00 |
| 100 | GF 92 | 350 | **AY57.1** | 100 | 173,00 |
| 135 | GF 92 | 350 | **AY58.1** | 100 | 275,00 |
| 142 | GF 92 | 350 | **AY59.1** | 100 | 282,00 |



## Glass fibre round filters

By Macherey-Nagel. Made of borosilicate fiber glass. With organic binders or binder-free. Enable speedy filtering, yet with high retaining power. Very good resistance against most organic and anorganic solvents (not resistant against hydrofluoric acid). Temperature max. 200 °C.

**Technical specifications:**

| Filter type | Binder | Speed air (s) | Retaining range (µm) | Grammage (g/m²) |
|---|---|---|---|---|
| **MN 85/70** | organic | 15 | max 0.6 | 70 |
| **MN 85/70 BF** | without | 15 | max 0.6 | 70 |

**Type MN 85/70**

**Application:** Most commonly used fiber glass filter for standard applications with high mechanical stability.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | MN 85/70 | 0,35 | **EN17.1** | 100 | 12,10 |
| 37 | MN 85/70 | 0,35 | **EN18.1** | 100 | 15,10 |
| 40 | MN 85/70 | 0,35 | **EN19.1** | 100 | 16,40 |
| 45 | MN 85/70 | 0,35 | **EN20.1** | 100 | 16,40 |
| 55 | MN 85/70 | 0,35 | **EN21.1** | 100 | 17,45 |
| 70 | MN 85/70 | 0,35 | **EN22.1** | 100 | 21,80 |
| 90 | MN 85/70 | 0,35 | **EN23.1** | 100 | 28,85 |
| 110 | MN 85/70 | 0,35 | **EN24.1** | 100 | 35,85 |
| 125 | MN 85/70 | 0,35 | **EN25.1** | 100 | 44,40 |
| 150 | MN 85/70 | 0,35 | **EN26.1** | 100 | 58,70 |
| 185 | MN 85/70 | 0,35 | **EN27.1** | 100 | 81,80 |
| 200 | MN 85/70 | 0,35 | **EN28.1** | 100 | 121,00 |
| 240 | MN 85/70 | 0,35 | **EN29.1** | 100 | 121,00 |
| 270 | MN 85/70 | 0,35 | **EN30.1** | 100 | 143,00 |
| 320 | MN 85/70 | 0,35 | **EN31.1** | 100 | 194,00 |

**Type MN 85/70 BF**

**Usage:** as a prefilter in the membrane filtration of particle-laden media.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | MN 85/70 BF | 0,35 | **HK45.1** | 100 | 21,10 |
| 37 | MN 85/70 BF | 0,35 | **HK46.1** | 100 | 26,70 |
| 45 | MN 85/70 BF | 0,35 | **HK47.1** | 100 | 28,70 |
| 55 | MN 85/70 BF | 0,35 | **HK48.1** | 100 | 31,40 |
| 70 | MN 85/70 BF | 0,35 | **HK49.1** | 100 | 38,50 |
| 90 | MN 85/70 BF | 0,35 | **HK50.1** | 100 | 51,20 |
| 110 | MN 85/70 BF | 0,35 | **HK51.1** | 100 | 64,70 |
| 125 | MN 85/70 BF | 0,35 | **HK52.1** | 100 | 81,00 |
| 150 | MN 85/70 BF | 0,35 | **HK53.1** | 100 | 108,00 |
| 185 | MN 85/70 BF | 0,35 | **HK54.1** | 100 | 153,00 |
| 240 | MN 85/70 BF | 0,35 | **HK55.1** | 100 | 218,00 |
| 270 | MN 85/70 BF | 0,35 | **HK56.1** | 100 | 262,00 |


▶ Glass wool see chapter Chromatography!
▶ Filtering flasks and filter crucibles from p. 170

# Filter papers for qualitative analysis



## Quartz fibre round filters MN QF-10

By Macherey-Nagel. Made of pure quartz fibres without bonding agents. High chemical resistance to organic and inorganic solvents, acids (except hydrofluoric acid) and alkalis. For filtration of aggressive media, in trace analytics, emission control, airborne dust analytics etc.
Extremely low content of metal trace elements.
Filter speed (in compliance with DIN 53137): <5 s.
Surface weight: 85 g/m², retention range: up to 0.3 µm.
Temperature stable up to 950 °C.

| ∅ (mm) | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 45 | 0.46 | **EN12.1** | 100 | 170,00 |
| 47 | 0.46 | **EN13.1** | 100 | 170,00 |
| 50 | 0.46 | **EN14.1** | 100 | 174,00 |
| 90 | 0.46 | **EN15.1** | 100 | 423,00 |



## Rotilabo®-round filters

Filter paper for **qualitative analysis**. Made of 100 % cellulose.
Ash content 0.06 %.

### Type 111A

**Very fast filtration time**, filtration speed according to DIN 53137: 10 s
Surface weight: 80 g/m², retention range: 12-15 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 111A | 0,16 | **XP31.1** | 100 | 5,05 |
| 47 | 111A | 0,16 | **XP32.1** | 100 | 5,05 |
| 55 | 111A | 0,16 | **AP58.1** | 100 | 5,15 |
| 70 | 111A | 0,16 | **AP59.1** | 100 | 5,60 |
| 90 | 111A | 0,16 | **AP60.1** | 100 | 6,80 |
| 110 | 111A | 0,16 | **AP61.1** | 100 | 7,40 |
| 125 | 111A | 0,16 | **AP62.1** | 100 | 9,30 |
| 150 | 111A | 0,16 | **AP63.1** | 100 | 11,25 |
| 185 | 111A | 0,16 | **AP64.1** | 100 | 13,60 |
| 240 | 111A | 0,16 | **AP65.1** | 100 | 21,50 |

### Type 112A

**Fast filtration time**, filtration speed according to DIN 53137: 20 s
Surface weight: 80 g/m², retention range: 8-12 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 112A | 0,16 | **XP33.1** | 100 | 5,05 |
| 47 | 112A | 0,16 | **XP34.1** | 100 | 5,05 |
| 55 | 112A | 0,16 | **AP66.1** | 100 | 5,15 |
| 70 | 112A | 0,16 | **AP67.1** | 100 | 5,60 |
| 90 | 112A | 0,16 | **AP68.1** | 100 | 6,80 |
| 110 | 112A | 0,16 | **AP69.1** | 100 | 7,45 |
| 125 | 112A | 0,16 | **AP70.1** | 100 | 9,30 |
| 150 | 112A | 0,16 | **AP71.1** | 100 | 11,25 |
| 185 | 112A | 0,16 | **AP72.1** | 100 | 13,65 |
| 240 | 112A | 0,16 | **AP73.1** | 100 | 21,50 |

### Type 113A

**Medium-fast filtration time**, filtration speed according to DIN 53137: 50s
Surface weight: 87 g/m², retention range: 5-8 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 113A | 0,16 | **XP35.1** | 100 | 5,05 |
| 47 | 113A | 0,16 | **XP36.1** | 100 | 5,05 |
| 55 | 113A | 0,16 | **AP74.1** | 100 | 5,15 |
| 70 | 113A | 0,16 | **AP75.1** | 100 | 5,65 |
| 90 | 113A | 0,16 | **AP76.1** | 100 | 6,80 |
| 110 | 113A | 0,16 | **AP77.1** | 100 | 7,45 |
| 125 | 113A | 0,16 | **AP78.1** | 100 | 9,30 |
| 150 | 113A | 0,16 | **AP79.1** | 100 | 11,25 |
| 185 | 113A | 0,16 | **AP80.1** | 100 | 13,60 |
| 240 | 113A | 0,16 | **AP81.1** | 100 | 21,50 |

### Type 114A

**Slow filtration time**, filtration speed according to DIN 53137: 100s
Surface weight: 80 g/m², retention range: 3-5 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 114A | 0,15 | **XP37.1** | 100 | 5,05 |
| 47 | 114A | 0,15 | **XP38.1** | 100 | 5,05 |
| 55 | 114A | 0,15 | **AP82.1** | 100 | 5,15 |
| 70 | 114A | 0,15 | **AP83.1** | 100 | 5,60 |
| 90 | 114A | 0,15 | **AP84.1** | 100 | 6,80 |
| 110 | 114A | 0,15 | **AP85.1** | 100 | 7,45 |
| 125 | 114A | 0,15 | **AP86.1** | 100 | 9,30 |
| 150 | 114A | 0,15 | **AP87.1** | 100 | 11,25 |
| 185 | 114A | 0,15 | **AP88.1** | 100 | 13,65 |
| 240 | 114A | 0,15 | **AP89.1** | 100 | 21,50 |

### Type 115A

**Very slow filtration time**, filtration speed according to DIN 53137: 180s
Surface weight: 80 g/m², retention range: 2-3 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 115A | 0,14 | **XP39.1** | 100 | 5,05 |
| 47 | 115A | 0,14 | **XP40.1** | 100 | 5,05 |
| 55 | 115A | 0,14 | **AP90.1** | 100 | 5,15 |
| 70 | 115A | 0,14 | **AP91.1** | 100 | 5,65 |
| 90 | 115A | 0,14 | **AP92.1** | 100 | 6,80 |
| 110 | 115A | 0,14 | **AP93.1** | 100 | 7,45 |
| 125 | 115A | 0,14 | **AP94.1** | 100 | 9,30 |
| 150 | 115A | 0,14 | **AP95.1** | 100 | 11,25 |
| 185 | 115A | 0,14 | **AP96.1** | 100 | 13,60 |
| 240 | 115A | 0,14 | **AP97.1** | 100 | 21,50 |

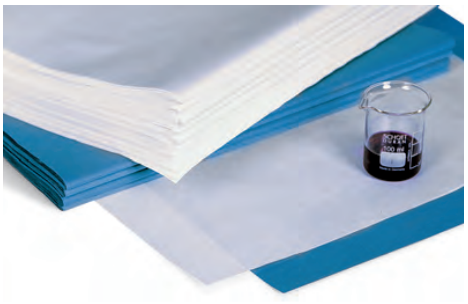
### Type 601A

**Slow filtration time**, filtration speed according to DIN 53137: 88s
Surface weight: 73 g/m², retention range: 5-13 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | 601A | 0,16 | **AP98.1** | 100 | 5,15 |
| 70 | 601A | 0,16 | **CA04.1** | 100 | 5,35 |
| 90 | 601A | 0,16 | **AT00.1** | 100 | 5,90 |
| 100 | 601A | 0,16 | **AT01.1** | 100 | 6,35 |
| 110 | 601A | 0,16 | **AT02.1** | 100 | 6,35 |
| 125 | 601A | 0,16 | **AT03.1** | 100 | 6,75 |
| 130 | 601A | 0,16 | **AT04.1** | 100 | 7,20 |
| 150 | 601A | 0,16 | **AT05.1** | 100 | 8,15 |
| 185 | 601A | 0,16 | **AT06.1** | 100 | 10,00 |
| 190 | 601A | 0,16 | **AT07.1** | 100 | 10,75 |
| 210 | 601A | 0,16 | **AT08.1** | 100 | 11,65 |
| 240 | 601A | 0,16 | **AT09.1** | 100 | 13,30 |
| 250 | 601A | 0,16 | **AT10.1** | 100 | 13,30 |
| 320 | 601A | 0,16 | **AT11.1** | 100 | 19,35 |
| 330 | 601A | 0,16 | **AT12.1** | 100 | 19,60 |
| 400 | 601A | 0,16 | **AT13.1** | 100 | 27,90 |

# Filter papers for qualitative analysis



## Filter papers - round filters

By Macherey-Nagel. For **qualitative analysis**. Not chemically treated. Ash content 0.1 - 0.2 %. Filtration time complies with DIN 53137.

**Type MN 615, medium filtering**
Thin filter paper for standard use. Particulary for filtration of water, saline solutions, surface weight 70 g/m², thickness 0.16 mm. Filtration time 22 s. Retention range: 4-12 µm.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | MN 615 | 0,16 | **L870.1** | 100 | 4,95 |
| 70 | MN 615 | 0,16 | **L871.1** | 100 | 4,95 |
| 90 | MN 615 | 0,16 | **L872.1** | 100 | 5,80 |
| 110 | MN 615 | 0,16 | **L873.1** | 100 | 7,60 |
| 125 | MN 615 | 0,16 | **L874.1** | 100 | 8,40 |
| 150 | MN 615 | 0,16 | **L875.1** | 100 | 11,10 |
| 185 | MN 615 | 0,16 | **L876.1** | 100 | 15,40 |
| 240 | MN 615 | 0,16 | **L877.1** | 100 | 24,50 |

**Type MN 616, medium filtering**
Ideal for sediments such as sulphides, lead chromate, calcium oxalate. Surface weight 85 g/m², thickness 0.20 mm. Filtration time 27 s. Retention range: 4-12 µm.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | MN 616 | 0,2 | **L878.1** | 100 | 5,90 |
| 70 | MN 616 | 0,2 | **L879.1** | 100 | 5,90 |
| 90 | MN 616 | 0,2 | **L880.1** | 100 | 7,90 |
| 110 | MN 616 | 0,2 | **L881.1** | 100 | 9,95 |
| 125 | MN 616 | 0,2 | **L882.1** | 100 | 12,20 |
| 150 | MN 616 | 0,2 | **L883.1** | 100 | 15,50 |
| 185 | MN 616 | 0,2 | **L884.1** | 100 | 21,90 |
| 240 | MN 616 | 0,2 | **L885.1** | 100 | 36,00 |

**Type MN 619 eh, slow filtering**
Dense filters for fine sediments. Surface weight 85 g/m², thickness 0.17 mm. Filtration time 140 s. Retention range: 2-4 µm.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | MN 619 eh | 0,17 | **L886.1** | 100 | 5,70 |
| 70 | MN 619 eh | 0,17 | **L887.1** | 100 | 5,70 |
| 90 | MN 619 eh | 0,17 | **L888.1** | 100 | 7,90 |
| 110 | MN 619 eh | 0,17 | **L889.1** | 100 | 9,95 |
| 125 | MN 619 eh | 0,17 | **L890.1** | 100 | 12,20 |
| 150 | MN 619 eh | 0,17 | **L891.1** | 100 | 15,50 |
| 185 | MN 619 eh | 0,17 | **L892.1** | 100 | 21,90 |
| 240 | MN 619 eh | 0,17 | **L893.1** | 100 | 36,00 |

## Rotilabo®-filter papers

100 % cellulose quality filter papers. High absorbency.
Standard filter paper with a smooth surface for analysis. Colour white.
Larger sizes are ideal as surface protection paper or working surface.

**Type 600**
Weight 64 g/m², thickness 0.15 mm. Retention 10-20 µm.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 420 | 520 | **XP43.1** | 500 | 65,70 |
| 500 | 500 | **XP44.1** | 500 | 74,40 |
| 600 | 600 | **XP45.1** | 500 | 107,50 |

**Type 601**
Weight 73 g/m², thickness 0.16 mm. Retention 5-13 µm.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 450 | 450 | **XP46.1** | 500 | 180,60 |
| 460 | 570 | **XP47.1** | 100 | 42,05 |

**Type 122**
Weight 73 g/m², thickness 0.17 mm. Retention 17-30 µm.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 520 | 520 | **XP48.1** | 500 | 169,85 |
| 600 | 600 | **XP49.1** | 500 | 199,95 |



## Rotilabo®-Büchner funnels

Made of glazed porcelain. Excellent resistance to acids and bases.
Temperature stable up to 1000 °C.

| Volume (ml) | for filter paper ∅ (mm) | ∅ Filter plate (mm) | Height (mm) | Tube length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 35 | 45 | 48 | 24 | 43 | **XX44.1** | 1 | 13,30 |
| 70 | 55 | 62 | 30 | 64 | **XX45.1** | 1 | 15,45 |
| 120 | 70 | 77 | 35 | 64 | **XX46.1** | 1 | 18,45 |
| 240 | 90 | 97 | 40 | 71 | **XX47.1** | 1 | 25,60 |
| 400 | 110 | 116 | 49 | 83 | **XX48.1** | 1 | 31,90 |
| 600 | 125 | 130 | 52 | 85 | **XX49.1** | 1 | 40,15 |
| 1000 | 150 | 156 | 59 | 96 | **XX50.1** | 1 | 53,35 |
| 2000 | 185 | 192 | 74 | 117 | **XX51.1** | 1 | 71,45 |
| 4000 | 240 | 248 | 90 | 117 | **XX52.1** | 1 | 166,65 |
| 7000 | 290 | 296 | 105 | 130 | **XX53.1** | 1 | 401,00 |
| 10 000 | 320 | 334 | 120 | 133 | **XX54.1** | 1 | 500,95 |

# Filter papers for qualitative analysis






## Rotilabo®-folded filters

Filter paper for **qualitative analysis**. Made of 100 % cellulose.
Ash content 0.06 %.

**Type 113P**

**Medium filtration speed**, filtration speed acc. to DIN 53137: 50 s
Surface weight: 87 g/m², retention range: 5-8 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 70 | 113P | 0,16 | **CA05.1** | 100 | 24,40 |
| 90 | 113P | 0,16 | **CA06.1** | 100 | 24,40 |
| 110 | 113P | 0,16 | **CA07.1** | 100 | 25,25 |
| 125 | 113P | 0,16 | **CA08.1** | 100 | 27,25 |
| 150 | 113P | 0,16 | **CA09.1** | 100 | 28,35 |
| 185 | 113P | 0,16 | **CA10.1** | 100 | 31,30 |
| 210 | 113P | 0,16 | **CA11.1** | 100 | 38,30 |
| 240 | 113P | 0,16 | **CA12.1** | 100 | 43,40 |
| 270 | 113P | 0,16 | **CA13.1** | 100 | 50,40 |
| 320 | 113P | 0,16 | **CA14.1** | 100 | 67,30 |

**Type 600P**

**Fast filtration speed**, filtration speed acc. to DIN 53137: 30 s
Surface weight: 64 g/m², retention range: 13 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 70 | 600P | 0,15 | **CA15.1** | 100 | 13,95 |
| 100 | 600P | 0,15 | **CA16.1** | 100 | 15,20 |
| 110 | 600P | 0,15 | **CA17.1** | 100 | 15,95 |
| 125 | 600P | 0,15 | **CA18.1** | 100 | 16,40 |
| 150 | 600P | 0,15 | **CA20.1** | 100 | 16,90 |
| 185 | 600P | 0,15 | **CA21.1** | 100 | 18,55 |
| 240 | 600P | 0,15 | **CA23.1** | 100 | 22,55 |
| 320 | 600P | 0,15 | **CA25.1** | 100 | 32,15 |
| 400 | 600P | 0,15 | **CA27.1** | 100 | 46,60 |
| 450 | 600P | 0,15 | **CA28.1** | 100 | 65,70 |
| 500 | 600P | 0,15 | **CA29.1** | 100 | 72,40 |

**Type 601P**

**Slow filtration speed**, filtration speed acc. to DIN 53137: 130 s
Surface weight: 73 g/m², retention range: 5-13 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 70 | 601P | 0,16 | **AY73.1** | 100 | 17,50 |
| 100 | 601P | 0,16 | **AY74.1** | 100 | 20,00 |
| 110 | 601P | 0,16 | **AY75.1** | 100 | 20,70 |
| 125 | 601P | 0,16 | **AY76.1** | 100 | 20,75 |
| 150 | 601P | 0,16 | **AY78.1** | 100 | 22,70 |
| 185 | 601P | 0,16 | **AY79.1** | 100 | 24,30 |
| 240 | 601P | 0,16 | **AY81.1** | 100 | 28,65 |
| 320 | 601P | 0,16 | **AY83.1** | 100 | 42,25 |
| 400 | 601P | 0,16 | **AY85.1** | 100 | 56,45 |
| 450 | 601P | 0,16 | **AY86.1** | 100 | 80,75 |
| 500 | 601P | 0,16 | **AY87.1** | 100 | 102,90 |

## Filter papers – folded filters

By Macherey-Nagel. For **qualitative analysis**. Ash content approx. 0.1%.
Alpha cellulose content approx. 95%.

**Type MN 615 ¼, medium filtration speed**
General purpose thin filter paper. Especially suited to filtering water and saline solutions. Surface weight 70 g/m². Filtration time in accordance with DIN 53137: 22 s. Retention efficiency: >4 µm.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 70 | MN 615 ¼ | 0,16 | **A795.1** | 100 | 23,65 |
| 90 | MN 615 ¼ | 0,16 | **A796.1** | 100 | 23,65 |
| 110 | MN 615 ¼ | 0,16 | **A797.1** | 100 | 23,65 |
| 125 | MN 615 ¼ | 0,16 | **A798.1** | 100 | 23,65 |
| 150 | MN 615 ¼ | 0,16 | **A799.1** | 100 | 23,65 |
| 185 | MN 615 ¼ | 0,16 | **A800.1** | 100 | 26,00 |
| 210 | MN 615 ¼ | 0,16 | **A801.1** | 100 | 37,55 |
| 240 | MN 615 ¼ | 0,16 | **Y856.1** | 100 | 37,50 |
| 270 | MN 615 ¼ | 0,16 | **Y857.1** | 100 | 43,50 |
| 320 | MN 615 ¼ | 0,16 | **Y858.1** | 100 | 53,50 |
| 380 | MN 615 ¼ | 0,16 | **Y859.1** | 100 | 78,10 |

**Type MN 617 ¼, quick filtration speed**
For quickly filtering out coarse deposits. Surface weight 85 g/m². Filtration time in accordance with DIN 53137: 92 s. Retention efficiency: 7 -12 µm.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 70 | MN 617 ¼ | 0,2 | **EEY9.1** | 100 | 26,80 |
| 90 | MN 617 ¼ | 0,2 | **EHA0.1** | 100 | 26,80 |
| 110 | MN 617 ¼ | 0,2 | **EHA1.1** | 100 | 26,80 |
| 125 | MN 617 ¼ | 0,2 | **EHA2.1** | 100 | 26,80 |
| 150 | MN 617 ¼ | 0,2 | **EHA3.1** | 100 | 26,80 |
| 185 | MN 617 ¼ | 0,2 | **EHA4.1** | 100 | 32,60 |
| 240 | MN 617 ¼ | 0,2 | **EHA5.1** | 100 | 49,10 |
| 270 | MN 617 ¼ | 0,2 | **EHA6.1** | 100 | 57,50 |
| 320 | MN 617 ¼ | 0,2 | **EHA7.1** | 100 | 75,00 |
| 385 | MN 617 ¼ | 0,2 | **EHA8.1** | 100 | 105,00 |

**Type MN 619 eh ¼, slow filtration speed**
For filtering out fine and ultra-fine deposits. Surface weight 85 g/m².
Filtration time in accordance with DIN 53137: 140 s.
Retention efficiency: 2 -4 µm.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 70 | MN 619 eh ¼ | 0,17 | **EHA9.1** | 100 | 26,30 |
| 90 | MN 619 eh ¼ | 0,17 | **EHC0.1** | 100 | 26,30 |
| 110 | MN 619 eh ¼ | 0,17 | **EHC1.1** | 100 | 26,30 |
| 125 | MN 619 eh ¼ | 0,17 | **EHC2.1** | 100 | 26,30 |
| 150 | MN 619 eh ¼ | 0,17 | **EHC3.1** | 100 | 26,30 |
| 185 | MN 619 eh ¼ | 0,17 | **EHC4.1** | 100 | 32,60 |
| 240 | MN 619 eh ¼ | 0,17 | **EHC5.1** | 100 | 49,10 |
| 270 | MN 619 eh ¼ | 0,17 | **EHC6.1** | 100 | 57,50 |
| 320 | MN 619 eh ¼ | 0,17 | **EHC7.1** | 100 | 74,00 |
| 385 | MN 619 eh ¼ | 0,17 | **EHC8.1** | 100 | 106,00 |


▶ Analysis funnels see page 167
▶ Filter stands see page 168

# Filter papers for quantitative analysis



## Rotilabo®-round filters

Filter paper for **qualitative analysis**. Made of 100 % cellulose.
Ash content 0.007 %.

**Type 11A**
**Equivalent black band.**
**Very fast filtration time**, filtration speed according to DIN 53137: 10 s
Surface weight: 84 g/m², retention range: 12-15 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 9 | 11A | 0,18 | **XP10.1** | 100 | 6,40 |
| 12 | 11A | 0,18 | **XP11.1** | 100 | 6,40 |
| 13 | 11A | 0,18 | **XP12.1** | 100 | 6,40 |
| 15 | 11A | 0,18 | **XP13.1** | 100 | 6,40 |
| 27 | 11A | 0,18 | **XP14.1** | 100 | 6,40 |
| 42,5 | 11A | 0,18 | **XP15.1** | 100 | 6,40 |
| 47 | 11A | 0,18 | **XP16.1** | 100 | 6,40 |
| 55 | 11A | 0,18 | **AP18.1** | 100 | 6,60 |
| 70 | 11A | 0,18 | **AP19.1** | 100 | 7,50 |
| 90 | 11A | 0,18 | **AP20.1** | 100 | 10,45 |
| 110 | 11A | 0,18 | **AP21.1** | 100 | 13,75 |
| 125 | 11A | 0,18 | **AP22.1** | 100 | 17,00 |
| 150 | 11A | 0,18 | **AP23.1** | 100 | 22,55 |
| 185 | 11A | 0,18 | **AP24.1** | 100 | 31,55 |
| 240 | 11A | 0,18 | **AP25.1** | 100 | 63,45 |

**Type 12A**
**Fast filtration time**, filtration speed acc. to DIN 53137: 20 s
Surface weight: 84 g/m², retention range: 8-12 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | 12 A | 0,17 | **AP26.1** | 100 | 6,45 |
| 70 | 12 A | 0,17 | **AP27.1** | 100 | 7,50 |
| 90 | 12 A | 0,17 | **AP28.1** | 100 | 10,45 |
| 110 | 12 A | 0,17 | **AP29.1** | 100 | 13,75 |
| 125 | 12 A | 0,17 | **AP30.1** | 100 | 17,00 |
| 150 | 12 A | 0,17 | **AP31.1** | 100 | 22,55 |
| 185 | 12 A | 0,17 | **AP32.1** | 100 | 31,50 |
| 240 | 12 A | 0,17 | **AP33.1** | 100 | 63,55 |

**Type 13A**
**Equivalent white band.**
**Medium-fast filtration time**, filtration speed according to DIN 53137: 50 s
Surface weight: 84 g/m², retention range: 5-8 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 9 | 13A | 0,16 | **XP17.1** | 100 | 6,40 |
| 12 | 13A | 0,16 | **XP18.1** | 100 | 6,40 |
| 13 | 13A | 0,16 | **XP19.1** | 100 | 6,40 |
| 15 | 13A | 0,16 | **XP20.1** | 100 | 6,40 |
| 27 | 13A | 0,16 | **XP21.1** | 100 | 6,40 |
| 42,5 | 13A | 0,16 | **XP22.1** | 100 | 6,40 |
| 47 | 13A | 0,16 | **XP23.1** | 100 | 6,40 |
| 55 | 13A | 0,16 | **AP34.1** | 100 | 6,45 |
| 70 | 13A | 0,16 | **AP35.1** | 100 | 7,50 |
| 90 | 13A | 0,16 | **AP36.1** | 100 | 10,45 |
| 110 | 13A | 0,16 | **AP37.1** | 100 | 13,75 |
| 125 | 13A | 0,16 | **AP38.1** | 100 | 17,00 |
| 150 | 13A | 0,16 | **AP39.1** | 100 | 22,55 |
| 185 | 13A | 0,16 | **AP40.1** | 100 | 31,50 |
| 240 | 13A | 0,16 | **AP41.1** | 100 | 63,45 |

**Type 14A**
**Slow filtration time**, filtration speed acc. to DIN 53137: 100 s
Surface weight: 84 g/m², retention range: 3-5 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | 14A | 0,15 | **AP42.1** | 100 | 6,45 |
| 70 | 14A | 0,15 | **AP43.1** | 100 | 7,45 |
| 90 | 14A | 0,15 | **AP44.1** | 100 | 10,45 |
| 110 | 14A | 0,15 | **AP45.1** | 100 | 13,75 |
| 125 | 14A | 0,15 | **AP46.1** | 100 | 17,05 |
| 150 | 14A | 0,15 | **AP47.1** | 100 | 22,55 |
| 185 | 14A | 0,15 | **AP48.1** | 100 | 31,70 |
| 240 | 14A | 0,15 | **AP49.1** | 100 | 63,45 |

**Type 15A**
**Equivalent blue band.**
**Very slow filtration time**, filtration speed according to DIN 53137: 180 s
Surface weight: 84 g/m², retention range: 2-3 µm

| Membrane ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 9 | 15A | 0,14 | **XP24.1** | 100 | 6,40 |
| 12 | 15A | 0,14 | **XP25.1** | 100 | 6,40 |
| 13 | 15A | 0,14 | **XP26.1** | 100 | 6,40 |
| 15 | 15A | 0,14 | **XP27.1** | 100 | 6,40 |
| 27 | 15A | 0,14 | **XP28.1** | 100 | 6,40 |
| 42,5 | 15A | 0,14 | **XP29.1** | 100 | 6,40 |
| 47 | 15A | 0,14 | **XP30.1** | 100 | 6,40 |
| 55 | 15A | 0,14 | **AP50.1** | 100 | 6,45 |
| 70 | 15A | 0,14 | **AP51.1** | 100 | 7,50 |
| 90 | 15A | 0,14 | **AP52.1** | 100 | 10,45 |
| 110 | 15A | 0,14 | **AP53.1** | 100 | 13,75 |
| 125 | 15A | 0,14 | **AP54.1** | 100 | 17,00 |
| 150 | 15A | 0,14 | **AP55.1** | 100 | 22,55 |
| 185 | 15A | 0,14 | **AP56.1** | 100 | 31,50 |
| 240 | 15A | 0,14 | **AP57.1** | 100 | 63,45 |



## Forceps for filter paper

Made of 18/10 stainless steel. For handling filter papers, cover slips and other flat objects. Width 12 mm, length 125 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C828.1** | 1 | 10,25 |

▶ Further forceps from page 308

# Filter papers for quantitative analysis






## Filter papers - round filters MN 640

By Macherey-Nagel. For **quantitative analysis.** Made of noble cellulose washed in acid and linters with α cellulose content of over 95 %. Ash content <0.01 %. Temperature stable up to +130 °C. gsm substance 85 g/m$^2$. Filtration time acc. to DIN 53137.

**Type MN 640 w**
**Quick filtering, filtration time 9 s. Equivalent black band.**
Soft filter, loosely structured. Ideal for coarses sediments such as ferric/aluminium hydroxide, bismuth/copper/ferric sulphide, nickel/diacetyldioxine, etc. Standard filter for Si-analysis. Retention range: >8 µm.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | MN 640 w | 0,2 | **EEX7.1** | 100 | 9,60 |
| 70 | MN 640 w | 0,2 | **A780.1** | 100 | 12,75 |
| 90 | MN 640 w | 0,2 | **A781.1** | 100 | 18,25 |
| 110 | MN 640 w | 0,2 | **A782.1** | 100 | 26,60 |
| 125 | MN 640 w | 0,2 | **A783.1** | 100 | 30,35 |
| 150 | MN 640 w | 0,2 | **A784.1** | 100 | 41,20 |
| 185 | MN 640 w | 0,2 | **EEX8.1** | 100 | 61,95 |
| 240 | MN 640 w | 0,2 | **EEX9.1** | 100 | 100,00 |
| 320 | MN 640 w | 0,2 | **EEY0.1** | 100 | 174,00 |

**Type MN 640 m**
**Medium filtering, filtration time 27 s. Equivalent white band.**
Ideal for sediments such as sulphides, lead chromate, calcium oxalate. Typical fields of application: Gravimetric analysis, quantitative analysis of residue and purification processes. Retention range: >4 µm.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | MN 640 m | 0,2 | **EEY1.1** | 100 | 9,60 |
| 70 | MN 640 m | 0,2 | **A785.1** | 100 | 12,75 |
| 90 | MN 640 m | 0,2 | **A786.1** | 100 | 18,25 |
| 110 | MN 640 m | 0,2 | **A787.1** | 100 | 26,60 |
| 125 | MN 640 m | 0,2 | **A788.1** | 100 | 30,35 |
| 150 | MN 640 m | 0,2 | **A789.1** | 100 | 41,20 |
| 185 | MN 640 m | 0,2 | **EEY2.1** | 100 | 61,70 |
| 240 | MN 640 m | 0,2 | **EEY3.1** | 100 | 100,00 |
| 320 | MN 640 m | 0,2 | **EEY4.1** | 100 | 174,00 |

**Type MN 640 d**
**Slow filtering, filtration time 140 s. Equivalent blue band.**
Dense filters for all fine and extra fine sediments. Retention range: >2 µm.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | MN 640 d | 0,2 | **EEY5.1** | 100 | 9,55 |
| 70 | MN 640 d | 0,2 | **A790.1** | 100 | 12,75 |
| 90 | MN 640 d | 0,2 | **A791.1** | 100 | 18,25 |
| 110 | MN 640 d | 0,2 | **A792.1** | 100 | 26,60 |
| 125 | MN 640 d | 0,2 | **A793.1** | 100 | 30,35 |
| 150 | MN 640 d | 0,2 | **A794.1** | 100 | 41,20 |
| 185 | MN 640 d | 0,2 | **EEY6.1** | 100 | 61,70 |
| 240 | MN 640 d | 0,2 | **EEY7.1** | 100 | 100,00 |
| 320 | MN 640 d | 0,2 | **EEY8.1** | 100 | 174,00 |


- ▶ Buchner funnels, see page 168
- ▶ Filtering flasks, see page 171
- ▶ Filter units, see page 499


## Hard filter papers

Ash-free for **quantitative analysis**.
α cellulose content of over 95 %, ash content approx. 0.002 %.
Made of high-purity acid washed cotton linter pulp and cellulose mixed with a small quantity consolidating resin. Free of minerals and metal ions. High stability and resistance, very high wet strength. Precipitates can be removed easily with no fibres.
For analytical applications, routine quantitative and gravimetric methods. Highly recommended for vacuum and pressure filtration, determination of metal ions, and filtration of acidic and alkaline solutions.
Resistant to sulphuric and nitric acids (up to 40 % at 50 °C) and alkalis (up to 10 % at 20 °C).

**Technical specifications:**

| Type | Herzberg filtration rate (s) | Retention range (µm) | Weight (g/m$^2$) | Thickness (mm) |
|---|---|---|---|---|
| **1505** | 50 | 12-25 | 88 | 0.17 |
| **1506** | 170 | 4-12 | 90 | 0.16 |
| **1507** | 600 | ≤2 | 90 | 0.14 |

**Type 1505, fast filtering**

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 50 | **NL27.1** | 100 | 24,65 |
| 70 | **NL28.1** | 100 | 25,60 |
| 90 | **NL29.1** | 100 | 27,90 |
| 110 | **NL30.1** | 100 | 32,80 |
| 125 | **NL31.1** | 100 | 36,45 |
| 150 | **NL32.1** | 100 | 45,70 |
| 185 | **NL33.1** | 100 | 76,90 |
| 240 | **NL34.1** | 100 | 125,80 |

**Type 1506, medium fast filtering**

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 50 | **NL35.1** | 100 | 24,70 |
| 70 | **NL36.1** | 100 | 26,05 |
| 90 | **NL37.1** | 100 | 27,90 |
| 110 | **NL38.1** | 100 | 32,80 |
| 125 | **NL39.1** | 100 | 36,45 |
| 150 | **NL40.1** | 100 | 46,15 |
| 185 | **NL41.1** | 100 | 77,20 |
| 240 | **NL42.1** | 100 | 125,80 |

**Type 1507, slow filtering**

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 70 | **NL44.1** | 100 | 26,05 |
| 90 | **NL45.1** | 100 | 27,90 |
| 110 | **NL46.1** | 100 | 32,80 |
| 125 | **NL47.1** | 100 | 36,45 |
| 150 | **NL48.1** | 100 | 46,05 |
| 185 | **NL49.1** | 100 | 77,40 |
| 240 | **NL50.1** | 100 | 125,80 |

# Special filter papers




## Phosphate-free round filters

By Macherey-Nagel. Phosphate-free filter papers for soil analysis and P-analysis in iron and steel works.

**Technical specifications:**

| Filtertype | Speed acc. to DIN 53137 (s) | Thickness (mm) | Weight (g/m²) |
|---|---|---|---|
| **MN 619 G** | 100 | 0.17 | 75 |
| **MN 616 G** | 22 | 0.20 | 85 |
| **MN 617 G** | 9 | 0.20 | 85 |

**Type MN 619 G, slow filtering**

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | MN 619 G | 0,17 | **HK04.1** | 100 | 4,70 |
| 70 | MN 619 G | 0,17 | **HK05.1** | 100 | 4,70 |
| 90 | MN 619 G | 0,17 | **HK06.1** | 100 | 5,95 |
| 110 | MN 619 G | 0,17 | **HK07.1** | 100 | 8,20 |
| 125 | MN 619 G | 0,17 | **HK08.1** | 100 | 9,25 |
| 150 | MN 619 G | 0,17 | **HK09.1** | 100 | 12,30 |
| 185 | MN 619 G | 0,17 | **HK10.1** | 100 | 16,80 |
| 240 | MN 619 G | 0,17 | **HK11.1** | 100 | 26,70 |
| 320 | MN 619 G | 0,17 | **HK12.1** | 100 | 42,90 |
| 400 | MN 619 G | 0,17 | **HK13.1** | 100 | 73,90 |

**Type MN 616 G, medium filtering**

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | MN 616 G | 0,20 | **HK14.1** | 100 | 5,95 |
| 70 | MN 616 G | 0,20 | **HK15.1** | 100 | 5,95 |
| 90 | MN 616 G | 0,20 | **HK16.1** | 100 | 8,20 |
| 110 | MN 616 G | 0,20 | **HK17.1** | 100 | 10,25 |
| 125 | MN 616 G | 0,20 | **HK18.1** | 100 | 12,40 |
| 150 | MN 616 G | 0,20 | **HK19.1** | 100 | 15,90 |
| 185 | MN 616 G | 0,20 | **HK20.1** | 100 | 21,90 |
| 240 | MN 616 G | 0,20 | **HK21.1** | 100 | 36,00 |
| 320 | MN 616 G | 0,20 | **HK22.1** | 100 | 62,40 |
| 400 | MN 616 G | 0,20 | **HK23.1** | 100 | 105,00 |

**Type MN 617 G, quick filtering**

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | MN 617 G | 0,20 | **HK24.1** | 100 | 5,95 |
| 70 | MN 617 G | 0,20 | **HK25.1** | 100 | 5,95 |
| 90 | MN 617 G | 0,20 | **HK26.1** | 100 | 7,90 |
| 110 | MN 617 G | 0,20 | **HK27.1** | 100 | 9,95 |
| 125 | MN 617 G | 0,20 | **HK28.1** | 100 | 12,20 |
| 150 | MN 617 G | 0,20 | **HK29.1** | 100 | 15,50 |
| 185 | MN 617 G | 0,20 | **HK30.1** | 100 | 21,90 |
| 240 | MN 617 G | 0,20 | **HK31.1** | 100 | 36,00 |
| 320 | MN 617 G | 0,20 | **HK32.1** | 100 | 62,40 |
| 400 | MN 617 G | 0,20 | **HK33.1** | 100 | 105,00 |




## Phosphate-free folded filters MN 280 ¼

By Macherey-Nagel. Folded filters with high purification and smooth surface, made of acid-washed and phosphate-free filter papers. For analysis of available plant nutrients (Mg, Mn, Cu, Zn, Co, B, Mo) and soil analysis. Slow filtering.

**Technical specifications:**

| Type | Speed acc. to DIN 53137 (s) | Thickness (mm) | Weight (g/m²) |
|---|---|---|---|
| **MN 280 ¼** | 100 | 0.18 | 75 |

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 110 | MN 280 ¼ | 0,18 | **HK34.1** | 100 | 50,00 |
| 125 | MN 280 ¼ | 0,18 | **HK35.1** | 100 | 50,00 |
| 150 | MN 280 ¼ | 0,18 | **HK36.1** | 100 | 50,00 |
| 185 | MN 280 ¼ | 0,18 | **HK37.1** | 100 | 66,20 |
| 240 | MN 280 ¼ | 0,18 | **HK38.1** | 100 | 85,60 |




## Folded filters for analysing fats MN 615 ff ¼

By Macherey-Nagel. For analysing fats. Filter papers are practically free from fats and resins. Ether-soluble residue < 0.1 mg in filters with ∅ 270 mm. Medium filtering.

**Technical specifications:**

| Type | Surface | Weight (g/m²) |
|---|---|---|
| **MN 615 ff ¼** | smooth | 70 |

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 110 | MN 615 ff ¼ | 0,16 | **HK80.1** | 100 | 55,10 |
| 125 | MN 615 ff ¼ | 0,16 | **HK81.1** | 100 | 55,10 |
| 150 | MN 615 ff ¼ | 0,16 | **HK82.1** | 100 | 55,10 |
| 185 | MN 615 ff ¼ | 0,16 | **HK83.1** | 100 | 62,30 |
| 240 | MN 615 ff ¼ | 0,16 | **HK84.1** | 100 | 97,00 |
| 270 | MN 615 ff ¼ | 0,16 | **HK85.1** | 100 | 112,00 |

# Special filter papers




## Nitrogen poor filter papers

By Macherey-Nagel. With low nitrogen content.
Ideal for nitrogen and protein analyses.
For analysis of the dry substance and for filtration of samples for all N-parameters. Approved by the EBC (European Brewery Convention) for malt analysis in breweries and malt houses.

**Technical specifications:**

| Type | Surface | Speed acc. to DIN 53137 (s) | Weight (g/m²) |
|---|---|---|---|
| **MN 614 ¼** | grained | 25 | 75 |
| **MN 620 ¼** | grained | 25 | 75 |

**Type MN 614 ¼, medium filtering**
**Bleached.** Suitable for filtration of essential oils, emulsions, essences, etc.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 55 | MN 614 ¼ | 0,25 | **HK57.1** | 100 | 23,40 |
| 70 | MN 614 ¼ | 0,25 | **HK58.1** | 100 | 23,40 |
| 90 | MN 614 ¼ | 0,25 | **HK59.1** | 100 | 23,40 |
| 110 | MN 614 ¼ | 0,25 | **HK60.1** | 100 | 23,40 |
| 125 | MN 614 ¼ | 0,25 | **HK61.1** | 100 | 23,40 |
| 150 | MN 614 ¼ | 0,25 | **HK62.1** | 100 | 23,40 |
| 185 | MN 614 ¼ | 0,25 | **HK63.1** | 100 | 27,30 |
| 240 | MN 614 ¼ | 0,25 | **HK64.1** | 100 | 40,90 |
| 320 | MN 614 ¼ | 0,25 | **HK65.1** | 100 | 57,70 |
| 400 | MN 614 ¼ | 0,25 | **HK66.1** | 100 | 92,40 |

**Type MN 620 ¼**
**Unbleached.** For ex. for removing carbonic acid before analysis.

| ∅ (mm) | Type | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 70 | MN 620 ¼ | 0,26 | **HK67.1** | 100 | 19,20 |
| 90 | MN 620 ¼ | 0,26 | **HK68.1** | 100 | 19,20 |
| 110 | MN 620 ¼ | 0,26 | **HK69.1** | 100 | 19,20 |
| 125 | MN 620 ¼ | 0,26 | **HK70.1** | 100 | 19,20 |
| 150 | MN 620 ¼ | 0,26 | **HK71.1** | 100 | 19,20 |
| 185 | MN 620 ¼ | 0,26 | **HK72.1** | 100 | 23,40 |
| 240 | MN 620 ¼ | 0,26 | **HK73.1** | 100 | 31,70 |
| 320 | MN 620 ¼ | 0,26 | **HK74.1** | 100 | 47,10 |
| 385 | MN 620 ¼ | 0,26 | **HK75.1** | 100 | 65,60 |
| 400 | MN 620 ¼ | 0,26 | **HK76.1** | 100 | 73,40 |



## Rotilabo®-blotting paper blocks

Highly absorptive paper for removing excess liquid from small samples or microscopic preparations.
Surface weight 73 g/m². Dimensions: L 100 x W 37 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XP50.1** | 1 block à 50 sheets | 5,15 |



## Phase separating paper - round filters MN 616 WA

By Macherey-Nagel. Silicone-impregnated paper for **qualitative analysis**.
The hydrophobic surface separates water from non water-miscible liquids.
Suitable for filtration of portions. Surface weight: 85 g/m².
Temperature stable to +120 °C. Mostly solvent consistant.

| Membrane ∅ (mm) | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 125 | 0,2 | **1284.1** | 100 | 22,60 |



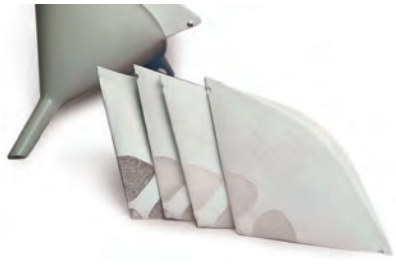
## Rotilabo®-activated carbon filter papers

Filter papers for clear filtration and brightening of dark urine for polarimetric determination of sugar, clear filtration of dyed liquids as well as filtration of galvanic baths.

Proportion of activated carbon 35 %, ash content 0.06 %, no binding medium.

Filtering speed in accordance with DIN 53137: 65 s
Retention: 5 µm
Grammage: 160 g/m²
Thickness: 0.42 mm

| ∅ (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 55 | round | **HC15.1** | 100 | 9,70 |
| 70 | round | **HC14.1** | 100 | 12,40 |
| 90 | round | **HC16.1** | 100 | 12,85 |
| 110 | round | **HC17.1** | 100 | 31,35 |
| 140 | round | **HC18.1** | 100 | 31,35 |
| 150 | round | **HC19.1** | 100 | 31,35 |
| 185 | round | **HC20.1** | 100 | 38,25 |
| 210 | round | **HC21.1** | 100 | 63,70 |



## Disposable sieves

Made of water repellant card with a nylon screen fabric.
For liquids of different consistencies, e.g. paints and lacquers.
Height 12 cm, ∅ top approx. 16 cm.

| Mesh size (µm) | Mesh type | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 125 | super fine | blue | **TA93.1** | 125 | 30,00 |
| 150 | extra-fine | turquoise | **AXL8.1** | 125 | 30,65 |
| 190 | fine | yellow | **TA92.1** | 125 | 27,65 |
| 260 | medium | orange | **TA91.1** | 125 | 26,85 |
| 1000 | coarse | white | **AXL9.1** | 125 | 30,65 |

# Special filter papers



## Rotilabo®-germ testing paper

Folded, moisture-resistant germ testing paper for carrying out germ resistance tests, e.g. for root vegetable seeds.
Grammage: 160 g/m². Format: width 110 mm, fold depth 20 mm, double folds (50 units), length 2 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AT14.1** | 1 | 4,10 |




## Cotton wool

Made of 100 % cotton, perforated. For filtering and cleaning.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| perforated | **0571.1** | 1,1 kg (14 x 80 g) | 24,65 |
| not perforated | **PE40.1** | 700 g (7 x 100 g) | 13,95 |



## Rotilabo®-test flakes

Untreated cellulose flakes for impregnating with active ingredient solution. Suitable for determining resistance to antiobiotics or chemotherapeutic media in bacteria culture and pathogenic organisms.
Made of 100 % cotton linter, good absorption, grammage: 290 g/m², thickness: 0.75 mm.

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6 | **KA07.1** | 1000 | 17,35 |
| 9 | **KA08.1** | 1000 | 22,10 |
| 12 | **KA09.1** | 1000 | 28,85 |
| 12,7 | **KA10.1** | 1000 | 28,90 |
| 25 | **KA11.1** | 1000 | 73,65 |



## Rotilabo®-absorbent papers

**Bench-Top Protection Paper**

Highly absorbent white paper, coated on one side with water-resistant PE. Suitable as a protective working surface for lab tops or for lining cupboards and drawers. Protects surfaces against chemicals, dirt and contamination. Also suitable for analytical and isotope laboratories.

**Weight:** 144 g/m², absorbency approx. 250-280 g/m²

| Cut | Size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Sheets | 48 cm x 60 cm | **1941.1** | 100 | 176,00 |
| Roll | 48 cm x 100 m | **1959.1** | 1 | 259,00 |
| Roll | 60 cm x 100 m | **1006.1** | 1 | 315,00 |

**Weight:** 125 g/m², absorbency approx. 170 g/m²

| Cut | Size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Sheets | 42 cm x 52 cm | **HY90.1** | 100 | 62,50 |
| Sheets | 46 cm x 57 cm | **HY91.1** | 100 | 67,60 |
| Sheets | 50 cm x 60 cm | **HY92.1** | 100 | 90,70 |
| Roll | 49 cm x 50 m | **HY93.1** | 1 | 90,50 |
| Roll | 60 cm x 50 m | **HY94.1** | 1 | 108,60 |
| Roll | 92 cm x 50 m | **HY95.1** | 1 | 145,15 |

**Weight:** 225 g/m², absorbency approx. 200 g/m²

| Cut | Size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Sheets | 46 cm x 57 cm | **HY96.1** | 50 | 67,75 |
| Sheets | 50 cm x 60 cm | **HY97.1** | 50 | 61,90 |
| Roll | 49 cm x 50 m | **HY98.1** | 1 | 169,85 |
| Roll | 60 cm x 50 m | **HY99.1** | 1 | 206,40 |
| Roll | 92 cm x 50 m | **KA00.1** | 1 | 293,50 |



## Rotilabo®-activated carbon filters

For filtration of organic solutions and acids, ambient air and various gases.
Filter material: Activated carbon granulate. Housing made of **PC**.
Temperature stable up to max. 70 °C, pressure resistant up to max. 2 bar.
For tube connections with inner-∅ 6.3 mm. Dimensions: ∅ 26 x 82 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HC24.1** | 10 | 94,75 |

▶ Blotting papers see chapter electrophoresis!

# Extraction thimbles





## Extraction thimbles, cellulose

By Macherey-Nagel. For Soxhlet and other extractions. Also suitable for extracting solid or liquid particles from the air and from gases.
Extraction thimbles as per DIN 12449 are suitable for extractors according to DIN 12602 and 12604.

* (acc. to DIN 12449)

| Outside ∅ (mm) | Inside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 23 | 20 | 80 | **H202.1** | 25 | 71,00 |
| 25* | 22 | 80 | **H203.1** | 25 | 71,00 |
| 26 | 23 | 100 | **H204.1** | 25 | 71,00 |
| 27 | 24 | 60 | **H205.1** | 25 | 71,00 |
| 31 | 28 | 80 | **H206.1** | 25 | 71,00 |
| 32 | 29 | 100 | **H207.1** | 25 | 83,20 |
| 33 | 30 | 80 | **H208.1** | 25 | 71,10 |
| 36* | 33 | 94 | **H209.1** | 25 | 85,30 |
| 33 | 30 | 100 | **H210.1** | 25 | 85,30 |
| 34 | 31 | 118 | **H211.1** | 25 | 102,00 |
| 36* | 33 | 205 | **L867.1** | 25 | 139,00 |
| 52* | 48 | 230 | **L868.1** | 25 | 186,00 |
| 61* | 57 | 315 | **L869.1** | 25 | 278,00 |



## Glass fibre extraction thimbles type MN 649 R

By Macherey-Nagel. Micro glass fibres consist of binder-free borosilicate glass, short term temperature stability up to 500 °C. The thimbles have high chemical resistance, a very high separation capacity and a very high particle retention capacity.
Suitable for emission measurement at high temperatures and for the separation of dust particles or aerosols from gases or air flows.
Extraction thimbles according to DIN 12449 are suitable for extractors with defined nominal volumes in accordance with DIN 12602 and 12604.

Extraction thimbles with sealing collar and two finger recesses on opposite sides of the collar, for dust analysis in industrial gases, exhaust gases and room air.

| Inside ∅ (mm) | Height (mm) | Collar ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 27 | 55 | 50 | **CYL8.1** | 25 | 172,00 |
| 79 | 155 | 102 | **CYL9.1** | 25 | 497,00 |


- ▶ Funnels see page 163
- ▶ Filter stands see page 168
- ▶ Soxhlet extractors see page 155


## Glass fibre extraction thimbles type MN 649

By Macherey-Nagel. Micro glass fibres consist of binder-free borosilicate glass, short term temperature stability up to 500 °C. The thimbles have high chemical resistance, a very high separation capacity and a very high particle retention capacity.
Suitable for emission measurement at high temperatures and for the separation of dust particles or aerosols from gases or air flows.
Extraction thimbles according to DIN 12449 are suitable for extractors with defined nominal volumes in accordance with DIN 12602 and 12604.

*(acc. to DIN 12449)

| Outside ∅ (mm) | Inside ∅ (mm) | Height (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 17 | 15 | 50 | 1,0 | **CYH8.1** | 25 | 131,00 |
| 18 | 16 | 100 | 1,0 | **CYH9.1** | 25 | 131,00 |
| 25* | 22 | 80 | 1,5 | **CYK0.1** | 25 | 131,00 |
| 26 | 23 | 90 | 1,5 | **CYK1.1** | 25 | 131,00 |
| 26 | 23 | 100 | 1,5 | **CYK2.1** | 25 | 131,00 |
| 30 | 27 | 80 | 1,5 | **CYK3.1** | 25 | 131,00 |
| 31 | 28 | 60 | 1,5 | **CYK4.1** | 25 | 131,00 |
| 31 | 28 | 120 | 1,5 | **CYK5.1** | 25 | 155,00 |
| 33 | 30 | 150 | 1,5 | **CYK6.1** | 25 | 192,00 |
| 36 | 33 | 80 | 1,5 | **CYK7.1** | 25 | 131,00 |
| 36 | 33 | 90 | 1,5 | **CYK8.1** | 25 | 158,00 |
| 36* | 33 | 94 | 1,5 | **CYK9.1** | 25 | 158,00 |
| 36 | 33 | 100 | 1,5 | **CYL0.1** | 25 | 158,00 |
| 36 | 33 | 118 | 1,5 | **CYL1.1** | 25 | 191,00 |
| 36* | 33 | 205 | 1,5 | **CYL2.1** | 25 | 257,00 |
| 36 | 35 | 150 | 1,5 | **CYL3.1** | 25 | 224,00 |
| 47 | 43 | 123 | 2,0 | **CYL4.1** | 25 | 224,00 |
| 52* | 48 | 230 | 2,0 | **CYL5.1** | 25 | 342,00 |
| 61* | 57 | 315 | 2,0 | **CYL6.1** | 25 | 515,00 |
| 79 | 75 | 330 | 2,0 | **CYL7.1** | 25 | 585,00 |



## Rotisol®

Universal alcoholic solvent, extraction agent, mobile phase, and elution medium, for dehydrating in histology, recrystallisation, etc.
Mixable with water.
Ingredients:
dehydrated ethanol ~99 % · acetone ~5 % · methyl ethyl ketone ~1 % · Flp 12 °C · Kp 56-80 °C · D ~0.79 · highly flammable.

**Danger** H225-H319-EUH066

| Art. No. | Pack Qty. | € |
|---|---|---|
| **7917.3** | 1 l | n. a. |
| **7917.1** | 2,5 l | n. a. |
| **7917.2** | 25 l | n. a. |

# Analytical sieve machines



## Analytical sieve machines, HAVER EML 200 Premium series

By Haver & Boecker. For sieve analysis in accordance with ISO 2591-1. Measurement range 20 µm-125 mm. Suitable for analytical sieves with ∅ 50 to 203 mm.

- Fast and easy to operate
- Amplitude is adjustable in 0.1 mm increments
- Intermittent operation or continuous operation
- Memory for storing various sieve modes (49 memory slots)
- Ethernet interface
- Optional TwinNut rapid clamping system allows easier and faster replacement of sieves without time-consuming screwing

**Additional features of EML 200 Premium Remote model:**
Unit with protection class IP 54 and separate control unit for wall mounting allows the additional option of wet sieving.

**Technical specifications:**

| Type | EML 200 Premium | EML 200 Premium Remote |
|---|---|---|
| Suitable for dry sieving | yes | yes |
| Suitable for wet sieving | no | yes |
| Type of motion | Three-dimensional | |
| Shaking amplitude (mm) | 0.1 to 3.0 | |
| Timer (min) | 1 to 99 or continuous operation | |
| Intermittent operation (s) | 1 to 99 | |
| Min. load capacity | 3 analytical sieves with usable height 50 mm and 1 sieve pan | |
| Max. load capacity | 9 analytical sieves with usable height 50 mm or 8.7 kg sieve stack weight | |
| Dimensions W x D x H (mm) | 295 x 385 x 880 | |
| Weight (kg) | 38 | |
| Power supply | 110-230 V, 50-60 Hz | |

① **Analytical sieve machines EML 200 Premium**
**Delivery incl.** clamping system (2 M20 guide bars, 660 mm long, 2 tensioning nuts) as well as machine cover with window.
**Delivery without** sieve pan (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| EML 200 Premium with Classic clamping system | **ECE6.1** | 1 | 2768,15 |
| EML 200 Premium with rapid TwinNut clamping system | **ECE7.1** | 1 | 2913,25 |

② **Analytical sieve machines EML 200 Premium Remote**
**Delivery incl.** separate control unit with wall mount and connecting cable, clamping system (2 M20 guide bars, 660 mm long, 2 tensioning nuts), machine cover with full-cone nozzle and window, water plug with socket and PVC water hose (3 m).
**Delivery without** sieve pan (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| EML 200 Premium Remote with Classic clamping system | **ECE8.1** | 1 | 3139,00 |
| EML 200 Premium Remote with TwinNut rapid clamping system | **ECE9.1** | 1 | 3284,15 |

**Accessories for dry sieving**
(EML 200 Premium and Premium Remote)

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sieve pan for dry sieving, ∅ 200 x H 50 mm, stainless steel | **ECC7.1** | 1 | 49,20 |
| Replacement machine cover with window | **ECE3.1** | 1 | 175,25 |

**Accessories for wet sieving**
(EML 200 Premium Remote only)

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sieve pan with outlet and PVC hose for wet sieving | **ECH0.1** | 1 | 156,95 |
| Replacement machine cover with full-cone nozzle and window | **ECH1.1** | 1 | 306,40 |
| PVC hose (½″), 3 m | **ECH2.1** | 1 | 11,90 |

**Spare parts for clamping systems**
(EML 200 Premium and Premium Remote)

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Replacement guide bar Classic / TwinNut, 660 mm, M20 | **ECH3.1** | 1 | 82,80 |
| Replacement tensioning nut for Classic system | **ECH4.1** | 1 | 61,30 |
| Replacement tensioning nut for TwinNut system | **ECH5.1** | 1 | 133,30 |



## Analytical sieve machine HAVER EML 200 Pure

By Haver & Boecker. For sieve analysis in accordance with ISO 2591-1. Standard model for dry sieving and fast and easy operation. Measurement range 20 µm-125 mm. Suitable for analytical sieves with ∅ 50 to 203 mm.

- Two amplitudes can be selected for coarse or fine materials
- Preset interval (10 s)
- Digital timer
- Anodised aluminium housing

**Technical specifications:**

| | |
|---|---|
| Type of motion | Three-dimensional |
| Shaking amplitude | 2.2 mm (coarse) or 0.9 mm (fine) |
| Timer | 1 min or continuous operation |
| Min. load capacity | 3 analytical sieves with usable height 50 mm and 1 sieve pan |
| Max. load capacity | 9 analytical sieves with usable height 50 mm or 8.7 kg sieve stack weight |
| Dimensions (W x D x H) | 295 x 385 x 900 mm |
| Weight | 38 kg |
| Power supply | 110-230 V, 50-60 Hz |

**Delivery incl.** Classic "eco" clamping system (2 M16 guide bars, 660 mm long, 2 tensioning nuts) and machine cover with window.
**Delivery without** sieve pan (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ECE2.1** | 1 | 2219,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| Sieve pan for dry sieving, ∅ 200 x H 50 mm, stainless steel | **ECC7.1** | 1 | 49,20 |
| Replacement machine cover with window | **ECE3.1** | 1 | 175,25 |
| Replacement Classic "eco" guide bar, 660 mm, M16 | **ECE4.1** | 1 | 60,20 |
| Replacement tensioning nut for Classic "eco" system | **ECE5.1** | 1 | 48,40 |

# Analytical sieves



## Analytical sieves ∅ 200 mm

By Haver & Boecker. Sieve frame fabricated in stainless steel with stainless steel wire mesh base. Compliant with DIN ISO 3310, ASTM E11, ISO 565, BS 410, etc. Suitable for testing granulates, powders, plastics, silicon, dyes, metal filings etc.

- Strong sieve construction for long life
- Sieve mesh retains excellent tension, even during intensive use
- Smooth frame surface avoids cross contamination
- Usable height 50 mm

**Delivery incl.** PVC sealing ring and Certificate of Compliance 2.1 in accordance with DIN EN 10 204.

| Mesh size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,02 | **EAE7.1** | 1 | 547,70 |
| 0,025 | **EAE8.1** | 1 | 321,95 |
| 0,032 | **EAE9.1** | 1 | 190,55 |
| 0,036 | **EAH0.1** | 1 | 183,65 |
| 0,038 | **EAH1.1** | 1 | 184,40 |
| 0,04 | **EAH2.1** | 1 | 131,05 |
| 0,045 | **EAH3.1** | 1 | 131,40 |
| 0,05 | **EAH4.1** | 1 | 106,90 |
| 0,053 | **EAH5.1** | 1 | 106,90 |
| 0,056 | **EAH6.1** | 1 | 106,90 |
| 0,063 | **EAH7.1** | 1 | 97,15 |
| 0,071 | **EAH8.1** | 1 | 97,15 |
| 0,075 | **EAH9.1** | 1 | 97,15 |
| 0,08 | **EAK0.1** | 1 | 97,15 |
| 0,09 | **EAK1.1** | 1 | 97,15 |
| 0,1 | **EAK2.1** | 1 | 97,15 |
| 0,106 | **EAK3.1** | 1 | 97,15 |
| 0,112 | **EAK4.1** | 1 | 97,15 |
| 0,125 | **EAK5.1** | 1 | 97,15 |
| 0,14 | **EAK6.1** | 1 | 96,75 |
| 0,15 | **EAK7.1** | 1 | 97,15 |
| 0,16 | **EAK8.1** | 1 | 97,15 |
| 0,18 | **EAK9.1** | 1 | 97,15 |
| 0,2 | **EAL0.1** | 1 | 97,15 |
| 0,212 | **EAL1.1** | 1 | 97,15 |
| 0,224 | **EAL2.1** | 1 | 97,15 |
| 0,25 | **EAL3.1** | 1 | 97,15 |
| 0,28 | **EAL4.1** | 1 | 97,15 |
| 0,3 | **EAL5.1** | 1 | 97,15 |
| 0,315 | **EAL6.1** | 1 | 97,15 |
| 0,355 | **EAL7.1** | 1 | 97,15 |
| 0,4 | **EAL8.1** | 1 | 97,15 |
| 0,425 | **EAL9.1** | 1 | 97,15 |
| 0,45 | **EAN0.1** | 1 | 97,15 |
| 0,5 | **EAN1.1** | 1 | 97,15 |
| 0,56 | **EAN2.1** | 1 | 97,15 |
| 0,6 | **EAN3.1** | 1 | 97,15 |
| 0,63 | **EAN4.1** | 1 | 97,15 |
| 0,71 | **EAN5.1** | 1 | 97,15 |
| 0,8 | **EAN6.1** | 1 | 97,15 |
| 0,85 | **EAN7.1** | 1 | 97,15 |
| 0,9 | **EAN8.1** | 1 | 97,15 |
| 1 | **EAN9.1** | 1 | 98,90 |
| 1,12 | **EAP0.1** | 1 | 98,90 |
| 1,18 | **EAP1.1** | 1 | 98,90 |
| 1,25 | **EAP2.1** | 1 | 98,90 |
| 1,4 | **EAP3.1** | 1 | 98,90 |
| 1,6 | **EAP4.1** | 1 | 98,90 |
| 1,7 | **EAP5.1** | 1 | 98,90 |
| 1,8 | **EAP6.1** | 1 | 98,90 |
| 2 | **EAP7.1** | 1 | 98,90 |
| 2,24 | **EAP8.1** | 1 | 98,90 |
| 2,36 | **EAP9.1** | 1 | 98,90 |
| 2,5 | **EAT0.1** | 1 | 98,90 |
| 2,8 | **EAT1.1** | 1 | 113,95 |
| 3,15 | **EAT2.1** | 1 | 113,95 |
| 3,35 | **EAT3.1** | 1 | 113,95 |
| 3,55 | **EAT4.1** | 1 | 114,65 |
| 4 | **EAT5.1** | 1 | 113,95 |
| 4,5 | **EAT6.1** | 1 | 113,95 |
| 4,75 | **EAT7.1** | 1 | 113,95 |
| 5 | **EAT8.1** | 1 | 113,95 |
| 5,6 | **EAT9.1** | 1 | 113,95 |
| 6,3 | **EAX0.1** | 1 | 113,95 |
| 6,7 | **EAX1.1** | 1 | 113,95 |
| 7,1 | **EAX2.1** | 1 | 114,30 |
| 8 | **EAX3.1** | 1 | 113,95 |
| 9 | **EAX4.1** | 1 | 114,30 |
| 9,5 | **EAX5.1** | 1 | 114,30 |
| 10 | **EAX6.1** | 1 | 113,95 |
| 11,2 | **EAX7.1** | 1 | 122,00 |
| 12,5 | **EAX8.1** | 1 | 122,00 |
| 13,2 | **EAX9.1** | 1 | 122,00 |
| 14 | **EAY0.1** | 1 | 122,00 |
| 16 | **EAY1.1** | 1 | 121,60 |
| 18 | **EAY2.1** | 1 | 122,00 |
| 19 | **EAY3.1** | 1 | 122,00 |
| 20 | **EAY4.1** | 1 | 121,95 |
| 22,4 | **EAY5.1** | 1 | 129,45 |
| 25 | **EAY6.1** | 1 | 129,05 |
| 26,5 | **EAY7.1** | 1 | 129,05 |
| 28 | **EAY8.1** | 1 | 129,05 |
| 31,5 | **EAY9.1** | 1 | 129,45 |
| 35,5 | **ECA0.1** | 1 | 129,05 |
| 37,5 | **ECA1.1** | 1 | 129,05 |
| 40 | **ECA2.1** | 1 | 128,95 |
| 45 | **ECA3.1** | 1 | 129,45 |
| 50 | **ECA4.1** | 1 | 129,05 |
| 53 | **ECA5.1** | 1 | 129,05 |
| 56 | **ECA6.1** | 1 | 129,05 |
| 63 | **ECA7.1** | 1 | 129,05 |
| 71 | **ECA8.1** | 1 | 129,05 |
| 75 | **ECA9.1** | 1 | 129,05 |
| 80 | **ECC0.1** | 1 | 129,05 |
| 90 | **ECC1.1** | 1 | 129,05 |
| 100 | **ECC2.1** | 1 | 129,05 |
| 106 | **ECC3.1** | 1 | 129,05 |
| 112 | **ECC4.1** | 1 | 129,05 |
| 125 | **ECC5.1** | 1 | 129,05 |

**Accessories:**

| | | | |
|---|---|---|---|
| Sieve lid ∅ 200 mm, stainless steel | **ECC6.1** | 1 | 130,45 |
| Sieve pan for dry sieving, ∅ 200 x H 50 mm, stainless steel | **ECC7.1** | 1 | 49,20 |
| Intermediate pan ∅ 200 x H 50 mm, stainless steel | **ECC8.1** | 1 | 87,05 |
| Adapter ring ∅ 200 x H 50 mm, stainless steel | **ECC9.1** | 1 | 79,25 |
| Replacement PVC sealing ring | **ECE0.1** | 1 | 4,85 |
| Viton sealing ring (-15 to 200 °C) | **ECE1.1** | 1 | 10,70 |



## Distilling unit Monodest

Tabletip unit. For producing distilled water from tap water. Ideal for schools, pharmacies or firms with relatively low water consumption.

**Technical specifications:**

| Type | Monodest |
|---|---|
| Power consumption | 2.500 W |
| Distillate amount | 3.5 l/h |
| Cooling water amount | 45 l/h |
| Conductivity distillate | 1.5 µS/cm |
| Distillate temperature | 80 °C |
| Heating element | Stainless steel |
| Glass parts | DURAN® |
| Connection | olive ∅ 12 mm |
| Weight | 3.5 kg |
| In acc. with DAB norm | no |
| Voltage | 230 V |
| Dimensions (W x D x H) | 160 x 220 x 700 mm |

**Delivery incl.** hose set.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y367.1** * | 1 | 1284,65 |

* Longer delivery times possible. Please check with our Sales Department.



## Compact ion exchanger Destillo 2

For wall attachment. Ideal for deionizing water (high purity water quality 0.1-20 µS) in small quantities.

- Very effective, handy and dependable
- Capacity approx. 50 l water per h
- Capacity of cartridge is dependent on water grade: at 10° d app. 320 l, at 20° d approx. 160 l water. Conductivity range up to 100 µS/cm
- Current 220 V/50Hz
- Dimensions: W 115 x H 520 x D 115 mm
- Extension cord 150 cm, tap water supply with ¾″ - screw thread 150 cm, plastic outlet hose 100 cm

**Delivery incl.** cartridge, hoses, wall attachment and instruction manual.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0092.1** | 1 | 317,15 |

## Disposable cartridge D 2

Pretreated against algae growth. Length 380 mm, ∅ 90 mm. Weight app. 1400 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0093.1** | 1 | 73,00 |



## Flow meters with propeller

With 2 hose connectors, length 25 mm, ∅ 6-11 mm.
Minimum flow 150 ml/min. Pressure load max. 2 bar.
Dimensions: W 90 x H 40 x D 15 mm. Weight 12 g.

**Made of styrene-acrylonitrile (SAN)**
For water and similar liquids. Temperature stable up to +30 °C.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **1736.1** | 1 | 11,65 |
| red | **E486.1** | 1 | 11,40 |
| black | **E487.1** | 1 | 11,40 |

# Water recycling



## Ion exchange cartridges plastic design

By Thermo. **Pressureless.**

Provide completely demineralized water using a mixed-bed resin ion exchanger. Can be attached directly to a tap water supply. Ideal for treating small amounts of water and for supplying autoclaves, sterilizers etc. with deionized water.

- 100 % utilization of capacity
- Constantly good water quality

**Technical specifications:**

| Model | DI 425 | DI 750 |
|---|---|---|
| Cartridge | disposable | regenerative |
| Rate of flow (l/h) | 50 | 100 |
| Capacity at 10° total salt content (l) | 425 | 750 |
| High-purity water quality (µS/cm) | 0.1 - 20 | |
| Max. water temp. (°C) | 30 | |
| Current | 230 V, 50/60 Hz | |
| Material | polyethylene | |
| Dimensions ∅ x H (mm) | 100 x 600 | 175 x 480 |
| Weight approx. (kg) | 3 | 7 |
| Connection | R $^{3}/_{4}$″ | |

**Delivery incl.** cartridge, tubing set and analogue conductivity meter.
Measuring range 0.1-50 µS/cm.
Model DI 425 additional incl. wall attachment.

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| DI 425 | **Y360.1** | 1 | 291,35 |
| DI 750 | **Y362.1** | 1 | 395,60 |

## Spare cartridges for ion exchange cartridges DI 425 and DI 750

| For model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| DI 425 | **Y361.1** | 1 | 76,90 |
| DI 750 | **Y363.1** | 1 | 227,90 |



## Ion exchanger cartridges made of stainless steel

By Thermo. **Pressure-stable** (max. 10 bar) ion exchanger cartridges made of stainless steel. For simple and economical production of deionized water. Ideal for supplying high-purity water systems, dishwasher, autoclaves, sterilizers, air conditioners, steam boilers and for general laboratory applications.

**Technical specifications:**

| Model | DI 1500 | DI 2000 | DI 2800 | DI 4000 |
|---|---|---|---|---|
| Capacity at 10° total salt content (l) | 1500 | 2000 | 2800 | 4000 |
| Cartridge filling | Mixed bed resin, **regenerative** | | | |
| Max. pressure (bar) | 10 | | | |
| Pure water quality (µS/cm) | 0.1-20 | | | |
| Max. water temperature (°C) | 30 | | | |
| Material | Stainless steel V4A | | | |
| Connection | R ¾″ | | | |
| Weight (kg) | 14 | 18 | 24 | 27 |
| Dimensions ∅ x H (mm) | 240 x 410 | 240 x 490 | 240 x 600 | 240 x 700 |

**Delivery without** conductivity meter CA30.1 (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| DI 1500 | **HH27.1** * | 1 | 681,55 |
| DI 2000 | **CA31.1** * | 1 | 771,85 |
| DI 2800 | **CA32.1** * | 1 | 898,70 |
| DI 4000 | **CA33.1** * | 1 | 1186,80 |

* Longer delivery times possible. Please check with our Sales Department.




## Digital conductivity meter

By Thermo. Ranges: 0.055-199.9 µS/cm, from 10 µS/cm automatic switch-over to 10.00-199.9 µS/cm. With automatic temperature-compensation. Limit value alarm can be adjusted to up to 30 µS/cm, visual and audible alarm when limit value has been exceeded.
**Delivery incl.** PVC-tube, outside-∅ 16.5 mm, inside-∅ 10.2 mm, length 1.5 m.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for models DI 1500 to DI 4000 | **CA30.1** * | 1 | 569,75 |

* Longer delivery times possible. Please check with our Sales Department.



## Smart2Pure ultrapure water system

By Thermo.
Compact systems for the production of contamination-free water from tap water. The unit is **connected directly to the mains water supply**. Simultaneous provision of ultrapure and pure water in the following grades:

- **ASTM type I** (resistance of 18.2 MΩ x cm)
- **ASTM type II** (resistance of 10 -15 MΩ x cm)

Easy to use, space-saving design and low follow-up costs.
The pre-treatment cartridge is separate from the ultrapure water cartridge. Only the used cartridge need be replaced, when necessary.

**Uses:**
**Analytical chemistry:** HPLC, GC, GC-MS, ICP-MS, AA, TOC measurements, IC
**Molecular biology and microbiology:** cell culture/ tissue culture, PCR, DNA sequencing, electrophoresis
**Routine laboratory tasks:** making up and diluting buffers and reagents, rinsing of laboratory glassware, supply of autoclaves, analysers and other laboratory equipment

**Features of Smart2Pure basic model:**
- Combined cartridge (reverse osmosis membrane/activated charcoal) for pre-treatment of feed water
- Direct tapping of type I ultrapure water through a sterile end filter (0.2 µm)
- Integrated 6-litre tank for storing type II pure water
- Guaranteed pure water quality: the recirculation pump and sterile air filter protect from microbial contamination
- Additional pressure outlet on ultrapure water tank for supplying downstream devices
- Simple and economical change of expendables as treatment cartridges can be replaced separately
- Space-saving mounting on laboratory bench or on the wall

**Optional Smart2Pure UV system:**
UV lamp with two wavelengths of 254 and 185 nm kills bacteria, oxidises organic compounds and produces germ-free ultrapure water with a TOC content of < 5 ppb.

**Optional Smart2Pure UF system:**
UF ultra-filtration module for near-total elimination of macro-molecular contamination such as microorganisms, pyrogens (bacterial endotoxins), nucleases and particles.

**Optional Smart2Pure UV/UF system:**
The combination of UV oxidation and ultra-filtration produces analytically pure water with a specific resistance of up to 18.2 MΩ cm, TOC values of < 5 ppb, pyrogen levels of < 0.001 EU/ml and RNase, DNase and DNA concentrations below the detection limit.

**Technical specifications:**

| **Drinking water requirements:** | |
|---|---|
| Drinking water to DIN 2000 | Manganese and iron content: < 0.05 mg/l |
| | Chlorine concentration: < 0.1 mg/l |
| | Colloid index : < 3 |
| | Drinking water temperature: 2-35 °C |
| | Drinking water pressure: 1-6 bar |

| **Pure water specifications:** | **ASTM Type I** | **ASTM Type II** |
|---|---|---|
| Conductivity (µS/cm) | 0.055 | 0.067-0.1 |
| Resistance (MΩ x cm) | 18.2 | 10-15 |
| Permeate output for pure water at 15 °C (l/h) | - | 3 or 6 |
| Output for ultrapure water (l/min) | 1.0 | - |
| Output (models with UF filter) (l/min) | 0.6 | - |
| TOC value (ppb) | < 10 | - |
| TOC value (models with UV lamp) (ppb) | 1-5 | - |
| Endotoxins (models with UF filter) (EU/ml) | 0.001 | - |
| Bacteria content (KbE/ml) | < 1 | - |
| Particle content < 0.2 µm pro ml | < 1 | - |
| **Technical specifications:** | | |
| Dimensions W x D x H (mm) | 305 x 400 x 545 | |
| Weight (kg) | approx. 22 | |
| Power supply | 100-240 V / 50/60 Hz, 1.8 m mains plug | |
| Drinking water connection | 1.5 m tubing with 8 mm outer ∅ and ¾″ | |
| Wastewater connection | ¼″ or 8 mm outer ∅, 2 m tubing, pressure-less outlet | |

**Delivery incl.** Smart2Pure unit with integral 6-litre tank, sterile tank ventilation filter, combined cartridge (reverse osmosis membrane/activated charcoal), ultrapure water cartridge, 0.2 µm end filter, pressure retaining valve, UV lamp and/or ultra-filter (depending on model).

| Type | Typical applications | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Smart2Pure 3 l/h | Standard buffers, autoclaves, analysis AAS, IC, ICP | **HE77.1** * | 1 | 4310,75 |
| Smart2Pure 6 l/h | | **HE78.1** * | 1 | 5449,20 |
| Smart2Pure UF 3 l/h | Standard buffers, autoclaves, molecular biology f.ex. electro-phoresis buffer, cell and tissue culture media | **HE79.1** * | 1 | 4761,20 |
| Smart2Pure UF 6 l/h | | **HE80.1** * | 1 | 5899,60 |
| Smart2Pure UV 3 l/h | Trace analysis, HPLC, IC, ICP-MS, GC-MS, TOC analysis | **HE81.1** * | 1 | 5005,20 |
| Smart2Pure UV 6 l/h | | **HE82.1** * | 1 | 6142,55 |
| Smart2Pure UV/UF 3 l/h | Molecular and microbiology: PCR, DNS, IVF, monoclonal antibodies, cell culture media | **HE83.1** * | 1 | 5631,95 |
| Smart2Pure UV/UF 6 l/h | | **HE84.1** * | 1 | 6769,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare pretreatment pack Smart2Pure 3 l/h | **HE85.1** * | 1 | 288,10 |
| Spare pretreatment pack Smart2Pure 6 l/h | **HE86.1** * | 1 | 327,90 |
| Spare pure water filter cartridge | **HE87.1** * | 1 | 424,65 |
| Spare UV-lamp | **HE88.1** * | 1 | 306,40 |
| Spare ultra-filtration module | **HE89.1** * | 1 | 407,45 |
| Spare tank air filter | **HE90.1** * | 1 | 99,90 |
| Wall attachments incl. mounting parts | **HE92.1** * | 1 | 152,65 |
| Spare sterile filter capsule 0.2 µm | **CA73.1** * | 1 | 212,85 |

* Longer delivery times possible. Please check with our Sales Department.

# Chromatography accessories




## BRITA® benchtop water filters

For optimal drinking water quality. Reduces limescale, lead, copper and chlorine content using a combination of ion exchange and activated charcoal.

- Electronic cartridge exchange indicator
- With MAXTRA Flow Control for steady flow and optimal filtration capacity
- ① MARELLA: easy to fill flip top lid
- ② OPTIMAX: with tap easy and convenient use

**Delivery incl.** 1 MAXTRA water filter cartridge.

| Type | Filling volume (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① MARELLA | 2,4 | 267 x 109 x 277 | **XC11.1** | 1 | 26,35 |
| ② OPTIMAX | 8,5 | 200 x 350 x 228 | **XC12.1** | 1 | 67,75 |

**Accessories:**

| | | | |
|---|---|---|---|
| BRITA® MAXTRA+ water filter cartridges | **XC13.2** | 4 | 31,85 |



## TLC separation chamber

Made of borosilicate glass 3.3. For immersing pre-treated TLC ready-to-use 8 x 4 cm foils in solvents. Cylindrical glass beakers with loose glass lid. Inner height 100, ∅ 60 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0823.1** | 1 | 39,25 |

▶ Further separation chambers see chapter chromatography!



## Rotilabo®-battery jars

Made of type 3.3 borosilicate glass.
Cylindrical glass beakers with rough ground rim. Autoclavable.

| Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 60 | 120 | **AYL9.1** | 10 | 107,50 |
| 100 | 100 | **AYN0.1** | 6 | 72,55 |
| 100 | 150 | **AYN1.1** | 6 | 77,60 |
| 100 | 200 | **AYN2.1** | 6 | 88,15 |
| 125 | 125 | **AYN3.1** | 6 | 94,75 |
| 125 | 250 | **AYN4.1** | 6 | 102,85 |
| 150 | 150 | **AYN5.1** | 4 | 86,75 |
| 150 | 200 | **AYN6.1** | 1 | 21,35 |
| 150 | 250 | **AYN7.1** | 1 | 22,50 |
| 160 | 320 | **AYN8.1** | 1 | 36,95 |
| 200 | 200 | **AYN9.1** | 1 | 42,60 |
| 200 | 250 | **AYP0.1** | 1 | 45,50 |
| 200 | 300 | **AYP1.1** | 1 | 49,00 |
| 200 | 400 | **AYP2.1** | 1 | 52,00 |
| 240 | 480 | **AYP3.1** | 1 | 108,60 |



## Capillary tubes

By Hirschmann. Made of clear glass. Open at both ends.

| Length (mm) | Outer ∅ (mm) | Inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 80 | 1,0 | 0,8 | **EAC7.1** | 10 x 100 | 65,80 |
| 80 | 1,35 | 0,95 | **EAC8.1** | 10 x 100 | 46,05 |
| 80 | 1,55 | 1,15 | **EAC9.1** | 10 x 100 | 48,00 |
| 90 | 1,0 | 0,8 | **EAE0.1** | 10 x 100 | 66,40 |
| 100 | 1,0 | 0,8 | **EAE1.1** | 10 x 100 | 75,40 |
| 100 | 1,35 | 0,95 | **EAE2.1** | 10 x 100 | 53,55 |
| 100 | 1,55 | 1,15 | **EAE3.1** | 10 x 100 | 49,25 |
| 120 | 1,0 | 0,8 | **EAE4.1** | 4 x 250 | 77,10 |
| 120 | 1,35 | 0,95 | **EAE5.1** | 4 x 250 | 63,45 |
| 150 | 1,0 | 0,8 | **EAE6.1** | 4 x 250 | 83,50 |



Material
DURAN®
A 121 °C

## Test tube atomizers

Made of DURAN®. Autoclavable without rubber tube.
**Delivery incl.** ground joint clamp and rubber bulb.

| Volume (ml) | Standard taper (NS) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 14/23 | **TK61.1** | 1 | 48,20 |
| 12 | 19/26 | **TK62.1** | 1 | 49,05 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare atomizer attachment for TK61.1 | **TK63.1** | 1 | 42,50 |
| Spare atomizer attachment for TK62.1 | **TK64.1** | 1 | 45,15 |
| Spare test tube for TK61.1 | **TK65.1** | 1 | 9,85 |
| Spare test tube for TK62.1 | **TK66.1** | 1 | 11,00 |
| Spare rubber bulb, incl. tube, length 20 cm | **5914.1** | 1 | 13,55 |




## TLC sprayer

Versatile sprayer with gas cartridge for spraying reagents and other liquids.
Spray pressure: constant 4,4 bar. Eco-friendly propellant mixture of dimethyl ether, propane and isobutane.
Sufficient for approx. 500 ml of liquid.
Easy to clean: unscrew cartridge, immerse uptake into vessel containing cleaning fluid and spray until the spray is free of residues.
Propellants: dimethyl ether, isobutane, propane.
**Delivery incl.** propellant cartridge (94 g), 170 ml glass reservoir bottle, suction tube and screw cap.
**Danger** H222-H229

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC44.1** | 1 | 14,55 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement cartridges with spray nozzle and suction tube | **YC45.1** | 5 | 45,50 |
| Replacement 170 ml glass bottle | **YC46.1** | 1 | 7,35 |



Material
DURAN®
A 121 °C

## TLC atomizers

Made of DURAN®. NS 19/26, volume 100 ml. Overall height 160 mm. Autoclavable without rubber tube.
**Delivery incl.** Erlenmeyer flasks, wire joint clamps, rubber ball incl. rubber tube 25 cm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| TLC atomizers complete | **0707.1** | 1 | 63,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare spray nozzle | **H451.1** | 1 | 37,55 |
| Spare rubber bulb, incl. tube, length 20 cm | **5914.1** | 1 | 13,55 |

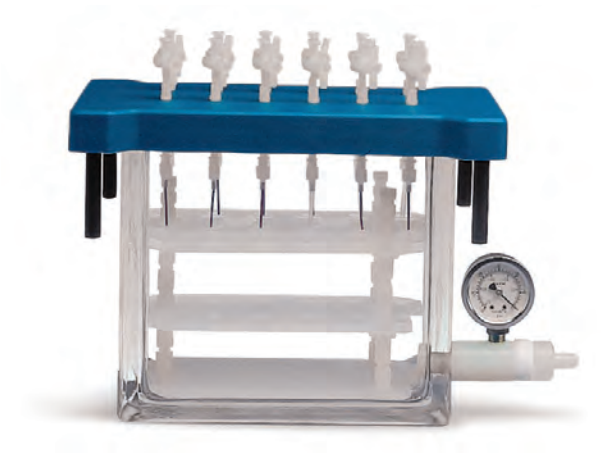


## Spray diffusers

By Rixius. Made of brown glass. Volume approx. 20 ml, ∅ 29 mm, overall height with spray nozzle 98 mm. With GL 18 thread. Spray nozzle complete with cap and tube made of PE. Approx. 0.05 ml spray volume per pump action.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N145.1** | 3 | 8,40 |

# Chromatography accessories



## Vacuum-blocks

For **filtration** and solid **extraction**. Ideal for rapid **sample preparation**. Each tube position is equipped with a valve and can therefore be evacuated either individually or with the others. Each individual valve contains a Luer fitting, enabling filtration with a syringe filter or mounting of a disposable syringe. Inner body makes exact positioning of test tubes under each available opening.

**Delivery incl.**vlid, glass chamber with connector (for tubes with inner ∅ 9-10 mm) and manometer, plastic rack (with support posts and 3 interchangeable plates for tube-∅ 17, 12 or 10 mm), nylon-stopcocks, plastic valves and needles (PP, length 25 mm).

| Type | Inner dimensions: L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12-place | 177 x 82,5 x 171,5 | **H676.1** | 1 | 843,90 |
| 16-place | 279 x 76 x 171,5 | **T670.1** | 1 | 955,70 |
| 24-place | 279 x 76 x 171,5 | **T678.1** | 1 | 1118,00 |

## Accessories for vacuum-blocks

**Drying attachment**
For simultaneous evaporation of between 12 and 24 eluates.
The lid has a gas connector on one side, from which the gas is fed directly to 12, 16 or 24 stations.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12-station | **PL28.1** | 1 | 385,95 |
| 16-station | **PL29.1** | 1 | 461,20 |
| 24-station | **PL30.1** | 1 | 481,60 |

**Rack bases for 12-station vacuum-block**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rack base for volumetric flasks | **PL31.1** | 1 | 70,75 |
| Rack base for autosampler vials ∅ 12 mm | **PL32.1** | 1 | 70,75 |

## Spare parts for vacuum-blocks

**For 12 places** (H676.1)

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Glass chamber | **T553.1** | 1 | 177,40 |
| Spare parts set incl. 1 lid, 1 seal, 12 cocks | **T554.1** | 1 | 335,40 |
| Lid seals | **T555.1** | 2 | 22,50 |
| Spare parts set incl. 1 vac. manom., 1 valve, 1 glass chamber | **T556.1** | 1 | 504,20 |
| Needles (polypropylene) | **T557.1** | 12 | 40,10 |
| Needles (stainless steel) | **T558.1** | 12 | 134,40 |
| Cocks (nylon) | **T559.1** | 12 | 94,10 |

**For 16 places** (T670.1)

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Glass chamber | **T671.1** | 1 | 224,70 |
| Spare parts set incl. 1 lid, 1 seal, 12 cocks | **T672.1** | 1 | 516,00 |
| Lid seals | **T673.1** | 2 | 31,65 |
| Spare parts set incl. 1 vac. manom., 1 valve, 1 glass chamber | **T674.1** | 1 | 559,00 |
| Needles (polypropylene) | **T675.1** | 16 | 52,60 |
| Needles (stainless steel) | **T676.1** | 16 | 166,65 |
| Cocks (nylon) | **T677.1** | 16 | 120,40 |

**For 24 places** (T678.1)

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Glass chamber | **T679.1** | 1 | 235,45 |
| Spare parts set incl. 1 lid, 1 seal, 12 cocks | **T680.1** | 1 | 536,45 |
| Lid seals | **T681.1** | 2 | 30,00 |
| Spare parts set incl. 1 vac. manom., 1 valve, 1 glass chamber | **T682.1** | 1 | 708,45 |
| Needles (polypropylene) | **T683.1** | 24 | 77,40 |
| Needles (stainless steel) | **T684.1** | 24 | 235,45 |
| Cocks (nylon) | **T685.1** | 24 | 170,95 |

## General spare parts for vacuum-blocks

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Top lid port, female Luer connector | **PL33.1** | 2 | 13,95 |
| Bottom lid port, male Luer connector | **PL34.1** | 2 | 13,95 |



## SPE-columns

Made of **PP**. Can be used with vacuum block (H676.1ff) and other vacuum systems. Excellent chemical resistance. Column outlet: Luer (male).
**Delivery without** PE frits (please order separately).

| Volume (ml) | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 8 | **PX07.1** | 100 | 44,10 |
| 3 | 11 | **PX08.1** | 100 | 44,10 |

## Frits for SPE-columns

Made of **PE**. Pore size 20 µm.

| Type | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| For 1 ml PP column | 6 | **PX10.1** | 100 | 17,10 |
| For 3 ml PP column | 9 | **PX11.1** | 100 | 17,10 |

## Accessories: Luer caps

Made of **PP**. To fit standard Luer (male) outlets, and for all column and cartridge sizes.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PX15.1** | 100 | 17,10 |

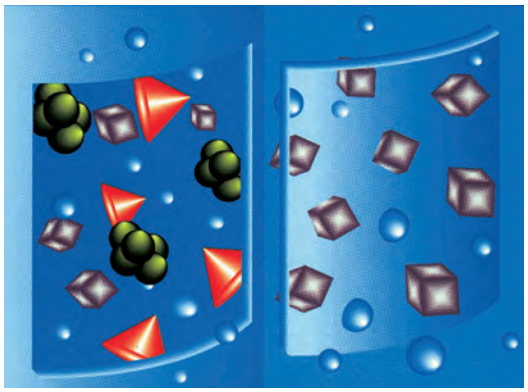


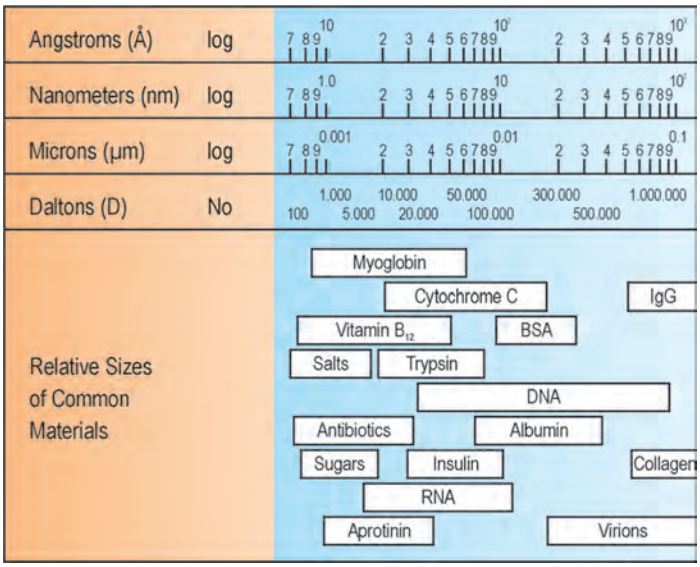
## SPE empty cartridges

Made of **PP**. Fitted with 2 PE frits (pore size 20 µm).
Usable with vacuum block (H676.1ff) and other vacuum systems.
The Luer lock caps can be removed are refitted. Luer lock caps can be used to fit further cartridges, a column or a reservoir with Luer outlet (male).
Column outlet: Luer (male). Load capacity is dependent on the particle size of the sorbent.

| Volume (ml) | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,7 | 12 | **PX13.1** | 100 | 148,35 |
| 2 | 12 | **PX14.1** | 100 | 169,85 |

# Dialysis Tubular Membranes






## Dialysis – Principle

Dialysis is a method used for **purifying biomolecules** according to the principle of osmosis: From a high concentration solution small solutes diffuse across a semi permeable membrane to a low concentration solution until equilibrium is reached. The pore size of the membrane allows only small solutes to pass, larger species are retained. Thus the molecules are separated. The pore size is indicated as **M**olecular **W**eight **C**ut **O**ff **(MWCO)**.

## Dialysis- Examples for Applications

- Desalting
- Concentration of plasma or serum
- Buffer or pH change of samples
- Preparation of proteins for electrophoresis
- Concentration of antibodies
- Removal of contamination
- Purifying cell culture extracts
- Removal of oligosaccharides from protein solutions

## Course of Dialysis

1. Fill beaker with dialysis buffer:
   In most cases the dialysis buffer equals the sample buffer, except for the molecules hold back by the membrane. The volume of the solution should be at least 100 times the sample volume.
2. Place magnetic follower into the buffer.
3. Cut dialysis tube.
   The length required depends on the following criteria:
   - Tube length for dialysis (mm) = [Vol (in µl) x 3.2] / [flat width$^2$ (in mm$^2$)]
   - Add 10 % of tube length
   - Add 40 mm for closures
4. Close one end of the preincubated tube with a closure so that at least 1 cm tubing overlaps.
5. Turn tube, open other end and fill sample. Carefully press the tubing to remove remaining air. Also close this end with a closure (1 cm overlap).
6. Place the dialysis tube into the prepared beaker, close lid and switch on stirrer.
7. The dialysis solution should be changed at least 3 times during the total dialysis process. Recommend changing after 2- 4 h, 6- 8 h and 10-14 h.
   Dialysis should be continued for at least 2 h after final change.
8. Following dialysis dry tube with a clean kim wipe, remove one clip, open the tube and remove sample with a pipette.

**Filling volume for 15 cm tube length**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Broadth (mm) | 8 | 10 | 12 | 18 | 25 | 32 | 40 | 45 | 50 | 76 | 100 | 120 |
| Tube ∅ (mm) | 5 | 6 | 8 | 11 | 16 | 20 | 25 | 29 | 32 | 48 | 64 | 76 |
| Filling volume (ml) | 3.1 | 4.8 | 7 | 15 | 30 | 49 | 76 | 97 | 119 | 276 | 478 | 688 |

## Choosing the Dialysis Membrane

**Chemical resistance (residence time 17-20 h):**

*Regenerated cellulose:* 2<pH<12, applicable when using diluted acid, base, or solvents (see table below).
*Cellulose ester:* 5<pH<9, use only under neutral conditions.

**MWCO:**

Those molecules about to be separated must have a **size ratio of approx. 25:1**.
Rule of thumb: Ideal MWCO = approx. half of molecular weight of the macromolecule left in the membrane.

**Flat width:**

Rule of thumb: √ [Vol (in µl) / 20] = average flat width required (mm).
The overall length of dialysis tube should not exceed 10 to 15 cm.

## Choosing the Clips

The clips should be approx. 4 to 10 mm wider than the flat width of the tube.
Notice: Membranes made of cellulose ester should only be closed using Art. No 0685.1 to 0688.1.

## Pretreatment of the Membranes

**Wet packaged membranes (Spectra/Por® cellulose ester, Spectra/Por® 7, ZelluTrans/Roth V series)**

Place tube for approx. 30 min in distilled water to remove the sodium azide and ethanol, respectively. Then rinse with distilled water.

**Dry packaged membranes (Membra-Cel™, Nadir®, ZelluTrans/Roth, Spectra/Por®1-4 and Spectra/Por® 6)**

For the most applications it is sufficient to soak the membrane for approx. 30 min in distilled water to remove glycerol and then to rinse it with distilled water.To remove heavy metals and sulphides place the tube in a solution of 2 % sodium bicarbonate and 1 mM EDTA and treat it as follows:

- Soak the tube at + 60 °C for 3 to 4 h. Then rinse with distilled water.
  Be careful also to rinse the inside of the tube.
- *Alternatively* incubate the tube 2 times for 10 min at approx. 95 °C. Rinse with distilled water in between incubation steps and afterwards. Be careful also to rinse the inside of the tube.

**Note:**
**Wetted membranes may not dry out!**

# Dialysis Tubular Membranes




121 °C

## ZelluTrans/Roth dialysis membranes

Made of **regenerated cellulose**.

- High-quality membranes, **dry packaged** on rolls
- Treated with glycerol to protect against brittleness
- Very low adsorption capacity (e.g. 1 µg/cm² Bovin Serum Albumin)
- Temperature stable up to +90 °C
- Good chemical resistance
- Contain low amounts of impurities, sulphides and heavy metals
- Wall thickness: 20-50 µm
- Autoclavable up to 121 ° C
  (immersed in dist. water for max. 10 min. at 1 bar)

**Metal traces:**

| | | | |
|---|---|---|---|
| cadmium | < 0.10 ppm | nickel | < 0.10 ppm |
| chromium | < 0.10 ppm | zinc | 6.24-12.9 ppm |
| copper | < 0.10 ppm | lead | 0.75-0.80 ppm |
| iron | < 13.6 ppm | | |

**Delivery incl.** detailed instructions, disposable scissors and 2 clips.

**T1: MWCO 3500**, with batch specific data sheet.

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| 19 | 12 | 15 | **E656.1** | 1 | 213,95 |
| 19 | 12 | 30 | **E657.1** | 1 | 299,95 |
| 46 | 29.3 | 15 | **E658.1** | 1 | 224,70 |
| 46 | 29.3 | 30 | **E659.1** | 1 | 302,10 |

**T2: MWCO 6000-8000**, with batch specific data sheet.

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| 10 | 6.4 | 15 | **E660.1** | 1 | 235,45 |
| 10 | 6.4 | 30 | **E661.1** | 1 | 317,15 |
| 23 | 14.6 | 15 | **E662.1** | 1 | 154,80 |
| 23 | 14.6 | 30 | **E663.1** | 1 | 197,80 |
| 25 | 16 | 15 | **E664.1** | 1 | 159,10 |
| 25 | 16 | 30 | **E665.1** | 1 | 201,05 |
| 32 | 20.4 | 15 | **E666.1** | 1 | 161,25 |
| 32 | 20.4 | 30 | **E667.1** | 1 | 199,95 |
| 40 | 25.5 | 15 | **E668.1** | 1 | 165,55 |
| 40 | 25.5 | 30 | **E669.1** | 1 | 210,70 |
| 50 | 31.8 | 15 | **E670.1** | 1 | 240,80 |
| 50 | 31.8 | 30 | **E671.1** | 1 | 296,70 |

**T3: MWCO 12000-14000**, with batch specific data sheet.

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| 10 | 6.4 | 15 | **E672.1** | 1 | 277,35 |
| 10 | 6.4 | 30 | **E673.1** | 1 | 377,35 |
| 25 | 16 | 15 | **E674.1** | 1 | 224,70 |
| 25 | 16 | 30 | **E675.1** | 1 | 310,70 |
| 33 | 21 | 15 | **E676.1** | 1 | 224,70 |
| 33 | 21 | 30 | **E677.1** | 1 | 310,70 |
| 45 | 28.6 | 15 | **E678.1** | 1 | 224,70 |
| 45 | 28.6 | 30 | **E679.1** | 1 | 310,70 |
| 76 | 48.4 | 5 | **E680.1** | 1 | 160,20 |
| 76 | 48.4 | 10 | **E681.1** | 1 | 213,95 |

**T4: MWCO 12000-14000**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| 10 | 6.4 | 30 | **E682.1** | 1 | 346,15 |
| 25 | 16 | 30 | **E683.1** | 1 | 156,95 |
| 33 | 21 | 30 | **E684.1** | 1 | 164,50 |
| 45 | 28.6 | 30 | **E685.1** | 1 | 187,05 |




121 °C

## ZelluTrans/Roth V-series

Made of **regenerated cellulose**.

- **Highly pure tubing membrane in pieces (length 50 cm)**
- Free of any trace elements, glycerol, heavy metals, sulphides
- Can be used without any time-consuming cleaning procedure
- **Packaged wet** in 20 % ethanol
- Excellent for DNA/RNA applications
- Good chemical resistance
- Wall thickness: 20-30 µm
- Store at +4 to +8 °C
- Autoclavable up to 121 ° C
  (immersed in dist. water for max. 10 min. at 1 bar)

| MWCO | Flat width (mm) | Art. No. | Pack Qty. | € | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 1000 | 18 | **E909.1** | 5 | 177,40 | **E887.1** | 10 | 252,65 |
| 1000 | 38 | **E910.1** | 5 | 177,40 | **E888.1** | 10 | 252,65 |
| 1000 | 45 | **E911.1** | 5 | 177,40 | **E889.1** | 10 | 252,65 |
| 2000 | 18 | **E912.1** | 5 | 177,40 | **E890.1** | 10 | 252,65 |
| 2000 | 38 | **E913.1** | 5 | 177,40 | **E891.1** | 10 | 252,65 |
| 2000 | 45 | **E914.1** | 5 | 177,40 | **E892.1** | 10 | 252,65 |
| 5000 | 18 | **E915.1** | 5 | 177,40 | **E893.1** | 10 | 252,65 |
| 5000 | 20 | **E916.1** | 5 | 177,40 | **E894.1** | 10 | 245,10 |
| 5000 | 30 | **E917.1** | 5 | 177,40 | **E895.1** | 10 | 252,65 |
| 5000 | 40 | **E918.1** | 5 | 163,40 | **E896.1** | 10 | 245,10 |
| 10000 | 10 | **E919.1** | 5 | 163,40 | **E897.1** | 10 | 245,10 |
| 10000 | 25 | **E920.1** | 5 | 163,40 | **E898.1** | 10 | 245,10 |
| 10000 | 32 | **E921.1** | 5 | 163,40 | **E899.1** | 10 | 245,10 |
| 10000 | 40 | **E922.1** | 5 | 163,40 | **E900.1** | 10 | 245,10 |
| 15000 | 10 | **E923.1** | 5 | 163,40 | **E901.1** | 10 | 245,10 |
| 15000 | 25 | **E924.1** | 5 | 163,40 | **E902.1** | 10 | 245,10 |
| 15000 | 32 | **E925.1** | 5 | 163,40 | **E903.1** | 10 | 245,10 |
| 15000 | 45 | **E926.1** | 5 | 163,40 | **E904.1** | 10 | 245,10 |
| 25000 | 12 | **E927.1** | 5 | 177,40 | **E905.1** | 10 | 259,10 |
| 25000 | 25 | **E928.1** | 5 | 177,40 | **E906.1** | 10 | 259,10 |
| 25000 | 35 | **E929.1** | 5 | 177,40 | **E907.1** | 10 | 259,10 |
| 25000 | 40 | **E930.1** | 5 | 177,40 | **E908.1** | 10 | 259,10 |

## Nadir®-dialysis tubing

Made of **regenerated cellulose (cellulose hydrate)**.

For technical dialysis of metal colloids, blood serum and other protein colloids, and for removal of mineral salts and to culture bacteria.

**Technical specifications:**

| **MWCO** | **10 000 - 20 000 Dalton** |
|---|---|
| Average poresize | 25 - 30 Å |
| Total pore surface | approx. 6 % |
| Water vapour permeability (DIN 53122) | 1000 mg/m² at 20 °C and 85 % rel. humidity |
| Effective diffuse permeability | NaCl: 7 - 15 x $10^{-7}$ cm²/s (37 °C)<br>Vit. B12: 0,5 - 1,5 x $10^{-7}$ cm²/s (37 °C) |
| Glycerol content | 21 % |
| Steam sterilizable at | +130 °C |

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| 62,8 | 40 | 25 | **5101.1** | 1 | 53,45 |
| 62,8 | 40 | 100 | **5101.2** | 1 | 180,60 |
| 66 | 42 | 25 | **5102.1** | 1 | 53,45 |
| 66 | 42 | 100 | **5102.2** | 1 | 180,60 |
| 78,5 | 50 | 25 | **5104.1** | 1 | 53,45 |
| 78,5 | 50 | 100 | **5104.2** | 1 | 180,60 |

# Dialysis Tubular Membranes




## Dialysis membrane Spectra/Por® 1 to 4

Made of **regenerated cellulose**.

- High-quality membrane on rolls
- Temperature stable up to +60 °C
- High chemical resistance
- **Dry packaged**
- Treated with glycerol to protect against brittleness
- Contains low amounts of impurities such as sulphides and heavy metals

**Metal traces:**

| | | | |
|---|---|---|---|
| cadmium | < 0.02 ppm | lead | 2-6 ppm |
| chromium | 0.1-0.2 ppm | magnesium | 0.1-0.3 ppm |
| copper | 0.8-1.2 ppm | nickel | 1.3-1.7 ppm |
| iron | 20-60 ppm | zinc | 1.5-5 ppm |

### Spectra/Por® 1 - MWCO 6000 to 8000

Width 10-50 mm: Wall thickness 30-50 µm
Width 100-120 mm: Wall thickness 70 µm

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 6,4 | 15 | **1954.1** | 1 | 263,40 |
| 23 | 14,6 | 30 | **1955.1** | 1 | 272,00 |
| 32 | 20,4 | 30 | **1956.1** | 1 | 272,00 |
| 40 | 25,5 | 30 | **2710.1** | 1 | 291,35 |
| 50 | 31,8 | 30 | **2711.1** | 1 | 339,70 |
| 100 | 63,7 | 15 | **2712.1** | 1 | 411,75 |
| 120 | 76,4 | 15 | **2713.1** | 1 | 426,80 |

### Spectra/Por® 2 - MWCO 12000 to 14000

Highly porous membranes for high dialysis rates.
Width 10-45 mm: Wall thickness 20-50 µm
Width 105-120 mm: Wall thickness 135-155 µm

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 6,4 | 15 | **1958.1** | 1 | 360,15 |
| 25 | 15,9 | 15 | **1964.1** | 1 | 360,15 |
| 45 | 28,6 | 15 | **2714.1** | 1 | 360,15 |
| 105 | 63,7 | 15 | **2715.1** | 1 | 792,30 |
| 120 | 76,4 | 15 | **2716.1** | 1 | 792,30 |

### Spectra/Por® 3 - MWCO 3500

Wall thickness: 25-30 µm

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 18 | 11,5 | 15 | **0978.1** | 1 | 320,35 |
| 45 | 28,6 | 15 | **0959.1** | 1 | 320,35 |
| 54 | 34,0 | 15 | **0983.1** | 1 | 340,80 |

### Spectra/Por® 4 - MWCO 12000 to 14000

Wall thickness: 20-50 µm

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 6,4 | 30 | **2717.1** | 1 | 398,85 |
| 25 | 15,9 | 30 | **2718.1** | 1 | 221,45 |
| 32 | 20,4 | 30 | **2719.1** | 1 | 238,65 |
| 45 | 28,6 | 30 | **2720.1** | 1 | 277,35 |
| 75 | 47,7 | 15 | **2721.1** | 1 | 293,50 |

## Trial Kits Spectra/Por® 1-3

Made of **regenerated cellulose**.
**Tubular membrane pieces on rolls, length 5 m, packaged dry**. Ideal for small-scale dialyses and for testing membranes for special applications.

**Trial Kit delivery incl.**
- tubular membrane Spectra/Por® 1, 2 or 3
- 1 pair of Spectra/Por® sealing clips made of PP (1 x with weight, 1 x without)

### Spectra/Por® 1 - MWCO 6000-8000

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 32 | 20.4 | 5 | **4570.1** | 1 | 122,55 |
| 50 | 32 | 5 | **4572.1** | 1 | 134,40 |

### Spectra/Por® 2 - MWCO 12 000-14 000

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 16 | 5 | **4574.1** | 1 | 122,55 |
| 45 | 29 | 5 | **4577.1** | 1 | 134,40 |

### Spectra/Por® 3 - MWCO 3500

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 18 | 11.5 | 5 | **4578.1** | 1 | 122,55 |
| 54 | 34 | 5 | **4579.1** | 1 | 134,40 |




## Dialysis tubes Membra-Cel™

By Viskase. Made of **regenerated cellulose**.
Colourless, transparent to slightly opaque, semi-permeable and seamless.
Application area: dialysis and ultrafiltration in the laboratory.

- **Exclusion limit (MWCO) 14 000**
- Dry packed, treated with glycerine
- Solid in pH range from 5 to 9
- No unspecific protein binding, protein adsorption < 1 ng/g
- Autoclavable up to +120 °C (max. 15 min, immersed in dist. water)

| Flat width (mm) | ∅ (mm) | Length (m) | Wall thickness (mm) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|---|
| 10 | 6 | 30 | 0.051 | **1780.1** | 1 | 162,35 |
| 10 | 6 | 152 | 0.051 | **1781.1** | 1 | 513,85 |
| 25 | 16 | 152 | 0.020 | **0653.1** | 1 | 192,45 |
| 34 | 22 | 30 | 0.023 | **1784.1** | 1 | 69,90 |
| 34 | 22 | 152 | 0.023 | **0654.1** | 1 | 209,65 |
| 44 | 28 | 30 | 0.020 | **1785.1** | 1 | 83,85 |
| 44 | 28 | 152 | 0.020 | **0655.1** | 1 | 252,65 |
| 77 | 49 | 30 | 0.041 | **5358.1** | 1 | 196,75 |

**Attention:**
Do not tie knots in **regenerated cellulose.**
Closure clips must be used to avoid any changing of membrane or MWCO.

# Dialysis Tubular Membranes




## Dialysis membranes Spectra/Por® 6

Made of **regenerated cellulose.**

- **Packaged wet** in 0.05 % sodium azide solution, on rolls
- Contain low amounts of impurities such as sulphides and heavy metals
- Wall thickness: 60-65 µm
- Store at +4 °C
- Temperature stable up to +60 °C

**Metal traces:**

| | | | |
|---|---|---|---|
| cadmium | < 0.02 ppm | lead | 2-6 ppm |
| chromium | 0.1-0.2 ppm | magnesium | 0.1-0.3 ppm |
| copper | 0.8-1.2 ppm | nickel | 1.3-1.7 ppm |
| iron | 20-60 ppm | zinc | 1.5-5 ppm |

**Spectra/Por® 6 MWCO 1000**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 18 | 11,5 | 10 | **1966.1** | 1 | 380,55 |
| 38 | 24 | 10 | **1967.1** | 1 | 380,55 |
| 45 | 29 | 10 | **1968.1** | 1 | 380,55 |

**Spectra/Por® 6 MWCO 2000**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 18 | 11,5 | 10 | **1973.1** | 1 | 380,55 |
| 38 | 24 | 10 | **1974.1** | 1 | 380,55 |
| 45 | 29 | 10 | **1975.1** | 1 | 380,55 |

**Spectra/Por® 6 MWCO 3500**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 18 | 11,5 | 10 | **1976.1** | 1 | 380,55 |
| 45 | 29 | 10 | **1977.1** | 1 | 380,55 |
| 54 | 34 | 10 | **1978.1** | 1 | 380,55 |

**Spectra/Por® 6 MWCO 8000**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 7,5 | 10 | **1924.1** | 1 | 380,55 |
| 24 | 15 | 10 | **1926.1** | 1 | 380,55 |
| 40 | 25,5 | 10 | **1934.1** | 1 | 380,55 |
| 50 | 32 | 10 | **1935.1** | 1 | 380,55 |

**Spectra/Por® 6 MWCO 10000**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 7,5 | 10 | **1990.1** | 1 | 380,55 |
| 24 | 15 | 10 | **1991.1** | 1 | 380,55 |
| 32 | 20,4 | 10 | **1992.1** | 1 | 380,55 |
| 45 | 29 | 10 | **1996.1** | 1 | 380,55 |

**Spectra/Por® 6 MWCO 15000**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 7,5 | 10 | **1881.1** | 1 | 380,55 |
| 24 | 15 | 10 | **1883.1** | 1 | 380,55 |
| 32 | 20,4 | 10 | **1887.1** | 1 | 380,55 |
| 45 | 29 | 10 | **1888.1** | 1 | 380,55 |

**Spectra/Por® 6 MWCO 25000 (opaque)**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 7,5 | 10 | **1979.1** | 1 | 380,55 |
| 28 | 18 | 10 | **1981.1** | 1 | 380,55 |
| 34 | 22 | 10 | **1982.1** | 1 | 380,55 |

**Spectra/Por® 6 MWCO 50000 (opaque)**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 7,5 | 10 | **1891.1** | 1 | 380,55 |
| 28 | 18 | 10 | **1892.1** | 1 | 380,55 |
| 34 | 22 | 10 | **1893.1** | 1 | 380,55 |

## Dialysis membranes Spectra/Por® 7

Made of **regenerated cellulose.**

- **Packaged wet** in 0.05 % sodium azide solution, on rolls
- **Highly pure membrane** without any trace elements such as heavy metals, sulphides, glycerol
- Can be directly used without any cleaning procedures
- Wall thickness: 60-65 µm
- Store at +4 °C
- Temperature stable up to +60 °C

**Spectra/Por® 7 MWCO 1000**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 18 | 11.5 | 5 | **E853.1** | 1 | 321,45 |
| 38 | 24 | 5 | **E854.1** | 1 | 321,45 |
| 45 | 29 | 5 | **E855.1** | 1 | 321,45 |

**Spectra/Por® 7 MWCO 2000**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 18 | 11,5 | 5 | **E856.1** | 1 | 321,45 |
| 38 | 24 | 5 | **E857.1** | 1 | 321,45 |
| 45 | 29 | 5 | **E858.1** | 1 | 321,45 |

**Spectra/Por® 7 MWCO 3500**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 18 | 11,5 | 5 | **E859.1** | 1 | 321,45 |
| 45 | 29 | 5 | **E860.1** | 1 | 321,45 |
| 54 | 34 | 5 | **E861.1** | 1 | 321,45 |

**Spectra/Por® 7 MWCO 8000**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 7,5 | 5 | **E862.1** | 1 | 321,45 |
| 18 | 11,5 | 5 | **E863.1** | 1 | 321,45 |
| 24 | 15 | 5 | **E864.1** | 1 | 321,45 |
| 32 | 20,4 | 5 | **E865.1** | 1 | 321,45 |
| 40 | 25,5 | 5 | **E866.1** | 1 | 321,45 |
| 50 | 32 | 5 | **E867.1** | 1 | 321,45 |

**Spectra/Por® 7 MWCO 10000**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 7,5 | 5 | **E868.1** | 1 | 321,45 |
| 18 | 11,5 | 5 | **E869.1** | 1 | 321,45 |
| 24 | 15 | 5 | **E870.1** | 1 | 321,45 |
| 32 | 20,4 | 5 | **E871.1** | 1 | 321,45 |
| 45 | 29 | 5 | **E872.1** | 1 | 321,45 |

**Spectra/Por® 7 MWCO 15000**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 7,5 | 5 | **E873.1** | 1 | 321,45 |
| 18 | 11,5 | 5 | **E874.1** | 1 | 321,45 |
| 24 | 15 | 5 | **E875.1** | 1 | 321,45 |
| 32 | 20,4 | 5 | **E876.1** | 1 | 321,45 |
| 45 | 29 | 5 | **E877.1** | 1 | 321,45 |

**Spectra/Por® 7 MWCO 25000 (opaque)**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 7,5 | 5 | **E878.1** | 1 | 321,45 |
| 18 | 11,5 | 5 | **E879.1** | 1 | 321,45 |
| 28 | 18 | 5 | **E881.1** | 1 | 321,45 |
| 34 | 22 | 5 | **E882.1** | 1 | 321,45 |

**Spectra/Por® 7 MWCO 50000 (opaque)**

| Flat width (mm) | ∅ (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 7,5 | 5 | **E883.1** | 1 | 321,45 |
| 28 | 18 | 5 | **E884.1** | 1 | 321,45 |
| 34 | 22 | 5 | **E885.1** | 1 | 321,45 |

# Dialysis Tubular Membranes




## Dialysis membrane Spectra/Por® Biotech CE

Made of **cellulose ester (CE)**

- **High purity** as no trace elements, heavy metals, sulphides or glycerol
- Low membrane reactivity, therefore negligible protein and liposome adsorption
- No time-consuming cleaning process required
- Temperature stable up to +37 °C
- **Packaged wet** in 0.05 % sodium-azide solution
- Store at +4 °C
- Wall thickness:
  MWCO 100-50 000: 75-85 µm
  MWCO 100 000: ≥ 100-125 µm

**MWCO 100-500**

| Flat width (mm) | ∅ (mm) | Vol/length (ml/cm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 6,4 | 0,32 | 10 | **2702.1** | 1 | 385,95 |
| 16 | 10,2 | 0,79 | 10 | **4594.1** | 1 | 440,75 |

**MWCO 500-1000**

| Flat width (mm) | ∅ (mm) | Vol/length (ml/cm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 6,4 | 0,32 | 10 | **2704.1** | 1 | 385,95 |
| 16 | 10,2 | 0,79 | 10 | **4596.1** | 1 | 440,75 |

**MWCO 3500-5000**

| Flat width (mm) | ∅ (mm) | Vol/length (ml/cm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 6,4 | 0,32 | 10 | **2708.1** | 1 | 385,95 |
| 16 | 10,2 | 0,79 | 10 | **4616.1** | 1 | 440,75 |

**MWCO 8000-10000**

| Flat width (mm) | ∅ (mm) | Vol/length (ml/cm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 6,4 | 0,32 | 10 | **4633.1** | 1 | 385,95 |
| 16 | 10,2 | 0,79 | 10 | **4635.1** | 1 | 440,75 |

**MWCO 20 000**

| Flat width (mm) | ∅ (mm) | Vol/length (ml/cm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 6,4 | 0,32 | 10 | **4643.1** | 1 | 385,95 |
| 16 | 10,2 | 0,79 | 10 | **4646.1** | 1 | 440,75 |

**MWCO 50000**

| Flat width (mm) | ∅ (mm) | Vol/length (ml/cm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 6,4 | 0,32 | 10 | **8957.1** | 1 | 385,95 |
| 16 | 10,2 | 0,79 | 10 | **8959.1** | 1 | 440,75 |

**MWCO 100000**

| Flat width (mm) | ∅ (mm) | Vol/length (ml/cm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10 | 6,4 | 0,32 | 10 | **8960.1** | 1 | 385,95 |
| 16 | 10,2 | 0,79 | 10 | **8967.1** | 1 | 440,75 |
| 24 | 15,2 | 1,80 | 10 | **8968.1** | 1 | 505,25 |

**MWCO 300 000**

| Flat width (mm) | ∅ (mm) | Vol/length (ml/cm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 16 | 10,2 | 0,79 | 10 | **8977.1** | 1 | 440,75 |

**MWCO 1 000000**

| Flat width (mm) | ∅ (mm) | Vol/length (ml/cm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 16 | 10,2 | 0,79 | 10 | **2786.1** | 1 | 440,75 |

## Trial Kits Spectra/Por® Biotech CE

Made of **cellulose ester (CE)**.

**Tubing membrane pieces on rolls, length 1 m, packaged moist** in 0.05 % natrium azide solution. Ideal for dialysis where only a small amount of tubing is required (test runs, small-scale applications, etc.).

**Sample kit delivery incl.**

- Spectra/Por® Biotech CE tubular membrane
- 1 pair of Spectra/Por® universal sealing clips (red, sealing length 50 mm)

| MWCO | Flat width (mm) | ∅ (mm) | Vol/length (ml/cm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 100-500 | 16 | 10 | 0,79 | 1 | **4556.1** | 1 | 146,20 |
| 500-1000 | 16 | 10 | 0,79 | 1 | **4558.1** | 1 | 146,20 |
| 3500-5000 | 16 | 10 | 0,79 | 1 | **4567.1** | 1 | 146,20 |
| 8000-10 000 | 16 | 10 | 0,79 | 1 | **4583.1** | 1 | 146,20 |
| 20 000 | 16 | 10 | 0,79 | 1 | **4584.1** | 1 | 146,20 |
| 50 000 | 16 | 10 | 0,79 | 1 | **4585.1** | 1 | 146,20 |
| 100 000 | 16 | 10 | 0,79 | 1 | **4586.1** | 1 | 146,20 |
| 300 000 | 16 | 10 | 0,79 | 1 | **4587.1** | 1 | 146,20 |
| 1 000 000 | 16 | 10 | 0,79 | 1 | **4588.1** | 1 | 146,20 |

▶ For Spectra/Por® universal closures, see page 538

**Appearance of dialysis membranes**

Dry dialysis membranes have different appearances, dependent on pore size and wall thickness: Clear, opaque or even completely white.

Reason:
Larger MWCO membranes are made slightly thicker to maintain membrane strength when the pores are larger.
The thicker the membrane and larger the pores, the more opaque.
So the different membranes look as follows:

**Dry membranes with MWCO**
**100-1000: clear**
**3 500-5 000: mostly clear**
**8 000-10 000: slightly opaque**
**20 000-50 000: opaque**
**≥100 000: white.**

When the membrane is wetted with water the effect dissapears and the membrane becomes more clear.

# Premade Dialysis Units



**Microdialysis by Membrane Filter (Drop Dialysis)**

Microvolumes of sample (5-100 µl) can also be dialysed by membrane filter discs made of cellulose mixed ester (pore size 0,025 µm, Art. No. CY35.1-CY37.1):
Fill a Petri dish with dialysis buffer. Place the membrane filter disc on the surface of the solution (shiny side up, avoid bubbles under the filter) by using a stainless steel forceps. Float the membrane for ca. 5 min until it is completely soaked. Pipette the sample on the center of the filter. Due to the open pore structure of the membrane filter and the high surface-to-volume ratio the dialysis is done within a short time (mostly < 30 min). To avoid evaporation of the sample seal the Petri dish tightly during the procedure. In this way the sample volume remains nearly constant.

## Spectra/Por® Float-A-Lyzer® G2

Ready-to-use Dialysis device combining efficiency, convenience and sample protection **with a sample recovery rate of 95-98 %.** The cylindrical dialysis tubing from cellulose ester is fixed to polycarbonate pieces. **Packaged dry** with glycerol to protect against brittleness. Before use the glycerol is to be removed by rinsing with distilled water for 15-30 min.

- Sample volume 1-10 ml
- The leak-proof screw-on cap allows easy for handling and in-process testing during dialysis is possible
- The tubing is made of cellulose ester with no heavy metal and sulfide contaminants, therefore, no special purification is necessary
- Low-protein and liposome binding membrane, can be used directly with biological samples
- Flotation ring improves sample buoyancy and vertical orientation during dialysis
- Available in precise MWCOs with colour-coded caps
- Several Float-A-Lyzer can be used in one vessel

**Technical specifications:**

| Capacity | 1 ml | 5 ml | 10 ml |
|---|---|---|---|
| Length (mm) | 50 | 100 | 160 |
| Membrane Diameter (mm) | 10 | 10 | 10 |
| Top Piece Diameter (mm) | 23 | 23 | 23 |
| Flotation Ring Diameter (mm) | 38 | 38 | 38 |

| MWCO | Colour code | 1 ml Art. No. | 5 ml Art. No. | 10 ml Art. No. |
|---|---|---|---|---|
| 100-500 | green | **P560.1** | **P586.1** | **P599.1** |
| 500-1000 | orange | **4549.1** | **4617.1** | **4657.1** |
| 3500-5000 | black | **P564.1** | **P590.1** | **P603.1** |
| 8000-10 000 | yellow | **P566.1** | **P592.1** | **P605.1** |
| 20 000 | red | **P568.1** | **P594.1** | **P607.1** |
| 50 000 | violet | **P569.1** | **P595.1** | **P608.1** |
| 100 000 | blue | **P570.1** | **P596.1** | **P609.1** |
| 300 000 | amber | **4550.1** | **4624.1** | **4660.1** |
| 1 000 000 | pink | **4608.1** | **4653.1** | **4663.1** |
| Pack Qty. | | **12** | **12** | **12** |
| € | | 125,80 | 137,60 | 140,85 |

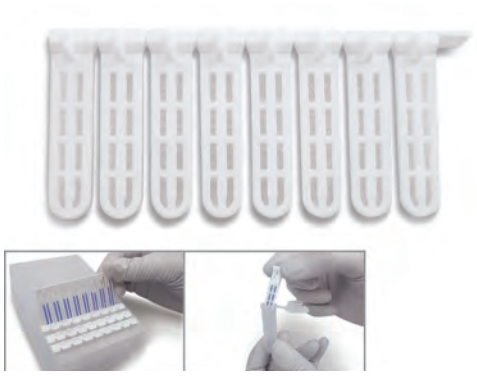


## Spectra/Por®-dialysis cylinder

Made of PS. For use with magnetic stirrers.
The tube is centred and dialysis speeded up by the stirring movement.
- MINI - for dialysis tubes and systems up to a length of 10 cm
- MAXI - for dialysis tubes and systems up to a length of 25 cm

**Delivery incl.** magnetic bar and cover.

| Model | Volume (ml) | Height (cm) | ∅ (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| MINI | 600 | 12,5 | 11,5 | **CL82.1** | 1 | 74,20 |
| MAXI | 1800 | 30 | 11,5 | **CL83.1** | 1 | 89,25 |





## ZelluTrans/Roth Mini Dialyzer MD 100

Made of **regenerated cellulose**.

**Ready-to-use dialysis unit for samples of between 10 and 100 µl.**
The Mini Dialyzer consists of a U-shaped polypropylene capillary with 25 µl graduations and membranes on both sides. The filled sample forms a very thin layer over a large surface area, ensuring short dialysis times.

- Available as an **individual dialyzer** packed in a 2 ml reaction vial or as a **dialyzer strip** with 8 interconnected individual dialyzers (can be separated)
- Membranes are made of high-quality regenerated cellulose with different pore sizes (MWCO), **dry packed**
- Easy to use: can be filled with sample and emptied using any standard pipette (2-200 µl)
- Flexible: uses ranging from low-volume dialysis (in reaction vial or micro-titration plate) to high-volume dialysis (using a suitable flotation aid, as described below)
- Compatible with **96 deepwell plates (2.5 ml)**, 8-channel multichannel pipettes and standard automation systems allow simultaneous processing of up to 96 samples.

The Mini Dialyzers can are ready for use straight away - no pretreatment required. For sensitive applications, soak in water or buffer for 15 min to remove any traces of glycerine.

| MWCO | Designation | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 500 | Individual dialyzer in 2 ml reaction vial | **4765.1** | 1 | 8,80 |
| 3 500 | Individual dialyzer in 2 ml reaction vial | **4766.1** | 12 | 50,00 |
| 3 500 | Dialyzer strip (8 connected individual dialyzers) | **4767.1** | 1 | 38,60 |
| 6 000-8 000 | Individual dialyzer in 2 ml reaction vial | **4769.1** | 1 | 8,35 |
| 6 000-8 000 | Individual dialyzer in 2 ml reaction vial | **4770.1** | 12 | 50,00 |
| 6 000-8 000 | Dialyzer strip (8 connected individual dialyzers) | **4771.1** | 1 | 38,60 |
| 12 000-14 000 | Individual dialyzer in 2 ml reaction vial | **4772.1** | 1 | 8,35 |
| 12 000-14 000 | Individual dialyzer in 2 ml reaction vial | **4775.1** | 12 | 50,00 |
| 12 000-14 000 | Dialyzer strip (8 connected individual dialyzers) | **4776.1** | 1 | 42,90 |

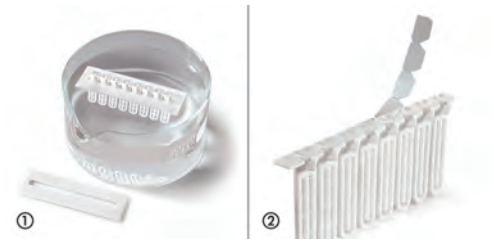
## ZelluTrans/Roth Mini Dialyzer MD 300

Made of **regenerated cellulose.**
**Ready-to-use dialysis system for samples from 50 to 300 µl.**
The Mini Dialyzer consists of a U-shaped polypropylene capillary with 75 µl graduations and membranes on both sides. The filled sample forms a thin layer over a large surface area, ensuring very short dialysis times.

- Available as an **individual dialyzer** packed in a 5 ml test tube or as a **dialyzer strip** with 8 interconnected individual dialyzers (can be separated)
- Membranes are made of high-quality regenerated cellulose with different pore sizes (MWCO), **dry packed**
- Easy to use: can be filled with sample and emptied using any standard pipette (100-1000 µl)
- Short dialysis times (30-480 min)
- Flexible: uses ranging from low-volume dialysis (in test tube, 96-deepwell plates, 2.5 ml) to high-volume dialysis (using a suitable flotation aid, 4768.1)

The Mini Dialyzers are ready for use straight away - no pretreatment required.
For sensitive applications, soak in water or buffer for 15 min to remove any traces of glycerine.

| MWCO | Designation | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3500 | Individual dialyzer in 5 ml test tube | **NH90.1** | 1 | 8,50 |
| 3500 | Individual dialyzer in 5 ml test tube | **NH91.1** | 12 | 53,70 |
| 3500 | Dialyzer strip (8 connected individual dialyzers) | **NH92.1** | 1 | 40,80 |
| 6000-8000 | Individual dialyzer in 5 ml test tube | **NH93.1** | 1 | 8,50 |
| 6000-8000 | Individual dialyzer in 5 ml test tube | **NH94.1** | 12 | 53,70 |
| 6000-8000 | Dialyzer strip (8 connected individual dialyzers) | **NH95.1** | 1 | 40,80 |
| 12 000-14 000 | Individual dialyzer in 5 ml test tube | **NH96.1** | 1 | 8,50 |
| 12 000-14 000 | Individual dialyzer in 5 ml test tube | **NH97.1** | 12 | 53,70 |
| 12 000-14 000 | Dialyzer strip (8 connected individual dialyzers) | **NH98.1** | 1 | 40,80 |




## Accessories for Mini Dialyzer MD 100 and MD 300

① **Flotation aids**, made of PE-foam, for use of the Mini Dialyzer in large dialysis vessels. Reusable.

② **PP cover film** for protection against contamination and evaporation or for storage. Self-adhesive.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Flotation aid | **4768.1** | 1 | 6,40 |
| ② PP cover film (for 12 dialyzer strips) | **4781.1** | 1 | 5,35 |

# Premade Dialysis Units





## Micro dialysis capsule QuixSep®

Reusable dialysis system made of **HDPE** for fast and efficient cleaning of very small sample volumes (**50 µl to 5 ml**). Minimised sample loss, easy handling, usable with any type of membrane.

**Usage:**
The bottom part of the capsule (white) is filled with sample and the desired membrane is fixed in place by pressing on the capsule closure (red). The fitted capsule is placed into a buffer solution and set in rotation by a magnetic stirrer. This significantly accelerates the dialysis process; concentrations are equalised on average after 30 to 60 min per 0.1 ml of sample volume. On completion of dialysis, the dialysis membrane is pierced with a pipette tip or a syringe and the residual volume is drawn off. The micro dialysis capsule can then be cleaned and reused. During the dialysis process, the cover protects the membrane against damage, allowing multiple QuixSep® capsules to be used simultaneously in a vessel.

**Note:**
ready-fit dialysis membranes - see ZelluTrans/Roth membrane pieces for QuixSep®, Art. No. 2820.1 - 2822.1. Regenerated cellulose, available in three standard MWCO's.
If using other tube membranes, they must be trimmed to **20 x 20 mm** (for QuixSep® 0.1 to 1.0 µl) or **55 x 55 mm** (for QuixSep® with 5.0 ml volume); i.e. tubes with a flat width of at least 10 or 28 mm are required.

| Max. volume (ml) | Max. width of bottom part (mm) | Max. width of cover (mm) | Capsule height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0.1 | 27 | 21 | 22 | **H447.1** | 1 | 57,00 |
| 0.5 | 27 | 21 | 22 | **H448.1** | 1 | 57,00 |
| 1.0 | 27 | 21 | 22 | **H449.1** | 1 | 57,00 |
| 5.0 | 50 | 48 | 15 | **0671.1** | 1 | 117,20 |
| Range, each 1x 0.1 / 0.5 / 1.0 ml | | | | **H450.1** | 1 | 166,65 |

## Replacement lids for Micro Dialysis Capsules QuixSep®

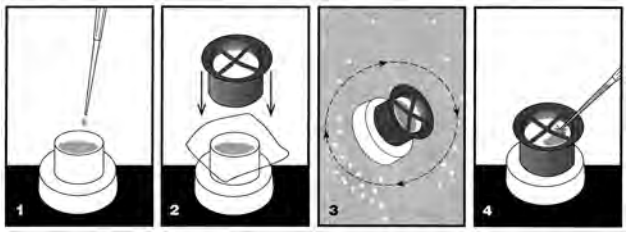
| Capsule size (max. vol.) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,1 ml / 0,5 ml / 1,0 ml | **3929.1** | 10 | 122,55 |
| 5,0 ml | **3931.1** | 10 | 122,55 |




## ZelluTrans/Roth dialysis membrane pieces for QuixSep®

Single-layer membrane pieces (flat sheets) made of **regenerated cellulose**, packed dry. Properties - see ZelluTrans/Roth T series of dialysis membranes ( Art. No. E656.1 ff). Dimensions: 55 x 55 mm, **suitable for QuixSep® 5.0 ml micro dialysis capsules**. When using the small capsules (0.1 to 1.0 ml), the pieces can be cut into four equal parts (approx. 20 x 20 mm).
Easy preparation: soak in distilled water for approx. 20 minutes and rinse with distilled water. Use straight away since moist membranes must not be allowed to dry.

| Designation | MWCO | Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Membrane pieces F1 | 3500 | 55 x 55 mm | **2820.1** | 10 | 61,15 |
| Membrane pieces F2 | 6000-8000 | 55 x 55 mm | **2821.1** | 10 | 61,15 |
| Membrane pieces F3 | 12 000-14 000 | 55 x 55 mm | **2822.1** | 10 | 61,15 |




## Procedure with micro dialysis capsule QuixSep®

① Fill bottom part with sample.
② Fit the desired dialysis membrane (20 x 20 mm for H447.1, H448.1 and H449.1; 55 x 55 mm for 0671.1) and press on the cover.
③ Move QuixSep® continuously in a buffer solution using the magnetic stirrer.
④ On completion of dialysis, the dialysis membrane can be pierced with a pipette tip or a syringe and the residual volume drawn off.

## Chemical Compatibility of Dialysis Membranes

The list below is no guarantee of chemical compatibility. In fact, it should be used as a guide. Many other factors like temperature, concentration of solvent, duration of exposure etc. may modify the effect to the membrane.

**Membranes made of cellulose ester and regenerated cellulose are to be used only with diluted solvents, maximum about 25 %.**
Higher concentrations may alter the membrane.

We recommend to test the membrane compatibility under your own conditions first.

**Chemical Compatibility of Dialysis Membranes**

**R:** recommended
**L:** limited exposure only
**NR:** not recommended

| | Celluloseester | Reg. Cellulose |
|---|---|---|
| Acetic acid (5 %) | L | R |
| Acetic acid (25 %) | NR | R |
| Acetic acid, glacial | NR | R |
| Acetic acid ethyl ester | NR | R |
| Acetone | NR | R |
| Acetonitril | NR | R |
| Ammonia (diluted) | NR | R |
| Ammonia (approx. 25 %) | NR | L |
| Amyl alcohol | L | R |
| Benzene | NR | R |
| Benzyl alcohol | NR | R |
| Boric acid | R | R |
| Butyl acetate | NR | R |
| Butyl-alcohol | L | R |
| Chlorine acetic acid | NR | R |
| Chloroform | L | R |
| Cyclohexane | L | R |
| Diacetone alcohol | NR | R |
| Dichloromethane | L | R |
| Dimethyl formamide | NR | L |
| Dimethyl sulfoxide | NR | R |
| Dioxane | NR | L |
| Ethanol (15 %) | R | R |
| Ethanol (95 %) | L | R |
| Ether | NR | R |
| Ethylene glycol | L | R |
| Ethylene oxide | NR | L |
| Formaldehyde (up to 30 %) | L | R |
| Formic acid (up to 50 %) | NR | R |
| Glycerol | R | R |
| Hexane | R | R |
| Hydrochloric acid (5 %) | L | R |
| Hydrochloric acid (up to 37 %) | NR | NR |
| Hydrofluoric acid (25 %) | NR | L |
| Hydrogen peroxide (30 %) | R | R |
| Iodine solution | NR | NR |
| Isobutyl-alcohol | R | R |
| Isopropanol | L | R |
| Isopropyl ether | L | R |
| Lactic acid | R | R |
| Methanol | L | R |
| Methyl acetate | NR | R |

**Chemical Compatibility of Dialysis Membranes**

**R:** recommended
**L:** limited exposure only
**NR:** not recommended

| | Celluloseester | Reg. Cellulose |
|---|---|---|
| Methyl chloride | NR | R |
| Methylene chloride | L | R |
| Methyl ethyl ketone | NR | R |
| Methyl isobutyl ketone | NR | R |
| N-Methyl-2-pyrrolidone | NR | R |
| Mineral oils | R | R |
| Monochlorobenzene | L | R |
| Nitric acid (5 %) | L | R |
| Nitric acid (min. 25 % or 6 M) | NR | NR |
| Nitrobenzene | NR | L |
| Nitropropane | NR | L |
| Oil of Petroleum basis | R | R |
| Pentane | R | R |
| Perchloric acid (25 %) | NR | L |
| Perchloroethylene | NR | R |
| Petroleum ether | R | R |
| Phenol (0.5 %) | R | R |
| Phenol (10 %) | NR | R |
| Phosphoric acid (25 %) | NR | L |
| Potassium hydroxide (1 N) | L | R |
| Potassium hydroxide (25 %) | NR | L |
| Potassium hydroxide (50 %) | NR | NR |
| Propanol | R | R |
| Pyridine | NR | R |
| Silicone oil | R | R |
| Sodium hydroxide (0.1 N) | L | R |
| Sodium hydroxide (up to 25 %) | NR | L |
| Sodium hydroxide (> 25 %) | NR | NR |
| Sodium hypochlorite | R | R |
| Sulfuric acid (5 %) | R | R |
| Sulfuric acid (25 % or 6 N) | NR | L |
| Tetrahydrofurane | NR | R |
| Toluene | R | R |
| Trichloro acetic acid (25 %) | NR | NR |
| Trichloroethylene | R | R |
| Triethylamine | NR | R |
| Trichlorobenzene | NR | NR |
| Trichloroethane | L | R |
| Urea (diluted) | NR | R |
| Urea (6 N) | R | R |
| Xylene | NR | R |

# Dialysis accessories



## ZelluTrans/Roth locking clips

Made of **PA**. For liquid-tight sealing of tube membranes.
Usage temperature -30 to +80 °C. Autoclavable.
Suitable for diaphragms made of regenerated cellulose, for diaphragms made of cellulose ester, please use universal sealing clips
(Art No. 0685.1 ff)

| Sealing length (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 45 | 65 | **H277.1** | 10 | 7,45 |
| 65 | 90 | **H278.1** | 10 | 9,65 |
| 110 | 130 | **P901.1** | 10 | 15,00 |
| 150 | 170 | **P902.1** | 10 | 23,60 |

**Please note:**
The closure clips should be 4-10 mm longer than the width of the tubular membrane.



## Spectra/Por®-universal locking clips

Made of **PA**. For liquid-tight sealing of tube membranes. Non floating.
**Suitable for all membrane types, especially recommended for membranes made of cellulose ester.**
Autoclavable, usage temperature 0 to 90 °C.

| Sealing length (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 | yellow | **0685.1** | 10 | 93,55 |
| 70 | yellow | **0686.1** | 10 | 106,45 |
| 110 | yellow | **0687.1** | 10 | 118,25 |
| 150 | yellow | **0688.1** | 10 | 118,25 |

▶ Spectra/Gel™-Absorbant for concentration of dialysed biomolecules see the Biochemistry/ Protein Isolation chapter!



## Spectra/Por®-clips

Made of **PP**. Temperature stable from 0 to +121 °C. Autoclavable.
Suitable for diaphragms made of regenerated cellulose, for diaphragms made of cellulose ester, please use universal sealing clips
(Art No. 0685.1 ff)

**Standard clips**

| Sealing length (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12 | orange | **0985.1** | 10 | 93,55 |
| 23 | orange | **2768.1** | 10 | 104,30 |
| 35 | orange | **0988.1** | 10 | 106,45 |
| 55 | orange | **2770.1** | 10 | 109,65 |
| 75 | orange | **2771.1** | 10 | 111,80 |

**Clips with weights,** for upright dialysis position

| Sealing length (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12 | white | **2773.1** | 10 | 106,45 |
| 23 | white | **2774.1** | 10 | 115,05 |
| 35 | white | **2775.1** | 10 | 119,35 |
| 55 | white | **2776.1** | 10 | 121,50 |
| 75 | white | **2777.1** | 10 | 127,95 |

**Combi-set (10 with weights, 10 without weights)**

| Sealing length (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12 | white/orange | **2779.1** | 20 | 170,95 |
| 23 | white/orange | **2780.1** | 20 | 188,15 |
| 35 | white/orange | **2781.1** | 20 | 205,35 |
| 55 | white/orange | **2782.1** | 20 | 211,80 |
| 75 | white/orange | **2783.1** | 20 | 220,40 |



## Spectra/Por®-magnetic weight locking clips

Made of **PP**. With embedded magnetic weight for use with magnetic stirrers.
- The dialysis bag is completely immersed in the buffer
- Continuous, rotary action for optimal material exchange
- No additional magnetic stirrer bar is required

Suitable for diaphragms made of regenerated cellulose, for diaphragms made of cellulose ester, please use universal sealing clips
(Art No. 0685.1 ff).

| Sealing length (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 23 | red | **4647.1** | 2 | 70,95 |
| 35 | red | **4648.1** | 2 | 76,35 |
| 55 | red | **4650.1** | 2 | 78,50 |
| 75 | red | **4652.1** | 2 | 87,65 |




121°C

## ZelluTrans/Roth dialysis tubing support

Made of **PP**. With labelling surface. Very sturdy.
Ideal for immersing the filled dialysis tube in larger vessels. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E704.1** | 6 | 29,30 |



121°C

## ZelluTrans/Roth filling funnel

Made of **PP**. For easy filling and draining of dialysis tubes. The open end of the dialysis tube is pushed onto the funnel nozzle and held in place by a silicone strap. The holder on the funnel allows the funnel to be mounted in different containers. Snap closure. Autoclavable.

| Type | For | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Mini | Tubes with 10-19 mm flat width | **E709.1** | 5 | 83,35 |
| Maxi | Tubes with 23-45 mm flat width | **E710.1** | 10 | 88,15 |



## Spectra/Por®-dialysis cylinder

Made of PS. For use with magnetic stirrers.
The tube is centred and dialysis speeded up by the stirring movement.

- MINI - for dialysis tubes and systems up to a length of 10 cm
- MAXI - for dialysis tubes and systems up to a length of 25 cm

**Delivery incl.** magnetic bar and cover.

| Model | Volume (ml) | Height (cm) | ∅ (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| MINI | 600 | 12,5 | 11,5 | **CL82.1** | 1 | 74,20 |
| MAXI | 1800 | 30 | 11,5 | **CL83.1** | 1 | 89,25 |



# Occupational Safety & Personal Protection


| | |
|---|---|
| Absorbers | 693 |
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| Body safety showers | 542 |
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| Cold resistant gloves | 643 |
| Cut resistant gloves | 633 |
| Disposable gloves | 610 |
| Disposable protective clothing | 654 |
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| Fire protection | 673 |
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| Full view goggles | 550 |
| Foot protection | 663 |
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| Skin protection accessories | 604 |
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| Waste collectors | 707 |
| Waste disposal | 696 |
| Working gloves | 639 |
| Workwear | 650 |

# Sekuroka®-Body showers

In compliance with DIN EN 15154-1:2006,
DIN 12899-3:2009 and ANSI Z 358.1-2009.

- Stable construction due to robust brass body
- Chemically resistant powder coating
- Large, maintenance-free ball stop-cock for high flow volume (at 1.5 bar 60 l/min)
- Large, easy to operate release rod
- Operative range from 1 to 10 bar water pressure
- Automatic-emptying, high-power shower head (prevents formation of bacteria and scaling)
- Maintenance-free
- Self-adhesive information label for body showers, 150 x 150 mm



## Body shower model 3

DVGW certified. For above the door mounting, surface inlet pipe, can be mounted on the right or left of the door, wall flange mounting. Is triggered by a pull-rod valve, which does not close automatically. Water-connection ¾″ inner thread, overhang 565 mm, distance of pull-rod valve to shower arm 500 mm, length of pull rod 700 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EP72.1** * | 1 | 396,70 |

* Longer delivery times possible. Please check with our Sales Department.



## Body shower model 1

DVGW certified. For wall assembly, surface inlet pipe.
Wall flange mounting. Is triggered off by pull-rod valve, which does not close automatically. Water connection ¾″ inner thread, overhang 625 mm, pull-rod length 700 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EP70.1** * | 1 | 279,50 |

* Longer delivery times possible. Please check with our Sales Department.



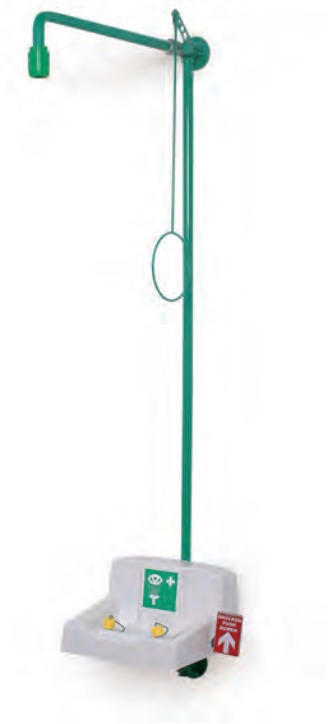

## Combined emergency showers

**Acc. to DIN EN 15154-1:2006, DIN EN 15154-2:2006, DIN 12899-3:2009 and ANSI Z 358.1-2009. DIN-DVGW tested and approved.**

- **Emergency body shower with eye wash**
- Made of brass with chemical resistant powder coating, colour green
- Water connection: ¾″ internal thread
- Wall mounting, surface-type
- Projection: 625 mm

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Emergency body shower with hand-eye wash, vertical shower head | **YP32.1** | 1 | 729,95 |
| ② | Emergency body shower with eye wash, two 45° shower heads | **YP33.1** | 1 | 740,70 |

All laboratories must have a **body shower** with a drinking water supply beside the exit which contains sufficient water (at least 30 l/min) to wet all body parts immediately. The showers must meet the requirements of DIN EN 15154-1. (Laboratory guidelines "Working Safely in Laboratories – Basic Principles and Guidelines" , DGUV Information 213-850, previously BGI/GUV-I 850-0).



## Body-/Eye shower model 2

**Combined shower for wall mounting**
- Height 205 mm, width 355 mm, depth 305 mm
- Wall-mounted shower arm ¾″ made of brass, spout projection 625 mm
- Volume flow rate 60 l/min at 1-1.5 bar flow pressure

**Body shower:**
- Wall flange ¾″ made of brass, water supply ¾″ inner thread
- Brass ball valve ¾″ with pull rod operation
- Pull rod with triangular handle made of steel, 700 mm long
- High-performance shower head made of chemically resistant plastic with upgraded stream, corrosion-resistant

**Eye shower with basin:**
- Eye and face shower with 2 shower heads and basin
- Media-bearing parts made of stainless steel 1.4301 (AISI304)
- Enclosure and basin made of unbreakable and UV-resistant ABS plastic
- Activated by pressing large stainless steel panel
- Broad-stream shower heads ensure extensive water distribution
- With integrated volume regulating valve ⅜″ outer thread
- Water supply ⅜″ outer thread, water drainage 1 ¼″ outer thread

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KH53.1** * | 1 | 891,20 |

* Longer delivery times possible. Please check with our Sales Department.

**Emergency shower inspection**

Emergency showers (body showers and eyewashes) must be inspected on a monthly basis as stipulated by laboratory guidelines "Working Safely in Laboratories – Basic Principles and Guidelines" , (DGUV Information 213-850, previously BGI/GUV-I 850-0) section 7.2. Besides the flow rate, this inspection involves a visual assessment of the water distribution through the shower head and the quality of the water.

The purpose of the regular inspections is also to ensure that the actuating valve continues to operate smoothly and water flow through the shower head is maintained. In addition, the function tests safeguard against microbial contamination. It is recommended that emergency eyewashes be operated even more frequently.



## Emergency shower test trolley

Mobile catch tank on 4 castors with two recessed handles. Can be dismantled into three pieces for easy storage. Drain screw for floor drainage. Retention capacity: 30 litres. Total/ catch height 2.1 m, W 440 x D 440 mm. Aluminium tube ∅ 47 mm, connectable, non extendable. Funnel ∅ 440 mm, height 160 mm. Overall weight 7 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YP27.1** | 1 | 201,05 |



## Sekuroka®-shower tester

For easy checking of body showers. Consists of: synthetic hose with stitched-in opening ring, upper ∅ 28 cm, lower ∅ 12 cm, length 180 cm. 20-litre plastic bucket. Metal clamp rod, 80 cm long.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **T348.1** | 1 | 198,90 |

# Sekuroka®-eye showers

In compliance with DIN EN 15154-2:2006 and ANSI Z358.1-2009. DVGW-certified.

- Rubber sleeves to protect against injury
- Dust caps open automatically when actuated
- Integral flow control ensures a steady jet of water even if water pressure varies
- With extremely wide-stream shower head for a large surface water distribution
- Large holes in the shower heads protect against scaling
- Shower heads can be removed easily for maintenance
- Self-adhesive information label for eye shower, 150 x 150 mm



## Eye showers model 2

Identical to model 1 except that the **shower head is inclined at 45°**, allowing the eye bath to be used without removing it from the wall or desktop holder.

**With 1 shower head**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KT01.1** | 1 | 225,75 |

**With 2 shower heads**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KT02.1** | 1 | 265,55 |



## Eye shower model 1

**With a vertical shower head.**

With non-automatic closing valve **for wall and vertical desk top mounting**. The release lever locks automatically, and the water can easily be shut off by releasing the lever. Made of plastic (media-conveying parts are made of brass). Silicone hose stainless steel clad, 1.5 m long. Flow rate 7 l/min per shower head at a minimum operating pressure of 1 bar. ½″ water connection, internal thread, union nut.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KT00.1** | 1 | 181,70 |




## Premium eye showers

**Tested and approved acc. to DIN EN 15154-2:2006 and ANSI Z358.1- 2009, DIN-DVGW.**

- Made of stainless steel
- For bench or wall mounting
- Integrated backflow preventer
- Stainless steel sheathed drinking water tube, length 1.5 m
- Water connection ½″ internal thread

**With vertical shower head**

- High-performance shower head with integrated flow rate regulator: 7 l/min
- Attachment height: 77 cm (±20 cm)
- Height of shower: 21 cm

| Image | Type of assembly | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Benchtop | **YP23.1** | 1 | 255,85 |
| ② | Wall, 20° angle wall bracket | **YP24.1** | 1 | 255,85 |

**With two vertical shower heads**

- High-performance shower head with integrated flow rate regulator:14 l/min
- Attachment height: 68 cm (±20 cm)
- Height of shower: 26 cm

| Image | Type of assembly | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ③ | Benchtop | **YP25.1** | 1 | 338,65 |
| ④ | Wall, 20° angle wall bracket | **YP26.1** | 1 | 338,65 |

All laboratories must install an **eye shower**, which meets the requirements of DIN EN 15154-2 (Laboratory guidelines "Working Safely in Laboratories – Basic Principles and Guidelines", DGUV Information 213-850, previously BGI/GUV-I 850-0). In the event of contamination or cauterization, both eyes can, therefore, be rinsed immediately and for as long as necessary with a constant supply of drinking water.

**Eye wash flasks**, which do meet the requirements of DIN EN 15154-4, can still be used to supplement the emergency eye showers, especially those with special rinsing solution.

# Eye showers




## Eye shower model 3

For table assembly. Two 45° offset shower heads and distributor fork made of brass, with chemically resistant green powder coating.
With large release lever, 130 mm long and big "PUSH" sign, luminescent according to DIN 67510. Maintenance-free ball valve, 90° operation, made of stainless steel, does not close automatically, DIN-DVGW certified and approved.
Flow rate 14-16 l/min at a minimum operating pressure of 1 bar.
Water connection ½″ outer thread incl. attachment kit.
Dimensions: W (incl. lever) 240 x H 180 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LP23.1** | 1 | 194,60 |




## Eye shower model 5

For wall mounting. With stainless steel basin, diameter 275 mm, drainage connection 1 ¼″ inner thread. Two shower heads, distributor fork and wall flange (water connection ¾″ inside thread) made of brass, with chemically resistant green powder coating. With large release lever, length 240 mm and big "PUSH" sign, luminescent according to DIN 67510. Maintenance-free ball valve, 90° operation, made of stainless steel, does not close automatically, DIN-DVGW certified and approved.
Flow rate 14-16 l/min at a minimum operating pressure of 1 bar.
Dimensions: W (incl. lever) 425 x D 385 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LP26.1** | 1 | 364,45 |




## Eye shower model 4

For wall mounting.Two 45° offset shower heads, distributor fork and wall flange (Water connection ¾″ inner thread) made of brass, with chemically resistant green powder coating. With large release lever, 130 mm long and big "PUSH" sign, luminescent according to DIN 67510. Maintenance-free ball valve, 90° operation, made of stainless steel, does not close automatically, DIN-DVGW certified and approved.
Flow rate 14-16 l/min at a minimum operating pressure of 1 bar.
Dimensions: W (incl. lever) 330 x D 330 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LP25.1** | 1 | 246,20 |



## Sekuroka®-eye shower Kleen Eyes® II

For connection to water spigots with outer thread M 22 x 1. Is activated by simple push of a button. Ensures continuous fresh water supply. Both hands stay free US-patent.

**Sekuroka®-eye showers Kleen Eyes® II is not inconformity with DIN 15154-2, Part 2**. The eye shower may only be used as a supplement to emergency eye showers in conformance with DIN 15154-2.

**Automatic switch-back** to normal use of tap water when turned off.
Spray heads can be adjusted to desired angle.
The eye-shower unit can be rotated when attached to water tap.
This enables the unit to be fitted to awkwardly situated water taps and to be adjusted to the required position.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E348.1** | 1 | 102,15 |

**Adapter for Kleen Eyes®**
M 22 x 1 outer, ½″ inner. For connecting Kleen Eyes® units to water taps with ½″ outer thread.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E711.1** | 1 | 5,50 |




## Eye shower model 6

For in-wall mounting or for replacing the cold water tap. Made of brass, with chemically stable powder coating. Spray disc made of plastic. Two wide streamm 45° offset shower heads. Release lever with 90° operation. Valve does not close automatically. Waterconnection ½″ outer thread.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KX21.1** | 1 | 212,85 |

# Eye wash bottles




## Disposable eye wash bottles

By Plum. Compliant with DIN EN 15154-4. Sterile. Supplied with dust cap. This easy-to-use product is designed to allow speedy rinsing of eyes in an emergency. Patented eye supports keep the eyelids open during rinsing. Duo design enables both eyes to be rinsed simultaneously.

- Sterile saline (0.9 %)
- Quick and easy use
- Directions for use on the bottle
- No contamination
- No cleaning or maintenance needed
- Shelf life 3 years (if unopened)

**Note**: disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of comparable quality is available!

**① Eye wash bottles for one eye**

| Volume (ml) | Total rinsing time | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 200 | approx. 2 min | **Y829.1** | 1 | 11,80 |
| 500 | approx. 5 min | **Y828.1** | 1 | 18,25 |
| 1000 | approx. 10 min | **LH95.1** | 1 | 21,00 |

**② Duo eye wash bottle for both eyes**

| Volume (ml) | Total rinsing time | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 | approx. 2 min | **ALA8.1** | 1 | 16,10 |
| 1000 | approx. 5 min | **LY44.1** | 1 | 27,75 |




## Phosphate buffer disposable eye wash bottles

By Plum. Compliant with DIN EN 15154-4. **Sterile.** Supplied with dust cap. This easy-to-use product is designed to allow speedy rinsing of eyes in an emergency. Patented eye support keeps the eyelids open during rinsing. For speedy and effective neutralisation of acids and a wide range of alkaline substances. Duo design enables both eyes to be rinsed simultaneously.

- Neutralising phosphate buffer solution (4.9 %)
- pH-neutral (pH-value 7.4)
- No contamination
- Quick and easy use
- Directions for use on the bottle
- No cleaning or maintenance needed
- Shelf life 3 years (if unopened)
- Rinsing time approx. 2 minutes

**Note:** disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of comparable quality is available!

| Type | Design | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | For one eye | 200 | **AA81.1** | 1 | 13,95 |
| ② | Duo, for both eyes | 500 | **LY45.1** | 1 | 25,30 |




## Wall-mounted eye wash stations

By Plum. Wall mounting with pictogram, including one eye wash bottle.
① 1 x 500 ml sterile NaCL eye wash solution (Y828.1)
② 1 x 1000 ml sterile NaCL eye wash solution in duo bottle (LY44.1)

For eye wash use at any time in the workplace.
The duo bottle allows both eyes to be rinsed simultaneously.
Pictogram dimensions: H 300 x W 90 x D 3 mm.
**Delivery incl.** mounting materials.

**Note:** Disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of equivalent quality is available!

| Type | Design | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | For one eye | 500 | **Y830.1** | 1 | 34,95 |
| ② | Duo, for both eyes | 1000 | **LY50.1** | 1 | 40,65 |




## Duo wall-mounted eye emergency station

By Plum. Wall mount with pictogram and mirror, including duo eye wash bottles:

- 1 x 1000 ml sterile NaCL eye wash solution (LY44.1)
- 1 x 500 ml sterile pH neutral phosphate buffer eye wash solution (LY45.1)

Ideal for use in workplaces where acids, bases and foreign bodies can get into the eyes.
Duo bottles come eye device for rinsing both eyes at the same time.
After rinsing with the phosphate buffer solution, it is recommended that rinsing with the sodium chloride solution be continued until medical treatment is provided.

Pictogram dimensions: H 300 x W 90 x D 3 mm.

**Delivery incl.** mounting materials and mirror.

**Note:** Disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of equivalent quality is available!

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LY51.1** | 1 | 64,45 |

# Eye wash bottles




## QuickSafe first aid boxes

- For keeping all your first aid materials ready to hand in one place
- Flexible and well-organised system
- Contains all the essential materials needed in an emergency
- High hygiene standard through dust-proof housing
- Robust and sturdy box made of impact-resistant plastic
- Requires little space due to compact size: H 430 x W 253 x D 92 mm

**Delivery incl.** mounting materials.

① **QuickSafe Box Complete**

**For irrigation of eyes, wound care, minor cutting injuries and burns.**
**Contents:**

- 2 x 500 ml sterile NaCl eye wash solution 0.9 %
- 1 x 200 ml sterile pH neutral eye wash solution
- 5 x 20 ml sterile QuickRinse eye wash ampoules
- 18 x QuickCool burn relief gel
- 1 x QuickStop wound dressing kit with 1 17 x 17 cm dressing and 2 7.5 x 12 cm dressings
- 20 x QuickClean wound cleaning tissues
- 1 x QuickFix Elastic plaster refill set with 45 plasters

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ALA9.1** | 1 | 127,95 |

② **QuickSafe Chemical Industry**

**For irrigation of eyes after accidents involving acids and bases.**
**Contents:**

- 1 x 500 ml NaCl eye wash solution 0.9 %, Duo bottle
- 1 x 500 ml sterile pH neutral eye wash solution, Duo bottle
- 1 x 200 ml sterile pH neutral eye wash solution
- 5 x 20 ml sterile QuickRinse eye wash ampoules
- 1 x QuickFix Elastic plaster refill set with 45 plasters

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ALC0.1** | 1 | 116,10 |

## Refill eye wash bottles for the QuickSafe first aid boxes

With sterile eye wash solutions.

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| NaCl eye wash solution 0.9 % | 200 | **Y829.1** | 1 | 11,80 |
| NaCl eye wash solution 0.9 % | 500 | **Y828.1** | 1 | 18,25 |
| NaCl eye wash solution 0.9 %, Duo | 500 | **ALA8.1** | 1 | 16,10 |
| pH neutral eye wash solution | 200 | **AA81.1** | 1 | 13,95 |
| pH neutral eye wash solution, Duo | 500 | **LY45.1** | 1 | 25,30 |

## Refill packs for QuickSafe first aid boxes

**QuickClean wound cleaning tissues**
Wound cleaning tissues for cleaning minor wounds and cutting injuries. Contains sterile water.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ALC1.1** | 20 | 9,65 |

**QuickCool burn relief gel**
Sachets containing pain-relieving gel for first-aid use on minor burns and scalds. Cools and relieves pain. Contains tea tree oil.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ALC2.1** | 18 | 16,70 |

**QuickRinse eye wash ampoules**
Eye wash ampoules containing 20 ml of 0.9 % sterile sodium chloride solution. For rinsing dust and dirt out of the eyes.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ALC3.1** | 5 | 10,25 |

**QuickStop wound dressing kit**
Sterile wound dressings with integrated compress. Elastic, non-adherent and skin friendly. Suitable for universal use as compressive dressing, occlusive dressing and fixed dressing. In the event of heavy bleeding, the small wound dressings can be used as an additional compress.
**Kit consists of:** One 3 m x 8 cm wound dressing with 17 x 17 cm compress and two 2 m x 7 cm wound dressing with 7.5 x 12 cm compresses.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANE4.1** | 1 | 11,30 |

**QuickFix Elastic plaster refill set** with 45 plasters.
Elastic, breathable and skin-friendly 72 x 25 mm plaster strips.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LH94.1** | 2 | 14,95 |

All laboratories must install an **eye shower**, which meets the requirements of DIN EN15154-2 (Laboratory guidelines "Working Safely in Laboratories – Basic Principles and Guidelines", DGUV Information 213-850, previously BGI/GUV-I 850-0). In the event of contamination or cauterization, both eyes can, therefore, be rinsed immediately and for as long as necessary with a constant supply of drinking water.

**Eye wash flasks**, which do meet the requirements of DIN EN15154-4, can still be used to supplement the emergency eye showers, especially those with special rinsing solution.




## Eye first-aid stations

By Plum. First-aid stations each containing:

- 1 x 500 ml sterile NaCL eye wash solution (Y828.1)
- 1 x 200 ml sterile pH neutral eye wash solution (AA81.1)
- Mirror
- Integrated pictogram and/or marking of eye wash direction

Two models available:
① Wall station with wall attachments:
Dimensions: H 290 x W 230 x D 80 mm.
② Dust-proof wall box: Dimensions: H 270 x W 227 x D 110 mm.

**Delivery incl.** wall attachment material.

| Image | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Wall station with wall attachment, open | **CK43.1** | 1 | 53,70 |
| ② | Dust-proof wall box | **CK44.1** | 1 | 64,40 |

# Eye wash bottles



## Wall-mounted eye wash box

By Plum. Wall box with two eye wash bottles filled with 500 ml sterile NaCl eye wash solution (Y828.1).
With marking of eye wash direction and mirror.

- Ideal for use in workplaces where dust and dirt accumulate (e.g. workshops)
- Easy to open for quick access in an emergency

Dimensions: H 270 x W 227 x D 110 mm.

**Delivery incl.** mounting materials.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y831.1** | 1 | 60,75 |




## Sekuroka®-eye wash flask

Acc. to DIN EN 15154-4, filled with 620 ml eye wash solution (water), 2 year shelf life.

- **Refillable:** the eye wash bottle can be filled with drinking water any number of times after the first complete rinse to allow continuous rinsing until medical care is provided
- **Patented tilt valve:** allows the eye wash bottle to be drained both upwards and downwards, e.g. in a bent-forward posture or in a reclining body position

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1543.1** | 1 | 26,70 |

## Wall attachment for Sekuroka®-eye wash flask

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5546.1** | 1 | 6,40 |







## Eye wash bottle station

Made of shock-proof plastic. For dust and splash-free storage of all standard eye wash bottles. Protective lid locks in place when open. Also contains mirror which enables immediate and on-the-spot application and control. Dimensions: H 236 x W 225 x D 125 mm.

Suitable for storing maximum:

- 6 Sekuroka®-mini eye wash bottles (K128.1) or
- 3 disposable eye wash bottles 500 ml (Y828.1/NH43.1) or
- 6 disposable eye wash bottles 200 ml (Y829.1)

**Delivery incl.** screws and dowels for wall attachment.
With labels on clasp for individual marking. Contents not included.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y832.1** | 1 | 42,80 |



## Sekuroka®-eye wash boxes

Made of plastic, with mirror.
For wall attachment, empty, for eye wash flask 1543.1.

| Type | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| For 1 eye wash flask | 320 x 180 x 78 | **8120.1** | 1 | 49,40 |
| For 2 eye wash flasks | 320 x 280 x 78 | **2005.1** | 1 | 66,55 |

All laboratories must have an **eye shower** with a drinking water supply, which meets the requirements of DIN EN 15154-2 (Laboratory guidelines "Working Safely in Laboratories – Basic Principles and Guidelines" , DGUV Information 213-850, previously BGI/GUV-I 850-0).
**Eye wash flasks**, which do meet the requirements of DIN EN 15154-4, can still be used to supplement the emergency eye showers. Should eye wash flasks be used, then preferably those with special rinsing solution.

# Eye wash bottles




## Sekuroka®-eye wash solution

Acc. to EN 15154-4. Eye wash bottle, with 500 ml 0.9 % sodium chloride solution, **sterile**, for washing foreign particles, e.g. wood and metal splinters, dust, dirt.

- Ready to use
- Eye wash bottle with ergonomically designed spray head and dust cap
- For mobile use and for refilling eye wash stations and first-aid cases

**Note:** Disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of equivalent quality is available!

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NH43.1** | 1 | 15,00 |



## Sekuroka®-single eye wash station

Wall-mountable eye wash station, supplied with 1 Sekuroka® eye wash bottle, 500 ml (NH43.1). With pictograms for quick and easy use.

**Delivery incl.** mount for wall mounting and mounting materials.

**Note:** Disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of equivalent quality is available!

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NH45.1** | 1 | 27,55 |

## Sekuroka®-eye wash box

Space-saving, dust-proof eye wash station. Filled with 2 eye wash bottles, 500 ml Sekuroka® eye wash solution (NH43.1) for rinsing out foreign particles. Suitable for wall mounting, easy to use.
Outer dimensions: approx. W 260 x H 370 x D 100 mm.

**Delivery incl.** mirror, pictogram and mounting materials.

**Note:** Disposable eye wash bottles to DIN EN 15154-4 may only be used in addition to existing eye wash units to DIN EN 15154-2 if no running potable water or water of equivalent quality is available!

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NH44.1** | 1 | 35,45 |




NEU
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## Wound and eye spray

By Plum. **Sterile** 0.9 % NaCl solution (isotonic), 250 ml.
Fast and effective rinsing of small surface wounds such as scratches and cuts on the skin or dust and dirt in the eyes.

- Easy to carry with you and ready for immediate use when needed
- Easy operation with one hand, spraying possible from all directions
- Suitable for multiple use, stays sterile after opening
- Contains non-flammable aerosol
- Rinsing solution and propellant are separate, the propellant remains in the can when spraying (bag-on-valve system)
- Total spraying time of a can approx. 15 minutes
- Durable 3 years after production

**Applications:** industry, production, laboratories, hazardous goods transport, work in the open, rescue services and emergency aid, wherever no clean water is available immediately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HLY6.1** | 1 | 21,50 |




## BARIKOS KS eye wash flask Mini

By Bartels + Rieger. Acc. to DIN EN 15154-4. Filled with 175 ml eye wash solution (water). Can be comfortably carried in overall pocket from one workplace to the other and is always at hand. With patented tilt valve, refillable with drinking water. Min. shelf life two years.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K128.1** | 1 | 21,30 |

# Full view goggles



## Full view safety goggles Vistamax

Acc. to **EN 166**. Can be worn over regular spectacles. With direct ventilation. Scratch-proof and non-fogging polycarbonate screen. The frame is made of transparent, stabilized PVC. With woven polyester/ natural rubber headband. The full-vision goggles provide protection against flying particles of medium energy and splashes of molten metal and hot solid. Weight approx. 110 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5360.1** | 1 | 24,10 |




## Full view goggles ultrasonic

By UVEX. Acc. to **EN 166 and EN 170. Also suitable for working with UV-light.** Scratchproof, non-fogging polycarbonate screen. Features flexible soft components for pressure-free fit and panoramic visual field. Also suitable for spectacle users. Wide, variably adjustable band.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| orange/grey | **X406.1** | 1 | 22,05 |
| grey/black | **X407.1** | 1 | 22,05 |

**Eye Protection Equipment**
All laboratory staff are obliged to constantly wear goggles with sufficient side protection. When working with dangerous substances, suitable eye protection must be made available and worn. Below is an extract on the dangers of chemical injuries to the eyes. Look at DGUV information 213-850, previously BGI/GUV-I 850-0.





## Full-vision goggles BLAST

By Bollé. Acc. to **EN 166** and **EN 170.** Also suitable for work with UV light. Special features: Combined with attachable "Visor" (please order separately) with same degree of protection as a face visor and improved eye protection.

- Very comfortable to wear, flexible application options
- Scratch-proof, anti-fog and antistatic PC visor
- Protects against dust, droplets, gases and splashes of molten metal
- Can be worn over spectacles
- Adjustable head strap
- Rotatable articulated hinge
- Outer channel for fluid transport
- Permits wearing of a respiratory half-mask
- 2 versions: indirect venting or gastight

Weight: protective goggles 113 g, visor 65 g.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Full-vision goggles, indirect venting | **KP07.1** | 1 | 15,40 |
| Full-vision goggles, gastight | **KP08.1** | 1 | 15,40 |
| "Visor" | **KP09.1** | 1 | 9,05 |







## Autoclavable full-vision goggles

By Bollé. Conforms to **EN 166**. Suitable for **cleanroom** use.

- Can be worn over prescription spectacles
- Adjustable head strap
- High wearing comfort

① **Model COVERALL CLAVE**
Lens with high-quality anti-fog and anti-scratch coating. With interchangeable indirect ventilation.

② **Model BLAST AUTOCLAVE**
Lens made of untreated PC. With liquid overflow chute and direct ventilation. Can be worn with respiratory half mask.

| Image | Model | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | COVERALL CLAVE | 54 | **PK52.1** | 1 | 18,30 |
| ② | BLAST AUTOCLAVE | 103 | **PK53.1** | 1 | 23,65 |

**EN-Standards for safety spectacles**
EN 166 General requirements
EN 169 Eye protection filter for welding
EN 170 UV-protection filter
EN 171 Infrared filter
EN 172 Sun-protection filter

# Full view goggles



## Full view goggles 9305

By UVEX. Acc. to **EN 166**. Tight, pressure-free fit. With vents.
Non-fogging screen made of cellulose acetate. Headband manufactured from solid rubber. Suitable for clean-room work.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Panorama goggles | **P822.1** | 1 | 17,55 |
| Spare screen | **P823.1** | 1 | 9,80 |



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## Ultravision gastight full vision goggles

By UVEX. Acc. to **EN 166, EN 170**. UV lens made of transparent PC.
Anti-fog on the inside, scratch-resistant and resistant to chemicals on the outside. Unrestricted side view. Also suitable as over-goggles.
Frame colour yellow.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HHX4.1** | 1 | 19,15 |



## uvex 9405 full-view safety goggles for respiratory protection masks

By UVEX. Complies with **EN 166**.

- Large, full-view goggles with all-round ventilation system
- Cellulose acetate protective visor; clear and fog-free
- Upper section of goggle body frosted to suppress light reflections
- Can be worn over corrective spectacles
- Shape at bottom has been specially flattened, making it ideal to be combined with respiratory protection masks
- Headband can be easily adjusted

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EEK7.1** | 1 | 17,55 |



## Full view goggles 6X3

By Univet. Acc. to **EN 166**.
Large panorama lens, can be worn over corrective spectacles and is compatible with half masks. Clear glass lenses made of PC with innovative double-layer anti-scratch/anti-fog coating.

- Adjustable head strap
- Indirect ventilation system ensures protection against liquid droplets and splashes
- Optional attachable face shield
- Weight of safety spectacles: 75 g

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Full view goggles 6X3 | **ATP4.1** | 1 | 25,75 |
| Face visor | **ATP5.1** | 1 | 11,50 |



## Full view goggles ultravision

By UVEX. Acc. to **EN 166**. Panorama screen with 180° vision field.
Features ventilating and deventilating system.
Screen made from cellulose acetate, with non-fogging coating on screen.
Wide, variably adjustable band.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X368.1** | 1 | 19,65 |



## Full view goggles 2890

By 3M. In acc. with **EN 166, EN 170**. Also suitable for work with UV light.
Clear, scratch-proof and non-fogging PC lens. Indirect ventilated.
Can be worn over most prescription spectacles using grooves on each side.
Wide adaptable headband with adjustable joints for perfect fit.
Good compatibility with 3M half masks. Weight 41 g.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2890 | **PT44.1** | 1 | 15,20 |

# Full view goggles





## Full view goggles 601

By Univet. Acc. to **EN 166**.
Lenses made of clear acetate, with anti-fog coating.
Excellent resistance to chemicals and solvents.
Soft and elastic, allows perfect adaptation to the face,
with anatomically shaped nose bridge for optimum wear comfort.

- Wide and undistorted field of view
- Soft fitting, pressure-free rubber frame
- Wide, adjustable elastic head strap
- Can be worn over corrective spectacles
- Adapter available for corrective lenses
- Weight 118 g

| Type | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| With indirect ventilation | blue | **ATP1.1** | 1 | 22,05 |
| Without ventilation, gastight | white | **ATP2.1** | 1 | 22,05 |
| Adapter for corrective lenses | transparent | **ATP3.1** | 1 | 13,20 |



## Wide-vision safety goggles 611 Firefighters

By Univet. Acc. to **EN 166, EN 170**. Developed for the requirements of professionals who need maximum protection when working under extreme conditions with high-tech equipment.

- Clear UV-protection double lens made of polycarbonate. With anti-scratch and anti-fog plus coating
- Double lens protects against heat, fog and impact
- Frame, safety lens and elastic band made of fireproof material
- Gas-tight protective frame offers protection against irritating gases and fine dust
- Version with quick-release closure for use with different helmet types
- Wide elastic band ensures additional stability

Application: Protection against liquids, coarse and fine dust, gas, molten metal and hot solids.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Red, gas-tight | **EYY6.1** | 1 | 39,70 |
| Red, gas-tight, with quick-release closure | **EYY7.1** | 1 | 46,05 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement lens | **EYY8.1** | 1 | 16,10 |
| Adapter for corrective lenses | **ATP3.1** | 1 | 13,20 |



## 6X1 full view goggles

By Univet. Acc. to **EN 166**.
The perfect combination. Clear lenses made of PC with anti-scratch/ anti-fog coating. The adjustable SoftPad™ side pieces can be replaced with an elastic head strap and therefore offer absolute flexibility.

- Wide lens for distortion-free field of view
- Indirect ventilation system
- Soft fitting, pressure-free rubber frame
- Adapter available for corrective lenses
- Angle and length of side pieces can be adjusted

**Delivery incl.** head strap.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Full view goggles 6X1 | **APY5.1** | 1 | 28,25 |
| Adapter for corrective lenses | **APY6.1** | 1 | 7,80 |



## Fahrenheit™-safety goggles

By 3M. Acc. to **EN 166**. PC lenses, clear, with anti-scratch and anti-fog coating. Light blue frame. Indirect ventilation, adjustable nylon head band. Suitable for wearing with corrective spectacles and respiratory half masks.
**Delivery incl.** microfibre bag.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| FheitAF | **AKX2.1** | 1 | 11,85 |



## Full-vision goggles X90

By Bollé. Acc. with **EN 166**. Small, compact full-vision goggles.

- PC lens
- Scratch-proof, anti-fog and antistatic treatment
- Wide, adjustable head strap
- Rotatable articulated hinge
- Indirect venting

Weight: 62 g

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KP06.1** | 1 | 14,95 |




## Protective goggles uvex u-sonic

By UVEX. Acc. to **EN 166, EN 170**.
Small and compact wide-vision goggle with perfect fit. Clear UV protective lens made of polycarbonate, outside scratch-proof and chemical-resistant, mist-free inside.

- Adapts perfectly to any face - ergonomic design with flexible soft components
- High-comfort fit - through light weight and low pressure
- Keeps the eyes comfortable - due to innovative ventilation system
- Ideally combinable with hard hat - due to compact geometry
- Easy and fast insertion of the additional lens for EEK5.1 through integrated magnet technology
- Weight: without additional lens 69 g

| Frame colour | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① grey/lime | Ventilation system | **EEK3.1** | 1 | 21,85 |
| ② black/red | Limited ventilation | **EEK4.1** | 1 | 21,85 |
| ③ black/orange | Ventilation system, with grey additional lens (16 % glare protection) and magnetic headband | **EEK5.1** | 1 | 27,85 |




## Safety goggles SP1000™

In acc. with **EN 166 and EN 170**. Offers effective protection from chemical splash, impact, wind, dust and flying particles. With black frame and clear PC lens. Weight 50 g.

- With Dura-streme™ dual anti-fog/anti-scratch coating
- With indirect ventilation at the top and bottom
- High-quality foam-padded frame for first-class comfort and sealing
- Soft and flexible nose pads for easy fitting to a variety of face shapes
- Padded ear-piece tips for all-day wear comfort
- Flexible design: can be used with ear pieces or adjustable headband.

**Delivery incl.** ear pieces and headband.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PT41.1** | 1 | 24,95 |




## Full vision goggles carbonvision

By UVEX. In acc. with **EN 166 and EN 170**. Also suitable for work with UV light. Colourless, scratch-proof and anti-fog PC visor.
Excellent mechanical stability with high-grade, long-life headband.
Very light full-vision goggles combinable with respiratory protection and safety cap. Weight 46 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PP31.1** | 1 | 22,05 |




## Over-goggles 5X7

By Univet. In accordance with **EN 166, EN 170, EN 172** (only grey lens).
Innovative frame design prevents overlapping of the arms and offers absolute comfort. UV-protection lenses made of polycarbonate.
Orange lens: Protection against UV and blue light up to 525 nm.

- 3x length adjustable side pieces
- SoftPad™ ear pieces allow perfect adaptation to the face shape of the wearer
- Weight: 37 g

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① gun metal/orange | clear, anti-scratch coated | **HAA6.1** | 1 | 15,00 |
| ② gun metal/green | clear, anti-scratch and anti-fog coating | **APY1.1** | 1 | 19,30 |
| ③ white/blue | clear, anti-scratch and anti-fog coating | **APY2.1** | 1 | 19,30 |
| ④ gun metal/green | grey, anti-scratch coating | **APY3.1** | 1 | 16,10 |
| ⑤ black/orange | orange, anti-scratch and anti-fog coating | **APY4.1** | 1 | 20,95 |

# Protective glasses for spectacle wearers



## Panorama safety goggles Armamax

Fits over regular glasses. Acc. to **EN 166**. Extra large field of vision and wide side shields. Frame and screen made of transparent polycarbonate. Weight 46 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1726.1** | 1 | 9,15 |



## Goggles for spectacle wearers, super OTG

By UVEX. Acc. to **EN 166, EN 170** and **EN 172** (only Art. No. KX41.1). Can be worn over most standard spectacles.

- Highly scratch-resistant PC lens on both sides
- Hinge-free earpiece
- Flexible, soft ear pieces
- Weight 57 g

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| blue | clear | **KX39.1** | 1 | 20,40 |
| black | clear | **KX40.1** | 1 | 21,85 |
| black | tinted grey | **KX41.1** | 1 | 22,90 |



## Cover glasses 9161

By UVEX. Acc. to **EN 166, EN 170**.
**Also suitable for working with UV-light**.
Fits over all regular spectacles. Super panorama sceen with 180° fields of vision enable unlimited side view.

**Model I**: Uncoated polycarbonate lens with standard side arms; autoclavable.

**Model II**: scratch-proof polycarbonate screen, with special side arms adjustable in 4 stages. With soft padding for pressure-free fit.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Model I | **1554.1** | 1 | 8,85 |
| Model II | **N163.1** | 1 | 12,70 |





## Over-goggles 2800

By 3M. Acc. to **EN 166** and **EN 170**. Lenses made of PC with UV protection, anti-scratch coating. Dark-blue frame. Can be worn as over-goggles over most types of corrective spectacles.

- 4x adjustable earpiece length
- Adjustable lens angle for perfect fit
- Soft tip ear pieces for wearing comfort
- Yellow lenses filter UV radiation and blue light up to 480 nm and increase contrast even in weak light conditions.
- Weight 38 g

| Lens | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| clear | 2800 | **KA80.1** | 1 | 9,80 |
| yellow | 2802 | **AKT8.1** | 1 | 9,95 |



## Over-goggles OX 3000

By 3M. Acc. to **EN 160, EN 170**. Also suitable for UV work. Comfortable over-goggles for spectacle wearers, fits over all types of spectacles.

- Clear polycarbonate lens, the coating protects against fogging, scratches, static charge and chemical influences
- Straight earpieces, 4-times adjustable, can also be used in combination with ear muffs
- The earpieces are covered with non-slip rubber for optimal comfort
- No metal parts, also suitable for electricians
- Weight 46 g

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KA31.1** | 1 | 11,40 |



## SQUALE UV-over-goggles

By Bollé. Acc. to **EN 166** and **170**.
- Length-adjustable earpieces
- Scratch-proof and anti-fog PC visor
- Additional top and bottom protection

Weight: 43 g.
**Delivery incl.** thin goggles strap.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KP05.1** | 1 | 7,90 |



## Safety goggles for visitors

Acc. to **EN 166**. Rugged over-goggles with uncoated PC lens.
Ventilated side protectors. Can be worn over corrective spectacles.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CNH1.1** | 1 | 5,85 |



## UV-safety spectacles cosmoflex

By UVEX. Acc. to **EN 166, EN 170**. Excellent fit and low weight (33 g).
Clear panes made of polycarbonate, extremely scratch-resistant.
Side arms can be individually adapted in 4 stages for extreme comfort and are non-slip. Side protectors integrated in frames. Also feature covers for eyebrow area for additional protection against impurities from above.
Replaceable lenses.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C523.1** | 1 | 18,75 |



## UV-safety glasses XC

Acc. to **EN 166, EN 170**. Anti-fogging polycarbonate lens. Inclination of lens can be adjusted individually, length of side-arms is also adjustable. Can also be used by people with glasses in combination with the special corrective lens insert (CK91.1).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CK90.1** | 1 | 20,65 |

## Corrective insert

Can be combinded with UV-safety glasses XC (CK90.1). The insert must be adjusted individually by your optician with lenses in your normal strength.
- Can be fitted easily and safely behind the screen of the safety glasses
- The optician's lenses are protected by the safety glasses screen
- More comfortable to wear than clip-on glasses or spectacle covers

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CK91.1** | 1 | 36,45 |



## Safety glasses BX™-readers with bifocal lenses

By 3M. Compliant to **EN 166, EN 170**. **Bifocal lenses** made of clear PC, anti-scratch and anti-fog. The bottom part of the lens provides magnification for reading or precision work but at the same time still providing excellent protection against flying particles or mist.
- The lenses are deeply curved for optimal coverage of the eyes
- Soft tip temples improve wear comfort
- Soft, universal-fit nose piece
- Adjustable temple length and lens angle (3 positions)

| Protection level | Focal power | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2C-1.2 | +1.5 | **YP13.1** | 1 | 17,00 |
| 2C-1.2 | +2.0 | **YP14.1** | 1 | 17,00 |

# Safety glasses



## UV-safety spectacles, futura

By UVEX. Acc. to **EN 166, EN 170**. Excellent fit. Clear panes made of polycarbonate, extremely scratch-resistant and with a near unrestricted field of view. Side arms can be individually adapted in 4 stages for extreme comfort, are non-slip and with variably adjustable inclination. Weight 46 g. Replaceable lenses.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C522.1** | 1 | 17,85 |




## Safety glasses SUNDOWNER

Acc. to **EN 166**. Panorama style design, i.e. frames and lenses curve backwards and are formed to fit the shape of the head. The one-piece, non-fogging screen is made of scratchproof 2 mm thick polycarbonate. The nose piece features soft silicone padding for improved comfort. Side arms can be adjusted in length by 4 stages. Weight 41 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P099.1** | 1 | 13,55 |



## Safety glasses 511

By Univet. Acc. to **EN 166**. Clear lenses made of PC. Narrow type is suitable for narrow faces or students.

- Angle and length of side pieces can be adjusted
- Integrated side protection
- Weight 34 g

| Type | Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Normal type | blue | Anti-scratch coating | **APY7.1** | 1 | 7,10 |
| Normal type | black | Anti-fog coating | **CNH0.1** | 1 | 9,05 |
| Narrow type | blue | Anti-scratch coating | **APY8.1** | 1 | 7,20 |




## Skylite UV safety spectacles

By UVEX. Acc. to **EN 166, EN 170**. Clear lenses made of polycarbonate, scratch-resistant on the inside and outside. Angle of side pieces can be adjusted. Integrated side protectors with a matt finish. Ultra-lightweight spectacles, approx. 26 g.

| Frame colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① red metallic | **CH18.1** | 1 | 12,40 |
| ② blue | **NP29.1** | 1 | 11,80 |




## Safety glasses Max A1

Acc. to **EN 166**. Scratchproof, non-fogging lenses made of polycarbonate. With integral side protection. Side arms can be adjusted in length and are pliable. Softpads reduce the pressure. Inclination of lens enables individual fit. Weight 34 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y254.1** | 1 | 12,50 |



## UV-safety glasses B272

By Bollé. Acc. to **EN 166** and **EN 170**.

- Scratch-proof and non-fogging PC visor
- Length-adjustable earpieces
- Adjustable visor inclination
- Additional top and bottom protection

Weight: 31 g.

| Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| clear | **KP00.1** | 1 | 14,20 |

# UV-protection glasses





## UV-safety spectacles astrospec

By UVEX. Acc. to **EN 166, EN 170**. **Scratchproof, with permanently non-fogging and antistatic lens** made of polycarbonate with integrated side protection. Lens is easy to replace. Side arms can be adjusted in length and inclined for exact fit. Soft pads at the ends of the side arms reduce pressure. Weight 36 g.

| Frame colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **9018.1** | 1 | 14,55 |
| yellow | **9021.1** | 1 | 14,55 |
| spare screen | **9022.1** | 1 | 8,85 |



## Safety spectacles astrospec asiatic

By UVEX. Acc. to **EN 166 and EN 170. Also suitable for working with UV-light.** Specially formed to fit asiatic heads, stop glasses from always slipping down. Clear lenses, extremely scratchproof and chemically resistant. Angle of lens can be adjusted in 3 stages and the length of the ear-piece 4 times. The ends of the ear-pieces are soft for a pressure-free fit.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AA86.1** | 1 | 14,55 |



## UV-safety spectacles skyper / skyper s

By UVEX. Acc. to **EN 166, EN 170**. Polycarbonate lens, clear, scratchproof. Length of side pieces and inclination of lens can be adjusted for individual fit. Also features integrated side protection in lens. Weight 30 g or 28 g.

**Skyper: larger model for broad faces**

| Frame colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **X451.1** | 1 | 17,10 |
| black | **X452.2** | 1 | 17,10 |

**Skyper s: smaller model for narrow faces**

| Frame colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **P825.1** | 1 | 17,10 |




## astrospec 2.0 safety spectacles

By UVEX. Acc. to **EN 166, EN 170**.
Clear panorama lens made of polycarbonate with UV filter and integrated side protectors.

- Flexible duo component temples and adjustable lens inclination for perfect fit
- Soft ear pieces ensure a secure fit without pressure points
- Maximum wearing comfort for all face shapes
- Also suitable for extended wear
- Extremely flat-folding and space-saving
- Weight 37 g

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① anthracite/ blue | Scratch-resistant on the outside and inside, permanently anti-fog | **CYN0.1** | 1 | 19,90 |
| ② black/ lime | Scratch-resistant on outside and chemical resistant on inside, anti-fog | **CYN2.1** | 1 | 19,90 |
| ③ blue/ light blue | Extremely scratch- and chemical-resistant on both sides. Non-stick coating for easy cleaning | **EEK6.1** | 1 | 17,20 |




## UV-safety spectacles super g

By UVEX. Acc. to **EN 166, EN 170.**
**The lightest safety glasses in the world.**
Weight 18 g.

- Completely metal-free
- Fatigue-free and safe fit thanks to the barely noticeable and extremely flexible frame design
- Unique nose rest allows it be combined easily with respiratory masks
- The side-arms are comfortable and pressure-free due to XST technology (Ends of side-arms come with soft components)
- Very thin and breakproof lens made of PC
- Different types of lens coating available:
  ① Permanently non-fogging, scratchproof and antistatic.
  ② Outside highly scratchproof, inside permanently non-fogging.

| Model | Frame colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | crystal | **HH50.1** | 1 | 18,10 |
| ② | blue | **HH51.1** | 1 | 19,35 |

# UV-protection glasses



## UV-safety glasses SILIUM

By Bollé. Acc. to **EN 166, EN 170** and **EN 172** (dark visor).
- Non-slip TIPGRIP earpieces and non-slip adjustable nose bridge plates
- Scratch-proof, anti-fog and antistatic PC visor
- Bendy, Flex earpiece 160 %
- Brass frame

Weight: 34 g.

| Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| clear | **KN95.1** | 1 | 12,05 |
| Tinted glass, slightly dark | **KN96.1** | 1 | 13,65 |



## UV-safety glasses Premium 2750

By 3M. Acc. to **EN 166, EN 170**. Clear, scratchproof and non-fogging lens made of polycarbonate. Sidearms can be adjusted 5 times in length. Soft, shaped nose piece. Weight 32 g. Can be used in combination with Sekuroka®-particle filter masks N186.1 ff., the 9300 series by 3M.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH68.1** | 1 | 12,55 |



## Safety glasses 506U

By Univet. Acc. to EN **166, EN 170.**
Clear UV-protective lens made of PC with anti-scratch/anti-fog coating.
- Angle and length adjustable temples
- Soft ear pieces avoid pressure points
- Optimal wearing comfort and adaptation through soft, adjustable nose pad
- Weight 25 g

| Frame colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white/pink | **CNE8.1** | 1 | 12,60 |
| black/green | **CNE9.1** | 1 | 11,30 |



## UV safety glasses Tora CCS

By 3M. Acc. to **EN 166, EN 170**. Scratchproof, fogproof PC lens. Ear protection attaches directly to the glasses, ensuring that eye and ear protection are always joined and ready for use, without tangling. The ear protection cord doubles as a spectacle cord. Very light (22 g). **Delivery without** ear protection and cord. Please order separately (ULTRAFIT TE80.1 ear plugs).

| Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| clear | **TE79.1** | 1 | 9,25 |



## UV-safety glasses Z8

Acc. to **EN 166, EN 170**. Clear, anti-fogging polycarbonate lens, also protects the area around the eyebrows. Metal side-arm. Side-arms are padded at the ends with non-slip, soft PVC. Optimal fit and good panorama view. Weight 33 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CY76.1** | 1 | 12,85 |




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## UV safety spectacles i-works

By UVEX. Acc. to **EN 166, EN 170.**

- UV protective lens made of PC. Anti-fog on the inside, scratch-resistant and resistant to chemicals on the outside
- Non-metallic
- Large field of view due to panoramic lens
- Soft temples, flat earpiece with opening for fastening the spectacle cord

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| anthracite/blue | clear | **HHX0.1** | 1 | 13,95 |
| anthracite/green | clear | **HHX1.1** | 1 | 14,00 |
| black/grey | silver mirror, grey | **HHX2.1** | 1 | 26,80 |
| black/yellow | yellow | **HHX3.1** | 1 | 17,75 |



## UV safety spectacles I-3

By UVEX. Acc. to **EN 166, EN 170**.

- PC lenses - anti-fog on the inside, scratch resistant on the outside, resistant to chemicals
- Perfect vision downwards
- Adapts perfectly to any face shape, excellent wearer comfort
- Soft nose pads ensure perfect anti-slip fitting
- Metal-free construction for low weight and long life

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| anthracite/blue | clear | **NP27.1** | 1 | 21,45 |



## UV-safety glasses PRISM

By Bollé. Acc. to **EN 166, EN 170** and **EN 172** (dark visor).

- Goggles 100 % polycarbonate
- Scratch-proof and anti-fog visor
- Straight earpiece
- Very light goggles, 23 g

**Delivery incl.** goggles strap.

| Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| clear | **KP03.1** | 1 | 7,90 |
| Tinted glass, dark | **KP04.1** | 1 | 7,90 |




## UV-safety glasses VIPER

By Bollé. In acc. with **EN 166** and **EN 170**.

- Very good adaptation thanks to shape and ultra-light design
- Length-adjustable earpieces
- Visor made of PC, scratch-proof; yellow tinted visor, also anti-fog
- Additionally integrated protection at upper edge of goggles

Weight: 25 g.
**Delivery incl.** adjustable goggles strap.

| Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| clear | **KP01.1** | 1 | 9,35 |
| yellow | **KP02.1** | 1 | 11,50 |

# UV-protection glasses



## UV-safety spectacles x-trend

By UVEX. Acc. to **EN 166, EN 170, EN 172** for HH53.1.
Large anatomically formed wrap-around lens made of PC, for extreme safety. 20 % higher coverage compared to standard glasses. Lens is highly scratch-resistant on exterior and with permanently non-fogging inner side. With anti-slip side arm surface.

| Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| clear | **HH52.1** | 1 | 14,90 |
| grey | **HH53.1** | 1 | 18,10 |



## UV safety goggles pheos s

By UVEX. In accordance with **EN 166, EN 170.**
Smaller-framed pheos safety goggles for narrower face shapes.

- Wide, borderless, undistorted field of vision
- Inner lenses permanently non-fogging, outer lenses highly scratch- and chemical-resistant
- Duo-spherical lenses provide optimal eye coverage at the sides
- The tips of the earpieces are fitted with anti-slip components for extra comfort and slip resistance
- Excellent ventilation
- Metal-free earpiece mechanism with an easy action
- Compatible with ear muffs, hard hats and bump caps

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① white/green | Clear | **EHT7.1** | 1 | 19,30 |
| ② anthracite/grey | Clear | **EHT8.1** | 1 | 19,30 |



## UV safety spectacles pheos/pheos blue

By UVEX. Acc. to **EN 166, EN 170** and **EN 172** (grey lens).

- Wide, undistorted field of vision
- Inner lenses permanently anti-fogging, outer lenses highly scratch-resistant and chemical-resistant
- Duo-spherical lenses provide optimal eye coverage at the sides
- The tips of the earpieces are fitted with anti-slip components for extra comfort and slip resistance
- Excellent ventilation
- Metal-free earpiece mechanism with an easy action
- Compatible with ear muffs, hard hats and bump caps

①+② **pheos**
PC lenses.

③ **pheos blue**
Eco-friendly safety spectacles **"Green Design"** based on natural raw materials. Made of bioplastic, which is a plastic based on organic raw materials. Fully functional safety spectacles which meets all requirements for safety and wearing comfort.

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① light grey/grey | clear | **XC85.1** | 1 | 14,90 |
| ② black/green | clear | **EHT6.1** | 1 | 19,30 |
| ③ black/grey | grey | **XC86.1** | 1 | 16,45 |
| ④ sand/blue | clear | **XC87.1** | 1 | 21,40 |



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## UV safety spectacles pheos cx2

By UVEX. Acc. to **EN 166, EN 170.**

- UV lens made of transparent PC. Anti-fog on the inside, scratch-resistant and resistant to chemicals on the outside
- Wide, undistorted field of vision
- Comfortable protection with directly moulded forehead piece and nose piece
- Excellent ventilation for healthy eyes
- Combinable with ear defenders, helmet and bump caps

| Frame colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| black/light blue | **HHT7.1** | 1 | 15,00 |
| blue/grey | **HHT8.1** | 1 | 15,00 |
| red/gray | **HHT9.1** | 1 | 15,00 |




## Safety spectacles UVEX sportstyle

By UVEX. In acc. with **EN 166, EN 170** and **EN 172** (EHN4.1).
- Attractive UVEX design with UV protection
- Inner lenses permanently non-fogging, outer lenses highly scratch- resistant
- Soft, adjustable nose pads
- Soft, anti-slip side arm ends
- UVEX lens geometry from optimum view and perfect protection
- Extremely light, sporting design for excellent wearer comfort

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① black/petrol | clear | **EHN2.1** | 1 | 20,40 |
| ② black/green | clear | **EHN3.1** | 1 | 20,40 |
| ③ black/petrol | grey | **EHN4.1** | 1 | 20,40 |




## UV safety spectacles i-vo

By UVEX. Acc. to **EN 166, EN 170 and/or EN 172** (CH15.1). Polycarbonate lens. The nanotechnology coating enhances the anti-adhesion properties, allowing aqueous and oily staining to be removed effortlessly from the lens.
- Safety spectacles for maximum comfort
- Pressure-free and comfortable fit due to soft components at sensitive zone, such as nose, forehead and ears
- Length-adjustable side arms, 5-stage inclination

| Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Clear, extremely scratch-proof and chemical-resistant on both sides | **Y406.1** | 1 | 20,80 |
| ② Clear, mist-free inside (at least 16 s), outside extremely scratch-proof and chemical-resistant | **EHT5.1** | 1 | 21,45 |
| ③ Brown, extremely scratch-proof and chemical-resistant on both sides | **CH15.1** | 1 | 22,05 |




## Safety glasses 5X1

By Univet. In accordance with **EN 166, EN 170.** Designed for optimum protection and individual adjustment. UV protective lenses made of polycarbonate.
- Distinctive “wrap-around” lens with extra protection in side eye area
- SoftPad™ ear pieces, arms adjustable in length and angle
- Soft, height-adjustable nose bridge, reduces pressure
- Suitable for long periods of wear
- In/Out lens with multi-layer, reflective coating on the outside, offers protection against glare and allows good visibility when switching between dark and bright environments

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① grey/green | clear, anti-scratch and anti-fog coating | **HAA7.1** | 1 | 19,85 |
| ② grey/green/blue | In/Out, anti-scratch coating | **HAA8.1** | 1 | 19,85 |



## Safety glasses 5X3

By Univet. Acc. to **EN 166, EN 170**.
Advanced frame design minimises pressure points, adapts automatically to any face shape.
- SoftPad™ side pieces and adjustable nose bridge for improved wear comfort
- Distinctive wraparound lenses made of PC
- Ventilation system
- Orange lens offers protection against UV light and blue light up to 525 nm
- Weight 31 g

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| black/green | clear, anti-scratch coated | **APX7.1** | 1 | 11,80 |
| black/orange | clear, anti-scratch/anti-fog coated | **APX8.1** | 1 | 18,25 |
| black/orange | orange, anti-scratch/anti-fog coated | **CNH4.1** | 1 | 18,75 |

# UV-protection glasses



## UV safety glasses 5X6

By Univet. Acc. to **EN 166, EN 170**.
Clear UV-protective lens made of PC with anti-scratch/anti-fog coating.
Light and comfortable model, ideal for long-duration wear.
Sporty "wrap-around" design, the lens is flexibly attached to the frame.

- Length adjustable SoftPad™ side pieces
- Soft and anatomically shaped nose bridge
- Weight 26 g

| Frame colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| gun metal/green | **APX9.1** | 1 | 17,15 |
| white/blue | **APY0.1** | 1 | 17,15 |



## UV-safety glasses Comfort 2740

By 3M. Acc. to **EN 166, EN 170**. Lens made of clear polycarbonate, scratchproof and non-fogging. Earpieces can be adjusted 4 times in length and in inclination and have soft ends. Weight 28 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH67.1** | 1 | 11,40 |



## UV-safety spectacles x-act

By UVEX. Acc. to **EN 166, EN 170**. Frameless glasses with large field of vision. With clear, scratchproof polycarbonate lenses. Top of the lens is also covered for additional protection against falling particles. Adjustable arm inclination allows lens to be adjusted to face shape. Weight approx. 28 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AA52.1** | 1 | 17,75 |



## UV-safety glasses Maxim

By 3M. Acc. to **EN 166, EN 170.** Clear polycarbonate lens for 180° view without distortion. Coated lens protects against fogging, scratches and splashes from chemicals. Soft, adjustable nose-piece. With eyebrow protection for more comfort and protection against mechanical influences. Earpieces can be adjusted in length and inclination of lens can also be altered. Weight 28 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KA36.1** | 1 | 14,55 |




## X-one UV safety spectacles

By UVEX. Acc. to **EN 166, EN 170, EN 172** (grey lenses).
Sporty and lightweight, wide field of vision, unlimited side vision, good coverage of the eyebrows and cheeks. Weight 27 g.

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① colourless | clear | **NP24.1** | 1 | 9,15 |
| ② azure blue | clear | **NP25.1** | 1 | 9,15 |
| ③ grey-black | grey | **NP26.1** | 1 | 9,15 |

# UV-protection glasses



## Safety glasses SecureFit 400

By 3M. Acc. to **EN 166, EN 170, EN 172** (grey lenses).
Polycarbonate UV protective lenses with anti-scratch resistance and anti-fog properties.

- Flexible frame, adapts easily to all head sizes and shapes
- Soft, adjustable nose pad for a perfect and secure fit
- Padded ear pieces reduce pressure points and thus enhance wearing comfort
- Optimal compatibility with ear muffs and fine dust masks
- Ultra lightweight - only 19 g

| Frame colour | Lens | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| black/green | clear | **CNE6.1** | 1 | 9,90 |
| black/green | grey | **CNE7.1** | 1 | 10,20 |



## Virtua UV-safety glasses

By 3M. Acc. to **EN 166, EN 170** and **EN 172** (grey lens).
Spectacles are entirely made of polycarbonate scratchproof.
Extremely good fit. Weight 25 g.

| Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| clear | **CY78.1** | 1 | 6,40 |
| grey | **CY80.1** | 1 | 6,40 |



## UV-safety glasses, Kids

By 3M. Acc. to **EN 166, EN 170**. For small head sizes, children or adults with short interpupillary distance / narrow face.
Glasses made of polycarbonate, clear and scratchproof lens.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KA62.1** | 1 | 6,25 |



## millennia® UV-safety glasses

Tempered safety glasses acc. to **EN 166, EN 170** and **EN 172** (P763.1).
Ergonomic frame adapts to head shape. Straight side-arms do not need to be adjusted in length or inclined, no pressure behind the ears.
Lens is optimally curved enabling undistorted vision.
Low weight (34 g).

| Lens | Application |
|---|---|
| clear | High mechanical protection, filters harmful UV-rays. |
| yellow | Excellent contrast recognition by filtering the blue proportion of light in the visible spectrum, filters harmful UV-rays. High mechanical protection. |
| grey | Sun protection filter, filters UV-rays and visible light. Good colour recognition. |

**Delivery incl.** adjustable, flexible spectacles band.

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| blue | clear | **P758.1** | 1 | 10,70 |
| silver | clear | **P760.1** | 1 | 10,70 |
| black | yellow | **P761.1** | 1 | 13,65 |
| black | grey | **P763.1** | 1 | 13,65 |



## UV-safety glasses millennia® sport

Acc. to **EN 166, EN 170** und **EN 172** (grey lens).
Scratchproof polycarbonate lens. Same as millenia® UV-safety glasses.
**Delivery incl.** adjustable, flexible spectacles band.

| Frame colour | Lens | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| blue | clear | **CA36.1** | 1 | 10,25 |
| black | grey | **CA35.1** | 1 | 9,65 |

# UV-protection glasses





## UV-safety spectacles, cybric

By UVEX. Acc. to **EN 166, EN 170** and **EN 172** (AA34.1).
Sporty, modern double lens optic with integral side protection. Scratchproof and non-fogging lens made of polycarbonate. Side arms can be adjusted individually in inclination and length. End of side arms are elastic for a pressure-free and comfortable fit. Weight 29 g.

| Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| clear | **AA33.1** | 1 | 18,85 |
| grey | **AA34.1** | 1 | 19,80 |





## Safety glasses 546

By Univet. Acc. to **EN 166, EN 170.** Extremely lightweight and modern spectacle with a sporty line. Clear UV protective lenses made of PC with anti-scratch/anti-fog coating.

- Wraparound polycarbonate lens with integrated side protectors
- Temples guarantee excellent fit and wear comfort
- Non-slip soft nose pad
- Ideal for long wearing times
- Orange lens offers protection against UV and light up to 525 nm

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| black/green | clear | **CNH2.1** | 1 | 13,85 |
| black/orange | orange | **CNH3.1** | 1 | 17,85 |





## UV-safety spectacles racer MT

By UVEX. Acc. to **EN 166, EN 170** and **EN 172** (only Art. No. KX38.1).

- Flexible metal frame
- Adjustable nosepiece
- Scratchproof, non-fogging PC lens
- Weight 40 g

| Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| clear | **KX37.1** | 1 | 26,55 |
| grey | **KX38.1** | 1 | 30,65 |










## UV-safety glasses 2840

By 3M. Acc. to **EN 166, EN 170** and **EN 172** (KA83.1).

- Side arm length is 3-times adjustable
- Adjustable inclination of lens for individual fit
- Robust polycarbonate lens with scratchproof and non-fogging coating
- Integrated eyebrow protection for more safety
- Side arms are soft inside for a more comfortable fit
- Safety spectacles **KA83.1**, with grey lens for outside use when greater protection against sunlight is necessary
- Protective goggles **NN25.1** with orange lens, filters out UV radiation and blue wavelength light to 530 nm. Enhances contrast and focus in low light conditions
- Weight 26 g

| Lens design | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① clear | 2840 | **KA82.1** | 1 | 12,50 |
| ② grey | 2841 | **KA83.1** | 1 | 12,75 |
| ③ orange | 2846 | **NN25.1** | 1 | 15,35 |

**EN-Standards for safety spectacles**
EN 166 General requirements
EN 169 Eye protection filter for welding
EN 170 UV-protection filter
EN 171 Infrared filter
EN 172 Sun-protection filter

# Special protection glasses




## Autoclavable safety goggles CR

By UVEX. Acc. to **EN 166, EN 170**.
Clear lenses made of PC with UV protection, anti-fog coated on the inside, highly scratch-resistant on the outside. Autoclavable for at least 10 cycles (20 min at 121 °C). Suitable as cleanroom goggles or for critical areas.

① **Full-vision goggles ultrasonic CR**
Exceptional wear comfort even for wearers of corrective spectacles. No pressure problems even after long periods of wear due to the combination of hard and soft components.
Sporty design, wide panoramic field of vision and full side protection. Indirect ventilation, adjustable silicone strap. Replaceable lens.

② **Over-goggles super OTG CR**
Fit over corrective goggles. Excellent wearability, unrestricted lateral vision. New side piece/hinge concept with soft ear pieces.

③ **Safety goggles super fit CR**
Ultra light safety glasses in sporty design. Extremely thin lens made of clear PC for maximum optical clarity. Excellent protection against mechanical risks, perfect non-slip fit.

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Full-vision goggles ultrasonic CR | **ANL3.1** | 1 | 32,15 |
| ② Over-goggles super OTG CR | **ANL4.1** | 1 | 26,90 |
| ③ Safety goggles super fit CR | **ANL5.1** | 1 | 26,90 |



## UV-safety glasses LED Light Vision

By 3M. Acc. to **EN 166, EN 170**.
- Safety spectacles with height-adjustable and extremely bright LEDs
- Built-in batteries (2 x round cell batteries CR 2032), long battery life (over 50 hours)
- Illuminates dark areas and at the same time protects the eyes. Hands are free to work, e.g. for electric work, car repairs, installation work, do-it-yourself jobs, mechanical work in the dark, reading...
- With rubber padding on ear and nose-piece for extra comfort
- Non-fogging lens made of polycarbonate, also suitable for working with UV-light

Weight 61.4 g.

**Delivery incl.** microfiber pouch for storing and cleaning.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KA25.1** | 1 | 22,80 |




## Safety glasses 5X9

By Univet. Acc. to **EN 166, EN 170**. The two-lens structure enables a wide selection of lens materials and filters and can thus be used in many applications. The integrated flip-up system and the lens form a unique modular system for maximum flexibility.
- Integrated side protection with ventilation system
- Arms can be adjusted in length and angle, with SoftPad™-ear pieces
- Version with elastic head band is equipped with a tight-fitting additional frame
- Version with glass lenses offers good protection against chemicals and scratches
- Weight: 52 g (glass), 35 g (polycarbonate)
- Can be combined with flip-ups with protective filters for specific requirements

**Application:** In chemistry labs and in environments with grinding dust.

| Frame colour | Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① gun metal/orange | PC, clear, anti-scratch coating | **HAA0.1** | 1 | 17,15 |
| ② gun metal/green | Glass, clear | **HAA1.1** | 1 | 32,15 |
| ③ with head band/black | PC, clear, anti-scratch and anti-fog coating | **HAA2.1** | 1 | 20,35 |

## Accessories for safety glasses 5X9

**Flip-up with protective filter for use with safety glasses 5X9.**
Can be easily fitted onto the glasses frame, removed again and replaced with another filter, can be flipped up.

**Green PC lenses:**
**IR 3:** Protection against UV and IR radiation and glare, which can occur during welding processes.
**Application:** Soldering, gas welding.
**IR 5:** Optimum protection against IR radiation, high VLT for good visibility in dark environments, good colour identification (TSR), sun protection.
**Application:** Glass work, quality control, foundries, artificial optical radiation (AOR).

**Blue glass lens:**
Protection against IR radiation. Absorbs yellow-orange radiation. Reduces distracting reflections caused by molten glass or metal.
**Application:** Glass work, metallurgy, foundries.

| Lens design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ④ PC, green IR 3 | **HAA3.1** | 1 | 22,05 |
| ⑤ PC, green IR 5 | **HAA4.1** | 1 | 22,05 |
| ⑥ Glass, blue IR 4-5 | **HAA5.1** | 1 | 34,30 |

# Special protection glasses



## Welding safety goggles 5X7 over-goggles

Acc. to **EN 166, EN 170**. Protection against UV and IR radiation and glare, as often occurs during welding processes. Stage: 5.

- Innovative frame design prevents overlapping of the arms and offers absolute comfort
- PC lenses with anti-scratch and anti-fog coating, shatterproof
- 3x length adjustable side pieces
- SoftPad™ ear pieces allow perfect adaptation to the face shape of the wearer
- Weight: 37 g

Application: soldering, gas welding.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYY9.1** | 1 | 21,45 |



## Welding safety goggles

By UVEX. Acc. to **EN 166, EN 169, EN 170, welding protection stage 5**. Full vision welding safety goggles with flip-up filter holder. Lenses are made of colourless CA in standard version. Green hinged lenses. Tight-fitting with high wearer comfort, designed to fit perfectly over prescription spectacles. Quick and easy headband adjustment. Indirect ventilation system.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NP31.1** | 1 | 22,05 |



## Spectacles bag

By UVEX. Made of nylon. Suitable for all spectacles and full-view goggles.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T708.1** | 1 | 6,10 |



## Spectacle cases with velcro fastening

By UVEX. Flexible case made of robust nylon material. Individually adjustable velcro fastening. With belt. Colour: black.

① Extension with zipper attached on the side. Suitable for UVEX spectacles.
② Suitable for small wide-vision spectacles such as u-sonic (Art. No. EEK3.1ff) and carbonvision (Art. No. PP31.1).

| Image | Suitable for | Pack Qty. | Art. No. | € |
|---|---|---|---|---|
| ① | Spectacles | 1 | **EHL7.1** | 10,75 |
| ② | Small wide-vision spectacles | 1 | **EHL8.1** | 10,70 |



## Spectacles bags

By UVEX. Very robust case with reinforced zipper and separate pocket for cleaning tissues or spare lens. With velcro fastenings for belt. Colour: black.

① Ideal for all spectacles from UVEX except Super OTG.
② Ideal for all spectacles and goggles from UVEX.

| Image | Suitable for | Pack Qty. | Art. No. | € |
|---|---|---|---|---|
| ① | Temple spectacles | 1 | **AA00.1** | 10,15 |
| ② | Wide-vision goggles | 1 | **EHL9.1** | 14,55 |




## Hard-shell spectacles case

By UVEX. Innovative, fashionable design, specially adapted for models with pronounced curve (like the i-vo).
With zipper, buckle and practical snap hook. Colour: black.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EHN0.1** | 1 | 11,70 |



## Universal glasses strap

By 3M. Suitable for most glasses, braided, with silicone rubber band.
Black, length about 45 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5844.1** | 1 | 5,05 |



## Safety spectacles dispenser

Store spectacles in a clean and safe place, ideal for visitor's spectacles.
Made of acrylic glass. Either separate or attached to the wall.
Spectacles can also be removed individually. Clamping lid at top.
Dimensions: W 170 x D 75 x H 390 mm. Sampling port: W 17 x H 5.9 cm.
**Delivery incl.** wall attachment for wall assembly, without safety spectacles.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KN10.1** | 1 | 127,95 |



## Sekuroka®-safety glasses boxes

- Made of impact resistant plastic (ABS) with rounded corners, blue or transparent
- For safe storage of safety spectacles directly in the workplace
- Protects against scratching, dust and moisture
- Suitable for all standard safety spectacles

**Delivery incl.** fixing hardware for wall mounting, without safety spectacles.

**Box for 1 pair of safety glasses**
Dimensions: W 236 x D 120 x H 120 mm
**Delivery without** safety label (Art. No. NK20.1 - please order separately).

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **N426.1** | 1 | 12,40 |
| transparent | **N427.1** | 1 | 14,55 |

**Box for 4 pairs of safety glasses**
Dimensions: W 236 x D 125 x H 225 mm
**Delivery incl.** safety label "Wear eye protection".

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **TY59.1** | 1 | 54,85 |
| transparent | **TY60.1** | 1 | 60,45 |

**Box for 12 pairs of safety spectacles**
Ideal for storage of safety spectacles for visitors. Insert is removable, e.g. for cleaning.
Outer dimensions: W 236 x D 200 x H 315 mm
Inner dimensions: W 230 x D 192 x H 299 mm
Inner compartment: W 63 x D 174 x H 75 mm, ∅ 98 mm
**Delivery incl.** safety label "Wear eye protection".

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **X465.1** | | 105,90 |
| transparent | **CHL0.1** | 1 | 109,65 |

# Protective glasses accessories



## Mobile spectacles box

Made of sturdy plastic (ABS), blue. Portable spectacles box for safe "on the go" storage of safety spectacles, e.g. when away on a job, in industrial plants, on construction sites etc. Protects against scratching, dust and moisture. Suitable for all standard safety spectacles.

**Delivery without** safety spectacles.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TY61.1** | 1 | 11,00 |




## Eyewear cleaning set

Suitable for all spectacle lenses and visors.

- Highly effective cleaning
- Anti-fog and anti-static
- Alcohol-free

**Set incl.** eyewear cleaner (50 ml) and 1 microfibre cloth (20 x 20 cm).

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **EEE0.1** | 1 | 9,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| Eyewear cleaner in a spray can, 50 ml | **EHT4.1** | 2 | 6,40 |




## Spectacles cleaning station

By UVEX. Manufactured from breakproof plastic. Can be locked with specially-made key. For wall assembly. The station is filled with 2 x 700 sheets of silicon-free tissue wipes and 500 ml cleanser fluid with plastic pump.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spectacles cleaning station, full | **AA35.1** | 1 | 74,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Tissue wipes with 700 tissues | **AA36.1** | 2 | 24,75 |
| Cleaning fluid 0.5 l bottle | **AA37.1** | 1 | 12,40 |
| Plastic pump | **AA38.1** | 1 | 6,70 |



## Sekuroka®-microfibre tissues

Ideal for film-free cleaning of spectacles and optical instruments. Washable and reusable. Dimensions: 150 x 150 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E172.1** | 5 | 12,40 |



## Sekuroka®-lens cleansing tissues

For moist cleaning of optical glasses, with active grease remover and alcohol. Clean glasses without leaving specks, anti-static and non-fogging. Very gentle, only one wipe required. Individually packed.

H228 - H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1678.1** | 100 | 18,10 |



## Anti-fog cleaner

Solution for cleaning spectacles and visors, prevents fogging. Contents: 17 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CNH5.1** | 1 | 12,35 |



## 699 face visor with chin protection

By Univet. Acc. to **EN 166**.
- 1 mm polycarbonate visor with 90° hinge mechanism
- Height-adjustable head frame
- Adjustable head size using elastic headband
- Exchangeable foam headband
- Can be worn with protection goggles and respiratory protection

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Face visor with chinguard | **ATP6.1** | 1 | 18,10 |
| Replacement visor lens 699 | **ATP7.1** | 1 | 9,30 |
| Replacement chinguard made of PC | **ATP8.1** | 1 | 3,40 |



## UV face visor SPHERE

By Bollé. In acc. with **EN 166, EN 170**. Also suitable for work with UV light.
- Lens made of PC (2.0 mm thick), frame made of PP
- Large field of vision of 180°
- Adjustable headgear and headband
- Protection from chemical splashes
- Protection from medium energy particles (120 m/s), tested at extremely high temperatures
- Protection from hot solids and molten metals

Weight 355 g. Lens size: H 205 x W 394 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| UV face visor SPHERE | **PT74.1** | 1 | 24,10 |
| Spare lens for UV face visor SPHERE PT74.1 | **PT75.1** | 1 | 13,20 |




**Programme extension!**

## Uvex face protection shields

By UVEX. Acc. to **EN 166** and **EN 170**.
Robust head support made of PA with integrated forehead protection
Comfortable adjustment to individual head size via twist fastener.
Face protection shield made of cellulose acetate, thickness 1 mm.
Infinitely adjustable lift-up mechanism. For protection against low-energy particles.
Dimensions: H 195 x W 540 mm. Weight 227 g.

**① Face protection shield 9705, non-coated screen**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Face protection shield with head cover | **EX08.1** | 1 | 30,40 |
| Spare screen EX08.1 | **EX09.1** | 1 | 14,55 |

**② Face protection shield 9706, screen with anti-fog coating**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Face protection shield with head cover | **HLN4.1** | 1 | 49,25 |
| Spare screen HLN4.1 | **HLN5.1** | 1 | 27,90 |



## UV-face visor

By Bollé. Acc. to **EN 166, EN 170**. Also suitable for work with UV light.
- Ultra-light, fold-up visor
- Anti-fog acetate protective visor, thickness 1.5 mm
- Protection against chemical splashes, electrical arcs and short circuits
- Protection against flying particles, medium energy (120 m/s)
- Adjustable head strap
- Frame and head fastener made of polypropylene

Weight: 200 g. Visor size (H x W) 190 x 290 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| UV face visor | **KP10.1** | 1 | 34,00 |
| Spare visor for UV face visor KP10.1 | **KP11.1** | 1 | 28,40 |

# Head and face protection



## Face protection shield

By 3M. Acc. to **EN 166.** Protects against all particles of medium energy flying about and liquid metal splashes. Screen made from 2 mm thick PC (230 x 370 mm), can be lifted up and locked in place.
Infinitely adjustable. With soft vinyl sweat-band.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Face protection shield | **T668.1** | 1 | 36,00 |
| Spare screen for face protection shield T668.1 | **T669.1** | 1 | 14,25 |



## Protector F800 face shield

Acc. to **EN 166**. With visor frame which attaches into the centre of the frame, allowing easy replacement. Head support with headband and ratchet wheel for easy adaptation to head size.

- Offers a high level of protection and a wide field of vision
- Acetate or PC visor options
- Built-in chinguard for additional protection

**Delivery without** visor. Please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Screen support with built-in chinguard | **XK49.1** | 1 | 26,90 |
| Acetate visor, anti-fog | **XK50.1** | 1 | 23,05 |
| PC visor | **XK51.1** | 1 | 13,50 |



## Hard hat with protection shield

Acc. to **EN 166** and **EN 397**. Hard hat made of white plastic, with four press studs to fasten the face protection shield. Adjustable plastic insert.
Face protection shield made of polycarbonate, approx. 25 cm long, can be lifted up. Weight 500 g.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Hard hat with protection shield | **1475.1** | 1 | 61,45 |
| Replacement protection shield | **0652.1** | 1 | 19,60 |
| Replacement hard hat | **8405.1** | 1 | 22,40 |



## Face shield

Acc. to **EN 166**. Extremely light head support. Replaceable PC screen, pliable due to metal frame. Rotating ratchet mechanism enables width of padded head support to be individually adjusted. Ideal for protection against liquid splashes and low pressure flying particles. Dimensions of screen H 250 x W 205 mm. Height including head support 265 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Face shield | **E227.1** | 1 | 31,10 |
| Spare screen for face shield E227.1 | **E228.1** | 1 | 13,95 |



## UV-face protection shield Bionic

Acc. to **EN 166, EN 170**.

- Large screen for good view
- Polycarbonate lens for UV-protection and good colour identification
- Scratchproof and non-fogging
- Protects against liquid splashes
- Protects against flying particles of medium energy (120 m/s), tested at extremely high temperatures
- Lenses are very easy to replace
- Individually adjustable for good fit
- Ratchet head fixture
- Frame made of robust ABS-plastic
- Soft padding on all parts that touch the head
- Skin-friendly sweatband, can be replaced and washed
- Added protection for top of head and chin
- Can be combined with respiratory protection or safety spectacles
- Very light, weight 407 g
- Dimensions: H 31 x W 24 cm

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| UV-face protection screen Bionic | **CA34.1** | 1 | 72,05 |
| Spare screen for face protection screen CA34.1 | **EP73.1** | 1 | 32,20 |



## Combined face and ear protection G500

By 3M. Acc. to EN 166, EN 352. The combination consists of yellow headgear, a clear, anti-fog PC visor and Optime™ I ear muffs (insulation value 26 dB A). Adjustable headgear for head sizes ranging from 54-62 cm. The visor protects against particles flying at a medium speed of 120 m/s.

- A practical and comfortable solution for all who need both face and ear protection
- Face visor and wide field of view
- Multiple combinations with protective glasses and clear or net visors
- Stable construction, long service life and excellent wear comfort

**Delivery incl.** headgear, PC visor, Optime™ I ear protectors.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YT38.1** | 1 | 58,90 |



## Safety helmets with Uvicator™ sensor and ratchet system

By 3M. Acc. to EN 397. Made of ABS, ventilated, with headband. Designed for use in harsh environments with high safety requirements.

- Compatible with other auxiliary safety gear, such as ear defenders, visors or safety goggles.
- The Peltor™ Uvicator™ sensor indicates when the hat needs replacing.
- Short face shield allows for excellent visibility
- Ratchet system for easy adaptation to head size
- Slender, rounded shape reduces the danger of danger of getting caught on objects such as tree branches or similar obstacles
- Multiple ventilation slots make for excellent ventilation

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **NH14.1** | 1 | 22,50 |
| yellow | **NH15.1** | 1 | 22,50 |



## Peltor™ OPTIME™ ear defenders

By 3M. Acc. to EN 352-1. With safety attachment for all hard hats with 30 mm slot system and face/ear protection G500 (YT38.1). High wearing comfort and low pressure inside ear even after extended wear.

- Lightweight design, optimal ear protection
- Constant pressure, liquid-filled sealing ring
- 2-point mounting

**OPTIME™ I**

Flat design. **Applications:** outdoor work, building trade, engineering, woodworking, metalworking, automobile industry, farming, chemical treatment.

**OPTIME™ II**

For high-noise environments, provides excellent sound insulation even at extremely low frequencies.
**Applications:** outdoor work, building trade, airports.

**Delivery without** safety helmet, please order separately (Art. No. NH14.1f).

| Model | SNR value | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| OPTIME™ I | 26 dB | **NH12.1** | 1 | 23,05 |
| OPTIME™ II | 30 dB | **NH13.1** | 1 | 28,90 |




## Protective visors, for hard hats

By 3M. Suitable for hard hats (NH14.1f) and face/ear protection G500 (YT38.1). The visor mount (NH18.1) and, if no ear defenders are attached, the hat adapter (AKT9.1) are also required for hard hats.

① **PC visor**, clear, anti-fog

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NH16.1** | 1 pieces | 16,40 |

② **Stainless steel mesh visor,** light reduction: 24 %, 54 g, suitable for farming, forestry and landscaping.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NH17.1** | 1 pieces | 14,90 |

③ **Visor mount** for hard hats NH14.1 f.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NH18.1** | 1 pieces | 12,05 |

**Helmet adapter**
Connector for helmets with 30 mm slot (NH14.1) for attaching the visor mount without earmuffs.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AKT9.1** | 1 pair | 13,80 |

# Protection masks



## Face protection shields Polysoft

By op-d-op. Ultra-light, made from ABS. Flexible, non fogging. Can also be worn over respiratory masks and glasses. With forehead padding and straps. Head-piece adapts to wearer after exposure to body temperature. Smallest head size approx. 440 mm.
**Delivery incl.** headgear with cord, 3 face shields and 1 mini shield.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **C346.1** | 1 | 53,70 |
| blue | **C347.1** | 1 | 53,70 |
| neon yellow | **C348.1** | 1 | 53,70 |
| neon pink | **C349.1** | 1 | 53,70 |
| Spare screens (6 spare screens and 6 spare mini screens) | **C350.2** | 12 | 57,00 |



## Face visor 710

By Univet. Acc. to **EN 166**. Lightweight face shield for liquid droplet and splash protection in medical areas.
- Clear anti-fog visor made of acetate
- Interchangeable skin-friendly terry towel lining on forehead
- Adjustable elastic head strap
- Can be worn over corrective spectacles
- Weight 97 g

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Face visor 710 | **APY9.1** | 1 | 37,15 |
| Replacement lenses, anti-fog | **ATA0.1** | 5 | 58,65 |



## Sekuroka®-wall hooks

With information sign, made of rigid plastic. W 195 x L 215 mm. Hook length 40 mm.

| Information sign | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Gas mask | **1091.1** | 1 | 11,30 |
| Apron | **1092.1** | 1 | 11,30 |
| Face screen | **E174.1** | 1 | 11,30 |



## Sekuroka®-protective masks Sanifil®

Protect against irritating, non-hazardous coarse dust.
No personal protection equipment.
**Comfort**, optimal fit. Weight approx. 6.2 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AA73.1** | 50 | 28,60 |



## Activated carbon masks

Disposable mask with activated carbon fleece. Absorbs unpleasant odours. Free of glass fibre and skin-friendly. With adjustable aluminium nose bracket and elastic bands. Pleasant to wear with low breathing resistance. Dimensions: L 175 x W 98 mm. Individually wrapped in foil.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **8401.1** | 10 | 25,75 |
| **8401.2** | 50 | 101,60 |



## Surgical masks with SUAVEL®-Antifluid visor

By Meditrade®. Acc. to EN 14683 Model II R, 93/42EEC Class 1.
- Filtration capacity: > 99 % BFE (bacteria filtration efficiency)
- Face mask for highly contagious situations
- Splash and fluid protection for mouth, nose and eyes
- 4-layer skin friendly material with antifluid layer
- With reinforced, long nose piece
- For tying
- Latex free, lint-free, non-sterile
- Colour: blue

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CAL8.1** | 50 | 44,10 |




## Disposable protection masks Visma®

By B. Braun.
- OP facemasks to EN 14683 type II
- Acc. to MDD 93/42/EEC class 1
- Filtration capacity ≥98 % BFE (Bacterial filtration efficiency)
- Protection for patient and wearer
- Soft textile non-woven fabric
- Glass fibre free and latex free
- 3-ply, skin friendly
- Excellent fit
- Absorbent material prevents spectacles from fogging

**Visma® ear-loop:** with rubber straps for secure fitting behind the ears
**Visma® tie-on:** with straps for tying

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Visma® ear-loop | **X458.1** | 50 | 17,45 |
| Visma® tie-on | **HY39.1** | 50 | 16,10 |




## Suavel® Protec surgical masks

By Meditrade. In accordance with EN 14683 Type II.
- Three-layer disposable facemasks
- With elasticated ear loops
- Premium-quality materials ensure the masks are well tolerated by the skin
- Ultrasonic sealing: No uncomfortable seams or threads coming loose
- Reinforced nose bridge enables optimum adaptation to facial contours
- Latex- and glass fibre-free
- Colour: Green

① **Suavel® Protec**
Basic model that is extremely comfortable to wear.
Bacteria filtration efficiency (BFE) >98%.

② **Suavel® Protec Plus**
Highly effective and extremely comfortable. Extra-soft padded ear loops make the mask comfortable to wear for extended periods.
Bacteria filtration efficiency (BFE) >99%

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Suavel® Protec | **EHT9.1** | 50 | 4,85 |
| ② | Suavel® Protec Plus | **EHX0.1** | 50 | 7,00 |



## Medical masks

By Moldex. **All-in-one fine dust mask and medical mask**
2-way protective special masks for medical applications, emergency services, pharmaceuticals industry and foodstuffs industry.

Acc. to EN 149:2001+A1:2009 Occupational Safety Standard (EC Directive 89/686/EEC) and
EN 14683:2005 Medical Products Standard (Medical Products Directive 93/42/EEC).

**Protection for the wearer**
- Protects against airborne hazardous substances (FFP2 NR and FFP3 NR to Occupational Safety Standard EN 149:2001)
- Protects against chemical splashes (splash resistant type IIR to Medical Products Standard EN 14683:2005)

**Environment protection**
- 98 % antibacterial filtration (type II to Medical Products Standard EN 14683:2005)

**All the advantages at a glance:**
- Fluted filter technology: very low respiratory resistance, high absorption capacity, long life
- DuraMesh®: stable mask mesh
- ActivForm®: no nosepiece required
- Soft sealing lip and all-round strap with clip
- Packed individually
- Natural latex and PVC free
- Available in two sizes

| Protection level | Size | Moldex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| FFP2 NR D | S | 3150 | **XA28.1** | 10 | 25,60 |
| FFP2 NR D | M/L | 3100 | **XA29.1** | 10 | 25,60 |
| FFP3 NR D | S | 3250 | **XA30.1** | 10 | 57,00 |
| FFP3 NR D | M/L | 3200 | **XA31.1** | 10 | 57,00 |

**Particle filtering half masks**
In accordance with European standards EN 149:2001 + A1:2009, particle filtering half masks protect the wearer **against solid and non-volatile liquid particles** and, depending on their filtration capacity, are subdivided into three classes based on OEL (Occupational Exposure Limit.

**FFP1**: up to 4 times OEL

**FFP2**: up to 10 times OEL

**FFP3**: up to 30 times OEL

**R:** Reusable
**NR:** Non reusable (for one work shift only)
**D:** Meets Dolomite Dust Test requirements.
The Dolomite Dust Test is mandatory for reusable (R) masks.

# Respiratory protection




## smart FFP preformed masks

By Moldex. Acc. to EN 149:2001 + A1:2009

**Protection against dust, aerosols and fumes**

- Anatomically preformed masks - adaptable to fit different face sizes
- DuraMesh®: sturdy mask mesh keeps the mask in shape
- ActivForm®: no nosepiece required
- Klimaventil® minimises heat and moisture build-up under the mask

- With soft sealing lip
- All-round strap with clip for easy application, removal and adjustment
- Colour-coded straps: FFP1 blue, FFP2 white, FFP3 yellow

**Without Klimaventil®**

| Protection level | Moldex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP1 NR D | 2380 | **EE30.1** | 20 | 31,75 |
| FFP2 NR D | 2480 | **EE31.1** | 20 | 56,05 |

**With Klimaventil®**

| Protection level | Moldex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP1 NR D | 2385 | **T758.1** | 20 | 54,85 |
| FFP2 NR D | 2485 | **T759.1** | 20 | 75,20 |
| FFP3 NR D | 2505 | **T760.2** | 10 | 72,90 |




## Air and Air Plus fine dust masks

By Moldex. Acc. to EN 149:2001+A1:2009

**Protection against dust, aerosols and fumes**

- Anatomically preformed masks - adaptable to fit different face sizes
- DuraMesh®: sturdy mask mesh keeps the mask in shape
- ActivForm®: no nosepiece required
- Klimaventil® minimises heat and moisture build-up under the mask

- **Fluted filter technology: 260 % more filtration area**, very low respiratory resistance, high absorption capacity, long life
- All-round strap with adjustable clip for easy application, removal and adjustment
- Air fine dust masks are also available in **size S** (for small or narrow faces)
- With Klimaventil®

**Air fine dust masks**

| Protection level | Size | Moldex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| FFP2 NR D | S | 3155 | **XA32.1** | 10 | 36,05 |
| FFP2 NR D | M/L | 3105 | **XA33.1** | 10 | 36,05 |
| FFP3 NR D | S | 3255 | **XA34.1** | 10 | 67,65 |
| FFP3 NR D | M/L | 3205 | **XA35.1** | 10 | 67,65 |

**Air Plus fine dust masks**

- Reusable FFP mask
- Soft all-round sealing lip made of a skin-friendly, washable TPE material

| Protection level | Size | Moldex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| FFP2 R D | M/L | 3305 | **T761.1** | 5 | 43,65 |
| FFP3 R D | M/L | 3405 | **T763.1** | 5 | 48,40 |




## Fine dust masks with SoloBand®

By Moldex. Acc. to EN 149:2001 + A1:2009.

**Protection against dust, aerosols and fumes**

- Anatomically preformed masks - adaptable to fit different face sizes
- DuraMesh®: sturdy mask mesh keeps the mask in shape
- ActivForm®: no nosepiece required
- Klimaventil® minimises heat and moisture build-up under the mask

- FFP mask with special headband
- Easy and quick application and removal, even wearing gloves
- Soft sealing lip
- With Klimaventil®

| Protection level | Moldex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP1 NR D | 2395 | **CT75.1** | 20 | 58,40 |
| FFP2 NR D | 2495 | **CT77.1** | 20 | 75,15 |




## Respiratory protection masks silv-Air

By UVEX. Acc. to EN 149:2001 + A1:2009.

- Exhalation valve reduces respiratory resistance and heat and moisture under the mask
- Integrated nose clip
- All-round comfort sealing lip
- 4-point headband attachment for comfortable and secure fit at PP32.1

| Protection level | Uvex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP2 R D | 7212 | **XC91.1** | 15 | 47,55 |
| FFP3 R D | 7312 | **PP32.1** | 5 | 30,75 |



## Smart Pocket FFP masks

By Moldex. Acc. to EN 149:2001+ A1:2009.

**With Klimaventil®. Protection against dust, aerosols and fumes.**

- **Individually packed**
- **Ready to wear**
- Soft sealing lip
- DuraMesh®: sturdy mask mesh keeps the mask in shape
- ActivForm®: without nose piece
- Loop strap with clip for simple on, off and adjustment

| Protection level | Moldex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP2 NR D | 2475 | **YP17.1** | 10 | 36,35 |
| FFP3 NR D | 2575 | **YP18.1** | 10 | 61,20 |




## Particle masks Aura™ 9300+ series

By 3M. Acc. to EN 149:2001 + A1:2009.

- Soft fleece, low weight and flat design guarantee comfortable wear; Speaking is no problem
- Integral nose piece with sweat-absorbing padding
- Can be folded flat for easy transport; individually wrapped
- Compatible with spectacles and eye protection
- Cool-Flow exhalation valves reduce breathing resistance and prevent heat accumulation under the mask
- Without natural rubber components
- **Colour-coded bands:** FFP1 yellow, FFP2 blue, FFP3 red

①-③ **Without exhalation valve**

| Protection level | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP1 NR D | 9310+ | **N186.1** | 20 | 27,20 |
| FFP2 NR D | 9320+ | **N187.1** | 20 | 51,20 |
| FFP3 NR D | 9330+ | **TY71.1** | 20 | 117,20 |

④-⑥ **With Cool-Flow exhalation valve**

| Protection level | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP1 NR D | 9312+ | **N188.1** | 10 | 24,30 |
| FFP2 NR D | 9322+ | **N189.1** | 10 | 35,70 |
| FFP3 NR D | 9332+ | **N190.1** | 10 | 70,95 |



## silv-Air preformed respiratory protection masks

By UVEX. Acc. to EN 149:2001 + A1:2009.

- Optimized shape
- 4-point adjustable band for comfortable, safe fitting
- Flexible, adaptable nosepiece
- 2 extra filters with inhalation valve for lower respiratory resistance
- Larger filter surface means longer period of use
- Dolomite dust check (D)
- Soft, sealing lip all round
- Temperature control via two suction valves and one exhalation valve

| Protection level | Uvex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP2 R D | 7232 | **XC92.1** | 3 | 27,45 |
| FFP3 R D | 7330 | **KX42.1** | 3 | 33,35 |



## Particle masks Aura™ 9400+

By 3M. Acc. to EN 149: 2001+A1:2009.
Specially designed to meet the requirements for **foodstuff production and processing**. Comfort features of the Aura™ 9300+ series plus:

**No small parts which can become detached**

- Clip-free: minimises the risk of contamination
- Inlying, adjustable nose piece: securely integrated into the mask

**High recognisability**

- Metal detector: integrated metallic nose piece
- Visual monitoring: blue contrast colour stands out clearly from foodstuff colours

| Protection level | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP2 NR D | 9422+ | **YP12.1** | 10 | 40,25 |

# Respiratory protection



## Two-way respiratory protection masks Aura™ 1800+ series

By 3M. Acc. to EN 149:2001 + A1:2009.
Type IIR acc. to EN 14683:2005 (Surgical Masks), acc. to 93/42/EEC, class 1.

- **Protects the user and the environment**
- Protection against particulates and aerosols
- Protection against ingress of chemical splashes, e.g. body fluid
- Suitable for lab technicians (e.g. **handling of cytostatic agents**), the pharmaceuticals industry (production of medicines), doctors, operating room nurses, emergency room staff

- Three-piece design, mask adapts to many different face shapes and sizes
- Compatible with safety spectacles
- Folded flat and individually, hygienically packed for easy portability
- Integrated nose piece with perspiration absorbent padding

**Without exhalation valve**

| Protection level | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP2 NR D | 1862+ | **CNE4.1** | 20 | 85,95 |
| FFP3 NR D | 1863+ | **CNE5.1** | 20 | 192,45 |

**With special Cool-Flow exhalation valve**
Specially developed, covered Cool-Flow exhalation valve reduces heat build-up in the mask and breathing resistance while protecting the environment against exhaled aerosols.

| Protection level | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP3 NR D | 1883+ | **HT23.1** | 8 | 61,20 |



## Particle masks classical, series 8000

By 3M. Acc. to EN 149:2001 + A1:2009.
- For protection against fine dust and liquid particulates
- Dimensionally stable mask frame with flexible nose piece
- **Cool-Flow exhalation valve** reduces breathing resistance and prevents build-up of heat under the mask

**Without exhalation valve**

| Protection level | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP1 NR D | 8710E | **0265.1** | 20 | 24,00 |
| FFP2 NR D | 8810 | **L159.1** | 20 | 42,80 |

**With Cool-Flow™ exhalation valve**

| Protection level | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP1 NR D | 8812 | **C810.1** | 10 | 20,40 |
| FFP2 NR D | 8822 | **C811.1** | 10 | 31,10 |



## Particle masks comfort, series 8300

By 3M. Acc. to EN 149:2001 + A1:2009.
- For protection against fine dust and liquid particulates
- Dimensionally stable mask frame with flexible nose piece
- Soft padded fleece lining for wear comfort
- Safe tight fit even without foam insert
- **Cool-Flow exhalation valve** reduces breathing resistance and prevents build-up of heat under the mask

**Without exhalation valve**

| Protection level | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP1 NR D | 8310 | **CNE0.1** | 10 | 13,45 |
| FFP2 NR D | 8320 | **CNE1.1** | 10 | 23,15 |

**With Cool-Flow exhalation valve**

| Protection level | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP1 NR D | 8312 | **CNE2.1** | 10 | 21,40 |
| FFP2 NR D | 8322 | **CNE3.1** | 10 | 32,20 |

**With Cool-Flow exhalation valve and all-round lip seal**

| Protection level | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FFP3 R D | 8833 | **EH61.1** | 10 | 60,75 |



## Premium particle masks

By 3M. In accordance with EN 149:2001 + A1:2009; for filtering out fine dust and liquid particles.
- **Masks have passed the Dolomite clogging test (D)** and have an all-round sealing lip, meaning they can be worn for more than one shift
- 3M™ Advanced Electret Media (AEM) is a high-performance filter material to facilitate breathing
- Consistently high filtering power
- **Cool-Flow exhalation valve** prevents heat from building up in the mask and makes breathing easier
- Reduces fogging of eye protection
- 3D preformed seal around the face makes the masks exceptionally comfortable to wear and extremely safe
- Flexible material with built-in nose profile allows the mask to adapt to any face shape
- Masks do not contain components made of latex, PVC or metal
- Held securely in place by a four-part fabric strap, which is adjustable and extra-wide
- Colour-coded according to protection factor (FFP = blue, FFP3 = red)

**FFP2 R D** for filtering out solid and liquid particles of noxious substances; for atmospheres with a hazardous concentration of up to 10 times the exposure limit for that hazard.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 8825+ | **0266.1** | 5 | 39,25 |

**FFP3 R D** for filtering out solid and liquid particles of toxic and highly toxic substances; for atmospheres with a hazardous concentration of up to 30 times the exposure limit for that hazard.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 8835+ | **8123.1** | 5 | 49,25 |




## Special masks

By 3M. By 3M. Acc. to EN 149:2001 + A1:2009.

① **Odour binding masks FFP1 NR D**

Protect against fine dust up to 4-times the limit value and below the limit value **against unpleasant organic odours**.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 9913 | **0936.1** | 20 | 95,15 |

② **Odour binding masks FFP1 NR D with Cool-Flow exhalation valve**

Protect against fine dust up to 4-times the limit value and below the limit value **against organic odours.**

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 9914 | **EH58.1** | 10 | 52,70 |

③ **Smog masks FFP1 NR D**

Protect against fine dust up to 4-times the limit value and below the limit value **against HF-gas and sulphur dioxide.**

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 9915 | **P841.1** | 20 | 92,45 |

④ **Special masks FFP2 NR D with Cool-Flow exhalation valve**

Protect against fine dust up to 10-times the limit value and below the limit value **against organic odours, HF-gas and sulphur dioxide.**

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 9926 | **EH59.1** | 10 | 72,00 |

⑤ **Ozone masks FFP2 R D with Cool-Flow exhalation valve**

Protect **against harmful fine dusts, metal fumes and ozone** up to 10-times the limit value. Ideal for welding.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 9928 | **P842.1** | 10 | 101,05 |

⑥ **Special masks FFP3 R D with Cool-Flow exhalation valve**

Protect against fine dust up to 30-times the limit value and below the limit value **against sour gases, HF-gas and sulphur dioxide.**

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 9936 | **EH60.1** | 10 | 94,55 |

**Particle filtering semi-masks** are classified according to the filter peformance into 3 groups. These depend on the limit value of the harmful substance (up to 4 x, 10 x or 30 x value).

In accordance with norm EN 149: 2001, particle filtering semi-masks protect against solid and liquid particles. These are classified into three groups, FFP1, FFP2 and FFP3 depending on the level of the limit value.




## 4000 Plus-series respiratory masks

By 3M. Acc. to EN 405: 2001 + A1:2009. Ready-to-use half masks, maintenance free, comfortable and high quality. Integrated filters allow long service life. With exhalation valve, large field of vision and special head band for optimal weight distribution. Combinable with safety goggles and ear protection. Delivered in an airtight, resealable bag.

① **FFA1P2 RD**

Protects against organic gases and vapours (boiling point >65 °C) up to 1000 ppm and against solid and liquid particles up to 10x occupational exposure limit.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4251 | **9750.1** | 1 | 25,30 |

① **FFABE1P3 RD**

Protects against organic and inorganic gases and vapours, as well as $SO_2$/HCl up to 1000 ppm and against solid and liquid particles of harmful substances up to 30x occupational exposure limit.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4277 | **C272.1** | 1 | 33,35 |

① **FFA2P3 RD**

Protects against organic gases and vapours (boiling point >65 °C) up to 5000 ppm and against solid and liquid particles of harmful substances up to 30x occupational exposure limit.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4255 | **E347.1** | 1 | 31,10 |

① **FFABEK1P3 RD**

Protects against organic and inorganic gases and vapours, as well as $SO_2$/HCl and ammonia up to 1000 ppm and against solid and liquid particles of harmful substances up to 30x occupational exposure limit.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4279 | **L162.1** | 1 | 37,10 |

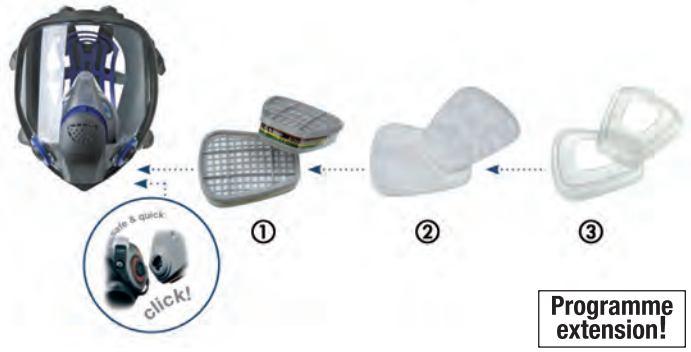
② **Particle prefilter for 4000 series masks**

Protects against coarse particles and extends the useful life of the mask.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 400 | **AKX1.1** | 10 | 17,15 |

▶ More hazard warning signs from page 688
▶ Ultrasonic bath for cleaning of respiratory mask can be found from page 1094

# Respiratory protection




**Programme extension!**

## ① Gas filters

By 3M. Acc. to EN 141 (gas filters). The filters are fitted directly to facepiece via bayonet catch. The unique design ensures optimal weight distribution and excellent vision. Fit for respiratory masks by 3M: L167.1ff/N168.1ff/ PT45.1 f/N182.1/ HLL0.1ff.

| Filter | For protection against... |
|---|---|
| **A1** | organic vapours with max. concentration of 1000 ppm. |
| **A1+formaldehyde** | organic vapours with max. concentration of 1000 ppm and formaldehydes. |
| **A2** | organic vapours with max. concentration of 5000 ppm. |
| **ABE1** | organic vapours, inorganic and acid gases with max. concentration of 1000 ppm. |
| **ABEK1** | organic vapours, inorganic, acid gases and ammonia derivates to max. concentration of 1000 ppm. |
| **K1** | Ammonia and derivatives with max. concentration of 1000 ppm. |

| Filter type | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| A1 | 6051 | **L170.1** | 8 | 44,75 |
| A2 | 6055 | **L172.1** | 8 | 52,90 |
| ABE1 | 6057 | **L173.1** | 8 | 49,70 |
| A1 + formaldehyde | 6075 | **L174.1** | 8 | 50,65 |
| ABEK1 | 6059 | **N171.1** | 8 | 54,85 |
| K1 | 6054 | **L171.1** | 8 | 52,70 |

## ② Non-woven filter insert for protection against ingress of particles

By 3M. Acc. to EN 143 (particulate filters). Used together in combination with gas filters L170.1ff and HLK8.1f and filter holder L181.1.

| Filter | For protection against... |
|---|---|
| **P1R** | Particles of inert substances up to 4 times the limit value. |
| **P2R** | Particles of inert substances up to 10 times (for semi-masks) / 15 times (for full masks) the limit value. |
| **P3R** | Particles of inert substances up to 30 times (for semi-masks) / 200 times (for full masks) the limit value. |

| Filter type | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| P1R | 5911 | **L175.1** | 30 | 40,35 |
| P2R | 5925 | **L176.1** | 20 | 66,15 |
| P3R | 5935 | **N174.1** | 20 | 82,70 |

## ③ Filter holders

By 3M. For combination of gas and particulate insertion filters.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 501 | **L181.1** | 2 | 4,85 |



## Round particulate filters

By 3M. Acc. to EN 143 (particulate filters). The rounded shape enables easier assembly, as the filters can be attached in any position with the bayonet fastening. Breathing resistance was reduced by 30 %, thus enabling longer, fatigue-proof working. Fit for respiratory masks by 3M: L167.1ff/N168.1ff/PT45.1 f/N182.1/ HLL0.1ff.

| Filter | For protection against... |
|---|---|
| **P2R** | Solid and liquid particles of harmful substances up to 10 times (for semi-masks) / 15 times (for full masks) the limit value. |
| **P2R with active charcoal** | Particles of harmful substances up to 10 times (for semi-masks) / 15 times (for full masks) the limit value, with additional protection against organic and acid gases and vapours as well as ozone below the limit value. |
| **P3R** | Solid and liquid particles of harmful substances up to 30 times (for semi-masks) / 200 times (for full masks) the limit value. |
| **P3R with active charcoal** | Particles of toxic and highly toxic substances up to 30 times (for semi-masks) / 200 times (for full masks) the limit value, with additional protection against organic and acid gases and vapours below the limit value as well as ozone up to 10 times the limit value. |

| Filter type | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| P2R | 2125 | **L177.1** | 20 | 76,35 |
| P2R with active charcoal | 2128 | **L178.1** | 20 | 88,15 |
| P3R | 2135 | **L179.1** | 20 | 90,30 |
| P3R with active charcoal | 2138 | **L180.1** | 20 | 103,10 |



**Programme extension!**

## Combined filter

By 3M. Acc. to EN 14387 (gas and combined filters). The filters can be attached directly to mask body. The new design distributes the weight evenly and offers an excellent field of view. Suitable for respiratory masks by 3M: L167.1ff/N168.1ff/PT45.1f/N182.1/HLL0.1ff.

| Filter type | For protection against... |
|---|---|
| **A1P3 R** | Organic gases and vapours (boiling point above 65 °C) and particles |
| **ABEK1P3 R + formaldehyde** | Organic, inorganic and acidic gases, ammonia and derivatives, formaldehyde and particles |
| **A2P3 R** | Organic gases and vapours (boiling point above 65 °C) and particles |
| **ABEK2HgP3 R* + formaldehyde** | Organic vapours, inorganic and acidic gases, ammonia and derivatives, mercury vapours and formaldehyde and solid and liquid particles |
| **AXP3 NR** | Organic vapours/gases with boiling point below 65 °C; particles of toxic and extremely toxic substances up to 200 times the limit value. |
| **AE1HgP3 R** | Organic vapours, mercury vapours, chlorine gas, sulphur dioxide and acidic gases, as well as solid and liquid particles |

*for full-face masks only

| Filter type | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| A1P3 R | 6091 | **HHY2.1** | 4 | 48,95 |
| ABEK1P3 R+formaldehyde | 6092 | **HHY3.1** | 4 | 54,65 |
| A2P3 R | 6095 | **HHY4.1** | 4 | 52,15 |
| ABEK2HgP3 R*+formaldehyde | 6099 | **N172.1** | 4 | 68,55 |
| AXP3 NR | 6098 | **N173.1** | 4 | 82,70 |
| AE1HgP3 R* | 6096 | **P845.1** | 4 | 88,15 |



NEU
NOUVEAU
NEW

## Gas filter with indicator

By 3M. The new 3M™ 6051i and 6055i filters for protection of organic gases and vapours ensure that the filter saturation can be readily seen and read: Thanks to the innovative 3M™ technology, the filters are equipped with a consumption display.
If used properly in the corresponding environments, it displays an indicator line when the filter should be replaced.

**Important warnings and instructions for use:**
Whether the new **3M™ filter consumption display** is suitable as single basis for the decision for filter change management in the individual working environment, must be considered by the user prior to use!
There is a corresponding information brochure in the packaging.
To determine whether you should rely entirely on the consumption display, please also use the 3M™-ESLI software under 3M.eu/SLS.
Matches respiratory masks from 3M:
L167.1ff/N168.1ff/PT45.1f/N182.1 and HLL0.1ff.

| Filter type | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| A1 | 6051i | **HLK8.1** | 8 | 64,40 |
| A2 | 6055i | **HLK9.1** | 8 | 77,00 |



NEU
NOUVEAU
NEW

## Half masks series 6500 and 6500QL

By 3M. Acc. to EN 140. Light, robust and comfortable.
Strong, stable mask body with a robust but soft face seal.

- Face seal made of elastic silicone offers an optimum and comfortable fit
- Robust and adjustable headband ensures an optimum fit and high wearing comfort
- 3M™ Cool Flow™ exhalation valve reduces the breathing resistance and makes it easy to breathe
- The flat and compact design allows a wide field of vision and makes for easy cleaning of the smooth surface
- The design of the respiratory valve passes heat and moisture downwards and reduces fogging of the goggles
- Bayonet click system, compatible with 3M respiratory protection filter for numerous applications
- The 6500QL versions with "quick release" mechanism allow fast and simple removal of the mask during work breaks
- The straps and exhalation valve are available as spare parts

**Delivery without** filter, matching filter: L170.1ff, L177.1, HLK8.1, HHY2.1f and TE83.1f please order separately.

| Type | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Size S | 6501 | **HLL0.1** | 1 | 27,80 |
| Size M | 6502 | **HLL1.1** | 1 | 27,80 |
| Size L | 6503 | **HLL2.1** | 1 | 27,80 |
| Size S | 6501QL | **HLL3.1** | 1 | 30,60 |
| Size M | 6502QL | **HLL4.1** | 1 | 30,60 |
| Size L | 6503QL | **HLL5.1** | 1 | 30,60 |




## Particle filter in plastic housing

By 3M. Acc. to EN 143. Protects against solid and liquid particles in a sturdy plastic housing. Suitable for demanding applications.
P3 R with activated charcoal gives additional protection against organic and acidic gases and vapours.
Fits the following respiratory masks: L167.1ff, N168.1ff, N182.1ff, PT45.1ff and HLL0.1ff.

| Filter type | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| P3 R | 6035 | **TE83.1** | 20 | 97,85 |
| P3 R with activated charcoal | 6038 | **TE84.1** | 8 | 59,35 |



## Half masks 6000 series

By 3M. Acc. to EN 140-1998.

- Made of elastomer material
- Easy to handle and rugged
- Extremely light (82 g) for fatigue-free working
- Low maintenance (exhalation/inhalation valves are non-interchangeable)
- Reduced breathing resistance through double filter system
- Good weight distribution
- Easy filter assembly using bayonet connection

Matching respiratory protection filter: L170.1 ff/L177.1 ff/HHY2.1 ff/ HLK8.1 ff/TE83.1 ff.

| Size | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S | 6100 | **L167.1** | 1 | 19,70 |
| M | 6200 | **L168.1** | 1 | 19,70 |
| L | 6300 | **L169.1** | 1 | 19,70 |



## Half masks 7500 series

By 3M. Acc. to EN 140-2001.
- Made of skin friendly//kind to the skin silicone rubber
- Rugged and highly comfortable
- With drop-down strap for quick up and down adjustment and for wearing the mask around the neck during breaks
- Reduced breathing resistance through Cool-Flow™ exhalation valve and double filter system
- Good weight distribution
- Easy filter assembly using bayonet connection
- Exchangeable components.

**Delivery without** filter, matching respiratory protection filter:
Art. No. L170.1 ff/L177.1 ff/L175.1 ff/HHY2.1 ff/HLK8.1 ff/TE83.1 ff.

| Size | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S | 7501 | **PT45.1** | 1 | 34,95 |
| M | 7502 | **Y393.1** | 1 | 34,40 |
| L | 7503 | **Y394.1** | 1 | 34,40 |



## Full face masks 6000 series

By 3M. EN 136 compliant. **Class I: full face masks for low-load applications.**
- Mask body made of skin-friendly silicone
- Scratchproof, large eyepiece
- Compact design and extremely lightweight (400 g)
- Low breathing resistance due to the double filter system
- Easy to use
- Filter assembly by bayonet connection

**Delivery without** filter, fitting respiratory protection filter:
Art. No. L170.1 ff/L177.1 ff/HHY2.1 ff/HLK8.1 ff/TE83.1 ff.

| Type | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Full face mask, small | 6700S | **N168.1** | 1 | 120,40 |
| Full face mask, medium | 6800M | **N169.1** | 1 | 120,40 |
| Full face mask, large | 6900L | **N170.1** | 1 | 120,40 |
| Spectacles holder with case | - | **P848.1** | 1 | 76,35 |

## Spare parts:

| Type | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Inhalation valves | 6893 | **X621.1** | 10 | 25,80 |
| Exhalation valves | 6889 | **X620.1** | 10 | 30,00 |
| Head straps | 6897 | **X622.1** | 1 | 23,15 |



## Full face respiratory protection mask

By 3M. Acc. to EN 136.
**Class II: full face masks for normal applications**.

- Mask body made of skin friendly silicone
- Wide field of vision
- Scratch and impact resistant lens
- Lip seal ensures excellent fit
- With speech diaphragm
- Exchangeable components.
- Reduced breathing resistance through double filter system
- Easy filter assembly using bayonet connection

**Delivery without** filters, matching respiratory protection filters:
L170.1 ff/L177.1 ff/L175.1 ff/HHY2.1 ff/HLK8.1ff/TE83.1 ff.

| Type | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Full face mask | 7907S830 | **N182.1** | 1 | 248,35 |
| Spectacles holder | - | **P849.1** | 1 | 162,35 |

## Spare parts for full face respiratory protection mask

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Inhalation valves | **N184.1** | 10 | 25,80 |
| Exhalation valves | **N185.1** | 10 | 32,05 |
| Head straps | **X623.1** | 1 | 78,40 |




## Sekuroka®-respiratory protection filters

Acc. to EN 141 (gas filters), 14387 (gas and combined filters), EN 371 (AX filters) and EN 143 (particle filters).
With standard thread acc. to EN 148-1. Aluminium filter case.
Combinable with respiratory half masks and full face masks with standard thread connection.

Max. storage time of unopened gas and combination filters is 6 years after production. AX-and NO-filters are to be used once only.

| Filter | Protection against: |
|---|---|
| **A2** | Organic gases and vapours, with boiling point above 65 °C |
| **A2 - P2** | Organic gases and vapours with boiling point above 65 °C, together with particles of harmful substances |
| **A2 - P3** | Organic gases and vapours with boiling point above 65 °C, together with particles of toxic substances |
| **AX** | Organic gases and vapours, with boiling point under 65 °C |
| **AXP3** | Organic gases and vapours, with boiling point under 65 °C, together with particles of toxic substances |
| **B2** | Anorganic gases and vapours |
| **B2 - P2** | Anorganic gases and vapours together with particles of harmful substances |
| **B2 - P3** | Anorganic gases and vapours together with particles of toxic substances |
| **E2** | Sulphur dioxide and hydrogen chloride |
| **Hg - P3** | Mercury vapours |
| **K2** | Ammonia |
| **NO - P3** | Nitrose gases, nitrogen monoxide |
| **P2** | Particles of harmful substances |
| **P3** | Toxic particles |
| **A2B2E2K2 - P3** | Anorganic gases, sulphur dioxide and ammonia. Organic gases and vapours with boiling point above 65 °C as well as particles of toxic substances |
| **A2B2E2K2Hg-P3RD** | Organic and anorganic gases and vapours, sulphur dioxide, ammonia and mercury vapors together with particles of toxic and highly toxic substances |

| Filter type | Colour code | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| A2 | brown | 180 | **1270.1** | 1 | 12,45 |
| A2 - P2 | brown/white | 260 | **1272.1** | 1 | 18,95 |
| A2 - P3 | brown/white | 260 | **A249.1** | 1 | 20,05 |
| AX | brown | 265 | **1550.1** | 1 | 18,15 |
| AXP3 | brown | 290 | **KP19.1** | 1 | 20,55 |
| B2 | grey | 200 | **1271.1** | 1 | 13,15 |
| B2 - P2 | grey/white | 270 | **1282.1** | 1 | 22,35 |
| B2 - P3 | grey/white | 270 | **0029.1** | 1 | 20,75 |
| E2 | yellow | 250 | **1277.1** | 1 | 13,55 |
| Hg - P3 | red/white | 265 | **1274.1** | 1 | 23,20 |
| K2 | green | 225 | **1275.1** | 1 | 12,80 |
| NO - P3 | violet/white | 370 | **1224.1** | 1 | 73,65 |
| P2 | white | 115 | **1286.1** | 1 | 15,45 |
| P3 | white | 115 | **1225.1** | 1 | 14,90 |
| A2B2E2K2 - P3 | brown/grey/yellow/ green/white | 360 | **0635.1** | 1 | 23,95 |
| A2B2E2K2Hg-P3RD | brown/grey/yellow/ green/white/red | 360 | **KP20.1** | 1 | 24,75 |



## Pro2000 respiratory protection filters

Acc. to EN 141 (gas filters), EN 14387 (gas and combined filters), EN 371 (AX filters) and EN 143 (particle filters).
With EN 148-1 standard thread. Suitable for respiratory half masks and full face masks with standard threads.

- Low breathing resistance
- High capacity, long life

Half masks are only suitable for filters weighing 300 g or less.

| Filter type | Colour code | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| A2 | brown | 190 | **XK35.1** | 1 | 13,20 |
| A2-P3 | brown/white | 230 | **XK36.1** | 1 | 20,95 |
| AX | brown | 268 | **XK37.1** | 1 | 19,85 |
| AX-P3 | brown/white | 310 | **XK38.1** | 1 | 23,85 |
| B2-P3 | grey/white | 265 | **XK40.1** | 1 | 23,85 |
| E2 | yellow | 305 | **XK41.1** | 1 | 20,45 |
| reactor-Hg-P3 | red/white | 307 | **XK42.1** | 1 | 28,70 |
| K2 | green | 255 | **XK43.1** | 1 | 14,35 |
| P3 R | white | 90 | **XK44.1** | 1 | 10,95 |
| A2B2E2K2-P3 | brown/grey/yellow/ green/white | 370 | **XK45.1** | 1 | 28,60 |
| A2B2E2K2-Hg-P3 | brown/grey/yellow/ green/red/white | 370 | **XK46.1** | 1 | 28,70 |




## Sekuroka® half masks

Acc. to EN 140. With EN 148-1 standard thread. **Two exhalation valves** guarantee lower exhalation resistance which is optimal for physical work. Exchangeable components. Pull strap. Please order the suitable respiratory filter with EN 148-1 standard round thread separately.

| Material | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Rubber | **1939.1** | 1 | 55,85 |
| ② Silicone | **9799.1** | 1 | 70,70 |

## Spare parts

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Inhalation valve discs | **N966.1** | 10 | 6,30 |
| Exhalation valve discs | **N967.1** | 10 | 18,25 |
| Straps for 1939.1 | **C567.1** | 1 | 26,85 |
| Straps for 9799.1 | **C568.1** | 1 | 29,15 |



NEU
NOUVEAU
NEW

## Half masks AVIVA 40

Acc. to EN 140. Single-filter half masks, combinable with respiratory protection filters with standard thread acc. to EN 148-1.
Skin-friendly thermoplastic elastomer.

- Perfect fit due to flexible inner Hybrid Reflex Seal
- User-friendly leak test function
- Easily combinable with eye protection and other PPE
- Downwards oriented respiratory filter prevents fogging of the eye protection
- Improved intelligibility due to integrated voice channel
- Comfortable and robust head harness provides better grip and is ideal for use beneath headgear
- Simple rear-fastening makes them easy to put on and take off

**Delivery without** filter, matching filter: 1270.1ff, XK35.1ff please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Size S | **HHN8.1** | 1 | 28,10 |
| Size M | **HHN9.1** | 1 | 28,10 |
| Size L | **HHP0.1** | 1 | 28,10 |



## Sekuroka®-full view mask

Acc. to **EN 136**. Made of rubber and plastic, with communication membrane, replaceable polycarbonate front screen and **two exhalation valves**. Weight 570 g.
**Delivery without** filter, please order suitable respiratory protection filters with standard round thread acc. to EN 148-1 (1270.1ff, XK35.1ff), separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1262.1** | 1 | 142,55 |

## Spare parts for full view mask

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spare screen | **0482.1** | 1 | 25,85 |
| Spare straps | **C566.1** | 1 | 24,40 |
| Inhalation valve discs | **N968.1** | 10 | 25,95 |
| Exhalation valve discs | **N969.1** | 2 | 8,35 |



## Promask full face respiratory protection masks

Acc. to EN 136. With EN 148-1 standard thread.

- Lightweight and anatomically shaped
- Special faceseal provides a comfortable and tight fit
- Clear inner mask
- Unrestricted field of vision thanks to large visor and left side fitting filter port
- With speech diaphragm
- Outstanding wearing comfort
- Easy to use

**Promask Black** made of halo-butyl elastomer.
High chemical resistance ensures long service life.
Suitable for CBRN applications
(chemical, biological, radiological, nuclear).

**Promask SIL** made of skin-friendly, soft yellow silicone rubber.
**Delivery without** filter, matching filters: 1270.1ff, XK35.1ff
(please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Promask Black | **XK47.1** | 1 | 152,65 |
| Promask SIL | **XK48.1** | 1 | 173,10 |



## Full view mask Vision 2

Acc. to EN 136.

- Full face mask made of soft silicone rubber
- Wide field of vision (98% field of vision)
- Speech membrane
- Five-point head strap with snap buckle and padding
- Adjustable neck strap
- Full view polycarbonate visor is shock-resistant and scratchproof, also resistant to solvents, fire and heat
- Weight 630 g

**Delivery without** filter, matching respiratory protection filter with screw thread to EN 148-1 (1270.1ff, XK35.1ff), please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Vision 2 | **X541.1** | 1 | 238,65 |
| Spectacles holder | **X542.1** | 1 | 73,65 |

# Respiratory protection accessories



## Sekuroka®-safety boxes

Made of breakproof plastic. With rounded edges. Ideal for storing protective products (spectacles, ear plugs, etc.) at work place. Protects equipment against dust, dirt and splashing. Boxes are affixed by glueing or screwing (incl. screws and dowels).With 5 label cards. Boxes have a neutral design and can be labelled with warning signs (NK21.1ff) .

| Colour | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| blue | 236 x 120 x 120 | **N426.1** | 1 | 12,40 |
| transparent | 236 x 120 x 120 | **N427.1** | 1 | 14,55 |
| blue | 236 x 125 x 225 | **N428.1** | 1 | 27,10 |
| transparent | 236 x 125 x 225 | **N429.1** | 1 | 31,40 |
| blue | 236 x 200 x 315 | **N430.1** | 1 | 35,30 |
| transparent | 236 x 200 x 315 | **CHL1.1** | 1 | 41,40 |

It is the manager's responsibility to ensure that respiratory protection equipment is maintained and checked in accordance with the instruction manual from the manufacturer. Should such recommendations not be available, the following table should be used as a guide DGUV regulations 112-190 (Maintenance and checking of respiratory protection (full masks, semi masks, quarter masks and mouth pieces)

| Work to be carried out (Comments) | Deadlines | | | | | |
|---|---|---|---|---|---|---|
| | prior to releasing for use | prior to use | after use*) | half-yearly | every 2 years | every 6 years |
| Cleaning and disinfecting | | | x | x[2] | | |
| Function and impermeability test | x | | | x[2] | x | |
| Valve disk change | | | | | x | x[1] |
| Communication membrane change | | | | | | x |
| Gasket ring change | | | | | x | x[1] |
| Screw thread check (with Lehrdorn) if applicable | | | | | | x** |
| Control by user | | x | | | | |

After parts which may influence impermeability have been changed, a full check-over is essential.

1 for reserve equipment;
2 only random checks for equipment in airproof packaging.
*) Respiratory masks which are used regularly, should be cleaned and disinfected as often as required. They should be cleaned as soon as possible after each application,, as perspiration or saliva, which dry on the valves, can interfere with their flawlessness.The equipment must be disinfected before it is handed over to another user.
**) After the first 6-year deadline, the equipment should be checked yearly for possible wear and tear.




## Dräger PARAT® rescue hoods

By Dräger. Acc. to EN 403:2004 (fire rescue hoods).
Protects eyes and respiratory passages.

- High-performance respiratory filter
- Easy to put on and safe to wear, allows a quick escape
- Wide field of vision for better orientation when escaping from a fire
- Also suitable for spectacle wearers and people with beards.
- Replacing the filter extends the shelf life by a further 8 years

**Technical specifications:**

| Type | **PARAT® 5530** | **PARAT® 7530** |
|---|---|---|
| Filter performance | CO-P2 | ABEK-CO-P3 |
| Usable life | Min. 15 minutes | |
| Shelf life | 16 years with replacement of filter after 8 years | |
| Weight (g) | 720 | 830 |
| Dimensions W x D x H (mm) | 143 x 241 x 107 | 156 x 249 x 115 |

**Delivery incl.** hard case, dust and water spray protected box (IP 54) with protective seal.

**Dräger PARAT® 5530 fire rescue hood**
Protects the wearer against toxic conflagration gases, vapours and particles for at least 15 minutes while escaping from a fire. The filter is also approved for use against H2S (2.500 ppm) according to DIN 58647-7.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fire rescue hood PARAT® 5530 | **CHK3.1** | 1 | 231,15 |
| Replacement filter for PARAT® 5530 | **CHK4.1** | 1 | 85,50 |
| Wall mount for PARAT® hard case | **CHK5.1** | 1 | 28,85 |

**Dräger PARAT® 7530 fire and industry rescue hood**
Protects the wearer against toxic industrial gases, vapours, particles and conflagration gases for at least 15 minutes while escaping from a fire. The filter is also approved for use with gas and combined filters according to DIN 58647-7 and EN 14387:2004.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fire and industry rescue hood PARAT® 7530 | **CHK6.1** | 1 | 254,80 |
| Replacement filter for PARAT® 7530 | **CHK7.1** | 1 | 103,75 |
| Wall mount for PARAT® hard case | **CHK5.1** | 1 | 28,85 |




## Respiratory protection storage box

By 3M. Ideal for storing 3M semi masks. Made of PE with labelling area. Height 120 mm, ∅ 210 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P846.1** | 1 | 6,85 |

# Respiratory protection accessories



## Replacement filter for Dräger PARAT® rescue hoods

Spare filter with replacement parts set extends the useful life of the rescue hood by a further 6 years after replacement.
Usage time: at least 15 min during escape to safety.

| Filter type | Matching rescue hood | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| CO-P2 | Dräger PARAT® C | **AH73.1** | 1 | 87,65 |
| ABEK P15 | Dräger PARAT® 4530 | **E198.1** | 1 | 99,80 |



## Sekuroka®-wall cabinet

**Mobile**, made of breakproof plastic with transparent door for safe and dust-free storage of respiratory protection products. Specially developed for light respiratory protection devices used at different locations.
The robust, easy to assemble wall attachment allows for quick removal and easy transport of cupboard. Ideal for 1 full-view mask and 2 filters or 2 semi masks and 4 filters. Supplied with 2 shelves.
Dimensions: W 270 x H 410 x D 140 mm. Weight approx. 1.6 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H994.1** | 1 | 71,95 |



## Sekuroka®-wall container

Ideal for gas mask and filters or for other personal protection equipment.
Made of plastic, with transparent, removable snap-on lid.
Dimensions: W 340 x H 430 x D 150 mm. Weight 1.2 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2953.1** | 1 | 105,35 |



## SecuCase

**Carry and storage case for personal protective equipment.**

Made of **PP**. Can be customised, handy for changing places of use or assembly work.

- Clean and safe storage of equipment
- Protective apparatus can be removed quickly and easily
- Including four safety symbol labels (wear eye protection, ear protection, mask and gloves)

**Delivery without** contents.

| Size | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Mini | 260 x 74 x 210 | **ALA6.1** | 1 | 14,30 |
| Midi | 340 x 84 x 280 | **ALA7.1** | 1 | 21,45 |



## Bag for full-face masks

By 3M. Bag for carrying and storage of full face masks.
Dimensions: H x W x D: 280 x 320 x 190 mm.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 107 | **AKX0.1** | 1 | 46,05 |



## Cleaning wipes for respiratory masks

By 3M. For quick and easy cleaning of respiratory masks.
Impregnated with cleaning solution, individually packed.
Dimensions: L 198 x W 92 mm.

| 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 105 | **TK43.1** | 40 | 16,70 |

## Alphabetical listing of harmful substances and recommended respiratory protection filters

**When selecting protective breathing equipment, observe the DGUV regulations 112-190 - Use of respiratory protective devices (formerly BGR 190) !**

| Harmful Substance | Filter type |
|---|---|
| Acetaldehyde | AX |
| Acetone | AX |
| Acetonitril | A |
| Acrylaldehyde | AX |
| Acrylamide | A(-P3) |
| Acrylnitrile | A |
| Acrylic acid | A |
| Potassium hydroxide (caustic potash solution) | P2 |
| Aluminium | P2 |
| Alumimiumchloride | P2(-E) |
| Alumimium oxide | P2 |
| Formic acid | E; B |
| Amine (C7-C9 aliph.) | A; B |
| Ammonia | K |
| Ammonium chloride | P2 |
| Iso-Amyl alcohol | A |
| Aniline | A(-P3) |
| Antimony | P2 |
| Stibine | B |
| Arsenous acid and its salt | P3 |
| Arsenic trioxide (Arsenic) | P3 |
| Arseniuretted hydrogen | B(-P3) |
| Asbestos | P2; P3 |
| Ash | P2 |
| Atrazine | P2 |
| Bacteria | P2 |
| Barium compounds soluble | P2 |
| Cotton dust | P2 |
| Petrol | A |
| Benzene | A |
| Benzyl chloride | B(-P2); A(-P2) |
| Beryllium | P3 |
| Concrete (-injection guns) | P2 |
| Biphenyl | A(-P2) |
| Hydrocyanic acid | B |
| Lead and compounds | P2 |
| Lead chromate | P3 |
| Lead vapour | P2; P3 |
| Boroxide | P2 |
| Boric acid | (E-)P2 |
| Bromine | B |
| Hydrogen bromide | E-P2 |
| Butane | AX |
| Butanol | A |
| Butanone | A |
| Butyl acetate | A |
| n-Butyl acrylate | A |
| Butyl amin | AX |
| Cadmium and compounds | P3 |
| Calcium hydroxide, -sulphate, -oxide | P2 |
| Carbonyl chloride | B |
| Chlorine | B(-P3) |
| Chlorbenzene | A |
| 2-Chloro- 1,3-Butadiene | AX |
| Chlorinated biphenyl | (A)P2 |
| Chloroform | AX |
| 3-Chlorpropene | AX |
| Chrome(VI)-compounds | P3 |
| Cobalt-metal, -oxide, -sulphide | P3 |

| Harmful Substance | Filter type |
|---|---|
| Cyanamide | B-P2 |
| Cyanide (e.g. potassium cyanide, etc.) | B-P3 |
| Hydrocyanic acid | B |
| Cyclohexane | A |
| Cyclohexylamine | A |
| Cyclopentadiene | AX |
| Diazinone | A(P2) |
| Dibenozodioxine, -furane | (A-)P3 |
| Dichlorbenzene | A |
| 1,1-Dichlorethene, 1,2 -~ | AX |
| Dichlormethane | AX |
| Dichromate Na-, K- | P3 |
| Diesel fuel | A(-P3) |
| Diethylamine | AX |
| Diethyl ether | AX |
| Di-isopropylether | A |
| Dimethoxymethane | AX |
| Dimethylamine | K |
| 3,3-Dimethylbenzidine | (A-)P3 |
| Dimethylformamiden (DMF) | A |
| Dimethylnitrosamine | A(-P3) |
| Dimethylsulfate | A(-P3) |
| 1,4-Dioxane | A |
| Pyrosulphuric dichloride | B(-P2) |
| Stainless steel, vapours, fine dust | P3 |
| Iron oxide | P2 |
| Enzymes | P3 |
| Ethanol | A |
| Ethyl acetate | A |
| Ethyl acrylate | A |
| Ethyl amine | K |
| Ethyl benzene | A |
| Ethylene glycol | A(-P29 |
| Ethylene oxide | AX |
| Ethyl formiate | AX |
| Fluorine | B |
| Fluoride | P2 |
| Hydrogen fluoride (hydrofluoric acid) | E; B |
| Formaldehyde | B(-P3) |
| Formamide | A |
| Gypsum | P2 |
| Glass fibers | P2 |
| Glycidole | A |
| Graphite | P1 |
| Halogens | B |
| Halothane | AX |
| n-Heptane | A |
| Hexachlorcyclohexane | A(-P2) |
| n-Hexane | A |
| Hexane-Isomers | A |
| Wood dust | P2 |
| Hydrazine | K |
| Insekticide | A(-P3) |
| Jodine | B(-P2) |
| Isocyanate | B(-P3) |
| Isopropanol | A |
| Caustic potash | P2 |
| Lime | P2 |
| Silica glass, silica vapours | P2 |

| Harmful Substance | Filter type |
|---|---|
| Silica acid, Kieselguhr | P2 |
| Carbon monoxide | CO |
| Cresol | A |
| Cooling lubricants | P2 |
| Artificial mineral fibres | P2 |
| Copper, -vapours | P2 |
| Lindane | A-P3 |
| Magnesium oxide | P2 |
| Magnesium vapours | P2 |
| Maleic anhydride | A-P2 |
| Manganese compounds | P2 |
| Marble | P1 |
| Mill dust | P3 |
| Mercaptane | B |
| Methanol | AX |
| Methoxy ethanol | A |
| Methyl acrylate | A |
| Methyl amine | K |
| Methyl cyclohexanol | A |
| Methyl ethyl ketone (MEK) | A |
| Methyl isobutyl ketone | A |
| Molybdenum compounds | P2 |
| Naphthaline | A(-P2) |
| Sodium azide | P3 |
| Sodium hydroxide (caustic soda) | P2 |
| Nickel-metal, -oxide, -sulphide | P3 |
| Nitrous fumes (NO, $NO_2$) | NO-P3 |
| Nitrous compounds (org.) | A |
| N-Nitrosamine | A-P3 |
| Octane | A |
| Ozone | NO |
| Parathion (E605) | A-P3 |
| Perchlorethylene | A |
| Phenol | A(-P2) |
| Phenylhydrazine | A(-P2) |
| Phosgene (Carbonylchloride) | B |
| Phosphorpentoxide | P2 |
| Phosphortrichloride | B-(p2); E |
| Hydrogen phosphide (Phosphine) | B |
| Fungal spores | P2 |
| Polychlorinated biphenyle (PCB) | (A-)P3 |
| Polyvinyl chloride (PVC) | P2 |
| Pyridine | A |
| Quartz | P2 |
| Quartzing fine dust | P2 |
| Mercury | Hg(P3) |
| Rust | P1 |
| Soot | P2 |
| Nitric acid | E; B; NO |
| Hydrochloric acid (hydrogen chloride) | E(-P2); B(-P2) |
| Sulphur dioxide | E |
| Carbon bisulphide (carbon disulphide) | B; A |
| Hydrogen sulphide | B |
| Silver and compounds (soluble) | P3 |
| Silicious carbide | P2 |
| Stone dust (quartzing) | P2 |
| Styrene | A |
| Talc | P3 |

| Harmful Substance | Filter type |
|---|---|
| Telluric, -compounds | P2 |
| Turpentine oil | A |
| Tetrachlormethane | A |
| Tetrahydrofurane (THF) | A |
| Titanium dioxide | P2 |
| o-Toluidine | A |
| Toluene | A |
| Trichloreethylene (Tri) | A |
| 1,2,4 Trimethylbenzene | A |
| Triethylamine | A; K |
| Uranium compounds | P3 |
| Vanadium pentoxide | P3 |
| Vinyl acetate | A |
| Viruses | P3 |
| Hydrogen peroxide | NO |
| Xylidine | A-P3 |
| Xylene (all isomers) | A |
| Cement | P2 |
| Zinc oxide, -vapours | P2 |
| Tin compounds (anorg.) | P2 |
| Tin compounds (org.) | AP2 |
| Cytostatics | P2 |

# Ear protection

**Work Safety Act for the prevention of noise and vibration** (March 2007) instruct the employer to provide the employee with suitable ear protection when exposure to noise exceeds **80 dB(A)**.
**Individual ear protection** must be used when exposure to noise has reached or exceeds **85 dB(A)**.

**Attenuation values of ear protection products:**

| Art. No. | H-value | M-value | L-value | SNR-value | Page |
|---|---|---|---|---|---|
| **Ear plugs:** | | | | | |
| **0245.1** | 30 | 24 | 22 | 28 | 586 |
| **C493.1** | 32 | 29 | 29 | 33 | 587 |
| **EH62.1 f.** | 37 | 31 | 27 | 34 | 587 |
| **EH64.1 f.** | 27 | 22 | 20 | 25 | 589 |
| **HE94.1** | 27 | 24 | 22 | 27 | 590 |
| **HE97.2 f.** | 36 | 34 | 34 | 37 | 588 |
| **HE99.2 f.** | 33 | 30 | 29 | 33 | 588 |
| **K130.1** | 30 | 24 | 22 | 28 | 589 |
| **KA60.1** | 35 | 32 | 30 | 35 | 587 |
| **KN21.1 f.** | 36 | 35 | 34 | 37 | 587 |
| **KP16.1** | 34 | 32 | 31 | 35 | 588 |
| **KP17.1** | 26 | 18 | 12 | 22 | 588 |
| **P907.1** | 34 | 32 | 31 | 35 | 590 |
| **T210.1** | 37 | 34 | 31 | 37 | 588 |
| **TE80.1 f.** | 33 | 28 | 25 | 32 | 589 |
| **TE82.1** | 25 | 17 | 10 | 20 | 589 |
| **X556.1/Y868.1** | 32 | 29 | 29 | 33 | 587 |
| **XA38.2 f.** | 32 | 28 | 26 | 32 | 589 |
| **XC88.1 f.** | 28 | 23 | 19 | 26 | 587 |
| **Y861.1 f.** | 34 | 32 | 31 | 35 | 588 |
| **Ear plugs on band:** | | | | | |
| **1029.1** | | | | | 590 |
| under the chin<br>behind the head<br>over the head | 30<br>28<br>29 | 23<br>21<br>22 | 22<br>18<br>18 | 27<br>25<br>26 | |
| **A344.1** | | | | | 590 |
| under the chin<br>behind the head | 27<br>25 | 19<br>17 | 17<br>15 | 23<br>21 | |
| **HE95.1** | 26 | 19 | 18 | 24 | 590 |
| **XA36.1** | 30 | 23 | 22 | 27 | 590 |
| **XC97.1** | 26 | 18 | 17 | 23 | 590 |
| **Ear muffs:** | | | | | |
| **AKX4.1** | 32 | 25 | 15 | 27 | 593 |
| **CT07.1** | 24 | 22 | 20 | 25 | 591 |
| **CT19.1** | 32 | 28 | 21 | 30 | 591 |
| **CT24.1** | 30 | 29 | 25 | 30 | 591 |
| **CT25.1** | 25 | 24 | 19 | 26 | 591 |
| **NH12.1** | 32 | 23 | 15 | 26 | 593 |
| **NH13.1** | 34 | 28 | 19 | 30 | 593 |
| **NH19.1** | 32 | 25 | 15 | 27 | 592 |
| **NH20.1** | 34 | 29 | 20 | 31 | 592 |
| **NH61.1** | 31 | 29 | 21 | 31 | 592 |
| **HLN6.1** | 32 | 24 | 16 | 27 | 592 |
| **HLN7.1** | 34 | 29 | 20 | 31 | 592 |
| **HLN8.1** | 35 | 30 | 25 | 33 | 592 |
| **HLN9.1** | 36 | 30 | 22 | 33 | 592 |

| | |
|---|---|
| **L-value (dB):** | Sound attenuation in low frequency range approx. 63-500 Hz. |
| **M-value (dB):** | Sound attenuation in mid frequency range approx. 500-4000 Hz. |
| **H-value (dB):** | Sound attenuation in high frequency range approx. 4000-8000 Hz. |
| **SNR-value (dB):** | Average sound attenuation over total frequency range (63 to 8000 Hz). |

| dB (A) | Type of noise | |
|---|---|---|
| 180 | Deadly noise level | **Painful** |
| 150 | Jet engine test | |
| 130 | Impace pile driver,<br>pneumatic riveting and drilling hammer | **Harmful** |
| 120 | Propeller engine, circular metal saw, hooter | |
| 110 | Drill, pneumatic hammer, discotheque,<br>exxentric press, sawmill | |
| 100 | Metal processing work, compressor,<br>pressroom and stamping | |
| 90 | Belt grinders, milling seaming machines,<br>welding shops, heavy goods vehicles | |
| 80 | Heavy traffic, vacuum cleaner,<br>lawnmower, EDP printer | **Annoying** |
| 70 | Cars, shouting, kitchen mixers | |
| 60 | Normal radio music,<br>normal conversation | |
| 50 | Running tap water, typewriter | **Safe** |
| 40 | Quiet radio music | |
| 30 | Ticking of alarm clock, whispering | |
| 20 | Breathing, fine rain | |
| 10 | Rustling leaft | |

**Ear muffs or ear plugs?**

It is not possible to say that the one is better than the other, but it is rather a question of what is more suitable under individual working conditions.
Ear plugs are usually used for protection against long-term noise (weight!), ear muffs for short-term noise and both of them together for protection against extreme short-term noise.
Past experience has shown, however, that comfort (i.e. handling) and hygiene have always played a major role when selecting the correct protection.
In order to encourage the wearing of ear protection, we recommend giving the employees the possibility to choose.

The ear protection is insulated to max. 20-40 dB(A), depending on frequency, material and anatomy. To achieve a higher level of insulation, the ear protection plugs and capsules can be combined. Ear protection plugs can be used for noise levels of up to 115 dB(A) (refer to manufacturer's information). Combinations of plugs and capsules are suitable for higher noise levels.




## Ear plugs E.A.R.® Classic II

By 3M. Acc. to EN 352-2. Comfortable fit, high noise attenuation, washable. SNR-value: 28 dB.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **0245.1** | 5 | 3,80 |



## Max®-disposable ear plugs

Acc to EN 352-2. Made of polyurethane.
- Bell-shaped for very comfortable fit and high protection
- Optimised shape for simple insertion and to prevent slipping out
- Soft, soil-resisting outer shell prevents dirt deposits and guarantees improved hygiene
- Packed in pairs
- High insulating values, SNR value: 37 dB

| Type | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| without security tear band | **KN21.1** | 200 | 43,55 |
| with security tear band | **KN22.1** | 100 | 51,55 |



## No-Touch disposable ear plugs

By 3M. Acc. to EN 352-2:2002. Made of slowly expanding foam. Pre-formed, soft plugs can be used immediately.
- No rolling up into a ball necessary! With band, practical and hygienic
- Can be combined with other personal protective equipment
- Come packed in pairs
- SNR-value: 35 dB

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **KA60.1** | 100 | 88,15 |



## Disposable ear plugs

By 3M. Acc. to EN 352-2. Made of PU-foam, antiallergic, toxicologically tested and medically harmless for use in industry. Very soft and flexible for an extremely comfortable fit.The special shape enables plugs to adapt optimally to the auditory canal. The low pressure on the ears makes them particularly suitable for people with narrow auditory canals. SNR: 34 dB.

| Type | 3M No. | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| without safety band | 1120 | **EH62.1** | 200 | 35,40 |
| with safety band | 1130 | **EH63.1** | 100 | 73,65 |




① ② ③

## Disposable ear plugs

Acc. to EN 352-2. Made of insulating, dermatologically tested PU foam rubber (does not contain PVC). Conic shape for optimal fit in the ear canal. Nominal size 5-12 mm. Weight approx. 0.5 g. SNR-value 33 dB.

① **Disposable ear plugs 303L in hand dispenser**

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **X556.1** | 100 | 24,30 |

② **Disposable ear plugs 304L with safety strap**

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **C493.1** | 20 | 12,10 |

## ③ Ear-plug dispenser for wall attachment

Made of plastic. With turning mechanism for simple removal of plugs. Ensures that ear-plugs are always available at workplace. Transparent cover enables user to see if plugs need refilled.
**Delivery incl.** dispenser with 400 pairs of ear-plugs (X556.1); 200 pairs in refill pack, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dispenser | **Y867.1** | 1 | 107,30 |
| Refill pack for dispenser Y867.1 | **Y868.1** | 1 | 39,60 |



## Ear plugs xact-fit

By UVEX. Acc. to EN 352-2. These innovative plugs adapt perfectly to the ears. The design for the left and right ear is modelled on the anatomy of the ear canal. This noticeably reduces the pressure in the ear canal, even after long wearing.
- Convenient and easy to use
- Oval shape ensures optimal wearing comfort
- Foam plugs are interchangeable for maximum economy and hygiene
- Free of PVC, SNR: 26 dB

| Type | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| Ear plugs, with cord | **XC88.1** | 50 | 109,65 |
| Spare plugs | **XC89.1** | 250 | 77,75 |

# Ear protection




## Disposable ear plugs

By Moldex. Acc. to EN 352-2. Comfortable soft PU-foam plugs.
Ideal for work which requires constant ear protection.
Soft, easy to insert. Plugs, wall attachment and packaging are completely PVC-free.
Bright colours increase wearing acceptance.
2 models available:

① **Spark plugs:**
- Anatomically pre-formed
- SNR-value: 35 dB(A)

② **MelLows:**
- For better perception of surroundings and better communication
- Especially suitable for lower noise exposure
- SNR-value: 22 dB(A)

**Delivery incl.** 250 pairs in disposable dispenser station for hanging in wall attachment (please order separately), makes ear protection quickly and hygienically available at work site.

| Type | Moldex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① Spark plugs | 7825 | **KP16.1** | 500 | 53,35 |
| ② MelLows | 7625 | **KP17.1** | 500 | 51,40 |
| Wall holder incl. fixing hardware | 7060 | **KP18.1** | 1 | 7,50 |




**Programme extension!**

## X-fit and Com4-fit ear plugs

By UVEX. Acc. to EN 352-2. Ergonomically designed **disposable ear plugs** for mobile long-term protection.
Made of allergy-free PU-foam with a synthetic elastomer.
- Pleasantly soft
- "X"-embossing for comfortable fit and reduction of pressure in the auditory canal
- Closed surface prevents impurities from entering

① **X-fit:**
- For larger auditory canals
- For high and continuous noise exposure
- Very high insulating value, SNR-value 37 dB

② **Com4-fit:**
- For smaller auditory canals
- For lower noise exposure
- SNR-value 33 dB

| Type | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| X-fit, 6 pairs in the mini-box | **HE97.2** | 84 | 15,70 |
| X-fit, loose on refill box for dispenser HH01.1 | **HE98.2** | 300 | 42,90 |
| Com4-fit, 6 pairs in the mini-box | **HE99.2** | 84 | 15,70 |
| Com4-fit, loose on refill box for dispenser HH01.1 | **HH00.2** | 300 | 42,90 |

## Ear protection dispenser

By UVEX. Robust, easy-to-use dispensers
- Automatic dispensing guarantees economical removal, plugs fall out individually when turned
- Simple and hygienic refilling
- Max. filling amount 600 pairs
- Can be filled with X-fit, Com4-fit and all standard ear plugs
- Suitable for wall assembly

**Delivery incl.** mounting material for wall assembly, without ear plugs.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HH01.1** | 1 | 57,65 |



## Disposable ear plugs LASER LITE®

Acc. to EN 352-2. Two-tone plug made of PU. Extremely soft foam.
Plugs adapt automatically to the auditory canal.
Cause no irritation or allergies. SNR-value: 35 dB.
**Packed in pairs in a practical box**
(not suitable for ear plug dispenser Y862.1)

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **Y861.1** | 200 | 42,80 |

## Ear plug dispenser

Made of hard, anodized aluminium. Very robust, suitable for continuous stress. Easy removal of plug by turning the crank.
Can be filled with ear plugs Y861.2 (500 pairs).
**Delivery incl.** fittings, without content.
500 pairs in the refill pack, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dispenser | **Y862.1** | 1 | 187,05 |
| Refill pack for dispenser Y862.1 | **Y861.2** | 1 | 84,95 |



## Disposable ear plugs

By 3M. Made of polyurethane, acc. to EN 352-2.
Cone shaped, soft and kind to the skin. Optimal fit in the ear canal.
Two pairs of plugs with **aluminium storage box.** SNR-value: 37 dB.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **T210.1** | 1 | 7,85 |




## ULTRAFIT ear plugs

By 3M. Acc. to EN 352-2. Pre-moulded ear plugs made of thermoplastic elastomer. Thanks to their flat design, they are a perfect fit for any ear canal. To wash the ear plugs use warm soapy water. **Reusable.** Suitable for sensitive working areas in the foodstuffs and chemicals industries. SNR value: 32 dB.

| Type | 3M No. | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| ① with safety cord | UF01000 | **TE80.1** | 50 | 115,05 |
| ② with storage box | UF01020 | **TE81.1** | 50 | 117,20 |



## Reusable ear plugs

By 3M. Acc. to EN 352-2. Lamellar design for improved fit in the auditory canal and increased comfort. The soft material (monoprene) also adds to the comfort. With special recessed grips for better handling. Storage box with a belt clip for clean and safe storage during rest periods and after work. SNR-value: 25 dB.

| Type | 3M No. | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| without safety band | 1261 | **EH64.1** | 50 | 66,05 |
| with safety band | 1271 | **EH65.1** | 50 | 88,80 |



## ClearE.A.R. 20 ear plugs

By 3M. Acc. to EN 352-2. Pre-moulded ear plugs. Made of soft polymer, transparent. Almost invisible when worn. Ideal fit thanks to flat shape. Short stem for easy insertion and removal. Washable and **reusable**. SNR value: 20 dB.

**Delivery incl.** storage box.

| 3M No. | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| UF01021 | **TE82.1** | 12 | 51,85 |




## Spark Plugs® Detect ear plugs

By Moldex. In acc. with EN 352-2. **Detectable** disposable ear protection plugs made of soft PU foam. The plug and cord both contain metal and therefore are fully detectable. Suitable for use in foodstuffs production. Available in hygienic dispenser station or with cord. SNR value: 32 dB.

| Type | Moldex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Spark Plugs® Detect dispenser station | 7859 | **XA38.2** | 1000 | 127,95 |
| Wall holder incl. fixing hardware | 7060 | **KP18.1** | 1 | 7,50 |



## E.A.R. Express™-ear plugs

By 3M. Acc. to EN 352-2. Extremly comfortable fit. The foam rubber material expands slowly and insulates completely without any excessive pressure. With patented grip for easy and hygienic insertion and removal of plugs as there is no contact between fingers and plug surface. **Plugs are reusable** and easy to clean. Bright colours encourage wear. Come in handy wrapping which can be resealed daily. SNR-value: 28 dB.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **K130.1** | 20 | 18,25 |

# Ear protection



## Ear protection plugs whisper+detec

By UVEX. Acc. to EN 352-2. Soft, able to detect **reusable ear plugs** with excellent fit inside ear channel. Especially ideal in a dirty working environment. Smooth surface prevents particles, which could cause injuries, from collecting.

- For medium noise range
- Plugs are blue for better visibility on the product line
- Detectable
- Hygienic box for clean storage
- Are always within reach
- Fast and easy to use
- Washable
- Easy to communicate
- Suitable for the food sector
- SNR-value: 27 dB

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **HE94.1** | 50 | 80,65 |



## LASER-TRAK ear plugs

Sound absorbing, **able to detect**. Acc. to EN 352-2.
Adapts to auditory canal and cause no irritation or allergies.
Also suitable in the food industry. SNR-value: 35 dB.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **P907.1** | 100 | 85,90 |



## Clamp ear protectors E.A.R.Caps™

By 3M. Acc. to EN 352-2. With soft polyurethane plugs.
Ideal for workers with changing noise exposure and for visitors. Comfortable with simple individual adaption. Can also be worn around the neck.
Weight approx. 7.6 g. SNR-value: 23 dB.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Clamp ear protectors E.A.R.Caps™ | **A344.1** | 1 | 7,75 |
| Spare plugs for clamp ear protector | **P784.1** | 20 | 22,55 |

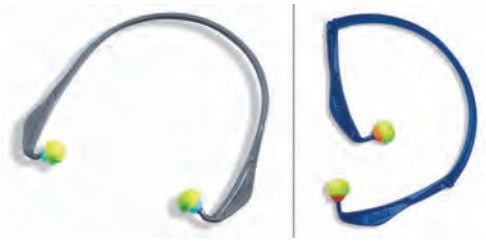


## Clamp ear protectors WaveBand® 2K

By Moldex. Acc. to EN 352-2.

- Ear plug band with anatomically adapted contour
- Freedom of movement without contact noise
- Two-component design with grip points
- Comfortable, low contact pressure (only 1.2 N)
- Feather light: only 12 g
- SNR value: 27 dB

| Type | Moldex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Clamp ear protector WaveBand® 2K | 6800 | **XA36.1** | 1 | 8,10 |
| Replacement plugWaveBand® 2K | 6825 | **XA37.1** | 100 | 48,30 |



## Clamp ear protectors x-cap / x-fold

By UVEX. Acc. to EN 352-2. PU ear protection plugs.
The lightweight alternative to ear muffs.
Ideal ear protection for visitors and on-the-go use.

- For temporary noise protection
- Specially designed earpieces, excellent shape retention
- Readily available, convenient and easy to use
- Comfortable fit, easy communication
- Very light, approx. 8 g
- Colour: grey or blue

**x-cap:** SNR value: 24 dB.

**x-fold:** Foldable, i.e. handy for on-the-go use. SNR value: 23 dB.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Clamp ear protector x-cap | **HE95.1** | 1 | 7,20 |
| Clamp ear protector x-fold | **XC97.1** | 1 | 8,55 |
| Replacement ear plugs for x-cap / x-fold | **HE96.1** | 10 | 9,55 |



## Clamp ear protector E.A.R. Reflex™

By 3M. Acc. to EN 352-2. Features ergonomically designed tilting band for multiple wearing positions. Can be worn together with other types of safety equipment. Infinitely adjustable. Can be worn under the chin, behind the neck or over the head. Extremely soft ear plugs are comfortable to wear and provide excellent attenuation. SNR-value: 26 dB.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Clamp ear protector E.A.R. Reflex™ | **1029.1** | 1 | 9,65 |
| Spare plugs for clamp ear protector | **LE06.1** | 50 | 79,20 |



## Thunder T1 ear muffs

Acc. to EN 352-1. Shape-retaining headband which adapts quickly to all head shapes using a quick-click adjustment system. Soft sealing cushions. Dielectric design for working in areas with possible electrical influence. Weight 186 g, pressure force 8.8 N. SNR-value: 30 dB.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Ear muffs Thunder T1 | **CT19.1** | 1 | 21,45 |
| Hygiene kit (spare cushions) | **CT20.1** | 1 | 7,65 |




## Clarity C1 ear muffs

Acc. to EN 352-1. Blocks out noise while allowing voices, signals and alarms to be heard with minimal distortion. Without electronic components. Two-part headband with well-ventilated interior, soft sealing cushions. Weight 194 g. Pressure force: 10 N. SNR-value: 25 dB.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Ear muffs Clarity C1 | **CT07.1** | 1 | 24,55 |
| Hygiene kit (spare cushions) | **X682.1** | 1 | 9,65 |



## Clarity C2 ear muffs

Acc. to EN 352-1. The Sound Management Technology provides uniform attenuation while allowing voices and signals to be heard with minimal distortion. 3-position universal headband for comfortable fit in the following wearing positions: over the head, behind the neck or under the chin. Can therefore be combined with other safety equipment. Dielectric design. Two-piece headband with well-ventilated interior. Weight 208 g. Pressure force: 11.6 N. SNR-value: 30 dB.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Clarity C2 ear muffs | **CT24.1** | 1 | 26,70 |
| Hygiene kit (spare cushions, headband padding) | **X680.1** | 1 | 12,70 |




## Clarity C1F ear muffs, foldable

Acc. to EN 352-1. The Sound Management Technology provides uniform attenuation while allowing voices and signals to be heard with minimal distortion. Can be folded together to protect the earpieces against dust and dampness. Quick-click adjustment enables headband to adapt quickly to all head shapes and sizes. Dielectric design. Two-part headband with well-ventilated interior, soft sealing cushions. Weight 194 g. Pressure force: 11 N. SNR-value: 26 dB.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Ear muffs Clarity C1F, foldable | **CT25.1** | 1 | 26,70 |
| Hygiene kit (spare cushions) | **X682.1** | 1 | 9,65 |

# Ear protection




## Ear muffs 3M™ Peltor™ X-series

By 3M. Acc. to EN 352-1.
- Modern and attractive slim design
- Double bracket design for better balance and greater comfort
- Low weight
- Soft, wide sealing rings reduce the pressure on the ears and enhance wearing comfort
- Innovative new attenuating cushions and intermediate rings ensure improved attenuation
- Innovative, patented foam in the sealing rings for effective protection
- The cups offer abundant space inside to minimize heat and moisture
- The sealing rings and inserts are easy to replace, for easy cleaning of the cups
- The headband of the ear muffs are dielectric (electrically insulated). The metal parts of the headband are coated with a conductive material, which means that the hearing protection van also be used with a low electrical voltage (less than 440 V AC)

① **Ear muffs 3M Peltor X1**
For protection against light industry noise, lawn mowing, power drilling, etc.
SNR 27 dB, weight 184 g.

② **Ear muffs 3M Peltor X2**
For protection against moderate to high industrial noise levels including roadworks, construction etc.
SNR 31 dB, weight 220 g.

③ **Ear muffs 3M Peltor X3**
For protection against noise in the forestry industry, heavy engineering, at airports, etc.
SNR 33 dB, weight 245 g.

④ **Ear muffs 3M Peltor X4**
With slim cups For use against high noise levels in a wide range of industries.
SNR 33 dB, weight 234 g.

| Type | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3M™ Peltor™ X1 | X1A | **HLN6.1** | 1 | 27,10 |
| 3M™ Peltor™ X2 | X2A | **HLN7.1** | 1 | 32,20 |
| 3M™ Peltor™ X3 | X3A | **HLN8.1** | 1 | 38,00 |
| 3M™ Peltor™ X4 | X4A | **HLN9.1** | 1 | 43,25 |

## Accessories for ear muffs of the 3M™ Peltor™ X-series

By 3M. Hygiene kits allow hygienic and economic use of the ear muffs, since the entire hearing protection does not have to be replace in the event of contamination. Fast and easy assembly.

One set includes 2 foam cushions and 2 sealing rings.

| Hygiene set for | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3M™ Peltor™ X1 | HYX1 | **HLP0.1** | 1 | 12,85 |
| 3M™ Peltor™ X2 | HYX2 | **HLP1.1** | 1 | 12,85 |
| 3M™ Peltor™ X3 | HYX3 | **HLP2.1** | 1 | 13,90 |
| 3M™ Peltor™ X4 | HYX4 | **HLP3.1** | 1 | 15,75 |




## M1 ear muffs

By Moldex. Acc. to EN 352-1.
- High-quality ear muffs
- Soft coat material in metallic colour
- Six adjustments for perfect fit
- Soft padded metal headpiece for long wear comfort
- Collapsible: space-saving and hygienic
- SNR value: 31 dB

| Type | Moldex No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| M1 ear muffs | 6100 | **NH61.1** | 1 | 37,85 |
| Hygiene set | 6105 | **NH62.1** | 1 | 8,55 |



## Peltor™ OPTIME™-ear muffs

By 3M. Acc. to EN 352-1. High wearing comfort and low pressure inside ear even after extended wear.
- Lightweight design, optimal ear protection
- Constant pressure, liquid-filled sealing ring
- 2-point mounting

**OPTIME™ I**

Flat design. **Applications:** outdoor work, building trade, engineering, woodworking, metalworking, automobile industry, farming, chemical treatment.

**OPTIME™ II**

For high-noise environments, provides excellent sound insulation even at extremely low frequencies.
**Applications:** outdoor work, building trade, airports.

| Model | SNR value | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| OPTIME™ I | 27 dB | **NH19.1** | 1 | 22,35 |
| OPTIME™ II | 31 dB | **NH20.1** | 1 | 27,65 |



## Peltor™ OPTIME™ ear defenders

By 3M. Acc. to EN 352-1. With safety attachment for all hard hats with 30 mm slot system and face/ear protection G500 (YT38.1).
High wearing comfort and low pressure inside ear even after extended wear.

- Lightweight design, optimal ear protection
- Constant pressure, liquid-filled sealing ring
- 2-point mounting

**OPTIME™ I**

Flat design. **Applications:** outdoor work, building trade, engineering, woodworking, metalworking, automobile industry, farming, chemical treatment.

**OPTIME™ II**

For high-noise environments, provides excellent sound insulation even at extremely low frequencies.
**Applications:** outdoor work, building trade, airports.

**Delivery without** safety helmet, please order separately (Art. No. NH14.1f)

| Model | SNR value | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| OPTIME™ I | 26 dB | **NH12.1** | 1 | 23,05 |
| OPTIME™ II | 30 dB | **NH13.1** | 1 | 28,90 |

## Accessories for Peltor™ OPTIME™-ear muffs and ear defenders

By 3M. **Hygiene set.**
**Delivery incl.** 2 foam pads and 2 sealing rings.

| suitable for | Art. No. | Pack Qty. | € |
|---|---|---|---|
| OPTIME™ I ear muffs + ear defenders | **NH21.1** | 1 | 11,80 |
| OPTIME™ II ear muffs + ear defenders | **NH22.1** | 1 | 11,80 |




## PELTOR™-Kid ear muffs

By 3M. Acc. to EN 352-1. Specially designed for sensitive children's ears. These comfortable ear muffs have an extra-slim profile and offer child-friendly wearing comfort. The unique, low head band design ensures a constant, low contact pressure. The liquid-filled, soft and wide sealing rings provide a perfect seal with a minimum of contact pressure for comfortable wearing.
Matching hygiene set: NH21.1 (please order separately).
Colour: neon green, SNR value 27 dB.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AKX4.1** | 1 | 23,55 |




## Sekuroka®-sweat absorbers

For ear muffs. Manufactured from white cotton fabric, washable. Pleasantly warm in winter and refreshingly cool in summer.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **T705.1** | 50 | 75,05 |

# Skin protection

| Skin protection | To be applied when handling... | | | | | | | | For skin care | For working without leaving marks | For glove-wearers | Silicone-free | Unscented | Does not contain any preservatives |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Solvents | Dil. acids + alkalis | $H_2O$-insoluble substances, oils and fats | $H_2O$-soluble substances | Cleaning agents | Coarse dirt | Dust | UV rays | | | | | | |
| **TE58.1** Baktolan® protect+ pure | | | | x | | | | | x | | x | x | | |
| **P332.1** Dualin® cream | | | x | x | | | | | | | | x | | x |
| **0543.2** Rotiprotect® skin protection cream | x | x | x | | | | x | | x | | | | | |
| **2938.3f** Marly Skin® skin protection cream | x | | x | x | x | x | | | x | x | x | | | |
| **YT47.1** HERWEDERM PROTECT SENSITIVE | x | | x | x | x | | | | | x | | x | | x |
| **KN04.1** HERWESAN ALL-IN-ONE | | | x | x | | | | | | x | | x | | |
| **KN05.1** HERWE EMULSION | | | | | | | | | | | x | x | | |
| **KN06.1** HERWESAN UV | | | | x | | | | x | | | | x | | |
| **YY19.1f** LINDESA® | | | | x | | | | | x | | | x | | |
| **EEE4.1** LINDESA® unscented | | | | x | | | | | x | | | x | x | |
| **EEE5.1** LINDESA® K | | | | x | | | | | x | x | | x | | |
| **P346.1** Physio® UV 30 | | | | x | x | | | x | | | | | | |
| **AH81.1f** Physioderm® proGlove | | | | | | | | | | | x | x | | |
| **EEE6.1** PROTEXSAN | x | x | | x | x | x | | | | | | x | x | x |
| **C785.1** Saniwip® | | x | | x | x | | | | x | | | x | | |
| **4140.1** Silicoderm® F | | x | x | x | | | x | | | | | | | x |
| **2987.1** Sineprint | | | | | | | x | | | x | | x | | |




## Sineprint®

Hand protection cream made for using natural ingredients.
Protects hands,does not leave residue and increases finger grip.
Non-greasing, silicone-free, paraben-free.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube 100 ml | **2987.1** | 1 | 6,25 |

## Dualin® cream

Protects against **non-water soluble** and **water soluble** substances and is therefore ideal for workplaces with different working materials.
Absorbs into the skin quickly, is slightly perfumed, very hypoallergenic.
Free of paraffin, silicone and paraben.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube 100 ml | **P332.1** | 1 | 7,50 |




## HERWESAN ALL-IN-ONE (non-greasing cream)

**Areas of application:** non-greasing protective cream for handling of working materials with water-soluble and hydrophobic properies, for example, in metal processing and in plastics technology, microelectronics and electrical engineering.

- Easy to spread, quickly absorbed O/W skin protection emulsion
- With a new film formation system for protection against water-soluble and hydrophobic working materials
- Non-greasing and therefore a particularly good, comfortable grip remains following absorption
- Cost-effective dosing system
- Silicone-free

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube 100 ml | **KN04.1** | 1 | 7,40 |




## Rotiprotect®-skin protection cream

Protects and nourishes the skin. Creates a water-repellant protective film. Promotes the regeneration of skin cells and preserves the natural acidic mantle of the skin. Contains silicone, essential fatty acids, allantoin and RMS, a lactic acid, pH 4.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dispenser 55 g | **0543.2** | 1 | 7,75 |

## HERWEDERM PROTECT SENSITIVE skin protection gel

**For imprint-free working** and frequently changing work materials; also suitable for sensitive skin types. Universally usable, for face and hands, recommended for extremely sensitive skin types.
**For use** in the food industry, hospitals, nursing and retirement homes, as well as in electrical engineering. Protection against colours, grease, damp/wet, resins, adhesives, paints, oil, tar-like substances, changing areas of use.
Easy to apply, absorbed quickly. pH neutral, non-greasy, free from preservatives, parabens, silicone and dyes, non-perfumed.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 ml tube | **YT47.1** | 1 | 7,90 |




## LINDESA®-skin protection and skin care cream

Oil-in-water emulsion containing natural beeswax and allantoin for care of the skin. For use in applications involving low stress on the skin or daily work in high humidity environments. Protects against skin damage and soothes irritated skin areas while smoothing and conditioning the skin. Suitable as an afterwork skin care cream or for conditioning stressed skin. Fast-absorbing, low-greasing, silicone-free, beeswax-scented or unscented.

| Type | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Perfumed | 50 ml tube | **YY19.1** | 1 | 4,20 |
| Perfumed | 100 ml tube | **YY19.2** | 1 | 5,20 |
| Unscented | 100 ml tube | **EEE4.1** | 1 | 6,40 |




## LINDESA® K
## Non-greasy skin protection cream with chamomile

Oil-in-water emulsion that contains natural beeswax and chamomile. Particularly suitable for working environments where leaving grease marks on surfaces must be avoided, e.g. when painting, in electrical manufacturing or the final inspection. Also suitable for caring for stressed skin. Strengthens the skin's defensive function and prevents skin damage caused by external stresses. Has a normalising effect on irritated skin. Non-greasy, fast-absorbing, scented, silicone-free.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 ml tube | **EEE5.1** | 1 | 5,35 |




## Saniwip®

Hand cream for protection against damage to the skin when working with **water soluble agents** such as acids, alkali, solvents and alcohol. Prevents cracking of the skin. Suitable for use in foodstuffs processing. Also suitable for the care of highly stressed skin.
Without perfume or silicone.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube 100 ml | **C785.1** | 1 | 6,40 |

## physio UV 30 sun

Skin protection creme for protection against exposure to UV-A, UV-B and UV-C radiation with well balanced protection factor UV-B 30/UVA 10.
**Use:** for protection against intensive UV radiation or when using artificial UV radiation sources.

- white, medium-moisturising W/O emulsion
- Waterproof, contains no fragrances, preservatives or petroleum
- With reflective titanium oxide UV filters (silicone coated)
- Vitamin E acetate combats ageing of the skin

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 ml tube | **P346.1** | 1 | 8,85 |




## Physioderm® proGLOVE

Protects the skin against the effects of skin softening when wearing gloves. Transparent fragrance and greece free gel containing alcohol. Hamamelis and chitin protect the upper layer of the skin while bisabolol and glycerine moisturise and soothe the skin. Suitable for foodstuffs. Contains no fragrances, preservatives, silicone or grease.
Matching dispenser for AH81.2: YY16.1.

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 100 ml tube | **AH81.1** | 1 | 10,65 |
| ② | Dispenser bottle 1000 ml | **AH81.2** | 1 | 33,90 |

# Skin protection




## PROTEXSAN skin cream

Protection against water-soluble and water-miscible substances (e.g. water-mixed oils and cooling lubricants, diluted acids and alkalis, alcohol, washing-up liquids and detergents, disinfectants, salts, and cement) and against free radicals.

- Contains luteolin, co-enzyme Q10 and vitamin E, as well as skin-related lipids
- Does not contain any aluminium salts, preservatives or emulsifiers
- Free from mineral oils, silicone-free, unscented
- Fast-absorbing
- ECARF-certified

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 50 ml tube | **EEE6.1** | 1 | 10,70 |




## HERWE DRY EMULSION

**Area of application:** prevents softening of the skin as a result of wearing airtight clothing and in case of mechanical stress on the skin. For example, when wearing gloves for microelectronic work, and when handling cardboard boxes.

- Non-greasing O/W emulsion
- Hardens corneal layers
- Non-greasing cream
- Reduces perspiration and protects against softening of the skin
- Increases wearing comfort of protective clothing
- Lightly perfumed, silicone-free

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 250 ml bottle | **KN05.1** | 1 | 9,70 |

## HERWESAN UV

**With sun protection factor 30** (International SPF Test Method, Colipa).
**Area of application:** for protection against strong solar radiation or during exposure to artificial sources of radiation.

- White, slightly greasing, weak-fragrance O/W emulsion
- Waterproof and easy to spread on the skin, easily absorbed
- Silicone-free
- Contains inorganic UV protective pigments and special sunscreens, thus protecting the skin against harmful UV-A, -B, -C radiation
- Skin care properties through cosmetic oils and shea butter

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube 100 ml | **KN20.1** | 1 | 8,35 |




## Baktolan® protect+ pure

Water-in-oil-in-water emulsion, protects against aqueous solutions and revitalises cracked, hard-working skin. Protects the skin when performing tasks involving aqueous solutions. Can be used under gloves to counteract skin irritation due to occlusion. Suitable for use several times a day. Fragrance, silicone and colourant free.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 ml tube | **TE58.1** | 1 | 9,65 |




## Marly-Skin®-skin protection foam

Microfine foam penetrates the skin rapidly and forms a protective barrier against harmful and irritant substances. Protection for 4-6 hours. Suitable for use on the entire body, non-greasy, unnoticeable, economical in use. Ideal for use under gloves. Clinically tested.

**Note:** does not replace protective measures, e.g. wearing gloves.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spray can 50 ml | **2938.3** | 1 | 12,50 |
| Spray can 100 ml | **2938.1** | 1 | 21,45 |




## Silicoderm®F BAYER

Hand protection cream with silicone oil, sorbit and vitamin F. Protects reliably against skin damaging conditions. Slightly cooling, pleasant smell.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube 35 g | **4140.1** | 1 | 5,60 |

| Skincare | | For stressed skin | | | Water-in-oil emulsion | Water-in-oil emulsion | Helps the skin to regenerate itself | Silicone-free | Fragrance-free | Suitable as skin protection |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Low | Medium | High | | | | | | |
| Baktolan® balm pure | **ANY7.1** | | | x | | x | x | | x | |
| Baktolan® lotion | **L297.1** | x | | | x | | x | x | | |
| Baktolan® lotion pure | **EKH7.1** | x | | | x | | x | x | x | |
| Cura Soft | **Y866.1** | x | | | x | | x | x | | |
| cUrea soft | **LP24.1** | | x | | x | | x | x | | |
| Rotiprotect® skin protection cream | **0543.2** | | | x | x | | x | | | x |
| HERWE CURA | **KN06.1** | x | | | x | | x | x | | x |
| HERWE MIELOSAN | **YT49.1** | | | x | | | x | x | | |
| Physioderm® cream | **4671.1f** | | | x | x | x | x | x | | |
| ROTIDERM® | **5535.2** | | | x | | | x | | x | |




## ROTIDERM®

Hand care cream for highly stressed and sensitive skin.
Contains essential fatty acids, Sorbitol, waxy high fatty acids and dextrorotatory lactic acid. Helps to repair cracked skin and restore the natural acid balance of the skin. pH 4, unperfumed.

**Application:** apply to cleansed and dried skin after work which is tough on the hands. Absorbs completely without leaving a greasy film.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dispenser 55 g | **5535.2** | 1 | 7,75 |




## Cura Soft

Skin care cream. Is absorbed quickly and is only slightly greasing.
Fat content 7 %. Ideal for nourishing and regenerating skin subjected to stress. Oil-in-water-emulsion. Slightly perfumed, silicone-free.
Dermatologically tested.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube 100 ml | **Y866.1** | 1 | 6,25 |

## cUrea soft

**Application:** fast absorbing skin care cream containing naturally hygroscopic urea. Nourishes sensitive, worn skin. Helps skin to regenerate effectively from abrasional dermatosis or eczema. Also suitable as nail care.

**Product description:**
- Contains urea, horsetail plant extracts and high quality bisabolol
- Smooths extremely dry, worn hands
- Slightly greasing cream, emulsion type O/W
- pH-value neutral and perfumed
- Silicone-free and without mineral oil

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube 100 ml | **LP24.1** | 1 | 6,40 |




## HERWE CURA

**Area of application:** easily absorbed skin care cream. Every time after washing hands and face; also during work in the company or office.
- Slightly greasing cream, emulsion type O/W
- Contains natural oils and beeswax
- Easily absorbed, ensures pleasant feeling on the skin
- For hands and face
- Regenerates the skin
- Weak fragrance, silicone-free
- Suitable for all skin types

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube 100 ml | **KN06.1** | 1 | 4,55 |

## HERWE MIELOSAN

High-quality hand and foot care cream for dry and stressed skin.
To care for skin after intensive hand washing and other activities that particularly dehydrate the skin. Supports the skin's natural moisture retention capacity. Easy to apply, very little required.
With honey, urea, glycerine and allantoin, silicon-free.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 ml tube | **YT49.1** | 1 | 5,65 |

# Skin care




## Baktolan® lotion

Moisturising care for normal skin, with vegetable oils and panthenol. Oil-in- water-emulsion. Suitable for both daily body skin care and for hand care. Is light and distributes well. Soaks into the skin quickly and leaves no irritating oily film. Slightly perfumed, silicone-free. Excellent when doing paperwork, for working in the laboratory, etc.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Bottle 350 ml | **L297.1** | 1 | 7,80 |

## Baktolan® lotion pure

Fragrance-free O/W emulsion for normal skin.
- High skin tolerability
- Absorbs quickly without leaving a greasy film
- Significantly increases the skin's moisture

**Areas of application:**
Can be used on the hands and body. This mild O/W emulsion has been adapted to the skin's physiological characteristics and is especially suited to daily use, as well as applications in which fragrance-free skincare is particularly sought-after.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 350 ml bottle | **EKH7.1** | 1 | 7,20 |




## Baktolan® balm pure

Fragrance free W/O emulsion for dry, highly stressed and sensitive skin. Contains the following active ingredients: allantoin, vitamin E and panthenol. Moisturising and soothing effect, stabilises the skin's protective barrier, pH 5.5. Spreads easily, economical in use, is absorbed quickly, does not form a greasy film.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 350 ml bottle | **ANY7.1** | 1 | 11,40 |




## Physioderm® cream

Refatting skin care cream, improves the skin's water-binding capacity, helps restore the skin's hydrolipidic film, improves skin smoothness and can help to regenerate the skin in case of attrition dermatitis or eczema. Oil-in-water emulsion with high level of lipids, perfumed, silicone free.

**Applications:** care and protection of work-stressed skin, especially brittle or dry skin.

| Image | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Tube 100 ml | **4671.1** | 1 | 6,25 |
| ② | Dispenser 1000 ml | **4671.2** | 1 | 31,75 |




## Skin cream dispensers

Compatible with article no. AH81.2 and 4671.2, all Physioderm Vario 1000 or 2000 ml bottles.
**Delivery incl.** mounting material.

**VARIOMAT ECO**
Made of impact-resistant plastic, with optimal dispensing and efficient emptying.
Dimensions (W x H (incl. lever) x D): 126 x 351 x 130 mm.

| Image | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **YY16.1** | 1 | 53,65 |

**VARIOMAT-M STAINLESS STEEL**
Brushed stainless steel housing. Absolutely hygienic system since the product does not come into contact with the dispenser.
- Robust design
- Easy to operate and fill
- Optimal dispensing

Dimensions (W x H (incl. lever) x D): 134 x 316 x 128 mm.

| Image | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ② | **EEE7.1** | 1 | 95,60 |

| Skin cleaning | To be used for ... | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Soiling: | | | | | | | | | | | | |
| | light | medium to strong | very strong | oils, fats, lubricants | Chemicals | Hands | Body | Surfaces | free from alcali and soap | unscented | With abrasive agent | anti-bacterial | oil-moisturizing |
| **PA94.1f** AZUDERM EXTRA MILD® | x | | | | | x | x | | x | | | | x |
| **X589.1f** Baktolin® sensitive | x | | | | | x | x | | x | | | | x |
| **EKH6.1f** Baktolin® pure | x | | | | | x | | | x | x | | | |
| **CK45.1** plum wipes moist hand wipes | x | | | | | x | | x | | | | | x |
| **CK46.1** Heavy Duty moist hand wipes | | x | | x | | x | | x | | | | | x |
| **NK81.1** Gentle Med® wash lotion | x | | | | | x | x | | x | | | | |
| **YT48.1f** HERWE FRESH shower gel | x | | | | | x | x | | | | | | |
| **EYY3.1f** Lotion Soap | x | | | | | x | | | | | | | |
| **1548.1** Majola® wash lotion | x | | | | | x | x | | x | | | x | |
| **EYX5.1** Foam soap | x | | | | | x | | | | | | | |
| **X668.1f** Stellisept® med | x | | | | | x | x | | | | | x | x |
| **AH82.1** Topscrub® NATURE | | | x | | x | x | | | x | | x | | |




## Lotion soap

Mild lotion soap with pleasant scent. Skin-friendly substances guarantee no skin irritation even when used frequently. Economical in use. Colour: Pink.

| Image | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 950 ml bottle | **EYY3.1** | 1 | 7,30 |
| ② | 10 l canister | **EYY4.1** | 1 | 36,50 |




## AZUDERM EXTRA MILD

**Area of use:** Soap-free cleaning gel for sensitive and highly stressed skin.

- Mild, colourless cleaning liquid
- No preservatives
- **Non-perfumed**
- With skin-friendly sugar tensides
- For gentle cleansing of the hands and the whole body
- Corresponds to the pH-value of the skin

| Image | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Bottle 250 ml | **PA94.1** | 1 | 4,20 |
| ② | Pouch bottle 2000 ml | **PA95.1** | 1 | 18,85 |




## Moist hand wipes plum wipes

By Plum. Effectively and carefully removes all kinds of dirt and soiling caused while working. The moist PP tissues absorb and bind the dirts; and they can be used repeatedly, also suitable for cleaning labware or tools. Lightly perfumed and, because of the glycerine additive, are moisturizing.

- ① **Multi-purpose wipes** with a wide spectrum of application for removing slight to medium soiling.
- ② **Heavy duty-wipes** with additional rubbing effect for removing stubborn and bad soiling, e.g. oil, fat and grease.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Multi-purpose wipes, box with 200 tissues | **CK45.1** | 1 | 36,45 |
| ② Heavy duty-wipes, box with 50 tissues | **CK46.1** | 1 | 16,10 |

## Dispenser

Matches Art. No. PA95.1 and YT48.2.
Housing and wall bracket made of shock-resistant plastic. Operating lever made of stainless steel. With adjusting screw to regulate pump volume.
Dimensions: W 120 x H 320 x D 125 mm.

| Image | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ③ | **PA96.1** | 1 | 61,25 |

# Skin cleansing




## Baktolin® pure

Cleaning lotion for mild cleaning.
- Fragrance-free and colourant-free
- Free of alkali and soap
- Skin-neutral pH value of 5.5

**Areas of application: Due to the omission of fragrance and colourants,**
Baktolin® pure is particularly suitable for sensitive skin. The pH value of 5.5 conserves the skin's natural acid-protection layer. At the same time, this makes the product ideal for use in food-processing fields, in which detrimental effects on the goods to be processed are to be avoided.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 500 ml bottle | **EKH6.1** | 1 | 3,15 |
| 1000 ml bottle | **EKH6.2** | 1 | 4,95 |




## Baktolin® sensitive

For stressed skin. Conditioning and moisturising cleansing lotion for gentle cleansing of hands and skin. Contains the skin care substances allantoin and wheat protein. Regenerates and soothes the skin. Soap, alkali and colorant free, skin-neutral pH of 5.5, subtly scented.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 500 ml bottle | **X589.1** | 1 | 4,95 |
| 1000 ml bottle | **X589.2** | 1 | 7,85 |

## Stellisept® med

Acc. to EN 1499, EN 13727. Antiseptic cleansing lotion with antibacterial effect for hands and body. Bactericidal and effective against MRSA. Skin and mucous membrane compatible, suitable for all skin types. Contains no alcohol and no colouring agents.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Bottle 500 ml | **X668.1** | 1 | 7,35 |
| Bottle 1000 ml | **X668.2** | 1 | 11,85 |




## Gentle Med®-cleansing lotion with camomile extract

For hands and body. Moisturises and protects against dry skin, anti-irritant and soothing effect. Economical in use. pH skin neutral, free of alkalis and soap, fresh fragrance.
Suitable for dispensers TE54.1.

| Art. No. | Pack qty. (ml) | € |
|---|---|---|
| **NK81.1** | 1000 | 7,50 |




## Majola® cleanser lotion

For hands and skin, alkali-free. Strengthens and regenerates the skin's natural acid-protection layer. With an anti-bacterial and deodorizing effect. Suitable for infected, damaged, highly stressed and soap-sensitive skin. Helps in the treatment of acne.

| Art. No. | Pack qty. (ml) | € |
|---|---|---|
| **1548.1** | 500 | 10,15 |




## HERWE FRESH shower gel

Skin-friendly and pleasantly mild cleaning gel for face, body and hair.
Even suitable for extremely stressed and very sensitive skin,
as well as frequent hand-washing.
Free from abrasives, soap, and parabens, pH neutral,
contains preservatives, discreetly perfumed.

| Image | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Bottle 250 ml | **YT48.1** | 1 | 4,50 |
| ② | Dispenser bottle 2000 ml | **YT48.2** | 1 | 19,25 |

## Dispenser

Matches Art. No. PA95.1 and YT48.2.
Housing and wall bracket made of shock-resistant plastic.
Operating lever made of stainless steel.
With adjusting screw to regulate pump volume.
Dimensions: W 120 x H 320 x D 125 mm.

| Image | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ③ | **PA96.1** | 1 | 61,25 |




## COSMOS foam soap dispenser

Made of ABS plastic, colour white. Lockable.
Removable wall bracket for flexible handling.
Dimensions: H 240 x W 105 x D 120 mm.
Can be used with foam soap cartridge EYX5.1.
**Delivery incl.** mounting material.

| Image | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **EYX4.1** | 1 | 39,25 |

## Foam soap cartridges for COSMOS foam soap dispenser

Foam soap with grapefruit scent.
Economical in use, approx. 0,4 ml per stroke.

| Image | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ② | 1000 ml | **EYX5.1** | 1 | 8,75 |




## Topscrub® NATURE

Hand cleanser with natural rubbing agent (walnut shell flour).
Ideal for thorough, but skin-friendly removal of **severe industrial soiling**.
Dermatologically tested. Very hypoallergenic.
Contains neither solvents or soap. Extremely economical in use.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube 200 ml | **AH82.1** | 1 | 5,05 |




## Tubenboy®

Made of ABS/SAN, very robust. For total emptying of all plastic and metal tubes. The tube can be stored in an upright position.
The actual tube content can always be seen.
For max. tube width 66 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AK63.1** | 1 | 3,50 |

# Skin disinfection

| Skin disinfection | | On following basis ... | | | | |
|---|---|---|---|---|---|---|
| | | Propanol | Benzalconium-chloride | Ethanol | for hands | for the body |
| Disinfectant spray Cutasept® F | **AK64.1f** | x | x | | x | x |
| Softa-Man® | **XP54.1ff** | x | | x | x | |
| Softa-Man® ViscoRub | **XP55.1ff** | x | | x | x | |
| Sterillium® | **L276.1ff** | x | | | x | x |
| Sterillium® Antiseptic wipes | **T037.1** | x | | | x | x |
| Sterillium® classic pure | **EH72.1ff** | x | | | x | x |
| Sterillium® Virugard | **L313.1ff** | | | x | x | |




## Sterillium®

Propanol-based rub-in hand disinfectant. No need for a wash basin or water. For all hygiene-sensitive clinical and industrial applications. Protects against infection in public buildings and during travel.
**Efficacy range:** bactericidal, tuberculocidal, limited virucidal efficacy (HBV, HIV, HCV), effective against herpes simplex, influenza A, SARS coronavirus, adeno-associated viruses, polyoma viruses and rotavirus.
**Listing:** BfArM Approval No. 603.00.01. RKI list area A, VAH, IHO list for virucidal products.

**Sterillium: Active substances: propan-2-ol, propan-1-ol, mecetronium ethyl sulphate. Ingredients:** 100 g of solution contains: Active substances: propan-2-ol 45.0 g, propan-1-ol 30.0 g, mecetronium ethyl sulphate 0.2 g. Other Ingredients: glycerol 85 %, tetradecan-1-ol, fragrances, blue patent V 85 %, purified water. **Areas of application:** for hygienic and surgical hand disinfection. For skin disinfection prior to injections and punctures. **Contraindications:** unsuitable for the disinfection of mucus membranes. Do not use in close proximity to the eyes or open wounds. Hypersensitivity (allergy) to one of the ingredients. **Side effects:** slight dryness or irritation of the skin can occur occasionally. In such cases, more intensive general skin care is recommended. Allergic reactions are rare. **Warnings:** Sterillium should not be used on newly or prematurely born infants.
Wait until dry before using electrical devices.
Do not expose to naked flame. Do not use in the vicinity of ignition sources. Flash point: 23 °C, flammable. There are no fire or explosion hazards associated with the proper use of this product. After spillage of the disinfectant, the following steps should be taken: soak up the spilt liquid straight away, dilute with copious amounts of water, ventilate the room and remove ignition sources. Refrain from smoking. In the event of fire, extinguish with water, extinguishing powder, foam or CO2. Refilling may only be performed under aseptic (clean bench) conditions.
**Warning** H226-H319-H336

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Bottle 100 ml | **L276.3** | 1 | n. a. |
| Bottle 500 ml | **L276.1** | 1 | n. a. |
| Bottle 1000 ml | **L276.2** | 1 | n. a. |
| Canister 5 l | **L276.4** | 1 | n. a. |




## Sterillium® classic pure

Hygienic and surgical rub-in hand disinfectant.
Ideal for users with sensitive skin (colorant and fragrance free).
For all hygiene-sensitive clinical and industrial applications.
**Efficacy range:** bactericidal, tuberculocidal, limited virucidal efficacy (incl. HBV, HIV, HCV). Effective against herpes simplex, influenza A, SARS coronavirus, adeno-associated viruses, polyoma virus and rotavirus.
**Listing:** BfArM Approval No. 25918.00.00, RKI list area A, VAH certification, IHO list for virucidal products.
Actual product not shown (similar).

**Sterillium classic pure: Active substances :** propan-2-ol, propan-1-ol, mecetronium ethyl sulphate. Composition: 100 g solution contains: Active substances: 45.0 g propane-2-ol, 30.0 g propane-1-ol, 0.2 g mecetronium ethyl sulphate. **Other ingredients:** 85 % glycerol, tetradecane-1-ol, purified water. **Areas of application:** for hygienic and surgical hand disinfection. For skin disinfection prior to injections and punctures. **Contraindications:** unsuitable for the disinfection of mucus membranes. Do not use in close proximity to the eyes or open wounds. Do not use in case of hypersensitivity (allergic reaction) to one of the active substances or other ingredients. **Side effects:** slight dryness or irritation of the skin may occasionally occur. In such cases, more intensive general skin care is recommended. Allergic reactions are rare. **Warnings:** hand disinfection helps prevent the transmission of infection, e.g. in nursing and health care. Sterillium classic pure should not be used on newly or prematurely born infants. Always consult a doctor prior to use on infants and small children. It is important to ensure that the solution does not come into contact with the eyes.
After contact with the eyes, rinse the eyes under running water for several minutes holding the eyelids open. Avoid transferring the solution from one container into another in order to prevent contamination. If this is unavoidable, the solution should be transferred under aseptic conditions (e.g. using sterile containers under a laminar air flow hood). Wait until dry before using electrical devices. Do not expose to naked flame. Do not use in the vicinity of ignition sources. Flash point: 23 °C, flammable. There are no fire or explosion hazards associated with the proper use of this product. After spillage of the disinfectant, the following steps should be taken: soak up the spilt liquid straight away, dilute with copious amounts of water, ventilate the room and remove ignition sources. Refrain from smoking. In the event of fire, extinguish with water, extinguishing powder, foam or CO2.
**Warning** H226-H319-H336

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Bottle 100 ml | **EH72.1** | 1 | n. a. |
| Bottle 500 ml | **EH72.2** | 1 | n. a. |
| Bottle 1000 ml | **EH72.3** | 1 | n. a. |
| Canister 5 l | **EH72.4** | 1 | n. a. |

# Skin disinfection




## Sterillium® Virugard

Ethanol-based rub-in hand disinfectant. Especially useful for all working areas with an increased infection hazard, such as clinics, laboratories, hospitals etc.
**Efficacy range:** bactericidal, fungicidal, tuberculocidal, limited virucidal efficacy (including HBV, HIV, HCV), virucidal. Effective against herpes simplex, adeno-associated viruses, polyoma viruses, polio and rotavirus.
**Listing:** BfArM Approval No. 13814.00.00. RKI list area A/B, VAH, IHO list for virucidal products.

**Sterillium Virugard: Active substance:** ethanol. **Ingredients:** 100 g solution contain: Active substance: ethanol 99 % 95.0 g. Other ingredients: butan-2-on, glycerol, tetradecan-1-ol, petroleum. **Areas of application:** hygienic and surgical hand disinfection. **Contraindications:** Do not apply to mucus membranes. Hypersensitivity to ingredients. **Side effects:** slight, diffuse reddening of the skin may occur rarely. In such cases, more intensive general skin care is recommended. **Warning:** do not expose to naked flame. Do not use in the vicinity of ignition sources. Close bottle after use. Flash point according to DIN 51755: 0 °C. Highly flammable. After spillage of the disinfectant, the following steps should be taken: soak up the spilt liquid straight away, dilute with copious amounts of water, ventilate the room and remove ignition sources. Refrain from smoking.

**Danger** H225-H319-H412

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Bottle 100 ml | **L313.3** | 1 | n. a. |
| Bottle 500 ml | **L313.1** | 1 | n. a. |
| Bottle 1000 ml | **L313.2** | 1 | n. a. |



## Dosing pumps

For screwing on. Made of PP/PE. Suitable for bottles from Bode.

| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 300/500 ml bottles | **X439.1** | 2 | 11,50 |
| 1000 ml bottles | **X440.1** | 2 | 11,50 |




## Cutasept® F

For skin disinfection, e.g. in the event of accident or minor injuries.
Fast acting and comprehensive. Excellent skin tolerance.
Ready-to use, colourless solution.
**Efficacy range:** bactericidal (including MRSA), fungicidal, tuberculocidal, limited virucidal efficacy (including HBV, HIV, HCV), rotavirus.
**Listing:** BfArM Approval No. 6281157.00.00, VAH.
**Delivery incl.** invertible spray nozzle for 50, 250 and 500 ml bottles (please order spray nozzle for 1000 ml bottle separately).

**Cutasept F: Active substance:** propan-2-ol. **Ingredients:** 100 g solution contain: Active substance: propan-2-ol 63.0 g, equivalent 72 % by vol. Other ingredients: benzalkonium chloride, purified water. **Areas of application:** skin disinfection prior to punctures, injections and surgical procedures. Surgical and hygienic hand disinfection. **Contraindications:** do not use in close proximity to the eyes. Intolerance to ingredients. When used properly, Cutasept F is safe for use during pregnancy and breast-feeding. **Side effects:** slight, diffuse skin irritation occurs frequently. Contact allergic reactions may occur. **Warning:** there is not enough clinical data to recommend this product for the treatment of infants and toddlers. In these cases, this product may only be applied after stringent diagnosis and under medical supervision. Benzalkonium chloride may cause skin irritation. Do not wet skin below blood pressure cuffs. Do not apply surgical film until dry. Wait until dry before using electrical devices. Do not expose to naked flame. Keep clear of ignition sources. There are no fire or explosion hazards associated with the proper use of this product. After spillage of the disinfectant, the following steps should be taken: soak up the spilt liquid straight away, dilute with copious amounts of water, ventilate the room and remove ignition sources. Flash point according to DIN 51755: 21 °C. Flammable. Refilling may only be performed under aseptic (clean bench) conditions.

**Danger** H225-H319-H336

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 50 ml spray bottle | **AK64.1** | 1 | n. a. |
| 250 ml spray bottle | **AK64.2** | 1 | n. a. |
| 500 ml spray bottle | **AK64.3** | 1 | n. a. |
| 1000 ml bottle | **AK64.4** | 1 | n. a. |
| Spray nozzle for 1000 ml bottle | **X827.1** | 1 | n. a. |

**Abbreviations for hygiene inspectorates**

DGHM = German Society for Hygiene and Microbiology
VAH = Association for Applied Hygiene
RKI = Robert Koch Institute
IHO = German Industrial Association for Hygiene and the Protection of Surfaces

IHO List of Virucidal Products: www.iho-viruzidie-liste.de

# Skin protection-accessories





## Softa-Man®

Ready-to-use, alcohol-based hand sanitiser.
- For rapid and long lasting skin disinfection
- Contains Panthenol (Provitamin B5), Bisabolol and Allantoin for hand care
- Dye-free, low-allergen fragrance
- Dermatologically tested
- Hygienic hand disinfection 30 sec, surgical hand disinfection 60 sec

**Efficacy:** effective against bacteria (including MRSA, TbB) and fungi. Limited virucidal efficacy (including HBV, HCV, HIV), effective against rota, influenza, adeno and noro viruses (surrogate virus MNV).
**Listing:** DGHM/VAH, RKI listed (efficacy range A) and in the IHO List of Virucidal Products.

**Composition:** 100 ml of solution contain: Active substances: ethanol (100 %) 45 g, 1-propanol (Ph. Eur.) 18 g. Other constituents: purified water, diisopropyl adipate, macrogol-6-glycerolcaprylocaprate (Ph.Eur.), dexpanthenol, (+/-)alpha-bisabolol, fragrances (contain lemons and linalool), allantoin. **Applications:** hygienic and surgical hand disinfection. **Contraindications:** hypersensitivity (allergy) to ethanol or 1-propanol or one of the other constituents. **Side effects:** contact allergy. Skin irritations such as inflammation and redness and burning, particularly if used frequently. **Warnings:** flammable. Keep container tightly closed. Keep clear of ignition sources. - Refrain from smoking! Avoid contact with the eyes. Do not apply to injured skin or mucus membranes. For external use only. 21-22 °C flash point according to DIN 51 755.

**Danger** H225-H318-H336

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 ml bottle | **XP54.1** | 1 | n. a. |
| 500 ml bottle | **XP54.2** | 1 | n. a. |
| 1000 ml bottle | **XP54.3** | 1 | n. a. |
| 5 litre canister | **XP54.4** | 1 | n. a. |

## Softa-Man® ViscoRub

Ready-to-use, gel-like, alcohol-based hand disinfectant.
- Gel-like structure allows drip free dispensing
- Colorant and fragrance free, i.e. reduced allergenic potential
- Excellent skin compatibility - dermatologically tested
- Especially gentle to the skin
- Hygienic hand disinfection 30 sec, surgical hand disinfection 90 sec

**Efficacy:** effective against bacteria (including MRSA, TbB) and fungi. Limited virucidal efficacy (including HBV, HCV, HIV), effective against rota, influenza and noro viruses (surrogate virus MNV).
**Listing:** DGHM/VAH listed and included in the IHO List of Virucidal Products.

**Composition:** 100 ml of solution contain: Active substances: ethanol (100 %) 45 g, 1-propanol (Ph. Eur.) 18 g. Other ingredients: purified water, butane-2-on, glycerol, isopropyl myristate (Ph. Eur.), (hexadecyl, octadecyl) [(RS)-2-ethyl hexanoate], (+/-)alpha-bisabolol. **Applications:** hygienic and surgical hand disinfection. **Contraindications:** hypersensitivity (allergy) to ethanol or 1-propanol or one of the other ingredients of Softa-Man® ViscoRub. **Side effects:** contact allergy. Skin irritations such as inflammation and redness and burning, particularly if used frequently. **Warnings:** flammable. Keep container tightly closed. Keep clear of ignition sources. - Refrain from smoking! Avoid contact with the eyes. Do not apply to injured skin or mucus membranes. For external use only. 52.3 % ethanol by weight, 20.9 % 1-propanol by weight. 21 °C flash point according to DIN 51 755.

**Danger** H225-H318-H336

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 ml bottle | **XP55.1** | 1 | n. a. |
| 500 ml bottle | **XP55.2** | 1 | n. a. |
| 1000 ml bottle | **XP55.3** | 1 | n. a. |
| 5 litre canister | **XP55.4** | 1 | n. a. |




## Sterillium® Tissue

For hand and skin disinfection. Based on propan-2-ol, propan-1-ol and mecetronium ethyl sulphate.
**Efficacy range:** bactericidal, yeasticidal, tuberculocidal, mycobactericidal, limited virucidal efficacy (including HBV, HIV, HCV). Effective against herpes simplex and rotavirus. **Listing:** BfArM Approval No. 603.00.00.VAH.

**Sterillium® Tissue:** Active substances: 2-propanol (Ph. Eur.), 1-propanol (Ph. Eur.), mecetronium ethyl sulphate. **Composition:** 1 fleece wet wipe contains: **Active substances:** 1.341 mg propan-2-ol , 894 mg propan-1-ol and 5.96 mg mecetronium ethyl sulphate. Other constituents: tetradecane-1-ol, glycerol 85 %, fragrances, purified water. **Applications:** for hygienic hand disinfection, for skin disinfection after injections and punctures in low-sebaceous areas of skin. **Contraindications:** Sterillium® Tissue must not be used in persons with an allergic hypersensitivity to 2-propanol (Ph. Eur.), 1-propanol (Ph. Eur.), mecetronium ethyl sulphate or any of the other constituents, in immediate proximity to the eyes or open wounds, in premature and new-born infants, and for disinfection of mucus membranes. **Side effects:** slight dryness or irritation of the skin may occasionally occur. In such cases, more intensive general skin care is recommended. Allergic reactions are rare. **Warnings:** always consult a doctor prior to use on infants and small children. Avoid contact with the eyes. In case of contact with the eyes, rinse immediately with flowing water for several minutes with the eyelid open. Do not use electrical equipment until the substance has dried. Keep away from naked flame. Do not use in the vicinity of ignition sources. Flash point: 23.5 °C, flammable. In the event of fire, extinguish with water, fire extinguisher or $CO_2$.

**Warning** H226-H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T037.1** | 10 | n. a. |



## ELS/TLS Plus wall dispensers

By B. Braun. For hygienic and precise dispensing of cleansing lotions, disinfectants and skin care lotions. Lever-operated, aluminium housing, plastic pump. Adjustable dispensing volume of 0.7 to 1.5 ml per stroke.

| Type | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ELS plus for 500 ml bottles | 82 x 215 x 295 | **NK86.1** | 1 | 108,60 |
| TLS plus for 1000 ml bottles | 92 x 225 x 340 | **NK87.1** | 1 | 108,60 |

## Dispensing pumps

By B. Braun. Made of PP/PE. For hygienic dispensing. Integrated non-return valve prevents leakage of contents, e.g. when tilting the bottle. 2 ml per stroke. Suitable for B. Braun bottles.

| For bottles | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 500 ml | **NK88.1** | 1 | 6,70 |
| 1000 ml | **NK89.1** | 1 | 6,70 |



## Sekuroka® soap and disinfectant dispenser plus

For application of hand disinfectants, wash and care lotions
- Removable front for easy pump replacement
- Reliable and robust metal dispenser
- All removable parts are fully autoclavable
- Easy installation even in difficult space conditions
- Fits all commercially available bottles
- Easy and quick bottle replacement
- Easy to operate and clean
- Dispensing quantities are adjustable to approx. 0.75 ml to 1.5 ml per stroke

**Delivery incl.** mounting hardware, excludes bottle (please order separately).

**With long arm lever**

| For bottles | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350/500 ml | 82 x 215 x 295 | **TE53.1** | 1 | 96,25 |
| 1000 ml | 92 x 225 x 340 | **TE54.1** | 1 | 105,35 |

**With short arm lever**

| For bottles | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350/500 ml | 82 x 160 x 315 | **CTA8.1** | 1 | 83,75 |
| 1000 ml | 92 x 160 x 360 | **CTA9.1** | 1 | 91,95 |

Accessories:

| | | | |
|---|---|---|---|
| Empty dispenser bottles, 500 ml | **KA39.1** | 6 | 7,75 |
| Empty dispenser bottles, 1000 ml | **KA40.1** | 6 | 9,45 |

## Accessories: Drip pans with handle

Suitable for Sekuroka® soap and disinfectant dispenser plus. The drip pans protect floors and other surfaces against products which can drip during dispensing.

| For bottles | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350/500 ml | 82 x 215 x 295 | **TE55.1** | 1 | 70,95 |
| 1000 ml | 92 x 225 x 340 | **TE56.1** | 1 | 73,10 |

## Accessories: dispensing pumps

Suitable for Sekuroka® soap and disinfectant dispenser plus.

**Replacement stainless steel pumps**

| For bottles | Matching dispenser | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 ml | TE53.1 | **CTA4.1** | 1 | 23,95 |
| 1000 ml | TE54.1 | **CTA5.1** | 1 | 26,70 |

**Disposable pumps**

Single-use plastic pumps. Easy pump replacement after changing bottle. Saves conditioning the stainless steel pump.
- Individually packed for hygienic use of the pump
- Suitable for hand sanitisers and cleansing lotions
- Dispensing quantity: 1.3 ml per stroke, non-adjustable.
- Non-dishwasher safe, non-autoclavable

| For bottles | Matching dispenser | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 ml | TE53.1 | **CTA6.1** | 1 | 8,10 |
| 1000 ml | TE54.1 | **CTA7.1** | 1 | 8,10 |



## Touchless disinfectant dispenser plus

Touchless dispenser for hand sanitiser

- Removable front for easy pump replacement
- Reliable and robust metal dispenser
- Easy installation even in difficult space conditions
- Easy and quick bottle replacement
- Easy to operate and clean
- Dispensing quantities are adjustable to approx. 0.75 to 1.5 ml per stroke

**Delivery incl.** batteries and mounting hardware, without bottle (please order separately).

| For bottles | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350/500 ml | 92 x 210 x 290 | **CTC0.1** | 1 | 232,20 |
| 1000 ml | 92 x 210 x 290 | **CTC1.1** | 1 | 246,20 |

Accessories:

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Soap and disinfectant dispenser Vario

Made of ABS. For application of hand sanitisers, wash and care lotions.
- Removable front for convenient pump replacement
- Easy to assemble
- Easy and quick bottle replacement
- Easy to operate and clean
- Dispensing quantities are adjustable to approx. 1 to 3 ml per stroke

**Delivery incl.** mounting hardware, excludes bottle (please order separately).

| For bottles | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350/500 ml | 74 x 170 x 275 | **CPY9.1** | 1 | 50,45 |
| 1000 ml | 98 x 170 x 345 | **CTA0.1** | 1 | 53,70 |

## Accessories: replacement pumps for soap and disinfectant dispenser Vario

Replacements pumps for CPY9.1 and CTA0.1.

| For bottles | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 350/500 ml | **CTA1.1** | 1 | 16,10 |
| 1000 ml | **CTA2.1** | 1 | 16,60 |

# Skin protection-accessories



## Universal arm lever dispenser

Made of ABS. Operating lever made of stainless steel. Colour: White.
With wall bracket, lockable closing plate and replaceable pump.
Optimally designed for the hygiene needs of a wide range of industries.

- 500 ml or 1000 ml capacity in one dispenser
- Suitable for all conventional bottle models
- Flexible stroke adjustments
- Convenient installation
- Removable drip tray and wall bracket
- Easy folding of the pump head for replacement of the pump
- Locking plate and key guarantee no unauthorised removal

Dimensions: W 105 x H 350 x D 222 mm.

**Delivery incl.** mounting material, empty 1000 ml bottle and adapter for 500 ml bottle. Drip tray optional, please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYX7.1** | 1 | 41,85 |

## Accessories for universal arm lever dispenser

**Drip tray:** Made of ABS, colour white.
Dimensions: W 185 x H 20 x D 105 mm.
**Replacement pump:** Made of plastic.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Drip tray | **EYX8.1** | 1 | 10,70 |
| Replacement pump | **EYX9.1** | 1 | 5,35 |



## Sekuroka®-soap dispenser

For liquid hand wash, lotions, shampoos, shower gel and detergents.
500 ml capacity. Housing made of transparent plastic.
Suitable as standalone or wall-mounted dispenser.
Dimensions: H 180 x W 80 x T 65 mm.
**Delivery incl.** mounting materials.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T054.1** | 1 | 22,60 |



## Liquid soap dispenser

Universal soap and disinfectant dispenser.
Made of ABS, operating lever made of stainless steel.
Easily filled from canisters.
Suitable for 1000 ml disposable Euro bottles.
Dimensions: W 100 x H 280 x D 180 mm. Lever length 70 mm.
**Delivery incl.** dispenser bottle and lockable cover plate.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYX6.1** | 1 | 42,95 |




## Sekuroka®-dispenser

For hand disinfecting agents, wash and skin care lotions in 350 and 500 ml Bode-bottles. Original bottle can be replaced easily.
Dosing approx. 1.5-2 ml per pump action. H 210 x W 58/65 x D 110 mm.
**Delivery incl.** dosing pump, wall holder, mounting parts, assembly and operating instructions. Bottle not included (please order separately).

| For bottles | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 350/500 ml | 58/65 x 110 x 210 | **N110.1** | 1 | 14,10 |



## Sekuroka®-folded towel dispensers

Made of sheet steel, white, with level indicator window.
Suitable for all standard towels.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CY02.1** | 1 | 32,15 |



## Wall holders

Made of stable, load bearing ABS plastic. For hand sanitisers, wash and skin care lotion bottles. Easy attachment and cleaning. Consisting of wall plate and bottle holder. Wall plate is attached to the wall, bottle holder is easy to remove and attach for cleaning or replacement.
Resistant to hand sanitisers.
Y973.1 is also suitable for holding Bacillol® Tissue cans.

**Delivery incl.** mounting hardware, without bottle/can and dispensing pump (please order separately).

| For bottles | Inner surface area (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 ml | 70 x 70 | **Y972.1** | 2 | 19,15 |
| 1000 ml | 88 x 88 | **Y973.1** | 2 | 22,60 |



## Sekuroka®-folded hand towels

Made of 100 % recycled paper, soft tissue quality, highly absorbent and tough.
Suitable for folded towel dispenser CY02.1, ETY2.1 and EYY1.1.

| Type | Size (mm) | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|
| 2-ply, tissue, natural, zigzag folds | 23,5 x 23 | **CY03.1** | 20 x 160 | 31,10 |
| 2-ply, tissue, green, zigzag folds | 23,5 x 23 | **CY04.1** | 20 x 160 | 31,15 |
| 1-ply, crepe, natural, quire folding | 25 x 33 | **CY05.2** | 24 x 154 | 36,15 |



## Folded hand towel dispenser

Made of ABS, colour white with blue window.
Dimensions: W 277 x H 270 x D 130 mm.
**Delivery incl.** mounting material.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYT2.1** | 1 | 24,65 |



## Folded hand towels

Made of cellulose, TAD quality, 2-ply, interfold. Highly absorbent, soft and tearproof when wet. Towel dimensions: 20.3 x 32 cm.
Suitable for dispensers: EYY1.1, CY02.1, EYT2.1.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 20 x 100 towels | **EYY0.1** | 2000 | 44,10 |

# Skin protection-accessories



## AQUARIUS hand towel dispenser

By Kimberley-Clark. Made of impact resistant plastic, white, with sight glass.
For hygienic individual removal of paper hand towels.
Dimensions: L 265 x D 136 x H 399 mm.
Suitable for disposable hand towels: KLEENEX® Art. No. X251.2, ECX6.1, ECX7.1 and SCOTT® Performance Art. No. X254.2.

| KC number | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6945 | **X252.1** | 1 | 99,45 |

## Disposable hand towels for AQUARIUS hand towel dispenser

By Kimberley-Clark.

**SCOTT® Performance hand towels**
Disposable hand towels made of Airflex paper, white, single layer, interfold.
Suitable for hand towel dispenser AQUARIUS Art. No. X252.1.

| KC number | Towel size L x W (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 6663 | 315 x 215 | 15 pack, 212 sheets each | **X254.2** | 3180 | 79,90 |

**KLEENEX® ULTRA hand towels**
Disposable hand towels made of Airflex paper, white.
Double-layer, interfold.
Outstanding quality, highly absorbent and tear resistant.
Suitable for hand towel dispenser AQUARIUS Art. No. X252.1.

| KC number | Towel size L x W (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 6777 | 315 x 215 | 30 pack, 124 sheets each | **ECX6.1** | 3720 | 135,45 |

**KLEENEX® ULTRA SUPER SOFT hand towels**
Disposable hand towels made of Airflex paper, white.
Triple-layer, interfold, very soft, kind to the skin and highly absorbent.
Suitable for hand towel dispenser AQUARIUS Art. No. X252.1.

| KC number | Towel size L x W (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 6771 | 315 x 215 | 30 pack, 96 sheets each | **ECX7.1** | 2880 | 149,45 |
| 6773 | 415 x 215 | 30 pack, 72 sheets each | **X251.2** | 2160 | 170,95 |



## Midi folded hand towel dispenser

Made of ABS, colour white with window.
Suitable for all folded hand towels, lockable.
Dimensions: W 255 x H 250 x D 120 mm.
**Delivery incl.** mounting material and dispenser plate for interfold paper.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYY1.1** | 1 | 26,70 |




## COSMOS hand towel roll dispenser

Made of ABS plastic, colour white. Lockable and secure.
Cover opens upwards and remains open for convenient refilling.
Removable wall bracket for flexible handling.
Automatic remnant roll function.
Dimensions: H 430 x W 320 x D 210 mm.
Suitable for hand towel rolls up to W 290 mm.

① **COSMOS Autocut**
Push lever with slip clutch.
**Delivery incl.** mounting material.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYX0.1** | 1 | 100,55 |

② **COSMOS Sensor**
With length regulator. Setting options: Sensor or Auto mode as well as battery or mains operation.
**Delivery incl.** mounting material and 4 (Duracell D) 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYX1.1** | 1 | 144,05 |

Accessories:

| | | | |
|---|---|---|---|
| Mains adapter for COSMOS Sensor hand towel roll dispenser | **EYX2.1** | 1 piece | 17,85 |
| Mono/D 1.5 V battery | **1024.2** | 2 pieces | 6,35 |
| Paper rolls, 2-ply, W 290 x L 140 m, for COSMOS hand towel roll dispenser | **EYX3.1** | 6 pieces | 41,85 |



## Maxi hand towel roll dispenser with pull-out unit

Made of ABS, colour white with blue window. Lockable.
Dimensions: W 207 x H 321 x D 220 mm. For roll diameters max. 190 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYY2.1** | 1 | 36,15 |



## Lab towels

Made of 100 % cotton, towelling quality, can be washed at 90 °C.
Dimensions: 50 x 100 cm, surface weight 420 g/m$^2$.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| peacock blue | **1617.1** | 3 | 23,15 |
| creamy-yellow | **1616.1** | 3 | 23,15 |
| pure white | **0121.1** | 3 | 23,15 |



## Wall-mounted dispenser for hand towel rolls

Made of impact-resistant plastic.
For tidy storage and easy removal of wipes from the roll.

| Dimensions: W x D x H (mm) | suitable for | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 140 x 140 x 280 | E184.1 | **E183.1** | 1 | 34,95 |

## Disposable hand towel rolls

Premium quality, tear resistant, single-layer, unperforated, white.
Pull out centre, unwind wipes from inside.

| Blade width (mm) | Roll length (m) | suitable for | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| 200 | 120 | E183.1 | **E184.1** | 3 | 16,05 |
| 203 | 300 | EYY2.1 | **E185.1** | 2 | 21,45 |



## Sekuroka®-wire mesh basket

Made of robust metal with plastic coating. Suitable as waste basket, e.g. for paper tissues. Dimensions: L 360 x W 260 x H x 610 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AC06.1** | 1 | 39,75 |

## Accessories for Sekuroka®-wire mesh basket

**Matching waste disposal bags**
50 litres. Made of PE, white. Dimensions: 370/260 x 850 mm, strength 30 µm. 40 bags, pre-perforated on a roll.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y405.1** | 200 | 23,60 |

# Disposable gloves

## Guidelines on Personal Protective Equipment 89/686/EWG

**Identification of protective gloves via Cat. I, II or III pictographs:**

| | |
|---|---|
| **Cat. I** | Minimal risk<br>Low protection requirements |
| **Cat. II** | Medium risk<br>Protection against e.g. mechanical hazards |
| **Cat. III** | High risk<br>Protection against irreversible damages and fatal hazards, e.g. damage caused by chemicals. |

**European Standards for protective gloves:**

| | |
|---|---|
| **EN 374** | Protective gloves against chemicals and micro-organisms |
| **EN 388** | Protective gloves against mechanical risk |
| **EN 407** | Protective gloves against thermal risk |
| **EN 420** | General requirements for gloves |
| **EN 421** | Gloves for protection against ionising radiation and radioactive contamination |
| **EN 455** | Medical gloves for single use |
| **EN 511** | Protective gloves against the cold |
| **EN 1082** | Protective clothing, gloves and protective sleeves for protection against cuts and stab injuries caused by pocket knives |
| **EN 1149** | Protective clothing against electrostatics |
| **EN 12477** | Protective gloves for welders |

**AQL-value:** Statistical procedure for quality analysis.

**Identification of protective gloves via standardized pictographs:**


Protection against mechanical hazards


Protection against chemical hazards


Waterproof protective gloves and low protection against chemical hazards


Protection against bacteriological contamination


Protection against radioactive contamination


Protection against cold


Protection against heat and flames


Commodity goods which are safe to come in contact with food




## Rotilabo®-wall dispensers

Made of **stainless steel**. Suitable for all Rotiprotect® glove dispensers and Rotizell®-tissues (0087.2). By lightly pressing the two metal hoops together, other dispensers of max. 7.5 cm width can be inserted. Comes with two loops for wall attachment. Dowels and screws included.

| Type | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| For one box | 180 x 85 x 135 | **Y383.1** | 1 | 22,05 |
| For three boxes | 245 x 100 x 477 | **AC07.1** | 1 | 53,25 |




## Dracula universal wall mount

Made of PS, colour: white. Adaptable wall mount for dispenser boxes in various sizes, ideal for disposable gloves, face masks, tissues or wipes. For doctor's surgeries, laboratories and hospitals.

- Spring-loaded clamp with teeth
- For boxes with a width of 100 to max. 130 mm, weight up to approx. 1 kg
- Can be attached with double-sided adhesive tape or screws
- Dimensions: W 100 x H 170-210 x D 20 mm

**Delivery incl.** double-sided adhesive strips for fastening.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CAL7.1** | 1 | 7,50 |






## Sekuroka®-Solo glove dispenser

Made of premium-quality stainless steel, matt-brushed surface.
Can be disinfected with surface disinfectant.
**Flexible wall mounting options:** Can be mounted vertically or horizontally thanks to the shelf support fitted on one side.
**Highly adaptable:** On the back of the dispenser is a tab that users can fold over in order to insert boxes of different sizes (between 60 and 90 mm) and secure them firmly in place. Flat boxes will not slip backwards.
**Delivery incl.** wall fastenings.

| Outer dimensions: L x W x H (mm) | Suitable dispenser boxes max. L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 250 x 135 x 95 | 250 x 132 x 90 | **EHC9.1** | 1 | 42,95 |







## Sekuroka®-stainless steel glove dispensers

Made of high-quality stainless steel with brushed matt finish.
Can be disinfected with surface disinfectant.
① **Flex glove dispenser**
Height adjustable with variable mounting positions - can be mounted on a level surface or bolted to the wall. Suitable for dispensers with central dispensing opening. Also suitable for dispensing cosmetic wipes and cleaning wipes.
**Delivery incl.** 4 non-slip, self-adhesive mounting pads to protect surfaces.
② **Fix glove dispenser**
Keyhole system for quick mounting and removal from the wall without tools.
③ **Trio glove dispenser**
Three-way glove dispenser with a straightforward vertical layout.
Sizes S, M and L are marked on the side. Filling from above.
Can be removed from the wall without tools.

All dispensers are **supplied with** mounting materials.

| Type | Outer dimensions: L x W x H (mm) | Suitable dispenser boxes max. L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Flex | 262 x 152 x 90 | 259 x 136 x 60-90 | **NK95.1** | 1 | 81,50 |
| ② Fix | 250 x 135 x 80 | 250 x 132 x 75 | **NK96.1** | 1 | 42,50 |
| ③ Trio | 258 x 96 x 392 | 250 x 130 x 90 | **NK97.1** | 1 | 68,30 |
| Adapter for Iso standard rail | 202 x 23 x 37 | - | **NK98.1** | 1 | 21,45 |




## Acrylic wall-mounted holder

Made of transparent acrylic. For boxes containing gloves or cleaning wipes.
Can be wall-mounted. Supplied without wall fastenings.

| Type | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 250 x 140 x 70 | **EHX1.1** | 1 | 13,95 |
| ② | 250 x 145 x 100 | **EHX2.1** | 1 | 15,60 |



## Rotiprotect®-latex finger stalls

With roll-up cuff, **powder-free**, natural colour. Length 68 mm, 0.1 mm thick.

| Size | Flat width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 (M) | 24 | **X152.1** | 500 | 11,75 |
| 4 (L) | 27 | **X153.1** | 500 | 11,75 |
| 5 (XL) | 30 | **X154.1** | 500 | 11,75 |

# Disposable gloves




## PE-gloves

Disposable gloves made of polyethylene. Simple consumer quality.
10 packs of 100.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Men's gloves | **1969.1** | 1000 | 17,10 |
| Ladies' gloves | **H706.1** | 1000 | 17,10 |



Cat. I

## Sekuroka®-membrane gloves

Made of blue soft foil (co-polymere), very stretchable.
Disposable, ambidextrous. Ideal for foodstuffs
acc. to Guidelines 90/128/EWG. Strength 30 µm, length 375 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AN63.1** | 100 | 5,60 |



## Sekuroka®-disposable gloves

Made of sturdy polyethylene, stretchable and powdered.
Skin friendly and abrasion-proof. Suitable for delicate work.
Come in dispenser carton with holes for wall mounting.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Ladies' | **1517.1** | 100 | 11,80 |
| Men's | **1230.1** | 100 | 11,80 |



## Undergloves

Made of 100 % nylon. Thin white fine knit. Fingertip-free fine knit under-gloves for protection against sweaty hands. High wearing comfort, good tactile sensitivity and ambidextrous. Machine washable up to 30 °C, suitable for multiple use. Universal size.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **NK52.1** | 10 | 17,15 |



## Sekuroka®-membrane gloves, extra-long

Made of soft foil (co-Polymer), very stretchable. Colour orange.
Disposable, ambidextrous. Strength 30 µm, length approx. 90 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AN64.1** | 50 | 8,85 |

# Rotiprotect®-vinyl gloves

**Acc. to EN 420, corresponds to EN 455. AQL 1.5.**

Comply with the requirements of the Foodstuffs and Commodotoes Law, EU-Regulation 1935/2004.

Not suitable for foodstuffs containing grease.




Cat. I

## Rotiprotect®-vinyl

**Disposable vinyl gloves, powder-free**

CE Category I, protected from minimal risks
Acc. to EN 420, corresponds to EN 455. AQL 1.5.

**Very good sense of touch**

- Colour transparent
- Made of PVC
- Smooth
- Flexible
- With roll-type edge
- Wall thickness, double: approx. 0.18 mm
- Free of latex proteins
- Can be used on both hands
- 100 or 90 units in a dispenser carton

| Size | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S (6-7) | ≥240 | **6177.1** | 100 | 8,25 |
| M (7-8) | ≥240 | **6178.1** | 100 | 8,25 |
| L (8-9) | ≥240 | **6179.1** | 100 | 8,25 |
| XL (9-10) | ≥240 | **X356.1** | 90 | 8,25 |
| With 10 boxes of each size | | | | 7,43/box |

**Resistance list Rotiprotect®-vinyl gloves**

| Material | Level acc. to EN 374-3 | Permeation time (min) |
|---|---|---|
| Acetone | n. r. | instant |
| Acetonitrile | A | <10 |
| Ammonia (25 %) | A | <10 |
| Benzalconium chloride | 4 | >120 |
| Benzene | n. r. | instant |
| Cyclohexanol (solid) | 4 | >120 |
| Chlorohexidine (solid) | 6 | >480 |
| Dichloremethane | n. r. | instant |
| Diesel oil | A | <10 |
| Diethylamine | n. r. | instant |
| Diethylether | n. r. | instant |
| Dimethylsulfoxide (DMSO) | n. r. | instant |
| Acetic acid (10 %) | 6 | >480 |
| Ethanol (80 %) | A | <10 |
| Ethyl acetate | n. r. | instant |
| Formaldehyde (37 %) in 10 % methanol | A | <10 |
| Formaldehyde (37 %), formalin | A | <10 |
| Glutaraldehyde (5 %) | 5 | >240 |
| n-Heptane | n. r. | instant |
| n-Hexane | n. r. | instant |
| Isopropyl alcohol | A | <10 |
| Linseed oil | A | <10 |
| Soda lye (40 %) | 6 | >480 |
| Phenol (10 %) | A | <10 |
| Nitric acid (10 %) | 6 | >480 |
| Nitric acid (50 %) | 6 | >480 |
| Hydrochloric acid (36 %) | 1 | >10 min |
| Sulphuric acid (96 %) | A | <10 |
| Toluene | n. r. | instant |
| Trichloroethane | n. r. | instant |
| Xylene | n. r. | instant |

Level / permeation time:

A - only recommended as splash guard

Level 1 >10 min
Level 2 >30 min
Level 3 >60 min
Level 4 >120 min
Level 5 >240 min
Level 6 >480 min

n. r. = not recommended

This information is based upon laboratory test methods which cannot simulate the working conditions completely. It is the responsibility of the end consumer to select the gloves most suitable for his needs. When working with substances that may irritate the skin, please always check the glove beforehand for possible holes or tears.

# Rotiprotect®-latex gloves

Comply with the requirements of the Foodstuffs and Commodotoes Law, EU-Regulation 1935/2004.

- Thin roll-type edge
- Very smooth and pleasantly soft
- Extremely stretchable
- Thiuram-free
- AQL 1.5







## Rotiprotect®-latex gloves Type 1 powder-free

**Disposable natural latex gloves**

Acc. to 89/686/EEC, CE category III, for protection against complex risks
Acc. to EN 420, EN 374 and ASTM-F 1671-97. AQL 1.5
Acc. to 1935/2004 - suitable for contact with foodstuffs.

**Textured surface for secure grip**.
- Very smooth and pleasantly soft
- Extremely stretchy
- High tactile sensitivity
- Can be worn on both hands
- Beaded cuff
- Colour: natural
- Double thickness: min. 0.20 mm
- Thiuram-free
- 100 or 90 per dispenser box

| Size | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S (6-7) | ≥240 | **C268.1** | 100 | 12,75 |
| M (7-8) | ≥240 | **C269.1** | 100 | 12,75 |
| L (8-9) | ≥240 | **C270.1** | 100 | 12,75 |
| XL (9-10) | ≥240 | **HE60.1** | 90 | 12,75 |
| With 10 boxes of each size | | | | 11,48/box |

**Thiurams**
are used as a preservative during glove manufacturing and are also mainly added to accelerate vulcanisation. Thiurams may often cause latex allergies.







## Rotiprotect®-latex gloves Type 2 powder-free

**Disposable natural latex gloves**

Acc. to 89/686/EEC, CE category III, for protection against complex risks
Acc. to EN 420, EN 455, EN 374 and ASTM-F 1671-97. AQL 1.5
Acc. to 1935/2004 - suitable for contact with foodstuffs.

**Textured surface for secure grip.**
**Synthetic inner coating makes gloves easy to put on**.
- Maximum wearing comfort and optimum perspiration absorption
- Intensive washing processes ensure gloves contain low levels of protein and irritants
- Can be worn on both hands
- Beaded cuff
- Colour: natural (light)
- Double thickness: min. 0.22 mm
- Thiuram-free
- 100 or 90 per dispenser box

| Size | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S (6-7) | ≥240 | **L949.1** | 100 | 11,65 |
| M (7-8) | ≥240 | **L950.1** | 100 | 11,65 |
| L (8-9) | ≥240 | **L951.1** | 100 | 11,65 |
| XL (9-10) | ≥240 | **HE61.1** | 90 | 11,65 |
| With 10 boxes of each size | | | | 10,49/box |







## Rotiprotect®-latex gloves type 4 powdered

**Disposable natural latex gloves**

Acc. to 89/686/EEC, CE category III, for protection against complex risks
Acc. to EN 420, EN 374 and ASTM-F 1671-97. AQL 1.5
Acc. to 1935/2004 - suitable for contact with foodstuffs.

**Micro coarse outer surface**
**Smooth inner surface, lightly powdered**
- Very smooth and pleasantly soft
- Can be worn on both hands
- Thin rolled edge
- Colour: natural (light)
- Double thickness: approx. 0.18 mm
- Thiuram-free
- 100 per dispenser box

| Size | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S (6-7) | ≥240 | **5884.1** | 100 | 8,10 |
| M (7-8) | ≥240 | **5885.1** | 100 | 8,10 |
| L (8-9) | ≥240 | **5886.1** | 100 | 8,10 |
| With 10 boxes of each size | | | | 7,29/box |

**Resistance list Rotiprotect®-latex gloves**

| Rotiprotect® Latex | Type 1 powder-free C268.1 ff. | Type 2 powder-free L949.1 ff. | Type 4 powdered 5884.1 ff. |
|---|---|---|---|
| **Substance** | **Level acc. to EN 374** | | |
| Acetic acid (10 %) | 2 | 2 | A |
| Acetone (2-propanone, ketone propane) | n.r. | n.r. | n.r. |
| Acetonitrile (methyl cyanide, ethane nitrile) | n.r. | n.r. | n.r. |
| Acrylamide (40 %) | 6 | n.t. | 6 |
| Ammonia (25 %) | A | A | n.t. |
| Benzalkonium chloride fl. (quaternary ammonium compound) | n.t. | 6 | n.t. |
| Chlorhexidine gluconate+ethanol+water | n.t. | n.t. | n.t. |
| Chloroform (trichloromethane) | n.r. | n.r. | n.r. |
| Cyclohexanol (hexalin / at 23 °C) | n.t. | 1 | n.t. |
| Dichloromethane (methylene dichloride, Freon 30) | n.r. | n.r. | n.r. |
| Diethyl amine (DEA) | n.r. | n.r. | n.r. |
| Diethyl ether (diethyl oxide, ethoxyethane) | n.r. | n.r. | n.r. |
| Dimethyl sulphoxide DMSO | n.r. | n.r. | n.r. |
| Ethanol (20 %) | A | A | A |
| Ethanol (40 %) | n.r. | n.r. | n.r. |
| Ethanol (70 %) | n.r. | n.r. | n.r. |
| Ethanol (80 %) | n.r. | n.r. | n.r. |
| Ethanol p.a. | n.r. | n.r. | n.r. |
| Ethidium bromide (1 %) | n.r. | n.r. | n.r. |
| Ethyl acetate | n.r. | n.r. | n.r. |
| Formaldehyde (37 %) | 1 | n.t. | A |
| Glutaraldehyde (5 %) | 6 | n.t. | n.t. |
| n-heptane (CAS 142-82-5) | n.r. | n.r. | n.r. |
| n-hexane (CAS 110-54-3) | n.r. | n.r. | n.r. |
| Hydrochloric acid (36 %) | A | 1 | 1 |
| Hydrofluoric acid (40 %) (hydrogen fluoride) | n.t. | n.t. | n.t. |
| Isopropyl alcohol (40 %) | A | A | A |
| Isopropyl alcohol (70 %) | A | A | A |
| Isopropyl alcohol p.a. | n.r. | A | n.r. |
| Methanol p.a. | n.r. | n.r. | n.r. |
| Nitric acid (10 %) | 6 | 6 | 6 |
| Nitric acid (36 %) | 6 | n.t. | n.t. |
| Nitric acid (50 %) | 2 | A | A |
| Petroleum (heavy, bp 150-190 °C) | n.r. | n.r. | n.r. |
| Phenol (10 %) | n.t. | A | A |
| Phenol (80 %) | n.t. | n.t. | n.t. |
| Phosphoric acid (30 %) | 6 | n.t. | n.t. |
| Potassium hydroxide (30 %) (caustic potash) | 1 | n.t. | n.t. |
| Sodium hydroxide (30 %) (caustic soda) | 4 | 6 | 2 |
| Sodium hydroxide (40 %) (caustic soda) | 4 | 5 | 3 |
| Sulphuric acid (96%) | n.t. | 1 | n.t. |
| Toluene | n.r. | n.r. | n.r. |
| Trichlorethane | n.r. | n.r. | n.r. |
| Xylene | n.r. | n.r. | n.r. |

Level / Permeation time:

| | | |
|---|---|---|
| Level 1 >10 min | Level 4 >120 min | A - < 10 min, only recommended as splash guard |
| Level 2 >30 min | Level 5 >240 min | n.r. = not recommended (ruptures immediately) |
| Level 3 >60 min | Level 6 >480 min | n.t. = not tested |

This information is based on laboratory test methods which are not able to simulate al aspects of the working conditions. The end user is responsible for selecting appropriate gloves for a given application. When working with fabrics which can damage the hands, please check the gloves first for any holes and cracks they may contain.







## Sempercare® premium sterile - examination gloves

**Disposable natural latex gloves, powder-free, sterile.**
Acc. to 93/42 EEC medical product class I, acc. to 89/686/EEC PSA category III, acc. to EN 420, EN 374, EN 455, ASTM-F 1671-97, AQL 1,5

- Usable on both sides
- Synthetic inner coating
- Colour: yellowish-white
- Smooth surface, textured fingers, thin beaded cuff
- Double wall thickness: 0.16 mm fingertips; 0.26 mm palm
- High tensile strength (9 N) gives superior protection for use in critical environments
- Protection against infection for user and patient
- Gamma-sterilised acc. to EN 552, EN 556
- Packaged in pairs inside sterile pouches and sealed

**Applications:** health care, medical and dental use, light laboratory applications, food processing.

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| S (6-7) | ≥240 | **HH47.1** | 40 | 28,85 |
| M (7-8) | ≥240 | **HH48.1** | 40 | 28,85 |
| L (8-9) | ≥240 | **HH49.1** | 40 | 28,85 |
| With 10 boxes of each size | | | | 25,97/box |







## Semperclean MC

**Single-use gloves made of natural Latex, powder-free**
Acc. to 89/686/EEC CE Category III, for complex risks.
Acc. to 93/42/EEC: CE Class I Medical products.
Acc. to EN 420, EN 374, EN 455, AQL 1.5.

- **With hand-specific form**, ideal fit for fatigue-free work
- Highest wearing comfort and especially easy to put on due to special inner coating
- Excellent secure grip through micro-roughended surfaces
- Especially skin-friendly, since cleaned/washed in the production process
- Thin rolled edge
- Colour: natural white
- Length: min. 270 mm
- Double thickness: approx.0.42 mm (measured double)
- 50 pairs in a dispenser carton

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| S | 270 | **HHN4.1** | 50 | 42,95 |
| M | 280 | **HHN5.1** | 50 | 42,95 |
| L | 285 | **HHN6.1** | 50 | 42,95 |

# Rotiprotect®-nitrile gloves

Acc. to 89/686/EEC, CE category III, for protection against complex risks
Acc. to EN 420, EN 455, EN 374 and ASTM-F 1671-97. AQL 1.5
Acc. to 1935/2004 - suitable for contact with foodstuffs.




## Rotiprotect® -nitrile evo

**Disposable nitrile gloves, powder-free**

**Textured surface for secure grip**
- Higher durability thanks to special formulation
- High elasticity and good tactile sensitivity
- Can be worn on both hands
- Beaded cuff
- Colour: blue
- Thickness: approx. 0.14 mm
- Length: min. 240 mm
- Free from phthalates/plasticisers and allergenic latex proteins
- 100 or 90 per dispenser box

Ideal for general laboratory use, good resistance to many chemicals, greases and oils.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S (6-7) | **CPX6.1** | 100 | 14,75 |
| M (7-8) | **CPX7.1** | 100 | 14,75 |
| L (8-9) | **CPX8.1** | 100 | 14,75 |
| XL (9-10) | **CPX9.1** | 90 | 14,75 |
| With 10 boxes of each size | | | 13,28/box |




## Rotiprotect®-nitrile eco

**Disposable nitrile gloves, powder-free**

**Textured fingers for secure grip**
- Extra thin and soft for maximum wearing comfort
- High tactile sensitivity
- Can be worn on both hands
- Beaded cuff
- Colour: blue
- Thickness: approx. 0.10 mm
- Length: min. 240 mm
- Free from phthalates/plasticisers and allergenic latex proteins
- 100 or 90 per dispenser box

The perfect disposable solution for splash protection against many chemicals and for handling greasy foodstuffs. The blue signal is suitable for areas which are subject to HACCP standards.

| Size | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S (6-7) | ≥240 | **TC12.1** | 100 | 12,50 |
| M (7-8) | ≥240 | **TC13.1** | 100 | 12,50 |
| L (8-9) | ≥240 | **TC14.1** | 100 | 12,50 |
| XL (9-10) | ≥240 | **TC15.1** | 90 | 12,50 |
| With 10 boxes of each size | | | | 11,25/box |

# Disposable gloves







## Rotiprotect®-nitrile light

**Disposable nitrile gloves, powder-free**

**Textured fingers for secure grip**

- Extra thin and elastic for maximum wearing comfort
- High tactile sensitivity
- Can be worn on both hands
- Beaded cuff
- Colour: blue
- Thickness: approx. 0.07 mm
- Length: min. 240 mm
- Free from phthalates/plasticisers and allergenic latex proteins
- 200 or 180 per dispenser box

The perfect alternative to latex gloves. An extremely thin nitrile glove with outstanding elasticity and maximum wearing comfort thanks to a specially developed formulation and innovative production technology.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| XS (5-6) | **EYK7.1** | 200 | 23,45 |
| S (6-7) | **AYA6.1** | 200 | 23,45 |
| M (7-8) | **AYA7.1** | 200 | 23,45 |
| L (8-9) | **AYA8.1** | 200 | 23,45 |
| XL (9-10) | **AYA9.1** | 180 | 23,45 |
| With 10 boxes of each size | | | 21,11/box |

**Disposable gloves**
These gloves have been manufactured for single use and should be disposed of regularly. They are liquidproof and can therefore be used as protection against splashing of certain chemicals. Gloves which have been contaminated with chemicals should be changed as soon as possible.

**Resistance list Rotiprotect®-nitrile gloves**

| | Nitrile evo CPX6.1ff | Nitrile eco TC12.1ff | Nitrile light EYK7.1 |
|---|---|---|---|
| Substance | Level acc. to EN 374 | | |
| Acetic acid (10 %) | n.t. | 6 | 6 |
| Acetone (2-Propanon, Ketonpropan) | n.r. | n.r. | n.r. |
| Acetonitrile (Methylcyanide, Ethanenitrile) | n.r. | n.r. | n.r. |
| Acrylamide (40 %) | 6 | 6 | 6 |
| Ammonia (25 %) | n.t. | A | n.t. |
| Benzene (heavy, bp 160-190 °C, CAS 8032-32-4) | n.r. | n.r. | n.r. |
| Chloroform (Trichloromethane) | n.r. | n.r. | n.r. |
| Cyclohexanol (Hexalin / at 23 °C) | 4 | 3 | n.t. |
| Dichlormethane (Methylene dichloride, Freon 30) | n.r. | n.r. | n.r. |
| Diethylamine (DEA) | n.r. | n.r. | n.r. |
| Diethylether (Diethyloxide, Ethoxyethane) | n.r. | n.r. | n.r. |
| Dimethylsulfoxide DMSO | n.r. | n.r. | n.r. |
| Ethanol (20 %) | 6 | 6 | 1 |
| Ethanol (40 %) | 1 | 1 | A |
| Ethanol (70 %) | 1 | 1 | A |
| Ethanol (80 %) | 1 | A | A |
| Ethanol p.a. | n.t. | A | A |
| Ethidiumbromide (1 %) | 6 | 6 | 6 |
| Ethylacetate | A | n.r. | n.r. |
| Formaldehyde (37 %) | 6 | 3 | 1 |
| Glutaraldehyde (5 %) | 6 | 6 | 6 |
| n-Heptane (CAS 142-82-5) | A | n.r. | n.r. |
| n-Hexane (Cas 110-54-3) | A | n.r. | n.r. |
| Hydrochloric acid (10 %) | n.t. | 6 | 6 |
| Hydrochloric acid (36 %) | 3 | 2 | A |
| Hydrofluoric acid (40%) (Hydrogen fluoride) | 1 | n.t. | n.t. |
| Hydrogen peroxide | n.t. | 6 | n.t. |
| Isopropylalcohol (40 %) | 1 | 1 | 1 |
| Isopropylalcohol (70 %) | 1 | 1 | 1 |
| Isopropylalcohol p.a. | 1 | 1 | A |
| Methanol 5 % | n.t. | 6 | n.t. |
| Methanol p.a. | A | A | n.r. |
| Nitric acid (10 %) | 6 | 6 | 6 |
| Nitric acid (36 %) | 4 | A | A |
| Nitric acid (50 %) | 4 | A | A |
| Phenol (10 %) | 2 | n.r. | n.r. |
| Phenol (80 %) | 2 | n.r. | n.r. |
| Phosphoric acid (30 %) | n.t. | 6 | 6 |
| Potassiumhydroxide (30 %) | 6 | 6 | 6 |
| Sodiumhydroxide (30 %) (Caustic potash, caustic soda) | 6 | 6 | 6 |
| Sodiumhydroxide (40 %) (Caustic potash, caustic soda) | 6 | 6 | 6 |
| Sulphuric acid (96 %) | 1 | A | n.t. |
| Toluene | n.r. | n.r. | n.r. |
| Trichlorethane | n.r. | n.r. | n.r. |
| Xylene | n.r. | n.r. | n.r. |

Level / permeation time:

Level 1 >10 min
Level 2 >30 min
Level 3 >60 min
Level 4 >120 min
Level 5 >240 min
Level 6 >480 min

A - only recommended as splash guard
n. r. = not recommended
n. t. = not tested

This information is based upon laboratory test methods which cannot simulate the working conditions completely. It is the responsibility of the end consumer to select the gloves most suitable for his needs. When working with substances that may irritate the skin, please always check the glove beforehand for possible holes or tears.

# Disposable gloves



Cat. III

## Semperguard® Nitrile Xenon examination gloves

**Disposable nitrile gloves, non-powdered**

Acc. to 89/686/EEC: CE category III, protection against complex risks.
Acc. to 93/42/EEC: CE class I medical product.
Acc. to EN 420, EN 374, AQL 1.5.
Acc. to EC regulation 1935/2004 - suitable for contact with foodstuffs.

- **Smooth exterior, textured fingers**
- Very soft, very thin with latex-like wearing comfort and excellent tactile sensitivity
- Can be worn on both hands
- Thin rolled edge
- Kind to the skin: free of phthalates and allergy-causing latex proteins
- Colour: white
- Wall thickness: approx. 0.05 mm
- 200 or 180 per dispenser (less packaging material)

**Applications:** foodstuffs production, catering, health care, examination gloves, medical areas, light industrial applications.

| Size | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S (6-7) | 240 | **XP94.1** | 200 | 25,60 |
| M (7-8) | 240 | **XP95.1** | 200 | 25,60 |
| L (8-9) | 240 | **XP96.1** | 200 | 25,60 |
| XL (9-10) | 240 | **XP97.1** | 180 | 25,60 |
| With 10 boxes of each size | | | | 23,04/box |




NEU
NOUVEAU
NEW

Cat. III

## Semperguard® Nitrile Xtension

**Disposable nitrile gloves, non-powdered**
Acc. to 89/686/EEC: CE category III, protection against complex risks.
Acc. to 93/42/EEC: CE class I medical product.
Acc. to EN 420, EN 374, EN 455, AQL 1.5.
Acc. to 1935/2004 – suitable for contact with foodstuffs.

- High wearing comfort
- Safe grip due to textured finger tips
- Good protection against many chemicals
- Skin-friendly, since free of phthalaten/plasticizers and allergenic latex proteins
- Thin rolled edge
- The blue signal colour is suitable for areas which are subject to HACCP standards
- **Length: 300 mm**. Extra protection at wrist
- Double thickness: approx.0.20 mm (measured double)

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S | **HLH8.1** | 100 | 18,20 |
| M | **HLH9.1** | 100 | 18,20 |
| L | **HLK0.1** | 100 | 18,20 |
| XL | **HLK1.1** | 90 | 18,20 |




S

Cat. III

## Nitrile® sterile examination gloves

By Meditrade. **Disposable nitrile gloves, powder-free, sterile.**
In accordance with EN 420, EN 455, AQL 1.5.
In accordance with 93/42/EEC medical product category Is.

Thin and soft material, fit the hand like a second skin after just a short time and thus guarantee fatigue-free work.

- Micro-rough surface
- With polymer inner coating making them easy to put on
- Can be worn on both hands
- With rolled edge
- Colour: white
- Thickness: approx. 0.06 mm
- Length: ≥240 mm
- Free from allergenic latex proteins
- In pairs in a peel pack

**Applications:** for all areas with sterile requirements and in sterile environments, in laboratories, in the pharmaceutical industry, cleaning industry, food industry, etc.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| S (6-6.5) | **EYL4.1** | 50 | 28,30 |
| M (7-7.5) | **EYL5.1** | 50 | 28,30 |
| L (8-8.5) | **EYL6.1** | 50 | 28,30 |
| XL (9-9.5) | **EYT3.1** | 50 | 28,30 |




Cat. III

## Nitrile® magenta examination gloves

By Meditrade. **Disposable gloves made of nitrile, powder-free**.
In accordance with EN 420, EN 455, EN 374, AQL 1,5.
In accordance with 93/42/EEC Medical product category I.
In accordance with 1935/2004 – food safe.

- Patented inner coating, silk-sericin coating, gentle on the hands and ensures the gloves can be put on easily
- Excellent tactile sensitivity and flexibility
- Ideal for particularly dry and stressed skin
- Micro-rough surface
- Can be worn on both hands
- With rolled edge
- Colour: Pink
- Thickness: approx. 0.07 mm
- Length ≥240 mm
- Free from allergenic latex proteins

**Applications:** use in laboratories, in the pharmaceuticals industry, for patient care and for handling of cleaning agents.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S | **EYL1.1** | 100 | 11,10 |
| M | **EYL2.1** | 100 | 11,10 |
| L | **EYL3.1** | 100 | 11,10 |
| With 10 boxes of each size | | | 9,99/box |



NEU NOUVEAU NEW

Cat. III

## Microflex® 93-833

By Ansell. Disposable gloves, examination gloves made of nitrile.
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to. EN 420, EN 374, EN 455, AQL 0,65.
Antistatic acc. to EN 1149

- Examination gloves with ergonomics certificate. The low muscle force required and the resulting low hand fatigue minimizes the risk factors for illnesses at the workplace caused by ergonomics (carpal tunnel syndrome)
- Protection against type-I allergy, irritation and dehydration of the skin, since powder-free and latex-free
- Can be worn on both hands
- Thin rolled edge
- Length 240 mm
- Thickness: approx. 0.07 mm

**Applications:** laboratory analyses, food processing, manufacture and preparation of pharmaceuticals, assembly and inspection, storage work, maintenance and cleaning of devices ad instruments, examination of patients.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 5.5-6 | **HLT3.1** | 250 | 31,10 |
| 6.5-7 | **HLT4.1** | 250 | 31,10 |
| 7.5-8 | **HLT5.1** | 250 | 31,10 |
| 8.5-9 | **HLT6.1** | 250 | 31,10 |
| 9.5-10 | **HLT7.1** | 230 | 31,10 |
| With 10 boxes of each size | | | 27,99/box |



NEU NOUVEAU NEW

Cat. III

## Microflex® 93-856

By Ansell. Disposable gloves, examination gloves made of nitrile.
Acc. to 89/686/EEC: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 1,5.
Antistatic acc. to EN 1149

- High visibility of the hands at greater distances and therefore higher safety in the work areas due to bright orange colour, also when lighting is poor
- Resistant to a wide range of industrial chemicals over a longer period than other gloves made of nitrile
- Additional protection through extended cuff
- Safe grip due to textured fingers
- Powder-free and latex-free for protection against type-I allergy
- Can be worn on both hands
- Thin rolled edge
- Length 270 mm
- Thickness: approx. 0.13 mm

**Applications:** laboratory analyses, assembly and inspection, storage work, maintenance and cleaning of devices and instruments, examination of patients.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6.5-7 | **HLP8.1** | 100 | 30,65 |
| 7.5-8 | **HLP9.1** | 100 | 30,65 |
| 8.5-9 | **HLT0.1** | 100 | 30,65 |
| 9.5-10 | **HLT1.1** | 100 | 30,65 |
| 10.5-11 | **HLT2.1** | 100 | 30,65 |
| With 10 boxes of each size | | | 27,59/box |



NEU NOUVEAU NEW

Cat. III

## Microflex® 93-260

By Ansell.
Disposable gloves, examination gloves made of neoprene and nitrile.
Acc. to 89/686/EEC: CE category III, for protection against complex risks.
Acc. to EN 420, EN 388 and EN 374. AQL 0.65. Antistatic acc. to EN1149.

- Coating material neoprene and nitrile
- Excellent protection against chemicals, including acids, solvents and bases
- Thin-walled, therefore high tactile sensitivity and finger mobility
- Extra-soft material and anatomic fit, very good wearing comfort, high flexibility
- Textured fingertips
- Silicon-free material formulation and processing
- Non-powdered
- Colour: green outside, blue inside
- Rolled edge
- Length 300 mm
- Double thickness 0.198 mm
- 50 piece per dispenser box

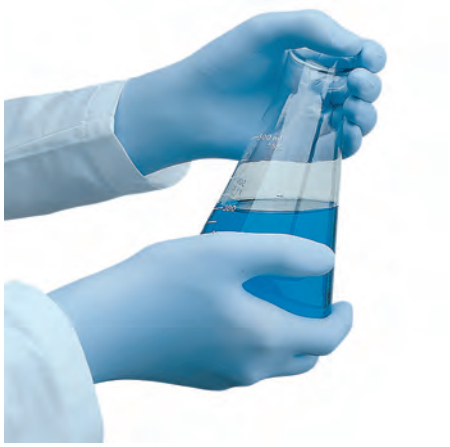
**Applications**: sampling and laboratory processing, handling of unexpected leaks, transport of liquids and solids, spillage or other releases, petrochemicals, paint and varnishing, handling of spray guns and robots.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| XS (5.5-6) | **HNT5.1** | 50 | 24,70 |
| S (6.5-7) | **HNT6.1** | 50 | 24,70 |
| M (7.5-8) | **HNT7.1** | 50 | 24,70 |
| L (8.5-9) | **HNT8.1** | 50 | 24,70 |
| XL (9.5-10) | **HNT9.1** | 50 | 24,70 |
| XXL (10.5-11) | **HNX0.1** | 50 | 24,70 |
| With 10 boxes of each size | | | 22,23/box |

# SHOWA disposable gloves

- Made of 100 % nitrile rubber (latex-free)
- Wearing comfort like a second skin
- Easy to put on and take off
- Low-modulus formula for better fit and less fatigue
- Can be worn on both hands



## SHOWA 7505PF

By SHOWA.
**Disposable gloves made of nitrile, powder-free**.

In accordance with 89/686/EEC, CE category III,
protected against complex risks.
In accordance with EN 374. AQL 1.5.
In accordance with 1935/2004, food safe.

- Structured surface on fingers for improved grip
- Short-term chemical-protection against a variety of hazardous substances
- With rolled edge
- Colour: Blue
- Thickness: Approx. 0.1 mm
- Length ≥240 mm

**Areas of use:** Chemistry labs and plants, industry and utility companies.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| XS (5-6) | **EYL7.1** | 100 | 21,45 |
| S (6-7) | **EYL8.1** | 100 | 21,45 |
| M (7-8) | **EYL9.1** | 100 | 21,45 |
| L (8-9) | **EYN0.1** | 100 | 21,45 |
| XL (9-10) | **EYN1.1** | 100 | 21,45 |
| XXL (10-11) | **EYN2.1** | 100 | 21,45 |
| With 10 boxes of each size | | | 19,31/box |



NEU
NOUVEAU
NEW

## SHOWA 7540

By SHOWA. **Disposable gloves made of nitrile, non-powdered.**
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 0.65.
Acc. to EC 1935/2004 suitable for contact with foodstuffs.

- Silicone-free
- High protection against chemical penetration and chemical splashes
- Chlorinated glove for improved comfort and grip, and reduced sticking
- Wearing comfort like a second skin, more pleasant texture and easy to pull on
- Structured surface on finger tips for improved grip
- Can be worn on both hands
- Thin rolled edge
- Colour: cobalt blue
- Length 240 mm
- Thickness: approx. 0.1 mm
- 100 piece per dispenser box

**Applications:** laboratories, health/pharmaceutical industry, glass and glazing, food processing, electronics, aviation.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| XS | **HKA7.1** | 100 | 18,95 |
| S | **HKA8.1** | 100 | 18,95 |
| M | **HKA9.1** | 100 | 18,95 |
| L | **HKC0.1** | 100 | 18,95 |
| XL | **HKC1.1** | 100 | 18,95 |
| With 20 boxes of each size | | | 17,06/box |



NEU
NOUVEAU
NEW

## SHOWA 7555

By SHOWA. **Disposable gloves made of 100 % nitrile, non-powdered.**
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 0.65.
Acc. to EC 1935/2004 suitable for contact with foodstuffs.

- Silicone-free
- High protection against chemical penetration and chemical splashes
- Chlorinated glove for improved comfort and grip, and reduced sticking
- Wearing comfort like a second skin, more pleasant texture and easy to pull on
- Structured surface on finger tips for improved grip
- Can be worn on both hands
- Thin rolled edge
- Colour: cobalt blue
- Length 300 mm
- Thickness: approx. 0.12 mm

**Applications:** laboratories, health/pharmaceutical industry, glass and glazing, food processing, electronics, aviation.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| XS | **HKC2.1** | 50 | 15,00 |
| S | **HKC3.1** | 50 | 15,00 |
| M | **HKC4.1** | 50 | 15,00 |
| L | **HKC5.1** | 50 | 15,00 |
| XL | **HKC6.1** | 50 | 15,00 |
| With 20 boxes of each size | | | 13,50/box |



NEU NOUVEAU NEW

Cat. III

## SHOWA 7550

By SHOWA. **Disposable gloves made of 100 % nitrile, non-powdered.**
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 1.5. Antistatic acc. to EN 1149.

- **Antistatic** - surface resistance $10^9$ to $10^{10}$ Ohm
- Silicone-free
- Enhanced grip due to structured surface on finger tips
- Protection against chemical splashes
- Thin rolled edge
- Colour: black
- Length 240 mm
- Thickness: approx. 0.1 mm
- 100 piece in each dispenser box

**Applications:** laboratories, electronics and auto-mobile industry, printing industry, painting and spraying workshops, aviation, non-complex assembly work, food sectors.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S | **HHP3.1** | 100 | 21,45 |
| M | **HHP4.1** | 100 | 21,45 |
| L | **HHP5.1** | 100 | 21,45 |
| XL | **HHP6.1** | 100 | 21,45 |
| With 20 boxes of each size | | | 19,31/box |



NEU NOUVEAU NEW

Cat. III

## SHOWA 7595

By SHOWA. **Disposable gloves made of 100 % nitrile, non-powdered.**
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 1.5.

- **Suitable for use in clean room class 100 (ISO 5)**
- Silicone-free
- Washed intensively with deionised water in the production process and packaged in the clean room
- Enhanced grip due to structured surface on finger tips
- Protection against many chemicals and chemical splashes
- Thin rolled edge
- Colour: white
- Length 300 mm
- Thickness: approx. 0.12 mm
- 100 pieces in bag

**Applications:** pharmaceutical manufacturing, biotechnology and biosciences, optics, microelectronics and semiconductor production, quality testing.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| XS | **HHT2.1** | 100 | 37,60 |
| S | **HHT3.1** | 100 | 37,60 |
| M | **HHT4.1** | 100 | 37,60 |
| L | **HHT5.1** | 100 | 37,60 |
| XL | **HHT6.1** | 100 | 37,60 |
| With 10 boxes of each size | | | 33,84/box |



NEU NOUVEAU NEW

Cat. III

## SHOWA 7570

By SHOWA. **Disposable gloves made of 100 % nitrile, non-powdered.**
Acc. to 89/686/EWG: CE Category III, protected from complex risks.
Acc. to EN 420, EN 374, EN 455, AQL 1.5.

- **Accelerator-free formula**, suitable for particularly sensitive skin - reduces the risk of allergic skin reactions
- Silicone-free
- Enhanced grip due to structured surface on finger tips
- Protection against chemical splashes
- Thin rolled edge
- Colour: Hi Viz green (fluorescent)
- Length 240 mm
- Thickness: approx. 0.1 mm
- 100 piece in each dispenser box

**Applications:** laboratories, pharmaceutical industry, hospitals and medical treatment, agriculture, auto-mobile industry, easy assembly work.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| XS | **HHP7.1** | 100 | 21,45 |
| S | **HHP8.1** | 100 | 21,45 |
| M | **HHP9.1** | 100 | 21,45 |
| L | **HHT0.1** | 100 | 21,45 |
| XL | **HHT1.1** | 100 | 21,45 |
| With 20 boxes of each size | | | 19,31/box |

**Accelerators** are chemical additives used for shortening the “curing process” when manufacturing disposable nitrile gloves.

# Disposable gloves







## Dermatril® P-disposable nitrile gloves

Acc. to EN 420. EN 374, EN 455. AQL 0.65.
Virus resistant to ASTM F 1671:2007.
RAL approved for use with foodstuffs.

- Colour: blue
- Long cuff, rolled edge, coarsened fingertips
- Snug fitting, very high tactile sensitivity
- Increased tear strength
- Good chemical resistance
- Powder-free
- Latex free, free of allergenic thiurames and rosin
- Wall thickness: 0.2 mm
- Length: 280 mm

**Applications:** laboratory and research, chemicals industry, foodstuffs industry, electronics and computer industry, cleaning and maintenance work, product protection.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6 | **TX41.1** | 50 | 28,85 |
| 7 | **TX42.1** | 50 | 28,85 |
| 8 | **TX43.1** | 50 | 28,85 |
| 9 | **TX44.1** | 50 | 28,85 |
| 10 | **TX45.1** | 50 | 28,85 |
| 11 | **TX46.1** | 50 | 28,85 |
| With 10 boxes of each size | | | 25,97/box |






## Nitrile disposable gloves TouchNTuff®, powder-free

Acc. to EN 420 and EN 374. AQL 1.5. **Powder-free.** Colour light blue. Thickness 0.10 mm. With roll-type edge. Textured fingertips. Offers optimal protection against splashes from chemicals. Suitable for foodstuffs. 100 slides per dispenser.

**TouchNTuff® 92-670, length 240 mm.**

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S (6½-7) | **P438.1** | 100 | 23,45 |
| M (7½-8) | **P439.1** | 100 | 23,45 |
| L (8½-9) | **P440.1** | 100 | 23,45 |
| XL (9½-10) | **P441.1** | 100 | 23,45 |
| With 10 boxes of each size | | | 21,11/box |

**TouchNTuff® 92-665, length 300 mm.**

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S (6½-7) | **KE73.1** | 100 | 27,80 |
| M (7½-8) | **KE74.1** | 100 | 27,80 |
| L (8½-9) | **KE75.1** | 100 | 27,80 |
| XL (9½-10) | **KE76.1** | 100 | 27,80 |
| With 10 boxes of each size | | | 25,02/box |






## Nitrile disposable gloves TouchNTuff®

Acc. to EN 420 and EN 374. AQL 1.5. Colour green. Thickness 0.12 mm. With roll-type edge. Offers optimal protection against splashes from chemicals. 100 gloves per dispenser.

**TouchNTuff® 92-500, slightly powdered, textured fingertips.**

| Size | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S (6½-7) | 240 | **K416.1** | 100 | 20,25 |
| M (7½-8) | 240 | **K417.1** | 100 | 20,25 |
| L (8½-9) | 240 | **K418.1** | 100 | 20,25 |
| XL (9½-10) | 240 | **K419.1** | 100 | 20,25 |
| With 10 boxes of each size | | | | 18,23/box |

**TouchNTuff® 92-600, powder-free, smooth. Suitable for foodstuffs. Antistatic acc. to EN 1149-5.**

| Size | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S (6½-7) | 240 | **K966.1** | 100 | 25,05 |
| M (7½-8) | 240 | **K967.1** | 100 | 25,05 |
| L (8½-9) | 240 | **K968.1** | 100 | 25,05 |
| XL (9½-10) | 240 | **K969.1** | 100 | 25,05 |
| With 10 boxes of each size | | | | 22,55/box |

**TouchNTuff® 92-605, powder-free, smooth. Suitable for foodstuffs.**

| Size | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S (6½-7) | 300 | **PA90.1** | 100 | 28,25 |
| M (7½-8) | 300 | **PA91.1** | 100 | 28,25 |
| L (8½-9) | 300 | **PA92.1** | 100 | 28,25 |
| XL (9½-10) | 300 | **PA93.1** | 100 | 28,25 |
| With 10 boxes of each size | | | | 25,43/box |



Cat. III

## NeoTouch® Neoprene disposable gloves

Acc. to EN 420, EN 374, AQL 1.5. Ideal for applications in the pharmaceutical and chemical industry; for laboratory work and analyses which require short-term protection against chemicals.

- Powder-free
- Protect against Type I allergies
- The inner polyurethane coating enables gloves to be slipped on easily
- With structured fingertips for safer grip when dry or wet
- Turn-up cuff offers safe and firm hold
- Excellent stretching ability enables greater freedom of movement
- Good protection against chemical splashes but not suitable as complete protection against chemicals
- Thickness: 0.13 mm
- 100 gloves per dispenser box

**NeoTouch® 25-101, length 240 mm**

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S (6.5-7) | **EN44.1** | 100 | 20,40 |
| M (7.5-8) | **EN45.1** | 100 | 20,40 |
| L (8.5-9) | **EN46.1** | 100 | 20,40 |
| XL (9.5-10) | **EN47.1** | 100 | 20,40 |
| With 10 boxes of each size | | | 18,36/box |

**NeoTouch® 25-201, length 290 mm**

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S (6.5-7) | **LT51.1** | 100 | 24,85 |
| M (7.5-8) | **LT52.1** | 100 | 24,85 |
| L (8.5-9) | **LT53.1** | 100 | 24,85 |
| XL (9.5-10) | **LT54.1** | 100 | 24,85 |
| With 10 boxes of each size | | | 22,37/box |



Cat. III

## DermaShield® Neoprene disposable gloves

Acc. to EN 420, EN 374 and EN 421, AQL 0.65.

- Powder-free, green
- High tech disposable gloves, available in **sterile** or non-sterile, suitable for use in controlled environments or **cleanrooms**
- Free of latex proteins and vulcanisation accelerants
- High wearing comfort and high flexibility
- Anti-slip rolled edge for increased protection
- Optimal product and user protection
- Fingertips with bisque finish for enhanced tactile sensitivity
- Length 310 mm, wall thickness 0.18 mm

**Applications:** drug production under aseptic conditions, biotechnology, production of medical equipment, handling cytostatic agents.

**Packaging:**

- PE bag printed with cleanroom-compatible IPA printing ink
- Optimal contamination protection is provided by triple packaging
- Easy-to-open PE packaging

**DermaShield® 73-711.**
**Sterile,** for critical applications acc. to ISO 5 (class 100 & GMP AB).
Subpackaging:

- In pairs, 10 pairs in sealed PE master bag
- 5 PE master bags in separate PE protective sleeve
- 4 PE master bags per large bag, carton

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 6 | **XE44.1** | 200 | 593,40 |
| 7 | **XE45.1** | 200 | 593,40 |
| 7½ | **XE46.1** | 200 | 593,40 |
| 8 | **XE47.1** | 200 | 593,40 |
| 9 | **XE48.1** | 200 | 593,40 |

**DermaShield® 73-721.**
**Non-sterile,** for controlled working environments.
Subpackaging:

- 20 left/right gloves in separate chambers of a vacuum sealed PE bag
- 2 PE bags in vacuum sealed PE master bag
- 5 PE master bags per large bag, carton

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 6 | **XE49.1** | 200 | 525,70 |
| 7 | **XE50.1** | 200 | 525,70 |
| 7½ | **XE51.1** | 200 | 525,70 |
| 8 | **XE52.1** | 200 | 525,70 |
| 9 | **XE53.1** | 200 | 525,70 |

# Chemical protection gloves

## Resistance against chemicals - protective gloves

| Material | Butyl | | | Chloroprene (Neoprene) | | | | | Latex | | PE-spec. foil | PVA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Art. No. (and following) | K626ff | AXN0ff | CE42ff | K347ff/ AA08ff | ET40ff | XY14 | XY15 | HLP4 | C940ff | YA59ff | P157ff | 1681f |
| Page | p. 632 | p. 632 | p. 631 | p. 627 | p. 628 | p. 628 | p. 628 | p. 628 | p. 626 | p. 631 | p. 631 | p. 630 |
| Substance | Level (Permeation time) | | | | | | | | | | | |
| Accumulator acid (Sulphuric acid 25%) | 6 | 6 | n.t. | 6 | 6 | n.t. | n.t. | n. t. | 6 | n.t. | n.t. | n.t. |
| Acetic acid 10 % | 6 | 6 | n.t. | 6 | 6 | n.t. | n.t. | 0 | 6 | n.t. | n.t. | n.t. |
| Acetic acid conc. (pure acetic acid) | 6 | 6 | n.t. | 2 | 2 | n.t. | n.t. | n. t. | 2 | 3 | 4 | n.t. |
| Acetone (2-Propanon) | 6 | 6 | 4 | 1 | 1 | 0 | n.t. | n. t. | 1 | 0 | 6 | 3 |
| Acetonitril | 6 | 6 | 6 | 1 | 3 | 1 | 2 | n. t. | 1 | 1 | 6 | 3 |
| Ammonia 25 % | 6 | 6 | 6 (29 %) | 3 | 5 | n.t. | n.t. | n. t. | 1 | 1 | 1 | n.t. |
| Amyl alcohol (1-Pentanol) | 6 | 6 | n.t. | 5 | 5 | n.t. | n.t. | n. t. | 1 | n.t. | n.t. | n.t. |
| Benzene | 1 | 1 | n.t. | 1 | 1 | n.t. | n.t. | n. t. | 0 | n.t. | 6 | n.t. |
| Butyl alcohol (1-Butanol) | 6 | 6 | 6 | 5 | 5 | n.t. | 6 | n. t. | 1 | n.t. | n.t. | n.t. |
| Carbon disulphide | 2 | 1 | n.t. | 0 | 1 | 0 | 0 | n. t. | n/r | 0 | 6 | 6 |
| Carbon tetrachloride | 2 | 1 | 1 | 1 | 4 | n.t. | n.t. | n. t. | 1 | n.t.. | n.t. | n.t. |
| Caustic potash solution, saturated | 6 | 6 | n.t. | 6 | n.t. | n.t. | n.t. | n. t. | 6 | n.t. | n.t. | n.t. |
| Chloroform (Trichloromethane) | 1 | 1 | 1 | 0 | 0 | n.t. | n.t. | n. t. | 0 | n.t. | 1 | n.t. |
| Cyclohexane | 2 | 2 | 1 | 1 | 5 | n.t. | n.t. | n. t. | 0 | n.t. | n.t. | n.t. |
| Dichlormethane (Methylene chloride) | 1 | 1 | 0 | 0 | 0 | n.t. | n.t. | n. t. | 0 | n.t. | 1 | 6 |
| Diesel fuel | 5 | 4 | 3 | 4 | 5 | n.t. | n.t. | n. t. | 2 | n.t. | n.t. | n.t. |
| Diethylamine | 2 | 1 | n.t. | 0 | 0 | n.t. | n.t. | n. t. | 0 | 0 | 6 | 0 |
| Diethyl ether (Ether) | 1 | 1 | n.t. | 0 | 1 | n.t. | n.t. | n. t. | 0 | n.t. | 6 | n.t. |
| Ethanol (Ethylalcohol) | 6 | 6 | 6 | 3 | 4 | n.t. | n.t. | n. t. | 1 | 2 (95 %) | 6 | n.t. |
| Ethyl acetate (Acetic acid ethyl) | 4 | 3 | 3 | 1 | 1 | 0 | n.t. | n. t. | 0 | 0 | 6 | 6 |
| Formaldehyde 37 % (Formalin) | 6 | 6 | n.t. | 5 | 6 | n.t. | n.t. | n. t. | 0 | 6 (35 %) | n.t. | n.t. |
| Formic acid 98 % | 6 | 6 | n.t. | 6 | 6 | n.t. | n.t. | n. t. | 3 | 3 | 6 | n.t. |
| Glycerine | 6 | 6 | n.t. | 6 | 6 | n.t. | n.t. | n. t. | 6 | n.t. | n.t. | n.t. |
| n-Heptane | 1 | 1 | 0 | 3 | 6 | 5 | 4 | n. t. | 0 | n.t. | 6 | 6 |
| n-Hexane | 2 | 2 | 0 | 1 | 6 | n.t. | n.t. | n. t. | 1 | 0 | 6 | 6 |
| Hydrochloric acid 32 % | 6 | 6 | 6 (37 %) | 6 | 6 | 6 (37 %) | 6 (37 %) | n. t. | 3 | 6 (conc.) | 6 (conc.) | n.t. |
| Hydrofluoric acid 10 % | 6 | 6 | n.t. | 6 | 6 | n.t. | n.t. | n. t. | 6 | n.t. | n.t. | n.t. |
| Hydrofluoric acid 40 % | 6 | 6 | 6 (48 %) | 6 | 5 | n.t. | n.t. | 6 | 4 | 6 (48 %) | 6 (48 %) | n.t. |
| Hydrogen peroxide 30 % | 6 | 6 | n.t. | 6 | 6 | n.t. | n.t. | n. t. | 6 | 6 | n.t. | n.t. |
| Isopropyl alcohol (Isopropanol) | 6 | 6 | 6 | 5 | 6 | n.t. | 6 | n. t. | 0 | 4 | n.t. | 3 |
| Lactic acid 90 % | 6 | 6 | n.t. | 6 | 6 | n.t. | n.t. | n. t. | 6 | n.t. | n.t. | n.t. |
| Methanol (Methyl alcohol) | 6 | 6 | 6 | 2 | 4 | 6 | 3 | 6 | 0 | 2 | 6 | 0 |
| Methylethylketone (2-Butanone) | 5 | 5 | 2 | 1 | 1 | n.t. | n.t. | n. t. | 0 | 0 | 6 | 2 |
| Nitric acid 50 % | 6 | 6 | 6 (70 %) | 5 | 5 | n.t. | n.t. | n. t. | 6 | 4 (70 %) | 6 (65 %) | n.t. |
| Nitrobenzene | 6 | 6 | 6 | 2 | 2 | n.t. | n.t. | n. t. | 2 | n.t. | 6 | 6 |
| Perchlorethylene (Tetrachlorethylene) | 1 | 1 | 0 | 1 | 4 | n.t. | n.t. | n. t. | 0 | n.t. | 6 | n.t. |
| Petroleum | 3 | 2 | n. t. | 1 | 5 | n.t. | n.t. | n. t. | 0 | n.t. | n.t. | n.t. |
| Phenol, 85 % in water | 6 | 6 | 6 | 6 | 5 | n.t. | n.t. | n. t. | 4 | 4 (90%) | 6 (90 %) | n.t. |
| Phosphoric acid, saturated | 6 | 6 | 6 (85 %) | 6 | 6 | 6 | 6 | n. t. | 6 | 6 | n.t. | n.t. |
| Potassium hydroxide solution, saturated | 6 | 6 | n.t. | 6 | 6 | n.t. | n.t. | n. t. | 6 | n.t. | n.t. | n.t. |
| Pyridine | 5 | 4 | n.t. | 1 | 1 | n.t. | n.t. | n. t. | 1 | 1 | 6 | 0 |
| Sodium hydroxide 40 % | 6 (50 %) | 6 | 6 (50 %) | 6 (45 %) | 6 (45 %) | 6 (50%) | 6 (50%) | n. t. | 6 | 6 (50 %) | 6 (50 %) | 0 (50 %) |
| Sodium hypochlorite (12 % Active chlorine) | 6 | 6 | n.t. | 6 | 6 | n.t. | n.t. | 6 | 6 | n.t. | n.t. | n.t. |
| Sulphuric acid 50 % | 6 | 6 | n.t. | 6 | 6 | n.t. | n.t. | n. t. | 6 | n.t. | n.t. | n.t. |
| Sulphuric acid 96 % | 4 | 3 | 6 (97 %) | 3 | 3 | 5 | 5 | n. t. | 1 | 4 | 6 (95 %) | 0 |
| Tetrahydrofurane | 1 | 1 | 1 | 0 | 1 | n.t. | n.t. | n. t. | 0 | n.t. | 6 | 2 |
| Toluene | 1 | 1 | 0 | 0 | 1 | n.t. | n.t. | n. t. | 0 | 0 | 6 | 6 |
| m-Xylene | 2 | 2 | 1 | 0 | 1 | n.t. | n.t. | 0 | 0 | n.t. | 6 | 6 |

Level / Permeation time

Level 1 >10 min
Level 2 >30 min
Level 3 >60 min
Level 4 >120 min
Level 5 >240 min
Level 6 >480 min
n/r: no recommendation
n.t.: not tested

This table is meant as a **guideline when selecting the correct chemical protection gloves**.
All information is based on EN 374. Permeation is the molecular penetration through the glove material.
The time required by the chemical to permeate is listed in levels.

## Resistance against chemicals - protective gloves

| Material | PVC | | Nitrile | | | | | | Viton | |
|---|---|---|---|---|---|---|---|---|---|---|
| Art. No. (and following) | 8203ff | X410ff | Y452ff/ CH44ff | HH73ff | PT65ff | PA83ff | AXY9ff | XX07ff | LH87ff | CY66ff |
| Page | p. 627 | p. 627 | p. 629/630 | p. 629 | p. 639 | p. 629 | p. 630 | p. 630 | p. 632 | p. 632 |
| Substance | Level (Permeation time) | | | | | | | | | |
| Accumulator acid (Sulphuric acid 25%) | n.t. | n.t. | 6 | n.t. | 6 | n.t. | n.t. | n.t. | 6 | n.t. |
| Acetic acid 10 %ig | n.t. | n.t. | 6 | n.t. | 6 | n.t. | n.t. | n.t. | 6 | n.t. |
| Acetic acid conc. (pure acetic acid) | 6 | 1 | 2 | 0 | 2 | 3 | 2 | 4 | 3 | n.t. |
| Acetone (2-Propanon) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | n.t. | 0 | 0 |
| Acetonitril | 0 | n.t. | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| Ammonia 25 % | n.t. | 1 | 5 | 1 | 5 | 5 | 4 | n.t. | 6 | 6 (29 %) |
| Amyl alcohol (1-Pentanol) | n.t. | n.t. | 6 | n.t. | 6 | n.t. | n.t. | n.t. | 6 | n.t. |
| Benzene | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 6 | 3 |
| Butyl alcohol (1-Butanol) | 6 | n.t. | 6 | n.t. | 6 | n.t. | n.t. | n.t. | 6 | 6 |
| Carbon disulphide | n.t. | 0 | 0 | n.t. | n.t. | 1 | 1 | 0 | 6 | n.t. |
| Carbon tetrachloride | 1 | n.t. | 5 | n.t. | 4 | n.t. | n.t. | n.t. | 6 | 6 |
| Caustic potash solution, saturated | n.t. | n.t. | 6 | n.t. | n.t. | n.t. | n.t. | n.t. | 6 | n.t. |
| Chloroform (Trichloromethane) | 0 | n.t. | 0 | n.t. | 0 | n.t. | n.t. | n.t. | 6 | 6 |
| Cyclohexane | 6 | n.t. | 6 | n.t. | 6 | 6 | 6 | n.t. | 6 | 6 |
| Dichlormethane (Methylene chloride) | 0 | n.t. | 0 | n.t. | 0 | 0 | n.t. | n.t. | 4 | 0 |
| Diesel fuel | n.t. | n.t. | 6 | n.t. | 6 | n.t. | 6 | n.t. | 6 | 6 |
| Diethylamine | n.t. | n.t. | 1 | 0 | 1 | 1 | 1 | 2 | 4 | n.t. |
| Diethyl ether (Ether) | n.t. | n.t. | 1 | n.t. | 1 | 2 | n.t. | n.t. | 2 | n.t. |
| Ethanol (Ethylalcohol) | 6 | n.t. | 4 | 1 | 4 | 5 (95 %) | n.t. | n.t. | 6 | 6 |
| Ethyl acetate (Acetic acid ethyl) | 0 | 0 | 1 | 0 | 0 | 1 | 1 | n.t. | 1 | 1 |
| Formaldehyde 37 % (Formalin) | n.t. | n.t. | 6 | 6 (35 %) | 6 | 6 | n.t. | n.t. | 6 | n.t. |
| Formic acid 98 % | n.t. | 4 | 1 | n.t. | 2 | 2 | 1 | n.t. | 6 | n.t. |
| Glycerine | n.t. | n.t. | 6 | n.t. | 6 | n.t. | n.t. | n.t. | 6 | n.t. |
| n-Heptane | 6 | n.t. | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| n-Hexane | 6 | 0 | 6 | 6 | 6 | n.t. | 6 | 6 | 6 | 6 |
| Hydrochloriacid 32 % | 5 (36 %) | 6 (conc.) | 6 | 4 (37 %) | 6 | 6 (conc.) | 6 (30 %) | 6 (37 %) | 6 | 6 (37 %) |
| Hydrofluoric acid 10 % | n.t. | n.t. | 6 | n.t. | 6 | n.t. | n.t. | n.t. | 6 | n.t. |
| Hydrofluoric acid 40 % | n.t. | 6 | 4 | 0 (48 %) | 3 | n.t. | 4 (48 %) | n.t. | 6 | 6 (48 %) |
| Hydrogen peroxide 30 % | 6 | 6 | 6 | 4 | 6 | 6 | 6 | n.t. | 6 | 6 |
| Isopropyl alcohol (Isopropanol) | 6 | 4 | 6 | 3 | 6 | 6 | 6 | n.t. | 6 | 6 |
| Lactic acid 90 % | n.t. | n.t. | 6 | n.t. | 6 (85 %) | n.t. | n.t. | n.t. | 6 | n.t. |
| Methanol (Methyl alcohol) | 6 | 2 | 2 | 0 | 1 | 3 | 1 | 4 | 4 | 6 |
| Methylethylketone (2-Butanone) | 0 | n.t. | 0 | 0 | 0 | 1 | 0 | n.t. | 1 | 0 |
| Nitric acid 50 % | 3 (16 %) | 2 (70 %) | 4 | 0 (70 %) | 4 | 2 (70 %) | 1 (70 %) | n.t. | 6 | 6 (70 %) |
| Nitrobenzene | n.t. | n.t. | 2 | n.t. | 1 | 4 | 3 | 5 | 6 | n.t. |
| Perchlorethylene (Tetrachlorethylene) | 1 | 0 | 5 | 1 | 5 | 5 | 4 | 5 | 6 | 6 |
| Petroleum | n.t. | n.t. | 6 | n.t. | 6 | n.t. | 3 | n.t. | 6 | n.t. |
| Phenol, 85 % in water | n.t. | 4 (90 %) | 3 | n.t. | 2 | 3 (90 %) | 3 (90 %) | n.t. | 6 | 6 |
| Phosphoric acid, saturated | n.t. | n.t. | 6 | n.t. | 6 (85 %) | 6 (conc.) | 6 | n.t. | 6 | 6 (85 %) |
| Potassium hydroxide solution, saturated | n.t. | n.t. | 6 | n.t. | 6 | n.t. | n.t. | n.t. | 6 | n.t. |
| Pyridine | n.t. | 0 | 1 | n.t. | 0 | 1 | 1 | n.t. | 1 | n.t. |
| Sodium hydroxide 40 % | 6 (50 %) | 6 (50 %) | 6 (45 %) | 6 | 6 (50 %) | 6 (50 %) | 6 | 6 (50 %) | 6 (45 %) | 6 (50 %) |
| Sodium hypochlorite (12 % Active chlorine) | n.t. | n.t. | 6 | n.t. | 6 (13 %) | n.t. | n.t. | n.t. | 6 | n.t. |
| Sulphuric acid 50 % | n.t. | n.t. | 6 | n.t. | 6 | n.t. | n.t. | n.t. | 6 | n.t. |
| Sulphuric acid 96 % | n.t. | 2 | 2 | 1 | 2 | 3 | 2 | 4 | 6 | 6 (97 %) |
| Tetrahydrofurane | n.t. | 0 | 0 | n.t. | 0 | 0 | 0 | n.t. | 1 | 0 |
| Toluene | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 2 | 6 | 4 |
| m-Xylene | 1 | 0 | 2 | 0 | 2 | 2 | 2 | 4 | 6 | 6 |

Level / Permeation time

Level 1 >10 min
Level 2 >30 min
Level 3 >60 min
Level 4 >120 min
Level 5 >240 min
Level 6 >480 min
n/r: no recommendation
n.t.: not testet

**Attention:**

The information in the table was established under laboratory conditions (new gloves, no additional mechanical strain, room temperature). As the conditions in everyday practical use often vary from the above conditions, the information in only meant as a guideline when choosing suitable chemical protection gloves. The table does not replace the need for suitability tests to be carried out by the end consumer. For this reason Carl Roth GmbH + Co. KG will not be held responsible and/or accept liability in connection with the information in the above list.

# Chemical protection gloves



Cat. III

## AccuTech® 91-325 latex gloves

By Ansell. Acc. to EN 420, EN 374. AQL 1.0.
Made from a special natural rubber latex formulation which provides a very comfortable fit ideal for work requiring high tactile sensitivity and precision. Suitable for a large number of applications, particularly in controlled working environments in biotechnology, medical equipment production, laboratory analysis, pharmaceuticals, and in the flat screen industry.

- Powder-free
- Hand specific (packed in pairs in a PE bag)
- Smooth inside and out, fingertips with bisque finish
- Colour: natural
- Straight forend
- Length 300 mm
- Wall thickness (palm): 0.225 mm

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 6,5 | **ANC8.1** | 10 | 31,15 |
| 7 | **ANC9.1** | 10 | 31,15 |
| 7,5 | **ANE0.1** | 10 | 31,15 |
| 8 | **ANE1.1** | 10 | 31,15 |
| 8,5 | **ANE2.1** | 10 | 31,15 |
| 9 | **ANE3.1** | 10 | 31,15 |
| With 20 boxes of each size | | | 28,04/box |



Cat. III

## Lapren® 706 moulded latex gloves

By KCL by Honeywell. Acc. to EN 420, EN 388, EN 374, AQL 0,65.
Made of natural latex with a low chloroprene content.
Profiled palms for secure grip even in wet zones. Cotton flock lining.
Forend with elastic edging. Anatomically shaped, elastic and flexible.
Length approx. 300-320 mm, thickness 0.6 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **C940.1** | 10 | 35,05 |
| 8 | **C941.1** | 10 | 35,05 |
| 9 | **C942.1** | 10 | 35,05 |
| 10 | **C943.1** | 10 | 35,05 |



Cat. III

## Marigold®-Featherweight Plus

By Ansell. Acc. to EN 420, EN 388, EN 374, EN 421, AQL 0.65.
Made of natural rubber with beaded cuff. Palms and fingers with a rough profile outside, smooth on inside. High flexibility, excellent finger mobility, high tactile sensitivity, highly tear resistant.
Length approx. 320 mm, wall thickness approx. 0.35 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 6.5 | **YX54.1** | 12 | 29,60 |
| 7.5 | **YX55.1** | 12 | 29,60 |
| 8.5 | **YX56.1** | 12 | 29,60 |
| 9.5 | **YX57.1** | 12 | 29,60 |



Cat. III

## Bi-Colour™-latex/neoprene combination gloves

By Ansell. Acc. to EN 420, EN 374, EN 388, EN 421, AQL 0.65.
Double latex/neoprene outer coating, high-quality pure cotton inner flocklining. With protective cuff. Diamond-pattern grip profile for outstanding wet and dry grip. High resistance to salts and cleaning agents.
Reliable protection against a wide range of chemicals.
Colour: green/yellow. Wall thickness 0.68 mm. Length 320 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 6½-7 | **YA59.1** | 12 | 41,90 |
| 7½-8 | **YA60.1** | 12 | 41,90 |
| 8½-9 | **YA61.1** | 12 | 41,90 |
| 9½-10 | **YA62.1** | 12 | 41,90 |
| 10½-11 | **YA63.1** | 12 | 41,90 |






## PVC protective gloves Snorkel®

By Ansell. Acc. to EN 420, EN 388 and EN 374. AQL 1.5.
Inner lining made of cotton jersey. With good grip profile for safe handling.
Excellent abrasion resistance. Suitable for working with acids,
caustic substances and solvents. Length 355 mm, 1.2 mm thick.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 9 | **X410.1** | 1 | 12,05 |
| 10 | **X411.1** | 1 | 12,05 |






## Chloroprene gloves Camapren® 720

By KCL by Honeywell. Acc. to EN 420, EN 388, EN 374, AQL 0,65.
made of polychloroprene with natural latex layer. Profiled palms for secure grip even when handling wet, greasy and oily parts.
Cotton flock lining. Forend with elastic edging.
Highly elastic and flexible even at low depths temperatures.
**Resistant to** diluted and semi-concentrated acids, diluted to concentrate bases, saturated saline solutions, glycol and glycerol, long-chained alcohols, vegetable and animal fats and oils.
Length 290-310 mm, total layer thickness approx. 0,65 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **K347.1** | 2 | 11,00 |
| 8 | **K348.1** | 2 | 11,00 |
| 9 | **K349.1** | 2 | 11,00 |
| 10 | **K350.1** | 2 | 11,00 |
| 11 | **K351.1** | 2 | 11,00 |






## PVC-long gloves

Acc. to EN 420, EN 388 and EN 374. With cuff, made of soft PVC foil.
High wearing comfort and excellent touch sensitivity.
Also features patterned grip area and skin friendly inner cotton flocked lining. Free from latex and phthalate.
Largely resistant against diluted acids and alkali, alcohol, etc.
Approx. 0.6 mm thick, length 700 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| M | **8203.1** | 1 | 23,60 |
| L | **8204.1** | 1 | 23,60 |
| XL | **8206.1** | 1 | 23,60 |






## Chloroprene gloves Tricopren® 723

By KCL by Honeywell. Acc. to EN 420, 388, EN 374, AQL 0,65.
Made of polychloroprene, with interior cotton lining. **Latex-free.**
Highly resistant to mechanical and a variety of chemical hazards.
Anatomic fit. The palm is ribbed for safe grip.
**Suitable for** working with diluted and semi-concentrated acids and diluted and concentrated alkaline solutions, for glycols and glycerins, long-chain alcohols, Perhydrol, aliphatic and alicyclic hydrocarbons.
Length approx. 300 mm. Total layer thickness 1.3 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 8 | **AA08.1** | 1 | 29,90 |
| 9 | **AA09.1** | 1 | 29,90 |
| 10 | **AA10.1** | 1 | 29,90 |
| 11 | **AA11.1** | 1 | 29,90 |

# Chemical protection gloves




Cat. III

## Neoprene gloves Scorpio® 09-924

By Ansell. Acc. to EN 420, EN 388 and EN 374. AQL 1.5.
Black, neoprene-coated protective gloves, cotton jersey backed.
For protection against a wide range of bases, acids, alcohols and diluted aqueous solvents. Good abrasion and cutting resistance.
Smooth grip profile. Length 350 mm. Standard size 10.
**Applications:** handling chemicals and petrochemicals, for degreasing and coating etc.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **XY14.1** | 1 | 24,00 |




Cat. III

## Neoprene gloves Scorpio® 09-022

By Ansell. Acc. to EN 420, EN 388, EN 374, EN 407 and EN 511.
AQL 1.5. Black, neoprene-coated protective gloves **with foam insulation**.
For protection against a wide range of bases, acids, alcohols and diluted aqueous solvents.
**Also suitable for working in hot and cold conditions**.
Suitable for short-time contact with liquids at temperatures from max. 180 °C to min. -25 °C. Not suitable for temperatures above 200 °C.
Good abrasion and cutting resistance. Smooth grip profile.
Length 350 mm. Standard size 10.

**Applications:** handling chemicals and petrochemicals, for degreasing and coating etc.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **XY15.1** | 1 | 47,00 |




Cat. III

## Neoprene gloves Scorpio®

By Ansell. Acc. to EN 420, EN 374, EN 388 (3222), EN 407 (32XX4X) and EN 511 (121). AQL 1,0. black, Neoprene-coated protective gloves with **foam insulation**.

- For protection against a wide range of bases, acids, alcohols and diluted aqueous solvents
- Also suitable for working in hot and cold conditions.
  Suitable for short-time contact with liquids at temperatures from max. 180 °C to min. -25 °C. Good abrasion-resistance and cut-resistance.
  Antistatic acc. to EN 1149
- Roughened handle profile for enhanced grip

**Please note:**
**Gloves are not suitable for working above 200 °C.**
**Do not use when working with or near to open flames.**

**Applications:** Steam-jet and maintenance work, anodizing.
Working with water baths. Handling objects with hot or cold chemicals.

**Scorpio 19-024**

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 8 | 450 | **HLP4.1** | 1 | 71,50 |
| 10 | 450 | **HLP5.1** | 1 | 71,50 |

**Scorpio 19-026**

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 8 | 660 | **HLP6.1** | 1 | 83,65 |
| 10 | 660 | **HLP7.1** | 1 | 83,65 |



Cat. III

## Nitopren®-gloves 717

By KCL by Honeywell. Acc. to EN 420, 388 and EN 374. Made with 2 layers of material, top layer **chloroprene**, inner layer **nitril**, with thin velour coating. Anatomic fit. Has an extremely high resistance to a number of chemicals and to many aggressive gases. Highly flexible, also enable sensitive work. Secure grip when working with wet and oily objects. Very good mechanical resistance. Free of natural latex.
**Suitable for** the chemical and pharmaceutical industry, galvanic work.
Length approx. 310 mm, thickness of layer approx. 0.65 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **ET40.1** | 2 | 10,70 |
| 8 | **ET41.1** | 2 | 10,70 |
| 9 | **ET42.1** | 2 | 10,70 |
| 10 | **ET43.1** | 2 | 10,70 |
| 11 | **ET44.1** | 2 | 10,70 |



Cat. III

## Nitrile gloves Virtex™

By Ansell. Acc. to EN 420, EN 421, EN 388 and EN 374.
Antistatic acc. to EN 1149.
Interior with new, extremely thin polymer-composite coating - Aquadri™. Give off fewer particles, absorb more moisture.
Glove exterior is not chlorinated and is abraded for a better grip.
Comfortable fit and extremely flexible.
**Suitable for** light assembly work and for working with parts which require a secure grip when dry, wet or oily: Light assembly work in contact with chemicals, the automotive industry, paint and spray jobs, working with solutions on an oil and hydrocarbon base.
Thickness 0.225 mm, length approx. 310 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **HH73.1** | 5 | 12,10 |
| 8 | **HH74.1** | 5 | 12,10 |
| 9 | **HH75.1** | 5 | 12,10 |
| 10 | **HH76.1** | 5 | 12,10 |



Cat. III

## Nitrile gloves Tricotril® 736

By KCL by Honeywell. Acc. to EN 420, EN 388, EN 374, AQL 0.65.
Anatomic fit, with profiled palm. Latex-free, authorized for food processing and preparation. With cotton tricot interior. **Suitable for** diluted and semi-concentrated acids, alkaline solutions, glycols and glycerin, long-chain alcohols, aliphatic and alicyclic hydrocarbons.
Length approx. 300 mm. Total layer thickness 1.0 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 8 | **CH44.1** | 1 | 24,30 |
| 9 | **CH45.1** | 1 | 24,30 |
| 10 | **CH46.1** | 1 | 24,30 |
| 11 | **CH47.1** | 1 | 24,30 |



Cat. III

## Nitrile gloves Sol-Vex® 37-900

By Ansell. Acc. to EN 420, EN 374, EN 388. AQL 0.065.
- Inside: with velour
- Outside: textured surface in palm
- Length 380 mm, wall thickness 0.425 mm
- Each glove is tested using compressed air
- Excellent protection against abrasion and puncture

**Suitable for** laboratory analyses, chemical applications, e.g. chemical processing, handling corrosive chemicals and chemical mixtures.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **PA83.1** | 2 | 14,45 |
| 8 | **PA84.1** | 2 | 14,45 |
| 9 | **PA85.1** | 2 | 14,45 |
| 10 | **PA86.1** | 2 | 14,45 |
| 11 | **PA87.1** | 2 | 14,45 |

# Chemical protection gloves






Cat. III

## Nitrile gloves Sol-Vex®

By Ansell. Acc. to EN 420, EN 374, EN 388, AQL 0.65.
- Structured palm gives increased grip
- Colour green
- Suitable for foodstuffs

**Applications:** chemical processes, refining oil and petroleum, metalworking, agrochemicals and printing industry.
Ideal for dry and wet work environments where chemical protection and high abrasion resistance are crucial.

① **Sol-Vex® 37-675: length 330 mm, wall thickness 0.38 mm**
Inner: with flocklining for improved wear comfort.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **AXY9.1** | 12 | 38,20 |
| 8 | **AXX0.1** | 12 | 38,20 |
| 9 | **AXX1.1** | 12 | 38,20 |
| 10 | **AXX2.1** | 12 | 38,20 |
| 11 | **AXX3.1** | 12 | 38,20 |

② **Sol-Vex® 37-185: length 455 mm, wall thickness 0.5 mm**
Inner: without flocklining, therefore no contamination by flock fibres.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **XX07.1** | 1 | 10,40 |
| 8 | **XX08.1** | 1 | 10,40 |
| 9 | **XX09.1** | 1 | 10,40 |
| 10 | **XX10.1** | 1 | 10,40 |
| 11 | **XX11.1** | 1 | 10,40 |



Cat. III

## Camatril®-nitrile gloves

By KCL by Honeywell. Acc. to EN 420, EN 388 and EN 374. AQL 0.65.
Largely cut and puncture proof. Free of silicone and antibacterial.
With high chemical resistance especially to oils, fats, solvents and fuels.

**Camatril® 730: Length 310 mm**, approx. 0.4 mm thick, flock lined.
Approved for foodstuffs.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **Y452.1** | 2 | 10,35 |
| 8 | **Y453.1** | 2 | 10,35 |
| 9 | **Y454.1** | 2 | 10,35 |
| 10 | **Y455.1** | 2 | 10,35 |
| 11 | **Y456.1** | 2 | 10,35 |

**Camatril® 732: Length 400 mm**, approx. 0.4 mm thick, flock lined.
Approved for foodstuffs.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **T923.1** | 2 | 17,15 |
| 8 | **A909.1** | 2 | 16,70 |
| 9 | **A910.1** | 2 | 16,70 |
| 10 | **A911.1** | 2 | 16,70 |
| 11 | **T924.1** | 2 | 17,15 |

**Camatril® 733: Length 600 mm**, approx. 0.5 mm thick

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 8 | **8197.1** | 1 | 31,35 |
| 9 | **8198.1** | 1 | 31,35 |
| 10 | **8199.1** | 1 | 31,35 |
| 11 | **8200.1** | 1 | 31,35 |

## Resistance against chemicals-protective gloves

This table is meant as a **guideline when selecting the correct chemical protection gloves**.
All information is based on EN 374. Permeation is the molecular penetration through the glove material.
The time required by the chemical to permeate is listed in levels.

**Attention:**
The information in the table was established under laboratory conditions (new gloves, no additional mechanical strain, room temperature). As the conditions in everyday practical use often vary from the above conditions, the information in only meant as a guideline when choosing suitable chemical protection gloves. The table does not replace the need for suitability tests to be carried out by the end consumer.
For this reason Carl Roth GmbH + Co. KG will not be held responsible and/or accept liability in connection with the information in the above list.

**Permeation time (Level):**

| | | |
|---|---|---|
| Level 1 >10 min | Level 4 >120 min | |
| Level 2 >30 min | Level 5 >240 min | n.r. = no recommendation |
| Level 3 >60 min | Level 6 >480 min | n.t. = not tested |



Cat. III

## PVA®-solvent gloves

By Ansell. Acc. to EN 420, EN 388 and EN 374, AQL 1.0. Antistatic acc. to EN 1149. Red covered with a layer of polyvinylalcohol and cotton flock lined. Resistant against aromatic (xylene), chlorinated (tri, per) and other organic solvents. Sensitive to high temperatures.
**Dissolve in water and fluids containing water!**
Length 355 mm. Thickness 1.1 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 9 | **1681.1** | 1 | 38,20 |
| 10 | **NH46.1** | 1 | 38,10 |



Cat. III

## NSK26 long nitrile gloves

By SHOWA. Comply with EN 420, EN 388 (4111), EN 374.
Acc. to EEC 1935/2004 – suitable for contact with foodstuffs.
Cotton/polyester jersey lining with nitrile outer coating.

- Anatomically shaped hand allows for greater freedom of movement and fatigue-free work
- Extended bonded sleeve, stitched with elasticated border means that it stays correctly adjusted
- Rough finish over entire surface for an effective and durable grip
- Flexible glove with excellent wear resistance
- Absorbs perspiration and can be worn for an extended period with no reduction in comfort
- Protects against oils, hydrocarbons and fats
- Impermeable; for working in a damp or oily environment

**Areas of application:** Food production, petrochemistry and refinery, working with oils and fats.

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 8 (S) | 620 | **ECY4.1** | 1 | 18,20 |
| 9 (M) | 630 | **ECY5.1** | 1 | 18,20 |
| 10 (L) | 640 | **ECY6.1** | 1 | 18,20 |
| 11 (XL) | 650 | **ECY7.1** | 1 | 18,20 |



Cat. III

## Long-sleeve nitrile gloves 772

By SHOWA. Acc. to EN 420, EN 388 (4111) and EN 374.
Cotton/polyester jersey lining, fully coated nitrile rubber outer.
The additional coating over the entire hand offers improved protection from chemicals.

- Anatomically shaped hand
- Extended bonded sleeve, stitched with elasticated edging, means that it stays correctly adjusted
- Rough finish over entire surface for improved sense of touch and better grip
- Flexible, robust and abrasion-resistant
- Absorbs perspiration; comfortable even when worn for extended periods
- Protects against oils, hydrocarbons, fats and abrasion; offers effective, lasting grip
- Eyelet for airing and hanging up
- Colour: yellow; thickness: approx. 0.8 mm

**Applications:** for working in damp or oily environments;
for securely taking hold of objects. Petrochemistry and refinery, etc.

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 8 (M) | 650 | **ECY8.1** | 1 | 18,60 |
| 9 (L) | 650 | **ECY9.1** | 1 | 18,60 |
| 10 (XL) | 650 | **EEA0.1** | 1 | 18,60 |



Cat. III

## Special gloves Barrier®

By Ansell. Acc. to EN 420, EN 374 and EN 388. AQL 0.065.
Made of 5-ply HPPE-laminate. Anatomic-fitting chemical resistant PE gloves. For protection against a wide range of hazardous chemicals.
Each glove is individually tested with compressed air.
Thickness of PE film approx. 0.062 mm.

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 7 | 380 | **P157.1** | 1 | 15,90 |
| 8 | 385 | **LY64.1** | 1 | 15,90 |
| 9 | 390 | **N964.1** | 1 | 15,90 |
| 10 | 395 | **N965.1** | 1 | 15,90 |
| 11 | 410 | **P158.1** | 1 | 15,90 |



Cat. III

## Butyl-gloves SHOWA 874R

By SHOWA. Acc. to EN 420, 388, 374. Thin chemical protection glove with rough surface in hand area to increase grip of smooth and wet objects. Good finger mobility and sens of touch. Long roll-up cuff. Unlined.
Length 350 mm, **0.35 mm thick.**

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **CE42.1** | 1 | 33,00 |
| 8 | **CE43.1** | 1 | 33,00 |
| 9 | **CE44.1** | 1 | 33,00 |
| 10 | **CE45.1** | 1 | 33,00 |
| 11 | **CE46.1** | 1 | 33,00 |

# Chemical protection gloves



Cat. III

## Butoject® 897+ butyl gloves

By KCL by Honeywell. Acc. to EN 420, EN 388 and EN 374. AQL 0.65. Highly flexible and effective chemical protection gloves made of butyl rubber, suitable for work with esters and ketones, among other chemicals. Ideal for laboratory use.

- With special surface roughening for increased grip when handling wet objects
- Designed for tight fit, and therefore also suitable for precision work or as undergloves
- Excellent mechanical resistance and gas tightness
- Exceptional flexibility at low temperatures and good ozone resistance

With beaded cuff, powdered on the inside, length 350 mm, wall thickness 0.3 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **AXN0.1** | 1 | 50,45 |
| 8 | **AXN1.1** | 1 | 50,45 |
| 9 | **AXN2.1** | 1 | 50,45 |
| 10 | **AXN3.1** | 1 | 50,45 |
| 11 | **AXN4.1** | 1 | 50,45 |



Cat. III

## Butyl-gloves Butoject® 898

By KCL by Honeywell. Acc. to EN 420, EN 421, EN 388 and EN 374. AQL 0.65. For use in the chemical industry, at production sites of paint, lacquer, glue and plastics and for the production and use of herbicides. Resist short chained esters, ketones and aldehydes, diluted and concentrated acids and alkali, saturated saline solutions, alcohols, softeners etc. With roll-up cuff.
Length approx. 350 mm, approx. **0.7 mm thick.**

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 8 | **K626.1** | 1 | 29,90 |
| 9 | **A621.1** | 1 | 29,90 |
| 10 | **A622.1** | 1 | 29,90 |
| 11 | **A623.1** | 1 | 29,90 |



Cat. III

## Viton-gloves Vitoject®

Made of 100 % fluororubber (Viton®). Acc. to EN 420, 388 and EN 374. AQL 0.65. Gastight. Anatomically formed, with roll-up cuff, smooth, powdered. Wide fit allows glove liners to be worn underneath.
Suitable for working with particularly aggressive chemicals such as aliphatic, aromatic and chlorinated hydrocarbons, diluted and concentrated acids, saturated salt solutions, long-chain alcohols, glycol and glycerin, aniline, benzene etc. Not resistant against esters and ketones.
**Please see chemical resistance table!**
Length approx. 350 mm, 0.7 mm thick.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 8 | **LH87.1** | 1 | 159,10 |
| 9 | **A398.1** | 1 | 159,10 |
| 10 | **A399.1** | 1 | 159,10 |
| 11 | **A400.1** | 1 | 159,10 |

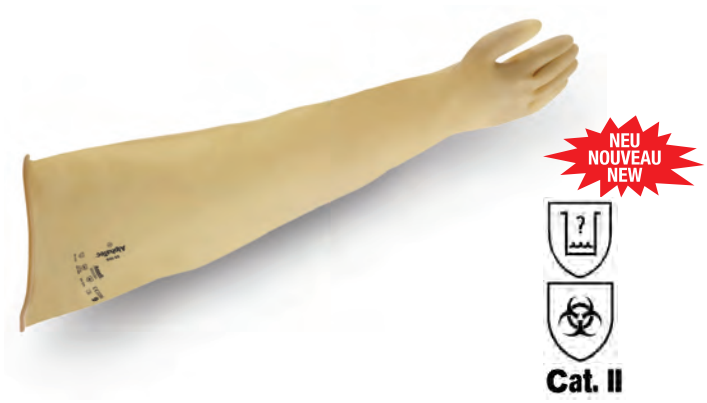


Cat. III

## Viton®-gloves SHOWA 892

Acc. to EN 420, 388 and 374. Thin gloves for chemical protection that are made out of a Viton®-top layer and Butyl-bottom layer, unlined. Very good flexibility and good touch sensitivity.
Hand-specific form, rolled band on cuff.
**Suitable for** working with aromatic, aliphatic and chlorinated hydrocarbons, organic and anorganic acids, alkaline solutions, animal fats and oils. Smooth surface, length 300 mm, thickness 0.3 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **CY66.1** | 1 | 96,65 |
| 8 | **CY67.1** | 1 | 96,65 |
| 9 | **CY68.1** | 1 | 96,65 |
| 10 | **CY69.1** | 1 | 96,65 |
| 11 | **CY70.1** | 1 | 105,90 |




## Glove box gloves AlphaTec® 55-100

By Ansell. Acc. to 89/686/EWG: CE Category III, against complex risks. Acc. to EN 420, EN 374, EN 388 (3010), AQL 0.65.

- Made of natural rubber (latex), without carrier material
- Enhanced finger mobility for improved handling of objects
- With rolled edge
- Smooth surface, natural colour
- Thickness 0.51 mm
- Length 711 mm
- Port (shaft size) 150 mm (6 inch)

**Applications:** biotechnology, chemical and pharmaceutical research, chemical processing, laboratory work and analyses, particularly when acid-resistance is required, processing of chemical and biological products, product protection work.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 9 | **HLT8.1** | 1 | 131,15 |

### Cut-resistant gloves

The cut-resistant gloves are controlled according to EN Standard 388 (mechanical risks). This standard defines four tests and determines the level. The levels illustrate the efficiency of a glove.

| Test | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|---|---|---|---|---|
| Abrasion resistance (cycles) | 100 | 500 | 2000 | 8000 | - |
| Cut resistance (factor) | 1.2 | 2.5 | 5.0 | 10.0 | 20.0 |
| Tear resistance (Newton) | 10 | 25 | 50 | 75 | - |
| Puncture resistance (Newton) | 20 | 60 | 100 | 150 | - |

**Abrasion resistance:**
Number of test cycles required to fray test glove.

**Cut resistance:**
Number of test cycles required at constant speed to cut test glove.

**Tear resistance:**
Force required to tear test glove.

**Puncture resistance:**
Force required to puncture test glove with a standardized test product.




## Glove box gloves AlphaTec® 55-302

By Ansell. Acc. to 89/686/EWG: CE Category III, against complex risks. Acc. to EN 420, EN 374, EN 388 (2100) AQL 0.65.

- Made of neoprene, without carrier material
- Effective protection in moderately contaminated chemical environments, extraordinary chemical-resitance to most acids, alcohols, oils, lubricants and hydrocarbons
- Enhanced finger mobility for improved handling of objects
- With rolled edge
- Smooth surface, black colour
- Thickness 0.51 mm
- Length 813 mm
- Port (shaft size) 200 mm (8 inch)

**Applications:** biotechnology, chemical and pharmaceutical research, chemical processing, laboratory work and analyses, particularly when acid-resistance is required, processing of chemical and biological products, product protection work.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 9 | **HLT9.1** | 1 | 203,20 |

### Cut resistant gloves

| Art. No. | Abrasion resistance | Cut resistance | Tear resistance | Puncture resistance | Page |
|---|---|---|---|---|---|
| **0024.1 ff.** | Level 2 | Level 1 | Level 3 | Level 2 | 639 |
| **CA01.1 ff.** | Level 4 | Level 3 | Level 4 | Level 0 | 638 |
| **CAN2.1 ff** | Level 2 | Level 1 | Level 4 | Level 2 | 637 |
| **CC05.1 ff.** | Level 3 | Level 1 | Level 4 | Level 0 | 634 |
| **CYC0.1ff** | Level 3 | Level 5 | Level 4 | Level 0 | 638 |
| **E441.1 ff.** | Level 1 | Level 3 | Level 4 | Level 0 | 635 |
| **EA32.1 ff.** | Level 0 | Level 3 | Level 4 | Level 2 | 637 |
| **ECP7.1 ff.** | Level 3 | Level 5 | Level 3 | Level 1 | 646 |
| **ECT2.1 ff.** | Level 3 | Level 5 | Level 4 | Level 3 | 638 |
| **ECY4.1 ff.** | Level 4 | Level 1 | Level 1 | Level 1 | 631 |
| **ECY8.1 ff.** | Level 4 | Level 1 | Level 1 | Level 1 | 631 |
| **EHN5.1 ff.** | Level 2 | Level 1 | Level 2 | Level 1 | 636 |
| **EP06.1 ff.** | Level 3 | Level 1 | Level 3 | Level 1 | 636 |
| **HE68.1 ff.** | Level 2 | Level 1 | Level 2 | Level 1 | 640 |
| **HEN1.1 ff.** | Level 4 | Level 1 | Level 4 | Level 1 | 635 |
| **HH29.1 ff.** | Level 2 | Level 1 | Level 3 | Level 1 | 636 |
| **HNA3.1 ff.** | Level 4 | Level 1 | Level 3 | Level 1 | 635 |
| **HNA7.1 ff.** | Level 4 | Level 1 | Level 4 | Level 1 | 636 |
| **HNC2.1 ff.** | Level 3 | Level 2 | Level 4 | - | 634 |
| **K290.1 ff.** | Level 3 | Level 1 | Level 1 | Level 1 | 640 |
| **K961.1 ff.** | Level 3 | Level 4 | Level 4 | Level 4 | 639 |
| **KL18.1 ff.** | Level 4 | Level 3 | Level 4 | Level 1 | 637 |
| **LY23.1 ff.** | Level 0 | Level 0 | Level 3 | - | 634 |
| **PA77.1 ff.** | - | Level 5 | Level 4 | Level 3 | 639 |
| **PT65.1 ff** | Level 4 | Level 5 | Level 4 | Level 4 | 639 |
| **T084.1 ff.** | Level 1 | Level 3 | Level 4 | Level 0 | 641 |
| **TT87.1 ff.** | Level 2 | Level 1 | Level 1 | Level 1 | 640 |
| **XC93.1 ff.** | Level 4 | Level 1 | Level 3 | Level 1 | 637 |
| **XY00.1 ff.** | Level 2 | Level 1 | Level 4 | - | 634 |
| **XY04.1 ff.** | Level 4 | Level 3 | Level 4 | Level 2 | 638 |
| **XY83.1 ff.** | Level 4 | Level 1 | Level 3 | Level 1 | 635 |

# Cut resistant gloves



Cat. II

## Multipurpose gloves SensiLite® type 48-105

By Ansell. Acc. to EN 420 and EN 388 (003X). Lightweight multipurpose glove for work requiring selective abrasion resistance and a secure grip.

- Made of seamless nylon, with knitted welt and PU-coated fingertips
- Only the fingertips are coated, ensuring maximum breathability and good wear comfort
- Outstanding fit and good mobility allow precise handling of small objects
- For protection against skin abrasion
- Length 210-265 mm

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **LY23.1** | 12 | 30,40 |
| 8 | **LY24.1** | 12 | 30,40 |
| 9 | **LY25.1** | 12 | 30,40 |
| 10 | **LY26.1** | 12 | 30,40 |



Cat. II

## Stringknits™ multipurpose gloves

By Ansell. Acc. to EN 420, EN 388 (2140). Seamless knit gloves made of lightweight nylon (soft, comfortable, flexible and low-fluff). With knitted welt. Breathable. Ambidextrous. Colour: white. Length 190-235 mm. Washable up to max. 40 °C.

**Applications:** general work, precision work, precision assembly of dry components and packing work. Also suitable as undergloves.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **XY00.1** | 12 | 23,65 |
| 8 | **XY01.1** | 12 | 23,65 |
| 9 | **XY02.1** | 12 | 23,65 |
| 10 | **XY03.1** | 12 | 23,65 |



Cat. II

## Knitted gloves PolyTRIX®

By KCL by Honeywell. Acc. to EN 420, EN 388 (3140).
Light protective gloves made of 70 % polyamide and 30 % cotton, white. Can be worn on both sides. Cellular, seamless knit, adapt to the skin. With elastic knitted cuff. Washable.
Application range: Laboratory work, fine work, light assembly work.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **CC05.1** | 5 | 16,10 |
| 8 | **CC06.1** | 5 | 16,10 |
| 9 | **CC07.1** | 5 | 16,10 |
| 10 | **CC08.1** | 5 | 16,10 |




NEU
NOUVEAU
NEW

Cat. II

## Cut resistant gloves with dimples

Acc. to EN 420 and EN 388 (324x).
Double-layer finely knitted gloves, cotton inside, polyamide outside.
Seamless circular knit with knit wrist.
Hand inner surfaces with vinyl dimples.

- Skin-friendly and pleasant to wear
- Excellent fit and flexible
- Safe grip
- Excellent wear resistance for long service life
- Colour white/dimples green

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **HNC2.1** | 6 | 11,70 |
| 8 | **HNC3.1** | 6 | 11,70 |
| 9 | **HNC4.1** | 6 | 11,70 |
| 10 | **HNC5.1** | 6 | 11,70 |



Cat. II

## Cut resistant gloves K-MEX®

By KCL by Honeywell. Acc. to EN 420 and EN 388 (1340).
Made of Para-Aramid. Medium knit-strength. Fit both hands, breathing.
Facilitates long, non-fatiguiing work. High touch sensitivity.
Washable. Used for all kinds of assembly works, metal processing, chemical and plastic industry.

PVC-spotted

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **E441.1** | 1 | 16,10 |
| 8 | **E442.1** | 1 | 16,10 |
| 9 | **E443.1** | 1 | 16,10 |
| 10 | **E444.1** | 1 | 16,10 |




NEU NOUVEAU NEW

Cat. II

## Finely knitted gloves with PU coating

Acc. to EN 420 and EN 388 (4131).
Finely knitted gloves made of polyamide, seamless circular knit with knit wrist. Hand inner surfaces and finger tips with polyurethane coating.

- Especially breathable, comfortable to wear
- Very good fit, excellent tactile sensitivity
- Safe grip
- High resistance to wear for long service lives
- Colour grey/grey

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **HNA3.1** | 12 | 12,75 |
| 8 | **HNA4.1** | 12 | 12,75 |
| 9 | **HNA5.1** | 12 | 12,75 |
| 10 | **HNA6.1** | 12 | 12,75 |



NEU NOUVEAU NEW

Cat. II

## Finely knitted gloves with PU coating

Acc. to EN 420 and EN 388 (4131). Finely knitted made of polyamide, seamless. Hand inner surfaces and finger tips with polyurethane coating.

- Breathable, comfortable to wear
- Safe grip with excellent tactile sensitivity, high resistance to wear
- Excellent fit
- For protection against light cuts and stabbing injuries
- Colour white, rubber grey knit wrist

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 6 | **HEN1.1** | 12 | 15,00 |
| 7 | **HEN2.1** | 12 | 15,00 |
| 8 | **HEN3.1** | 12 | 15,00 |
| 9 | **HEN4.1** | 12 | 15,00 |
| 10 | **HEN5.1** | 12 | 15,00 |



Cat. II

## Multipurpose gloves SensiLite® type 48-101

By Ansell. Acc. to EN 420, EN 388 (4131). Rugged finely knitted nylon gloves, with knitted welt and polyurethane-coated palm. Colour: black.
Length 210-265 mm. For protection against chafing.
Good mobility for handling small parts.
**Applications:** general work, assembly, inspection and packing of small components.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 6 | **XY83.1** | 12 | 34,15 |
| 7 | **XY84.1** | 12 | 34,15 |
| 8 | **XY85.1** | 12 | 34,15 |
| 9 | **XY86.1** | 12 | 34,15 |
| 10 | **XY87.1** | 12 | 34,15 |
| 11 | **XY88.1** | 12 | 34,15 |

# Cut resistant gloves



NEU
NOUVEAU
NEW

Cat. II

## Ninja Maxim NFT® multipurpose gloves

Acc. to EN 420 and EN 388 (4141). Finely knitted gloves made of polyamide/Elasthan, seamless circular knit with knit wrist.
Hand inner surfaces and finger tips with foamed NFT® Nitrile coating.

- Excellent fit and flexible, therefore comfortable to wear
- Excellent tactile sensitivity, especially breathable
- Secure grip in dry, oily and moist environments
- Excellent wear resistance for long service life
- Colour grey/black

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **HNA7.1** | 2 | 8,90 |
| 8 | **HNA8.1** | 2 | 8,90 |
| 9 | **HNA9.1** | 2 | 8,90 |
| 10 | **HNC0.1** | 2 | 8,90 |
| 11 | **HNC1.1** | 2 | 8,90 |



Cat. II

## Anti-static gloves Camapur® Comfort

By KCL by Honeywell. Acc. to EN 420, EN 388 (2131), EN 1149 Part 1 and 2. Made of polyamide with copper thread. Polyurethane coating on palm of the hand, back of the hand is not coated. With knitted cuff.
Good fit and sensitivity. Fulfills all the requirements for classification as an anti-static glove. Values in compliance with EN 1149: Part 1 $<10^6$ surface resistance, Part 2 $<10^6$ volume resistance.
Suitable for assembly work in the electro-industry or handling and processing chips. Washable, anti-static properties do not dwindle away.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **HH29.1** | 5 | 37,60 |
| 8 | **HH30.1** | 5 | 37,60 |
| 9 | **HH31.1** | 5 | 37,60 |
| 10 | **HH32.1** | 5 | 37,60 |




## UVEX phynomic ESD

By UVEX. Acc. to EN 420, EN 388 (2121). Light protective glove for work in antistatic areas. Made of conductive polyamide/elastane/carbon material. Finger tips and inside hand coated with a thin, conductive aqua-polymere impregnation. With knitted welt.
Acc. to DIN EN 16350:2014 (conditions: contact resistance <108 Ohm, air temperature 23 ±1 °C, humidity 25 ±5 %). Colour: grey/grey.

- **UVEX pure standard**, therefore extremely skin-friendly
- Excellent tactile sensitivity and flexibility
- Optimised dry grip
- Very high breathability

**Applications:** work in ESD and antistatic areas, precision assembly, precision work.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 6 | **EHN5.1** | 10 | 53,25 |
| 7 | **EHN6.1** | 10 | 53,25 |
| 8 | **EHN7.1** | 10 | 53,25 |
| 9 | **EHN8.1** | 10 | 53,25 |
| 10 | **EHN9.1** | 10 | 53,25 |
| 11 | **EHP0.1** | 10 | 53,25 |




Cat. II

## HyFlex®Foaam knitted gloves

By Ansell. Acc. to EN 420, EN 388 (3131). Seamless, knitted, multi-purpose gloves made of elastic nylon. Dip coated with specially foamed, breathable nitril except on back of hand.

- With excellent freedom of movement
- Excellent grip
- Ideal for handling dry or slightly oiled components
- Offers some protection when working with mechanical parts
- High abrasion resistance

Areas of application: light assembly work in the automobile, plastic, textile and consumer goods industry, warehouse and logistics work.
All substances in compliance with FDA 21 CFR 177.2600.
Washable max. 40 °C.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **EP06.1** | 2 | 11,10 |
| 8 | **EP07.1** | 2 | 11,10 |
| 9 | **EP08.1** | 2 | 11,10 |
| 10 | **EP09.1** | 2 | 11,10 |




Cat. II

## phynomic M1 WET-cut resistant gloves

By UVEX. Acc. to EN 420. EN 388 (4131). Made of polyamide/Elasthan, Aqua-Polymer foam coating on palm and fingers. With knitted welt.

- Absolute cleanliness - **uvex pure standard**, excellent skin tolerability
- Perfect fit, outstanding natural feel
- Maximum flexibility
- Outstanding dry and wet grip
- Oil/emulsions roll off, oil is absorbed
- High breathability ensures optimum wear comfort
- Length 210-250 mm

**Suitable for** precision work, fine assembly work, general maintenance work, dry areas and moist/oily working conditions.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **XC93.1** | 2 | 13,15 |
| 8 | **XC94.1** | 2 | 13,15 |
| 9 | **XC95.1** | 2 | 13,15 |
| 10 | **XC96.1** | 2 | 13,15 |



Cat. II

## Protective gloves Camapur® Cut

By KCL by Honeywell. Acc. to EN 420, EN 388 (4341).

- Seamless tricot made of Polyethylene (HPPE-fibre), with knitted welt and thin Polyurethane-layer
- The back of the hand remains uncovered, minimizes sweating of hand
- Very high cut protection value
- High touch sensitivity and mechanical load, extremely comfortable
- Good grip even when handling wet and slippery objects
- Approx. 1.2 mm thick, length approx. 240 mm

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **KL18.1** | 2 | 32,20 |
| 8 | **KL19.1** | 2 | 32,20 |
| 9 | **KL20.1** | 2 | 32,20 |
| 10 | **KL21.1** | 2 | 32,20 |




Cat. II

## Showa Grip Green 310 protective gloves

By SHOWA. Acc. to EN 420, EN 388 (2142).
Seamless polyester/cotton fabric with latex coated palm and elasticated cuff. A flexible and robust glove offering great dexterity and good resistance to tearing.

- Breathable back for reduced moisture
- Suitable for use in wet and moist environments
- Surface is specially treated for a more tactile feel and better grip
- Anatomically shaped for greater freedom of movement and extra comfort during extended periods of wear

**Applications:** farming, gardening, construction, outdoor work.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 (S) | **CAN2.1** | 10 | 39,70 |
| 8 (M) | **CAN3.1** | 10 | 39,70 |
| 9 (L) | **CAN4.1** | 10 | 39,70 |
| 10 (XL) | **CAN5.1** | 10 | 39,70 |
| 11 (XXL) | **CAN6.1** | 10 | 39,70 |



Cat. II

## Cut protection gloves T-Flex

By SHOWA. Acc. to EN 420 and EN 388 (0342). Very thin glove made of Polyethylene. Offers high protection agains cuts, very good tactile touch and high finger sensitivity. Circular knit, can be worn on both hands. Universal use, e.g. for sharp-edged glass or metal parts.
Suitable for either working with or for processing food.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **EA32.1** | 1 | 23,60 |
| 8 | **EA33.1** | 1 | 23,60 |
| 9 | **EA34.1** | 1 | 23,60 |
| 10 | **EA35.1** | 1 | 23,60 |

# Cut resistant gloves



Cat. II

## Cut resistant gloves NevoCut® 923

By KCL by Honeywell. Acc. to EN 420, EN 388 (3540).
Made of seamless tricot (polyamide and high-strength polyethylene HPPE fibre) with knitted welt.
**Very high level of protection against cutting (Level 5)**, without limiting mobility. Excellent tactile sensitivity and high wearing comfort.
Can be worn on both hands, washable. Length 250 mm.

**Applications:** work which involves a high risk of cutting, e.g. work with scalpels or doctor blade. Suitable for contact with foodstuffs.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **CYC0.1** | 1 | 18,05 |
| 8 | **CYC1.1** | 1 | 18,05 |
| 9 | **CYC2.1** | 1 | 18,05 |
| 10 | **CYC3.1** | 1 | 18,05 |



Cat. II

## Cut resistant gloves 8110 D-Flex

By SHOWA. Acc. to EN 420, EN 388 (3543).
Acc. to Reg. (EC) 1935/2004 - suitable for contact with foodstuffs.
Seamless fabric made of high-performance polyethylene (HPPE, Spectra fibres).
Uncoated, untreated. With elasticated cuff. Ambidextrous.

- Active protection against cutting and long life
- Excellent dexterity and tactile feel
- Minimum allergy risk
- No skin irritation by stitching
- High freedom of movement of wrist joint
- Length 240 mm

**Areas of use:**
Work requiring a high level of protection against cutting and dexterity.
Food processing.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 6 | **ECT2.1** | 1 | 29,00 |
| 7 | **ECT3.1** | 1 | 29,00 |
| 8 | **ECT4.1** | 1 | 29,00 |
| 9 | **ECT5.1** | 1 | 29,00 |
| 10 | **ECT6.1** | 1 | 29,00 |



Cat. II

## Cut resistant gloves 542X HPPE Fit

By SHOWA. Acc. to EN 420 and EN 388 (4340). Seamless knit gloves made from polyethylene (HPPE). Without coating, thin and flexible, good protection against cutting. Excellent for precision working. Washable at 40 °C with a neutral washing powder. (The performance level according to standard EN 388 is no longer guaranteed after washing).

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **CA01.1** | 1 | 13,20 |
| 8 | **CA02.1** | 1 | 13,20 |
| 9 | **CA03.1** | 1 | 13,20 |




Cat. II

## HyFlex®-cut resistant gloves type 11-624

By Ansell. Acc. to EN 420, EN 388 (4342). Grey backing material Polyethylene (ultra-high-molecular-weight PE), Elasthan (Lycra®), nylon. Polyurethane coated palm. With knitted welt.

- Comfortable gloves with good mobility
- Pleasant to wear, also suitable for prolonged work use
- Special polyurethane coating offers flexibility and fit, as well as secure grip on dry and slightly oily objects
- High cutting resistance for safe handling and assembly of sharp-edged parts
- Length 220-270 mm

**Applications:** glass production, handling sharp-edged objects, preassembly, cutting dry or slightly oily small parts, maintenance work etc.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **XY04.1** | 1 | 12,85 |
| 8 | **XY05.1** | 1 | 12,85 |
| 9 | **XY06.1** | 1 | 12,85 |
| 10 | **XY07.1** | 1 | 12,85 |



Cat. II

## Cut resistant gloves K-TEX®

By KCL by Honeywell. Acc. to EN 420 and EN 388 (3444). Coated. Made of Para-Amid. Finger tips and inner surface dipped in natural latex. Excellent flexibility and grip. Comfortable to wear. Washable. Total length 250 mm. Ideal for following applications: metal processing, glass industry, plastic industry, etc. Heavy-weight glove.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **K961.1** | 1 | 18,50 |
| 8 | **K962.1** | 1 | 18,50 |
| 9 | **K963.1** | 1 | 18,50 |
| 10 | **K964.1** | 1 | 18,50 |



Cat. III

## Protective gloves PROTECTOR CHEMICAL

By UVEX. Acc. to EN 374 and EN 388 (4544).

- Multi Layer Technology provides optimal chemical/cut protection Cotton/polyethylene (HPPE)/glass and double nitrile rubber coating
- Comfortable, anatomically shaped glove
- Coarse surface for secure grip

**Suitable for** chemicals industry, machine and tool making, work involving cutting hazards and protection from chemicals.

**Length 270 mm**

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 9 | **PT65.1** | 1 | 69,35 |
| 10 | **PT66.1** | 1 | 69,35 |

**Length 400 mm**

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 9 | **PT67.1** | 1 | 84,95 |
| 10 | **PT68.1** | 1 | 84,95 |



Cat. III

## Cut resistant gloves PowerFlex®

By Ansell. Acc. to EN 388 (X543), EN 407.

- Excellent protection against cuts, abrasion and puncture
- Made of steel, nylon, fiber-glass, cotton and Kevlar®
- Safe grip with rough coat of natural rubber
- ¾ coated, liquid-repellent
- Blue coating on green flecked base
- Length 260-295 mm
- Extended knitted wrist for ideal forearm protection
- Machine washable

Suitable for handling broken glass, sharp metal edges, waste separation (glass, tin cans, metallic parts, etc.).

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 6 | **PA77.1** | 1 | 21,85 |
| 7 | **PA78.1** | 1 | 21,85 |
| 8 | **PA79.1** | 1 | 21,85 |
| 9 | **PA80.1** | 1 | 21,85 |
| 10 | **PA81.1** | 1 | 21,85 |
| 11 | **PA82.1** | 1 | 21,85 |



Cat. II

## Sekuroka®-safety gloves E

Acc. to EN 420, EN 388 (2132). Grey split cowhide leather, does not include rubber cord. Cuffs and backs made of green drill. Length approx. 260 mm.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 10.5 | **0024.1** | 5 | 17,00 |

# Work gloves



Cat. II

## Protective gloves Sahara® 100

By KCL by Honeywell. Acc. to EN 420 and EN 388 (3111). Made of cotton. The **high-quality nitrile coating** guarantees excellent physical properties. Gloves are light, flexible and robust and provide safe and comfortable protection during mechanical stress. For example, protect against puncture injuries and cuts. Made of cotton tricot and without coating on back of hands gloves have excellent touch sensitivity and are comfortable to wear.

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 7 | ca. 235 | **K290.1** | 2 | 11,80 |
| 8 | ca. 250 | **K291.1** | 2 | 11,80 |
| 9 | ca. 255 | **K292.1** | 2 | 11,80 |
| 10 | ca. 265 | **K293.1** | 2 | 11,80 |



Cat. II

## Protective gloves Man at Work

By KCL by Honeywell. In acc. to EN 420, EN 388 (2111). Made of cotton with nitrile coating and canvas cuff. Knuckle protection and elastic back. Rugged design. **Ideal replacement for leather gloves.**
High flexibility compared to leather, good thermal flexibility.
High breathability. Oil, grease and moisture repellent.
Provides good grip on smooth surfaces. Washable up to 30 °C.
Length: 260-280 mm, 1.25 mm thick.

**Applications:** craft trades, forestry and agriculture, construction and machinery sector, metalworking.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 8 | **TT87.1** | 2 | 13,80 |
| 9 | **TT88.1** | 2 | 13,80 |
| 10 | **TT89.1** | 2 | 13,80 |
| 11 | **TT90.1** | 2 | 13,80 |



Cat. II

## Working gloves RewoMech®

By KCL by Honeywell. Acc. to EN 420, EN 388 (2121). Grey/black.
Good alternative to conventional leather gloves.

- Breathable backing fabric made of 97 % polyester with 3 % elastane
- Palm reinforced with resistant synthetic leather (60 % polyamide / 40 % polyurethane)
- Thumb back with cotton wool Terry cloth for sweat absorption
- Cuff with Velcro fastening system for secure fit
- Strong grip even when parts are wet
- Good fit enables long and fatigue-free working
- Sensitive, therefore ideal for working with filigree objects
- Vent holes between the fingers
- Flexible to cold up to approx. max -20 °C
- Temperature resistant up to approx. max 130 °C
- Length approx. 230-280 mm, 0.70 mm thick

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **HE68.1** | 2 | 31,30 |
| 8 | **HE69.1** | 2 | 31,30 |
| 9 | **HE70.1** | 2 | 31,30 |
| 10 | **HE71.1** | 2 | 31,30 |
| 11 | **HE72.1** | 2 | 31,30 |



Cat. II

## Nappa leather gloves

Acc. to EN 420. For cold and hot conditions, comfortable fit, not fully tear- and waterproof.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 8 | **1744.1** | 2 | 12,90 |
| 9 | **1747.1** | 2 | 12,90 |
| 10 | **1748.1** | 2 | 12,90 |



Cat. I

## Sekuroka®-cotton gloves

Tricot gloves made of 100 % cotton. With finger walls, anatomic thumb, lined. White, bleached. Öko Tex Standard 100. Suitable for foodstuffs. Breathable, wearing comfort, precise fit, excellent tactile sensitivity.
**Application:** product protection or as underglove.

**Length approx. 24 cm, medium-duty quality**

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **ENC3.1** | 12 | 24,20 |
| 8 | **ENC4.1** | 12 | 24,55 |
| 9 | **ENC5.1** | 12 | 24,55 |
| 10 | **ENC6.1** | 12 | 24,55 |
| 11 | **ENC7.1** | 12 | 24,55 |

**Length approx. 24 cm, heavy duty**

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **0514.2** | 12 | 32,20 |
| 11 | **0557.2** | 12 | 32,20 |

**Extra long approx. 35 cm, medium-duty quality**

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 8 | **ENC8.1** | 6 | 18,85 |
| 10 | **ENC9.1** | 6 | 18,85 |



## Chain stitch gloves

Acc. to EN 1082. Protect hands against **cuts, punctures and bites**. Made completely from high-grade steel. Can be thoroughly cleaned of all residue and easy to disinfect. Adjustable clasp on cuff for optimal fit. This new dual-closure-system enables the same glove to be worn by left- or right-handed users. Ring ∅ 4.2 mm, wire thickness 0.55 mm.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S | **K173.1** | 1 | 105,90 |
| M | **K174.1** | 1 | 105,90 |
| L | **K175.1** | 1 | 105,90 |

▶ Film gloves for wearing under chain gloves see page 612



Cat. I

## Sekuroka®-undergloves

Tricot gloves made of 100 % cotton. Ambidexterous, lined. Natural white, unbleached. Öko Tex standard 100. Breathable, wearing comfort, excellent tactile sensitivity.
**Application:** product protection or as underglove.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **ENE0.1** | 12 | 13,55 |
| 8 | **ENE1.1** | 12 | 13,55 |
| 10 | **0068.2** | 12 | 13,55 |



Cat. II

## Arm protectors ArMEX

By KCL by Honeywell. Acc. to EN 388. Made of Para-Aramid. With thumb-hole for good fit. Protect the forearm **against cuts** and **temperatures to 100 °C**. Washable.

| Size (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2 | 360 | **T084.1** | 2 | 21,45 |
| 3 | 420 | **TT10.1** | 2 | 23,55 |

# Cold resistant gloves

## Cold protection gloves

Tested according to **EN 511 standard (gloves for protection against the cold).** This applies to all gloves designed for protection of the hand against convective and contact cooling to -50 °C. The standard defines three performance indicators in conjunction with specific protective properties.

**A: Resistance to convective cooling (performance levels 0-4)**
Thermal insulation against through-cooling, measured by convection transfer.

**B: Contact cooling (performance levels 0-4)**
Thermal insulation of the glove material in direct contact with a cold object.

**C: Waterproofing (0 or 1)**
The test for water-tightness is voluntary.
0 = water penetration
1 = no water penetration
X = the glove was not submitted for testing, or the test or test method is not appropriate or irrelevant.

**Cold protection gloves**

| Art. No. | Performance indicators according to EN 511 | | |
|---|---|---|---|
| | A | B | C |
| 0922.1ff | 3 | 2 | x |
| 5233.1f | 1 | 1 | x |
| CC00.1ff | 1 | 2 | x |
| EA80.1f | 1 | 0 | 0 |
| HLP4.1ff | 1 | 2 | 1 |
| K970.1ff | 1 | 2 | 1 |
| KH93.1ff | 3 | 2 | 1 |
| KL11.1ff | 3 | 3 | 1 |
| T664.1ff | 3 | 2 | 1 |
| XE54.1f | 1 | 1 | 1 |
| XY15.1 | 1 | 1 | 1 |

In addition all gloves must achieve at least performance level 1 for abrasive resistance and tear strength according to EN 388 (protection against mechanical risks).

**Performance indicators according to EN 388**

| Art. No. | Abrasive resistance | Cutting resistance | Tear resistance | Penetration force |
|---|---|---|---|---|
| 0922.1ff. | 1 | 3 | 2 | 3 |
| 5233.1f | 1 | x | 4 | x |
| CC00.1ff | 2 | 1 | 2 | 1 |
| EA80.1f | 3 | 1 | 4 | x |
| HLP4.1 ff. | 3 | 2 | 2 | 2 |
| K970.1ff | 3 | 2 | 2 | 1 |
| KH93.1ff | 1 | 3 | 2 | 3 |
| KL11.1ff | 3 | 2 | 2 | 2 |
| T664.1ff | 1 | 2 | 2 | 3 |
| XE54.1f. | 3 | 3 | 4 | 1 |
| XY15.1 | 3 | 2 | 3 | 2 |






## Resistant gloves proFood® Insulated

By Ansell. Acc. to EN 420, EN 388, EN 511 and EN 407.
- With special hollow fibers for working in cold and hot conditions
- Draw off moistness from skin and forms a heat insulation barrier between skin and surroundings
- Light and pliable, can be worn on both hands
- Seamless design prevents rubbing and skin irritation
- Made of material which is also suitable for handling food
- Machine washable up to 40 °C
- Protection against exposure up to 100 °C: max. 15 sec

**Recommended areas of application:**
- Gloves can also be worn to protect against cold or frost, e.g. non-sterile working with dry food
- As a glove liner when working with meat or fish

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **EA80.1** | 2 | 13,20 |
| 9 | **EA81.1** | 2 | 13,20 |






## SIPRA®-deep freeze gloves

Acc. to EN 420, EN 388 and EN 511. Heavyweight, made of dense, knitted white an impregnating cotton and terry towel like outer structure. Made of 100 % cotton, Öko-Tex Standard 100. Length 30 cm. Protection against contact coldness down to -20 °C.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 8 / S (red braid) | **5233.1** | 1 | 44,65 |
| 9 / M (blue braid) | **2086.1** | 1 | 44,65 |

# Cold resistant gloves



Cat. II

## Winter Monkey Grip®-work gloves

By Ansell. Acc. to EN 388, EN 420, EN 511.
- PVC dip coated with foam insulation
- Keeps hands warm and dry and protects against chafing
- Oil and grease repellent
- Excellent grip and abrasion resistance
- Maintains flexibility even at subzero temperatures
- With protective cuff

**Applications:** working with oily or greasy objects and materials, working with chemical containers at low temperatures, transporting oil in winter, cold storage room and warehouse maintenance.

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 10 | 265 | **XE54.1** | 1 | 17,45 |
| 11 | 295 | **XE55.1** | 1 | 17,45 |



Cat. II

## Ice Grip® cold resistant gloves

By KCL by Honeywell. Acc. to EN 511 and EN 388. RAL-certified, suitable for use in the food industry. Made of PVC, inner lining made of breathable Thinsulate®. Very good grip, especially of wet parts, due to special slipstop coating on palm. Moisture repellent.
The knitted wrist stops cold from getting into the glove.
Cold-stable to max. -50 °C.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **CC00.1** | 1 | 13,55 |
| 8 | **CC01.1** | 1 | 13,55 |
| 9 | **CC02.1** | 1 | 13,55 |
| 10 | **CC03.1** | 1 | 13,55 |



Cat. II

## Cold resistant gloves Cama Iso® 690+

By KCL by Honeywell. Acc. to EN 420, EN 388, EN 511. Made of PVC. Specially developed for working in cold. Extremely comfortable, abrasion-proof and highly flexible. With seamless, warm cotton lining inside. Impervious to fluids. Textured surface for secure grip when handling wet parts. Length approx. 300 mm, total layer thickness approx. 3.5 mm. Stable to approx. -20 °C.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 9 | **K970.1** | 1 | 25,65 |
| 10 | **K971.1** | 1 | 25,65 |




Cat. III

## Neoprene gloves Scorpio® 09-022

By Ansell. Acc. to EN 420, EN 388, EN 374, EN 407 and EN 511.
AQL 1.5.Black, neoprene-coated protective gloves **with foam insulation**. For protection against a wide range of bases, acids, alcohols and diluted aqueous solvents. **Also suitable for working in hot and cold conditions**. Suitable for short-time contact with liquids at temperatures from max. 180 °C to min. -25 °C. Not suitable for temperatures above 200 °C. Good abrasion and cutting resistance. Smooth grip profile.
Length 350 mm. Standard size 10.

**Applications:** handling chemicals and petrochemicals, for degreasing and coating etc.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **XY15.1** | 1 | 47,00 |

# Cold resistant gloves






## Cryo-Gloves®-cold resistant gloves

By Tempshield. Acc. to EN 420, EN 388 and EN 511. Provides protection in extremely cold temperature ranges up to -160 °C. Autoclavable. Suitable for handling dry ice (-79 °C), for working in the gas phase of cryogenic media, such as **liquid nitrogen in the gas phase**.
**Attention: Do not submerse in cryogenic liquids!**
Material: Semi-permeable skin made of sewn nylon.
Seamless, laminated inside. Light polyolefin/polyester lining in cotton-knit inner glove.

**Type ① and ② for applications in the laboratory:**
- Filling and decanting from large tanks to Dewars
- Shock freezing and deep freezing
- Filling cryo traps and metrological devices
- Cryo banks, blood banks
- Deep-freeze conservation

**Model ①: Standard design, water resistant**

**With knitted trim**

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| S (8 - 8½) | 290, wrist length | **0922.1** | 1 | 175,25 |
| M (9 - 9½) | 320, wrist length | **0923.1** | 1 | 175,25 |
| L (10 - 10½) | 320, wrist length | **0924.1** | 1 | 175,25 |

**With cuffs**

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| S (8 - 8½) | 345, forearm length | **0926.1** | 1 | 180,60 |
| M (9 - 9½) | 345, forearm length | **0927.1** | 1 | 180,60 |
| L (10 - 10½) | 390, forearm length | **0928.1** | 1 | 180,60 |
| XL (11- 11½) | 390, forearm length | **0929.1** | 1 | 188,15 |
| M (9 - 9½) | 440, elbow length | **5462.1** | 1 | 235,45 |
| L (10 - 10½) | 485, elbow length | **5468.1** | 1 | 235,45 |
| XL (11- 11½) | 485, elbow length | **5483.1** | 1 | 237,60 |
| M (9 - 9½) | 625, shoulder length | **5506.1** | 1 | 273,05 |
| L (10 - 10½) | 685, shoulder length | **5508.1** | 1 | 273,05 |
| XL (11- 11½) | 685, shoulder length | **5511.1** | 1 | 280,60 |

Model ②: 100 % waterproof design, with additional seamless inner glove.
**For long-term work in the gas phase** and when there is a danger of exposure to liquids, e.g. also to **infectious** or **toxic** substances.
Possible penetration through seams at fingers is prevented.

**With knitted trim**

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| S (8) | approx. 290, wrist length | **KH93.1** | 1 | 230,05 |
| M (9) | approx. 320, wrist length | **KH94.1** | 1 | 230,05 |
| L (10) | approx. 320, wrist length | **KH95.1** | 1 | 230,05 |
| XL (11) | approx. 320, wrist length | **KH96.1** | 1 | 234,35 |

**With cuffs**

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| S (8) | approx. 345, forearm length | **T664.1** | 1 | 232,20 |
| M (9) | approx. 345, forearm length | **T665.1** | 1 | 232,20 |
| L (10) | approx. 390, forearm length | **T666.1** | 1 | 232,20 |
| XL (11) | approx. 390, forearm length | **T667.1** | 1 | 237,60 |
| M (9) | approx. 440, elbow length | **KH97.1** | 1 | 280,60 |
| L (10) | approx. 485, elbow length | **KH98.1** | 1 | 280,60 |
| XL (11) | approx. 485, elbow length | **KH99.1** | 1 | 287,05 |
| M (9) | approx. 625, shoulder length | **KL00.1** | 1 | 345,10 |
| L (10) | approx. 685, shoulder length | **KL01.1** | 1 | 345,10 |
| XL (11) | approx. 685, shoulder length | **KL02.1** | 1 | 352,60 |






## Cryo-Industrial® cold resistant gloves

By Tempshield.
Same design as Cryo-Gloves® thermal protection gloves.
**Attention: Do not submerse in cryogenic liquids.**

**Model ③: Industrial design 100 % waterproof:**
Specially for industrial applications, hard-wearing and robust. Ideal for applications where wear resistance, durability and good grip are necessary. Inner glove consists of three layers (two insulating layers and lining). There is an additional 100 % waterproof seamless inner glove between the outer layer and the insulating layers.
**Areas of application:** Chemical/pharmaceutical (cryogenic product cooling), food technology (cryogenic freezing processes, pelletising), metal processing industry (cold dilation and shrinkage), maintenance and repair work to cryo-systems, during cryo-cleaning processes, technical gas industry (decanting cryogenic gases, argon, oxygen, nitrogen, helium).

**With cuffs, forearm length**

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| M (9) | ca. 400 | **KL11.1** | 1 | 244,05 |
| L (10) | ca. 400 | **KL12.1** | 1 | 244,05 |
| XL (11) | ca. 400 | **KL13.1** | 1 | 249,40 |

**With wide cuffs, elbow length**

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| M (9) | ca. 500 | **YL11.1** | 1 | 370,90 |
| L (10) | ca. 500 | **YL12.1** | 1 | 370,90 |
| XL (11) | ca. 500 | **YL13.1** | 1 | 378,40 |

## Heat protection gloves

Tested according to **EN 407 standard (gloves for protection against the thermal risks).** The standard defines six performance indicators in conjunction with specific protective properties and performance levels from 0-4.

- **A:** Flammability
- **B:** Contact heat
- **C:** Convective heat
- **D:** Radiation heat
- **E:** Small amounts of molten metal spatter
- **F:** Small amounts of liquid metal

**Heat protection gloves**

| Art. No. | Performance indicators | | | | | |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| 0745.1 | 4 | 2 | 2 | 2 | x | x |
| 6584.1ff. | x | 2 | x | x | x | x |
| ALA1.1ff. | x | 1 | x | x | x | x |
| ALA3.1ff. | x | 1 | x | x | x | x |
| APX6.1ff. | 4 | 1 | 3 | 4 | 4 | 4 |
| CNH6.1 | 4 | 2 | 3 | 4 | 4 | 4 |
| ECP7.1ff. | 4 | 2 | 2 | 1 | 2 | x |
| H297.1ff. | 4 | 3 | 4 | 2 | x | x |
| HE74.1 | 4 | 3 | x | 2 | x | x |
| HE75.1 | 4 | 4 | x | 2 | 2 | 4 |
| HE76.1 | 4 | 4 | x | 2 | 1 | x |
| HLP4.1ff. | 3 | 2 | x | x | 4 | x |
| LY89.1ff. | x | 2 | x | x | x | x |
| TT82.1 | 4 | 1 | 3 | 4 | 4 | 4 |
| TT84.1ff. | 4 | 2 | 4 | 3 | x | x |
| TX89.1 | 4 | 3 | 4 | 3 | x | x |
| XE56.1 | 4 | 1 | 3 | x | 4 | x |
| XY15.1 | 3 | 2 | x | x | x | x |
| Y351.1ff. | x | 2 | 4 | 2 | x | x |
| Y431.1ff. | 4 | 2 | 4 | 1 | x | x |

In addition, all gloves must achieve at least performance level 1 for abrasive resistance and tear strength according to EN 388 (protection against mechanical risks).

**Performance indicators according to EN 388**

| Art. No. | Abrasive resistance | Cutting resistance | Tear resistance | Penetration force |
|---|---|---|---|---|
| 0745.1 | 1 | x | 2 | x |
| 6584.1ff. | 1 | x | 1 | x |
| ALA1.1ff. | 1 | x | 1 | x |
| ALA3.1ff. | 1 | x | 1 | x |
| APX6.1ff | 1 | x | 2 | x |
| CNH6.1 | 3 | 4 | 4 | 3 |
| ECP7.1ff | 3 | 5 | 3 | 1 |
| H297.1ff. | 4 | x | 2 | x |
| HE74.1 | 1 | 5 | 4 | x |
| HE75.1 | 2 | 3 | x | x |
| HE76.1 | 1 | x | 2 | 2 |
| HLP4.1ff | 3 | 2 | 2 | 2 |
| LY89.1ff. | 3 | 2 | 3 | 2 |
| TT82.1 | 4 | x | 4 | x |
| TT84.1ff. | 1 | 4 | 4 | 1 |
| TX89.1 | 2 | 4 | 4 | 2 |
| XE56.1 | 3 | 2 | 4 | 3 |
| XY15.1 | 3 | 2 | 3 | 2 |
| Y351.1ff. | 2 | 2 | 4 | 1 |
| Y431.1ff. | 1 | 4 | 4 | 1 |






## Sekuroka®-heat protection gloves

Acc. to EN 420, EN 388 and EN 407. Made of polyamide fibres Nomex® by DuPont. Long product life, good form stability, very comfortable fit, highly flame and chemical resistant. The finely-knitted jersey quality gloves are suitable for precision work. Washable at max. +95 °C. Protect against exposure to max contact heat of:

- 100 °C: max. 26 sec
- 250 °C: max. 7.6 sec

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 6½ | 260 | **ALA1.1** | 1 | 31,95 |
| 7½ | 260 | **0138.1** | 1 | 31,45 |
| 8 | 260 | **0141.1** | 1 | 31,45 |
| 8½ | 260 | **0143.1** | 1 | 31,45 |
| 9 | 260 | **ALA2.1** | 1 | 31,95 |
| 6½ | 350 | **ALA3.1** | 1 | 42,80 |
| 7½ | 350 | **0145.1** | 1 | 42,80 |
| 8 | 350 | **0147.1** | 1 | 42,80 |
| 8½ | 350 | **0148.1** | 1 | 42,80 |
| 9 | 350 | **ALA4.1** | 1 | 42,80 |






## Sekuroka®-5-finger gloves

Acc. to EN 420, EN 388 and EN 407. Made of polyamide Nomex® from DuPont. Ideal for protection against flames and heat. Size 10½. Protective capacity on contact with heat:

- 60.5 sec at 100 °C
- 14.7 sec at 250 °C

| Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 270 | **6584.1** | 1 | 44,00 |
| 350 | **6599.1** | 1 | 47,45 |
| 400 | **6604.1** | 1 | 57,00 |

# Heat resistant gloves



Cat. II

## Heat and cut resistant gloves 240

By SHOWA. Acc. to EN 420, EN 388 (3531), EN 407 (42212X) seamless fine knit made of Kevlar®, modacrylic, glass fibre with foam neoprene palm.

- Flame resistant materials
- Kevlar backing fabric offers high cutting resistance: Level 5
- Flat dipped neoprene coating ensures extra-secure grip
- The ergonomic design matches the natural shape of the hand and thus reduces operator fatigue and improves fit and wearing comfort
- Protection against arcing: arcing protection class 2
- 240 mm long.

**Range of uses:**
Work requiring a high level of protection against cutting and heat.
Building trade, metallurgy, oily working conditions.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 (S) | **ECP7.1** | 1 | 22,50 |
| 8 (M) | **ECP8.1** | 1 | 22,50 |
| 9 (L) | **ECP9.1** | 1 | 22,50 |
| 10 (XL) | **ECT0.1** | 1 | 22,50 |
| 11 (XXL) | **ECT1.1** | 1 | 22,50 |




Cat. III

## Neoprene gloves Scorpio® 09-022

By Ansell. Acc. to EN 420, EN 388, EN 374, EN 407 and EN 511. AQL 1.5. Black, neoprene-coated protective gloves **with foam insulation**.
For protection against a wide range of bases, acids, alcohols and diluted aqueous solvents.
**Also suitable for working in hot and cold conditions**.
Suitable for short-time contact with liquids at temperatures from max. 180 °C to min. -25 °C. Not suitable for temperatures above 200 °C.
Good abrasion and cutting resistance.
Smooth grip profile. Length 350 mm. Standard size 10.

**Applications:** handling chemicals and petrochemicals, for degreasing and coating etc.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **XY15.1** | 1 | 47,00 |




Cat. II

## Clavies™ autoclavable gloves

Acc. to EN 420, EN 388, and EN 407. Made of 100 % cotton terry cloth.
Anatomic glove cut. Temperature stable up to 232 °C.
Ideal when handling autoclavable material. Machine washable.
Can be tumble-dried at max. 70 °C.

| Total length (mm) | Cuff length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 330 | 130 | **Y351.1** | 1 | 38,70 |
| 470 | 280 | **Y352.1** | 1 | 53,70 |



NEU
NOUVEAU
NEW

Cat. III

## Neoprene gloves Scorpio®

By Ansell. Acc. to EN 420, EN 374, EN 388 (3222), EN 407 (32XX4X) and EN 511 (121). AQL 1,0. black, Neoprene-coated protective gloves with **foam insulation**.

- For protection against a wide range of bases, acids, alcohols, and diluted aqueous solvents
- Also suitable for working in hot and cold conditions. Suitable for short-time contact with liquids at temperatures from max. 180 °C to min. -25 °C. Good abrasion-resistance and cut-resistance. Antistatic acc. to EN 1149
- Roughened handle profile for enhanced grip

**Please note:**
**Gloves are not suitable for working above 200 °C.**
**Do not use when working with or near to open flames.**

**Applications:** Steam-jet and maintenance work, anodizing.
Working with water baths. Handling objects with hot or cold chemicals.

**Scorpio 19-024**

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 8 | 450 | **HLP4.1** | 1 | 71,50 |
| 10 | 450 | **HLP5.1** | 1 | 71,50 |

**Scorpio 19-026**

| Size | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 8 | 660 | **HLP6.1** | 1 | 83,65 |
| 10 | 660 | **HLP7.1** | 1 | 83,65 |

# Heat resistant gloves





Cat. III

## KarboTECT® heat resistant gloves

Acc. to EN 420. EN 388, EN 407. Made of Para-Aramid, carbon and wool. Heavy knit.

- Good thermal insulation
- High cutting resistance
- Good and tight fit for exact and precise handling
- Good wearing comfort thanks to cotton inner glove
- Reduced static charging

**Applications:** laboratories, heating and drying ovens, metal production and metalworking, commercial bakeries, retooling hot machines, refineries, all dry contact heat environments.

**With knitted welt**, length 250 mm.
Good thermal protection up to 250 °C. Washable up to 30 °C.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **Y431.1** | 1 | 35,60 |
| 9 | **Y432.1** | 1 | 35,60 |
| 10 | **Y433.1** | 1 | 35,60 |

**With leather cuff**, length 390 mm.
This combination allows work to be carried out at temperatures of up to 350 °C and protects large areas of the lower arm.
Suitable for use with foodstuffs.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 7 | **TT84.1** | 1 | 52,15 |
| 9 | **TT85.1** | 1 | 52,15 |
| 10 | **TT86.1** | 1 | 52,15 |



Cat. III

## Leather-aluminium heat resistant gloves

By JUTEC®. Acc. to EN 388, EN 407.
Mitten. Outer hand and cuff of flexible aluminium coated Preox-Aramid fabric, inner hand of heat resistant Sebatan leather.
Very soft and flexible. Protection against:

- Radiated heat to 1000 °C
- Contact heat up to 100 °C for at least 15 sec
- Contact heat (spatter) to 250 °C for a limited time

Standard size 10. Length 38 cm.

**Applications:** light welding work, foundries, metalworking, ceramic furnaces.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **TT82.1** | 1 | 67,55 |



Cat. II

## Charguard®-heat resistant gloves

Acc. to EN 420, EN 388 and EN 407. In conformity with 21CFR, 170-199.

- Special, non-woven heat-insulating lining with heat-resistant coating
- Textured surface
- Slip-on design for easy use
- Heat resistant up to 260 °C
- Washable to 65 °C
- Length 355 mm

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| S | **LY89.1** | 1 | 19,70 |
| M | **LY90.1** | 1 | 19,70 |
| L | **LY91.1** | 1 | 19,70 |
| XL | **LY92.1** | 1 | 19,70 |



Cat. III

## Heat resistant gloves providing protection to 500 °C

By JUTEC®. Acc. to EN 388, EN 407, EN 420.
Made of Aramid fabric. Cut resistant, abrasion resistant, double insulated.
Good mechanical strength even at high temperatures.
Usable on both sides.
Protection against contact heat to:

- 350 °C: max. 20 sec
- 500 °C: max. 12 sec

Standard size 10. Length 30 cm.

| Type | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| Mitten | **TX89.1** | 1 | 39,60 |
| 5-finger glove | **HE73.1** | 1 | 47,55 |

# Heat resistant gloves



Cat. III

## Aramid-aluminium heat resistant gloves

By JUTEC®. Acc. to EN 388, EN 407.
5-finger glove. Aluminised Preox-Aramid fabric outer hand and cuff, Aramid palm. Cut and abrasion resistant with insulation.
Protection against:
- Radiated heat to 1000 °C
- Contact heat up to 100 °C for at least 15 sec
- Contact heat (spatter) to 250 °C for a limited time

Length 380 cm.

**Applications:**
foundries, welding shop, furnace construction, metalworking, container construction.

| Size | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|
| 9 | **APX6.1** | 1 | 79,20 |
| 10 | **TT81.1** | 1 | 79,20 |



Cat. III

## Preox aramid-aluminium heat resistant gloves

By JUTEC®. Acc. to EN 388, EN 407.
5-finger gloves. Outer shell and cuff of Preox aramid fabric with aluminium, palm of Preox aramid, carbon fibre reinforced. Cut and abrasion resistant with insulation. Soft aluminium coating, good handling.
Protection against:
- Radiated heat up to 1000 °C
- Min. 15 sec resistance to contact heat at 250 °C, short-time spatter resistance up to 600 °C

Standard size 10, length 380 mm.
**Applications:** foundries, furnace construction, glass processing, metal construction, etc.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **CNH6.1** | 1 | 91,30 |



## Isotemp®-R-mittens

Asbestos-free, acc. to EN 407, EN 420, with raw leather on palm.
The back of the hand and the 15 cm long cuffs are made of ISOTEMP®. Thick wooly fur lining. Reliable secure protection of hands and lower arms, excellent grip on smooth surfaces. Largely waterproof and stable against contact temperature up to +300 °C and radiation heat up to +600 °C.
Total length 35 cm.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **0745.1** | 1 | 58,05 |



Cat. III

## Heat protection gloves for max. 650 °C

By JUTEC®. Acc. to EN 388, EN 407, EN 420. 5-finger gloves made of preox-aramid blended fibres, can withstand mechanical stress, cut-resistant. Heat protection up to 650 °C.
Protect against exposure to max. contact heat:
- 350 °C: max. 19 sec
- 500 °C: max. 11 sec

One-size 10, length 30 cm.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **HE74.1** | 1 | 63,45 |

# Heat resistant gloves



Cat. III

## Heat protection gloves for max. 900 °C

By JUTEC®. Acc. to EN 388, EN 407, EN 420, EN 531. Mittens made of a fabric with a special high-temperature coating, can withstand mechanical load capacity, cut-resistant.
Protect against exposure contact heat:
- 500 °C: max. 16 sec
- 900 °C: max. thermal resistance

Also protects against small metal splashes as well as liquid iron and aluminium. Thumb on side, can be worn on both hands.
One-size 10, length 30 cm.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **HE75.1** | 1 | 77,20 |



Cat. III

## Welder gloves WorkGuard™

By Ansell. Acc. to EN 388, EN 407, EN 420, EN 12477 type A.
Rugged 5-finger leather glove with jersey liner and Kevlar stitching®.
With protective cuff.
Special-purpose glove for heavy-duty work with excellent protection against molten metal spatter. Also suitable for general thermal protection.
Outstanding durability and excellent protection against cutting.
Reinforced palm for even higher abrasion resistance.
**For thermal protection in many types work**, e.g. welding work, machine operation and work in environments where there is a danger of molten metal spatter.

Standard size 10, length 41 cm.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **XE56.1** | 1 | 16,15 |



Cat. III

## Heat protection gloves for max. 1100 °C

By JUTEC®. Acc. to EN 388, EN 407, EN 420. Mittens made of silicate fabric, 3-fold special isolation. Marginal mechanical load capacity, very flexible even at high temperatures, soft surface, doesn't stick to hot glass.
Protects against exposure contact heat:
- 500 °C: max. 24 sec
- 1100 °C: max. thermal resistance

One-size 10, length 40 cm.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **HE76.1** | 1 | 135,45 |



## Sekuroka®-heat protections

Ideal for manipulating hot or frozen goods.
Made of silicone rubber, temperature stable from -60 to +250 °C.
No slipping due to rubber burl surface.
With loop to hang up glove.

| Type | Size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Type F finger | 137 x 30 | **4694.1** | 1 | 12,45 |
| Type M hand | 170 x 86 | **4693.1** | 1 | 20,00 |


- ▶ Heat protection aprons see page 659
- ▶ Safety glasses IR see page 566



## Sekuroka®-lab coats

Made of blended fabrics (65 % polyester, 35 % cotton).

- **Concealed press-stud buttons** - can be ripped open quickly in an emergency
- **Pen pocket** - pens or spatulas don't fall out when bending
- **Sleeve ends can be adjusted 3 times** - narrower cuffs allow gloves to be pulled on more easily and stop the sleeves from being caught on corners or other objects.
- 2 side pockets - the right pocket as a **double pocket, one of which has a zip**
- The back seam has a practical vent, no belt on back

**Properties:**

- Crease-resistant
- Comfortable to wear
- Easy-to-clean
- Washable at max. 60 °C, can be dry-cleaned
- German sizes
- Fabric weight approx. 215 g/m²

**For ladies - length 114 cm**

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 36 | **T410.1** | 1 | 42,95 |
| 38 | **T411.1** | 1 | 42,95 |
| 40 | **T412.1** | 1 | 42,95 |
| 42 | **T413.1** | 1 | 42,95 |
| 44 | **T414.1** | 1 | 42,95 |
| 46 | **T415.1** | 1 | 42,95 |
| 48 | **T416.1** | 1 | 42,95 |

**For men - length 120 cm**

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 46 | **T417.1** | 1 | 45,10 |
| 48 | **T418.1** | 1 | 45,10 |
| 50 | **T419.1** | 1 | 45,10 |
| 52 | **T420.1** | 1 | 45,10 |
| 54 | **T421.1** | 1 | 45,10 |
| 56 | **T422.1** | 1 | 45,10 |
| 58 | **T423.1** | 1 | 45,10 |



## Women's and men's coats UNISEX, reversible collar

By BP®. **With reversible collar**. Concealed buttons, long sleeve, 1 breast pocket, 2 side pockets, with a slit at the back. Length 103 cm. Öko-Tex Standard 100.

**100 % cotton**

Fabric weight approx. 205 g/m². Easy-care, washable up to 95 degrees, dry cleaning possible.

| Size | equivalent to women's size | equivalent to men's size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| XXS | - | 38 | **ELY1.1** | 1 | 33,35 |
| XS | 32/34 | 40/42 | **KT03.1** | 1 | 37,85 |
| S | 36/38 | 44/46 | **KT04.1** | 1 | 37,85 |
| M | 40/42 | 48/50 | **KT05.1** | 1 | 37,85 |
| L | 44/46 | 52/54 | **KT06.1** | 1 | 37,85 |
| XL | 48/50 | 56/58 | **KT07.1** | 1 | 37,85 |
| XXL | 52/54 | 60/62 | **KT08.1** | 1 | 37,85 |
| 3XL | 56/58 | 64/66 | **ELY2.1** | 1 | 33,35 |

**Mixtures of 65 % polyester / 35% cotton**

Fabric weight approx. 215 g/m². Robust, suitable for industrial washing.

| Size | equivalent to women's size | equivalent to men's size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| XS | 32/34 | 40/42 | **ELY3.1** | 1 | 33,35 |
| S | 36/38 | 44/46 | **ELY4.1** | 1 | 33,35 |
| M | 40/42 | 48/50 | **ELY5.1** | 1 | 33,35 |
| L | 44/46 | 52/54 | **ELY6.1** | 1 | 33,35 |
| XL | 48/50 | 56/58 | **ELY7.1** | 1 | 33,35 |
| XXL | 52/54 | 60/62 | **ELY8.1** | 1 | 33,35 |



## Women's and men's coats UNISEX, stand-up collar

By BP®. **With stand-up collar**. Concealed buttons, long sleeve, 1 breast pocket, 2 side pockets, with a slit at the back. Length 103 cm. Öko-Tex Standard 100.

**100 % cotton**
Fabric weight approx. 205 g/m². Easy-care, washable up to 95 degrees, dry cleaning possible.

| Size | equivalent to women's size | equivalent to men's size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| XXS | - | 38 | **ELY9.1** | 1 | 33,90 |
| XS | 32/34 | 40/42 | **ENA0.1** | 1 | 33,90 |
| S | 36/38 | 44/46 | **ENA1.1** | 1 | 33,90 |
| M | 40/42 | 48/50 | **ENA2.1** | 1 | 33,90 |
| L | 44/46 | 52/54 | **ENA3.1** | 1 | 33,90 |
| XL | 48/50 | 56/58 | **ENA4.1** | 1 | 33,90 |
| XXL | 52/54 | 60/62 | **ENA5.1** | 1 | 33,90 |
| 3XL | 56/58 | 64/66 | **ENA6.1** | 1 | 33,90 |

**Mixtures of 65 % polyester / 35 % cotton**
Fabric weight approx. 215 g/m². Robust, suitable for industrial washing.

| Size | equivalent to women's size | equivalent to men's size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| XS | 32/34 | 40/42 | **ENA7.1** | 1 | 32,20 |
| S | 36/38 | 44/46 | **ENA8.1** | 1 | 32,20 |
| M | 40/42 | 48/50 | **ENA9.1** | 1 | 32,20 |
| L | 44/46 | 52/54 | **ENC0.1** | 1 | 32,20 |
| XL | 48/50 | 56/58 | **ENC1.1** | 1 | 32,20 |
| XXL | 52/54 | 60/62 | **ENC2.1** | 1 | 32,20 |




## HACCP-Unisex laboratory coats

By BP®. Acc to. DIN 10524:2004 and HACCP.
**With inner pockets.** Concealed stud fastenings, 1 inside breast pocket, 2 inside side pockets, long sleeves with adjustable sleeve vents, turn-down collar .
60 % cotton, 40 % polyester, fabric weight approx. 200 g/m².
Suitable for industrial washing at up to 95 °C. Length 103 cm. Colour: white.

| Size | equivalent to women's size | equivalent to men's size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| XS | 32/34 | 40/42 | **XE73.1** | 1 | 35,25 |
| S | 36/38 | 44/46 | **XE74.1** | 1 | 35,25 |
| M | 40/42 | 48/50 | **XE75.1** | 1 | 35,25 |
| L | 44/46 | 52/54 | **XE76.1** | 1 | 35,25 |
| XL | 48/50 | 56/58 | **XE77.1** | 1 | 35,25 |
| XXL | 52/54 | 60/62 | **XE78.1** | 1 | 35,25 |




**Programme extension!**

## Work coats

By UVEX. Long-sleeved with reversible collar. Öko-Tex Standard 100.
Colour: Cornflower blue.

① **Ladies work coats**
Slightly tailored. Concealed metal stud fastenings. 2 sewn-on side pockets, left-hand breast pocket. Adjustable cuffs. **100 % cotton**.
Fabric weight 210 g/m². Length approx. 105 cm. Washable up to 60 °C.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 36 | **NN99.1** | 1 | 45,05 |
| 38 | **NP00.1** | 1 | 45,05 |
| 40 | **NP01.1** | 1 | 45,05 |
| 42 | **NP02.1** | 1 | 45,05 |
| 44 | **NP03.1** | 1 | 45,05 |
| 46 | **NP04.1** | 1 | 45,05 |
| 48 | **NP05.1** | 1 | 50,00 |
| 50 | **NP06.1** | 1 | 50,00 |
| 52 | **NP07.1** | 1 | 50,00 |
| 54 | **NP08.1** | 1 | 50,00 |

② **Men's work coats**
With short side slits. Concealed metal stud fastenings. 1 left-hand external breast pocket, 1 right breast pocket, 2 side pockets. Adjustable cuffs.
**65 % Polyester, 35 % cotton**.
Fabric weight 245 g/m². Length approx. 96 cm. Washable up to 95 °C.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 40/42 | **NP09.1** | 1 | 38,40 |
| 44/46 | **NP10.1** | 1 | 38,40 |
| 48/50 | **NP11.1** | 1 | 38,40 |
| 52/54 | **NP12.1** | 1 | 38,40 |
| 56/58 | **NP13.1** | 1 | 40,75 |
| 60/62 | **NP14.1** | 1 | 40,75 |
| 64/66 | **NP15.1** | 1 | 40,75 |

③ **Men's work coats**
With short side slits. Concealed buttons. 1 left-hand external breast pocket, 1 right breast pocket, 2 side pockets. Straight cuffs. **100 % cotton**.
fabric weight 240 g/m². Length approx. 96 cm. Washable up to 95 °C.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 44/46 | **HHX6.1** | 1 | 23,45 |
| 48/50 | **HHX7.1** | 1 | 23,45 |
| 52/54 | **HHX8.1** | 1 | 23,45 |
| 56/58 | **HHX9.1** | 1 | 23,45 |
| 60/62 | **HHY0.1** | 1 | 23,45 |







## ① Ladies' coats 4866

By BP®.
- Stand-up collar with V-neck
- Body-fitting cut
- Hidden snap fasteners with one visible fastener
- 2 side pockets and 1 buzzer pocket
- Length 90 cm
- 100 % cotton, Öko-Tex Standard 100
- Fabric weight approx. 205 g/m²
- **Suitable for industrial washing**, boil-proof and easy care

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 36 | **PE25.1** | 1 | 41,55 |
| 38 | **PE26.1** | 1 | 41,55 |
| 40 | **PE27.1** | 1 | 41,55 |
| 42 | **PE28.1** | 1 | 41,55 |
| 44 | **PE29.1** | 1 | 41,55 |
| 46 | **PE30.1** | 1 | 41,55 |
| 48 | **PE31.1** | 1 | 41,55 |
| 50 | **PE32.1** | 1 | 41,55 |
| 52 | **PE33.1** | 1 | 41,55 |

## ② Ladies' coats 1699

By BP®. Made of 50 % cotton, 50 % polyester. With reversible collar. Concealed buttons, 1 breast pocket, 2 side pockets, with a slit at the back and back strap. Length 105 cm. Body-fitting.
Fabric weight: approx. 215 g/m².
**Industrial washable**, boil-proof and easy care.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 32 | **PT46.1** | 1 | 41,75 |
| 34 | **PT47.1** | 1 | 41,75 |
| 36 | **PT48.1** | 1 | 41,75 |
| 38 | **PT49.1** | 1 | 41,75 |
| 40 | **PT50.1** | 1 | 41,75 |
| 42 | **PT51.1** | 1 | 41,75 |
| 44 | **PT52.1** | 1 | 41,75 |
| 46 | **PT53.1** | 1 | 41,75 |
| 48 | **PT54.1** | 1 | 41,75 |
| 50 | **PT55.1** | 1 | 41,75 |
| 52 | **PT56.1** | 1 | 41,75 |
| 54 | **PT57.1** | 1 | 41,75 |



## Ladies' coats 1111

By BP®. With stand-up collar and hidden buttons, sewed on buttons. Centre seam in the back with vent. Length 105 cm. 100 % cotton, Öko-Tex Standard 100. Boil proof, easy to iron and **suitable for industrial wear**, extremely easy-care. German sizes. Fabric weight approx. 230 g/m².

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 36 | **EE17.1** | 1 | 61,20 |
| 38 | **EE18.1** | 1 | 61,20 |
| 40 | **EE19.1** | 1 | 61,20 |
| 42 | **EE20.1** | 1 | 61,20 |
| 44 | **EE21.1** | 1 | 61,20 |
| 46 | **EE22.1** | 1 | 61,20 |
| 48 | **EE23.1** | 1 | 61,20 |
| 50 | **KE01.1** | 1 | 63,70 |
| 52 | **KE02.1** | 1 | 63,70 |



## Ladies' coats 1108

By BP®. With lapel and concealed buttons, buttons are permanently sewn on, centre seam on back with slit, length 105 cm.
100 % cotton, Öko-Tex Standard 100. May be boiled, easy to iron and **ideal for industrial use,** easy-care. Fabric weight approx. 230 g/m².

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 36 | **KE10.1** | 1 | 62,90 |
| 38 | **KE11.1** | 1 | 62,90 |
| 40 | **KE12.1** | 1 | 62,90 |
| 42 | **KE13.1** | 1 | 62,90 |
| 44 | **KE14.1** | 1 | 62,90 |
| 46 | **KE15.1** | 1 | 62,90 |
| 48 | **KE16.1** | 1 | 62,90 |
| 50 | **KE17.1** | 1 | 62,90 |
| 52 | **KE18.1** | 1 | 62,90 |




## ① Men's lab coats

By BP®. With concealed stud fasteners, 1 breast pocket, 1 inner pocket and 2 side pockets, length 96 cm. 65 % cotton, 35 % polyester, Öko-Tex Standard 100. Easy-care, washable at 95 °C.
Fabric weight approx. 230 g/m².

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 48/50 | **KC56.1** | 1 | 48,70 |
| 52/54 | **KC57.1** | 1 | 48,70 |
| 56/58 | **KC58.1** | 1 | 48,70 |
| 60/62 | **KC59.1** | 1 | 48,70 |

## ② Men's lab coats

By BP®. Made of 100 % cotton Öko-Tex Standard 100.
With concealed buttons, 1 breast pocket, 1 inner pocket and 2 side pockets (including 1 with multipurpose pocket). Length 96 cm.
Fabric weight approx. 230 g/m².

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 48/50 | **PT58.1** | 1 | 44,65 |
| 52/54 | **PT59.1** | 1 | 44,65 |
| 56/58 | **PT60.1** | 1 | 44,65 |
| 60/62 | **PT61.1** | 1 | 44,65 |



## Ladies' tunics

By BP®. **½ arm.** With V-neck, no collar rear web. Length 75 cm.
**Suitable for industrial washing**, boil-proof and easy care.
Made of 65 % polyester, 35 % cotton, Öko-Tex Standard 100.
With snap fasteners. 1 breast pocket and 2 side pockets.
Fabric weight approx. 215 g/m².

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 34 | **PE14.1** | 1 | 26,35 |
| 36 | **PE15.1** | 1 | 26,35 |
| 38 | **PE16.1** | 1 | 26,35 |
| 40 | **PE17.1** | 1 | 26,35 |
| 42 | **PE18.1** | 1 | 26,35 |
| 44 | **PE19.1** | 1 | 26,35 |
| 46 | **PE20.1** | 1 | 26,35 |
| 48 | **PE21.1** | 1 | 26,35 |
| 50 | **PE22.1** | 1 | 26,35 |
| 52 | **PE23.1** | 1 | 26,35 |
| 54 | **PE24.1** | 1 | 26,35 |



## Men's lab coats

By BP®. With lapel and hidden, sewn on buttons and belt on back.
Length 110 cm. 100 % cotton, Öko-Tex Standard 100.
Boil-proof, easy to iron and **suitable for industrial wear**, easy-care.
German sizes. Fabric weight approx. 230 g/m².

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 46 | **EC50.1** | 1 | 66,15 |
| 48 | **EC51.1** | 1 | 66,15 |
| 50 | **EC52.1** | 1 | 66,15 |
| 52 | **EC53.1** | 1 | 66,15 |
| 54 | **EC54.1** | 1 | 66,15 |
| 56 | **EC55.1** | 1 | 66,15 |
| 58 | **KE05.1** | 1 | 68,30 |
| 60 | **KE06.1** | 1 | 68,30 |



## Ladies' and men's trousers

By BP®. Comfortable fit: elasticised waistband with integrated drawstring and 2 side pockets. Hardwearing blended fabric: 50 % cotton, 50 % polyester. Soft on the inside, smooth on the outside and resistant.
**Suitable for industrial laundering** up to 95 °C. Inside leg 82 cm.
Weight of fabrics approx. 215 g/m².

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| XS | **EE24.1** | 1 | 27,35 |
| S | **EE25.1** | 1 | 27,35 |
| M | **EE26.1** | 1 | 27,35 |
| L | **EE27.1** | 1 | 27,35 |
| XL | **EE28.1** | 1 | 27,35 |
| XXL | **EE29.1** | 1 | 27,35 |

# Protective clothing

## Protective clothing - type overview

- Type 1: Gas tight protective clothing
- Type 2: Non gas tight protective clothing
- Type 3: Liquid tight protective clothing EN 14605
- Type 4: Splashproof protective clothing EN 14605
- Type 5: Particle tight protective clothing Protection against solid airborne particles EN ISO 13982
- Type 6: Limited splashproof protective clothing Protection against chemical splashes EN 13034
- Protective clothing against pathogens EN 14126
- Protection against contamination by radioactive particles (no protection against radioactive radiation) EN 1073-2
- Protective clothing with antistatic properties EN 1149-1
- Flame protection EN ISO 14116




## TYCHEM®-overalls C and F

Types 3, 4, 5 and 6 are in compliance with European standards for protective clothing against chemicals.
The special PE-spun fleece is extremely comfortable to wear.

- 100 % particle-tight
- Non-fluffing, tear- and abrasionproof
- Antistatic in acc. with EN 1149-1
- With hood, and elasticated face, arms, legs and waist
- Double zip covering can be removed by unsticking
- With special chin covering for optimal sealing of respiratory protection masks
- 100 % tight seams

| Model | ① TYCHEM® C, yellow | ② TYCHEM® F, orange |
|---|---|---|
| Protection against | many conc. anorganic acids, alkaline and saline solutions | many **organic** chemicals; many conc. anorganic acids, alkaline and saline solutions |
| Impermeable to splashes | **up to max. 2 bar** | **up to max. 5 bar** |
| Material | coated PE-spun fleece | laminated PE-spun fleece |
| Weight | 83.2 g/m² | 120 g/m² |
| Thickness | 183 µm | 206 µm |

### ① Model TYCHEM® C, yellow

| Size | Body size (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| M | 168-176 | **AK28.1** | 1 | 36,35 |
| L | 174-182 | **AK29.1** | 1 | 36,35 |
| XL | 180-188 | **AK30.1** | 1 | 36,35 |
| XXL | 186-194 | **AK31.1** | 1 | 36,35 |

### ② Model TYCHEM® F, orange

| Size | Body size (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| M | 168-176 | **AK33.1** | 1 | 60,75 |
| L | 174-182 | **AK34.1** | 1 | 60,75 |
| XL | 180-188 | **AK35.1** | 1 | 60,75 |
| XXL | 186-194 | **AK36.1** | 1 | 60,75 |

**Fields of application:**

**TYCHEM® C**

- Handling powdery hazardous materials
- Working with anorganic acids and alkaline solutions
- Protection against radioactive particles
- Handling blood and viruses transmitted through blood e.g. hepatitis and HIV
- Treating crops and plants by pressure-spraying agrochemichals

**TYCHEM® F**

- Handling solid, liquid or gaseous hazardous substances
- Decontamination
- Disposal of hazardous chemicals
- When working with hazardous substances under pressure
- Checking and securing areas exposed to unknown substances




## Overalls decontex® CONCEPT

Type 4. Acc. to EN 14605 (chemically resistant).
Antistatic acc. to EN 1149-1. Flame-retarding acc. to EN ISO 14116 (Index 1). Made of elastomerised special PVC. Light, flexible and comfortable. Washable at 40 °C. Seams are welded for liquid proof. With integrated hood, front zip covered with velcro fastening and protective bib. Sleeve bottoms feature inner safety catch and trouser legs have a velcro fastening. German sizes.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| M (50/52) | **P787.1** | 1 | 156,95 |
| L (54/56) | **P788.1** | 1 | 156,95 |
| XL (58/60) | **P789.1** | 1 | 164,50 |
| XXL (62/64) | **P790.1** | 1 | 170,95 |







## TYVEK®-overalls

Special PE-spun fleece, extremely comfortable to wear.
- Lint-free, suitable for cleanroom classes ISO 7/8 (C/D acc. to GMP)
- Tear- and abrasionproof
- Light and flexible
- High protection against splashing, aerosols and particles (>1 µm)
- Weight approx. 41 g/m², 130 µm thick
- Antistatic in accordance with EN 1149-1

**① Model Classic Xpert, white**
This model is qualified under types 5 and 6 in accordance with the European Standards for protective clothing against chemicals. The hood, arm, leg, and waist holes have both elastic and covered zipper seals. Antistatic, cellular.

| Size | Body size (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S | 162-170 | **AK17.1** | 1 | 11,80 |
| M | 168-176 | **AK18.1** | 1 | 11,80 |
| L | 174-182 | **AK19.1** | 1 | 11,80 |
| XL | 180-188 | **AK20.1** | 1 | 11,80 |
| XXL | 186-194 | **AK21.1** | 1 | 11,80 |

**② Model Classic Plus, white**
Types 4, 5 and 6 in accordance with the European Standards for protective clothing against chemicals. Similar to Model Classic, but with velcro fastening on the covered zip. With special chin covering for optimal sealing of respiratory protection masks. 100 % tight seams.

| Size | Body size (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| M | 168-170 | **AK23.1** | 1 | 13,95 |
| L | 174-182 | **AK24.1** | 1 | 13,95 |
| XL | 180-188 | **AK25.1** | 1 | 13,95 |
| XXL | 186-194 | **AK26.1** | 1 | 13,95 |

## 3M®-protective suits

By 3M. Type 5/6, protection against non-hazardous dusts and limited spray-tightness. Made of soft spunbonded polypropylene and a polyethylene film laminate.
Antistatic on both sides, in accordance with EN 1149.
- Elasticated at hips and ankles for comfort fit and improved mobility
- Two-way zip with taped flap
- Low-lint
- Colour: white

**Series 4510**
Elasticated inserts at hips, arms and wrists, 2-ply hood.
**Applications:** light activities in industrial firms and craft enterprises, light industrial cleaning, machine maintenance and inspection work.

| Size | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S | 4510S | **HAL0.1** | 1 | 7,00 |
| M | 4510M | **HAL1.1** | 1 | 7,00 |
| L | 4510L | **HAL2.1** | 1 | 7,00 |
| XL | 4510XL | **HAL3.1** | 1 | 7,00 |
| XXL | 45102XL | **HAL4.1** | 1 | 7,00 |
| L | 45103XL | **HAL5.1** | 1 | 7,50 |

**Series 4545**
knitted cuffs on the arms for improved comfort. 3-part hood for improved fit. Reinforced crotch.
**Applications:** insulating work, cement production, grinding/sanding and polishing, light industrial cleaning, machine maintenance, work in the pharmaceutical industry.

| Size | 3M No. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S | 4545S | **HAL6.1** | 1 | 9,80 |
| M | 4545M | **HAL7.1** | 1 | 9,80 |
| L | 4545L | **HAL8.1** | 1 | 9,80 |
| XL | 4545XL | **HAL9.1** | 1 | 9,80 |
| XXL | 45452XL | **HAN0.1** | 1 | 9,80 |
| L | 45453XL | **HAN1.1** | 1 | 10,45 |

**Fields of application:**

**TYVEK® Model Classic Xpert**
- Handling solid hazardous materials
- Laboratory work, food industry, pharmaceuticals industry, agriculture
- Police investigations
- Decontamination
- Pest and weed control
- Agricultural chemistry
- Clean rooms
- Nuclear power stations

**TYVEK® Model Classic Plus**
- Same as Model Classic Xpert
- All areas of application which require additional protection through tight seams (particles rejected by the material cannot penetrate through the seam holes)

# Protective clothing







## uvex sil-Wear disposable overalls

By UVEX.
- Hood is highly compatible with protective face masks
- Middle finger loops prevent the sleeves from riding up, e.g. during overhead work
- Silicone-free
- Antistatic to EN 1149-1
- **Suitable for clean rooms**

① **Type 5/6, white/lime**

Breathable PE laminate with air-permeable SMS back for excellent moisture management and breathability. With bound seams for effective protection against chemical splashes and particles.

**Uses:**
- Working with powdery chemicals
- Painting and lacquering
- Glass fibre production and processing
- General maintenance work

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| M | **PP20.1** | 1 | 13,55 |
| L | **PP21.1** | 1 | 13,55 |
| XL | **PP22.1** | 1 | 13,55 |
| XXL | **PP23.1** | 1 | 13,55 |

② **Type 4B, 5, 6, acc. to EN 14126, protection against pathogens, white/orange**

Made of breathable, lightweight and flexible material for wear comfort. Self-adhesive zip cover and bound seams provide protection against penetration of liquid aerosols and particles.
Tested for **protection against pesticides according** to DIN 32781.

**Uses:**
- Handling of low-toxic inorganic chemicals
- Industrial cleaning work using low pressures (spray)
- Shipbuilding and automobile manufacturing
- Handling of paints and lacquers
- Agriculture and horticulture
- Electronics

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S | **PP25.1** | 1 | 15,40 |
| M | **PP26.1** | 1 | 15,40 |
| L | **PP27.1** | 1 | 15,40 |
| XL | **PP28.1** | 1 | 15,40 |
| XXL | **PP29.1** | 1 | 15,40 |
| XXXL | **PP30.1** | 1 | 15,40 |






## Overall KLEENGUARD® A50

Type 5 and 6. Protects against chemical splashes and particles.
Antistatic acc. to EN 1149-1.
- Low-fluffing and with inner seams to prevent contamination through fibres
- Silicone-free, ideal for spray-painting task.
- Two-way zip for easier access to clothing worn underneath
- Cellular material for reduced heat build up
- With special hood for masks and good freedom of movement
- Robust triple whip stitches with high resistance to tear

**Ideal for following applications:** chemical, pharmaceutical and processing industry, supply and disposal, electronics, agriculture and spray-painting processes.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| M (46-50) | **0455.1** | 1 | 24,55 |
| L (50-54) | **0497.1** | 1 | 24,55 |
| XL (54-58) | **0498.1** | 1 | 24,55 |



## KIMTECH SCIENCE® A7 Lab Coat

Acc. to EN 13034 type PB [6], part-body protective clothing with limited splash protection. Antistatic acc. to EN 1149-1.
Made from breathable, textile-like SMS-material.
Triple stitched seams. With attached pockets and buttons.
Durable and tear resistant, comfortable to wear. Silicone free.

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S | **2144.1** | 5 | 82,75 |
| M | **2145.1** | 5 | 82,75 |
| L | **2146.1** | 5 | 82,75 |
| XL | **2147.1** | 5 | 82,75 |





## TYVEK®-lab coats

By DuPont. Made of TYVEK® (spunbond polyethylene fibre).
With stand-up collar and inner seams. Colour: white. Lint-free and antistatic.
Permeation barrier protection against particles and fibres >1 µm.
**Applications:** laboratories, non-critical environments, pharmaceuticals production, electronics, food processing.

**With 5 press studs and 3 pockets**

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| M | **2142.2** | 10 | 68,60 |
| L | **NK08.1** | 10 | 68,65 |
| XL | **2143.2** | 10 | 68,60 |
| XXL | **NK09.1** | 10 | 68,65 |

**With zipper, 2 pockets and elasticated cuffs**

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S | **NK10.1** | 10 | 68,45 |
| M | **NK11.1** | 10 | 68,45 |
| L | **NK12.1** | 10 | 68,45 |
| XL | **NK13.1** | 10 | 68,45 |
| XXL | **NK14.1** | 10 | 68,45 |



## Sekuroka®-disposable coats

Made of **PP**. white, 40 g/m². With snap-fasteners. Individually wrapped.

**With 2 pockets, straight cuffs**

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| L | **KE77.1** | 10 | 12,05 |
| XL | **KE78.1** | 10 | 12,05 |
| XXL | **KE79.1** | 10 | 12,05 |

**Without pockets, elasticated cuffs**

| Size | Art. No. | Pack Qty. | € |
|---|---|---|---|
| L | **KE80.1** | 10 | 12,05 |
| XL | **KE81.1** | 10 | 12,05 |
| XXL | **KE82.1** | 10 | 12,05 |





## ① Sekuroka®-aprons

Made of PP with PE-coating. Water repellent.
Anti-static, lint free and tearproof. Skin-friendly.

| Length (mm) | Width (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 96,5 | 98 | **A246.1** | 10 | 21,00 |

## ② TYVEK®-aprons

By DuPont. Made from specially spun, non-woven PE material,
weight 41 g/m², white. Lint-free. Antistatic.
Temperature stable up to max. 134 °C.

| Length (mm) | Width (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 90 | 70 | **HY31.1** | 25 | 74,65 |



## Sekuroka®-disposable aprons

Made of PE. Colour white or blue. Waterproof.

| Colour | Thickness (µm) | Width (cm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| white | 25 | 75 | 125 | **KE83.1** | 50 | 7,50 |
| white | 35 | 75 | 145 | **KE84.1** | 50 | 11,80 |
| blue | 25 | 75 | 145 | **KE85.1** | 50 | 8,10 |
| blue | 35 | 75 | 145 | **KE86.1** | 50 | 11,80 |

# Protective clothing



NEU
NOUVEAU
NEW

## PU laboratory and work aprons

Pinafore and straps made of polyurethane.
- Durable and multifunctional
- Water repellent
- Smooth, washable surface
- Metal lugs at connection points
- Strap length individually adjustable
- Adjustable click lock at straps
- Material thickness of 0.30 mm.

| Colour | Length (mm) | Width (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| white | 110 | 90 | **HNE1.1** | 1 | 15,95 |
| blue | 110 | 90 | **HNE2.1** | 1 | 15,95 |
| white | 130 | 90 | **HNE3.1** | 1 | 15,95 |
| blue | 130 | 90 | **HNE4.1** | 1 | 15,95 |



## PVC-aprons

By Ansell. Acc. to EN 340 and EN 14605:2005. Neck and waist ties. Made of flexible, robust PVC. Highly resistant against many chemicals, fats and oils. Extremely abrasion proof. With welded PVC eyelets for longer durability. Manufactured exclusively from FDA-approved materials and therefore suitable for the food industry. Watertight.
Dimensions: L 112 x W 84 cm.

| Thickness (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,508 | green | **L073.1** | 3 | 29,20 |



NEU
NOUVEAU
NEW

## Hygiene work aprons

Pinafores made of polyester/cotton blended fabric with polyurethane coating.
- Durable and multifunctional
- Water-resistant and liquid-resistant
- Smooth, washable surface
- Neck straps and ties in the waist made of PU
- Hygienic because washable up to 90 °C
- Fabric weight approx. 260 g/m$^2$

| Colour | Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| red/white striped | 110 | 75 | **HNC9.1** | 1 | 23,60 |
| dark blue/white striped | 110 | 75 | **HNE0.1** | 1 | 23,60 |



## TYCHEM®-aprons, chemical resistant

By DuPont. Partial body chemical protective clothing, category III, type PB [3] to EN 14605:2005+A1:2009.
Fastening straps at the neck and waist.
Standard size, width 70 cm, length 108 cm.

**TYCHEM® C**: Protection against inorganic chemicals.
**TYCHEM® F**: Protection against organic chemicals.

| Material | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| TYCHEM® C | yellow | **NK15.1** | 5 | 28,95 |
| TYCHEM® F | grey | **NK16.1** | 5 | 40,65 |



## TYCHEM® C-aprons with sleeves

By DuPont. Acc. to EN 14605:2005+A1:2009 Type PB[3].
Part-body chemical protective clothing. Surface weight 83 g/m².
Lab coat with back-closing ties. Protection of the front of the body and arms.
Rubber cuff sleeves. Tight, overtaped seams. Calf-length.
**Material protects against:**

- Dust and powder-like harmful substances
- Inorganic acids and alkali
- Splashes of various organic chemicals
- Aerosols and spray mist of many mixtures
- Blood or viruses passed on through blood

| Size | Chest girth (cm) | Body size (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| S/M | 84-100 | 162-176 | **K179.2** | 4 | 80,60 |
| L/XXL | 100-124 | 176-194 | **HY32.1** | 4 | 80,60 |




## Heat protection aprons

By JUTEC®. For simple protection against radiated heat.

- Flexible, lightweight, soft
- With adjustable neck suspender
- Dimensions: approx. L 1000 x W 800 mm

① Made of glass fabric with Alufix coating on one side.
Protects against contact heat up to 600 °C.
② Made of aluminised Aramid fabric.
Protects against radiated heat up to 1000 °C. DIN EN ISO 11612 certified (clothing for protection against heat and naked flame).

**Applications:**
extreme radiated heat, welding work, glass industry, etc.

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Heat protection apron, contact heat up to 600 °C | **APX4.1** | 1 | 50,00 |
| ② | Heat protection apron, radiated heat up to 1000 °C | **APX5.1** | 1 | 136,55 |



## X-ray protection aprons

Acc. to DIN 6813 and RöV. Lead value 0.5 mm Pb. Very light apron with velcro fastening and elastic band. Fastens crosswise on the hip.
The vinyl exterior can be cleaned with a mild detergent at max. 30 °C.
Colour: royal blue.

| Size | Length (mm) | Shoulder size (mm) | Hip size (mm) | Weight (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| S | 900 | 400 | 600 | 3,0 | **X423.1** | 1 | 461,20 |
| M | 1000 | 480 | 600 | 3,4 | **X424.1** | 1 | 510,65 |



## Cryo aprons

Acc. to EN 340. Ideal for operations in deep-freezing processes and **with liquid nitrogen in gas phase**. Also suitable for clean-rooms.
Reversible. Made of water repellent nylon with polyolefin/polyester lining.
Temperature stable from -160 to +150 °C. High chemical resistance.
With adjustable ties for waist and neck. Antistatic and washable.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 89 | **0525.1** | 1 | 213,95 |
| 107 | **0526.1** | 1 | 225,75 |

▶ CRYO-safety gloves, see page 644

▶ Labels Radtape® / Autoradiography Pen see chapter biochemistry.

# Protective clothing



## BEESANA®-surgical gowns

By Meditrade®. Acc. to 93/42/EEC, medical product class I.
Disposable protective gown made of 3-layer PP SMS (spunbond meltblown spunbond), 40 g/m².
With tricot cuffs on the sleeves, ties at the back of the neck and waist.
Colour blue, length 150 cm, size XL/XXL. Non-sterile.

For protection against liquids and particles. Breathable and comfortable, low-linting, tear and puncture resistant. Ideal for use in industry, laboratories, electronics and pharmaceuticals.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CAL9.1** | 10 | 17,00 |



## Bouffant caps Suavel® Astrid

By Meditrade. Disposable caps made of extra-soft breathable polypropylene fleece. With latex free all around stretch band. Comfortable to wear and skin-friendly.

| Size (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 53 | white | **EHY2.1** | 100 | 5,60 |
| 53 | blue | **EHY3.1** | 100 | 5,60 |
| 53 | green | **EHY4.1** | 100 | 5,60 |
| 60 | white | **EHY5.1** | 100 | 5,60 |
| 60 | green | **EHY6.1** | 100 | 5,60 |



## BEESANA® disposable protective gowns for visitors

By Meditrade®. Made of PP nonwoven material, 23 g/m².
With ties at the back of the neck and waist. Elasticised cuffs.
Lightweight, breathable and moisture repellent. Protects both personnel and visitors against germs. Standard size, length 140 cm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **CAN0.1** | 10 | 10,70 |
| green | **CAN1.1** | 10 | 11,30 |




## Disposable caps, PP fleece

Made of PP fleece, lightweight. Protect hair from dust and other particles, but also products from contamination.
**Applications:** foodstuffs industry, pharmacy, electrical industry etc.

① **Standard caps - high quality**
Acc. to HACCP. Latex free elastic bands. Size ∅ 50 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **2089.1** | 100 | 17,75 |

② **Bouffant caps**
Allround elastic band. Size ∅ 53 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **L092.1** | 100 | 11,85 |



## Beard cover

Made of polypropylene non-woven material, highly breathable and lightweight. With elastic band, latex-free.
**Areas of application**: Food production, hospitals, biochemistry and in sensitive production environments.

| Size (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 46 x 20 | White | **EHP3.1** | 100 | 7,75 |



Cat. I

## Sekuroka®-hoods

Made of PP with PE-coating. Features elastic band and shoulder protection. Highly resistant and abrasion proof, water repellent and anti-static. Protects against harmful dusts and some chemicals.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L272.1** | 20 | 29,00 |




## Disposable caps

① **Detectable caps**

Acc. to 2002/72/EC. Made of PP-fleece with integral metal strips. With latex free elastic band. Size ∅ 50 cm.
**Applications**: hospitals, laboratories and foodstuffs industry.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **XL10.1** | 100 | 11,20 |
| blue | **XL11.1** | 100 | 11,20 |

② **Caps with screen**

Made of PP fleece, lightweight, breathable. With latex free elastic band. Size ∅ 48 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **XL12.1** | 100 | 14,50 |



## Surgical caps

Made of PP-fleece. With two latex free elastic bands for securing behind the neck. One size fits all.
**Applications:** hospitals, laboratories and foodstuffs industry.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **XL13.1** | 100 | 18,95 |

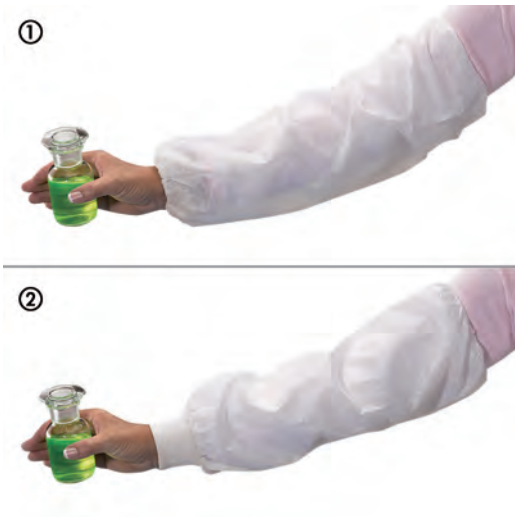
# Protective clothing



## Sekuroka®-protective sleeves standard

Made of PE, 20 µm thick, 40 cm long. Elastic closures at the ends.
Moisture-proof, hard wearing. Food-safe according.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KP24.1** | 5 x 100 | 24,85 |




## Sekuroka®-protective sleeves, air-permeable

For the food industry. Colour white. Length 45 cm.
**Model** ① Made of PP-fleece, 25 g/m². Elastic bands on both ends.
Air-permeable and moisture repellent.
**Model** ② Made of SMS-fleece, 55 g/m², PE-coated inside.
With elastic band on one end and soft knitted cuff on other.
Allows skin to breathe and are moisture repellent.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **LH96.1** | 500 (5 x 100) | 60,00 |
| ② | **LH97.1** | 100 | 32,10 |



## Sleeves made of Secutex®

Made of PP with PE-coating. With elastic bands. Anti-static, lint-free, tearproof and water repellent. For protection against heavy soiling.

| Design | Length (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| Normal | 38 | **8193.1** | 10 | 13,95 |
| Shoulder length | 58 | **8202.2** | 10 | 19,30 |





## TYCHEM®-sleeves, chemical resistant

By DuPont. Partial body chemical protective clothing , category III.
Type PB [3] to EN 14605:2005+A1:2009.
Wide elasticated wrist band and upper arm for comfortable and secure fitting. Tight, overtaped seams. Length 50 cm.
**TYCHEM® C**: Resistant to inorganic chemicals.
**TYCHEM® F**: Resistant to organic solutions.

| Material | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| TYCHEM® C | yellow | **NK18.1** | 10 | 22,90 |
| TYCHEM® F | grey | **NK19.1** | 10 | 34,20 |

## TYCHEM® C-overboot, chemical resistant

By DuPont. Category III partial body chemical protective clothing.
Type PB [3] to EN 14605:2005+A1:2009.
Good resistance to concentrated inorganic chemicals.
Knee-length overboots with slip-retardant sole, fixation ties and elasticated cuff. Overtaped seams, same tightness as TYCHEM® C suit material.
Double layer sole, partially stitched, splash proof but not completely impervious to fluids.
Standard size, height 48 cm, length 42 cm, fits shoes sizes up to 45 (UK size 11). Colour: yellow.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NK17.1** | 10 | 42,50 |

# Foot guard



## Sekuroka®-disposable overshoes

Made of textured **PE**-film. Interchangeable. Colour: blue.

| L x W (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 360 x 150 | Standard | **1258.1** | 100 | 6,40 |
| 410 x 150 | Large | **PK96.1** | 100 | 7,00 |



## Overshoes made of Secutex®

Made of PP with PE-layer. Water repellent. Specially treated to be antistatic. Tearproof, lint-free. Skin-friendly. Length approx. 39 cm.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **A248.1** | 25 | 26,80 |
| **A248.3** | 100 | 89,15 |



## Non-woven overshoes with a CPE-sole

Upper made from white breathable polypropylene non-woven material with an outsole made of blue CPE (chlorinated polyethylene). The CPE sole is very sturdy, tear-proof and **slip-resistant.** It is impermeable to moisture and therefore provides protection against liquids. Suitable for use in catering and medical environments.

| Size (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 41 | white/blue | **EHE4.1** | 50 | 10,00 |



## Disposable PE-overboots

Made of embossed transparent polyethylene, very sturdy and moisture repellent. An integrated elastic ensures a good fit.
Suitable for use in the meat and foodstuffs industry and for working in wet conditions.
Length: 38 cm, height: 47 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NP38.1** | 100 | 23,60 |



## Anti-slip CPE-overshoes with TPE-coating

Made of CPE (chlorinated polyethylene) with a firmly welded and extremely hard-wearing 50 µm thick TPE-coating. This makes the overshoes **highly slip-resistant**, therefore providing the wearer with secure footing even on smooth or slippery flooring. Suitable for wearing for extended periods, e.g. in catering or pharmaceutical environments, clinics and large kitchens.

| Size (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 41 | white | **EHE5.1** | 50 | 10,70 |



## TYVEK®-overboots

Made of PE-spunbond, white. Water repellent, lint free, antistatic.
With rubber cord and fastening straps.
Standard size, height 48 cm, length 42 cm.

| Art. No. | Pack Qty. (pair) | € |
|---|---|---|
| **2084.2** | 10 | 41,40 |

# Foot guard







## Overshoes

Suitable for use with Hygomat overshoe dispensers.

⑥ **PE-eco overshoes**
Made of polyethylene film, 20 µm thick.
Suitable for wearing for short periods and under low stress.

| Size (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 41 | blue | **EHE6.1** | 110 | 15,00 |

① **CPE-overshoes**
Made of CPE, 60 µm thick, hard wearing and impermeable to liquids.

| Size (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 47 | blue | **XA12.1** | 110 | 21,00 |

② **Fleece overshoes with CPE-sole**
Fleece upper, reinforced CPE sole, 60 µm thick. Robust and tear resistant.
Provides protection against liquids, air permeable.
Anti-slip, suitable for smooth floors.

| Size (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 44 | white/blue | **XA13.1** | 70 | 26,90 |

③ **Fleece overshoes with CPE coating**
Fleece lining, CPE coated outerAnti-slip, suitable for smooth surfaces.

| Size (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 44 | white | **XA14.1** | 80 | 33,35 |

④ **PP-overshoes with non-slip sole**
Made of PP. Hard wearing and extra slip resistant.

| Size (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 46 | light-blue | **XA15.1** | 100 | 24,35 |

⑤ **PP-fleece overshoes with antistatic band**
Made of PP-fleece, antistatic, discharges static electricity through a black contact band requiring skin contact to ground the body.

| Size (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 46 | blue | **XA16.1** | 100 | 85,90 |

## Hygomat overshoe dispensers

- Improves hygiene & cleanliness, reduces germs and infections
- Low-noise mechanical action – no electrical power required
- With different filling capacities and level indicator windows
- Reliable and robust
- Easy to operate and refill
- Overshoes adapt automatically to shoes

**Applications:** for employees of and visitors to laboratories, restaurants and canteens, hospitals, dairies, showrooms, production facilities, cleanrooms and protected zones.

**Note:**
the overshoe dispensers can only be filled with matching-sized overshoes (Art. No. XA12.1 to XA16.1)!

① **Hygomat Classic mobile overshoe dispenser**
- For product, factory and personal hygiene
- For mobile use
- Capacity: 110 overshoes

| Size: L x W x H (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 70 x 32 x 28 | **XA09.1** | 1 | 295,65 |

② **Hygomat Comfort overshoe dispenser**
- With larger capacity for large numbers of employees and visitors
- With handle for even more convenient fitting
- Capacity: 220 overshoes

| Size: L x W x H (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 74 x 32 x 90 | **XA10.1** | 1 | 456,90 |

② **Hygomat Cleanroom overshoe dispenser**
- Specially designed for use in cleanrooms and pharmaceuticals industry
- With handle for even more convenient fitting
- Stainless steel rear and side panels for optimal hygiene
- Easy to clean and disinfect
- Two rollers on the back allow fast and easy moving
- Capacity: max. 220 overshoes

| Size: L x W x H (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 74 x 32 x 90 | **XA11.1** | 1 | 585,90 |



## Nomad™-adhesive mats for fine dust

By 3M. Multi-layered adhesive mat. White vinyl backing, adhesive surface layers of clear PE. With self-adhesive surface for retention of fine dirt and dust particles. Thickness 1.99 mm. 40 layers per mat.

- Excellent absorption of dirt and fine dust from soles of shoes and wheels
- All layers are numbered and the number of remaining layers is visible
- The mat is suitable for driving over as it frameless and flat. Can also be placed under doors.

Suitable for use at cleanroom entrances, in the computer, semiconductor and electronics industry, in laboratories, hospitals and in the pharmaceuticals industry.

| Width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 450 | 900 | **PY75.2** | 6 | 586,95 |
| 450 | 1150 | **PY76.2** | 6 | 719,20 |
| 600 | 1150 | **PY77.2** | 6 | 1030,95 |
| 900 | 1150 | **PY78.2** | 6 | 1542,65 |



## Sekuroka®-adhesive mats for fine dust

Multi-ply, blue tacky mats for cleaning the soles of shoes before entering cleanroom areas in medicine, industry, food processing, electronics etc.Self-adhesive backing holds the mat securely in place. Used films can be removed hygienically and quickly. Mat comprises 30 self-adhesive, removable, numbered films.

| Dimensions L x W (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 45 x 90 | **NK53.1** | 10 | 124,70 |
| 60 x 90 | **NK54.1** | 10 | 138,70 |
| 66 x 114 | **NK55.1** | 10 | 167,70 |




## Multi-dispensers for single-use protective clothing

Suitable for loose gloves, caps, protective sleeves and overshoes. Can be wall-mounted. The top cover can be opened for refilling.

① **Stainless steel multi-dispenser**
Made from stainless steel, front panel made from transparent acrylic glass and features a dispensing opening.

② **Acrylic glass multi-dispenser**
Container and top cover made from acrylic glass. Features a dispensing opening.

| Image | Material | Dimensions: W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | Stainless steel/acrylic glass | 300 x 200 x 430 | **EHE0.1** | 1 | 170,95 |
| ② | Acrylic glass | 155 x 210 x 395 | **EHE1.1** | 1 | 85,90 |



## Stainless steel multi-dispenser for visitor smocks, lab coats and overalls

Made from stainless steel, can be cleaned with disinfectants. Its depth makes it particularly well suited to storing large items. Dimensions: W 280 x H 400 x D 300 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EHE2.1** | 1 | 192,45 |



## Dispenser for covers

Made of stainless steel, can be cleaned with disinfectant. With wide rubber-clad removal slot. For storing all types of standard covers, caps, hairnets or disposable protectors. Dimensions: W 300 x H 312 x D 160 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EHE3.1** | 1 | 192,45 |

# First aid




## Sekuroka®-first-aid cabinets

Made of sheet steel, stove-enamelled in white. Security lock with 2 keys.
With filling acc. to **DIN 13157 or 13169**.
With adjustable shelving units and folding tray.

| Design | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Acc. to DIN 13157 | 302 x 140 x 362 | **K931.1** | 1 | 79,35 |
| Refill set acc. to DIN 13157 | | **K166.1** | 1 | 23,80 |
| Acc. to DIN 13169 | 402 x 112 x 462 | **K932.1** | 1 | 110,75 |
| Refill set acc. to DIN 13169 | | **K165.1** | 1 | 54,20 |




## First aid cabinets

White, single door.

① Made of plastic
- For first-aid kits & supplies acc. to DIN 13 157
- Impact resistant, antistatic
- Subdivided into 10 compartments, with 4 removable compartments
- Security lock with key

② Made of sheet steel
- **With poison compartment;** extra lock with 2 keys
- For first-aid kits & supplies acc. to DIN 13 169
- With solid base, stove-enamelled
- Security lock with 2 keys

**Delivery without** dressing materials.
Please order first-aid kits & supplies separately.

| Type | W x D x H (mm) | Weight (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 330 x 160 x 450 | approx. 2.2 | **XE80.1** | 1 | 56,45 |
| ② | 455 x 175 x 550 | approx. 9.8 | **XE81.1** | 1 | 96,55 |

A first-aid kit/cabinet acc. to DIN 13169 contains the same dressing materials, however double the amount, as a small first-aid kit/cabinet acc. to DIN 13157. Two first-aid kits/cabinets acc. to DIN 13157 replace one acc. to DIN 13169.



## First aid refill packs and replacement sets

① **First aid refill packs**

Quality first aid refill packs are in accordance with the latest accident prevention guidelines. All first aid refill packs come illustrated and labelled in multiple languages for easy use.

| Type | Art. No. | Pack Qty. (set) | € |
|---|---|---|---|
| First aid refill packs acc. to DIN 13 157 | **XH21.1** | 1 | 16,15 |
| First aid refill packs acc. to DIN 13 169 | **XH22.1** | 1 | 28,95 |

② **Replacement sets for DIN first aid refill packs**

**Sterile.** The complete set allows convenient replacement of all sterile products in a DIN first aid refill pack.

| Type | Art. No. | Pack Qty. (set) | € |
|---|---|---|---|
| Replacement set acc. to DIN 13 157 | **XH23.1** | 1 | 6,40 |
| Replacement set acc. to DIN 13 169 | **XH24.1** | 1 | 10,70 |
| Replacement set acc. to DIN 13 164 | **XH25.1** | 1 | 6,40 |




## Sekuroka®-first-aid box

With contents in compliance with **DIN 13157,** made of high impact plastic, orange. With hinge and straps. L 260 x W 160 x H 80 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sekuroka®-first-aid box | **T295.1** | 1 | 26,00 |
| Wall mounting plastic, orange | **T296.1** | 1 | 3,85 |
| Refill set acc. to DIN 13157 | **K166.1** | 1 | 23,80 |

▶ Hazard signs from page 688




## Sekuroka®-first-aid box

Acc. to **DIN 13169**, made of sheet steel, painted white. Rounded edges, profile packing. With toggle catch. L 350 x W 250 x H 100 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sekuroka®-first-aid box | **K934.1** | 1 | 99,20 |
| Wall mounting made of sheet steel | **T297.1** | 1 | 14,75 |
| Refill set acc. to DIN 13169 | **K165.1** | 1 | 54,20 |




## MEZZO FOX®-first aid set

With contents according to DIN 13157. The arrangement of the interior compartments is variable, with wall holder and handle.

- Translucent for a good view inside
- Robust and durable
- Easy to operate: Can be used from the wall or can be removed from holder for on-site aid
- Is securely mounted and therefore theft-proof
- High-quality dressing material, printed in four languages
- The compartments inside can be moved around and altered

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HA37.1** | 1 | 41,85 |



## Sekuroka®-first-aid case

Compact design made of plastic, rugged and long lasting.
Suitable for mobile and stationary use, with wall mount. Easy to use, sealable. Colour: translucent red, dimensions: L 270 x W 300 x H 110 mm.
**Delivery incl.** first aid materials acc. to DIN 13 157.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sekuroka®-first-aid case | **NP39.1** | 1 | 32,15 |
| First aid refill packs acc. to DIN 13 157 | **XH21.1** | 1 | 16,15 |




## Sekuroka®-mobile-first-aid cases

Made of ABS-plastic. All-round rubber sealing protects against dust and splashing. Cases can be lead-sealed. Wall attachment with 90° stop-lock, which enables case to be opened in the attachment and items to be removed.

Model with contents as per **DIN 13157**:
Dimensions: L 260 x W 110 x H 170 mm.
Model with contents as per **DIN 13169**:
Dimensions: L 400 x W 150 x H 300 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Case small with content acc. to DIN 13157 | **0598.1** | 1 | 79,05 |
| Refill set acc. to DIN 13157 | **NH88.1** | 1 | 40,75 |
| Case big with content acc. to DIN 13169 | **1721.1** | 1 | 179,55 |
| Refill set acc. to DIN 13169 | **NH89.1** | 1 | 82,70 |




## Sekuroka®-first-aid book

Ideal for entering all information on work accidents or assistance given. Preprinted columns, DIN A5, bound in paper boards. In german.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T298.1** | 1 | 4,25 |

According to
BGV-A1/GUVA1 § 24 IV Section 6, a record must be kept of every occasion on which first aid was administered and retained for 5 years.




## Sekuroka®-emergency first aid bag

Your own personal first aid kit for immediate aid. Small, compact, can be taken everywhere: on excursions, trips, sports or work.
Bag with zip, 210 x 140 mm. Contents: gauze pads, quick-dressings, bandages, assortment of band aids, SIRIUS®-rescue blanket.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N531.1** | 1 | 17,45 |



## Sekuroka®-first-aid cases special

**Burns and cauterizations**

with acids, alkaline solutions, steam and liquids.
Specially put together for chemical and galvanic work areas.

**Laboratory and chemistry**

Base contents in accordance with DIN 13157 and expanded after risk assessment for chemical industry, medical, technical and chemical laboratories.

**Science and research**

Base contents in accordance with DIN 13157 and expanded after risk assessment for scientific colleges and universities, research institutes and laboratories.

All cases incl. wall attachment with 90° stop-lock, which enables case to be opened in the attachment and items to be removed.
Dimensions of case: L 400 x W 150 x H 300 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Burns and cauterizations | **0515.1** | 1 | 194,60 |
| Refill set for Art.no. 0515.1 | **P098.1** | 1 | 117,20 |
| Laboratory and chemistry | **X292.1** | 1 | 181,70 |
| Refill set for Art.no. X292.1 | **X298.1** | 1 | 105,80 |
| Science and research | **X293.1** | 1 | 187,05 |
| Refill set for Art.no. X293.1 | **X299.1** | 1 | 113,95 |




## First-aid case for special occupations - foodstuffs

Basic contents to DIN 13157, extended and tailored to specific occupational hazards. Equipped for foodstuffs and food processing industry, frozen and tinned foods, butchers, dairies and bakeries.

Case made of orange-coloured ABS plastic. Shape-holding, impact resistant, temperature stable, splashproof, dust-proof.
Adjustable inner partitions, transparent cover panels.
Easy-action turn-lock fasteners, reinforced carry handle.
Case is sealable, with security seal.
Wall fixing with 90° stop.
Case dimensions: L 400 x W 150 x H 300 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TX11.1** | 1 | 173,65 |




## Motor vehicle first aid box

The content meets the requirements of DIN 13164. Box made of high impact strength plastic, colour: black. With hinge and sealing flaps.
Interior with extra tray for a better view of the contents.
Dimensions: L 260 x W 160 x H 80 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KL96.1** | 1 | 16,80 |




## Retro-reflective safety vests

Comply with EN ISO 20471:2013, class 2
(size S in accordance with EN 1150). 100 % polyester.
With double Velcro fasteners for variable size fitting.
**Use:** For improved recognition of persons in traffic and handling zones, or as equipment for company vehicles.

**① Features two reflective horizontal bands**

| Size | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S | yellow | **TP38.1** | 5 | 16,10 |
| M-XL (One size fits all) | orange | **TP39.1** | 5 | 16,70 |
| M-XL (One size fits all) | yellow | **TP40.1** | 5 | 16,70 |
| XXL | orange | **TP41.1** | 5 | 16,70 |
| XXL | yellow | **TP42.1** | 5 | 16,70 |

**② Features two reflective horizontal bands and vertical bands over the shoulders**

| Size | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| One size fits all | orange | **EHP4.1** | 1 | 5,05 |
| One size fits all | yellow | **EHP5.1** | 1 | 5,05 |

## Bags for reflective safety vests

100 % polyester, with velcro fastener. Size: 180 x 220 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| yellow | **TP43.1** | 5 | 4,25 |
| orange | **TP44.1** | 5 | 4,25 |



## Traveller first aid set

Softbag with first aid supplies for use on the go. Made of synthetic fibre. Two carrying straps, parallel zipper, flap with button, insertable straps. Dimensions: L 230 x W 115 x H 55 mm.
**Contents:** emergency blanket, compresses, quick bandages, finger and wound dressing, Silk adhesive plaster strips, surgical disinfectant, sutures, scissors, tweezers, protective gloves.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TL60.1** | 1 | 28,15 |




## Sekuroka®-first-aid miniset

Bag made of laminated nylon fabric, blue, with zip, 135 x 90 mm. Contains most commonly required items: sticky plaster strips, packets of dressings, gauze pad, elastic bandage.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T299.1** | 1 | 4,45 |



## Sekuroka®-rescue blanket

Silver and gold-coloured. Aluminium-vaporised PE-foil, reflects up to 85 % body heat, can eliminate radiation loss, prevents cooling down and hypothermia, can also be used as heat protection. Size: 210 x 160 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1846.1** | 1 | 3,90 |




## ① Cold-ready to use-compresses

Quick "ice bag" without precooling. Bag is activated when squeezed together and it immediately turns extremely cold. For rapid cooling of acute injuries such as bruises, pulled muscles or sprains. Can only be used once.

| Size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 21 x 15 | **AP16.1** | 5 | 9,65 |
| 25 x 15 | **AP17.1** | 5 | 9,65 |

## ② Cold-/warm-compresses

Reusable compresses for local pain relief of bruises, pulled muscles, sprains, acute inflammation, insect bites, etc. Remain's flexible and easy to form even down -30 °C. Can also be used as a heating pad. Place in the freezer to cool or in a hot water bath to heat (up to +60 °C). Contents: environmentally friendly, non-toxic gel.

| Size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ca. 7,5 x 13 | **AP13.1** | 5 | 7,50 |
| ca. 13 x 14 | **AP14.1** | 5 | 9,30 |
| ca. 15 x 28 | **AP15.1** | 5 | 16,90 |




## Actiomedic® AQUATIC-first aid bandages

Water repellent, elastic first aid dressing. Supple and easy to tear off, suitable for all minor finger injuries, even in awkward places.
- Sticks to itself and not to the wound, skin or hair
- Easy to remove
- Water repellent and elastic
- Allows maximum freedom of movement
- Keeps grease, water and oil away from the wound

**Roll size: 3 cm x 7 m**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **XH07.1** | 4 | 14,95 |
| blue | **XH08.1** | 4 | 14,95 |
| skin colour | **XH09.1** | 4 | 14,95 |

**Roll size: 5 cm x 7 m**

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **XH10.1** | 2 | 9,65 |
| blue | **XH11.1** | 2 | 9,65 |
| skin coloured | **XH12.1** | 2 | 9,65 |




## Hansaplast®-finger tip bandages

Made of elastic polyamide fabric. Air permeable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0629.1** | 50 | 27,90 |

## Hansaplast®-strips

Plaster-sets contain strips in 4 different sizes.
Breathable and skin-friendly material, non-adhesive wound dressing protects and pads the wound. The plasters adhere reliably and do not slip. Suitable for all types of small wounds and injuries.

- **Hansaplast® Universal water-repellent**
- **Hansaplast® Sensitive** - hypo-allergenic for sensitive skin

| Type | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Universal 20 strips | 8 strips 19 x 72 mm<br>6 strips 30 x 72 mm<br>2 strips ∅ 50 x 72 mm<br>4 strips 23 mm | **0630.2** | 1 | 6,25 |
| Sensitive 40 strips | 20 strips 19 x 72 mm<br>10 strips 30 x 72 mm<br>2 strips ∅ 50 x 72 mm<br>8 strips 23 mm | **ENH9.1** | 1 | 8,85 |

## Leukosilk®-adhesive plasters

Made of white cellulose acetate. Extremely skin-friendly, easy to tear with high tensile strength. The plaster is hypo-allergic, painless to remove and can be labelled. Roll 5 m, 2.5 cm wide.

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **0631.1** | 3 | 22,85 |

## Leukoplast®-adhesive plasters

With extremely high adhesive power. Is air permeable, water-repellent with high tensile strength skin-coloured. Roll 5 m.

| Width (cm) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|
| 1,25 | **N532.1** | 3 | 12,50 |
| 2,50 | **N533.1** | 3 | 20,80 |



## Cellulose swabs

Acc. to DAB. Made of highly bleached cellulose, highly absorptive, non-fibrous. For skin cleansing, or as absorbent pads for treatment of minor injuries. Non-sterile. Size 4 x 5 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NK84.1** | 2 rolls à 500 pieces | 5,30 |

## Cellulose swab dispenser

For hygienic storage and removal of cellulose swabs. Suitable for 1 roll of 500.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NK85.1** | 1 | 24,65 |




## Salvequick®-sticking plaster dispensers

Half of the plaster is ready for sticking on when pulled out. Can be used without any assistance.

Set contains:

- Dispenser box with special key for opening and refilling dispenser L 220 x W 52 x H 115 mm
- 1 refill set X288.1 elastic with 24 strips 72 x 19 mm and 16 strips 72 x 25 mm
- 1 refill set X289.1 waterproof with 27 strips 72 x 19 mm and 18 strips 72 x 25 mm

| Type | Art. No. | Pack Qty. (set) | € |
|---|---|---|---|
| ① Sticking plaster dispenser set | **X287.1** | 1 | 37,00 |
| ② Refill elastic | **X288.1** | 1 | 10,70 |
| ③ Refill waterproof | **X289.1** | 1 | 8,75 |




## aluderm®-aluplast®-bandage dispensers

Made of ABS-plastic. Base with three compartments for strips, finger knuckle and fingertip dressings, transparent lid with compartment for finger dressings. Wall mounting possible.
Dimensions: approx. 160 x 122 x 57 mm.

**Contains:**

- 25 fingertip dressings
- 30 strips 7.2 x 2.5 cm
- 30 strips 7.2 x 1.9 cm
- 20 finger dressings 12 x 2 cm
- 10 finger knuckle dressings

All sticky plasters are individually and hygienically sealed. The aluminized gauze layer does not stick to the wound. Cellular, water repellent, hypoallergenic, skin-friendly, also suitable for sensitive skin or allergies to sticky plasters.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sticky plaster dispensers, filled | **AH56.1** | 1 | 24,60 |

**Refill packs:**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 25 fingertip dressings | **AH57.1** | 1 | 7,10 |
| 30 strips 7.2 x 2.5 cm | **AH58.1** | 1 | 4,25 |
| 30 strips 7.2 x 1.9 cm | **AH59.1** | 1 | 4,25 |
| 20 finger dressings 12 x 2 cm | **AH60.1** | 1 | 4,25 |
| 10 finger knuckle dressings | **TP45.1** | 1 | 4,05 |




## QuickFix-bandage systems

By Plum.
- Individually wrapped sticky plaster strips
- Can be removed from the bottom of the dispenser; sticking side is opened completely on one side; **advantage:** plaster strip can be placed on wound immediately with one hand.
- With additional compartments for storing first-aid material in the dispenser
- The system can be locked, protects against theft
- Contains following plasters:
  **Type ①:** waterproof, extremely skin-friendly, made of perforated, air-permeable substrate. Plaster size: 72 x 25 mm
  **Type ②:** detectable blue sticky plaster strips with integrated metal strips to enable detection by metal detectors in hygienically sensitive areas (**e.g. the food industry**); made of elastic textile fabric. Plaster size: 72 x 25 mm
- **Type** ③: elastic, extremely skin-friendly and breathable. Made of perforated, air-permeable textile fabric. Plaster size: 72 x 25 mm.
- Dispenser dimensions: W 23.25 x H 13.34 x D 3.3 mm

**Delivery incl.** QuickFix Plaster dispenser system, incl. two refill packs, mounting material and key to protect against theft.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dispenser system incl. 2 x HC45.1, type ① | **HC43.1** | 1 | 27,90 |
| Dispenser system incl. 2 x HC46.1, type ② | **HC44.1** | 1 | 38,50 |
| Dispenser system incl. 2 x LH94.1, type ③ | **LK67.1** | 1 | 31,95 |
| Refill pack type ①, 45 plasters | **HC45.1** | 2 | 13,90 |
| Refill pack type ②, 45 plasters | **HC46.1** | 2 | 21,40 |
| Refill pack type ③, 45 plasters | **LH94.1** | 2 | 14,95 |







## First Aid Station

By Plum. Guarantees speedy and optimal care of eye accidents and cuts. All elements can be operated single-handedly; no additional person is needed.

Wall assembly station (L 515 mm x W 300 mm) **incl.**:
- **Disposable eye wash flask 500 ml** (Y828.1)
  Sterile salt solution 0.9 %, maintenance-free.
  The ergonomically designed eye dish holds eyelid open during rinsing process.
- **QuickFix sticky plaster dispenser**
  Filled with 45 plaster strips apiece.
  Type 1 (waterproof) and type 3 (elastic).
- **QuickClean-dispenser box**
  With 40 individually wrapped tissues for cleaning wound.
  Size: 130 x 200 folded 40 x 40 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LH92.1** | 1 | 67,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| Refill pack Type ①, waterproof | **HC45.1** | 2 | 13,90 |
| Refill pack Type ②, detectable | **HC46.1** | 2 | 21,40 |
| Refill plasters Type ③, elastic | **LH94.1** | 2 | 14,95 |
| Refill pack, wound cleansing tissues | **LH93.1** | 1 | 10,70 |
| Disposable eye wash flask 500 ml | **Y828.1** | 1 | 18,25 |




## Sekuroka®-pocket mask for mouth-to-mouth resusciation

Ideal for untrained personnel in first aid. Air supply via mouth and nose simultaneously without contact with the patient's exhaled air. Transparent mask enables observation of patient (saliva excretion, etc.). Suitable for adults and children. Extendable semi-soft plastic dome with mouth piece. Air filled press-on rim made of soft plastic. L 120 mm. Easy to clean, reusable. Complete with case and instruction.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **4799.1** | 1 | 24,75 |







## Detectable plasters

Elastic, hypoallergenic and detectable plasters, individually sealed.

**Detectable**

| Type | Dimensions (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Plaster strips | 19 x 72 | **XH14.1** | 100 | 8,20 |
| Knuckle dressings | 38 x 75 | **XH15.1** | 50 | 8,55 |
| Finger dressings | 120 x 20 | **XH16.1** | 100 | 10,55 |

**Detectable and water repellent**

| Type | Dimensions (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Plaster strips | 19 x 72 | **XH17.1** | 100 | 6,80 |
| Finger dressings | 120 x 20 | **XH18.1** | 100 | 8,10 |
| Fingertip dressings | 43 x 68 | **XH19.1** | 50 | 6,35 |

## Plaster dispenser

Plastic wall-mountable dispenser box, blue/transparent.
The plaster container detaches from the wall.
Dimensions: W 155 x H 125 x D 55 mm.
**Delivery incl.** wall mount, mounting kit and 100 detectable plaster strips (19 x 72 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XH20.1** | 1 | 12,40 |



## Ampoule case

Made of coated nylon fabric in red, with all-round zipper.
**For 55 ampoules** in various standard sizes, can be individually configured.
Dimensions: L 310 x W 320 x H 30 mm.
**Delivery without** ampoules.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NH87.1** | 1 | 37,55 |




## Gauze swabs

Acc. to EN 14079, type 20. Made of medical gauze, 100 % cotton.
Non-sterile. For absorbing blood and secretion, external wound care and hand disinfection. Highly absorptive.
Swab size 20 x 20 cm, round, plum-sized, in PE-bag.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NK83.1** | 250 | 13,95 |




## Rest room loungers

Frame made of square profiled steel tubing, white powder-coated, sturdy and load bearing. Upholstery made of fabric-reinforced synthetic leather, hardwearing, easy care, dirt repellent, colour black.
- Multi-position adjustable
- Sanitary paper reel holder integrated into frame

Reclining surface: 2000 x 700 mm, reclining height approx. 500 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Adjustable head rest, rigid foot rest | **NH47.1** | 1 | 315,00 |
| ② Adjustable head and foot rests | **NH48.1** | 1 | 346,15 |



## Examination table paper covers

Hygienic paper on a roll, made of double-layer recycled cellulose, absorptive, tear resistant, white. Roll length 50 m, width 59 cm.

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **NK82.1** | 1 | 8,55 |




## FLAME STOP-fire blanket

Acc. to DIN EN 1869 (2001), TÜV-certified. Made of impregnated glass fiber cloth (300 g/m²). Temperature stable up to 1250 °C. Blankets are specially folded and have two pull tags for speedy opening. Self-inflating.
For single use. For extinguishing small fires, for protection against fire.
Does not release toxic fumes.

| Dimensions L x W (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 x 100 | **AH78.1** | 1 | 32,20 |
| 180 x 125 | **AH79.1** | 1 | 47,25 |




## Sekuroka®-fire extinguishing blanket

Made of fibre glass Isotemp®. BAM-tested. Free of asbestos, stable against high temperatures, fully capable of extinguishing, reusable.
Standard format 200 x 160 cm, weight approx. 2100 g. With loops.
In stand-by pack with wall attachment.
Dimensions of stand-by pack: D 130 x W 255 x H 275 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0084.1** | 1 | 99,45 |

▶ Fire warning signs see page 688
▶ Fire-rescue hoods see page 583




## Dry powder extinguisher Bavaria Colt P6

In acc. with DIN EN 3. To be used for **ABC-fires** and for **electric devices of max. 1000 volt**. Highgrade dry powder extinguisher.
All-purpose use in industry, commerce, public buildings and the home.
Contents: 10 extinguishing components according to BGR 133.
Weight 10.9 kg. Operating conditions -30 to +60 °C. Incl. wall mount.
Dimensions (L x W x H): 300 x 155 x 535 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T321.1** | 1 | 123,65 |

## $CO_2$-fire extinguisher

For **fire class B**. Ideal for rooms with sensitive electronic and electric devices. Content 2 kg. Weight 7 kg.
Dimensions: ∅ 110 x H 555 mm. With wall mounting.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1028.1** | 1 | 167,70 |



## Sekuroka® fire protection tub

Tub and mesh made of chrome-nickel-steel.
- Liquids are collected immediately and fire-safe in the mesh
- If the liquid ignites, the flame extinguishes autonomously due to lack of oxygen
- Resists heat and corrosion
- Liquids collected can be transferred for disposal or reuse
- The mesh can be removed and is easy to clean and reuse
- No glass or steel wool mats needed, so there is no material to dispose of

**Note! The meshes may only be filled to 2/3 with flammable liquid. Maximum collection volume approx. 13 litres.**

Dimensions: W 450 x L 450 x H 120 mm. Weight 12 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1658.1** * | 1 | 881,50 |

* Longer delivery times possible. Please check with our Sales Department.

# Safety cabinets




## Safety cabinets Q-Classic-90

By Asecos. For the storage of flammable liquids.
Acc. to DIN EN 14470-1, 90 min fire resistance (FWF 90).
Ceric-compliant, GS-approved, acc. to DIN EN 14727 (laboratory furniture).

- **Highly rugged design**, scratchproof textured paint finish
- The panel doors lock in any position for easy storage and removal from storage
- **Automatic locking of doors in event of fire** by integrated thermal cut-out
- Forklift-accessible base - easy transport, high flexibility, lockable with optional plinth panel
- **Easy alignment** - adjusting aids to compensate for uneven floor
- **Quick commissioning** - air ducts ready for connection (NW 75) to a technical exhaust system

**Design:** anthracite grey body (similar to RAL 7016), light grey doors (RAL 7035), with panel doors. Ventilation system, recirculating air filter system and plinth panel are optional (please order separately).

**Types (inner fittings):**

① With 3 shelves, perforated sheet insert and bottom tray (33 l, powder-coated sheet steel)
② With 4 full extension drawers (powder-coated sheet steel)
③ With 6 full extension drawers (powder-coated sheet steel)
④ With 3 shelves, perforated sheet insert and bottom tray (22 l, powder-coated sheet steel)
⑤ With 6 full extension drawers ( powder-coated sheet steel)

| Type | Door stop | Outer dimensions (mm) W x D x H | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 2/right, left | 1193 x 615 x 1953 | **CCA0.1** * | 1 | 3160,50 |
| ② | 2/right, left | 1193 x 615 x 1953 | **CCA1.1** * | 1 | 3753,90 |
| ③ | 2/right, left | 1193 x 615 x 1953 | **CCA2.1** * | 1 | 4133,40 |
| ④ | 1/left | 599 x 615 x 1953 | **CCA3.1** * | 1 | 2461,75 |
| ④ | 1/right | 599 x 615 x 1953 | **CCA4.1** * | 1 | 2461,75 |
| ⑤ | 1/left | 599 x 615 x 1953 | **CCA5.1** * | 1 | 3031,50 |
| ⑤ | 1/right | 599 x 615 x 1953 | **CCA6.1** * | 1 | 3031,50 |

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.

## Plinth panels for safety cabinets Q-CLASSIC-90

By Asecos. Please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Plinth panel for 2-door cabinets | **CCA7.1** * | 1 | 33,70 |
| Plinth panel for 1-door cabinets | **CCA8.1** * | 1 | 24,95 |

* Longer delivery times possible. Delivery plus packing and transport costs. Please check with our Sales Department




## Accessories for safety cabinets Q-Classic-90

By Asecos.

① **Ventilation system without exhaust monitor**

Safe detection of vapour and gas emissions at the outlet or source. Housing made of powder-coated high-grade sheet steel.
- Plug ready - fast and easy assembly
- Extra low noise, ideal for use directly in the workspace
- NW 75 hose connection
- ATEX-compliant: Ceric II 3/-G Ex c IIC T4

**Delivery incl.** connecting cable and power plug.

② **Recirculating air filter system for safety cabinets**

Vents safety cabinets safely and economically without exhaust lines. Recirculating air filter housing made of powder-coated high-grade sheet steel.
- Installation without wall breakthroughs and exhaust lines
- Flexible selection of installation location
- Safe detection of hazardous vapours with retention in the filtration system
- Silent - only approx. 39 dB (A)
- ATEX-compliant: Ceric II 3/-G Ex ic nA IIB T4Gc

**Delivery incl.**:
- Multiple-stage filtration system, connecting cable and power plug
- VDE-approved monitoring electronics for exhaust air and filter monitoring
- Visual and audible alarms incl. floating alarm contact

| Type | Outer dimensions (mm) W x D x H | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① Ventilation system | 200 x 400 x 200 | **CCA9.1** * | 1 | 643,95 |
| ② Recirculating air filter system | 305 x 555 x 210 | **CCC0.1** * | 1 | 1522,20 |

* Longer delivery times possible. Delivery plus packing and transport costs. Please check with our Sales Department



## Sekuroka®-wall cupboard for toxins

With 2 fixed shelves. Made of polyurethane coated sheet steel. With folded edges for extra strength. W 400 x H 800 x D 200 mm. Weight 15 kg. **Delivery without** hazard warning signs.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5226.1** | 1 | 234,35 |




## Combined safety cabinets K-PHOENIX-90

By Asecos.
**Two in one** - storage of flammable and aggressive hazardous substances in one cabinet. Acc. to DIN EN 14470-1, 90 min fire resistance (FWF 90). Ceric-compliant, GS-approved, acc. to DIN EN 14727 (laboratory furniture).

- **Rugged and durable** - safety elements assembled outside the storage compartment for increased protection against corrosion
- **Safety isolated** - storage chambers hermetically separated by central partition
- **Comfortable and safe** - doors lock in the standard stop position, safe storage and removal from storage of drums, all doors can be operated and locked separately
- **Easy alignment** - adjusting aids to compensate for uneven floor
- **Quick commissioning** - integrated air ducts ready for connection (NW 75) to a technical exhaust system

Outer body made of epoxy resin coated high-grade sheet steel. Inner body made of highly resistant melamine resin coated special panels. Colour light grey (RAL 7035), outer dimensions W x D x H: 1200 x 615 x 1968 mm. Ventilation system (Art. No. CCA9.1) is optional, please order separately.

**Types:**
① **Left side of cabinet**, compartment for flammable liquids: with folding door, 3 shelves (75 kg load capacity), perforated sheet insert and 22 l bottom tray (powder-coated sheet steel). **Right side of cabinet**, compartment for acids and bases: with panel doors, 4 pull-out shelves (25 kg load capacity) incl. removable plastic tray.
② **Left side of cabinet**, compartment for flammable liquids: with folding door, 6 full extension drawer (powder-coated sheet steel). **Right side of cabinet**, compartment for acids and bases: with panel doors, 6 pull-out shelves (25 kg load capacity) incl. removable plastic tray.

| Image | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **CCC1.1** * | 1 | 3671,15 |
| ② | **CCC2.1** * | 1 | 4446,20 |

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.




## SL-Classic acid and base cabinets

By Asecos. Safe and correct storage of aggressive, non-flammable hazardous substances in work zones. GS-approved, acc. to DIN EN 14727 (laboratory furniture).

- **Rugged and durable** - epoxy resin coated high-grade sheet steel, locking mechanism is located outside the store room for increased protection against corrosion
- **Safely isolated** - two hermetically separated storage chambers
- **No unauthorised use** - doors are fitted with profile cylinder locks (master-key system compatible)
- **Easy alignment** - integrated adjusting aids to compensate for uneven floor
- **Quick commissioning** - air ducts ready for connection (NW 75) to a technical exhaust system
- **Clean ventilation** - corrosion-resistant, metal-free air ducts, separate ventilation of storage chambers, only one air vent in roof area

**Equipment:** pull-out shelves - high-quality, sturdy construction with leak-proof, removable plastic tray (18 l), 25 kg load capacity. With panel doors, colour light grey (RAL 7035). Ventilation system (Art. No. CCA9.1) is optional, please order separately.

**Inner fittings:**
① with 12 pull-out shelves incl. plastic collecting tray
② with 6 pull-out shelves incl. plastic collecting tray

| Type | Door stop | Outer dimensions (mm) W x D x H | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | left/right | 1197 x 603 x 1965 | **CCC8.1** * | 1 | 3463,65 |
| ② | left | 597 x 603 x 1965 | **CCC9.1** * | 1 | 2208,05 |
| ② | right | 597 x 603 x 1965 | **CCE0.1** * | 1 | 2208,05 |

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.




## Gas cylinder cabinets G90

By Asecos. For safe indoor storage of pressurised gas cylinders (decentralised). Type-tested acc. to DIN EN 14470-2, 90 min fire resistance (FWF 90). Ceric-compliant, GS-approved, acc. to DIN EN 14727 (laboratory furniture).

- **Easy assembly of fittings and pipework** - large inner height (1858 mm), 24 leadthroughs in the cabinet ceiling
- **No unauthorised use** - door is fitted with profile cylinder locks (master-key system compatible)
- **Easy alignment** - adjusting aids to compensate for uneven floor
- **Quick commissioning** - integrated air ducts ready for connection (NW 75) to a technical exhaust system, complete and even floor-to-ceiling ventilation inside cabinet

① For safe storage of up to two 50-litre steel pressurised gas cylinders or two 40-litre aluminium pressurised gas cylinders, each ∅ 230 mm. With standard inner fittings complete - consisting of mounting rail, roll-in flap, cylinder holder and matching tensioning straps.

② For safe storage of one 50 litres pressurised gas cylinder or two 10 litre pressurised gas cylinders. With standard inner fittings - complete with mounting rail, roll-in flap, cylinder holder and matching tensioning straps - optional accessories: lateral cylinder holder for 2 x 10-litres cylinders.

③ Small gas cylinder cabinet for two 10-litres cylinders. With standard inner fittings - complete with mounting rail, roll-in flap, cylinder holder and matching tensioning straps.

Design: with panel door, left stop. Body and door light grey (RAL 7035).

| Image | For gas cylinders: | Outer dimensions (mm) W x D x H | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 2 x 50 l | 598 x 616 x 2050 | **CCC3.1** * | 1 | 3320,70 |
| ② | 1 x 50 l | 598 x 616 x 2050 | **CCC4.1** * | 1 | 2869,20 |
| ③ | 2 x 10 l | 598 x 616 x 1450 | **CCC5.1** * | 1 | 2869,20 |

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.

## Accessories for gas cylinder cabinets:

By Asecos.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2 cylinder holders with 2 tensioning straps for additional securing of small 10 l pressurised gas cylinders | **CCC6.1** * | 1 | 58,65 |
| Gas cylinder trolley for 1 x 50 l gas cylinder | **CCC7.1** * | 1 | 312,85 |

* Longer delivery times possible. Delivery plus packing and transport costs. Please check with our Sales Department



## Filter trolley Jumbo

Ideal for extracting and filtering gases and vapours directly from place of origin.

- With wheels which enable flexible use at different workplaces
- Very quiet
- With 3 articulated arms for more flexibility
- Low energy consumption
- With ultra filter effect for pure air
- The filtered air is routed back to the workplace
- Filter can be easily removed for changing

**Applications:**

glueing, lacquering, laminating, extraction of solvent vapours, cleaning work.

**Technical specifications:**

| | |
|---|---|
| Range of suction arm | 750 mm |
| Performance | 80 $m^3$/h at 1400 Pa |
| Electrical connection | 230 V, 50 Hz |
| Power consumption | 150 W |
| Sound level | 49 dB (A) |
| **Hood** | |
| Dimensions (L x W) | 296 x 248 mm |
| Material | PC |
| **Filter trolley** | |
| Dimensions | 450 x 340 x 530 mm |
| Weight | 18 kg |
| Material | ABS |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Filter trolley, complete | **Y928.1** * | 1 | 2789,65 |
| Spare filter | **Y929.1** * | 1 | 256,95 |

* Longer delivery times possible. Please check with our Sales Department.



## Pharmacy workstations (pharmacy fume hoods)

Workstations for hazardous materials according to DIN 12924-4: 2012

- Safe handling of chemicals, protection against harmful vapours and explosive atmospheres
- Easy to mount on bench top
- Ruggedly constructed from chemical resistant, antibacterial plastic coated high-grade sheet steel
- Each unit is functionally tested by a recognised testing agency

**Standard equipment**
- Monitoring electronics
- 2 power sockets
- Work light
- Continuously height-adjustable acrylic glass sliding window
- Exhaust fan

Delivery without media supply (natural gas, wastewater, cold water) and ventilation sets (please order separately).

**Technical specifications:**

| Type | APA.145.075 | APA.145.090 |
|---|---|---|
| Outer dimensions W x D x H (mm) | 750 x 600 x 1460 | 900 x 600 x 1460 |
| Inner dimensions W x D x H (mm) | 740 x 440 x 924 | 890 x 440 x 924 |
| Effective working area W x D (mm) | 745 x 440 | 895 x 440 |
| Overall weight (kg) | 55 | 65 |
| Exhaust connection (NW/mm) | 100 | |
| Recommended exhaust air volume ($m^3$/h) | 330 | |
| Pressure loss (approx. Pa) | 315 | |
| PE power sockets, IP 54 rated | 2 | |
| Media supply (optional) | Drainage outlet, natural gas, water | |
| Wastewater connection (inches) | 1.5 | |
| Gas/water connection (mm) | 12 | |
| Electrical system: power supply 230 V, 50 Hz, energy-saving lamp, on-off switch, light switch, monitoring electronics, fresh air fan(s), with 2 230 V PE power sockets, 50 Hz. Unit is fuse-protected to 4 A. | | |

**With standard equipment**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| APA.145.075 | **CEH3.1** * | 1 | 2160,75 |
| APA.145.090 | **CEH4.1** * | 1 | 2201,60 |

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.

## Accessories for pharmacy workstations (pharmacy fume hoods)

**Media supply**

| Type | For | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Cold water, drainage outlet | APA.145.075 | **CEH5.1** * | 1 | 209,65 |
| Natural gas, cold water, drainage outlet | APA.145.075 | **CEH6.1** * | 1 | 388,10 |
| Cold water, drainage outlet | APA.145.090 | **CEH7.1** * | 1 | 209,65 |
| Natural gas, cold water, drainage outlet | APA.145.090 | **CEH8.1** * | 1 | 388,10 |
| Natural gas | APA.145.075/ APA.145.090 | **CEH9.1** * | 1 | 223,60 |

**Ventilation sets**

**Ventilation set 1**
- 1 m flexible hose DN100
- 2 hose clamps
- 1 wall duct

**Ventilation set 2**
- 7.5 m flexible hose DN125
- 2 hose clamps
- 1 wall duct
- 1 reducer DN100/125

**Ventilation set 3**
- 1 duct fan DN150
- 2 reducers DN150/125
- 7.5 m flexible hose DN125
- 2 hose clamps
- 6 drilling screws 4.2 x 16 mm

| Type | For | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Ventilation set 1 | APA.145.075/APA.145.090 | **CEK0.1** * | 1 | 164,50 |
| Ventilation set 2 | APA.145.075/APA.145.090 | **CEK1.1** * | 1 | 280,60 |
| Ventilation set 3 | APA.145.075/APA.145.090 | **CEK2.1** * | 1 | 621,35 |

* Please note: longer delivery times may occur! Delivery free of charge behind the first lockable door within Germany. Costs for further transport to the point of use within the building in Germany as well as for the transport outside Germany are available on request. For further information please contact our Sales Department.



## Sekuroka®-glove bags

Made of PE, with integrated gloves.
Ideal for handling substances in an air or moisture free milieu.
Handling: fill all working material through opening into glove bag, close with clip and then fill with inert gas through gas adapter.
Plastic coupling for gas adapter, closing clips and glove liners come with bag.

**Bags with 1 opening and 1 hose connection**

| L x W x H (mm) | Opening (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 420 x 420 x 280 | 275 | **1936.1** | 1 | 51,50 |
| 690 x 690 x 380 | 565 | **K352.1** | 1 | 85,90 |
| 940 x 940 x 640 | 860 | **K353.1** | 1 | 96,70 |

**Glove bag-set**

3 x 1936.1; 2 x K352.1 and 1 x K353.1.

| Opening (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| see above | **1910.1** | 1 | 298,85 |

**Bag with 2 openings and 2 hose connections**

| L x W x H (mm) | Opening (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 490 x 490 x 290 | each 300 mm | **1937.1** | 1 | 62,30 |

# Safety shields



## Sekuroka®-safety shields

Collapsable. Made of transparent acrylic glass, 8 mm thick. Protects against splinters and splashes. Three parts, can be folded out to 120°.

**Type 450**

Main shield W 450 x H 450 mm, 2 side shields each W 200 x H 450 mm. Weight approx. 3.7 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2967.1** | 1 | 263,40 |

**Type 750**

Main shield W 450 x H 750 mm, 2 side shields each W 200 x H 750 mm. Weight approx. 6.0 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2968.1** | 1 | 349,40 |

## Table holder

Consists of acrylic glass support and screw clamp with ring screws. Securely attaches shield to work benches and tables up to 38 mm thickness.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5099.1** | 1 | 59,05 |





## Sekuroka®-protection shields

Made of transparent or leaded acrylic glass. Protects against beta or gamma-radiation. By adjusting the feet, the screens can be used at inclination of 15°. Dimensions: W 350 x H 540 mm.

| For protection against | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Beta-radiation | 10 | **E008.1** | 1 | 170,95 |
| Gamma-radiation | 12 | **E009.1** | 1 | 1693,15 |

## Sekuroka®-radiation protection screens

Protect against radio-isotope solutions. Two models available: for either beta protection ($^{32}P$) or gamma radiation ($^{125}J$) ; made of transparent or leaded acrylic glass. With 45° canted frontage.
With offsetbase for hanging into the safety tub.

| For protection against | W x D x H (mm) | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| β-radiation | 300 x 150 x 450 | 10 | **K562.1** | 1 | 162,35 |
| γ-radiation | 300 x 150 x 450 | 12 | **K564.1** | 1 | 1528,65 |



## Sekuroka® radiation protection screens

For protection during work with radioactive samples or solutions which emit beta radiation ($^{32}P$) or gamma radiation ($^{125}J$). Made of transparent acrylic glass for protection against beta radiation or of leaded acrylic glass for protection against gamma radiation. Inclination angle of 15° to reduce light reflections. Screens with bent base are suitable for use with protection trays.

**With flat base.** Dimensions: W 300 x D 300 x H 450 mm.

| For protection against | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| β radiation | 10 | **E041.1** | 1 | 156,95 |
| γ radiation | 12 | **EXN7.1** | 1 | 1264,20 |

**With bent base.** Dimensions: W 300 x D 150 x H 450 mm.

| For protection against | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| β radiation | 10 | **EXN8.1** | 1 | 160,20 |
| γ radiation | 12 | **E042.1** | 1 | 1326,55 |

**Sekuroka® radiation protection screen duo**
Made of two layers, acrylic and leaded acrylic. 15° inclination angle. With bent base. Dimensions: W 300 x D 150 x H 450 mm.

| For protection against | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| β and γ radiation | - | **EXN9.1** | 1 | 2578,95 |

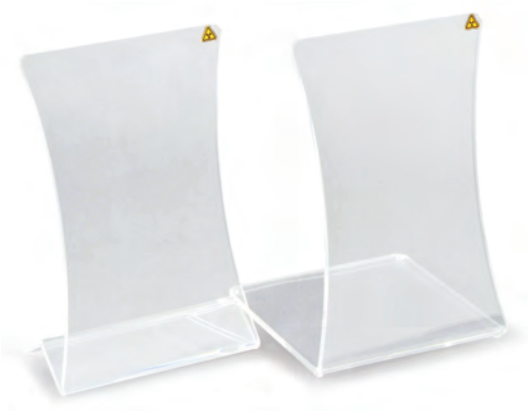


## Sekuroka®-beta radiation protection screen

Made of transparent acrylic glass. Ideal for working with radio-isotope solutions which emit Beta-radiation, e.g. $^{32}P$, $^{14}C$ or $^{35}S$. With tilted front screen and rounded edges. With 4 rubber feet on base plate for extra stability. Made of one piece. Total height 50 cm, width 35 cm, depth 30 cm. Wall thickness 1 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9764.1** | 1 | 160,20 |

▶ Cryo safety gloves see page 644



## Sekuroka®-hourglass-shaped radiation protection screens

Made of transparent acrylic glass for protection against beta radiation or of leaded acrylic glass for protection against gamma radiation.
Inclination angle of 15° to reduce light reflections.
For protection during work with radioactive samples and solutions which emit beta radiation (32P) or gamma radiation (125J).
Screens with a bent base are suitable for use with protection trays.
The bent shape with cut-outs at the sides allows for greater freedom of movement in order to eliminate fatigue when working.

**With flat base.** Dimensions: W 300 x D 300 x H 450 mm.

| For protection against | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| β radiation | 10 | **EYN3.1** | 1 | 168,80 |
| γ radiation | 12 | **EYN4.1** | 1 | 1351,30 |

**With bent base.** Dimensions: W 300 x D 150 x H 450 mm.

| For protection against | Wall thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| β radiation | 10 | **EYN5.1** | 1 | 169,85 |
| γ radiation | 12 | **EYN6.1** | 1 | 1351,30 |




## Sekuroka®-radiation protection waste box

Made of leaded acrylic glass for protection against beta rays.
For collecting contaminated pipettor tips, cannulas, centrifuge tubes, etc.
Opening ∅ 25 mm in lid. Extra hinged lid for closing the opening.
Comes with 4 rubber feet to prevent slipping.
Dimensions: W 150 x D 150 x H 150 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Protection against beta-radiation | **E267.1** | 1 | 356,90 |

## Sekuroka®-radiation protection waste bags

Suitable for waste box E267.1. Made of reinforced polyethylene.
With double welded seams for extra leak proofing and a double cord sealing mechanism for secure storage of radioactive waste during disposal.
A line marking the maximum fill level and warning symbol for radioactive waste is printed on the bags.
Dimensions: L 120 x W 130 x H 140 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K178.1** | 25 | 112,90 |



## Sekuroka®-radiation protection boxes

Made of transparent acrylic glass for protection against beta radiation or of leaded acrylic glass for protection against gamma radiation.
For storage and transportation of radioactive samples and solutions.
Each box has a hinged lid and slip-resistant feet.

**Beta radiation protection boxes**

| Type | Outer dimensions (mm) W x D x H | Inner dimensions (mm) W x D x H | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| MIni | 109 x 109 x 79 | 85 x 85 x 55 | **EXT0.1** | 1 | 240,80 |
| Midi | 185 x 105 x 80 | 165 x 85 x 60 | **K565.1** | 1 | 259,10 |
| Maxi | 300 x 185 x 160 | 280 x 165 x 140 | **L424.1** | 1 | 336,50 |

**Gamma radiation protection boxes**

| Type | Outer dimensions (mm) W x D x H | Inner dimensions (mm) W x D x H | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Mini | 109 x 109 x 79 | 85 x 85 x 55 | **EXT1.1** | 1 | 893,35 |
| Midi | 189 x 109 x 84 | 165 x 85 x 60 | **K566.1** | 1 | 1423,30 |
| Maxi | 304 x 189 x 164 | 280 x 165 x 140 | **L425.1** | 1 | 2687,50 |

## Racks for Sekuroka®-radiation protection boxes

Made of acrylic. Maxi boxes can accommodate up to three midi racks.

| Suitable for | Version for | No. of slots | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Mini box | 0.5 ml reaction vials | 20 | **EXT2.1** | 1 | 35,35 |
| Mini box | 1.5 ml reaction vials | 16 | **EXT3.1** | 1 | 35,35 |
| Midi box | 0.5 ml reaction vials | 40 | **EXT4.1** | 1 | 35,35 |
| Midi box | 1.5 ml reaction vials | 32 | **K568.1** | 1 | 35,25 |
| Midi box | 2 ml cryogenic vials | 32 | **EXT5.1** | 1 | 35,35 |
| Maxi box | 5 ml scintillation vials | 15 | **EXT6.1** | 1 | 35,35 |
| Maxi box | 20 ml scintillation vials | 8 | **EXT7.1** | 1 | 35,35 |




## Sekuroka®-beta-protection round container

Made of transparent acrylic glass. Holds flasks, beakers and other vessels.
Wall thickness 1 cm.

| Outside ∅ (mm) | Inside ∅ (mm) | Outer height (mm) | Inner height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 120 | 100 | 170 | 150 | **9766.1** | 1 | 177,40 |
| 150 | 130 | 280 | 260 | **9767.1** | 1 | 262,30 |

# Safety shields



## Sekuroka®-radiation protection waste containers

For storage and transportation of radioactive samples and solutions.
Made of transparent acrylic glass for protection against beta radiation or of leaded acrylic glass for protection against gamma radiation.
The 47 l container is equipped with rollers for easy transportation.

**Beta radiation protection waste container**

| Volume (l) | Inner L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 100 x 80 x 130 | **EYN7.1** | 1 | 296,70 |
| 3,3 | 150 x 150 x 150 | **C975.1** | 1 | 411,75 |
| 10 | 200 x 200 x 250 | **C976.1** | 1 | 493,45 |
| 20 | 215 x 235 x 380 | **EYN8.1** | 1 | 507,40 |
| 47 | 285 x 270 x 580 | **EYN9.1** | 1 | 662,20 |
| 53 | 490 x 270 x 400 | **C977.1** | 1 | 590,20 |

**Gamma radiation protection waste container**

| Volume (l) | Inner L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 100 x 80 x 130 | **EYP0.1** | 1 | 1193,25 |
| 3,3 | 150 x 150 x 150 | **EYP1.1** | 1 | 1797,40 |






## Sekuroka®-protection trays

Made of **PVC** in signal colour. To protect the desk or laboratory bench against contamination from radioactive substances or spilt reagents. Easy to clean. With strong edging, 20 mm high. The trays should be used together with the anti-static inserts made of transparent PET.
**Delivery incl.** protection tray and protection tray insert.

**For work with radioactive substances, signal colour yellow**

| Outer L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 460 x 260 | **EXL3.1** | 1 | 66,65 |
| 540 x 340 | **EXL4.1** | 1 | 72,85 |
| 570 x 540 | **LN79.1** | 1 | 99,60 |
| 680 x 540 | **EXL5.1** | 1 | 119,35 |
| 700 x 460 | **EXL6.1** | 1 | 121,50 |
| 1130 x 540 | **LN78.1** | 1 | 135,45 |

**For general tasks, colour white**

| Outer L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 460 x 260 | **EXL7.1** | 1 | 53,60 |
| 540 x 340 | **EXL8.1** | 1 | 58,20 |
| 570 x 540 | **EXL9.1** | 1 | 80,10 |
| 680 x 540 | **EXN0.1** | 1 | 97,30 |
| 700 x 460 | **EXN1.1** | 1 | 97,30 |
| 1130 x 540 | **EXN2.1** | 1 | 112,90 |

**Sekuroka®-protection tray inserts**
Made of **PET**, transparent. The flexible anti-static inserts fit exactly into the trays provided and can be disposed of or reused as required.

| Outer L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 460 x 260 | **EXN3.1** | 25 | 70,85 |
| 540 x 340 | **EXN4.1** | 25 | 92,20 |
| 570 x 540 | **LN81.1** | 25 | 107,30 |
| 680 x 540 | **EXN5.1** | 25 | 145,15 |
| 700 x 460 | **EXN6.1** | 25 | 147,30 |
| 1130 x 540 | **LN80.1** | 25 | 201,05 |




## Sekuroka® "Radioactive" warning labels

Made of plastic film, self-adhesive. Yellow background with black writing.
Supplied on a roll: Width 24 mm, Length 66 m, core ∅ 7.6 cm.

| Type | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|
| RADIOACTIVE | **1730.1** | 3 | 18,60 |

a




c




d

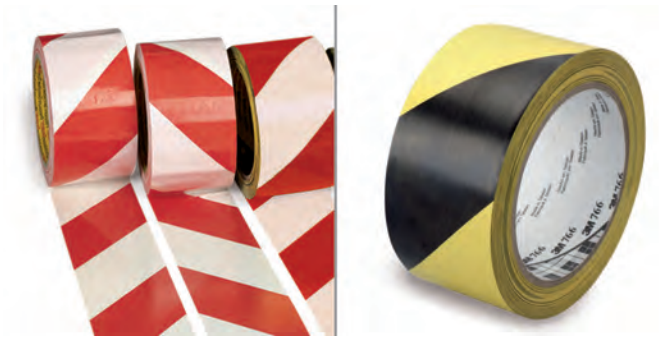



e




f



## Adhesive hazard warning tape

By 3M. Self-adhesive, abrasion resistant adhesive hazard warning tape for indoor use. Made of PVC film, highly elastic and conformable even on irregular or uneven surfaces. Ideal for marking hazards, bundling, holding and sealing. Roll width 50 mm, length 33 m.

| Colour | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|
| red / white | **0744.2** | 1 | 23,25 |
| yellow / black | **NK94.1** | 1 | 21,45 |



## Sekuroka®-signal barrier tape

Tear-resistant tape made of PE film, red/white striped, plain printed, non-adhesive. For indicating, marking and warning against obstacles and hazardos. Dimensions: L 500 m x W 80 mm.

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **NH42.1** | 1 | 23,15 |

Only available in Germany!



## Sekuroka®-hazard warning labels "Radioactive"

Self-adhesive. Ideal for labelling micro-centrifuge tubes, twist top vials, test tubes, etc. Supplied in dispenser box.

| ∅ (mm) | Packaging | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|
| 6,0 | roll à 1000 | **E289.1** | 1 | 52,90 |

Self-adhesive. For microcentrifuge tubes with flat lid.
Sticks during autoclaving, in boiling waterbaths, during freezing.
Chemically resistant against most organic solvents and caustic substances.
Autoclavable.

| ∅ (mm) | Packaging | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|
| 9,5 | roll à 1000 | **X285.1** | 1 | 38,20 |




## Sekuroka®-magnetic signs

Come on tape roll. Made of plastic with magnetic finish and white PVC layer. Can be marked with pencil, pen, typewriter, etc.

| Width (mm) | Roll length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 30 | 5 | **0182.1** | 1 | 26,45 |
| 50 | 5 | **0181.1** | 1 | 44,05 |



## PerfTape™-perforated marker tapes

Self-adhesive coloured marker tape, with perforations for easy and clean separation of identical-sized strips. The coated paper surface is durable, abrasion resistant and does not discolour. Oil and water resistant. Excellent adhesion to most surfaces, such as glass, plastic and metal. Can be removed without leaving a residue.

Ideal for general identification and colour coding. Suitable for labelling with ball-point pen, pencil, felt tipped pen or permanent marker.

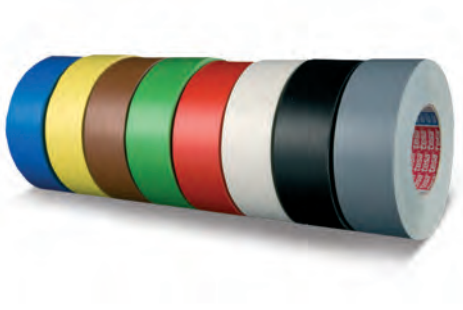
Temperature stable from -23 to +121 °C.
Distance between perforations: 31.75 mm.

**Length 12.7 m, width 19 mm, core ∅ 25.4 mm**

| Colour | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|
| white | **ATY8.1** | 1 | 16,80 |
| yellow | **ATY9.1** | 1 | 16,80 |
| green | **AXA0.1** | 1 | 16,80 |
| light blue | **AXA1.1** | 1 | 16,80 |
| red | **AXA2.1** | 1 | 16,80 |

**Length 55 m, width 19 mm, core ∅ 76.2 mm**

| Colour | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|
| white | **AXA3.1** | 1 | 40,75 |
| yellow | **AXA4.1** | 1 | 40,75 |
| green | **AXA5.1** | 1 | 40,75 |
| light blue | **AXA6.1** | 1 | 40,75 |
| red | **AXA7.1** | 1 | 40,75 |



## tesa®-premium textile adhesive tapes

Acrylic-coated cloth tape with natural rubber adhesive. 148 mesh (threads per inch²). Abrasion resistant, very high tear strength. Hand tearable. Waterproof, UV and oil resistant. Wide variety of uses indoors and outdoors. Writable, temperature stable from -40 to 130 °C. Length 50 m, width 19 mm, thickness 0.31 mm, core ∅ 76.1 mm. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **YX11.1** | 1 | 26,80 |
| yellow | **YX12.1** | 1 | 26,80 |
| red | **YX13.1** | 1 | 26,80 |
| blue | **YX14.1** | 1 | 26,80 |
| green | **YX15.1** | 1 | 26,80 |
| brown | **YX17.1** | 1 | 26,80 |
| black | **YX18.1** | 1 | 26,80 |



## Temperature stable adhesive tapes

Self-adhesive tape. Ideal for extreme temperatures. Temperature stable from **-196 to +287 °C**. Suitable for use in the cryo sector, incubators, autoclaves, sterilizers, etc. Surface with textile finish, can be marked.

| Width (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12,7 | 7,6 | **L034.1** | 1 | 32,25 |
| 19,0 | 7,6 | **L035.1** | 1 | 36,35 |
| 25,4 | 7,6 | **L036.1** | 1 | 54,10 |



## Sekuroka®-standard textile adhesive tapes

PE-coated cloth tape with natural rubber adhesive backing. 80 mesh (threads per inch²). High tear strength, good adhesive power, also adheres to rough surfaces. Hand tearable. Waterproof, highly UV and oil resistant. Wide variety of uses indoors and outdoors.
Writable, temperature stable from -35 to +80 °C.
Length 50 m, width 19 mm, thickness 0.30 mm, core ∅ 76.1 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **YX05.1** | 1 | 15,95 |
| yellow | **YX06.1** | 1 | 15,95 |
| red | **YX07.1** | 1 | 15,95 |
| blue | **YX08.1** | 1 | 15,95 |
| green | **YX09.1** | 1 | 15,95 |
| silver | **YX10.1** | 1 | 15,95 |


- Microcentrifuge tubes from page 474
- Stands for centrifuge tubes from page 231
- Cryo gloves see page 644




## Roti®-Tape-marking tapes

Self-adhesive, coloured marking tape. Ideal for various applications, e.g. marking samples, lab glasses, vessels, etc.

- Can be written on with pencil, biro, pen, marker, ink, etc.
- Can be peeled off without leaving a trace
- Resistant to oil, water and acids
- Temperatur stable from -23 to +121 °C
- Autoclavable

**Length 12.7 m, inner-Ø 2.54 cm**

| | Width 13.0 mm | Width 19.1 mm | Width 25.4 mm |
|---|---|---|---|
| Colour | Art. No. | Art. No. | Art. No. |
| white | **7981.1** | **7999.1** | **8036.1** |
| yellow | **7987.1** | **8008.1** | **8055.1** |
| green | **7985.1** | **8003.1** | **8042.1** |
| pink | **AL31.1** | **AL32.1** | **AL33.1** |
| red | **7982.1** | **8000.1** | **8037.1** |
| orange | **7988.1** | **8014.1** | **8057.1** |
| blue | **7983.1** | **8002.1** | **8041.1** |
| beige | **AL34.1** | **AL35.1** | **AL36.1** |
| salmon | **AL37.1** | **AL38.1** | **AL39.1** |
| copper | **AL40.1** | **AL41.1** | **AL42.1** |
| pink | **AL43.1** | **AL44.1** | **AL45.1** |
| violet | **AL46.1** | **AL47.1** | **AL48.1** |
| lavender | **AL49.1** | **AL50.1** | **AL51.1** |
| grey | **AL52.1** | **AL53.1** | **AL54.1** |
| black | **AL55.1** | **AL56.1** | **AL57.1** |
| €/roll | 8,05 | 9,25 | 12,80 |

**Length 55 m, inner-Ø 7.62 cm**

| | Width 13.0 mm | Width 19.1 mm | Width 25.4 mm |
|---|---|---|---|
| Colour | Art. No. | Art. No. | Art. No. |
| white | **7990.1** | **8024.1** | **8058.1** |
| yellow | **7996.1** | **8034.1** | **8065.1** |
| green | **7994.1** | **8033.1** | **8064.1** |
| rosé | **AL58.1** | **AL59.1** | **AL60.1** |
| red | **7991.1** | **8026.1** | **8061.1** |
| orange | **7997.1** | **8035.1** | **8069.1** |
| blue | **7993.1** | **8027.1** | **8062.1** |
| salmon | **AL64.1** | **AL65.1** | **AL66.1** |
| copper | **AL67.1** | **AL68.1** | |
| pink | **AL70.1** | **AL71.1** | **AL72.1** |
| violet | **AL73.1** | **AL74.1** | **AL75.1** |
| lavender | **AL76.1** | **AL77.1** | **AL78.1** |
| grey | **AL79.1** | **AL80.1** | **AL81.1** |
| beige | | **AL62.1** | |
| black | | **AL83.1** | |
| €/roll | 17,20 | 20,65 | 25,75 |



## Roti®-Tape-marking tapes starter set

Set consists of 1 metal-tape dispenser (L314.1) and 10 rolls marking tape (13 mm x 12.7 m) in the colours white, red, blue, green, yellow, orange, beige, salmon, violet, and lavender.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AL85.1** | 1 | 106,35 |

## Roti®-Tape-marking tape assortments

Contains 5 rolls in white, red, blue, green and yellow.

| Length (m) | Width (mm) | Art. No. | Pack Qty. (assortment) | € |
|---|---|---|---|---|
| 12,7 | 13,0 | **AK65.1** | 1 | 32,20 |
| 12,7 | 19,1 | **AK66.1** | 1 | 37,60 |
| 12,7 | 25,4 | **AK67.1** | 1 | 50,45 |
| 55 | 13,0 | **E287.1** | 1 | 60,85 |
| 55 | 19,1 | **E288.1** | 1 | 74,20 |
| 55 | 25,4 | **K325.1** | 1 | 104,30 |



## Roti®-Tape-marking tape dispensers

For Roti®-Tape-marking tape.
Dispenser and rolls can be combined individually.
**Plastic dispenser:** for 1-2 rolls of length 12.7 m.
**Metal dispenser:** with 4 rubber knobs to prevent slipping and with bore holes for wall attachment. Colour brillant blue.
**Acrylic glass dispenser:** with lid and 4 rubber knobs.

| Image | for roll length (m) | Useable width(mm) | Material | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| ① | 12,7 | 34 | Plastic | 117 x 47 x 90 | **CT05.1** | 1 | 10,35 |
| ② | 12,7 | 240 | Metal | 260 x 120 x 80 | **L314.1** | 1 | 66,65 |
| ③ | 55 | 240 | Metal | 250 x 175 x 100 | **K346.1** | 1 | 69,05 |
| ④ | 12,7 | 220 | Acrylic glass | 251 x 125 x 92 | **AL87.1** | 1 | 96,65 |
| ⑤ | 55 | 240 | Acrylic glass | 248 x 191 x 162 | **AL88.1** | 1 | 121,50 |

# Marking




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121°C

## Labels on rolls

Ideal for 0.2/0.5/0.65 and 1.5/2 ml tubes and other containers made of chemically inert polyester. Sticks to plastics without drying out and falling off during steam sterilization, in boiling waterbaths, refrigerators, stirrers, shakers, centrifuges, etc. Are extremely close-fitting and do not hinder removal or loading of tubes in stands or centrifuges. Tearproof.
Can be marked with almost all markers.

**Labels, angular (Tough Tags™)**, for manually marking.
Temperature stable from **-40 to +121 °C**. 1000 per roll.
(1500 per roll at Art. No. K436.1).

| For vials (ml) | Colour | Length (mm) | Width (mm) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|---|
| 0,2 | white | 20,5 | 6,5 | **K436.1** | 1 | 40,85 |
| 0,5 | white | 23 | 13 | **K556.1** | 1 | 38,20 |
| 0,5 | blue | 23 | 13 | **K440.1** | 1 | 40,85 |
| 0,5 | yellow | 23 | 13 | **K441.1** | 1 | 40,85 |
| 0,5 | green | 23 | 13 | **L666.1** | 1 | 39,70 |
| 0,5 | red | 23 | 13 | **K442.1** | 1 | 40,85 |
| 0,5 | transparent | 23 | 13 | **K443.1** | 1 | 40,85 |
| 1,5/2 | white | 32 | 13 | **K557.1** | 1 | 38,20 |
| 1,5/2 | blue | 32 | 13 | **K444.1** | 1 | 48,40 |
| 1,5/2 | yellow | 32 | 13 | **K445.1** | 1 | 48,40 |
| 1,5/2 | green | 32 | 13 | **L667.1** | 1 | 45,70 |
| 1,5/2 | red | 32 | 13 | **K446.1** | 1 | 48,40 |
| 1,5/2 | transparent | 32 | 13 | **K447.1** | 1 | 48,40 |
| Test tubes etc. | white | 38 | 19 | **L676.1** | 1 | 60,75 |
| Microtest plates | white | 38 | 6 | **K435.1** | 1 | 40,85 |

**Labels, round (Tough Spots™),** for manually marking.
Temperature stable from **-196 to +80 °C**. 1000 per roll.

| For vials (ml) | Colour | ∅ (mm) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| 0,5 | white | 9,5 | **K164.1** | 1 | 39,25 |
| 0,5 | blue | 9,5 | **X612.1** | 1 | 36,55 |
| 0,5 | green | 9,5 | **X613.1** | 1 | 36,55 |
| 0,5 | red | 9,5 | **X614.1** | 1 | 36,55 |
| 0,5 | yellow | 9,5 | **X615.1** | 1 | 36,55 |
| 1,5/2 | white | 12,7 | **N120.1** | 1 | 38,20 |
| 1,5/2 | red | 12,7 | **N121.1** | 1 | 38,20 |
| 1,5/2 | green | 12,7 | **N122.1** | 1 | 38,20 |
| 1,5/2 | yellow | 12,7 | **N123.1** | 1 | 38,20 |
| 1,5/2 | blue | 12,7 | **N124.1** | 1 | 38,20 |




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121°C

## Labels for laser printers

Ideal for 0.2/0.5/0.65 and 1.5/2 ml tubes and other containers made of chemically inert polyester. Sticks to all plastics without drying out and falling off during steam sterilization, in boiling waterbaths, refrigerators, stirrers, shakers, centrifuges, etc. Are extremely close-fitting and do not hinder removal or loading of tubes in stands or centrifuges. Tearproof.

**Labels, angular, for laser printers (Laser Tough Tags™)**
Come on sheets, sheet size (US-Letter) 21.6 x 27.9 cm.
Temperature stable from **-40 to +121 °C**

*sorted acc. to colour: contains 4 sheets each of following colours (blue, green, orange, red, yellow)

| For vials (ml) | Colour | Length (mm) | Width (mm) | Labels/ Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|---|
| 0,5 | white | 24 | 13 | 119 | **TH53.1** | 25 | 85,50 |
| 0,5 | sorted acc. to colour* | 24 | 13 | 119 | **TH54.1** | 25 | 85,50 |
| 1,5/2 | white | 33 | 13 | 85 | **TH55.1** | 25 | 85,50 |
| 1,5/2 | sorted acc. to colour* | 33 | 13 | 85 | **TH56.1** | 25 | 85,50 |
| Test tubes etc. | white | 38 | 19 | 60 | **TH57.1** | 25 | 85,50 |
| Test tubes etc. | sorted acc. to colour* | 38 | 19 | 60 | **TH58.1** | 25 | 85,50 |
| Microscope slides etc. | white | 22 | 22 | 96 | **TH59.1** | 25 | 85,50 |
| Microscope slides etc. | sorted acc. to colour* | 22 | 22 | 96 | **TH60.1** | 25 | 85,50 |

**Labels, round, for laser printers (Laser Tough Spots™)**
Come on sheets, sheet size (US-Letter) 21.6 x 27.9 cm.
Temperature stable from **-196 to +100 °C.**

*sorted according to colour: contains 4 sheets each of following colours (blue, green, orange, red, yellow)

| For vials (ml) | Colour | ∅ (mm) | Labels/Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|
| 0,5-0,65 | white | 9,5 | 192 | **KP57.1** | 20 | 67,95 |
| 0,5-0,65 | sorted acc. to colour* | 9,5 | 192 | **KP63.1** | 20 | 67,95 |
| 1,5-2,0 | white | 11 | 234 | **KP64.1** | 20 | 67,95 |
| 1,5-2,0 | white | 13 | 192 | **KP65.1** | 20 | 67,95 |
| 1,5-2,0 | sorted acc. to colour* | 13 | 192 | **KP71.1** | 20 | 67,95 |

▶ Further labels see page 686



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## Cryo-labels on sheets

Made with acrylate. Sticks to plastic, glass or metal without drying out or peeling off. Glass and metal surfaces must be completely free of grease. Can also be used in boiling water baths, in refrigerators, under cryo-conditions (liquid nitrogen). Temperature stable from **-196 to +100 °C**. Can be removed without leaving any traces. Sheets are printable with a laser printer.

**Sheet size (US-Letter) 21.6 x 27.9 cm.**

**White**

| Length (mm) | Width (mm) | For | Labels/ Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|
| 38 | 6 | Microtiter-plates | 156 | **X545.1** | 20 | 76,55 |
| 24 | 13 | 0.5 ml tubes | 119 | **X547.1** | 20 | 76,55 |
| 33 | 13 | 1.5-2 ml tubes | 85 | **X548.1** | 20 | 76,55 |
| 25 | 25 | Microscope slides | 80 | **EL06.1** | 20 | 73,65 |
| 38 | 19 | Cryo-vials | 60 | **X549.1** | 20 | 76,55 |
| 64 | 13 | 0.5-2 ml tubes | 60 | **EL07.1** | 20 | 73,65 |
| 43 | 19 | Cryo vials | 52 | **EL08.1** | 20 | 73,65 |
| 29 | 44 | Centrifuge tubes | 42 | **EL09.1** | 20 | 73,65 |
| 67 | 25 | Racks, boxes | 30 | **X550.1** | 20 | 76,55 |
| 76 | 51 | Bottles, glasses | 12 | **X551.1** | 20 | 76,55 |

**Blue**

| Length (mm) | Width (mm) | For | Labels/ Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|
| 24 | 13 | 0.5 ml tubes | 119 | **HX32.1** | 20 | 74,75 |
| 33 | 13 | 1.5-2 ml tubes | 85 | **HX33.1** | 20 | 74,75 |
| 38 | 19 | Cryo-vials | 60 | **HX34.1** | 20 | 74,75 |
| 67 | 25 | Racks, boxes | 30 | **HX35.1** | 20 | 74,75 |

**Green**

| Length (mm) | Width (mm) | For | Labels/ Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|
| 24 | 13 | 0.5 ml tubes | 119 | **HX36.1** | 20 | 74,75 |
| 33 | 13 | 1.5-2 ml tubes | 85 | **HX37.1** | 20 | 74,75 |
| 38 | 19 | Cryo-vials | 60 | **HX38.1** | 20 | 74,75 |
| 67 | 25 | Racks, boxes | 30 | **HX39.1** | 20 | 74,75 |

**Orange**

| Length (mm) | Width (mm) | For | Labels/ Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|
| 24 | 13 | 0.5 ml tubes | 119 | **HX40.1** | 20 | 74,75 |
| 33 | 13 | 1.5-2 ml tubes | 85 | **HX41.1** | 20 | 74,75 |
| 38 | 19 | Cryo-vials | 60 | **HX42.1** | 20 | 74,75 |
| 67 | 25 | Racks, boxes | 30 | **HX43.1** | 20 | 74,75 |

**Red**

| Length (mm) | Width (mm) | For | Labels/ Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|
| 24 | 13 | 0.5 ml tubes | 119 | **HX44.1** | 20 | 74,75 |
| 33 | 13 | 1.5-2 ml tubes | 85 | **HX45.1** | 20 | 74,75 |
| 38 | 19 | Cryo-vials | 60 | **HX46.1** | 20 | 74,75 |
| 67 | 25 | Racks, boxes | 30 | **HX47.1** | 20 | 74,75 |

**Yellow**

| Length (mm) | Width (mm) | For | Labels/ Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|
| 24 | 13 | 0.5 ml tubes | 119 | **HX48.1** | 20 | 74,75 |
| 33 | 13 | 1.5-2 ml tubes | 85 | **HX49.1** | 20 | 74,75 |
| 38 | 19 | Cryo-vials | 60 | **HX50.1** | 20 | 74,75 |
| 67 | 25 | Racks, boxes | 30 | **HX51.1** | 20 | 74,75 |

**Coloured assorted**
**(4 sheets of each: blue, green, orange, red, yellow)**

| Length (mm) | Width (mm) | For | Labels/ Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|
| 24 | 13 | 0.5 ml tubes | 119 | **HX52.1** | 20 | 74,75 |
| 33 | 13 | 1.5-2 ml tubes | 85 | **HX53.1** | 20 | 74,75 |
| 38 | 19 | Cryo-vials | 60 | **HX54.1** | 20 | 74,75 |
| 67 | 25 | Racks, boxes | 30 | **HX55.1** | 20 | 74,75 |

## Cryo-labels on the roll, colour white

**White, for manually marking**

| Length (mm) | Width (mm) | For | Labels/ Roll | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|---|
| 24 | 13 | 0.5 ml tubes | 1000 | **HX56.1** | 1 | 39,80 |
| 38 | 19 | Cryo vials | 1000 | **L673.1** | 1 | 39,70 |
| 33 | 13 | 1.5-2 ml tubes | 1000 | **L672.1** | 1 | 39,70 |

## Cryo-Clear™ - labels for laser printers

**Transparent labels** made of flexible vinyl with acrylic adhesive.
The label surface is specially coated for printing with laser printers.
Temperature stable from **-196 to +70 °C**. Also suitable for liquid nitrogen.
Good chemical resistance against most organic solutions.

**Come on sheet, format (US-Letter) 21.6 x 27.9 cm**

| Length (mm) | Width (mm) | For | Labels/ Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|
| 24 | 13 | 0.5 ml tubes | 119 | **HT44.1** | 20 | 73,65 |
| 33 | 13 | 1.5-2.0 ml tubes | 85 | **HT45.1** | 20 | 73,65 |




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## WETGRIP™-labels

On sheets, sheet size (US-Letter) 21.6 x 27.9 cm, suitable for laser printers.
Labels stick to moist and frozen surfaces made of glass, plastic, metal and cardboard. Make sure that surfaces are free of grease and silicone!
Made of chemically inert polyester.
Temperature stable from **-80 to +100 °C.**

| Length (mm) | Width (mm) | For | Labels/ Sheet | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|---|---|
| 24 | 13 | 0.5 ml-tubes | 119 | **KP74.1** | 20 | 75,05 |
| 33 | 13 | 1.5-2 ml-tubes | 85 | **KP75.1** | 20 | 75,05 |
| 38 | 19 | Other applications | 60 | **KP76.1** | 20 | 75,05 |
| 22 | 22 | Microscope slides | 96 | **KP77.1** | 20 | 75,05 |

▶ Labels for thermal transfer printers see page 686

▶ Labels DIN A4 see page 692

# Marking




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## Thermal transfer labels

White, angular cornered labels with acrylate-based adhesive backing. Excellent adhesion to plastic, glass or metal at low temperatures without drying out or peeling off. Care must be taken to ensure that glass and metallic surfaces are absolutely free of oil and grease. Abrasion resistant, resistant to chemicals and moisture. Suitable for use in refrigerators, freezers and under cryogenic conditions (liquid nitrogen). Can be removed without leaving any traces. Coated for use with a resin ribbon. Designed for high resolution and very precise labelling, e.g. for barcode. Suitable for most thermal transfer printers. 2000 labels per roll, wound externally, roll core dia. 25.4 mm (1 inch).

**Cryo-Tags® cryogenic labels**

Temperature stable from **-196 to +80 °C**.

| Length (mm) | Width (mm) | For | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| 20,6 | 7 | 0.2 ml tubes | **NL05.1** | 1 | 81,70 |
| 24 | 13 | 0.5 ml tubes | **NL06.1** | 1 | 81,70 |
| 27 | 13 | 0.5 ml tubes | **NL07.1** | 1 | 81,70 |
| 32 | 13 | 1.5-2 ml tubes | **NL08.1** | 1 | 101,05 |
| 35 | 16 | 0.5-2 ml cryo vials | **NL09.1** | 1 | 88,10 |
| 38 | 13 | 0.5-2 ml cryo vials | **NL10.1** | 1 | 111,80 |
| 38 | 19 | Racks/containers | **NL11.1** | 1 | 137,60 |
| 51 | 6 | Microtitration plates | **NL12.1** | 1 | 78,40 |

**Tough-Tags®**

Temperature stable from **-40 to +150 °C**.

| Length (mm) | Width (mm) | For | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| 24 | 13 | 0.5 ml tubes | **NL13.1** | 1 | 79,50 |
| 32 | 13 | 1.5-2 ml tubes | **NL14.1** | 1 | 82,75 |
| 35 | 16 | 0.5-2 ml cryo vials | **NL15.1** | 1 | 82,75 |
| 38 | 19 | Racks/containers | **NL16.1** | 1 | 145,15 |
| 51 | 6 | Microtitration plates | **NL17.1** | 1 | 82,75 |




121°C

## Thermal transfer labels, xylene-resistant

Made of polyester. Excellent solvent resistance, specifically against xylene. Versatile - also suitable for use in boiling water baths. Surface coated for use with resin ribbon. Designed for high resolution and very precise labelling, e.g. for barcode. Suitable for most thermal transfer printers. Good adhesion to PP tubes; not for use on siliconised surfaces. Temperature stable from -40 to 121 °C, autoclavable. 2000 labels per roll, wound externally, 25.4 mm roll core (1 inch).

| L x W (mm) | Suitable for: | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 22 x 22 | Microscope slide | **ECH8.1** | 2000 | 84,95 |




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121°C

## High-temperature labels (Bake Tags™)

Made of acrylate, for manual labelling. For permanent labelling of plastic, glass and metal containers. Can be used for hot air sterilizing (180 °C) and for deactivating RNase/DNase and other enzymes. Also ideal for use during sterilizing, autoclaving, in boiling waterbaths, refrigerators and for storing in freezers (liquid nitrogen). Resistant to most organic solvents, acids and alkalis. Strength 0.008 mm. Temperature stable from **-196 to +180 °C**. Size of labels 38 x 19 mm. Colour: white. 250 labels on roll.

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **L675.1** | 1 | 100,95 |


- ▶ Microcentrifuge tubes from page 474
- ▶ Stands for centrifuge tubes from page 231
- ▶ Cryo gloves see page 644




## Wash-Off Labels™

Washable, white labels **on sheets**. Labels and adhesive are completely removable within 30 seconds at any water temperature and without leaving any traces of adhesive. 100 % biodegradable. Temperature stable from 0 to 21 °C. Suitable for racks, boxes and containers. Suitable for most laser printers. Sheet format (US letter) 21.6 x 27.9 cm.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 67 | 25,4 | **NL21.1** | 750 | 117,20 |
| 102 | 25,4 | **NL22.1** | 500 | 117,20 |



## Removable Tough-Tags® for manual labelling

Removable, white labels with rounded corners; ideal for labelling reusable containers, laboratory equipment, racks and pipettes. No residues - easily removable without leaving any traces of adhesive. Resistant to most solvents, including (for short periods) acetone and xylol. 1000 labels per roll.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|
| 32,5 | 12,7 | **NL19.1** | 1 | 32,20 |
| 38 | 19 | **NL20.1** | 1 | 32,20 |



## Sekuroka®-hazard warning labels "Biohazard"

Self-adhesive, ∅ 9.5 mm. Ideal for 0.5 to 2.0 ml tubes and other containers. Sticks to all plastics without drying out and falling off, e.g in freezers or in boiling water baths. Chemically resistant against most organic solvents and caustic materials. Autoclavable. 1000 labels per roll.

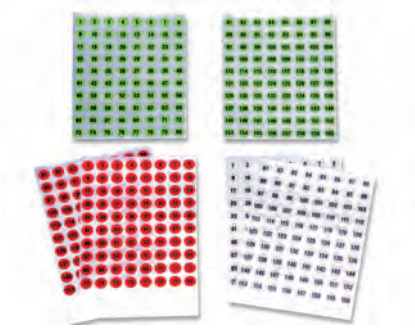
| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **KL45.1** | 1 | 38,20 |



## Write-Protect™-label protection film

Self-adhesive, perforated, fits Cryo labels for 0.5, 1.5 and 2.0 ml tubes or other vessels. Protects the label against organic solvents and corrosive chemicals. Holds labels in place, and prevents labels from becoming detached or falling off. Adheres to most surfaces, plastics, glass and metals. Resistant in temperature range from -196 to +150 °C.
**Delivery incl.** dispenser. 1000 labels per roll.

| L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 31,75 x 12,7 | **ECH6.1** | 1000 | 39,75 |
| 40,65 x 16,0 | **ECH7.1** | 1000 | 39,75 |



## Sekuroka®-labels

Numbered from 1-160 in red, green and blue. Self-adhesive, made of paper ∅ 8 mm. Ideal for labelling test tubes, vials, microcentrifuge tubes, etc. Should be used together with numerical racks to prevent any mix-up. Labels ensure correct positioning of test tubes even during bulk sampling.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N376.1** | 1 | 4,25 |



## Tough-Tag Station

For easy and convenient storage of up to 6 rolls of Tough-Tags®, Tough-Spots® or Cryo-Tags® (unsuitable for round labels ∅ 25 mm). With ledge for writing labels, cutting edge and no-skid rubber feet.
**Delivery without** labels, please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NL18.1** | 1 | 88,15 |




## tesa Easy Cut® table dispenser

Non-slip base and heavy weight for extra stability.
**Model** ①: dimensions L 240 x W 70 x H 130 mm, weight 1500 g
**Model** ②: dimensions L 155 x W 55 x H 80 mm, weight 900 g

| Model | for roll length (m) | Max. tape width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 66 | 25 | **1731.1** | 1 | 40,80 |
| ② | 33 | 19 | **4918.1** | 1 | 32,15 |

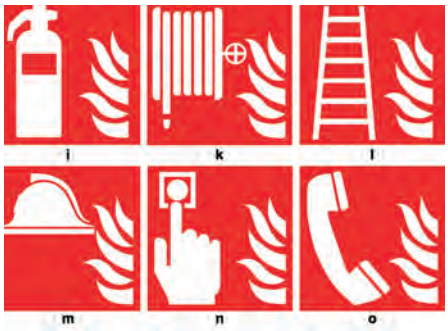


## Sekuroka®-blank labels

Multipurpose labels made of calendered paper (80 g/m²), white.
With permanent adhesive. On A5 sheets. Ideal for writing or printing on.

| Size (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 50 x 19 | 200 sheets x 24 labels = 4800 labels | **5823.1** | 1 | 42,95 |
| 50 x 100 | 200 sheets x 4 labels = 800 labels | **5831.1** | 1 | 42,95 |

# Hazard identification




## Sekuroka®-fire protection sign acc. to ISO 7010

Acc. to ASR A1.3, DIN EN ISO 7010.
Self-adhesive film. Adheres permanently to clean, grease-free and smooth surfaces. Resistant to many chemicals.
Temperature stability: -40 to +80 °C. Suitable for indoor use.
Minimum bonding temperature: +10 °C.
Material thickness: approx. 0.08 to 0.55 mm.

| Type | Symbol | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| i | Fire extinguisher | 148 x 148 | **YX19.1** | 1 | 3,50 |
| i | Fire extinguisher | 200 x 200 | **YX20.1** | 1 | 4,50 |
| k | Fire hose | 200 x 200 | **YX21.1** | 1 | 4,95 |
| l | Fire ladder | 200 x 200 | **YX22.1** | 1 | 5,30 |
| m | Firefighting media and apparatus | 200 x 200 | **YX23.1** | 1 | 4,95 |
| n | Fire alarm | 200 x 200 | **YX24.1** | 1 | 5,30 |
| o | Fire emergency telephone | 200 x 200 | **YX25.1** | 1 | 5,30 |

**Long-lasting luminescence**
175 % over DIN 67510. Ideal for power failure or darkness.

| Type | Symbol | W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| i | Fire extinguisher | 200 x 200 | **YX26.1** | 1 | 9,60 |
| k | Fire hose | 200 x 200 | **YX27.1** | 1 | 9,60 |
| l | Fire ladder | 200 x 200 | **YX28.1** | 1 | 9,85 |
| m | Firefighting media and apparatus | 200 x 200 | **YX29.1** | 1 | 9,60 |
| n | Fire alarm | 200 x 200 | **YX30.1** | 1 | 9,85 |
| o | Fire emergency telephone | 200 x 200 | **YX31.1** | 1 | 9,85 |



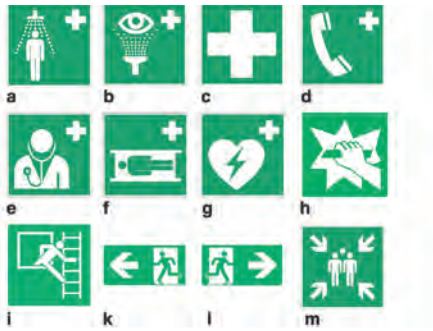

## Sekuroka®-fire protection signs

Field-proven safety marking. Made of self-adhesive PVC foil, 0.1 mm, with permanent-glue and colour-fast print.

| Type | Symbol | B x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| d | Direction arrow | 200 X 200 | **K217.1** | 1 | 5,35 |

**Recognisability of the sign depends on the size of the sign and the distance between the viewer and the sign:**

| | | | | | |
|---|---|---|---|---|---|
| Side length (mm) | 50 | 100 | 200 | 300 | 400 |
| Visibility range (m) | 1 | 3 | 6 | 9 | 12 |
| | | | | | |
| ∅ (mm) | 50 | 100 | 200 | - | 400 |
| Visibility range (m) | 2 | 4 | 8 | | 16 |
| | | | | | |
| Size W x H (mm) | 148 x 148 | 200 x 200 | 297 x 105 | 297 x 148 | 400 x 140 |
| Visibility range (m) | 10 | 12 | 8 | 9 | 10.5 |




## First-aid and emergency signs acc. to ISO 7010

Acc. to ASR A1.3 and DIN EN ISO 7010.

**Film**
Self-adhesive individual labels, made of PE film, colourfast print.
Resistant to water, oil and alkalis. Temperature stable from -40 to +80 °C.

| Image | Symbol | Side length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| a | Body safety shower | 200 x 200 | **NP67.1** | 1 | 5,40 |
| b | Eyewash | 200 x 200 | **H497.1** | 1 | 5,35 |
| c | First aid | 100 x 100 | **NP68.1** | 1 | 3,80 |
| c | First aid | 200 x 200 | **0232.1** | 1 | 5,90 |
| d | Emergency telephone | 200 x 200 | **NP69.1** | 1 | 5,35 |
| e | Doctor | 200 x 200 | **NP70.1** | 1 | 5,35 |
| f | Stretcher | 200 x 200 | **NP71.1** | 1 | 5,35 |
| g | Defibrillator | 200 x 200 | **NP72.1** | 1 | 5,15 |
| h | Emergency exit system | 100 x 100 | **NP73.1** | 1 | 3,85 |
| k | Emergency exit, left | 400 x 200 | **NP74.1** | 1 | 8,20 |
| l | Emergency exit, right | 400 x 200 | **NP75.1** | 1 | 8,20 |

**Film, long-lasting luminescence**
Self-adhesive, long-lasting luminescence exceeding DIN 67510 by 175 %.
Ideal for power failure or darkness.

| Image | Symbol | Side length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| a | Body safety shower | 200 x 200 | **NP76.1** | 1 | 9,85 |
| b | Eyewash unit | 200 x 200 | **H493.1** | 1 | 11,70 |
| c | First aid | 200 x 200 | **H492.1** | 1 | 11,70 |
| h | Emergency exit system | 100 x 100 | **NP77.1** | 1 | 6,05 |
| i | Emergency exit with escape ladder | 200 x 200 | **NP78.1** | 1 | 9,85 |
| k | Emergency exit, left | 400 x 200 | **NP79.1** | 1 | 18,30 |
| l | Emergency exit, right | 400 x 200 | **NP80.1** | 1 | 18,30 |

**Plastic**
Plastic sign for indoor and outdoor use. Temperature stable from -30 to +50 °C, resistant to moisture and weak acids, flame retardant.

| Image | Symbol | Side length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| m | Collection point | 400 x 400 | **NP81.1** | 1 | 23,10 |






## Safety symbols to ISO 7010

Acc. to ASR A1.3 and DIN EN ISO 7010.
Made of PE film with colour-fast print. Self-adhesive individual labels.
Resistant to water, oil and alkalis. Temperature stable from -40 to +80 °C.

| Type | Symbol | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| a | Wear eye protection | 100 | **NK21.1** | 1 | 2,80 |
| a | Wear eye protection | 200 | **NK22.1** | 1 | 4,65 |
| b | Wear respiratory protection | 100 | **NK23.1** | 1 | 3,20 |
| b | Wear respiratory protection | 200 | **NK24.1** | 1 | 4,90 |
| c | Wear ear protection | 100 | **NK26.1** | 1 | 2,80 |
| c | Wear ear protection | 200 | **NK27.1** | 1 | 4,65 |
| d | Wear protective headgear | 100 | **NK28.1** | 1 | 3,20 |
| d | Wear protective headgear | 200 | **NK29.1** | 1 | 4,90 |
| e | Wear protective gloves | 50 | **NK30.1** | 1 | 2,10 |
| e | Wear protective gloves | 100 | **NK31.1** | 1 | 2,80 |
| e | Wear protective gloves | 200 | **NK32.1** | 1 | 4,65 |
| f | Wear protective footwear | 100 | **NK33.1** | 1 | 3,20 |
| f | Wear protective footwear | 200 | **NK34.1** | 1 | 4,90 |
| g | Wear mask | 100 | **NK35.1** | 1 | 3,20 |
| g | Wear mask | 200 | **NK36.1** | 1 | 4,90 |
| j | Wear protective clothing | 100 | **NK37.1** | 1 | 3,20 |
| j | Wear protective clothing | 200 | **NK38.1** | 1 | 4,90 |
| l | Wash hands | 100 | **NK39.1** | 1 | 3,20 |
| l | Wash hands | 200 | **NK40.1** | 1 | 4,90 |
| m | Wear face shield | 100 | **NK41.1** | 1 | 3,20 |
| m | Wear face shield | 200 | **NK42.1** | 1 | 4,90 |
| n | Wear protective apron | 100 | **NK43.1** | 1 | 3,20 |
| o | Wear safety vest | 100 | **NK45.1** | 1 | 3,20 |
| p | Apply skin protection creme | 100 | **NK46.1** | 1 | 3,20 |
| r | Follow instructions | 100 | **NK47.1** | 1 | 3,20 |
| s | Use footpath | 200 | **NK48.1** | 1 | 4,90 |




## Sekuroka®-prohibition symbols to ISO 7010

To ASR A1.3, DIN EN ISO 7010.
Self-adhesive film. Adhere permanently to clean, grease-free and smooth surfaces. Resistant to many chemicals. Temperature stable from -40 to +80 °C. Suitable for indoor use. Minimum bonding temperature +10 °C.
Material thickness approx. 0.08 to 0.55 mm.

| Type | Symbol | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| a | No smoking | 100 | **YX32.1** | 1 | 2,85 |
| a | No smoking | 200 | **YX33.1** | 1 | 4,30 |
| b | Fire, naked flame and smoking prohibited | 200 | **0204.1** | 1 | 5,35 |
| b | Fire, naked flame and smoking prohibited | 400 | **0205.1** | 1 | 12,85 |
| c | Not drinking water | 100 | **YX34.1** | 1 | 2,85 |
| d | No eating or drinking | 200 | **YX35.1** | 1 | 4,60 |
| e | No pedestrian access | 200 | **YX36.1** | 1 | 4,60 |
| f | No storage permitted | 200 | **YX37.1** | 1 | 4,60 |
| g | Do not touch | 200 | **YX38.1** | 1 | 4,60 |
| h | Do not enter | 200 | **YX39.1** | 1 | 4,60 |
| i | No mobile phones | 200 | **X450.1** | 1 | 5,50 |
| k | No access for persons with pacemakers or implanted defibrillators | 200 | **YX40.1** | 1 | 4,60 |
| l | No photography | 200 | **YX41.1** | 1 | 4,60 |

**Sekuroka®-prohibition signs, double-sided**
Self-adhesive films for glass doors.

| Type | Symbol | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| i | No mobile phones | 100 | **YX42.1** | 1 | 12,85 |
| a | No smoking | 100 | **YX43.1** | 1 | 12,85 |




## Sekuroka®-mandatory signs

Field-proven, self-adhesive PVC foil, 0.1 mm,
with permanent-glue and colour-fast print.

| Type | Symbol | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| h | Protective cap must be used | 100 | **N419.1** | 1 | 3,50 |
| h | Protective cap must be used | 200 | **L252.1** | 1 | 5,95 |

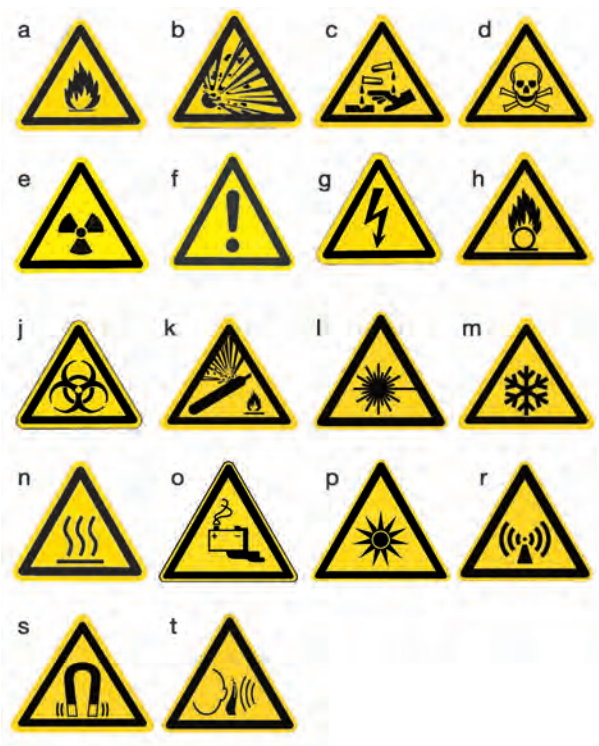



## Sekuroka®-prohibition signs

Field-proven safety marking. Made of self-adhesive PVC foil,
0.1 mm, with permanent-glue and colour-fast print.

| Type | Symbol | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| f | Access forbidden to all unauthorized persons | 200 | **H483.1** | 1 | 5,35 |
| h | Eating and drinking forbidden | 200 | **H486.1** | 1 | 6,35 |

# Hazard identification




## Warning symbols

Selection in accordance with ISO 7010, in accordance with ASR A1.3, or established through use in the industry.

Made of **PE film** with colourfast print. Self-adhesive warning symbol labels. Permanent. Resistant to water, oil and alkalis.
Temperature resistant from -40 to +80 °C. Suitable for indoor use.

**On sheets**, 10 pc/sheet

| Product | Warning against | Side length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| c | Corrosive substances | 50 | **XL40.1** | 1 | 9,95 |
| e | Radioactive substances or ionising radiation | 25 | **XL42.1** | 1 | 7,55 |
| e | Radioactive substances or ionising radiation | 50 | **XL43.1** | 1 | 8,75 |
| f | Hazardous area | 50 | **XL44.1** | 1 | 8,75 |
| g | Hazardous electrical voltage | 25 | **XL45.1** | 1 | 7,20 |
| g | Hazardous electrical voltage | 50 | **XL46.1** | 1 | 8,50 |
| o | Laser beam | 50 | **XL47.1** | 1 | 7,45 |
| q | Hot surface | 50 | **XL48.1** | 1 | 8,50 |
| s | Electromagnetic field | 50 | **XL49.1** | 1 | 9,25 |

**Individual labels**

| Product | Warning against | Side length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| a | Flammable substances | 100 | **XL15.1** | 1 | 3,80 |
| a | Flammable substances | 200 | **TA07.1** | 1 | 5,35 |
| b | Explosive substances | 200 | **XL16.1** | 1 | 5,35 |
| b | Explosive substances | 300 | **0458.1** | 1 | 9,65 |
| c | Corrosive substances | 100 | **EYH2.1** | 1 | 3,80 |
| c | Corrosive substances | 200 | **EYH3.1** | 1 | 5,35 |
| d | Toxic substances | 100 | **XL19.1** | 1 | 3,80 |
| d | Toxic substances | 200 | **EYH4.1** | 1 | 5,35 |
| e | Radioactive substances or ionising radiation | 100 | **XL21.1** | 1 | 3,80 |
| e | Radioactive substances or ionising radiation | 200 | **XL22.1** | 1 | 5,35 |
| f | Hazardous area | 100 | **XL23.1** | 1 | 3,80 |
| f | Hazardous area | 200 | **XL24.1** | 1 | 5,35 |
| f | Hazardous area | 400 | **0220.1** | 1 | 10,70 |
| g | Hazardous electrical voltage | 100 | **XL25.1** | 1 | 3,80 |
| g | Hazardous electrical voltage | 200 | **XL26.1** | 1 | 5,35 |
| h | Oxidising substances | 100 | **XL28.1** | 1 | 3,80 |
| h | Oxidising substances | 200 | **EYH5.1** | 1 | 5,35 |
| j | Biohazard | 100 | **XL29.1** | 1 | 3,80 |
| j | Biohazard | 200 | **H489.1** | 1 | 5,35 |
| k | Gas cylinders | 100 | **EYH6.1** | 1 | 3,80 |
| k | Gas cylinders | 200 | **EYH7.1** | 1 | 5,35 |
| l | Laser beam | 100 | **EYH8.1** | 1 | 3,80 |
| l | Laser beam | 200 | **XL31.1** | 1 | 5,35 |
| l | Laser beam | 300 | **H498.1** | 1 | 6,40 |
| m | Low temperature/frost | 100 | **EYH9.1** | 1 | 3,80 |
| m | Low temperature/frost | 200 | **EYK0.1** | 1 | 5,95 |
| n | Hot surface | 100 | **XL33.1** | 1 | 3,80 |
| n | Hot surface | 200 | **K214.1** | 1 | 5,35 |
| o | Hazards due to batteries | 100 | **XL34.1** | 1 | 3,80 |
| p | Optical radiation | 100 | **XL35.1** | 1 | 3,80 |
| r | Non-ionising radiation | 100 | **EYK1.1** | 1 | 4,50 |
| r | Non-ionising radiation | 200 | **XL36.1** | 1 | 5,35 |
| s | Magnetic field | 100 | **EYK2.1** | 1 | 4,50 |
| s | Magnetic field | 200 | **XL37.1** | 1 | 5,35 |
| t | Sudden loud noise | 100 | **EYK3.1** | 1 | 4,50 |

**On a roll**, 500 pc/roll

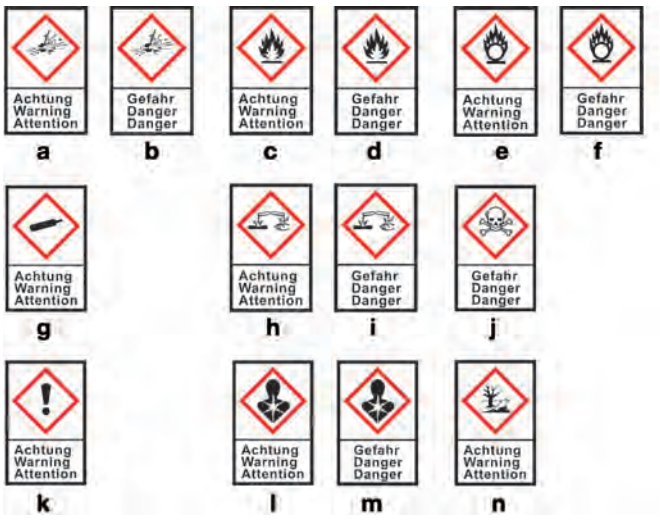
| Product | Warning against | Side length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| o | Laser beam | 25 | **XL50.1** | 1 | 57,00 |
| q | Hot surface | 25 | **XL52.1** | 1 | 57,00 |
| q | Hot surface | 50 | **XL53.1** | 1 | 75,15 |




## Warning symbols – Established individual labels

Self-adhesive. Made of PVC film with colourfast print. Permanent. Resistant to water, oil and alkalis. Temperature resistant from -40 to +80 °C. Suitable for indoor use.

| Type | Warning against | Side length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| a | Harmful or irritant substances | 200 | **H490.1** | 1 | 5,35 |
| b | Explosive atmosphere | 100 | **EYK5.1** | 1 | 4,50 |
| b | Explosive atmosphere | 200 | **XL27.1** | 1 | 5,35 |
| b | Explosive atmosphere | 400 | **H487.1** | 1 | 10,70 |
| c | UV radiation | 100 | **EYK6.1** | 1 | 4,50 |




## GHS hazardous substances labels

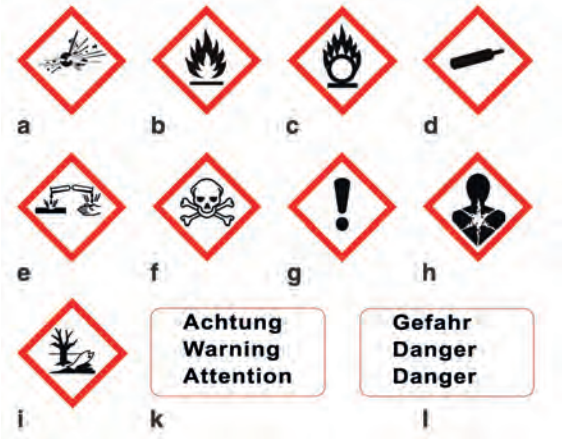
High-glossy **PE-foil**, 100 µm thick. permanent adhesive, waterproof, temperature stable from -20 to +80 °C.
Signal words trilingual: German, English, French.
250 per roll in practical dispenser box.

**Dimensions:** W 22 x H 30 mm

| Image | Pictogram/signal word | Code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| a | Exploding bomb/Warning | GHS01 | **LN47.1** | 250 | 10,25 |
| b | Exploding bomb/Danger | GHS01 | **LN48.1** | 250 | 10,25 |
| c | Flame/Warning | GHS02 | **LN49.1** | 250 | 10,25 |
| d | Flame/Danger | GHS02 | **LN50.1** | 250 | 10,25 |
| e | Flame over circle/Warning | GHS03 | **LN51.1** | 250 | 10,25 |
| f | Flame over circle/Danger | GHS03 | **LN52.1** | 250 | 10,25 |
| g | Gas cylinder/Warning | GHS04 | **LN53.1** | 250 | 10,25 |
| h | Chemical burns/Warning | GHS05 | **LN54.1** | 250 | 10,25 |
| i | Chemical burns/Danger | GHS05 | **LN55.1** | 250 | 10,25 |
| j | Skull and crossbones/Danger | GHS06 | **LN56.1** | 250 | 10,25 |
| k | Exclamation mark/Warning | GHS07 | **LN57.1** | 250 | 10,25 |
| l | Health hazard/Warning | GHS08 | **LN58.1** | 250 | 10,25 |
| m | Health hazard/Danger | GHS08 | **LN59.1** | 250 | 10,25 |
| n | Environment/Warning | GHS09 | **LN60.1** | 250 | 10,25 |

**Dimensions:** W 27 x H 40 mm

| Image | Pictogram/signal word | Code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| a | Exploding bomb/Warning | GHS01 | **LN61.1** | 250 | 13,95 |
| b | Exploding bomb/Danger | GHS01 | **LN62.1** | 250 | 13,95 |
| c | Flame/Warning | GHS02 | **LN63.1** | 250 | 13,95 |
| d | Flame/Danger | GHS02 | **LN64.1** | 250 | 13,95 |
| e | Flame over circle/Warning | GHS03 | **LN65.1** | 250 | 13,95 |
| f | Flame over circle/Danger | GHS03 | **LN66.1** | 250 | 13,95 |
| g | Gas cylinder/Warning | GHS04 | **LN67.1** | 250 | 13,95 |
| h | Chemical burns/Warning | GHS05 | **LN68.1** | 250 | 13,95 |
| i | Chemical burns/Danger | GHS05 | **LN69.1** | 250 | 13,95 |
| j | Skull and crossbones/Danger | GHS06 | **LN70.1** | 250 | 13,95 |
| k | Exclamation mark/Warning | GHS07 | **LN71.1** | 250 | 13,95 |
| l | Health hazard/Warning | GHS08 | **LN72.1** | 250 | 13,95 |
| m | Health hazard/Danger | GHS08 | **LN73.1** | 250 | 13,95 |
| n | Environment/Warning | GHS09 | **LN74.1** | 250 | 13,95 |




## Combinable GHS hazard pictograms

High-gloss **PE-film**, thickness 100 µm.
Permanent adhesive, waterproof, temperature stable from -20 to +80 °C.
**250 pce. per roll** in a handy dispenser box.

**Pictograms without signal word,** label size 22 x 22 mm.

| Image | Pictogram/signal word | Code | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| a | Exploding bomb | GHS01 | **NP43.1** | 250 | 11,30 |
| b | Flame | GHS02 | **NP44.1** | 250 | 11,30 |
| c | Flame over circle | GHS03 | **NP45.1** | 250 | 11,30 |
| d | Gas bottle | GHS04 | **NP46.1** | 250 | 11,60 |
| e | Burns | GHS05 | **NP47.1** | 250 | 11,60 |
| f | Skull | GHS06 | **NP48.1** | 250 | 11,60 |
| g | Exclamation mark | GHS07 | **NP49.1** | 250 | 11,60 |
| h | Health hazard | GHS08 | **NP50.1** | 250 | 11,60 |
| i | Environment | GHS09 | **NP51.1** | 250 | 11,60 |

**Signal words** in three languages: German, English and French.
Label size: W 27 x H 15 mm.

| Image | Pictogram/signal word | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| k | Caution | **NP52.1** | 250 | 12,85 |
| l | Hazard | **NP53.1** | 250 | 12,85 |



## GHS hazard symbols assortment

High-gloss, self-adhesive **PE film**, thickness 100 µm.
Permanent adhesive, waterproof, temperature stable from -20 to +80 °C.
20 labels per sheet, sorted by frequency of use.

| Type | Label size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Hazard symbols GHS01-GHS09 | 22 x 22 | **ATY6.1** | 500 | 58,60 |
| Signal words for caution/hazard | 27 x 15 | **ATY7.1** | 500 | 90,85 |

# Hazard identification




## Sekuroka®-labels

For wash bottles and reagent bottles. Suitable for ordinary laboratory use. Made of PVC, dimensions L 105 x W 75 mm. With the name of substance and hazard pictograms. Trilingual: German, English, French.

| Label | Art. No. | Pack Qty. | € |
|---|---|---|---|
| acetone | **8416.1** | 10 | 11,10 |
| destilled water | **8420.1** | 10 | 11,10 |
| ethanol | **8419.1** | 10 | 11,10 |
| isopropanol | **8430.1** | 10 | 11,10 |




## Labels on DIN A4 sheets

Rectangular labels, white, matt.

### Standard paper labels

With permanent adhesive.
Suitable for laser, colour and inkjet printers, as well as copiers.

| W x H (mm) | Labels/sheet | Art. No. | Pack Qty. (sheets) | € |
|---|---|---|---|---|
| 70 x 50,8 | 15 | **HY36.1** | 100 | 21,45 |
| 105 x 74 | 8 | **HY37.1** | 100 | 21,45 |
| 105 x 148 | 4 | **HY38.1** | 100 | 21,45 |

### Impregnated paper labels

Made of wood-free paper, with high-strength rubber-based adhesive. Latex-impregnated surface is water repellent.
Suitable for laser printers and copiers.

| W x H (mm) | Labels/sheet | Art. No. | Pack Qty. (sheets) | € |
|---|---|---|---|---|
| 70 x 50,8 | 15 | **NK99.1** | 30 | 32,05 |
| 105 x 74 | 8 | **NL00.1** | 30 | 32,05 |
| 105 x 148 | 4 | **NL01.1** | 30 | 32,05 |

### Chemical resistant PET labels

Made of polyester film, with permanent acrylic adhesive. Suitable for laser printers, copiers and inkjet printers (with solvent based inks only). Weather resistant and suitable for outdoor use. Saltwater resistant and resistant to many solvents, diluted acids and alkalis.

| W x H (mm) | Labels/sheet | Art. No. | Pack Qty. (sheets) | € |
|---|---|---|---|---|
| 70 x 50,8 | 15 | **NL02.1** | 30 | 31,10 |
| 105 x 74 | 8 | **NL03.1** | 30 | 31,10 |
| 105 x 148 | 4 | **NL04.1** | 30 | 31,10 |



NEU
NOUVEAU
NEW

## Document boxes

By Justrite. Made of HDPE, stable and weatherproof. Safe storage of safety datasheets, directives, manuals, among other things documents at hand at the work place.

- Protection against moisture and dust
- With front flap
- Field for writing labels on the lid
- High visibility due to bright red colour
- Large box suitable for a narrow A4 folder
- Securing with padlock possible (feed-through opening ∅ 10 mm)
- Wall fastening through screws or adhesive tape

**Delivery incl.** doubled-sided adhesive tape for simple installation.

| Type | Outer dimensions (mm) W x D x H | Inner dimensions (mm) W x D x H | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Medium | 279 x 54 x 368 | 219 x 25 x 311 | **HNN3.1** | 1 | 117,20 |
| Large | 333 x 90 x 400 | 273 x 57 x 337 | **HNN4.1** | 1 | 138,70 |






## Pyracidosorb-ROTH®

**For neutralizing acids.** With colour indicator. 1 kg absorbs approx. 0.3 l concentrated sulphuric acid, 0.6 l concentrated nitric acid and 1 l concentrated hydrochloric acid.

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0411.1** | 5 kg | 42,90 |

## Basosorb

For **neutralizing alkaline** solutions. With colour indicator. 1 kg absorbs approx. 1 l concentrated ammonia solution (25 %), 1 l concentrated potassium hydroxide (50 %) and ¾ l concentrated sodium hydroxide (50 %).

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **3287.1** | 5 kg | 66,55 |

## Universal absorber Rotisorb®

**Ideal for absorption of inflammable, oily, and aggressive liquids** such as anorganic and organic acids, alkaline solutions, alcohols, aldehydes, amines, esters, aromatic, chlorinated and aliphatic hydrocarbons, substance compounds, e. g. paint, heating oil, fuels, lacquers, motor lubricants.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1710.1** | 800 g (in square HDPE container) | 23,45 |
| **1710.2** | 25 kg (in PE flat bag) | 85,90 |



## Sekuroka®-safety station

Wall shelf W 530 x H 300 x D 220 mm, made of aluminium.
**Delivery incl.** 3 special absorbents for acids, alkali and solvents (0411.1, 3287.1 and 1710.1), plastic bags, dustpan and brush.

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1288.1** | 1 | 220,40 |




## Entsorger-Set-ROTH® (Disposal-Kits)

Ideal for absorbing and disposing spilled chemicals.
**Contents:** absorbent and neutralizer, safety glasses, scoop and brush, sponge, disposal bags with clips and labels.

### Acids and alkali

5 kg Pyracidosorb-ROTH®, 5 kg Basosorb

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1808.1** | 1 kit | 121,50 |

### Organic solvents

2 x 800 g universal absorber Rotisorb®

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1803.1** | 1 kit | 87,10 |

### Fluoric acid

2-component system for neutralizing spilt hydrofluoric acid.
Set contains: substances to mix. 1.5 l FLUOROSORB-ROTH® component A, 1 l FLUOROSORB-ROTH® component B with pH indicator, 800 g universal absorber Rotisorb®.
Component A (art. no. H066.1): WGK 1

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1804.1** | 1 kit | 112,90 |
| **H066.1** | FLUOROSORB-ROTH®, Component A | 23,45 |
| **H067.1** | FLUOROSORB-ROTH®, Component B | 29,90 |

### Disposal-Mix

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0055.1** | 1 kg Pyracidosorb-ROTH®, 1 kg Basosorb, 400 g Rotisorb® | 89,25 |

# Absorbents



## ROTH® Mercurisorb

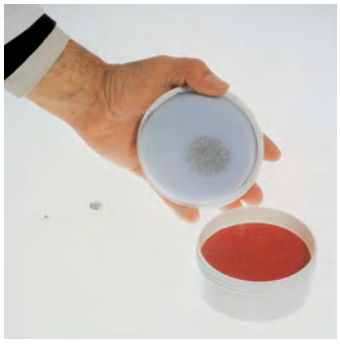
Contains silver nitrate. For speedy and easy absorption of mercury. Emits no more vapours after absorption. Absorption capacity 1:1.

**Emergency kit (in plastic case or in a box).**
**Delivery incl.** 100 g Mercurisorb-ROTH®, scoop, brush, pasteur pipettes, empty vessel.

**Danger** H314-H410

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9461.1** | 1 Emergency kit in plastic case | 87,00 |
| **9461.4** | 1 Emergency kit in carton | 67,95 |
| **9461.2** | 1 Refill pack Mercurisorb-ROTH® 250 g, plastic | 114,50 |
| **9461.3** | 1 Refill pack Mercurisorb-ROTH® 1 kg, plastic | 443,90 |

**Mercury** is, at room temperature, a liquid metal, (freezing point -38.84 °C, boiling point 356.95 °C). Saturation pressure at room temperature is only 0.0013 mm. Mercury vapours are highly toxic and can often lead to chronic mercury poisoning. Inhaled mercury accumulates in the human organ's and can be secreted only very slowly with the urine. Mercury should therefore always be stored in closed containers and should only be used in well-ventilated rooms with a respiratory filter (e.g. screw-top filter Hg-P3 up to 0.5 Vol %).



## Mercury collector

Mercury is absorbed by a specially-designed foamed insert inside the collector. When the collector is screwed down the pellets loosen, fall through a perforated separating disc and can be reused.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Mercury collector | **P941.1** | 1 | 25,75 |
| Spare foamed insert | **P942.1** | 1 | 4,85 |




## UNI-SAFE chemical and oil binder

**All-in-one binder!**
Polymer-based all-purpose chemical and oil binder. Suitable for absorbing and containing liquids such as acids, alkalis, oils, fuels, brake fluid etc., but also battery acid, coolant, oil-water mixtures, paints and lacquers. Also suitable for strong oxidants, such as fuming nitric acid and peroxides.

- High absorption capacity
- No hazardous reactions
- Dam-forming

Absorption capacity of aqueous media up to 1:75
Oil binder type III/R (suitable for paved traffic areas), 1 kg binds 0.56 l heating oil
**Areas of use:** laboratories, chemical and commercial operations, transportation of hazardous materials, emergency vehicles, etc.

**UNI-SAFE**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EAA8.1** | 800 g laboratory pack | 48,20 |
| **EAA8.2** | 5 kg bucket | 175,25 |

**UNI-SAFE Plus** fine granulate with reduced formation of dust

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYY5.1** | 700 g laboratory pack | 46,25 |
| **EYY5.2** | 5 kg bucket | 165,55 |




## Oil sorbent

By 3M. Ideal for absorbing and containing oil and organic liquids. Is also oleophilic (hydrophobic) and water repellent. Ideal for absorbing oil both on water and on land. Made of synthetic fibres (polypropylene and polyester) for use indoors and out.

| Type | 3M No. | Dimensions (cm) | Absorption capacity (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Wipes | HP255 | 48 x 43 | 2,0 | **A377.1** | 10 | 31,40 |
| Mini hose | T4 | ∅ 7,5 x 120 | 3,75 | **E186.1** | 1 | 16,80 |



## Oil binder Penta 99

Fast-acting and highly effective fine granulate for absorbing oil, waste oil, grease, lubricants, fuels, paints and lacquers and other nonpolar organic liquids on firm surfaces. Stays hard and slip-resistant after use and can easily be removed. Do not use in combination with acids and oxidants.

- Oil binder type III/R (suitable for traffic surfaces)
- Calcium silicate hydrate based
- Oil absorption capacity: approx. 60 % fuel oil by weight
- Bulk weight: approx. 545 g/l.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 40 l bag (approx. 21 kg) | **CTC2.1** | 1 | 37,65 |



## Chemicals absorbant fleece

By 3M. Ideal for absorbing and containing **agressive** liquids, such as acids, bases, ketones, alcohols, aromatic compounds, glycols, hydrocarbons. **High absorption capacity.**

| Type | Length (mm) | Width (cm) | ∅ (mm) | Capacity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| Pillows | 23 | 38 | - | 2 l | **2888.1** | 4 | 61,85 |
| Wipes | 28 | 33 | - | 0,25 l | **2920.1** | 50 | 60,20 |
| Tube | 120 | - | 75 | 3,75 l | **2930.1** | 1 | 33,30 |



## Öcu-Sorb fleece-wipes T-33

For fast and dust-free absorption of **oil and organic, non-aggressive liquids**. Water-repellent, floatable, so ideal in water.
Absorption capacity per cloth approx. 260 ml. Cloth size 30 x 30 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5128.2** | 50 | 36,45 |




## Industrial sorbent

By 3M. Ideal for absorbing and containing **non-agressive liquids** such as oil, coolants, lubricants and emulsions. High absorption power.
Easy disposal, recovery of absorbed liquid possible. When folded, the fleece looks like a tube, when unfolded once like a pillow and a second time similar to a wipe. Perforated every 40 cm. Length 15 m, width 12 cm.
Total absorption approx. 34 l, comes in dispenser.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E391.1** | 1 | 63,35 |




## Laboratory emergency kit

By 3M. Absorption capacity for approx. 5 l of spilled liquids.
Contents: 10 sorbent pads, 1 sorbent pillow, 1 waste disposal bag.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AKX3.1** | 1 | 58,95 |




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## Warning sign Danger of slipping

Made of PE. Acc. to ASR A 1.3/BGV A8/DIN 4844.
Warning sign "Warning of danger of slipping", two languages German and English. Colour yellow, printed on both sides. Easy to fold and transport.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HLL6.1** | 1 | 24,70 |

# Waste disposal



## Benchtop waste container

Practical and space-saving. Ergonomic design with large opening for easy disposal of articles.
- Slip-resistant rubber feet for secure positioning on the lab bench
- Lid can be secured in open position
- Extra-large lid rim for easy opening
- The divider can be removed from the green waste container as required
- Wall mountable

**Delivery incl.** mounting kit.

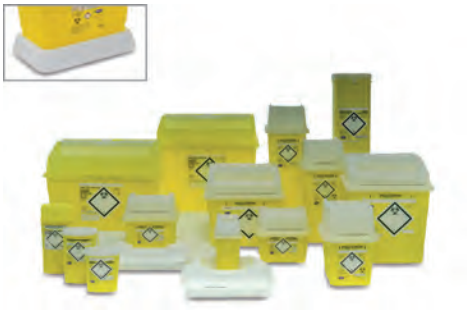
| Type | Volume (l) | Dimensions: W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 compartment, blue | 4 | 155 x 155 x 170 | **AXL3.1** | 1 | 74,10 |
| 2 compartments, green | 5 | 180 x 155 x 165 | **AXL4.1** | 1 | 73,00 |



## Mini safety bins

Acc. to BGR 250/TRBA 250: biological substances in the health sector and welfare work.
Made of PP, bright yellow. With sealing lid and removal device for needles/syringes. Ideal when on the go, fits in all doctor's bags, emergency kits, or labcoat pockets. The reinforced base prevents the needles from piercing through. Height 115 mm, ∅ 50 mm, volume 170 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HA52.1** | 10 | 15,00 |



## Sekuroka®-waste disposal bins

Made of PP, shock and perforation proof. Ideal for safe collection of sharp, dangerous or infected waste such as needles, Petri dishes, syringes, scalpels, etc. Autoclavable up to 134 °C (18 min.).
- Acc. to DIN EN ISO 23907, TRBA 250, AFNOR NX30-500, BS 7320
- Waterproof when vertical
- With handle for safe transport
- Large opening with transparent inner chamber and automatic closure which prevents vapours from escaping to the ambient air
- Lid of outer chamber has two positions: temporary or permanent closure
- Distinct maximum level mark
- Label is the indelibly stamped into the container
- Container can be autoclaved when open

**1 l bin** with pull-off device for insulin pens, Luer-Lock syringes and Luer-Slip syringes. Label in German/French/Italian/Spanish/English.

**2, 4 and 7 l bins** with pull-off device for all needle types as well as insulin pens and scalpel blades. Label in German/French/Italian/Spanish/English.

**9 and 13 l bins** with pull-off devices for all needle types and scalpel blades. With wide horizontal opening for large quantities of waste such as 60 or 90 mm ∅ Petri dishes. Label in French/Dutch.

**9h l bin**, high type, specially designed for pipettes and long instruments.

**24 and 30 l bins** with pull-off device for scalpels and universal pull-off device as well as wide non-return trap for the disposal of bulky waste. Label in English.

| Volume (l) | L x W x H (mm) | Opening (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 108 x 90 x 180 | 55 x 35 | **YK90.1** | 10 | 25,75 |
| 2 | 195 x 120 x 180 | 55 x 50 | **PA88.1** | 5 | 14,80 |
| 4 | 175 x 175 x 245 | 55 x 50 | **E812.1** | 5 | 18,25 |
| 7 | 175 x 175 x 380 | 55 x 50 | **E813.1** | 5 | 24,65 |
| 9 | 292 x 195 x 291 | 210 x 60 | **HT25.1** | 5 | 34,95 |
| 9h | 175 x 175 x 498 | 55 x 50 | **YK91.1** | 5 | 34,85 |
| 13 | 292 x 195 x 353 | 210 x 60 | **HT26.1** | 5 | 45,50 |
| 24 | 450 x 230 x 335 | 365 x 95 | **YK92.1** | 1 | 17,95 |
| 30 | 450 x 230 x 415 | 365 x 95 | **YK93.1** | 1 | 21,80 |

## Accessories for Sekuroka®-waste disposal bins

**Stand** made of PP, self-adhesive.
For safe mounting of the waste disposal bin on a level surface.

| Suitable for bins | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 litre | **YK94.1** | 1 | 7,50 |
| 2 litres | **PA89.1** | 1 | 9,50 |
| 4 litres, 7 litres and 9h | **KA66.1** | 1 | 9,90 |
| 9 and 13 litres | **KA67.1** | 1 | 10,55 |

**Wall hook.** Made of stainless steel.

| Suitable for bins | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2, 4 and 7 litres | **YK97.1** | 1 | 12,40 |

**Laminar flow stand.** Made of stainless steel.
Stand for use of the waste disposal bin under laminar flow.

| Suitable for bins | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4 litres, 7 litres and 9h | **YK98.1** | 1 | 20,65 |

**Trays** made of PP, with storage compartments.
Suitable for 1 and 2 litre bins.

| Type | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| with 1 storage compartment | 280 x 260 x 45 | **YK95.1** | 1 | 9,15 |
| with 2 storage compartments | 355 x 290 x 45 | **YK96.1** | 1 | 7,50 |




## Biohazard waste collection containers

From Nalgene®. Made of **PP**. For collecting and storing biohazardous waste materials. For easy sterilisation in a single operation. It is not necessary to remove the autoclavable bag. Opening in lid makes for safe disposal. Wall and base of container are **leak-proof**. Autoclavable.

| Volume (l) | Outer ∅ x H (mm) | Matching bag | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5,5 | 210 x 270 | KN77.1 | **APL8.1** | 1 | 159,10 |
| 19 | 280 x 380 | KN78.1 | **APL9.1** | 1 | 256,95 |
| 67 | 330 x 690 | A192.1, 0385.1 | **APN0.1** | 1 | 310,70 |




## Multi-Safe euroMatic®-waste disposal bins

Made of PP. With self-opening, automic lid. For the disposal of pointed and sharp objects (needles, scalpels, broken glass etc.).
With detaching device, e.g. for scalpels.
Single-hand operation: lid lifts automatically when button is pressed and can be opened and closed repeatedly. The slit is not secured or tightly closed until after the final closure. A retaining ring then automatically moves to an upright position and serves as a handle.
Compliant with: TRBA 250, AFNOR, DIN EN ISO 23907.
With UN inspection number. Oval opening ∅: 110 x 60 mm, standing area: 132 x 132 mm, filling: max. 85 %.

| Volume (l) | Dimensions with lid L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3,0 | 173 x 173 x 185 | **EL18.1** | 5 | 22,05 |
| 4,0 | 173 x 173 x 245 | **EL19.1** | 5 | 23,60 |
| 6,0 | 173 x 173 x 330 | **EL20.1** | 5 | 29,90 |
| 7,0 | 173 x 173 x 390 | **EL21.1** | 5 | 29,60 |



## Multi-Safe twin waste disposal bin

Made of PP. Conforms to: TRBA 250, DIN EN ISO 23907.
- Universal extractor for the disposal of needles, scalpels, disposable syringes, tubing, etc.
- The size of the slot can be gradually enlarged by breaking out the flaps (except for E329.1)
- All-round sealing rim and double lid
- Lid can always be reopened by closing the lid to the first locking position
- A secure final seal is obtained by pushing the lid through to the second locking position
- With UN inspection number
- Oval slot: 55 x 106 mm (except for E329.1, round ∅ 50 mm)
- Filling capacity: max. 85 %

| Volume (l) | ∅ base/lid (mm) | Height (mm) | Opening ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0,7 | 77/98 | 135 | 50 | **E329.1** | 20 | 27,45 |
| 1,8 | 112/143 | 162 | 55 x 106 | **E330.1** | 20 | 37,10 |
| 2,1 | 112/143 | 186 | 55 x 106 | **E331.1** | 10 | 24,70 |
| 3,0 | 112/143 | 259 | 55 x 106 | **T709.1** | 5 | 17,15 |




## Medibox® disposable bins

By B. Braun. Made of PP. Complies with TRBA 250, DIN EN ISO 23907 and international standards (Norme Francaise NF X 30-500 (1999); British Standard BS 7320 (1990)).
- No-touch insertion of needles and scalpel blades
- Break-proof, stable and puncture-proof
- Irreversible final lock mechanism
- Visible content level on side to monitor for overfill
- Application explained using pictograms on label

| Type | Max. filling cap. (l) | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Medibox® 0.7 l | 0,58 | 116 x 75 x 130 | **PA97.1** | 10 | 30,05 |
| Medibox® 3 l | 2,40 | 198 x 141 x 156 | **PA98.1** | 10 | 44,65 |
| Medibox® 5 l | 4,00 | 198 x 141 x 258 | **PA99.1** | 10 | 59,70 |

# Waste disposal




## Broken glass disposal boxes

For safe collection and disposal of broken glass materials.

- Made of extra-strength cardboard, with a 50 µm thick PE-insert bag to prevent residual fluid from escaping
- Large flap in lid for simple filling
- Seal safety lid for disposal when box is full
- Printed in four languages (German, English, French and Spanish)
- Folded flat for space-saving storage
- 2 sizes; small container suitable for the lab bench

| Type | Max. loading weight (kg) | Dimensions W x D x H (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| small | 5.5 | 20 x 20 x 25 | **KN69.1** | 6 | 57,95 |
| large | 18 | 30 x 30 x 69 | **KN70.1** | 6 | 93,40 |



## Waste bins

By Nalgene®. **Autoclavable**, made of polypropylene for safe handling of biologically harmful substances. Ideal for storing and sterilizing waste, clothing, lab articles, appliances and contaminated materials. Complies with OSHA-standard 29 CFR part 1910.1030 for use as protection against disease-causing agents in blood. With recessed handles.
**Note:** lid must be removed before autoclaving. Thermal conductivity of plastic (as compared to that of metal and glass) and the large volume of the container may lead to requiring longer autoclaving times. Duration of autoclaving to achieve sterility also depends upon the material being autoclaved and users own experience.

| Volume (l) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 23 | 279 | 457 | **H984.1** | 1 | 184,90 |
| 45 | 356 | 584 | **H985.1** | 1 | 297,80 |




## Disposal boxes

For all types of waste that is neither pointed nor sharp (e.g. full safety bins for needles) and not fluid (e.g. swabs and for compresses).

- Made of cardboard with 2 hand grips
- Cardboard is 6 mm thick
- LDPE bag insert is 60 µm thick to extensively prevent residual fluids running out
- Bag closure made of PP
- Cable ties as final seal in lid
- Capacity 50 l
- Printed in four languages (German, English, French and Dutch)
- UN authorization 4G/Y18
- Maximum net weight 13 kg
- Dimensions: 400 x 300 x 500 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LP22.1** | 10 | 57,45 |



## Wide neck barrels

By CurTec. Made of **HDPE**, with rubber seal. UN-approval (X-approval) for storage and transport of solid materials and pastes. Approved for food, chemical and pharmaceutical products. Impermeable to air, water and water vapours. Art. No. CY90.1 to 5459.1 with handles.
Maximum filling temperature is 80 °C. Sealable.

| Volume (l) | ∅ (mm) | Neck inner ∅ (mm) | Height (mm) | UN approval | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 3,6 | 198 | 136 | 173 | 1H2/X12/S | **K280.1** | 1 | 14,20 |
| 6,4 | 198 | 136 | 265 | 1H2/X20/S | **0788.1** | 1 | 17,50 |
| 10,4 | 274 | 204 | 239 | 1H2/X22/S | **L958.1** | 1 | 27,10 |
| 15,4 | 274 | 204 | 328 | 1H2/X22/S | **0789.1** | 1 | 31,90 |
| 20 | 274 | 204 | 418 | 1H2/X27/S | **L959.1** | 1 | 35,50 |
| 26 | 316 | 204 | 426 | 1H2/X33/S | **0790.1** | 1 | 39,45 |
| 42 | 410 | 282 | 416 | 1H2/X51/S | **CY90.1** | 1 | 56,55 |
| 55 | 410 | 282 | 518 | 1H2/X66/S | **CY91.1** | 1 | 62,25 |
| 68,5 | 410 | 282 | 632 | 1H2/X81/S | **5459.1** | 1 | 64,45 |

▶ Scoops see page 195



## Safety waste disposal systems

By Nalgene®. Made of break-resistant (fluorinated) HDPE.
For temporary storage of chemical, biological and solvent waste.
System consists of waste container and removable safety funnel with lid.

- Reduces emission‘s of volatile substances in the laboratory
- The funnel has a large diameter for easy filling
- Easy-Snap-safety lock on lid minimises spillage should the system fall over accidentally
- Integrated ventilation valve with PTFE-syringe filter on cover adapter accelerates the flow of the chemicals and prevents any overflowing
- Removable sieve insert (PP) on bottom of funnel stops particles from falling through

Materials: 4 l-container HDPE, 10 l-container FLPE, funnel and lid HDPE.

| Bottle volume (l) | ∅ of funnel at top (mm) | Length of funnel tube (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 4 | 140 | 254 | **EL99.1** | 1 | 85,50 |
| 10 | 254 | 254 | **EN00.1** | 1 | 127,95 |



## Sekuroka®-waste disposal cans

For storing and transporting aggressive waste in the laboratory.

Advantages:

- High stability
- Glass insert made of borosilicate glass 3.3, resistant against almost all chemicals. The glass meets the requirements of hydrological class 1, acidic class 1, caustic class 2 in compliance with DIN 12111, 12116, 52322
- With screw cap, overpressure protection and handle
- Red-coated enclosure
- Hazardous goods - label

| Filling volume (l) | Height (mm) | Outside ∅ (mm) | Neck inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 4 | 360 | 230 | 87 | **1397.1** | 1 | 434,30 |
| 8 | 420 | 265 | 87 | **1398.1** | 1 | 468,70 |



## Safety funnels

By Nalgene®. Made of HDPE, with lid.

- The funnel has a large diameter for easy filling
- Easy-Snap-safety lock on lid minimises spillage should the canister fall over accidentally
- Integrated ventilation valve with PTFE-syringe filter on cover adapter accelerates the flow of the chemicals and prevents any overflowing
- Removable sieve inserst (PP) on bottom of funnel stops particles from falling through
- Cover adapter can be removed for cleaning

Please order matching bottles separately:
4 l-bottle (Art. No. C475.1) fits small funnel
10 l-bottle (Art. No. C476.1) fits large funnel

| ∅ of funnel at top (mm) | Length of funnel tube (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 140 | 254 | **EN01.1** | 1 | 61,85 |
| 254 | 254 | **EN02.1** | 1 | 65,60 |



NEU
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NEW

## Safety canisters Poly Can

By Justrite. Made of chemical-resistant HPE.
Lid and flame protection made of stainless steel.

- Safe storage and distribution of flammable fluids
- Very robust container with extra-strong walls
- Self-closing lid
- Operation via lever at handle
- Automatic pressure compensation
- **Carbon Insert** - a patented system connects the flame protection on the inside with the earth connection on the outside
- Can be earthed using an earthing cable
- Space-saving, oval shape
- Red colour

| Volume (l) | Type | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | oval | 194 x 117 x 241 | **HNP1.1** | 1 | 105,90 |
| 4 | oval | 194 x 117 x 324 | **HNP2.1** | 1 | 116,10 |

# Waste disposal




NEU
NOUVEAU
NEW

## Safety collecting canister Safety Can

By Justrite. Made of chemical-resistant HPE. Lid, handle and flame protection made of stainless steel.

- Safe collection and storage of flammable liquids
- Very robust container with extra-strong walls
- Lid with spring, vents at overpressure (between 0.2 and 0.35 bar)
- Snap-in system holds the cover flap in the open position when filling
- The large opening makes filling easy
- **Carbon Insert** - a patented system connects the flame protection on the inside with the earth connection on the outside
- Can be earthed using an earthing cable
- Secure stand through round compact form
- Red colour

| Volume (l) | Type | ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 7,5 | Round | 305 x 375 | **HNP3.1** | 1 | 320,35 |
| 19 | Round | 305 x 508 | **HNP4.1** | 1 | 289,20 |



## Sekuroka®-safety funnels for plastic canisters

Made of stainless steel, unpolished. Seal made of Alveocel (polyolefin foam). With lid, overfill protection and flame arrester, as well as earth connection. Can be screwed onto plastic canisters.
Height 125 mm, funnel head ∅ 140 mm.
**Delivery without** screen filter insert (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Closure size DIN 50 | **ATA6.1** | 1 | 175,25 |
| Closure size DIN 61 | **ATA7.1** | 1 | 175,25 |

## Accessories: screen filter insert for Sekuroka® safety funnels for plastic canisters

Suitable for safety funnels: K345.1, ATA6.1 and ATA7.1, as well as for insertable funnels PC04.1 and PC13.1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ATA8.1** | 1 | 12,90 |




## Safety collection containers for flammable liquids

For safe collection of flammable liquids.
Made of high-grade stainless steel (1.4571=V4a, unpolished), wall thickness: 0.8 mm. High stability. Capacity 10 l.
Cap size: IG2″ fine pitch thread, with PTFE seal, without flame arrester.
Dimensions: H 330 x ∅ 260 (mm) (incl. ring).
Usable with Sekuroka® stainless steel funnel K345.1.
With level indicator for ATA3.1.

**Delivery without** accessories (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① without level indicator | **ATA2.1** | 1 | 251,55 |
| ② with level indicator | **ATA3.1** | 1 | 459,05 |

## Accessories for 10 l safety collection containers

Made of stainless steel (1.4301=V2a).
For safe filling and draining of containers. Fits 10 l safety collection container, Rotitainer® and other drums with cap with 2″ fine pitch thread.
Safety funnel: H 125 x ∅ 140 mm
Spout: H 180, tube ∅: 40 mm

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sekuroka® stainless steel funnel | **K345.1** | 1 | 177,40 |
| Flame arrester | **ATA4.1** | 1 | 65,60 |
| Spout 2" | **ATA5.1** | 1 | 54,85 |



## Sekuroka®-high-grade steel funnel

**With lid, overflow and flame safety device.** The flame arrester which deeply penetrates the container prevents ignition sparks from entering. The hinged lid almost totally prevents harmful fumes from escaping and must be closed after each filling process. The overflow device causes an insulating air cushion to arise once the filling level has been reached.
The funnel contents do not drain. Contents only drain off when the funnel has been released. After draining, the funnel is removed and container closed. Opening app. 120 mm. Flame arrester approx. 150 mm long.
With 2″-Trisure®-thread. With PE sealing ring. Suitable for Rotitainers® and all other standard vessels with 2″-Trisure®-screw fittings.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K345.1** | 1 | 177,40 |



## Sekuroka®-waste disposal stations

For collecting chemical waste. Canisters come in different colours for easy distinguishing of waste. The funnels come with a sieve on the inside to catch solids and level indicator.

**4-place waste disposal station**

Four canisters (10 l) made of HDPE with 4 funnels ∅ 120 mm and spillage tub made of PP.

Dimensions with open lids: L 870 x W 370 x H 610 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| assorted | **5074.1** | 1 | 557,95 |

**1-place waste disposal station**

One canister (10 l) made of HDPE with one funnel ∅ 120 mm and spillage tub made of PP.

Dimensions with open lid: L 240 x W 370 x H 610 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| natural | **5084.1** | 1 | 260,15 |
| yellow | **5087.1** | 1 | 260,15 |
| green | **5090.1** | 1 | 260,15 |
| blue | **5096.1** | 1 | 260,15 |



## Sekuroka®-spare canisters

Made of HDPE, capacity 10 l. With handle and replacement ventilation screw. L 280 x W 180 x H 325 mm. Neck-∅ 42 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| natural | **A251.1** | 1 | 26,80 |
| yellow | **A252.1** | 1 | 26,80 |
| green | **A253.1** | 1 | 26,90 |
| blue | **A254.1** | 1 | 26,90 |



## Sekuroka®-spare spillage tubs

For 10 l canisters, grey.

| Design | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-place | 240 x 370 x 165 | **P318.1** | 1 | 197,30 |
| 4-place | 870 x 370 x 165 | **P319.1** | 1 | 237,60 |



## Sekuroka®-spare funnels

Made of PP, with integrated screw connection, collecting sieve, level indicator and self-closing lid. Diameter 120 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5083.1** | 1 | 120,40 |

**Sekuroka®-adapter**

For funnel 5083.1. 2″-fine-pitch thread, to fit Roth-Rotitainer®-flasks.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9070.1** | 1 | 77,40 |



## Waste disposal units, electro-conductive

Specially for the disposal of highly flammable liquids. All components made of black, electro-conductive, conducting PE-HD, build-up of electric charge is not possible.

- 10 l-canister, leakproof screw cap and handle. UN-authorization (Y) for the transport of hazardous goods.
- Screw-on funnel with automatically closing, patented floating ball valve.Therefore, no vapours or odours can escape from the waste disposal bin. Also comes with overflow and splash protection.
- Robust spillage tub can hold 100 % of canister contents in an emergency.

**Delivery incl.** disposable funnel, 10 l-canister with metal ring (for connecting earthing cable), spillage tub and 3 earth cables.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Waste disposal units, electro-conductive | **HE62.1** | 1 | 456,90 |



## Spare parts for waste disposal units

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Funnel, electro-conductive | **HE63.1** | 1 | 127,95 |
| Canister 10 l, electro-conductive | **HE64.1** | 1 | 85,90 |
| Spillage tubs, electro-conductive | **HE65.1** | 1 | 192,45 |
| Grounding tension clip, Cr-Ni-Steel | **HE66.1** | 1 | 81,60 |
| Grounding cable | **HE67.1** | 1 | 50,00 |

# Waste disposal





## Sekuroka®-30 l-chemical collection pans

PE-collection pan, galvanised steel grid. Suitable for small drums.
Also usable for storage shelves and chemicals cabinets. Can be lined with chemical binding fleece. Outer dimensions: L 980 x W 600 x H 85 (mm).
Retention capacity 30 l. Load-bearing capacity of pan with grid: 50 kg.

| Type | Weight (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Collection pan | 4 | **NH66.1** | 1 | 149,45 |
| Collection pan with grid | 10 | **NH67.1** | 1 | 225,75 |





## Sekuroka®-spillage tubs

Made of glass-fiber reinforced plastic with DIBt-Berlin approval Z40.12-227.
Ideal for correct storage of highly water imcompatible substances.
High chemical resistance, corrosion-proof, durable, UV-resistant, recyclable. Suitable for barrels, plastic carboys, small drums, canisters, etc.

**Spillage tub without grating, with stop catch**

150 l capacity. Dimensions: L 1200 x W 800 x H 165 mm, approx. 9 kg.
With stop catch on the underside of tub for attaching to Europallets 800 x 1200 mm (only stable with paletts).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2915.1** * | 1 | 317,15 |

**Spillage tub without grating and stop catch**

150 l capacity. Dimensions: L 1200 x W 800 x H 165 mm, approx. 9 kg.
Can be placed directly on the ground.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N530.1** * | 1 | 256,95 |

**Spillage tub with steel grating**

220 l capacity. Dimensions: L 1280 x W 850 x H 270 mm, approx. 33 kg.
Galvanized steel grating for max. 800 kg surface load.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X426.1** * | 1 | 375,20 |

* Delivery ex work.



## Sekuroka®-drip pans

Made of acid-proof PE; acid, chemical, oil and petroleum resistant.
4-chamber system for safe transportation and drainage via the 4 pouring edges with raised lip to prevent spillage of contents.

| Retention capacity (l) | Outer dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 | 690 x 440 x 105 | **NH64.1** | 1 | 123,65 |
| 55 | 1010 x 730 x 125 | **NH65.1** | 1 | 166,65 |



## Sekuroka®-solvent collecting vessels

Stackable, painted sheet metal drum. Suitable for interim storage of liquid waste – mainly used solvents. 60 mm filler neck, with plastic screw plug.
**Delivery incl.** pouring aid, 2″ coarse thread.

**6 litre collecting vessel**

with Lupolen® lining, upper carry handle, H 20 cm, ∅ 23.5 cm,
unladen weight approx. 1.3 kg. UN authorization: 6HA1/X2.0/300/

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHK8.1** | 1 | 33,35 |

**12 litre collecting vessel**

with Lupolen® lining, upper carry handle, H 35 cm, ∅ 23.5 cm,
unladen weight approx. 1.8 kg. UN authorization: 6HA1/X2.0/300/

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0750.1** | 1 | 38,60 |

**30 litre collecting vessel**

with Lupolen® lining, 2 side carry handle, H 57 cm, ∅ 27 cm,
unladen weight approx. 3.5 kg. UN authorization: 6HA1/X1.6/300/

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0751.1** | 1 | 42,95 |

## Accessorie for Sekuroka®-solvent collectors

Sekuroka®-funnel

To screw on top, made of polypropylene. ∅ 120 mm.
Features sieve to catch solids, lid and floating indicator to show filling level.
With adapter for 2″-coarse thread.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9081.1** | 1 | 222,55 |



## Sekuroka®-multi-purpose disposal container

For collecting used solvents. Outer container made of lacquered sheet steel (0.5 mm gauge), with lid and galvanised clamping ring and rubber seal. Adjustable narrow mouth container made of Lupolen®, with 2″ coarse thread closure. Nominal content 12 l. H 384 mm, outside ∅-310 mm, inside-∅ 230 mm.
**Use:** as collector initially.
Once full, the container is taken to a disposal centre.
Here, the filled Lupolen® liner is tipped out.
The sheet metal container is then reused with a new Lupolen®-liner.
UN authorization: 6HA1/X1.6/250

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sekuroka®-disposal container, complete | **1393.1** | 1 | 40,80 |
| Lupolen®-insert | **1394.1** | 1 | 21,45 |




## Waste bins for cleaning rags

By JUSTRITE®. Rags soaked with solvent, thinner, linseed oil, flammable adhesives and other flammable liquids and represent a serious fire hazard if they are not disposed of correctly.

- Made of galvanised sheet steel with rugged, highly chemical resistant powder-coat finish
- The opening angle of the lid does not exceed 60°
- The lid is self-closing when not in use
- Protects contents against sparks, heat sources and spontaneous combustion
- With foot pedal, colour red

| Volume (l) | Outside ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | 302 | 403 | **CAX1.1** | 1 | 85,95 |
| 34 | 354 | 464 | **CAX2.1** | 1 | 100,85 |
| 52 | 408 | 514 | **CAX3.1** | 1 | 112,90 |



## Problem waste containers

For collection of non-liquid waste. Conical container made of dark blue PP with bulging handles on both sides and yellow lid made of the same material, with rubber seal. Lid can not be removed after final closing. Container and lid are totally free from metal and can be incinerated.
UN authorization: 1H2/Y15/S bzw. 1H2/Y25/S.

| Volume (l) | Weight (kg) | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | ca. 1,050 | 334 x 404 x 315 | **A854.1** | 1 | 15,00 |
| 60 | ca. 1,650 | 335 x 404 x 646 | **1066.1** | 1 | 20,40 |




## Disposal containers for corrosive waste

Made of PE, red. Safe collection and disposal of corrosive, non-solvent-based waste. Use directly at the workplace. Reduces leakage of vapours. Self-closing lid. Safe foot pedal operated opening mechanism.

| Volume (l) | Outer ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 23 | 420 x 400 | **CEH0.1** | 1 | 139,75 |
| 38 | 420 x 470 | **CEH1.1** | 1 | 152,65 |
| 53 | 560 x 530 | **CEH2.1** | 1 | 164,50 |

# Waste disposal



NEU
NOUVEAU
NEW

## Electrically conductive disposal canisters

Made of HDPE, electrically conductive, surface resistance <$10^9$ Ohm.
- With carrying handle and screw cap
- Stackable
- With UN approval
- Closure size DIN 61

| Volume (l) | L x W x H (mm) | UN approval | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 300 x 200 x 258 | 3H1/Y1.5/200 | **HNC6.1** | 1 | 33,15 |
| 20 | 300 x 200 x 495 | 3H1/Y1.5/150 | **HNC7.1** | 1 | 43,00 |
| 30 | 364 x 240 x 455 | 3H1/Y1.5/150 | **HNC8.1** | 1 | 51,50 |




121 °C

## Sekuroka®-disposal bags – Biohazard

Made of strong PE. For holding and disposing of small items of contaminated waste such as pipette tips, test tubes and sample vials directly at the workstation.
Colour red for easy recognition and identification.
With BIOHAZARD labelling and indicator field, colour change indicates completed autoclaving process. Autoclavable at 121 °C.
Leave the bag open during the autoclaving process.
Safety information in German, English, French and Spanish.
For use with Sekuroka®-desk stands H508.1.
Dimensions: W 210 x H 290 mm, foil thickness 20 µm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EPY0.1** | 1000 | 145,15 |




121 °C

## Sekuroka®-disposal bags

Ideal for laboratory waste such as used pipettor tips, test tubes and vials.
Sterilizable to +121 °C. Bags should be left open during autoclaving.
Dimensions: W 200 x L 300 mm.
**Made of 40 µm thick PP** in a dispenser box.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E706.1** | 100 | 9,15 |

## Sekuroka®-disposal bags

Ideal for laboratory waste such as used pipettor tips, test tubes and vials.
Dimensions: W 200 x L 300 mm.
**Made of 30 µm thick PP.** Not autoclavable.
100 bags pre-perforated from roll.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H736.1** | 500 | 19,90 |

## Sekuroka®-disposal bag holders

Wire frame with white powder coating and anti-slip rubber feet.
Dimensions: Upper ∅ 125 mm, height 250 mm. Ideal for all lab benchtops.
Autoclavable. For disposal bags W 200 x L 300 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Sekuroka®-disposal bag holder | **H508.1** | 1 | 11,65 |
| Sekuroka®-disposal bag holder, incl. 100 PP bags (E706.1) | **E705.1** | 1 | 18,55 |




121 °C

## Bench-Top disposal bags

- Made of HDPE, red, thickness 18 µm. Material acc. to ASTMD 1922 (propagation tear resistance) and ASTMD 1709 (puncture resistance)
- With printed-on "Biohazard"-warning symbol
- **Autoclavable, with sterility indicator field**
- Dimensions: B 220 x H 280 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YA55.1** | 100 | 26,70 |

## Bench-Top stands and covers for disposal bags

Cover made of PP. Epoxy coated wire frame.
Suitable for disposal bags in sizes W 200 x L 300 and W 220 x L 280 mm.
For lab benches, extractors and examination rooms. Autoclavable.

| Type | Dimensions (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Stands | 127 x 85 x 216 | **YA56.1** | 1 | 37,50 |
| Covers | 127 x 89 x 16 | **YA57.1** | 1 | 17,15 |




121 °C

## Sekuroka®-disposal bags

Designed for hygienic disposal of contaminated laboratory articles.
Autoclavable. Seal bag loosely during sterilisation!

① **PP bag, film thickness 50 µm**.
For steam sterilisation at temperatures of up to +134 °C.

| Dimensions W x L (mm) | Total volume (l) | Usable volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 300 x 500 | 8 | 6 | **0384.1** | 500 | 83,75 |
| 400 x 780 | 38 | 22 | **L371.1** | 500 | 146,20 |
| 600 x 800 | 60 | 32 | **0385.2** | 100 | 51,50 |
| 600 x 800 | 60 | 32 | **0385.1** | 500 | 169,85 |
| 700 x 1100 | 110 | 72 | **L372.2** | 75 | 56,45 |
| 700 x 1100 | 110 | 72 | **L372.1** | 350 | 192,45 |

**PP bag, extra strong, film thickness 100 µm**.
For steam sterilisation at temperatures of up to +134 °C.

| Dimensions W x L (mm) | Total volume (l) | Usable volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 600 x 800 | 60 | 32 | **XP67.1** | 125 | 160,20 |
| 700 x 1100 | 110 | 72 | **XP68.1** | 75 | 138,70 |

**PA bag, film thickness 50 µm**.
Suitable for hot air sterilisation at temperatures up to +160 °C.

| Dimensions W x L (mm) | Total volume (l) | Usable volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 300 x 500 | 10 | 6 | **L373.1** | 500 | 282,75 |
| 400 x 780 | 30 | 22 | **L374.1** | 500 | 547,20 |
| 600 x 780 | 65 | 32 | **L375.1** | 300 | 425,70 |

② **PP bag, film thickness 50 µm. With extra-strong bottom seam**.
Suitable for steam sterilisation to +134 °C.
With imprinted **biohazard symbol** and affixed sterilisation indicator box.
Safety imprint in German, English and French.

| Dimensions W x L (mm) | Total volume (l) | Usable volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 300 x 500 | 8 | 6 | **ATY2.1** | 100 | 42,50 |
| 400 x 780 | 38 | 22 | **ATY3.1** | 100 | 68,30 |
| 600 x 800 | 60 | 32 | **ATY4.1** | 100 | 83,75 |
| 700 x 1100 | 110 | 72 | **ATY5.1** | 100 | 146,20 |

## Sekuroka®-bag ties

Made of plastic coated wire. Ideal for closing all types of bags.
Length 300 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C790.1** | 1000 | 27,85 |




121 °C

## Sekuroka®-disposal bags

Made of 40 µm thick PP. Heat stable to +145 °C.
Transparent, with **„Biohazard“ warning**. Ideal for safe disposal of lab waste, e.g. used petri dishes, test tubes, sample vials, etc.
Bags should be left open during autoclaving. Autoclavable

| Dimensions W x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 305 x 660 | **A195.1** | 100 | 33,25 |
| 420 x 600 | **A194.1** | 100 | 34,30 |
| 600 x 780 | **A192.1** | 100 | 59,05 |




121 °C

## Disposal bags with sterilisation indicator

- For steam sterilisation at 135 °C
- Made of PP, thickness 38 µm, material acc. to ASTMD 1922 (propagation tear resistance) and ASTMD 1709 (puncture resistance)
- **With sterilisation indicator field that turns dark after autoclaving**
- With imprinted "Biohazard" warning symbol
- Labelled in German, English, French and Spanish
- Matches disposal bag stand KN74.1.1ff

| Dimensions W x L (mm) | Volume max. (l) | suitable for | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 300 x 610 | 11,5 | KN74.1 | **KN71.1** | 100 | 80,65 |
| 610 x 760 | 45,4 | KN75.1 | **KN72.1** | 100 | 195,65 |
| 610 x 910 | 75,7 | KN76.1 | **KN73.1** | 100 | 212,85 |

▶ Autoclavable baskets see p. 262
▶ Sterile indicator tapes see p. 259

# Waste disposal




121°C

## Disposal bags stands

Suitable for disposal bags with sterilisation indicator KN71.1ff.
Stainless steel frame, keeps the bag open at all times. Bottom made of PP, serves as a receptacle for leaking bags. Small stand, ideal for lab benches. Autoclavable.
Cover for stand sizes M and L is optional; please order separately.

| Type | Dimensions W x L x H (cm) | Matching bag | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| S | 18.5 x 35.6 x 47 | KN71.1 | **KN74.1** | 1 | 61,20 |
| M | 35.6 x 35.6 x 54.6 | KN72.1 | **KN75.1** | 1 | 87,80 |
| L | 35.6 x 35.6 x 69.6 | KN73.1 | **KN76.1** | 1 | 94,35 |

## Accessories: cover for disposal bag stands

Made of PP, with labelling space.
Suitable for disposal bag stands KN75.1 and KN76.1.
Dishwasher safe. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YA64.1** | 1 | 40,80 |




121°C

## Disposal bags extra strong, with sterilisation indicator

- For steam sterilisation at 135 °C
- Red, made of HDPE, thickness 50 µm
- **With sterilisation indicator field that turns dark after autoclaving**
- With imprinted "Biohazard" warning symbol
- Labelled in German, English, French and Spanish

| Dimensions W x L (mm) | Volume max. (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 360 x 480 | 15,1 | **KN77.1** | 200 | 256,95 |
| 480 x 580 | 34,1 | **KN78.1** | 200 | 353,70 |
| 640 x 890 | 45,4 | **KN79.1** | 200 | 718,10 |
| 790 x 960 | 113,6 | **KN80.1** | 200 | 806,25 |
| 940 x 1220 | 189,3 | **KN81.1** | 100 | 618,15 |




121°C

## Disposal bags, self-adhesive

Made of HMHD (High Molecular Weight High Density) PE, thickness 25.4 µm. Material acc. to ASTM D1922 (propagation tear resistance) and ASTM D1709 (puncture resistance). For disposal of laboratory waste at the workplace, e.g. lab bench. Space-saving. Load capacity max. 1.36 kg. Dimensions: W 305 x L 406 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YA65.1** | 50 | 45,30 |



121°C

## One-way clips

Made of PP. For keeping disposal bags sealed during transportation and sterilisation. Can be opened and closed with one hand. Suitable for bags in sizes W 300 x L 610 and W 480 x L 580 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YA58.1** | 100 | 22,95 |



## Sekuroka®-multi-purpose bags

Made of PE with adhesive strip. For attaching to all smooth and clean surfaces, such as walls, tables, scales, etc. Can be peeled off without leaving a trace. Bags can be sealed with adhesive strip if required.

| Dimensions W x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 200 x 300 | **Y104.1** | 100 | 12,85 |
| 300 x 300 | **Y105.1** | 100 | 14,55 |
| 300 x 450 | **Y106.1** | 100 | 11,50 |





## Waste collectors Clappy

Made of stainless steel. Bin base made of plastic (ABS). With solid rubber wheels. The ring for attaching the waste bag also serves as closure. Opens by pressing the pedal. Integrated brake device prevents collector from rolling away.

| Volume (l) | L x W x H (mm) | Weight (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 40 | 585 x 490 x 825 | 6,5 | **X441.1** * | 1 | 357,95 |
| 70 | 585 x 490 x 975 | 7,5 | **X442.1** * | 1 | 379,80 |

* Delivery ex work

## Matching waste disposal bags

Made of PE.

**40 litres**: blue. Superstrong quality. 550 x 650 mm, strength 30 µm. Roll with 50 bags.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y386.1** | 200 | 19,25 |

**70 litres**: light blue. Especially tearproof and tensile. 575 x 1000 mm, strength 50 µm. Roll with 25 bags.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y387.1** | 100 | 21,40 |





## ProfiLine waste collection system ASS 120

Made of aluminium and plastic.
Upright system for a 120-l waste disposal bag.

- Open by foot pedal
- Automatic and damped closing
- Always closed, even without lid
- Easy to mount
- Coloured self-adhesive film for waste sorting
- Connection elements for expansion to dual or triple collection station

Dimensions: W 33 x D 49 x H 108 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KL36.1** | 1 | 68,75 |



## WS 120 profiLine waste collectors

- Stand for 120 l waste bags
- With holder for waste bags
- Aluminium tubular holder
- Hinged lid
- Lid frame and bottom made of plastic (ABS)
- Integrated frame with rubber ring for easy attachment of bags
- Models with and without rollers
- Includes set of labels for separating waste

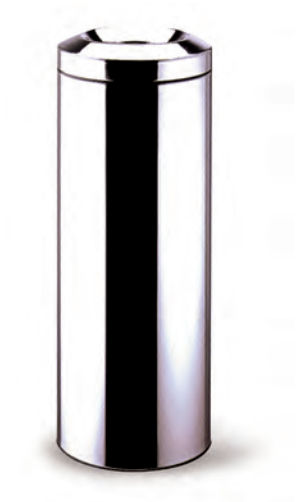
| Model | W x D x H (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| without castors | 43 x 45 x 97 | **KL39.1** | 1 | 61,10 |
| with castors | 43 x 45 x 103 | **KL40.1** | 1 | 67,20 |

## Matching waste disposal bags for ProfiLine ASS 120 and WS 120

Made of PE, blue. Especially tearproof and tensile.
**120 litres:** 700 x 1100 mm, strength 40 µm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5382.2** | 1 roll with 25 bags | 7,45 |

# Waste collectors



## Self-extinguishing paper basket

By Brabantia. With removable incombustible zinc insert. TÜV-tested. The ring around basket has been formed in such a way that the oxygen supply is cut off by rising smoke and the fire is subsequently smothered. Capacity 20 litres, height 655 mm, ∅ 250 mm, opening of basket ∅ 120 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| chrome | **N442.1** | 1 | 80,65 |



## Push Bin

By Brabantia. Functional design. Removable lid with extra wide (210 x 210 mm) opening. Bin made of chrome steel, base made of plastic to avoid damage to the floor. Capacity 60 l, ∅ 400 mm x H 820 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y404.1** | 1 | 170,95 |

## Matching waste disposal bags for waste bin Push Bin

**50-60 litres**. Made of PE, whiteDimensions: 370/260 x 850 mm, strength 30 µm. 40 bags on a roll. Specially suitable for waste bins.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y405.1** | 200 | 23,60 |



## Pedal bin

By Brabantia. Made of steel plate. Comes either with polyethylene or incombustible zinc insert. Silent lid lock, odour-proof.

| Colour | Insert-material | Volume (l) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| chrome | PE | 12 | 400 | 250 | **N434.1** | 1 | 51,10 |
| chrome | zinc | 12 | 400 | 250 | **N435.1** | 1 | 61,30 |
| white | zinc | 12 | 400 | 250 | **N436.1** | 1 | 52,70 |
| white | zinc | 20 | 460 | 290 | **1873.1** | 1 | 68,45 |
| chrome | zinc | 20 | 460 | 290 | **N437.1** | 1 | 79,45 |
| chrome | zinc | 30 | 675 | 300 | **N438.1** | 1 | 102,15 |
| white | zinc | 30 | 675 | 300 | **N439.1** | 1 | 83,85 |

## Matching waste disposal bags

**For 12-l bin: 16 litres:**
Dimensions: 450 x 520 mm, roll with 50 pre-perforated bag, white.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P388.1** | 250 | 6,15 |

**For 18-l bin: 24 litres:** Dimensions: 540 x 550 mm,
Box with 1000 bags. Recycling waste disposal bags made of HDPE.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P389.1** | 1000 | 25,40 |

**For 20-l bins: 40 litres:** Made of PE, blue. Superstrong quality. Dimensions 550 x 650 mm, strength 30 µm. Roll with 50 bags.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y386.1** | 200 | 19,25 |

**For 30-l bins: 50 litres:** Made of PE, blue. Dimensions: 370/260 x 850 mm, strength 30 µm. 40 bags on a roll. Specially suitable for waste bins.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y405.1** | 200 | 23,60 |

# Waste collectors




## Waste collector "Sort & Go"

By Brabantia. Made of plastic.
- Compact and space-saving
- Ideal for separate collection of refuse
- Can be mounted on the wall or positioned free-standing
- Easy to mount
- The small 6-l container is ideal for the disposal of waste directly from the worktop
- The lid is not self-closing, ideal for longer work
- Stable handle and recessed grip on base for emptying

**Delivery incl.** wall-mount, fastening material and instructions.

| Volume (l) | Colour | Dimensions: W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 6 | yellow | 200 x 249 x 181 | **HLX7.1** | 1 | 24,65 |
| 6 | white | 200 x 249 x 181 | **HLX8.1** | 1 | 24,65 |
| 6 | grey | 200 x 249 x 181 | **HLX9.1** | 1 | 24,65 |
| 12 | yellow | 200 x 249 x 351 | **HLY0.1** | 1 | 29,90 |
| 12 | white | 200 x 249 x 351 | **HLY1.1** | 1 | 29,90 |
| 12 | grey | 200 x 249 x 351 | **HLY2.1** | 1 | 29,90 |
| 16 | yellow | 220 x 279 x 401 | **HLY3.1** | 1 | 36,50 |
| 16 | white | 220 x 279 x 401 | **HLY4.1** | 1 | 36,50 |
| 16 | grey | 220 x 279 x 401 | **HLY5.1** | 1 | 36,50 |



## Sekuroka®-waste bins

Made of PP. With swinging lids that lock into place when pushed backwards.

| Volume (l) | L x W x H (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 330 x 270 x 510 | silver / anthracite | **K522.1** | 1 | 20,40 |
| 50 | 406 x 340 x 668 | silver / anthracite | **K524.1** | 1 | 31,10 |

## Matching waste disposal bags for Sekuroka® waste bins

**For 25-l bins: 40 litres:** Made of PE, blue. Superstrong quality.
Dimensions 550 x 650 mm, strength 30 µm. Roll with 50 bags.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y386.1** | 200 | 19,25 |

**For 50-l bins: 50-60 litres:** Made of PE, blue.
Dimensions: 370/260 x 850 mm, strength 30 µm.
40 bags, pre-perforated on a roll. Specially suitable for waste bins.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y405.1** | 200 | 23,60 |



## Paper basket

By Brabantia. Made out of galvanized steel plates, stainless.
Rim at top of basket has beads to provide a more secure grip.

| Colour | Volulme (l) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| black | 15 | 320 | 251 | **L909.1** | 1 | 25,65 |



## Sekuroka®-dual system paper basket

Ideal for dual waste disposal. Paper and other waste can be collected separately. Paper in the 20 l basket, wet waste in the attached 9 l basket with lid. Both baskets can be emptied separately.
The circular grip rim enables both to be carried at the same time.
H 350 mm, W 280 mm. ∅ top 154 + 291 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A338.1** | 1 | 48,20 |




## Used battery collector

Made of recycling plastic, colour grey.
One opening each for normal batteries and button cells.
Dimensions: L 300 x W 200 x H 230 mm, volume 9 litres.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P345.1** | 1 | 34,95 |



# Laboratory Equipment, Transport & Tools


| | |
|---|---|
| Ampoule opener | 735 |
| Assortment boxes | 727 |
| Caliper gauges / Measuring rulers | 736 |
| Cases | 722 |
| Container & boxes | 722 |
| Chairs / stools | 712 |
| Clips | 740 |
| Cutting tools | 732 |
| Drawer trays | 729 |
| Glass cutters / engravers | 735 |
| Knives | 733 |
| Lab markers | 743 |
| Laboratory mats | 730 |
| Ladders | 717 |
| Non-slip mats | 730 |
| Office organization | 741 |
| Openers | 740 |
| Pens | 745 |
| Platform trolleys | 718 |
| Scissors | 734 |
| Storage containers | 727 |
| Storage boxes | 727 |
| Supports | 716 |
| Tools | 736 |
| Transport containers | 722 |
| Transport trolleys | 720 |
| Trolleys | 718 |

# Chairs, Stools



## Office chairs, standard models

Acc. to DIN 68877.

- Seat and backrest made of PU-foam or beechwood, ergonomically designed
- Backrest adjustment and seat height adjustment infinitely variable
- Depth of seat can be adjusted
- Safety gas spring with spring suspension for depth
- All double rollers have a load-controlled brake, suitable for hard and soft floors
- PU-moulded parts with steel core
- Stable and robust plastic cross-shaped base

| Model | Seat and backrest | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Glides | PU black | 400-600 | **Y708.1** * | 1 | 153,75 |
| Castors | PU black | 420-620 | **Y709.1** * | 1 | 168,80 |
| Glides | Beech natural | 400-600 | **Y710.1** * | 1 | 134,40 |
| Castors | Beech natural | 420-620 | **Y711.1** * | 1 | 147,30 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement rollers for working stools | **CTY8.1** | 5 | 29,75 |




## Office chairs

- Large PU-seat and PU-backrest, black
- Continuous seat and backrest adjustment
- 12° seat inclination adjustment
- Plastic feet with concealed safety gas spring
- Large, non-slip floor glides or load-responsive braked double castors
- Optionally available with footrest, footrest height is adjustable independently of seat height
- Acc. to DIN 68877

| Model | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① Glides, without footrest | 440-630 | **ALC5.1** * | 1 | 198,90 |
| ② Castors, without footrest | 500-690 | **ALC6.1** * | 1 | 209,65 |
| ③ Glides, with footrest | 440-630 | **ALC7.1** * | 1 | 231,15 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement rollers for working stools | **CTY8.1** | 5 | 29,75 |




## Office chairs, high

- Seat and backrest made of PU-foam
- Tilting backrest can be adjusted in height and inclination
- Infinitely variable seat height adjustment
- Type ② with adjustable seat inclination (12°)
- Extremely stable tubular steel feet
- Three integrated footrests at different heights
- Glides
- Safety gas spring
- Compliant with DIN 68877

| Type | Seat and backrest | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | PU, black | 480-880 | **Y712.1** * | 1 | 245,10 |
| ① | Beech, natural | 480-880 | **Y713.1** * | 1 | 213,95 |
| ② | PU, black | 480-880 | **ALC8.1** * | 1 | 266,60 |

* Longer delivery times possible. Please check with our Sales Department.



## Office chairs, stainless steel

- Large PU-seat and PU-backrest with stainless steel inlay
- Infinitely variable seat and backrest adjustment
- Stainless steel feet with stainless steel safety gas spring
- Easy to clean
- Rust free
- Optionally available with footrest, folds up variably (please order separately)
- Compliant with DIN 68877

| Colour | Model | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| black | Glides | 440-630 | **ALE9.1** * | 1 | 596,65 |
| black | Castors | 500-690 | **ALH0.1** * | 1 | 618,15 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| Footrest made of stainless steel | **ALH1.1** | 1 | 160,20 |



NEU NOUVEAU NEW

## Laboratory chairs Labster

By bimos.
GMP-compatible and suitable for use in clean rooms, ideal for laboratories with safety classes S1 to S3.

- High level of seating comfort through Skai artificial leather and soft upholstery
- Fully washable and can be disinfected
- Seamless design concept
- Mechanics and soft-cover lining with control panel
- Excellent ergonomics, height-adjustable backrest
- Auto-motion technology adapts the inclination of the seat and backrest automatically to the working posture
- Compact design, small space requirement
- Space-saving star base
- Load-dependent limited dual casters for hard floor surfaces

| Type | Design | Colour | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Labster 2 | Rollers | black | 400-510 | **HHA2.1** | 1 | 435,40 |
| Labster 2 | Rollers | grey | 400-510 | **HHA3.1** | 1 | 435,40 |
| Labster 2 | Rollers | red | 400-510 | **HHA4.1** | 1 | 435,40 |
| Labster 2 | Rollers | mint | 400-510 | **HHA5.1** | 1 | 435,40 |
| Labster 2 | Rollers | black | 450-650 | **HHA6.1** | 1 | 461,20 |
| Labster 2 | Rollers | grey | 450-650 | **HHA7.1** | 1 | 461,20 |
| Labster 2 | Rollers | red | 450-650 | **HHA8.1** | 1 | 461,20 |
| Labster 2 | Rollers | mint | 450-650 | **HHA9.1** | 1 | 461,20 |
| Labster 3 | Glides + foot ring | black | 550-800 | **HHC0.1** | 1 | 553,65 |
| Labster 3 | Glides + foot ring | grey | 550-800 | **HHC1.1** | 1 | 553,65 |
| Labster 3 | Glides + foot ring | red | 550-800 | **HHC2.1** | 1 | 553,65 |
| Labster 3 | Glides + foot ring | mint | 550-800 | **HHC3.1** | 1 | 553,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| Foot ring for 2, suitable for later mounting on the seat column | **HHC4.1** | 1 | 69,35 |



NEU NOUVEAU NEW

## Laboratory stools Labster

By bimos.
GMP-compatible and suitable for use in clean rooms, ideal for laboratories with safety classes S1 to S3.

- High level of seating comfort through Skai artificial leather and soft upholstery
- Fully washable and can be disinfected
- Seamless design concept
- Mechanics and soft-cover lining with control panel
- Adjustable seat height with ring-release gas elevation
- Extra-large seat with ∅ 380 mm
- Compact design, small space requirement
- Load-dependent limited dual casters for hard floor surfaces

| Type | Design | Colour | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| Labster stools | Rollers | black | 450-650 | **HHC5.1** | 1 | 252,65 |
| Labster stools | Rollers | grey | 450-650 | **HHC6.1** | 1 | 252,65 |
| Labster stools | Rollers | red | 450-650 | **HHC7.1** | 1 | 252,65 |
| Labster stools | Rollers | mint | 450-650 | **HHC8.1** | 1 | 252,65 |



NEU NOUVEAU NEW

## Office chairs, XXL

- With leather upholstery
- Especially large, comfortable seat and backrest width
- Continuously variable seat inclination
- Maximum load up to 160 kg
- Reinforced synchronized mechanics with hand wheel to adjust the weight
- Height adjustment via gas spring
- Large, non-slip floor glides or load-responsive braked double castors

| Model | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Glides | 480-660 | **HKT1.1** | 1 | 524,20 |
| Rollers | 425-555 | **HKT2.1** | 1 | 536,45 |



## Stools

- Infinitely variable seat height adjustment
- Seat made of durable PU-foam or beech
- Super-sturdy plastic star base
- Safety gas spring for quick seat height adjustment
- LGA approved

**Standard stool**

| Model | Seat | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Glides | PU, black | 400-600 | **Y702.1** | 1 | 102,65 |
| Rollers | PU, black | 420-620 | **Y703.1** | 1 | 109,65 |

**Stools with release ring**

| Model | Seat | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Glides | PU, black | 400-590 | **CXA5.1** | 1 | 106,45 |
| Glides | Beech, natural | 400-600 | **Y704.1** | 1 | 103,10 |
| Rollers | PU, black | 430-620 | **CXA6.1** | 1 | 116,10 |
| Rollers | Beech, natural | 420-620 | **Y705.1** | 1 | 110,75 |
| Glides + foot ring | PU, black | 540-800 | **CXA7.1** | 1 | 137,60 |



## Swivel stools, padded

- Soft seat made of durable synthetic leather
- Seat ∅ 360 mm, seat thickness 90 mm, padded
- Release ring
- Plastic feet ∅ 630 mm, with double castors
- Safety gas spring for quick seat height adjustment

| Colour | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| red | 480-680 | **ALH2.1** | 1 | 127,95 |
| blue | 480-680 | **ALH3.1** | 1 | 127,95 |
| black | 480-680 | **ALH4.1** | 1 | 127,95 |



## Stool, comfort models

- Infinitely variable seat height adjustment
- Seat made of extremely robust PU-foam or beechwood
- Beechwood seat with circular trigger
- Pedestal made of stable plastic, with rollers
- Safety gas spring for speedy seat height adjustment
- LGA-tested

| Seat | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| PU-black | 440-630 | **Y706.1** | 1 | 105,35 |
| Beech natural | 440-630 | **Y707.1** | 1 | 104,30 |




## Swivel stools, stainless steel

- Seat made of PU-foam with stainless steel inlay
- Stainless steel feet with stainless steel safety gas spring
- Easy to clean
- Rust-free
- Optionally available with footrest, folds up variably (please order separately)

| Colour | Model | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| black | Glides | 440-630 | **ALE1.1** | 1 | 302,10 |
| black | Castors | 500-690 | **ALE2.1** | 1 | 326,80 |

**Accessories:**

| | | | |
|---|---|---|---|
| Footrest made of stainless steel | **ALH1.1** | 1 | 160,20 |



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## Swivel stool, XL

- Infinitely variable seat height adjustment
- Seat made of soft, robust synthetic leather or beech
- Maximum load up to 150 kg
- Safety gas spring, chrome-plated
- Aluminium star base, polished, ∅ 610 mm
- Load-responsive braked double castors

| Model | Design | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Rollers | Black synthetic leather, ∅ 400 mm | 560-740 | **HKP7.1** | 1 | 238,65 |
| Rollers | Beech, ∅ 400 mm | 470-650 | **HKP8.1** | 1 | 203,20 |
| Rollers | Black synthetic leather, ∅ 360 mm | 560-740 | **HKP9.1** | 1 | 206,40 |
| Rollers | Beech, ∅ 360 mm | 470-650 | **HKT0.1** | 1 | 167,70 |



## Stools and standing supports, high

- Seat made of soft PU foam or PP
- Continuously variable seat height adjustment by means of gas spring
- Large seat area, width 370 mm
- Front/back seat angle adjustment: 7.5°
- Sturdy plastic cross base
- High backrest for upright seating

Articles CXA3.1 and CXA4.1 can be used flexibly as a standing support or stool: incline seat forwards to stand, align straight for sitting.

| Model | Seat | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Glides | PU, blue | 490-680 | **CTY9.1** | 1 | 192,45 |
| Rollers | PU, blue | 520-710 | **CXA0.1** | 1 | 198,90 |
| Glides | PP, black | 490-680 | **CXA1.1** | 1 | 160,20 |
| Rollers | PP, black | 520-710 | **CXA2.1** | 1 | 166,65 |
| Glides + base ring | PU, blue | 600-860 | **CXA3.1** | 1 | 224,70 |
| Glides + base ring | PP, black | 600-860 | **CXA4.1** | 1 | 192,45 |



## Stackable stools, stainless steel

- Seat made of PU foam with stainless steel inlay
- Tubular stainless steel frame
- Easy to clean
- Rust free

| Colour | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| blue | 500 | **ALE3.1** | 1 | 181,70 |
| blue | 580 | **ALE4.1** | 1 | 192,45 |
| black | 500 | **ALE5.1** | 1 | 161,25 |
| black | 580 | **ALE6.1** | 1 | 165,55 |



## Stool with all-round footrest

Thanks to the integrated footrest, seat heights of up to 740 mm are possible.

- Seat made of PU-foam, black
- Safety gas spring
- Sturdy steel feet, glides
- All-round footrest for excellent support

| Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 540-740 | **ALH5.1** | 1 | 138,70 |

# Chairs, Stools



①



②



## ① Standing supports

Folding, made of plastic covered steel tubing. To relieve feet and spinal cord at work in standing positions. Padded seat and back rest made of air permeable imitation leather.
Infinitely variable adjustment from 550 to 900 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **9042.1** | 1 | 198,90 |
| black | **9045.1** | 1 | 198,90 |
| aluminium | **9050.1** | 1 | 198,90 |

## ② Standing support

For taking the strain off work carried out standing. Stable steel tube frame. Black PU seat, foamed, steel cored. Seat and foot rest are collapsible. Seat height is adjustable and can be locked in place: 650-850 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| black | **AH91.1** | 1 | 165,55 |
| red | **AH92.1** | 1 | 165,55 |

## Roller stools

Acc. to DIN 4569. TÜV and BG tested. Runs on 3 spring-bearing wheels (attachable). With thick plastic stand ring.
Steps covered with nonslip rubber covering. Max. load 150 kg.
Immovable, stationary stand from 5 kg load.

### Metal stools

Made of powder-coated metal, lead and cadmium free.
**Dimensions:** H 430 mm, upper ∅ 290 mm, lower ∅ 435 mm.
Weight 4.9 kg.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **X429.1** | 1 | 64,45 |
| light grey | **X430.1** | 1 | 64,45 |

### Plastic stools

Made of breakproof **PP**.
**Dimensions:** H 425 mm, upper ∅: 290 mm, lower ∅ 445 mm.
Weight 2.8 kg.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **X431.1** | 1 | 50,55 |
| light grey | **X432.1** | 1 | 50,55 |



## Stackable stools

- Seat made of PU foam or beech, ∅ 350 mm
- Sturdy tubular steel frame
- Ready to hand and can be stacked to save space

| Seat | Frame | Seat height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PU, black | black | 500 | **CXA8.1** | 1 | 73,95 |
| PU, black | light grey | 500 | **CXA9.1** | 1 | 73,95 |
| Beech, natural | light grey | 500 | **CXC0.1** | 1 | 58,05 |
| PU, black | black | 580 | **CXC1.1** | 1 | 75,25 |
| PU, black | light grey | 580 | **CXC2.1** | 1 | 75,25 |
| Beech, natural | light grey | 580 | **CXC3.1** | 1 | 59,60 |



## Stepladder

Made of robust plastic. With two steps. Folding.
Antislip feet and steps. Easy to clean. Max. load 150 kg.
Outer dimensions 486 x 172 x 630 mm, colour anthracite/red.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T224.1** | 1 | 46,80 |



## Mobile step-ladder

Acc. to DIN 4569. TÜV and BG tested. Made of aluminium with edge protection. With spring-bearing wheels for full mobility. 2 corrugated steps. Immoveable, stationary stand when under load. Folding.

**Technical specifications:**

| | |
|---|---|
| Dimensions (L x W x H)<br>When folded together | 440 x 425 x 445 mm<br>440 x 230 x 485 mm |
| Maximum load / weight | 150 / 2.2 kg |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y645.1** | 1 | 66,65 |




## Safety ladders

By Hailo. Made of aluminium. With anti-slip grooves. Safe, high-tech rivetted rail step connection and anti-slip foot. Load capacity 150 kg.

① **Safety ladder with steel platform.**

| Steps | W x H (mm) | Height of platform (mm) | Weight (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 4 | 450 x 1580 | 840 | 3,9 | **LT09.1** | 1 | 65,60 |

② **Safety ladder with aluminium platform.**

| Steps | W x H (mm) | Height of platform (mm) | Weight (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 5 | 480 x 1820 | 1060 | 4,6 | **LT12.1** | 1 | 84,85 |



## Folding step ladders

By Hailo. With Soft-Grip base for optimal stability on various surfaces. High-curved aluminium safety rail for secure grip or simply to lean against, with tray. Extra-large, non slip ribbed aluminium steps for optimal comfort when standing. Maximum load capacity 150 kg.

| Steps | W x H (mm) | Weight (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 520 x 1270 | 4,9 | **ACP5.1** | 1 | 75,15 |
| 3 | 550 x 1540 | 6,6 | **ACP6.1** | 1 | 89,15 |



## Gas bottle holders

Made of galvanised steel. For wall-mounting of a single gas bottle. **Delivery incl.** safety chain.

| For bottle ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 140 | **CTC5.1** | 1 | 55,40 |
| 230 | **CTC6.1** | 1 | 55,40 |
| 320 | **CTC7.1** | 1 | 58,60 |

# Platform trolleys




## Gas cylinder trolley

Made of sturdy **PE**, with handle. For safe transportation of a single gas bottle, ∅ max. 320 mm. Large surface area provides excellent stability. Solid rubber tyres, wheel ∅ 200 mm. Load capacity: 80 kg.
**Delivery incl.** lashing strap for securing the bottle.

| Type | W x D x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① Without stabiliser wheel | 495 x 630 x 1110 | **CTC3.1** | 1 | 273,05 |
| ② With stabiliser wheel | 495 x 800 x 1110 | **CTC4.1** | 1 | 296,70 |



## Trolley for transporting crates

Steel tubing. Colour black-silver effect. Pneumatic/cleated tires. Roller bearing wheels. **Load capacity 250 kg.**
Dimensions: H 1100 mm, shovel W 260 x D 280 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X828.1** * | 1 | 241,90 |

* Longer delivery times possible. Please check with our Sales Department.



## Universal transport trolley

Foldable. Made of fiber-reinforced plastics in conjunction with aluminium and steel tube. With adjustable strap to secure goods. Solid rubber tyres on wheels (∅ 200 x W 40 mm) made of cushion-type polymer (easy-to-handle, puncture-proof).
**Load capacity 125 kg**. Weight 5.4 kg.
Dimensions when folded/open: W 490/490 x H 685/1030 mm.
Shovel unfolded: W 490 x D 250 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9305.1** | 1 | 148,35 |



## Rotilabo®-platform trolleys

Tabular steel construction with reinforced beech plywoods. Black-silver enamel steel plate. With 2 steerable and 2 fixed wheels, solid rubber, ∅ 200 mm. Platform height 270 mm.
**Loading capacity 500 kg.**

| Platform size (mm) | Overall height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 850 x 500 | 975 | **N176.1** * | 1 | 368,75 |
| 1200 x 700 | 980 | **N177.1** * | 1 | 440,75 |

* Longer delivery times possible. Please check with our Sales Department.



## Lab services trolley

Metal frame and steel angles with black-silver enamel powder coating. Plates made of multilayer beech plywood. **Capacity load 200 kg.** Weight 33 kg. With two castor wheels and two fixed wheels 125 mm, solid rubber soft running wheels with ball-bearing.
Two loading platforms 100 x 60 cm at a height of 28 and 80 cm.
Dimensions without handle: W 62 x H 81 x L 104 cm. Overall height 90 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5390.1** * | 1 | 456,90 |

* Longer delivery times possible. Please check with our Sales Department.



## Lab-wire trolley

Made of steel tubing and sheet steel. Two baskets, 65 and 24 l volume, corrosion protected and covered with soft plastic.
Dimensions: W 410 x L 730 x H 850 mm (total height 970 mm), weight 13.5 kg. Wheels, ∅ 10 cm, can rotate in all directions.
Loading capacity per basket 30 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1927.1** | 1 | 504,20 |

### Security separating grating

For use inside trolley. Made of plastic covered metal. Ideal for subdividing lab trolley basket. Suitable for safe transport of small containers and glass flasks. Dimensions: W 370 x H 240 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **B001.2** | 1 | 61,75 |



## Rotilabo®-platform trolleys

Made of stainless steel. The smooth, sound absorbing, undercoated platform has 80 mm folded edges with safety crimping to the inside. Curved handle is made of rectangular tubing ∅ 25 mm and is firmly welded onto trolley. The 4 rubber wheels (2 are lockable), ∅ 125 mm, are screwed on at the reinforced corners. 2 sturdy corner guards protect the trolley from damage. Platform height 243 mm. **Total load 120 kg.**

| Platform size (mm) | L x W x H outer (mm) | Weight (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 545 x 545 | 740 x 600 x 1020 | 16 | **N136.1** * | 1 | 596,65 |
| 820 x 545 | 1000 x 600 x 1020 | 20 | **N137.1** * | 1 | 627,80 |

* Longer delivery times possible. Please check with our Sales Department.



## Rotilabo®-transport trolleys

Made of stainless steel. Welded circular tubing frame, ∅ 25 mm. With 1.5 mm thick, firmly attached shelf. One narrow side features 450 mm high barred construction, curved handle. With four firmly screwed on plates to attach the rubber tyred wheels, ∅ 200 mm. With 2 fixed rollers and 2 lockable, steerable wheels. Platform height 270 mm. **Total load 500 kg.**

| Platform size (mm) | L x W x H outer (mm) | Weight (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 850 x 500 | 970 x 500 x 940 | 27 | **N138.1** * | 1 | 1016,95 |
| 1000 x 700 | 1120 x 700 x 940 | 34 | **N139.1** * | 1 | 1194,35 |

* Longer delivery times possible. Please check with our Sales Department.

# Transport trolleys



## Laboratory shelf trolleys

Made of high-grade 18/10 steel. With welded bases, max. load per base 40 kg. Comes on extra large wheels with wall fender guards and two wheel locks. Diameter of wheels is 125 mm.
Without protruding edges and screws, therefore safe and easy to clean.
Wheels are anti-static. Shelf size L 800 x W 500 mm.

| Model | With 2 and 3 shelves | With 4 shelves |
|---|---|---|
| Outer dimensions L x W x H (mm) | 900 x 600 x 940 | 900 x 600 x 1260 |

| No. of shelves | Distance between shelves (mm) | Weight (kg) | Total load capacity (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 2 | 590 | approx. 15 | 80 | **0033.1** | 1 | 367,65 |
| 3 | 280 | approx. 22 | 120 | **A206.1** | 1 | 407,45 |
| 4 | 280 | approx. 27 | 130 | **Y497.1** | 1 | 526,75 |



## Rotilabo®-shelf trolleys, for self-assembly

Made of stainless steel 18/0. Sturdy shelves, 0.8 mm thick.
Load-bearing capacity of each shelf: 40 kg.
Bases are coated with sound-insulating material.

**Technical specifications:**

| Model | With 2 plates | With 3 plates |
|---|---|---|
| Total load-bearing capacity (kg) | 80 | 120 |
| Rack ∅ (mm) | 25 | |
| Swivel castor ∅ (mm) | 125 | |
| Plate spacing (mm) | 570 | 260 |
| Plate inner dimensions L x W (mm) | 760 x 440 | |
| Plate outer dimensions L x W (mm) | 830 x 510 | |
| Overall plate dimensions: L x W x H (mm) | 860 x 560 x 950 | |
| Weight (kg) | 13 | 17 |

**Delivery incl.** 4 swivel castors, 2 lockable. Fully disassembled.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| With 2 plates | **YE87.1** | 1 | 212,85 |
| With 3 plates | **YE88.1** | 1 | 256,95 |




## Rotilabo®-compact multi-function trolleys

With 2 or 3 shelves made of **PE**. Middle shelf can be adjusted in height by 25 mm. Shelves either have a retaining rim or a tub shape. Load capacity of shelves: model with tub-shaped shelves 65 kg, other models 30 kg.
**Delivery incl.** 4 rubber castors, unmounted.

① **Without tub shelves,** height 940 mm

| Depth (mm) | Width (mm) | Number of shelves | Useable surface (mm) | Distance between shelves (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 535 | 857 | 2 | 475 x 735 | 550 | **K492.1*** | 1 | 385,95 |
| 535 | 857 | 3 | 475 x 735 | 250 | **K493.1*** | 1 | 478,40 |
| 686 | 1003 | 2 | 620 x 880 | 550 | **K494.1*** | 1 | 446,15 |
| 686 | 1003 | 3 | 620 x 880 | 250 | **K495.1*** | 1 | 548,25 |

② **With tub shelves**, height 1060 mm

| Depth (mm) | Width (mm) | Number of shelves | Useable surface (mm) | Distance between shelves (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 540 | 840 | 2 | 480 x 730 | 610 | **X446.1*** | 1 | 456,90 |
| 540 | 840 | 3 | 480 x 730 | 280 | **X447.1*** | 1 | 514,95 |
| 690 | 995 | 2 | 625 x 885 | 610 | **X448.1*** | 1 | 493,45 |
| 690 | 995 | 3 | 625 x 885 | 280 | **X449.1*** | 1 | 578,35 |

* Longer delivery times possible. Please check with our Sales Department.



## Laboratory trolley

Made of stainless steel 1.4301.
- Sturdy and hygienic design
- 4 swivel castors, including 2 with full locking brake
- Castor ∅ 125 mm, in corrosion-resistant housing, low-friction bearings
- Castors are not electrically conductive
- With smooth side shelves, thickness 1.0 mm, with sound-absorbing lining
- Shelves rigidly welded with 4 round tubes, ∅ 25 mm

Dimensions: W 450 x D 450 x H 510 mm. Load capacity: 120 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AXL5.1** | 1 | 442,90 |



## Stainless steel shelf trolley

Made of stainless steel 1.4301. With four solid rubber swivel castors (non-marking), wheel ∅ 125 mm. Load capacity of trolley 200 kg. Dimensions: L 620 x W 460 x H 1200 mm. Shelf spacings 300 mm. Shelves (XE29.1) and matching stackable container (TC11.1) (optional), please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TC09.1** | 1 | 575,15 |

## Shelves

Made of RESOPAL®. Suitable for stainless steel shelf trolley TC09.1. Dimensions: L 610 x W 410 x H 8 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XE29.1** | 3 | 201,05 |

## Stackable containers

Made of plastic, impact resistant. Container TC11.1 suitable for stainless steel shelf trolley TC09.1 (can be used with or without XE29.1 shelves).

| Capacity (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 | 400 x 300 x 235 | **TC10.1** | 1 | 32,25 |
| 40 | 600 x 400 x 220 | **TC11.1** | 1 | 55,40 |



## Plastic tubs

Made of **HDPE**. Chipproof and breakproof. Resistant against most acids and alkali. Temperature stable from -40 to +110 °C.
Tub C973.1 suitable for lab cart C972.1.

| Colour | Volume (l) | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| red | 85 | 800 x 550 x 300 | **C973.1** | 1 | 60,00 |
| white | 100 | 900 x 550 x 360 | **E285.1** | 1 | 89,80 |



## Tub trolleys

For all-purpose use in labs, clinics, production sites. The carriage is made of plastic-coated steel pipe with four solid rubber castor wheels ∅ 75 mm. The tub is made of white **LDPE**, stable from -40 to +120 °C.
Dimensions:

- Tub: inside/top 480 x 480 mm, H 400 mm, capacity approx. 85 l, weight 2.8 kg
- Trolley with tub: H 800 mm, weight 8.2 kg

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tub | **4524.1** | 1 | 40,75 |
| Lid for tub | **5826.1** | 1 | 37,75 |
| Trolley | **K625.1** | 1 | 180,60 |



## Lab cart

For removable tub or basket. Multi-purpose use. **Max. load 200 kg.** Frame made of 28 mm steel tubing, plastic coated. 4 wheels (∅ 75 mm) with solid rubber tyres and thread protection to ensure mobility. Is secure due to 2 lockable steering wheels with double stop. Height of tub seat 430 mm. **Delivery without** tub. Please order suitable plastic tub separately.

| for tub | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| C973.1 | 730 x 490 x 580 | **C972.1** | 1 | 175,25 |
| E285.1 | 730 x 350 x 530 | **CPY5.1** | 1 | 181,70 |

# Transport containers



## Universal containers

Made of 18/10 stainless steel, extra heavy-duty. Material thickness of 1.0 mm. Items EEX5.1 and EEX6.1 come with handle reinforcement plates. **Delivery incl.** lid and three toggle fasteners to secure it in place.

| Volume (l) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 20 | 265 | 395 | **EEX2.1** | 1 | 354,75 |
| 25 | 300 | 395 | **EEX3.1** | 1 | 414,95 |
| 30 | 300 | 465 | **EEX4.1** | 1 | 428,95 |
| 50 | 350 | 555 | **EEX5.1** | 1 | 513,85 |
| 75 | 400 | 620 | **EEX6.1** | 1 | 619,20 |



## Transport castors

Made of 18/10 stainless steel. With five rubber castors dia. 100 mm, one of which can be locked. For transporting round containers safely.

| For ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 300 | **EET7.1** | 1 | 203,20 |
| 350 | **EET8.1** | 1 | 212,85 |
| 400 | **EET9.1** | 1 | 241,90 |
| 445 | **EEX0.1** | 1 | 317,15 |
| 550 | **EEX1.1** | 1 | 370,90 |



## Aluminium boxes

Made of 1.0 mm thick aluminium. Colour: Silver.

- Corrosion, weather and temperature-resistant
- Dimensionally stable
- Strong lever clamp seals with holes for padlock or seal lock and for fitting cylinder locks
- Plastic-coated safety folding handles
- Circumferential rubber seal to protect against external influences, such as dust and splash water
- Retaining bands on folding lid prevent hinges from pulling out

| Capacity (l) | Outer dimensions L x W x H (mm) | Inner dimensions L x W x H (mm) | Weight (kg) |
|---|---|---|---|
| 29 | 335 x 432 x 277 | 300 x 400 x 245 | 2.7 |
| 76 | 385 x 592 x 409 | 353 x 560 x 380 | 4.37 |
| 91 | 385 x 782 x 379 | 350 x 750 x 350 | 5.3 |

| Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 29 | **EPL0.1** | 1 | 102,15 |
| 76 | **EPL1.1** | 1 | 191,35 |
| 91 | **EPL2.1** | 1 | 198,90 |



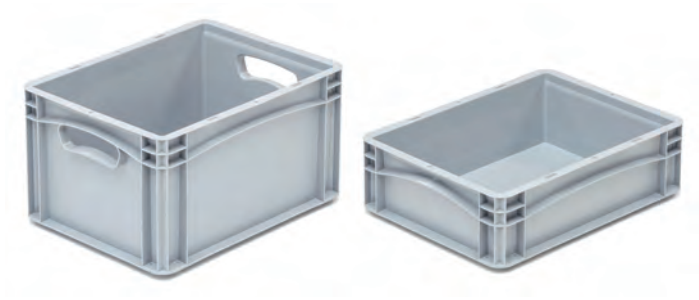
## Sekuroka®-transport boxes

Made of **PP**. With recessed grip on the side. Very robust, stackable. UN-authorized for storing and transporting solids, granulates and powders (Packing group I, II and III) if used together with UN-seal tape to secure lid. **Delivery without** seal tapes, please order separately.

| Volume (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 | 400 x 300 x 275 | **T325.1** | 1 | 58,55 |
| 45 | 600 x 400 x 275 | **LL32.1** | 1 | 63,10 |

**Accessories:**

| | | | |
|---|---|---|---|
| UN-seal tapes | **LL31.1** | 50 | 20,40 |



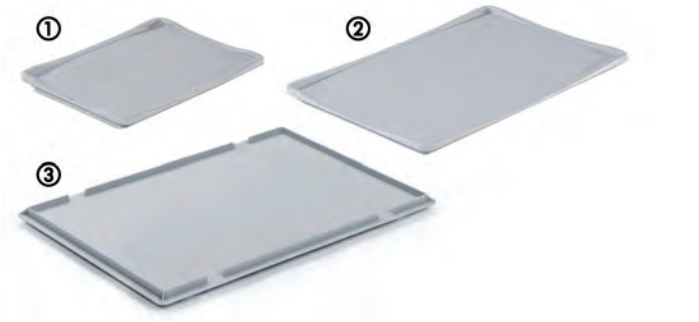
## Euro container

Made of PP. With 2 handles or open grips, ideal for transport and storage.
- Stackable
- Closed base and side walls
- Dimensions compliant with Euro pallet (120 x 80 cm)
- Please order non-hinged lid separately (can also be stackable with lids)

**Delivery without** non-hinged lid, please order separately.

| Capacity (l) | Outer dimensions L x W x H (mm) | Inner dimensions L x W x H (mm) | Weight (kg) | Matching lid |
|---|---|---|---|---|
| 11.2 | 300 x 400 x 120 | 268 x 367 x 117 | 0.69 | EPK7.1 |
| 20.8 | 300 x 400 x 220 | 268 x 367 x 217 | 1.02 | EPK7.1 |
| 30.0 | 300 x 400 x 320 | 268 x 367 x 317 | 1.46 | EPK7.1 |
| 23.9 | 400 x 600 x 120 | 367 x 567 x 117 | 1.13 | EPK8.1 |
| 54.5 | 400 x 600 x 270 | 367 x 567 x 267 | 1.96 | EPK8.1 |
| 80.0 | 400 x 600 x 420 | 367 x 567 x 416 | 3.20 | EPK9.1 |

| Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 11,2 | **EPK1.1** | 1 | 10,70 |
| 20,8 | **EPK2.1** | 1 | 14,65 |
| 30,0 | **EPK3.1** | 1 | 18,85 |
| 23,9 | **EPK4.1** | 1 | 16,80 |
| 54,5 | **EPK5.1** | 1 | 26,90 |
| 80,0 | **EPK6.1** | 1 | 42,90 |




## Non-hinged lid for Euro container

| Image | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **EPK7.1** | 1 | 7,65 |
| ② | **EPK8.1** | 1 | 9,65 |
| ③ | **EPK9.1** | 1 | 14,85 |



## Rotilabo®-plastic cases

With lid. Very robust version, slip-proof and stackable.
With handle and spring-loaded latches, can be lead-sealed.

| Volume (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | 400 x 300 x 133 | **C236.1** | 1 | 37,10 |
| 15 | 400 x 300 x 183 | **C237.1** | 1 | 40,75 |
| 20 | 600 x 400 x 135 | **C238.1** | 1 | 53,70 |
| 40 | 600 x 400 x 235 | **C239.1** | 1 | 64,45 |

**With two extra side handles**

| Volume (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 32 | 400 x 300 x 282 | **H310.1** | 1 | 53,70 |
| 40 | 400 x 300 x 338 | **H311.1** | 1 | 53,70 |



## Rotilabo®-instrument cases

Very robust aluminium cases with extra stabilizing aluminium frame.
Instruments are protected from shock and breakage due to the removeable knopped foam liner in lid and the pre-perforated foam squares in base.
Can be locked.
**Delivery incl.** key.

**Small case**

Outer dimensions: W 340 x H 270 x D 145 mm
Inner dimensions: W 320 x H 245 x D 125 mm
Weight 2 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y377.1** | 1 | 81,60 |

**Large case**

Outer dimensions: W 460 x H 360 x D 155 mm
Inner dimensions: W 440 x H 330 x D 140 mm
Weight 3 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y378.1** | 1 | 112,90 |

# Transport containers



## DuraPorter™-safety containers

Made of **PC**, with watertight silicon seal. Ideal for in-house transportation of biological and chemical samples, instruments or for storage.
Transparent box with hinged lid, three snap locks and carry handle, stackable. Partitionings for smaller samples can be removed to make use of the entire interior. Lid can be fully opened for easy filling and cleaning.
Dimensions: outer L 380 x W 196 x H 160 mm,
inner L 335 x W 155 x H 135 mm. Autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| transparent/blue | **AAA0.1** | 1 | 85,50 |
| red | **AAA1.1** | 1 | 85,50 |
| yellow | **AAA2.1** | 1 | 85,50 |



## Transport containers

Made of PP. Grey/red, with spacious compartment for storing small parts and carrying tray.
- Cover and removable carrying tray each with flush handle
- Hinges with galvanised metal axles
- Eyelet for attachment of a padlock

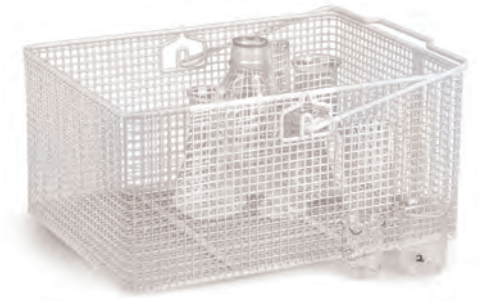
| Volume (l) | L x W x H (mm) | Carrying tray compartments | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 9 | 410 x 225 x 185 | 5 | **EPL4.1** | 1 | 23,55 |
| 15 | 485 x 260 x 230 | 6 | **EPL5.1** | 1 | 27,85 |



## Rotilabo®-safety container

Made of **PC**. For dustfree storage of samples and reagents or for safe transport of test tubes and other vessels with dangerous substances.
Features tightly sealing lid and 4 catches. Plus two side-handles and a main one made out of high-grade steel. Break- and leakproof.
Dimensions: outer L 330 x W 175 x H 180 mm,
inner L 300 x W 125 x H 160 mm. Autoclavable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Safety container | **8331.1** | 1 | 97,80 |
| Spare clips | **LK68.1** | 4 | 19,20 |



## Rotilabo®-laboratory basket

Spot-welded, PE-coated wire trellis basket, 10 x 10 x 1.5 mm.
Handle can be folded down and locks into place. The grip of the handle is plastic-coated. Base is reinforced by two rods for additional safety.
Dimensions: L 400 x W 300 x H 200 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L048.1** | 1 | 160,20 |



## Rotilabo® transport boxes

Made of plastic. With sturdy fold-away carry handle; removable compartment and 2 removable small parts magazines in lid.
For transporting measuring instruments, tools and small parts.
Dimensions: L 580 x W 290 x H 300 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CYX1.1** | 1 | 35,30 |




## Hand baskets

Can be stacked inside one another when empty.

① **Made of plastic**, double-handled. Colour red.

| Volume (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 22 | 430 x 300 x 230 | **TC06.1** | 1 | 24,40 |

② **Zinc chromate finish** with plastic-coated metal handle.

| Volume (l) | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 7 | 365 x 250 x 120 | **TC07.1** | 1 | 49,35 |
| 20 | 470 x 310 x 210 | **TC08.1** | 1 | 45,15 |





## Rotilabo®-baskets

Made of aluminium. Slide strip made of plastic. Ergonomically formed handles on the front side. The straight baskets can be stacked on top of each other, the conical ones inside each other.

| Model | Outer dimensions L x W x H (mm) | Inner dimensions L x W x H (mm) | Volume (l) | Weight (kg) |
|---|---|---|---|---|
| ① straight | 580 x 380 x 300 | 540 x 340 x 280 | 55 | 2.5 |
| ② conical | top: 740 x 485 x 290<br>bottom: 640 x 380 x 290 | top: 700 x 445 x 290<br>bottom: 630 x 375 x 290 | 89 | 3.0 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① straight | **EX45.1** | 1 | 127,95 |
| ② conical | **EX47.1** | 1 | 166,65 |



## Rotilabo®-collapsible boxes

Made of **PP**. Folding baskets. Capacity 30 l. Max. load 10 kg.
Dimensions: L 470 x W 340 x H 240 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X857.1** | 1 | 13,95 |



121°C

## Bottle carriers

Made of **PP**, with handle and 8 slots. Ideal for transporting oxygen bottles acc. to Winkler (Art. No. HH78.1, 150 ml).
Dimensions: L 330 x W 170 x H 70 mm. Opening ∅ 72 mm.
Handle height 72 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC18.1** | 2 | 113,95 |

## Rotilabo®-plastic containers

Made of **PP**. For safe transport of bottles. Segment divisions in box can be removed easily. Containers are robust, scratch-proof and easy to clean.
Outer dimensions: L 400 x W 300 mm.

**With 12 subdivisions**

Each 85 x 85 mm. Height of container 220 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C013.1** | 1 | 45,15 |

**With 8 subdivisions**

Each 97 x 97 mm. Height of container 270 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C014.1** | 1 | 47,25 |

**Accessories:**
**Lid** with hinges

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P094.1** | 1 | 8,55 |

**Spring-loaded catches**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P095.1** | 2 | 3,05 |



## Multi-purpose transport baskets

By Nalgene®. Ideal for transporting samples, bottles, tools, etc.
With moulded divider.
Dimensions of compartments: L 340 x W 89 x H 111 mm.
Overall dimensions (incl. handle): L 378 x W 241 x H 114 mm.

**Made of HDPE**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K571.1** | 1 | 30,05 |

**Made of PP**

Autoclavable. Ideal in biological and clinical laboratories for collecting and transporting samples. Conforms to OSHA Standard 29 CFR, part 1910.1030 for use as protection against haematogen pathogens.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K572.1** | 1 | 31,50 |

# Transport containers



## Bottle transport buckets

Made from thermoplastic elastomer. Suitable for shockproof transport of breakable glass bottles or goods for cooling.
Max. tensile loading capacity: 50 kg.
Resistant to most aqueous solvents, acids and bases.
Temperature stable from -45 to +110 °C. Autoclavable.

| For bottles | Height incl. handle (mm) | Height without handle (mm) | Outer ∅ (mm) | Inner ∅ (mm) |
|---|---|---|---|---|
| 0.5 to 1 | 254 | 165 | 114 | 100 |
| 2.5 to 4 l | 406 | 267 | 190 | 175 |

| For bottles | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0.5 to 1 l | red | **ATC1.1** | 1 | 38,95 |
| 2.5 to 4 l | red | **C804.1** | 1 | 82,25 |
| 2.5 to 4 l | black | **C806.1** | 1 | 82,25 |

**Transport of hazardous substances**
The guidelines for working safely in laboratories (BGI 850-0) stipulate that non-shatterproof containers must be supported at their base when carrying; many other containers taken from refrigerators or cold rooms may be very smooth or slippery due to condensation.
Non-shatterproof containers may only be transported to other rooms using special aids which allow them to be held and carried safely; these include buckets, carry boxes or laboratory trolleys, preferably fitted with trays (4.10.3).




## Safety container for bottles

By Nalgene®. Made of **LDPE** with PC lid. Ideal for transporting and storing 2.5 l narrow neck bottles (for ex. Art. No. T503.1).
The screw cap enables pouring without removing bottle from the container.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P333.1** | 1 | 83,85 |



## Bottle baskets

Ideal for transporting dangerous liquids. Made of plastic covered steel wire. Handle with slight suspension effect.

**Basket 4 x 1 l**
Dimensions: L 235 x W 235 x H 130 mm, H with handle 300 mm, compartment width 105 x 105 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0869.1** | 1 | 38,95 |

**Basket 2 x 2.5 l**
Dimensions: L 340 x W 180 x H 130 mm, H with handle 320 mm, compartment width 160 x 160 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0130.1** | 1 | 34,20 |



## Bottle baskets

Ideal for transporting different-sized laboratory samples.
With feet and stable handle. Made of wire, covered with white PE.

| Inside ∅ (mm) | Number of compartments | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 4 | 330 | **L431.1** | 1 | 62,15 |
| 100 | 6 | 330 | **L432.1** | 1 | 76,90 |
| 100 | 8 | 330 | **L433.1** | 1 | 95,70 |
| 100 | 10 | 330 | **L434.1** | 1 | 116,10 |
| 130 | 4 | 370 | **L435.1** | 1 | 69,90 |
| 130 | 6 | 370 | **L436.1** | 1 | 79,85 |
| 130 | 8 | 370 | **L437.1** | 1 | 110,20 |
| 80 | 12 | 320 | **N146.1** | 1 | 107,50 |



## Bottle carriers

Made of PP. With ergonomically-shaped carrying handle.
Height 150 mm. Stackable.

| Compartment size (mm) | Number of compartments | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 90 x 90 | 6 | 295 x 200 x 320 | **EPA5.1** | 5 | 40,35 |
| ∅ 110 | 4 | 300 x 260 x 310 | **EPA6.1** | 5 | 46,20 |



## MultiStore storage systems

Made of **PS**, white, tip-out drawers made of transparent polystyrene.

- For small items and accessories, versatile
- Dust-free and clean storage of contents
- Can be combined in a variety of ways to provide customised storage solutions

| Number of drawers | Overall plate dimensions: L x W x H (mm) | Drawer size L x W x H (mm) |
|---|---|---|
| 9 | 601 x 65 x 77 | 49 x 45 x 46 |
| 6 | 601 x 94 x 113 | 80 x 67 x 69 |
| 5 | 601 x 136 x 163 | 99.5 x 97 x 107.5 |
| 3 | 601 x 198 x 238 | 176 x 149 x 161 |
| 2 | 601 x 310.5 x 353 | 265 x 221 x 241 |

| Number of drawers | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 9 | **ANP5.1** | 1 | 18,20 |
| 6 | **ANP6.1** | 1 | 22,90 |
| 5 | **EPL6.1** | 1 | 30,00 |
| 3 | **ANP7.1** | 1 | 48,95 |
| 2 | **EPL7.1** | 1 | 109,65 |



## Storage boxes

Made of **PP**. Resistant against oil and acids. Breakproof, stackable.

| Colour | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| blue | 115 x 102 x 74 | **Y388.1** | 6 | 7,10 |
| blue | 164 x 102 x 74 | **Y389.1** | 4 | 6,90 |
| blue | 242 x 146 x 127 | **Y390.1** | 2 | 7,00 |
| blue | 332 x 207 x 155 | **Y391.1** | 2 | 14,85 |
| red | 332 x 207 x 155 | **EPH3.1** | 2 | 14,75 |
| yellow | 332 x 207 x 155 | **EPH4.1** | 2 | 14,75 |
| green | 332 x 207 x 155 | **EPH5.1** | 2 | 14,75 |
| blue | 489 x 312 x 184 | **Y392.1** | 2 | 25,30 |



## Sorting container for small items

Made of acrylic glass. Easy to fill from above. Pipette tips, reaction vials and other small items can easily be removed through second opening.
With non-slip rubber feet.

| Number of compartments | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 180 x 175 x 235 | **AXE0.1** | 1 | 67,70 |
| 2 | 139 x 160 x 368 | **AXE1.1** | 1 | 78,50 |
| 3 | 210 x 155 x 212 | **AXE2.1** | 1 | 89,25 |
| 4 | 278 x 158 x 217 | **AXE3.1** | 1 | 95,50 |



## Drawer container

**Made of ABS.** With 5 drawers for the storage of up to 5000 microscope slides. Each drawer holds 10 containers for microscope slides (Art. No. 2299.2 + 2300.2). Optionally available with rollers for mobile use. Can be upgraded by adding drawers.
**Delivery incl.** 5 drawers and cover. Please order rollers separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Drawer container | **CPY1.1** | 1 | 241,90 |
| **Accessories:** | | | |
| Rollers | **CPY2.1** | 4 | 16,70 |
| Drawer (L 420 x W 420 x H 140 mm) | **CPY3.1** | 1 | 70,85 |
| Cover for drawer (L 420 x B 420 x H 25 mm) | **CPY4.1** | 1 | 25,70 |

# Storage containers



## Storage boxes

Bottom section made of PP. Cover housing made of SAN.
Red, with transparent hinge cover.

- Nominal volume 2.5 l (Filling volume 3.7 l)
- Stackable
- Can be connected together at the sides by means of enclosed connectors
- Dimensions: W 146 x D 232 x H 158 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EPH1.1** | 4 | 53,70 |



## Storage boxes

Made of **PP**. With hinged lid, stackable.
Art. No. YC76.1 and YC77.1 with label holder on lid.

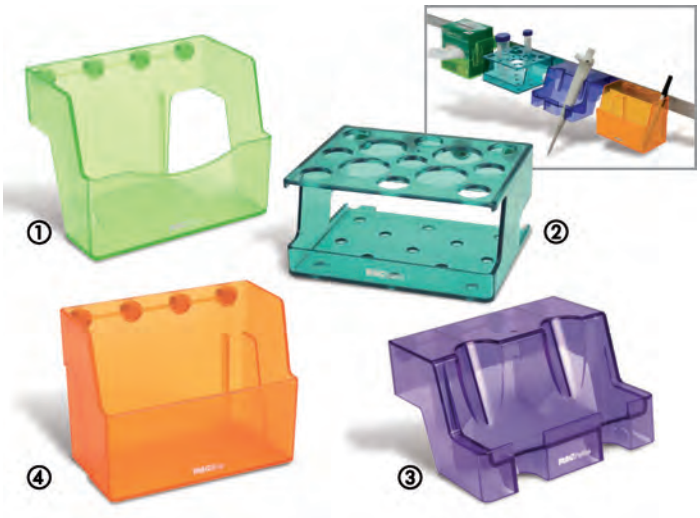
| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 136 x 87 x 35 | **YC76.1** | 1 | 6,40 |
| 136 x 87 x 55 | **YC77.1** | 1 | 6,75 |
| 185 x 140 x 80 | **YC78.1** | 1 | 8,55 |
| 228 x 130 x 60 | **YC79.1** | 1 | 8,95 |



## Hood for small instruments

Made of **PMMA**. Transparent cover with square base for protecting microscopes and other sensitive instruments against dust and contamination. Also suitable as draft shield for balances.
Dimensions: L 300 x W 307 x H 400 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CPX2.1** | 1 | 96,55 |




## Magnetic storage containers

Made of **ABS**, with four magnets. For attaching to clean benches, extractors or other metallic surfaces.
**Delivery incl.** metal plate for attaching, self-adhesive.

| Type | For | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | Tissue boxes AA64.1 (213 x 114 mm) | 130 x 91 x 98 | **ACL3.1** | 1 | 21,80 |
| ② | 4 x 50 ml + 9 x 15 ml centrifuge tubes | 131 x 112 x 64 | **ACL4.1** | 1 | 21,80 |
| ③ | 2 microlitre pipettes | 131 x 112 x 76 | **ACL5.1** | 1 | 21,80 |
| ④ | Small items | 130 x 78 x 102 | **ACL6.1** | 1 | 21,80 |



## Assortment boxes

Made of **PP**. With fixed compartments and sturdy hinges and covers.

**Dimensions: L 250 x W 170 x H 46 mm**

| Colour | Number of compartments | Dimensions of compartments (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| red | 8 | 65 x 242 (1x), 98 x 38 (2x) 48 x 38 (4x), 98 x 90 (1x) | **H354.1** | 1 | 10,65 |
| transparent | 12 | 82 x 38 (12x) | **EPH6.1** | 1 | 12,05 |
| transparent | 18 | 48 x 38 (12x), 65 x 38 (6) | **EPH7.1** | 1 | 12,05 |

**Dimensions: L 335 x W 225 x H 55 mm**

| Colour | Number of compartments | Dimensions of compartments (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| red | 8 | 105 x 105 (1x), 105 x 325 (1x) 105 x 52 (2x), 52 x 52 (4x) | **H355.1** | 1 | 13,90 |
| yellow | 12 | 105 x 52 (12x) | **EPH8.1** | 1 | 13,90 |
| Blue | 24 | 52 x 52 (24x) | **EPH9.1** | 1 | 13,90 |

# Drawer trays



## Storage rack for microscope slide boxes

Made of acrylic. With 15 spaces for 50 or 100-slot microscope slide boxes.
Compartment dimensions: L 214 x W 171 x H 38 mm,
Overall dimensions: L 711 x W 171 x H 228 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TP32.1** | 1 | 289,20 |



## Rotilabo®-drawer tray

Made of **PVC**, with 12 storage compartments 87 x 87 mm (inside) for small parts. Outer dimensions: L 410 x W 300 x H 65 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **8110.1** | 1 | 54,85 |



## Rotilabo®-small parts boxes

Made of clear **PS**. Art. No. 8544.1 red. With different-sized compartments.

| Outer dimensions (mm) | Number of compartments | Dimensions of compartments (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 x 170 | 12 | 82 x 38 x 40 | **K154.1** | 1 | 12,60 |
| 250 x 170 | 18 | 48 x 38 x 40 (12 x)<br>65 x 38 x 40 (6 x) | **K155.1** | 1 | 12,40 |
| 210 x 120 | 7 | 32 x 57 x 30 (6 x)<br>203 x 57 x 30 (1 x) | **8544.1** | 1 | 7,55 |
| 210 x 120 | 9 | 36 x 67 x 30 | **K156.1** | 1 | 9,90 |
| 210 x 120 | 12 | 56 x 32 x 30 | **K157.1** | 1 | 9,50 |
| 170 x 105 | 10 | 50 x 32 x 27 | **K159.1** | 1 | 8,30 |



## Rotilabo®-drawer tray

Made of **PVC**, with 5 compartments for pipettes, thermometers, small parts, etc. Outer dimensions: L 410 x W 300 x H 70 mm.
Compartment inner dimensions:

- 1 compartment L 380 x W 96 mm
- 2 compartments L 187 x W 100 mm
- 2 compartments L 187 x W 66 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9521.1** | 1 | 53,55 |



## Rotilabo®-drawer tray

Made of **PS**. With 4 compartments 205 x 155 mm for neat storage of larger, small devices.
Overall dimensions approx. W 440 x D 340 x H 70 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L064.1** | 1 | 75,15 |

# Non-slip mats/Laboratory mats



## Rotilabo®-drawer tray, 9 compartments

Made of **PVC**, with subdivided lengthwise. Ideal for pipettes, thermometers, columns, etc. Outer dimensions: L 355 x W 300 x H 45 mm.
Dimensions of the compartments: L 345 x W 27 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **8111.1** | 1 | 50,35 |



## Rocker Tape Adhesive films for shakers

Made of Polyester. Adhesive on both sides, provides a secure hold for different laboratory vessels on agitators or in incubators. Suitable for gentle shaking movements, dependent on load and contact area. Washable, reusable.

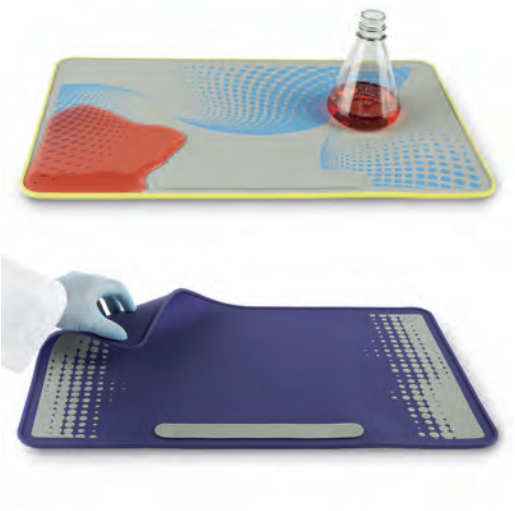
| Type | Length (mm) | Width (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Roll | 610 | 3,8 | **TH52.1** | 1 | 44,65 |
| Sheets | 30,5 | 30,5 | **TX33.1** | 3 | 55,60 |



## Rotilabo®-pipette tray

Made of **PVC**, fits most drawers. Divided lengthways into 4 parts.
Dimensions: L 420 x W 300 x H 40 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **7230.1** | 1 | 32,95 |





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## Laboratory mats

Made of FDA-approved silicone. Reduce vibration noise from devices. Metal inserts in the mat hold the magnetic rods in position. Raised edge as protection for spilled liquids.

- Slip-resistant
- Usable on both sides
- Washable
- Dishwasher-safe

Dimensions: L 600 x W 350 x H 2 mm.
Temperature-stable up to +200 °C, autoclavable.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| yellow | **HNH0.1** | 1 | 59,05 |
| violet | **HNH1.1** | 1 | 59,05 |



## Rotilabo®-drawer tray for microlitre pipettors

Made of **PS**. Ideal for pipettors, syringes

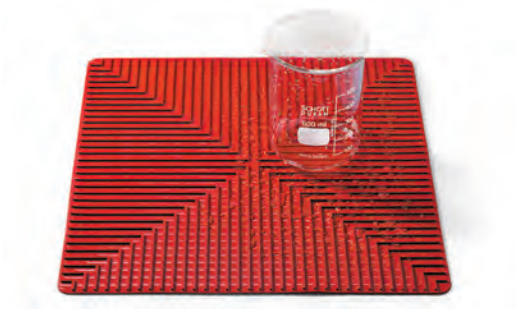
- 5 compartments L 275 x W 60 mm
- 2 compartments L 155 x W 140 mm

Overall dimensions approx. W 440 x D 340 x H 70 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L060.1** | 1 | 75,15 |


▶ Pipettor stands see pages 424

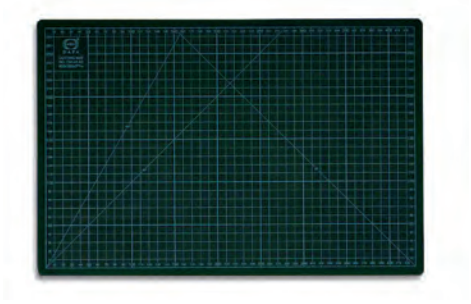
▶ Drawer container for microscope slides, see page 300



## Rotilabo®-laboratory mats

Made of silicone. Non-slip. Temperature stable from -60 to +260 °C. Autoclavable.

| Colour | Dimensions (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| red | 250 x 250 | **EE86.1** | 1 | 16,65 |
| black | 250 x 250 | **EE87.1** | 1 | 16,65 |
| red | 350 x 350 | **EE88.1** | 1 | 25,75 |
| black | 350 x 350 | **EE89.1** | 1 | 25,75 |



## Cutting mats

Made of **PVC**, in 3 layers with special interior core. With grid imprint and self-closing surface. Colour: green, with white grid pattern. Thickness 3 mm.

| Dimensions L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 450 x 300 | **KN07.1** | 1 | 13,45 |
| 600 x 450 | **PK51.1** | 1 | 23,15 |



## Lab sink mat

Made of soft **PVC** to prevent glass breakage when washing. Round profile prevents splashing of running water. The smooth surface prevents dirt from settling. Weight of mat is sufficient to insure secure position in flowing water. An additional advantage: Magnetic rods do not slip through mesh easily into drain pipe. Dimensions: L 750 x W 450 x H 15 mm.
Width of profile 8 mm. Width of web 40 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C374.1** | 1 | 64,30 |




## Anti-vibration laboratory mats

Made of neoprene. For absorbing vibration produced by laboratory equipment. Suitable for a large number of vortexers, shakers, rotators, microscopes and other equipment. Slip-resistant, creates a stable surface. Stackable for bearing heavy equipment, place side by side to produce a larger surface area.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 178 | 216 | **AXC1.1** | 2 | 46,50 |
| 216 | 279 | **AXC2.1** | 2 | 54,15 |



## Rotilabo®-adhesion mat

Made of soft **PVC**. Prevents slipping and is suitable for use as padding. Both sides can be used. Washable and durable.
Roll W 400 x L 1000 mm, approx. 1 mm thick.

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **0668.1** | 1 | 32,20 |



## Rotilabo®-elastic buffer pads

Ideal for preventing slipping, vibrating, rattling of instruments, machines, lids, etc. Made of soft-elastic plastic. Self-adhesive.

| ∅ (mm) | Height (mm) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 13 | 3 | clear | **5352.1** | 112 | 24,70 |

▶ Bench-Top protection paper see page 1130

# Cutting tools



## Cutting boards

Made of **PE**. Temperature stable up to +90 °C.

| Dimensions L x W x H (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 x 200 x 10 | with recessed grip, without rubber feet | **N115.1** | 1 | 9,35 |
| 350 x 250 x 20 | without recessed grip, with rubber feet | **N116.1** | 1 | 23,15 |



## Safety knife

Made of cast aluminium, black heat-baked paint and blue plastic parts.
For left and right handed users. Blade is drawn back into handle by a spring when lever is released. With ergonomically formed handle.
Knife is handy, safe and secure in grip. Length 150 mm, width 35 mm.
Blade thickness 0.65 mm (trapeze shape).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Safety knife | **C649.1** | 1 | 17,75 |
| Spare blades | **C650.1** | 10 | 6,40 |



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## Cutting boards

Made of coloured plastic, for colour assignment.
Dimensions: L 400 x W 300 x H 20 mm.

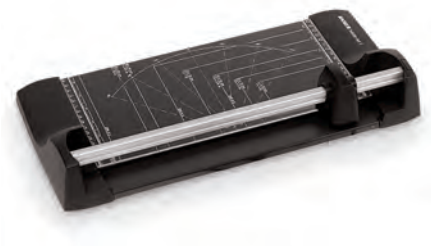
| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **HEC8.1** | 1 | 31,95 |
| blue | **HEC9.1** | 1 | 31,95 |
| green | **HEE0.1** | 1 | 31,95 |
| white | **HEE1.1** | 1 | 31,95 |




## MARTego safety knife

With automatic blade retractor. Operating lever can be locked to prevent accidental opening. Anatomically shaped aluminium tong grip with soft -component handle for slip-resistant and fatigue-free working.
For left and right handed users. Easy blade replacement without tools.
Application advantage: blade is usable on 4 sides.
Suitable for all routine cutting work, ideal for opening boxes.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Safety knife | **XK02.1** | 1 | 32,20 |
| Replacement blades | **XK03.1** | 10 | 7,75 |



## Safety cutter

With bevelled, rotating round knife, self-sharpening, in closed plastic top.
Automatic pressing on of the cutting material at the cutting point.
With transparent press-down ruler. Also features two angle layouts with cm and inch scales, degree graduation and format marking.
Cutting height max. 1 mm.

**Small model:**
Cutting length max. ca 320 mm. Dimensions: W 430 x H 70 x D 210 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X860.1** | 1 | 50,00 |

**Large model:**
Cutting length max. ca 460 mm. Dimensions: W 570 x H 70 x D 210 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X861.1** | 1 | 61,85 |



## Cutter 2-in-1

With automatic blade retractor and auto-lock feature.
Metal handle with rubberised grip zone and integrated break-off device.
Usable as a standard cutter or safety knife. Spring-loaded blade retracts automatically when the blade slips off the cutting object.
The standard break-off blade can, however, also be pushed forwards in the conventional fashion using the auto-lock feature.
Dimensions: L 186 mm x W 38 mm, blade width 18 mm.
**Delivery incl.** blade.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Cutter | **PK49.1** | 1 | 12,65 |
| Replacement blades | **PK50.1** | 10 | 4,00 |



## Cutter ARGENTAX

With button to push blade forward. Length 150 mm. Weight 90 g.
**Delivery incl.** 5 blades.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Cutter | **0507.1** | 1 | 12,70 |
| Spare blades | **A856.2** | 10 | 7,50 |

## Glass and ceramic scratcher

With fitted blade. For hobs and other smooth surfaces.
Adjustable. Width 50 mm, length 140 mm. Weight 30 g.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Scratcher | **0508.1** | 1 | 5,30 |
| Replacement blades (L 43 x W 22 x strength 0,22 mm) | **CLT7.1** | 10 | 5,35 |



## Safety laboratory knife

Strong, rounded blade made of stainless steel 1.4034.
Plastic safety handle reduces risk of injury.
Blade length 90 mm, overall length 225 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PX19.1** | 1 | 17,10 |



## Ceramic knives

With extremely hard, stainless and anti-magnetic blade. Very light.
Ergonomically designed handle. No resharpening.

| Blade length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 90 | **T752.1** | 1 | 32,15 |
| 120 | **T753.1** | 1 | 53,70 |
| 150 | **T754.1** | 1 | 57,95 |



## Knives

For cutting foils, tubing, insulation, mats, etc. Blade is made of ice-hardened and hand-sharpened stainless steel. Knives are dishwasher proof.

| Blade length (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 75 | 180 | **A572.1** | 1 | 35,95 |
| 90 | 190 | **A573.1** | 1 | 36,85 |
| 120 | 225 | **A574.1** | 1 | 38,30 |
| 160 | 270 | **A575.1** | 1 | 43,55 |
| 200 | 330 | **A577.1** | 1 | 60,75 |
| 260 | 380 | **A579.1** | 1 | 68,60 |



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## Knives with coloured handle

Blades made of chrome molybdenum steel.
Coloured handle for colour assignment, anti-slip for safe grip.

**With smooth cutter**
Blade length 130 mm, overall length 270 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **HEE2.1** | 1 | 15,60 |
| blue | **HEE3.1** | 1 | 15,60 |
| green | **HEE4.1** | 1 | 15,60 |

**With serrated edge**
For cutting hard shells or crusts.
Blade length 110 mm, overall length 220 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| orange | **HEE5.1** | 1 | 6,25 |
| light blue | **HEE6.1** | 1 | 6,25 |
| lime green | **HEE7.1** | 1 | 6,25 |



## Lab clasp knife

Special knife with lockable, stainless blade and rubber-like textured handle for secure grip. Dimensions: length blade ca. 70 mm, knife unfolded 175 mm, folded ca. 105 mm. Weight 78 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1036.1** | 1 | 15,00 |

# Scissors




## Scissors

Made of stainless high-grade steel, rated 56 on the Rockwell hardness scale and shock-resistant plastic. Can be readjusted and sharpened. TÜV-tested. Comes in plastic case.

**For papers, textiles, foils and more**

| Fig. | Blade length (mm) | Total length (mm) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ④ | 130 | 260 | for right-handed users | **0821.1** | 1 | 18,25 |
| ① | 66 | 164 | for right-handed users | **9674.1** | 1 | 15,00 |
| - | 66 | 164 | for left-handed users | **9676.1** | 1 | 17,15 |

**For cardboard, leather, plastic, carpets and more**

| Fig. | Blade length (mm) | Total length (mm) | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ② | 41 | 170 | for right-handed users | **5489.1** | 1 | 12,85 |
| ③ | 93 | 212 | for right-handed users | **9677.1** | 1 | 17,45 |
| - | 93 | 212 | for left-handed users | **9678.1** | 1 | 20,40 |



## Utility shears

- Cutting principle Amboss
- Precision-ground upper blade, non-stick
- Ergonomic handle, non-slip
- Integrated spring
- One-handed safety lock
- Maximum cutting thickness 23 mm
- Length 200 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1259.1** | 1 | 28,40 |



## Combinations scissors

Made of stainless steel. Cut wire, tin, cardboard, textile, leather, rubber and plastic. Can be locked. Total length 190 mm, blade length 40 mm, weight 110 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1901.1** | 1 | 17,75 |



## Rotilabo®-hose- and tube-cutter

Made of stainless steel 18/10, with high gloss finish.
Ideal for cutting hoses and centrifuge tubes of max. outer ∅ 10 mm.
Blade length 2.5 cm.Total length 10 cm.

**Delivery incl.** artificial leather case.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CK56.1** | 1 | 19,35 |



## Tube cutter

For all tubes with ∅ max. 13 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube cutter | **6737.1** | 1 | 19,75 |
| Spare blades for tube cutter | **6738.1** | 5 | 35,10 |



## Rotilabo®-glass tube cutter

Made of die cast zinc, nickel plated. Carbide cutter wheel.
Suitable for tube ∅ from 3 to 30 mm.

| Type | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Glass tube cutter | 68 | **YT66.1** | 1 | 13,45 |
| Replacement cutter wheel for glass tube cutter | 2 | **YT67.1** | 1 | 4,25 |



## Capillary tubing cutter

For ∅ up to 1/16″ (1.59 mm) outside and 0.1 mm inside. Prevents sharp or warped edges when cutting. The depth of cut can be adjusted. Also suitable for clean cuts on PTFE tubes or electric wires. Can be used approx. 2000 times.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5116.1** | 1 | 53,70 |



## Glass cutter

With replaceable blade made of hard metal. Length 185 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Glass cutter | **8209.1** | 1 | 47,85 |
| Spare blade 40 x 20 mm | **8210.1** | 1 | 32,05 |



## Ampoule opener

Opens ampoules from 1 to 10 ml easily and safely.
Transparent material renders the contents of the ampoule visible.
Single-handed opening of up to three ampoules at the same time.
Dimensions: L 95 mm x W 76 mm x H 83 mm.
**Delivery incl.** 1 ampoule box and 4 inserts for opening 1 ml, 2 ml, 5 ml and 10 ml ampoules.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXT2.1** | 1 | 50,70 |



## Rotilabo®-glass cutter

With plastic handle. Standard format with Toplife cutting roller. Extremely light cover strip made of special metal alloy. Cuts very finely and smoothly. Universal glass cutter for glass thickness 2 to 12 mm. Cutting angle 135°. 2.5 mm from ruler. Cutter roller not interchangeable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L124.1** | 1 | 20,35 |



## Diamond grinding pen

With octaeder tip and wooden handle. For engraving glass.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1530.1** | 1 | 24,65 |



## Rotilabo®-glass scriber

With carbide tip scriber, for permanent marking of glass or metal. Ergonomic handle made of plastic, sturdy pen made of aluminium with rugged tip holder for safe handling.
Tip can be retracted into the pen body for safe storage.
Dimensions: L 150 x ∅ 11 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHN4.1** | 1 | 26,80 |



## Marker pen

With sharp tungsten carbide tip for indelible marking of glass, ceramic and plastic. Tip can be retracted into the pen body for safe storage.
Dimensions: L 137 x ∅ 9.8 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AXL2.1** | 1 | 32,80 |




## Signograph

Engraver, for marking or decorating metal, stone, plastic, glass, porcelain.
Works acc. to the vibration principle, using AC frequency.
Intensity can be infinitely adjusted.
**Delivery incl.** adapter and steel tip. 1.75 m extension cord.
Power supply 220 V/50 Hz/25 W. Weight incl. cable 320 g.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Engraver Signograph | **1951.1** | 1 | 39,35 |
| Modelling tip, spherical | **5251.1** | 1 | 4,25 |
| Modelling tip, pointed | **0203.1** | 1 | 5,35 |
| Diamond tip | **0901.1** | 1 | 38,45 |



## Hand cork borers

Made of brass. For drilling in cork, rubber, leather, styrofoam, etc.
18 drills from ∅ 5 to 26 mm.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **0581.1** | 1 | 151,60 |

## Cork borer sharpener

For sharpening blunt drills.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0582.1** | 1 | 20,55 |



## Engraving set, complete

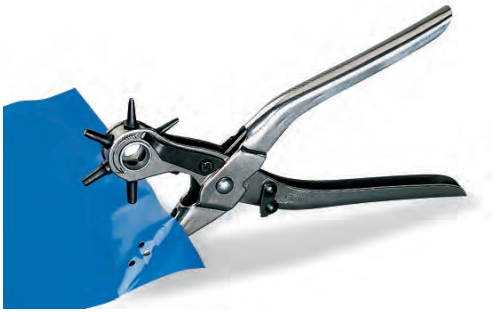
Ideal for engraving, frosting, signing glass, ceramics, acrylic or metal.
Dimensions approx. L 300 x W 200 x H 60 mm. Comes in plastic case.
- 1 engraver 12-18 volt, 20.000 $Umin^{-1}$, with mounted ball bearing
- 1 TÜV-tested power pack (220-240/12 volt, 0.5 A)
- 1 piece of test glass
- 1 sample and instruction manual

**Delivery incl.** all the necessary tools: spherical Diamond pens for making 1.0 and 1.8 mm lines and notches. Each grinding pen is made of silicium-carbide, with a cone and ball shaped for frosting.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N411.1** | 1 | 66,45 |

## Spare pens

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Diamond grinding pen, spherical ∅ 1.0 mm | **N976.1** | 2 | 6,25 |
| Diamond grinding pen, spherical ∅ 1.8 mm | **N977.1** | 2 | 6,25 |
| Silicium-carbide grinding pens, cone and ball shaped | **N978.1** | 2 | 4,00 |



## Hole punching pliers

With 6 hole punchers from ∅ 2 to 5 mm. Ideal for cardboard, plastic foil, leather. Can be locked. L 220 mm, weight 250 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0837.1** | 1 | 18,20 |



## Diamond steel saw

With tungsten-carbide blade. Ideal for cutting wood, plastic, rubber, ceramics, soft metal, clay and glass tubes, etc. without knife jamming.
Blade length 210 mm. Total length 400 mm (255 mm when clasped).
Weight 150 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1857.1** | 1 | 25,70 |



## Precision caliper gauge

Made of hardened high grade steel, with round scale under acrylic glass cover. Knurled thumb screws are used for adjustment and locking. Range up to 160 mm. Resolution: 0.02 mm. Accuracy acc. to DIN 862. With case.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0813.1** | 1 | 61,85 |



## Fastening tool

Made of metal. For fastening and cutting cable ties. The corrugated cable ties or fasteners are secured in a single operation and then cut.
The required tension can be individually set.
Colour: blue or red.
Assorted ties Art. No. 1729.1 and 1735.1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H977.1** | 1 | 90,20 |

## Rotilabo®-ties

Made of **PA**. Temperature stable from -40 to +85 °C.
Suitable for fastening tool H977.1.

| Length (mm) | Width (mm) | For binding to max | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 180 | 4,5 | ∅ 50 mm | **1729.1** | 100 | 10,00 |
| 102 | 2,5 | ∅ 22 mm | **1735.1** | 100 | 5,05 |



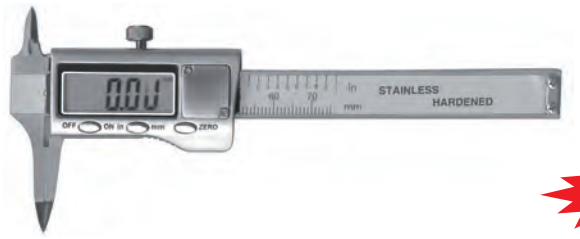
## Rotating vice

With ball-and-socket joint. For benches up to 80 mm thick.
Has two aluminium holding blocks with different profiles.
Max. opening 55 mm. Weight 2.2 kg.
Colour grey hammer enamel (not picture colour).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1940.1** | 1 | 199,95 |

Holding blocks made of plastic. For highly sensitive objects.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1942.1** | 2 | 36,50 |




NEU
NOUVEAU
NEW

## Pocket slide rule, digital

By Hammacher. Made of stainless steel, with narrow callipers.
With cross tips and depth measuring stick.
Extra large display, accuracy to DIN 862.

**Technical specifications:**

| | |
|---|---|
| Measurement range | 0 to 70 mm |
| Scaling | 0.01 mm / .0005″, switchable |
| Jaw length | 20 mm |

**Delivery incl.** case.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCN3.1** | 1 | 127,10 |



## Digital caliper gauge

Made of stainless steel, hardened. Suitable for indoor and outdoor measurement. Working temperature 5 to 40 °C.
With locking screw device. Power supply via 1.5 V cell battery.
Features automatic switch-off and mm/inch change-over.

**Technical specifications:**

| | |
|---|---|
| Range | 0 to 150 mm |
| Scale graduation | 0.01 mm |
| Tolerance | ±0.03 mm |
| Max. operating speed | 1.5 m/s |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L826.1** | 1 | 105,35 |



NEU
NOUVEAU
NEW

121°C

## Rulers

By Hammacher. Made of metal, non-corrosive. Autoclavable.

| Measuring range (mm/inch) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 150 / 6 | 167 | **HCN1.1** | 1 | 7,70 |
| 300 / 12 | 317 | **HCN2.1** | 1 | 9,80 |




## Precision gripper

Made of chrome-vanadium steel with plastic handle.
Smooth, polished gripping surfaces for precise work. Smooth-running double spring for soft, steady opening. Length 130 mm. Weight 61 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ETY7.1** | 1 | 52,60 |



## Tool kit bag

Made of sturdy imitation leather with chrome vanadium tools:
- 1 enamelled hammer 250 g
- 1 adjustable pliers 235 mm
- 1 insulated combination pliers 180 mm with side cutting
- 3 insulated screwdrivers 125 x 6, 150 x 5 and 75 x 4 mm
- 1 cross-point screwdriver 100 x 2 mm
- 1 voltage tester 150-250 V as screwdriver
- 8 chrome plated double open-ended spanners, width 6 to 22

Bag when open: W 400 x L 400 mm.
Bag when closed: W 150 x H 70 x L 400 mm. Weight 2.1 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1829.1** | 1 | 149,45 |




## Pliers

Made from special steel, chromium-plated, polished.
With protective covering for handles.

① **Combination pliers**

| Length (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 270 | **X191.1** | 1 | 16,15 |

② **Telephone pliers, straight**

| Length (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 200 | 180 | **X192.1** | 1 | 16,70 |

③ **Telephone pliers, 45° offset**

| Length (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 200 | 180 | **X193.1** | 1 | 17,75 |

④ **Diagonal cutting pliers**

| Length (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 160 | 190 | **X194.1** | 1 | 18,25 |



## Expert toolbox

By Heyco. By Heyco. Made of ABS, with load-carrying capacity of up to 30 kg, double aluminium frame and barrel lock. High-quality foam insert for secure tool holding during transit. Dimensions: L 480 x W 320 x H 150 mm.

**Contents:**
- 1 removable socket wrench set 1/4″, 17-piece
- 1 lever wrench 1/2″ + 5 accessories
- 12 socket wrench inserts 1/2″ from 10 to 24 mm (hexagonal)
- 1 pipe and water pump wrench 240 mm
- 13 combination wrench from 6 to 24 mm
- 1 combination pliers 180 mm
- 1 side cutter 160 mm
- 8 offset screwdriver from 2 to 10 mm (hexagonal)
- 8 offset screwdriver T9 to T40 (TORX®)
- 1 voltage tester, insulated
- 1 engineer's hammer
- 1 boxcutter
- 1 torch (LED, 1 W, L 100 mm)
- 1 tape measure, 5 m, with belt clip
- 2 Phillips screwdriver (75 mm, No. 1 / 100 mm, No. 2)
- 2 screwdrivers (100 x 5.5 mm / 150 x 8.0 mm)

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **NH23.1** | 1 | 891,20 |



## Screwdriver set

Acc. to EN 60900. For live parts up to 1000 V. 6-piece set:

| Slotted: | Phillips: |
|---|---|
| 2.5 x 80 mm<br>3.5 x 100 mm<br>4.0 x 100 mm<br>5.5 x 125 mm | PH 1/80 mm<br>PH 2/100 mm |

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **Y258.1** | 1 | 26,50 |



## Box spanner set

47 parts. Made of chrome vanadium steel, chrome-plated. ¼″ + TORX.

**Contents:**

- Box spanner adapters 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14 mm
- Box spanner adapters long 8; 10; 11; 13 mm
- Adapters for slotted head screws 4; 5.5; 6.5 mm
- Adapters for crosspin screws PH 1, 2, 3, PZ 1, 2, 3
- Adapters for Allen screws 3, 4, 5, 6, 7, 8 mm
- Adapters for inner-TORX-screws T10; T15; T20; T25; T30; T40
- Handle with sliding block
- Reversible lever ratchet with ejection mechanism
- Hand adapter with plastic hilt
- Cardan joint
- Extension 50 + 105 mm
- Hexagon wrench key with pilot 1.5; 2; 2.5

Supplied in plastic box, dimensions: L 230 x W 160 x H 40 mm.
Weight 1050 g.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **L148.1** | 1 | 55,70 |




## Pin spanner set

Hexagonal hinged holder for standard inch screws. Has an ergonomic design and a fiber-glass reinforced casing. Spanners are made of chrome vanadium steel. Lifting button enables easy selection of the required spanner. For screws 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4 inch.
Dimensions: L 120 x W 32 x H 39 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HE16.1** | 1 | 21,45 |




## Multi-function tools

Hinged holder for hexagon, slotted, Philips and TORX® screws. Ergonomic design, fiber-glass reinforced casing. Spanner made of chrome vanadium steel. Lifting button enables easy selection of the required spanner. Dimensions: L 120 x W 32 x H 39 mm.

**Technical specifications:**

| | |
|---|---|
| Slotted | 4.5 mm |
| Phillips | PH2 |
| TORX® | T10, T15, T20 |
| Hexagon | 3, 4, 5, 6 mm |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HE15.1** | 1 | 27,85 |



## Pliers/wrench

Made of chrome vanadium steel. Pliers and spanner in one.
The loose jaw opening can be adjusted 13 times by press of a button - jaws are therefore always parallel. Extremely high clamping power.

| Opening (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 42 | 250 | **K336.1** | 1 | 61,20 |
| 35 | 180 | **K965.1** | 1 | 55,80 |

# Openers/clips



## Opening keys

For plastic canisters and bottles with DIN thread.

*Opener with notches, compatible with Roth closures.

| Type | Dimensions L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| DIN 45/32* | 220 x 70/55 | **X457.1** | 1 | 7,00 |
| DIN 51 | 195 x 80 | **CNC9.1** | 1 | 4,25 |
| DIN 61 | 200 x 85 | **TX61.1** | 1 | 6,40 |




## Tri-Sure®-barrel and keg key

Ideal for taking off tin seals and caps and for unscrewing Tri-Sure® container plugs. The narrow side of the tool is 15 mm, the wide side is 45 mm wide. Total length 260 mm. Weight app. 380 g. **Suitable for ROTITAINER®.**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0398.1** | 1 | 29,90 |



## Strap wrench

For easy loosening of connected parts. Max. range 160 mm, weight 220 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X190.1** | 1 | 15,80 |



## Rotilabo®-universal clamps

Made of powder coated metal, nickel-plated, with strong coil spring. For storing, binding, pressing or glueing, large clamping width. Also suitable for hanging up.

| Width (mm) | Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 75 | 20 | **AEA0.1** | 10 | 34,30 |
| 125 | 30 | **AEA1.1** | 10 | 44,10 |



## Tin opener

For tins of all sizes. Length 200 mm. Weight 210 g. 5 years warranty.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0505.1** | 1 | 10,70 |

## All-purpose opener

For screw lids from tube caps to wide neck lids. Length 260 mm. Weight 200 g. 5 years warranty.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0506.1** | 1 | 10,70 |



## Universal spring clamps

Made of **PA**. For powerful clamping with constant tension force. With ergonomic, antislip handle and flexible, movable soft pads. Excellent for sensitive materials such as glass plates, wood and plastics. Extremely light and handy, but with highest stability.

| Total length (mm) | Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 60 | 20 | **LK35.1** | 1 | 4,45 |
| 90 | 34 | **LK36.1** | 1 | 5,35 |
| 120 | 44 | **LK37.1** | 1 | 7,50 |
| 160 | 60 | **LK38.1** | 1 | 10,70 |



## Rotilabo®-clips

Made of spring steel. For DC plates, x-ray films, sheets of paper, etc. Can be hung up.

| Width (mm) | Span (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 19 | 7 | **ACY9.1** | 12 | 5,05 |
| 25 | 10 | **0826.1** | 12 | 5,85 |
| 41 | 18 | **0827.1** | 6 | 7,55 |
| 51 | 28 | **0850.1** | 6 | 11,75 |




## tesa Easy Cut® table dispenser

Non-slip base and heavy weight for extra stability.
**Model** ①: dimensions L 240 x W 70 x H 130 mm, weight 1500 g
**Model** ②: dimensions L 155 x W 55 x H 80 mm, weight 900 g

| Model | for roll length (m) | Max. tape width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 66 | 25 | **1731.1** | 1 | 40,80 |
| ② | 33 | 19 | **4918.1** | 1 | 32,15 |

## tesafilm® PP adhesive tape

Transparent universal adhesive tape for packaging, e.g. for sealing small boxes, tins and bags.

| for dispenser | Roll length (m) | Strip width (mm) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| 1731.1 | 66 | 19 | **CPY6.1** | 1 | 3,45 |
| 4918.1 | 33 | 19 | **CPY7.1** | 1 | 2,80 |




## tesa®-hand tape dispenser comfort

Ideal for sealing packages. **Blade is covered** for extra protection against injury. Manually adjustable roll brake.
Dimensions: Length, height: 22 cm, width 6 cm, weight 500 g.
Core ∅ 76.2 mm, roll ∅ max 140 mm, roll width max 50 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X163.1** | 1 | 29,70 |

## tesapack®-PVC adhesive tape

Parcel brown. Length 66 m x width 50 mm.

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **6111.1** | 3 | 22,05 |

## tesapack®-paper adhesive tape

Foil-free, manufactured from smooth paper with silicone-free, impregnated surface and a synthetic rubber paste. 0.1076 mm thick. Tensile strength 50 N/cm. Elongation at tear 8 %. On 50 m long and 50 mm wide rolls.

| Art. No. | Pack Qty. (roll) | € |
|---|---|---|
| **8574.1** | 3 | 17,15 |




## Universal protective case for tablet PCs

Made from high-quality synthetic leather, easy care, with soft lining. Universal all-round protection in A5 format with stand function for all tablets with screen sizes from 9.7" to 10.1". The tablet is held securely in place by four rubber band holders. To watch videos and presentations etc., the tablet holder can be set up in any desired viewing angle.
Connections and functions are easily accessible, with cut-outs for camera lenses. With elastic rubber loop for touch pen and magnetic catch with concealable loop.
Suitable for Apple iPad 1 to 4 + AIR, Samsung Galaxy + Note, Asus MeMo, Sony Xperia, Acer Iconia and all other tablets from 9.7" to 10.1".
Dimensions: L 270 x W 210 x H 30 mm
(max. tablet size: approx. 267 x 192 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANY4.1** | 1 | 27,85 |

## Accessories for tablet case Touch Pen 2 in 1

Conductive stylus with ball-point pen. Soft rubber tip for precise navigation on all touch screens of smartphones and tablet PCs. Allows accurate composition of messages and easy navigation and scrolling without leaving fingerprints on the display. Even works through protective film and antireflective film. Ball-point pen with rotary mechanism and jumbo cartridge (blue). Length 130 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANY5.1** | 1 | 12,40 |

# Office organization



## Business card box

Made of plastic. With sliding lid and eight plastic dividers.
Dimensions: L 235 x W 135 x H 65 mm. Colour black/blue.

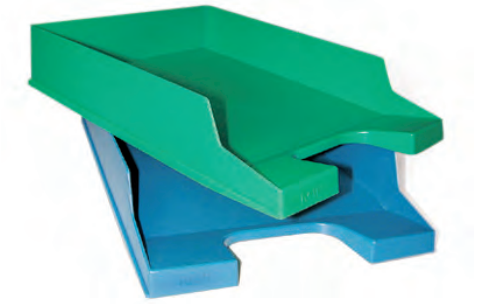
| Art. No. | Pack Qty. | € |
|---|---|---|
| **8194.1** | 1 | 41,20 |



## Writing pad support

Made of break-proof plastic. Suitable for all formats up to DIN A4.
Rubber lip holds the paper tightly in place. Clamping width ca. 9 mm.
Can be hung up. Dimensions: L 330 x W 220 x H 15 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0382.1** | 1 | 16,10 |



## Standard file boxes A4-C4

Stackable. Boxes with grip and labelling area.
Compatible with other makes. Dimensions: W 256 x D 350 x H 67 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **X020.1** | 1 | 5,35 |
| green | **X017.1** | 1 | 5,35 |




## Laboratory notebooks

For the documentation of research findings, experiment logs,
important notes and data. Numbered, acid-free pages, gridded,
with preprinted fields for project names, project number, date and signature.
With waterproof cover. Dimensions: W 218 x L 281 mm.

| Colour | Number of pages | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| black | 100 | **YY89.1** | 1 | 24,65 |
| black | 100 | **YY89.2** | 12 | 241,90 |
| blue | 200 | **YY90.1** | 1 | 29,00 |




## Files, A4

For magazines, catalogues, books and documents. With grid in opening to protect corners. Dimensions: H 293 x W 75 x D 251 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| green | **X007.1** | 1 | 5,30 |
| blue | **X008.1** | 1 | 5,30 |




## Lab Markers

All-purpose fibre-tip. For nearly all types of surfaces made of glass, metal and most plastics, e.g. PS-petri dishes. Writes on wet or cold surfaces. Waterproof, also while autoclaving. With quick-drying ink. Can be wiped off high-gloss surfaces. Length 135 mm. Stroke width 1.0 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| black | **3083.2** | 10 | 24,30 |
| blue | **3084.2** | 10 | 24,30 |
| red | **3085.2** | 10 | 24,30 |
| 4 black, 4 blue, 4 red | **1701.1** | 12 | 28,50 |



## Sharpie® lab markers

Waterproof permanent marker for glass, metal, porcelain or similar surfaces. Fast-drying. Single-tip marker with 1 mm stroke width, double-tip marker with additional stroke width of 0.5 mm.

| Design | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Double tip | Sorted (black, blue, violet, bordeaux, light blue, light green, turquoise, orange) | **XT85.1** | 8 | 32,65 |
| Single tip | black | **KN09.1** | 12 | 38,70 |




## Lab Markers II

All-purpose fibre-tip. Ideal for glass and most plastics, e.g. embedded casting moulds and microscope slides. Waterproof. With quick-drying ink. Can be wiped off high-gloss surfaces. Length 135 mm.
Stroke width 0.6 mm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| black | **9028.1** | 10 | 31,00 |
| red | **9036.1** | 10 | 31,00 |
| 5 black, 5 red | **9040.1** | 10 | 31,00 |




## Laboratory markers

By Marienfeld. Permanent marker suitable for nearly all surfaces made of glass, plastic and paper. Suitable for indelible labelling of microscope slides, embedding cassettes and Petri dishes.

- Ultrafine tip
- High-contrast black ink
- Writes without pretreatment of surfaces
- Waterproof, resistant to most laboratory chemicals
- Odourless
- Non-toxic
- Non-dry, long-lasting

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CET9.1** | 12 | 36,35 |




## Waterproof ink pen set

Fine-line, stroke width 0.4 mm. Quick drying.
Two pens each in black, blue, green, red.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **0883.1** | 1 | 15,60 |




# Optical Instruments & Lamps


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# Cold light source



NEU
NOUVEAU
NEW

## Dual goose neck LED

By Kern. External lighting unit (reflected) for microscope.
For maximum flexibility and maximum comfort.
With excellent light quality at constant intensity on the object.

**Technical specifications:**

| | |
|---|---|
| Lighting | 6 W LED, dimmable |
| Useful life | Approx. 50,000 operating hours |
| Colour temperature | 5600-6300 K |
| Length of lights | 300 mm |
| Dimensions (W x H x D) | 300 x 250 x 250 mm |
| Weight | 1.5 kg |
| Power supply | 50/60 Hz, 100-240 V |

**Delivery incl.** twin-arm goose neck light conductor.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HNH3.1** | 1 | 160,00 |




## Cold light source macrospot 1500

Light source with **150 watt halogen metal oxide vaporized mirror lamp** and colour temperature of 3200 kelvin. Extremely quiet fan cooling.
Two-stage switching for full and reduced illumination (50 %) at constant colour temperature. With handle.
**Delivery without** fiber optic light guide, please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P348.1** | 1 | 557,95 |

## Fiber optical light guides for macrospot 1500

With gooseneck casing (Length approx. 500 mm, 4 mm thick glass-fiber bundle). The self-locking light guides can be moved in almost any position.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2-armed | **P349.1** | 1 | 482,70 |
| 3-armed | **P350.1** | 1 | 547,20 |



## Cold light source

With adapter for gooseneck light guide.
- **Integral halogen mirror lamp 8 V, 20 W**
- With continuous adjustable electronic adjustment of light
- Ideal for illuminating objects during microscopy
- Dimensions: W 175 x D 150 x H 90 mm
- Electrical supply 220 V

**Delivery without** gooseneck light guide, please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C018.1** | 1 | 467,65 |

## Gooseneck light guides

With glass-fibre cable. Fully flexible. With metal casing.
Front ∅ 4.5 mm, external ∅ 10 mm. Length 500 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1-armed | **C019.1** | 1 | 192,45 |
| 2-armed | **C020.1** | 1 | 299,95 |
| Spare halogen mirror lamp | **K641.1** | 2 | 66,15 |




## Accessories for macrospot 1500

**① Iris diaphragm**

Ideal for adjusting the luminous angle of emersion from ca. 38° down to a minimum 20° and for simultaneous dimming by max. 5 diaphragm stages. Includes filter compartment. Can be attached to P349.1 and P350.1.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Iris diaphragm | **P351.1** | 1 | 140,50 |

**② Focus adapter**

For reducing the luminous angle of emersion of app. 38°.
Includes filter compartment. Can be attached to P349.1 and P350.1.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Focus adapter | **P352.1** | 1 | 87,65 |

**③ Insert filters**

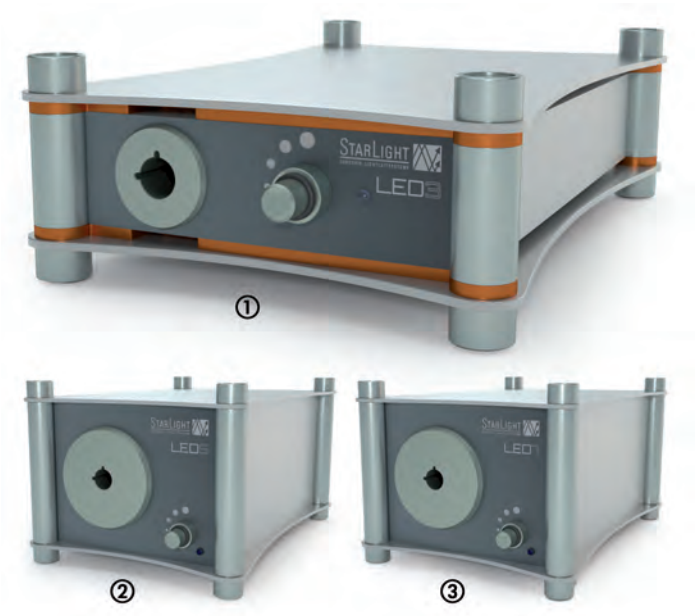
Filter discs for loading into iris diaphragm P351.1.

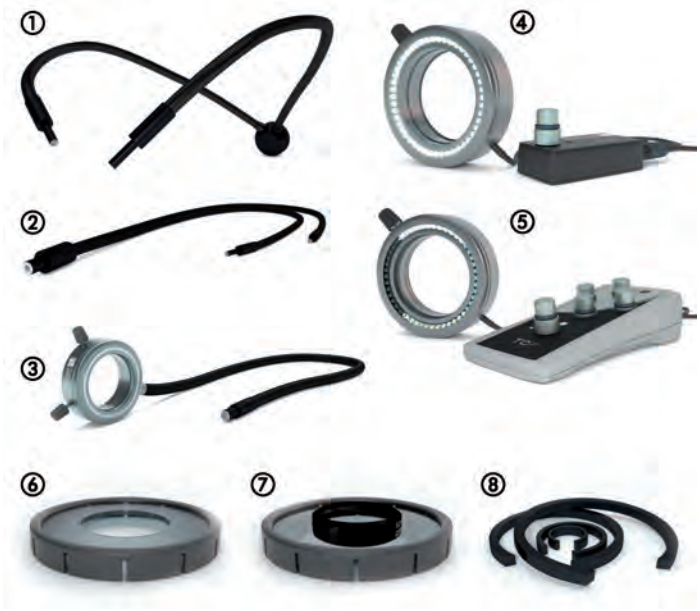
| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Conversion filter | **P353.1** | 1 | 17,10 |
| Colour filter set, one filter each in red, blue, green, yellow | **P354.1** | 1 | 39,75 |
| Polarizing filter | **P356.1** | 1 | 21,45 |

**Spare light source**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spare light source for halogen metal oxide vaporized mirror lamp | **P355.1** | 1 | 32,80 |

# Cold light source




## LED series cold light sources

By Starlight. Modern cold light sources with robust aluminium housing and premium-quality finish. LED technology makes for highly efficient, long-lasting (approx. 50,000 h) and maintenance-free units.
Flicker-free illumination. Stackable.
Can be positioned both horizontally and vertically.

**Model overview:**

| | |
|---|---|
| ① **LED3** | - Passive cooling (without fan) for silent and vibration-free working<br>- More powerful than 150 W halogen light sources<br>- Fanless cooling makes them perfect for cleanroom applications |
| ② **LED5** | - Cold light source is actively cooled and provides excellent lighting whatever the diameter of the fibre-optic cable |
| ③ **LED7** | - Actively cooled cold light source with high light output |

**Technical specifications:**

| **Model** | ① **LED3** | ② **LED5** | ③ **LED7** |
|---|---|---|---|
| Luminous flux with 1 m x ∅ 9 mm (lm) fibre-optic cable | 730 | 810 | 1350 |
| Colour temperature (K) | 5700 | 7700 | 6900 |
| Colour rendering index (CRI) | 70 | 70 | 75 |
| Fibre-optic cable connection (mm) | ∅ 15 | ∅ 15 | ∅ 15 |
| Power consumption (W) | 36 | 62 | 78 |
| Dimensions L x W x H (mm) | 259 x 174 x 81 | 259 x 174 x 137 | 259 x 174 x 138 |
| Weight (kg) | 3.7 | 2.7 | 2.7 |
| Power supply | 100-240 V, 50/60 Hz | | |

**Delivery without** fibre-optic cable; please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① LED3 | **HAX2.1** | 1 | 622,45 |
| ② LED5 | **HAX3.1** | 1 | 858,95 |
| ③ LED7 | **HAX4.1** | 1 | 1041,70 |

## Fibre-optic cables and accessories for LED series cold light sources

**Fibre-optic cables**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Dual-branch swan-neck fibre-optic cable. L: 450 mm, active ∅ 4.5 mm | **HAX5.1** | 1 | 210,70 |
| Single-branch flexible fibre-optic cable. L: 1200 mm, active ∅ 4.5 mm | **HAX6.1** | 1 | 127,95 |
| ② Dual-branch flexible fibre-optic cable. L: 1200 mm, active ∅ 4.5 mm | **HAX7.1** | 1 | 212,85 |
| ③ Fibre-optic split ring light 66. L: 1000 mm, active ∅ 9 mm | **HAX8.1** | 1 | 523,55 |

**LED ring lights**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ④ LED ring light RL4-66-NW, ∅ 66 mm, approx. 5000 K | **HAX9.1** | 1 | 375,20 |
| ⑤ LED segment ring light RL4-66-S4, ∅ 66 mm, approx. 5000 K, 4 segments | **HAY0.1** | 1 | 633,20 |
| ⑥ Diffuser plate for RL4-66 series | **HAY1.1** | 1 | 69,90 |
| ⑦ Polarising filter set for RL4-66 series | **HAY2.1** | 1 | 223,60 |

⑧ **Reducing rings for ring lights**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ∅ 66 mm to ∅ 64 mm | **HAY3.1** | 1 | 23,15 |
| ∅ 66 mm to ∅ 62 mm | **HAY4.1** | 1 | 23,15 |
| ∅ 66 mm to ∅ 60 mm | **HAY5.1** | 1 | 23,15 |
| ∅ 66 mm to ∅ 58 mm | **HAY6.1** | 1 | 23,15 |
| ∅ 66 mm to ∅ 56 mm | **HAY7.1** | 1 | 23,15 |
| ∅ 66 mm to ∅ 54 mm | **HAY8.1** | 1 | 23,15 |
| ∅ 66 mm to ∅ 52 mm | **HAY9.1** | 1 | 23,15 |
| ∅ 66 mm to ∅ 50 mm | **HCA0.1** | 1 | 23,15 |

# Stereo microscopes, Eschenbach



## Model 33208 stereo microscope

By Eschenbach. With LED lighting, reflected light and transmitted light. Can be dimmed as an option – dimmer sold separately.

**Technical specifications:**

| | |
|---|---|
| Total magnification | 20x/40x – can be expanded up to 80x as an option |
| Eyepieces | Wide field (WF) 10x<br>Field of view 20 mm<br>Diopter compensation on left eyepiece tube (±5 dpt) |
| Head | Binocular<br>45° angular observation<br>Rotatable by 360°<br>Adjustable interocular distance (54-74 mm) |
| Lenses | Rotation of turret 2x and 4x<br>Parallel lens arrangement |
| Working distance with 10x WF 2x lens/4x lens | 75 mm/45 mm |
| Lighting | LED, separate reflected and transmitted light and can be controlled in real time |
| Image focusing | Coarse focus |
| Stand | Robust metal stand, 180 mm column length |
| Power supply | 100-240 V |

**Delivery incl.** 95 mm ∅ table inserts (black/white plastic plate for reflected light, and frosted glass plate for transmitted light), eyepiece cups and dust cover.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EEC2.1** | 1 | 514,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| Wide-field eyepieces WF 5x (field of view approx. 22 mm) | **P239.1** | 2 | 131,15 |
| Wide-field eyepieces WF 15x (field of view approx. 14 mm) | **9667.1** | 2 | 141,90 |
| Wide-field eyepieces WF 20x (field of view approx. 10 mm) | **P240.1** | 2 | 141,90 |
| Dimmer | **EEC3.1** | 1 | 27,80 |



## Models 33213 and 33263 stereo microscopes

By Eschenbach.
With LED lighting, reflected light.

- Model 33213 with robust metal stand, column length 245 mm. 200 x 150 mm bottle stand with black and white plastic plate for reflected lighting. Support rod ∅ 20 mm.
- Model 33263 with robust, 850-mm-long swivelling metal arm with three set screws in the spring joints, fully adjustable. With a sturdy table clamp and desk-top foot that can be fixed to the table. Suitable for tabletop thicknesses up to 70 mm.

**Technical specifications:**

| | |
|---|---|
| Total magnification | 10x/20x – can be expanded up to 40x as an option |
| Eyepieces | Wide field (WF) 10x<br>Field of view 19 mm<br>Diopter compensation on left eyepiece tube (±5 dpt) |
| Head | Binocular<br>45° angular observation<br>Rotatable by 360°<br>Adjustable interocular distance (54-74 mm) |
| Lenses | Rotation of turret 1x and 2x<br>Coaxial lens arrangement |
| Working distance | 83 mm |
| Lighting | LED reflected light ring lighting |
| Image focusing | Coarse focus |
| Power supply | 100-240 V |

**Delivery incl.** eyepiece cups and dust cover.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Model 33213 | **X822.1** | 1 | 590,20 |
| Model 33263 | **X823.1** | 1 | 772,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| Wide-field eyepieces WF 5x (field of view approx. 22 mm) | **P239.1** | 2 | 131,15 |
| Wide-field eyepieces WF 15x (field of view approx. 14 mm) | **9667.1** | 2 | 141,90 |
| Wide-field eyepieces WF 20x (field of view approx. 10 mm) | **P240.1** | 2 | 141,90 |




## SMZ-161-series LED stereo microscopes

By Motic. With **LED lighting.** Compact design, high-quality optics, rugged mechanism.

- Continuously variable zoom with detent positions for reproducible magnification
- Increased working distance allows sufficient space for sample handling
- Optionally available with a trinocular head for attachment of a microscope camera to the phototube using a C-Mount adapter (please order C-Mount camera adapter separately)

**Technical specifications:**

| | |
|---|---|
| Total magnification | 7.5 to 45x |
| Eyepieces | Wide field 10x<br>Field of view 20 mm<br>Diopter compensation on both ocular tubes (±5 dpt) |
| Head | Binocular or trinocular<br>45° viewing angle<br>360° rotatable<br>Adjustable eye distance (50-75 mm) |
| Lens | Magnification 0.75x-4.5x<br>Zoom factor 1:6 |
| Working distance | 110 mm |
| Lighting | 3 W LED, reflected and transmitted light can be controlled separately |
| Image focusing | Coarse drive |
| Power supply | 100-240 V |

**Delivery incl.** black/white and matte glass stage inserts as well as dust cover.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① SMZ-161-BLED (R2LED) | Binocular | **ATP9.1** | 1 | 784,75 |
| ② SMZ-161-TLED (R2LED) | Trinocular | **ATT0.1** | 1 | 843,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| 0.5x C-Mount camera adapter for ⅓″ or ½″ chip sensors | **ATT1.1** | 1 | 153,75 |

▶ Dissecting sets see p. 334
▶ Precision tweezers see p. 308




## SMZ-168-series reflected and transmitted light stereo microscopes

By Motic. High-end stereo microscope for science, research and quality control.

- 50x total magnification, up to max. 200x with optional widefield ocular and attachment lenses
- Larger field of view and working distance
- Sturdy transmitted light stand with wide base plate
- Continuously variable zoom with lock positions for reproducible magnification
- Optionally available with trinocular head for attachment of a microscope camera to the phototube using a C-Mount adapter (please order C-Mount camera adapter separately)

**Technical specifications:**

| | |
|---|---|
| Total magnification | 7.5 to 50x - up to max. 200x with optional lenses |
| Eyepieces | Widefield 10x<br>Field of view 23 mm<br>Diopter compensation on both ocular tubes (±5 dpt) |
| Head | Binocular or trinocular<br>35° viewing angle<br>360° rotatable<br>Adjustable eye distance (52.5-75 mm) |
| Lens | Magnification 0.75x-5x<br>Zoom factor 1:6.7 |
| Working distance | 113 mm |
| Lighting | 12 V / 10 W Halogen, reflected and transmitted light can be adjusted separately |
| Image focusing | Coarse drive |
| Power supply | 100-240 V |

**Delivery incl.** black/white and matte glass stage inserts, blue filter and dust cover.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① SMZ-168 BL | Binocular | **KA17.1** | 1 | 1029,85 |
| ② SMZ-168 TL | Trinocular | **KA18.1** | 1 | 1118,00 |

## Accessories for SMZ-168 series

By Motic.

**Wide field eyepieces**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| WF 15 x (vision field 13 mm) | **KA19.1** | 1 pair | 149,45 |
| WF 20 x (vision field 10 mm) | **KA20.1** | 1 pair | 149,45 |

**Ancillary lenses**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,5x (operating distance 192 mm) | **KA21.1** | 1 piece | 117,20 |
| 2x (operating distance 34,5 mm) | **KA22.1** | 1 piece | 117,20 |

**C-Mount adapter**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0.45x C-Mount-adapter for ⅓″ chip-sensors | **PE02.1** | 1 piece | 101,60 |
| 0.65x C-Mount-adapter for ½″ chip-sensors | **KA23.1** | 1 piece | 100,55 |

**Replacement bulb**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Halogen (reflected light), 12 V / 10 W | **PE00.1** | 1 piece | 18,10 |
| Replacement bulb, halogen (transmitted light), 12 V / 10 W | **PE49.1** | 1 piece | 20,35 |

# Stereo microscopes, Kern




NEU
NOUVEAU
NEW

## Stereo microscope OSE-417

By Kern. Robust, rigid and easy to operate stereo microscope for schools, workshops and training organisations. For preparations with focus on spatial impression, e.g. insects and seeds.

- Good optical characteristics for sharp images over a wide field of vision
- Interchangeable lens with two pre-defined magnifications
- Eyepiece fixed securely in the barrel
- Stable and precisely adjustable mechanics of the microscope stand

**Technical specifications:**

| | |
|---|---|
| Total magnification | 20x, 40x |
| Eyepieces | Wide field 10x<br>Field of vision ∅ 20 mm<br>Dioptre compensation, left |
| Head | Binocular<br>45° Viewing angle<br>Adjustable eye distance (55-75 mm) |
| Lens | Revolver: 2x and 4x |
| Working distance | 57 mm |
| Lighting | 0.21 W LED (transmitted and reflected illumination) |
| Image focusing | Coarse focus |
| Power supply | 50/60 Hz, 100 to 240 V |

**Optional accessories (please order separately):**
Wide field eyepieces can be used to modulate the total magnification of the stereo zoom microscope.

**Technical specifications:**

| Eyepiece | Lens | | |
|---|---|---|---|
| | Magnification | 2x[1] | 4x[1] |
| **WF 5x** | Total magnification (x-fold)<br>Visual field ∅ (mm) | 10<br>10 | 20<br>5 |
| **WF 10x[1]** | Total magnification (x-fold)<br>Visual field ∅ (mm) | 20<br>10 | 40<br>5 |
| **WF 20x** | Total magnification (x-fold)<br>Visual field ∅ (mm) | 40<br>6.5 | 80<br>3.2 |

[1] included in delivery

**Delivery incl.** table inserts black/white and frosted glass, eye cups and dust protection hood.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HNA2.1** | 1 | 255,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Eyepieces HWF 5x, visual field ∅ 16.2 mm | **HHE3.1** | 2 | 75,25 |
| Eyepieces HWF 20x, visual field ∅ 10 mm | **HHE4.1** | 2 | 75,25 |




NEU
NOUVEAU
NEW

## Stereo microscope OSF-439

By Kern. Practical and sterile stereo microscope for training and laboratory. With integrated handle and stable stand. Ergonomically designed working surface for enhanced convenience. Interchangeable lens with three pre-defined magnifications for fast, effective working. Eyepieces securely held in the tube and thereby protected against loss or damage.

**Technical specifications:**

| | |
|---|---|
| Total magnification | 10x, 20x, 40x |
| Eyepieces | Wide field 10x<br>Visual field ∅ 20 mm<br>Dioptre compensation, left (±5 dpt) |
| Head | Binocular<br>45° angular observation<br>fixed<br>Adjustable interocular distance (55-75 mm) |
| Lens | Revolver: 1x, 2x and 4x |
| Working distance | 57 mm |
| Lighting | 1 W LED (incident light), 0.35 W LED (transmitted light)<br>Incident and transmitted light can be regulated separately |
| Image focusing | Coarse focus |
| Power supply | 50/60 Hz, 100 to 240 V |

**Delivery incl.** table sets black/white and mat glass, eye cups and dust cover.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HHC9.1** | 1 | 325,00 |

# Stereo microscopes, Kern




NEU
NOUVEAU
NEW

## Stereo zoom microscope OZL-445

By Kern. Easy-to-operate, stable stereo-zoom microscope for laboratories, test institutes and quality checks. Zoom lens enables infinitely-variable magnification of the preparation. Large work area for enhanced comfort, column stands for greater flexibility. Eyepieces securely held in the tube and thereby protected against loss or damage.

**Technical specifications:**

| | |
|---|---|
| Total magnification | 7.5x to 36x (can be expanded to 144x) |
| Eyepieces | Wide field 10x<br>Visual field ∅ 20 mm<br>Dioptre compensation, left (±5 dpt each) |
| Head | Binocular<br>45° angular observation<br>Rotatable by 360°<br>Adjustable interocular distance (55-75 mm) |
| Lens | Zoom: 0.75 to 3.6x |
| Working distance | 86 mm (standard lens) |
| Lighting | 1 W LED (incident light), 0.35 W LED (transmitted light)<br>Incident and transmitted light can be regulated separately |
| Image focusing | Coarse focus |
| Power supply | 50/60 Hz, 100 to 240 V |

**Optional accessories (please order separately):**
- Protective lens element
- Wide field eyepieces and clip-on lenses allow modulation of the overall magnification of the stereo zoom microscope:

**Technical specifications:**

| Eyepiece | Lens | | | |
|---|---|---|---|---|
| | Magnification | Standard 1x[1] | Clip-on 0.5x | Clip-on 2.0x |
| WF 5x | Total magnification (x-fold)<br>Visual field ∅ (mm) | 3.75 to 18<br>26 to 6 | 1.875 to 9<br>60 to 13 | 7.5 to 36<br>12.5 to 3 |
| WF 10x[1] | Total magnification (x-fold)<br>Visual field ∅ (mm) | 7.5 to 36<br>26.7 to 5.6 | 3.75 to 18<br>53.3 to 11.1 | 15 to 72<br>13.3 to 2.8 |
| WF 20x | Total magnification (x-fold)<br>Visual field ∅ (mm) | 15 to 72<br>12.5 to 3 | 7.5 to 36<br>28 to 6 | 30 to 144<br>6 to 1.5 |

1 In delivery incl.

**Delivery incl.** table sets black/white and mat glass, eye cups and dust cover.

| Art. No. | Pack Qty. | € |
|---|---|---|
| HHE1.1 | 1 | 410,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Protective lens | HHE2.1 | 1 | 19,00 |
| Eyepieces HWF 5x, visual field ∅ 16.2 mm | HHE3.1 | 2 | 75,25 |
| Eyepieces HWF 20x, visual field ∅ 10 mm | HHE4.1 | 2 | 75,25 |
| Clip-on lens 0.5x | HHE5.1 | 1 | 75,00 |
| Clip-on lens 2.0x | HHE6.1 | 1 | 80,00 |



NEU
NOUVEAU
NEW

## Stereo zoom microscope OZL-46 series

By Kern. All-round stereo microscope with zoom function for schools, training workshops and laboratories. With extra-wide field eyepieces for greater vision angle, thereby ideal for persons who wear glasses. Optimal illumination of the preparation through powerful incident and transmitted light.

**Technical specifications:**

| | |
|---|---|
| Total magnification | 7x to 45x (can be expanded to 180x) |
| Eyepieces | Extra-wide field 10x<br>Visual field ∅ 20 mm<br>Dioptre compensation, left (±5 dpt each) |
| Head | Binocular or trinocular<br>45° angular observation<br>Rotatable by 360°<br>Adjustable eye distance (55-75 mm) |
| Lens | Zoom: 0.7 to 4.5x |
| Working distance | 105 mm (standard lens) |
| Lighting | 1 W LED (incident light), 1 W LED (transmitted light)<br>Incident and transmitted light can be regulated separately |
| Image focusing | Coarse focus |
| Power supply | 50/60 Hz, 100 to 240 V |

**Optional accessories (please order separately):**
- C-mount adapter for mounting a microscope camera on the photo tube of the trinocular microscope
- Wide field eyepieces and clip-on lenses allow modulation of the overall magnification of the stereo zoom microscope

**Technical specifications:**

| Eyepiece | Lens | | | |
|---|---|---|---|---|
| | Magnification | Standard 1x[1] | Clip-on 0.5x | Clip-on 2.0x |
| HWF 10x[1] | Total magnification (x-fold)<br>Visual field ∅ (mm) | 7 to 45<br>28.6 to 4.4 | 3.5 to 22.5<br>57.1 to 8.9 | 14 to 90<br>14.3 to 2.2 |
| HWF 20x | Total magnification (x-fold)<br>Visual field ∅ (mm) | 14 to 90<br>14.3 to 2.2 | 7 to 45<br>28.6 to 4.4 | 28 to 180<br>7.1 to 1.1 |

1 In delivery incl.

**Delivery incl.** table sets black/white and mat glass, eye cups and dust cover.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| OZL 463 binocular | HHE7.1 | 1 | 500,00 |
| OZL 464 brinocular | HHE8.1 | 1 | 570,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 0.5x C-mount adapter (adjustable focus) | HHE9.1 | 1 | 95,00 |
| Eyepieces HWF 20x, visual field ∅ 10 mm | HHH0.1 | 2 | 100,00 |
| Clip-on lens 0.5x | HHH1.1 | 1 | 80,00 |
| Clip-on lens 2.0x | HHH2.1 | 1 | 80,00 |

# Microscopes, Kern



NEU
NOUVEAU
NEW

## Stereo zoom microscope OZL-456

By Kern. Stereo microscope with large zoom range. Integrated LED ring lighting in the lens housing for even illumination of the preparation without shadows. Field of vision and working distance magnified through high-super wide field lenses. The greater vision angle of the HSWF eyepieces is ideal for persons who glasses.

**Technical specifications:**

| | |
|---|---|
| Total magnification | 7.5x to 50x (can be expanded to 200x) |
| Eyepieces | Extra-wide field 10x (HSWF)<br>Visual field ∅ 23 mm<br>Dioptre compensation, left (±5 dpt each) |
| Head | Binocular<br>45° angular observation<br>Rotatable by 360°<br>Adjustable interocular distance (55-75 mm) |
| Lens | Zoom: 0.75 to 5x |
| Working distance | 113 mm (standard lens) |
| Lighting | 1 W LED (incident light), 0.21 W LED (transmitted light)<br>Incident and transmitted light can be regulated separately |
| Image focusing | Coarse focus |
| Power supply | 50/60 Hz, 100 to 240 V |

**Optional accessories (please order separately):**

- Wide field eyepieces and clip-on lenses allow modulation of the overall magnification of the stereo zoom microscope:

**Technical specifications:**

| Eyepiece | Lens | | |
|---|---|---|---|
| | Magnification | Standard 1x[1] | Clip-on 2.0x |
| HWF 5x | Total magnification (x-fold)<br>Visual field ∅ (mm) | 3.75 to 25<br>31 to 4.6 | 7.5 to 50<br>16 to 2.5 |
| HSWF 10x[1] | Total magnification (x-fold)<br>Visual field ∅ (mm) | 7.5 to 50<br>33 to 5 | 15 to 100<br>16 to 2.5 |
| HSWF 20x | Total magnification (x-fold)<br>Visual field ∅ (mm) | 15 to 100<br>20 to 3.5 | 30 to 200<br>10 to 1.8 |

1 In delivery incl.

**Delivery incl.** table sets black/white and mat glass, eye cups and dust cover.

| Art. No. | Pack Qty. | € |
|---|---|---|
| HHH3.1 | 1 | 690,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Eyepieces HWF 5x, visual field ∅ 23.2 mm | HHH4.1 | 2 | 80,00 |
| Eyepieces HSWF 20x, visual field ∅ 14.5 mm | HHH5.1 | 2 | 120,00 |
| Clip-on lens 2.0x | HHH6.1 | 1 | 115,00 |



NEU
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NEW

## Transmitted light microscope OBS-106

By Kern. Simple microscope with clear operating elements for school and training. For translucent, thin, high-contrast and non-demanding preparations.

- Height adjustable, focusable 1.25 Abbe condenser for optimised light concentration
- Mechanical cross table for fast working and moving of the preparation
- Mobile use possible through rechargeable batteries
- With continuously dimmable 0.5 W LED for optimum illumination of the preparations

**Technical specifications:**

| | |
|---|---|
| Total magnification | 40x, 100x, 400x |
| Eyepieces | Wide field 10x<br>field of vision ∅ 18 mm<br>dioptre compensation on both side |
| Head | Binocular<br>30° angular observation<br>Rotatable by 360°<br>Adjustable interocular distance (55-75 mm) |
| Lens turret | 4-way, tilted forwards |
| Lenses, achromatic | - 4x / N.A. 0.10, W.D. 18.0 mm<br>- 10x / N.A. 0.25, W.D. 7.0 mm<br>- 40x / N.A. 0,65 (sping-loaded), W.D. 0.53 mm |
| Microscope stage | Area 115 x 125 mm<br>Coaxial x/y travel range 75 x 18 mm |
| Condenser | Focusable Abbe condenser N.A. 1.25 with aperture cover |
| Lighting | 0.5 W LED transmitted light, chargeable, adjustable |
| Image focusing | Coaxial coarse and fine drive with scale: 2.5 µm |
| Power supply | 50/60 Hz, 100 to 240 V |

**Delivery incl.** batteries and dust hood.

| Art. No. | Pack Qty. | € |
|---|---|---|
| HNA1.1 | 1 | 360,00 |




## OBE series transmitted light microscope

By Kern. Fully-equipped transmitted light microscope (bright field) for training and lab use. Very easy to use, robust and sturdy. For translucent and thin, contrast-rich preparations (e.g. plant tissue, stained cells, parasites). With **strong, infinitely dimmable 3W LED** for optimum illumination of the preparations.

**Technical specifications:**

| | |
|---|---|
| Total magnification | 40x, 100x, 400x, 1000x |
| Eyepieces | Wide field 10x<br>Field of view 18 mm<br>Dioptre compensation on left ocular tube (±5 Dpt) |
| Head | Binocular or trinocular<br>30° viewing angle<br>360° rotatable<br>Adjustable eye distance (50-75 mm) |
| Lens turret | 4-way, tilted forwards |
| Lenses, achromatic | - 4x / N.A. 0.10, W.D. 18.6 mm<br>- 10x / N.A. 0.25, W.D. 6.5 mm<br>- 40x (spring) / N.A. 0.65, W.D. 0.47 mm<br>- 100x (spring, oil) / N.A. 1.25, W.D. 0.07 mm |
| Microscope stage | Area 125 x 115 mm<br>Coaxial x/y travel range 50 x 70 mm |
| Condenser | Focusable Abbe condenser N.A. 1.25 with aperture cover |
| Lighting | 3W LED transmitted light, adjustable |
| Image focusing | Coaxial coarse and fine drive with scale: 2 µm |
| Power supply | 50/60 Hz, 100 to 240 V |

**Optional accessories (please order separately):**
- C-mount adapter for mounting a microscope camera on the phototube of the trinocular microscope
- Dark field use for 4x to 40x lenses; to increase contrast of small, unstained structures
- 100x lens (planachromatic, spring) with water immersion

**Delivery incl.** eyecups and dust cover.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① OBE 112 binocular | **EYP2.1** | 1 | 540,00 |
| ② OBE 114 trinocular | **EYP3.1** | 1 | 650,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 0.5x C-mount adapter (adjustable focus) | **EYP4.1** | 1 | 160,00 |
| Dark field use for 4x to 40x lenses | **EYP5.1** | 1 | 85,00 |
| 100x lens, planachromatic (spring, water) / N.A. 1.0, W.D. 0.18 mm | **EYP6.1** | 1 | 170,00 |




## OBL series transmitted light microscope

By Kern. Versatile transmitted light microscope (bright field) for translucent, low-contrast, demanding preparations (e.g. living mammal cells, bacteria, tissue). With **simplified Köhler illumination** (fixed pre-centred) and **infinite optics** for optimum image quality. With **strong, infinitely dimmable 3W LED** for optimum illumination of the preparations.

**Technical specifications:**

| | |
|---|---|
| Total magnification | 40x, 100x, 400x, 1000x |
| Eyepieces | Wide field 10x<br>Field of view 20 mm<br>Dioptre compensation on left ocular tube ( ±5 dpt) |
| Head | Binocular or trinocular<br>30° viewing angle<br>360° rotatable<br>Adjustable eye distance (50-75 mm) |
| Lens turret | 4-way, tilted backwards |
| Lenses, achromatic | - 4x / N.A. 0.10, W.D. 12.1 mm<br>- 10x / N.A. 0.25, W.D. 2.1 mm<br>- 40x (spring) / N.A. 0.65, W.D. 0.58 mm<br>- 100x (spring, oil) / N.A. 1.25, W.D. 0.19 mm |
| Microscope stage | Area 145 x 130 mm<br>Coaxial x/y travel range 76 x 52 mm<br>Holder for 2 object carriers |
| Condenser | Fixed pre-centred, focusable Abbe condenser N.A. 1.25 with aperture and field diaphragm |
| Lighting | 3W LED transmitted light, adjustable |
| Image focusing | Coaxial coarse and fine drive with scale: 2 µm |
| Power supply | 50/60 Hz, 100 to 240 V |

**Optional accessories (please order separately):**
- C-mount adapter for mounting a microscope camera on the phototube of the trinocular microscope
- Dark field use to increase contrast of small, unstained structures
- 100x lens (planachromatic, spring) with water immersion

**Delivery incl.** eyecups and dust cover.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① OBL 127 binocular | **EYP7.1** | 1 | 910,00 |
| ② OBL 137 trinocular | **EYP8.1** | 1 | 1020,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 0.47x C-mount adapter (adjustable focus) | **EYP9.1** | 1 | 160,00 |
| Dark field condenser N.A. 0.85-0.91 (Dry) | **EYT0.1** | 1 | 230,00 |
| 100x infinity lens, planachromatic (spring, water) / N.A. 1.15, W.D. 0.18 mm | **EYT1.1** | 1 | 445,00 |

# Microscopes, Kern



## OBD series digital microscope

By Kern. Digital transmitted light microscope with integrated camera. For translucent, low-contrast and demanding preparations (e.g. living mammal cells, bacteria, tissue).
With **simplified Köhler illumination** (fixed pre-centred) and **infinite optics** for optimum image quality. With **powerful, infinitely variable 20 W halogen lighting** for optimum illumination of the preparations.

**General technical specifications:**

| | |
|---|---|
| Total magnification | 4x, 10x, 40x, 100x |
| Eyepieces | Wide field 10x<br>Field of view 20 mm<br>Dioptre compensation on left ocular tube ( ±5 dpt) |
| Digital head | Trinocular<br>30° viewing angle<br>360° rotatable<br>Adjustable eye distance (50-75 mm)<br>Beam path distribution 80:20<br>Built-in digital camera<br>USB port for PC |
| Lens turret | 4-way, tilted backwards |
| Lenses, semi-planachromatic | - 4x / N.A. 0.10, W.D. 12.1 mm<br>- 10x / N.A. 0.25, W.D. 2.1 mm<br>- 40x (spring) / N.A. 0.65, W.D. 0.58 mm<br>- 100x (spring, oil) / N.A. 1.25, W.D. 0.19 mm |
| Microscope stage | Area 125 x 115 mm<br>Coaxial x/y travel range 76 x 52 mm |
| Condenser | Fixed pre-centred, focusable Abbe condenser N.A. 1.25 with aperture cover |
| Lighting | 6 V / 20 W halogen transmitted light, adjustable built-in colour filter (blue) |
| Image focusing | Coaxial coarse and fine drive with scale: 2 µm |
| Power supply | 50/60 Hz, 100 to 240 V |

**Camera technical specifications:**

| Type | OBD 127 | OBD 128 |
|---|---|---|
| Resolution | 3 MP | 5 MP |
| CMOS colour sensor | 1/2″ | 1/2.5″ |
| Software operating system | WIN XP, 7, VISTA, 8, 10 | |

**Optional accessories (please order separately):**
- Dark field condenser to increase contrast of small, unstained structures
- 100x lens (planachromatic, spring) with water immersion

**Delivery incl.** software, USB cable, calibration rod, eyecups and dust cover.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| OBD 127 digital / 3 MP | **EYT8.1** | 1 | 1510,00 |
| OBD 128 digital / 5 MP | **EYT9.1** | 1 | 1600,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Dark field condenser N.A. 0.85-0.91 (Dry) | **EYT0.1** | 1 | 230,00 |
| 100x infinity lens, planachromatic (spring, water) / N.A. 1.15, W.D. 0.18 mm | **EYT1.1** | 1 | 445,00 |



## OBL series phase contrast microscope

By Kern. Sturdy phase contrast microscope for very translucent, low-contrast and demanding preparations (e.g. living mammal cells, bacteria, tissue).
With **simplified Köhler illumination** (fixed pre-centred) and **infinite optics** for optimum image quality. With **powerful, infinitely variable 20 W halogen lighting** for optimum illumination of the preparations.

**Technical specifications:**

| | |
|---|---|
| Total magnification | 40x, 100x, 400x, 1000x |
| Eyepieces | Wide field 10x<br>Field of view 20 mm<br>Dioptre compensation on left ocular tube ( ±5 dpt) |
| Head | Binocular or trinocular<br>30° viewing angle<br>360° rotatable<br>Adjustable eye distance (50-75 mm) |
| Lens turret | 4-way, tilted backwards |
| Lenses for bright field, semi-planachromatic | - 4x / N.A. 0,10, W.D. 12.1 mm<br>- 100x (spring, oil) / N.A. 1.25, W.D. 0.19 mm |
| Lenses for phase contrast, planachromatic | - Ph 10x / N.A. 0.25, W.D. 4.64 mm<br>- Ph 40x (spring) / N.A. 0.66, W.D. 0.65 mm |
| Object plate (mechanical) | Area 145 x 130 mm<br>Coaxial x/y travel range 76 x 52 mm<br>Holder for 2 object carriers |
| Condenser | Fixed pre-centred, focusable Abbe condenser N.A. 1.25 with aperture and field diaphragm |
| Phase modifier, single | Each for Ph 10x and Ph 40x |
| Lighting | 6 V / 20 W halogen, adjustable built-in colour filter (blue) |
| Image focusing | Coaxial coarse and fine drive with scale: 2 µm |
| Power supply | 50/60 Hz, 100 to 240 V |

**Optional accessories (please order separately):**
- C-mount adapter for mounting a microscope camera on the phototube of the trinocular microscope
- Dark field condenser to increase contrast of small, unstained structures
- 100x lens (planachromatic, spring) with water immersion

**Delivery incl.** colour filter (green), eyecups and dust cover.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| OBL 145 binocular | **EYT6.1** | 1 | 1420,00 |
| OBL 155 trinocular | **EYT7.1** | 1 | 1530,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 0.47x C-mount adapter (adjustable focus) | **EYP9.1** | 1 | 160,00 |
| Dark field condenser N.A. 0.85-0.91 (Dry) | **EYT0.1** | 1 | 230,00 |
| 100x infinity lens, planachromatic (spring, water) / N.A. 1.15, W.D. 0.18 mm | **EYT1.1** | 1 | 445,00 |



## SFC-100FL monocular biology microscope model

By Motic.
**Total magnification:** 40x, 100x, 400x
**Monocular barrel:** 45° tilt, 360° revolvable
**Design:** Basic microscope with integrated light (Tungsten light 20 W / 220-240 V). Stable metal stand. 3-times revolving lensepiece.
Coarse and fine pinion adjustable.
Microscope stage 120 x 110 mm with retaining clamps.
**Optical equipment:**
- Wide-field eyepiece 10x WF / Field of vision 18 mm
- Three achromatic objectives: DIN 4x, 10x, 40x (Spring)
- Condenser NA 0.65
- Iris diaphragm with filter holder

**Delivery incl.** dust protection hood and blue filter.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KP98.1** | 1 | 167,70 |

## Accessories for SFC-100FL

**Replacement bulb**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tungsten, 220-240 V / 20 W | **PC95.1** | 1 | 18,25 |




## Paper wipes for lenses

Lint-free tissue paper. Ideal for cleaning optical glasses, cuvettes and as protective paper for metallographic cuts. Pack of 50 sheets, 80 x 100 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1068.1** | 10 | 47,20 |



## SFC-100FLED monocular microscope

By Motic. Rugged microscope for pupils and students.
With **LED lighting**. Battery or mains operation.

**Technical specifications:**

| | |
|---|---|
| Total magnification | 40x, 100x, 400x |
| Eyepiece | Wide field 10x<br>Field of view 18 mm<br>With pointer and ocular retainer |
| Head | Monocular<br>45° viewing angle<br>360° rotatable |
| Lens turret | 3-way, tilted forwards |
| Lenses, achromatic | - 4x / N.A. 0.10<br>- 10x / N.A. 0.25<br>- 40x (spring) / N.A. 0.65 |
| Microscope stage | 120 x 110 mm, with 2 spring clamps |
| Condenser | N.A. 0.65 with iris diaphragm and filter holder |
| Lighting | LED (20 mA / 3.5 V / 70 mW),<br>chargeable, continuously variable |
| Image focusing | Coarse and fine drive |
| Power supply | 100-240 V |

**Delivery incl.** charger, batteries and dust cover.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ATT2.1** | 1 | 191,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement LED (20 mA / 3.5 V / 70 mW) | **ATT3.1** | 1 | 20,30 |




## Lens cleaning tissues

Cleans without smearing, also remove dust and oil. 500 wipes per pack.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LH30.1** | 1 | 16,40 |

# Microscopes, Motic



## Laboratory and course microscope SHB 45

By Motic. Rugged microscope for pupils and students.
With halogen lighting and light intensity adaptation.

**Technical specifications:**

| | |
|---|---|
| Total magnification | 40x, 100x, 400x, can be expanded up to 1000x |
| Eyepieces | Wide field 10x<br>Field of view 18 mm<br>Dioptre compensation on both eyepieces (±5 dpt) |
| Head | Binocular<br>45° inclination<br>360° rotatable |
| Lens turret | 4-way, tilted forwards |
| Lenses, achromatic | 4x / N.A. 0.10<br>10x / N.A. 0.25<br>40x (spring) / N.A. 0.65 |
| Microscope stage | 120 x 120 mm with clamps for microscope slide |
| Condenser | N.A. 1.25, focusable, iris membrane with filter holder |
| Lighting | Halogen 12 V / 10 W, adjustable |
| Image focusing | Coaxial coarse and fine focus |
| Power supply | 100-240 V |

**Delivery incl.** blue filter, eyepiece cups and dust cover.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SHB 45 | **Y421.1** | 1 | 425,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Lenses, achromatic, 20x / N.A. 0.40 | **Y424.1** | 1 | 62,35 |
| Lenses, achromatic, 60x (spring) / N.A. 0.85 | **Y425.1** | 1 | 79,40 |
| Lenses, achromatic, 100x (spring) / oil / N.A. 1.25 | **Y426.1** | 1 | 79,30 |
| Wide field eyepieces 15x, visual field 12 mm | **CH58.2** | 2 | 64,30 |
| Replacement bulb, halogen (transmitted light), 12 V / 10 W | **PE49.1** | 1 | 20,35 |

▶ Microscope slides and cover slips see p. 290



## Biology microscope B3 Professional series

By Motic. With infinity optics.

- Brightfield microscope for the analysis of high-contrast, coloured samples
- Optionally available with a trinocular head for attachment of a microscope camera to the phototube using a C-Mount adapter (please order C-Mount camera adapter separately)

**Technical specifications:**

| | |
|---|---|
| Total magnification | 40x, 100x, 400x, 1000x |
| Eyepieces | Widefield 10x<br>Field of view 20 mm<br>Diopter compensation on left ocular tube ( ±5 dpt) |
| Head | Binocular or trinocular<br>30° viewing angle<br>360° rotatable<br>Adjustable eye distance (55-75 mm) |
| Lens turret | 5x, inclined backward, with four achromatic super contrast lenses |
| Lens | - 4x / N.A. 0.10, W.D. 17.0 mm<br>- 10x / N.A. 0.25, W.D. 6.4 mm<br>- 40x (spring) / N.A. 0.65, W.D. 0.45 mm<br>- 100 x (spring oil) / N.A. 1.25, W.D. 0.14 mm |
| Microscope stage | 140 x 135 mm, height adjustable<br>coaxial x/y travel range 78 x 50 mm |
| Condenser | Focusable Abbe condenser N.A. 1.25 with iris diaphragm and filter holder |
| Lighting | Köhler halogen (12 V / 20 W), variable |
| Image focusing | Coaxial coarse and fine focus |
| Power supply | 100-240 V |

**Delivery incl.** colour filter set (blue, yellow, green), immersion oil and dust cover.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| B3-220ASC | Binocular | **CH56.1** | 1 | 805,20 |
| B3-223ASC | Trinocular | **CH57.1** | 1 | 955,70 |

## Accessories for B3 Professional series

**Wide-field eyepiece**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Wide field eyepieces 15x, visual field 12 mm | **CH58.2** | 1 pair | 64,30 |

**Graduated eyepiece**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| WF 10x (for ASC), scale grad. 10 mm into 100 increments | **PC97.1** | 1 piece | 95,15 |

**C-Mount adapter**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0.5x C-Mount adapter for ½″ chip-sensors | **PC98.1** | 1 piece | 95,15 |

**Replacement bulb**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Halogen, 12 V / 20 W | **PC99.1** | 1 piece | 18,10 |




## BA210-series laboratory microscopes

By Motic. With **LED lighting** and **infinite optics** for optimum image quality.

- Brightfield microscope for analysis of high-contrast, coloured samples; supplied lenses: 4x, 10x, 40x and 100x
  Phase contrast version for examination of colourless preparations with low natural contrast; supplied lens: Ph10x + Ph40x for phase contrast and 4x + 100x for brightfield
- Optionally available with a trinocular head for attachment of a microscope camera to the phototube using a C-Mount adapter
  (please order C-Mount camera adapter separately)

**Technical specifications:**

| | |
|---|---|
| Total magnification | 40x, 100x, 400x, 1000x |
| Eyepieces (incl. eyecups) | Wide field 10x<br>Field of view 20 mm<br>Diopter compensation on both eyepieces ( ±5 dpt) |
| Head | Binocular or trinocular<br>30° viewing angle<br>360° rotatable<br>Adjustable eye distance (55-75 mm) |
| Lens turret | 4-way, tilted backwards |
| Lens for brightfield, planachromatic (EC PL) | - 4x / N.A. 0.10. W.D. 15.9 mm<br>- 10x / N.A. 0.25, W.D. 17.4 mm<br>- 40x S / N.A. 0.65, W.D. 0.5 mm<br>- 100x S-Oil / N.A. 1.25, W.D. 0.15 mm |
| Lens for phase contrast, planachromatic (EC-H-PL) | - Ph10x / N.A. 0.25, W.D. 17.4 mm<br>- Ph40x S / N.A. 0.65, W.D. 0.50 mm |
| Microscope stage | 140 x 135 mm<br>coaxial x/y travel range 76 x 50 mm |
| Condenser | Focusable Abbe condenser N.A. 1.25 with iris diaphragm and slider slot |
| Specially designed for phase contrast | 3x phase shifter for Ph1/2 and brightfield<br>Centring telescope |
| Lighting | LED (3 W), controllable<br>Colour temperature: 5 500 K |
| Image focusing | Coarse and fine drive |
| Power supply | 100-240 V |

**Delivery incl.** immersion oil and dust cover.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① BA210 LED binocular, brightfield | **ATT7.1** | 1 | 1033,10 |
| ② BA210 LED trinocular, brightfield | **ATT8.1** | 1 | 1188,95 |
| ① BA210 LED binocular, phase contrast | **ATT9.1** | 1 | 1569,50 |
| ② BA210 LED trinocular, phase contrast | **ATX0.1** | 1 | 1745,80 |
| **Accessories:** | | | |
| 0.5x C-Mount camera adapter for ⅓″ or ½″ chip sensors | **ATT1.1** | 1 | 153,75 |




## AE2000-series inverse microscopes

By Motic. During inverse microscopy the lenses are positioned under the benchtop. This results in a larger gap between the benchtop and condenser, allowing analysis of thicker preparations such as living cells in culture vessels/microtiter plates.

- With **infinite optics** for optimum image quality
- Optionally available with **LED lighting** (please order separately)
- Optionally available with a trinocular head for attachment of a microscope camera to the phototube using a C-Mount adapter
  (please order C-Mount camera adapter separately)

**Technical specifications:**

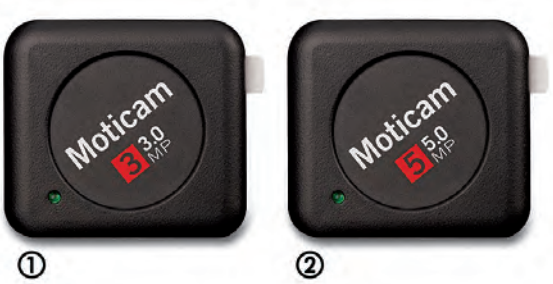
| | |
|---|---|
| Total magnification | 40x and 400x in brightfield<br>100x and 200x in phase contrast |
| Eyepieces (incl. eyecups) | Wide field 10x<br>Field of view 20 mm<br>Diopter compensation on both eyepieces |
| Head | Binocular or trinocular<br>45° viewing angle<br>360° rotatable<br>Adjustable eye distance (48-75 mm) |
| Lens turret | 4-way, tilted sideways |
| Lenses for brightfield, planachromatic | - PL 4x / N.A. 0,10, W.D. 12.6 mm<br>- LWD PL 40x / N.A. 0.50, W.D. 3.0 mm |
| Lenses for phase contrast | - PL Ph 10x / N.A. 0.25, W.D. 4.1 mm<br>- LWD PL Ph 20x / N.A. 0.30, W.D. 4.7 mm |
| Worktop | 200 x 239 mm<br>With glass/metal stage insert |
| Condenser | ELWD N.A. 0.30 with phase shifter (Ph1, BF)<br>W.D. with condenser for 72 mm W.D. |
| Lighting | Halogen (6 V / 30 W) with sleep mode, variable |
| Image focusing | Coarse and fine drive, coaxial |
| Power supply | 100-240 V |

**Delivery incl.** blue filter, interference filter green, neutral filter with slider, centring telescope and dust cover.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① AE2000 binocular | **ATT4.1** | 1 | 2630,55 |
| ② AE2000 trinocular | **ATT5.1** | 1 | 3025,05 |
| **Accessories:** | | | |
| LED module (6 V / 30 W, 6 000 K) | **AXA8.1** | 1 | 84,40 |
| 0.5x C-Mount camera adapter for ⅓″ or ½″ chip sensors | **ATT1.1** | 1 | 153,75 |
| Replacement halogen lamp (6 V / 30 W) | **ATT6.1** | 1 | 38,15 |

▶ Immersion oil see chapter Histologie/ Microscopy accessories!

# Microscope accessories




## Microscope cameras

By Motic. Digital microscope cameras with measurement software. The cameras can be connected to the third tube of the microscope by the C-Mount thread. This requires a matching C-Mount adapter of the microscope manufacturer. The supplied eyepiece adapter allows the cameras to be used on almost any commercially available microscope. Connection via PC, system requirements: Windows XP operating systems and higher or Apple Mac OSX, USB 3.0 port. The camera is powered via the USB port. Larger objects can also be viewed independently of the microscope using the macro tube.

**Technical specifications:**

| Model | ① Moticam 3+ | ② Moticam 5+ |
|---|---|---|
| CMOS sensor format | ½″ | ½,5″ |
| Attachment lens, focusable | 16 mm / CCD | 12 mm / CCD |
| Number of pixels | 3.0 MP | 5.0 MP |
| Maximum resolution | 2048 x 1536 | 2592 x 1944 |
| Live image measurements | yes | |

**Delivery incl.** 2 variable eyepiece adapters (suitable for sizes 28, 30, 34 and 35 mm), detachable USB 3.0 cable, macro tube with macro lens, Motic (4-point) calibration scale with crosshair and Motic Images 2.0 Software.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Moticam 3+ | **TX09.1** | 1 | 796,60 |
| ② Moticam 5+ | **TX10.1** | 1 | 995,45 |



## Protective sleeves for microscopes

Made of Vikem®-vinyl. Protects high-end devices and instruments against dust and liquids.

| Size | Bottom range x top range x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Standard | 660 x 460 x 420 | **XY16.1** | 1 | 19,30 |
| L | 820 x 560 x 460 | **XY17.1** | 1 | 26,35 |
| XL | 920 x 760 x 560 | **XY18.1** | 1 | 30,65 |




NEU
NOUVEAU
NEW

## C-mount cameras ODC series

By Kern. For conventional microscope use, and for demanding application (e.g. darkfield, phase contrast and fluorescence).

- Fast and clear image transmission with proven CMOS technology
- USB 2.0 data transmission adequate for static samples. USB 3.0 version recommended for living samples (faster transmission without stalling)
- Camera power supply via USB cable (length 2 m)
- Multilingual software supplied. With the functions streaming, photo snapshot and video. Various measuring functions such as paths, surfaces and angular measurement, as well as manual counting possible. Image processing and documentation functions included
- Mounting possible either via C-mount connection on the third barrel of the microscope or via eyepiece.
  Matching C-mount adapter is provided by the microscope manufacturer, eyepiece adapter (∅ 23.2 mm) and adapter rings (∅ 30.0 mm and 30.5 mm) included in the scope of delivery

**Technical specifications:**

| Model | ODC 822 | ODC 824 | ODC 825 | ODC 831 | ODC 832 |
|---|---|---|---|---|---|
| CMOS sensor format | 1/3″ | 1/2″ | 1/2,5″ | 1/3″ | 1/2,5″ |
| Port | USB 2.0 | USB 2.0 | USB 2.0 | USB 3.0 | USB 3.0 |
| Number of pixels (MP) | 1.3 | 3.1 | 5.1 | 3.1 | 5.1 |
| Images per second | 15-48 | 11.5-45 | 6.8-55 | 27.3-53.3 | 14.2-101.2 |
| Supported operating system | Win XP, Vista, 7, 8, 10 | | | | |

**Delivery incl.** software microscope VIS, USB cable, eyepiece adapter, rings and lens micrometer for calibrating the software.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ODC 822 | **HNH4.1** | 1 | 280,00 |
| ODC 824 | **HNH5.1** | 1 | 370,00 |
| ODC 825 | **HNH6.1** | 1 | 385,00 |
| ODC 831 | **HNH7.1** | 1 | 500,00 |
| ODC 832 | **HNH8.1** | 1 | 530,00 |



NEU
NOUVEAU
NEW

## Digital USB manual microscope ODC 895

By Kern. For fast and easy pre-examination, for example of plants, insects or skin samples. Strong and effective illumination of the samples with eight LEDs arranged in a ring. Multilingual software supplied. With the functions streaming, photo snapshot and video.

**Technical specifications:**

| | |
|---|---|
| Magnification stages | 10x, 200x |
| CMOS sensor format | $^{1}/_{3.2}''$ |
| Port | USB 2.0 |
| Number of pixels | 2 MP |
| Work area | 150 x 80 mm |
| Focal range | 60 mm |
| Images per second | 15-30 |
| Lighting | LED reflected light ring lighting, controllable |
| Image focusing | Coarse focus |
| Supported operating system | Win XP, Vista, 7, 8, 10 |
| Power supply | Via USB connection (fixed cable, length 1.4 m) |

**Delivery incl.** software.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HNH2.1** | 1 | 230,00 |



## Pocket microscope

30x magnification. With focusing device and swivel illumination of the viewing area. Dimensions: 140 x 45 x 20 mm.
**Delivery without** batteries, please order separately.
2 batteries Mignon 1.5 V are required.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P387.1** | 1 | 32,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Bellows with cleaning brushes

Made of rubber. Clip-on brushes. For contact-free removal of dust and/or loose dust particles on optical or other sensitive surfaces. Easy handling. With large elastic bellows for strong blowing action. Sturdy air nozzle at front, air inlet valve at rear.
Dimensions about: L 180 x ∅ 60 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KP30.1** | 1 | 13,90 |



## Stand magnifier and mini light panel

**Stand magnifier**

With swivel-mounted plastic lens, **magnification 1.75x**.
Lens size 140 x 100 mm, frame height 185 mm.
Use with mini light panel NL24.1 is optional.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NL23.1** | 1 | 95,70 |

**Mini light panel**

Battery-operated.
Dimensions: housing L 161 x W 135 x H 44 mm, illuminated surface L 127 x W 100 mm.
**Use with stand magnifier NL23.1 is optional.**
**Delivery incl.** 4 Mignon (1.5 V) batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NL24.1** | 1 | 134,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |

# Illuminated magnifiers



## Desk magnifying glass with LED lamp

With frameless plastic lens, ∅ 102 mm. **2x magnification**, with integrated small lens **4x**. Separate LED lamp with 4 LEDs. With removable clamp for attaching to table edges.

**Delivery incl.** 2 x 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK48.1** | 1 | 28,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## LED magnifier lamps, compact

- **3 diopter** glass lens, field of vision **Ø 100 mm**
- Embedded **12-diopter** lens, field of vision **Ø 25 mm**
- 60 LEDs, over 20,000 hours lamp life, maintenance free
- Colour temperature: daylight white 6500 K
- Light intensity 1 x 200 lx at 35 cm distance, 330 lumen
- Low energy consumption of approx. 5 watts (energy efficiency class A)
- Ball-and-socket joint allows three-dimensional head rest adjustment
- Plastic linkage, arm length: bottom 155 mm, top 180 mm
- Sturdy base with ballasting, 150 x 180 mm
- Power supply 230 V, 50 Hz, cable length 1.40 m

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **NK01.1** | 1 | 74,75 |
| black | **NK02.1** | 1 | 74,75 |



## LED magnifier lamps

- **3 diopter** glass lens, field of vision **Ø 127 mm**
- 90 LEDs, over 15 000 hours lamp life, maintenance free
- Colour temperature: daylight white 6500 K
- Light intensity 1 x 600 lx at 35 cm distance, 495 lumen
- Low energy consumption of approx. 8 watts (energy efficiency class „A“)
- Ball-and-socket joint allows three-dimensional head rest adjustment
- Rugged metal linkage, arm length at bottom and top 450 mm
- Clamp base for clamping widths of up to 65 mm
- Power supply 230 V, 50 Hz, cable length 1.70 m

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **NH99.1** | 1 | 134,40 |
| black | **NK00.1** | 1 | 134,40 |



## Circular illuminated magnifier

Available as **clamp version** with epoxy-coated steel tubes. Energy-saving 22 watt fluorescent lamp for high intensity light at minimum heat levels. Overall radius 1200 mm. **Lenses-Ø 127 mm. Lense with 3 diopters** and folding lens cover. Amplifications possible with clip-on additional lens. Pearl white.

**Technical specifications:**

| **Diopters:** | | | **Magnification:** |
|---|---|---|---|
| primary lens | additional lens | total | % incl. original size |
| 3 | - | - | 175 |
| 3 | 4 | 7 | 275 |
| 3 | 8 | 11 | 375 |

**Delivery incl.** light bulbs and table clamp.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Circular illuminated magnifier, clamping version | **N362.1** | 1 | 310,70 |
| Spare circular fluorescent tube | **N366.1** | 1 | 25,75 |
| Additional lens 8 diopters | **N364.1** | 1 | 112,90 |

**Approximation formula for calculating diopters in magnification:**

$$\frac{\text{Dpt.}}{4} + 1 = \text{x-times magnified}$$

# Illuminated magnifiers



## varioLEDflex magnifier lamp

By Eschenbach. With shadow-free ring illumination and structure-accentuating segment illumination. A flexible gooseneck stand with a smooth action and the lens which also tilts in two directions ensures precise adjustment of the magnifier head to suit individual requirements.

- Aspheric PXM® lightweight lens, cera-tec® coated
- **Lens ∅ 76 mm**
- **2.5x magnification (6 dpt),** high edge definition
- 63 LEDs, up to 50 000 hours lamp life, maintenance free
- Illumination level: approx. 6 000 lx at only 5 W (ring illumination)
- Colour temperature >6 000 K
- Stand length 410 mm
- Power supply 110-230 V, 50-60 Hz, cable length approx. 2.5 m

**Delivery incl.** mains adapter (EU/GB/US) and sturdy table clamp made from steel, max. clamping range 60 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AEA3.1** | 1 | 407,45 |



## Circular illuminated magnifier

By Waldmann. Made of metal, painted light grey. Features heavy base plate for secure stand. Can be used as table lamp. **Lens visual area 120 mm in ∅, magnification 2x**, in high magnification area of lens (∅ 30 mm) **4 - 5x magnification**. With non-glaring 22 W circular fluorescent tube. Magnifier has spring-balanced arms and is variably adjustable and rotatable to all sides. Max. height approx. 88 cm. Total weight approx. 9 kg.
With 150 cm cable and plug for 220 V electric supply.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Circular illuminated magnifier | **0054.1** | 1 | 590,20 |
| Spare circular fluorescent tube | **N366.1** | 1 | 25,75 |

## Accessories: Auxiliary lens

Magnifcation 4.0 diopters. ∅ 117 mm. Simply place lens on magnifier head.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **6194.1** | 1 | 130,10 |



## LED-illuminated round magnifier

By Waldmann. Very sturdy and rugged, resistant to vibration. Excellent colour rendering and homogeneous light distribution.

- Scratch-resistant plastic lens with **6 diopters**
- Field of vision ∅ **72 mm**, undistorted
- 63 x Low Power LEDs
- Low energy consumption of approx. 6 watts (energy efficiency class A)
- Colour temperature: neutral white 3 700-4 300 K
- Colour rendering Ra = 85
- Illumination level approx. 2 660 lx at a distance of 15 cm
- Stand length approx. 730 mm
- Comfortable switching on/off using sensor button on lamp head
- Housing made of anodised aluminium and black plastic
- Power supply 100-240 V, 50/60 Hz, cable length 2.3 m

**Delivery incl.** base and protective lens casing to avoid fire when not in use. Table clamp and table base is optional (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| LED illuminated round magnifier | **CCE1.1** | 1 | 432,15 |
| Table clamp | **LK23.1** | 1 | 40,35 |
| Table base | **LK24.1** | 1 | 96,65 |



## varioLED illiuminated magnifiers

By Eschenbach. With flicker-free, dimmable LED ring light, approx. 5000 Lux at 200 mm working distance.
Folding and removable lens cover.

- 1.9x magnification (**3.55 dpt**), optional 25x (**6 dpt**)
- **Lens-∅ 132 mm**
- Aspheric PXM® lightweight lens, with cera-tec® hard coating
- Edge-to-edge distortion-free images
- Swivel range of magnifier head: 180°
- 6 joints and 0.9 m operating radius for optimal magnifier head alignment
- Table clamp for tabletop thickness from 18-74 mm
- Dimensions: length of swivel arms 400 mm, Lamp head ∅ 209 mm
- Power supply 110 V-230 V, 50-60 Hz

**Delivery incl.** plug adapter (EU/GB/US/AUS).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| varioLED 1.9x magnifier lamp | **PX01.1** | 1 | 661,15 |
| varioLED 2.5x magnifier lamp | **PX02.1** | 1 | 751,45 |
| Spare lens 6 dpt/2.5x | **PX03.1** | 1 | 120,40 |
| Table base | **PX04.1** | 1 | 203,20 |
| Lens protector | **PX05.1** | 1 | 24,60 |

# Illuminated magnifiers



## Tevisio magnifier lamps

By Waldmann. For demanding applications in research, manufacturing, quality assurance and assembly.

- Scratch-resistant **3.5 diopter** glass lens
- **Large field of vision, Ø 153 mm**, distortion free
- 48 LEDs, up to 50,000 hours lamp life, maintenance free
- Various light segments can be switched on and off to create structure-accentuating effects
- Continuously variable dimming to 10 %
- Colour temperature: neutral white 4000 K
- Light intensity: 6000 lx at only 14 W
- 40 % energy saving compared to standard magnifier lamps
- 3D head joint for individual adjustments
- Housing made of colourless anodised aluminium and black plastic
- Power supply 100-240 V, 50/60 Hz, cable length 3.8 m

| Overall reach (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 784 (400/384) | **NH40.1** | 1 | 719,20 |
| 984 (500/484) | **NH41.1** | 1 | 736,40 |




## Headlight LED

By Eschenbach. High-performance LED light for shadow-free, ergonomic and fatigue-free working at near-constant illumination levels. Light swivels vertically into the desired position.
For attachment to headband magnifiers (P106.1 ff.) and the MaxDetail magnifier (HE06.1).

**Technical specifications:**

| | |
|---|---|
| Lighting | 2 high-performance LEDs |
| Illumination level | approx. 3200 lx in 250 mm<br>approx. 1200 lx in 400 mm |
| Length of cable | 1 m |
| Dimensions:<br>lamp housing<br>battery housing (incl. clip) | <br>32 x 20 x 34 mm<br>90 x 55 x 40 mm |
| Weight:<br>lamp housing<br>battery housing (excl. batteries) | <br>11 g<br>60 g |
| Lighting duration | approx. 8 h in normal mode<br>approx. 14 h in Eco mode |
| Power supply | 3 mignon/AA 1.5 V batteries |

**Delivery incl.** adapter for headband magnifiers and MaxDetail magnifier, hard foam case and batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CPT7.1** | 1 | 96,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Magnifying glasses MaxDetail

By Eschenbach. **Magnification 2-times.** Multi-purpose magnifying glasses for all tasks where you need to use both hands.
**Advantages:**

- Adjustable side-pieces for a close fit
- Optimal working distance 400 mm
- Large field of vision (~150 mm at 400 mm working distance)
- Diopter compensation of ±3 dpt. possible
- Low weight 49 g

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HE06.1** | 1 | 103,00 |



## Head band magnifiers

By Eschenbach. Binocular lenses enable stereoscopic sight with both eyes. Suitable for spectacle users. Screen is closed on all sides to protect against diffused light. Screen can be folded back when not in use.

| Operating distance (mm) | Magnification | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 400 | 1.7x | **P106.1** | 1 | 105,30 |
| 250 | 2x | **P107.1** | 1 | 105,30 |
| 180 | 2.5x | **P108.1** | 1 | 105,30 |
| 130 | 3x | **P109.1** | 1 | 105,30 |

# Illuminated magnifiers




## Illuminated pocket magnifiers

By Eschenbach.
- Ergonomically shaped handle
- Large, easy-to-operate light switch
- Aspheric PXM® lightweight lens, dia. 35 mm
- Lenses are hard coated on both sides
- Setting distance (distance between eye and virtual image): 400 mm
- Easy battery replacement

**Delivery incl.** batteries (2 Mignon 1.5 V, type AA), folding dust cap (type ② only).

**Type ①: with 2.5 V light bulb, 250 mA, E10**

| Magnification | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 7x / 28.0 dpt. | **H506.1** | 1 | 31,75 |
| 10x / 38.0 dpt. | **H507.1** | 1 | 35,35 |

**Type ②: with LED white light, 52 mA**
With attachable filters for various light colours.

| Magnification | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10x / 38.0 dpt. | **PT98.1** | 1 | 63,05 |
| 12.5x / 50.0 dpt. | **PT99.1** | 1 | 66,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Binocular magnifiers for spectacles

By Eschenbach. Simple and effective magnifying aid for spectacle users.

**Advantages:**
- Can be clipped on to almost any spectacle frames
- Field of vision is not restricted
- Both hands are free for working

| Operating distance (mm) | Magnification | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 400 | 1.7x | **P103.1** | 1 | 60,20 |
| 250 | 2x | **P104.1** | 1 | 60,20 |
| 180 | 2.5x | **P105.1** | 1 | 60,20 |
| 160 | 3x | **H577.1** | 1 | 63,30 |




## ① Precision magnifiers with graticule

By Eschenbach. Has a distortion-free, high quality, achromatic lens. **Lens Ø 23 mm.** Features handy focussing ring. With 20 mm range and 0.1 mm subdivision. Casing made of glass-fibre reinforced polyamide.

| Magnification | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 7x | **H570.1** | 1 | 103,05 |
| 10x | **H571.1** | 1 | 120,40 |

## ② Illuminating attachement LED

By Eschenbach. For precision magnifiers. Handy case for two batteries, type Baby 1.5 V. **Delivery without** batteries, please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H572.1** | 1 | 78,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| Baby/C 1.5 V battery | **1023.2** | 2 pieces | 4,85 |

**Approximation formula for calculating diopters in magnification:**

$$\frac{\text{Dpt.}}{4} + 1 = \text{x-times magnified}$$



## Illuminated precision magnifier

By Eschenbach. With removable **graticule**. **Magnification 10x, 38 (dpt).** With aspheric **PXM®-light lens, lens-Ø 35 mm.** Graticule with 0.5 mm and 1/64 inch graduation. Power supply via 2 x 1.5 V batteries (type Baby). **Delivery without** batteries, please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H568.1** | 1 | 79,55 |

**Accessories:**

| | | | |
|---|---|---|---|
| Baby/C 1.5 V battery | **1023.2** | 2 pieces | 4,85 |

# Magnifying lenses



## Illuminated pocket magnifiers easyPOCKET

By Eschenbach.
- Aspherical lens
- **Magnification: 3-times**
- Lens diameters: L 50 x W 46 x H 3 mm
- Ultra-flat
- With LED illumination
- Can be switched on and off by pulling magnifier out of protective case
- Fibre glass reinforced plastic case protects lens
- Dimensions of plastic case: L 85 x W 55 x H 6 mm

**Delivery incl.** battery (Button cell, 3 V, type CR 2025)

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| silver | **KC50.1** | 1 | 60,20 |
| black | **KC51.1** | 1 | 60,20 |

Accessories:

| | | | |
|---|---|---|---|
| CR 2025 button cell battery (3 V) | **CH14.1** | 1 piece | 5,35 |



## All-purpose pocket lens

By Eschenbach. Can be used as a **handheld or desktop magnifier.** With a simply twist, you can easily transform the hand-held magnifier into a desktop magnifier that always ensures correct height and a sharp image. The aspheric PXM® lightweight lens **(Ø 60 mm)** produces a sharp image right to the edge of the lens with **3.5x magnification (10.0 dpt.)**.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H569.1** | 1 | 36,55 |



## Folding magnifier

Made of plastic, with PXM® lightweight lens **(Ø 23 mm)**.
**10x magnification.** Aplanatic lens for edge-to-edge distortion-free images.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PX00.1** | 1 | 30,50 |



## Hand-held magnifiers with additional lens

By Eschenbach. Suitable for use when a large field of vision is required with low level magnification.
- Biconvex PXM® lightweight lens
- Plano-convex additional lens with 5x magnification integrated in the handle
- Eyelet in the handle for round-the-neck carry cord

| Lens Ø (mm) | Magnification (dpt / x times) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 60 | 6,4/2,5 | **AXL6.1** | 1 | 15,75 |
| 80 | 5,0/2,25 | **AXL7.1** | 1 | 23,60 |



## Folding magnifiers

High-resolution. With aspheric lens.
Dust-tight casing protects lens from scratching. Ø **of lens 35 mm**.
Total Ø 52 mm.

**Delivery incl.** neck strap

| Magnification | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4x | red | **H502.1** | 1 | 24,60 |
| 7x | anthracite | **H503.1** | 1 | 27,75 |
| 10x | white | **H504.1** | 1 | 33,35 |




## Standing magnifiers

Multipurpose magnifiers made of shockproof plastic.
Lenses made of PMMA. Transparent glass base. With aspheric lenses.
Model ② also has colour-corrected lens and diopter compensation.

**Technical specifications:**

| Model | Magnification | Lens-Ø (mm) | Height (mm) | Ø-Field of vision (mm) |
|---|---|---|---|---|
| ① | 8-times | 24 | approx. 45 | 45 |
| ② | 10-times | 26 | approx. 38 | 66 |

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **X294.1** | 1 | 17,75 |
| ② | **KP29.1** | 1 | 20,35 |



## Measuring lens

With **magnification 8x**, variably adjustable. With graticule length 10 mm, subdivisions 0.1 mm. Outer ∅ 32 mm.

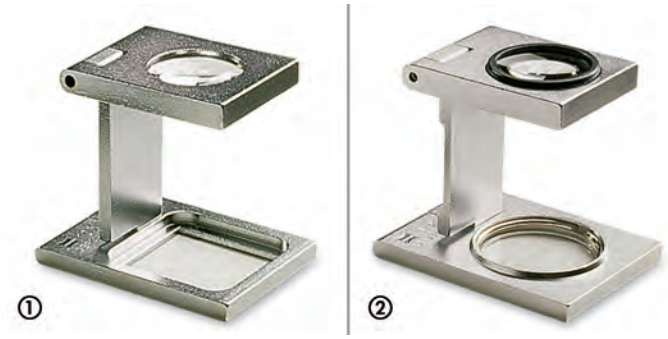
| Art. No. | Pack Qty. | € |
|---|---|---|
| **1285.1** | 1 | 105,90 |



## Linen tester

Made of plastic. With graticule on side, 1 mm subdivision.
**Magnification 8x**. Aperture 20 x 20 mm. Height 35 mm. Collapsible.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H576.1** | 1 | 20,35 |




## ① Precision linen tester

By Eschenbach. In chromium plated brass housing.
Biconvex lens made of optically ground silicate glass. Collapsible.

| Magnification | Height (mm) | Aperture (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10x | 27 | 15 x 15 | **H573.1** | 1 | 44,95 |
| 5x | 53 | 30 x 30 | **H574.1** | 1 | 62,50 |

## ② Linen tester

By Eschenbach. In chromium plated brass housing.
With **graticule** length 10 mm, 0.1 mm subdivision. Collapsible.

| Magnification | Height (mm) | Aperture (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 8x | 33 | ∅ 18 | **H575.1** | 1 | 154,80 |



## Hand-held lamp, Compact

**9 W**. With ballast in plug, unbreakable plastic protection tube and tiltable wire hook. Length of lamp 205 mm. 5 m cable. Protection class II.
Current 220 V/50Hz.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2986.1** | 1 | 163,40 |




## Infrared lamp IL21

Compressed glass bulb for intensive infrared light. Inclination of angle adjustable in 5 stages from 0 to 45°. Capacity ca. 150 W.
Voltage: 230 V, 50/60 Hz.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Infrared lamp IL21 | **X435.1** | 1 | 60,75 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare lamp for IL21 | **X436.1** | 1 | 21,45 |



## LED bench lamps

- 48 LEDs, over 15 000 hours lamp life, maintenance free
- Colour temperature: daylight white 6 500 K
- Light intensity: 1 500 lx at 350 cm distance, 200 lumen
- Low energy consumption of approx. 6.5 watts (energy efficiency class „A“)
- Arm and lamp head made of aluminium and plastic
- Lamp head 130 x 110 mm, rotatable and tiltable
- Switch on lamp head for convenient switching on and off
- Arm length: 400 mm
- Height in normal working position: 430 mm
- Sturdy base, 200 x 165 mm, made of plastic with ballasting
- Power supply 230 V, 50 Hz, cable length 1.75 m

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| black | **NK64.1** | 1 | 83,75 |
| silver | **NK65.1** | 1 | 83,75 |



## Table lamps Study

Arm, shade and clamp base made of metal.

- Length of arm, top and bottom approx. 35 cm (height adjustable)
- Reflector can be moved
- Lamp head ∅ 17 cm
- Span width of clamp max. 55 mm
- Can be rotated 360°
- Cord length approx. 1.75 m
- Supply 230 V, 50/60 Hz

**Delivery without** light bulb, please order separately.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| silver | **EP57.1** | 1 | 32,20 |
| black | **EP58.1** | 1 | 32,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| Energy-saving bulb E27 | **TA18.1** | 1 | 21,15 |



## Energy saving bench lamps

- Reflector for optimal light utilisation
- Colour temperature: daylight white 6 500 K
- Light intensity: 1 700 lx at 350 cm distance, 840 lumen
- Arm, lamp head and base made of shatterproof plastic
- Lamp head 360 x 70 mm
- Switch on lamp head for convenient switching on and off
- Arm length 310 mm, variable height
- Height in normal working position: 420 mm
- Sturdy base, 230 x 120 mm, with ballasting
- Energy efficiency class „A“
- Power supply 230 V, 50 Hz, cable length 1.80 m

**Delivery incl.** bulbs.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **NK60.1** | 1 | 40,35 |
| black | **NK61.1** | 1 | 40,35 |
| silver | **NK62.1** | 1 | 40,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement energy saving bulb, 11 W, G23 base | **NK63.1** | 1 | 10,30 |



## Desktop lamp "Office"

**Output 20 W**. With adjustable aluminium arm (max. 82 cm). Can be rotated horizontally 360°. Arm and reflector (Length 21 cm) can be adjusted. Lamp head with antiglare protection. Rotatable metal foot, alternatively available with metal clamping foot (max opening 55 mm). Cable length 2 m. Power supply: 230 V, 50/60 Hz.

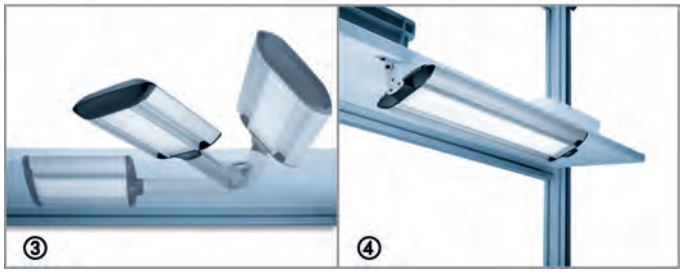
**Delivery incl.** light bulb, foot and table clamp.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH77.1** | 1 | 84,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare lamp | **XC72.1** | 1 | 10,50 |




## LED workplace luminaires

By Waldmann. For homogeneous wide area illumination of the workplace without glare or shadows. Good contrast vision and excellent colour detection.

- Maintenance-free LED technology, up to 50 000 hours lamp life
- 30 % energy saving compared to standard work lights
- Variable dimming down to 10 %, with memory function
- Colour temperature: neutral white 5 000 K
- Glare suppression is provided by cone prism aperture
- Flicker-free light without IR and UV content
- Housing made of colourless anodised aluminium and black fibre-reinforced plastic

**Technical specifications:**

| Model | ① | ② | ③ | ④ |
|---|---|---|---|---|
| Number of LEDs | 24 | 36 | 12 | 24 |
| Power consumption (W) | 31 | 47 | 15 | 31 |
| $E_m/E_{max}$ (lx)* | 958/2603 | 1425/3596 | 479/1394 | 958/2603 |
| Total reach (mm) | 1036 | | 431 | - |
| Lamp dimensions L x W x H (mm) | 398 x 136 x 33 | 577 x 136 x 33 | 179.5 x 136 x 33 | 359.5 x 136 x 33 |

*$E_m$ = medium illuminance, $E_{max}$ = max. illuminance, measuring field 100 x 100 cm, measuring distance 50 cm.

Models ① and ② for benchtop mounting. With frame and 3D head joint.
**Delivery incl.** screw-on foot.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **NK90.1** | 1 | 628,90 |
| ② | **NK91.1** | 1 | 725,65 |

Models ③ and ④ for space-saving under-cabinet assembly.
Rotatable head joint.
**Delivery incl.** bracket.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ③ with swivel arm | **NK92.1** | 1 | 321,45 |
| ④ with fixed mounting | **NK93.1** | 1 | 381,65 |



## Workplace luminaire

Colour: white. Ideal for laboratories, workshops and engineering offices. With electronic ballast for flicker-free start, flicker-free light, low current consumption and longer bulb life.

- Colour temperature: daylight white 6 500 K
- Light intensity: 2 800 lx at 350 cm distance, 1 250 lumen
- Lamp head with aluminised parabolic louvre for glare-free use
- Switch on lamp head for convenient switching on and off
- Rugged metal arm, rotatable through 360°
- Arm length at bottom and top 400 mm
- Height in normal working position 400 mm
- Metal clamp base, plastic coated (for clamping widths up to 65 mm)
- Energy efficiency class „A“
- Power supply 230 V, 50 Hz, cable length 1.50 m

**Delivery incl.** bulbs (3 x 14 W).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NK58.1** | 1 | 132,25 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement energy saving bulb, 14 W, G5 base | **NK59.1** | 1 | 16,15 |



## Laser pointer

All-metal casing with clip. Range approx. 150 m. Laser class 2.
Dimensions: L 140 mm, ∅ 10 mm.
Output power ≤ 1 mW, wavelength 635-670 nm (red).
**Delivery incl.** case and 2 batteries Micro/AAA 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH29.1** | 1 | 28,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

**Warning:**
Avoid looking directly into the laser beam and do not point the beam into another person's eyes!

# Torches




## Solitaire®-Rod-shaped torch

By MAG. Black. With aluminium casing. 8 cm long. A simple turning movement enables switch over from spot- to floodlight. **With battery and spare bulb** in cap. Extra long-life and economical energy usage. With key-chain hook in case.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N257.1** | 1 | 19,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |
| Spare bulbs | **N261.1** | 2 | 7,50 |



## Torches, Micro-Mag and Mini-Mag

By MAG. Black with aluminium casing. Can be switched over from spot- to floodlight. Anodized inside and outside for optimal protection against corrosion.
**Delivery incl.** 2 x 1.5 V Micro batteries for Micro-Mag, 2 x 1.5 V Mignon batteries for Mini-Mag. Includes case and spare lamp.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Micro-Mag, 125 mm long with pocket clip | **N258.1** | 1 | 37,15 |
| Mini-Mag, 145 mm long (without pict.) | **N259.1** | 1 | 42,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |
| Spare bulbs | **N263.1** | 2 | 8,10 |



## LED torch

By TFA-Dostmann. **With zoom** for stray light/focusing. Rugged aluminium housing with carry strap.

**Technical specifications:**

| | |
|---|---|
| Power output | 3 W |
| Illumination range | 120 m |
| Lifetime of LED bulb | 100 000 h |
| Energy consumption | 800 mA/h |
| Dimensions (L x ∅) | 115 x 34 mm |
| Weight incl. battery | 160 g |
| Power supply | 3 x 1.5 V AAA batteries |

**Delivery incl.** batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YK82.1** | 1 | 18,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Torch LED 3 D-Cell

By Mag-Lite®. Continuous adjustment from spot to flood beam. Housing made of aluminium. Anodized surfaces for enahnced corrosion protection. Splash-proof and shockproof.

**Technical specifications:**

| | |
|---|---|
| Lamp | 1 LED |
| Distance | 364 m |
| Light output | 168 Lumen |
| Lighting duration | approx. 80 h |
| Length | 315 mm |
| Ø | 56 mm |
| Weight (without batteries) | 446 g |
| Power supply | 3 batteries Mono/D 1.5 V |

**Delivery without** batteries, please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HLC2.1** | 1 | 83,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Mono/D 1.5 V battery | **1024.2** | 2 pieces | 6,35 |

# Explosion-proof torches



## Ex-safe LED mini flash light eLED®PEN

By Ecom. Pen-sized for zone
1/21 hazardous areas (areas in which an explosive atmosphere is likely to be present intermittently). Wide beam with powerful, evenly distributed light.

**Technical specifications:**

| | |
|---|---|
| Lamp | 0.5 W power LED |
| Lighting power at a distance of 1 m | approx. 1000 lx |
| Ex-code:<br>Suitable for use in gas atmosphere<br>Suitable for use in dust atmosphere | <br>II 2G Ex ib IIB T4 Gb<br>II 2D Ex ib IIIC T60 °C IP6X Db |
| Operating time | approx. 3 hours (continuous operation) |
| Ambient temperature | -20 to +40 °C |
| IP protection class | IP67 |
| Dimensions (L x W x H) | 135 x 22 x 25 mm |
| Weight | approx. 100 g |

**Note:** Please use only type-tested replacement batteries (see operating instructions)!

**Delivery incl.** 2 batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NT20.1** | 1 | 49,40 |



## Ex-safe LED torch Lite-Ex PL 10

By Ecom. For zone 0/20 hazardous areas (areas in which an explosive atmosphere is likely to be present continuously for long periods or frequently). With ring switch and coated, scratch-resistant protective filter.

**Technical specifications:**

| | |
|---|---|
| Lamp | High-performance LED |
| Lighting power at a distance of 1 m | approx. 3000 lx |
| Ex-code:<br>Suitable for use in gas atmosphere<br>Suitable for use in dust atmosphere | <br>II 1G Ex ia op is IIC T4 Ga<br>II 1D Ex ia IIIC T130 °C Da |
| Operating time | approx. 55 hours |
| Ambient temperature | -20 to +50 °C |
| IP protection class | IP65/IP67 |
| Dimensions (L x W x H) | 147 x 36 x 36 mm |
| Weight | approx. 120 g |

**Note:** Please use only type-tested replacement batteries (see operating instructions)!

**Delivery incl.** belt clip, hand strap and 3 batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NT19.1** | 1 | 117,20 |




## Ex-safe LED torch eLED®CPO TS

By Ecom. For zone 1/21 hazardous areas (areas in which an explosive atmosphere is likely to be present intermittently).

**Technical specifications:**

| | |
|---|---|
| Lamp | 2 W power LED |
| Lighting power at a distance of 1 m | approx. 2000 lx |
| Ex-code:<br>Suitable for use in gas atmosphere<br>Suitable for use in dusty atmospheres | <br>II 2G Ex e ib IIC T6<br>II 2D Ex ibD 21 T61 °C |
| Operating time | approx. 6-8 hours (continuous operation) |
| Ambient temperature | -20 to +40 °C |
| IP protection class | IP67 |
| Dimensions (L x W x H) | 134 x 35 x 41 mm |
| Weight | approx. 150 g |

**Note:** Please use only type-tested replacement batteries (see operating instructions)!

**Delivery incl.** 3 batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NT21.1** | 1 | 85,80 |



NEU
NOUVEAU
NEW

## LED light panels slimlite plano

By Kaiser-Fototechnik. With 8 mm high, very flat lighting plates.
For an even and true-colour illumination when viewing transparent images.
LED lighting in daylight quality, dimmable.

- Touch-sensitive switch for On/Off and brightness control
- Selectable mains or battery operation
- Different units beside the illuminated area (cm and inch)

**Technical specifications:**

| **Model** | **S** | **M** | **L** |
|---|---|---|---|
| Illuminated area L x W (mm) | 220 x 160 | 320 x 228 | 429 x 309 |
| Number of LEDs | 23 | 33 | 90 |
| Colour temperature (K) | 5000 | 5000 | 5000 |
| Light density cd/m² | 750 | 600 | 650 |
| Colour rendering index CRI | 95 | 95 | 95 |
| Power consumption (W) | 3,6 | 4.1 | 6,6 |
| Operation duration, battery (h) | 5 | 3.5 | 1.5 |
| Charge time, battery (h) | 5 | 5 | 5 |
| Power supply | 100-240 V, 50/60 Hz | | |
| Dimensions L x W x H (mm) | 290 x 200 x 8 | 390 x 270 x 8 | 499 x 350 x 8 |
| Weight (g) | 570 | 1010 | 1690 |

**Delivery incl.** power supply, USB cable (length 2 m), lithium-ion battery.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S | **HNK0.1** | 1 | 123,65 |
| M | **HNK1.1** | 1 | 192,45 |
| L | **HNK2.1** | 1 | 258,00 |

# Lighting panels, autoradiography






## Lighting panels

By Rex.
Ideal for viewing and for precise colour evaluation of slides, for examining large-sized films and transparencies, for illuminating X-rays. Also suitable for selecting and evaluating photographic material or for comparing superimposed graphs or chromatogrammes, etc.

**Design**:
- Sturdy sheet steel case, powder-coated (white)
- Extremely flat construction
- Plane, scratch resistant plastic opal pane
- **Non-flashing, non-flickering light,** for non-fatiguing viewing
- Without border and good illumination
- Light temperature 5000 K
- Only slight warming of surface during permanent run
- Comes with integrated wall mounting
- Length of leads 2 m
- Mains supply 230 V, 50-60 Hz

**Technical specifications:**

| Type | Dimensions L x W x D (mm) | Illuminated area L x W (mm) | Luminance (cd/m²) | Light fittings (Watt) |
|---|---|---|---|---|
| **Size 6 E** | 320 x 250 x 60 | 300 x 230 | 1700 | 2 x 8 |
| **Size 1 E2** | 415 x 270 x 60 | 395 x 250 | 1400 | 2 x 8 |
| **Size 1 E4** | 415 x 270 x 60 | 300 x 250 | 3000 | 4 x 8 |
| **Size 2 E** | 550 x 380 x 60 | 530 x 360 | 1300 | 2 x 13 |
| **Size 2 RE** | 550 x 380 x 60 | 530 x 360 | 1800 | 3 x 13 |
| **Size 3 RE** | 600 x 550 x 60 | 580 x 530 | 2000 | 5 x 13 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Size 6 E | **P262.1** | 1 | 212,85 |
| Size 1 E2 (2 x 8 W) | **P263.1** | 1 | 221,45 |
| Size 1 E4 (4 x 8 W) | **H988.1** | 1 | 310,70 |
| Size 2 E | **P265.1** | 1 | 281,65 |
| Size 2 RE | **P266.1** | 1 | 339,70 |
| Size 3 RE | **P268.1** | 1 | 471,95 |

## Rotilabo®-X-ray-cassettes

Light, stable aluminium cassette. **Optimal film-screen contact.**
With safety catch for easy opening. Press to close.
High cold stability to -70 °C.

| Size (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 13 x 18 | **X264.1** | 1 | 104,85 |
| 18 x 24 | **X265.1** | 1 | 123,65 |
| 18 x 43 | **X266.1** | 1 | 147,30 |
| 24 x 30 | **X272.1** | 1 | 155,90 |
| 30 x 40 | **X267.1** | 1 | 158,05 |

## Intensifying screens

Suitable for isotopes $^{32}P$.
**Delivery incl.** 1 set of screens for front and back.

- **Type, Universal (sensitivity 100)**

Combines relatively high sensitivity with excellent detail recognition. Luminous substance: calcium tungstate. For blue-sensitized films.

| Size (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 13 x 18 | **X273.1** | 1 | 44,95 |
| 18 x 24 | **X274.1** | 1 | 60,10 |
| 18 x 43 | **X275.1** | 1 | 87,10 |
| 24 x 30 | **X277.1** | 1 | 87,10 |
| 30 x 40 | **X276.1** | 1 | 118,25 |

- **Type, Special/Rapid (sensitivity 200)**

Sensitivity of special screens is almost twice as high as that of standard universal screens. Luminous substance: calcium tungstate. Blue-emitting.

| Size (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 13 x 18 | **X278.1** | 1 | 53,55 |
| 18 x 24 | **X279.1** | 1 | 72,05 |
| 18 x 43 | **X280.1** | 1 | 118,25 |
| 24 x 30 | **X282.1** | 1 | 110,75 |
| 30 x 40 | **X281.1** | 1 | 168,80 |


▶ X-ray protection aprons see page 659
▶ Illuminated template and autoradiography pen: refer to Biochemistry!
▶ UVA-meter see page 854
▶ UV-spectacles see page 557

# Surface illuminators



## UV-handheld lamps

By Herolab. Suitable for fluorescence excitation in microbiology, textile material technology, mineralogy, botany etc. The lamps are equipped with and can be switched over between **two wavelengths (254 nm/365 nm)**. Supplied complete with outlet cable, on/off switch and handle. Electrical supply 220 V/50 Hz. Also available as an accessory: Desktop stand made of metal.

**Technical specifications:**

| Model | Output (W) | Dim. filter L x W (mm) | Dim. lamp L x W x H (mm) | Weight (kg) |
|---|---|---|---|---|
| **I** | 2 x 4 | 100 x 50 | 195 x 70 x 65 | 0.7 |
| **II** | 2 x 6 | 150 x 50 | 260 x 70 x 65 | 0.8 |
| **III** | 2 x 8 | 200 x 50 | 335 x 70 x 65 | 0.9 |
| **IV** | 2 x 15 | 300 x 70 | 485 x 85 x 80 | 1.65 |

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| I | **H466.1** | 1 | 338,65 |
| II | **H467.1** | 1 | 376,25 |
| III | **H468.1** | 1 | 388,10 |
| IV | **H469.1** | 1 | 513,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement UV tube, 4 W, 254 nm, L135 x ∅ 16 mm | **H391.1** | 1 | 45,00 |
| Replacement UV tube, 4 W, 365 nm, L135 x ∅ 16 mm | **H392.1** | 1 | 37,65 |
| Replacement UV tube, 6 W, 254 nm, L210 x ∅ 16 mm | **P368.1** | 1 | 46,25 |
| Replacement UV tube, 6 W, 365 nm, L210 x ∅ 16 mm | **P369.1** | 1 | 34,55 |
| Replacement UV tube, 8 W, 254 nm, L288 x ∅ 16 mm | **P370.1** | 1 | 46,10 |
| Replacement UV tube, 8 W, 365 nm, L288 x ∅ 16 mm | **P371.1** | 1 | 35,05 |
| Replacement UV tube, 15 W, 254 nm, L437 x ∅ 26 mm | **P372.1** | 1 | 59,60 |
| Replacement UV tube, 15 W, 365 nm, L437 x ∅ 26 mm | **P373.1** | 1 | 42,95 |
| Spare fluorescent tubes - White light | **H390.1** | 1 | 13,80 |

## Desktop stand made of metal

By Herolab. For UV-handheld lamps. Height adjustable from 50 to 270 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H470.1** | 1 | 132,25 |



## UV transilluminators

For use in all areas
(standard gel analysis, preparation of nucleic acids, etc.).

- **Filter size: 110 x 140 mm**
- Stainless steel filter cover
- Special reflectors made of ultra-pure aluminium for homogeneous illumination with high utilisation of tube UV intensity
- Flicker-free quick starting
- Low thermal output
- Dimensions: W 266 x D 186 x H 80 mm

**Delivery without** UV protective screen. Please order separately.

| Type | Wavelength (nm) | Tubes | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| UVT-14 SE | 254 | 4 x 6 W | **NK03.1** | 1 | 836,35 |
| UVT-14 ME | 312/302 | 4 x 6 W | **NK04.1** | 1 | 836,35 |
| UVT-14 LE | 365 | 4 x 6 W | **NK05.1** | 1 | 731,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Hinged UV protective screen | **NK06.1** | 1 | 112,90 |
| Replacement UV tube, 6 W, 254 nm, L210 x ∅ 16 mm | **P368.1** | 1 | 46,25 |
| Replacement UV tube, 6 W, 312/302nm, L210 x ∅ 16 mm | **P850.1** | 1 | 53,75 |
| Replacement UV tube, 6 W, 365 nm, L210 x ∅ 16 mm | **P369.1** | 1 | 34,55 |

**Warning: UV-C radiation is detrimental to health!**

**Fields of application:**

- UV-A = 320 to 380 nm (max 366 nm): effect lighting, testing of materials, commencement of photochemical reaction, fluorescence excitation e.g. with DCchromatogrammes and gels.
- UV-B = 280 to 320 nm (max 312 nm): e.g. analytic evaluation of chromatography plates without destroying separated substances.
- UV-C = 100 to 280 nm (max 254 nm): e.g. chromatographic investigation for identifying (absorption or fluorescence) substances.

# Surface illuminators



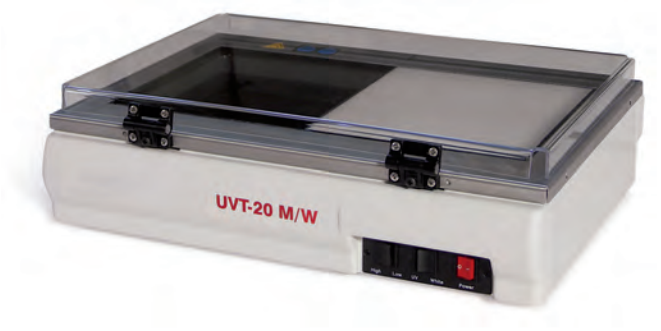
## Blue light LED transilluminators

For the gentle excitation of fluorescent DNA strands in gel.
No damage to DNA by UV radiation. Specially designed for SYBR dyes (excitation at 420-500 nm, emission above 520 nm).
Dimensions: L 266 x W 186 x H 80 mm. Please order UV protective goggles with orange lens for the detection of DNA strands separately.

| Type | Filter size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| UVT-14 BE-LED | 110 x 140 | **NN23.1** | 1 | 624,60 |
| UVT-22 BE-LED | 140 x 220 | **NN24.1** | 1 | 660,05 |

**Accessories:**

| | | | |
|---|---|---|---|
| UV protective goggles with orange lens | **NN25.1** | 1 | 15,35 |




## UV/white light transilluminator

By Herolab. Multifunction device with **100/75 % intensity switch**.

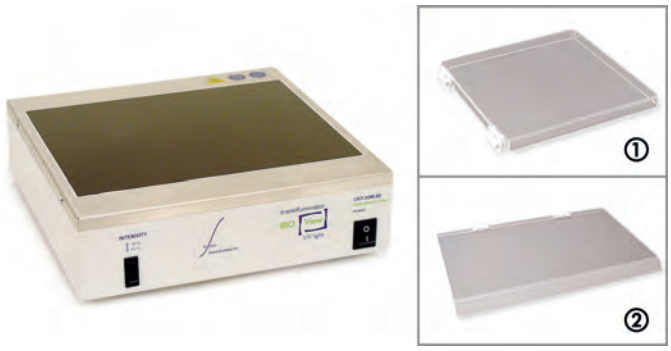
- **Filter size: 200 x 200 mm**
- Stainless steel filter cover, plastic coated housing, recessed switch
- Special reflectors made of ultra-pure aluminium for homogeneous illumination with high utilisation of tube UV intensity
- Dimensions: W 470 x D 340 x H 135 mm

**Delivery incl.** UV protective screen.

| Type | Wavelength (nm) | Tubes | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| UVT-20 M/W | 312/white light | 6 x 8 W/3 x 6 W | **LY09.1** | 1 | 1583,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement white light tube, 6 W, L 210 x ∅ 16 mm | **X306.1** | 1 | 35,05 |
| Replacement UV tube, 8 W, 312 nm, L 285 x ∅ 12 mm | **LL71.1** | 1 | 34,40 |




## UV-transilluminators with high light intensity

By Biostep.

- Filter cover made of rust-proof stainless steel
- Homogenous illumination
- High intensity light
- Model UST-30M-8E has an intensity switch 50/100 % and quiet, temperature-controlled ventillation system

**Delivery without** UV-protective covers, please order separately.

**Filter size: 230 x 300 mm**
**Dimensions: W 325 x D 322 x H 105 mm**

| Type | Wavelength (nm) | Tubes | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| UST-30M-8E | 312 | 12 x 8 W | **LY10.1** | 1 | 1342,70 |

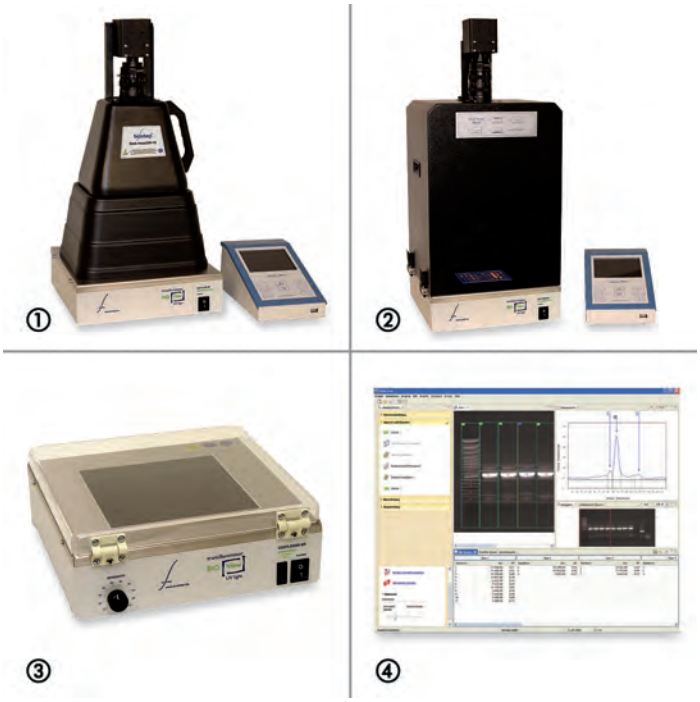
**Filter size: 200 x 400 mm**
**Dimensions: W 478 x D 322 x H 135 mm**

| Type | Wavelength (nm) | Tubes | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| UXDT-40SL-15K | 254/365 | 2 x (3 x 15 W) | **LY11.1** | 1 | 1987,70 |
| UXDT-40SM-15K | 254/312 | 2 x (3 x 15 W) | **LY12.1** | 1 | 1987,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| UV-protective cover for LY10.1, canted on 4 sides, W 325 x D 322 x H 25 mm | **LY13.1** | 1 | 78,30 |
| UV-protective cover for LY11.1, LY12.1, canted on 2 sides, W 478 x D 322 x H 25 mm | **LY14.1** | 1 | 72,60 |
| Replacement UV tube, 8 W, 312 nm, L 285 x ∅ 12 mm | **LL71.1** | 1 | 34,40 |
| Replacement UV tube, 15 W, 254 nm, L 437 x ∅ 26 mm | **P372.1** | 1 | 59,60 |
| Replacement UV tube, 6 W, 254 nm, L210 x ∅ 16 mm | **P851.1** | 1 | 69,80 |
| Replacement UV tube, 15 W, 365 nm, L 437 x ∅ 26 mm | **P373.1** | 1 | 42,95 |

# Gel documentation




## Gel documentation systems

By Biostep. PC-independent imaging systems e.g. for acquisition of DNA/RNA bands in agarose gels or protein bands in polyacrylamide gels. Standard version with ethidium bromide filter.

**CCD-Camera** model B8-437G
- Resolution 752 x 582 pixel
- Manual zoom objective 8 - 48 mm
- Camera control via external operation terminal 5,6″ LCD display, keypad and USB-connection
- Functions: Live image mode for easy positioning of gels, setting of exposure time (manual or automatic), image inverting, recognition of image manipulation (GLP), staring image settings and storage data onto a USB-stick

① **Typ Gerix 1005**
Attachable dark hood for use in combination with a transilluminator with UV-protection shield.

② **Typ Gerix 1020**
Stationary dark hood with white top light and sliding door. Integrated UV protective shield can be pushed up for gel positioning. Attachable to transilluminator with 4 clamps. Transilluminator will automatically switch off in the case of overheating.

**Delivery incl.** dark hood, CCD-camera and operation terminal. Without transilluminator, thermal printer and evaluation software, please order separately.

| Type | Dimensions W x D x H (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① Gerix 1005 | 30 x 25 x 59 | **LL53.1** | 1 | 4025,90 |
| ② Gerix 1020 | 32,5 x 32 x 67 | **LL54.1** | 1 | 4708,50 |

## Accessories for gel documentations systems

By Biostep.

③ **Transilluminators**
- Homogenous illumination
- Temperature-controlled ventilation (except K-model)
- Filter lid made of stainless steel
- Dimensions W 32,5 x D 32,2 x H 10,5 cm
- Filter size 20 x 20 cm

Please order UV-protection and blue light filter shield separately.

| Type | Wavelength (nm) | Tubes | Intensity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| UST-20M-8K | 312 | 6 x 8 W | - | **LL55.1** | 1 | 822,40 |
| UST-20M-8E | 312 | 8 x 8 W | 50-100 % | **LL56.1** | 1 | 1073,95 |
| UST-20M-8R | 312 | 8 x 8 W | 10-100 % | **LL57.1** | 1 | 1284,65 |
| USDT-20SM-8K | 254/312 | 2 x (4 x 8) W | - | **LL58.1** | 1 | 1127,70 |
| USDT-20SM-8R | 254/312 | 2 x (4 x 8) W | 10-100 % | **LL59.1** | 1 | 1342,70 |
| USDT-20ML-8K | 312/365 | 2 x (4 x 8) W | - | **LL60.1** | 1 | 1127,70 |
| USDT-20ML-8R | 312/365 | 2 x (4 x 8) W | 10-100 % | **LL61.1** | 1 | 1342,70 |
| BST-20G-D2R | 470 | LED-matrix 224 | 10-100 % | **LL62.1** | 1 | 1235,20 |

**UV-tubes**
- 8 watt
- Dimensions: L 300 x Ø 12 mm

| Wavelength (nm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 254 | **LL70.1** | 1 | 22,60 |
| 312 | **LL71.1** | 1 | 34,40 |
| 365 | **LL72.1** | 1 | 26,90 |

**Protection/filter shields for transilluminators**
- Dimensions: W 32,5 x D 32,2 x H 2,5 cm
- 4 sides blocking edges

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| UV-protection shield | **LY13.1** | 1 | 78,30 |
| Filter shield for blue light | **LL65.1** | 1 | 84,75 |

④ **Analysis software Gelix One® 210, single license**
- Imports bmp, png, tif, jpg images
- Reduces background noise
- Manual band detection and processing
- Molecular weight determination
- Manual standard allocation
- Exports data table
- Reporting and printing function
- For operating systems: Win XP, Win 7

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LL67.1** | 1 | 507,40 |

**Thermal printer Mitsubishi P93E**
- Thermosensitive print technology, 256 shades of grey
- Resolution 325 dpi
- Printing speed approx. 3 s/printout
- Standard paper: Thermal paper roll K61B, width 110 mm, approx. length 21 m
- High density paper: Thermal paper roll K65HM, width 110 mm, approx. length 21 m

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Printer | **LL68.1** | 1 | 966,45 |
| Paper K61B | **LL69.1** | 4 | 38,70 |
| Paper K65HM | **LL66.1** | 4 | 85,50 |

# Refractometers



## Handheld refractometers, analog

By Kern. For measuring the refractive index of transparent substances in a liquid state.
- Eyepiece with diopter compensation
- Scale is precisely calculated and checked, with very thin and clear lines
- With or without automatic temperature compensation (ATC):
  Measured temperature with ATC: 10 to 30 °C
  Measured temperature without ATC: 20 °C

**Delivery incl.** calibration solution and storage box.

**Application area: laboratory**

| Model | Scale | Measurement range | Graduation | ATC |
|---|---|---|---|---|
| **ORA 4RR** | Refractive index | 1.440-1.520 nD | 0.001 nD | - |
| **ORA 1RE** | Refractive index | 1.333-1.405 nD<br>1.405-1.468 nD<br>1.468-1.517 nD | 0.005 nD<br>0.005 nD<br>0.005 nD | - |

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ORA 4RR | **CEX9.1** | 1 | 85,00 |
| ORA 1RE | **CEY0.1** | 1 | 320,00 |

**Application area: food industry/quality control**

| Model | Scale | Measurement range | Graduation | ATC |
|---|---|---|---|---|
| **ORA 10BA** | Brix | 0-10 % | 0.1 % | + |
| **ORA 20BA** | Brix | 0-20 % | 0.1 % | + |
| **ORA 32BA** | Brix | 0-32 % | 0.2 % | + |
| **ORA 80BB** | Brix | 0-80 % | 0.5 % | - |

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ORA 10BA | **CEY1.1** | 1 | 85,00 |
| ORA 20BA | **CEY2.1** | 1 | 85,00 |
| ORA 32BA | **CEY3.1** | 1 | 85,00 |
| ORA 80BB | **CEY4.1** | 1 | 80,00 |

**Application area: food industry/wine making**

| Model | Scale | Measurement range | Graduation | ATC |
|---|---|---|---|---|
| **ORA 3WA** | Brix<br>Oechsle | 0-32 %<br>30-140 °Oe | 0.2 %<br>1 °Oe | + |
| **ORA 1WA** | Brix<br>Oechsle (°Oe)<br>KMW (Babo) | 0-32 %<br>0-140 °Oe<br>0-25 °KMW | 0.2 %<br>1 °Oe<br>0.25 °KMW | + |
| **ORA 2AB** | Vol (weight) | 0-50 % by vol<br>50-80 % by vol | 1 % by vol<br>2.5 % by vol | - |

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ORA 3WA | **CEY5.1** | 1 | 85,00 |
| ORA 1WA | **CEY6.1** | 1 | 85,00 |
| ORA 2AB | **CEY7.1** | 1 | 80,00 |

**Application area: food industry/fishkeeping**

| Model | Scale | Measurement range | Graduation | ATC |
|---|---|---|---|---|
| **ORA 1SA** | Salinity<br>Spec. weight | 0-100 ‰<br>1.000-1.070 sg | 1 ‰<br>0.001 sg | + |
| **ORA 3SA** | Salt (NaCl)<br>Brix | 0-28 %<br>0-32 % | 0.2 %<br>0.2 % | + |

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ORA 1SA | **CEY8.1** | 1 | 85,00 |
| ORA 3SA | **CEY9.1** | 1 | 85,00 |

**Applications: industry/automotive**
For analysing the glycol concentration (ethylene: EG and propylene: PG) of battery fluid (BF), antifreeze and windscreen wash fluid (CW).

| Model | Scale | Measurement range | Graduation | ATC |
|---|---|---|---|---|
| **ORA 4FA** | EG (G13)<br>PG (G11 / 12)<br>CW<br>BF | -50 - 0 °C<br>-50 - 0 °C<br>-40 - 0 °C<br>1.10 - 1.40 kg / l | 1 °C<br>1 °C<br>5 °C<br>0.01 kg / l | + |

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ORA 4FA | **CYN3.1** | 1 | 85,00 |




## Digital refractometer HI 96801

By Hanna. Portable, digital refractometers for determining sugar content in liquids.
- Automatic temperature compensation
- Simultaneous display of % brix and temperature
- Automatic switch-off after 3 min
- Simple calibration via keystroke with distilled or deionised water

**Technical specifications:**

| | |
|---|---|
| Measuring range | 0 to 85.0 % brix |
| Resolution | 0.1 % brix |
| Accuracy | ±0.2 % brix |
| Temperature compensation range | 5 to 40 °C |
| Dimensions (W x D x H) | 192 x 102 x 67 mm |
| Weight | 420 g |
| Power supply | E-Block battery 9 V |

**Delivery incl.** battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LP29.1** | 1 | 193,00 |




## Refractometer, digital

By Kern. Digital refractive index measuring instrument for laboratories and industry.

- Compact, rugged design
- Dust and splashproof according to protection class IP 65
- With automatic temperature compensation (ATC)
- Depending on model, measurement data is output on different measurement scales

**Technical specifications:**

| | |
|---|---|
| Measurement temperature<br>Accuracy | +5 to +30 °C<br>±0.5 °C |
| Minimum sample volume | approx. 2-3 droplets |
| Auto Off function | after 90 sec |
| Battery life | approx. 3750 measurements |
| Dimensions (H x W x D) | 38 x 145 x 67 mm |
| Weight | approx. 200 g |
| Power supply | 2 x Micro/AAA 1.5 V battery |

**Delivery incl.** calibration solution, leather case, storage case and batteries.

**Application area: laboratory**
For refractive index measurement, with extra-large measurement range.

| Model | Scale | Measurement range | Accuracy | Graduations |
|---|---|---|---|---|
| **ORF 1RS** | Refractive index | 1.3330-1.5400 nD | ±0.0005 nD | 0.0001 nD |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ORF 1RS | **ECL0.1** | 1 | 430,00 |

**Application area: food industry/quality control**
For calculating the Brix value (refractive index) for the quantification of sugar content in foodstuffs (e.g. fruit, vegetables, juices and beverages containing sugar). Also suitable for monitoring industrial processes (monitoring of cooling lubricants, oils and greases). Refractive index display is optional.

| Model | Scale | Measurement range | Accuracy | Graduations |
|---|---|---|---|---|
| **ORF 45BM** | Brix<br>Refractive index | 0-45 %<br>1.3330-1.4098 nD | ±0.2 %<br>±0.0003 nD | 0.1 %<br>0.0001 nD |
| **ORF 85BM** | Brix<br>Refractive index | 0-85 %<br>1.3330-1.5100 nD | ±0.2 %<br>±0.0003 nD | 0.1 %<br>0.0001 nD |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ORF 45BM | **ECL1.1** | 1 | 340,00 |
| ORF 85BM | **ECL2.1** | 1 | 395,00 |

**Application area: food industry/fishkeeping**
For calculating the Brix value (refractive index) and determining the concentration of sodium chloride in water.
Refractive index display is optional.

| Model | Scale | Measurement range | Accuracy | Graduations |
|---|---|---|---|---|
| **ORF 3SM** | Brix<br>Salt (NaCl)<br>Refractive index | 0-45 %<br>0-28 %<br>1.3330-1.4100 nD | ±0.2 %<br>±0.2 %<br>±0.0003 nD | 0.1 %<br>0.1 %<br>0.0001 nD |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ORF 3SM | **ECL3.1** | 1 | 340,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 | 6,40 |




## Digital refractometers

By Krüss. Digital refractometers for analyzing the concentration and calculation index of liquids. Measuring, temperature compensating and adjusting take place automatically. The DR301-95 model also includes a tolerance alarm, serial port, data transfer cable and evaluation software.

**Technical specifications:**

| **Model** | **① DR 201-95** | **② DR 301-95** |
|---|---|---|
| Range | 1.3330 - 1.5320 nD | 1.3330 - 1.5318 nD |
| | 0-95 % Brix | 0-95 % Brix |
| | - | 0-30 % salt content |
| Accuracy | ±0.0003 nD | ±0.00015 nD |
| | ±0.2 % Brix | ±0.1 % Brix |
| | - | ±0.1 % salt content |
| Resolution | 0.0001 nD | 0.0001 nD |
| | 0.1 % Brix | 0.1 % Brix |
| | - | 0.1 % salt content |
| Temperature compensation range | 5-40 °C | 5-40 °C |
| Dimensions | 130 x 80 x 40 mm | 180 x 100 x 60 mm |
| Weight | 150 g | 900 g |
| Power supply | Battery Mignon 1.5 V | Battery E-block 9 V |

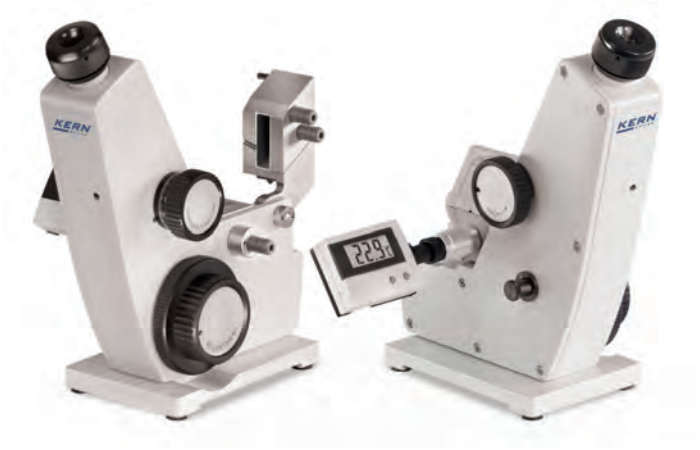
**Delivery incl.** batteries.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① DR 201-95 | **HH60.1** | 1 | 481,60 |
| ② DR 301-95 | **EP62.1** | 1 | 944,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 | 5,95 |
| E-Block 9 V battery | **1025.1** | 1 | 4,85 |

# Refractometers



## Abbe refractometer ORT 1RS

By Kern. For determining the refraction index of transparent liquid, solid and pasty samples.
Application area: laboratory/industry/pharmaceuticals.

- Easy-to-use, rugged design
- Eyepiece with diopter adjustment
- Scale refers to +20 °C
- Includes thermometer for reading the measuring temperature
- Calibrated with distilled water or calibration block and special contact fluid
- Can be connected to a water circulation system for temperature control of measurement prism and illumination prism (outer diameter of connecting piece: 9.5 mm)

**Technical specifications:**

| Scale | Brix | Refraction index |
|---|---|---|
| Measurement range | 0-95 % | 1.3000-1.7000 nD |
| Accuracy | ±0.1 % | ±0.0002 nD |
| Graduations | 0.25 % | 0.0005 nD |
| Dimensions W x D x H (mm) | 90 x 180 x 240 | |
| Weight | approx. 1950 g | |

**Delivery incl.** thermometer, calibration block and contact fluid.
Transportation and storage box made of aluminium is optional (please order separately).

**Warning** H302-H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ECK5.1** | 1 | 690,00 |

**Replacement contact fluid 1-brom-naphthalene**
for ORT 1 RS, contents: 2.5 ml

**Warning** H302-H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ECK9.1** | 1 | 25,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Aluminium case (L 310 x W 120 x H 240 mm) | **ECK6.1** | 1 | 80,00 |
| Replacement thermometer (wihthout battery V 13 GA) | **ECK7.1** | 1 | 72,50 |
| Replacement calibration block for ORT 1RS | **ECK8.1** | 1 | 40,00 |
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## Laboratory refractometer, model RMI

Abbe refractometer for determining the refractive index and the Brix value (refractive index) of liquid, solid, semi-solid and powdery substances.

- Large prisms (6 $cm^2$)
- Connectivity to a thermostat
- Optical reading system for determining the coefficient of refraction and Brix value, with built-in high-luminosity scale lighting system (6 V, 5 W lamp)
- Eyepiece with focusing
- Manual temperature compensation up to 100 °C

**Technical specifications:**

| Scale | Brix | Refractive index |
|---|---|---|
| Measurement range | 0-95 % | 1.300-1.700 nD |
| Accuracy | ±0.2 % | ±0.001 nD |
| Graduations | 0.25 % | 0.001 nD |
| Dimensions (W x D x H) | 125 x 260 x 300 mm | |
| Weight | approx. 4.2 kg | |

**Delivery incl.** calibration prism, brom-naphthalene (approx. 5 ml) for calibration, check thermometer, plastic cover and power adapter.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X062.1** | 1 | 1665,20 |




## Dry batteries High Energy

By Varta. System: Alkali-manganese.

| Type | Voltage (V) | Capacity (mAh) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Lady/LR 1 | 1,5 | 800 | **CH38.1** | 1 | 3,80 |
| ② Micro/AAA | 1,5 | 1200 | **1021.2** | 4 | 6,40 |
| ③ Mignon/AA | 1,5 | 2600 | **1022.2** | 4 | 5,95 |
| ④ Baby/C | 1,5 | 7800 | **1023.2** | 2 | 4,85 |
| ⑤ Mono/D | 1,5 | 16500 | **1024.2** | 2 | 6,35 |
| ⑥ E-Block | 9,0 | 550 | **1025.1** | 1 | 4,85 |

## Round cell batteries

By Varta.

| Model | System | Voltage (V) | Capacity (mAh) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| CR 1220 | lithium | 3,0 | 35 | **CH41.1** | 1 | 5,35 |
| CR 1225 | lithium | 3,0 | 48 | **AEC3.1** | 1 | 5,35 |
| CR 1616 | lithium | 3,0 | 55 | **KE59.1** | 1 | 5,35 |
| CR 1620 | lithium | 3,0 | 60 | **CH42.1** | 1 | 5,35 |
| CR 2016 | lithium | 3,0 | 90 | **CH43.1** | 1 | 5,35 |
| CR 2025 | lithium | 3,0 | 170 | **CH14.1** | 1 | 5,35 |
| CR 2032 | lithium | 3,0 | 230 | **P858.1** | 1 | 5,35 |
| CR 2430 | lithium | 3,0 | 280 | **EY56.1** | 1 | 5,35 |
| V 10 GA | alkali-manganese | 1,5 | 50 | **CH39.1** | 1 | 5,35 |
| V 13 GA | alkali-manganese | 1,5 | 125 | **1938.1** | 1 | 4,25 |
| V 301 | silver | 1,55 | 115 | **CH40.1** | 1 | 5,35 |
| V 392 | silver | 1,55 | 38 | **X563.1** | 1 | 5,35 |
| V 675 AT | zinc-air | 1,4 | 630 | **9800.2** | 6 | 8,55 |




## Rechargeable Power Accu

By Varta. Environment-friendly Ni-MH storage batteries. No memory effect. Constant, always recurrent capacity standard.

| Type | Voltage (V) | Capacity (mAh) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Micro/AAA | 1,2 | 800 | **T409.2** | 4 | 16,10 |
| ② Mignon/AA | 1,2 | 2100 | **1301.2** | 4 | 15,95 |
| ③ Mignon/AA | 1,2 | 2400 | **HT32.1** | 4 | 22,05 |
| ④ Baby/C | 1,2 | 3000 | **1302.2** | 2 | 18,25 |
| ⑤ Mono/D | 1,2 | 3000 | **X228.2** | 2 | 18,25 |
| ⑥ E-Block | 8,4 | 200 | **1304.1** | 1 | 15,00 |




## LCD universal charger

By Varta. Suitable for 2 or 4 Ni-MH rechargeable batteries of sizes AA, AAA, C, D (charging in pairs), 1 x 9 V.

- LCD indicator (blue) for charge status
- Safety features: Minus Delta U-shut-off, timer, alkaline detection
- Charging times: Rechargeable batteries 4 hours, external devices 1.5-5 hours
- 4 charging bays for charging batteries
- Dimensions: W 111 x D 70 x H 187 mm

**Delivery incl.** external mains adapter (100-240 V).
Supplied without rechargeable batteries, please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXP0.1** | 1 | 24,55 |




## LCD Ultra Fast Charger

By Varta. Suitable for one to four AA or AAA Ni-MH batteries.

- Four different functions: Charging, discharging, refresh and capacity test
- Large LCD display for reading the voltage, mAh and minute values; LED backlighting that indicates charging status
- Safety features: Minus Delta U cut-off, safety timer, short-circuit protection, alkaline detection, temperature monitoring and fan function
- AA battery charging time (70 %): 15-30 min.
- Dimensions: W 180 x D 240 x H 111 mm

**Delivery incl.** four AA batteries, external power supply (220-240 V) and 12 V-adapter.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CA77.1** | 1 | 73,65 |




# Measuring Instruments

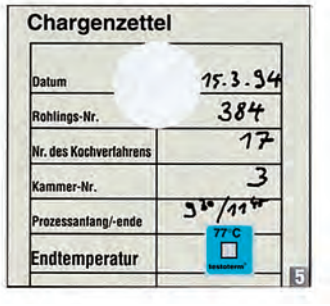

| | |
|---|---|
| Airflow measuring devices | 852 |
| Air quality measuring devices | 817 |
| Balances, analytical and precision balances | 858 |
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# Temperature measurement










## Colour-change crayons - irreversible

Ideal for monitoring temperature of equipment and machines via colour change. The colour clings to paper, rubber, textiles, plastic, glass, iron, and steel. Can also be used in aluminium processing or in enamel and welding operations. Exact measuring result with a tolerance of ±5 °C per temperature value. Colour change after reaching the temperature within 1-2 seconds.

| Measuring point (°C) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 120 | **9307.1** | 1 | 18,15 |
| 245 | **9312.1** | 1 | 18,15 |
| 600 | **9547.1** | 1 | 18,15 |

## Temperature measuring dots - irreversible

Self-adhesive, temperature stable foils with heat sensitive elements for temperature monitoring and control. Once temperature has been reached, there is an irreversible change of colour within one second from the pale grey or yellow dot to black. Dimensions of each check point: L 15 x W 14 mm. Accuracy: ±1 %. 1 booklet with 50 check points.

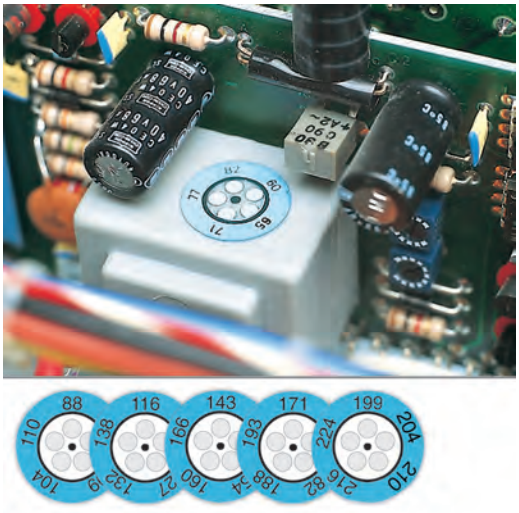
| Measuring point (°C) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 65 | **N276.1** | 1 | 22,60 |
| 71 | **N277.1** | 1 | 22,60 |
| 77 | **N278.1** | 1 | 22,60 |
| 82 | **N279.1** | 1 | 22,60 |
| 110 | **N284.1** | 1 | 22,60 |
| 121 | **N286.1** | 1 | 22,60 |




## Temperature measuring strips - irreversible

Self-adhesive. They indicate current temperatures on surfaces. The light indicator dots on the self-adhesive strips darken after reaching temperature value next to dot.
Dimensions per check strip: L 48 x 18 mm. Measuring accuracy: ±1 %. Delivered in bags with 10 strips.

| Measuring range (°C) | Art. No. | Pack Qty. (Bag) | € |
|---|---|---|---|
| 40-43-46-49-54-60-66-71 | **1890.1** | 1 | 18,20 |
| 77-82-88-93-99-104-110-116 | **2077.1** | 1 | 18,20 |
| 121-127-132-138-143-149-154-160 | **2079.1** | 1 | 18,20 |
| 166-171-177-182-188-193-199-204 | **5231.1** | 1 | 19,60 |
| 210-216-224-232-241-249-254-260 | **5232.1** | 1 | 19,60 |




## Mini-temperature indicators – irreversible

Self-adhesive, temperature stable foils with heat sensitive elements for temperature controll of small objects. The colour changes irreversibly within 2 seconds as soon as the respective temperature has been reached. Accuracy from 88 to 154 °C: ±1.5 °C; over 160 °C: ±1 °C and ±1 % of respective temperature value. 1 booklet with 10 indicators (∅ 15 mm each measuring point).

| Measuring range (°C) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 88-93-99-104-110 | **AY04.1** | 1 | 30,75 |
| 116-121-127-132-138 | **AY05.1** | 1 | 30,75 |
| 143-149-154-160-166 | **AY06.1** | 1 | 30,75 |

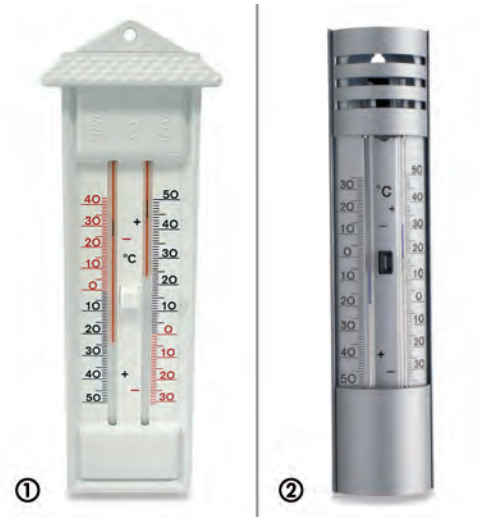
# Thermometer, analogue




## Bimetallic strip maximum-minimum thermometer

Measurement range: -50 to +50 °C. Graduated by 1 °C. Plastic housing. Adjustable red markers indicate the Max/Min temperatures. Reset by turning the dial. Dimensions: W 95 x D 35 x H 135 mm. With hanger eyelet.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LX81.1** | 1 | 13,85 |




## Environmentally friendly maximum/ minimum thermometer

With mercury-free thermometer liquid (**special red filling**).
Measuring range: -30 to +50 °C. Graduated by 1 °C marks.
Metal markers indicate max/min temperatures. Reset via push-button.
With suspension eye.

| Image | Material housing | Dimensions W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | Plastic | 79 x 230 | **KA34.1** | 1 | 9,65 |
| ② | Aluminium | 50 x 220 | **CK40.1** | 1 | 15,60 |



## Deep-freeze thermometer

With bimetallic indicator. Range -50 to +50 °C. Graduated by 1 °C. Measuring accuracy ±2 °C. ∅ 70 mm. With loop for hanging.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H717.1** | 1 | 5,75 |




## Thermometer for autoclaves

For monitoring the temperature during autoclaving. Max. temperature is indicated by the moving red marker. Manual resetting by turn screw. Bimetallic thermometer with housing and removable base made of stainless steel, dust cap made of silicone rubber.
Watertight glass window, pressure resistant. Autoclavable.

**Technical specifications:**

| | |
|---|---|
| Measurement range | -20 to +150 °C |
| Graduations | 2 °C |
| Accuracy | ±1.5 °C |
| Dimensions | ∅ 81 x D 85 x H 95 mm |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXP0.1** | 1 | 54,65 |



## Soil thermometer

With pointed probe. Ideal for determining the temperature of deeper layers. Measuring range -20 to +60 °C. Graduation 1 °C. Accuracy ±2 °C. Probe: Length 200 mm, ∅ 3 mm. Head: ∅ 40 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E755.1** | 1 | 15,00 |


- ▶ Data logger for autoclaves see page 804
- ▶ Please note our digital thermometers overview on page 786

# Thermometer, analogue



## Plastic thermometer

With a **special blue filling**. Measuring range -50 to +50 °C.
Graduation 1 °C. Measuring accuracy ±2 °C. Length 200 mm, ∅ 20 mm.

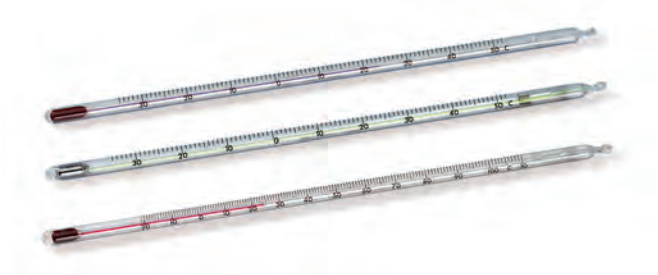
| Art. No. | Pack Qty. | € |
|---|---|---|
| **H718.1** | 1 | 5,35 |



## Universal thermometers

Tube contains a **special red filling**, coated white.
Comes in a yellow plastic case with clip. 1 °C graduation.
Accuracy ±2 °C. Size: Length 165 mm, ∅ 10 mm.

| Measuring range (°C) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| -30 to +50 | **Y931.1** | 1 | 6,70 |
| -10 to +100 | **Y932.1** | 1 | 6,70 |



## General-purpose stirring thermometers

With reinforced base for stirring in beakers etc.
In capillary form, colourless with red special liquid filling
(thermometer liquid and biodegradable colour, accuracy ±3-4 °C).
1 °C graduations, rod-∅ 7-8 mm.

| Measuring range (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| -35 to +50 | 260 | **PE82.1** | 1 | 12,10 |
| -10 to +60 | 200 | **PE83.1** | 1 | 10,45 |
| -10 to +110 | 260 | **PE84.1** | 1 | 10,45 |
| -20 to +110 | 260 | **PE85.1** | 1 | 11,70 |
| -10 to +150 | 260 | **PE86.1** | 1 | 12,05 |
| -10 to +200 | 300 | **PE87.1** | 1 | 16,35 |



## Environmental-friendly glass thermometers

Rod-shaped. With a **special green filling**. Thermometer fluid and colour are biodegradable. Coated white. ∅ 5.5 to 7.0 mm. Accuracy ±3 °C.
With band around top.

| Measuring range (°C) | Graduation (°C) | Length (mm) | Immersion depth (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| -10 to +110 | 1 | 300 | 76 | **ET02.1** | 1 | 12,80 |
| -10 to +110 | 0.5 | 300 | 76 | **ET03.1** | 1 | 13,90 |
| -10 to +150 | 1 | 300 | 76 | **ET04.1** | 1 | 13,90 |
| -10 to +250 | 2 | 300 | 76 | **ET05.1** | 1 | 19,30 |
| -10 to +360 | 2 | 300 | 76 | **ET06.1** | 1 | 22,05 |



## Glass thermometers with temperature limiter

With **red or blue special filling** and safety casing (PTFE/FEP).
For monitoring cooling units and temperature control units. Supplied in plastic bottle containing filling medium for precise temperature determination. Can be mounted using magnets (exception: YE26.1).

**Bottle filling medium: sand**

| Measuring range (°C) | Graduation (°C) | Accuracy (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| -90 to +20 | 1,0 | ±2.0 | 180 | **YE17.1** | 1 | 67,30 |

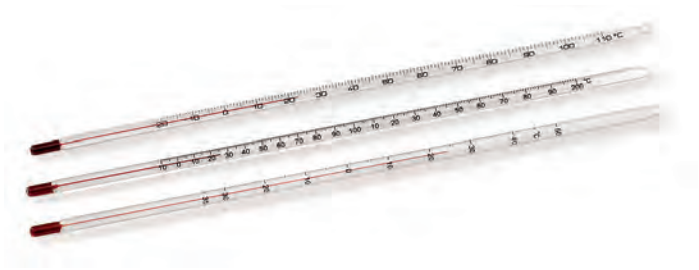
**Bottle filling medium: ethylene glycol mixture**

| Measuring range (°C) | Graduation (°C) | Accuracy (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| -25 to -5 | 0,1 | ±0.2 | 235 | **YE18.1** | 1 | 85,10 |
| -30 to 0 | 0,5 | ±1.0 | 130 | **YE19.1** | 1 | 57,30 |
| -2 to +10 | 0,1 | ±0.2 | 230 | **YE20.1** | 1 | 72,00 |
| -5 to +15 | 0,5 | ±1.0 | 130 | **YE21.1** | 1 | 52,15 |
| +15 to +30 | 0,1 | ±0.2 | 180 | **YE22.1** | 1 | 77,20 |
| +18 to +50 | 0,5 | ±1.0 | 130 | **YE23.1** | 1 | 55,15 |
| +25 to +45 | 0,1 | ±0.2 | 190 | **YE24.1** | 1 | 82,10 |

**Bottle filling medium: Vermiculite**

| Measuring range (°C) | Graduation (°C) | Accuracy (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| +20 to +130 | 1,0 | ±2.0 | 135 | **YE25.1** | 1 | 59,40 |
| +35 to +200 | 1,0 | ±2.0 (>100 °C ±3.0) | 180 | **YE26.1** | 1 | 160,20 |
| +50 to +115 | 0,5 | ±1.0 | 240 | **YE27.1** | 1 | 96,00 |

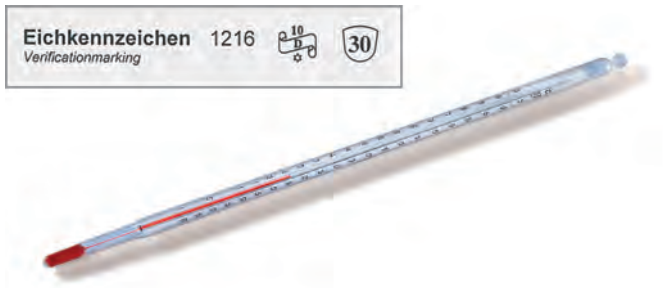
# Thermometer, analogue



## Standard glass thermometers

Special filling red (E745.1 blue). Rod-shaped for daily laboratory operations. ∅ 5.5 to 7.0 mm. Accuracy ±3 to 200 °C. Graduated by 1 °C.

| Measuring range (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| -35 to +50 | 300 | **E740.1** | 1 | 11,70 |
| -10 to +60 | 200 | **E741.1** | 1 | 11,65 |
| -20 to +110 | 300 | **E742.1** | 1 | 11,70 |
| -20 to +150 | 300 | **E743.1** | 1 | 11,65 |
| -10 to +200 | 300 | **E744.1** | 1 | 11,70 |
| -10 to +250 | 300 | **E745.1** | 1 | 26,80 |




## Lab thermometers, calibrated with certificate

Special red filling. Enclosed type. Prismatic capillary tube, uncoated. ∅ 8.0 to 9.0 mm. Enclosed-scale thermometer.

| Measuring range (°C) | Graduation (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -10 to +50 | 0,5 | 220 | **KT51.1** | 1 | 387,00 |
| -10 to +100 | 0,5 | 270 | **KT52.1** | 1 | 387,00 |
| -10 to +100 | 1 | 305 | **KT53.1** | 1 | 387,00 |
| -10 to +150 | 1 | 305 | **KT54.1** | 1 | 387,00 |
| -10 to +200 | 1 | 350 | **KT55.1** | 1 | 387,00 |




## Precision, high-accuracy thermometers

Special filling, blue. Enclosed type. Capillary form colourless, prismatic, ∅ 8-10 mm. With serial number and conformity certificate. Calibrated fully immersed.

**Standard design**

| Measuring range (°C) | Graduation (°C) | Accuracy (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| -10 to +50 | 0,5 | ±0.5 | 220 | **HKX4.1** | 1 | 49,90 |
| -10 to +100 | 0,5 | ±0.5 | 270 | **HKX5.1** | 1 | 56,15 |
| -10 to +150 | 0,5 | ±0.5 | 350 | **HKX6.1** | 1 | 67,55 |
| -10 to +200 | 0,5 | ±0.5 | 450 | **HKX7.1** | 1 | 73,65 |
| -5 to +50 | 0,2 | ±0.3 | 350 | **HKX8.1** | 1 | 57,70 |
| -5 to +100 | 0,2 | ±0.3 | 420 | **HKX9.1** | 1 | 79,20 |
| -5 to +201 | 0,2 | ±0.4 | 550 | **HKY0.1** | 1 | 141,90 |
| -10 to +50 | 0,1 | ±0.2 | 420 | **HKY1.1** | 1 | 84,50 |
| 0 to +100 | 0,1 | ±0.2 | 550 | **HKY2.1** | 1 | 136,55 |

**With FEP safety coating**

| Measuring range (°C) | Graduation (°C) | Accuracy (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| -10 to +50 | 0,5 | ±0.5 | 220 | **HKY3.1** | 1 | 74,35 |
| -10 to +100 | 0,5 | ±0.5 | 270 | **HKY4.1** | 1 | 91,60 |
| -10 to +150 | 0,5 | ±0.5 | 350 | **HKY5.1** | 1 | 109,65 |
| -10 to +200 | 0,5 | ±0.5 | 450 | **HKY6.1** | 1 | 120,40 |
| -5 to +50 | 0,2 | ±0.3 | 350 | **HKY7.1** | 1 | 100,80 |
| -5 to +100 | 0,2 | ±0.3 | 420 | **HKY8.1** | 1 | 121,50 |
| -5 to +201 | 0,2 | ±0.4 | 550 | **HKY9.1** | 1 | 203,20 |
| -10 to +50 | 0,1 | ±0.2 | 420 | **HLA0.1** | 1 | 131,15 |
| 0 to +100 | 0,1 | ±0.2 | 550 | **HLA1.1** | 1 | 195,65 |



## Precision low-temperature thermometers

Enclosed-scale thermometer. Graduated by 1 °C.

**Capillary: luminous blue, prismatic, pentane filling.**

| Measuring range (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| -200 to +30 | 350 | **X575.1** | 1 | 99,10 |
| -150 to +30 | 300 | **X576.1** | 1 | 53,70 |

**Capillary: uncoated, prismatic. Alcohol filling.**

| Measuring range (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| -100 to +100 | 300 | **X577.1** | 1 | 52,70 |
| -100 to +30 | 300 | **X578.1** | 1 | 38,70 |

## Precision low-temperature thermometers, calibrated

**Calibrated, with certification.** Enclosed form. Graduated by 1 °C.

**Capillary: luminous blue, prismatic, pentane filling.**

| Measuring range (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| -200 to +30 | 350 | **KH57.1** | 1 | 470,85 |
| -150 to +30 | 300 | **KH58.1** | 1 | 432,15 |

**Capillary: uncoated, prismatic. Alcohol filling.**

| Measuring range (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| -100 to +100 | 300 | **KH59.1** | 1 | 467,65 |
| -100 to +30 | 300 | **KH60.1** | 1 | 427,85 |


▶ Thermometer adapters see page 146

▶ Material for stands see page 209

# Thermometer, analogue



## Precision thermometers with special filling

**Red filling.** Calibrated fully immersed.

**Rod type**
Yellow backed capillary, round. ∅ 6 ±1 mm.

| Measuring range (°C) | Graduation (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -10 to +100 | 1 | 305 | **ALH6.1** | 1 | 19,90 |
| -10 to +150 | 1 | 305 | **ALH7.1** | 1 | 21,95 |
| -10 to +200 | 1 | 350 | **ALH8.1** | 1 | 30,25 |
| -10 to +50 | 0,5 | 220 | **ALH9.1** | 1 | 22,15 |
| -10 to +100 | 0,5 | 270 | **ALK0.1** | 1 | 24,20 |
| -10 to +150 | 0,5 | 350 | **ALK1.1** | 1 | 41,60 |
| -5 to +50 | 0,2 | 350 | **ALK2.1** | 1 | 26,35 |
| -5 to +100 | 0,2 | 420 | **ALK3.1** | 1 | 32,20 |
| -1 to +200 | 0,2 | 610 | **ALK4.1** | 1 | 98,15 |
| -10 to +30 | 0,1 | 300 | **ALK5.1** | 1 | 51,00 |
| -10 to +50 | 0,1 | 420 | **ALK6.1** | 1 | 38,70 |
| -1 to +101 | 0,1 | 610 | **ALK7.1** | 1 | 92,40 |

**Enclosed type, with factory test certificate**
Colourless capillary, prismatic. ∅ 9 ±1 mm.

| Measuring range (°C) | Graduation (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -10 to +100 | 1 | 305 | **ALK8.1** | 1 | 135,45 |
| -10 to +150 | 1 | 305 | **ALK9.1** | 1 | 139,75 |
| -10 to +200 | 1 | 350 | **ALL0.1** | 1 | 147,30 |
| -10 to +50 | 0,5 | 220 | **ALL1.1** | 1 | 137,60 |
| -10 to +100 | 0,5 | 270 | **ALL2.1** | 1 | 148,35 |
| -10 to +150 | 0,5 | 350 | **ALL3.1** | 1 | 151,60 |
| -10 to +200 | 0,5 | 450 | **ALL4.1** | 1 | 162,35 |
| -5 to +50 | 0,2 | 350 | **ALL5.1** | 1 | 143,00 |
| -5 to +100 | 0,2 | 420 | **ALL6.1** | 1 | 162,35 |
| -10 to +30 | 0,1 | 300 | **ALL7.1** | 1 | 166,65 |
| -10 to +50 | 0,1 | 420 | **ALL8.1** | 1 | 163,40 |
| 0 to +100 | 0,1 | 550 | **ALL9.1** | 1 | 209,65 |




## Precision thermometer, with DAkkS-certification

Special red filling. Enclosed type. Capillary form: colourless, prismatic.
∅ 9 ±1 mm. Calibrated for total immersion.

| Measuring range (°C) | Graduation (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -10 to +50 | 0,5 | 220 | **CKX7.1** | 1 | 186,00 |
| -10 to +100 | 0,5 | 270 | **CKX8.1** | 1 | 235,45 |
| -10 to +100 | 1 | 305 | **CKX9.1** | 1 | 192,45 |
| -10 to +150 | 1 | 305 | **CKY0.1** | 1 | 177,40 |
| -10 to +200 | 1 | 350 | **CKY1.1** | 1 | 192,45 |



## Precision thermometers with blue filling

**Very high accuracy, contains no mercury.** Rod type.
Capillary form: white back, round.

### Without calibration certificate

*according to ASTM

| Measuring range (°C) | Graduations/ accuracy (°C) | Immersion depth | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| -38 to +2* | 0,1 / ±0,1 | total | 401 | **ANK4.1** | 1 | 138,70 |
| -20 to +102* | 0,2 / ±0,2 | total | 435 | **ANK5.1** | 1 | 143,00 |
| -20 to +150 | 1,0 / ±0,5 | 76 mm | 335 | **ANK6.1** | 1 | 79,05 |
| -7 to +105* | 0,5 / ±0,5 | total | 300 | **ANK7.1** | 1 | 77,60 |
| +20 to +100 | 0,2 / ±0,2 | total | 325 | **ANK8.1** | 1 | 108,60 |
| +30 to +200 | 0,5 / ±0,3 | total | 415 | **ANK9.1** | 1 | 110,75 |

### With DAkkS calibration certificate

*according to ASTM

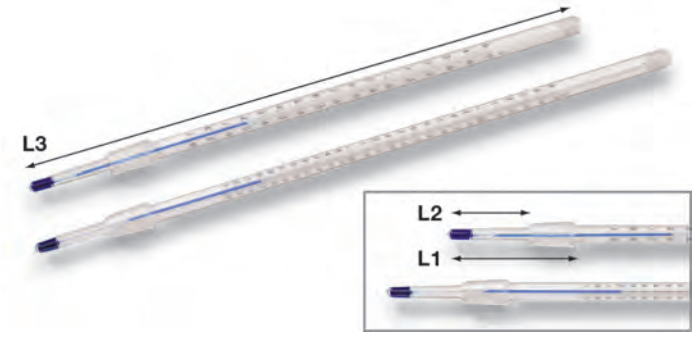
| Measuring range (°C) | Graduations/ accuracy (°C) | Immersion depth | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| -20 to +102* | 0,2 / ±0,2 | total | 435 | **ANL0.1** | 1 | 301,00 |
| -20 to +150 | 1,0 / ±0,5 | 76 mm | 335 | **ANL1.1** | 1 | 250,50 |
| +30 to +200 | 0,5 / ±0,3 | total | 415 | **ANL2.1** | 1 | 283,80 |

**General information on calibration and calibrating meters**

**Calibrated meters:**
Calibration of a meter is performed by the competent calibrating body. Each unit must fulfill certain criteria prior to receiving a certificate (e.g. automatic check when switched on, suitable connection for standard probes, etc.).
A calibrated meter is not automatically a highly accurate unit, it must simply keep within the given tolerances.
Each calibrated unit receives a seal and certificate of testing. Tests should be repeated at regular intervals.

**Meters with DAkkS Certificates of Calibration:**
A DAkkS Certificate of Calibration is issued by a accredited testing agency (must be approved and is monitored by Deutsche Akkreditierungsstelle [German Accreditation Agency]). Meter meets national standard requirements and can be used in accordance with ISO 9000 Quality Assurance Standards.
Very low preset tolerance (lower than required for works certificate).
The user of DAkkS certified meters can therefore issue internal works certificates.
This is particulary of advantage in the Quality Assurance Department of larger firms where measuring instruments used in the Production Department must be tested and calibrated at specific intervals.
Individual test points should be customized depending upon temperature ranges under measurement.

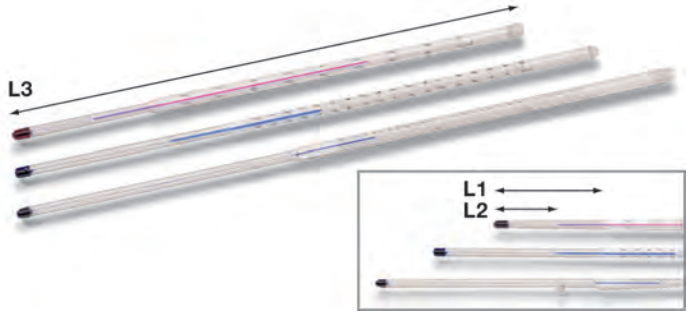
**Meters with a Works Certificate of Calibration:**
A works certificate of calibration is issued after carrying out a comparison measurement with a DAkkS calibrated meter.
Unit meets national standard requirements and can be used in accordance with **ISO 9000** Quality Assurance Standards.
Tolerance of measurement with works certificates is slightly higher than of a DAkkS certified unit. Individual test points should be customized depending upon temperature ranges under measurement.




## Precision ground joint thermometers with special filling

**Compliant with DIN 12784**. With NS 14.5/23 ground joint. Enclosed type. **Blue filling.** Capillary form: colourless, prismatic. Graduations 1 °C. Upper ∅ 11 ±0.5 mm.

| Measuring range (°C) | Length L1 (mm) | Immersion depth L2 (mm) | Overall length L3 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| -10 to +150 | 68 | 45 | 318 | **ALN0.1** | 1 | 40,55 |
| -10 to +150 | 75 | 52 | 325 | **ALN1.1** | 1 | 40,70 |
| -10 to +150 | 95 | 72 | 345 | **ALN2.1** | 1 | 40,80 |
| -10 to +150 | 125 | 102 | 375 | **ALN3.1** | 1 | 44,65 |
| -10 to +250 | 68 | 45 | 368 | **ALN4.1** | 1 | 48,70 |
| -10 to +250 | 75 | 52 | 375 | **ALN5.1** | 1 | 47,65 |
| -10 to +250 | 95 | 72 | 395 | **ALN6.1** | 1 | 58,70 |
| -10 to +250 | 125 | 102 | 425 | **ALN7.1** | 1 | 60,85 |




## Precision straight stem thermometers with special filling

**Compliant with DIN 12781**. Enclosed type. Blue filling (except for ALP0.1, which has a red filling). Capillary form: colourless, prismatic. Graduations 1 °C. Upper ∅ 11 ±0.5 mm, lower ∅ 8 ±0.5 mm.

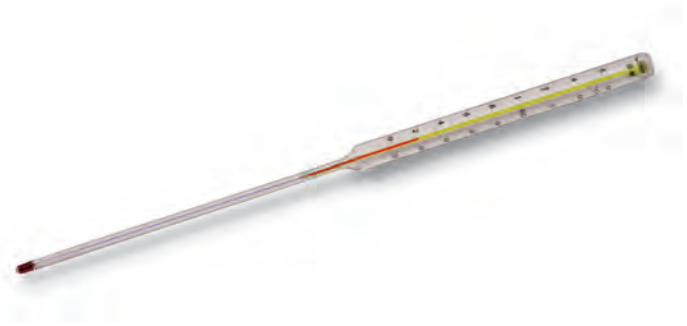
| Measuring range (°C) | Length L1 (mm) | Immersion depth L2 (mm) | Overall length L3 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| -30 to +50 | 100 | 80 | 375 | **ALP0.1** | 1 | 47,55 |
| -20 to +150 | 150 | 130 | 425 | **ALP1.1** | 1 | 54,85 |
| -20 to +150 | 250 | 230 | 525 | **ALP2.1** | 1 | 49,95 |
| -20 to +150 | 300 | 280 | 575 | **ALP3.1** | 1 | 65,95 |
| -20 to +150 | 400 | 380 | 675 | **ALP4.1** | 1 | 70,55 |
| -20 to +250 | 100 | 80 | 375 | **ALP5.1** | 1 | 58,70 |
| -20 to +250 | 150 | 130 | 425 | **ALP6.1** | 1 | 59,80 |
| -20 to +250 | 200 | 180 | 475 | **ALP7.1** | 1 | 61,10 |
| -20 to +250 | 300 | 280 | 575 | **ALP8.1** | 1 | 68,45 |
| -20 to +250 | 400 | 380 | 675 | **ALP9.1** | 1 | 73,30 |



## Distillation thermometers

Precision thermometer with core NS 14/23. special filling red.

| Measurement range/graduations (°C) | Length L1 (mm) | Immersion depth L2 (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0 to +150 / 0.5 | 55 | 32 | 355 | **EPY1.1** | 1 | 66,15 |
| 0 to +150 / 0.5 | 70 | 47 | 370 | **EPY2.1** | 1 | 66,15 |
| 0 to +150 / 0.5 | 85 | 62 | 385 | **EPY3.1** | 1 | 66,15 |
| 0 to +250 / 1 | 55 | 32 | 355 | **EPY4.1** | 1 | 70,05 |
| 0 to +250 / 1 | 70 | 47 | 370 | **EPY5.1** | 1 | 70,05 |
| 0 to +250 / 1 | 85 | 62 | 385 | **EPY6.1** | 1 | 70,05 |



## Straight stem thermometers with special filling

**Similar to DIN 16178.** With flat scale. **Red filling.** Capillary form: colourless, prismatic. Upper ∅ 20.5 ±1 mm, lower ∅ 8 ±0.5 mm.

| Measurement range/ graduations (°C) | Length L1 (mm) | Immersion depth L2 (mm) | Overall length L3 (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| -30 to +50 / 1 | 105 | 89 | 340 | **ALT0.1** | 1 | 45,75 |
| 0 to +160 / 2 | 165 | 149 | 400 | **ALT1.1** | 1 | 37,65 |
| 0 to +160 / 2 | 255 | 239 | 490 | **ALT2.1** | 1 | 42,05 |
| 0 to +200 / 2 | 105 | 89 | 340 | **ALT3.1** | 1 | 45,40 |

▶ Clear lubricant see page 1138

# Thermometer, digital

## Overview - Digital Thermometers

| Measuring range (°C) | Accuracy (°C) | Features | Art. No. | Page |
|---|---|---|---|---|
| +32 to +44 | ±0.1 to ±0.2 | Fever thermometer for the measurement of body temperature | **PY79.1** | 791 |
| -10 to +50 | ±1 | Solar thermometer, Min/Max-storage | **KT83.1** | 788 |
| -10 to +200 | ±1 | Thermometer with timer, alarm and min./max. functions | **X256.1** | 789 |
| -20 to +55 | ±0.4 | °C and rF data logger; memory with capacity for 1 mill. measured values; data readout via PC or SD card | **PH32.1** | 803 |
| -20 to +50 | ±1 | Min/Max-temperature values; Suitable for inside and outside; Splashproof | **CK39.1** | 789 |
| -20 to +50 | ±1 | Refrigerator thermometer | **TA56.1** | 790 |
| -20 to +70 | ±0.5 | °C- and rF data logger with display for 16000 measured values | **NA07.1** | 802 |
| -20 to +140 | ±0.2 to ±0.5 | Data logger for high temperatures; water-tight and pressure-tight up to 10 bar | **ENE3.1** | 804 |
| -30 to +50 | ±0.5 | Wireless data logger with integrated NTC temperature sensor | **ECK0.1** | 805 |
| -30 to +70 | ±1 | Digital fridge/freezer thermometer with min/max function | **PE75.1** | 790 |
| -30 to +60 | ±1 | °C and rF data logger with wireless sensor; connectivity for 8 transmitters | **PL21.1** | 804 |
| -30 to +60 | ±1 | LAN data logger with Internet connection, data can be retrieved via smartphone, up to 50 transmitters can be connected | **ENN0.1** | 805 |
| -30 to +70 | ±0.5 | °C data logger with display for 16000 measured values | **NA06.1** | 802 |
| -30 to +220 | ±0.5 / 1% | Folding thermometer for core temperature and random measurement | **PE63.1** | 793 |
| -30 to +220 | ±1.5 to ±2 or 2 % | Non-contact thermometer with hold and lock function | **Y400.1** | 807 |
| -35 to +55 | ±0.5 | °C data logger; memory with capacity for 1 mill. measured values; data readout via PC or SD card | **PH31.1** | 803 |
| -35 to +70 | ±0.5 | °C data logger with display for 40 000 measured values | **CXC4.1** | 802 |
| -35 to +365 | ±2 to ±2 % | Infrared thermometer with measuring spot marking and pistol grip | **LY46.1** | 807 |
| -35 to +950 | ±0.75 to ±0.75 % | Infrared thermometer with thermocoupe input, laser cross and memory | **HH65.1** | 808 |
| -40 to +60 | ±1 | Wireless transmission of measured values; Min/Max storage with time data | **HL18.1** | 787 |
| -30 to +70 | ±1 | Wireless transmission of measured values, min/max memory | **HY40.1** | 787 |
| -40 to +65 | ±1 | Readings transferred wirelessly, up to three transmitter units can be connected, min./max. memory | **LP27.1** | 787 |
| -40 to +70 | ±1 to ±2 | Inner-/outer thermometer Rotilabo®, min/max function | **YE41.1** | 788 |
| -40 to +70 | ±1 | Solar-operated indoor/outdoor thermometer, Min/Max-storage | **KT84.1** | 788 |
| -40 to +70 | ±0.5 to ±1 | For monitoring refrigerators; alarm, min./max. and hold functions | **KA32.1** | 791 |
| -40 to +70 | ±0.5 to ±1 | °C data logger with integrated USB port for 60000 measured values | **CCE2.1** | 801 |
| -40 to +70 | ±0,5, ±1,0 | USB data logger able to display 150,000 readings, data issued as a PDF automatically | **EHX3.1** | 801 |
| -40 to +200 | ±0.5 to ±1.5 | For monitoring refrigerators; alarm, min./max. and hold functions | **KA33.1** | 791 |
| -40 to +200 | ±0.5 to ±1 | Min/Max-storage, hold function, display lighting | **N359.1** | 798 |
| -40 to +200 | ±1 to ±2 | Insertion thermometer with revolving display, Min/Max and hold function | **AK16.1** | 792 |
| -40 to +200 | ±1 to ±1.5 | Penetration thermometer with HOLD-, Min- and Max-function | **T332.1** | 792 |
| -40 to +200 | ±1 to ±1.5 | Permanently-connected NTC penetration probe, min/max and hold function | **HNN8.1** | 798 |
| -40 to +250 | ±0.5 to ±1 or 1 % | Folding thermometer for core temperature and random measurement | **TA94.1** | 793 |
| -40 to +250 | ±0.5 to ±1 or 1 % | Penetration thermometer with min/max and hold function, water and dustproof (IP 67) | **LN45.1** | 792 |
| -50 to +60 | ±1 | Inner-/outer thermometer Min/Max-storage | **AN34.1** | 788 |
| -50 to +70 | ±1 to ±2 | Inner-/outer thermometer with limit value alarm and Min/Max function | **HA34.1** | 789 |
| -50 to +70 | ±1 | Inner-/outer thermometer, Min/Max-storage | **CH86.1** | 789 |
| -50 to +70 | ±1 | Indoor-/outdoor thermometer, officially calibrated with certificate, min/max function | **EH47.1** | 790 |
| -50 to +70 | ±0.3 to ±0.5 | For monitoring refrigerators | **Y238.1** | 790 |
| -50 to +70 | ±1.5 | Thermometer with timer-function and temperature trend | **Y845.1** | 787 |
| -50 to +70 | ±0.3 | With factory certificate, alarm, min./max. functions and temperature control | **HAN2.1** | 791 |
| -50 to +125 | ±0.5 to ±1 | °C data logger with display for 60 000 measured values. Connection of external sensor | **NA22.1** | 803 |
| -50 to +150 | ±0.3 to ±0.5 | Test function, high measuring accuracy | **G002.1** | 793 |
| -50 to +150 | ±0.3 to ±0.5 | Test function, high measuring accuracy | **G001.1** | 793 |
| -50 to +150 | ±0.2 or ±0.4 | Precision-NTC-thermometer with acoustic limit value alarm, min/max function | **EL54.1** | 795 |
| -50 to +220 | ±0.3 or ±0.4 % | Pocket thermometer with self-diagnosis function | **T235.1** | 792 |
| -50 to +200 | ±1 | Penetration probe thermometer, hold function | **A321.1** | 793 |
| -50 to +250 | ±0,5 to ±2,5 | Penetration probe and infrared thermometer for core and surface temperature measurement | **XK00.1** | 806 |
| -50 to +250 | ±0.5 to ±1 or 1 % | Folding thermometer for core temperature and random measurement with Min/Max-function | **PE64.1** | 793 |
| -50 to +300 | ±0.2 to ±0.3 | Conformity assessment; with alarm and min./max. functions | **EH93.1** | 796 |
| -50 to +300 | ±1.5 to ±2 | Non-contact temperature quicktester with laser spot marker | **P855.1** | 806 |
| -50 to +300 | ±0.2 to ±0.5 or 0.4 % | For simple, fast measurements, with penetration probe, IP 67 | **HHY1.1** | 795 |
| -50 to +1000 | ±0.5 to ±0.7 / ±0.3 % to ±0.5 % | Wide range of accessories available; with alarm, min./max. and hold functions | **EH73.1** | 797 |
| -50 to +1350 | ±0.2 % | Suitable for use with different K-Type-probes, Min/Max-display, IP 67 | **HA65.1** | 794 |
| -60 to +500 | ±2 or ±2 % | Infrared thermometer with circuit laser, thermocouple input for external sensors | **EHP6.1** | 807 |
| -60 to +1000 | ±2 or ±2 % | Infrared thermometer with thermocouple input and double laser | **KA38.1** | 807 |
| -64 to +1370 | ±1 or ±1 % | For simple temperature measurements, various K-type sensors can be connected, hold function | **KL30.1** | 794 |
| -80 to +70 | ±0.5 to ±0.8 | °C data logger for 40 000 measured values, specially designed for low temperatures | **CXC5.1** | 802 |
| -100 to +800 | ±0.2 to 0.2 % | Pt 100-thermometer with Min/Max-function and limit value alarm | **EH87.1** | 796 |
| -200 to +220 | ±1.5 to ±2.5 | Wireless data logger with 2 connections for external temperature sensors | **ECK1.1** | 805 |
| -200 to +250 | ±0.5 | °C-data logger with display for 60000 measured values. Connection of external sensor | **NK56.1** | 803 |
| -200 to +850 | ±0.3 | Pt 100 thermometer with min/max and hold function, internal memory, USB interface, adjustment feature | **HNN5.1** | 799 |
| -200 to +1760 | ±0.1 to ±1.5 | With calibrating function, can be connected either to Pt 100 probe or thermocouple | **X717.1** | 800 |
| -200 to +1760 | ±0.1 to ±1.5 | With calibrating function, can be connected either to Pt 100 probe or thermocouple | **X718.1** | 800 |
| -200 to +1760 | ±0.03 to ±1.5 | With calibrating function and extremly high accuracy | **X719.1** | 800 |
| -200 to +1760 | ±0.03 to ±1.5 | With calibrating function and extremly high accuracy | **X720.1** | 800 |
| -200 to +1375 | ±0.5 | Type K thermometer with min/max, hold and average values, adjustment feature | **HNN9.1** | 799 |

# Thermometer, digital



## Indoor/outdoor thermometer

By Amarell. Memory function for min/max temperature (indoor and outdoor). Outdoor sensor fitted with 3 m cable. With temperature trend display. Also includes clock and date display. Ideal for table top or wall mounting.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | Indoor: 0.0 to +50.0 °C<br>Outdoor: -50.0 to +70.0 °C |
| Accuracy | ±1.5 °C |
| Dimensions (L x W x D) | 100 x 70 x 25 mm |

**Delivery incl.** 1.5 V Micro battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y845.1** | 1 | 23,60 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Radio-controlled thermometer, type Wave

By TFA-Dostmann. Wireless transmission of outside temperature. Range max. 100 m. Indication of inside temperature. Min/Max-memory. Also with clock and date display. Suitable for desktop or hanging.

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | Inside<br>Outside | -10.0 to +60.0 °C<br>-40.0 to +60.0 °C |
| Dimensions (L x W x H) | Receiver<br>Transmitter | 115 x 70 x 29 mm<br>132 x 39 x 28 mm |
| Power supply | Receiver<br>Transmitter | 2 Batteries Mignon 1.5 V<br>2 Batteries Mignon 1.5 V |

**Delivery incl.** receiver, transmitter and batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HY40.1** | 1 | 23,55 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Radio-controlled thermometer

By TFA-Dostmann. Wireless transmission of outside temperature from 1 transmitter. Range max. 100 m. Simultaneous display of interior and ambient temperatures, including high and low values. Indication of inside temperature. Additional Min/Max storage with manual resetting and indication of time and date. With radio-controlled clock. Can be stood up or hung up.

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | Inside<br>Outside | -10.0 to +40.0 °C<br>-40.0 to +60.0 °C |
| Dimensions (L x W x H) | Receiver<br>Transmitter | 95 x 19 x 136 mm<br>41 x 19 x 128 mm |
| Power supply | Receiver<br>Transmitter | 2 batteries Micro 1.5 V<br>2 batteries Micro 1.5 V |

**Delivery incl.** 1 receiver unit and 1 transmitter. Without batteries, please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HL18.1** | 1 | 38,60 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Radio-controlled thermometer Ratio

By TFA-Dostmann. Wireless transmission of outside temperature from up to 3 different transmitters. Range max. 100 m. Indication of inside temperature. Max/Min-memory. Also with radio-controlled clock. For hanging or upright use.

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | Inside<br>Outside | 0 to +60.0 °C<br>-40.0 to +65.0 °C |
| Dimensions (L x W x H) | Receiver<br>Transmitter | 113 x 67 x 28 mm<br>86 x 32 x 15 mm |
| Power supply | Receiver<br>Transmitter | 2 Batteries Mignon 1.5 V<br>2 Batteries Micro 1.5 V |

**Delivery incl.** 1 receiver and 1 transmitter. Without batteries, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Radio-controlled thermometer | **LP27.1** | 1 | 21,00 |
| Additional transmitter | **LP28.1** | 1 | 14,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Thermometer, digital




## Digital solar thermometer, Eco Basic

By TFA-Dostmann. Shows actual inside temperature and comes with memory function for min/max values. With integrated and replaceable backup-battery - should energy supply from solar panel not be sufficient. With stand and hanging device.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -10.0 to +50.0 °C |
| Accuracy | ±1 °C |
| Dimensions (W x D x H) | 90 x 20 x 90 mm |
| Weight | 100 g |

**Delivery incl.** 1.5 V button cell battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KT83.1** | 1 | 13,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |




## Rotilabo®-indoor/outdoor thermometers

With Min/Max function. Outdoor sensor with approx. 1.5 m of cable.

**Technical specifications:**

| | |
|---|---|
| Measurement range/resolution | Indoor: -10.0 to +50.0 °C<br>Outdoor: -40.0 to +70.0 °C |
| Accuracy | ±1.0 °C (0.0 to +50.0)<br>±2.0 °C (residual measurement range) |
| Dimensions (H x W x D) | 68 x 58 x 12 mm |
| Weight including battery | approx. 37 g |

**Delivery incl.** button cell battery CR 2032 (3 V).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE41.1** | 1 | 12,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |




## Solar-operated indoor/outdoor thermometer Eco Pro

By TFA-Dostmann. Displays actual indoor or outdoor temperature. Memory function for min/max values. With integrated and replaceable backup-battery - should energy supply from solar panel not be sufficient. With stand and hanging device. Outside sensor with approx. 3 m cable.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | Indoor -10.0 to +50.0 °C<br>Outdoor -40.0 to +70.0 °C |
| Accuracy | ±1 °C |
| Dimensions (W x D x H) | 90 x 20 x 90 mm |
| Weight | 100 g |

**Delivery incl.** 1.5 V button cell battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KT84.1** | 1 | 17,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |




## Indoor/outdoor thermometer

By TFA-Dostmann.

- Simultaneous-display of inside and outside temperatures
- Save-function for min-/max-temperature readings (inside and outside)
- Reset-key for save-function
- Outdoor sensor with 3 m cord
- Desktop stand, wall fixture

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | Inside: -10.0 to +50.0 °C<br>Outside: -50.0 to +60.0 °C |
| Accuracy | ±1 °C |
| Dimensions (L x W x D) | 105 x 65 x 20 mm |
| Weight | 105 g |

**Delivery incl.** 1.5 V Mignon battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AN34.1** | 1 | 14,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |

# Thermometer, digital



## Electronic maxima-minima-thermometer with limit value alarm

By TFA-Dostmann. Simultaneous display of indoor and outdoor temperatures. Memory function for min/max values. **Outdoor temperature alarm with adjustable upper and lower limit values** (interval alarm only rings whenever the set temperatures have been exceeded or not reached). Outer probe with 1.5 m lead. Ideal for hanging or standing.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | Indoor: -10.0 to +50.0 °C<br>Outdoor: -50.0 to +70.0 °C |
| Accuracy | ±1 °C (0 to +50 °C)<br>±2 °C (outside) |
| Dimensions (L x W x H) | 110 x 70 x 20 mm |
| Weight | 130 g |

**Delivery incl.** Micro 1.5 V battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HA34.1** | 1 | 15,05 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Electronic maximum-minimum-thermometer

Shows current temperature as well as highest and lowest values.
Suitable for inside and outside; splash-proof.
With reset-button for resetting max/min-values. For wall assembly.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -20.0 to +50.0 °C |
| Accuracy | ±1 °C |
| Dimensions (H x L x W) | 75 x 44 x 115 mm |
| Weight | 161 g |

**Delivery incl.** Mignon 1.5 V battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CK39.1** | 1 | 19,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Indoor/outdoor thermometer

By TFA-Dostmann. With large display and max/min function.
Ideal for desktops or hanging. Outdoor sensor with approx. 3 m cord.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | Inside: -10.0 to +50.0 °C<br>Outside: -50.0 to +70.0 °C |
| Dimensions (L x W x D) | 110 x 95 x 20 mm |
| Weight | 180 g |

**Delivery incl.** battery Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CH86.1** | 1 | 18,60 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Thermo-timer

By TFA-Dostmann. For measuring temperature.
**Alarm sounds once a specific temperature has been reached** (can be set as upper and lower limit). Stainless steel probe (L 160 x ∅ 4 mm) with 1 m heat-resistant cord. Min/max function.
Measuring range -10 to +200 °C, Resolution/Accuracy: 1 °C.
Clock with 12- or 24-h-display.
**Timer-function (up to 24 h). With signal at "zero"**. Mountable display.
Dimensions W 67 x H 12 x D 16 mm.
**Delivery incl.** 1.5 V Micro battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X256.1** | 1 | 26,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Thermometer, digital



## Refrigerator thermometer

By Dostmann. For indication of current temperature in rooms, refrigerators etc. With fold-out holder for attaching to grids etc. Includes magnet for affixing. Refrigerator symbol is displayed at temperatures between +4 and +8 °C.

**Technical specifications:**

| | |
|---|---|
| Measurement range/resolution | -20.0 to +50.0 °C |
| Accuracy | ±1 °C |
| Dimensions (W x D x H) | 68 x 14 x 43 mm |

**Delivery incl.** CR 2025 button cell battery (3 V).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA56.1** | 1 | 9,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| CR 2025 button cell battery (3 V) | **CH14.1** | 1 piece | 5,35 |




## Thermometer Checkfridge

By Hanna.

- For monitoring inside temperature of refrigerators
- High measuring accuracy
- "Checkcal function" for testing the electronics inside unit
- Thermistor sensor (with 1 m cord) for the interior of the cooling appliance
- Thermometer is attached to the outside of the cooling appliance with a magnet

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -50.0 to +70.0 °C |
| Accuracy | ±0.3 °C (-20 to +70 °C) / ±0.5 °C (outside) |
| Probe | L 40 mm x ∅ 5 mm |
| Dimensions of enclosure | 92 x 36 x 25 mm |

**Delivery incl.** battery Mignon 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y238.1** | 1 | 59,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Digital fridge/freezer thermometer

By TFA-Dostmann. For displaying current, maximum and minimum temperatures. With stand and frame for attachment to surfaces or behind glass (display cabinet etc.) by means of self-adhesive film.

**Technical specifications:**

| | |
|---|---|
| Measurement range/resolution | -30.0 to +50.0 °C |
| Accuracy | ±1 °C |
| Dimensions (L x W x D) | 91 x 72 x 13 mm |
| Weight | 66 g |

**Delivery incl.** CR 2032 button cell battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE75.1** | 1 | 15,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |




## Indoor-/outdoor thermometer, officially calibrated

By Amarell. With display light and Min/Max-value control. Simultaneous display of inside and outside temperatures. Outdoor sensor with approx. 3 m cord. Suitable for desktop or wall assembly.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | Inside: 0,0 to +40 °C<br>Outside: -50 to +70 °C |
| Accuracy | ±1 °C |
| Dimensions (H x L x W) | 55 x 20 x 80 mm |

**Delivery incl.** official calibration certificate with test point at +4 °C and battery Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH47.1** | 1 | 137,60 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Thermometer, digital




## Laboratory thermometers with limit alarm and Min/Max function

By Dostmann. Applications: measurements in refrigerators and deep freezers, storage of foodstuffs etc. Watertight housing (IP 65). Min/Max and Hold function. Audio and visual warning alarm when freely adjustable temperature limits are exceeded. Magnetic back for attachment to metal surfaces.

**Technical specifications:**

| Model | ① Lab Basic | ② Lab Pro |
|---|---|---|
| Measuring range/resolution (°C) | -40.0 to +70.0 | -40.0 to +200.0 |
| Accuracy (°C) | ±0.5 (-20.0 to +25.0)<br>±1.0 (outside) | ±0.5 (0 to +50.0)<br>±1.0 (-40.0 to 0)<br>±1.0 (+50.0 to +100.0)<br>±1.5 (outside) |
| Sensor dimensions L x ∅ (mm) | 20 x 5 | 100 x 3.5 |
| Cable length (m) | 3 | 1 |
| Dimensions L x W x D (mm) | 86 x 57 x 30 | |
| Weight (g) | 40 | |

**Delivery incl.** button cell battery CR 2032, 3 V.

**Standard version**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Lab Basic | **KA32.1** | 1 | 20,90 |
| ② Lab Pro | **KA33.1** | 1 | 27,00 |

**Measuring equipment Kit with works certificate**, test point at +5 °C

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Lab Basic | **PY66.1** | 1 | 32,05 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |




## Temperature limiter for thermometer

By Dostmann. **Reference object for constant temperature measurement in refrigerators.** Avoids large temperature fluctuations, e.g. due to frequent opening of the refrigerator door. The sensor is inserted into one of the accurate-fitting holes and fixed in place with a screw. The reference object acts as a buffer and provides a homogeneous temperature distribution, because mass (and not air) is measured. Suitable for sensors with ∅ of 3.5 mm, 4.2 mm and 5.0 mm. Dimensions: W 60 x D 25 x H 25 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PT43.1** | 1 | 23,15 |




## Thermometer with factory certificate

By Ludwig Schneider.

- Calibrated at -10 °C and +40 °C
- High measuring precision
- Min/max measured value storage with real time and date
- Limit alarm, audible and visual
- Storage of last threshold violation
- For exact temperature measurement with temperature brake (plastic bottle filled with ethylene glycol)

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -50.0 to +70.0 °C |
| Accuracy | ±0.3 °C |
| Sensor cable length | 320 mm |
| Dimensions:<br>Device (W x H x D)<br>Plastic bottle (∅ x H) | <br>75 x 124 x 19 mm<br>19.5 x 40 mm |
| Weight | 170 g |

**Delivery incl.** temperature brake, factory certificate and AAA 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HAN2.1** | 1 | 170,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Electronic fever thermometer

By TFA-Dostmann. For the measurement of body temperature in humans and animals. An alarm signal indicates when the measurement is finished. Automatic shut-off after 10 min.

**Technical specifications:**

| | |
|---|---|
| Measurement range/resolution | +32.00 to +43.00 °C |
| Accuracy | ±0.1 °C (35.00 to 39.00)<br>±0.2 °C (outside) |
| Sensor dimensions (L x ∅) | 6 x 3 mm |
| Dimensions (L x W x D) | 127 x 18 x 10 mm |
| Weight | 10 g |

**Delivery incl.** protective sleeve and button cell battery V 392. 1.55 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY79.1** | 1 | 6,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery V 392 | **X563.1** | 1 piece | 5,35 |

# Thermometer, digital



## Inserting thermometer

By Dostmann. Ideal for simple temperature measurements in liquids, powdery and plastic substances. HOLD-, MAX-, and MIN-function. Automatic switch-off after 10 minutes.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -40.0 to +200.0 °C |
| Accuracy | ±1.0 °C (-20.0 to 100.0 °C)<br>±1.5 °C (outside) |
| Dimensions with probe | 205 x 20 x 16 mm |
| Dimension of probe | 125 mm, ∅ 3.5 mm |

**Delivery incl.** protective case (for probe) and 1.5 V button cell battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T332.1** | 1 | 21,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## Insertion thermometer Pro-DigiTemp

By Dostmann. With 180°-swivel display for easy readability. MAX-, MIN- and HOLD-function. Automatic switch-off after 5 min.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -40.0 to +200.0 °C |
| Accuracy | ±1.0 °C (0 to +100 °C)<br>±2.0 °C (outside) |
| Dimensions total | L 240 mm, ∅ 50 mm |
| Dimension of probe | L 180 mm, ∅ 3.5 mm |

**Delivery incl.** protective case (for the probe) and 1.5 V button cell battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AK16.1** | 1 | 23,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## Laboratory pocket thermometer LABTHERM

By Dostmann. With robust insertion tip, ideal for measuring temperature in liquids, food, etc. **Water and dustproof acc. to IP 67.** Hold-, Max- and Min-Function. AUTO-OFF function after 15 min to save battery, can be switched off. 0 °C calibrating function.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -40.0 to +250.0 °C |
| Accuracy | ±0.5 °C (-10 to +100 °C),<br>±1.0 °C or ±1.0 % (outside) |
| Dimensions total (L x W x H) | 220 x 25 x 20 mm |
| Dimensions of probe | 106 mm, ∅ 3.5 mm |

**Delivery incl.** protective cover (for probe), attachment clip and 1.5 V button cell battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LN45.1** | 1 | 24,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |




## Pocket thermometer HI 145

By Hanna. With stainless steel penetration probe. Internal self-diagnosis function ensures high accuracy. Excellent for daily routine checking.

**Technical specifications:**

| | |
|---|---|
| Measuring range | -50.0 to +220 °C |
| Resolution | 0.1 °C (-50.0 to +199.9 °C)<br>1 °C (+200 to +220 °C) |
| Accuracy | ±0.3 °C (-20 to +90 °C)<br>±0.4 % (outside) |
| Dimensions total | 92 x 165 x 38 mm |
| Dimensions of probe | L 125 mm, ∅ 5 mm |

**Delivery incl.** battery Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T235.1** | 1 | 49,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Thermometer, digital



## Pocket-thermometer

By Amarell. With sensor probe tip of high-grade steel.
Ideal for measurements in liquids, semi-solid substances and for solids.
Plastic housing useful as handle or as pocket clip.
With hold function to store spot measurements.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -50.0 to +200.0 °C |
| Accuracy | 1.0 °C (-20 to +100 °C) |
| Dimensions (L x W) | 150 x 58 mm |
| Dimensions of probe | L 120 mm x ∅ 3.5 mm |

**Delivery incl.** 1.5 V button cell battery battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A321.1** | 1 | 23,60 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## ThermoJack folding pocket thermometer

By Dostmann. For core temperature and random measurements.
Suitable for foodstuffs acc. to EN 13485. Protection class IP 65.

**Technical specifications:**

| | |
|---|---|
| Measurement range/resolution | -40.0 to +250.0 °C |
| Accuracy | ±0.5 °C (-20.0 to +150.0 °C)<br>±1 or ±1 °C (outside) |
| Housing dimensions, folded out fully (L x W x H) | 190 x 38 x 20 mm |
| Sensor dimensions (length /∅) | 70 x 3.5 mm (tip tapered to approx. 1.7 mm) |
| Weight | 43 g |

**Delivery incl.** CR 2032 button cell battery (3 V).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA94.1** | 1 | 27,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |




## Checktemp series precision thermometers

- Ideal for daily temperature measurement in the laboratory and in industry
- High measurement accuracy of ±0.3 °C in the measurement range from -20 to +90 °C
- **CAL CHECK-function** for testing the internal device electronics
- Stainless steel sensor probe

**Technical specifications:**

| **Model** | **① Checktemp basic** | **② Checktemp 1** |
|---|---|---|
| Measurement range/resolution (°C) | -50.0 to +150.0 | |
| Accuracy (°C) | ±0.3 (-20 to +90)<br>±0.5 (outside) | |
| Sensor dimensions L x ∅ (mm) | 106 x 3,6 | 97x 3,5 |
| Housing dimensions H x W x D (mm) | 71 x 51 x 22 | 107 x 59 x 17 |
| Cable length (m) | - | 1 |
| Protection rating | IP 65 | |
| Weight (g) | 52 | 80 |
| Battery | 1 x CR 2032 button cell (3 V) | Micro/AAA 1.5 V |

**Delivery incl.** battery.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Checktemp basic | **G001.1** | 1 | 42,00 |
| ② Checktemp 1 | **G002.1** | 1 | 45,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Folding thermometers testo 103/104

By Testo. For core temperature and random measurements.
On/Off via folding mechanism (approx. 30°). Auto Off after 60 min.

**Technical specifications:**

| **Model** | **testo 103** | **testo 104** |
|---|---|---|
| Measuring range/resolution (°C) | -30.0 to +220.0 | -50.0 to +250.0 |
| Accuracy (°C) | ±0.5 (-30.0 to +99.9)<br>±1 % (+100.0 to +220.0) | ±1.0 (-50.0 to -30.1)<br>±0.5 (-30.0 to +99.9)<br>±1 % (+100.0 to +250.00) |
| Housing dimensions, folded out fully L x W x H (mm) | 189 x 35 x 19 | 265 x 48 x 19 |
| Sensor dimensions length/∅ (mm) | 75 / 3 | 106 / 3 |
| Other functions | - | Auto Hold, Hold, Min/Max |
| Protection rating | IP 55 | IP 65 |
| Housing material | ABS | ABS / TPE / PC, die cast zinc, stainless steel |
| Battery type | 2 x button cell battery CR 2032 (3 V) | 2 x Micro/AAA 1.5 V |
| Weight (g) | 49 | 165 |

**Delivery incl.** batteries.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| testo 103 | **PE63.1** | 1 | 48,40 |
| testo 104 | **PE64.1** | 1 | 83,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |

# Thermometer, digital



## Compact thermometer Mini-K

By Dostmann. For simple temperature measurement.
For connection with thermocouple probe, Type K.

- Waterproof enclosure (IP 65)
- Automatic switch-off after 15 min to prolong battery life
- Hold display
- With magnet for attachment to metal surfaces

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -64.0 to +1370.0 °C |
| Accuracy | ±1 % or 1 °C (larger value is valid) |
| Dimensions (L x W x D) | 43 x 20 x 78 mm |
| Weight | 41 g |

**Delivery incl.** Cell battery CR 2032, 3 V.
Supplied without probe (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KL30.1** | 1 | 50,00 |

## Temperature probes, type K for Mini-K

Cord length 1.0 m.

**Immersion-/penetration probes**
With centred tip. Measuring range -40 to +400 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 120 | 3,5 | **KL31.1** | 1 | 31,75 |

**Immersion-/penetration probes**
With centred tip. Measuring range -60 to +550 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 130 | 1,5 | **KL32.1** | 1 | 44,95 |

**Immersion probe**
Ideal for measuring in liquid, gaseous and powdery media.
Measuring range -100 to +1100 °C

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 1.5 | **KL33.1** | 1 | 64,40 |

**Immersion probes without handle.**
Bendable. Measuring range -200 to +900 °C.
Without handle and connecting lead. Please order separately if required.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 220 | 3 | **KL34.1** | 1 | 29,05 |

**PTFE-insulated thermo wire without handle**
Bendable. Measuring range -65 to +260 °C.
Without handle and connecting lead. Please order separately if required.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1000 | 1 | **KL35.1** | 1 | 21,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 | 5,35 |
| Handle with connecting lead, cord length 1.2 m, suitable for all K-Type sensors | **EH83.1** | 1 | 70,95 |




## Compact-thermometer HI 935005

By Hanna. Waterproof casing (IP 67). For connecting of thermocouple probes, Type K. Simultaneous display of current, highest and lowest measured values. HOLD-button for holding a reading in the display. Battery-charge indicator. Automatic switch-off.

**Technical specifications:**

| | |
|---|---|
| Measuring range | -50.0 to +1350.0 °C |
| Accuracy | ±0.2 % |
| Resolution | 0.1 °C (-50 to +199.9 °C)<br>1 °C (outside) |
| Dimensions (L x W x D) | 150 x 80 x 36 mm |
| Weight | 300 g |

**Delivery incl.** 3 batteries, Mignon 1.5 V.
Comes without probe (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HA65.1** | 1 | 111,00 |

## Temperature sensor K-type for HI 935005

**Standard probe**
With handle and 1 m cable. For liquids and standard applications.
L 120 mm, ∅ 3 mm, max. temperature +900 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C823.1** | 1 | 66,00 |

## Information on temperature measurement

There are various methods to make a temperature visible or readable:
Colour reaction (e.g. with colour change crayons), defined solid or liquid extension (e.g. glass thermometers) and electric signals (e.g. digital thermometers).
There are a number of sensor elements available to change the temperature values into electric signals.

**Thermocouples (NiCr-Ni)**
Thermocouples consist of two point welded wires of different metals.
The most common thermocouple is NiCr-Ni (Designation K).

**Resistance sensors (Pt 100)**
Here the resistance change of platin resistance, which is independent of temperature, is used. The multiplier resistor is driven with a constant current and the fall of voltage measured.

**Thermistors (NTC)**
Temperature measurement with thermistors is also based on a temperature-independent resistance change of the thermocouple. Unlike the Pt 100 thermometers, thermistors have a very negative temperature coefficient.

**General rule**
Thermocouple probes are fast and have a large measuring range.
Pt 100 and NTC probes are slower, but more precise.
There is a special probe for each application, e.g. insertion probe for measuring in plastic or pasty media.

# Thermometer, digital




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## Temperature measuring device testo 108

By Testo. For fast, simple and precise temperature measurement, above all in the food industry (transport, storage, production, quality testing). Simple operation and handling through two self-explanatory key and a large display. Instrument and waterproof probe (IP 67).

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -50.0 to +300.0 °C |
| Instrument accuracy | ±0.5 °C (-30.0 to +70.0 °C)<br>±0.5 °C ±0.5 % of the measurement value (outside) |
| Probe accuracy (incl. in delivery) | ±0.5 °C (-40 to -20 °C)<br>±0.2 °C (-20 to +70 °C)<br>±0.5 °C (+70 to +125 °C)<br>±0.4 % of measurement value (+125 to +300 °C) |
| Housing dimensions (L x W x H) | 140 x 60 x 24.5 mm |
| Probe dimensions, length /∅ | 85 / 4 mm |
| Measuring cycle | 2 measurements per second |
| Battery type | 3 x Micro/AAA 1.5 V |
| Weight | 150 g |

**Delivery incl.** standard penetration probe TE Type T, protective cover, calibration protocol and batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HHY1.1** | 1 | 95,70 |

Accessories:

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

## Accessories for temperature measuring device testo 108

① **Standard penetration probe TE Type T**, cable length 1.2 m

| Measuring range (°C) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -50.0 to +300.0 | 85 | 4 | **HKA0.1** | 1 | 30,10 |

② **Air sensor TE Type T**, with heat-resistant PTFE connecting cable (up to +250 °C).

| Measuring range (°C) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -50.0 to +250.0 | 2000 | 1.5 | **HKA1.1** | 1 | 39,80 |

③ **Robust stainless steel penetration probe TE Type T (IP 67)**, with heat-resistant FEP connecting cable (up to +200 °C, length 1.2 m)

| Measuring range (°C) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -50.0 to +350.0 | 125 | 4 | **HKA2.1** | 1 | 111,80 |

④ **Thin stainless penetration probe TE Type T**, with heat-resistant connecting cable (up to 250 °C, length 1.2 m)

| Measuring range (°C) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -50.0 to +250.0 | 60 | 1.4 | **HKA3.1** | 1 | 97,85 |



## Precision thermometer testo 110

By Testo. High-precision control thermometer for connection to NTC-sensors.

- Acoustic alarm (adjustable limit values)
- Display of Max/Min-values
- Display light
- Auto-hold automatically identifies the final value

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -50.0 to +150.0 °C |
| Accuracy | ±0.2 °C (-25 to +75 °C)<br>±0.5 % of mean value (+100 to +150 °C)<br>±0.4 °C (outside) |
| Working temperature | -20 to +50 °C |
| Dimensions (W x D x H) | 64 x 40 x 182 mm |
| Weight | 171 g |

**Delivery incl.** E-Block battery 9 V and calibration protocol. Supplied without probe (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Precision thermometer testo 110 | **EL54.1** | 1 | 105,35 |

## NTC-Temperature sensors for testo 110

**Measuring range -50 to +150 °C.** Length of lead approx. 1.2 m.

**Air sensor**
Robust and waterproof.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 115 | 5 | **EL55.1** | 1 | 69,90 |

**Surface probe**
Waterproof. For smooth surfaces. With broadened measuring tip ∅ 6 mm.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 115 | 5 | **EL56.1** | 1 | 78,50 |

**Immersion/Penetration probe**
Waterproof. With chamfered tip.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 115 | 5 | **EL57.1** | 1 | 67,75 |

**Food probe**
Waterproof (IP 67). Made of stainless steel. Pointed, robust.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 125 | 4 | **EL58.1** | 1 | 123,65 |

## Thermometer kit testo 110 with certificate

**Delivery incl.** thermometer testo 110 (Art. No. EL54.1), Immersion-/penetration probe (Art. No. EL57.1) and ISO-calibration certificate with three calibration points (-18 °C; 0 °C; +60 °C).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Thermometer kit testo 110 | **EL59.1** | 1 | 270,90 |

Accessories:

| | | | |
|---|---|---|---|
| Protective cover TopSafe | **EH74.1** | 1 | 31,20 |
| Transport case (for meter and probe) | **EH75.1** | 1 | 40,85 |
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |

# Thermometer, digital



## Precision thermometer testo 720

By Testo. For sophisticated measuring in the laboratory and industry.
- Acoustic alarm (adjustable limit values)
- Min/Max-value display
- Display light
- Ideal for laboratory work because the glass-sheated temperature probe is suitable for connection

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -100.0 to +800.0 °C |
| Accuracy | ±0.2 % of mean value (+200 to +800 °C)<br>±0.2 °C (outside) |
| Working temperature | -20 to +50 °C |
| Dimensions (W x D x H) | 64 x 40 x 182 mm |
| Weight | 171 g |

**Delivery incl.** E-Block-battery 9 V and calibrating protocol.
Supplied without probe (please order seperately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH87.1** | 1 | 160,20 |

## Temperature probes Pt 100 for testo 720

**Measuring range -50 to +400 °C**. Cord length approx. 1.2 m.

**Laboratory probe, glass-sheathed (Cl. A)**
Glass tube is removable. Resistant to aggressive media.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 200 | 6 | **EH88.1** | 1 | 106,45 |

**Food probe (Cl. A)**
Made of stainless steel. Pointed, robust. Watertight (IP 65).

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 125 | 4 | **EH89.1** | 1 | 135,45 |

**Immersion-/Penetration probes (Cl. A)**
With chamfered tip. Waterproof.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 114 | 5 | **EH90.1** | 1 | 75,25 |

**Surface probes (Cl. B)**
Watertight. With widened measurement tip (∅ 9 mm).

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 114 | 5 | **EH91.1** | 1 | 107,50 |

Accessories:

| | | | |
|---|---|---|---|
| Protective cover TopSafe | **EH74.1** | 1 | 31,20 |
| Transport case (for meter and probe) | **EH75.1** | 1 | 40,85 |
| E-Block 9 V battery | **1025.1** | 1 | 4,85 |



## Calibrated precision thermometer testo 112, conformity assessed

By Testo. **Application range:**
- Suitable for certified measuring by public authorities, institutions and for expert reports
- For measuring product temperature in the food industry
- For routine operations in everyday work
- For check measurements during refrigerated transports

**Properties:**
- PTB-type testing
- Integrated self-check
- Acoustic alarm goes off immediately when limit values have been exceeded or under-run
- Display light
- Min/Max-values
- Declaration of conformity for device and sensor

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -50.0 to +300.0 ° C |
| Accuracy | ±0.2 °C (-50 to +200 °C)<br>±0.3 °C (outside) |
| Working temperature | -20 to +50 °C |
| Dimensions (W x D x H) | 64 x 40 x 182 mm |
| Weight | 171 g |

**Note:**a new calibration law (MessEG) and new calibration regulations (MessEV) came into force in Germany on 01.01.2015. The previous initial calibration procedure has been be replaced by a new procedure, the so-called conformity assessment procedure. Instead of the certificate of calibration, a declaration of conformity is now issued by the equipment manufacturer and checked by a conformity assessment agency (e.g. Office of Weights and Measures). Equipment can, as before, be recalibrated after two years through any Office of Weights and Measures.

**Delivery incl.** Pt 100 Immersion-/Penetration probe (L 115 mm, ∅ 5 mm) with attached cable (cable length approx. 1.2 m), declaration of conformity and E-Block battery 9 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH93.1** | 1 | 564,40 |

## Accessories for thermometer testo 112

**Safety cover TopSafe**, protects from blows and dust

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH94.1** | 1 | 32,20 |

**Transport case for thermometer and probe**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH75.1** | 1 | 40,85 |

**Spare battery E-Block 9 V**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1025.1** | 1 | 4,85 |

# Thermometer, digital



## Allround-thermometer testo 925

By Testo. Robust thermometers for daily measuring. For connecting with thermocouple probes, Type K. Acoustic alarm goes off immediately when the set limits are either exceeded or under-run. Max/Min-value display. Hold-button. With display-light. **Transfer of measured data is possible via radio with optional radio probe and radio module.**

**Technical specifications:**

| | |
|---|---|
| Measuring range | -50.0 to +1000.0 °C |
| Accuracy | ±0.5 °C or 0.3 % o. measured (-40 to +900 °C)<br>±0.7 °C or 0.5 % of mv. (outside) |
| Resolution | 0.1 °C (-50 to +199.9 °C)<br>1 °C (outside) |
| Working temperature | -20 to +50 °C |
| Dimensions (W x D x H) | 64 x 40 x 182 mm |
| Weight | 171 g |

**Delivery incl.** E-block-battery 9 V and calibration protocol.
Supplied without probe (please order seperately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH73.1** | 1 | 94,60 |

## Accessories for Allround-thermometer testo 925

**Protective cover TopSafe**, protects against blows and dirt.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH74.1** | 1 | 31,20 |

**Transport case for meter and probe.**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH75.1** | 1 | 40,85 |

**Extension lead**
For thermocouple probe Type K. Length 5 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH76.1** | 1 | 52,70 |

**Spare battery E-Block 9 V for meter testo 925**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1025.1** | 1 | 4,85 |

**Spare battery Micro/AAA 1.5 V for radio handle**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1021.2** | 4 | 6,40 |

## Temperature probes type K for testo 925

Cord length 1.2 m.

**Immersion probes (Cl. 1)**
Bendable. Precise and fast. Waterproof. Measuring range -60 to +1000 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 1.5 | **EH77.1** | 1 | 93,55 |

**Immersion-/Penetration probes (Cl. 2)**
Watertight. With chamfered tip. Measuring range -60 to +400 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 114 | 5 | **EH78.1** | 1 | 40,85 |

**Food probe (Cl. 2)**
Made of stainless steel. Pointed, robust. Watertight (IP 65).
Measuring range -60 to +400 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 125 | 4 | **EH79.1** | 1 | 74,20 |

**Surface probes (Cl. 2)**
**For flat surfaces.** Waterproof. With widened measurement tip (∅ 6 mm).
Measuring range -60 to +400 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 115 | 5 | **EH80.1** | 1 | 58,05 |

**Surface probes (Cl. 2)**
**For surfaces which are not flat.** Watertight and sturdy.
With elastic thermocouple band (measuring tip: ∅ 12 mm).
Measuring range -60 to +300 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 115 | 5 | **EH81.1** | 1 | 119,35 |

**Immersion measurement tip (Cl. 1)**
Pliable. Measuring range -200 to +1000 °C.
Without handle and connecting lead (please order separately).

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 500 | 1,5 | **EH82.1** | 1 | 26,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| Handle with connecting lead, cord length 1.2 m, suitable for all K-Type sensors | **EH83.1** | 1 | 70,95 |

## Radio module, radio handle and radio probe for testo 925

**Radio module**
For cordless transfer of measured data. Frequency 869.85 MHz FSK.
Please order radio handle and probe separately
(are required when transfering measured data via radio).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Radio module | **EH84.1** | 1 | 40,85 |

**Radio handle and radio probe, technical specifications:**

| | |
|---|---|
| Measuring cycle | 0.5 or 10 sec, adjustable on handle |
| Range | max. 20 m (open air test site) |
| Working temperature | -20 to +50 °C |
| Battery type | radio handle: 2 x Micro/AAA 1.5 V batteries |

**Radio handle for radio probe**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Radio handle incl. batteries | **EH85.1** | 1 | 96,75 |

**Radio probe for air-/immersion-penetration measurements (Cl. 2)**
With chamfered tip. Measuring range -50 to +350 °C.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Radio probe, L 120 mm, ∅ 5 mm | **EH86.1** | 1 | 50,55 |

► Please take note of our digital thermometers-overview on page 786

# Thermometer, digital



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## Thermometer P200

By Dostmann. For measuring air, gas, liquids, and plastic materials.
- **Fixed NTC penetration probe** with handle, cable length 60 cm
- Large display
- Min/max and hold function
- Plastic housing, food-safe and waterproof
- Integrated sensor holder for single-hand operation

**Technical specifications:**

| | |
|---|---|
| Measurement range | -40 to 200 °C |
| Resolution | 0.1 °C |
| Accuracy | ±1. °C (-25 up 150 °C), ±1.5 °C (outside) |
| Measuring cycle | 1 sec |
| Protection class | IP 65 |
| Device dimensions (L x W x H) | 95 x 60 x 18 mm |
| Sensor dimensions (L x ∅) | 110 x 3.5 mm |
| Weight | 150 g |
| Power supply | 2 x Micro/AAA 1.5 V battery |

**Delivery incl.** fastening clip, table stand and batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HNN8.1** | 1 | 52,20 |

**General information on calibration and calibrating meters**

**Meters with DAkkS Certificates of Calibration:**
A DAkkS Certificate of Calibration is issued by a accredited testing agency (must be approved and is monitored by Deutsche Akkreditierungsstelle [German Accreditation Agency]). Meter meets national standard requirements and can be used in accordance with ISO 9000 Quality Assurance Standards.
Very low preset tolerance (lower than required for works certificate).

The user of DAkkS certified meters can therefore issue internal works certificates. This is particulary of advantage in the Quality Assurance Department of larger firms where measuring instruments used in the Production Department must be tested and calibrated at specific intervals.
Individual test points should be customized depending upon temperature ranges under measurement.

**Meters with a Works Certificate of Calibration:**
A works certificate of calibration is issued after carrying out a comparison measurement with a DAkkS calibrated meter.
Unit meets national standard requirements and can be used in accordance with **ISO 9000** Quality Assurance Standards.
Tolerance of measurement with works certificates is slightly higher than of a DAkkS certified unit. Individual test points should be customized depending upon temperature ranges under measurement.




## Thermometer P300

By Dostmann. For measuring in liquid, paste-like and semi-solid media.
- **Fixed NTC penetration probe** with handle, cable length 1.2 cm
- Large backlit display
- Min/Max and hold function
- Plastic housing, food-safe and splash-proof
- Integrated sensor holder for single-hand operation

**Technical specifications:**

| | |
|---|---|
| Measurement range | -40.0 to +200.0 °C |
| Resolution | 0.1 °C |
| Accuracy | ±0.5 °C (0 to 100 °C)<br>±1.5 °C (outside) |
| Measuring cycle | 1 sec |
| Protection class | IP 54 |
| Device dimensions (L x W x H) | 130 x 65 x 25 mm |
| Sensor dimensions (L x ∅) | 120 x 3.5 mm |
| Weight | 240 g |
| Power supply | 2 x Mignon batteries / AA 1.5 V |

**Delivery incl.** batteries.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Thermometer P300 standard design | **N359.1** | 1 | 67,20 |
| With ISO calibration certificate (0 °C, +60 °C) | **HT78.1** | 1 | 94,60 |
| **Accessories:** | | | |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |

▶ Please take note of our digital thermometers-overview on page 786

# Thermometer, digital



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## Compact thermometer P4000

By Dostmann. For measuring liquid gaseous and powdery media.
**With Pt 100 four-conductor sensor technology**.
- Plastic splash-proof and washable housing
- Stores min, max, hold and average values
- 1-point adjustment possible
- 2-line LCD display

**Technical specifications:**

| | |
|---|---|
| Measurement range | -200 to +850 °C |
| Resolution | 0.1 °C (-99.9 to +399.9 °C)<br>1 °C (outside) |
| Accuracy | ±0.3 °C |
| Measurement data memory | 20 |
| Port | USB |
| Protection class | IP 54 |
| Dimensions (L x W x H) | 150 x 74 x 32 mm |
| Weight | 217 g |
| Power supply | 2 x Mignon/AA 1.5 V |

**Optional accessories** (please order separately):
Windows software DE Graph and USB cable for online documentation.

**Delivery incl.** 2 batteries and test protocol.
Without measuring probe (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HNN5.1** | 1 | 117,20 |

## Temperature measuring probe Pt 100 for P4000

With handle. Cable length 1 m.

**Immersion sensors (Cl. B)**
For measuring liquid gaseous and powdery media.

| Measuring range (°C) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -50 to +350 | 150 | 3 | **AY91.1** | 1 | 75,20 |
| -50 to +350 | 300 | 3 | **AY92.1** | 1 | 81,70 |

**Penetration probe (Cl. B)**
For measuring solid and powdery media.

| Measuring range (°C) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -50 to +350 | 150 | 4 | **AY93.1** | 1 | 75,20 |

**Surface sensor (Cl. B)**
With spring-loaded contact area.

| Measuring range (°C) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -40 to +300 | 150 | 6 | **AY94.1** | 1 | 170,95 |

**Air probe (Cl. B)**
For measuring air and gas temperatures.

| Measuring range (°C) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -50 to +250 | 250 | 4 | **AY95.1** | 1 | 96,25 |

**Immersion sensors (Cl. B / 1/3 DIN)**
For measuring liquid gaseous and powdery media.

| Measuring range (°C) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -200 to +450 | 150 | 3 | **AY96.1** | 1 | 130,10 |
| -200 to +450 | 300 | 3 | **AY97.1** | 1 | 137,60 |

Accessories:

| | | | |
|---|---|---|---|
| Windows Software DE Graph for P4000/P700 | **HNN6.1** | 1 | 133,30 |
| USB cable for P4000 series | **HNN7.1** | 1 | 26,90 |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



NEU
NOUVEAU
NEW

## Thermometer P4010

By Dostmann. For measuring liquid gaseous and powdery media.
- **With replaceable thermoelement probe Type K**
- 2-line LCD display
- Stores min, max, hold and average values
- 1-point adjustment possible
- Plastic splash-proof and washable housing

For graphic and tabular documentation, please order Set 2
with software and USB cable.

**Technical specifications for device:**

| | |
|---|---|
| Measurement range | -200 to +1370 °C |
| Resolution | 0.1 °C (-99.9 to +399.9 °C); 1 °C (outside) |
| Accuracy | ±0.5 °C |
| Measurement data memory | 20 |
| Port | USB |
| Protection class | IP 54 |
| Dimensions (L x W x H) | 150 x 74 x 32 mm |
| Weight | 217 g |
| Power supply | 2 x Mignon batteries / AA 1.5 V |

**Technical specifications of sensor:**
Immersion/penetration probe Type K Cl. 2. With handle. Cable length 1 m.
Measuring range -40 to +400 °C. Sensor dimensions L 120 x ∅ 3.5 mm.

**Set 1, P4010**
**Delivery incl.** immersion/penetration probe Type K Cl 2,
test protocol and batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HNN9.1** | 1 | 138,90 |

**Set 2, P4010**
**Delivery incl.** immersion/penetration probe Type K Cl 2,
DE Graph software, USB cable, test protocol and batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HNP0.1** | 1 | 246,15 |

## Accessories for thermometer P4010

**Immersion sensor Type K Cl.1**
With handle. Cable length 1 m.

| Measuring range (°C) | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| -100 to + 1100 °C | 300 | 3 | **X196.1** | 1 | 69,90 |

# Thermometer, digital



## Precision thermometers P700-series

By Dostmann. **With integral calibrating function for simple compensation of sensor tolerances.** Can be connected either to Pt 100 probe or thermocouple type K, J, L, N, R, S, T. Storage of min/max-values, hold- and mean value. USB-Online-PC-Interface. Integral probe holder. With collapsible clip for standing on desktop.
Battery and wall socket operated.

**Technical specifications:**

| Model | P700 and P705 | P750 and P755 |
|---|---|---|
| **Measuring range** | | |
| Pt 100 | -200 to +850 °C | |
| Type K | -200 to +1760 °C | |
| **Accuracy** | | |
| Pt 100 | ±0.1 °C (-100 to +200 °C)<br>±0.1 % of (rest) | ±0.03 °C (-50 to +199,99 °C)<br>±0.05 °C (-200 to +200 °C)<br>±0.1 % of (rest) |
| Type K | ±0.2 (0 to +200 °C)<br>±0.5 (+200 to +1000 °C)<br>±1.0 °C (rest) | |
| Resolution<br>Pt 100 and type K | 0.1 °C | 0.01 °C (-200 to +200 °C)<br>0.1 °C (rest) |
| Dimensions (L x W x H) | 200 x 93 x 44 mm | |
| Current supply | 1 battery block 9 V | |

**1-channel thermometer P700**
**Delivery incl.** battery, sensor and power pack please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X717.1** | 1 | 241,90 |

**2-channel thermometer P705**
Like model P700. With additional simultaneous display of 2 measured values or differential temperature display.
**Delivery incl.** battery, sensor and power pack please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X718.1** * | 1 | 295,65 |

**1-channel thermometer P750**
Extremely high accuracy of ±0.03 °C. Ideal as a reference for testing ancillary thermometers. Humidity and flow sensors can be attached.
**Delivery incl.** battery, sensor and power pack please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X719.1** * | 1 | 473,00 |

**2-channel thermometer P755**
Like model 750. With additional simultaneous display of 2 measured values or differential temperature display.
**Delivery incl.** battery, sensor and power pack please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X720.1** * | 1 | 526,75 |

**Service kit for thermometer P750**
Contents: 1-channel thermometer P750 (art.no. X719.1), immersion probe (Art.No. X726.1), 9 V storage battery with battery charger, plug-in power pack and block-battery 9 V, PC-adapter cable and software, case for transporting.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X721.1** * | 1 | 876,15 |

* Please check with our Sales Department for delivery period of this products.

## Temperature sensors Pt 100 for P700-series

With 4-conductor technics. Cord length 1 m.

**Immersion probes (Cl. B)**
Ideal for measuring in liquid, gaseous and powdery media.
Range: -50 to +350 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 150 | 3 | **X722.1** | 1 | 78,50 |
| 300 | 3 | **X723.1** | 1 | 83,85 |

**Penetration probes (Cl. B)**
For measuring in liquid and powdery media.
Range: -50 to +350 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 150 | 4 | **X724.1** | 1 | 77,40 |

**High-precision immersion probe (Cl. B 1/3 DIN)**
Ideal for measuring in liquid, gaseous and powdery media.
Range: -200 to +450 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 3 | **X726.1** | 1 | 129,00 |

**High-precision immersion probe (Cl. B 1/10 DIN)**
For measuring in solid and powdery media.
Range: -200 to +450 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 3 | **AY99.1** | 1 | 191,35 |

## Temperature sensors type K for P700-series

Cord length 1 m.

**Immersion/penetration probe (Cl. 2)**
For measuring in liquid, gaseous media. Measuring range: -40 to +400 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 120 | 3,5 | **X727.1** | 1 | 37,65 |

**Immersion probe (Cl. 1)**
For measuring in liquid and gaseous media.
Measuring range: -100 to +1100 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 1,5 | **X728.1** | 1 | 66,65 |
| 500 | 3 | **X729.1** | 1 | 75,05 |

**Clip-on probe (Cl. 1)**
For measuring on pipes. Measuring range: -40 to +200 °C.

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| to max. 35 | **X730.1** | 1 | 60,20 |

## Multi-purpose sensor (for meters P750/P755)

For humidity and temperature. Cord length 1 m.
Measuring ranges: 0 to 100 % RH, -30 to +80 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 120 | 20 | **X825.1** | 1 | 174,15 |

## Flow sensor (for meters P750/P755)

For air and gas. Cord length 1 m. Measuring range: 0.3 to 20 m/s.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 175 | 22 | **X731.1** | 1 | 685,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Power supply for P700-series | **H198.1** | 1 | 32,20 |
| E-Block 9 V battery | **1025.1** | 1 | 4,85 |

# Data logger



## 1-/2-channel data logger for temperature/humidity

By Dostmann. For measurement data monitoring, e.g. storage and transport conditions, production facilities, greenhouses and refrigerators.

- Pre-programmed data logger (measuring interval: 5 min), ready for immediate use
- Automatic data output as PDF file, no driver installation required
- Integrated USB port
- Windows-compatible software is available for programming the logger (e.g. measuring cycle, alarm limits, start/end of recording), please download software free of charge
- Status and alarm LEDs with audio signal

**Technical specifications:**

| Model | | LOG32T | LOG32TH |
|---|---|---|---|
| Measuring range/resolution | °C | -40.0 to +70.0 | |
| | % RH | - | 0.0 to 100.0 |
| Accuracy | °C | ±0.5 (-10 to +40)<br>±1 (outside) | |
| | % RH | - | ±3 (40 to 60)<br>±3.5 (20 to 40, 60 to 80)<br>±5 (outside) |
| Data memory | | 60 000 datasets | |
| Measuring cycle | | 30 s to 24 h | |
| Dimensions (L x W x D) | | 100 x 19 x 19 mm | |
| Weight | | 70 g | |

**Delivery incl.** ISO Certificate of Calibration, wall mount and 3.6 V lithium battery.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| LOG32T | **CCE2.1** | 1 | 59,15 |
| LOG32TH | **CCE3.1** | 1 | 73,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement 3.6 V / ½ AA lithium battery | **LT32.1** | 1 | 8,60 |

**General information on calibration and calibrating meters**

**Meters with DAkkS Certificates of Calibration:**
A DAkkS Certificate of Calibration is issued by a accredited testing agency (must be approved and is monitored by Deutsche Akkreditierungsstelle [German Accreditation Agency]). Meter meets national standard requirements and can be used in accordance with ISO 9000 Quality Assurance Standards.
Very low preset tolerance (lower than required for works certificate).
The user of DAkkS certified meters can therefore issue internal works certificates. This is particulary of advantage in the Quality Assurance Department of larger firms where measuring instruments used in the Production Department must be tested and calibrated at specific intervals.
Individual test points should be customized depending upon temperature ranges under measurement.

**Meters with a Works Certificate of Calibration:**
A works certificate of calibration is issued after carrying out a comparison measurement with a DAkkS calibrated meter.
Unit meets national standard requirements and can be used in accordance with **ISO 9000** Quality Assurance Standards.
Tolerance of measurement with works certificates is slightly higher than of a DAkkS certified unit. Individual test points should be customized depending upon temperature ranges under measurement.



## PDF datalogger LOG200-series

By Dostmann. For monitoring and documentation of measured values during transportation and storage.

- Pre-programmed datalogger (measuring interval LOG200: 15 min, LOG210 and LOG220: 5 min)
- Automatic data output as PDF file, no driver installation required
- Status and alarm LEDs with audio signal
- Windows-compatible software for logger programming is available (e.g. measuring cycle, alarm limits); please download software free of charge

**Technical specifications:**

| Model | LOG200 | LOG210 | LOG220 |
|---|---|---|---|
| Measuring parameters | Temperature | Temperature<br>Humidity | Temperature<br>Humidity<br>Pressure |
| **Temperature**<br>Measuring range (°C)<br>Accuracy (°C) | -40 to +70<br>±0.5 (-10 to +40), ±1.0 (outside) | | |
| **Rel. humidity**<br>Measuring range (%rF)<br>Accuracy (%rF) | -<br>- | 0.0 to 100.0<br>±3.5 (20 to 80), ±5 (outside) | |
| **Air pressure**<br>Measuring range (hPa)<br>Accuracy (hPa) | -<br>- | | 300,0 to 1100.0<br>±1 (900 to 1100)<br>0.5% v. end value (outside) |
| Measured values | 150 000 | 100 000 | 60 000 |
| Measuring cycle | 30 sec to 24 h | | |
| Port | USB port, integrated | | |
| Dimensions L x W x D (mm) | 90 x 42 x 20 | | |
| Weight (g) | 98 | 93 | 70 |
| Battery | 1 x 3.6 Volt, Lithium ½ AA | | |
| Battery life | Approx. 3 years with measuring interval of 15 min<br>Approx. 2 years with measuring interval of 5 min | | |

**Delivery incl.** ISO Certificate of Calibration, wall bracket and battery (3.6 V, Lithium ½ AA).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| LOG200 | **EHX3.1** | 1 | 69,65 |
| LOG210 | **EHX4.1** | 1 | 82,90 |
| LOG220 | **EHX5.1** | 1 | 100,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement 3.6 V / ½ AA lithium battery | **LT32.1** | 1 | 8,60 |

# Data logger




## 1-channel data logger testo 184 series for temperature

By Testo. For monitoring temperature-sensitive products.
Model testo 184 T4 is specially for low temperatures (down to -80 °C).

- With alarm management:
  Adjustable min/max function and cumulative alarm
- The configuration file for logger programming is stored directly on the data logger (no software installation required)
- Automatic data output as PDF file via USB port
- Mobile readout via NFC

**Technical specifications:**

| Model | ① testo 184 T3 | ② testo 184 T4 |
|---|---|---|
| Measuring range/resolution | -35.0 to +70.0 °C | -80.0 to +70.0 °C |
| Accuracy | ±0.5 °C | ±0.8 (-80.0 to -35.1) °C<br>±0.5 (-35.0 to +70.0) °C |
| Sensor type | NTC | Pt 1000 |
| Display | yes | no |
| Measured values | 40 000 | |
| Measuring cycle | 1 min to 24 h | |
| Protection class | IP 67 | |
| Dimensions (W x D x H) | 44 x 12 x 97 mm | |
| Weight | 45 g | |
| Battery type | 1 CR 2450 battery (3 V) | 1 ER 2450 battery (3 V) |

**Delivery incl.** battery and inspection report stored on logger.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① testo 184 T3 | **CXC4.1** | 1 | 107,00 |
| ② testo 184 T4 | **CXC5.1** | 1 | 181,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| CR 2450 button cell battery (3 V) | **CXC6.1** | 1 | 5,35 |
| ER 2450 button cell battery (3 V) | **CXC7.1** | 1 | 24,75 |




## 1-/2-channel mini data logger testo 174 for temperature and humidity

By Testo. For monitoring climatic conditions, for example in storage, in offices and in production areas.

- Memory for 16000 measured values
- With LCD display for current measured value
  (with model testo 174H display of the current temperature or humidity value), battery status as well as min/max values
- Optical limit alarm (freely selectable values)
- Windows compatible software (data logger programming, for outputting data, graphic and tabular display, printout of data) download software free of charge or order separately.
  USB interface required for communication between software and data logger.

**Technical specifications:**

| Model | ① 1-channel °C logger testo 174T | ② 2-channel °C/RH logger testo 174H |
|---|---|---|
| Measuring ranges/resolution | -30.0 to +70.0 °C | -20.0 to +70.0 °C<br>0,0 to 100.0 % RH |
| Accuracy | ±0.5 °C | ±0.5 °C<br>±3 % RH (2 to 98 % RH) |
| Protection class | IP65 | IP20 |
| Measurement data memory | 16000 | |
| Measuring cycle | 1 min to 24 h | |
| Dimensions (L x W x D) | 60 x 40 x 20 mm | |

**Delivery incl.** 2 x CR 2032 button cell batteries, wall attachment and calibration protocol.
Please order USB interface for logger programming separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① testo 174T | **NA06.1** | 1 | 53,70 |
| ② testo 174H | **NA07.1** | 1 | 85,80 |

## Accessories for 174-series data logger

By Testo.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| USB interface for programming and reading data from the 174T and 174H loggers | **NA08.1** | 1 | 85,80 |
| CD Comsoft Basic (if free download not required) | **NA09.1** | 1 | 26,80 |
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 | 5,35 |




## testo 175 series 1-/2-channel mini data logger for temperature and humidity

By Testo. Temperature monitoring of cooling and refrigeration rooms as well as long-term monitoring of working and storage areas.

- Memory with capacity for 1 million measured values
- With LCD display for current measured value (with model testo 175 H1 display of current temperature and humidity values), battery status as well as min/max values
- Optical limit alarm (freely selectable values)
- Long battery life using standard batteries
- Simple read-out of data via USB cable or using an SD card (if a USB cable or SD card is required, please order separately). Only data can be collected with the SD card (reprogramming is not possible).
- Windows-compatible software (logger programming, read-out of data, graphic and tabular display of data and printout of data) please download free of charge or order separately. An USB cable is required for communication between the software and logger.

**Technical specifications:**

| Model | 1-channel °C logger testo 175 T1 | 2-channel °C/rH logger testo 175 H1 |
|---|---|---|
| **Temperature** | | |
| Measurement range | -35 to +55 °C | -20 to +55 °C |
| Resolution/accuracy | 0.1 °C /±0.5 °C | 0.1 °C /±0.4 °C |
| **Humidity** | | |
| Measurement range | - | 0 to 100 % rel. hum. |
| Resolution/accuracy | - | 1 % rH/±2 % rH (2 to 98 % rH) |
| Measured data storage | 1 million readings | |
| Measuring cycle | 10 s to 24 h | |
| Dimensions (H x W x D) | 89 x 53 x 27 mm | 149 x 53 x 27 mm |
| Protection class | IP 65 | IP 54 |
| Battery type | 3 micro batteries 1.5 V | |

**Delivery incl.** wall attachment, lock, calibration report and batteries.
Please order software and USB cables for logger programming separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| testo 175 T1 | **PH31.1** | 1 | 127,95 |
| testo 175 H1 | **PH32.1** | 1 | 267,70 |
| **Accessories:** | | | |
| CD Comsoft Basic (if free download not required) | **NA09.1** | 1 | 26,80 |
| USB cable (mini USB to USB), L 2 m | **PH33.1** | 1 | 23,55 |
| 2 GB SD card for collecting data | **PH34.1** | 1 | 27,55 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 | 6,40 |




## LOG100 series 2/3-channel temperature/humidity data logger

By Dostmann. For quality control in the lab and in production, as well as monitoring storage and transport conditions.

- Memory for 60.000 measured values
- LCD display for indication of current measured value, battery status, min/max value and average value
- Limit alarm, audible and visual
- Integrated USB port
- Optionally available with Windows-compatible software (logger programming, data transfer, graphical and tabular representation of data) and external temperature sensor

**Technical specifications:**

| Model | 2-channel °C logger | 2-channel °C cryogenic logger | 3-channel °C/rF logger |
|---|---|---|---|
| **Internal °C sensor:** | | | |
| Measurement range / resolution | -30.0 to +70.0 | -10.0 to +70.0 | -30.0 to +70.0 |
| Accuracy | ±0.5 (-20 to +50) ±0.7 (outside) | ±0.3 (-20 to +50) ±0.7 (outside) | ±0.5 (-10 to +40) ±1.0 (outside) |
| **External °C sensor:** | | | |
| Measurement range/ resolution | -50.0 to +125.0 | -200.0 to +250.0 | -50.0 to +125.0 |
| Accuracy | ±0.5 (0 to +40) ±1.0 (outside) | ±0.5 | ±0.5 (0 to +40) ±1.0 (outside) |
| **Internal rF sensor:** | | | |
| Measurement range/ resolution | - | - | 0.1 to 99.0 |
| Accuracy | - | - | ±3 |
| Measuring cycle | 1 s to 24 h | | |
| Display operating range (°C) | -10 to +70 | | |
| Dimensions L x W x D (mm) | 88 x 55 x 20 | | |
| Weight (g) | 95 | | |

**Delivery incl.** button cell battery CR 2032, 3 V.
Please order external temperature sensor (sensor dimensions L 40 mm, ∅ 3 mm, cable length 3 m) and logger programming software separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2-channel °C logger | **NA22.1** | 1 | 104,30 |
| 2-channel °C cryogenic logger | **NK56.1** | 1 | 149,45 |
| 3-channel °C/rF logger | **NA23.1** | 1 | 160,20 |
| **Accessories:** | | | |
| Windows logger programming software with USB cable | **NA24.1** | 1 | 63,45 |
| External °C sensor for NA22.1 and NA23.1, measurement range -50 to +125 °C | **NA25.1** | 1 | 59,15 |
| External °C sensor for NK56.1, measurement range -200 to +250 °C | **NK57.1** | 1 | 73,10 |
| Temperature limiter, W 60 x D 25 x H 25 mm | **PT43.1** | 1 | 23,15 |
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 | 5,35 |

# Data logger




## KlimaLogg Pro thermal hygrometer with data logger and wireless sensor

By TFA-Dostmann. For monitoring temperature and humidity.

① **Thermal hygrometer**:
- Display of humidity and temperature values
- Max/Min display with time of day
- **Connectivity for up to 8 RF transmitters**
- Text display with fixed serial number or individual name allocation for stored transmitters
- Custom alarm limits can be set for all channels with audio or visual alarm indication
- Ring buffer with capacity for up to 50 000 datasets
- Datasets can be retrieved directly from the device and via PC
- Data transfer via USB wireless transceiver (range: up to 10 m)
- Windows-compatible data transfer software is available for download free of charge. This software is required for transferring data. Measured values can also be exported as a text file.
- Radio clock with date display
- Battery charge level indicator

**Choose between the 2 wireless sensors:**

② **Wireless °C/rel. humidity sensor type FS1**
Measurement range/resolution: -30.0 to +60.0 °C, 1 to 99 % rel. humidity
Accuracy: ±1 °C, ±3 % rel. humidity (30 to 75 % rel. humidity)
Range: max. 100 m (free-field)
Dimensions: H 160 x W 44 x D 23 mm
**Delivery incl.** 2 x 1.5 V Mignon/AA batteries.

③ **Wireless °C sensor with external probe type FS2**
Measurement range/resolution: -30.0 to + 60.0 °C
Accuracy: ±1 °C
Range: max. 100 m (free-field)
Dimensions: H 128 x W 40 x D 23 mm
With external probe (cable length 3 m).
Temperature is measured at the probe only
**Delivery incl.** 2 x 1.5 V Micro/AAA batteries.

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | Indoors 1 to +99.0 % rel. humidity<br>Outdoors 1 to +99 % rel. humidity | Indoors -20.0 to +50.0 °C<br>Outdoors -30.0 to +60.0 °C |
| Accuracy | ±3 % rel. hum.<br>(30 to 75 % rel. hum) | ±1 °C |
| Measurement data memory | 50 000 datasets | |
| Measuring cycle | Adjustable in increments of 1/5/10/15/30 min or 1/2/3/6 h | |
| Dimensions (W x H x D) | 137 x 98 x 26 mm | |

**Delivery incl.** USB wireless transceiver and 3 1.5 V Mignon/AA batteries.
Wireless sensors not included. Please order separately.
Please download Windows software free of charge.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① KlimaLogg Pro thermal hygrometer | **PL21.1** | 1 | 90,30 |
| **Accessories:** | | | |
| ② Wireless °C/ rel. humidity sensor type FS1 | **PL22.1** | 1 | 24,75 |
| ③ Wireless °C sensor with external probe type FS2 | **PL23.1** | 1 | 23,25 |
| 1.5 V AA battery | **1022.2** | 4 | 5,95 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 | 6,40 |




## SterilDisk temperature data logger

By Dostmann. For monitoring and recording temperature data in the pharmaceutical and medical fields and in laboratories and food production plants (e.g. for sterilization and pasteurization).
- High temperature range up to 140 °C
- Watertight and pressure-tight up to 10 bar
- Measurement accuracy of ±0.2 °C in the calibrated range from +25 to +140 °C
- Housing made of food-safe steel AISI316L
- Please order Windows-compatible software and disk interface with USB cable (logger programming, data read-out, graphic and tabular representation, data printout) separately.
  Automatic calculation of F0, Z and N values possible

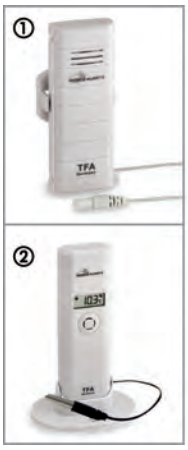
**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -20.0 to +140.0 °C |
| Accuracy | ±0.2 °C (+25 to +140 °C)<br>±0.5 °C (outside) |
| Measurement data memory | 20 200 |
| Measuring cycle | ≥1 s |
| Protection class | IP 68 |
| Ambient pressure | up to 10 bar |
| Port | Disk interface NS |
| Dimension H x ∅ | 17.4 x 36 mm |
| Weight | 80 g |

**Delivery incl.** calibration certificate and button battery BR 1632A.
Please order disk interface with USB cable and software separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① SterilDisk data logger | **ENE3.1** | 1 | 494,50 |
| **Accessories:** | | | |
| ② Disk interface with USB cable and software for SterilDisk data logger | **ENE4.1** | 1 | 306,40 |
| Replacement battery with seal | **ENE5.1** | 1 | 52,70 |

▶ Analogue thermometer for autoclaves
see page 781










## Temperature monitoring system for smartphones

By Dostmann. For simple monitoring of temperature/humidity at any time and from any place. Call up the data via Internet-capable smartphones.

- For operation in a cable-based network (LAN) with Internet connection
- Data storage on a cloud
- Data access via free App (iOS 7.0 or Android™ 3.2 and higher)
- Smartphone with camera required to scan the QR code at the transmitters
- Individual assignment of transmitter names possible
- Extendible up to 50 transmitter per gateway
- Reception range for transmitters max. 100 m (free field)
- Freely settable alarm limit with notification in the case of an alarm
- Dimensions gateway: L 104 x W 40 x D 28 mm

**Technical specifications:**

| Model | ① °C transmitter | ② °C/RH Profi transmitter |
|---|---|---|
| **Internal °C sensor:**<br>Measuring range/resolution (°C)<br>Accuracy (°C) | -<br>- | -40.0 to +60.0 °C<br>±1 |
| **External °C sensor:**<br>Measuring range/resolution (°C)<br>Accuracy (°C) | ±30.0 to +60.0<br>±1 | -50.0 to +110.0<br>±0.5 |
| **Internal RH sensor**<br>Measuring range/resolution (% RH)<br>Accuracy (% RH) | -<br>- | 0.0 to 99.0<br>±3 (30 to 80) |
| Cable length (cm) | 100 | 150 |
| Transmission interval to cloud | 7.0 min<br>Alerting in real-time | 3.5 min<br>Alerting in real-time |
| Data memory | 90 days | 18 months |
| Data archiving | - | Yes<br>(1x weekly per email) |
| Display | - | yes |
| Power supply | 2 x 1.5 V AAA | 2 x 1.5 V AAA |
| Dimensions<br>without holder L x W x D (mm)<br>with holder L x W x D (mm) | <br>87 x 33 x 22<br>92 x 39 x 33 | <br>129 x 41 x 35<br>135 x 83 x 61 |

**Delivery incl.** gateway unit with power pack, °C transmitter with external temperature sensor and network cable (RJ45). Please order batteries for the °C transmitter separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Starter kit | **ENN0.1** | 1 | 84,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| ① °C transmitter with external temperature sensor, without batteries | **ENN1.1** | 1 | 21,45 |
| ② °C/RH Profi transmitter with internal temperature/humidity measurement and external temperature sensor, without batteries | **ENN2.1** | 1 | 74,75 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 | 6,40 |

## Wireless data logger Saveris 2

By Testo. Modern solution for temperature measurement and monitoring in storage, cooling and work rooms.

- Data transfer via WiFi
- Online data storage directly to cloud
- Temperature data can be retrieved and evaluated via Internet-compatible smartphones, tablets or PCs
- Logger configuration via the testo basic cloud (free access), no software installation required
- An e-mail alert is generated if limits are exceeded
- With display for reading current measurement data, limit violations and residual battery life

Model **Saveris 2-T1** with integrated NTC temperature sensor.
Model **Saveris 2-T3** with 2 connections for external TE temperature sensor (please order sensor separately).

**Technical specifications:**

| Model | ① Saveris 2-T1 | ② Saveris 2-T3 | |
|---|---|---|---|
| Temperature sensor | internal | external | |
| Measurement range/ resolution (°C)<br>Accuracy (°C) | -30.0 to +50.0<br>±0.5 | **ECK2.1**<br>-40.0 to +220.0<br>±1.5 | **ECK3.1**<br>-200.0 to +40.0<br>±2.5 |
| Measuring cycle (min) | 15 | | |
| Measurement data memory | up to 3 months (ring buffer) | | |
| Reports | manual (.pdf/.csv) | | |
| Protection class | IP65 | IP54 | |
| Dimensions H x W x D (mm) | 95 x 75 x 30.5 | | |
| Weight (g) | 240 | | |

**Delivery incl.** basic cloud access, micro USB cable, wall mount with lock, 4 Mignon 1.5 V batteries, calibration report.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Saveris 2-T1 | **ECK0.1** | 1 | 129,00 |
| ② Saveris 2-T3 | **ECK1.1** | 1 | 215,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 | 5,95 |

## Type K temperature sensor for Saveris 2-T3

With ribbon cable. Cable length 2 m.

**Insertion sensor (terminal 1)**
For temperature measurement in climate control cabinets, incubators and refrigerators. Measurement range: -40 to +220 °C. Accuracy ±1.5 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 60 | 5 | **ECK2.1** | 1 | 59,35 |

**Low temperature sensor (terminal 3)**
For temperature measurement in liquid nitrogen, blast freezers and freezers. Measurement range: -200 to +40 °C. Accuracy ±2.5 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 90 | 5 | **ECK3.1** | 1 | 117,20 |

# Infrared thermometers




## Non-contact temperature quick testers

By Testo.

① **Quicktemp 826-T2**

- For non-contact measuring without destroying the packaging
- For monitoring upper **or** lower limits with visual alarm
- **Laser spot marker** for marking the measuring point
- **Acoustic alarm** for upper/lower deviation

② **Quicktemp 826-T4 with nuclear temperature measurement**

- For non-contact measuring without destroying the packaging
- A thin, robust test prod also enables measurement of nuclear temperatures
- For monitoring upper **or** lower limits with visual alarm
- **Supplied with deep-frozen food borer**
- **Laser spot marker** for marking the measuring point
- **Acoustic alarm** for upper/lower deviation

**Technical specifications:** general (for both models)

| | |
|---|---|
| Measuring range infrared | -50 to +300 °C |
| Resolution infrared | 0.1 °C |
| Accuracy infrared | ±1.5 °C (-20 to +100 °C)<br>±2 °C (outside) |
| Ratio measuring distance : spot | 6 : 1 |
| Emissivity | E = 0.95 (adjustable at 1.00) |

**Technical specifications:**
Contact side with penetration probe for type 826-T4

| | |
|---|---|
| Measuring range | -50 to +230 °C |
| Resolution | 0.1 °C |
| Accuracy | ±0.5 °C (-20 °C to +99 °C)<br>±1 °C or ±1 % of measured value (residual range),<br>the higher value being valid |

**Delivery incl.** 2 batteries Micro 1.5 V, belt/wall attachment, watertight protective case Top Safe (IP 67).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 826-T2 | **P855.1** | 1 | 95,70 |
| 826-T4 | **P857.1** | 1 | 149,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 | 6,40 |




## testo 104-IR multipurpose infrared and penetration thermometer

By Testo. Penetration thermometer combined with an infrared sensor for core and surface temperature measurements.

- Foldaway immersion/penetration probe
- 2-point laser mark for indicating the actual measurement spot
- Large LCD display for easy reading of measurement results

**Technical specifications:**

| | |
|---|---|
| **Immersion/penetration probe (NTC sensor type)** | |
| Measurement range/resolution | -50.0 to +250.0 °C |
| Accuracy | ±1 °C (-50.0 to -30.1 °C)<br>±0.5 °C (-30.0 to +99.9 °C)<br>±1 % of meas. value (outside) |
| **Infrared sensor** | |
| Measurement range/resolution | -30.0 to +250.0 °C |
| Accuracy | ±2.5 °C (-30.0 to -20.1 °C)<br>±2.0 °C (-20.0 to -0.1 °C)<br>±1.0 °C or 1.5% of meas. value (outside) |
| Ratio<br>measuring distance : measuring spot | 10 : 1 |
| Emmisivity/increments | 0.10 to 1.00 |
| **General** | |
| Protection rating | IP65 |
| Dimensions (W x D x H) | 48 x 21 x 281 mm (probe folded out)<br>48 x 21 x 178 mm (probe folded back) |
| Weight | 197 g |

**Delivery incl.** 2 micro 1.5 V batteries and calibration report.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XK00.1** | 1 | 117,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Infrared thermometers



①


②

## ① Mini-Flash infrared thermometer

By Dostmann. For non-contact measuring. Automatic hold-function for approx. 15 s. Lock-function for continous use.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | -33.0 to +220.0 °C |
| Accuracy infrared | ±1.5 °C (0 to +50 °C)<br>±2.0 °C or 2 % (outside) |
| Ratio measuringdistance : spot | 1.3 : 1 |
| Emissivity | E = 0.95 permanently set |
| Reaction infrared | approx. 500 ms |
| Working temperature | 0 to +50 °C |
| Dimensions (L x W x D) | 68 x 37 x 18 mm |
| Weight | 25 g |

**Delivery incl.** cellbattery CR 2032, 3 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y400.1** | 1 | 35,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |

## ② Scantemp 385 infrared thermometer

By Dostmann. For non-contact surface temperature measurement.
**With spot laser for marking the measurement zone**.
Backlight display. Lock function for continuous use.

**Technical specifications:**

| | |
|---|---|
| Measurement range | -35.0 to +365 °C |
| Resolution | 0.1 °C (-35 to 199.9)<br>1.0 °C (outside) |
| Accuracy | 2 °C to ±2 % (largest value applies) |
| Ratio<br>measurement distance : measurement spot | 12 : 1 |
| Emissivity | E=0.95 to E=0.70 (switchable) |
| Dimensions (L x W x D) | 167 x 64 x 34 mm |
| Weight | 150 g |

**Delivery incl.** 2 Micro 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LY46.1** | 1 | 53,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |


① ②

## Infrared thermometers with thermocouple input Scantemp-series

By Dostmann.

① **Scantemp Pro 450**

- Measuring range Infrared max. +500 °C
- With circular-laser for marking measuring point
- **Input for thermocouple sensor NiCr-Ni (Type K)**
- Min/Max/Hold-function
- Differential and mean value storage
- Optical and acoustic alarm when limit value has been exceeded
- LCD-indicator for simultaneous display of reading and min/max- or limit values
- Adjustable emission ratio from 0.10 to 1.00
- With backgroung lighting

**Delivery incl.** 2 batteries Micro 1.5 V.
Comes without thermocouple sensor, please order separately if needed.

② **Scantemp 490**

Like model Scantemp 450, **however comes with double target-laser which indicates the real measuring field for each measured distance.**
Measuring range infrared max. +1000 °C.

**Technical specifications:**

| | Infrared | Thermocouple input |
|---|---|---|
| Measuring range | Scantemp Pro 450: -60.0 to +500 °C<br>Scantemp 490: -60.0 to +1000 °C | -64.0 to +1370 °C |
| Resolution | 0.1 °C (-33.0/-60.0 to +199.9)<br>1 °C (outside) | |
| Accuracy | ±2.0 °C or 2 %<br>of higher value applies | ±1.0 °C or 1 %<br>of higher value applies |
| Ratio<br>Measured distance :<br>Measured spot | Scantemp Pro 450: 11 : 1<br>Scantemp 490: 50 : 1 | |
| Dimensions<br>(W x D x H) | Scantemp Pro 450: 39 x 79 x 175.2 mm<br>Scantemp 490: 45 x 145 x 215 mm | |
| Weight | Scantemp Pro 450: 180 g<br>Scantemp 490: 380 g | |

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Scantemp Pro 450 | **EHP6.1** | 1 | 107,00 |
| ② | Scantemp 490 | **KA38.1** | 1 | 227,90 |

## Accessories for Scantemp-series

**Immersion probes (Type K)**
Can be used up to max. 1100 °C. Dimensions of probe: L 300 x ∅ 3 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X196.1** | 1 | 69,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Thermohygrometers



## Infrared thermometer testo 845 with thermocouple input

By Testo.

- Switch-over optics for measuring far field and for point focusing.
  **Far field optics:** For large distance to measuring field.
  A laser cross marks the actual measuring field for all distances.
  **Point focus optics:** For surface temperature measuring with a spot size-∅ up to 1 mm (at 70 mm distance). 2-point laser marks the spot in point focusing.
- Three-spaced illuminated display with indicator for temperature, min-/ max-values, alarm signal limit (freely adjustable) and emission ratio
- Optical and acoustic alarm when limiting value has been exceeded
- Adjustable emission ratio from 0.1 to 1.0
- Input for thermocouple NiCr-Ni (Type K). Please order sensor separately.
- With memory for 90 readings.
- With USB-interface for reading out from memory and online measurements

**Technical specifications:**

| | Infrared | Thermocouple input |
|---|---|---|
| Measuring range/resolution | -35.0 to +950.0 °C | |
| Accuracy | ±2.5 °C (-35.0 to -20.1 °C)<br>±1.5 °C (-20.0 to +19.9 °C)<br>±0.75 °C (+20.0 to +99.9 °C)<br>±0.75 % of meas. value (outside) | ±0.75 °C (-35.0 to +75.0 °C)<br>±1 % of meas. value (outside) |
| Ratio<br>Measuring distance:<br>Measured spot | Far field: 75 : 1<br>Focusing point: 1 mm,<br>distance 70 mm | - |
| Dimensions (L x W x H) | 155 x 58 x 195 mm | |
| Weight | 465 g | |

**Delivery incl.** PC-software with USB-data transmission cable, stand holder, aluminium case, 2 batteries Mignon 1.5 V and calibration certificate.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HH65.1** | 1 | 643,95 |

## Accessories for infrared thermometers testo 845

**Surface sensors (Cl. 2)**
**For uneven surfaces.** Watertight and quick-reacting.
With springy thermocouple band (Measuring tip: ∅ 12 mm).
Measuring range -60 to +300 °C .

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 115 | 5 | **EH81.1** | 1 | 119,35 |

**Immersion probes (Cl. 1)**
Pliable. Precise and fast. Waterproof.
Measuring range -60 to +1000 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 1.5 | **EH77.1** | 1 | 93,55 |



## Precision hygrometer

Hygrometer and thermometer. For measuring humidity, dewpoint, steam pressure. Range thermometer: -30 to +50 °C.
Height 250 mm, ∅ 100 mm, weight 192 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1908.1** | 1 | 62,05 |




## Thermohygrometer

By TFA-Dostmann. Max/min value monitoring. Wall or table mount.

**Technical specifications:**

| Measurement range/resolution | 20 to 99 % RH | -20.0 to +50.0 °C |
|---|---|---|
| Accuracy | ±4 % RH (35 to 75 % RH),<br>±5 % RH (outside) | ±1.0 °C (0 to +40 °C)<br>±1.5 °C (outside) |
| Dimensions (L x W x D) | 104 x 104 x 13 mm | |
| Weight | 50 g | |

**Delivery incl.** cell battery V 2032 GA, 3 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NA63.1** | 1 | 20,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |



## Thermohygrometer

By TFA-Dostmann. Max/min value monitoring.
Ideal for desktops or hanging.

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/ esolution | +10 to +99 % RH | -10.0 to +60.0 °C |
| Accuracy | ±5 % RH | ±1 °C |
| Dimensions (L x W x D) | 110 x 95 x 20 mm | |
| Weight | 171 g | |

**Delivery incl.** battery Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y401.1** | 1 | 25,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Indoor-/outdoor thermohygrometer

By TFA-Dostmann. **With °C- and RH-outdoor sensor**
(cable length approx. 1.5 m). Simultaneous display of °C- and RH-values for inside and outside. Max-/Min-function. Ideal for desktop or wall assembly.

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | 10 to 99 % RH | -10.0 to +60.0 °C |
| Accuracy | ±5 % RH | ±0.5 °C |
| Dimensions (L x W x D) | 110 x 101 x 20 mm | |
| Weight | 185 g | |

**Delivery incl.** Micro 1.5 V battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HH28.1** | 1 | 37,55 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Thermohygrometer with alarm-LED

By Dostmann. Robust meter for measuring room temperature in laboratories, production and storage areas etc.

- Quick responding capacitive humidity sensor
- Dew point calculation (td)
- Max-/Min-function
- **LED-alarm indicates when humidity limit value has been exceeded**
- Battery life app. 1000 h at permanent run

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | 0.0 to 99.0 % RH | -40.0 to +70.0 °C |
| Accuracy | ±3.5 % RH (20 at 80 % RH)<br>±4 % RH (outside) | ±0.5 °C |
| Dimensions (L x W x H) | 105 x 105 x 44 mm | |
| Weight | 125 g | |

**Delivery incl.** 2 Micro 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CK97.1** | 1 | 46,05 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Thermohygrometer with jumbo-display

By Amarell. Large display (W 79 x H 66 mm) for air humidity, temperature and clock (24-h-display with alarm clock). Memory for min/max-values. Daily memory reset and freezing point alarm (alarm at outdoor temperature ≤0 °C) can be activated. Removable temperature outdoor sensor with 3 m cable. Suitable for desk top or wall attachment.

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | 20 to 99 % RH | Indoor 0.0 to +50.0 °C<br>Outdoor -50.0 to +70.0 °C |
| Accuracy | ±3 % RH | ±1.0 °C |
| Dimensions (L x W x D) | 110 x 98 x 21 mm | |

**Delivery incl.** battery Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AY02.1** | 1 | 41,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Thermohygrometers




## Thermohygrometer testo 608-H1/H2

By Testo. Ideal for monitoring room temperature and dew point in storage and clean rooms, laboratories, etc.

- Simultaneous display of **humidity and temperature**
- Dew point calculation td
- Max/min value monitoring
- Humidity sensor is insensitive to dew
- Ideal for desktops or hanging
- **Testo 608-H2 includes LED alarm which indicates when limit has been exceeded**

**Technical specifications:**

| Model | testo 608-H1 | testo 608-H2 |
|---|---|---|
| Measuring range/resolution | +10.0 to +95.0 % RH<br>0.0 to +50.0 °C<br>-20.0 to +50.0 °C td | +2.0 to +98.0 % RH<br>-10.0 to +70.0 °C<br>-40.0 to +70.0 °C td |
| Accuracy | ±3 % RH<br>±0.5 °C | ±2 % RH<br>±0.5 °C |
| Working temperature | 0 to +50 °C | -10 to +70 °C |
| Dimensions (W x H x D) | 120 x 89 x 40 mm | |

**Hygrometer testo 608-H1**
**Delivery incl.** 9 V block battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X226.1** | 1 | 74,20 |

**Alarm hygrometer testo 608-H2**
**Delivery incl.** calibrating protocol and battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X227.1** | 1 | 107,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |




## Thermohygrometer testo 623 with history function for measured values

By Testo.

- The large display shows the current and past temperature and humidity values as well as the date and time
- Selection option for temperature or humidity histogram
- Bar graph display of measured values over the last hour (for 5 min measuring cycle), 2 hours (for 10 min measuring cycle), 12 hours (for 1 h measuring cycle), 24 hours (for 2 h measuring cycle) or 12 days (for 24 h measuring cycle)
- Optical alarm (limit freely selectable)
- Min/max function
- Use as desktop or wall-mount unit

**Technical specifications:**

| | | |
|---|---|---|
| Measurement range/resolution | 0.0 to 100.0 % RH | -10.0 to +60.0 °C |
| Accuracy | ±2 % RH at +25 °C (10 to 90 % RH)<br>±3 % RH (outside) | ±0.4 °C |
| Operating temperature | -10 to +60 °C | |
| Dimensions (L x W x D) | 185 x 105 x 36 mm | |
| Weight | 240 g | |

**Delivery incl.** calibration protocol and 4 Mignon 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LY99.1** | 1 | 162,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Pocket-thermohygrometer

By TFA-Dostmann. Simultaneous display of temperature and air humidity. Stores min/max-values in °C and RH.

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | 20 to 90 % RH | -20.0 to +50.0 °C |
| Accuracy | ±5 % RH (35 to 75 % RH)<br>±7 % RH (outside) | ±1.0 °C |
| Dimensions (L x W x D) | 150 x 20 x 16 mm | |

**Delivery incl.** cell battery 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X684.1** | 1 | 32,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## Pocket thermohygrometer testo 610

By Testo.
- With display light
- AUTO-OFF function saves batteries, can be switched off
- Min/Max function, hold function
- Dewpoint calculation (td)

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | 0.0 to 100.0 % RH | -10.0 to +50.0 °C |
| Accuracy | ±2.5 % RH (5.0 up to 95.0 % RH) | ±0.5 °C |
| Dimensions (L x W x H) | 119 x 46 x 25 mm | |
| Weight | 250 g | |

**Delivery incl.** wrist strap, belt pouch, protective cap, calibration protocol and 2 batteries Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HY44.1** | 1 | 129,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Humidity sticks testo 605-H1

By Testo. Precise humidity sensor with long durability. With calculation of dew point. Sensor is insensitive to dew. AUTO-OFF-function (10 mins). With pivotable display.

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | 5.0 to 95.0 % RH | 0.0 to +50.0 °C |
| Accuracy | ±3 % RH | ±0.5 °C |
| Dimensions (L x W x D) | 180 x 37 x 36 mm | |

**Delivery incl.** mounting clip and 3 batteries Micro 1.5 V.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Humidity stick | **P302.1** | 1 | 95,70 |
| Humidity stick with ISO Certificate of Calibration, 75.3 % RH | **P303.1** | 1 | 180,60 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 | 6,40 |



## Thermohygrometer Dewpoint Pro

By Dostmann. Robust meter for measuring room climate in laboratories, buildings, etc.
- Fast-response capacitive humidity sensor (measuring cycle 1 s)
- Dew point calculation (td)
- Max/Min- and hold-function
- IP54-splashproof
- Battery life app. 1000 h at permanent run

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | 0.0 to 99.0 % RH | -40.0 to +70.0 °C |
| Accuracy | ±3 % RH (10 to 90 % RH)<br>±4 % RH (outside) | ±0.5 °C |
| Dimensions (L x W x H) | 170 x 50 x 17 mm | |
| Weight | 100 g | |

**Delivery incl.** 2 batteries, Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CK09.1** | 1 | 70,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Hygro-thermometer

Precise, compact thermometer with simultaneous display of humidity and temperature. Two humidity reference cells 33 and 75 % RH enable monitoring and calibration. Also features min/max. display. Automatic switch-off.

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | 0.0 to 99.8 % RH | -16.0 to +50.0 °C |
| Accuracy | ±3 % RH | ±1 °C |
| Dimensions (L x W x H) | 175 x 42 x 16 mm | |

**Delivery incl.** sturdy case, two reference cells and batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L895.1** | 1 | 251,55 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |

# Thermohygrometers



## Thermohygrometer testo 625

By Testo. With integral capacitive humidity sensor head for measuring air humidity and temperature. Two row display for indicating relative humidity or dewpoint as well as temperature. The humidity sensor head can be removed when measuring inacessible places and attached to the handle with sensor lead (please order separately). **Further cordless measurement transfer to the meter is possible via radio handle and radio module (please order separately)**.

- Min/Max-values
- Hold-button for retaining measured value
- Display light
- Auto-Off function

**Technical specifications:**

| | | |
|---|---|---|
| Measuring ranges/resolution | 0.0 to 100.0 % RH | -10.0 to +60.0 °C |
| Accuracy | ±2.5 % RH (+5 to +95 % RH) | ±0.5 °C |
| Working temperature | -20 to +50 °C | |
| Dimensions (W x D x H) | 64 x 40 x 182 mm | |
| Weight | 195 g | |

**Delivery incl.** attachable humidity sensor head, E-Block-battery 9 V and calibrating protocol.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH97.1** | 1 | 213,95 |

## Accessories for Thermohygrometer testo 625

**Handle** for attachable humidity sensor head.
**Delivery incl.** sensor lead (cord length approx. 1.2 m).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Handle for humidity sensor head | **EH98.1** | 1 | 44,10 |

Accessories:

| | | | |
|---|---|---|---|
| Protective cover TopSafe | **EH74.1** | 1 | 31,20 |
| E-Block 9 V battery | **1025.1** | 1 | 4,85 |

## Radio module and radio handle for testo 625

**Radio module for cordless transfer of measured data**
Frequency 869.85 MHz FSK.
Please order radio handle separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Radio module | **EH84.1** | 1 | 40,85 |

**Radio handle, technical specifications:**

| | |
|---|---|
| Measuring cycle | 0.5 or 10 sec, adjustable on handle |
| Range | max. 20 m (open air test site) |
| Battery type | 2 x Micro/AAA 1.5 V batteries |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Radio handle incl. batteries | **EH85.1** | 1 | 96,75 |

Accessories:

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Thermohygrometer P330

By Dostmann. Robust hand-held meter for determining temperature and humidity.

- Capacitance humidity sensor
- Max/Min- and hold function
- Integral sensor holder
- Display background lighting

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | 0 to 99 % RH | -40.0 to +70.0 °C |
| Accuracy | ±3 % RH | ±0.5 °C |
| Max. operating temp. | -40 to +70 °C | |
| Dimensions (L x W x H) | 130 x 70 x 25 mm | |
| Weight | 130 g | |

**Delivery incl.** 2 batteries Mignon/AA 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH55.1** | 1 | 107,00 |

Accessories:

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |




## Precision hygrometer P770

By Dostmann. **For analysing relative and absolute humidity, temperature, dew-point and flow.** Integrated calibration function for easy compensation of sensor tolerances. **With two sensor connections.** Storage of max-, min-, hold- and average values. USB-Online-PC-interface. Can be battery or wall socket operated. Dimensions: L 200 x W 93 x 44 mm.

**Technical specifications:**

| Measuring range/resolution | |
|---|---|
| Humidity<br>Pt 100<br>Flow | 0.0 to 100.0 % RH<br>-200.0 to +850.0 °C<br>0.00 to 40.00 m/s |
| **Accuracy** | |
| Humidity<br>Pt 100<br>Flow | ±1.5 % RH<br>±0.1 °C (-100 to +200 °C) / ±0.1 % of mv (rest)<br>1 % of final value |

**Delivery incl.** battery 9 V block. Comes without probe and power pack (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X732.1** | 1 | 344,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |
| Power supply for P700-series | **H198.1** | 1 | 32,20 |

## Accessories for precision hygrometer P770

With cable, length 1 m.

**Multi-purpose probe**
For measuring humidity and temperature.
Measuring range: 0 to 100 % RH; -30 to +80 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 120 | 20 | **X825.1** | 1 | 174,15 |

**Flow sensor**
For air and gases. Measuring range: 0.3 to 20 m/s.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 175 | 22 | **X731.1** | 1 | 685,85 |

**Temperature sensor Pt 100**
For measuring in liquid, gaseous and powdery media.
Measuring range -50 to +350 °C.

| Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 150 | 3 | **X722.1** | 1 | 78,50 |
| 300 | 3 | **X723.1** | 1 | 83,85 |

**General information on calibration and calibrating meters**

**Calibrated meters:**
Calibration of a meter is performed by the competent calibrating body. Each unit must fulfill certain criteria prior to receiving a certificate (e.g. automatic check when switched on, suitable connection for standard probes, etc.).
A calibrated meter is not automatically a highly accurate unit, it must simply keep within the given tolerances.
Each calibrated unit receives a seal and certificate of testing. Tests should be repeated at regular intervals.

**Meters with DAkkS Certificates of Calibration:**
A DAkkS Certificate of Calibration is issued by a accredited testing agency (must be approved and is monitored by Deutsche Akkreditierungsstelle [German Accreditation Agency]). Meter meets national standard requirements and can be used in accordance with ISO 9000 Quality Assurance Standards.
Very low preset tolerance (lower than required for works certificate).
The user of DAkkS certified meters can therefore issue internal works certificates. This is particulary of advantage in the Quality Assurance Department of larger firms where measuring instruments used in the Production Department must be tested and calibrated at specific intervals.
Individual test points should be customized depending upon temperature ranges under measurement.

**Meters with a Works Certificate of Calibration:**
A works certificate of calibration is issued after carrying out a comparison measurement with a DAkkS calibrated meter.
Unit meets national standard requirements and can be used in accordance with **ISO 9000** Quality Assurance Standards.
Tolerance of measurement with works certificates is slightly higher than of a DAkkS certified unit. Individual test points should be customized depending upon temperature ranges under measurement.

# Thermohygrometers



## Precision thermohygrometer HygroPalm 22

By Rotronic. For determining relative humidity and temperature
- Also for measuring equilibrium moisture content and temperature in powders and granulates (only with penetration probe Pro)
- 1-point probe-adjustment via buttons
- With display light
- Battery control
- Casing material: ABS

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | 0.0 to 100.0 % RH | -10.0 to +200.0 °C |
| Accuracy | ±1.5 % RH | ±0.3 K |
| Dimensions (L x W x D) | 196 x 72 x 35 mm | |
| Weight | 200 g | |

**Delivery incl.** 9 V block battery. Without measuring probe, calibrating device and humidity standard, please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KX08.1** | 1 | 306,40 |

## Accessories for thermohygrometer HygroPalm 22

**Temperature sensor HC2A-S**
Application areas: Indoor temperature control, temperature control during storage etc. With polyethylene filter as sensor protection.
Measuring range: 0 to 100.0 % RH, -50.0 to +100.0 °C.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Length 108 mm, ∅ 15 mm | **KX05.1** | 1 | 270,90 |

**Penetration probe, Basic**
For measurement in dustfree bulk and building materials such as concrete, brick etc. Also suitable for corn, wheat and granulates.
Not suitable for powdery substances.
Measuring range: 0 to 100.0 % RH, -40.0 to +85.0 °C.
With handle and cable (Length 2 m).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Length 200 mm, ∅ 5 mm | **KX06.1** | 1 | 661,15 |

**Penetration probe Pro**
Robust probe for measuring in dusty bulk materials such as flour, sugar and building materials like concrete, brick etc. With steel sinter filter.
Measuring range: 0 to 100.0 % RH, -40.0 to +85.0 °C.
With handle and cable (Length 2 m).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Length 280 mm, ∅ 10 mm | **KX07.1** | 1 | 731,00 |

**Calibrating device**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for temperature probe HC2-S | **CE88.1** | 1 | 155,90 |
| for penetration probe Basic | **CE89.1** | 1 | 155,90 |
| for penetration probe Pro | **CE90.1** | 1 | 155,90 |

**Humidity standards** each with 5 ampoules per humidity value

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10.0 % RH (±0.3 % RH) | **CE92.1** | 1 | 59,15 |
| 35.0 % RH (±0.5 % RH) | **CE93.1** | 1 | 59,15 |
| 80.0 % RH (±1.2 % RH) | **CE94.1** | 1 | 59,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |



## Mini material humidity meter, HumidCheck

By Dostmann. With measurement scale for building material and wood. Automatic switch-off. Easy to operate: Remove protective cap and stick measuring electrodes into object to be measured.
With temperature display.

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | Wood<br>Building material | 6 to 42 %<br>0.2 to 2.0 % |
| Accuracy | Wood<br><br>Building material | ±2 % (<30 %)<br>±4 % (>30 %)<br>±0.1 % (<1.4 %)<br>±0.2 % (>1.4 %) |
| Dimensions (L x W x H) | 80 x 4 x 20 mm | |
| Weight | 50 g | |

**Delivery incl.** wrist strap and 4 x1.5 V button cell batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KT96.1** | 1 | 25,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## Material hygrometer

By Dostmann. For measuring moisture in wood and buildings, e.g. for derived timber products, veneer, plaster, stone floors, paperboard etc. With graphic measuring scale for both parameters. Easy to operate: Remove the protective cap and stick the electrode into the object to be measured.

**Technical specifications:**

| | |
|---|---|
| Measuring range | Wood: 6 to 44 %<br>building material: 0.2 to 2.0 % |
| Accuracy: | Wood: ±1 %<br>building material: ±0.05 % |
| Dimensions (W x D x H) | 40 x 32 x 130 mm |
| Weight | 100 g |

**Delivery incl.** 3 button cell batteries CR 2032, 3 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EX62.1** | 1 | 64,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |



## Weather station

For inside measurements only. With thermometer, hygrometer and barometer. Round, with plastic case, ∅ 160 mm. Weight approx. 180 g.
Accuracy: hygrometer ±5 %, temperature ±1 °C, barometer ±5-10 %.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A889.1** | 1 | 32,20 |



## Weather station

For inside and outside. With thermometer, hygrometer and barometer. Stainless steel case, ∅ 160 mm. Weight approx. 440 g.
Accuracy: barometer ±5-10 %, thermometer ±1 °C, hygrometer ±5 % RH.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y246.1** | 1 | 66,65 |



## Climate centre

For inside and outside. With hygrometer, barometer and thermometer. Stainless steel case. Dimensions: W 95 x H 280 x D 18 mm, display instruments ∅ 70 mm, weight 380 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X257.1** | 1 | 48,35 |



## Satellite-supported meteorological radio station Galileo Plus

By TFA-Dostmann. Regional weather forecasting for 50 different areas in Germany. The meteorological radio stations identify the correct weather region automatically. Data is transmitted several times a day via satellite over a special radio network in 466 MHz frequency range.

- Weather forecast for today and the next 3 days
- Forecast with symbols (36 different weather symbols) for the 4 times of the day (morning, afternoon, evening, night)
- Indication of the highest and lowest temperatures expected for each day
- Transmission of local outside temperature (measuring range -40.0 to +60.0 °C) and air humidity (measuring range 1 to 99 % RH) via wireless outer sender (868 MHz) with max. range 100 m (free field)
- Outside sensor indicates either the current temperature or air humidity. Dimensions of sensor: L 40 x W 130 x D 25 mm
- Clock with alarm and date
- Dimensions of receiver: L 121 x W 131 x D 40 mm

**Delivery incl.** Receiver with 2 batteries Baby/C 1.5 V, sensor with 2 batteries Mignon 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HT61.1** | 1 | 73,10 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |
| Baby/C 1.5 V battery | **1023.2** | 2 pieces | 4,85 |

# Rain gauges




## Digital wireless rain gauge Monsun

By TFA-Dostmann. For wireless transmission of precipitation amount (up to 9999 mm) and ambient temperature (max. 30 m range in open air).

- Display of precipitation during the previous hour, 24 hours and total precipitation (since last reset), including time and date of storage
- Display of precipitation amount in a bar chart, the previous 7 days, 7 weeks or 7 months can be successively displayed
- Audible and visual alarms at onset of rainfall
- Max/Min function for interior and exterior temperature
- Programmable temperature alarm for interior and exterior
- Trend arrow for ambient temperature
- Self-draining rainwater tank
- Wall or table mountable receiver.

**Technical specifications:**

| | | |
|---|---|---|
| Measurement range | Precipitation amount | 0 to 9999 mm |
| | Exterior temperature | -50 to +70 °C |
| | Interior temperature | -10 to +50 °C |
| Dimensions | Receiver unit | W 94 x D 25 x H 122 mm |
| | Transmitter unit | ∅ 132 x H 160 mm |
| Power supply | Receiver unit | 3 1.5 V batteries |
| | Transmitter unit | 2 1.5 V batteries |

**Delivery incl.** rainwater tank (transmitter unit) and batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XA41.1** | 1 | 42,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare exterior transmitter | **XH13.1** | 1 piece | 19,30 |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |




## ① Pocket absolute pressure gauge, testo 511

By Testo.

- Display-light
- AUTO-OFF function saves batteries, can be switched off
- With barometric levelling
- Min/Max-function
- Tube connections for ID 4 and 6 mm

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | 300.0 to 1200.0 hPa |
| Accuracy | ±3.0 hPa |
| Units | hPa, mbar, Pa, $mmH_2O$, mmHg, $inH_2O$, inHg, psi, m, ft |
| Max. operating temperature | 0 to +50 °C |
| Dimensions (L x W x D) | 119 x 46 x 25 mm |
| Weight | 255 g |

**Delivery incl.** wrist strap, belt bag, protection cap, calibration protocol and 2 batteries Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HY43.1** | 1 | 160,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

## ② Pocket differential pressure gauge testo 510

By Testo. For measuring low differential pressures (e.g. checking filter permeability), gasflow pressure measurement etc.

- With display light
- AUTO-OFF function saves batteries, can be switched off
- With temperature compensation
- Min/Max function, hold function
- With magnets on back for free-hand operation
- Tube connections for ID 4 and 6 mm

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | 0.00 to 100.00 hPa |
| Accuracy | ±0.03 hPa (0 to 0.30 hPa)<br>±0.05 hPa (0.31 to 1.00 hPa)<br>±(0.1 hPa + 1.5 % of mean value) (1.01 to 100 hPa) |
| Units | hPa, mbar, Pa, $mmH_2O$, mmHg, $inH_2O$, inHg, psi |
| Max. operating temperature | 0 to +50 °C |
| Dimensions (L x W x D) | 119 x 46 x 25 mm |
| Weight | 255 g |

**Delivery incl.** silicone rubber connecting hoses (2 x 20 cm), wrist strap, belt pouch, protective cap, calibration protocol and 2 batteries Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HY42.1** | 1 | 138,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Carbon dioxide meter Air $CO_2$ntrol 3000

By Dostmann. For monitoring the $CO_2$-concentration in buildings e.g. schools, universities and all public facilities.

- Case made of ABS plastic
- **Integrated 24-h data loggers** with READ function (measured values can be retrieved via display) and preset 30-min storage cycle
- Acoustic alarm goes off when a freely set $CO_2$-value is exceeded
- Battery or outlet operation (Battery life approx. 48 operating hours)

**Technical specifications:**

| | Carbon dioxide | Temperature |
|---|---|---|
| Range | 0 to 3000 ppm | 0 to +50.0 °C |
| Resolution | 1 ppm (0 to 1000 ppm)<br>5 ppm (1001 to 2000 ppm)<br>10 ppm (2001 to 3000 ppm) | 0.1 °C |
| Accuracy: | ±50 ppm or 5 %<br>(larger value is valid) | ±1 °C or ±1 %<br>(larger value is valid) |
| Dimensions (L x W x D) | 165 x 80 x 23 mm | |
| Weight | 600 g | |
| Current | 230 V, 50/60 Hz | |

**Delivery incl.** Power unit and 4 batteries Mignon 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KL61.1** | 1 | 223,60 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |




## Carbon dioxide measuring device CP11

By Rotronic. Monitors $CO_2$ concentration, relative humidity and temperature.

- Integrated measured value memory and real-time clock
- Audible $CO_2$ alarm
- Maximum, minimum and average value display
- Calculates the dewpoint (TP) and wet bulb temperature (FKT)
- Large backlit display
- Adjustable auto power off function
- Logger programming, data transfer and representation with Windows compatible software
- Mini USB interface

**Technical specifications:**

| | |
|---|---|
| **Measurement range/resolution** | |
| CO2 | 0 to 5 000 ppm |
| Humidity | 0.10 to 99.95 % rel. hum. |
| Temperature | -20 to +60 °C |
| **Accuracy** | |
| $CO_2$ | ±30 ppm, ±5 % of the measured value |
| Humidity | 2.5 % rel. hum. (10 to 90 % rel. hum) |
| Temperature | ±0.3 K |
| **General notes** | |
| Measurement data memory | 18,000 values with time stamp, automatic recording (ppm, % rF, °C)<br>99 single values with time stamp, manual recording (ppm, % rF, °C, TP, FKT) |
| Battery lifetime | approx. 50 h |
| Dimensions incl. sensor (H x W x D) | 234 x 77 x 42 mm |
| Weight | 290 g |

**Delivery incl.** SW2.1 software, mini USB data cable, storage bag and 4 1.5 V Mignon batteries.
Please order mains adapter separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NL25.1** | 1 | 322,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| 5 VDC mains adapter | **NL26.1** | 1 piece | 46,25 |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |

# Densimeters



## Density hydrometers

Without thermometer. Graduations: 0.005 g/cm³. Reference temperature 20 °C. Overall length 300 mm. Body ∅ 16 mm, stem ∅ approx.7-10 mm.

| Measurement range (g/cm³) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0.700 to 1,000 | **PY81.1** | 1 | 10,65 |
| 1,000 to 1.500 | **PY82.1** | 1 | 11,50 |
| 1.500 to 2,000 | **PY83.1** | 1 | 13,45 |

## Hydrometer spindle with twin scales

Without thermometer. Graduations: 0.01 and 1 °Bé. Reference temperature 20 °C. Overall length 350 mm. Body ∅ 18 mm, stem ∅ 9 mm.

| Measurement range | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0.70 to 2.00 g/cm³ / 0 to 70 °Bé | **PY84.1** | 1 | 18,55 |



## Density hydrometers

Without thermometer. Graduation 0.001 g/cm³. Reference temperature 20 °C. Total length 300 mm. Body-∅ 16 mm, stem-∅ 6.25 mm.

| Measurement range (g/cm³) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0.600 to 0.700 | **HH87.1** | 1 | 11,00 |
| 0.700 to 0.800 | **HH88.1** | 1 | 11,00 |
| 0.800 to 0.900 | **HH89.1** | 1 | 11,00 |
| 0.900 to 1.000 | **HH90.1** | 1 | 11,00 |
| 1.000 to 1.100 | **HH91.1** | 1 | 12,10 |
| 1.100 to 1.200 | **HH92.1** | 1 | 12,10 |
| 1.200 to 1.300 | **HH93.1** | 1 | 12,10 |
| 1.300 to 1.400 | **HH94.1** | 1 | 12,85 |
| 1.400 to 1.500 | **HH95.1** | 1 | 12,85 |
| 1.500 to 1.600 | **HH96.1** | 1 | 13,25 |
| 1.600 to 1.700 | **HH97.1** | 1 | 13,25 |
| 1.700 to 1.800 | **HH98.1** | 1 | 13,25 |
| 1.800 to 1.900 | **HH99.1** | 1 | 13,25 |
| 1.900 to 2.000 | **HK03.1** | 1 | 13,25 |




## Alcoholometer (breathalyzer)

Without thermometer. Reference temperature 20 °C.

**Precision alcoholometer**

| Measuring range (% Vol.) | Graduation (% Vol.) | Tolerance (% Vol.) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 10-20 | 0,1 | ±0,1 | 320 | **HKX0.1** | 1 | 35,45 |
| 30-40 | 0,1 | ±0,1 | 320 | **HKX1.1** | 1 | 35,45 |
| 40-50 | 0,1 | ±0,1 | 320 | **HKX2.1** | 1 | 45,70 |

**Standard alcoholometer**

| Measuring range (% Vol.) | Graduation (% Vol.) | Tolerance (% Vol.) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0-100 | 1 | ±1 | 250 | **HKX3.1** | 1 | 27,75 |



## Standard alcoholometer (breathalyzer)

With thermometer. Special filling, blue. Reference temperature 20 °C.

| Measuring range (% Vol.) | Graduation (% Vol.) | Measuring range (°C) | Graduation (°C) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 0-100 | 1 | 0 to 30 | 1 | 340 | **AT55.1** | 1 | 40,50 |



## Density hydrometers acc. to Baumé

Without thermometer. Graduation 0.1 °Bé. Reference temperature 15 °C. Total length 280 mm. Body-∅ 16 mm, stem-∅ 5.25 mm.

| Measuring range (°Bé) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0.0 to 10.0 | **HH80.1** | 1 | 10,70 |
| 10.0 to 20.0 | **HH81.1** | 1 | 10,70 |
| 20.0 to 30.0 | **HH82.1** | 1 | 10,70 |
| 30.0 to 40.0 | **HH83.1** | 1 | 12,40 |
| 40.0 to 50.0 | **HH84.1** | 1 | 12,40 |
| 50.0 to 60.0 | **HH85.1** | 1 | 12,85 |
| 60.0 to 70.0 | **HH86.1** | 1 | 12,85 |




## Hydrometers made of polycarbonate

Shatterproof. Without thermometer.
Ideal for applications in the food and pharmaceutical industries.

**For measuring the density**

| Measurement range (g/cm³) | Graduation (g/cm³) | Length (mm) | Reference temperature (°C) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1.000 to 1.220 | 0,002 | 300 | 20 | **HKT3.1** | 1 | 78,40 |
| 1.200 to 1.420 | 0,002 | 300 | 20 | **HKT4.1** | 1 | 78,40 |
| 1.400 to 1.620 | 0,002 | 300 | 20 | **HKT5.1** | 1 | 78,40 |

**For measuring acc. to Baumé**

| Measuring range (°Bé) | Graduation (°Bé) | Length (mm) | Reference temperature (°C) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0 to 25 | 0,2 | 300 | 15 | **HKT7.1** | 1 | 78,40 |
| 0 to 12 | 0,2 | 250 | 15 | **HKT8.1** | 1 | 78,40 |
| 19 to 31 | 0,2 | 250 | 15 | **HKT9.1** | 1 | 78,40 |

**For measuring natrium chloride (saline solution)**

| Measuring range (%mas.) | Graduation (%mas.) | Length (mm) | Reference temperature (°C) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 0 to 26 | 0,2 | 300 | 20 | **HKT6.1** | 1 | 78,40 |



DURAN WHEATON KIMBLE
Material DURAN®
A 121°C

## Hydrometer cylinders

Made of DURAN®. Not graduated. With round base and polished rim.
Autoclavable.

| Volume (ml) | Height (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 380 | 400 | 40 | **KE08.1** | 1 | 17,35 |
| 770 | 500 | 50 | **KE09.1** | 1 | 28,00 |




## Standard colour selection fan RAL K5

With **213 colour cards**, with a dull finish. Contains colour register RAL 840-HR, coding colours RAL-F 14 and colours RAL-F 81.
Ideal for exact determination of colour tone in paper and TLC chromatography, and to determine colours of chemicals, crystals and natural dyes for textile and food colouring.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0426.1** | 1 | 55,70 |



## Rotilabo®-odour strips

For liquids. Made of filter carton 240 g/m². 5 blocks = 300 strips.
Dimensions: W 6 x L 135 mm in blocks of 60 strips.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1679.1** | 5 | 16,70 |




## OZONE test sticks

Simple test for analysis of the OZONE-content in the air.
Test sticks should be placed in a wind-sheltered area and compared to a scale after 10 minutes.

| | |
|---|---|
| Analysis | $O_3$ |
| Scale graduation | <90 / 90-150 / 150-210 / >210 µg/m³ |
| Colour change | from white to brown |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L828.1** | 12 | 17,65 |

# Test units




## Quick test sticks Aquadur®

Ideal for semi-quantitative evaluation of **water mineral content (total hardness).** Suitable as a fast first test of hardness values. Range from 0 °d to over 25 °d. Division into the following degrees of hardness: <3 °d, >5 °d, >10 °d, >15 °d, >20 °, >25 °d. Test stick is dipped into the water sample. The colour changes and hardness can be evaluated after 1 min by comparing it with the supplied scale. Attention: Test paper should not be touched with fingers. One pack contains 100 test sticks 6 x 95 mm. Conversion: 1 °d = 1.8 °f = 1.25 °e = 17.8 mg/l $CaCO_3$.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C725.1** | 100 | 22,85 |




## Oil test papers

For speedy detection of oil in water and/or soil.
The pale blue paper changes colour to dark blue upon contact with hydrocarbons, especially benzine, fuel oil, lubricating oil, etc.

**Technical specifications:**

| Substance | Colour reactions just visible (mg/l water) | Colour reactions clearly visible (mg/l water) |
|---|---|---|
| Petroleum ether (bp. 40-80 °C) | 250 | 400 |
| Motor gasoline (super) | 10 | 25 |
| Fuel oil EL | 5 | 10 |
| Lubricating oil | 1 | 5 |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L832.1** | 100 | 25,25 |




## Water hardness kit

Testing reagent is added drop by drop to 5 ml water sample until colour changes. Each drop equals 1 °dH. Pack with 2 x 15 ml reagent.

**Warning** H226-H319-H336

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0519.1** | 2 x 15 ml | 19,60 |




## Test papers

By Macherey-Nagel. For qualitative determination of ions and chemical compounds. The test paper changes colour above a specific detection limit.

**Technical specifications:**

| Test paper | Verification of | Sensitivity limit / colour change |
|---|---|---|
| Plumbtesmo | Lead (Pb)<br>Lead ions ($Pb^{2+}$) | 5 mg/l $Pb^{2+}$<br>white-yellow to pink-red |
| Potassium iodide starch paper | Nitrite ions ($NO_2^-$)<br>Free chlorine ($Cl_2$) | 1 mg/l $NO_2^-$<br>1 mg/l free $Cl_2$<br>white to blue-violet |
| Lead acetate paper | Hydrogen sulphide ($H_2S$)<br>Sulphide ions ($S^{2-}$) | 5 mg/l $S^{2-}$<br>white to brown/black |
| Phosphatesmo KM | Sperm, acid phosphatase | in trace amounts<br>white to violet |
| Watesmo | Water (e.g. in organic solvents) | in trace amounts<br>light blue to dark blue |

| Test paper | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Plumbtesmo | Paper strips, L 40 x W 25 mm | **1252.1** | 40 | 53,50 |
| Potassium iodide starch paper | Roll, L 5 m x W 7 mm | **AXT3.1** | 1 | 12,80 |
| Lead acetate paper | Roll, L 5 m x W 7 mm | **AXT4.1** | 1 | 12,40 |
| Phosphatesmo KM | Paper strips, L 30 x W 15 mm | **AXT5.1** | 25 | 117,00 |
| Watesmo | Roll, L 5 m x W 10 mm | **AXT6.1** | 1 | 32,00 |

# Test units




## Test sticks Quantofix®

By Macherey-Nagel. For semi-quantative analysis of different substances. The test sticks consist of an 0.2 mm thick plastic strip with test paper sealed on at lower end. After the test strip has been wetted, the visible staining can been compared with the colour scale on the welt of the can. The concentration value can be read and/or a concentration area estimated. One container contains 100 test sticks 6 x 95 mm.

| Type | Scale grading (mg/l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Aluminium $Al^{3+}$ | 0-5-20-50-200-500 | **L865.1** | 100 | 44,50 |
| Ammonium $NH_4^+$ | 0-10-25-50-100-200-400 | **H920.1** | 100 | 41,00 |
| Ascorbic acid $C_6H_8O_6$ | 0-50-100-200-300-500-1000-2000 | **LT42.1** | 100 | 28,75 |
| Carbonate hardness $CO_3^{2-}$ | 0-3-6-10-15-20 | **L863.1** | 100 | 27,15 |
| Chlorine $Cl_2$ | 0-1-3-10-30-100 | **H921.1** | 100 | 53,60 |
| Chloride $Cl^-$ | 0-500-1000-1500-2000 ≥3000 | **H922.1** | 100 | 30,65 |
| Cyanide $CN^-$ | 0-1-3-10-30 | **L864.1** | 100 | 54,20 |
| EDTA | 0-100-200-300-400 | **LT47.1** | 100 | 28,40 |
| Iron 100 $Fe^{2+}/Fe^{3+}$ | 0-2-5-10-25-50-100 | **L830.1** | 100 | 22,75 |
| Potassium $K^+$ | 0-200-400-700-1000-1500 | **LT48.1** | 100 | 42,70 |
| Copper $Cu^+/Cu^{2+}$ | 0-10-30-100-300 | **L831.1** | 100 | 23,20 |
| Molybdenum $Mo^{6+}$ | 0-5-20-50-100-250 | **P921.1** | 100 | 59,75 |
| Nickel $Ni^{2+}$ | 0-10-25-50-100-250-500-1000 | **LT49.1** | 100 | 27,90 |
| Nitrate/Nitrite $NO_3^-/NO_2^-$ | 0-10-25-50-100-250-500 / 0-1-5-10-20-40-80 | **C733.1** | 100 | 26,00 |
| Nitrite $NO_2^-$ | 0-1-5-10-20-40-80 | **C734.1** | 100 | 25,20 |
| | 0-100-300-600-1000-2000-3000 | **LT43.1** | 100 | 27,35 |
| Nitrite/pH $NO_2^-$/pH | $NO_2^-$ 0-1-5-10-20-40-80 / pH 6,0-6,4-6,7-7,0-7,3-7,6-7,9-8,2-8,4-8,6-8,8-9,0-9,3-9,6 | **HL20.1** | 100 | 32,30 |
| Per acetic acid $C_2H_4O_3$ | 0-5-10-20-30-50 | **LT44.1** | 100 | 30,80 |
| | 0-50-100-200-300-400-500 | **LT45.1** | 100 | 30,95 |
| | 0-500-1000-1500-2000 | **LT46.1** | 100 | 34,90 |
| Peroxide $H_2O_2$ | 0-0,5-2-5-10-25 | **L829.1** | 100 | 24,45 |
| | 0-1-3-10-30-100 | **C735.1** | 100 | 24,20 |
| Phosphate $PO_4^{3-}$ | 0-3-10-25-50-100 | **H923.1** | 100 | 39,00 |
| Sulphate $SO_4^{2-}$ | 0->400->800->1200->1600 | **P922.1** | 100 | 27,95 |
| Sulphite $SO_3^{2-}$ | 0-10-25-50-100-250-500-1000 | **C736.1** | 100 | 25,40 |
| Tin $Sn^{2+}$ | 0-10-25-50-100-250-500 | **L866.1** | 100 | 39,10 |




## ① VISOCOLOR® *alpha* test kits

By Macherey-Nagel. For colorimetric and volumetric procedures. The use of **multi-component reagents** means that **only 1 reagent is required for analysing** (2 reagents for $Cl_2$). Contents: Sample vial with 5 ml ring marking, bottles with drops or powder of required reagents, dosing spoon for powder and colour card.

| Type | Measuring range (mg/l) | No. of analysis | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Ammonium $NH_4^+$ | 0-0,2-0,5-1-2-3 | 50 | **X319.1** | 1 | 34,95 |
| Carbonate hardness | 1 drop = 1°d | 100 | **T361.1** | 1 | 19,40 |
| Chlorine, $Cl_2$ | 0,25-0,5-1,0-1,5-2,0 | 150 | **T362.1** | 1 | 20,45 |
| Total hardness | 1 drop = 1°d | 50 | **T363.1** | 1 | 22,60 |
| Nitrate $NO_3^-$ | 2-8-15-30-50 | 100 | **X320.1** | 1 | 33,90 |
| Nitrite $NO_2^-$ | 0,05-0,10-0,25-0,5-1,0 | 200 | **T364.1** | 1 | 22,75 |
| Phosphate $PO_4^{3-}$ | 2-5-10-15-20 | 70 | **X321.1** | 1 | 32,95 |
| Rest hardness °d | 0,00-0,04-0,08-0,15-0,30 | 200 | **X322.1** | 1 | 39,20 |
| pH 5,0-9,0 | pH 5,0-5,5-6,0-6,5-7, 0-7,5-8,0-8,5-9,0 | 200 | **T365.1** | 1 | 27,40 |

## ② VISOCOLOR® *HE* test kits

By Macherey-Nagel. This highly sensitive colorimetric measuring technique enables analysis of minimal substance concentrations. Combined with the application of highly sensitive substances and the application of an optical trick, double irradiation, the **sensitivity compared to other VISOCOLOR® test kits is enhanced by 10 - 100 times**. Contents: sturdy plastic box, the required reagents, a comparator block for holding the revolving 10-colour disc and the 2 measuring glasses.

* Method in accordance with basic chemical factors of German unit processes.

| Type | Measuring range (mg/l) | No. of analysis | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Ammonium $NH_4^+$ | 0-0,02-0,04-0,07-0,10-0,15-0,20-0,30-0,40-0,50 | 110 | **T379.1** | 1 | 88,35 |
| Chlorine $Cl_2$ free+total | 0-0,02-0,04-0,06-0,10-0,15-0,20-0,30-0,40-0,60 | each 160 | **T380.1** | 1 | 88,25 |
| Cyanide $CN^-$ | 0-0,002-0,004-0,007-0,010-0,015-0,020-0,025-0,030-0,040 | 55 | **T381.1** | 1 | 88,00 |
| Iron Fe | 0-0,01-0,02-0,03-0,04-0,05-0,07-0,10-0,15-0,20 | 300 | **T382.1** | 1 | 88,00 |
| Copper $Cu^{2+}$ | 0-0,04-0,07-0,10-0,15-0,20-0,25-0,30-0,40-0,50 | 150 | **T383.1** | 1 | 88,00 |
| Manganese Mn | 0-0,03-0,06-0,10-0,15-0,20-0,25-0,30-0,40-0,50 | 100 | **T384.1** | 1 | 88,00 |
| Nitrite $NO_2^-$ | 0-0,005-0,010-0,015-0,02-0,03-0,04-0,06-0,08-0,10 | 150 | **T385.1** | 1 | 88,00 |
| Phosphate P | 0-0,05-0,10-0,15-0,20-0,3-0,4-0,6-0,8-1,0 | 300 | **T388.1** | 1 | 88,00 |
| Phosphate P (DEV)* | 0-0,01-0,02-0,03-0,05-0,07-0,10-0,15-0,20-0,25 | 100 | **T387.1** | 1 | 88,00 |
| Silicium Si | 0-0,01-0,02-0,03-0,05-0,07-0,10-0,15-0,20-0,30 | 120 | **T389.1** | 1 | 88,00 |

# Photometer




## VISOCOLOR® *ECO* test kits

By Macherey-Nagel. For colorimetric and volumetric procedures. ECO-test kits are suitable for **the analysis of water contents with low limiting values whereby environmentally hazardous or toxic substances are not used**. With pictogram for easy operation. Contents: 2 measuring glasses, 20 mm, with screw cap, sliding comparator for holding measuring glasses, colour card, plastic syringe 5 ml, bottles with reagents and dosing spoons.

Assays are suitable for use in photometer PF12, except Art. Nos. X323.1, T367.1, T372.1, T378.1, Y559.1 and T376.1.

| Type | Measuring range (mg/l) | No. of analysis | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Ammonium $NH_4^+$ | 0-0,2-0,3-0,5-0,7-1-2-3 | 50 | **T366.1** | 1 | 48,15 |
| Calcium $Ca^{2+}$ | 1 drop = 5 mg/l | 100 | **X323.1** | 1 | 31,00 |
| Carbonate hardness | 1 drop = 1°d | 100 | **T367.1** | 1 | 40,90 |
| Chlorine, $Cl_2$ | <0,1-0,1-0,2-0,3-0,4-0,6-0,9-1,2-2,0 | 150 | **T368.1** | 1 | 43,90 |
| Chloride $Cl^-$ | 1-2-4-7-12-20-40-60 | 90 | **T369.1** | 1 | 50,40 |
| Chrome (VI) Cr | 0,02-0,05-0,10-0,15-0,20-0,30-0,40-0,50 | 140 | **T370.1** | 1 | 50,45 |
| Cyanide $CN^-$ | 0-0,01-0,02-0,03-0,05-0,07-0,10-0,15-0,20 | 100 | **X324.1** | 1 | 64,55 |
| Cyanuric acid Cya | 10-15-20-30-40-60-80-100 | 100 | **X325.1** | 1 | 79,15 |
| Iron Fe | 0-0,04-0,07-0,10-0,15-0,20-0,30-0,50-1,0 | 100 | **T371.1** | 1 | 44,45 |
| Total hardness | Drop = 1°d | 100 | **T372.1** | 1 | 40,75 |
| Potassium $K^+$ | 2-3-4-6-8-10-15 | 60 | **Y556.1** | 1 | 93,85 |
| Silicic acid $SiO_2$ | 0-0,2-0,4-0,6-1,0-1,5-2,0-2,5-3,0 | 80 | **Y557.1** | 1 | 55,10 |
| Copper $Cu^{2+}$ | 0-0,1-0,2-0,3-0,5-0,7-1,0-1,5 | 100 | **T373.1** | 1 | 48,40 |
| Manganese Mn | 0-0,1-0,2-0,3-0,5-0,7-0,9-1,2-1,5 | 70 | **Y558.1** | 1 | 59,65 |
| Nickel $Ni^{2+}$ | 0-0,1-0,2-0,3-0,5-0,7-0,9-1,2-1,5 | 150 | **X326.1** | 1 | 73,00 |
| Nitrate $NO_3^-$ | 0-4-10-20-30-50-70-90-120 | 120 | **T374.1** | 1 | 43,40 |
| Nitrite $NO_2^-$ | 0-0,02-0,03-0,05-0,07-0,1-0,2-0,3-0,5 | 150 | **T375.1** | 1 | 44,40 |
| Phosphate $PO_4$-P | 0-0,2-0,3-0,5-0,7-1-2-3-5 | 80 | **T377.1** | 1 | 42,55 |
| Swimming pool (Chlorine + pH) | $CL_2$ 0,1-0,2-0,3-0,4-0,6-0,9-1,2-2,0<br>pH 6,9-7,2-7,4-7,6-7,8-8,2 | 150 | **T378.1** | 1 | 56,70 |
| Sulphide $S^{2-}$ | 0-0,1-0,2-0,3-0,4-0,5-0,6-0,7-0,8 | 90 | **Y560.1** | 1 | 57,50 |
| Sulfite $SO_3^{2-}$ | 1 drop = 1 mg/l | 60 | **Y559.1** | 1 | 44,95 |
| pH 4,0 - 9,0 | pH 4,0-5,0-6,0-6,5-7,0-7,5-8,0-8,5-9,0 | 400 | **T376.1** | 1 | 43,00 |




## Photometer PF-12$^{Plus}$ for water analysis

By Macherey-Nagel. Portable photometre for field and laboratory use with preprogrammed Visocolor®-ECO and Nanocolor® round cuvette tests

- Illuminated graphic display
- Automatic wavelength setting
- Cell shaft for round cells 16 mm AD
- USB-interface for data transfer and power supply
- Dust and waterproof casing according to IP 68

**Technical specifications:**

| | |
|---|---|
| Optic | Automatic filter wheel with 7 interference filters |
| Wave lengths | 345/436/470/540/585/620/690 nm |
| Wave length precision | ±2 nm |
| Light source | Wolfram lamp |
| Photometric range | ±3 E |
| Photometric accuracy | ±1 % |
| Memory | 1000 readings, GLP-conform |
| Interface | USB 2.0 |
| Dimensions (L x W x D) | 215 x 100 x 65 mm |

**Delivery incl.** software DVD, 4 Mignon 1.5 V batteries, 4 empty cuvettes, funnel, beaker, syringe, USB-cord, calibrating cuvette and transport case. Please order USB-power adapter separately if required.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LP73.1** * | 1 | 920,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| USB-power adapter | **LP74.1** * | 1 piece | 33,85 |
| Spare cuvettes 16 mm AD with screw cap | **X367.1** * | 20 | 32,00 |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |

* Longer delivery times possible.Please check with our Sales Department







## AL100 chlorine photometer

By Aqualytic. For free, bound and total chlorine.
- Internal ring buffer for 16 datasets with real-time clock and date
- Auto-Off function
- Countdown function to maintain reaction time

Determination of chlorine content using reagent tablets.
- Measurement of free chlorine using DPD No. 1
- Measurement of total chlorine using DPD No. 1 + DPD No. 3

Checking the detection accuracy and reproducibility of measurement results using reference standard kit (please order separately).

**Technical specifications:**

| | |
|---|---|
| Measurement range/resolution | 0.01 to 6.00 mg/l |
| Measurement tolerances of DPD reagent tablets | 0.00 to 1.00 mg/l: ±0.05 mg/l<br>1.01 to 2.00 mg/l: ±0.10 mg/l<br>2.01 to 3.00 mg/l: ±0.20 mg/l<br>3.01 to 4.00 mg/l: ±0.30 mg/l<br>4.01 to 6.00 mg/l: ±0.40 mg/l |
| Optics | LEDs, interference filter and photosensor |
| Wavelength | 530 nm Δ λ= 5 nm |
| Wavelength accuracy | ±1 nm |
| Photometric accuracy at 20-25 °C | 3 % FS |
| Protection class | IP 68 |
| Permissible ambient conditions | 5 to 40 °C at 30 to 90 % rel. humidity |
| Dimensions (L x W x H) | 155 x 75 x 35 mm |
| Weight (incl. batteries) | approx. 260 g |

**Delivery incl.** 3 glass round vials with covers, 1 stirring bar, 1 brush, DPD No. 1 + No. 3 reagent tablets, plastic case and 4 type Micro/AAA batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE08.1** | 1 | 428,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| DPD No. 1 reagent tablets (free chlorine) | **YE09.1** | 100 pieces | 22,25 |
| DPD No. 3 reagent tablets (total chlorine) | **YE10.1** | 100 pieces | 22,25 |
| Replacement cells with cover, H 48 x ∅ 24 mm | **YE11.1** | 12 pieces | 72,80 |
| Reference standard kit for chlorine (0.5 and 2.0 mg/l) | **YE12.1** | 1 piece | 66,05 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

## Turbidimeter AL250 T-IR

By Aqualytic. With a broad measuring range of 0.01 to 1100 NTU (= TE/F = FNU) and a detection limit of 0.01 NTU, it can be used in different areas from sewage to drinking water. For stained and colourless water.
- With infrared light source
- Backlight LCD display
- Automatic switch-off after 10 min to prolong battery life
- Internal ring buffer for 16 data records with real time clock and date
- Key pad

**Technical specifications:**

| | |
|---|---|
| Measuring range | 0.01 to 1100 NTU (Auto-range) |
| Resolution | 0.01 to 9.99 NTU<br>10.0 to 99.9 NTU<br>100 to 1100 NTU |
| Accuracy | ±2.5 % measured value or 0.01 NTU (0 to 500 NTU)<br>±5 % of measured value (500 to 1100 NTU) |
| Optic | Temperature-compensated LED (Wavelength 860 nm) |
| Dimensions (L x W x H) | 190 x 110 x 55 mm |
| Weight | 400 g |

**Delivery incl.** 4 turbidity standards (<0.1, 20, 200, 800 NTU), E-Block-battery 9 V, 2 cuvettes and transport cases.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LP38.1** | 1 | 706,55 |

**Accessories:**

| | | | |
|---|---|---|---|
| Set of turbidity standards (<0,1, 20, 200, 800 NTU) | **LP39.1** | 1 piece | 225,75 |
| Set of measuring cuvettes with black lid, height 55 mm, ∅ 24 mm | **LP40.1** | 12 pieces | 109,65 |
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |

# pH-papers




## Rotilabo®-universal indicator papers type Eco

For fast and exact measurment of coloured or cloudy and aqueous solutions. Plastic tin with colour scale. On rolls, 5 m long, 7 mm wide.

| pH-measuring range | pH graduation | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,0-10,0 | 1,0 | **AP99.1** | 1 | 6,25 |
| 1,0-11,0 | 1,0 | **AX00.1** | 1 | 6,25 |
| 1,0-14,0 | 1,0/2,0 | **AX01.1** | 1 | 6,25 |
| 0,5-5,0 | 0,5 | **AX02.1** | 1 | 6,25 |
| 5,0-9,0 | 0,5 | **AX03.1** | 1 | 6,25 |
| 6,5-10,0 | 0,5 | **AX04.1** | 1 | 6,25 |
| 9,0-13,0 | 0,5 | **AX05.1** | 1 | 6,25 |




## Universal indicator paper pH 1-11 and pH 1-14

Plastic rotating container with colour scale. Contains 1 roll, 5 m long and 7 mm wide. 1.0 pH intervals. Rolls individually packaged in refill pack.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tin pH 1-11 (pH graduation 1-2-3-4-5-6-7-8-9-10-11) | **L861.1** | 1 | 11,60 |
| Refill pack pH 1-11 of 3 rolls | **L862.1** | 1 | 17,25 |
| Tin pH 1-14 (pH graduation 1-2-3-5-6-7-8-9-10-12-14) | **N360.1** | 1 | 11,35 |
| Refill pack pH 1-14 of 3 rolls | **N361.1** | 1 | 16,50 |



## Litmus papers

Comes on rolls, 10 mm wide and 5 m long.

| Measurement range | Transition | Colour change | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| blue pH 8.0-5.0 | alkalic/acidic | blue/red | **8222.1** | 1 | 10,60 |
| neutral pH 5.0-8.0 | to acidic to alkalic | violet/red (violet/blue) | **8223.1** | 1 | 10,60 |
| red pH 5.0-8.0 | acidic/alkalic | red/blue | **8224.1** | 1 | 10,60 |

**Refill packs**

| Measurement range | Transition | Colour change | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| blue pH 8.0-5.0 | alkalic/acidic | blue/red | **8409.1** | 3 | 14,85 |
| neutral pH 5.0-8.0 | to acidic to alkalic | violet/red (violet/blue) | **8410.1** | 3 | 14,85 |
| red pH 5.0-8.0 | acidic/alkalic | red/blue | **8411.1** | 3 | 14,85 |




## Universal pH indicator paper Tritest

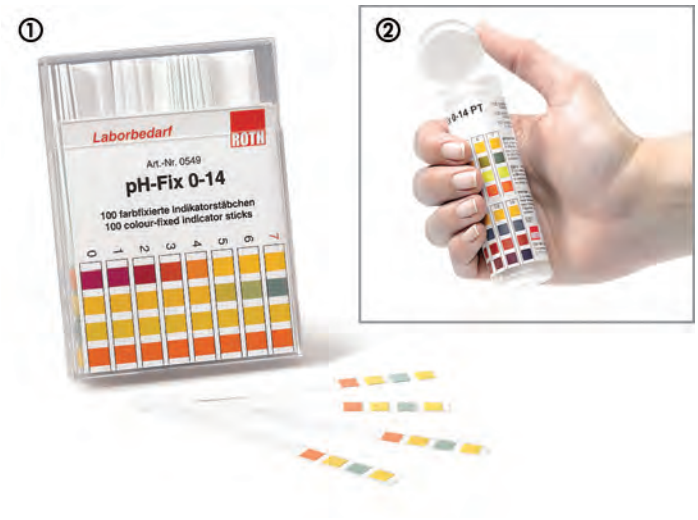
Comes on rolls. With 3 indicator zones (1 main and 2 secondary zones) for better estimation of intermediate values. Range pH 1-11, steps 1.0 pH. A pack contains 2 rotating plastic tins with indicator paper and colour scale. Two different types available.

**Width 10 mm, length 5 m per tin.**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Pack of 2 tins | **C726.1** | 1 | 25,70 |
| Refill pack of 3 rolls | **C727.1** | 1 | 26,20 |

**Width 14 mm, length 6 m per tin.**
With 2 hydrophobic zones for clearer readings in alkaline range.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Pack of 2 tins | **C728.1** | 1 | 33,50 |
| Refill pack of 3 rolls | **C729.1** | 1 | 33,60 |




## Universal indicator sticks pH-Fix

Test field made of colour-impregnated cellulose.
Colour scale with colour grading included. Reliable, **non-bleeding**.
Pack contains 100 sticks (L 85 x W 6 mm).

### ① In square plastic box

| pH-measuring range | pH graduation | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0-14 | 1,0 | **0549.2** | 100 | 11,95 |
| 0,0-6,0 | 0,5 | **C730.2** | 100 | 11,95 |
| 2,0-9,0 | 0,5 | **H913.2** | 100 | 11,95 |
| 4,5-10,0 | 0,5 | **C731.2** | 100 | 11,95 |
| 7,0-14,0 | 0,5 | **C732.2** | 100 | 11,95 |
| 0,3-2,3 | 0,3/0,4 | **H914.2** | 100 | 11,95 |
| 1,7-3,8 | 0,3 | **H915.2** | 100 | 11,95 |
| 3,6-6,1 | 0,3/0,5 | **H916.2** | 100 | 11,95 |
| 5,1-7,2 | 0,3 | **H917.2** | 100 | 11,95 |
| 6,0-7,7 | 0,3/0,4 | **H918.2** | 100 | 11,95 |
| 7,5-9,5 | 0,2/0,4 | **H919.2** | 100 | 12,30 |

### ② In round plastic box with snap-on lid

Single-handed opening and closing of lid with thumb.

| pH-measuring range | pH graduation | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0-14 | 1,0 | **KH69.1** | 100 | 12,30 |
| 3,6-6,1 | 0,3/0,5 | **LH91.1** | 100 | 12,50 |




## PEHANON® indicator papers

By Macherey-Nagel. With colour comparison scale on each test strip.
Ideal for stained solutions and suspensions, as the resultant colour shift has the same effect on the indicator and comparison colours.
The individual colour zones are separated by hydrophobic gaps.
One tin contains 200 strips (W 11 x L 100 mm).

| pH-measuring range | pH graduation | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-12 | 1-2-3-4-5-6-7-8-9-10-11-12 | **EA47.1** | 200 | 16,45 |
| 0-1,8 | 0-0,3-0,6-0,8-1,0-1,2-1,5-1,8 | **AXT7.1** | 200 | 13,90 |
| 1,0-2,8 | 1,0-1,3-1,6-1,8-2,0-2,2-2,5-2,8 | **EA48.1** | 200 | 14,50 |
| 1,8-3,8 | 1,8-2,1-2,4-2,7-3,0-3,2-3,5-3,8 | **AXT8.1** | 200 | 13,90 |
| 2,8-4,6 | 2,8-3,1-3,4-3,6-3,8-4,0-4,3-4,6 | **AXT9.1** | 200 | 13,90 |
| 3,8-5,5 | 3,8-4,0-4,2-4,4-4,6-4,9-5,2-5,5 | **EA49.1** | 200 | 14,50 |
| 4,0-9,0 | 4,0-4,5-5,0-5,5-6,0-6,5-7,0-7,5-8,0-8,5-9,0 | **AYA0.1** | 200 | 13,90 |
| 5,2-6,8 | 5,2-5,5-5,7-5,9-6,1-6,3-6,5-6,8 | **AYA1.1** | 200 | 13,90 |
| 6,0-8,1 | 6,0-6,3-6,6-6,9-7,2-7,5-7,8-8,1 | **EA50.1** | 200 | 14,50 |
| 7,2-8,8 | 7,2-7,4-7,6-7,8-8,0-8,2-8,5-8,8 | **AYA2.1** | 200 | 13,90 |
| 8,0-9,7 | 8,0-8,2-8,4-8,6-8,8-9,1-9,4-9,7 | **EA51.1** | 200 | 14,50 |
| 9,5-12,0 | 9,5-10,0-10,5-11,0-11,5-12,0 | **AYA3.1** | 200 | 13,90 |
| 10,5-13,0 | 10,5-11,0-11,5-12,0-12,5-13,0 | **AYA4.1** | 200 | 13,90 |
| 12,0-14,0 | 12,0-12,5-13,0-13,5-14,0 | **AYA5.1** | 200 | 13,90 |




## Unisol Indicator solutions

By Macherey-Nagel. For pH measurement in weak buffered solutions, in pure water, in surface water and in highly diluted acids or alkalis.
Droplets of an indicator solution are added to the sample and the reaction colour is compared to a colour chart.
**Delivery incl.** 100 ml dropper bottle containing reagent (sufficient for approx. 500 pH measurements), colour chart and 1 type 13/72 measuring cuvette.

**Danger** H225

| Type | pH graduation | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| UNISOL 410 | 4.0-4.5-5.0-5.5-6.0-6.5-7.0-7.5-8.0-8.5-9.0-9.5-10.0 | **TK45.1** | 1 | 27,80 |
| UNISOL 113 | 1-2-3-4-5-6-7-8-9-10-11-12-13 | **TK46.1** | 1 | 28,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement rectangular measuring cuvettes, made of PMMA, type 13/72 | **TK47.1** | 5 | 31,50 |

# pH-buffer solutions



## pH-Buffer Solutions, ROTI®CALIPURE

- Manufactured from high purity buffer substances
- No need for time-consuming drying and weighing of reagents
- The buffer solutions are adjusted to their respective pH values by comparison with standard buffer solutions (according to DIN 19266 and based on primary reference materials of the PTB and/or NIST)
- Quick and precise calibration of measuring equipment
- Stabilised against algae and bacterial action

| pH value | Design | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| 1,00 ±0,05 (20 °C) | colourless | **T180.2** | 500 ml | plastic | 17,10 |
| | | **T180.1** | 1 l | plastic | 24,20 |
| 1,679 ±0,03 (25 °C) | colourless | **8112.1** | 1 l | plastic | 41,85 |
| 2,00 ±0,02 (20 °C) | colourless | **P715.2** | 500 ml | plastic | 17,10 |
| | | **P715.1** | 1 l | plastic | 24,20 |
| 3,00 ±0,02 (20 °C) | colourless | **T181.2** | 500 ml | plastic | 17,10 |
| | | **T181.1** | 1 l | plastic | 24,20 |
| 3,776 ±0,012 (25 °C) | colourless | **4280.1** | 500 ml | plastic | 17,75 |
| | | **4280.2** | 1 l | plastic | 26,35 |
| 4,00 ±0,02 (20 °C) | colourless | **P712.3** | 500 ml | plastic | 17,10 |
| | | **P712.1** | 1 l | plastic | 24,20 |
| | | **P712.2** | 10 l | plastic | 155,90 |
| 4,00 ±0,02 (20 °C) | tinted red | **A517.3** | 250 ml | twin neck bottle | 14,55 |
| | | **A517.2** | 500 ml | plastic | 17,10 |
| | | **A517.4** | 500 ml | twin neck bottle | 18,20 |
| 4,00 ±0,02 (20 °C) | tinted red | **A517.1** | 1 l | plastic | 24,20 |
| | | **A517.5** | 10 l | plastic | 155,90 |
| 4,005 ±0,02 (25 °C) | colourless | **4281.1** | 500 ml | plastic | 17,75 |
| | | **4281.2** | 1 l | plastic | 26,35 |
| 4,62 ±0,02 (20 °C) | colourless | **T182.1** | 1 l | plastic | 24,20 |
| 5,00 ±0,02 (20 °C) | colourless | **T183.2** | 500 ml | plastic | 17,10 |
| | | **T183.1** | 1 l | plastic | 24,20 |
| 6,00 ±0,02 (20 °C) | colourless | **T184.2** | 500 ml | plastic | 17,10 |
| | | **T184.1** | 1 l | plastic | 24,20 |
| 6,865 ±0,02 (25 °C) | colourless | **4284.1** | 500 ml | plastic | 17,75 |
| | | **4284.2** | 1 l | plastic | 26,35 |
| 6,88 ±0,02 (20 °C) | colourless | **T185.1** | 1 l | plastic | 24,20 |
| 7,00 ±0,02 (20 °C) | colourless | **A518.3** | 500 ml | plastic | 17,10 |
| | | **A518.1** | 1 l | plastic | 24,20 |
| | | **A518.2** | 10 l | plastic | 155,90 |
| 7,00 ±0,02 (20 °C) | tinted green | **P713.3** | 250 ml | twin neck bottle | 14,55 |
| | | **P713.2** | 500 ml | plastic | 17,10 |
| | | **P713.4** | 500 ml | twin neck bottle | 18,20 |
| 7,00 ±0,02 (20 °C) | tinted green | **P713.1** | 1 l | plastic | 24,20 |
| | | **P713.5** | 10 l | plastic | 155,90 |
| 7,413 ±0,02 (25 °C) | colourless | **4285.1** | 500 ml | plastic | 17,75 |
| | | **4285.2** | 1 l | plastic | 26,35 |
| 8,00 ±0,02 (20 °C) | colourless | **T186.2** | 500 ml | plastic | 17,10 |
| | | **T186.1** | 1 l | plastic | 24,20 |
| 9,00 ±0,02 (20 °C) | colourless | **A519.1** | 1 l | plastic | 24,20 |
| | | **A519.3** | 500 ml | plastic | 17,10 |
| 9,00 ±0,02 (20 °C) | colourless | **A519.2** | 10 l | plastic | 155,90 |
| 9,00 ±0,02 (20 °C) | tinted blue | **P714.3** | 250 ml | twin neck bottle | 14,55 |
| | | **P714.2** | 500 ml | plastic | 17,10 |
| | | **P714.1** | 1 l | plastic | 24,20 |
| 9,180 ±0,02 (25 °C) | colourless | **4294.1** | 500 ml | plastic | 17,75 |
| | | **4294.2** | 1 l | plastic | 26,35 |
| 9,22 ±0,02 (20 °C) | colourless | **0466.1** | 500 ml | plastic | 21,40 |
| 10,00 ±0,02 (20 °C) | colourless | **P716.2** | 500 ml | plastic | 17,10 |
| | | **P716.1** | 1 l | plastic | 24,20 |
| 10,00 (20 °C) | for complexo-metric titration | **T188.1** | 1 l | plastic | 24,20 |
| 10,00 ±0,02 (20 °C) | tinted blue | **8086.1** | 250 ml | twin neck bottle | 16,05 |
| | | **8086.2** | 500 ml | plastic | 17,75 |
| | | **8086.3** | 500 ml | twin neck bottle | 19,25 |
| | | **8086.4** | 1 l | plastic | 25,30 |
| | | **8086.5** * | 10 l | plastic | 181,70 |
| 11,00 ±0,05 (20 °C) | colourless | **T187.2** | 500 ml | plastic | 16,55 |
| | | **T187.1** | 1 l | plastic | 24,20 |
| 12,00 ±0,05 (20 °C) | colourless | **T189.2** | 500 ml | plastic | 17,10 |
| | | **T189.1** | 1 l | plastic | 24,20 |



## pH buffer tablets

For pH tester. Accuracy ±0.05 pH. Dissolve one pH buffer tablet in 20 ml of deionised/distilled water.

| pH value | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4 | **YT50.1** | 100 | 21,45 |
| 7 | **YT51.1** | 100 | 21,45 |
| 10 | **YT52.1** | 100 | 21,45 |

▶ Further informations see chapter Chemicals A-Z.

# pH-buffer solutions



## pH-buffer solutions
For pH-meter. Accuracy ±0,01 pH.

**pH-buffer solutions, without analysis certificate**

| pH value | Design | Art. No. | Pack Qty. (ml) | € |
|---|---|---|---|---|
| 4,01 | colourless | **9602.1** | 500 | 13,95 |
| 4,01 | tinted pink | **H906.1** | 1000 | 15,40 |
| 6,86 | colourless | **9603.1** | 500 | 14,80 |
| 6,86 | colourless | **H907.1** | 1000 | 15,95 |
| 7,01 | colourless | **9604.1** | 500 | 13,95 |
| 7,01 | tinted green | **H908.1** | 1000 | 15,40 |
| 9,18 | colourless | **9605.1** | 500 | 14,80 |
| 9,18 | colourless | **H909.1** | 1000 | 15,95 |
| 10,01 | colourless | **9606.1** | 500 | 13,95 |
| 10,01 | tinted purple | **H910.1** | 1000 | 15,40 |

**pH-buffer solutions, with analysis certificate**

| pH value | Design | Art. No. | Pack Qty. (ml) | € |
|---|---|---|---|---|
| 4,01 | colourless | **AK52.1** | 500 | 19,25 |
| 6,86 | colourless | **AK53.1** | 500 | 19,25 |
| 7,01 | colourless | **AK54.1** | 500 | 19,25 |
| 9,18 | colourless | **AK55.1** | 500 | 19,25 |
| 10,01 | colourless | **AK56.1** | 500 | 19,25 |



## Precision-pH-buffer solutions
For pH-meter with high resolution and accuracy.
With original works certificate. **Accuracy ±0.002 pH.**

| pH value | Art. No. | Pack qty. (ml) | € |
|---|---|---|---|
| 4,010 | **EN87.1** | 500 | 31,80 |
| 7,010 | **EN88.1** | 500 | 31,80 |
| 10,010 | **EN89.1** | 500 | 31,80 |




## ① pH-buffer solutions
**In 20 ml bags.** The reagent contents of a bag are sufficient for one calibration. Bag is light- and airtight. Accuracy ±0.01 pH.

**Without Certificate**

| pH value | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4,01 | **N320.1** | 25 | 29,00 |
| 7,01 | **N321.1** | 25 | 29,00 |
| 10,01 | **N322.1** | 25 | 29,00 |

**With Certificate**

| pH value | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4,01 | **Y477.1** | 25 | 32,90 |
| 7,01 | **Y478.1** | 25 | 32,90 |
| 10,01 | **Y479.1** | 25 | 32,90 |

**Calibration kits without Certificate**

| pH value | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4.01 and 7.01 | **Y480.1** | 10 (2 x 5) | 16,70 |
| 10.01 and 7.01 | **Y481.1** | 10 (2 x 5) | 16,70 |

**Calibration kits with Certificate**

| pH value | Art. No. | Pack Qty. | € |
|---|---|---|---|
| pH 4.01 and 7.01 | **Y482.1** | 10 (2 x 5) | 17,80 |
| pH 10.01 and 7.01 | **Y483.1** | 10 (2 x 5) | 17,80 |

## ② Storage solution HI 70300
For pH-electrodes. Guarantees rapid reaction time and exact measuring results of electrodes. 460 ml bottle.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9608.1** | 1 | 14,80 |

## Cleaning solutions

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| General cleaning solution HI 7061 | **9609.1** | 460 ml | 14,80 |
| Cleaning solution for protein-containing media HI 7073 | **9610.1** | 460 ml | 28,85 |
| Cleaning solution for inorganic substances HI 7074 | **9611.1** | 460 ml | 28,85 |
| Cleaning solution for oils HI 7077 | **9612.1** | 460 ml | 28,85 |

## Electrolytes
For reference electrodes.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| KCl 3 mol/l saturated with AgCl | **A925.1** | 250 ml | 19,45 |
| KCl 3 mol/l | **A926.1** | 250 ml | 19,45 |

# pH-testers



## Checker®-pH-tester

By Hanna. Handy digital pH-tester **with replaceable electrode**.
Ideal for testing even low liquid quantities in narrow vessels.
Manual 1-/2-point calibration (pH 7,01; 4,01; 10,01) via trimmer.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | 0.00 to 14.00 pH |
| Accuracy | ±0.2 pH |
| Dimensions head | 66 x 50 x 25 mm |
| Shaft length /∅ | 80/8 mm |
| Weight | 63 g |

**Delivery incl.** 2 cell batteries 1.5 V.

| Design | Connection | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| With electrode | S7-screwhead | **A873.1** | 1 | 36,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare-electrode for pH-tester Checker® | **E463.1** | 1 | 27,50 |
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## Piccolo pocket pH-meters

By Hanna. With electrode and integrated amplifier for higher reading stability. Includes built-in temperature sensor for automatic temperature compensation. 2-point calibration possible.
Dimensions (unit) 172 x 29 x 15 mm, weight 80 g.

**Technical specifications:**

| **Model** | **Piccolo I and II** | **Piccolo Plus** |
|---|---|---|
| Measuring range/resolution | 1.00 to 13.00 pH | 1.00 to 13.00 pH / 0 to +70 °C |
| Accuracy | ±0.01 pH | ±0.01 pH (±1 °C) |

**Delivery incl.** electrode, pH buffer pH 4 and 7, screwdriver for 2-point calibration, batteries (3 Cell batteries 1.5 V).

| Type | Electrode | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Piccolo I (pH) | 90 mm | **0590.1** | 1 | 199,00 |
| Piccolo II (pH) | 160 mm | **8324.1** | 1 | 204,00 |
| Piccolo Plus (pH, °C) | 160 mm | **E016.1** | 1 | 226,00 |

**Spare-electrodes**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spare-electrode for Piccolo I, 90 mm | **0592.1** | 1 | 63,65 |
| Spare-electrode for Piccolo II, 160 mm | **8325.1** | 1 | 58,30 |
| Spare-electrode for Piccolo Plus, 160 mm | **E017.1** | 1 | 71,50 |



①



②

## ① pHep® and pHep®+ pH-testers

By Hanna. Base model with robust, ergonomically designed case and large LCD-display. Manual 1-/2-point-calibration via trimmer.

**Technical specifications:**

| | |
|---|---|
| Measuring range/resolution | 0.0 to 14.0 pH |
| Accuracy | ±0.1 pH |
| Ambient conditions | 0 to +50 °C |
| Dimensions | 175 x 41 x 23 mm |

**Delivery incl.** protective lid and 4 x 1.5 V cell batteries.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| pHep® | Without temperature compensation; case red | **X208.1** | 1 | 49,50 |
| pHep®+ | With automatic temperature compensation (0 to +50 °C); case whiteWith automatic temperature compensation (0 to +50 °C); case white | **AK69.1** | 1 | 58,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |

## ② pHep®-4 and pHep®-5 pH- and °C-testers

By Hanna. **In IP67 waterproof casing**. LCD-display.
Automatic 1-/2-point-calibration with two pre-programmed standard buffer series (pH 7.01; 4.01; 10.01 or 4.01; 6.86; 9.18).
Stability indicator. **Simultaneous display of pH- and °C-values.**
Automatic temperature compensation.
Automatic switch-off after 8 min measuring break. Hold-function.

**Technical specifications:**

| **Model** | | **pHep®-4** | **pHep®-5** |
|---|---|---|---|
| Measuring range/resolution | pH | -2.0 to 16.0 | -2.00 to 16.00 |
| | °C | -5.0 to 60.0 | |
| Accuracy | pH | ±0.1 | ±0.05 |
| | °C | ±0.5 | |
| Dimensions (L x W x D) | | 163 x 40 x 26 mm | |
| Weight | | 100 g | |

**Delivery incl.** replaceable pH-electrode, protective cap and 4 batteries, cell 1.5 V.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| pH- and °C-tester pHep®-4 | **X283.1** | 1 | 98,50 |
| pH- and °C-tester pHep®-5 | **HA66.1** | 1 | 108,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare electrode for pHep®-4 and pHep®-5 | **X284.1** | 1 | 60,50 |
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |






## Tester kits PH 1, PH 5 and PH 5 food

By Dostmann.
- Large LCD display
- Waterproof and dust-proof in accordance with protection class IP67
- Automatic temperature compensation from 0 to 50 °C
- Confirmation when a stable measured value is reached
- Automatic calibration with display of the calibrated ranges
- Multicolour back lighting for status display of measurement mode, calibration and alarm
- PH 5 food tester with insert electrode for solid and semi-solid samples like meat, butter, cheese, yoghurt, dough and creams

**Technical specifications:**

| Type | | PH 1 | PH 5 | PH 5 Food |
|---|---|---|---|---|
| Measuring range/ resolution | pH<br>mV<br>°C | 0.0 to 14.00<br>-<br>- | -2.00 to 16.00<br>±1000<br>0.0 to 50.0 | |
| Accuracy | pH<br>mV<br>°C | ±0,1<br>-<br>- | ±0.01<br>±1<br>±0.5 | |
| Replaceable electrode | | no | yes | |
| Calibration | | 1-/2-point calibration | 1-/2-/3-point calibration | |
| Dimensions ∅ x L (mm) | | 35 x 175 | 35 x 175 | 35 x 210 |

**Delivery incl.** buffer solution (pH 4.01 and pH 7.00), storage solution, storage case and 4 Micro 1.5 V batteries.

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | PH 1 | **EHX6.1** | 1 | 85,90 |
| ② | PH 5 | **EHX7.1** | 1 | 134,40 |
| ③ | PH 5 Food | **EHX8.1** | 1 | 284,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement electrode for tester PH5 | **EHX9.1** | 1 | 59,10 |
| Replacement electrode for tester PH 5 Food | **EHY0.1** | 1 | 189,20 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## SD 50 pH tester

By Aqualytic.
- Rugged, water resistant housing (IP67)
- Automatic 1/2/3 point calibration
- Automatic temperature compensation
- Auto Off after 8 min
- Memory with storage space for 25 datasets incl. time and date

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | pH<br>mV<br>°C | 0.01 to 14.00<br>-1800 to 1800<br>0.1 to 60.0 |
| Accuracy | pH<br>mV<br>°C | ±0.05<br>±3<br>±1 |
| Dimensions (L x W x D) | | 177 x 43 x 29 mm |
| Weight | | 128 g |

**Delivery incl.** electrode; 10 buffer tablets for pH 4, pH 7 and pH 10; carry strap, plastic box and 2 Micro batteries 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YP28.1** | 1 | 155,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement electrode for pH tester SD 50 | **YP29.1** | 1 piece | 66,65 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# pH measurement – Information and interesting facts

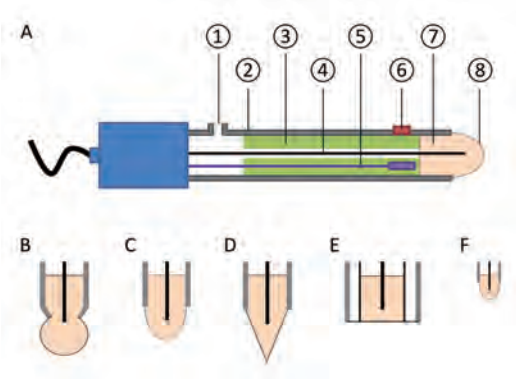



Fig.:
A: Longitudinal section through a pH single-rod measuring cell:
① Filler neck, ② Electrode,③ Reference electrolyte, ④ Outlet, ⑤ Reference outlet, ⑥ Diaphragm, ⑦ Internal buffer, ⑧ pH-sensitive glass membrane
B-F: Application-specific types of pH-sensitive glass membrane

## Choosing the right pH single-rod measuring cell

During the pH measurement a pH single-rod measuring cell (see Fig. A) is inserted into the sample solution in such a way that the pH-sensitive glass membrane interacts with the hydrogen ions ("protons") in the sample solution. The resultant voltage potential is dependent on the concentration and is measured by the measuring instrument and converted to a pH value.

pH single-rod measuring cells are distinguished, among other things, by the reference electrolyte, the diaphragms, the shape of the glass membrane and the electrode material (glass or plastic). The sample solution dictates which electrode is most suitable for the pH measurement.

The **reference electrolyte** is stored inside the pH single-rod measuring cell. It is in contact with the sample solution via a special connection, the so-called diaphragm, and can flow into the sample solution in a controlled manner. Reference electrolytes are roughly subdivided into two categories - liquid electrolytes and gel electrolytes.

- pH single-rod measuring cells containing **liquid electrolyte** have a faster response time, greater measurement certainty and longer life. The electrolyte is refillable, but is also completely exchangeable and more heat resistant.
- pH single-rod measuring cells containing **gel electrolyte** incur virtually no loss of electrolyte during the measurement and do not need to be refilled. They are rugged, require little maintenance and affordable, but they are unsuitable for highly acidic/basic solutions with a low ion content.

The connection between the electrolyte and the sample solution is made in a different way. It is important that the diaphragm not become clogged by the sample solution (e.g. by viscous solutions, suspensions, aqueous samples with a high protein content), as otherwise it will not be possible to obtain a correct pH measurement.

- The **ceramic diaphragm** has a porous structure which has a high chemical resistance, but is highly sensitive to contamination. This diaphragm is suitable for standard measurements in aqueous solutions which are free of suspended matter.
- The **platinum diaphragm** consists of fine, smooth platinum wires which are twisted together and fused into the glass shaft of the pH single-rod measuring cell. The electrolyte flows out through cavities between the platinum wires. The platinum diaphragm does not clog up as quickly as the ceramic diaphragm, but it is unsuitable for sample solutions with a strong oxidising or reducing effect.
- The **fibre diaphragm** is similar to the platinum diaphragm, but is less chemically stable. It comprises a non-metallic fibre bundle (e.g. made of nylon) and often contains a gel electrolyte.
- The **ground joint diaphragm** is suitable for measuring pH in contaminated solutions, sludge, suspensions, emulsions and viscous media. The bottom section of the electrode is ground and covered by a sleeve. The electrolyte flows out from the fine gap between the shaft and sleeve at a high velocity. This also allows the pH of sample solutions with a low ion content to be measured. The diaphragm can be cleaned very easily by pushing up the sleeve.
- The **hole diaphragm** is a small connecting hole between the gel electrolytes and the sample medium. This diaphragm is highly resistant to clogging because it does not have a reticular structure.

Depending on application, the pH-sensitive glass membrane is shaped in a specific way (see Fig. B-F).

- For standard applications, the glass membrane has either a **spherical** structure (B) or a **hemispherical** structure (C).
- For insertion measurements in semi-solid, pasty and solid samples, the glass membrane is **tapered** (D).
- For surface measurements and droplet-sized samples, the glass membrane is **flat** (E).
- For small quantities of fluid and sample solutions in narrow vessels, there is a micro version in which the glass membrane is **narrow** and **hemispherical** (F).

## Temperature compensation

One of the key factors influencing pH measurements is the temperature. For this reason, only pH values which have been measured at the same temperature should be compared with one another. In order to correlate the pH value with the actual temperature of the sample solution, temperature compensation should be carried out. The temperature can either be entered manually into the pH meter or measured automatically by an additional temperature sensor.

## Calibration

A pH single-rod measuring cell is characterised by its zero point and its slope. At a pH of 7 the electrical voltage at the zero point is approx. 0 mV. The slope describes the change of voltage between two pH units. Since these characteristics change as a function of time, the sensor should be calibrated regularly using a calibration solution with a known pH. This is particularly important **after cleaning, maintenance or long periods of storage** of the pH electrode. To obtain more exact test results, **2-point calibration** should be carried out at least once and the **pH buffer solutions is use should have a pH nearest to the expected pH values**.

## Storage

pH single-rod measuring cells are stored in an **aqueous, solution with a high ion content**. A solution which matches the inner electrolyte is recommended. The pH 4 buffer solution can be used as an alternative. However, pH single-rod measuring cells should never be stored in distilled water.

For longer periods of storage (several weeks to months), pH single-rod measuring cells can also be stored in a dry state. The electrodes will age more slowly as a result, but the outer hydrated layer on the pH-sensitive glass membrane which forms through contact with aqueous solutions will be irreparably damaged. Therefore, pH single-rod measuring cells which have been stored in a dry state have to be wetted again prior to initial use. For this purpose, the pH single-rod measuring cell is regenerated overnight in the storage solution.

## Care and maintenance

With proper care and maintenance, pH single-rod measuring cells will deliver more exact measurement results, shorter response times and last longer.

- After each measurement the electrode must be flushed with deionised water and stored in the storage solution. If the electrode is dabbed with a paper towel, its rough surface should not come into contact with the pH-sensitive glass membrane.
- pH single-rod measuring cells containing liquid electrolyte have to be refilled. It is important that the electrolyte level does not drop below that of the sample solution because it will otherwise flow into the electrode.
- To prevent crystallisation of the electrolyte, the electrolyte should be completely exchanged on a regular basis.
- If air bubbles form inside the measuring cell, they can be removed by carefully shaking the electrode. Air trapped in the vicinity of the glass membrane leads to unstable measurement values.
- If the electrodes or the diaphragm are contaminated, various cleaning solutions can be used.

## Useful life

The pH single-rod measuring cell is a **consumable** subject to diminishing performance over time. Its useful life is considerably reduced by high temperatures (>50 °C) and measurements at extreme pH values in particular. However, the type of sample solution, duration and frequency of measurement and, not least, electrode maintenance are also factors which influence the useful life of the measuring cell. Ageing symptoms include longer response time, decreasing slope and zero shift.




## HI series pH single-rod measuring cells

By Hanna. With fixed cable, length 1 m, BNC connection.
Please order recommended storage solution HI 70 300 (Art. No. 9608.1) separately.

**Technical specifications:**

| Type | HI 1332 B | ① HI 1230 B | ② HI 1131 B |
|---|---|---|---|
| pH range | 0 to 13 | 0 to 13 | 0 to 13 |
| Operating range (°C) | 0 to +80 | 0 to +80 | 0 to +100 |
| Diaphragm | Ceramic | Ceramic | Ceramic |
| Electrolyte | 3.5 mol/l KCl (HI 7082) | Gel | 3.5 mol/l KCl (HI 7082) |
| Length (mm) | 120 | 120 | 120 |
| Shaft ∅ (mm) | 12 | 12 | 12 |
| Shaft material | Plastic (PEI) | Plastic (PEI) | Glass |
| Application | Standard electrodes for general applications | | |

| Type | ③ HI 1330 B | ④ HI 1053 B | ⑤ HI 1043 B |
|---|---|---|---|
| pH range | 0 to 13 | 0 to 12 | 0 to 14 |
| Operating range (°C) | 0 to +100 | 0 to +100 | 0 to +100 |
| Diaphragm | Ceramic | Ceramic | Ceramic |
| Electrolyte | 3.5 mol/l KCl + AgCl (HI 7071) | 3.5 mol/l KCl (HI 7082) | 3.5 mol/l KCl (HI 7082) |
| Length (mm) | 95 | 120 | 120 |
| Shaft ∅ (mm) | 5 | 12 | 12 |
| Shaft material | Glass | Glass | Glass |
| Application | Low volumes and narrow vessels | Soil samples, emulsions, media with a low ion content | Strong acids and bases, aqueous solvents, Tris buffers |

| Image | Product | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| - | HI 1332 B | **C984.1** | 1 | 97,90 |
| ① | HI 1230 B | **G008.1** | 1 | 102,00 |
| ② | HI 1131 B | **G011.1** | 1 | 140,00 |
| ③ | HI 1330 B | **AL24.1** | 1 | 153,00 |
| ④ | HI 1053 B | **AL23.1** | 1 | 179,00 |
| ⑤ | HI 1043 B | **AL22.1** | 1 | 184,00 |

▶ Overview of standard connections on pH meters se page 834




## LE series pH single-rod measuring cells

By Mettler-Toledo. Affordable pH single-rod chains for various applications.

**Technical specifications:**

| Type | ① LE407 | ② LE409 | ③ LE438 |
|---|---|---|---|
| pH range | 0 to 14 | 0 to 14 | 0 to 14 |
| Operating range (°C) | 0 to +80 | 0 to +80 | 0 to +80 |
| Diaphragm | Nylon | Ceramic | Nylon |
| Electrolyte/ storage solution | Gel / 3 mol/l KCl | 3 mol/l KCl + AgCl / 3 mol/l KCl | Gel/3 mol/l KCl |
| Length (mm) | 120 | 120 | 120 |
| Shaft ∅ (mm) | 12 | 12 | 12 |
| Shaft material | Plastic (POM) | Glass | Plastic (POM) |
| Application | Simple pH measurements | General aqueous solutions | Temperature-compensated measurements (NTC 30 kΩ) |

| Type | ④ LE420 | ⑤ LE422 | ⑥ LE427 |
|---|---|---|---|
| pH range | 0 to 14 | 0 to 14 | 0 to 11 |
| Operating range (°C) | 0 to +80 | 0 to +80 | 0 to +50 |
| Diaphragm | Ground joint | Ceramic | Ceramic |
| Electrolyte/ storage solution | 3 mol/l KCl | Gel/3 mol/l KCl | Gel/3 mol/l KCl |
| Length (mm) | 120 | 90 | 16 |
| Shaft ∅ (mm) | 12 | 4.3 | 6 |
| Shaft material | Glass | Glass | Glass |
| Application | TRIS buffers, emulsions, viscous samples, suspensions, media with a low ion content | Low quantities of fluid, narrow vessels | Insertion measurements |

| Image | Type | Connection | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | LE407 | Fixed cable, length 1 m, DIN 19262 | **TC48.1** | 1 | 76,30 |
| ① | LE407 | Fixed cable, length 1 m, BNC | **TC47.1** | 1 | 76,90 |
| ② | LE409 | Fixed cable, length 1 m, DIN 19262 | **TC49.1** | 1 | 93,40 |
| ② | LE409 | Fixed cable, length 1 m, BNC | **HY58.1** | 1 | 94,60 |
| ③ | LE438 | Fixed cable, length 1.2 m, DIN 19262 + banana plug (1x 4 mm) | **TC50.1** | 1 | 149,00 |
| ③ | LE438 | Fixed cable, length 1.2 m, BNC + cinch plug | **HY59.1** | 1 | 151,00 |
| ④ | LE420 | Fixed cable, length 1 m, DIN 19262 | **NP40.1** | 1 | 141,00 |
| ④ | LE420 | Fixed cable, length 1 m, BNC | **NP41.1** | 1 | 141,00 |
| ⑤ | LE422 | Fixed cable, length 1 m, BNC | **NP42.1** | 1 | 162,00 |
| ⑥ | LE427 | Fixed cable, length 1.2 m, BNC | **TH61.1** | 1 | 163,00 |
| ⑥ | LE427 | S7 connector, please order connecting cable separately | **TH62.1** | 1 | 135,00 |

**Accessories:**

| | | | | |
|---|---|---|---|---|
| Connecting cable, length 1.2 m, S7 + DIN 19262 | **A921.1** | 1 | 44,00 |
| Connecting cable, length 1.2 m, S7 + BNC | **A923.1** | 1 | 38,70 |

# pH-electrodes




## InLab® series pH single-rod measuring cells

By Mettler-Toledo. High-quality pH single-rod chains for various applications. With S7 connector.

**Technical specifications:**

| Type | ① InLab®-Easy | ② InLab®Routine | ③ InLab®Semi-Micro |
|---|---|---|---|
| pH range | 0 to 14 | 0 to 14 | 0 to 12 |
| Operating range (°C) | 0 to +80 | 0 to +100 | 0 to +100 |
| Diaphragm | Ceramic | Ceramic | Hole |
| Electrolyte / storage solution | Gel / 3 mol/l KCl | 3 mol/l KCl | Gel / 3 mol/l KCl |
| Length (mm) | 120 | 120 | 100 |
| Shaft ∅ (mm) | 12 | 12 | 6 |
| Shaft material | Polysulfon | Glass | Glass |
| Application | Simple pH measurements | General aqueous solutions | Low quantities of fluid, narrow vessels |

| Type | ④ InLab®Science | ⑤ InLab®Solids | ⑥ InLab®Surface |
|---|---|---|---|
| pH range | 0 to 12 | 1 to 11 | 1 to 11 |
| Operating range (°C) | 0 to +100 | 0 to +80 | 0 to +50 |
| Diaphragm | Ground joint | Hole | Ceramic ring |
| Electrolyte / storage solution | 3 mol/l KCl | Gel / 3 mol/l KCl | 3 mol/l KCl |
| Length (mm) | 120 | 25 | 110 |
| Shaft ∅ (mm) | 12 | 6 | 12 |
| Shaft material | Glass | Glass | Polysulfon |
| Application | Emulsions, viscous samples, suspensions, media with a low ion content e.g. wastewater, dissolved earth, water-based paints, milk | Insertion measurements e.g. in cream, yoghurt, butter, cheese, meat, fish, dough | surface measurement e.g. on skin, leather, textiles, paper, agar plates; measurement of droplet-sized sample volumes |

**Delivery without** connecting cable. Please order separately.

| Image | Product | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | InLab®Easy | **H948.1** | 1 | 92,00 |
| ② | InLab®Routine | **A915.1** | 1 | 151,00 |
| ③ | InLab®Semi-Micro | **A916.1** | 1 | 229,00 |
| ④ | InLab®Science | **A917.1** | 1 | 219,00 |
| ⑤ | InLab®Solids | **A918.1** | 1 | 254,00 |
| ⑥ | InLab®Surface | **KL07.1** | 1 | 213,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Connecting cable, length 1.2 m, S7 + DIN 19262 | **A921.1** | 1 | 44,00 |
| Connecting cable, length 1.2 m, S7 + BNC | **A923.1** | 1 | 38,70 |




## InLab® series pH single-rod measuring cells with integrated temperature sensor

By Mettler-Toledo. High-quality pH single-rod measuring cells for temperature-compensated measurements.

- pH range: 0 to 14
- Operating range: 0 to +100 °C
- Installed length: 120 mm, shaft ∅: 12 mm

**Technical specifications:**

| Type | ① InLab® Expert NTC30 | ② InLab® Expert Pt 1000 |
|---|---|---|
| Diaphragm | Hole | Hole |
| Electrolyte / storage solution | Gel / 3 mol/l KCl | Gel / 3 mol/l KCl |
| Temperature sensor | NTC 30 kΩ | Pt 1000 |
| Shaft material | Plastic (PEEK) | Plastic (PEEK) |
| Application | Wide range of applications, including emulsions, suspensions, wastewater and solutions containing proteins and sulphides | |

| Type | ③ InLab® Routine Pro | ④ InLab® Versatile Pro |
|---|---|---|
| Diaphragm | Ceramic | Ceramic |
| Electrolyte / storage solution | 3 mol/l KCl | 3 mol/l KCl |
| Temperature sensor | NTC 30 kΩ | NTC 30 kΩ |
| Shaft material | Glass | Polysulfon |
| Application | General aqueous solutions | |

| Image | Product | Connection | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | InLab® Expert NTC30 | MultiPin™, connecting cable please order separately | **X571.1** | 1 | 197,00 |
| ② | InLab® Expert Pt 1000 | MultiPin™, connecting cable please order separately | **A920.1** | 1 | 197,00 |
| ③ | InLab® Routine Pro | MultiPin™, connecting cable please order separately | **N504.1** | 1 | 223,00 |
| ④ | InLab® Versatile Pro | Fixed cable, length 1.2 m, BNC + cinch plug | **TA11.1** | 1 | 208,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Connecting cable, length 1.2 m, MultiPin™ + DIN 19262 + banana plug 1x4 mm | **X572.1** | 1 | 84,80 |
| Connecting cable, length 1.2 m, MultiPin™ + BNC + banana plug 1x4 mm | **X573.1** | 1 | 84,80 |
| Connecting cable, length 1.2 m, MultiPin™ + BNC + cinch plug | **N505.1** | 1 | 84,80 |




## BlueLine series pH single-rod measuring cells

By SI Analytics. For general applications: **22 pH, 23 pH, 25 pH and 28 pH**.
For more critical measurements: **12 pH, 14 pH and 15 pH**.

**Technical specifications:**

| Type | ① 22 pH, 23 pH, 25 pH, 28 pH | ② 12 pH, 14 ph, 15 pH |
|---|---|---|
| pH range | 0 to 14 | 0 to 14 |
| Operating range (°C) | -5 to +80 | -5 to +100 |
| Diaphragm | Fibre | Platinum |
| Electrolyte/ storage solution | Gel / 3 mol/l KCl | 3 mol/l KCl |
| Length (mm) | 120 | 120 |
| Shaft ∅ (mm) | 12 | 12 |
| Shaft material | Plastic (Noryl) | Glass |

| Image | Product | Temperature sensor | Connection | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | 22 pH | - | Schott connector, please order connecting cable separately | **N525.1** | 1 | 103,00 |
| ① | 23 pH | - | Fixed cable, L 1 m, DIN 19262 | **N523.1** | 1 | 131,15 |
| ① | 25 pH | - | Fixed cable, L 1 m, BNC | **N524.1** | 1 | 131,15 |
| ① | 28 pH | Pt 1000 | Fixed cable, L 1 m, DIN 19262 + banana plug (1x 4 mm) | **H772.1** | 1 | 207,50 |
| ② | 12 pH | - | Fixed cable, L 1 m, DIN 19262 | **N520.1** | 1 | 151,60 |
| ② | 14 pH | NTC 30 kΩ | Fixed cable, L 1 m, DIN 19262 + banana plug (1x4 mm) | **N521.1** | 1 | 235,45 |
| ② | 15 pH | NTC 30 kΩ | Fixed cable, L 1 m, BNC + banana plug (1x4 mm) | **N522.1** | 1 | 235,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Connecting cable, Schott connector + DIN 19262 | **N526.1** | 1 | 58,05 |
| Connecting cable, Schott connector + BNC | **N527.1** | 1 | 58,05 |




## ScienceLine series pH single-rod measuring cells

By SI Analytics. With fixed cable, length 1 m.
- pH range: 0 to 14
- Operating range: -5 to + 100 °C
- Electrolyte/storage solution: 3 mol/l KCl
- Shaft material: glass

**Technical specifications:**

| Type | ① N 42 A | ② N 52 BNC |
|---|---|---|
| Diaphragm | Ceramic | Platinum |
| Length (mm) | 120 | 120 |
| Shaft ∅ (mm) | 12 | 12 |
| Application | Standard glass electrodes for aqueous solutions | |

| Type | ③ N 1042 A / N1042 BNC | ④N 6000 A / N 6000 BNC |
|---|---|---|
| Diaphragm | Ceramic | Platinum |
| Length (mm) | 120 | 96 |
| Shaft ∅ (mm) | 12 | 3 |
| Application | Temperature-compensated measurements (Pt 1000) | Low quantities of fluid (0.1 ml or higher), narrow vessels |

| Image | Product | Connection | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | N 42 A | DIN 19262 | **C887.1** | 1 | 224,70 |
| ② | N 52 BNC | BNC | **C894.1** | 1 | 231,15 |
| ③ | N 1042 A | DIN 19262 + banana plug (1x4 mm) | **C889.1** | 1 | 347,25 |
| ③ | N 1042 BNC | BNC + banana plug (1x4 mm) | **C896.1** | 1 | 347,25 |
| ④ | N 6000 A | DIN 19262 | **C892.1** | 1 | 295,65 |
| ④ | N 6000 BNC | BNC | **C899.1** | 1 | 295,65 |



## Electrode holder

Suitable for 3 electrodes. Fully flexible for almost any position.
Stable base plate (L 300 x W 150 mm), made of coated steel.
∅ of 3 openings = 12 mm each. Weight 1500 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9287.1** | 1 | 115,00 |



## Electrode holder

With cable duct. For three electrodes, opening ∅ 16 mm.
Additional opening ∅ 11 mm. Three joints for high flexibility and adjustment options. Base plate: 110 x 130 mm. Base plate weight: 0.6 kg.
Arm weight: 0.1 kg. Max. arm height: 32 cm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Electrode holder | **EHY1.1** | 1 | 88,15 |

# pH-electrodes and accessories




## SenTix® series pH single-rod measuring cells

By WTW. With fixed cable, length 1 m.

**Technical specifications:**

| Type | ① SenTix®21 | ② SenTix®41 | ③ SenTix®81 |
|---|---|---|---|
| pH range | 0 to 14 | 0 to 14 | 0 to 14 |
| Operating range (°C) | 0 to +80 | 0 to +80 | 0 to +100 |
| Diaphragm | Polyester PET | Polyester PET | Platinum |
| Electrolyte/storage solution | Gel / 3 mol/l KCl | Gel / 3 mol/l KCl | 3 mol/l KCl |
| Length (mm) | 120 | 120 | 120 |
| Shaft ∅ (mm) | 12 | 12 | 12 |
| Shaft material | Plastic (PPE/PS) | Plastic (PPE/PS) | Glass |

| Product | Temperature sensor | Connection | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| SenTix®21 | - | DIN 19262 | **X174.1** | 1 | 134,40 |
| SenTix®41 | NTC 30 kΩ | DIN 19262 + banana plug (1x4 mm) | **X173.1** | 1 | 209,65 |
| SenTix®81 | NTC 30 kΩ | DIN 19262 + banana plug (1x4 mm) | **ETC4.1** | 1 | 235,45 |

## Overview of standard connections on pH meters

When selecting a pH single-rod measuring cell, pay attention to the connections. Standardised connections for the pH sensor and the coaxial connector acc. to DIN **19262** and the bayonet connector (**BNC**). For example, **cinch** and **banana** (4 mm) connections are suitable for the temperature sensor.

In the case of the temperature sensor, also pay attention to the sensor type. Either a temperature sensor of the type **NTC 30 kΩ** or **Pt1000** can be connected to most pH meters.

| Connection | Connector (pH single-rod measuring cell) | Socket (pH meter) |
|---|---|---|
| Coaxial connector acc. to DIN 19262 |  |  |
| BNC |  |  |
| Cinch |  |  |
| Banana, 4 mm |  |  |



## Storage sets for electrodes

For safe, standby storage of electrodes with shaft ∅ 12 mm.

**Set - standard equipment:** Screw cap GL 45 incl. 5 seals and bore hole for storing electrodes.

**Set 1: Delivery without** screw thread bottle and storage solution (please order separately).

**Set 2: Delivery incl.** 100 ml screw thread bottle and 460 ml storage solution HI 70300.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Set 1 | **KH88.1** | 1 | 32,15 |
| Set 2 | **LK39.1** | 1 | 41,80 |

## Accessories for storage sets

**Screw thread vials, 100 ml, H 100 mm**

Made of DURAN®, transparent. Without pouring ring and cap.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T426.1** | 10 | 38,15 |

**Storage solution HI 70300**

For pH-electrodes. Volume 460 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9608.1** | 1 | 14,80 |



## Redox-electrodes

By SI Analytics. With cable has platinum sensor material. Reference system used silver/silver chloride. Electrolyte KCl 3 mol/l. With ceramic diaphragm. Length 120 mm. Sensor diameter 1 mm. Work temperature range 0 to 100 °C.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| With BNC connection | **C900.1** | 1 | 306,40 |
| With DIN connection | **C893.1** | 1 | 244,05 |

# Pocket pH-meters




①




②

## ① AL10 hand-held pH meter

By Aqualytic.
- Splash-proof membrane keyboard
- Manual single-point or double-point calibration via trimmer

**Technical specifications:**

| | |
|---|---|
| Measurement range / resolution | 0.01 to 14.00 pH |
| Accuracy | ±0.1 (pH 4.0-10.0)<br>±0.2 (pH 1.1-3.9 and pH 10.1-13.0)<br>±0.3 (pH 0.1-1.0 and pH 13.1-14.0) |
| Dimensions (L x W x H) | 208 x 110 x 34 mm |

**Delivery incl.** pH plastic electrodes with gel electrolyte and BNC connector, pH buffer solutions (pH 4.01 and pH 7.00, each 90 ml), protective cover for measuring in difficult conditions, case and E-type block 9 V battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YP68.1** | 1 | 197,80 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare pH plastic electrodes | **YP69.1** | 1 piece | 77,40 |
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |

## ② Digital-pH-/mV-/°C-meter HI 83141

By Hanna. Easy-to-use pH-/mV-/°C-handy meter.
- With membrane keyboard
- Splashproof push keys
- Automatic temperature compensation
- Manual 2-point calibration via neutral and slope pad trimmer

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range / resolution | pH<br>mV<br>°C | 0.00 to 14.00<br>-1999 to +1999<br>0.0 to +100.0 |
| Accuracy | pH<br>mV<br>°C | ±0.01<br>±1<br>±0.4 |
| Dimensions (L x W x D) | | 164 x 76 x 45 mm |

**Delivery incl.** plastic-pH-electrode HI 1230 B (BNC-connector), with separate stainless steel-temperature probe, battery E-Block 9 V, calibrating screwdriver.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N541.1** | 1 | 275,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare-pH-plastic electrode HI 1230 B | **G008.1** | 1 piece | 102,00 |
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |




## pH 7-series pocket pH meter

By Dostmann.
- Large screen with simultaneous display of pH or mV value and temperature
- Automatic or manual temperature compensation
- Confirmation when a stable measured value is reached
- Automatic or manual calibration
- Storage of current calibration and display of the electrode status
- Automatic switch-off after 20 min

**Technical specifications for pH meter:**

| | | |
|---|---|---|
| pH measuring range / resolution | pH<br>mV<br>°C | 0.00 to 14.00<br>±1000<br>0.0 to +100.0 |
| Accuracy | pH<br>mV<br>°C | ±0.01<br>±1<br>±0.5 |
| Connections | pH<br>°C | BNC<br>Cinch (NTC 30 KΩ) |
| Calibration<br>- automatic<br>- manual | | <br>1-/2-/3-point calibration (predefined buffer)<br>1-/2-point calibration (user-defined buffer) |
| Dimensions (H x W x D) | | 196 x 86 x 33 mm |

**Technical specifications for pH combination electrodes:**

| **pH electrode** | **201T** | **GEL** | **2PoreT** |
|---|---|---|---|
| pH range | 0 to 14 | | |
| Operating range (°C) | 0 to +60 | | |
| Diaphragm | Ceramic | Double | Pores |
| Electrolyte / storage solution | Gel / 3 mol/l KCl | Gel / 3 mol/l KCl | Polymer / 3 mol/l KCl |
| Length (mm) | 120 | 120 | 35 |
| Shaft ∅ (mm) | 12 | 12 | 6 |
| Shaft material | Plastic | | |
| Temperature sensor | NTC 30 KΩ | - | NTC 30 KΩ |
| Application | for generally aqueous solutions | | for insertion measurements in solid and semi-solid samples such as meat, fruit, butter, etc. |

**Delivery incl.** buffer solution pH 4.01 and 7.00 (per 75 ml), storage solution (35 ml), empty container for water, 100 ml measuring beaker, transport case and 3 Mignon 1.5 V batteries.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| pH 7, set 1 | pH combination electrode 201T with integrated temperature sensor | **HAH0.1** | 1 | 363,35 |
| pH 7, set 2 | pH combination electrode GEL and external temperature sensor NT55 | **HAH1.1** | 1 | 396,70 |
| pH 7 Food, set 3 | pH combination electrode 2PoreT with integrated temperature sensor | **HAH2.1** | 1 | 418,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| pH combination electrode 201T with fixed cable L 1 m (BNC/Cinch) | **HAE4.1** | 1 | 107,30 |
| pH combination electrode GEL with fixed cable L 1 m (BNC) | **HAH3.1** | 1 | 84,95 |
| pH combination electrode 2PoreT with fixed cable L 1 m (BNC/Cinch) | **HAH4.1** | 1 | 179,55 |
| Temperature sensor NT55 (NTC 30 kΩ) with fixed cable L 1 m (Cinch) | **HAE5.1** | 1 | 85,95 |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |

# Pocket pH-meters




## Pocket pH-/°C-meter HI 991001

By Hanna.

- Waterproof, meets requirements for protection class IP 67
- Simultaneous display of pH value and temperature
- Stability indicator
- Automatic temperature compensation
- Automatic 1-/2-point calibration with 2 pre-programmed standard buffer series possible (4.01 - 7.01 - 10.01 or 4.01 - 6.86 - 9.18)
- Automatic switch-off after 8 min

**Technical specifications:**

| | |
|---|---|
| Measuring range / resolution | -2.00 to 16.00 pH<br>-5.0 to +105.0 °C |
| Accuracy | ±0.02 pH<br>±0.5 to 60 °C; ±1 °C to 105 °C |
| Dimensions (L x W x D) | 150 x 80 x 36 mm |

**Delivery incl.** pH-/°C-Electrode HI 1296 D made of Titan with integrated temperature sensor; 3 batteries Micro 1.5 V; case for transporting.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y490.1** | 1 | 347,00 |

## Spare-PH-electrode HI 1296 D

For pH-meter HI 991001. Made of titanium.
With integrated temperature sensor.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y491.1** | 1 | 189,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Portable pH-/mV-/°C-meters HI 9125 and HI 9126

By Hanna.

**General specifications for both models**

- Water and dustproof in accordance with IP 67
- Simultaneous display of pH- or mV value and temperature
- Graphic symbols guide user through calibration
- Automatic 1-/2-point calibration with 5 pre-programmed standard buffers (4.01 - 6.86 - 7.01 - 9.18 - 10.01)
- Automatic or manual temperature compensation
- Automatic switch-off can be activated

**Additional features HI 9126**

- Display indicating condition of electrode
- Automatic 1-/2-point calibration with 7 pre-programmed standard buffers (1.68 - 4.01 - 6.86 - 7.01 - 9.18 - 10.01 - 12.45)
- Programming of 2 user-defined buffers for special applications
- With backlighting

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range / resolution | pH<br>mV<br>°C | -2.00 to 16.00<br>-1999 to +1999<br>-20.0 to +120.0 |
| Accuracy | pH<br>mV<br>°C | ±0.01<br>±1<br>±0.4 |
| Dimensions (L x W x D) | | 192 x 71.6 x 36 mm |

**Delivery incl.** pH-plastic electrode HI 1230 B gel-filled (BNC-connector), temperature probe, transport case, buffer solutions pH 4.01 and 7.01 (20 ml each) and 3 batteries Micro 1.5 V.

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | HI 9125 | **KP53.1** | 1 | 457,00 |
| ② | HI 9126 | **KP54.1** | 1 | 490,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare-pH-plastic electrode HI 1230 B | **G008.1** | 1 piece | 102,00 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

▶ pH-buffer solutions see page 826

# Pocket pH-meters



## FiveGo™ portable pH meter

By Mettler-Toledo.
- Waterproof and dust-proof in accordance with protection class IP67
- Ergonomic design for comfortable handling
- Simple, user-friendly menu
- Automatic or manual temperature compensation
- Automatically or manually end a measurement; with acoustic and visual endpoint signal
- Automatic calibration with four predefined buffer groups
- Displays the current calibration and has data memory for 200 measurements

**Technical specifications for the devices:**

| | | |
|---|---|---|
| Measuring range / resolution | pH<br>mV<br>°C | 0.00 to 14.00<br>-1999 to +1999<br>0.0 to +100.0 |
| Accuracy | pH<br>mV<br>°C | ±0.01<br>±01<br>±0.5 |
| Connections | pH<br>°C | BNC<br>Cinch (NTC 30 kΩ) |
| Calibration | | 1-/2-/3-point calibration |
| Data memory | | 200 measurements, current calibration |
| Dimensions (L x W x H) | | 169 x 82 x 36 mm |

**The FiveGo series is available in the following different versions:**
- F2-Meter without pH single-rod measuring cell
- F2-Standard with LE438-IP67 pH single-rod measuring cell for water-based samples, including emulsions and suspensions
- F2-Field with LE438-IP67 pH single-rod measuring cell and carrying case
- F2-Food with LE427-IP67 pH single-rod measuring cell for recess measurements in solid and semi-solid samples, such as meat, fruit, butter, yoghurt or cheese

**Technical specifications for the pH single-rod measuring cells:**
- LE438-IP67 with integrated temperature sensor (NTC 30 kΩ), pH range 0 to 14, range of application 0 to +80 °C, protection class IP67, nylon diaphragm, plastic shaft, shaft length/∅ 120/12 mm, gel-filled
- LE427-IP67 without temperature sensor, pH range 0 to 11, range of application 0 to +50 °C, protection class IP67, ceramic diaphragm, glass shaft, shaft length/∅ 16/6 mm, gel-filled; for automatic temperature compensation, the NTC 30 kΩ temperature sensor (art. no. Y734.1) can be connected. This is sold separately.

**Delivery incl.** calibration bag (pH 4.01, 7.00 and 9.21), electrode clip, wrist strap and four 1.5 V AAA batteries.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FiveGo F2-Meter | - | **HY66.1** | 1 | 335,00 |
| FiveGo F2-Standard | LE438-IP67 | **HY67.1** | 1 | 492,00 |
| FiveGo F2-Field | LE438-IP67, carrying case | **HY68.1** | 1 | 555,00 |
| FiveGo F2-Food | LE427-IP67 | **EEP5.1** | 1 | 534,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| LE438-IP67 pH single-rod measuring cell with 1 m fixed cable (BNC + Cinch) | **EEP6.1** | 1 | 167,00 |
| LE427-IP67 pH single-rod measuring cell with 1 m fixed cable (BNC) | **EEP7.1** | 1 | 157,00 |
| NTC 30 kΩ temperature sensor with 1.2 m fixed cable (Cinch) | **Y734.1** | 1 | 81,00 |
| Carrying case with 4 sample bottles | **EEP8.1** | 1 | 83,70 |



## Seven2Go™-series pocket pH meters

By Mettler-Toledo. Rugged pH meter designed to withstand the harshest environments. Waterproof and dustproof to IP 67. Impact protection housing.
- Automatic and manual temperature compensation
- Automatic, manual and timer-controlled endpoint determination
- User-defined intermittent measurement possible (max. operating time 1 h)
- Intelligent Sensor Management (ISM®) for automatic recognition of ISM® sensors and reading in calibration data

**Other features of the Seven2Go™ pro pH/Ion S8 professional pH meter:**
- Menu structure with full-text display in 12 languages
- Graphical LCD display
- Memory capacity for 2000 datasets incl. date and time (GLP-compliant)
- Data readout via Micro USB port

**Technical specifications:**

| Model | | Seven2Go™ S2 | Seven2Go™ pro S8 |
|---|---|---|---|
| Measuring range / resolution | pH<br>mV<br>°C | -2.00 to 20.00<br>-1999 to +1999<br>-5.0 to +105.0 | -2.000 to 20.000<br>-2000.0 to +2000.0<br>-5.0 to +130.0 |
| Accuracy | pH<br>mV<br>°C | ±0.01<br>±1<br>±0.5 | ±0.001<br>±0.01<br>±0.2 (0 to +105)<br>±0.5 (outside) |
| Connections | pH<br>°C | BNC<br>Cinch (NTC k30 Ω) | BNC<br>Cinch (NTC 30 kΩ) |
| Calibration points | | 1-/2-/3-/4-/5-point calibration | 1-/2-/3-/4-/5-point calibration |
| Buffer series:predefined/user-defined | | 4/1 | 8/5 |
| Data memory | | 200 pH values | 2000 datasets |
| Communication port | | - | Micro USB |
| Dimensions H x W x D (mm) | | 222 x 70 x 35 | 222 x 70 x 35 |

**Delivery incl.** pH plastic electrode InLab® Expert Pro-ISM®-IP67 with built-in temperature sensor (for aqueous samples, including emulsions, suspensions and solutions containing proteins), electrode clip, pH buffer solution in 4.01, 7.00 and 9.21 packs (2 x 30 ml sachets each) and 4 Mignon 1.5 V batteries.
Seven2Go™ pro pH/Ion S8 Standard Kit including software and data cable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Seven2Go™ pH/mV S2 standard kit | **CAL2.1** | 1 | 595,00 |
| Seven2Go™ pro pH/Ion S8 standard kit | **CAL3.1** | 1 | 930,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| pH plastic electrode InLab® Expert Go-ISM®(IP 67), incl. 1.8 m fixed cable (BNC/Cinch), stem length/∅ 120/12 mm, gel-filled | **LN43.1** | 1 | 334,00 |
| pH plastic electrode InLab® Expert Go (IP 67), without ISM®, incl. fixed cable 1.8 m (BNC/Cinch), stem length/∅ 120/12 mm, gel-filled | **CY88.1** | 1 | 257,00 |
| 1.5 V AA battery | **1022.2** | 4 | 5,95 |

# Desktop pH-meters





## Pocket pH-meters, models pH 3110 and 3310

By WTW. Dust and waterproof. Come singly or in set.

**Standard set equipment:** professional case with integrated measuring station and separate compartments for accessories. Complete with stand, beaker, pH-buffer solutions and batteries.

**Set 1:** standard equipment with pH-meter, model 3110: electrode Sentix® 41 with integrated temperature sensor

**Set 2:** standard equipment with pH-meter model 3310: electrode Sentix® 41 with integrated temperature sensor, driver software for USB and USB cable (Length 1 m).

**Technical specifications:**

| Model | | pH 3110 | pH 3310 |
|---|---|---|---|
| Measuring range / resolution | pH<br>mV<br>°C | -2.0 to +19.9, -2.00 to +19.99, -2.000 to +19.999<br>±2000<br>-5.0 to +105.0 | |
| Accuracy | pH<br>mV<br>°C | ±0.1, ±0.01, ±0.005<br>±1 mV<br>±0.1 | |
| Connections | pH<br>°C | DIN 19262<br>banana, 2 x 4 mm (NTC 30 kΩ/Pt 1000) | |
| AutoRead | | Automatic | Automatic/Manual |
| Calibration | | 1-/2-/3-point | 1-/2-/3-/4-/5-point |
| Calibration storage | | Current calibration | 5 calibrations retrievable |
| Display | | 7 segment LCD | LCD graphics, backlitt |
| Data storage | | - | Manual 200 records and 5000 time-controlled |
| Interface | | - | Mini-USB |
| Dimensions (H x W x D) | | 180 x 80 x 55 mm | |
| Power supply | | 4 Mignon/AA 1.5 V batteries | |

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3110 | without accessories | **KT20.1** | 1 | 524,60 |
| 3110 | Set 1 | **KT21.1** | 1 | 656,85 |
| 3310 | without accessories | **KT25.1** | 1 | 650,40 |
| 3310 | Set 2 | **KT26.1** | 1 | 840,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| pH electrode SenTix®41 with integral temperature sensor and fixed cable L 1 m (DIN 19262 + banana plug 1x4 mm) | **X173.1** | 1 | 209,65 |
| pH electrode SenTix®21 with fixed cable L 1 m (DIN 19262) | **X174.1** | 1 | 134,40 |
| Temperature sensor TFK 325 | **AN69.1** | 1 | 184,90 |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |

## pH 50-series benchtop pH meters

By Dostmann.

- Large screen with simultaneous display of pH or mV value and temperature
- Automatic or manual temperature compensation
- Automatic calibration
- Saves the current calibration
- Confirmation when a stable measured value is reached

**Technical specifications:**

| | | |
|---|---|---|
| pH measuring range / resolution | pH<br>mV<br>°C | 0.00 to 14.00<br>±1999<br>0.0 to +100.0 |
| Accuracy | pH<br>mV<br>°C | ±0.01<br>±1<br>±0.5 (+5 to +60), ±1 (outside) |
| Connections | pH<br>°C | BNC<br>Cinch (NTC 30 KΩ) |
| Calibration | | 1-/2-/3-point calibration (pH 4.01 / 7.00 / 10.01) |
| Data memory | | 25 measurements, current calibration |
| Dimensions (L x W x H) | | 160 x 190 x 70 mm |

**Technical specifications for pH combination electrode 201T:**
Features integrated temperature sensor, pH-range 0 to 14, operating range 0 to +60 °C, ceramic diaphragm, gel-electrolyte, plastic shaft, shaft length/∅ 120/12 mm.

**Delivery incl.** buffer solution pH 4.01 and 7.00 (50 ml each), electrode holder and mains adapter.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| pH 50 | without pH combination electrode | **HAE2.1** | 1 | 350,45 |
| pH 50 Set | with pH combination electrode 201T | **HAE3.1** | 1 | 407,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| pH combination electrode 201T with fixed cable L 1 m (BNC/Cinch) | **HAE4.1** | 1 | 107,30 |
| Temperature sensor NT55 (NTC 30 kΩ) with fixed cable L 1 m (Cinch) | **HAE5.1** | 1 | 85,95 |
| Electrode holder | **EHY1.1** | 1 | 88,15 |



## Desktop pH/mV/°C meter HI 2211-02

By Hanna.
- Simultaneous display of pH or mV value and temperature
- Stability indicator prevents faulty measurements
- Automatic 1/2-point calibration with 5 pre-programmed standard buffers (pH 4.01; 6.86; 7.01; 9.18; 10.01)
- Automatic or manual temperature compensation

**Technical specifications:**

| | | |
|---|---|---|
| Measurement range / resolution | pH<br>mV<br><br>°C | -2.00 to 16.00<br>±399.9 (ISE)<br>±2000 (ORP)<br>-9.9 to +120.0 |
| Accuracy | pH<br>mV<br><br>°C | ±0.01<br>±0.2 (ISE)<br>±1 (ORP)<br>±0.5 |
| Dimensions (L x W x H) | | 240 x 182 x 74 mm |

**Delivery incl.** pH glass electrode HI 1131 B (BNC-connector), temperature sensor, electrode arm, buffer solution pH 7.01 and pH 4.01 (20 ml each), electrolytic solution and 12 V adapter.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PA65.1** | 1 | 473,00 |

## Accessories for pH/mV/°C meter HI 2211-02

**Replacement pH-glass electrode HI 1131 B**

For general applications. Temperature range from -5 to +100 °C. Ceramic diaphragm model. Shaft ∅ 12 mm. With fixed cable, length 1 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **G011.1** | 1 | 140,00 |



## Laboratory pH meter Lab 855

By SI Analytics.
- Large easy-to-use LCD screen and clearly laid out keypad
- Simultaneous display of pH or mV value and temperature
- Can analyse and store current calibration data
- Adjustable calibration interval
- Stability control for identifying stable readings
- Automatic or manual temperature compensation
- Suitable for battery and mains operation
- Can be set to switch off automatically when battery-operated

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range / resolution | pH<br>mV<br>°C | -2.000 to +19.999<br>±1200.0 / ±2000<br>-5.0 to +105.0 |
| Accuracy | pH<br>mV<br>°C | ±0.005<br>±0.3 / ±1<br>±0.1 |
| Connections | pH<br>°C | DIN 19262<br>Banane, 2 x 4 mm (NTC 30 kΩ/Pt 1000) |
| Calibration | | 1-/2-/3-point calibration |
| Dimensions (L x W x D) | | 230 x 190 x 80 mm |
| Power supply | | 100 to 240 V, 50/60 Hz or 4 x 1.5 V AA batteries |

**Delivery incl.** BlueLine pH electrode 14 pH, calibration pouch (4.00 and 7.00), electrolyte solution 3 mol/l KCl, tripod, universal power supply and batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EPH2.1** | 1 | 886,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| Temperature sensor Pt 1000, made of stainless steel with 1 m fixed cable | **X765.1** | 1 | 265,55 |
| Spare pH-electrode BlueLine 14 pH, with integrated temperature sensor | **N521.1** | 1 | 235,45 |

▶ HI-series pH single-rod measuring cells see page 831

▶ BlueLine-series pH single-rod measuring cells see page 833

# Desktop pH-meters







## FiveEasy™, FiveEasy Plus™ benchtop pH meters

By Mettler-Toledo.

- Space-saving design with large display
- Simple, user-friendly menu
- Automatic or manual temperature compensation
- Automatically or manually end a measurement; with acoustic and visual endpoint signal
- Automatic calibration with four predefined buffer groups
- Displays the current calibration

**Technical specifications for the device:**

| Model | | FiveEasy™ | FiveEasy Plus™ |
|---|---|---|---|
| Measuring range / resolution | pH<br>mV<br>°C | 0.00 to 14.00<br>-2000 to +2000<br>0.0 to +100.0 | -2.00 to 16.00<br>-2000 to +2000<br>-5.0 to +105.0 |
| Accuracy | pH<br>mV<br>°C | ±0.01<br>±1<br>±0.5 | ±0.01<br>±1<br>±0.3 |
| Connections | pH<br>°C | BNC<br>Cinch (NTC 30 kΩ) | BNC<br>Cinch (NTC 30 kΩ) |
| Calibration | | 1-/2-/3-point calibration | 1-/2-/3-/4-/5-point calibration |
| Data memory | | Current calibration | 200 measurements, current calibration |
| Data transmission ports | | - | RS 232, USB |
| Dimensions L x W x H (mm) | | 227 x 147 x 70 | |
| Power supply | | 100 to 240 V, 50/60 Hz | |

**Technical specifications for the LE438 pH electrode:**
For water-based samples, including emulsions and suspensions.
Features an integrated temperature sensor (NTC 30 kΩ),
pH range of 0 to 14, operating range of 0 to +80 °C, nylon diaphragm, plastic shaft (shaft length/∅ 120/12 mm respectively); gel-filled.

**Delivery incl.** electrode arm, calibration sachet (pH 4.01, 7.00 and 9.21) and 12 V power supply. F20- and FP20-standard models – also with LE438 pH electrode.

| Model | pH electrode | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FiveEasy™-F20-meter | - | **HY56.1** | 1 | 418,00 |
| FiveEasy™-F20-standard | LE438 | **PE70.1** | 1 | 555,00 |
| FiveEasy Plus™-FP20-meter | - | **TE49.1** | 1 | 597,00 |
| FiveEasy Plus™-FP20-standard | LE438 | **TE50.1** | 1 | 743,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| LE438 pH electrode with 1.2 m fixed cable (BNC + Cinch) | **HY59.1** | 1 | 151,00 |


▶ LE-series pH single-rod measuring cells see page 831

▶ For information on pH measurement see page 830


## Benchtop pH/ion meters SevenCompact™ S220

By Mettler-Toledo.

- Large colour display (4.3″) with Routine or Expert mode (e.g. for disabling Delete data or Edit data function)
- Menu navigation in 10 languages (DE, GB, FR, ES, IT, PT, CN, JP, KR, RU)
- Automatic 1-/2-/3-/4-/5-point calibration with predefined buffer groups or 1 user-defined group
- Automatic and manual temperature compensation
- Automatic, manual or timed endpoint detection
- Internal measured value memory: saving by pressing key or timed (intermittent) saving (interval is variable from 1 sec to 40 min)
- USB ports for exporting data via USB stick (datasets are exported as a text (.txt) file) or for connecting a USB keyboard
- It is possible to measure ion concentrations using additional ion-selective electrodes (ISE)

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range / resolution | pH<br>mV<br>°C | -2.0 to 20.0; -2.00 to 20.00; -2.000 to 20.000<br>-2000.0 to +2000.0; -2000 to +2000<br>-5.0 to +130.0 |
| Accuracy | pH<br>mV<br>°C | ±0.002<br>±0.2<br>±0.1 |
| Connections | pH<br>°C | BNC<br>Cinch (NTC 30 kΩ/Pt 1000) |
| Data memory | | 1000 sets |
| Communication ports | | RS 232, USB-A, USB-B |

**pH meter SevenCompact™ S220-basic**
**Delivery incl.** electrode holder and protective sleeve.
Please order single-rod pH measuring cell separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA09.1** | 1 | 870,00 |

**pH meter SevenCompact™ S220-U Kit-Version**
**Delivery incl.** electrode holder, protective sleeve, Versatile Pro plastic pH electrode and two 20 ml buffer bags for pH 4.01/7.00/9.21/10.00.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA10.1** | 1 | 1028,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| pH-electrode InLab® Versatile Pro, incl. fixed cable 1.2 m | **TA11.1** | 1 | 208,00 |
| pH-electrode InLab® Routine Pro with MultiPin™, connecting cable please order separately | **N504.1** | 1 | 223,00 |
| Connecting cable, length 1.2 m, MultiPin™ + BNC + cinch plug | **N505.1** | 1 | 84,80 |
| NTC 30 kΩ temperature sensor with 1.2 m fixed cable (Cinch) | **Y734.1** | 1 | 81,00 |


▶ InLab® series pH single-rod measuring cells with integrated temperature sensor, see page 832

# Conductivity tester




## DIST conductivity testers

By Hanna.
- Large LCD display with simultaneous display of conductivity, temperature, battery charge status and stability indicator
- Automatic 1-point calibration:
  Dist 3: 1413 µS/cm
  Dist 4: 12880 µS/cm
- Automatic temperature compensation up to 50.0 °C
- Accuracy: ±2 % of the measurement range end value
- Auto Off function
- Dimensions: L 160 x W 40 x D 17 mm, weight: 68 g

**Delivery incl.** protective cap and CR 2032 button cell battery (3 V).

| Type | Measuring range/resolution | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Dist 3 | up to 2000 µS/cm | **X210.1** | 1 | 57,80 |
| Dist 4 | up to 20.00 mS/cm | **X211.1** | 1 | 57,80 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 | 5,35 |




## Pure water tester PWT

By Hanna. Conductivity tester. Ideal for controlling distilled water in the laboratory.
- Automatic temperature compensation to +40 °C
- Measuring range 0.0-99.9 µS/cm / Resolution 0.1 µS/cm
- Accuracy: ±2 % of range
- Dimensions : L 150 x W 30 x D 24 mm, weight: 85 g

**Delivery incl.** batteries (4 x cell-battery 1.5 V).
Please order conductivity test solution 84 µS/cm separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0074.1** | 1 | 70,25 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |




## Waterproof conductivity, TDS- and °C tester

By Hanna. Two models for different measuring ranges.
Complete with 4 cell batteries 1.5 V.
- Simultaneous display of conductivity or TDS and temperature value
- **Automatic calibrating**
  (1413 µS/cm at DIST 5; 12880 µS/cm at DIST 6)
- Automatic temperature compensation
- Arbitrary temperature coefficient enables application in alkaline and acid media
- Exchangeable conductivity probe
- Low battery display, stability indicator
- Dimensions: L 163 x W 40 x D 26 mm. Weight 85 g.

**Technical specifications:**

| Model | | DiST 5 | DiST 6 |
|---|---|---|---|
| Measuring range / resolution | EC<br>TDS<br>°C | 0 to 3999 µS/cm<br>0 to 2000 ppm (mg/l)<br>0.0 to 60.0 | 0.00 to 20.00 mS/cm<br>0.00 to 10.00 ppt (g/l)<br>0.0 to 60.0 |
| Accuracy | EC/TDS<br>°C | ±2 % of rating<br>±0.5 | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| DiST 5 | **X633.1** | 1 | 109,00 |
| DiST 6 | **X634.1** | 1 | 109,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## SD 70 conductivity tester

By Aqualytic.
- Rugged, water resistant housing (IP67)
- Automatic 1/2 point calibration (calibration standards: 1413 µS/cm, 12.88 mS/cm) and manual 1/2 point calibration (calibration standards: freely selectable)
- Automatic temperature compensation
- Automatic change-over from µS/cm to mS/cm
- Auto Off after 8 min
- Memory with capacity for 25 datasets incl. time and date

**Technical specifications:**

| | |
|---|---|
| Measuring range / resolution | 1 to 1999 µS/cm and 2.00 to 20.00 mS/cm<br>0.1 to 60.0 °C |
| Accuracy | ±3 % of measurement range end value<br>±1 °C |
| Dimensions (L x W x D) | 177 x 43 x 29 mm |
| Weight | 126 g |

**Delivery incl.** conductivity measuring cell, carry strap, plastic box and 2 batteries micro/AAA 1,5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YP30.1** | 1 | 127,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement electrode for conductivity tester SD 70 | **YP31.1** | 1 | 70,95 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Conductivity meters




## Portable conductivity measuring devices HI 99300 / HI 99301

By Hanna. Dustproof and waterproof conductivity measuring devices (protection class IP 67) with microprocessor.
- Simultaneous display of conductivity or TDS and temperature value
- Automatic temperature compensation from 0 to +60.0 °C
- Automatic 1-point calibration with calibration standard (1413 µS with HI 99300; 12880 µS with HI 99301)
- Temperature coefficient adjustable from 0 to 2.4 %

**Technical specifications:**

| Model | | HI 99300 | HI 99301 |
|---|---|---|---|
| Measuring range / resolution | EC<br>TDS<br>°C | 0 to 3999 µS/cm<br>0 to 2000 ppm (mg/l)<br>0.0 to +60.0 °C | 0 00 to 20.00 mS/cm<br>0.00 to 10.00 ppt (g/l)<br>0.0 to +60.0 °C |
| Accuracy | EC<br>TDS<br>°C | ±2 % of the measuring range end value<br>±2 % of the measuring range end value<br>±0.5 °C | |
| Dimensions (L x W x D) | | 143 x 80 x 38 mm | |
| Weight | | 210 g | |

**Delivery incl.** case, conductivity sensor HI 76306 with 1 m-cable and 3 batteries Micro 1.5 V.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| HI 99300 | **KL93.1** | 1 | 204,00 |
| HI 99301 | **KL94.1** | 1 | 204,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare conductivity sensor HI 76306 | **KL95.1** | 1 | 110,00 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

▶ Conductivity test solutions see page 844




① ②

## ① Conductivity meter HI 8733 N

By Hanna. Standard unit with conductivity probe (1 m cord), calibrating screw driver and E-Block 9 V battery.
- 4-ring electrode gauge head
- One-point calibration via trimmer (calibration standard can be freely selected)
- Automatic temperature compensation
- **Temperature coefficient can be freely selected between 0 and 2.5 %**

**Technical specifications:**

| | |
|---|---|
| Measuring range / resolution | 0.0 to 199.9 µS/cm<br>0 to 1999 µS/cm<br>0.00 to 19.99 mS/cm<br>0.0 to 199.9 mS/cm |
| Accuracy | ±1 % of measuring range |
| Ambient conditions | 0 to +50 °C |
| Dimensions (L x W x D) | 185 x 82 x 45 mm |
| Weight | 355 g |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X218.1** | 1 | 439,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |

## ② Watertight conductivity meter HI 9033

By Hanna.
- Water- and dust-tight casing
- Robust with 4-ring-electrode
- Automatic temperature compensation via integral sensor
- Manual one point calibration via trimmer (calibration standard can be freely selected)
- Dimensions: L 164 x W 76 x D 45 mm, weight 425 g

**Technical specifications:**

| | |
|---|---|
| Measuring range / resolution | 0.0 to 199.9 mS<br>0.00 to 19.99 mS<br>0 to 1999 µS<br>0.0 to 199.9 µS |
| Accuracy | ±1 % over total range |
| Temp. compensation | from +10 to +40 °C |
| Reference temperature | +25 °C |

**Delivery incl.** sensor, case and block-battery 9 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C814.1** | 1 | 572,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |




## FiveGo™ portable conductivity meter

By Mettler-Toledo.
- Waterproof and dust-proof in accordance with protection class IP67
- Ergonomic design for comfortable handling
- Simple, user-friendly menu
- Automatic or manual temperature compensation
- Automatically or manually end a measurement; with acoustic and visual endpoint signal
- Automatic calibration with three predefined standards
- Displays the current calibration and has data memory for 200 measurements
- Selectable reference temperature (20 or 25 °C)

**Technical specifications for the device:**

| | | |
|---|---|---|
| Measuring range / resolution | EC<br>TDS<br>°C | 0.00 µS/cm to 200 mS/cm<br>0.01 mg/l to 200 g/l<br>0.0 to 100.0 |
| Accuracy | EC<br>TDS<br>°C | ±0.5% of the measured value<br>±0.5% of the measured value<br>±0.5 °C |
| Connection | | LTW, 7-pin (IP67) |
| Calibration | | 1-point calibration |
| Data memory | | 200 measurements, current calibration |
| Dimensions (L x W x H) | | 188 x 77 x 33 mm |

**Technical specifications for the conductivity sensor:**
LE703-IP67 with integrated temperature sensor, measuring range: 0.01 to 200 mS/cm, plastic shaft, shaft length/∅: 120/12 mm, range of application 0 to +80 °C.

**Delivery incl.** LE703-IP67 conductivity sensor, calibration bag (1413 µS/cm and 12.88 mS/cm), electrode clip, wrist strap and four 1.5 V AAA batteries.

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FiveGo F3-Standard | - | **HY63.1** | 1 | 534,00 |
| FiveGo F3-Field | Carry case | **HY64.1** | 1 | 586,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| LE703-IP67 conductivity sensor with 1 m fixed cable (LTW, 7-pin) | **EEP9.1** | 1 | 136,00 |
| Carrying case with 4 sample bottles | **EEP8.1** | 1 | 83,70 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Seven2Go™-series pocket conductivity meter

By Mettler-Toledo. Rugged conductivity meter designed to withstand the harshest environments. Waterproof and dustproof to IP 67. Impact protection housing.
- Automatic and manual temperature compensation
- Automatic, manual and timer-controlled endpoint determination
- User-defined intermittent measurement possible (max. operating time 1 h)
- Selectable reference temperature (20/25 or °C)
- Intelligent Sensor Management (ISM®) for automatic recognition of ISM® sensors and reading in calibration data

**Other features of the Seven2Go™ pro S7:**
- Menu structure with full-text display in 12 languages
- Graphical LCD display
- Memory capacity for 2000 datasets incl. date and time (GLP-compliant)
- Data readout via Micro USB port

**Technical specifications:**

| Model | | Seven2Go™ S3 | Seven2Go™ pro S7 |
|---|---|---|---|
| Measuring range / resolution | EC<br>TDS<br>Salinity<br>°C | 0.01 µS/cm to 500 mS/cm<br>0.01 mg/l to 300 g/l<br>0.00 to 42.0 psu<br>-5.0 to +105.0 | 0.01 µS/cm to 1000 mS/cm<br>0.01 mg/l to 600 g/l<br>0.00 to 42.0 psu<br>-5.0 to +105.0 |
| Accuracy | EC<br>TDS<br>Salinity<br>°C | ±0.5 %<br>±0.5 %<br>±0.5 %<br>±0.2 °C | ±0.5 %<br>±0.5 %<br>±0.5 %<br>±0.1 °C |
| Connections | | LTW 7-pin (IP 67) | LTW 7-pin (IP 67) |
| Calibration points | | 1 | 1 |
| Buffer series:<br>predefined<br>user-defined | | <br>3 (84, 1413, 12880 µS/cm)<br>2 | <br>3 (84, 1413, 12880 µS/cm)<br>2 |
| Temperature compensation | | linear | linear, non-linear |
| Data memory | | 200 conductivity values | 2000 datasets |
| Communication port | | - | Micro USB |
| Dimensions H x W x D (mm) | | 222 x 70 x 35 | 222 x 70 x 35 |
| Weight (g) | | 270 | 290 |

**Delivery incl.** conductivity sensor InLab® 738-ISM® (IP 67), electrode clip, conductivity test solutions 1413 µS/cm and 12880 µS/cm (2 x 30 ml sachets each) and 4 Mignon 1.5 V batteries.
Seven2Go™ pro S7 Standard Kit including software and data cable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Seven2Go™ conductivity S3 Standard Kit | **CAL4.1** | 1 | 753,00 |
| Seven2Go™ pro conductivity S7 Standard Kit | **CAL5.1** | 1 | 1091,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Conductivity sensor InLab® 738-ISM® (IP 67), incl. 1.8 m fixed cable (LTW 7-pin), stem length/∅ 120/12 mm, measuring range 0.01 to 1000 mS/cm | **LN44.1** | 1 | 441,00 |
| Conductivity sensor InLab® 738 (IP 67), incl. 1.8 m fixed cable (LTW 7-pin), stem length/∅ 120/12 mm, measuring range 0.01 to 1000 mS/cm | **CY95.1** | 1 | 391,00 |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |

# Conductivity meters



## Pocket conductometer Cond 3110-/3310-Set

By WTW. Robust, waterproof conductivity meters with parallel temperature display.

- 1-point calibration (calibration standard can be freely selected)
- Non-linear function for high-purity and natural water (non-cond.)
- Optional reference temperature (20 or 25 °C)

**Additional features of Cond 3310:**

- Integrated data logger
- USB-interface
- Turn-off temperature compensation
- Backlight graphic display
- Additional equipment: CD with driver software for USB and USB cable (Length 1 m)

**Technical specifications:**

| Model | | Cond 3110 | Cond 3310 |
|---|---|---|---|
| Measuring range / resolution | Conductivity<br>Temperature<br>Salinity | 0.1 µS to 1000 mS/cm<br>-5.0 to +105.0 °C<br>0.0 to 70.0 | |
| | TDS | - | 0 to 1999 mg/l,<br>0 to 199.9 g/l |
| Accuracy | Conductivity<br>Temperature | ±0.5 % of reading<br>±0.1 °C | |
| Temperature compensation | | Non-cond. | turn-off, non-cond.,<br>0.000 to 10.00 %/C |
| Calibrating storage | | Current calibration | 5 calibrations retrievable |
| Display | | 7 segment LCD | LCD graphics, backlight |
| Data storage | | - | Manual 200 and time-controlled 5000 records |
| Interface | | - | Mini-USB |
| Dimensions (H x W x D) | | 180 x 80 x 55 mm | |
| Power supply | | 4 Mignon/AA 1.5 V batteries | |

**Delivery incl.** 4-pol conductivity electrode TetraCon®325 (measuring range 0.001 to 1000 mS/cm), professional case with integrated measuring station and separate compartments for accessories, stand, beaker, conductivity test solutions 1413 µS/cm and batteries.

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Cond 3110-Set | **KT27.1** * | 1 | 1009,45 |
| Cond 3310-Set | **KT28.1** * | 1 | 1161,00 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |




## Conductivity test solutions

For conductivity meters.

**500-ml-bottles without manufacturer's certificate**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 84 µS/cm | **C524.1** | 1 | 14,80 |
| 1413 µS/cm | **E469.1** | 1 | 14,80 |
| 5000 µS/cm | **E470.1** | 1 | 21,90 |
| 12880 µS/cm | **E471.1** | 1 | 14,80 |

**500-ml-bottle, opaque with manufacturer's certificate**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 84 µS/cm | **PX16.1** | 1 | 25,00 |
| 1413 µS/cm | **PX17.1** | 1 | 25,00 |

**20-ml-bag without manufacturer's certificate**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1413 µS/cm | **N324.1** | 25 | 29,00 |
| 5000 µS/cm | **N326.1** | 25 | 29,00 |
| 12880 µS/cm | **N323.1** | 25 | 29,00 |

**20-ml-bag with manufacturer's certificate**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1413 µS/cm | **EN94.1** | 25 | 32,90 |
| 5000 µS/cm | **EN95.1** | 25 | 32,90 |
| 12880 µS/cm | **EN96.1** | 25 | 32,90 |

▶ Further calibration solutions for conductimetry see page 846




## FiveEasy™

By Mettler-Toledo.

- Space-saving design with large display
- Simple, user-friendly menu
- Automatic or manual temperature compensation
- Automatically or manually end a measurement; with acoustic and visual endpoint signal
- Automatic calibration with three predefined standards
- Saves the current calibration
- Selectable reference temperature (20 or 25 °C)

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range/resolution | EC<br>TDS<br>°C | 0.1 µS/cm to 200 mS/cm<br>0.01 mg/l to 200 g/l<br>0.0 to +100.0 °C |
| Accuracy | EC<br>TDS<br>°C | ±0.5 % of the measured value<br>±0.5 % of the measured value<br>±0.5 °C |
| Connection | | Mini-DIN |
| Calibration | | 1-point calibration |
| Dimensions (L x W x H) | | 227 x 147 x 70 mm |
| Power supply | | 100 to 240 V, 50/60 Hz |

**Technical specifications for the conductivity sensor:**
LE703 featuring integrated temperature sensor, measuring range: 0.01 to 200 mS/cm, plastic shaft (shaft length/∅: 120/12 mm respectively), operating range of 0 to +80 °C, 1.0 m fixed cable (mini-DIN).

**Delivery incl.** LE703 conductivity sensor, electrode arm, calibration sachet (1413 µS/cm and 12.88 mS/cm) and 12 V power supply.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HY61.1** | 1 | 879,00 |




## Conductivity sensors for the FiveEasy™ benchtop conductivity meter

Features an integrated temperature sensor (NTC 30 kΩ).

**Technical specifications:**

| Type | ① InLab® 720 | ② InLab® 751-4 mm | ③ LE703 |
|---|---|---|---|
| Measurement range | 0.1 to 500 µS/cm | 0.01 to 100 mS/cm | 0.01 to 200 mS/cm |
| Operating range (°C) | 0 to +100 | 0 to +100 | 0 to +80 |
| Cell constant/cm | 0.06 | 1.0 | 0.55 |
| Cell type | 2 platinum poles | 2 platinum poles | 4-pole graphite cell |
| Shaft material | Glass | Glass | Plastic |
| Stem length (mm) | 120 | 120 | 120 |
| Shaft ∅ (mm) | 12 | 4 | 12 |
| Application | For low-conductivity samples | For taking measurements in small containers | For general conductivity measurements |

**Delivery incl.** 1 m fixed cable and mini-DIN connector.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Conductivity sensor InLab® 720, incl. 1.0 m fixed cable (Mini-DIN); measurement range 0.01 to 500 mS/cm | **PP35.1** | 1 | 308,00 |
| ② InLab® 751-4 mm | **PP36.1** | 1 | 464,00 |
| ③ LE703 | **HY62.1** | 1 | 138,00 |

# Conductivity meters




## Benchtop conductivity meter SevenCompact™ S230

By Mettler-Toledo.

- Large colour display (4.3″) with Routine or Expert mode (e.g. for disabling Delete data or Edit data function)
- Menu navigation in 10 languages (DE, GB, FR, ES, IT, PT, CN, JP, KR, RU)
- 1-point calibration with 5 predefined groups and 1 user-defined group incl. temperature chart
- Automatic and manual temperature compensation
- Selection of compensation method: Linear, Nonlinear, Ultra-pure water, Off
- Manual cell constant input
- Internal measured value memory: saving by pressing key or timed (intermittent) saving (interval is variable from 1 sec to 40 min)
- USB ports for exporting data via USB stick (datasets are exported as a text (.txt) file) or for connecting a USB keyboard

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range / resolution | Conductivity: | 0.001 to 1.999 µmS/cm<br>2.00 to +19.99 µmS/cm<br>20.0 to 199.9 µmS/cm<br>200 to 1999 µmS/cm<br>20.0 to 199.9 mS/cm<br>200 to 1000 mS/cm |
| | Temperature: | -5.0 to 105.0 °C |
| | Salinity: | 0.00 to 80.00 psu |
| | TDS: | 0.00 mg/l to 1000 g/l |
| Accuracy | Conductivity: | ±0.5 % |
| | Temperature: | ±0.5 % |
| | Salinity: | ±0.5 % |
| | TDS: | ±0.5 % |
| Data memory | | 1000 sets |
| Communication ports | | RS 232, USB-A, USB-B |

**Conductivity meter SevenCompact™ S230 Basic Kit**
**Delivery incl.** electrode holder, protective sleeve, conductivity sensor InLab 731®-ISM (0.01 to 1000 mS/cm) and two 20 ml calibration bags for 1413 µS/cm and 12.88 mS/cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA12.1** | 1 | 1445,00 |

**Conductivity meter SevenCompact™ S230 USP/EP-Kit**
**Delivery incl.** electrode holder, protective sleeve, conductivity sensor InLab 741®-ISM (0.001 to 500 µS/cm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA13.1** | 1 | 1589,00 |

## Accessories for SevenCompact™ S230

**4-pole conductivity sensor InLab® 731-ISM® (0-01 mS/cm)**
With integrated temperature sensor. Stem material: epoxy.
Stem length: 120 mm, stem ∅ 12 mm. Temperature range: 0 to 100 °C.
Measuring range: 0.01 to 1000 mS/cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA14.1** | 1 | 390,00 |

**2-pole conductivity sensor InLab® 741-ISM® (0.001 µS/cm)**
With integrated temperature sensor. Stem material: steel.
Stem length: 120 mm, stem ∅ 12 mm. Temperature range: 0 to 100 °C.
Measuring range: 0.001 to 500 µS/cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA15.1** | 1 | 532,00 |



## Conductivity standards ROTI®CALIPURE

Our conductivity standard solutions are made from high-quality reagents and therefore ensure maximum precision during calibration. They are ready for use and come supplied with a batch-specific certificate of analysis.

- 10 conductivity standards
- Variation in conductivity ±1 % (25 °C)
- Traceable to SRM from NIST

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Conductivity standard 5 µS/cm | **2462.1** | 500 ml | 149,45 |
| Conductivity standard 84 µS/cm | **2432.1** | 500 ml | 27,45 |
| Conductivity standard 84 µS/cm | **2432.2** | 1 l | 36,05 |
| Conductivity standard 100 µS/cm | **2463.1** | 500 ml | 62,90 |
| Conductivity standard 147 µS/cm | **2433.1** | 500 ml | 27,45 |
| Conductivity standard 147 µS/cm | **2433.2** | 1 l | 36,05 |
| Conductivity standard 500 µS/cm | **2464.1** | 500 ml | 62,90 |
| Conductivity standard 1 000 µS/cm | **2465.1** | 500 ml | 62,90 |
| Conductivity standard 1413 µS/cm | **2434.1** | 500 ml | 27,45 |
| Conductivity standard 1413 µS/cm | **2434.2** | 1 l | 36,05 |
| Conductivity standard 10 000 µS/cm | **2466.1** | 500 ml | 62,90 |
| Conductivity standard 12 880 µS/cm | **2435.1** | 500 ml | 27,45 |
| Conductivity standard 12 880 µS/cm | **2435.2** | 1 l | 36,05 |
| Conductivity standard 500 000 µS/cm | **2467.1** | 500 ml | 62,90 |

▶ Further calibration solutions for conductimetry see chapter Chemical A-Z.




## HI 9146-04 oxygen meter

By Hanna. Ideal for analyzing released oxygen in liquids.
- Large display for reading the measured values (% or mg/l) and temperature
- Automatic calibration in the air up to 100 %
- Automatic temperature compensation from 0 to 50 °C plus air pressure-/salinity compensation
- Waterproof
- The hold-function enables the measured value to be "frozen" in the display
- Automatic switch-off after 4 h

**Technical specifications:**

| | | |
|---|---|---|
| Range of testing | $O_2$-concentration<br>$O_2$-saturation<br>Temperature | 0.00 to 45.00 mg/l<br>0.0 to 300.0 %<br>0.0 to 50.0 °C |
| Resolution | $O_2$-concentration<br>$O_2$-saturation<br>Temperature | 0.01 mg/l<br>0.1 %<br>0.1 °C |
| Accuracy | $O_2$-concentration<br>$O_2$-saturation<br>Temperature | ±1.5 %<br>±1.5 %<br>±0.5 °C |
| Dimensions (W x D x H) | | 80 x 60 x 196 mm |
| Weight | | 425 g |

**Delivery incl.** Oxygen probe with 4 m cable, 30 ml oxygen-electrolyte solution, 2 spare membranes, transport case and 3 Micro 1.5 V batteries.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Oxygen meter HI 9146-04 | **EL97.1** | 1 | 594,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare membranes | **EL98.1** | 5 | 122,00 |
| Oxygen electrolyte solution, 30 ml | **H446.1** | 1 | 17,10 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Pocket oxygen meter Oxi 3310-Set

By WTW. Robust, waterproof pocket meter, battery operated
- Integrated data logger
- USB-interface
- Automatic air pressure compensation sensor
- Backlit graphic display
- Calibrating storage - 5 calibrations are retrievable

**Set-equipment**
- Meter incl. 4 Mignon/AA 1.5 V batteries
- Galvanic oxygen sensor CellOx®325 with 1.5 m cable (Measuring range $O_2$-concentration: 0 to 50 mg/l)
- Professional case with integrated measuring station and separate compartments for accessories
- Cleaning agent and electrolyte solution
- 3 replaceable membrane heads
- Stand and beaker
- Driver software for USB
- USB-cable (Length 1 m)

**Technical specificationsn:**

| | | |
|---|---|---|
| Measuring range / resolution | $O_2$-concentration | 0.01 to 19.99 mg/l<br>0.0 to 90.9 mg/l |
| | $O_2$-saturation | 0.1 to 199.9 %<br>0 to 600 % |
| | Partial pressure | 0.1 to 199.9 hPa<br>0 to 1250 hPa |
| | Temperature | -5.0 to +50.0 °C |
| Accuracy | $O_2$-concentration | ±0.5 % of reading |
| | $O_2$-saturation | ±0.5 % of reading |
| | Partial pressure | ±0.5 % of reading |
| | Temperature | ±0.1 °C |
| Data storage | | Manual 200 and time-controlled 5000 records |
| Interface | | Mini-USB |
| Dimensions (H x W x D) | | 180 x 80 x 55 mm |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KT29.1** * | 1 | 1460,95 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |

► Winkler oxygen bottles see page 31

# Multi-range meters




## Combi testers pH, conductivity, °C - model Combo

By Hanna. Two models for different measuring ranges.
Complete with 4 cell batteries 1.5 V.

- Simultaneous display of pH or EC measured values and temperature.
- Simple calibrating with pre-programmed pH and conductivity solutions (1413 µS/cm at Combo I, 12880 µS/cm at Combo II)
- Automatic temperature compensation of pH and EC/TDS-value
- Adjustable temperature coefficient enables applicaton in alkaline and acid media
- Conductivity probe made of graphite
- Low battery display, stability indicator
- Dimensions: L 163 x W 40 x D 26 mm. Weight 85 g

**Technical specifications:**

| Model | | Combo I | Combo II |
|---|---|---|---|
| Measuring range / resolution | pH | 0.00 to 14.00 | 0.00 to 14.00 |
| | EC | 0 to 3999 µS/cm | 0.00 to 19.99 mS/cm |
| | TDS | 0 to 2000 ppm (mg/l) | 0.00 to 10.00 ppt (g/l) |
| | °C | 0.0 to 60.0 | 0.0 to 60.0 |
| Accuracy | pH | ±0.05 | |
| | EC/TDS | ±2 % of rating | |
| | °C | ±0.5 | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Combo I | **X631.1** | 1 | 159,00 |
| Combo II | **X632.1** | 1 | 159,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |
| Spare electrode for pHep®-4 and pHep®-5 | **X284.1** | 1 | 60,50 |

▶ For information on pH measurement see page 830



## Combined measuring devices PM 2000 set

Automatic sensor recognition. Robust, coated alu-housing.
Automatic calibration. Protective system IP 65.

**pH-measurement**

- Measuring range/resolution: pH 0.00 to 14.00
- Accuracy: ±0.01 pH
- Automatic temperature compensation: 0 to 100 °C

**Conductivity measurement**

- Measuring range: 0 µS/cm to 500 mS/cm in 5 measuring ranges
- Measuring cell with integrated temperature sensor
- Error of measurement: to 200 mS = 2 %, to 500 mS = 4 %
- Setting possibility for temperature coefficient (0-3.9 %) and reference temperature (20/25 °C)
- Dimensions of measuring cell: W 32 x D 18 x L 165 mm

**Temperature measurement**

- Measuring range: -50.0 to +150.0 °C; resolution 0.1 °C
- Accuracy of device: ±0.2 °C
- Probe Pt 1000 Class B

**mV-measurement (Redox potential)**

- Measuring range: -1000 mV to +1000 mV; resolution 1 mV
- Zero point can be set individually for Redox-electrodes

**Technical specifications:**

| | |
|---|---|
| Display | 8 digit x 14 segment LCD • 7 mm |
| Weight | 350 g without probe |
| Housing | Aluminium (black coating) |
| Dimensions (L x W x H) | 138 x 85 x 35 mm |
| Ambient temperature | 0 to +50 °C |

**Delivery incl.** pH/Redox-measuring pre-amplifier with temperature probe, pH-electrode pH62/A7, conductivity measuring cell, 3 lithium-batteries Mignon 1.5 V.
**Without** Redox electrode, please order separately if required.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HT24.1** | 1 | 585,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| Redox electrode Pt 110 | **N389.1** | 1 | 131,15 |
| pH-electrode pH62/AS7 | **N385.1** | 1 | 76,95 |
| pH/Redox measuring pre-amplifier with temp.-prove | **N384.1** | 1 | 169,85 |
| Conductivity measuring cell | **X286.1** | 1 | 150,30 |




## Combination meters HI 991300 / HI 991301

By Hanna. Waterproof pH-, conductivity/TDS- and temperature-meter with microprocessor.

- **Multiparameter probes** enable measuring to be carried out without changing the probe
- Probe with integrated temperature sensor for automatic temperature compensation and temperature measurement
- Temperature coefficient and TDS-factor can be set individually
- With large multifunction display for simultaneous temperature display
- Graphic symbols illustrate calibration and measurement
- Automatic calibration with preprogrammed standard buffers for pH (7.01; 4.01 10.01) and EC (1413 µS with HI 991300; 12880 µS at HI 991301)

**Technical specifications:**

| Model | | HI 991300 | HI 991301 |
|---|---|---|---|
| Measuring range / resolution | pH<br>EC<br>TDS<br>°C | 0.00 to 14.00<br>0 to 3999 µS/cm<br>0 to 1999 ppm (mg/l)<br>0.0 to 60.0 | 0.00 to 14.00<br>0.00 to 19.99 mS/cm<br>0.00 to 10.00 ppt (g/l)<br>0.0 to 60.0 |
| Accuracy | pH<br>EC<br>TDS<br>°C | ±0.01<br>±2 % of measuring ranges<br>±2 % of measuring ranges<br>±0.5 | |
| Dimensions (L x W x D) | | 150 x 80 x 28 mm | |
| Weight | | 210 g | |

**Delivery incl.** multiparameter probe, 3 batteries Micro 1.5 V.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| HI 991300 | **X222.1** | 1 | 495,00 |
| HI 991301 | **X223.1** | 1 | 495,00 |

## Accessories for HI 991300 and HI 991301

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spare probe HI 1288 | **X224.1** | 1 | 149,00 |
| Micro/AAA 1.5 V battery | **1021.2** | 4 | 6,40 |



## Multi-parameter handheld meter AL15

By Aqualytic. For the measurement of pH/redox, conductivity/TDS and oxygen.

- Automatic/manual temperature compensation
- Min/Max and Hold functions
- Automatic/manual storage of up to 16,000 datasets (please order software and cable for exporting data separately)
- RS 232 port and USB port
- Auto Off after 10 min
- Dimensions (incl. protective plating): L 220 x W 120 x D 40 mm. Weight 625 g

**Technical specifications:**

| | |
|---|---|
| **pH/redox** | |
| Measurement range / resolution | 0.01 to 14.00 pH<br>-1999 to +1999 mV |
| Accuracy | ±0.02 pH |
| Temperature compensation | Automatic: 0 to 65 °C, manual: 0 to 100 °C |
| Calibration | pH: 1-/ 2-/ 3-point calibration (pH 7. 4 and 10)<br>Redox: 1-point calibration (calibration standards freely selectable) |
| **Conductivity** | |
| Measurement range / resolution | 0.201 to 2.000 mS<br>2.01 to 20.00 mS<br>20.1 to 200.0 mS |
| Accuracy | ±0.5 % of the measurement range end value |
| Temperature compensation | Automatic: 0 to 60 °C |
| Calibration | 1-/ 2-/3-point calibration (calibration standards freely selectable) |
| **TDS** | |
| Measurement range / resolution | 0.1 to 132.0 ppm / 0.1 ppm<br>132 to 1320 ppm / 1 ppm<br>1320 to 13 200 ppm / 10 ppm<br>13 200 to 132 000 ppm / 100 ppm |
| Accuracy | ±2 % of the measurement range end value |
| **Oxygen** | |
| Measurement range / resolution | 0.1 to 20.0 mg/l (dissolved $O_2$)<br>0.1 to 100 % ($O_2$ in air) |
| Accuracy | ±0.4 mg/l<br>±0.7 % |
| Temperature compensation | Automatic: 0 to 50 °C |
| Salt correction | 0 to 39 % |
| Air pressure compensation | 0 to 8900 m |

**Delivery incl.** pH plastic electrode with gel electrolyte and BNC connection, temperature sensor, conductivity measuring cell, pH buffers 4 and 7, plastic case and 4 mignon 1.5 V batteries. Does not include oxygen sensor and redox electrode; please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YT94.1** | 1 | 698,75 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare pH plastic electrodes | **YP69.1** | 1 | 77,40 |
| Replacement conductivity measuring cell | **YT96.1** | 1 | 67,20 |
| Oxygen sensor | **YT97.1** | 1 | 169,85 |
| Electrolyte for oxygen sensor | **YT98.1** | 1 | 18,85 |
| Redox electrode with BNC connection | **C900.1** | 1 | 306,40 |
| RS 232 cable for data transfer | **YT99.1** | 1 | 23,15 |
| USB cable for data transfer | **YX00.1** | 1 | 67,75 |
| Windows software for data transfer | **YX01.1** | 1 | 76,35 |
| 1.5 V AA battery | **1022.2** | 4 | 5,95 |

# Multi-range meters




## pH-/Conductivity meters SevenGo® Duo

By Mettler-Toledo. Portable two-channel meter for determining pH, mV, conductivity, TDS (Total Dissolved Solids) and salinity.

**General information**
- Robust, waterproof casing
- Data storage for 99 GLP-data records

**pH-measurement**
- Automatic 1-/2-/3-point pH calibration with 4 predefined and one user-defined buffer set
- Reproducible results through automatic limit point recognition, automatic buffer identification and temperature compensation

**Conductivity measurement**
- 1-point calibration with calibration standards (84 / 1413 / 12880 µS/cm)
- Linear temperature compensation
- Selectable reference temperature (20 or 25 °C)

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range / resolution | pH<br>EC<br>mV<br>°C<br>Salinity<br>TDS | 0.00 to 14.00<br>0.01 µS/cm to 500 mS/cm<br>-1999 to + 1999<br>-5.0 to +105<br>0.00 to 80.00 ppt<br>0.1 mg/l to 300 g/l |
| Accuracy | pH<br>EC<br>mV<br>°C | ±0.01<br>±0.5 %<br>±1<br>±0.5 |
| Storage via keystroke | | 99 data records |
| Dimensions (W x D x H) | | 220 x 90 x 45 mm |

**pH-/Conductivity meter SevenGo® Duo model SG23-ELK:**
**Delivery incl.** pH-electrode InLab® Expert Go-ISM®, conductivity sensor InLab® 738-ISM® (both IP 67, 2 m cable), 4 batteries Mignon 1.5 V and wrist strap.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LN41.1** | 1 | 1218,00 |

**pH-/Conductivity meter SevenGo® Duo model SG23-FK5:**
**Delivery incl.** pH-electrode InLab® Expert Go-ISM®, conductivity sensor InLab® 738-ISM® (both IP 67, 5 m cable), elastic protective cover, bag with buffer solutions pH
(2 bags each; 4.01, 7.00), bag with calibrating standards conductive
(2 bags each 1413 and 12880 µS/cm), sample bottles,
4 batteries Mignon 1.5 V, wrist strap and case.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LN42.1** | 1 | 1396,00 |




## Accessories for SevenGo® Duo

① **Spare-IP67-pH-electrode InLab® Expert Go-ISM®:**
**Delivery incl.** integrated temperature probe and fixed cable (Length 1.8 m). Plastic shaft. Shaft length/∅ 120/12 mm. Gel-filled.
BNC/Cinch contact plug.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LN43.1** | 1 | 334,00 |

② **Spare IP67-4-pole conductivity sensor InLab® 738-ISM®:**
**Delivery incl.** integrated temperature probe and fixed cable (Length 1.8 m). Plastic shaft. Shaft length/∅ 120/12 mm. Measuring range 0.01 to 1000 mS/cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LN44.1** | 1 | 441,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |


- ▶ InLab®-series pH single-rod measuring cells see page 832
- ▶ pH-buffer solutions see page 826
- ▶ Conductivity test solutions see page 844
- ▶ For information on pH measurement see page 830




## SevenExcellence™ combined measuring devices

By Mettler-Toledo. Professional modular system for the measurement of pH, redox, conductivity, TDS and salinity. Up to three modules can in be connected to a basic unit in variable configurations. This means that up to three parameters can be measured in one or more samples.

- High-resolution 7-inch colour display with touchscreen control
- Intuitive menu structure with full-text display (in 10 languages)
- 4-level user management hierarchy with different access rights
- Automatic calibration
- Flexible buffer selection and make-up; pH buffers from various groups can be combined with one another
- Automatic and manual temperature compensation
- Direct measurement or individual analysis methods (for standard conditions)
- Individual, intermittent or series measurement
- Automatic calculation of statistical data (mean values, standard deviation)
- Intelligent Sensor Management (ISM®) for automatic recognition of ISM® sensors and reading in calibration data
- GLP support (PIN protection, GLP-compliant printouts containing all relevant data and monitoring of measurement limits)
- Radio clock for precise display of time and date
- Data storage (20,000 data points, 250 analyses)
- Data export with USB stick or LabX®direct PC software
- Communication ports: USB, Ethernet and RS 232

**Technical specifications:**

| | |
|---|---|
| **pH/redox** | |
| Measurement range / resolution | -2.000 to +20.000 pH<br>-2000.0 to +2000.0 mV<br>-30.0 to +130.0 °C |
| Accuracy | ±0.002 pH<br>±0.1 mV<br>±0.1 °C |
| Calibration | 1-/ 2-/ 3-/ 4-/ 5-point calibration<br>(8 predefined buffer series and<br>20 user-defined buffer series) |
| **Conductivity** | |
| Measurement range / resolution | 0.001 µS/cm to 2000 mS/cm<br>-30.0 to 130.0 °C |
| Accuracy | ±0.5 % of measurement range end value<br>±0.1 °C |
| Calibration | 1-point calibration<br>(13 predefined standards and 1 user-defined standard) |
| **TDS** | |
| Measurement range / resolution | 0.00 mg/l to 1000 g/l |
| Accuracy | ±0.5 % of measurement range end value |
| **Salinity** | |
| Measurement range / resolution | 0.00 to 80.00 psu |
| Accuracy | ±0.5 % of measurement range end value |

### SevenExcellence™ pH Kit Version S400

For the measurement of pH and redox potential.
Basic unit comprising a pH module, electrode holder, pH single-rod measuring cell InLab® Routine Pro-ISM®, buffer solutions (pH 4.01 / 7.00 / 9.21 / 10.00, 2 pouches of each), LabX®direct PC software, AC-adapter.

### SevenExcellence™ EC Kit Version S700

For the measurement of conductivity, TDS and salinity.
Basic unit comprising a conductivity module, electrode holder, conductivity sensor InLab® 731-ISM®, conductivity standards (1413 / 12880 µS/cm, 2 pouches of each), LabX®direct PC software, AC-adapter.

### SevenExcellence™ pH/EC Kit Version S470

For the measurement of pH, redox, conductivity, TDS and salinity.
Basic unit comprising a pH module, a conductivity module, electrode holder, pH single-rod measuring cell InLab®Expert Pro-ISM®, conductivity sensor InLab® 731-ISM®, buffer solutions (pH 4.01 / 7.00 / 9.21 / 10.00, 2 pouches of each), conductivity standards (1413 / 12880 µS/cm, 2 pouches of each), LabX®direct PC software, AC-adapter.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| pH Kit Version S400 | **YX44.1** | 1 | 2096,00 |
| EC Kit Version S700 | **YX45.1** | 1 | 2269,00 |
| pH/EC Kit Version S470 | **YX46.1** | 1 | 2654,00 |

**Accessories for SevenExcellence™ multimeters**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| pH module (without sensor) | **YX47.1** | 1 | 652,00 |
| Conductivity module (without sensor) | **YX48.1** | 1 | 775,00 |
| Plastic pH electrode InLab® ExpertPro-ISM®, including 1.2 m fixed cable (BNC/Cinch) | **YX49.1** | 1 | 260,00 |
| Glass pH electrode InLab® RoutinePro-ISM®, with multi-pin head (without ISM®-cable) | **YX50.1** | 1 | 277,00 |
| ISM® cable for YX50.1, 2 m long (BNC/Cinch-MultiPin) | **YX51.1** | 1 | 107,00 |
| Conductivity sensor InLab® 731-ISM®, incl. 1.2 m fixed cable (Mini-DIN); measurement range 0.01 to 1000 mS/cm | **TA14.1** | 1 | 390,00 |
| ① Conductivity sensor InLab® 720, incl. 1.0 m fixed cable (Mini-DIN); measurement range 0.01 to 500 mS/cm | **PP35.1** | 1 | 308,00 |

# Airflow meters



## Portable anemometer

For measuring current wind speed with highest and mean values, temperature and windchill factor. Wind speed measurement in m/s, km/h, mph or kn. Display of wind force according to Beaufort on a bar graph-wind scale (0 to 12 bft). LCD-back lighting.

**Technical specifications:**

| | |
|---|---|
| Measuring range / resolution | 0.2 to 30.0 m/s<br>-30.0 to +60.0 °C |
| Accuracy | ±5 %<br>±1 °C |
| Dimensions (L x W x H) | 98 x 39 x 17 mm |
| Weight | 110 g |

**Delivery incl.** neoprene bag, shoulder strap and cell button battery CR 2032.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EY92.1** | 1 | 53,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |



## Current sticks testo 405-V1

By Testo. Mini-anemometer with air current and volume flow measurement. Also features pivotable display. Pull-out telescope, max. 300 mm.

**Technical specifications:**

| | |
|---|---|
| Range | 0 to 10 m/s<br>-20 to +50 °C<br>0 to 99 990 $m^3/h$ |
| Accuracy | ±(0.1 m/s +5 % of mv) (0 to +2 m/s)<br>±(0.3 m/s +5 % of mv) (outside) |
| Resolution | 0.01 m/s / 0.1 °C |
| Ambient conditions | 0 to +50 °C |
| Sensor probe | Max. Length 300 mm, ∅ 37/36 mm |

**Delivery incl.** batteries (3 x Micro 1.5 V) and attachment clip.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Without Certificate of Calibration | **P304.1** | 1 | 121,50 |
| With ISO Certificate of Calibration, (5 and 10 m/s) | **P305.1** | 1 | 219,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Airflow meter testo 425

By Testo. Anemometer with permanently connected thermal flow probe (cord length approx. 1.2 m) incl. telescopic pipe (length of telescope max. 820 mm). Volume flow calculation via input of channel area.

- **Measures of temperature, flow and volume flow**
- Selective and temporal average determination
- Min/Max-values
- Hold-button for retaining measured value
- Display light
- Auto-off function

**Technical specifications:**

| | Thermal | NTC |
|---|---|---|
| Measuring ranges | 0 to +20 m/s | -20 to +70 °C |
| Accuracy | ±0.03 m/s or 5 % of mv | ±0.5 °C (0 to +60 °C)<br>±0.7 °C (outside) |
| Resolution | 0.01 m/s | 0.1 °C |
| Working temperature | -20 to +50 °C | |
| Dimensions (W x D x H) | 64 x 40 x 182 mm | |
| Weight | 285 g | |

**Delivery incl.** airflow meter testo 425 with permanently connected flow probe incl. telescopic pipe, E-Block-battery 9 V and calibration protocol.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH95.1** | 1 | 436,45 |

## Accessories for air flow meter testo 425

**Protective cover TopSafe**, protects against blows and dirt

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH74.1** | 1 | 31,20 |

**Emergency bag for meter and probe**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH96.1** | 1 | 31,20 |

**Spare battery E-Block 9 V**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1025.1** | 1 | 4,85 |




①




②

## ① Mini Luxmeter

For monitoring the lighting conditions in the workplace, warehouses etc.
- Measurement range: up to 40 000 Lux
- Automatic zero calibration
- AUTO-OFF function
- Max Hold display
- Backlit display

**Technical specifications:**

| | | | | | |
|---|---|---|---|---|---|
| Measurement range | lx | 200.0 | 2000 | 20 000 | 40 000 |
| Resolution | lx | 0.1 | 1 | x 10 | x 100 |
| Accuracy | ±5 % | | | | |
| Photosensor | Silicon photodiode with filter | | | | |
| Dimensions W x D x H (mm) | 54 x 34 x 157 | | | | |
| Weight (g) | 138 | | | | |

**Delivery incl.** 9 V E-block battery .

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK79.1** | 1 | 53,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |

## ② Pocket Luxmeter LM37

Ideal for measuring intensity of light. Measuring range 0.01 to 40 000 Lux.
- Choose between lx- and fc-units (fc = foot candelas; 1 fc = 10.764 lx)
- Automatic or manual range-changing switch
- With automatic null balancing
- Low battery display and AUTO-OFF function (can be deactivated)
- Hold function

**Technical specifications:**

| | | | | | |
|---|---|---|---|---|---|
| Range | lx<br>fc | 39.99<br>3.999 | 399.9<br>39.99 | 3999<br>399.9 | 39990<br>3999 |
| Resolution | lx<br>fc | 0.01<br>0.001 | 0.1<br>0.01 | 1<br>0.1 | 10<br>1 |
| Accuracy | ±3 % | | | | |
| Photo sensor | Silicium-photo-diode | | | | |
| Dimensions W x D x H (mm) | 54 x 33 x 196 | | | | |
| Weight (g) | 180 | | | | |

**Delivery incl.** E-block battery 9 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KP25.1** | 1 | 92,25 |

**Accessories:**

| | | | |
|---|---|---|---|
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |



①




②

## ① Luxmeter

Ideal for measuring intensity of light. Range 0.1 to 200 000 Lux.
With large 3½ digit LCD display and data hold function.
Compact, sturdy and easy-to operate. High accuracy and rapid readings.
With automatic zero point alignment.

**Technical specifications:**

| | |
|---|---|
| Measuring range | 200, 2000, 20 000, 200 000 Lux |
| Accuracy | ±3 % f. mv.<br>±4 % f. mv. ±10 digits >1000 Lux |
| Accuracy rerun | ±2 % |
| Photosensor | Silicium-photo-diode |
| Working temperature | 0 to +40 °C / 80 % rF |
| Power supply/Battery life | 9 V / 200 h |
| Cable photosensor | 1.5 m |
| Dimensions | photosensor: 100 x 60 x 27 mm<br>optosensor: 135 x 72 x 33 mm |
| Weight | 250 g |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E513.1** | 1 | 107,50 |

## ② Luxmeter

For measuring lighting intensity within a range of 0.01 up to 400000 Lux
- With bar graph display
- Can choose between lx- and fc-units
- With exceeded range display
- Cosine-adjusted angle
- Min/Max-values and hold function
- Auto-power-off function

**Technical specifications:**

| | | | | | |
|---|---|---|---|---|---|
| Measuring range | 40.00 lx<br>40.00 fc | 400.0 lx<br>400.0 fc | 4000 lx<br>4000 fc | 40.00 klx<br>40.00 kfc | 400.0 klx |
| | Please note: 1 fc = 10.764 lx; 1 klx = 1000 lx; 1 kfc = 1000 fc | | | | |
| Resolution | 0.01 lx<br>0.01 fc | 0.1 lx<br>0.1 fc | 1 lx<br>1 fc | 0.01 klx<br>0.01 kfc | 0.1 klx |
| Accuracy | ±3 % | | | | |
| Sensor | Silicium-photo-diode | | | | |
| Max. operating temp. | -0 to 40 °C at 80 % rh | | | | |
| Dimensions<br>(W x D x H) | sensor: 60 x 29 x 92 mm<br>unit: 72 x 35 x 150 mm | | | | |
| Length of photo sensor cable | 150 cm | | | | |
| Weight | 320 g | | | | |

**Delivery incl.** case and 6 Micro 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EN32.1** | 1 | 138,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Further measuring instruments




## UVA-meter

For mobile measurement of light quality e.g. ambient measurement for plant cultures, etc.

- With 3 measuring ranges
- Low battery display
- Hold function and maximum data logger
- UV-sensor spectrum 320 to 400 nm
- Exceeded range display

**Technical specifications:**

| | | | |
|---|---|---|---|
| Measuring range | 199.9 µW/cm² | 1.999 mW/cm² | 19.99 mW/cm² |
| Resolution | 0.1 µW/cm² | 0.001 mW/cm² | 0.01 mW/cm² |
| Accuracy | ±4 % | | |
| Max. operating temperature | 0-50 °C at 75 % rh | | |
| Dimensions (W x D x H) | 48 x 24 x 155 mm | | |
| Weight | 85 g | | |

**Delivery incl.** belt holster and 3 Micro 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EN33.1** | 1 | 106,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Mini sound level meter

For monitoring permissible noise pollution levels in the workplace, e.g. assessment of office equipment (copiers, printers etc.), and for measuring industrial and environmental noise.

- Max-Min display
- AUTO-OFF function
- Backlit display

**Technical specifications:**

| | |
|---|---|
| Measurement range | 40.0 to 130.0 dB |
| Resolution | 0.1 dB |
| Accuracy | ±3 dB |
| Dimensions (W x D x H) | 54 x 34 x 157 mm |
| Weight | 131 g |

**Delivery incl.** 9 V E-block battery and wind protection cap.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK80.1** | 1 | 43,55 |

**Accessories:**

| | | | |
|---|---|---|---|
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |



## Safety glasses 506U

By Univet. Acc. to EN **166, EN 170.** Clear UV-protective lens made of PC with anti-scratch/anti-fog coating.

- Angle and length adjustable temples
- Soft ear pieces avoid pressure points
- Optimal wearing comfort and adaptation through soft, adjustable nose pad
- Weight 25 g

| Frame colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white/pink | **CNE8.1** | 1 | 12,60 |
| black/green | **CNE9.1** | 1 | 11,30 |




## ULTRAFIT ear plugs

By 3M. Acc. to EN 352-2. Pre-moulded ear plugs made of thermoplastic elastomer. Thanks to their flat design, they are a perfect fit for any ear canal. To wash the ear plugs use warm soapy water. **Reusable.** Suitable for sensitive working areas in the foodstuffs and chemicals industries. SNR value: 32 dB.

| Type | 3M No. | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| ① with safety cord | UF01000 | **TE80.1** | 50 | 115,05 |
| ② with storage box | UF01020 | **TE81.1** | 50 | 117,20 |


▶ Ear protection products from p. 586

▶ Safety glasses from p. 556



## Sound-level meter SL328

For monitoring the permitted noise exposure at the workplace and for measuring industrial and environmental noise,
e.g. measurement of machine and appliance noise.

- Automatic range switch-over
- With lower and upper range display
- Max hold function for logging the maximum sound level or noise level maximum
- Electronic calibration via integrated oscillator (94 dB, 1 kHz)

**Technical specifications:**

| | |
|---|---|
| Range | 32.0 to 130.0 dB |
| Resolution | 0.1 dB |
| Accuracy | ±1.5 dB |
| Dimensions (L x W x D) | 206 x 42 x 25 mm |
| Weight | 100 g |

**Delivery incl.** wind protection screen and 2 batteries, Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EY76.1** | 1 | 109,65 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Tachometer testo 465

By Testo. Visual, non-contact speed measurement using reflex marks. Min/max function. Auto-off function.

**Technical specifications:**

| | |
|---|---|
| Range | to 99 999 rpm |
| Distance to object measured | max. 350 mm (14 inch) |
| Auto-off function | 30 sec (average/max./last readings are stored) |
| Dimensions (L x W x D) | 144 x 58 x 20 mm |
| Weight | 145 g |

**Delivery incl.** meter with reflex marks and batteries (2 x Mignon 1.5 V) in a practical case.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tachometer set | **P306.1** | 1 | 203,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| Reflex marks, self-adhesive | **P307.1** | 5 | 22,60 |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |




## Geiger-counter Alphaix 3000

Alphaix for attachable Geiger counters. With 5-digit display, time mode for setting measuring intervals and with audible alarm (can be switched off).
Battery operated with 9 V-Block battery.
Plastic housing L 120 x W 65 x D 30 mm.
**Delivery incl. case for standard unit and counter tubes.**
Without counter (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **8482.1** | 1 | 364,45 |

## Counter tubes for Geiger-counter Alphaix 3000

**End window counter type G**

- For measuring alpha-radiation from 1.9 MeV, beta-radiation from 0.09 MeV and gamma-radiation from 0.01 MeV
- Dose range 0.0001-1 R/H. Zero rate 30 IPM
- End window diameter 19.83 mm
- Detection limit 4 Bq for caesium 137 (distance 30 mm, length 10 minutes)
- Detection of carbon $C^{14}$ possible

| Art. No. | Pack Qty. | € |
|---|---|---|
| **8484.1** | 1 | 408,50 |

**Immersion counter type FSZ**

- With two counter probes for measuring liquids and bulk material. Also ideal for foodstuffs with high liquid content.
- Measurement of gamma-radiation from 0.02 MeV and beta-radiation from 0.25 MeV
- Dose range from 0.001-10 R/H. Zero rate 17 IPM
- Detection limit for dry measurements in bulk material in caesium 137 : 0.75 Bq for 25 grammes
- Detection limit for wet measurements in 100 ml caesium 137 solution: for 10 minutes = 63 Bq, for 20 minutes = 46 Bq.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **8486.1** | 1 | 375,20 |

# Regulators / Counters



## Multi-position counters

Mechanical table counter, multi-position. For counting blood cells, bacterial colonies or for other applications in which different samples must be counted repeatedly. Individual positions count to 999. With sums window for the total count, an acoustic signal is issued after 100 total counts. Rotary knob to reset to 0.

**Delivery incl.** printed labels for blood cell counts.

| Type | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6-digit | 250 x 76 x 56 | **ENK8.1** | 1 | 231,15 |
| 9-digit | 320 x 76 x 56 | **ENK9.1** | 1 | 317,15 |



## Manual counter

For mechanical counting from 1 to 9999.
**Casing made of chromium-plated metal.**
The counter adds 1 number after each press of the button.
Can be reset to 0 using the knob. With retainer ring. Casing ∅ 46 mm.
Weight approx. 66 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE53.1** | 1 | 11,15 |




## Laser distance meter

For indoor measurements. Units of measurement: m, in or ft.
Backlight display. Adjustable measuring plane (bottom and top edges).
Auto power-off after 180 s. Data memory for last 20 readings.

**Measurement programs:** Individual measurement, continuous measurement (max. 100 measurements) e.g. for checking plans, addition/subtraction of individual measured values, volume measurement and indirect measurement using Pythagoras function.

**Technical specifications:**

| | |
|---|---|
| Measurement range | 0.050 - 50 m |
| Resolution | 0.001 m (1 mm) |
| Accuracy | ±1.5 mm (5 mm to 10 m) |
| Dimensions (L x W x D) | 115 x 48 x 28 mm |
| Weight | 300 g |

**Delivery incl.** belt bag and 2 Micro 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TY93.1** | 1 | 129,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Flow meters with propeller

With 2 hose connectors, length 25 mm, ∅ 6-11 mm.
Minimum flow 150 ml/min. Pressure load max. 2 bar.
Dimensions: W 90 x H 40 x D 15 mm. Weight 12 g.

**Made of styrene-acrylonitrile (SAN)**
For water and similar liquids.
Temperature stable up to +30 °C.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **1736.1** | 1 | 11,65 |
| red | **E486.1** | 1 | 11,40 |
| black | **E487.1** | 1 | 11,40 |

**Made of polymethylene pentene (PMP)**
Can be sterilized. Resistant to most chemicals.
Temperature stable up to +60 °C.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **E488.1** | 1 | 14,55 |
| red | **1737.1** | 1 | 14,20 |
| black | **E489.1** | 1 | 14,55 |




## Leakage monitors

Ideal for monitoring all equipment operated by water. Prevents flooding by **automatic water cut-off** via magnetic valve. Highly sensitive moisture sensor sets off audible alarm and closes magnetic valve upon detection of 0.5 mm water.

**Technical specifications:**

| | |
|---|---|
| Magnetic valve | ¾″-connection and 12 V safety low voltage |
| Minimum pressure difference | 0.5 bar |
| Moisture sensor | with 2 m cable |
| Connector shell | with shockproof plug connector and socket |

**Leakage monitor I**

Comes ready to use. With control unit, moisture sensor, magnetic valve and alarm buzzer.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H481.1** | 1 | 134,40 |

**Leakage monitor II**

Comes ready to use. With control unit, moisture sensor, magnetic valve and alarm buzzer. Plus machine switch-off function in emergencies (to 16 A, 220 V, 50 Hz).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H482.1** | 1 | 158,05 |

## Accessories for leakage monitors I and II

**Extension cord** for moisture sensor.

| Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2 | **H499.1** | 1 | 13,45 |
| 5 | **H500.1** | 1 | 16,05 |
| 10 | **H501.1** | 1 | 21,15 |



## Flow indicator with ball

Made of **SAN**, transparent, with ball and two hose fittings. For easy visual monitoring of flow rates. Minimum flow rate: 140 ml/min for liquids, 8 l/min for gases. Temperature stable up to +50 °C.
Connectors for hose inside ∅ 6.5-10 mm.
Dimensions: W 102 x D 57 x H 14 mm. Weight 16 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TT47.1** | 1 | 14,45 |




## AQUASTOP® II laboratory cooling water monitor

For monitoring cooling water flow and temperature in the laboratory. For installation in apparatus that runs without permanent supervision. Power supply and water supply are cut off in case of irregularities or when the preset temperature limit is exceeded.

**Application:**

- If the flow rate drops below the preset minimum level, the solenoid valve shuts off the coolant supply and connected electrical device (e.g. heating mantle) is de-energised.
- If the maximum temperature is exceeded, the solenoid valve stays open, the apparatus continues to be cooled and the electrical device is de-energised.

The temperature at the coolant outlet is recorded by the internal NTC sensor integrated in the flow sensor. As an option, an external Pt 100 temperature sensor which automatically deactivates the internal sensor can be installed in a freely selectable position on the test set-up (if required, please order separately).

**Features:**

- 2-line LED display for simultaneous display of flow rate and temperature
- LED for switching status and alarm indication
- Freely selectable alarm limits
- Acoustic pre-alarm alerts user before final deactivation
- With Schuko socket on the back

**Technical specifications:**

| | |
|---|---|
| Flow measurement range | 2 to 99 l/h |
| Temperature measurement range<br>Internal NTC sensor<br>External Pt 100 temperature sensor | <br>0 to +80 °C<br>0 to +250 °C |
| Setting accuracy | ±1 l/h or ±1 °C |
| Fuse | 16 A mT (load)<br>0.5 A mT (solenoid valve)<br>0.2 A mT (control) |
| Solenoid valve connections<br>to tap<br>to apparatus | <br>3/4 inch female thread<br>3/4 inch male thread or ∅ 10 mm tubing connector |
| Rated power/rated current | 35.5 kW / 15 A |
| Dimensions (W x H x D) | 205 x 175 x 78 mm |
| Weight | 1.3 kg |
| Power supply | 230 V, 50 Hz |

**Delivery incl.** solenoid valve, flow sensor with internal NTC sensor and tubing connectors for hoses with 10 mm internal ∅.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CKY2.1** | 1 | 1284,65 |

## Accessories for AQUASTOP® II

**External Pt 100 temperature sensor,** made of stainless steel 1.4571, dimensions of sensor L 200 x ∅ 4 mm, connecting cable L 2 m, with Lemo connector.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CKY3.1** | 1 | 134,40 |

# Balances

## Overview top loading balances

| Weighing range (g) | Readability (g) | Art. No. | Page |
|---|---|---|---|
| 30 | 0,00001 | **CNH8.1** * | 874 |
| 42/210 | 0,00001/0,0001 | **CTH0.1** * | 877 |
| 42/120 | 0,00001/0,0001 | **HL85.1** * | 875 |
| 42/120 | 0,0001 | **HL86.1** * | 875 |
| 60/120 | 0,00001 | **CNK4.1** * | 876 |
| 40/60 | 0,00001 | **CNK0.1** * | 874 |
| 60/120/220 | 0,00001 | **CNK6.1** * | 876 |
| 60 | 0,0001 | **AHC2.1** * | 872 |
| 60 | 0,0001 | **ACT1.1** * | 871 |
| 60 | 0,0001 | **AHC9.1** * | 874 |
| 60 | 0,001 | **LY72.1** | 866 |
| 62 / 252 | 0,0001/0,001 | **CTE2.1** * | 870 |
| 80 | 0,0001 | **TA63.1** | 870 |
| 100 | 0,001 | **KX09.1** | 861 |
| 100 | 0,001 | **HK92.1** | 864 |
| 102 | 0,0001 | **CTE3.1** * | 870 |
| 40/60/120 | 0,00001/0,0001 | **CNK2.1** * | 874 |
| 120 | 0,0001 | **NN46.1** * | 872 |
| 120 | 0,0001 | **ACT0.1** * | 871 |
| 120 | 0,0001 | **NN83.1** * | 876 |
| 120 | 0,0001 | **APA8.1** * | 875 |
| 120 | 0,0001 | **NN59.1** * | 874 |
| 120 | 0,0001 | **TA64.1** | 870 |
| 120 | 0,0001 | **CTH1.1** * | 877 |
| 120 | 0,0001 | **KH72.1** * | 871 |
| 120 | 0,0001 | **CCE5.1** * | 873 |
| 120 | 0,001 | **EHE8.1** | 865 |
| 122 | 0,001 | **CTH4.1** * | 869 |
| 150 | 0,001 | **ACT5.1** * | 871 |
| 150 | 0,1 | **P961.1** | 860 |
| 150 | 0,1 | **HL50.1** | 859 |
| 152 | 0,0001 | **CTE4.1** * | 870 |
| 200 | 0,001 | **LY69.1** | 861 |
| 220 | 0,001 | **CTH6.1** * | 869 |
| 200 | 0,01 | **H723.1** | 866 |
| 200 | 0,01 | **CT06.1** | 861 |
| 200 | 0,01 | **HK93.1** | 864 |
| 200 | 0,1 | **T317.1** | 860 |
| 200 | 0,1 | **X678.1** | 860 |
| 210 | 0,0001 | **CTH2.1** * | 877 |
| 210 | 0,001 | **NN89.1** * | 876 |
| 210 | 0,001 | **NN65.1** * | 874 |
| 210 | 0,001 | **NN48.1** * | 872 |
| 210 | 0,01 | **PH67.1** | 863 |
| 220 | 0,0001 | **CCE6.1** * | 873 |
| 220 | 0,0001 | **PX41.1** * | 875 |
| 220 | 0,0001 | **NN81.1** * | 876 |
| 220 | 0,0001 | **NN45.1** * | 872 |
| 220 | 0,0001 | **NN57.1** * | 874 |
| 220 | 0,0001 | **KH70.1** * | 871 |
| 220 | 0,0001 | **ACP9.1** * | 871 |
| 220 | 0,0001 | **TA65.1** | 870 |
| 220 | 0,001 | **AX07.1** | 867 |
| 220 | 0,001 | **EHK0.1** | 865 |
| 220 | 0,001 | **KH78.1** * | 871 |
| 220 | 0,001 | **CCE7.1** * | 873 |
| 220 | 0,01 | **EHE9.1** | 853 |
| 250 | 0,001 | **YC31.1** | 864 |
| 250 | 0,001 | **KX11.1** | 864 |
| 252 | 0,0001 | **CTE5.1** * | 870 |
| 300 | 0,001 | **EEH4.1** | 865 |
| 300 | 0,001 | **HT19.1** | 866 |
| 320 | 0,001 | **CTH8.1** * | 869 |
| 300 | 0,001 | **CHH7.1** | 867 |
| 300 | 0,01 | **EXC0.1** | 869 |
| 310 | 0,0001 | **CTH3.1** * | 877 |
| 310 | 0,001 | **NN63.1** * | 874 |
| 310 | 0,001 | **NN47.1** * | 872 |
| 310 | 0,001 | **NN87.1** * | 876 |
| 320 | 0,0001 | **PX42.1** * | 875 |
| 320 | 0,0001 | **TA66.1** | 870 |
| 320 | 0,001 | **ACT4.1** * | 871 |
| 320 | 0,1 | **P923.1** | 860 |
| 350 | 0,001 | **LY67.1** | 864 |
| 350 | 0,001 | **HEH0.1** | 864 |
| 360 | 0,001 | **YY06.1** * | 868 |
| 400 | 0,01 | **AK49.1** | 866 |
| 400 | 0,1 | **P936.1** | 866 |
| 410 | 0,01 | **AHC4.1** * | 872 |
| 410 | 0,01 | **AHE3.1** * | 874 |
| 420 | 0,001 | **AX08.1** | 867 |
| 420 | 0,001 | **KH76.1** * | 871 |
| 420 | 0,001 | **PX43.1** * | 875 |
| 420 | 0,001 | **ACT3.1** * | 871 |
| 420 | 0,001 | **CCE8.1** * | 873 |
| 420 | 0,001 | **HT20.1** | 866 |
| 420 | 0,01 | **EHH0.1** | 865 |
| 420 | 0,1 | **EHH4.1** | 865 |
| 500 | 0,1 | **ET20.1** | 861 |
| 510 | 0,001 | **AHC3.1** * | 872 |
| 510 | 0,001 | **NN61.1** * | 874 |
| 510 | 0,001 | **NN85.1** * | 876 |
| 510 | 0,1 | **PH68.1** | 863 |
| 520 | 0,001 | **CCE9.1** * | 873 |
| 600 | 0,001 | **YY07.1** * | 868 |
| 600 | 0,01 | **ET19.1** | 861 |
| 600 | 0,01 | **LY73.1** | 866 |
| 600 | 0,01 | **YY08.1** * | 868 |
| 600 | 0,01 | **CHH8.1** | 867 |
| 610 | 0,001 | **AHH3.1** * | 876 |
| 610 | 0,001 | **AHE1.1** * | 874 |
| 610 | 0,01 | **NN75.1** * | 874 |
| 610 | 0,01 | **AHH5.1** * | 876 |
| 610 | 0,01 | **NN51.1** * | 872 |
| 620 | 0,001 | **ACT2.1** * | 871 |
| 620 | 0,001 | **ENH3.1** | 868 |
| 620 | 0,001 | **AX09.1** | 867 |
| 620 | 0,01 | **EHH1.1** | 865 |
| 620 | 0,1 | **EHH5.1** | 865 |
| 750 | 0,001 | **YY05.1** * | 868 |
| 820 | 0,01 | **AX10.1** | 867 |
| 820 | 0,01 | **ACX0.1** * | 871 |
| 1000 | 0,01 | **HK97.1** | 864 |
| 1000 | 0,01 | **KX10.1** | 861 |
| 1000 | 0,1 | **H724.1** | 866 |
| 1000 | 0,1 | **HK99.1** | 864 |
| 1000 | 1 | **P924.1** | 860 |
| 1100 | 0,001 | **PX44.1** * | 875 |
| 1100 | 0,01 | **NN97.1** * | 876 |
| 1100 | 0,01 | **NN50.1** * | 872 |
| 1100 | 0,01 | **NN73.1** * | 874 |
| 1100 | 0,1 | **PH69.1** | 863 |
| 1200 | 0,01 | **EHH2.1** | 865 |
| 1220 | 0,01 | **CTK0.1** * | 869 |
| 1200 | 0,1 | **ET21.1** | 861 |
| 1500 | 0,05 | **YY32.1** | 862 |
| 1500 | 0,5 | **YY37.1** | 862 |
| 1520 | 0,01 | **CCH1.1** * | 873 |
| 1600 | 0,01 | **L961.1** | 866 |
| 1600 | 0,1 | **PH70.1** | 863 |
| 2200 | 0,01 | **CTK2.1** * | 869 |
| 2000 | 0,01 | **LY70.1** | 861 |
| 2000 | 0,01 | **EEH5.1** | 865 |
| 2000 | 0,1 | **HL00.1** | 864 |
| 2000 | 0,1 | **H725.1** | 866 |
| 2000 | 1 | **T318.1** | 860 |
| 2100 | 0,01 | **NN49.1** * | 872 |
| 2100 | 0,01 | **NN95.1** * | 876 |
| 2100 | 0,01 | **NN71.1** * | 874 |
| 2100 | 0,1 | **PH71.1** | 863 |
| 2100 | 0,1 | **AHC6.1** * | 872 |
| 2100 | 0,1 | **AHE7.1** * | 874 |
| 2200 | 0,01 | **AX11.1** | 867 |
| 2200 | 0,01 | **ACT9.1** * | 871 |
| 2200 | 0,01 | **CCH2.1** * | 873 |
| 2200 | 0,01 | **EHH3.1** | 865 |
| 2200 | 0,01 | **KH82.1** * | 871 |
| 2200 | 0,1 | **ACX3.1** * | 871 |
| 2200 | 0,1 | **EHH6.1** | 865 |
| 2200 | 1 | **X415.1** | 861 |
| 2400 | 0,01 | **L962.1** | 866 |
| 2500 | 0,01 | **YC32.1** | 864 |
| 2500 | 0,01 | **KX12.1** | 864 |
| 3000 | 0,01 | **HT21.1** | 866 |
| 3200 | 0,01 | **CTK4.1** * | 869 |
| 3000 | 0,01 | **CHH9.1** | 867 |
| 3000 | 0,1 | **YY33.1** | 862 |
| 3000 | 0,1 | **TA62.1** | 861 |
| 3000 | 0,1 | **PA34.1** | 861 |
| 3000 | 0,1 | **EXC1.1** | 869 |
| 3000 | 1 | **YY38.1** | 862 |
| 3000 | 1 | **PA30.1** | 861 |
| 3000/6000 | 1/2 | **PA43.1** | 862 |
| 3000/6000 | 1/2 | **PX18.1** | 866 |
| 3100 | 0,01 | **AHC5.1** * | 872 |
| 3100 | 0,01 | **NN93.1** * | 876 |
| 3100 | 0,01 | **NN69.1** * | 874 |
| 3200 | 0,01 | **ENH4.1** | 868 |
| 3200 | 0,01 | **ACT8.1** * | 871 |
| 3200 | 0,2 | **PH72.1** | 863 |
| 3500 | 0,01 | **HEH1.1** | 864 |
| 3500 | 0,01 | **YY09.1** * | 868 |
| 3500 | 0,01 | **LY68.1** | 864 |
| 4000 | 0,1 | **Y530.1** | 866 |
| 4000 | 1 | **P937.1** | 866 |
| 4100 | 0,2 | **PH73.1** | 863 |
| 4200 | 0,01 | **CCH3.1** * | 873 |
| 4200 | 0,01 | **KH80.1** * | 871 |
| 4200 | 0,01 | **KX14.1** | 866 |
| 4200 | 0,01 | **ACT7.1** * | 871 |
| 4200 | 0,01 | **AX12.1** | 867 |
| 4200 | 0,01 | **PX45.1** * | 875 |
| 4200 | 0,1 | **KH86.1** * | 871 |
| 5000 | 1 | **T319.1** | 860 |
| 5000 | 5 | **HK43.1** | 859 |
| 5100 | 0,01 | **NN67.1** * | 874 |
| 5100 | 0,01 | **NN91.1** * | 876 |
| 5100 | 0,1 | **NN52.1** * | 872 |
| 5100 | 0,1 | **NN77.1** * | 874 |
| 5100 | 0,5 | **PH74.1** | 863 |
| 5100 | 1 | **NN79.1** * | 874 |
| 5100 | 1 | **NN53.1** * | 872 |
| 5200 | 0,01 | **CCK4.1** * | 873 |
| 5200 | 0,1 | **ACX2.1** * | 871 |
| 5200 | 1 | **ET22.1** | 861 |
| 5200 | 5 | **X416.1** | 861 |
| 6000 | 0,03 | **YC92.1** | 863 |
| 6000 | 0,1 | **EEH6.1** | 865 |
| 6000 | 0,1 | **HEH2.1** | 864 |
| 6000 | 0,1 | **YY10.1** * | 868 |

| Weighing range (g) | Readability (g) | Art. No. | Page |
|---|---|---|---|
| 6000 | 0,1 | **HL02.1** | 864 |
| 6000 | 0,1 | **LY71.1** | 861 |
| 6000 | 0,1 | **CHK0.1** | 867 |
| 6000 | 0,2 | **YY34.1** | 862 |
| 6000 | 0,5 | **PA35.1** | 861 |
| 6000 | 0,5 | **PA38.1** | 862 |
| 6000 | 1 | **P938.1** | 866 |
| 6000 | 1 | **HL05.1** | 864 |
| 6000 | 2 | **PA31.1** | 861 |
| 6000 | 2 | **YY39.1** | 862 |
| 6000/15000 | 2/5 | **PA44.1** | 862 |
| 6100 | 0,01 | **AHE5.1** * | 874 |
| 6100 | 0,01 | **AHH7.1** * | 876 |
| 6100 | 0,1 | **AHC7.1** * | 872 |
| 6100 | 0,1 | **AHE9.1** * | 874 |
| 6100 | 1 | **AHC8.1** * | 872 |
| 6100 | 1 | **AHH1.1** * | 874 |
| 6200 | 0,01 | **ACT6.1** * | 871 |
| 6200 | 0,01 | **CT72.1** | 867 |
| 6200 | 0,1 | **EHH7.1** | 865 |
| 6400 | 0,5 | **PH75.1** | 863 |
| 8000 | 0,05 | **YC93.1** | 863 |
| 8200 | 0,1 | **ACX1.1** * | 871 |
| 8200 | 1 | **EHH8.1** | 865 |
| 10000 | 0,1 | **YC33.1** | 864 |
| 10000 | 0,5 | **PH76.1** | 863 |
| 10000 | 1 | **HEH3.1** | 864 |
| 10000 | 10 | **HK44.1** | 859 |
| 10200 | 0,01 | **PX46.1** * | 875 |
| 10200 | 0,1 | **PX47.1** * | 875 |
| 12000 | 0,1 | **ENH5.1** | 868 |
| 12000 | 0,1 | **L963.1** | 866 |
| 12000 | 0,1 | **CT73.1** | 867 |
| 12000 | 1 | **EXC2.1** | 869 |
| 12000 | 1 | **PA39.1** | 862 |
| 15000 | 0,5 | **YY35.1** | 862 |
| 15000 | 1 | **PA36.1** | 861 |
| 15000 | 5 | **YY40.1** | 862 |
| 15000 | 5 | **PA32.1** | 861 |
| 15000/35000 | 5/10 | **PA45.1** | 862 |
| 16000 | 0,05 | **YC94.1** | 863 |
| 16000 | 0,1 | **YC95.1** | 863 |
| 16000 | 0,1 | **L964.1** | 866 |
| 16000 | 1,0 | **PH77.1** | 863 |
| 24000 | 0,1 | **L966.1** | 866 |
| 24000 | 2 | **PA40.1** | 862 |
| 30000 | 1 | **PA37.1** | 861 |
| 30000 | 1 | **YY36.1** | 862 |
| 30000 | 10 | **PA33.1** | 861 |
| 30000 | 10 | **YY41.1** | 862 |
| 30000/60000 | 10/20 | **PA46.1** | 862 |
| 36000 | 0,1 | **YC96.1** | 863 |
| 36000 | 0,2 | **YC97.1** | 863 |
| 60000/150000 | 20/50 | **PA47.1** | 862 |
| 60000 | 5 | **PA41.1** | 862 |
| 65000 | 0,2 | **YC98.1** | 863 |
| 65000 | 0,5 | **YC99.1** | 863 |
| 120000 | 10 | **PA42.1** | 862 |

* Longer delivery times possible. Please check with our Sales Department.




## Electronic hanging balances HDB-series

By Kern. With Data-Hold function for "freezing" the weight reading for 5 s. Hook made of stainless steel, folding. AUTO-OFF function engages after 5 min without any load change. Dimensions: W 70 x D 25 x H 105 mm (with hook 195 mm). Weight approx. 150 g.
**Delivery incl.** 2 batteries Micro 1.5 V.

| Model | Weighing range (kg) | Readability (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| HDB 5K5N | 5 | 5 | **HK43.1** | 1 | 60,00 |
| HDB 10K10N | 10 | 10 | **HK44.1** | 1 | 60,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Pocket balance model TEE 150-1

- **Weighing range 150 g. Readability 0.1 g**
- Blue, backlite LCD display
- AUTO-OFF function after 2 min without load change, function can be disabled.
- Dimensions of weighing pan: W 60 x D 64 mm
- Overall dimensions of balances: W 67 x D 100 x H 22 mm
- Weight approx. 100 g

**Delivery incl.** plastic cover and 2 Micro 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HL50.1** | 1 | 38,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Balances



## Pocket balance model TCB

By Kern.

- **Weighing range 200 g. Readability 0.1 g**
- Automatic switch-off after 3 min to prolong battery life
- TARA-function
- Weighing pan rotatable for overload protection
- Dimensions of scales: H 14 mm x Ø 80 mm
- Weight approx. 50 g.

**Delivery incl.** transport box and two cell-batteries 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X678.1** | 1 | 52,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## Electronic pocket balances CM-series

By Kern. **With hinged lid.** Balances in the case are protected against all types of compressive stress. Fitted as standard with tare function, recipe program, automatic switch-off for longer battery life and integrated pocket calculator. Dimensions: balance W 85 x D 130 x H 25 mm, weighing pan 80 x 70 mm. Weight 150 g.
**Delivery incl.** 2 batteries 1.5 V micro and soft case.

| Model | Weighing range (g) | Readability (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| CM 150-1N | 150 | 0,1 | **P961.1** | 1 | 52,00 |
| CM 320-1N | 320 | 0,1 | **P923.1** | 1 | 55,00 |
| CM 1 K1N | 1000 | 1 | **P924.1** | 1 | 52,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Compact balances CS-series

By Ohaus. Large, high-contrast display (11 mm). Short response time. With low battery display. Automatic switch-off after five minutes when battery operated. Display indicates over/underload. Can be battery or outlet operated. Stainless steel platform. Dimensions: balance 193 x 135 x 39 mm, weighing platform 145 x 133 mm. Weight 470 g.
**Delivery incl.** outlet pack and 3 batteries Mignon 1.5 V.

| Model | Weighing range (g) | Readability (g) | Linearity (±g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| CS 200 | 200 | 0,1 | 0,1 | **T317.1** | 1 | 59,00 |
| CS 2000 | 2000 | 1 | 1,0 | **T318.1** | 1 | 59,00 |
| CS 5000 | 5000 | 1 | 1,0 | **T319.1** | 1 | 69,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |







## EMB-series compact balances

By Kern.

- Large LCD-display with 15 mm high numbers
- Automatic switch-off after 3 min to prolong battery life, can be disabled
- External adjustment
- TARE-function
- Dimensions of weighing pan:
  ∅ 82 mm for EMB 100-3 and EMB 200-3
  ∅ 105 mm for EMB 200-2 and EMB 600-2
  ∅ 150 mm for all other models
- Dimensions of scales: W 170 x D 240 x H 39 mm
- Battery and outlet
- **Without power unit (please order separately if required)**

**Delivery incl.** batteries: EMB 2200-0: incl. 2 Mignon 1.5 V batteries.
All other models: incl. 9 V Block battery.

| Model | Weighing range (g) | Readability (g) | Linearity (±g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| EMB 100-3 | 100 | 0,001 | 0,003 | **KX09.1** | 1 | 195,00 |
| EMB 200-3 | 200 | 0,001 | 0,003 | **LY69.1** | 1 | 210,00 |
| EMB 200-2 | 200 | 0,01 | 0,02 | **CT06.1** | 1 | 125,00 |
| EMB 600-2 | 600 | 0,01 | 0,03 | **ET19.1** | 1 | 160,00 |
| EMB 1000-2 | 1000 | 0,01 | 0,03 | **KX10.1** | 1 | 195,00 |
| EMB 2000-2 | 2000 | 0,01 | 0,03 | **LY70.1** | 1 | 205,00 |
| EMB 500-1 | 500 | 0,1 | 0,2 | **ET20.1** | 1 | 57,00 |
| EMB 1200-1 | 1200 | 0,1 | 0,3 | **ET21.1** | 1 | 80,00 |
| EMB 3000-1 | 3000 | 0,1 | 0,3 | **TA62.1** | 1 | 125,00 |
| EMB 6000-1 | 6000 | 0,1 | 0,3 | **LY71.1** | 1 | 160,00 |
| EMB 2200-0 | 2200 | 1 | 2 | **X415.1** | 1 | 60,00 |
| EMB 5.2 K 1 | 5200 | 1 | 3 | **ET22.1** | 1 | 60,00 |
| EMB 5.2 K 5 | 5200 | 5 | 10 | **X416.1** | 1 | 55,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Mains pack for EMB-series | **X417.1** | 1 | 31,00 |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |

## Table balances FCE and FCB-series

By Kern.

**Features**

- LCD display with 25 mm high digits
- External adjustment
- Power-supply or battery operation
- Dimensions of weighing platform: W 252 x D 228 mm
- Dimensions of balance overall: W 270 x D 345 x H 106 mm
- Automatic switch-off after 3 min without a change of load to prolong battery life

Battery not included, please order separately.
One E-Block 9 V battery is required.

**Delivery incl.** power unit and work protection cover.

**FCE-series** with weighing platform made of plastic (ABS)

| Model | Weighing range (kg) | Readability (g) | Linearity (±g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| FCE 3K1N | 3 | 1 | 2 | **PA30.1** | 1 | 110,00 |
| FCE 6K2N | 6 | 2 | 4 | **PA31.1** | 1 | 110,00 |
| FCE 15K5N | 15 | 5 | 10 | **PA32.1** | 1 | 110,00 |
| FCE 30K10N | 30 | 10 | 20 | **PA33.1** | 1 | 110,00 |

**FCB-series** with weighing platform made of stainless steel

| Model | Weighing range (kg) | Readability (g) | Linearity (±g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| FCB 3K0.1 | 3 | 0,1 | 0,3 | **PA34.1** | 1 | 220,00 |
| FCB 6K0.5 | 6 | 0,5 | 1,5 | **PA35.1** | 1 | 190,00 |
| FCB 12K1 | 12 | 1 | 3 | **PA36.1** | 1 | 185,00 |
| FCB 30K1 | 30 | 1 | 3 | **PA37.1** | 1 | 220,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |



## Platform balances DE-A- and DE-D-series

By Kern.

**Features**

- Backlit LCD display with 25 mm high digits
- Function programs for number of items, recipe, percentage weighing and animal weighing
- RS 232 port
- External adjustment
- Power-supply or battery operation
- Dimensions of weighing platform made of stainless steel W 315 x D 305 mm
- Dimensions of display unit: W 225 x D 110 x H 45 mm

Battery not included, please order separately.
One E-Block 9 V battery is required.

**Delivery incl.** power supply unit.

### Standard balances DE-A-series

| Model | Weighing range (kg) | Readability (g) | Linearity (±g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| DE 6K0.5A | 6 | 0,5 | 1,5 | **PA38.1** | 1 | 215,00 |
| DE 12K1A | 12 | 1 | 3 | **PA39.1** | 1 | 215,00 |
| DE 24K2A | 24 | 2 | 6 | **PA40.1** | 1 | 215,00 |
| DE 60K5A | 60 | 5 | 15 | **PA41.1** | 1 | 215,00 |
| DE 120K10A | 120 | 10 | 30 | **PA42.1** | 1 | 215,00 |

### Dual-range balances DE-D-series (automatic switch-over)

| Model | Weighing range (kg) | Readability (g) | Linearity (±g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| DE 6K1D | 3 / 6 | 1/2 | 2 / 4 | **PA43.1** | 1 | 185,00 |
| DE 15K2D | 6 / 15 | 2/5 | 4 / 10 | **PA44.1** | 1 | 185,00 |
| DE 35K5D | 15 / 35 | 5/10 | 10 / 20 | **PA45.1** | 1 | 185,00 |
| DE 60K10D | 30 / 60 | 10/20 | 20 / 40 | **PA46.1** | 1 | 185,00 |
| DE 150K20D | 60 / 150 | 20/50 | 40 / 100 | **PA47.1** | 1 | 195,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Support for platform balances DE-A, DE-D series | **PA48.1** | 1 | 100,00 |
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |



## Ranger® 3000-series battery-operated industrial balances

By Ohaus.

**Applications:**

- Piece counting, percent weighing, dynamic weighing (animal weighing), check weighing and accumulating
- Display memory function - display of last stable value, can be initiated manually or automatically
- Adjustable weighing units: kg or g

**Equipment:**

- External adjustment
- Dimensions of stainless steel weighing platform: W 300 x D 225 mm
- Backlight LCD display
- **Battery operation possible, up to 210 h runtime, approx. 12 h charging time**
- Integrated hook for below-balance weighing
- Adjustable levelling feet and spirit level on the front
- Stability indicator
- Battery charge level indicator
- Automatic deactivation during battery operation (can be switched off)
- RS 232 port

**Delivery incl.** universal power supply (100-240 V, 50/60 Hz).

### External adjustment, non calibratable

| Model | Weighing range (kg) | Readability (g) | Linearity (±g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| R31P1502 | 1,5 | 0,05 | 0,1 | **YY32.1** | 1 | 359,00 |
| R31P3 | 3 | 0,1 | 0,2 | **YY33.1** | 1 | 359,00 |
| R31P6 | 6 | 0,2 | 0,5 | **YY34.1** | 1 | 359,00 |
| R31P15 | 15 | 0,5 | 1 | **YY35.1** | 1 | 359,00 |
| R31P30 | 30 | 1 | 2 | **YY36.1** | 1 | 359,00 |

### External adjustment, ex works calibrated

| Model | Weighing range (kg) | Readability (g) | Linearity (±g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| R31P1502-M | 1,5 | 0,5 | 0,1 | **YY37.1** | 1 | 419,00 |
| R31P3-M | 3 | 1 | 0,2 | **YY38.1** | 1 | 419,00 |
| R31P6-M | 6 | 2 | 0,5 | **YY39.1** | 1 | 419,00 |
| R31P15-M | 15 | 5 | 1 | **YY40.1** | 1 | 419,00 |
| R31P30-M | 30 | 10 | 2 | **YY41.1** | 1 | 419,00 |




## Table balances FKB-series

By Kern.

**Equipment:**

- External adjustment
- Functions: part counting, formulation, percentage weighing and animal weighing
- Backlight display
- Suitable for battery and mains operation
- Auto-Off function, switches balance off after 3 min of non-use to conserve batteries, can be deactivated
- RS 232 data port
- Dimensions of stainless steel weighing plate: 240 x 240 mm

**Technical specifications:**

| Model | Weighing range (kg) | Readability (g) | Reproducibility/linearity (±g) |
|---|---|---|---|
| **FKB 6K0.02** | 6 | 0.03 | 0.02 / 0.1 |
| **FKB 8K0.05** | 8 | 0.05 | 0.05 / 0.15 |
| **FKB 16K0.05** | 16 | 0.05 | 0.05 / 0.25 |
| **FKB 16K0.1** | 16 | 0.1 | 0.1 / 0.3 |
| **FKB 36K0.1** | 36 | 0.1 | 0.1 / 0.5 |
| **FKB 36K0.2** | 36 | 0.2 | 0.2 / 0.6 |
| **FKB 65K0.2** | 65 | 0.2 | 0.2 / 1 |
| **FKB 65K0.5** | 65 | 0.5 | 0.5 / 1.5 |

**Delivery incl.** mains adapter. Please order batteries separately.
6 batteries of the type Baby/C are required.

| Model | Weighing range (kg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FKB 6K0.02 | 6 | **YC92.1** | 1 | 520,00 |
| FKB 8K0.05 | 8 | **YC93.1** | 1 | 480,00 |
| FKB 16K0.05 | 16 | **YC94.1** | 1 | 580,00 |
| FKB 16K0.1 | 16 | **YC95.1** | 1 | 480,00 |
| FKB 36K0.1 | 36 | **YC96.1** | 1 | 550,00 |
| FKB 36K0.2 | 36 | **YC97.1** | 1 | 510,00 |
| FKB 65K0.2 | 65 | **YC98.1** | 1 | 550,00 |
| FKB 65K0.5 | 65 | **YC99.1** | 1 | 510,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Baby/C 1.5 V battery | **1023.2** | 2 pieces | 4,85 |



## Navigator precision balances

By Ohaus.

**Application:**

- Various weighing units are adjustable
- Functions: parts counting, percent weighing, check weighing, accumulating and display-hold function

**Equipment:**

- Stainless steel weighing platform
- External adjustment
- Backlight LCD display
- **Multifunctional infrared sensors for non-contact operation - e.g. contactless control of the zero/tare function to avoid specimen residues on the keypad**
- Spirit level on the front (lights up when switched on)
- Adjustable levelling feet with non-slip rubber pads
- Stability display and overload protection
- Upgradable with RS 232, USB or Ethernet port (please order separately)
- Battery or mains operation possible

**Technical specifications:**

| Model | Weighing range (g) | Readability (g) | Reproducibility/linearity (±g) | Weighing pan (mm) |
|---|---|---|---|---|
| **NV212** | 210 | 0.01 | 0.01 / 0.02 | ∅ 120 |
| **NV511** | 510 | 0.1 | 0.1 / 0.2 | 190 x 138 |
| **NV1101** | 1100 | 0.1 | 0.1 / 0.2 | 190 x 138 |
| **NVT1601** | 1600 | 0.1 | 0.1 / 0.2 | 230 x 174 |
| **NV2101** | 2100 | 0.1 | 0.1 / 0.2 | 190 x 138 |
| **NVT3201** | 3200 | 0.2 | 0.2 / 0.4 | 230 x 174 |
| **NV4101** | 4100 | 0.2 | 0.2 / 0.4 | 190 x 138 |
| **NV5101** | 5100 | 0.5 | 0.5 / 1.0 | 190 x 138 |
| **NVT6401** | 6400 | 0.5 | 0.5 / 1.0 | 230 x 174 |
| **NVT10001** | 10000 | 0.5 | 0.5 / 1.0 | 230 x 174 |
| **NVT16000** | 16000 | 1.0 | 1.0 / 2.0 | 230 x 174 |

**Delivery incl.** AC adapter.
Batteries not included (please order separately. NV models require 4 1.5 V mignon batteries and NVT models 4 Baby/C 1.5 V batteries).

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| NV212 | 210 | **PH67.1** | 1 | 240,00 |
| NV511 | 510 | **PH68.1** | 1 | 199,00 |
| NV1101 | 1100 | **PH69.1** | 1 | 220,00 |
| NVT1601 | 1600 | **PH70.1** | 1 | 205,00 |
| NV2101 | 2100 | **PH71.1** | 1 | 230,00 |
| NVT3201 | 3200 | **PH72.1** | 1 | 205,00 |
| NV4101 | 4100 | **PH73.1** | 1 | 225,00 |
| NV5101 | 5100 | **PH74.1** | 1 | 215,00 |
| NVT6401 | 6400 | **PH75.1** | 1 | 205,00 |
| NVT10001 | 10000 | **PH76.1** | 1 | 205,00 |
| NVT16000 | 16000 | **PH77.1** | 1 | 205,00 |

## Accessories for Navigator precision balances

By Ohaus.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RS 232 port, installation kit with cable | **Y609.1** | 1 | 31,00 |
| USB port, installation kit with cable | **Y610.1** | 1 | 31,00 |
| Ethernet port, installation kit with cable | **PH78.1** | 1 | 65,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |
| Baby/C 1.5 V battery | **1023.2** | 2 pieces | 4,85 |

# Balances





Programme extension!

## PCD-series precision balances

By Kern.

**Features**

- With separate platform for working in glove bags or fume cupboards
- External adjustment
- Functions: part counting, formulation, percentage weighing and animal weighing
- Backlight display
- Various weighing units can be set, e.g. g, ct, free value etc.
- With spirit level and levelling screws
- Draft shield for model PCD 250-3 and PCD 300-3: Dimensions of weighing space: W 146 x D 146 x H 80 mm
- Mains or battery operation
- Auto-Off function, switches balance off after 3 min of non-use to conserve batteries, can be deactivated

**Technical specifications:**

| Model | Weighing range (g) | Readability (g) | Reproducibility/linearity (±g) | Weighing pan (mm) |
|---|---|---|---|---|
| **PCD 250-3 (W)** | 250 | 0.001 | 0.002 / 0.005 | ∅ 105 |
| **PCD 300-3 (W)** | 350 | 0.001 | 0.002/0.005 | ∅ 105 |
| **PCD 2500-2** | 2500 | 0.01 | 0.02 / 0.05 | 160 x 160 |
| **PCD 3000-2** | 3500 | 0.01 | 0.02/0.05 | 160 x 160 |
| **PCD 6K-4** | 6000 | 0.1 | 0.1/0.3 | 160 x 160 |
| **PCD 10K0.1** | 10 000 | 0.1 | 0.1 / 0.3 | 160 x 160 |
| **PCD 10K-3** | 10 000 | 1 | 1/3 | 160 x 160 |

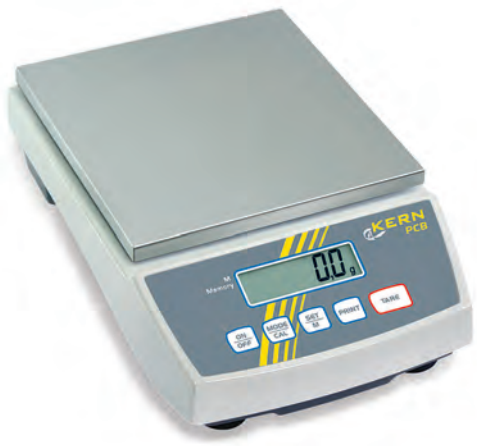
(W) = incl. draft shield.

**Delivery incl.** mains adapter. Please order batteries separately.
One 9 V E-Block battery is required.

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| PCD 250-3 (W) | 250 | **YC31.1** | 1 | 305,00 |
| PCD 300-3 (W) | 350 | **HEH0.1** | 1 | 350,00 |
| PCD 2500-2 | 2500 | **YC32.1** | 1 | 295,00 |
| PCD 3000-2 | 3500 | **HEH1.1** | 1 | 350,00 |
| PCD 6K-4 | 6000 | **HEH2.1** | 1 | 260,00 |
| PCD 10K0.1 | 10000 | **YC33.1** | 1 | 240,00 |
| PCD 10K-3 | 10000 | **HEH3.1** | 1 | 190,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Stand for raising the display unit, stand height 250 mm | **YC34.1** | 1 | 50,00 |
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |



## PCB-series precision balances

By Kern.

**Features:**

- Backlight LCD display
- Stainless steel platform (models with ∅ 81 mm have ABS plastic platform)
- External adjustment
- Programs: Piece counting, recipes, percentage and animal weighing
- RS 232-interface
- All models uphold 0.001 g readability and have a wind protection ring
- Battery and outlet operation possible
- AUTO-OFF function after 3 mins to save batteries, feature can be disabled

**Technical specifications:**

| Model | Weighing range (g) | Readability (g) | Reproducibility/linearity (±g) | Weighing pan (mm) |
|---|---|---|---|---|
| **PCB 100-3** | 100 | 0.001 | 0.001 / 0.003 | ∅ 81 |
| **PCB 250-3** | 250 | 0.001 | 0.001 / 0.005 | ∅ 81 |
| **PCB 350-3** | 350 | 0.001 | 0.001 / 0.005 | ∅ 81 |
| **PCB 200-2** | 200 | 0.01 | 0.01 / 0.02 | ∅ 105 |
| **PCB 1000-2** | 1000 | 0.01 | 0.01 / 0.03 | 130 x 130 |
| **PCB 2500-2** | 2500 | 0.01 | 0.01 / 0.05 | 130 x 130 |
| **PCB 3500-2** | 3500 | 0.01 | 0.01 / 0.05 | 130 x 130 |
| **PCB 1000-1** | 1000 | 0.1 | 0.1 / 0.2 | 130 x 130 |
| **PCB 2000-1** | 2000 | 0.1 | 0.1 / 0.2 | 130 x 130 |
| **PCB 6000-1** | 6000 | 0.1 | 0.1 / 0.3 | 150 x 170 |
| **PCB 6000-0** | 6000 | 1 | 1 / 2 | 150 x 170 |

**Delivery incl.** power unit and work protection cover for keypad and housing. Please order batteries separately.
One E-Block 9 V battery is required.

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| PCB 100-3 | 100 | **HK92.1** | 1 | 265,00 |
| PCB 250-3 | 250 | **KX11.1** | 1 | 290,00 |
| PCB 350-3 | 350 | **LY67.1** | 1 | 300,00 |
| PCB 200-2 | 200 | **HK93.1** | 1 | 230,00 |
| PCB 1000-2 | 1000 | **HK97.1** | 1 | 255,00 |
| PCB 2500-2 | 2500 | **KX12.1** | 1 | 290,00 |
| PCB 3500-2 | 3500 | **LY68.1** | 1 | 300,00 |
| PCB 1000-1 | 1000 | **HK99.1** | 1 | 185,00 |
| PCB 2000-1 | 2000 | **HL00.1** | 1 | 215,00 |
| PCB 6000-1 | 6000 | **HL02.1** | 1 | 240,00 |
| PCB 6000-0 | 6000 | **HL05.1** | 1 | 130,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |




## Scout® SKX- and STX-series precision balances

By Ohaus.

**General features of all models:**

- With external adjustment
- Draft shield for models with 0.001 g readability (internal height 45 mm)
- Battery and mains operation
- Connection options for data logging (sold separately)

**Technical specifications:**

| Model | Weighing range (g) | Readability (g) | Reproducibility/ linearity (±g) | Weighing pan (mm) |
|---|---|---|---|---|
| **SKX123/STX123 (W)** | 120 | 0.001 | 0.002/0.003 | ∅ 93 |
| **STX223 (W)** | 220 | 0.001 | 0.002/0.003 | ∅ 93 |
| **SKX222/STX222** | 220 | 0.01 | 0.01/0.01 | ∅ 120 |
| **SKX422/STX422** | 420 | 0.01 | 0.01/0.01 | ∅ 120 |
| **SKX622/STX622** | 620 | 0.01 | 0.01/0.02 | ∅ 120 |
| **SKX1202/STX1202** | 1200 | 0.01 | 0.02/0.03 | 170 x 140 |
| **SKX2202/STX2202** | 2200 | 0.01 | 0.02/0.03 | 170 x 140 |
| **SKX421/STX421** | 420 | 0.1 | 0.1/0.1 | ∅ 120 |
| **SKX621/STX621** | 620 | 0.1 | 0.1/0.1 | 170 x 140 |
| **SKX2201/STX2201** | 2200 | 0.1 | 0.1/0.1 | 170 x 140 |
| **SKX6201/STX6201** | 6200 | 0.1 | 0.1/0.2 | 170 x 140 |
| **SKX8200/STX8200** | 8200 | 1 | 1/1 | 170 x 140 |

(W) = incl. draft shield

**Delivery incl.** M1 test weight included in models up to 620 g and mains adapter. Without batteries (sold separately, 4 Mignon 1.5 V batteries are required).

① **SKX-series**

- Application: Determining density
- Background-lit LCD display

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| SKX123 (W) | 120 | **EHE8.1** | 1 | 390,00 |
| SKX222 | 220 | **EHE9.1** | 1 | 285,00 |
| SKX422 | 420 | **EHH0.1** | 1 | 360,00 |
| SKX622 | 620 | **EHH1.1** | 1 | 390,00 |
| SKX1202 | 1200 | **EHH2.1** | 1 | 435,00 |
| SKX2202 | 2200 | **EHH3.1** | 1 | 465,00 |
| SKX421 | 420 | **EHH4.1** | 1 | 165,00 |
| SKX621 | 620 | **EHH5.1** | 1 | 185,00 |
| SKX2201 | 2200 | **EHH6.1** | 1 | 285,00 |
| SKX6201 | 6200 | **EHH7.1** | 1 | 385,00 |
| SKX8200 | 8200 | **EHH8.1** | 1 | 440,00 |

② **STX-series with touchscreen and additional features**

- Application: Percent weighing, parts counting, check weighing, dynamic weighing, totalling, and determining density
- Full-colour touchscreen with WQVGA graphic LCD (4.3″ diagonal)
- QWERTY keyboard and numerical keyboard
- 9 different menu language options can be selected
- Up-front level display and adjustable levelling feet

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| STX123 (W) | 120 | **EHH9.1** | 1 | 590,00 |
| STX223 (W) | 220 | **EHK0.1** | 1 | 685,00 |
| STX222 | 220 | **EHK1.1** | 1 | 450,00 |
| STX422 | 420 | **EHK2.1** | 1 | 550,00 |
| STX622 | 620 | **EHK3.1** | 1 | 590,00 |
| STX1202 | 1200 | **EHK4.1** | 1 | 655,00 |
| STX2202 | 2200 | **EHK5.1** | 1 | 685,00 |
| STX421 | 420 | **EHK6.1** | 1 | 250,00 |
| STX621 | 620 | **EHK7.1** | 1 | 295,00 |
| STX2201 | 2200 | **EHK8.1** | 1 | 450,00 |
| STX6201 | 6200 | **EHK9.1** | 1 | 580,00 |
| STX8200 | 8200 | **EHL0.1** | 1 | 655,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| RS 232 interface kit | **EHL1.1** | 1 | 56,00 |
| USB host interface kit | **EHL2.1** | 1 | 87,00 |
| USB device interface kit | **EHL3.1** | 1 | 67,00 |
| Bluetooth interface kit | **EHL4.1** | 1 | 108,00 |
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## BTG-series precision balances

**Application:**

- Percent and counting
- Select from 21 weight units: g, ct, kg, lb, etc.

**Features:**

- Stainless steel weighing platform
- Backlit display showing the capacity
- With external adjustment
- Three-door glass draft shield on the BTG-303 model (interior height of 150 mm)
- RS 232 data port
- Integrated battery operation for mobile use (up to 40 hrs runtime and approx. 12 hrs charging time)

**Technical specifications:**

| Model | Weighing range (g) | Readability (g) | Reproducibility/linearity (±g) | Weighing pans (mm) |
|---|---|---|---|---|
| **BTG-303 (W)** | 300 | 0.001 | 0.001/0.003 | ∅118 |
| **BTG-2002** | 2000 | 0.01 | 0.01/0.03 | 188 x 148 |
| **BTG-6001** | 6000 | 0.1 | 0.1/0.2 | 188 x 148 |

(W) = incl. draft shield

**Delivery incl.** mains adapter, external additional test weight (class M1) and dust cover (BTG-2002 and BTG-6001 models only).

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| BTG-303 (W) | 300 | **EEH4.1** | 1 | 403,15 |
| BTG-2002 | 2000 | **EEH5.1** | 1 | 333,25 |
| BTG-6001 | 6000 | **EEH6.1** | 1 | 290,25 |

# Balances



## Electronic laboratory balances 440-series

By Kern. Stainless steel weighing platform. With external adjustment. Programs: piece counting, recipes, percent-weighing and animal weighing with data interface RS 232. Work protection cover supplied as standard. With Art. No. LY72.1 a wind guard ring is also supplied. Can be battery or outlet operated. AUTO-OFF after 3 mins for longer battery life.

**Delivery incl.** power unit. Please order battery separately.
1 battery E-block 9 V is required.

| Weighing range (g) | Readability (g) | Linearity (±g) | Weighing pan (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 60 | 0,001 | 0,003 | ∅ 81 | **LY72.1** | 1 | 350,00 |
| 200 | 0,01 | 0,02 | ∅ 105 | **H723.1** | 1 | 290,00 |
| 400 | 0,01 | 0,03 | ∅ 105 | **AK49.1** | 1 | 330,00 |
| 600 | 0,01 | 0,03 | ∅ 105 | **LY73.1** | 1 | 365,00 |
| 400 | 0,1 | 0,2 | 130 x 130 | **P936.1** | 1 | 185,00 |
| 1000 | 0,1 | 0,2 | 130 x 130 | **H724.1** | 1 | 245,00 |
| 2000 | 0,1 | 0,2 | 130 x 130 | **H725.1** | 1 | 270,00 |
| 4000 | 0,1 | 0,3 | 170 x 150 | **Y530.1** | 1 | 330,00 |
| 4000 | 1 | 2 | 170 x 150 | **P937.1** | 1 | 160,00 |
| 6000 | 1 | 2 | 170 x 150 | **P938.1** | 1 | 180,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |



## Calibrated table balance GAB

By Kern. **Application examples:** dispensing balance for pharmacies; manual mixing of tea, coffee etc.

- Functions: piece counting and percentage weighing
- Weighing with tolerance range: entry of upper/lower limits. A visual signal supports dosing and sorting
- RS 232 port
- Stainless steel weighing plate: 294 x 225 mm
- Overall dimensions: W 320 x D 330 x H 125 mm

**Delivery incl.** mains adapter.

| Weighing range (kg) | Readability (g) | Min. load (g) | Linearity (±g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 3/6 | 1/2 | 20 | 1/2 | **PX18.1** | 1 | 285,00 |



## Electronic laboratory balances 572-series

By Kern. **Robust metal housing**. With external adjustment.
Programs: piece counting, recipes, percentage weighing.
With data interface RS 232. Self-explanatory operation via an informative yes/no-dialogue in the display. With flush-mounted weighing device.
Dimensions: W 180 x D 310 x H 90 mm. Article Nos HT19.1 and HT20.1 comes with wind protection ring (∅ 160 mm, H 60 mm).

**Technical specifications:**

| **Model** | Weighing range (g) | Readability (g) | Reproducibility / linearity (±g) | Weighing pan (mm) |
|---|---|---|---|---|
| **572-31** | 300 | 0.001 | 0.001 / 0.003 | ∅ 105 |
| **572-32** | 420 | 0.001 | 0.002 / 0.005 | ∅ 105 |
| **572-33** | 1600 | 0.01 | 0.01 / 0.03 | ∅ 150 |
| **572-35** | 2400 | 0.01 | 0.01 / 0.03 | ∅ 150 |
| **572-37** | 3000 | 0.01 | 0.02 / 0.05 | ∅ 150 |
| **572-39** | 4200 | 0.01 | 0.02 / 0.05 | 150 |
| **572-45** | 12000 | 0.1 | 0.05 / 0.15 | 200 x 160 |
| **572-49** | 16000 | 0.1 | 0.1 / 0.3 | 200 x 160 |
| **572-57** | 24000 | 0.1 | 0.1 / 0.3 | 200 x 160 |

**Delivery incl.** work protection cover for keypad and housing, plus power outlet plug.

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 572-31 | 300 | **HT19.1** | 1 | 530,00 |
| 572-32 | 420 | **HT20.1** | 1 | 540,00 |
| 572-33 | 1600 | **L961.1** | 1 | 490,00 |
| 572-35 | 2400 | **L962.1** | 1 | 500,00 |
| 572-37 | 3000 | **HT21.1** | 1 | 510,00 |
| 572-39 | 4200 | **KX14.1** | 1 | 520,00 |
| 572-45 | 12000 | **L963.1** | 1 | 490,00 |
| 572-49 | 16000 | **L964.1** | 1 | 490,00 |
| 572-57 | 24000 | **L966.1** | 1 | 500,00 |



## EWJ-series precision balances

By Kern.
**Application:** piece counting and percent weighing.

**Features:**
- Timer-controlled automatic internal adjustment
- Capacity indication - LED strip indicates available weighing range
- Draft shield comprising four side parts (H = 90 mm) for models up to ≤600 g
- Spirit level
- RS 232 data port

**Technical specifications:**

| Model | Weighing range (g) | Resolution (g) | Reproducibility/linearity (±g) | Weighing pans (mm) |
|---|---|---|---|---|
| **EWJ 300-3 (W)** | 300 | 0.001 | 0.001 / 0.003 | ∅ 80 |
| **EWJ 600-2M (W)** | 600 | 0.01 | 0.01 / 0.03 | ∅ 135 |
| **EWJ 3000-2 (W)** | 3000 | 0.01 | 0.01 / 0.03 | ∅ 135 |
| **EWJ 6000-1M** | 6000 | 0.1 | 0.1 / 0.3 | 155 x 145 |

(W) = incl. draft shield

**Delivery incl.** work safety hood and AC adapter (230 V, 50 Hz).

| Model | Weighing range (g) | Pack Qty. | Not calibratable | | Factory-calibrated | |
|---|---|---|---|---|---|---|
| | | | Art. No. | € | Art. No. | € |
| EWJ 300-3 (W) | 300 | 1 | **CHH7.1** | 450,00 | | |
| EWJ 600-2M (W) | 600 | 1 | **CHH8.1** | 360,00 | **CHK1.1** | 426,00 |
| EWJ 3000-2 | 3000 | 1 | **CHH9.1** | 430,00 | | |
| EWJ 6000-1M | 6000 | 1 | **CHK0.1** | 350,00 | **CHK2.1** | 427,00 |



## EW- and EG-series precision balances

By Kern.
**Application:**
- Piece counting, percentage weighing, weighing with tolerance range (upper and lower limiting values are programmable; possible setting in g, pieces or %)
- Capacity display
- Various weighing units such as g, ct, oz etc. can be set
- LCD-display with 16 mm high digits

**Design:**
- Weighing platform made of stainless steel
- **EW-Models with external adjustment, EG-Models with internal switch-on adjustment via knob on the side**
- Adjusting water level
- Bidirectional RS 232 data interface
- Wind protection comes in series with all 0.001-g-models, with removable lid and opening for pipetting (weighing platform W 158 x D 130 x H 78 mm)
- Dimensions of balance: with weighing platform ∅ 118 and 170 x 142 mm: W 180 x D 235 x H 75 mm, with weighing platform 180 x 160 mm: W 190 x D 265 x H 90 mm

**Technical specifications:**

| Model | Capacity (g) | Readability (g) | Reproducibility / linearity (±g) | Platform (mm) |
|---|---|---|---|---|
| **EW/EG 220-3 NM (W)** | 220 | 0.001 | 0.001 / 0.002 | ∅ 118 |
| **EW/EG 420-3 NM (W)** | 420 | 0.001 | 0.001 / 0.003 | ∅ 118 |
| **EW/EG 620-3 NM (W)** | 620 | 0.001 | 0.001 / 0.004 | ∅ 118 |
| **EW 820-2 NM** | 820 | 0.01 | 0.01 / 0.01 | 170 x 142 |
| **EW/EG 2200-2 NM** | 2200 | 0.01 | 0.01 / 0.01 | 180 x 160 |
| **EW/EG 4200-2 NM** | 4200 | 0.01 | 0.01 / 0.02 | 180 x 160 |
| **EW 6200-2 NM** | 6200 | 0.01 | 0.01 / 0.03 | 180 x 160 |
| **EW 12000-1 NM** | 12000 | 0.1 | 0.1 / 0.2 | 180 x 160 |

(W)= incl. wind protector

**Delivery incl.** work protection hood and outlet adapter.

**EW-series, with external adjustment**

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| EW 220-3 NM (W) | 220 | **AX07.1** | 1 | 620,00 |
| EW 420-3 NM (W) | 420 | **AX08.1** | 1 | 690,00 |
| EW 620-3 NM (W) | 620 | **AX09.1** | 1 | 770,00 |
| EW 820-2 NM | 820 | **AX10.1** | 1 | 540,00 |
| EW 2200-2 NM | 2200 | **AX11.1** | 1 | 660,00 |
| EW 4200-2 NM | 4200 | **AX12.1** | 1 | 760,00 |
| EW 6200-2 NM | 6200 | **CT72.1** | 1 | 810,00 |
| EW 12000-1 NM | 12000 | **CT73.1** | 1 | 630,00 |

**EG-series, with internal adjustment**

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| EG 220-3 NM (W) | 220 | **AX13.1** | 1 | 760,00 |
| EG 420-3 NM (W) | 420 | **AX14.1** | 1 | 830,00 |
| EG 620-3 NM (W) | 620 | **AX15.1** | 1 | 930,00 |
| EG 2200-2 NM | 2200 | **AX16.1** | 1 | 820,00 |
| EG 4200-2 NM | 4200 | **AX17.1** | 1 | 880,00 |





Programme extension!

## PLJ-series precision balances

By Kern.
**Applications:**
Counting, percent weighing and tolerance range weighing (entry of an upper/lower limit).

**Specification for all models:**
- Automatic internal calibration after temperature change ≥3 °C or time-controlled every 3 h
- Draft shield consisting of 4 side sections for models with 0.001 g resolution (weighing chamber dimensions: W 140 x D 140 x H 65 mm)
- RS 232 data port

**Model PLJ-GM**
- Battery operation possible, up to 35 h runtime, approx. 12 h charging time
- With animal weighing
- Weighing principle: strain gauge

**Model PLJ-CM**
- With recipe function
- Weighing principle: load compensation

**Technical specifications:**

| Model | Weighing range (g) | Resolution (g) | Reproducibility/ linearity (±g) | Weighing pan (mm) |
|---|---|---|---|---|
| **PLJ 300-3CM (W)** | 360 | 0.001 | 0.001 / 0.004 | 128 x 128 |
| **PLJ 600-3CM (W)** | 600 | 0.001 | 0.002 / 0.004 | 128 x 128 |
| **PLJ 700-3CM (W)** | 750 | 0.001 | 0.002 / 0.003 | 128 x 128 |
| **PLJ 600-2GM** | 600 | 0.01 | 0.02 / 0.02 | 128 x 128 |
| **PLJ 3000-2CM** | 3500 | 0.01 | 0.01 / 0.04 | 195 x 195 |
| **PLJ 6000-1GM** | 6000 | 0.1 | 0.2 / 0.2 | 195 x 195 |

(W) = incl. draft shield

**Delivery incl.** safety cover and AC-adapter 230 V, 50 Hz.

| Model | Weighing range (g) | Pack Qty. | Internal calibration, non-calibrating Art. No. | € | Internal calibration, calibrated ex works Art. No. | € |
|---|---|---|---|---|---|---|
| PLJ 300-3CM (W) | 360 | 1 | **YY06.1** * | 800,00 | **YY11.1** * | 866,00 |
| PLJ 600-3CM (W) | 600 | 1 | **YY07.1** * | 800,00 | **YY12.1** * | 866,00 |
| PLJ 700-3CM (W) | 750 | 1 | **YY05.1** * | 820,00 | **HAP3.1** * | 886,00 |
| PLJ 600-2GM | 600 | 1 | **YY08.1** * | 570,00 | **YY13.1** * | 636,00 |
| PLJ 3000-2CM | 3500 | 1 | **YY09.1** * | 820,00 | **YY14.1** * | 886,00 |
| PLJ 6000-1GM | 6000 | 1 | **YY10.1** * | 570,00 | **YY15.1** * | 647,00 |

* Longer delivery times possible. Please check with our Sales Department.



## PNJ-series precision balances

By Kern.
**Application:**
Item counting, percentage weighing and checkweighing.

**Features:**
- With internal adjustment
- Capacity indication - LED strip indicates available weighing range
- Glass draft shield with 3 sliding doors for model with 0.001 g readability (interior height 160 mm)
- Spirit level
- RS 232 data port

**Technical specifications:**

| Model | Weighing range (g) | Resolution (g) | Reproducibility/ linearity (±g) | Weighing pans (mm) |
|---|---|---|---|---|
| **PNJ 600-3M (W)** | 620 | 0.001 | 0.001 / 0.004 | dia. 140 |
| **PNJ 3000-2M** | 3200 | 0.01 | 0.01 / 0.02 | 190 x 190 |
| **PNJ 12000-1M** | 12000 | 0.1 | 0.1 / 0.2 | 190 x 190 |

(W) = incl. draft shield

**Delivery incl.** work protection cover and AC-adapter.

| Model | Weighing range (g) | Pack Qty. | Internal adjustment, not calibratable Art. No. | € | Internal adjustment, calibrated ex works Art. No. | € |
|---|---|---|---|---|---|---|
| PNJ 600-3M (W) | 620 | 1 | **ENH3.1** | 730,00 | **ENH6.1** | 796,00 |
| PNJ 3000-2M | 3200 | 1 | **ENH4.1** | 705,00 | **ENH7.1** | 771,00 |
| PNJ 12000-1M | 12000 | 1 | **ENH5.1** | 705,00 | **ENH8.1** | 782,00 |



Programme extension!

## FX-/FZ-series precision balances

By A & D.

**Application:**
- Percent, counting and animal weighing
- Selectable weight units: g, ct, etc.

**Features:**
- FX-i models have external adjustment
- FZ-i models have internal adjustment
- **All models with additional WP: Dust and water proofing i.a.w. IP 65**
- Draft shield for models with 0.001 g readability (internal height 85 mm)
- With RS 232 data port
- Overload protection
- Five-year warranty

**Technical specifications:**

| Model | Weighing range (g) | Readability (g) | Reproducibility/ linearity (±g) | Weighing pan ∅ (mm) |
|---|---|---|---|---|
| **FX-/FZ-120i (W)**<br>**FX-/FZ-120i-WP (W)** | 122 | 0.001 | 0.001/0.002 | 130 |
| **FX-/FZ-200i (W)**<br>**FX-/FZ-200i-WP (W)** | 220 | 0.001 | 0.001/0.002 | 130 |
| **FX-/FZ-300i (W)**<br>**FX-/FZ-300i-WP (W)** | 320 | 0.001 | 0.001/0.002 | 130 |
| **FX-/FZ-1200i**<br>**FX-/FZ-1200i-WP** | 1220 | 0.01 | 0.01/0.02 | 150 |
| **FX-/FZ-2000i**<br>**FX-/FZ-2000i-WP** | 2200 | 0.01 | 0.01/0.02 | 150 |
| **FX-/FZ-3000i**<br>**FX-/FZ-3000i-WP** | 3200 | 0.01 | 0.01/0.02 | 150 |

(W) = incl. draft shield

**Delivery incl.** mains adapter.

| Model | Weighing range (g) | Pack Qty. | External adjustment Art. No. | € | Internal adjustment Art. No. | € |
|---|---|---|---|---|---|---|
| FX-/FZ-120i (W) | 122 | 1 | **CTH4.1** * | 612,75 | **EHP8.1** * | 811,65 |
| FX-/FZ-120i-WP (W) | 122 | 1 | **CTH5.1** * | 1037,40 | **CTK6.1** * | 1134,15 |
| FX-/FZ-200i (W) | 220 | 1 | **CTH6.1** * | 645,00 | **EHP9.1** * | 854,65 |
| FX-/FZ-200i-WP (W) | 220 | 1 | **CTH7.1** * | 1128,75 | **CTK7.1** * | 1247,00 |
| FX-/FZ-300i (W) | 320 | 1 | **CTH8.1** * | 682,65 | **EHT0.1** * | 892,25 |
| FX-/FZ-300i-WP (W) | 320 | 1 | **CTH9.1** * | 1214,75 | **CTK8.1** * | 1354,50 |
| FX-/FZ-1200i | 1220 | 1 | **CTK0.1** * | 612,75 | **EHT1.1** * | 811,65 |
| FX-/FZ-1200i-WP | 1220 | 1 | **CTK1.1** * | 1037,40 | **CTK9.1** * | 1134,15 |
| FX-/FZ-2000i | 2200 | 1 | **CTK2.1** * | 645,00 | **EHT2.1** * | 854,65 |
| FX-/FZ-2000i-WP | 2200 | 1 | **CTK3.1** * | 1128,75 | **CTL0.1** * | 1247,00 |
| FX-/FZ-3000i | 3200 | 1 | **CTK4.1** * | 682,65 | **EHT3.1** * | 892,25 |
| FX-/FZ-3000i-WP | 3200 | 1 | **CTK5.1** * | 1214,75 | **CTL1.1** * | 1354,50 |

* Longer delivery times possible. Please check with our Sales Department.



## Precision scales EK series, explosion-proof

By A & D.
For explosive areas in zones 0.1 and 2.

**Application:**
- Item counter and percentage weighing
- Acc. to ATEX: II 1G ia IIB T3 Ga
- With external adjustment

**Features:**
- Backlit display, deactivatable
- Auto power OFF for battery saving (battery life approx. 250 h with backlight off)
- Weighing pan made of stainless steel
- Anti-theft lug, bubble, levelling feet

**Technical specifications:**

| Model | Weighing range (g) | Resolution (g) | Reproducibility/ linearity (±g) | Weighing pans (mm) |
|---|---|---|---|---|
| **EK-300EP** | 300 | 0.01 | 0.01 / 0.02 | dia. 110 |
| **EK-3000EP** | 3000 | 0.1 | 0.01 / 0.02 | 133 x 170 |
| **EK-12KEP** | 12000 | 1 | 1 / 1 | 133 x 170 |

**Delivery incl.** 4 1.5V Mignon batteries.

**Please note:** use only type-tested replacement batteries (see operating instructions)!

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| EK-300EP | **EXC0.1** | 1 | 1290,00 |
| EK-3000EP | **EXC1.1** | 1 | 1290,00 |
| EK-12KEP | **EXC2.1** | 1 | 1290,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |







## ABS-N and ABJ-NM-series analytical balances

By Kern.

**Application:**
- Parts counting, percentage weighing and batching
- High stability mode and other filter settings are selectable

**Equipment:**
- ABS-N models have external calibration
- ABJ-NM models have internal automatic calibration, either after a change of temperature >2 °C or time controlled every 4 hours
- Spirit level
- Overall dimensions of balance incl. draft shield: W 210 x D 340 x H 325 mm
- Weighing space dimensions: W 174 x D 162 x H 227 mm

**Technical specifications:**

| Models | Weighing range (g) | Readability (g) | Reproducibility/ linearity (±g) | Platform (mm) |
|---|---|---|---|---|
| **ABS 80-4N (W)** | 80 | 0.0001 | 0.0002 / 0.0003 | ∅ 91 |
| **ABS 120-4N / ABJ 120-4NM (W)** | 120 | 0.0001 | 0.0002 / 0.0003 | ∅ 91 |
| **ABS 220-4N / ABJ 220-4NM (W)** | 220 | 0.0001 | 0.0002 / 0.0003 | ∅ 91 |
| **ABS 320-4N / ABJ 320-4NM (W)** | 320 | 0.0001 | 0.0002 / 0.0003 | ∅ 91 |

(W) = incl. wind guard

**ABS-N-series, with external calibration**

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ABS 80-4N (W) | 80 | **TA63.1** | 1 | 960,00 |
| ABS 120-4N (W) | 120 | **TA64.1** | 1 | 1020,00 |
| ABS 220-4N (W) | 220 | **TA65.1** | 1 | 1070,00 |
| ABS 320-4N (W) | 320 | **TA66.1** | 1 | 1230,00 |

**ABJ-NM series, with internal calibration, non-calibratable**

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ABJ 120-4NM (W) | 120 | **TA67.1** | 1 | 1070,00 |
| ABJ 220-4NM (W) | 220 | **TA68.1** | 1 | 1160,00 |
| ABJ 320-4NM (W) | 320 | **TA69.1** | 1 | 1330,00 |

**ABJ-NM series with internal adjustment, calibrated ex works**

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ABJ 120-4NM (W) | 120 | **TA70.1** | 1 | 1180,00 |
| ABJ 220-4NM (W) | 220 | **TA71.1** | 1 | 1270,00 |
| ABJ 320-4NM (W) | 320 | **TA72.1** | 1 | 1440,00 |

Accessories:

| | | | |
|---|---|---|---|
| RS 232 port, installation kit with interface cable | **TA73.1** | 1 | 75,00 |

## HR-series analytical balances

By A & D.

**Application:**
- Percent, counting, animal weighing
- Selectable weight units: g, mg, ct etc.

**Features:**
- HR-A model with external calibration function
- HR-AZ models with internal calibration function
- Backlit LCD display
- Removable full-sized draft shield (internal height 198 mm)
- The sliding doors of the draft shield tilt back to minimise space requirements
- With RS 232 data port
- Spirit level on the front
- Solid metal housing
- Overload protection
- 5 year warranty

**Technical specifications:**

| Models | Weighing range (g) | Resolution (g) | Reproducibility/ linearity (±g) | Weighing pan ∅ (mm) |
|---|---|---|---|---|
| **HR-251A/HR-251 AZ (W)** | 62<br>252 | 0.0001/<br>0.001 | 0.0001 / 0.0003<br>0.001 / 0.001 | 90 |
| **HR-100A/HR-100AZ (W)** | 102 | 0.0001 | 0.0001 / 0.0002 | 90 |
| **HR-150A/HR-150AZ (W)** | 152 | 0.0001 | 0.0001 / 0.0002 | 90 |
| **HR-250A/HR-250AZ (W)** | 252 | 0.0001 | 0.0002 / 0.0003 | 90 |

(W) = incl. draft shield

**Delivery incl.** AC adapter.

| Model | Weighing range (g) | Pack Qty. | External calibration | | Internal calibration | |
|---|---|---|---|---|---|---|
| | | | Art. No. | € | Art. No. | € |
| HR-251A / HR251AZ (W) | 62 / 252 | 1 | **CTE2.1** * | 1058,90 | **CTE6.1** * | 1279,25 |
| HR-100A / HR-100AZ (W) | 102 | 1 | **CTE3.1** * | 1058,90 | **CTE7.1** * | 1279,25 |
| HR-150A / HR-150AZ (W) | 152 | 1 | **CTE4.1** * | 1128,75 | **CTE8.1** * | 1338,40 |
| HR-250A / HR-250AZ (W) | 252 | 1 | **CTE5.1** * | 1354,50 | **CTE9.1** * | 1569,50 |

* Longer delivery times possible. Please check with our Sales Department.



## Pioneer®-series analytical and precision balances

By Ohaus.

**Application:**

- Programs: Piece counting, percentage weighing, animal weighing
- Different weighing units can be set, e.g. g, ct, free value etc.
- Integrated underfloor weighing hook

**Features:**

- Backlite LCD display
- Stainless steel weighing platform
- RS 232-data interface
- 3-door glass windbreak with removable doors on all 1.0 mg and 0.1 mg models (inner height 195 mm)
- Front spirit level
- With digital filter for variable adjustment depending on location
- **All balances with internal adjustment are available calibrated ex works at an extra charge. Please contact our Sales Department.**

**Technical specifications:**

| Models | Weighing range (g) | Readability (g) | Reproducibility/ Linearity (±g) | Weighing pan (mm) |
|---|---|---|---|---|
| **PA124 (W)** | 120 | 0.0001 | 0.0001 / 0.0002 | ∅ 90 |
| **PA224 (W)** | 220 | 0.0001 | 0.0001 / 0.0003 | ∅ 90 |
| **PA223 (W)** | 220 | 0.001 | 0.001 / 0.002 | ∅ 120 |
| **PA423 (W)** | 420 | 0.001 | 0.001 / 0.002 | ∅ 120 |
| **PA2202** | 2200 | 0.01 | 0.01 / 0.02 | ∅ 180 |
| **PA4202** | 4200 | 0.01 | 0.01 / 0.02 | ∅ 180 |
| **PA4201** | 4200 | 0.1 | 0.1 / 0.1 | ∅ 180 |

(W) = incl. draft shield

| Model | Weighing range (g) | Pack Qty. | External adjustment, not calibratable Art. No. | € | Internal adjustment, not calibratable Art. No. | € |
|---|---|---|---|---|---|---|
| PA124 (W) | 120 | 1 | **KH72.1** * | 1050,00 | **KH73.1** * | 1240,00 |
| PA224 (W) | 220 | 1 | **KH70.1** * | 1150,00 | **KH71.1** * | 1340,00 |
| PA223 (W) | 220 | 1 | **KH78.1** * | 730,00 | **KH79.1** * | 920,00 |
| PA423 (W) | 420 | 1 | **KH76.1** * | 785,00 | **KH77.1** * | 975,00 |
| PA2202 | 2200 | 1 | **KH82.1** * | 760,00 | **KH83.1** * | 950,00 |
| PA4202 | 4200 | 1 | **KH80.1** * | 830,00 | **KH81.1** * | 1020,00 |
| PA4201 | 4200 | 1 | **KH86.1** * | 690,00 | **KH87.1** * | 880,00 |

* Longer delivery times possible. Please check with our Sales Department.


- ▶ Batteries see page 777
- ▶ Weighing trays see page 189
- ▶ Weighing brushes see page 192




## Entris®-series analytical and precision balances

By Sartorius.

**Applications:**

- Weighing in percent, counting, animal weighing, conversion, density measurement
- Selectable weight units: g, kg, mg, ct etc.

**Features:**

- Models with 0.0001 g readability (inner height 240 mm) are supplied with a full draft shield
- Models with 0.001 g readability (inner height 60 mm) readability are supplied with a round glass ring protector
- With RS 232 data interface, antitheft device and spirit level
- Monolithic weighing technology

**Technical specifications:**

| Models | Weighing range (g) | Resolution (g) | Reproducibility/ linearity (±g) | Weighing pan (mm) |
|---|---|---|---|---|
| **Entris 64(i)-1S (W)** | 60 | 0.0001 | 0.0001 / 0.0002 | ∅ 90 |
| **Entris 124(i)-1S (W)** | 120 | 0.0001 | 0.0001 / 0.0002 | ∅ 90 |
| **Entris 224(i)-1S (W)** | 220 | 0.0001 | 0.0001 / 0.0002 | ∅ 90 |
| **Entris 153(i)-1S (W)** | 150 | 0.001 | 0.001 / 0.002 | ∅ 115 |
| **Entris 323(i)-1S (W)** | 320 | 0.001 | 0.001 / 0.002 | ∅ 115 |
| **Entris 423(i)-1S (W)** | 420 | 0.001 | 0.001 / 0.002 | ∅ 115 |
| **Entris 623(i)-1S (W)** | 620 | 0.001 | 0.001 / 0.002 | ∅ 115 |
| **Entris 822(i)-1S** | 820 | 0.01 | 0.01 / 0.03 | ∅ 150 |
| **Entris 2202(i)-1S** | 2200 | 0.01 | 0.01 / 0.03 | 180 x 180 |
| **Entris 3202(i)-1S** | 3200 | 0.01 | 0.01 / 0.03 | 180 x 180 |
| **Entris 4202(i)-1S** | 4200 | 0.01 | 0.01 / 0.03 | 180 x 180 |
| **Entris 6202(i)-1S** | 6200 | 0.01 | 0.01 / 0.03 | 180 x 180 |
| **Entris 2201(i)-1S** | 2200 | 0.1 | 0.1 / 0.3 | 180 x 180 |
| **Entris 5201(i)-1S** | 5200 | 0.1 | 0.1 / 0.3 | 180 x 180 |
| **Entris 8201(i)-1S** | 8200 | 0.1 | 0.1 / 0.3 | 180 x 180 |

(W) = incl. draft shield

**Delivery incl.** universal AC-adapter (100-240 V).

| Model | Weighing range (g) | Pack Qty. | External adjustment Art. No. | € | Internal adjustment Art. No. | € |
|---|---|---|---|---|---|---|
| Entris 64(i)-1S (W) | 60 | 1 | **ACT1.1** * | 1500,00 | **ACX6.1** * | 1780,00 |
| Entris 124(i)-1S (W) | 120 | 1 | **ACT0.1** * | 1630,00 | **ACX5.1** * | 1910,00 |
| Entris 224(i)-1S (W) | 220 | 1 | **ACP9.1** * | 1750,00 | **ACX4.1** * | 2040,00 |
| Entris 153(i)-1S (W) | 150 | 1 | **ACT5.1** * | 938,00 | **ACY0.1** * | 1190,00 |
| Entris 323(i)-1S (W) | 320 | 1 | **ACT4.1** * | 1060,00 | **ACX9.1** * | 1330,00 |
| Entris 423(i)-1S (W) | 420 | 1 | **ACT3.1** * | 1190,00 | **ACX8.1** * | 1450,00 |
| Entris 623(i)-1S (W) | 620 | 1 | **ACT2.1** * | 1380,00 | **ACX7.1** * | 1650,00 |
| Entris 822(i)-1S | 820 | 1 | **ACX0.1** * | 938,00 | **ACY5.1** * | 1190,00 |
| Entris 2202(i)-1S | 2200 | 1 | **ACT9.1** * | 1060,00 | **ACY4.1** * | 1330,00 |
| Entris 3202(i)-1S | 3200 | 1 | **ACT8.1** * | 1190,00 | **ACY3.1** * | 1450,00 |
| Entris 4202(i)-1S | 4200 | 1 | **ACT7.1** * | 1320,00 | **ACY2.1** * | 1590,00 |
| Entris 6202(i)-1S | 6200 | 1 | **ACT6.1** * | 1500,00 | **ACY1.1** * | 1780,00 |
| Entris 2201(i)-1S | 2200 | 1 | **ACX3.1** * | 878,00 | **ACY8.1** * | 1130,00 |
| Entris 5201(i)-1S | 5200 | 1 | **ACX2.1** * | 976,00 | **ACY7.1** * | 1240,00 |
| Entris 8201(i)-1S | 8200 | 1 | **ACX1.1** * | 1100,00 | **ACY6.1** * | 1370,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Logger type YDP20-OCE (with real-time clock, for printing date, time and statistics) | **N934.1** * | 1 | 892,00 |

* Longer delivery times possible. Please check with our Sales Department.

| | | | |
|---|---|---|---|
| Paper rolls, 5 x 40 m | **N935.1** | 1 | 28,90 |
| Ink ribbon for logger type YDP20-OCE | **N936.1** | 1 | 32,00 |



## Practum®-series analytical and precision balances

By Sartorius.

**Applications:**

- Percent weighing, checking, maximum value, counting, animal weighing
- Selectable weight units: g, kg, mg, ct etc.
- Made in Germany

**Equipment:**

- With external calibration function
- Touchscreen operation
- 10 different menu language options can be selected
- Full-sized draft shield for models with 0.0001 g / 0.001 g resolution (internal height 209 mm)
- Mini-USB port for automatic detection of Sartorius standard printer YDP40 (please order separately) or direct data transfer e.g. to Microsoft® Excel without additional software. Programmable interval for data output
- Menu lock for protection against accidental manipulation
- Levelling feet and glass level indicator on the front
- Anti-theft device for chain or cable

**Technical specifications:**

| Model | Weighing range (g) | Resolution (g) | Reproducibility/linearity (±g) | Weighing pan ∅ (mm) |
|---|---|---|---|---|
| **64-1S (W)** | 60 | 0,0001 | 0,0001/0,0002 | 90 |
| **124-1S (W)** | 120 | 0,0001 | 0,0001/0,0003 | 90 |
| **224-1S (W)** | 220 | 0,0001 | 0,0001/0,0003 | 90 |
| **213-1S (W)** | 210 | 0,001 | 0,001/0,003 | 120 |
| **313-1S (W)** | 310 | 0,001 | 0,001/0,003 | 120 |
| **513-1S (W)** | 510 | 0,001 | 0,001/0,002 | 120 |
| **412-1S*** | 410 | 0,01 | 0,01/0,03 | 180 |
| **612-1S*** | 610 | 0,01 | 0,01/0,03 | 180 |
| **1102-1S*** | 1100 | 0,01 | 0,01/0,03 | 180 |
| **2102-1S*** | 2100 | 0,01 | 0,01/0,03 | 180 |
| **3102-1S*** | 3100 | 0,01 | 0,01/0,03 | 180 |
| **2101-1S*** | 2100 | 0,1 | 0,1/0,3 | 180 |
| **5101-1S*** | 5100 | 0,1 | 0,1/0,3 | 180 |
| **6101-1S*** | 6100 | 0,1 | 0,1/0,3 | 180 |
| **5100-1S*** | 5100 | 1 | 1/1 | 180 |
| **6100-1S*** | 6100 | 1 | 1/1 | 180 |

(W) = incl. draft shield and dust cover; * incl. protective cover for operation

**Delivery incl.** universal mains-adapter (100-240 V).

| Model | Weighing range (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 64-1S (W) | 60 | **AHC2.1** * | 1 | 1650,00 |
| 124-1S (W) | 120 | **NN46.1** * | 1 | 1740,00 |
| 224-1S (W) | 220 | **NN45.1** * | 1 | 1840,00 |
| 213-1S (W) | 210 | **NN48.1** * | 1 | 1150,00 |
| 313-1S (W) | 310 | **NN47.1** * | 1 | 1290,00 |
| 513-1S (W) | 510 | **AHC3.1** * | 1 | 1560,00 |
| 412-1S | 410 | **AHC4.1** * | 1 | 872,00 |
| 612-1S | 610 | **NN51.1** * | 1 | 1010,00 |
| 1102-1S | 1100 | **NN50.1** * | 1 | 1100,00 |
| 2102-1S | 2100 | **NN49.1** * | 1 | 1290,00 |
| 3102-1S | 3100 | **AHC5.1** * | 1 | 1470,00 |
| 2101-1S | 2100 | **AHC6.1** * | 1 | 918,00 |
| 5101-1S | 5100 | **NN52.1** * | 1 | 1100,00 |
| 6101-1S | 6100 | **AHC7.1** * | 1 | 1190,00 |
| 5100-1S | 5100 | **NN53.1** * | 1 | 826,00 |
| 6100-1S | 6100 | **AHC8.1** * | 1 | 918,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Standard laboratory printer YPD 40 incl. printer paper and connecting cable | **NN54.1** * | 1 | 453,90 |
| Printer paper rolls for printer YDP 40 | **NN56.1** * | 5 | 24,90 |
| Mini-USB/USB A data cable | **NN55.1** * | 1 | 36,25 |

* Longer delivery times possible. Please check with our Sales Department.



## Analytical and precision balances, Adventurer® series

By Ohaus.

**Application:**

- Percentage weighing, parts counting, animal weighing, check weighing, density measurement, batching, display-hold function and totalising
- Selectable weight units

**Features:**

- All balances are available with external adjustment or with AutoCal™ - automatic time and temperature controlled internal calibration
- Colour touchscreen with graphical LCD display and additional mechanical buttons for tare, calibration etc.
- Removable stainless steel weigh pan
- Language selection (nine languages)
- Analytical full-sized draft shield for models with 0.0001 g / 0.001 g resolution (internal height 230 mm)
- Minimum sample weight function - a warning is displayed if the current sample weight is below the defined minimum sample weight
- **Two USB ports - one USB host port on the front for saving weighing data directly to a USB stick (not supplied) and an additional USB port on the back for connecting to a PC**
- RS 232 interface
- Integrated hook for below-balance weighing

**Technical specifications:**

| Model | Weighing range (g) | Resolution (g) | Reproducibility/linearity (±g) | Weighing pans (mm) |
|---|---|---|---|---|
| **AX124 (W)** | 120 | 0.0001 | 0.0001 / 0.0002 | dia. 90 |
| **AX224 (W)** | 220 | 0.0001 | 0.0001 / 0.0002 | dia. 90 |
| **AX324 (W)** | 320 | 0.0001 | 0.0001 / 0.0002 | dia. 90 |
| **AX223 (W)** | 220 | 0.001 | 0.001 / 0.002 | dia. 130 |
| **AX423 (W)** | 420 | 0.001 | 0.001 / 0.002 | dia. 130 |
| **AX523 (W)** | 520 | 0.001 | 0.001 / 0.002 | dia. 130 |
| **AX422** | 420 | 0.01 | 0.01 / 0.02 | 175 x 195 |
| **AX822** | 820 | 0.01 | 0.01 / 0.02 | 175 x 195 |
| **AX1502** | 1520 | 0.01 | 0.01 / 0.02 | 175 x 195 |
| **AX2202** | 2200 | 0.01 | 0.01 / 0.02 | 175 x 195 |
| **AX4202** | 4200 | 0.01 | 0.01 / 0.02 | 175 x 195 |
| **AX5202** | 5200 | 0.01 | 0.01 / 0.02 | 175 x 195 |
| **AX2201** | 2200 | 0.1 | 0.1 / 0.2 | 175 x 195 |
| **AX4201** | 4200 | 0.1 | 0.1 / 0.2 | 175 x 195 |
| **AX8201** | 8200 | 0.1 | 0.1 / 0.2 | 175 x 195 |

(W) = incl. draft shield

**Delivery incl.** power adapter (100-240 V) and safety cover.

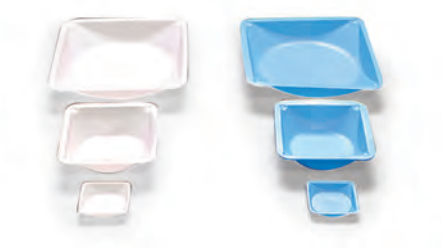
**External/internal adjustment, not calibratable**

| Model | Weighing range (g) | Pack Qty. | External adjustment, not calibratable Art. No. | € | Internal adjustment, not calibratable Art. No. | € |
|---|---|---|---|---|---|---|
| AX124 (W) | 120 | 1 | **CCE5.1** * | 1770,00 | **CCH4.1** * | 2050,00 |
| AX224 (W) | 220 | 1 | **CCE6.1** * | 1871,00 | **CCH5.1** * | 2151,00 |
| AX324 (W) | 320 | 1 | | | **CCH6.1** * | 2275,00 |
| AX223 (W) | 220 | 1 | **CCE7.1** * | 1160,00 | **CCH7.1** * | 1440,00 |
| AX423 (W) | 420 | 1 | **CCE8.1** * | 1360,00 | **CCH8.1** * | 1640,00 |
| AX523 (W) | 520 | 1 | **CCE9.1** * | 1570,00 | **CCH9.1** * | 1850,00 |
| AX422 | 420 | 1 | **EKH8.1** * | 880,00 | **EKK3.1** * | 1160,00 |
| AX822 | 820 | 1 | **EKH9.1** * | 1005,00 | **EKK4.1** * | 1285,00 |
| AX1502 | 1520 | 1 | **CCH1.1** * | 1140,00 | **CCK1.1** * | 1420,00 |
| AX2202 | 2200 | 1 | **CCH2.1** * | 1160,00 | **CCK2.1** * | 1440,00 |
| AX4202 | 4200 | 1 | **CCH3.1** * | 1355,00 | **CCK3.1** * | 1635,00 |
| AX5202 | 5200 | 1 | | | **CCK4.1** * | 1850,00 |
| AX2201 | 2200 | 1 | **EKK0.1** * | 825,00 | **EKK5.1** * | 1105,00 |
| AX4201 | 4200 | 1 | **EKK1.1** * | 1010,00 | **EKK6.1** * | 1290,00 |
| AX8201 | 8200 | 1 | **EKK2.1** * | 1110,00 | **EKK7.1** * | 1390,00 |

**Internal adjustment, calibrated ex works**

| Model | Weighing range (g) | Pack Qty. | Internal adjustment, calibrated ex works Art. No. | € |
|---|---|---|---|---|
| AX124 (W) | 120 | 1 | **EKK8.1** * | 2230,00 |
| AX224 (W) | 220 | 1 | **EKK9.1** * | 2331,00 |
| AX324 (W) | 320 | 1 | **EKL0.1** * | 2455,00 |
| AX223 (W) | 220 | 1 | **EKL1.1** * | 1620,00 |
| AX423 (W) | 420 | 1 | **EKL2.1** * | 1820,00 |
| AX523 (W) | 520 | 1 | **EKL3.1** * | 2030,00 |
| AX1502 | 1520 | 1 | **EKL4.1** * | 1600,00 |
| AX2202 | 2200 | 1 | **EKL5.1** * | 1620,00 |
| AX4202 | 4200 | 1 | **EKL6.1** * | 1815,00 |
| AX5202 | 5200 | 1 | **EKL7.1** * | 2030,00 |
| AX8201 | 8200 | 1 | **EKL8.1** * | 1570,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Rotilabo®-disposable weighing trays

Made of **PS**, antistatic. For solid and liquid substances. Resistant to diluted acids, alkalis, alcohols. Biologically inert. Temperature stable up to +80 °C.

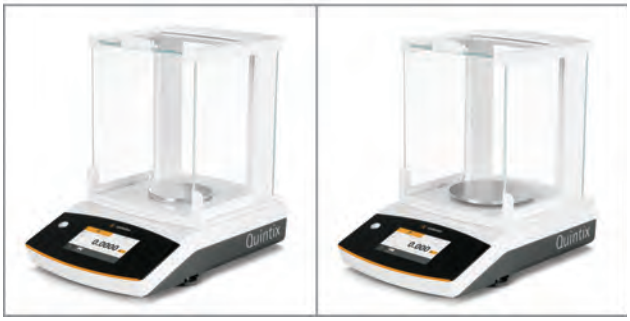
**Natural coloured, transparent**

| Volume (ml) | Length (mm) | Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 20 | 46 | 46 | 8 | **1878.2** | 500 | 25,75 |
| 100 | 85 | 85 | 24 | **1884.1** | 500 | 34,95 |
| 330 | 140 | 140 | 22 | **0875.2** | 500 | 69,70 |

**Opaque blue, ideal for white substances**

| Volume (ml) | Length (mm) | Width (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 20 | 46 | 46 | 8 | **2149.2** | 500 | 26,85 |
| 100 | 85 | 85 | 24 | **2150.1** | 500 | 39,70 |
| 330 | 140 | 140 | 22 | **2159.2** | 500 | 74,15 |




## Quintix®-series analytical and precision balances

By Sartorius.

**Applications:**

- Mixing, components, statistics, conversion, percent weighing, checking, maximum value, counting, animal weighing
- Made in Germany

**Features:**

- With isoCAL - fully automatic, temperature and time controlled internal calibration
- Touchscreen with easy menu navigation
- 10 different menu language options can be selected
- Full-sized draft shield for models with 0.0001 g / 0.001 g resolution (209 mm internal height)
- Mini USB port for automatic detection of Sartorius standard printer YDP40 (please order separately) or direct data transfer e.g. to Microsoft® Excel without additional software. Programmable data output interval
- Password protection - menu lock for protection against accidental manipulation
- Levelling feet and glass level indicator on the front
- Anti-theft device for chain or cable

**Technical specifications:**

**Semi-micro balances**

| Model | Weighing range (g) | Resolution (g) | Reproducibility/ linearity (±g) | Weighing pan ∅ (mm) |
|---|---|---|---|---|
| **35-1S / -1CEU (W)** | 30 | 0.00001 | 0.00003/0.0001 | 80 |
| **65-1S / -1CEU (W)** | 40/60 | 0.00001/ 0.00001 | 0.00002/0.0001 0.00004/0.0001 | 90 |
| **125D-1S / -1CEU (W)** | 40/60/120 | 0.00001/ 0.00001/ 0.0001 | 0.00002/0.0001 0.00004/0.0001 0.00007/0.0002 | 80 |

**Analytical and precision balances**

| Model | Weighing range (g) | Resolution (g) | Reproducibility/ linearity (±g) | Weighing pan ∅ (mm) |
|---|---|---|---|---|
| **64-1S / -1CEU (W)** | 60 | 0.0001 | 0.0001/0.0002 | 90 |
| **124-1S / -1CEU (W)** | 120 | 0.0001 | 0.0001/0.0002 | 90 |
| **224-1S / -1CEU (W)** | 220 | 0.0001 | 0.0001/0.0002 | 90 |
| **213-1S / -1CEU (W)** | 210 | 0.001 | 0.001/0.002 | 120 |
| **313-1S / -1CEU (W)** | 310 | 0.001 | 0.001/0.002 | 120 |
| **513-1S / -1CEU (W)** | 510 | 0.001 | 0.001/0.002 | 120 |
| **613-1S / -1CEU (W)** | 610 | 0.001 | 0.001/0.002 | 120 |
| **412-1S / -1CEU*** | 410 | 0.01 | 0.01/0.03 | 180 |
| **612-1S / -1CEU*** | 610 | 0.01 | 0.01/0.03 | 180 |
| **1102-1S / -1CEU*** | 1100 | 0.01 | 0.01/0.03 | 180 |
| **2102-1S / -1CEU*** | 2100 | 0.01 | 0.01/0.03 | 180 |
| **3102-1S / -1CEU*** | 3100 | 0.01 | 0.01/0.02 | 180 |
| **5102-1S / -1CEU*** | 5100 | 0.01 | 0.01/0.02 | 180 |
| **6102-1S / -1CEU*** | 6100 | 0.01 | 0.01/0.02 | 180 |
| **2101-1S / -1CEU*** | 2100 | 0.1 | 0.1/0.3 | 180 |
| **5101-1S / -1CEU*** | 5100 | 0.1 | 0.1/0.3 | 180 |
| **6101-1S / -1CEU*** | 6100 | 0.1 | 0.1/0.3 | 180 |
| **5100-1S / -1CEU*** | 5100 | 1 | 1/1 | 180 |
| **6100-1S / -1CEU*** | 6100 | 1 | 1/1 | 180 |

(W) = incl. draft shield and dust cover; * incl. protective cover for operation

**Delivery incl.** universal AC-adapter (100-240 V).

**Semi-micro balances**

| Model | Weighing range (g) | Pack Qty. | Internal adjustment, not calibratable Art. No. | € | Internal adjustment, calibrated ex works Art. No. | € |
|---|---|---|---|---|---|---|
| 35-1S / -1CEU (W) | 30 | 1 | **CNH8.1*** | 4540,00 | - | - |
| 65-1S / -1CEU (W) | 40/60 | 1 | **CNK0.1*** | 5020,00 | - | - |
| 125D-1S / -1CEU (W) | 40/60/ 120 | 1 | **CNK2.1*** | 5460,00 | **CNK3.1*** | 6030,00 |

* Longer delivery times possible. Please check with our Sales Department.

**Analytical and precision balances**

| Model | Weighing range (g) | Pack Qty. | Internal adjustment, not calibratable Art. No. | € | Internal adjustment, calibrated ex works Art. No. | € |
|---|---|---|---|---|---|---|
| 64-1S /-1CEU (W) | 60 | 1 | **AHC9.1*** | 2791,00 | **AHE0.1*** | 3210,00 |
| 124-1S / -1CEU (W) | 120 | 1 | **NN59.1*** | 3150,00 | **NN60.1*** | 3430,00 |
| 224-1S / -1CEU (W) | 220 | 1 | **NN57.1*** | 3500,00 | **NN58.1*** | 3780,00 |
| 213-1S / -1CEU (W) | 210 | 1 | **NN65.1*** | 2280,00 | **NN66.1*** | 2510,00 |
| 313-1S / -1CEU (W) | 310 | 1 | **NN63.1*** | 2460,00 | **NN64.1*** | 2680,00 |
| 513-1S / -1CEU (W) | 510 | 1 | **NN61.1*** | 2930,00 | **NN62.1*** | 3150,00 |
| 613-1S / -1CEU (W) | 610 | 1 | **AHE1.1*** | 3070,00 | **AHE2.1*** | 3290,00 |
| 412-1S / -1CEU | 410 | 1 | **AHE3.1*** | 1650,00 | | |
| 612-1S / -1CEU | 610 | 1 | **NN75.1*** | 1820,00 | **NN76.1*** | 2040,00 |
| 1102-1S / -1CEU | 1100 | 1 | **NN73.1*** | 2050,00 | **NN74.1*** | 2270,00 |
| 2102-1S / -1CEU | 2100 | 1 | **NN71.1*** | 2280,00 | **NN72.1*** | 2510,00 |
| 3102-1S / -1CEU | 3100 | 1 | **NN69.1*** | 2400,00 | **NN70.1*** | 2620,00 |
| 5102-1S / -1CEU | 5100 | 1 | **NN67.1*** | 3100,00 | **NN68.1*** | 3330,00 |
| 6102-1S / -1CEU | 6100 | 1 | **AHE5.1*** | 3340,00 | **AHE6.1*** | 3550,00 |
| 2101-1S / -1CEU | 2100 | 1 | **AHE7.1*** | 1880,00 | | |
| 5101-1S / -1CEU | 5100 | 1 | **NN77.1*** | 2100,00 | **NN78.1*** | 2330,00 |
| 6101-1S / -1CEU | 6100 | 1 | **AHE9.1*** | 2210,00 | **AHH0.1*** | 2440,00 |
| 5100-1S / -1CEU | 5100 | 1 | **NN79.1*** | 1700,00 | **NN80.1*** | 1930,00 |
| 6100-1S / -1CEU | 6100 | 1 | **AHH1.1*** | 1880,00 | **AHH2.1*** | 2100,00 |

* Longer delivery times possible. Please check with our Sales Department.




## Explorer series precision and analytical balances

By Ohaus.

**Applications:**

- Numerous balance applications (piece counting, percentage weighing, animal weighing, check weighing, batching etc.) and additional library for saving personal settings
- Various weighing units (e.g. g, mg, ct, etc.) can be set.
- High-resolution colour VGA touchscreen (145 mm diagonal) with QWERTY and block keypads
- Touchscreen display can be detached from the weighing platform (length of cable 1.5 m)

**Equipment:**

- Metal housing, ABS upper housing shell and stainless steel weighing pan
- All models have fully automatic time and temperature controlled internally calibrated (AutoCal)
- Full-sized draft shield for models with 0.0001 g and 0.001 readability (inside height 230 mm)
- Multifunctional sensors for non-contact operation - e.g. contactless control of the zero/tare function to avoid specimen residues on the keypad. Two sensors on the platform and two on the display are independently adjustable.
- With USB and RS 232 communication ports
- Integrated weighing hook on underside of balance and illuminated spirit level on the front

**Technical specifications:**

| Model | Weighing range (g) | Resolution (g) | Reproducibility/ linearity (±g) | Weighing pan (mm) |
|---|---|---|---|---|
| **EX124/AD (W)** | 120 | 0.0001 | 0.0001 / 0.0002 | ∅ 90 |
| **EX224/AD (W)** | 220 | 0.0001 | 0.0001 / 0.0002 | ∅ 90 |
| **EX324/AD (W)** | 320 | 0.0001 | 0.0001 / 0.0002 | ∅ 90 |
| **EX423 (W)** | 420 | 0.001 | 0.001 / 0.002 | ∅ 130 |
| **EX1103 (W)** | 1100 | 0.001 | 0.001 / 0.002 | ∅ 130 |
| **EX4202** | 4200 | 0,01 | 0,01 / 0,02 | 190 x 200 |
| **EX10202** | 10200 | 0,01 | 0,01 / 0,02 | 190 x 200 |
| **EX10201** | 10200 | 0,1 | 0,1 / 0,1 | 190 x 200 |

(W) = incl. draft shield

**Delivery incl.** mains adapter and protective display cover.

**Standard models**

| Model | Weighing range (g) | Pack Qty. | Internal adjustment, not calibratable Art. No. | € | Internal adjustment, calibrated ex works Art. No. | € |
|---|---|---|---|---|---|---|
| EX224 (W) | 220 | 1 | **PX41.1** * | 3515,00 | **PX48.1** * | 3740,00 |
| EX324 (W) | 320 | 1 | **PX42.1** * | 4010,00 | **PX49.1** * | 4235,00 |
| EX423 (W) | 420 | 1 | **PX43.1** * | 2925,00 | **PX50.1** * | 3130,00 |
| EX1103 (W) | 1100 | 1 | **PX44.1** * | 4275,00 | **PX51.1** * | 4480,00 |
| EX4202 | 4200 | 1 | **PX45.1** * | 2895,00 | **PX52.1** * | 3080,00 |
| EX10202 | 10200 | 1 | **PX46.1** * | 3995,00 | **PX53.1** * | 4180,00 |
| EX10201 | 10200 | 1 | **PX47.1** * | 2645,00 | **PX54.1** * | 2830,00 |

* Longer delivery times possible. Please check with our Sales Department.

**Models with Auto door function**

Including automatic, side-opening doors. Can be controlled by means of a non-contact sensor. Draft shield cover folding or sliding.

| Model | Weighing range (g) | Pack Qty. | Internal adjustment, not calibratable Art. No. | € | Internal adjustment, calibrated ex works Art. No. | € |
|---|---|---|---|---|---|---|
| EX124/AD (W) | 120 | 1 | **APA8.1** * | 3905,00 | | |
| EX224/AD (W) | 220 | 1 | **APA9.1** * | 4290,00 | **APC2.1** * | 4515,00 |
| EX324/AD (W) | 320 | 1 | **APC0.1** * | 4785,00 | **APC3.1** * | 5010,00 |

* Longer delivery times possible. Please check with our Sales Department.



## ABT-series semi-microbalances

By Kern.

**Application:**

- Programs: Piece counting, percentage weighing and recipes
- Different filter settings possible
- LCD-display with capacity display
- Different weighing units can be set, e.g. mg, g, ct

**Features**

- Monolithic weighing technology
- With internal automatic adjustment: that is dependent on time, temperature or individual per keystrokes
- RS 232-interface
- Stainless steel weighing platform
- Overall dimensions of balances incl. windbreak: W 217 x D 356 x H 338 mm
- All glass windbreak (inner height 223 mm)

**Technical specifications:**

| Model | Weighing range (g) | Readability (g) | Reproducibility/Linearity (±g) | Platform (mm) |
|---|---|---|---|---|
| **ABT 120-5DNM (W)** | 42 / 120 | 0.00001 / 0.0001 | 0.00002 / 0.00003 0.0001 / 0.0002 | ∅ 80 |

(W) = incl. windbreak

**Delivery incl.** work protection cover for display.

| Model | Weighing range (g) | Pack Qty. | Not calibratable Art. No. | € | Calibrated ex works Art. No. | € |
|---|---|---|---|---|---|---|
| ABT 120-5DNM (W) | 42/120 | 1 | **HL85.1** * | 2120,00 | **HL86.1** * | 2320,00 |

* Please check with our Sales Department for delivery period of this product. .



## Secura®-series analytical and precision balances

By Sartorius.

**Applications:**

- Mixing, components, statistics, conversion, percent weighing, checking, maximum value, counting, animal weighing
- Made in Germany

**Features:**

- With isoCAL - internal calibration is performed automatically in a time or temperature controlled manner and after levelling
- Touchscreen optimised for users in the pharmaceuticals laboratory
- **Optoelectronic levelling sensor with interactive user guidance** (if the sensor detects deviations, the risk is indicated immediately and a specific help text is displayed)
- 10 different menu language options can be selected
- Full-sized draft shield for models with 0.0001 g / 0.001 g resolution (209 mm internal height)
- Three configurable safety levels
- Mini USB port for automatic detection of Sartorius standard printer YDP40 (please order separately) or direct data transfer e.g. to Microsoft® Excel without additional software. Programmable interval for data output
- Storage of completed calibration cycles incl. detected deviation

**APC functions (Advanced Pharma Compliance) are possible:**

- Monitoring of minimum sample weight according to USP
- Blocking of data transfer to printer or computer in case of uncertain weighing results, e.g. unlevelled balance etc.

**Please note:**

Activation of the APC functions by a separate service.
If this service is desired, additional costs apply. Please ask our sales staff.

**Technical specifications:**

**Semi-micro balances**

| Model | Weighing range (g) | Resolution (g) | Reproducibility/ linearity (±g) | Weighing pan ∅ (mm) |
|---|---|---|---|---|
| **125-1S / -1CEU (W)** | 60/120 | 0.00001/ 0.00001 | 0.00002/0.0001 0.00004/0.0001 | 80 |
| **225D-1S / -1CEU (W)** | 60/120/220 | 0.00001/ 0.00001/ 0.0001 | 0.00002/0.0001 0.00004/0.0001 0.00007/0.0002 | 80 |

**Precision balances**

| Model | Weighing range (g) | Resolution (g) | Reproducibility/ linearity (±g) | Weighing pan ∅ (mm) |
|---|---|---|---|---|
| **124-1S / -1CEU (W)** | 120 | 0.0001 | 0.0001/0.0002 | 90 |
| **224-1S / -1CEU (W)** | 220 | 0.0001 | 0.0001/0.0002 | 90 |
| **213-1S / -1CEU (W)** | 210 | 0.001 | 0.001/0.002 | 120 |
| **313-1S / -1CEU (W)** | 310 | 0.001 | 0.001/0.002 | 120 |
| **513-1S / -1CEU (W)** | 510 | 0.001 | 0.001/0.002 | 120 |
| **613-1S / -1CEU (W)** | 610 | 0.001 | 0.001/0.002 | 120 |
| **612-1S / -1CEU*** | 610 | 0.01 | 0.01/0.02 | 180 |
| **1102-1S / -1CEU*** | 1100 | 0.01 | 0.01/0.02 | 180 |
| **2102-1S / -1CEU*** | 2100 | 0.01 | 0.01/0.02 | 180 |
| **3102-1S / -1CEU*** | 3100 | 0.01 | 0.01/0.02 | 180 |
| **5102-1S / -1CEU*** | 5100 | 0.01 | 0.01/0.02 | 180 |
| **6102-1S / -1CEU*** | 6100 | 0.01 | 0.01/0.02 | 180 |

(W) = incl. draft shield and dust cover; * incl. protective cover for operation

**Delivery incl.** universal AC-adapter (100-240 V).

**Semi-micro balances**

| Model | Weighing range (g) | Pack Qty. | Internal adjustment, not calibratable Art. No. | € | Internal adjustment, calibrated ex works Art. No. | € |
|---|---|---|---|---|---|---|
| 125-1S / -1CEU (W) | 60/120 | 1 | **CNK4.1*** | 6130,00 | **CNK5.1*** | 6710,00 |
| 225D-1S / -1CEU (W) | 60/120/220 | 1 | **CNK6.1*** | 6470,00 | **CNK7.1*** | 7050,00 |

**Analytical and precision balances**

| Model | Weighing range (g) | Pack Qty. | Internal adjustment, not calibratable Art. No. | € | Internal adjustment, calibrated ex works Art. No. | € |
|---|---|---|---|---|---|---|
| 124-1S / -1CEU (W) | 120 | 1 | **NN83.1*** | 3930,00 | **NN84.1*** | 4210,00 |
| 224-1S / -1CEU (W) | 220 | 1 | **NN81.1*** | 4360,00 | **NN82.1*** | 4640,00 |
| 213-1S / -1CEU (W) | 210 | 1 | **NN89.1*** | 2840,00 | **NN90.1*** | 3120,00 |
| 313-1S / -1CEU (W) | 310 | 1 | **NN87.1*** | 3020,00 | **NN88.1*** | 3230,00 |
| 513-1S / -1CEU (W) | 510 | 1 | **NN85.1*** | 3660,00 | **NN86.1*** | 3870,00 |
| 613-1S / 1CEU (W) | 610 | 1 | **AHH3.1*** | 3790,00 | **AHH4.1*** | 4090,00 |
| 612-1S / 1CEU | 610 | 1 | **AHH5.1*** | 2340,00 | **AHH6.1*** | 2560,00 |
| 1102-1S / -1CEU | 1100 | 1 | **NN97.1*** | 2550,00 | **NN98.1*** | 2770,00 |
| 2102-1S / -1CEU | 2100 | 1 | **NN95.1*** | 2780,00 | **NN96.1*** | 3000,00 |
| 3102-1S / -1CEU | 3100 | 1 | **NN93.1*** | 2960,00 | **NN94.1*** | 3170,00 |
| 5102-1S / -1CEU | 5100 | 1 | **NN91.1*** | 3820,00 | **NN92.1*** | 4050,00 |
| 6102-1S / -1CEU | 6100 | 1 | **AHH7.1*** | 4070,00 | **AHH8.1*** | 4280,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Hygrometer







## Semi-micro balances and analytical balances, GR-series

By A & D.

**Application:**
- Percent, counting
- Selectable weight units: g, mg, ct

**Features:**
- With internal automatic calibration function which adapts to changes of temperature
- Automatic adaptation to ambient conditions
- **Door opening system** allows the user to open the left or right hand side of the weighing chamber from the front of the balance. For easy access with only one hand free.
- Full-sized draft shield (internal height 215 mm)
- Data storage function for storing 200 units of weighing data for output to PC. Windows-compatible software (for direct readout of data, e.g. in Excel), available for download free of charge.
- Interval storage mode (measuring cycle: 2 sec, 5 sec, 10 sec, 30 sec, 1 min, 2 min, 5 min or 10 min
- With RS 232 data port
- Spirit level on the front
- Five-year warranty

**Technical specifications:**

| Models | Weighing range (g) | Resolution (g) | Reproducibility/ linearity (±g) | Weighing pan ∅ (mm) |
|---|---|---|---|---|
| **GR-202 (W)** | 42<br>210 | 0.00001/<br>0.0001 | 0.00002 / 0.00003<br>0.0001 / 0.0001 | 85 |
| **GR-120 (W)** | 120 | 0.0001 | 0.0001 / 0.0002 | 85 |
| **GR-200 (W)** | 210 | 0.0001 | 0.0001 / 0.0002 | 85 |
| **GR-300 (W)** | 310 | 0.0001 | 0.0002 / 0.0003 | 85 |

(W) = incl. draft shield

**Delivery incl.** AC-adapter.

| Model | Weighing range (g) | Pack Qty. | Internal calibration Art. No. | € |
|---|---|---|---|---|
| GR-202 (W) | 42/210 | 1 | **CTH0.1** * | 3606,65 |
| GR-120 (W) | 120 | 1 | **CTH1.1** * | 2365,00 |
| GR-200 (W) | 210 | 1 | **CTH2.1** * | 2477,90 |
| GR-300 (W) | 310 | 1 | **CTH3.1** * | 3230,40 |

* Longer delivery times possible. Please check with our Sales Department.

## MB Basic-series hygrometers

By Ohaus.

**Features on both models**
- Illuminated display
- RS 232 interface
- 2 selectable switch-off criteria: automatic or time-controlled
- Display: % moisture or weight value as well as temperature and time

**Model MB 23**
- Heater: Infrared heating system

**Delivery incl.** protective cover. If you want a holder for sample bowls, please order separately.

**Model MB 25**
- Heater: halogen heating system

**Delivery incl.** protective cover and holder for sample bowls.

**Technical specifications:**

| Model | MB 23 | MB 25 |
|---|---|---|
| Weighing range | 110 g | |
| Temperature range | 50 to 160 °C (5 °C increments) | |
| Heating technology | Infrared (no glass) | Halogen |
| Readability | 0.1 % /0.01 g | 0.05 % /0.005 g |
| Reproducibility | 0.3 % (3 g sample)<br>0.2 % (10 g sample) | 0.2 % (3 g sample)<br>0.05 % (10 g sample) |
| Time settings | 1 to 99 min<br>(30 sec increments to 60 min) | |
| Weighing pan | ∅ 90 mm | |
| Scope of samples | Typically 3 to 20 g, min. 0.5 g | |
| Dimensions (W x D x H) | 165 x 283 x 132 mm | |
| Weight | 2.3 kg | |
| Power connection | 100 to 240 V, 50/60 Hz | |

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MB 23 | **KT40.1** * | 1 | 1029,00 |
| MB 25 | **KT41.1** * | 1 | 1440,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Accessories for MB Basic series hygrometers

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Aluminium disposable sample trays, ∅ 90 x H 7 mm | **X837.1** | 80 | 30,00 |
| Holder for sample bowls for Model MB 23 | **KT42.1** | 1 | 40,00 |
| Glass fibre filter, ∅ 90 mm | **X838.1** | 200 | 44,00 |
| Calibration weight 50 g, F1 | **N006.1** | 1 | 39,60 |
| Temperature calibration set | **X840.1** * | 1 | 299,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Hygrometer



## DAB 100-3 moisture analyser

By Kern.
**Features:**
- Backlight display: % humidity, % dry matter or weight loss in g
- Heat source: Halogen quartz glass heater
- Switch-off criteria:
  - Automatic switch-off (2 mg weight loss in 45 sec)
  - Scheduled switch-off (3 min up to 99 hrs 59 min in 10 sec intervals)
  - Manual switch-off by pressing a button
- Drying modes: Standard, gentle and quick drying
- Internal memory for automatic execution of 15 drying processes and five memory spaces for test results
- RS 232 data port
- Sample viewing window

**Technical specifications:**

| | |
|---|---|
| Weighing range | 110 g |
| Temperature range | 40 to 199 °C (1 °C increments) |
| Readability | 0.01 %/0.001 g |
| Reproducibility | 0.05 % (5 g sample)<br>0.02 % (10 g sample) |
| Time range | 3 min up to 99 hrs, 59 min |
| Weighing pan | ∅ 92 mm |
| Dimensions (W x D x H) | 240 x 365 x 180 mm |
| Weight | 4.82 kg |
| Power supply | 220 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EEK2.1** | 1 | 1050,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Disposable aluminium sample pans, 90 mm | **YY18.1** | 80 | 60,00 |
| Glass fibre filter, ∅ 90 mm | **X838.1** | 200 | 44,00 |
| Calibration weight 100 g, F1 | **N007.1** | 1 | 44,00 |



## Hygrometer DBS 60-3

By Kern.
**Equipment:**
- Displays: % humidity, % dry matter, ATRO % or weight loss in g
- Heat source: halogen quartz glass heater
- Switch-off criteria:
  **AUTO** = drying stops if the set weight loss remains constant for 30 s
  **TIME** = drying stops on expiration of the set time
  **Manual** = stop button
- Drying modes: standard drying, phase drying, soft drying, activatable preheating phase and rapid drying
- Internal memory for automatic execution of 10 drying programs and 100 drying processes carried out
- RS 232 data port
- Sample code for up to 99 samples, 2-digit, freely programmable
- Date and time display
- Specimen viewing window

**Technical specifications:**

| | |
|---|---|
| Weighing range | 60 g |
| Temperature range | 50 to 200 °C (1 °C increments) |
| Readability | 0.01 % / 0.001 g |
| Reproducibility | 0.15 % (2 g specimen)<br>0.02 % (10 g specimen) |
| Time range | 1 min to 12 h |
| Weighing pan | ∅ 95 mm |
| Dimensions (W x D x H) | 202 x 336 x 157 mm |
| Weight | 4.2 kg |
| Power supply | 220 to 240 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TE06.1** | 1 | 1270,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Disposable aluminium sample pans, 90 mm | **YY18.1** | 80 | 60,00 |
| Glass fibre filter, ∅ 90 mm | **X838.1** | 200 | 44,00 |
| Calibration weight 50 g, F1 | **N006.1** | 1 | 39,60 |
| Temperature calibration set | **TE07.1** | 1 | 450,00 |

# Hygrometer



## Hygrometer MA35M

By Sartorius. For the determination of moisture content in organic and inorganic substances, e.g. in greases, oils, foodstuffs, building materials, wood or paper. For use in chemistry, pharmaceutics, medicine, environmental analytics or in sewage treatment plants.

**Equipment:**
- Heat source: infrared lamp
- RS 232 data port
- Display: % moisture content, % dry matter (residue), ATRO % or in weight values
- 2 selectable switch-off criteria: time controlled and automatic switch-off options (moisture determination ends if no significant weight loss is detected)
- A 30 g calibration weight is required for calibration of the moisture analyzer (please order separately)
- **With window for observation of the sample material**

**Technical specifications:**

| | |
|---|---|
| Weighing range | 35 g |
| Temperature range | 40 to 160 °C (1 °C increments) |
| Readability | 0.01 % / 0.001 g |
| Reproducibility | 0.20 % (1 g specimen)<br>0.05 % (5 g specimen) |
| Time range | 0.1 to 99 min |
| Weighing pan | 90 mm |
| Dimensions (W x D x H) | 224 x 366 x 191 mm |
| Weight | 5.8 kg |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** sample pan holder.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NT00.1** | 1 | 2340,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Calibration weight 20 g, F1 | **N005.1** | 1 | 36,30 |
| Calibration weight 10 g, F1 | **N004.1** | 1 | 34,00 |
| Aluminium disposable sample trays, ∅ 90 x H 7 mm | **X837.1** | 80 | 30,00 |
| Glass fibre filter, ∅ 90 mm | **X838.1** | 200 | 44,00 |



## MB-series moisture analyser

By Ohaus.

**Features of both models**
- Halogen heating technology
- 4.3″, QVGA, TFT touchscreen and 4 mechanical buttons
- Display results: % moisture, % solids, % moisture absorption, time, temperature, weight, method name
- 13 operating languages
- RS 232, USB host, USB device

**Model MB90**
- 3 switch-off criteria (manual, time-controlled or automatic)
- Storage of up to 2 methods and 100 test results for each method
- 2 heating profiles (standard and fast)

**Model MB120**
- 7 switch-off criteria (manual, time-controlled, AutoFree selectable %/s, AutoFree selectable mg/s, A30, A60 and A90)
- Storage of up to 100 methods and 1000 test results for each method
- 4 heating profiles (standard, fast, gentle/ramp and gradual)

**Technical specifications:**

| Model | MB90 | MB120 |
|---|---|---|
| Weighing range (g) | 90 | 120 |
| Temperature range (°C) | 40 to 200 (1 °C increments) | 40 to 230 (1 °C increments) |
| Readability | 0.01 %/0.001 g | |
| Reproducibility | 0.18 % (3 g sample)<br>0.02 % (10 g sample) | 0.05 % (3 g sample)<br>0.015 % (10 g sample) |
| Time setting (h) | 48 | |
| Weighing pan (mm) | 90 | |
| Dimensions W x H x D (mm) | 210 x 180 x 350 | |
| Weight (kg) | 5.23 | |
| Power supply | 100 or 240 V, 50/60 Hz | |

**Delivery incl.** work protection cover and stainless steel sample tray holder.

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MB90 | **HAP1.1** * | 1 | 2320,00 |
| MB120 | **HAP2.1** * | 1 | 3450,00 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| Aluminium disposable sample trays, ∅ 90 x H 7 mm | **X837.1** | 80 | 30,00 |
| Glass fibre filter, ∅ 90 mm | **X838.1** | 200 | 44,00 |
| Calibration weight 50 g, F1 | **N006.1** | 1 | 39,60 |

# Test weights



## Balance table

For analytical laboratories. Absorbs oscillations and vibrations which would otherwise falsify weighing results. Workbench with aluminium profile frame and height-adjustable feet. Polished marble slab (36 kg) as integrated worktop, mounted on absorbent rubber elements.
Balance plate dimensions: W 267 x D 405 x H 120 mm.
Outer dimensions fully assembled: W 770 x D 650 x H 815 mm.
Overall weight approx. 55 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AEP0.1** * | 1 | 990,00 |

* Longer delivery times possible. Prices do not include transport costs. Please check with our Sales Department.




## Test weights OIML-Class M1

Finely turned brass.
**Delivery incl.** case. With or without DAkkS calibration certificate.

| | | | Without certificate | | With certificate | |
|---|---|---|---|---|---|---|
| Weight (g) | Tolerance (±mg) | Pack Qty. | Art. No. | € | Art. No. | € |
| 50 | 3 | 1 | **EX28.1** | 11,00 | **EX35.1** | 28,10 |
| 100 | 5 | 1 | **EX29.1** | 12,90 | **EX36.1** | 31,60 |
| 200 | 10 | 1 | **EX30.1** | 16,95 | **EX37.1** | 35,35 |
| 500 | 25 | 1 | **EX31.1** | 34,55 | **EX38.1** | 51,95 |
| 1000 | 50 | 1 | **EX32.1** | 51,00 | **EX39.1** | 69,45 |
| 2000 | 100 | 1 | **EX33.1** | 87,90 | **EX40.1** | 99,60 |
| 5000 | 250 | 1 | **EX34.1** | 175,00 | **EX41.1** | 197,00 |




## Ioniser for balances

By Kern. Suitable for neutralising static charge. Non-conductive samples, e.g. plastic, porcelain, glass etc. is often statically charged. The resultant electromagnetic field between the sample and balance can falsify the weighing result.

- For weighings in the milligramme range or finer
- Blower can be switched on and off
- Suitable as benchtop unit or hand-held unit

**Technical specifications:**

| | |
|---|---|
| "Sample - ion source" distance | approx. 5 to 50 cm |
| Discharge time | 8 s/5 cm, 12 s/10 cm, 100 s/50 cm (with the blower switched on) |
| Max. air volume | 0.06 $cm^3$/min |
| Dimensions (W x D x H) | 95 x 30 x 57 mm |
| Weight | Ioniser 110 g, rack 430 g |
| Power supply | 110 to 230 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CET5.1** * | 1 | 940,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Set of weights OIML-Class M1

Made of finely cut copper.
**Delivery incl.** wooden box. With or without DAkkS calibration certificate.

| | | | Without certificate | | With certificate | |
|---|---|---|---|---|---|---|
| Weights from-to (g) | Number of weights | Pack Qty. (set) | Art. No. | € | Art. No. | € |
| 1-100 | 9 | 1 | **Y121.1** | 100,00 | **Y122.1** * | 152,00 |
| 1-500 | 12 | 1 | **Y123.1** | 158,00 | **Y124.1** * | 226,00 |
| 1-2000 | 15 | 1 | **Y125.1** | 430,00 | **Y126.1** * | 519,00 |

* Please check with our Sales Department for delivery period of this products.

## Set of weights OIML-Class M2

Made of finely cut copper.
**Delivery incl.** wooden box. With or without DAkkS calibration certificate.

| | | | Without certificate | | With certificate | |
|---|---|---|---|---|---|---|
| Weights from-to (g) | Number of weights | Pack Qty. (set) | Art. No. | € | Art. No. | € |
| 1-50 | 8 | 1 | **Y127.1** | 76,00 | **Y128.1** * | 120,00 |
| 1-100 | 9 | 1 | **Y129.1** | 86,00 | **Y130.1** * | 138,00 |
| 1-500 | 12 | 1 | **Y131.1** | 153,00 | **Y132.1** * | 227,00 |
| 1-1000 | 13 | 1 | **Y133.1** | 240,00 | **Y134.1** * | 320,00 |
| 1-2000 | 15 | 1 | **Y135.1** | 390,00 | **Y136.1** * | 486,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Test weights



## Test weights OIML-Class F1

For checking masses acc. to ISO 9000. Brass nickel-plated.
For adjusting (= calibrating) and checking laboratory balances.
**Delivery incl.** case, with or without DAkkS calibration certificate.

| | | | Without certificate | | With certificate | |
|---|---|---|---|---|---|---|
| Weight (g) | Tolerance (±mg) | Pack Qty. | Art. No. | € | Art. No. | € |
| 1 | 0,10 | 1 | **N001.1** | 27,50 | **N151.1** | 48,50 |
| 2 | 0,12 | 1 | **N002.1** | 28,60 | **N152.1** | 50,00 |
| 5 | 0,15 | 1 | **N003.1** | 31,00 | **N153.1** | 51,95 |
| 10 | 0,2 | 1 | **N004.1** | 34,00 | **N154.1** | 55,50 |
| 20 | 0,25 | 1 | **N005.1** | 36,30 | **N155.1** | 57,70 |
| 50 | 0,3 | 1 | **N006.1** | 39,60 | **N156.1** | 60,60 |
| 100 | 0,5 | 1 | **N007.1** | 44,00 | **N157.1** | 67,65 |
| 200 | 1,0 | 1 | **N008.1** | 59,40 | **N158.1** | 81,90 |
| 500 | 2,5 | 1 | **N009.1** | 82,50 | **N159.1** | 101,00 |
| 1000 | 5 | 1 | **N010.1** | 119,00 | **N160.1** | 138,00 |
| 2000 | 10 | 1 | **N011.1** | 161,00 | **N161.1** | 201,00 |



## Test weights OIML-Class E2

Made of corrosion-proof, antimagnetic stainless steel. High-polished.
Ideal for adjusting analytical balances.
**Delivery incl.** individual wooden boxes (velvet lined),
with or without DAkkS calibration certificate.

| | | | Without certificate | | With certificate | |
|---|---|---|---|---|---|---|
| Weight (g) | Tolerance (±mg) | Pack Qty. | Art. No. | € | Art. No. | € |
| 20 | 0.08 | 1 | **Y113.1** * | 93,00 | **Y114.1** * | 119,00 |
| 50 | 0.10 | 1 | **Y115.1** * | 104,00 | **Y116.1** * | 130,00 |
| 100 | 0.15 | 1 | **Y117.1** * | 110,00 | **Y118.1** * | 145,00 |
| 200 | 0.30 | 1 | **Y119.1** * | 132,00 | **Y120.1** * | 165,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Sets of weights OIML class F1

Made of polished and nickel-plated brass.
**Delivery incl.** wooden case. With or without DAkkS calibration certificate.

| | | | Without certificate | | With certificate | |
|---|---|---|---|---|---|---|
| Weights from-to (g) | Number of weights | Pack Qty. (set) | Art. No. | € | Art. No. | € |
| 1-50 | 8 | 1 | **YP77.1** | 310,00 | **YP82.1** | 380,00 |
| 1-100 | 9 | 1 | **YP78.1** | 350,00 | **YP83.1** | 433,00 |
| 1-200 | 11 | 1 | **YP79.1** | 435,00 | **YP84.1** | 541,00 |
| 1-500 | 12 | 1 | **YP80.1** | 560,00 | **YP85.1** | 677,00 |
| 1-1000 | 13 | 1 | **YP81.1** | 660,00 | **YP86.1** | 786,00 |

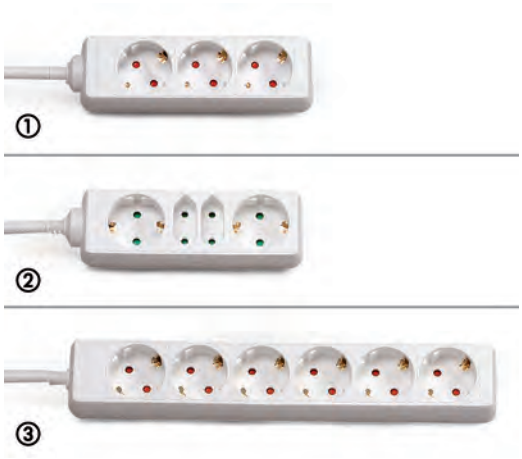


## Sets of weights OIML-Class E2

All milligram weights are in wafer form. 1 to 5 mg made of aluminium,
10 to 500 mg made of nickel silver.
**Delivery incl.** plastic case, with or without DAkkS calibration certificate.

| | | | Without certificate | | With certificate | |
|---|---|---|---|---|---|---|
| Weights from-to (mg) | Number of weights | Pack Qty. (set) | Art. No. | € | Art. No. | € |
| 1-500 | 12 | 1 | **YP75.1** | 320,00 | **YP76.1** | 525,00 |

# Multiple socket outlets




## Type Eco multiple socket outlets

Cable length 1.4 m. Power supply 250 V~, max. 3600 W, 16A.

① **3 way socket outlet** with inverted cups.
Dimensions: W 100 x H 60 x L 200 mm.

② **2+2-way socket outlet** with 2 European standard sockets and 2 PE sockets.
Dimensions: W 70 x H 50 x L 200 mm

③ **6-way socket outlet** with inverted cups.
Dimensions: W 75 x H 60 x L 345 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① 3-way | **XK32.1** | 1 | 8,55 |
| ② 2 + 2-way | **XK33.1** | 1 | 8,75 |
| ③ 6-way | **XK34.1** | 1 | 11,75 |



NEU NOUVEAU NEW

## Socket strips Eco-line, 3-way with switch

Inclined socket arrangement. Illuminated for safety, 2-pole on/off switch.
Dimensions: W 240 x D 100 x H 65 mm. Max. 3500 W, 16 A.
Power supply 230 V.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Cable length 3 m | **HHN0.1** | 1 | 10,45 |
| Cable length 5 m | **HHN1.1** | 1 | 15,00 |



## Socket strips

Made of highly breakproof special plastic. Inclined plug contacts enable 4/6 right-angle plugs to be used simultaneously. Integrated on/off switch indicates whether operational. With practical device for winding up and storing cable after use. Can also be attached to wall. Wall attachment device incl. With 2 m cable (4-way strip) and 3 m cable (6-way strip). Colour anthracite/bordeaux.

| Design | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4-way socket strip | approx. 320 | **E757.1** | 1 | 15,20 |
| 6-way socket strip | approx. 410 | **E758.1** | 1 | 22,15 |



## Socket strips 6-way

**With surge and high-voltage protection.**
Protects working appliances from destruction by surges, indirect lightning or spikes in the network up to 4500 A, e.g. by passing the current through inductive load resistors. Inclined plug contacts for up to 6 central and right-angle plugs. Suitable for appliances to max 16 A or 3680 W maximum load. 2-pole on/off switch with pilot light.1.5 m cable H05 VV-F 3G1,0. Shockproof plug 16 A, 230 V.
**Delivery incl.** brackets for wall attachment.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| black | **P685.1** | 1 | 24,75 |
| light grey | **P686.1** | 1 | 24,75 |



NEU NOUVEAU NEW

## Socket strips, 4-way, IP44

Also for use outdoors. With self-closing lids, degree of protection IP 44. Approx. 2 m rubber/neoprene connection cable. Screw hole for fastening. W 410 x D 100 x H 50 mm. Max. 3680 W, 16 A. Power supply 250 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HHN7.1** | 1 | 16,10 |



## IP54-Socket block for 5 plugs

For heavy-duty applications and outdoor use. Splash-proof (IP 54). Shockproof and breakproof plastic enclosure. Connection with **RCCB-socket (residual current circuit breaker)** 30 mA protects against dangerous electrical accidents. Illuminated 2-pin on/off switch with protective lid. 5 splashproof sockets with gasket ring and self-closing flap lid for protection against dirt, in compliance with VDE. Sockets in 45°-array. Cord length 5 m. Dimensions: L 480 x W 80 x H 62 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KP32.1** | 1 | 50,70 |



## Current distributor with 4 x socket output

With shockproof plug. Made of a highly breakproof special plastic. With 3 m power cable (rolled up in housing). Very flat (height 60 mm), ∅ 180 mm. Colour black/white.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E759.1** | 1 | 13,80 |



NEU
NOUVEAU
NEW

## Socket outlet, 4-way with USB charging function

Made of aluminium. For connecting and switching units directly on the table. Protective contact socket outlets in 45° arrangement.
2 USB charging sockets. (Total charging current max. 2100 mA).
Safety switch illuminated, 2-pole on/off switch. Cable length: 1.8 m.
Dimensions: W 377 x D 150 x H 95 mm.
Max. 3500 W, 16 A. Power supply 230 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HHN2.1** | 1 | 36,45 |



Programme extension!

## Safety cable reel

With automatic overheating and accident protection system. Current is out of at +55 °C and red control lamp flashes. Wattage 220 V/4 A. Designed for max. 3500 W when cable is rolled out. With 4 grounded socket outlets and cable with shockproof plug. Dimensions: H 230 x D 105 mm, ∅ 190 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Length of cord 5 m | **HHN3.1** | 1 | 20,65 |
| Length of cord 10 m | **4687.1** | 1 | 25,80 |

# Time switches



## Extension leads

PVC-sheathed flexible cord. With shockproof plug.

| Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 3 | **Y203.1** | 1 | 12,40 |
| 5 | **Y204.1** | 1 | 17,75 |



## Time switch

Mechanical and has daily cycle with 96 switching modes. Simple to programme. Shortest switching interval 15 min. accurately synchronized with the power outlet. Working temperature -10 to +55 °C.
Max. load 3500 W. Dimensions: H 145 x W 74 x D 39 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A405.1** | 1 | 19,90 |



## Plug time switch

Mechanical. Has a weekly cycle (7 x 24 h).
Shortest switching interval is 2 hours. Simple programming (every 2 h) with manual switch. With 84 switching modes.
With switching status indicator. Max. load 3500 W.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C536.1** | 1 | 29,35 |



## Plug time switch with storage capacity for 20 switching modes

Shortest indexing time 1 min, every minute programmable.
Battery reserve: 3 years. 20 slots (10 in, 10 out). 7-day indexing program with block structure: Daily blocks (Mon-Sun., Mon-Sat, Mon-Fri, Sat-Sun, individual days). Manual changeover between summer/winter time, 12/24 hr mode. An engageable random generator delays the indexing commands by up to 30 minutes. Permissible ambient temperature: -10 to +50 °C. Switching power 16 A. Electrical supply 230 V / 50/60 Hz.
**Delivery without** batteries. A CR 2032 (3 V) round cell battery is required for operation. Please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CH61.1** | 1 | 46,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |



## Time switch with thermo sensor

Enables time or temperature controlled switching. Operational in time mode, temperature mode or both modes simultaneously.
**Time mode** provides 3 possible on/off periods every 24-hours.
**Thermostat mode** automatically switches the connected device on when a preset temperature has not been attained.

**Technical specifications:**

| | |
|---|---|
| Ideal for temperatures | 0 to +40 °C |
| Accuracy | ±1 °C |
| Sensor cable | 1 m |
| Max. load | up to 3500 W |
| Dimensions (H x W x D) | 130 x 55 x 55 mm |
| Weight | 250 g |

**Delivery incl**. battery Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C012.1** | 1 | 48,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## One-hour signal timers

In plastic housing. With spring drive. When the set time has elapsed, a discreet but easily audible bell signal sounds.
Dimensions: W 70 x D 40 x H 70 mm. Weight approx. 108 g.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **KN85.1** | 1 | 7,50 |
| white/red | **KN86.1** | 1 | 7,50 |
| white/black | **KN87.1** | 1 | 7,50 |
| white/yellow | **KN88.1** | 1 | 7,50 |




## Rotilabo®-count-down/count-up timer

4-digit LCD display for minute and second. Programmable for 99 min, 59 sec. Timer memory function. Alarm when "0" reached. With magnet for affixing. Rubberised coating. Dimensions: ∅ 55 x D 15 mm. Weight 80 g.
**Delivery incl.** 1.5 V button cell battery.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| red | **LY66.1** | 1 | 10,70 |
| white | **LY65.1** | 1 | 10,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## One-hour signal timer

Stainless steel housing, plastic coating. Shows remaining time in colour. Ringing signal once the time has elapsed. Metal winding movement. Magnetic holder. Dimensions: ∅ 79 x D 32 mm. Weight 118 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EEC7.1** | 1 | 11,30 |




## Rotilabo®-count-down-timer

4-digit LCD display for minutes and seconds. Programmable for 99 min, 59 sec. Alarm signal at '0'. Timer memory function. Clip for hanging or standing on desktop, magnet. Dimensions: 88 x 46 x 12 mm, weight 30 g.
**Delivery incl.** cell battery 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X396.1** | 1 | 9,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## Two-hour signal timer

Spring movement. Made of plastic. A clearly audible bell ring signals the end of the preset time. Can be attached to wall.
Dimensions: W 69 x D 69 x H 40 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N022.1** | 1 | 8,85 |

# Timers



## Rotilabo®-count-down-timer

4-digit LCD display for minutes and seconds. Programmable for 99 min, 59 sec. Alarm signal at '0'. Timer memory function. With clip for hanging and standing, magnet. Dimensions: W 66 x D 56 x H 18 mm, weight 45 g.
**Delivery incl.** battery Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X398.1** | 1 | 11,25 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Count-down/count-up timer

Direct numerical input via numerical keypad. Maximum runtime 99 h, 99 min and 99 sec. With On/Off switch to conserve batteries and folding stand. Audio signal at "zero".
Dimensions: W 66 x D 20 x H 108 mm. Weight 67 g.
**Delivery incl.** 2 Micro 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TY87.1** | 1 | 11,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Electronic signal timer

With large display. Count down/count up function. Direct numerical entry via 10 key keyboard. Maximum running time 10 h. Alarm signal at "zero". Dimensions W 60 x H 70 x D 25 mm. With attachment magnet, stand, clip and suspension hook. Weight 95 g.
**Delivery incl.** battery Micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X253.1** | 1 | 13,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |



## Rotilabo®-signal-timer

With clock, 24 h quartz clock, features a count up/count down function, and has a second subdivision. Ideal for standing upright, attaching to magnetic surfaces or clipping to breast pocket. Intense interval bleeping tone.
Dimensions: W 60 x H 60 mm.
**Delivery incl.** cell battery 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0773.1** | 1 | 13,80 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## Rotilabo®-timer

Count-down/count-up feature. Maximum runtime 99 min, 59 s. Start/stop button with visual timer status indicator (green = time counting down; red = preset time expired). After the countdown stops, an acoustic signal sounds for 1 min and is indicated visually. Two different volumes or mute mode can selected. **Timer memory function for 3 times.**
Includes stand, magnet for fixing to metal surfaces and hanging attachment.
Dimensions: L 90 x W 60 x D 20 mm.
**Delivery incl.** 2 1.5 V micro batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA16.1** | 1 | 15,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Multi-purpose clocks with timer

**Features:**
- Display lighting
- Clock with date and alarm mode
- Temperature (measuring range/resolution: -20.0 to +50.0 °C)
- Count-down timer (max. runtime: 9 h 59 min 59 s) with signal
- Stop watch (max. runtime: 9 h 59 min 59 s) with interval timer

Dimensions: W 30 x L 55 x D 13 mm. Weight 30 g.
With snap-hook or ring fastener for attaching to labcoat.
**Delivery incl.** round cell battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HH45.1** | 1 | 18,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 1616 (3 V) | **KE59.1** | 1 | 5,35 |




## 2-channel timer

**With two independent channels for separate time measurement.**
Count-down/Count-up. Maximum runtime 99 min, 59 sec. Start/stop button with visual timer status indicator (green = time counting down; red = preset time expired). After the countdown stops, an acoustic signal sounds for 1 min and is indicated visually. Two different volumes or mute mode can selected. Includes stand, magnet for fixing to metal surfaces and hanging attachment. Dimensions: L 88 x W 75 x D 20 mm.
**Delivery without** batteries. Requires 2 micro 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA55.1** | 1 | 17,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Short period timer "Shake Awake"

- **With alarm tone, light signal or vibrating alarm.**
  **All signal settings can be activated separately or together.**
- Count-down/Count-up
- Four-digit LCD-display for h/min- or min/s-display
- Operation time: 19 h, 59 min or 99 min, 59 s
- With magnet or clip for affixing or standing up
- Dimensions: W 48 x D 31 x H 75 mm, weight 110 g

**Delivery incl.** 2 Micro 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE51.1** | 1 | 21,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Rotilabo®-signal-timer with clock

**With 2 independent channels for separate timing.**
**Count-down/Count-up.** Time is displayed by pressing a function key. Counts up to 99 h 59 min and 59 sec. Large LCD display. Alarm signal 1 min. With clamp stand and magnet for attachment to metal surfaces. Switches automatically to forward counting once timer has reached zero. Dimensions: H 65 x W 75 x D 15 mm, weight approx. 65 g.
**Delivery incl.** battery micro 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **A802.1** | 1 | 16,75 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |

# Stopwatches




## Triple Timer XL

With large display (80 x 60 mm) and clock. Three separate timers in one device. All three displays have a count-down function. Max. run time 19 h, 59 min and 59 sec. After the count-down is complete a beep sounds for 1 min and the timer begins to count up. Count-up function for display with 1/100 second display. Memory function. With mounting magnet, wall mount and folding stand.
Dimensions: W 103 x D 121 x H 20 mm.
**Delivery incl.** 2 micro 1.5 V batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PT76.1** | 1 | 18,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Micro/AAA 1.5 V battery | **1021.2** | 4 pieces | 6,40 |




## Laboratory timer

With 24-hour clock and calendar. Count down/count up function.
**Extra large LCD display (L 140 x W 40 mm).** Can be programmed for 23 h, 59 min, 59 sec. Alarm signal at „0“. Timer memory function.
Dimensions: L 160 x W 90 x D 68 mm.
**Delivery incl.** battery Baby 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y224.1** | 1 | 92,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Baby/C 1.5 V battery | **1023.2** | 2 pieces | 4,85 |




## Rotilabo®-timer 3-line

Large 3-line LCD display. **Three separate timers in one unit.** Countdown/countup for all three displays and memory function. Counts up to 99 h, 59 min and 59 sec. Alarm signal at "zero". Clock with 12/24 h adjustable format. With clip for hanging and standing and with magnet. Dimensions: W 83 x H 70 x D 22 mm. Weight 80 g.
**Delivery incl.**1.5 V cell battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P874.1** | 1 | 24,50 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |




## Rotilabo®-stopwatch

**Splashproof**. 24 hour running time. 1/100 sec display over 30 minutes. Split-time display. Also features clock, calendar and alarm function. Snooze function. Dimensions: L 69 x W 59 x D 19 mm.
**Delivery incl.** 1.5 V button cell battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L423.1** | 1 | 9,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Cell battery V 13 GA (1.5 V) | **1938.1** | 1 piece | 4,25 |



## Hand stopwatch

**Splash-proof.** Max. runtime 23 h 59 min. 1/100 sec display over 30 minutes. **With count-down timer function.** Readable time intervals. Additionally with time, date, hourly signal and alarm.
Dimensions: W 62 x D 25 x H 75 mm. Weight 95 g.
**Delivery incl.** button cell battery CR 2032, 3 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EK01.1** | 1 | 26,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| Button cell battery CR 2032 (3 V) | **P858.1** | 1 piece | 5,35 |




## Winding stopwatches

Winding by hand. Brass housing, chrome-plated.

**Technical specifications:**

| **Model** | ① **Basic** | ② **Classic** |
|---|---|---|
| Max. measuring range | 15 min | 30 min |
| Resolution | 1/10 sec | 1/5 sec |
| Start/Stop | Winder | Winder |
| Resetting | Winder | Zero setting |
| Interval button | No | Yes |
| Dimensions | ∅ 50 mm | |
| Weight | 100 g | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Basic | **HA62.1** | 1 | 64,40 |
| Classic | **HA63.1** | 1 | 70,75 |




## Stopwatch with calibration certificate

Water-protected ABS-housing. Max. runtime 9 h 59 min 59 sec. 1/100 seconds display. Records of interval time.
Dimensions: L 82 x W 61 x D 28 mm.
**Delivery incl.** Mignon 1.5 V battery and calibration certificate.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LK76.1** | 1 | 107,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |




## Addition stopwatches

Pocket-watch format. With winder. Plastic body, shock-resistant, dust and waterproof. Unbreakable wind up spring. Resolution 1/10 sec. Weight approx. 60 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2050.1** | 1 | 99,80 |

# Table stopwatches




## Table timers

Large, easy-to-read LCD display. Max. runtime 9 h 5 min 59 sec or 999 min. 2 timers with either separate or simultaneous start/stop operating. Count up/count down function. **With adjustable volume (max. 90 dB).** Time resolution 1/10 sec or 1/100 min. Dimensions: H 170 x W 130 x D 97 mm. **Delivery incl.** battery Mignon 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N317.1** | 1 | 107,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |




## Mechanical table-top stopwatch Model E-4

Metal casing. 1 sec to 60 min display. Can be wound up with key on back. 24 h run-time. Dimensions: **H 128 x W 115 mm.** Weight 450 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KH62.1** | 1 | 177,40 |




## Analogue stopclock

Quartz-controlled. Ergonomically designed with optimal stability. Functions: start/stop/reset plug addition (indefinite).

**Technical specifications:**

| | |
|---|---|
| Measuring range | 0-60 s / 0-60 min |
| Inner scale | with 1/100 display |
| Dial face | ∅ 110 mm |
| Dimensions | 175 x 130 x 95 mm |
| Weight | approx. 375 g |

**Delivery incl.** 1.5 V Mignon battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H735.1** | 1 | 127,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |




## Mechanical table-top stopwatch Model E-8

1 sec to 60 min display. Can be wound up using a key on the back. 24 h run-time. Dimensions: **H 220 x W 210 mm**, ∅ 207 mm. Metal casing. Weight 850 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KX02.1** | 1 | 231,15 |



## Wall clock

Comes with additional display for inside temperature and relative humidity.
∅ 265 mm, plastic casing and plastic front.
**Delivery incl.** Mignon 1.5 V battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KT37.1** | 1 | 13,80 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Wall clocks

Enclosure made of brushed aluminium. Glass cover.
∅ 300 mm, depth 41 mm.
**Delivery incl.** battery Mignon 1.5 V.

| Image | Colour clock face | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | white | **KN89.1** | 1 | 20,35 |
| ② | black | **KN90.1** | 1 | 20,35 |
| ③ | red | **KN91.1** | 1 | 20,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Quartz wall clocks

With plastic casing. ∅ 245 mm, 40 mm thick.
**Delivery without** battery. One battery 1.5 V is required.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **C333.1** | 1 | 15,00 |
| black | **C334.1** | 1 | 15,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Radio wall clocks

Automatic time setting and switch-over to summer/winter time.
Fig. 3 also with digital date display.
**Delivery incl.** battery Mignon 1.5 V.

| Image | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 246 | **KN66.1** | 1 | 24,75 |
| ② | 270 | **KN67.1** | 1 | 32,15 |
| ③ | 300 | **KN68.1** | 1 | 42,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |

# Wall clocks




## Radio wall clocks

Automatic time setting and switch-over to summer/winter time.
① **Sweep:**
Quiet Sweep movement with no ticking. Plastic housing.
Dimensions: ∅ 302 x D 47 mm, weight 434 g.
② **Corona:**
LED-illuminated dial that uses a light sensor to switch on and off automatically, or alternatively, can be switched on and off manually.
Dimensions: ∅ 308 x D 43 mm, weight 509 g. Separate battery compartment for clock and lighting. Lighting battery life approx. 100 days when used for 8 h/day ("auto" position).
**Delivery without** batteries. One 1.5 V AA battery (① Sweep) or four 1.5 V AA batteries (② Corona) is/are required.

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Sweep | **EEC8.1** | 1 | 31,75 |
| ② | Corona | **EEC9.1** | 1 | 38,60 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |



## Radio-controlled wall clocks

Automatic time adjustment and change-over from summer/winter time.
Case ∅ 300 mm, depth 45 mm. With glass cover. Station clockface.
Available with black plastic case or with chromium-plated frame.
**Delivery without** battery. One battery Mignon 1.5 V is required.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| black | **L486.1** | 1 | 35,30 |
| chrome | **Y227.1** | 1 | 35,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |




## Radio wall clock with room climate display

With analogue LCD clock and revolving second hand.
Display of date and week day (7 languages), interior temperature (measurement range -10 to +50 °C) and relative humidity (5 to 99 %), calendar week or digital time. Functions can be selected with sensor button.
Dimensions: W 220 x D 31 x H 265 mm. Weight 580 g.
**Delivery incl.** 4 1.5V Mignon/AA batteries.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XX18.1** | 1 | 69,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |




## Radio-controlled alarm clock XXL

Automatic time setting and switch-over to summer/winter time.
With large display. Display of interior temperature (-10 to +60 °C), weekday and date. Wake-up alarm with Snooze function. Wall or table mount. Dimensions: W 235 x H 195 x D 28 mm. Weight: 400 g.
**Delivery without** batteries. Two 1.5 V mignon batteries are required.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY80.1** | 1 | 24,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| 1.5 V AA battery | **1022.2** | 4 pieces | 5,95 |




## Chemistry-/LifeScience-pocket calculator Chemcode®

**Design:**
- Keypad with classification of elements and numerical keypad
- Keys for nucleotides for DNS (A, T, G, C) and RNS (A, U, G, C)
- Two-line display with scroll-function
- Scientific calculating functions
- Dimensions: L 136 x W 110 x D 14 mm

**Stoichiometric functions**

**Display:** molar mass, ideal gas volume, weighing-in mass in g, amount of substance in mol.

**Calculation:** total formula, share of single elements or element groups in % or g, amount of substance in g. Conversion of substance concentration (mol/l; molarity) into substance mass concentration (g/l) and inverse, mass-% in molarity. When diluting, it determines the volume to be used in litres and calculates the substance amount in mmol during titration.

**Molecularbiological function for PCR®**

**Display:** protein codes, %-share of guanin and cytosin, molar mass of nucleotide sequence and protein sequence, substance amount in nmol, optical density, substance amount of DNS-portion in ng, melting temperature of oligonucleotide.

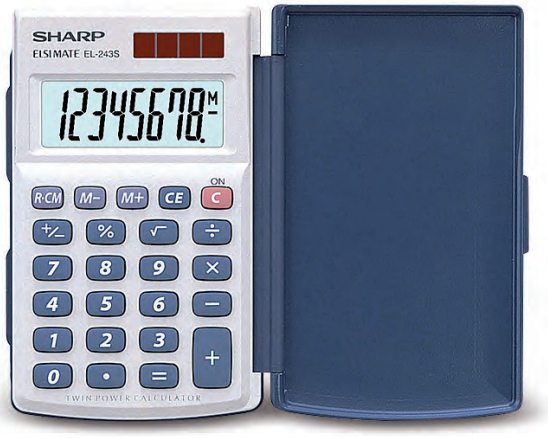
**Lexical functions**
- Conversion in °C, F and Kelvin
- Retrieval of different constants (Avogadro, Faraday etc.)
- Function to retrieve chemical, physical and biological properties of the elements and additional information such as melting point, boiling point, electron gativity, detection year, etc.

**Delivery incl.** 4 spare batteries, cell CR 2025.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CE95.1** | 1 | 120,40 |

Accessories:

| | | | |
|---|---|---|---|
| CR 2025 button cell battery (3 V) | **CH14.1** | 1 piece | 5,35 |




## Solar standard calculator Sharp EL-243S

8-digit LCD display. Solar and battery operated.
With root and percentage calculation. Memory.
Hinged protective cover (folds by 180°).
Dimensions (open): 11 x 104 x 64 mm, weight approx. 51 g.
**Delivery incl.** backup-battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LN02.1** | 1 | 9,15 |




## Solar pocket calculator LCD1000P

By Olympia. **Water and dustproof housing** according to IP 54.
With shock-absorbing rubber edges. 12-digit LCD display.
Solar and battery operated. Root/percentage calculation. Memory.
Dimensions: L 158 x W 106 x H 38 mm. Weight approx. 146 g.
**Delivery incl.** backup battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LN01.1** | 1 | 24,35 |

# Pocket calculators




## Desktop calculator Canon TX-1210E

12-digit LCD display with angled display and rugged keyboard.
Solar and battery operation. With square root function, rounding selector, tax calculation function and percentage calculation.
Dimensions: L 175 x W 126 x H 30 mm. Weight 172 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHA7.1** | 1 | 29,00 |




## Scientific calculator Sharp EL-W506X-VL

Combined solar and battery operation.
4-line display with 96 x 32 dot matrix. Direct algebraic input logic.
4 freely assignable keys for frequently used functions. 4 cursor keys for quick input/processing. Memory retention. With 556 functions, such as mathematical, trigonometric, statistical and scientific functions. 9 memory variables. Database with natural constants and metric conversions.
Dimensions: L 168 x W 80 x H 14 mm. Weight 100 g.
**Delivery incl.** protective cover.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHA8.1** | 1 | 34,55 |




## Solar scientific calculator TI-30 X II S

**2-line display** for statistics and scientific functions. **11-digit, scrollable entry line** and 10-digit results line. **Combined solar and battery operation.** With many functions, such as automatic simplification of fractions, trigonometry functions, 5 storage variables, random number generator, etc. Dimensions: W 82 x D 155 x H 19 mm.
**Delivery incl.** protective case.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KT82.1** | 1 | 31,15 |




# Laboratory Equipment


| | |
|---|---|
| Autoclaves and accessories | 896 |
| Barrel heaters | 986 |
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| Recirculating coolers | 944 |
| Refrigerating thermostats | 946 |
| Refrigerators / freezers | 907 |
| Rocker | 1059 |
| Rotary evaporators | 965 |
| Rotators / mixers | 1072 |
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| Stirrers and accessories | 1024 |
| Tripod and quadrupod stands / heating tiles | 930 |
| Thermoshakers | 961 |
| Thermostats | 937 |
| Thermostat cabinets | 913 |
| Vacuum drying cabinets | 985 |
| Vortexer | 1048 |
| Water baths | 950 |

# High-pressure laboratory autoclaves from Roth

Have a wide application range in research laboratories or for routine examinations. All autoclaves follow the current safety standards and are extremely robust. They should only be operated by qualified staff after taking all of the necessary safety precautions. Features include extremely reliable safety system (bursting disc) which automatically reduces the pressure and prevents the autoclave from being damaged in the case of excess pressure.

**Examples of applications:**

- Gas reactions under pressure
- Hydrogenation
- Anorganic chemical synthesis
- Organic-chemical synthesis
- Crystal growing
- Material testing
- Disintegration of organic cells



**OVERVIEW**
**High-pressure laboratory autoclaves from ROTH**

| | Model 0 | Model I | Model II | | | Model IV |
|---|---|---|---|---|---|---|
| Max. working volume (ml) | 50 | 100 | 200 | 300 | 250 | 500 |
| Max. working pressure (bar) | 100 | 100 | 100 | 100 | 200 | 100 |
| Heating mantle | none | 10 S | 20 S | 30 S | 30 S | 50 S |
| Sampling possible | no | no | yes | | | yes |
| Stirrer connection possible | no | no | yes | | | yes |
| Temp. measurement in autoclave possible | no | no | yes | | | yes |




## High-pressure laboratory autoclave Model 0

**50 ml/100 bar**
Model 0 is the smallest autoclave in our range. Initially it was developed for prelimenary tests at room temperature. **It is the steel test tube for all pilot studies and pretrials where high pressure is required. It is ideal for situations where glass carius tubes may present a danger.** Model 0 has a threaded head with a threaded opening for fitting to equipment. Openings can be plugged with threaded stoppers. Sealed with PTFE gaskets (max. 180 °C) or fine silver gaskets (max. 300 °C). **Longer delivery periods possible depending on the size of the autoclave ordered!**

**Technical specifications: Model 0**

| | |
|---|---|
| Inner volume | 75 ml |
| Working volume | 50 ml |
| Height | approx. 135 mm |
| Weight | approx. 835 g |
| Material | made of V4A high grade steel 1.4571 |
| Working temperature | -60 to +300 °C |
| Working pressure | max. 100 bar |
| Test pressure | 300 bar at +20 °C |
| Outer-∅ of beaker/head | 40/54 mm |
| Inner-∅ of beaker | 30 mm |
| Base shape | flat outside and inside |
| Connection thread in head | G ¼″ |

**Basic equipment consists of:**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Model 0, 50 ml cylinder and head ① | **2970.1** | 1 | 840,65 |
| Adapter I ② | **2207.1** | 1 | 1285,70 |
| Fine control valve ③ | **H745.1** | 1 | 342,95 |
| Pressure gauge 160 bar ④ | **2031.1** | 1 | 181,70 |
| Bursting disc 8.100/bar E | **2199.1** | 1 | 123,65 |
| PTFE - sealing set I (with silver gasket) for bursting disc | **2067.1** | 1 | 57,95 |
| Set of spanners I | **2071.1** | 1 | 42,50 |

**Accessories for gas autoclaving**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PTFE-high-pressure hose 1,5 m | **H996.1** | 1 | 320,35 |
| Reduction adapter for direct connection with gas bottle (please specify gas type) | **2066.1** | 1 | 160,75 |

**Accessories**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Glass liner 50 ml | **H976.1** | 1 | 19,15 |
| Base plate 41, ideal as holder for screwing on autoclave Model 0 and I | **2072.1** | 1 | 446,15 |
| Rotilabo®-tablet magnetic follower 22 | **3003.1** | 1 | 8,95 |
| Threaded stopper A | **2052.1** | 1 | 64,40 |

**Spare sealing gaskets**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PTFE gasket 12, for head and valve | **2160.1** | 1 | 4,85 |
| PTFE gasket 20, for pressure gauge | **2161.1** | 1 | 5,40 |
| PTFE gasket 42, for cylinder/head | **2163.1** | 1 | 6,10 |
| Fine silver gasket set I | **2065.1** | 1 | 192,45 |




## High-pressure laboratory autoclave Model I

**100 ml/100 bar**

Model I is the standard model in the Roth manufacturing range. Used mostly for in preliminary testing. Model I consists of an autoclave cylinder and a threaded autoclave head. The head has a thread on top for attachment of adapter (to fit bursting disc, pressure gauge and valve). Openings can be plugged with threaded stoppers. Sealed with PTFE gaskets (max. 180 °C) or fine silver gaskets (max. 300 °C). **Longer delivery periods possible depending on the size of the autoclave ordered!**

**Technical specifications: Model I**

| | |
|---|---|
| Inner volume | 135 ml |
| Working volume | 100 ml |
| Height | approx. 220 mm |
| Weight | 1210 g |
| Material | made of V4A high grade steel 1.4571 |
| Working temperature | -60 to +300 °C |
| Working pressure | max. 100 bar |
| Test pressure | 300 bar at +20 °C |
| Outer-∅ of beaker/head | 40/54 mm |
| Inner-∅ of beaker | 30 mm |
| Base shape | flat outside and inside |
| Connection thread in head | G ¼″ |
| **Adapter I (T-adapter), with bursting plate protection** | |
| Material | V4A-high grade steel 1.4571<br>(Adapter to fit bursting disc, valve and pressure gauge) |
| Adapter openings | G ½″ for pressure gauge<br>G ¼″ for valve |

**Basic equipment consists of:**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Model I, 100 ml cylinder and head ① | **2001.1** | 1 | 1072,85 |
| Adapter I ② | **2207.1** | 1 | 1285,70 |
| Fine control valve ③ | **H745.1** | 1 | 342,95 |
| Pressure gauge 160 bar ④ | **2031.1** | 1 | 181,70 |
| Bursting disc 8.100/bar E | **2199.1** | 1 | 123,65 |
| PTFE - sealing set I (with silver gasket) for bursting disc | **2067.1** | 1 | 57,95 |
| Rotilabo®-tablet magnetic follower 22 | **3003.1** | 1 | 8,95 |
| Set of spanners I | **2071.1** | 1 | 42,50 |
| Heating mantle 10 S, with magnetic stirrer ⑤ | **2088.1** | 1 | 2353,20 |

**Accessories for gas autoclaving**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PTFE-high-pressure hose 1,5 m | **H996.1** | 1 | 320,35 |
| Reduction adapter for direct connection with gas bottle (please specify gas type) | **2066.1** | 1 | 160,75 |

**Accessories for assembly/options**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Base plate 41, ideal as holder for screwing on autoclave Model 0 and I | **2072.1** | 1 | 446,15 |
| Threaded stopper A | **2052.1** | 1 | 64,40 |
| Connector fitting for hose | **H746.1** | 1 | 26,45 |
| Glass liner for 100 ml cylinder | **2196.1** | 1 | 20,35 |

**Spare sealing gaskets**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PTFE gasket 12, for head and valve | **2160.1** | 1 | 4,85 |
| PTFE gasket 20, for pressure gauge | **2161.1** | 1 | 5,40 |
| PTFE gasket 42, for cylinder | **2163.1** | 1 | 6,10 |
| Fine silver gasket set I | **2065.1** | 1 | 192,45 |
| Silver gasket 12, for head and valve | **2170.1** | 1 | 45,90 |
| Silver gasket 15, for bursting disc | **2173.1** | 1 | 42,80 |
| Silver gasket 18, for pressure gauge | **2172.1** | 1 | 42,95 |
| Silver gasket 40, for bursting disc | **2174.1** | 1 | 41,40 |

▶ For an overview of "High-pressure laboratory autoclaves" see page 896

▶ PTFE-spray, see page 1141

**Attention**

Due to the shape of the screw thread, cold setting of cylinder and head is possible when screwing these on. This usually leads to them sticking when opening and the thread breaking as a result.

The conducted reaction necessitates coating the thread with a release agent such as PTFE spray (Art. No. K007.1).

**Warning: Do not use PTFE screw thread tape!**

# Autoclaves




## High-pressure laboratory autoclave Model II

**200/300 ml/100 bar, 250 ml/200 bar**

Model II is ideal for all reactions where spontaneous gas development and a quick increase in pressure are expected. The units are operated with a large bursting disc, that is built into the autoclave head. Therefore it offers maximum safety in the laboratory. The enlarged autoclave head is screwed directly onto the autoclave cylinder. It contains the bursting disc holder at the top and three threaded openings at the side. For connections with: valves, reduction adapters for pressure gauges and temperature sensors or bursting disk safety device II, (when using magnetic stirrer head MRK 10). Threaded openings can be closed with screw stoppers. Sealed with gaskets made of PTFE (max 180 °C) or fine silver (max 300 °C).

**Longer delivery periods possible depending on extent of order!**

### Technical specifications: Model II

| **Autoclave head II** | |
|---|---|
| Material | Made of V4A high grade steel 1.4571 |
| Outer-∅ of beaker | 69 mm, top head opening for bursting disc 28.100/ 28.200 or magnetic stirrer MRK 10 |
| Three additional openings on the side of head | G ¼″ for valve, reduction adapter for pressure gauge and temperature sensor or bursting disc safety device II for use with magnetic stirrer head MRK 10 |
| Weight | approx. 1250 g |

| **Autoclave cylinder** | **200 ml** | **300 ml** | **250 ml** |
|---|---|---|---|
| Inner volume (ml) | 265 | 350 | 320 |
| Working volume (ml) | 200 | 300 | 250 |
| Height (mm) | 220 | 300 | 300 |
| Weight (g) | 1375 | 1900 | 2250 |
| Max. working pressure (bar) | 100 | 100 | 200 |
| Test pressure at +20 °C (bar) | 300 | 300 | 400 |
| Outer-∅ (mm) | 50 | 50 | 50 |
| Inner-∅ (mm) | 40 | 40 | 37 |
| Base shape | flat outside and inside | | |
| Material | made of V4A high grade steel 1.4571 | | |
| Working temperature | -60 to +300 °C | | |

**Basic equipment consists of:**

**Parts necessary for base equipment:**

| **Description** | **Art. No.** | **200 ml** | **300 ml** | **250 ml** |
|---|---|---|---|---|
| 200 ml autoclave cylinder ① | **2098.1** | x | | |
| 300 ml autoclave cylinder | **2108.1** | | x | |
| 250 ml autoclave cylinder | **2094.1** | | | x |
| Autoclave head II ② | **2126.1** | x | x | x |
| Bursting disc 28.100/bar E | **2203.1** | x | x | |
| Bursting disc 28.200/bar E | **2204.1** | | | x |
| Fine control valve ③ | **H745.1** | x | x | x |
| Pressure gauge 160 bar ④ | **2031.1** | x | x | |
| Pressure gauge 250 bar | **2036.1** | | | x |
| Reducer for pressure gauge ⑤ | **2033.1** | x | x | x |
| Threaded stopper A | **2052.1** | x | x | x |
| PTFE-dealing set with silver gasket | **2082.1** | x | x | x |
| Fine silver gasket set II | **2102.1** | | | |
| Tablet magnetic follower 30 | **4490.1** | x | x | x |
| Spanner-Set II | **2078.1** | x | x | x |
| Heating mantle 20 S for 200 ml | **0042.1** | x | | |
| Heating mantle 30 S for 250/300 ml | **2092.1** | | x | x |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 200 ml autoclave cylinder / 100 bar ① | **2098.1** | 1 | 912,70 |
| 300 ml autoclave cylinder / 100 bar | **2108.1** | 1 | 1268,50 |
| 250 ml autoclave cylinder / 200 bar | **2094.1** | 1 | 934,20 |
| Autoclave head II ② | **2126.1** | 1 | 665,45 |
| Bursting disc 28.100/bar E | **2203.1** | 1 | 130,10 |
| Bursting disc 28.200/bar E | **2204.1** | 1 | 130,10 |
| Fine control valve ③ | **H745.1** | 1 | 342,95 |
| Pressure gauge 160 bar ④ | **2031.1** | 1 | 181,70 |
| Pressure gauge 250 bar | **2036.1** | 1 | 181,70 |
| Reduction adapter for pressure gauge ⑤ | **2033.1** | 1 | 149,45 |
| Threaded stopper A | **2052.1** | 1 | 64,40 |
| PTFE-dealing set with silver gasket | **2082.1** | 1 | 60,00 |
| Fine silver gasket set II | **2102.1** | 1 | 250,50 |
| Tablet magnetic rod 30 | **4490.1** | 1 | 10,00 |
| Spanner set II | **2078.1** | 1 | 138,70 |
| Heating mantle 20 S for 200 ml, with magnetic stirrer | **0042.1** | 1 | 2353,20 |
| Heating mantle 30 S for 250/300 ml, with magnetic stirrer | **2092.1** | 1 | 2353,20 |

### Special accessories for use with gas

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PTFE-high-pressure hose 1,5 m | **H996.1** | 1 | 320,35 |
| Reduction adapter for direct connection with gas bottle (please specify gas type) | **2066.1** | 1 | 160,75 |

### Special accessories for measuring temperatures in autoclave

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Temperature controller WRT 2000x | **Y249.1** | 1 | 858,95 |
| Connection cable controller/heating hood | **Y250.1** | 1 | 123,65 |
| Temperature sensor for 200 ml cylinder | **2115.1** | 1 | 332,20 |
| Temperature sensor for 250/300 ml cylinder | **A880.1** | 1 | 332,20 |
| Equilibrating tubing for regulator/probe, length 1.5 m | **Y263.1** | 1 | 134,40 |

### Special accessories for filling or removing liquid or gas samples

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Adapter with immersion pipe 2 for 200 ml autoclave cylinder | **2043.1** | 1 | 891,20 |
| Adapter with immersion pipe 3 for 250/300 ml | **2044.1** | 1 | 891,20 |
| Fine control valve ③ | **H745.1** | 1 | 342,95 |
| PTFE gasket 12, for head and valve | **2160.1** | 1 | 4,85 |
| PTFE gasket 42, for cylinder/head | **2163.1** | 1 | 6,10 |

### Special accessories for stirring

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Magnet stirrer MRK 10 | **2359.1** | 1 | o. r. |
| Adapter for magnet stirrer | **2358.1** | 1 | 403,15 |
| Bursting disc valve II | **3167.1** | 1 | 966,45 |
| Bursting disc 8.100/bar E | **2199.1** | 1 | 123,65 |
| Silver gasket 15, for bursting disc 8.100/bar E | **2173.1** | 1 | 42,80 |
| Gasing stirrer 2 for 200 ml cylinder | **3184.1** | 1 | o. r. |
| Gasing stirrer 3 for 250/300 ml cylinder | **3189.1** | 1 | o. r. |

### Special accessories for assembly/options

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Base plate 55, ideal as holder for screwing on autoclave Model II | **2074.1** | 1 | 478,40 |
| Connector fitting for hose | **H746.1** | 1 | 26,45 |
| Glass liner for 200 ml cylinder | **2197.1** | 1 | 24,20 |
| Glass liner for 300 ml cylinder | **2198.1** | 1 | 25,80 |
| Glass liner for 250 ml cylinder | **2192.1** | 1 | 24,20 |

### Spare sealing gaskets

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PTFE gasket 12, for head, valve and reduction adapter | **2160.1** | 1 | 4,85 |
| PTFE gasket 20, for pressure gauge | **2161.1** | 1 | 5,40 |
| PTFE gasket 51, for cylinder | **2164.1** | 1 | 11,65 |
| Fine silver gasket set II | **2102.1** | 1 | 250,50 |
| Silver gasket 12, for head, valve and reduction adapter | **2170.1** | 1 | 45,90 |
| Silver gasket 18, for pressure gauge | **2172.1** | 1 | 42,95 |
| Silver gasket 40, for bursting disc | **2174.1** | 1 | 41,40 |
| Silver gasket 50, for cylinder | **2175.1** | 1 | 51,60 |

**OVERVIEW**
**High-pressure laboratory autoclaves from ROTH**

| | Model 0 | Model I | Model II | | | Model IV |
|---|---|---|---|---|---|---|
| Max. working volume (ml) | 50 | 100 | 200 | 300 | 250 | 500 |
| Max. working pressure (bar) | 100 | 100 | 100 | 100 | 200 | 100 |
| Heating mantle | none | 10 S | 20 S | 30 S | 30 S | 50 S |
| Sampling possible | no | no | yes | | | yes |
| Stirrer connection possible | no | no | yes | | | yes |
| Temp. measurement in autoclave possible | no | no | yes | | | yes |

**Attention**
Due to the shape of the screw thread, cold setting of cylinder and head is possible when screwing these on. This usually leads to them sticking when opening and the thread breaking as a result.

The conducted reaction necessitates coating the thread with a release agent such as PTFE spray (Art. No. K007.1).

**Warning: Do not use PTFE screw thread tape!**

▶ For an exact description of autoclave accessories see page 901

# Autoclaves



## High-pressure laboratory autoclave Model IV

**500 ml/100 bar**

Model IV is the largest autoclave in our manufacturing range. It represents an improved version of the original version from which the other models are derived. Model IV consists of a high grade steel cylinder with flange. The solid stainless steel lid is screwed onto the flange with eight screws. The autoclave head is fitted for a large bursting disc. This provides maximum safety in situations where spontaneous gas production and a quick increase in pressure might occur.
The large autoclave is screwed directly onto the cylinder. It contains the bursting disc holder at the top and three threaded openings at the side. For connection with: valvesa, reduction adapters for pressure gauges and temperature sensors or bursting disk safety devices II, (when using magnetic stirrer head).
Threaded openings can be closed with screw stoppers. Sealed with gaskets made of PTFE (max. 180 °C) or with fine silver gaskets (max. 300 °C).

**Longer delivery periods possible depending on the size of the order!**

**Technical specifications: Model IV**

| **Model IV, consists of cylinder, head, 8 hexagon head bolts and -nuts** | |
|---|---|
| Inner volume | 700 ml |
| Working volume | 500 ml |
| Height | 425 mm |
| Material | made of V4A high grade steel 1.4571 |
| Working temperature | -60 to +300 °C |
| Working pressure | max. 100 bar |
| Test pressure | 300 bar at +20 °C |
| Outer-∅ on beaker | 60 mm |
| Inner-∅ of beaker | 50 mm |
| Outer-∅ of lid | 125 mm |
| Base shape | flat outside and inside |
| **Autoclave head II** | |
| Material | made of V4A high grade steel 1.4571 |
| Outer-∅ | 64 mm; top head opening for bursting disc 28.100 or magnet stirrer MRK 10 |
| Three additional openings on the side of head | G ¼″ for valve, reduction adapter for pressure gauge and temperature sensor or bursting disk safety device II for use with magnetic stirrer head MRK 10 |

**Basic equipment**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 500 ml cylinder and head | **K172.1** | 1 | 2100,55 |
| Bursting disc 28.100/bar E | **2203.1** | 1 | 130,10 |
| Fine control valve | **H745.1** | 1 | 342,95 |
| Pressure gauge 160 bar | **2031.1** | 1 | 181,70 |
| Attachment for reduction adapter | **2034.1** | 1 | 327,90 |
| Reduction adapter for pressure gauge | **2033.1** | 1 | 149,45 |
| Threaded stopper A | **2052.1** | 1 | 64,40 |
| PTFE-sealing set with fine silver gasket | **K454.1** | 1 | 50,85 |
| Spanner set IV | **K455.1** | 1 | 99,80 |
| Tablet magnet follower 40, ∅ 40 mm, H 14 mm | **4517.1** | 1 | 18,95 |
| Heating mantle 50 S, with magnetic stirrer | **2158.1** | 1 | 2353,20 |

**Special accessories for gas autoclaving**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PTFE-high-pressure hose 1,5 m | **H996.1** | 1 | 320,35 |
| Reduction adapter for direct connection with gas bottle (please specify gas type) | **2066.1** | 1 | 160,75 |

**Special accessories for temperature measurement**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Temperature controller WRT 2000x | **Y249.1** | 1 | 858,95 |
| Connection cable controller/heating hood | **Y250.1** | 1 | 123,65 |
| Temperature sensor 330 mm with silver gasket | **K456.1** | 1 | 332,20 |
| Equilibrating tubing for regulator/probe, length 1.5 m | **Y263.1** | 1 | 134,40 |

**Special accessories for adding or removing gaseous or liquid samples**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Adapter with immersion pipe 4 | **K457.1** | 1 | 891,20 |
| Fine control valve | **H745.1** | 1 | 342,95 |
| PTFE gasket 12, for head and valve | **2160.1** | 1 | 4,85 |
| Silver gasket 40, for bursting disc | **2174.1** | 1 | 41,40 |
| Spanner 55 | **2187.1** | 1 | 55,75 |

**Special accessories for stirring**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Magnet stirrer MRK 10 | **2359.1** | 1 | o. r. |
| Adapter for magnet stirrer | **2358.1** | 1 | 403,15 |
| Bursting disc valve II | **3167.1** | 1 | 966,45 |
| Bursting disc 8.100/bar E | **2199.1** | 1 | 123,65 |
| Silver gasket 15, for bursting disc | **2173.1** | 1 | 42,80 |
| Gasing stirrer 4 | **K458.1** | 1 | o. r. |

**Assembly/options**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Connector fitting for hose | **H746.1** | 1 | 26,45 |
| Glass liner for 500 ml cylinders | **2099.1** | 1 | 29,65 |
| Tablet magnet follower 40, ∅ 40 mm, H 14 mm | **4517.1** | 1 | 18,95 |

**Spare sealing gaskets**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PTFE-sealing set with fine silver gasket | **K454.1** | 1 | 50,85 |
| Fine silver gasket set IV | **K459.1** | 1 | 213,95 |

# Autoclaving accessories



## Gaskets made of PTFE

Dimension = outer ∅ in mm.

**Gasket 12** - for connection to head and valve

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2160.1** | 1 | 4,85 |

**Gasket 20** - for reducing adapter/pressure gauge

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2161.1** | 1 | 5,40 |

**Gasket 42** - for autoclave cylinder/head (Model 0 and 1)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2163.1** | 1 | 6,10 |

**Gasket 51** - for autoclave cylinder/head (Model II)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2164.1** | 1 | 11,65 |

**Gasket 60** - for autoclave cylinder/head (Model IV)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2165.1** | 1 | 11,95 |



## Gaskets made of fine silver

Dimension = outer ∅ in mm.

**Gasket 12** - for connection to head and valve

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2170.1** | 1 | 45,90 |

**Gasket 15** - for bursting disc 8.100 E

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2173.1** | 1 | 42,80 |

**Gasket 18** - for reducing adapter/pressure gauge

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2172.1** | 1 | 42,95 |

**Gasket 40** - for autoclave cylinder/head (Models 0 and I), for bursting disc holder at the top of autoclave head II/IV, and for adapter with immersion pipes 2, 3 and 4

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2174.1** | 1 | 41,40 |

**Gasket 50** - for autoclave cylinder/head (Model II)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2175.1** | 1 | 51,60 |

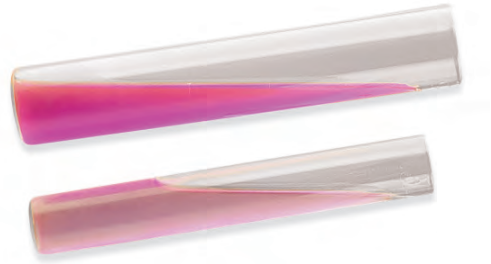
**Gasket 60** - for autoclave cylinder/head (Model IV)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2176.1** | 1 | 55,90 |



## Spanner set

| Type | Sizes (no.) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Set I | 14 - 17 - 19 - 22 - 27 - 41 | **2071.1** | 1 | 42,50 |
| Set II | 14 - 17 - 19 - 22 - 27 - 50 - 2 x 55 | **2078.1** | 1 | 138,70 |
| Set IV | 14 - 17 - 19 - 22 - 27 - 50 - 55 | **K455.1** | 1 | 99,80 |



## Glass liners

It has been proven to be extremely worthwhile to use glass liners in autoclaves when working with very viscous or smearing substances. These special vessels are designed to cope with the pressure and the temperature strain in autoclaves.

| For cylinder (ml) | Height (mm) | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 50 | 104 | 28 | **H976.1** | 1 | 19,15 |
| 100 | 185 | 28 | **2196.1** | 1 | 20,35 |
| 200 | 205 | 38 | **2197.1** | 1 | 24,20 |
| 250 | 285 | 36 | **2192.1** | 1 | 24,20 |
| 300 | 285 | 38 | **2198.1** | 1 | 25,80 |
| 500 | 320 | 48 | **2099.1** | 1 | 29,65 |

**Advice for working with silver gaskets**
When working with silver gaskets, it is essential to tighten the screw threads very tightly to achieve the necessary seat. We therefore recommend annealing the silver gaskets at +850 °C before use - the gaskets remain softer and more pliable, even when cool, and seal more efficiently.

# Autoclaving accessories



## Fine control- and check valve

Made of stainless steel. For high pressure laboratory autoclaves.
With 6 mm swagelock tube connection. Multi-positioning range.
Max. pressure range: to max. 210 bar, temperature range: to max. +205 °C.
**Delivery incl.** screw thread adapter made of high-grade steel (6 mm pipe for ¼″).

**Fine control valve**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H745.1** | 1 | 342,95 |

Optional:

**Tube connector fitting**

Made of stainless steel. For fine control- and check valve (output side). Suitable for tubing inner-diameter ¼″.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H746.1** | 1 | 26,45 |

**Screw thread adapter**

Made of stainless steel. (6-mm-pipe for ¼″)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P437.1** | 1 | 45,10 |



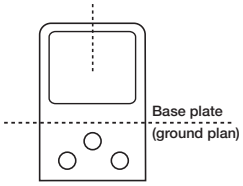
## Pressure gauges

Parts that are in contact with the medium (threaded adapter, spring-pipe) are made of high grade steel 1.4301/1.4404. White face with black numbers. Spring-pipe meter technique. With security glass.

**Technical specifications:**

| | |
|---|---|
| Temperature media | max. +100 °C |
| Ambient temperature | -25 to +60 °C |
| Threaded adapter | G ½″, radial underneath |
| Outer diameter pressure gauge | 100 mm |

| Measurement range | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0-160 bar | **2031.1** | 1 | 181,70 |
| 0-250 bar | **2036.1** | 1 | 181,70 |




## Assembly

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Base plate 41, ideal as holder for screwing on autoclave Model 0 and I | **2072.1** | 1 | 446,15 |
| Base plate 55, ideal as holder for screwing on autoclave Model II | **2074.1** | 1 | 478,40 |



## Sampling connections

With welded-in connection pipe. For insertion or removal of gaseous or liquid samples.

- Material: V4A high grade steel 1.4571
- Working temperature: max. +300 °C
- Working pressure: max. 200 bar

**Adapter with immersion rod 2** for laboratory autoclave Model II (200 ml)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2043.1** | 1 | 891,20 |

**Adapter with immersion rod 3** for laboratory autoclave Model II (250/300 ml)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2044.1** | 1 | 891,20 |

**Adapter with immersion rod 4** for laboratory autoclave Model IV (500 ml)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K457.1** | 1 | 891,20 |



## Threaded stoppers

To close a connection opening G¼″ or G½″. (e.g. adapter 2207.1)

| Type | for opening | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| A | ¼ ″ | **2052.1** | 1 | 64,40 |
| C | ½ ″ | **2038.1** | 1 | 282,75 |



## Bursting discs

To be used **for sealing** the bursting disc of the **fine silver gaskets**!
Working temperature max. +300 °C. Made of high-grade steel.

| Type | Outside Ø (mm) | Inside Ø (mm) | Reaction pressure (bar) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 8.100 E | 14 | 8 | 100 | **2199.1** | 1 | 123,65 |
| 28.100 E | 40 | 28 | 100 | **2203.1** | 1 | 130,10 |
| 28.060 E | 40 | 28 | 60 | **8135.1** | 1 | 130,10 |
| 28.200 E | 40 | 28 | 200 | **2204.1** | 1 | 130,10 |

# Autoclaving accessories



## Temperature measurements

The temperature probe consists of a thermoelement with an iron-copper nickel thermopair. The thermoelement is welded in a protective tube made of high grade steel 1.4541. It collects the temperature values in the inside of the autoclave and transmits them to WRT 2000x regulator. Unit displays temperature and regulation of heating unit can be carried out.

To seal, only fine silver gaskets should be used to prevent repeated replacement, which would shorten life expectancy of autoclave.

**Temperature probes Fe-Cu-Ni**, with fine silver gasket, ∅ 1.5 mm

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 220 | **2115.1** | 1 | 332,20 |
| 280 | **A880.1** | 1 | 332,20 |
| 330 | **K456.1** | 1 | 332,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| Equilibrating tubing for regulator/probe, length 1.5 m | **Y263.1** | 1 | 134,40 |



## Gas discharge

**PTFE-tubing sheathed in stainless steel** for connection to pressure reducer or for direct connection of high pressure tube to gas cylinder in combination with gas cylinder adapter (Art. No. 2066.1, please order separately).

**Technical specifications:**

| | |
|---|---|
| Inner-∅ | 4.8 mm |
| Outer-∅ | 8 mm |
| Min. bursting pressure | 825 bar |
| Operating pressure | 205 bar |
| Operating pressure valid for working temperature | +20 to +50 °C |
| Temperature range | -55 to +235 °C |
| Min. bending radius | 51 mm |
| Length | 1.5 m |
| Thickness of PTFE-tube | 1 mm |

**PTFE-tubing with NPT-inner thread ¼″**, on 6 mm connecting sleeve for gas cylinder adapter (Art. No. 2066.1, please order seperately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H996.1** | 1 | 320,35 |

**PTFE-tubing with NPT-outer thread ¼″**, on 6 mm connecting sleeve

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N246.1** | 1 | 269,85 |

**Gas cylinder adapter**
For **direct connection** of high pressure tube to gas cylinder (max. operating pressure 200 bar). **Please specify gas type**.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2066.1** | 1 | 160,75 |



## Stirrer with permanent magnetic clutch

**Type MRK 10**. Absolutely gas tight. Vacuum-tight.

**Technical specifications:**

| | |
|---|---|
| Height | 172 mm |
| ∅ | 44 mm |
| Maximum pressure | 200 bar |
| Maximum temperature | 300 °C |
| Torque | 20 N · cm |
| Viscosity | to 1500 mPa · s |
| Material | V4A high grade steel 1.4435 |
| Working temperature | max. 300 °C |
| Working pressure | max. 200 bar |
| Rpm | max. 5000 rpm |

**Delivery without** adapter and gasing stirrers. Please order separately.

**Magnet stirrer type MRK 10**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2359.1** | 1 | o. r. |

**Adapter M 42 - M 30**
Adapter for connecting autoclave head II to magnetic stirrer

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2358.1** | 1 | 403,15 |

## Gasing stirrers

To use with stirrer MRK 10. Made of high-grade steel 1.4435 and PTFE. ∅ 25 mm. Working temperature: max. +150 °C.

| Type | For autoclave cylinder (ml) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 200 | 220 | **3184.1** | 1 | o. r. |
| 3 | 250/300 | 299 | **3189.1** | 1 | o. r. |
| 4 | 500 | 380 | **K458.1** | 1 | o. r. |



## Stirrer with magnetic fins

**Tablet magnetic followers**, PTFE coated.
**Symmetrial fins** on upper and lower side ensure proper mixing.
The magnetic stirrer can be used with or without glass liner in autoclave cylinder.

| For autoclave cylinder (ml) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 22 | 15 | **3003.1** | 1 | 8,95 |
| 200/250/300 | 30 | 12 | **4490.1** | 1 | 10,00 |
| 500 | 40 | 14 | **4517.1** | 1 | 18,95 |

# Autoclaving accessories




## Heating mantles with magnetic stirrer

The basic principle of the heating mantle has been used in Roth autoclave heating units. For optimal heat distribution and utilization, the units are purposly made for use with autoclaves.The base contains the whole electronic system including the magnetic stirrer motor. The motor is attached tightly the heating cylinder. Stirring speed in the closed autoclave is guarenteed adjustable without disturbing the autoclave. Heating and stirring can be regulated separately. Power for the heating unit is supplied by a single extension cord. Even when using a separate unit e.g. temperature regulator, stirring and heating remain independent of each other.

**Technical specifications:**

| | |
|---|---|
| **Heating mantle** | |
| Voltage | 230 V ±10 % |
| Frequency | 50/60 Hz |
| Output, for types 10 S / 20 S / 30 S / 50 S | 200 W / 300 W / 400 W / 600 W |
| Fuse | 5A FF |
| Extension length | 1.3 m |
| Mains plug | Shockproof plug |
| **Regulator** | |
| Temperature range | +20 to +300 °C, variably adjustable |
| On/off display | LED red, Type/pulse pack control (always switches at zero, therefore does not produce radio interfaces) |
| Power output | Triac, no wear of unit |
| Accuracy of regulator | 1 % |
| Temperature sensor | thermoelement Fe-Cu-Ni |
| Regulation | internal via heating unit external viatemperature regulator |
| **Stirrer** | |
| Rpm range | approx. 0 to 1100 rpm, variably adjustable |
| Motor | external rotor motor with magnettemperature sensor can be fitted for additional temperature measurement |
| Sensor type | thermoelement Fe-Cu-Ni |

| Type | for laboratory autoclave | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 S | Model I, 100 ml | **2088.1** | 1 | 2353,20 |
| 20 S | Model II, 200 ml | **0042.1** | 1 | 2353,20 |
| 30 S | Model II, 250 / 300 ml | **2092.1** | 1 | 2353,20 |
| 50 S | Model IV, 500 ml | **2158.1** | 1 | 2353,20 |

▶ Sterile indicator strips, see p. 259



## Temperature controller WRT 2000x

For applications in the laboratory, technical sciences, research and production.

- Easily accessible operator's controls
- Key pad
- Functions: two/three point control; continuous PID-control; step-by-step control
- Two displays for actual and set value
- Additional functions: Timer function for 24 h (process time); ramp function in K/min; actuator function from 0 to 99 % (regulation ratio)

**Input (selection)**

- Input 1 (controller input): Thermocouple sensor see below, or configurable (Pt 100, thermoelement)
- 2 configurable logic inputs for change-over of set point, start/stop function

**Output (selection)**

- Control output (connection with shockproof plug)
- Analogue output (Resolution 10 bit): configurable output size and function

**Technical specifications:**

| | | |
|---|---|---|
| Measuring range | Pt 100<br>Type K<br>Type J<br>Type L<br>Type S | -100 to +600 °C<br>0 to +1200 °C<br>0 to +850 °C<br>0 to +850 °C<br>0 to +1700 °C |
| Measuring cycle | | 500 ms |
| Control accuracy | | <0.15 % of measured value |
| Resolution | | 0.1 °C |
| Rupturing capacity | | 2300 W |
| Enclosure system of protection | | IP 30 |
| Dimensions (W x H x D) | | 205 x 78 x 188 mm |
| Weight | | 1300 g |
| Safe ambient temperature | | 0 to +50 °C |
| Climatic stress | | max. 75 % rh |
| Working voltage | | 230 V, 50/60 Hz |
| Length of lead | | 1300 mm |

**Temperature controller WRT 2000x**:
**Delivery without** temperature sensor and connection cable (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y249.1** | 1 | 858,95 |

**Connection cable controller/heating hood**: length 1500 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y250.1** | 1 | 123,65 |

## Temperature sensor Fe-CuNi

With fine silver sealing.
**Delivery without** compensating circuit (please order separately).

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| For 200 ml beaker (Autoclave Model II) | 220 | **2115.1** | 1 | 332,20 |
| For 250/300 ml beaker (Autoclave Model II) | 280 | **A880.1** | 1 | 332,20 |
| For 500 ml beaker (Autoclave Model IV) | 330 | **K456.1** | 1 | 332,20 |

**Accessories:**

| | | | | |
|---|---|---|---|---|
| Equilibrating tubing for regulator/probe, length 1.5 m | **Y263.1** | 1 | 134,40 |



## Benchtop steam sterilisers, CertoClav EL-series

By CertoClav. With aluminium chamber. For steam heating of substances and use in research and development.
**Applications:** preparation of nutrient media, as well as sterilisation of waste, utensils, bottles and instruments.

**Equipment:**
- Lid with bayonet lock
- Quadruple pressure safety:
  safety lock to precvent opening under pressure, antilock safety valve, pressure relief valve and pressure relief vent
- Pressure regulation by control valve
- Alternate versions with different temperature / pressure levels (125/140 °C or 115/121 °C) are available

**Technical specifications:**

| Model | EL 12L | EL 18L |
|---|---|---|
| Capacity ( l) | 12 | 18 |
| Test pressure (bar) | 4.1 | |
| Ventilation method | Flow method | |
| Inner dimensions (mm) | H 230, ∅ 240 | H 360, ∅ 240 |
| Outer dimensions (mm) | H 535, ∅ 250 | H 665, ∅ 250 |
| Diagonal | 350 | 465 |
| Wire basket: included / max. number | 1/1 pce. | 1/2 pce. |
| Thermometer measurement range (°C) | 0 to 160 / 2-increment scale | |
| Pressure gauge measurement range (bar) | 0 to 4 / 0.1-increment scale | |
| Steam outlet cock (mm) | ∅ 10 | |
| Power consumption (W) | 1900 | |
| Weight (kg) | 7 | 9 |
| Power supply | 230 V, 50/60 Hz | |

**Delivery incl.** precision pressure gauge with maximum trailing pointer, precision thermometer, wire basket and aluminium instrument plate (∅ 225 mm, H 40 mm) with three feet as a base plate over the water.

| Model | Volume (l) | Temperature/pressure level | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| EL 12L | 12 | 125/140 °C at 1.4/2.7 bar | **TL61.1** | 1 | 2252,15 |
| EL 12L | 12 | 115/121 °C at 0.7/1.2 bar | **TL62.1** | 1 | 2252,15 |
| EL 18L | 18 | 125/140 °C at 1.4/2.7 bar | **TL63.1** | 1 | 2663,85 |
| EL 18L | 18 | 115/121 °C at 0.7/1.2 bar | **TL64.1** | 1 | 2663,85 |

## Accessories for benchtop steam sterilisers CertoClav EL-series

By CertoClav.

**Additional wire basket for CertoClav EL 18L**
For easy filling with sterilizable material. Inside ∅ 225 mm, H 170 mm. Mesh width: 1/4 inch. 2nd wire basket for model EL 18L or spare wire basket for model EL 12L.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TL65.1** | 1 | 166,65 |

**Seal service kit for EL-series**
With cover and valve seal, including seal for steam release cock, pressure gauge and steam release valve.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TL66.1** | 1 | 46,45 |



## Benchtop autoclaves CertoClav Classic and MultiControl 2

By CertoClav. With stainless steel chamber.
For culture media processing, as well as sterilisation of equipment and waste. No water connection required. Complementary to the large autoclaves. Space-saving positioning on the laboratory bench.
- Quadruple pressure safety: safety lock to prevent opening under pressure, antilock safety valve, pressure relief valve and pressure relief vent
- CertoLock for locking the lid with a single movement of the hand

**CertoClav Classic:**
Controlled by precision valves and thermostat. With timer. Models available with sterilisation temperature of 125/140 °C or 115/121 °C.

**CertoClav MultiControl 2:**
With freely programmable control system (room temperature to 140 °C). Standard sterilisation programs preinstalled. USB port for connectivity to PC inc. basic software (to display process data).

| Model | Classic | MultiControl 2 |
|---|---|---|
| User interface | Manual | LCD display |
| USB port | - | yes |
| Timer | analog (0 to 60 min or continuous operation) | digital (1 min to 14 d) |
| Process logging | - | PC software |
| Capacity (l) | 18 | |
| Test pressure (bar) | 4.1 | |
| Inner dimensions (mm) | H 300, ∅ 260 | |
| Outer dimensions (mm) | H 550, ∅ 270 | |
| Diagonal (mm) | 424 | |
| Max. wire basket capacity | 1 wire basket (please order separately) | |
| Thermometer measurement range (°C) | 0 to 160 / 2-increment scale | Room temp. to 140 (via LCD display) |
| Pressure gauge measurement range (bar) | 0 to 4 / 0.1-increment scale | |
| Steam outlet cock (mm) | ∅ 10 | |
| Power consumption (W) | 1300 | |
| Weight (kg) | 13 | |
| Power supply | 230 V, 50/60 Hz | |

**Delivery incl.**
Classic model: steam outlet cock, precision thermometer and pressure gauge. MultiControl 2 model: electronic control unit, precision pressure gauge, steam outlet cock and PC software. Please order wire basket separately.

| Model | Temperature/pressure level | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Classic | 125/140 °C at 1.4/2.7 bar | **CYH3.1** * | 1 | 2139,25 |
| Classic | 115/121 °C at 0.7/1.2 bar | **CYH4.1** * | 1 | 2139,25 |
| MultiControl 2 | RT to 140 °C to max. 2.7 bar | **CYH5.1** * | 1 | 3070,85 |

## Accessories for CertoClav Classic and MultiControl 2

By CertoClav.

**Wire basket**
For loading items to be autoclaved. Inside ∅ 250 mm, H 230 mm. Mesh size: ¼ inch.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CYH6.1** * | 1 | 166,65 |

**Seal service set**
With cover and safety valve seal as well as seal for steam outlet cock, pressure gauge, steam outlet valve and control valve.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CYH7.1** * | 1 | 64,30 |

* Longer delivery times possible. Please check with our Sales Department.

# Pressure digestion vessels




## For disintegrations in the Microwave

The energy of microwaves is ideal for disintegrating small sample volumes. Microwaves only interact with the sample material not with the containers. Samples can be heated to boiling point and higher within seconds.

Rotilabo®-digestion vessels are made of isostatically pressed pure TFM. TFM is a modified PTFE made by Hoechst and contains thermoplastic fluorocarbon resins. Therefore an even, pore-free surface can be ensured. Residues from previous samples can not contaminate the measurements.

① Rotilabo®**-hydrolysis and digestion vessels**

Made of isostatic pressed pure TFM. For samples up to 0.5 g. Vessels are form-stable under pressure (up to 25 bar) and temperature stable (max. 160 °C). Sealing membrane prevents loss of evaporating sample, rupture membrane provides additional safety against pressures that exceed the limit. Collecting vessels and a hose are optionally available for protection of the microwave. They can be used to divert and collect gases and fluids in case the sealing and rupture membrane burst.
Please order hose and collecting vessel separately.

**Delivery incl.** 10 sealing membranes made of PFA and 10 rupture membranes made of PTFE.

| Volume (ml) | Inside ∅ (mm) | Inner height (mm) | Max. pressure (bar) | Max. temp. (°C) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 5 | 15 | 32 | 25 | +160 | **E138.1** | 1 | 335,40 |
| 10 | 16 | 52 | 25 | +160 | **E139.1** | 1 | 564,40 |
| 20 | 22 | 60 | 20 | +150 | **E140.1** | 1 | 442,90 |
| 50 | 33 | 62 | 20 | +150 | **E141.1** | 1 | 621,35 |
| 100 | 35 | 110 | 15 | +140 | **E142.1** | 1 | 548,25 |

## ② Rotilabo®-digestion vessels with inserts

**With inserts (Inliner) made of TFM**. The same can be said for these containers as for the previous hydrolysis and digestion vessels.
The easily changed inliners are used for precise weighing of samples, because the whole vessel is usually too heavy for most precision balances. It is also possible to analyse several samples with the same vessel.
Collecting vessels and a hose are optionally available to protect the microwave. They can be used to divert and collect gases and fluids in case the sealing and rupture membrane burst.
Please order hose and collecting vessel separately.

**Delivery incl.** 10 sealing membranes made of PFA and 10 rupture membranes made of PTFE.

| Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 | **E143.1** | 1 | 697,70 |
| 20 | **E144.1** | 1 | 703,05 |
| 50 | **E145.1** | 1 | 655,75 |

## Accessories for Rotilabo®-digestion vessels

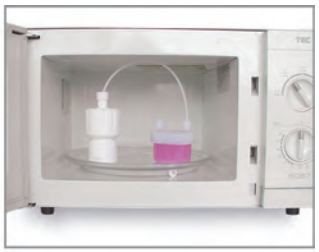
**Separate Rotilabo®-inserts** (Inliner)

| For vials (ml) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | approx. 48 | **E146.1** | 1 | 72,70 |
| 20 | approx. 55 | **E147.1** | 1 | 79,10 |
| 50 | approx. 112 | **E148.1** | 1 | 107,00 |

**Sealing and rupture membranes** for Rotilabo®-digestion vessels

| For vials (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 5 | **E149.1** | 10 | 28,10 |
| 10/20 | **E150.1** | 10 | 36,55 |
| 50/100 | **E151.1** | 10 | 44,10 |





## Collecting vessels

Made of PFA. Suitable for Rotilabo® digestion vessels.
Collecting vessels can be used to collect gases and fluids for protection of the microwave (if the sealing and rupture membrane bursts).
Transparent and pore-free. With two connections in the screw cap suitable for hose outside ∅ 6.35 mm (1/4″).
**Delivery without** FEP hose (please order separately).

| Volume (ml) | Overall height (mm) | Outside ∅ (mm) | Inside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 120 | 74 | 66 | 60 | **LT39.1** | 1 | 187,05 |
| 240 | 116 | 66 | 60 | **LT40.1** | 1 | 224,70 |

## FEP-tubes for collecting and digestion vessels

Temperature range -270 to +205 °C. Flexible, pore-free, gasproof. Transparent. Autoclavable.

| Inside ∅ (mm) | Outside ∅ (mm) | Wall thickness (mm) | Art. No. | Pack Qty. (m) | € |
|---|---|---|---|---|---|
| 4,35 (11/64″) | 6,35 (1/4″) | 1,0 | **Y506.1** | 5 | 45,70 |







## Household Cooling and refrigerating boxes

By Severin.

① **Household cooling box**
- Energy efficiency class (year): A+ (107 kWh)
- Climate class N-ST
- Refrigeration temperature can be regulated from +3 to +7 °C
- Temperature setting range:
  1 (= lowest refrigerating capacity) to 7 (= highest refrigerating capacity)
- Height adjustable feet
- Manual defrosting

② **Household refrigerating box**
- Energy efficiency class (year): A+ (146 kWh)
- Climate class N-ST
- Refrigeration temperature can be regulated from -18 to -24 °C
- Temperature range:
  1 (= lowest refrigerating capacity) to 5 (= highest refrigerating capacity)
- Height adjustable feet
- Manual defrosting

**Technical specifications:**

| Type | Household cooling box | Household refrigerating box |
|---|---|---|
| Refrigerating capacity (l) | 49 | 36 |
| Deep-freeze compartment (l) | 5* (for temperatures from approx. 0 to -5° C); non-regulable | - |
| Trays | 1 grid tray | 1 grid tray |
| Outer dimensions (mm) | | |
| Width<br>Depth<br>Height | 440<br>480<br>515 | 440<br>480<br>515 |
| Inner dimensions (mm) | | |
| Width top / bottom<br>Depth top / bottom<br>Height top / bottom | 355 / 355<br>320 / 170<br>235 / 175 | 305 / 305<br>360 / 205<br>190 / 180 |
| Weight (kg) | 18 | 20 |

*Dimensions: W 180 x D 270 x H 100 mm

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Household Cooling box | **KP21.1** | 1 | 192,45 |
| Household Ice box | **KP22.1** | 1 | 220,40 |




## Household table-height refrigerators

By Liebherr.

**General specifications for both models**
- Climate class SN-ST
- Cooling temperature is adjustable from 0 to +9 °C (mechanical control)
- Selectable temperature ranges:
  1 (= lowest cooling capacity) to 7 (= highest cooling capacity)
- Interior light
- Integrable and suitable for rack mounting through front-side ventilation (air exhaust through slits in the worktop) and removable worktop
- Height-adjustable front feet
- 1 variable refrigeration circuit

**Model T 1700-20**
- Energy efficiency class (year/24 h): A+ (119/0.326 kWh)
- Automatic defrost system

**Model T 1504-20**
- Energy efficiency class (year/24 h): A+ (183/0.499 kWh)
- With additional freezer compartment
  (average temperature approx. -18 °C)
- Automatic defrost refrigerator compartment, manual defrost freezer compartment

**Technical specifications:**

| Type | ① T 1700-20 | ② T 1504-20 |
|---|---|---|
| Cooling capacity (l) | 151 | 117 |
| Freezer compartment (l) | - | 17 |
| Number of glass shelves | 4 (3 adjustable) | 2 (1 adjustable) |
| Outer dimensions (mm): | | |
| Width<br>Depth<br>Height | 554<br>623<br>850 | 554<br>623<br>850 |
| Weight (kg) | 37 | 35,3 |
| Power supply | 220-240 V, 50 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| T 1700-20 | **CHH5.1** * | 1 | 535,35 |
| T 1504-20 | **CHH6.1** * | 1 | 535,35 |

* Longer delivery times possible. Please check with our Sales Department.

# Refrigerators/Freezers






## FK-series refrigerators

By Liebherr.

**General specifications of all models**

- Cooling temperature is adjustable from +2 to +10 °C.
- With static cooling
- Automatic defrost system
- Mechanical control unit
- Lockable door

**Model FKU 1800-20**
With additional digital temperature display on outside of door.

**Technical specifications:**

| Type | FKU 1800-20 | FK 2640-20 | FK 3640-20 | FK 4140-20 | FK 5440-20 |
|---|---|---|---|---|---|
| Cooling capacity (l) | 160 | 226 | 312 | 352 | 526 |
| Number of grids (adjustable) | 3 | 3 | 4 | 5 | 4 |
| Power output (W) | 100 | 140 | 150 | 150 | 150 |
| Outer dimensions (mm): | | | | | |
| Width<br>Depth<br>Height | 600<br>600<br>850 | 600<br>610<br>1250 | 600<br>610<br>1640 | 600<br>610<br>1800 | 750<br>730<br>1640 |
| Inner dimensions (mm): | | | | | |
| Width<br>Depth<br>Height | 513<br>441<br>702 | 470<br>440<br>1062 | 470<br>440<br>1452 | 470<br>440<br>1612 | 600<br>560<br>1452 |
| Energy consumption in 24 h (kWh) | 0,699 | 0,452 | 0,454 | 0,517 | 0,627 |
| Weight (kg) | 37 | 48 | 59 | 69 | 74 |
| Power supply | 220-240 V, 50 Hz | | | | |

**Delivery incl.** height-adjustable grids.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| FKU 1800-20 | **NP82.1** * | 1 | 623,50 |
| FK 2640-20 | **NP83.1** * | 1 | 711,65 |
| FK 3640-20 | **NP84.1** * | 1 | 799,80 |
| FK 4140-20 | **NP85.1** * | 1 | 865,40 |
| FK 5440-20 | **NP86.1** * | 1 | 1051,35 |

* Longer delivery times possible. Please check with our Sales Department.

## Refrigerators with circulation cooling FKUvsl series

By Liebherr.

**General specifications of all models**

- Temperature range: +1 to +15 °C
- Mechanical control with stages
- **Digital temperature display outside on the door**
- **Dynamic cooling system** for fast cool-down and even cooling temperature
- Automatic defrost system
- Lockable door

**Technical specifications:**

| Type | FKvsl 2610 | FKvsl 3610 | FKvsl 5410 |
|---|---|---|---|
| Cooling capacity (l) | 221 | 307 | 520 |
| Number of grids (adjustable) | 4 | 5 | 5 |
| Power (W) | 120 | 130 | 150 |
| Outer dimensions (mm) | | | |
| Width<br>Depth<br>Height | 600<br>610<br>1250 | 600<br>610<br>1640 | 750<br>730<br>1640 |
| Inner dimensions (mm) | | | |
| Width<br>Depth<br>Height | 470<br>440<br>1062 | 470<br>440<br>1452 | 600<br>560<br>1452 |
| Housing material/colour | Steel/silver | | |
| Energy consumption in 24 h (kWh) | 0,786 | 0,947 | 0,983 |
| Weight (kg) | 51 | 62 | 78 |
| Power supply | 220-240 V, 50 Hz | | |

**Delivery incl.** height-adjustable grills.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| FKvsl 2610 | **HKK5.1** * | 1 | 865,40 |
| FKvsl 3610 | **HKK6.1** * | 1 | 1014,80 |
| FKvsl 5410 | **HKK7.1** * | 1 | 1227,65 |

* Delivery times may apply to these products. Please check with our Sales Department



## FKUv-series refrigerators

By Liebherr.

**General specifications of both models**

- Cooling temperature is adjustable from +1 to +15 °C
- With dynamic cooling system (switchable fan, for even temperature distribution)
- Digital temperature display (resolution 1 °C)
- Temperature constancy ±4 K
- Outer design: sheet steel, white, powder coated
- Door opening alarm - if the door is opened for longer than 60 s (can be deactivated)
- Automatic thaw system

**FKUv 1610-22**
With insulating door made of powder-coated sheet steel.

**FKUv 1613-22**
With glass door. Additional LED-ceiling light can be switched separately.

**Technical specifications:**

| Type | FKUv 1610-22 | FKUv1613-22 |
|---|---|---|
| Cooling capacity (l) | 130 | |
| Number of grills | 3 (adjustable) | |
| Outer dimensions (W x D x H) mm | 600 x 611 x 830 | |
| Inner dimensions (W x D x H) mm | 440 x 435 x 670 | |
| Energy consumption in 24 h (kWh) | 0,6908 | 0,898 |
| Weight (kg) | 37 | 43 |
| Power supply | 220-240 V, 50 Hz | |

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| FKUv 1610-22 | With insulating door | **YP21.1** * | 1 | 788,00 |
| FKUv 1613-22 | With glass door | **YP22.1** * | 1 | 920,20 |

* Longer delivery times possible. Please check with our Sales Department.



## ES-series laboratory refrigerators and deep freezers

By Thermo.

**General specifications of all models**

- **Cooling temperature adjustable from:**
  Refrigerators: 4 to 6 °C; 5 °C is preset
  Freezers: -19 to -21 °C, -20 °C is preset
- **Digital temperature display (resolution 1 °C)**
- Alarm function for high and low temperature limits (alarm limits have fixed settings; 1 and 11 °C or -15 and -30 °C)
- Standard entries (∅ 16 mm), e.g. for external temperature sensors
- With lockable door

**Technical specifications:**

| Type | 151R-AEV-TS | 288R-AEV-TS | 151F-AEV-TS | 232F-AEV-TS |
|---|---|---|---|---|
| Cooling capacity (l) | 151 | 288 | 151 | 232 |
| Alarm | Yes | | | |
| Variable cooling temperatures (°C) | 4 to 6 | | -19 to -21 | |
| Max. temperature range (°C) | 1 to 10 | | -18 to -25 | |
| Number of loose shelves | 3 | 5 | - | 2 |
| Number of baskets | 1 | | 3 | |
| Outer dimensions (mm): | | | | |
| Width<br>Depth<br>Height | 595<br>595<br>845 | 595<br>634<br>1570 | 595<br>595<br>845 | 595<br>634<br>1570 |
| Inner dimensions (mm): | | | | |
| Width<br>Depth<br>Height | 500<br>450<br>705 | 480<br>445<br>1382 | 500<br>450<br>705 | 437<br>430<br>1300 |
| Thawing | Automatic | | Manual | |
| Energy consumption in 24 h (kWh) | 0.6 | 0.5 | 1.6 | 1.0 |
| Weight (kg) | 65 | 90 | 65 | 90 |
| Power supply | 230 V, 50 Hz | | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 151R-AEV-TS | **NN39.1** * | 1 | 783,00 |
| 288R-AEV-TS | **NN40.1** * | 1 | 1112,00 |
| 151F-AEV-TS | **NN41.1** * | 1 | 783,00 |
| 232F-AEV-TS | **NN42.1** * | 1 | 1112,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Refrigerators/Freezers





## Household freezers G 1213-20 and GP 2033-20

By Liebherr.

- LC display with graphical display of set temperature
- Variable cooling temperatures of -15, -18, -21, -25 and -32 °C
- Drawers with transparent front
- Manual defrost
- Height-adjustable front feet
- 1 variable refrigeration circuit

**Model G 1213-20**

- Energy efficiency class (year/24 h): A+ (199/0.543 kWh)
- Climate class SN-T

**Model GP 2033-20**

- Energy efficiency class (year/24 h): A++ (175/0.479 kWh)
- Climate class SN-T

**Technical specifications:**

| Model | G 1213-20 | GP 2033-20 |
|---|---|---|
| Cooling capacity (l) | 98 | 156 |
| Drawers in freezer compartment | 3 | 5 |
| Outer dimensions W x D x H (mm) | 553 x 624 x 851 | 600 x 632 x 1250 |
| Dimensions of upper drawers W x D x H (mm) | 375 x 355 x 180 | 413 x 400 x 160 |
| Dimensions of lower drawer W x D x H (mm) | 375 x 184 x 170 | 413 x 245 x 175 |
| Weight (kg) | 41 | 56 |
| Power supply | 220-240 V, 50 Hz | |

**Delivery incl.** drawers.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| G 1213-20 | **CHH4.1** * | 1 | 535,35 |
| GP 2030-20 | **CTY4.1** * | 1 | 798,75 |

* Longer delivery times possible. Please check with our Sales Department.



## Freezers GGU 1550-21 and GGv 5860-41

By Liebherr.

**General specifications of all models**

- Housing made of stainless steel
- Power fail indicator
- Door opening alarm
- With lockable door

**GGU 1550-21**

- **With static cooling**
- Digital temperature display (resolution 1 °C)
- Temperature constancy ±5 °C
- Manual thawing
- 4 shelves/evaporator plates

**GGv 5860-41**

- **With convection cooling**
- NoFrost technology - products are frozen with cooled recirculated air and moisture is discharged into the open
- Digital temperature display (resolution 1 °C)
- Temperature constancy ±2 °C
- Automatic defrost system
- Height of adjustable feet: 150 to 180 mm

**Technical specifications:**

| Type | GGU 1550-21 | GGv 5860-41 |
|---|---|---|
| Cooling capacity (l) | 133 | 490 |
| Cooling temperature (°C) | -9 to -26 | -14 to -28 |
| Number of shelves | 4 wire baskets, removable | 5 height-adjustable grid shelves with stop and pull-out stop, 1 bottom grid |
| Compartment height (mm) | 3 x 150 / 1 x 170 | - |
| Outer dimensions (mm): | | |
| Width<br>Depth<br>Height | 600<br>615<br>830 | 750<br>750<br>2064 |
| Inner dimensions (mm): | | |
| Width<br>Depth<br>Height | 474<br>443<br>676 | 610<br>500<br>1395 |
| Thawing method | Manual | Automatic |
| Energy consumption in 24 h (kWh) | 0,724 | 3,701 |
| Weight (kg) | 41 | 121 |
| Power supply | 220-240 V, 50 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GGU 1550-21 | **NH36.1** * | 1 | 876,15 |
| GGv 5860-41 | **NH37.1** * | 1 | 2618,70 |

* Longer delivery times possible. Please check with our Sales Department.

# Fridge-freezer



## Laboratory freezer Froster-Labo 330

By Kirsch.

- Freezing temperature can be adjusted from -5 to -30 °C
- Digital temperature display (Resolution 1 °C)
- Recirculates air cooling for consistent temperature control (switches off when door is opened)
- The freezing cycle is reversed automatically and after a limited time for rapid defrosting
- Drip water evaporation occurs in refrigerating machine room
- Min/Max-temperature storage
- Optic and acoustic limit value alarm
- Outer casing made of galvanized sheet steel, powder coated
- Adjustable feet compensate for uneven surfaces
- With lockable door

**Technical specifications:**

| | |
|---|---|
| Refrigerating capacity (l) | 300 |
| Alarm | yes |
| Grids | 4 |
| Power (W) | 500 |
| Outer dimensions (mm) | |
| Width<br>Depth<br>Height | 740<br>770<br>1490 |
| Inner dimensions (mm) | |
| Width<br>Depth<br>Height | 595<br>530<br>950 |
| Energy consumption in 24 h (kWh) | 4,58 |
| Weight (kg) | 125 |
| Current | 220-240 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KL29.1** * | 1 | 5180,45 |

* Longer delivery times possible. Please check with our Sales Department.



## Household fridge-freezer CUsl 2811

By Liebherr.

- Energy efficiency class (year/24 h): A++ (191/0.523 kWh)
- Climate class SN-ST
- 1 variable refrigeration circuit :
  Cooling temperature is adjustable from 0 to +9 °C (mechanical control)
  Freezer compartment: average temperature -18 °C (non-adjustable)
- Selectable temperature ranges:
  1 (= lowest cooling capacity) to 7 (highest cooling capacity)
- Refrigerator compartment with LED interior light, freezer compartment without light
- Height-adjustable front feet

**Technical specifications:**

| Type | Fridge unit | Freezer unit |
|---|---|---|
| Cooling capacity (l) | 210 | 53 |
| Number of shelves | 4 glass shelves<br>(3 adjustable) | 2 drawers with transparent front |
| Outer dimensions W x D x H (mm) | 550 x 629 x 1612 mm | |
| Thawing method | Automatic | Manual |
| Weight (kg) | 55 | |
| Power supply | 220-240 V, 50 Hz | |

**Delivery incl.** glass shelves and 2 drawers.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CTY5.1** * | 1 | 810,55 |

* Longer delivery times possible. Please check with our Sales Department.

# Fridge-freezer



## Laboratory fridge-freezer 263C-AEV-TS

By Thermo.

- **Cooling temperature adjustable from:**
  Refrigerator: 4 to 6 °C; 5 °C is preset
  Freezer: -20 °C (non-adjustable)
- **Digital temperature display (resolution 1 °C)**
- Alarm function for high and low temperature limits
  (alarm limits have fixed settings; 1 and 11 °C or -15 and -30 °C)
- Standard entries (∅ 16 mm), e.g. for external temperature sensors
- With lockable door

**Technical specifications:**

| Type | Fridge unit | Freezer unit |
|---|---|---|
| Cooling capacity (l) | 159 | 109 |
| Alarm | Yes | |
| Variable cooling temperature (°C) | 4 to 6 | -20 (non-adjustable) |
| Max. temperature range (°C) | 1 to 10 | -18 to -25 |
| Number of loose shelves | 3 | 1 |
| Number of baskets | 2 basket halves | 2 |
| Outer dimensions (mm): | | |
| Width<br>Depth<br>Height | 540<br>600<br>1680 | |
| Inner dimensions (mm): | | |
| Width<br>Depth<br>Height | 457<br>450<br>725 | 408<br>415<br>670 |
| Thawing | Automatic | Manual |
| Energy consumption in 24 h (kWh) | 0.9 | |
| Weight (kg) | 95 | |
| Power supply | 230 V, 50 Hz | |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NN38.1** * | 1 | 1448,00 |

* Longer delivery times possible. Please check with our Sales Department.



## LCv 4010 laboratory fridge-freezer combination

By Liebherr.

- Adjustable cooling temperature
  (2 separately adjustable refrigeration circuits)
  Fridge unit: +3 to +16 °C
  Freezer unit: -9 to -30 °C
- Fridge unit with recirculated-air ventilation system, freezer unit with static cooling system
- Digital temperature display
  Resolution, fridge unit: 0.1 °C
  Resolution, freezer unit: 0.1 °C (to -19.9 °C) or 1 °C (from -20 °C onwards)
- Temperature constancy
  Fridge unit: ±2.0 K
  Freezer unit: ±3.5 K
- With lockable door
- Memory for Min/Max temperatures
- Memory function for storing the last three temperature alarms and power failures with date/time/duration of alarm
- Audible and visual limit alarms
- Audible and visual door opening alarms
- Feedthrough for external temperature sensor (∅ 10 mm)
- Energy consumption in 24 h: 1,800 kWh

**Technical specifications:**

| | Fridge unit | Freezer unit |
|---|---|---|
| Cooling capacity (l) | 240 | 105 |
| Freezing temperature (°C) | +3 to +16 | -9 to -30 |
| Number of surfaces | 4 grates, plastic coated | 3 drawers |
| Outer dimensions (mm): | | |
| Width<br>Depth<br>Height | 600<br>615<br>2000 | |
| Inner dimensions (mm): | | |
| Width<br>Depth<br>Height | 440<br>435<br>1105 | 431<br>435<br>597 |
| Thawing method | Automatic | Manual |
| Weight (kg) | 91 | |
| Power supply | 220-240 V, 50/60 Hz | |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TP33.1** * | 1 | 2476,80 |

## LCexv 4010 fridge-freezer combination explosion protected

By Liebherr.
Same as model LCv 4010, but with explosion protected interior in compliance with the safety requirements of EU Directive 94/9/EC (ATEX 95) for the storage of explosive and highly flammable substances in enclosed containers.
**Delivery incl.** 4 glass shelves for the cooling unit (instead of plastic-coated racks).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AET2.1** * | 1 | 2542,40 |

* Longer delivery times possible. Please check with our Sales Department.

# Freezer chests/Thermostat cabinets





## Laboratory freezer chests

By Liebherr.

- Temperature adjustment range from -10 to -45 °C
- Digital temperature display
- Resolution: 0.1 °C (to -19.9 °C) or 1 °C (from -20 °C onwards)
- Temperature constancy ±2.5 K
- With static cooling
- Inner shell material: aluminium, white coated
  Door/lid material: steel
- Integrated interior light in chest lid
- Memory for Min/Max temperatures
- Memory function for storing last three temperature alarms and power failures with date/time/duration of alarm
- Audible and visual limit alarms
- Audible and visual lid opening alarms
- Feedthrough for external temperature sensor (∅ 10 mm)

**Technical specifications:**

| Type | LGT 2325 | LGT 3725 | LGT 4725 |
|---|---|---|---|
| Cooling capacity (l) | 200 | 342 | 431 |
| Outer dimensions (mm): | | | |
| Width<br>Depth<br>Height | 1132<br>760<br>919 | 1373<br>808<br>919 | 1648<br>808<br>919 |
| Inner dimensions (mm): | | | |
| Width<br>Depth<br>Height | 889<br>410<br>630 | 1170<br>500<br>650 | 1445<br>500<br>650 |
| Capacity for cryo racks<br>(please order cryo racks separately) | 8 pce. | 18 pce. | 24 pce. |
| Thawing method | Manual | | |
| Lock | Yes | | |
| Energy consumption in 24 h (kWh) | 2,258 | 2,928 | 4,352 |
| Weight (kg) | 66 | 84 | 96 |
| Power supply | 220-240 V, 50/60 Hz | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| LGT 2325 | **TP35.1** * | 1 | 1797,40 |
| LGT 3725 | **TP36.1** * | 1 | 1917,80 |
| LGT 4725 | **TP37.1** * | 1 | 2136,05 |

* Longer delivery times possible. Please check with our Sales Department.

## Accessories:

By Liebherr.

**Cryo racks for deep freezer chests**

For 11 boxes with max. height 50-53 mm.
Rack dimensions: L 140 x W 140 x H 604 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LH47.1** | 1 | 92,40 |

## TCS-series thermostat cabinets

By Aqualytic. For continuous temperature control in different applications, e.g. microbiological research, BSB requirements etc.

- Temperature range +2 to +40 °C, infinitely adjustable in 0.1 °C increments
- Illuminated LED temperature display for actual/nominal values
- Temperature constancy ±1.0 °C
- With internal sockets for devices which require a power supply, e.g. magnetic stirrer
- Built-in cooling and heating units
- Lockable door
- With height-adjustable grids

**Technical specifications:**

| Type | TC 135 S / TC 140 G | TC 175 S | TC 255 S / TC 256 G | TC 445 S |
|---|---|---|---|---|
| Cooling capacity (l) | 135/140 | 175 | 255/255 | 445 |
| Inserts: | | | | |
| Grids<br>Bottom grid | 3<br>1 | 3<br>1 | 4<br>1 | 4<br>1 |
| Outer dimensions (mm): | | | | |
| Width<br>Depth<br>Height | 600 (600*)<br>600 (600*)<br>850 (819*) | 600<br>610<br>1250 | 600<br>610<br>1640 | 750<br>730<br>1640 |
| Inner dimensions (mm): | | | | |
| Width<br>Depth<br>Height | 513<br>441<br>702 | 470<br>440<br>1062 | 470<br>440<br>1452 | 600<br>560<br>1452 |
| Sockets in usable space (pc.) | 4 | 5 | 7 | 9 |
| Energy consumption in 24 h (kWh) | 1,35/1,77 | 1,23 | 1,54/1,56 | 1,42 |
| Weight (kg) | 39 / 50 | 51 | 61 / 77 | 78.5 |
| Power supply | 220-240 V, 50 Hz | | | |

*Outer dimensions excluding worktop.

**With standard door**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| TC 135 S | **AKX5.1** * | 1 | 1725,40 |
| TC 175 S | **AKX6.1** * | 1 | 2186,55 |
| TC 255 S | **AKX7.1** * | 1 | 2382,20 |
| TC 445 S | **AKX8.1** * | 1 | 2918,65 |

**With glass door, double insulating glass with ABS frame**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| TC 140 G | **AKX9.1** * | 1 | 1962,95 |
| TC 256 G | **AKY0.1** * | 1 | 2545,60 |

* Longer delivery times possible. Please check with our Sales Department. Prices include shipping within Germany.

# Refrigerators/Freezers, explosion-proof





## Explosion-proof laboratory fridges

Explosion-proof in accordance with the guidelines on "Working Safely in Laboratories BG-I 850-0". Enclosed spaces in which hazardous, explosive atmospheres can develop, e.g. rooms where flammable liquids are stored, must be explosion-protected.

- Cooling temperature is infinitely variable from +1 to +15 °C
- Selectable temperature ranges:
  1 (= lowest cooling capacity) to 5 (= highest cooling capacity)
- Mechanical control unit
- Digital temperature display (resolution 1 °C)
- Sheet steel housing with impact resistant powder coating
- With lockable door and height-adjustable glass base
- Dynamic cooling system (with forced air ventilation)
- Models EX 220, EX 300 and EX 490 have a fan stop function which switches off the fan when the door is opened
- Automatic condensation drainage into inner catch tank

**Technical specifications:**

| Type | EX 160 | EX 220 | EX 300 | EX 490 |
|---|---|---|---|---|
| Cooling capacity (l) | 160 | 220 | 300 | 490 |
| Number of glass shelves | 3 | 4 | 5 | 5 |
| Outer dimensions (mm): | | | | |
| Width<br>Depth<br>Height | 600<br>600<br>860 | 600<br>610<br>1250 | 600<br>610<br>1640 | 750<br>730<br>1640 |
| Inner dimensions (mm): | | | | |
| Width<br>Depth<br>Height | 513<br>441<br>702 | 470<br>440<br>1062 | 470<br>440<br>1452 | 600<br>560<br>1452 |
| Energy consumption in 24 h (kWh) | 0,898 | 0,786 | 0,947 | 0,983 |
| Weight (kg) | 40 | 53 | 64 | 84 |
| Power supply | 220-240 V, 50 Hz | | | |

**Delivery incl.** height-adjustable glass shelves.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| EX 160 | **AKY7.1** * | 1 | 1036,30 |
| EX 220 | **AKY8.1** * | 1 | 1099,80 |
| EX 300 | **AKY9.1** * | 1 | 1308,40 |
| EX 490 | **ALA0.1** * | 1 | 1480,65 |

* Longer delivery times possible. Please check with our Sales Department. Prices include shipping within Germany.

According to laboratory guidelines, converted refrigerators and freezers must be identified with the sign „Interior free from ignition sources".

## Refrigerators Mediline, explosion-proof models LKUexv 1610 and LKexv 3910

By Liebherr. With explosion-proof interior acc. to. EU Guideline 94/9/EG (ATEX 95).

**General specifications for both models**

- Refrigeration temperature adjustable from +3 to +16 °C
- With hot-air ventilation
- Digital temperature display (Resolution 0.1 °C)
- Temperature constancy ±2.0 K
- Memory for min/max temperatures
- Memory function for last three temperature alarms and power cuts with date/time/duration of alarm
- With lockable door
- Optic and acoustic limit value alarm
- Optic and acoustic open door alarm
- Automatic defrosting

**Technical specifications:**

| Model | LKUexv 1610 | LKexv 3910 |
|---|---|---|
| Cooling volume (l) | 130 | 344 |
| Alarm | Yes | Yes |
| Number of glass shelves | 3 | 5 |
| Outer dimensions (mm): | | |
| Width<br>Depth<br>Height | 600<br>615<br>820 | 600<br>615<br>1840 |
| Inner dimensions (mm): | | |
| Width<br>Depth<br>Height | 455<br>435<br>669 | 455<br>435<br>1650 |
| Energy consumption in 24 h (kWh) | 0,747 | 0,865 |
| Weight (kg) | 42 | 70 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| LKUexv 1610 | **LL34.1** * | 1 | 1468,45 |
| LKexv 3910 | **LL33.1** * | 1 | 2004,90 |

* Longer delivery times possible. Please check with our Sales Department. Prices include transport costs within Germany.







## Refrigerators Mediline, explosion-proof models LGUex 1500 and LGex 3410

By Liebherr.
With explosion-proof interior acc. to. EU Guideline 94/9/EG (ATEX 95).

**General specifications for both models**

- Static cooling
- Digital temperature display
  Resolution 0.1 °C (to -19.9 °C) resp. 1 °C (from -20 °C)
- Temperature constancy ±2 K
- Memory for min/max temperatures
- Memory function saves the last three temperature alarms and power cuts with date/time/duration of alarm
- With lockable door
- Optic and acoustic limit value alarm
- Optic and acoustic open door alarm
- Manual defrosting

**LGUex 1500**
Cooling temperature adjustable from -9 to -26 °C

**LGUex 3410**
Cooling temperature adjustable from -9 to -30 °C

**Technical specifications:**

| Model | LGUex 1500 | LGex 3410 |
|---|---|---|
| Cooling capacity (l) | 129 | 284 |
| Alarm | yes | yes |
| Drawers<br>Basket | 3<br>1 | 8<br>- |
| Compartment height (mm) | 149 | 185 |
| Outer dimensions (mm): | | |
| Width<br>Depth<br>Height | 600<br>615<br>820 | 600<br>615<br>1840 |
| Inner dimensions (mm): | | |
| Width<br>Depth<br>Height | 454<br>450<br>663 | 420<br>400<br>1587 |
| Energy consumption in 24 h (kWh) | 0,926 | 1,309 |
| Weight (kg) | 46 | 89 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| LGUex 1500 | **LL36.1** * | 1 | 1523,30 |
| LGex 3410 | **LL35.1** * | 1 | 2093,05 |

* Longer delivery times possible. Please check with our Sales Department.

## Laboratory freezers, Froster-Labex series, explosion-proof

By Kirsch. Interior explosion-proof, in compliance EU guideline 94/9/EG (ATEX 95) and in comp. with laboratory guidelines BGR 120, nr. 3.8.

**Model Froster-Labex-70**

- Cooling temperature from -15 to -22 °C
- Temperature selection range:
  1 (= lowest cooling capacity) to 5 (= highest cooling capacity)
- With analogue actual value thermometer on inside of door
- Outer cabinet made of galvanized sheet steel, powder-coated
- Manual defrosting

**Model Froster-Labex-96**

- Cooling temperature adjustable from -5 to -25 °C
- Digital temperature display (resolution 1 °C)
- Min/Max temperature storage
- Optical and acoustic limiting value alarm
- Outer cabinet made of galvanized sheet steel, powder-coated
- With condense water tray for manual emptying of inner condensate

**Technical specifications:**

| Model | Froster-Labex-70 | Froster-Labex-96 |
|---|---|---|
| Cooling capacity (l) | 70 | 95 |
| Alarm | No | Yes |
| Output (W) | 100 | 160 |
| Grids<br>Gully grating<br>Drawers | 2<br>1<br>1 | 2<br>-<br>- |
| Outer dimensions (mm) | | |
| Width<br>Depth<br>Height | 480<br>510<br>740 | 540<br>540<br>850 |
| Inner dimensions (mm) | | |
| Width<br>Depth<br>Height | 350<br>410[1)]<br>550 | 440[2)]<br>420[3)]<br>470 |
| Energy consumption in 24 h (kWh) | 1,6 | 2,6 |
| Weight | 34 kg | 42 kg |
| Mains supply | 220-240 V, 50/60 Hz | |

[1)] Usable depth, top 90 mm, bottom 200 mm less
[2)] Usable width 20 mm less
[3)] Usable depth 50 mm less

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Froster-Labex-70 | **KL27.1** * | 1 | 2395,10 |
| Froster-Labex-96 | **KL28.1** * | 1 | 3371,20 |

* Longer delivery times possible. Please check with our Sales Department.

# Flake ice maker



## Cone ice makers SCOTSMAN® B-series

For making solid and crystal clear cone ice.
Applications: laboratories and industry.

- Stainless steel version, air cooled
- Built-in reservoir
- Insulated removal flap for reduced condensation
- Ice cone size: approx. H 30.5 x ∅ 34 mm (20 g)
- Suitable for use with drinking water and demineralised water

**Technical specifications:**

| Type | B 2508 | B 3015 |
|---|---|---|
| Max. output in 24 h (kg) | 25 | 31 |
| Reservoir capacity (kg) | 8 | 15 |
| Dimensions (W x D x H) mm | 390 x 515 x 640 | 467 x 570 x 690 |
| Operating limits:<br>Room temperature<br>Water temperature<br>Water pressure | min. 10 °C / max. 43 °C<br>min. 5 °C / max. 38 °C<br>min. 0.8 bar / max. 5 bar | |
| Weight (kg) | 31 | 34 |
| Power supply | 230 V, 50 Hz | |

**Delivery incl.** 1 ice scoop, connecting hose ¾″ (length 1.5 m), 1 discharge hose (∅ 20 mm, length 1.5 m).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| B 2508 | **NH38.1** * | 1 | 1069,65 |
| B 3015 | **NH39.1** * | 1 | 1327,65 |

* Longer delivery times possible. Please check with our Sales Department.



## RF-series flake ice maker with ice storage tank Manitowoc Ice

Range of applications: laboratories, research institutes and industry.
Ideal for production of flake and/or broken ice at a temperature of -0.5 °C.
The ice is crystalline-shaped and suitable for pouring.

- With free water drainage
- With integrated storage tank
- Outside cabinet made of stainless steel
- Air-conditioned
- Separate on/off switch
- Suitable for working with drinkng water and demineralised water
- Height adjustable feet (110 to 150 mm)

**Technical specifications:**

| Model | RF 0244 | RF 0266P | RF 0385 | RF 0399 |
|---|---|---|---|---|
| Max. production volume in 24 h (kg) | 82 | | 151 | |
| Tank content (kg) | 18 | 27 | 40 | 54 |
| Power consumption (W) | 700 | | 1000 | |
| Dimensions (mm) | | | | |
| Width<br>Depth<br>Height | 500<br>660<br>842 | 500<br>660<br>952 | 738<br>690<br>1003 | 783<br>690<br>1172 |
| Permissible working temperature | 10 to 43 °C | | | |
| Weight (kg) | 71/75 | 76/80 | 102/106 | 109/113 |
| Power supply | 230 V, 50 Hz | | | |

**Delivery incl.** 1 ice scoop and connection tubes (one each 1.5 m supply and drainage hose with ½″-thread).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RF 0244 | **LP30.1** * | 1 | 3042,25 |
| RF 0266 | **LP31.1** * | 1 | 3096,00 |
| RF 0385 | **LP32.1** * | 1 | 3440,00 |
| RF 0399 | **LP33.1** * | 1 | 3526,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Flake ice maker



## Flake ice machines with ice storage tank SCOTSMAN® AF-series

Applications: laboratories, research institutes and industry.

- Stainless steel model, air-cooled
- Environmental-friendly safety refrigerant

The ice flakes have a temperature of -0.5 °C; the irregular, large surface has an extremely good cooling effect. Each flake is saturated, firm and doesn't stick together.

**Model EF 103 AS**
With additional waste water pump (waste water can be pumped up to a height of 1.7 m or up to a distance of 15 m).

**All models can be converted to work with demineralized water (conductivity <30 µS) at an extra charge.**
**Please check with our Sales Department.**

**Technical specifications:**

| Type | AF 80 AS | EF 103 AS |
|---|---|---|
| Max. production volume in 24 h (kg) | 70 | 105 |
| Storage capacity (kg) | 25 | 30 |
| Power input (W) | 330 | 470 |
| Dimensions W x D x H (mm) | 535 x 626 x 933 | 592 x 622 x 1126 |
| Operating limits:<br>Room temperature (°C)<br>Water temperature (°C)<br>Water pressure (bar) | min. 10 / max. 40<br>min. 5 / max. 35<br>min. 1 / max. 5 | |
| Weight (kg) | 51 | 63 |
| Current | 230 V, 50 Hz | |

**Delivery incl.** 1 scoop, 1 connection hose ¾″ (length 1.5 m), 1 drainage hose (∅ 20 mm, length 1.5 m).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| AF 80 AS | **CK94.1** * | 1 | 3407,75 |
| EF 103 AS | **CK95.1** * | 1 | 3961,40 |

* Longer delivery times possible. Please check with our Sales Department.



NEU
NOUVEAU
NEW

## Rotilabo® ice scraper for refrigerators and freezers

Made of **PP**. Robust design. Practical short handle for cleaning iced refrigerators, freezer cabinets and freezers. Overall length 250 mm. Length of handle 130 mm. Width of scraper 110 mm, strength 4 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HNH9.1** | 5 | 32,20 |



## Ice crusher

Chrome housing. Volume of ice container approx. 900 ml. With hand crank. Grinder made of stainless steel. Dimensions: L 160 x W 135 x H 270 mm. **Delivery incl.** ice scoop made of PP.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LT26.1** | 1 | 51,50 |

# Gas burners




## Laboratory Bunsen burners

Suitable for propane gas or natural gas. Made of die-cast zinc.
Connection for hose with 9.5 mm internal ∅.

**Technical specifications:**

| Gas type | Temperature (°C) | Consumption (l/h) | Head ∅ (mm) |
|---|---|---|---|
| Propane gas | ① 1220<br>② 1180 | ① 40<br>② 43 | ① 17<br>② 17 |
| Natural gas | ① 1300<br>② 1240 | ① 115<br>② 123 | ① 17<br>② 17 |

**① With needle valve and air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 145 | 250 | **CHP0.1** | 1 | 32,05 |
| Natural gas | 145 | 250 | **CHP1.1** | 1 | 32,05 |

**② With lever stopcock, pilot flame and air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 150 | 310 | **C633.1** | 1 | 47,20 |
| Natural gas | 150 | 310 | **C634.1** | 1 | 47,85 |




## Laboratory Bunsen burners

**Acc. to DIN, DVGW approved.** Suitable for propane gas or natural gas.
Connection for hose with 9.5 mm internal ∅. Made of die-cast zinc.

**Technical specifications:**

| Gas type | Temperature (°C) | Consumption (l/h) | Head ∅ (mm) |
|---|---|---|---|
| Propane gas | ① 1220<br>② 1220<br>③ 1220<br>④ 1210 | ① 42<br>② 40<br>③ 42<br>④ 44 | ① 17<br>② 17<br>③ 17<br>④ 17 |
| Natural gas | ① 1300<br>② 1300<br>③ 1250<br>④ 1260 | ① 120<br>② 115<br>③ 120<br>④ 125 | ① 17<br>② 17<br>③ 17<br>④ 17 |

**① Basic version with air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 145 | 240 | **Y561.1** | 1 | 28,60 |
| Natural gas | 145 | 240 | **Y562.1** | 1 | 28,60 |

**② With needle valve and air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 145 | 250 | **Y563.1** | 1 | 38,00 |
| Natural gas | 145 | 250 | **Y564.1** | 1 | 38,00 |

**③ With needle valve, pilot flame and air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 145 | 250 | **CHT2.1** | 1 | 44,10 |
| Natural gas | 145 | 250 | **CHT3.1** | 1 | 44,10 |

**④ With stopcock, pilot flame and air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 150 | 280 | **CHT4.1** | 1 | 46,15 |
| Natural gas | 150 | 280 | **CHT5.1** | 1 | 46,15 |




## Teclu burners

Suitable for propane gas or natural gas. Made of die-cast zinc.
Connection for hose with internal ∅ 9.5 mm.

**Technical specifications:**

| Gas type | Temperature (°C) | Consumption (l/h) | Head ∅ (mm) |
|---|---|---|---|
| Propane gas | ① 1320<br>② 1285<br>③ 1380 | ① 50<br>② 53<br>③ 76 | ① 17<br>② 17<br>③ 32 |
| Natural gas | ① 1290<br>② 1300<br>③ 1330 | ① 145<br>② 150<br>③ 218 | ① 17<br>② 17<br>③ 32 |

**① With needle valve and air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 165 | 285 | **CHP4.1** | 1 | 40,65 |
| Natural gas | 165 | 285 | **CHP5.1** | 1 | 40,65 |

**② With stopcock, pilot flame and air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 170 | 310 | **CHP8.1** | 1 | 50,55 |
| Natural gas | 170 | 310 | **CHP9.1** | 1 | 50,55 |

**③ With needle valve, extended heat output and air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 165 | 360 | **CHT0.1** | 1 | 56,95 |
| Natural gas | 165 | 360 | **CHT1.1** | 1 | 56,95 |




## Teclu burners

**Acc. to DIN, DVGW approved.** Suitable for propane gas or natural gas.
Connection for hose with 9.5 mm internal dia. Made of die-cast zinc.

**Technical specifications:**

| Gas type | Temperature (°C) | Consumption (l/h) | Head ∅ (mm) |
|---|---|---|---|
| Propane gas | ① 1320<br>② 1285 | ① 50<br>② 53 | ① 17<br>② 17 |
| Natural gas | ① 1290<br>② 1300<br>③ 1330 | ① 145<br>② 150<br>③ 218 | ① 17<br>② 17<br>③ 32 |

**① With needle valve and air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 165 | 285 | **CHT6.1** | 1 | 46,15 |
| Natural gas | 165 | 285 | **CHT7.1** | 1 | 46,15 |

**② With stopcock, pilot flame and air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 170 | 310 | **Y565.1** | 1 | 60,50 |
| Natural gas | 170 | 310 | **Y566.1** | 1 | 60,50 |

**③ With needle valve, extended heat output and air control**

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Natural gas | 165 | 360 | **CHT9.1** | 1 | 56,90 |

# Gas burners




## Laboratory gas burners with suction foot

**Acc. to DIN, DVGW approved**. Connection for hose with 9.5 mm internal ∅. Suitable for propane gas or natural gas.

With suction foot:
- For stability on all smooth surfaces
- Accidental movement of the burner is largely avoided
- No metal in contact with the standing area

**Technical specifications:**

| Gas type | Temperature (°C) | Consumption (l/h) | Head ∅ (mm) |
|---|---|---|---|
| Propane gas | ① 1220<br>② 1210<br>③ 1320 | ① 40<br>② 44<br>③ 50 | ① 17<br>② 17<br>③ 17 |
| Natural gas | ① 1300<br>② 1260<br>③ 1290 | ① 115<br>② 125<br>③ 145 | ① 17<br>② 17<br>③ 17 |

① **With needle valve and air control** - Bunsen gas burner

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 145 | 250 | **CK28.1** | 1 | 41,85 |
| Natural gas | 145 | 250 | **CK29.1** | 1 | 41,85 |

② **With stopcock, pilot flame and air control** - Bunsen gas burner

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 150 | 280 | **CK30.1** | 1 | 50,55 |
| Natural gas | 150 | 280 | **CK31.1** | 1 | 50,55 |

③ **With needle valve and air control** - Teclu gas burner

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 165 | 285 | **CK32.1** | 1 | 50,55 |
| Natural gas | 165 | 285 | **CK33.1** | 1 | 50,55 |



## Laboratory gas burners with double lever stopcock

**Acc. to DIN, with DVGW-approval.** Connection for hose with inner-∅ 10 mm. For propane gas or natural gas. With double lever stopcock, pilot flame and air regulation.

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 150 | 290 | **CX71.1** | 1 | 56,80 |
| Natural gas | 150 | 290 | **CX72.1** | 1 | 56,80 |



## Gas burners

Ideal for propane or natural gas. With **DVGW seal**. Non-tilting base and low centre of gravity guarantee high stability. Burner can be removed from base. Inclination angle can be set to 60°/90°/120° with locking device.
With separate chimney for low flame and regulating valve to switch over from main to low flame. A regulating mechanism for air supply enables precise setting of flame temperature. Height depending on angle 100 mm/ 107 mm, weight 530 g. Suitable for continuous use.

| For gas type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Propane gas | **H612.1** | 1 | 153,75 |
| Natural gas | **H613.1** | 1 | 148,35 |



## Safety lab burners according to Teclu

With thermo sensor safety valve (if the flame extinguishes or the gas supply is interrupted, the safety valve closes automatically). Solid round base. With air regulation and needle valve.

| For gas type | Overall height (mm) | Weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Propane gas | 180 | 650 | **NA04.1** | | 134,40 |
| Natural gas | 180 | 650 | **NA05.1** | | 134,40 |



## Rotilabo®-safety gas tubes

For supplying Bunsen burners that operate using gas in accordance with DIN 30665. With non-buckling, elastic coupling sleeve, suitable for all three gas groups acc. to DVGW-Worksheet G 260, controlled and tested as per DIN-DVGW-Reg.-No. DG - 4607 AU 2366.
Not suitable for connection to gas cylinders. Inner-∅ 9 mm.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 50 | **1716.1** | 1 | 35,10 |
| 60 | **A268.1** | 1 | 36,80 |
| 75 | **1717.1** | 1 | 41,00 |
| 100 | **1718.1** | 1 | 47,30 |
| 125 | **A269.1** | 1 | 53,35 |
| 150 | **1719.1** | 1 | 56,05 |
| 200 | **A270.1** | 1 | 69,45 |
| 300 | **A271.1** | 1 | 103,20 |



## Horizontal burner

For soldering, melting, burning-off etc. With piezo ignition.
Flame temperatures up to 1300 °C. Sturdy metal construction with slip-resistant piston for one-handed operation.
Safety switch. Dimensions: ∅ 30 x H 150 mm. Fillable with lighter gas.
**Delivery without** filling; please order gas refill separately.

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Horizontal burner | **YE28.1** | 1 | 34,40 |
| Refillable gas (250 ml liquid butane) | **1652.1** | 1 | 3,50 |



## Rotilabo®-gas tubing

For laboratory gas burners that operate using gas in acc. with DIN 30665. Ideal for all 3 gas types, which are described in the German Municipal Services (DVGW). Pamphlet G260.
Acc. to DIN 30664 Part 1, without casing and armouring.
Suitable for pressures up to 100 mbar.
Tested as per DIN-DVGW- Reg.- No. NG - 4607 AU 2362. Not suitable for connection to gas cylinders! ∅-inner 10 mm, ∅-outer 14 mm.

| Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 5 | **E485.1** | 1 | 48,00 |




## Micro-horizontal burner GB 2001

Ideal for welding, soldering, branding and melting glass, made of chrome and camera plastic. Ignites piezo-electrically, reaching temperatures up to 1300 °C with a fine and focused flame. Cannister for liquid butane in handle, sufficient for approx. 2 hours of normal use. Height 145 mm, weight when empty 200 g. With removable base. For safety reasons, fuel is not included.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0386.1** | 1 | 91,40 |

## Universal refillable gas

With 250 ml liquid butane and 5 different injectors.

**Danger** H220-H280

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1652.1** | 1 | 3,50 |

▶ Tubing accessories from page 377
▶ Hose brushes see page 1134

# Gas burners



## Bunsen burner LABOGAZ 206

Works with C 206 D Super cartridge. With Clip & Go assembly system for simple cartridge change. With plastic bell-shaped top. Flame temperature approx. 1100 °C. Dimensions without cartridge: height 130 mm, ∅ 90 mm.
**Delivery without** base and cartridge (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0802.1** | 1 | 69,70 |

**Accessories:**

| | | | |
|---|---|---|---|
| **Pierce-through cartridge C 206 GLS**, butane/propane-mix 80/20 %, ∅ 90, height 90 mm, content 190 g | **0191.2** | 8 | 35,40 |
| Base for bunsen burners Labogaz 206 | **X711.1** | 1 | 7,85 |




## Gas cooker Twister® Plus PZ

Easy Clic®-connection for simple assembly of valve cartridges.
With 3 container holders. **Piezo ignition.** Fueled by gas cartridges CV 470 plus. Continuous operation of cartridge: approx. 2 h with CV 470 plus. Dimensions (without cartridge): L 105 x W 70 mm, pot holder-∅ 140 mm. Weight (without cartridge) 285 g.
**Delivery without** gas cartridge, please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EL22.1** | 1 | 53,70 |

## Valve cartridges for gas cooker Twister® Plus PZ

**Danger** H220-H280

| Type | Contents | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Cartridges CV 470 plus | 450 g | **Y652.1** | 2 | 25,95 |
| Cartridges CV 470 plus | 450 g | **Y652.2** | 12 | 137,60 |




## Bunsen burner LABOGAZ 470

For use with CV 470 plus cartridge.
Dimensions without cartridge: ∅ 22 mm, height 59 mm.
**Delivery without** cartridge (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y650.1** | 1 | 74,10 |

## Valve cartridges CV 470 plus

For bunsen burner LABOGAZ 470. Butane/propane-mix (80/20 %).
Valve cartridges can be removed from the unit, even when they are not completely empty. The valve ensures that the gas cannot escape.

**Danger** H220-H280

| Type | Contents | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| CV 470 plus | 450 g | **Y652.1** | 2 | 25,95 |
| CV 470 plus | 450 g | **Y652.2** | 12 | 137,60 |




## Fine soldering unit Spotflam

Cordless multi-purpose unit with attachable microburner and fine soldering copper tip. Flame can be regulated via air supply slide.
Burns for approx. 4 hours. Can be used for: heating test tubes, sterilizing instruments, hard and soft soldering.
**Delivery incl.** cartridge CV 360.

**Danger** H220-H280

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T926.1** | 1 | 35,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| **Compressed gas can CV 360** with valve, butane gas, contents 52 g | **T927.1** | 6 | 60,00 |




## Soldering blow torch SOUDOGAZ X 2000 and X 2000 PZ

Flame temperature approx. +1800 °C. Weight with cartridge approx. 800 g. Flame adjustment. Gas consumption 120 g/h.
**Delivery without** cartridge (please order separately).

① **SOUDOGAZ X 2000**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| X 2000 | **0777.1** | 1 | 42,50 |

② **SOUDOGAZ X 2000 PZ with automatic piezoelectric ignition**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| X 2000 PZ | **N183.1** | 1 | 49,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| **Pierce-through cartridge C 206 GLS**, butane/propane-mix 80/20 %, ∅ 90, height 90 mm, content 190 g | **0191.2** | 8 | 35,40 |



## Mobile hand-held laboratory gas burner powerjet

By WLD-TEC. For all flame protection sterilizers in microbiological or biotechnical applications.

- **Flame temperature approx. 1350 °C**
- Automatic ignition through Piezo effect
- The burner is ignited with the press of a button; the flame extinguishes when button is released
- Infinitely variable adjustment of flame size
- Operation with gas cartridge CG 1750, optimal for laboratories without a central gas supply
- Dimensions: W 150 x H 180 mm

**Delivery incl.** gas cartridge adapter for cartridge CG 1750.
(Please order cartridge CG 1750 separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EL35.1** | 1 | 223,60 |

## Gas cartridge CG 1750 for powerjet

By WLD-TEC. With screw valve. Special mix 70/30 butane/propane.

**Danger** H220-H280

| Type | Contents | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| CG 1750 | 175 g | 60 | 140 | **EL36.2** | 8 | 60,05 |




## Mobile hand-held laboratory gas burner powerjet 2

By WLD-TEC.
**For connection to the central gas supply (propane-, butane- and natural gas) and for operation with gas cartridge CV 360.**

- Flame temperature: approx. 1350 °C with liquid gas and 1300 °C with natural gas
- Automatic ignition through Piezo effect
- The gas only flows when the button is pressed down
- The burner is ignited with the press of a button; the flame extinguishes when button is released
- With locking device to set the flame for mobile continuous burning-off
- Infinitely variable adjustment of flame size
- Dimensions: W 150 x H 210 mm

**Delivery incl.** gas cartridge adapter for CV 360 cartridge, nozzle for propane-/butane gas and natural gas, hose nozzle with coupling nut, nozzle-socket wrench, screw wrench and stainless steel holder.
Please order CV 360 gas cartridge separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EP56.1** | 1 | 368,75 |

## Valve gas cartridge CV 360 for powerjet 2

**Danger** H220-H280

| Type | Contents | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| CV 360 | 52 g | 38 | 140 | **T927.1** | 6 | 60,00 |




## Gas cartridges

**Valve cartridge**

**Danger** H220-H280

| Image | Type | Contents | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| ① | CV 360 | 52 g | 38 | 140 | **T927.1** | 6 | 60,00 |
| ③ | CV 470 plus | 450 g | 109 | 135 | **Y652.1** | 2 | 25,95 |
| ③ | CV 470 plus | 450 g | 109 | 135 | **Y652.2** | 12 | 137,60 |

**Pierce-through cartridge**

**Danger** H220-H280

| Image | Type | Contents | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| ② | C 206 GLS | 190 g | 90 | 90 | **0191.2** | 8 | 35,40 |

**Screw valve cartridge**

**Danger** H220-H280

| Image | Type | Contents | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| ④ | CG 1750 | 175 g | 60 | 140 | **EL36.2** | 8 | 60,05 |

# Gas safety burner




## Spirits burner

① **Made of stainless steel**

With wick regulating facility and sealing cover. Capacity approx. 85 ml. Dimensions: ∅ 100 mm, H 65 mm. Weight 105 g. **Delivery incl.** wick.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AL28.1** | 1 | 23,15 |

**Replacement wick**

For stainless steel alcohol burner (Art. No. AL28.1). L 10 x W 1.2 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANL6.1** | 25 | 13,15 |

② **Made of soda lime glass**

With ground sealing cover. Capacity approx. 100 ml. Dimensions: ∅ 76 mm, H 102 mm. Weight 190 g. **Delivery incl.** wick.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AL29.1** | 1 | 14,20 |

**Replacement wick**

For soda-lime glass spirits burner (Art. No. AL29.1). L 10 cm, ∅ 6 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANL7.1** | 50 | 32,80 |




## Methylated spirit

Denatured ethyl alcohol. Suitable for use as a detergent, a fuel additive and an antifreeze agent.

**Danger** H225-H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AL30.1** | 1 l bottle | 8,00 |
| **AL30.2** | 10 l canister | 54,75 |
| **AL30.3** | 20 l canister | 98,80 |



## Flame 100 gas safety burner

Ideal for sterilization of microbiological instruments and graduated heating of dental tools.

- Housing and burner tube made of stainless steel
- With button function: flame is lit by pressing and extinguished by releasing the function button
- With ignition and flame control, clogging monitor, and overheating protection
- Continuous cartridge operation: 65 min with CV 360, 230 min with C 206, 550 min with CV 470 plus, 210 min with CG 1750
- Suitable for stationary natural gas and propane/butane gas. If cartridges are required, please order gas adapter and cartridge separately
- Operation possible by a foot pedal or an external infrared motion sensor

**Technical specifications:**

| | |
|---|---|
| Button | Start / stop with timer, 60 min |
| Foot pedal | Standard (flame while foot pedal pressed, foot pedal optional) |
| IR sensor | Standard (flame while hand in detection range of sensor; IR sensor optional) |
| Dimensions (W x H x D) | 89 x 34 x 88 mm |
| Height with burner tube | 94 mm |
| Weight | 385 g |

**Delivery incl.** variable power supply (100 to 240 V, 50/60 Hz), hose nozzle and injectors for natural gas, propane / butane gas. Without foot pedal or IR motion sensor (please order separately, if required).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NA00.1** | 1 | 253,70 |

## Accessories for Flame 100

Standard foot pedal made of stainless steel. Cable length 3 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AN88.1** | 1 | 46,25 |

**External IR motion sensor**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NA01.1** | 1 | 95,15 |

## Gas safety adapter for Flame 100

**Gas safety adapter for cartridge CV 360**

| For cartridge | Art. No. | Pack Qty. | € |
|---|---|---|---|
| CV 360 | **NA02.1** | 1 | 95,15 |

**Gas safety adapter for cartridges C 206, CV 470 plus and CG 1750**
With integrated pressure reducer, stopcock and DVGW hose 0.5 m long.

| For cartridge | Art. No. | Pack Qty. | € |
|---|---|---|---|
| C 206 GLS | **AN84.1** | 1 | 120,40 |
| CV 470 plus | **AN85.1** | 1 | 122,55 |
| CG 1750 | **EX07.1** | 1 | 74,95 |

## Gas cartridges for Flame 100

| Type | Contents | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| C 206 GLS | 190 g | **0191.2** | 8 | 35,40 |
| CV 470 plus | 450 g | **Y652.1** | 2 | 25,95 |
| CV 470 plus | 450 g | **Y652.2** | 12 | 137,60 |
| CV 360 | 52 g | **T927.1** | 6 | 60,00 |
| CG 1750 | 175 g | **EL36.2** | 8 | 60,05 |

# Gas safety burner







## Fuego SCS basic gas safety burners

Ideal for heating, burning off, annealing and for application in microbiological safety workbenches.

- 2 standard programs for pedal control
- Featuring an additional button function; flame is lit by pressing, and extinguished by releasing the function button
- Housing/control element made of stainless steel and glass, UV- and solvent resistant
- Burner head can be removed and taken apart
- Tilt adjustment right/left
- Cartridge continuous operation: 40 min with CV 360, 170 min with C 206, 370 min with CV 470 plus,150 min with CG 1750
- Safety devices include: gas safety cutoff, Ignition, flame and temperature monitoring, contamination and assembly monitoring, automatic switch-off and residiual heat indicator
- Ideal for natural gas or propane-/butane gas. Should you require cartridge operation, please order the gas adapter and cartridges separately

**Technical specifications:**

| Operating mode: | |
|---|---|
| Pedal | Standard (Flame when pedal is pressed down)<br>Start/Stop with monitoring timer (up to 60 min) |
| Dimensions (W x H x D) | 103 x 49 x 130 mm |
| Weight | 700 g |

**Delivery incl.** pedal, switching power supply (100 to 240 V, 50/60 Hz), hose nozzle with union nut, loop holder and nozzles for natural gas, propane-/butane gas.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HA64.1** | 1 | 436,45 |

## Accessories for Fuego SCS series

**Gas-safety adapter for cartridge CV 360**
With integrated pressure regulator.

| For cartridge | Art. No. | Pack Qty. | € |
|---|---|---|---|
| CV 360 | **HC48.1** | 1 | 88,80 |

**Gas-safety adapter for cartridge C 206, CV 470 plus and CG 1750**
With integrated pressure regulator, stop cock and DVGW-hose, length 0.5 m.

| For cartridge | Art. No. | Pack Qty. | € |
|---|---|---|---|
| C 206 GLS | **AN84.1** | 1 | 120,40 |
| CV 470 plus | **AN85.1** | 1 | 122,55 |
| CG 1750 | **EX07.1** | 1 | 74,95 |

## Gas cartridges for gas safety burners Fuego SCS series

| Type | Contents | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| C 206 GLS | 190 g | **0191.2** | 8 | 35,40 |
| CV 470 plus | 450 g | **Y652.1** | 2 | 25,95 |
| CV 470 plus | 450 g | **Y652.2** | 12 | 137,60 |
| CV 360 | 52 g | **T927.1** | 6 | 60,00 |
| CG 1750 | 175 g | **EL36.2** | 8 | 60,05 |

## Safety laboratory gas burner Fuego SCS / SCS pro

**General specifications of both models:**

Ideal for heating, burning-off and annealing as well as for use in microbiological safety workbenches.

- Animated graphic display with buzzer: installation and operating instructions with symbols, user ID, gas consumption display and cooling time reminder
- Casing/control elements made of stainless steel and glass, UV and solvent proof
- 6 programs for DoubleClick IR sensor, key, pedal and temperature control for precise heating of media with burning time display
- Safety devices: see Fuego SCS basic
- Zero-pressure shutoff: for releasing residual gas pressure after use
- Angle adjustment and removable burner head
- Ideal for natural, propane or butane gas. If cartridges are required, please order gas adapter and cartridge separately

**Fuego SCS pro**

- Same as Fuego SCS, but **with independent supply**
- Additional tilt sensor with gas safety shutoff

**Delivery incl.** 2 x 1.2 V Mignon batteries. Operating time: up to 9 h continuous duty. Charging time: approx. 3 h.

**Technical specifications:**

| | |
|---|---|
| Foot pedal | Standard (flame when pedal is pressed)<br>Start/stop with watchdog timer (1 sec to 2 h) |
| IR sensor, DoubleClick (connectible) | Start/stop with watchdog timer (1 sec to 2 h)<br>Auto-Off with timer (1 sec to 2 h) |
| Detection range of IR sensor | 5-100 mm, adjustable |
| Dimensions (W x D x H) | 103 x 130 x 49 mm |

**Delivery incl.** IR sensor, inoculation loop holder, power adapter, hose connector with union nut and nozzles for natural gas, propane/butane gas. Without foot switch (if required, please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fuego SCS | **EX06.1** | 1 | 522,45 |
| Fuego SCS pro | **LE17.1** | 1 | 596,65 |

## Pedal button for Fuego SCS

Standard foot pedal made of stainless steel. Cable length 3 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AN88.1** | 1 | 46,25 |

**Wireless pedal button set** enables operation of pedal without bothersome cable. Range 2 to 5 m. Frequency 2.4 GHz. Radio-controlled pedal button made of stainless steel.
**Delivery incl.** RF-stick, Radio-controlled pedal and 2 batteries Mignon 1.5 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KA26.1** | 1 | 122,15 |

# Gas safety burner




## Gasprofi 1 SCS *micro* gas safety burner

Space-saving laboratory gas burners for microbiology, cell biology and biotechnology.

**Features:**

- 4 standard programs for IR-sensor and foot pedal
- Featuring an additional button function; flame is lit by pressing, and extinguished by releasing the function button
- Housing and control element are made of stainless steel
- Can be fueled either with natural gas or propane-/butane gas
- Inclination adjustment can be set on right/left
- Cartridge continuous operation:
  45 min with CV 360, 170 min with C 206, 345 min with CV 470 plus
- Removable burner head

**Technical specifications:**

| | |
|---|---|
| Foot pedal | Standard (flame when pedal is pressed down)<br>Start/Stop with control timer, 60 min |
| IR-sensor | Start/Stop with control timer, 60 min<br>Auto-Off with learning function: 1 sec to 60 min |
| Coverage area of IR-sensors | 5-50 mm, adjustable |
| Dimensions (W x H x D) | 85 x 49 x 86 mm |
| Weight | 930 g |

**Delivery incl.** stainless steel foot pedal, IR-sensor, nozzles for natural gas and propane-/butane gas, hose nozzle with union nut and power supply plug. Should you require cartridge operation, please order the gas adapter and cartridge separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AN82.1** | 1 | 467,65 |

## Accessories for Gasprofi 1 SCS *micro* gas safety burners

**Gas-safety adapter for cartridge CV 360**
With integral pressure regulator.

| For cartridge | Art. No. | Pack Qty. | € |
|---|---|---|---|
| CV 360 | **HC48.1** | 1 | 88,80 |

**Gas-safety adapter for cartridge C 206, CV 470 plus and CG 1750**
With integral pressure regulator, stop valve and DVGW-hose, length 0.5 m.

| For cartridge | Art. No. | Pack Qty. | € |
|---|---|---|---|
| C 206 GLS | **AN84.1** | 1 | 120,40 |
| CV 470 plus | **AN85.1** | 1 | 122,55 |
| CG 1750 | **EX07.1** | 1 | 74,95 |

## Gas cartridges for Gasprofi 1 SCS *micro*

| Type | Contents | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| CV 360 | 52 g | **T927.1** | 6 | 60,00 |
| CV 470 plus | 450 g | **Y652.1** | 2 | 25,95 |
| CV 470 plus | 450 g | **Y652.2** | 12 | 137,60 |
| CG 1750 | 175 g | **EL36.2** | 8 | 60,05 |
| C 206 GLS | 190 g | **0191.2** | 8 | 35,40 |



## Fully automatic inoculating loop carousels auto*loop*$^{PRO}$

Enables **safety laboratory burners, like the Fuego SCS-series**, to be moved to sterilizing stations. The microprocessor-controlled carousel identifies when loops are removed and returned, and it automatically rotates and controls sterilizing. For max. 4 inoculating loops.

**Features:**

- Fully graphic DOT-Matrix display shows extraction position of cool loops and remaining cooling time, residual heat display and flame sterilisation time
- Adjustable sterilizing time: 1 to 15 sec, adjustable cooling time: 1 to 45 sec
- Made completely of stainless steel and anodised aluminium. Display is protected by special glass
- Sterilisation monitor controls the safe and reliable sterilisation of the inoculating loops. Symbol indicates if inoculating loops have been sterilized properly. 3-step setting of sensor intensity (low to high annealing intensity possible, for thin or thick inoculating wire)
- Excess temperature protection and residual heat display
- Dimensions: W 135 x H 305 x D 180 mm
- Power supply via burner pedal bush

**Delivery incl.** 4 loop holders, 4 inoculating loops and base. Safety lab gas burner, Fuegeo SCS-series, is required to operate the carousel (please order separately if not available).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LH88.1** | 1 | 1106,20 |

## Accessories for auto*loop*$^{PRO}$

**Splash protection**
For safe handling of pathogenic material, slotted.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HY19.1** | 1 | 52,50 |

# Gas safety burner




## phoenix II gas safety burner

For use in microbiological safety work benches.

- LED colour display with choice of languages
- Plain text menu navigation and display of burning time left
- UV-resistant, can be flamed (stainless steel housing, special glass display)
- Can be tilted left or right
- 4 operating modes:
  **Button function:** flame activation and deactivation by pressing function button. Flame extinguishes after a preset period
  **IR sensor:** contact-free activation of flame via IR sensor. Flame extinguishes after a preset period
  **Foot-operated push-button:** flame burns as long as the foot press-button remains pressed
  **Foot switch:** flame burns when the foot switch is pressed and extinguishes when pressed again or after a preset time
- Flame, ignition and contamination monitoring
- Ideal for natural, propane or butane gas. Can be operated with gas cartridges CV 360. C 206 and CV 470 plus (please order the required gas adapter separately) or from the central gas supply

**Technical specifications:**

| | |
|---|---|
| Foot-operated push-button | Conventional |
| Foot switch | Start/stop or with automatic shut-off (1 s to 120 min) |
| IR sensor operation | Start/stop with automatic shut-off (1 s to 120 min) |
| Detection range IR sensor | Three ranges can be selected: directly on the sensor, 30 mm or 80 mm |
| Dimensions (W x D x H) | 125 x 160 x 85 mm |

**Delivery incl.** IR sensor, stainless steel foot-operated push-button/foot switch and power unit (100 to 240 V, 50/60 Hz), hose fitting, natural gas and propane/butane nozzles.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA01.1** | 1 | 536,45 |

## Accessories for phoenix II gas safety burner

**Gas adapter for cartridge CV 360**

| For cartridge | Art. No. | Pack Qty. | € |
|---|---|---|---|
| CV 360 | **TA02.1** | 1 | 96,25 |

**Gas adapter for cartridges C 206 and CV 470 plus**
With built-in pressure reducer and 0.5 m safety gas hose.

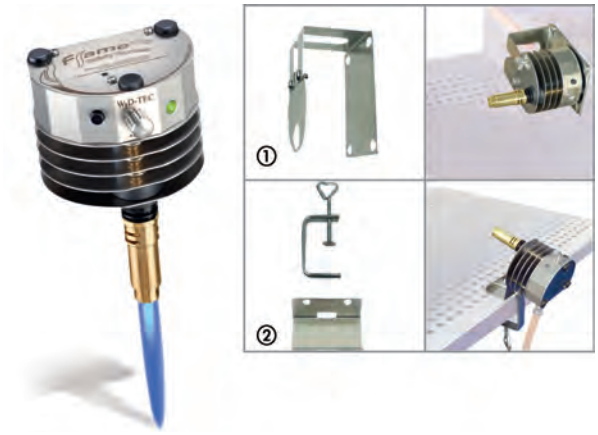
| For cartridge | Art. No. | Pack Qty. | € |
|---|---|---|---|
| C 206 D Super | **TA03.1** | 1 | 107,45 |
| CV 470 | **TA04.1** | 1 | 107,45 |

Accessories:

| | | | |
|---|---|---|---|
| Glass splash guard | **TA05.1** | 1 | 47,55 |
| Stainless steel draft shield | **TA06.1** | 1 | 38,20 |

## Gas cartridges for phoenix II

| Type | Contents | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| CV 360 | 52 g | **T927.1** | 6 | 60,00 |
| CV 470 plus | 450 g | **Y652.1** | 2 | 25,95 |
| C 206 GLS | 190 g | **0191.2** | 8 | 35,40 |




## Flame 110 overhead gas burner

Heats dental tools, sterilises microbiological instruments or flame deburred/flame polished plastic and rubber mouldings in an industrial environment.

- **Variable flame from any direction – even upside down (depending on positioning)**
- With button function: flame is started and stopped by pressing the function button
- With gas safety shutoff and overtemperature protection
- Can be operated using optional footswitch or external IR motion sensor. If required, please order separately.

**Technical specifications:**

| | |
|---|---|
| Button | Start / stop with timer, 60 min |
| Foot pedal | Standard (flame while foot pedal is pressed; please order foot pedal separately) |
| IR sensor | Standard (flame while hand in detection range of sensor; please order IR sensor separately) |
| Dimensions (H x ∅) | 135 x 88 mm |
| Weight | 580 g |

**Delivery incl.** fixing plate for overhead attachment and 100 to 240 V power supply, 50/60 Hz. Without gas adapter and cartridge (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YP70.1** | 1 | 468,70 |

## Accessories for Flame 110 overhead gas burner

Standard foot pedal made of stainless steel. Cable length 3 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AN88.1** | 1 | 46,25 |

**External IR motion sensor** Cable length 0.4 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NA01.1** | 1 | 95,15 |

① **Lateral bracket.** Made of stainless steel.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YP71.1** | 1 | 39,45 |

② **Horizontal bracket.** Made of stainless steel.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YP72.1** | 1 | 32,05 |

## Gas safety adapter for Flame 110

**For C 206 and CV 470 plus cartridges** with pressure reducer, shutoff valve and DVGW tubing (length 0.5 m).

| For cartridge | Art. No. | Pack Qty. | € |
|---|---|---|---|
| C206 D Super | **YP73.1** | 1 | 146,20 |
| CV 470 plus | **YP74.1** | 1 | 147,85 |

## Gas cartridges for Flame 110

| Type | Contents | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| C 206 GLS | 190 g | **0191.2** | 8 | 35,40 |
| CV 470 plus | 450 g | **Y652.1** | 2 | 25,95 |
| CV 470 plus | 450 g | **Y652.2** | 12 | 137,60 |

# Inoculation loop sterilisers



## Infrared sterilising station SteriMax-series

By WLD-TEC. For sterilizing inoculating loops, needles and instruments. Ideal for laboratories and safety workbenches where gas and open fires cannot be used. Simply hold the inoculating loop in the quartz glass sterilizing tube to sterilize. The loop is sterile after approx. 5 to 7 seconds.

- Made of stainless steel
- Residual heat display warns against high temperatures
- Angle can be adjusted 7 times
- Integrated splash protection
- Trays for 3 instruments

**Technical specifications:**

| Model | SteriMax 15 | SteriMax 21 |
|---|---|---|
| Quartz glass tube-∅ (mm) | 15 | 21 |
| Quartz glass tube length (mm) | 118 | 161 |
| Sterilizing temperature (°C) | 900 to 950 | |
| Average warm-up time (min) | 7 to 9 | |
| Output (W) | 160 | 225 |
| Dimensions W x H x D (mm) | 175 x 129 x 139 | 175 x 129 x 169 |
| Weight (g) | 960 | 1060 |
| Power supply | 230 V, 50/60 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SteriMax 15 | **KL88.1** | 1 | 493,45 |
| SteriMax 21 | **LH89.1** | 1 | 547,20 |



121 °C

## Inoculating loop holder

Made of stainless steel. Loops are fixed with union nut. For inoculating loops with wire-∅ 0.6-1.0 mm. Set sorted by colour: blue, yellow, red, black. Length: 245 mm. Autoclavable at 121 °C.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Inoculating loop holder set | **KL97.1** | 4 | 54,05 |

## Accessories: Inoculating loops

Made of **special stainless steel**. Wire-∅ 0.6 mm.
**Delivery without** inoculating loop holder, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Loop ∅ inside 1 mm | **KL98.1** | 10 | 26,85 |
| Loop ∅ inside 3 mm | **KL99.1** | 10 | 27,75 |
| Loop ∅ inside 5 mm | **KN00.1** | 10 | 27,90 |

Made of **platinum/iridium**. Wire-∅ 0.6 mm.
**Delivery without** inoculating loop holder, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Loop ∅ inside 1 mm | **KN01.1** | 1 | 102,70 |
| Loop ∅ inside 3 mm | **KN02.1** | 1 | 102,70 |
| Loop ∅ inside 5 mm | **KN03.1** | 1 | 102,70 |



## Infrared inoculation loop steriliser SteriMax smart

By WLD-TEC. Specially focussed infrared light creates an IR hotspot and sterilises inoculation loops at a temperature from 750 to 1000 °C within 5-10 sec.

- Auto start by non-contact IR sensor technology
- Adjustable sterilisation and cool-down timer for two users by touch operation
- Ready for use straight from the box without heat-up phase
- Dynamic Thermocontrol sterilisation timer for the utilisation of residual heat to speed up subsequent sterilisation cycles
- Housing made of special toughened glass and stainless steel
- With removable quartz glass annealing tube

**Technical specifications:**

| Quartz glass annealing tube | |
|---|---|
| Temperature | 750 to 1000 °C |
| Outer/inner ∅, length | 19/16 mm, 112 mm |
| **General information:** | |
| Timers | Sterilisation timer: 5-10 sec<br>Inoculation loop cool-down timer: 0-25 sec |
| Safety devices | Residual heat indicator, overtemperature protection and autom. unit switch-off |
| Power requirement | approx. 600 W |
| Heat source | IR halogen spotlamp |
| Dimensions (W x H x D) | 110 x 170 x 200 mm |
| Weight | 1.8 kg |
| Power supply | 220-240 V, 50/60 Hz |

**Delivery incl.** quartz glass annealing tube, inoculation loop holder with ∅ 3 mm inoculation loop and support for 3 inoculation loop holders.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACN7.1** | 1 | 790,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement quartz glass annealing tube | **ACN8.1** | 1 | 33,65 |




## Hot air sterilizers

For dry-sterilizing of instruments. Units are fitted with glass balls approx. 310 g, and can reach a temperature of 240 °C. Sterilization time: 10-30 seconds. Glass balls are included.

**Small unit**

Capacity 70 W. Warm-up period 15 min. Inner ∅ 50 mm. Outer dimensions: L140 x W 120 x H 140 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Without timer | **E996.1** | 1 | 338,65 |
| With timer (30 s) | **E997.1** | 1 | 392,40 |

**Large model:**

Capacity 100 W. Warm-up period 30 min. Inner ∅ 70 mm. Outer dimensions: L 195 x W 145 x H 154 mm.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Without timer | **E998.1** | 1 | 361,20 |
| With timer (30 s) | **E999.1** | 1 | 446,15 |

**Spare glass balls**

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 Pack qty. contains approx. 310 g | **H660.1** | 1 | 31,90 |



## Electrical Bunsen burner BA6101

Suitable for laboratories in which no gas and naked flames are allowed to be used. Ideal for heating test tubes, crucibles, small bottles and beakers. Max. temperatur 800 °C. The ceramic heating element is located in the upper part of the stainless steel cylinder. 80 % of max. temperature is reached in approx. 4 min and maximum temperature is reached in approx. 12 min.

Equipment: heat output regulator MC5 with special sleeve for attaching a stand rod (max. ∅ 12.5 mm) and indicator lamps for "Power On" and "Output regulator operation".

**Technical specifications:**

| | |
|---|---|
| Max. temperature | 800 °C |
| Inner dimensions of heating element (∅ x H) | 60 x 45 mm |
| Outer dimensions of chimney (∅ x H) | 120 x 180 mm |
| Dimensions of heat output regulator (W x D x H) | 95 x 130 x 105 mm |
| Output | 480 W |
| Power supply | 220 V, 50/60 Hz |

**Delivery incl.** variable heat output regulator MC5.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YL73.1** | 1 | 645,00 |



## Infrared burner IRB 1

By Edmund Bühler. Compact. Is extremely effective because it uses modern IR-radiation burner technology. Excellent for speedy, no-contact heating operations in laboratories, schools and at work. On/off switch with control lamp. Housing remains cool. Long-life infrared radiator element. Additional power control switch available. Max. temperature of **heating surface 750 °C.** Power supply: 250 W, 230 V.
Dimensions: L 100 x W 100 x H 100 mm, weight 850 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L487.1** | 1 | 312,85 |

**Accessories:**

| | | | |
|---|---|---|---|
| Power control switch | **L488.1** | 1 | 279,50 |
| Support rod for IRB 1 & 2 | **L489.1** | 1 | 20,35 |



## Infrared burner IRB 2

By Edmund Bühler. Infrared heater for high temperatures up to **900 °C**. **With integrated output control**, for variable adjustment between 0 and 100 %. Speedy and even heating **with no open flame.** Electronic parts are protected against overflowing liquids. Features also include additional side protection of burner. With ceramic heating element and excess temperature protection. Comes in safe-to-touch enclosure. **Embedded grips** enable safe transport. A cross recess allows flat vessels to be laid directly on heating element. Electrical supply: 800 W/230 V.
Dimensions: W 150 x D 150 x H 170 mm, weight 2250 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P910.1** | 1 | 542,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| Support rod for IRB 1 & 2 | **L489.1** | 1 | 20,35 |

# Lighters / Accessories gas burners



## Gas lighter

Piezo-electric. Made of plastic and stainless metal.
Length 260 mm, weight 50 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1949.1** | 1 | 10,70 |



## Lighter with flame

Handy igniter with loop for hanging. Size of flame can be regulated.
Refillable. With safety device. Length of gas igniter 256 mm,
length of stainless steel igniter 110 mm. Weight approx. 67 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P960.1** | 1 | 13,80 |

## Universal refill gas

With 250 ml liquid butane and 5 different injectors.

**Danger** H220-H280

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1652.1** | 1 | 3,50 |

▶ Thermometers can be found from page 781



## Tripod stands

Zinc coated from annealed cast iron. Unscrewable legs.

| Ring-∅ inside (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 180 | **KC15.1** | 1 | 14,55 |
| 120 | 210 | **KC16.1** | 1 | 15,80 |
| 140 | 210 | **KC17.1** | 1 | 18,20 |
| 150 | 240 | **KC18.1** | 1 | 19,65 |



## Tripod stands

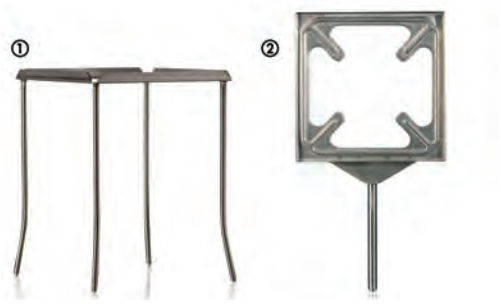
Can be taken apart. Made of Remanit 4301 high-grade steel.
Height 210 mm.

| Ring-∅ inside (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 | **9167.1** | 1 | 23,55 |
| 120 | **9170.1** | 1 | 24,65 |
| 140 | **9171.1** | 1 | 26,85 |
| 160 | **9172.1** | 1 | 29,00 |
| 180 | **9175.1** | 1 | 32,05 |

## Extension legs

Fit all tripods. With adjustment screws.
Can be extended to a total length of 370 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9179.1** | 3 | 30,00 |




DURAN WHEATON KIMBLE

## ① Lab quadruped stands

For glass ceramic protective tiles. Made of heat-resistant chrome-nickel steel, with four fet and sturdy design for excellent stability.
Please order the matching glass ceramic protective tiles separately.

| Size (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 135 x 135 | 210 | **HH18.1** | 1 | 24,70 |
| 155 x 155 | 210 | **HH19.1** | 1 | 27,65 |
| 175 x 175 | 220 | **HH20.1** | 1 | 32,55 |

## ② Tile holders

For glass ceramic protective tiles. Made of chrome nickel steel.
Please order matching glass ceramic protective tiles separately.

| Size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 135 x 135 | **HH21.1** | 1 | 22,00 |
| 155 x 155 | **HH22.1** | 1 | 25,95 |
| 175 x 175 | **HH23.1** | 1 | 30,35 |




DURAN WHEATON KIMBLE

## Glass ceramic protective tiles

Temperature resistant from -200 to +700 °C. 4 mm thick.

| Size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 135 x 135 | **A385.1** | 1 | 16,15 |
| 155 x 155 | **0619.1** | 1 | 17,40 |
| 175 x 175 | **A386.1** | 1 | 20,20 |



## Wire supports

Asbestos-free. Made of zinc plated wire mesh, with nonhazardous special covering (ceramic fibers). Excellent heat conduction. Long life.

| Size (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 120 x 120 | **1861.1** | 1 | 4,25 |
| 160 x 160 | **1862.1** | 1 | 5,25 |



## Rotilabo®-triangles for melting crucibles

Made of galvanised steel with smooth clay pipes.

| Clay pipe length (mm) | Max. ring ∅ of tripod (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 40 | 120 | **KN11.1** | 5 | 11,80 |
| 50 | 130 | **KN12.1** | 5 | 12,50 |
| 60 | 140 | **KN13.1** | 5 | 13,15 |
| 80 | 160 | **KN15.1** | 5 | 13,80 |



## Safety lab immersion coil heaters

For 220 V ~.With automatic switch-off. Lab immersion coil heaters do not become defective when handled improperly (e.g. overheating due to lack of water, water has boiled away or operation without any water).
The control unit can be reset. Switch-off at approx. 120 °C.
**Both models are suitable for water only.**

**Technical specifications:**

| Model | Small model | Large model |
|---|---|---|
| Power | 1000 W | 2000 W |
| Immersion depth | min. 70 mm<br>max. 200 mm | min. 120 mm<br>max. 280 mm |
| Dimensions | L 300 mm x ∅ 46 mm | L 380 mm x ∅ 53 mm |
| Connecting cord | 750 mm,<br>with right-angle plug | 900 mm,<br>with right-angle plug |
| Weight, without cord | 150 g | 280 g |
| Heating element material | Nickel-plated brass | |
| Probe material | Nickel-plated copper | |

| Type | Power (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Small model | 1000 | **0116.1** | 1 | 49,45 |
| Large model | 2000 | **0117.1** | 1 | 53,65 |

# Microwave ovens



## Simple-immersion coil heater

With melting point protection. Power 1000 W. Immersion depth 160 mm. Cable length 750 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1002.1** | 1 | 17,15 |




## Microwave oven with grill

By Severin.

- Housing made of stainless steel, brushed
- Interior volume approx. 23 l, painted
- Microwave power approx. 900 W, 9 power stages possible incl. thawing and grilling stages
- Separate grilling stage approx. 1000 W, with additional rack
- Microwave and grill can be combined
- Removable revolving plate (∅ 270 mm)
- 30-min-timer with signal tone
- Inner dimensions: L 335 x D 320 x H 190 mm
  Outer dimensions: L 483 x D 400 x H 281 mm
- Power supply 230 V, 50 Hz

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AT41.1** | 1 | 170,95 |




## Microwave oven

By Severin.

- High refractory housing
- Inside volume approx. 20 l
- Microwave power approx. 700 W
- 5 adjustable power stages
- 350-min-timer with signal tone
- Removable revolving plate (∅ approx. 254 mm)
- Inner dimensions: W 305 x D 290 x H 165 mm
  Outer dimensions: W 435 x D 345 x H 254 mm
- Power supply 230 V, 50 Hz

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CT41.1** | 1 | 106,35 |




## Microwave oven with grill- and hot air functions

By Severin.

- Housing with heat resistant coating
- Interior volume approx. 30 l
- Microwave power approx. 900 W, adjustable in 5 power stages
- With separate grill approx. 1100 W and hot air function approx. 2500 W
- Microwave, grill and hot air can be switched on separately or combined
- Removable revolving plate (∅ 315 mm)
- Digital multifunction display
- Quick-button enables unit to start immediately at full power
- 99-min-timer with signal tone
- Inner dimensions: L 335 x D 340 x H 200 mm
  Outer dimensions: L 520 x D 510 x H 335 mm
- Power supply 230 V, 50 Hz

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AT40.1** | 1 | 278,45 |




## Microwave oven

By Bosch.
- Interior volume approx. 17 l
- Microwave output 800 W
- 5 adjustable output stages (800/600/360/180/90 W)
- Digital display for time of day or count-down
- 30-min. timer with acoustic signal
- Removable glass rotary plate (∅ approx. 245 mm)
- Memory function saves 1 parameter combination of time and microwave output
- Inner dimensions: W 290 x D 300 x H 184 mm
  outer dimensions: W 462 x D 320 x H 280 mm
- Electrical supply 220-230 V, 50 Hz

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KN83.1** | 1 | 253,70 |



## Hot air dryer

By Braun. With press-on concentration nozzle. Two heat/fan stages. **Power 1200 watt**. Removable filter for easy cleaning. Hanging loop. 2 m power cable. Power supply 230 V, 50 Hz.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P096.1** | 1 | 31,15 |




## Large-capacity microwave with grill and hot air functions

By Sharp.
- Stainless steel housing
- Interior volume approx. 40 l, stainless steel
- **Optimal inside volume for heating 1 litre laboratory threaded bottles etc.**
- Microwave power approx. 1050 W, 5-times adjustable
- Quartz crystal grill approx. 1300 W
- Hot air function approx. 1450 W (10 steps: 40 to 250 °C)
- Microwave grill and hot air can be switched on together or separately
- Ceramic revolving plate (∅ 362 mm)
- Timer max. 90 min
- Inner dimensions: W 375 x D 395 x H 272 mm
  outer dimensions: W 550 x D 535 x H 368 mm
- Weight approx. 21 kg
- Power supply 230 V, 50 Hz

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HX94.1** | 1 | 568,70 |




## Hot air blower HL 1920 E

By Steinel. With temperature and air flow control.
9-step temperature adjustment using adjustment wheel.
Blower control via 3-step operating switch.

**Technical data:**

| | | | |
|---|---|---|---|
| Power | 2000 W | | |
| Operating stage<br>Air flow rate<br>Temperature | Stage 1<br>150 l/min<br>50 °C | Stage 2<br>150 to 300 l/min<br>50 to 600 °C | Stage 3<br>300 to 500 l/min<br>50 to 600 °C |
| Temperature adjustment | in 9 steps | | |
| Dimensions (W x D x H) | 253 x 84.5 x 200 mm | | |
| Weight | 850 g | | |
| Power supply | 220-230 V, 50/60 Hz | | |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AKN4.1** | 1 | 77,35 |

## Accessories for hot air blower HL 1920 E

By Steinel.

**Wide stream nozzle**
For attaching to blower, ensures an even distribution of air. Width 50 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1946.1** | 1 | 12,15 |

**Reducing nozzle**
For attaching to blower, for directed heat. ∅ 14 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1947.1** | 1 | 12,15 |

# Hot air tools



## Hot air dryer

By Braun. For warm and cold air. With three heating and two cooling stages.
**Power 2200 W.** Removable filter for easy cleaning.
**Delivery incl.** loop for hanging and attachable nozzle. 2 m power cable.
Power supply 230 V, 50/60 Hz.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y399.1** | 1 | 73,05 |



## HG 2320 E LCD hot air blower

Electronically controlled with continuously variable air flow rate and temperature control. Visual display of temperature and speed (resolution in 10-°C increments) via LCD. Residual heat display.
4 stored programs for temperature and air flow. With softgrip handle.

**Technical specifications:**

| | |
|---|---|
| Output | 2300 W |
| Temperature | Setting 1: 80 °C<br>Setting 2: 80 to 650 °C |
| Air flow | Setting 1: 150 l/min<br>Setting 2: 150 to 500 l/min |
| Dimensions (L x W x H) | 253 x 86.5 x 200 mm |
| Weight | 960 g |
| Voltage | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ALN9.1** | 1 | 149,45 |

## Accessories for HG 2320 E hot air blower

**Wide jet nozzle**,
simply push-on, for extensive air distribution. Width 50 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1946.1** | 1 | 12,15 |

**Reducing nozzle**,
simply push-on, for concentrated heat. ∅ 14 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1947.1** | 1 | 12,15 |



## Hot air gun HG 2220 E

By Steinel. Temperature adjustment from 80 to 630 °C in 9 steps by adjusting wheel. Air flow control in 2 stages from 150 to 500 l/min.

**Technical specifications:**

| | | |
|---|---|---|
| Power (W) | 2200 | |
| Operating stage<br>Air flow rate (l/min)<br>Temperature (°C) | Stage 1<br>150 to 300<br>80 to 630 | Stage 2<br>300 to 500<br>80 to 630 |
| Temperature adjustment | in 9 steps | |
| Dimensions L x W x H (mm) | 337 x 75 x 89 | |
| Weight (g) | 610 | |
| Power supply | 220-230 V, 50/60 Hz | |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CEP4.1** | 1 | 149,45 |

## Accessories for HG 2220 E hot air gun

**Wide spray nozzle**
Attachable, wide air distribution. Width 50 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1946.1** | 1 | 12,15 |

**Reduction nozzle**
Attachable, for directional heat flow. ∅ 14 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1947.1** | 1 | 12,15 |




## Fan heater AEG HS 203 T

By AEG. With automatic frost protection: the heater switches on automatically when room temperature is below 5 up to 8 °C.
Variable temperature setting up to 45 ° C.

- Connection capacity: 2000 W
- Two heat stages (1000/2000 W)
- Cold stage
- Dimensions approx. W 245 x H 260 x D 135 mm
- Power supply 230 V, 50/60 Hz.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X434.1** | 1 | 42,95 |




## Coffee machine with timer

By Severin. Power 800 watts. For up to 8 cups. 1-l-thermos flask with screw cap. Level indicator on glass jug for fresh water. With cable storage bay. On/off switch with control lamp. Swivel filter 1 x 4 with drip stopper.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **AT37.1** | 1 | 56,55 |
| black | **KN84.1** | 1 | 53,70 |




## Kettles

By Severin. Powerful, removeable kettle. Heating capacity approx. 2000 W. **Max. capacity 1.7 l**. Cordless with separate base. **Automatic steam stop.** On/off switch with indicator light. Transparent water level display on both sides. Spout with sieve. Overheating (heating element switches off automatically when there is no water in kettle or when the heating element becomes calcified) and excess temperature safety system. Electrical supply 220 V, 50 Hz.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| white | **Y527.1** | 1 | 30,35 |
| black | **KT58.1** | 1 | 28,95 |



## SENSEO®-Coffee-Pads machine

By Philips. Suitable for coffee pads. 1 or 2 cups possible. Heating 1450 W. Height-adjustable coffee spout for cup height up to 110 mm. Removable water container, **volume 0.9 l (8 cups)**. Automatic switch-off. Control light indicates inadequate water level, heating and brewing standby. Chalk indicator. Cord length 1 m. Dimensions: L 378 x W 232 x H 388 mm. Mains supply 220-240 V, 50-60 Hz.
**Delivery incl.** 2 pad holders (for 1-2 cups).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KP12.1** | 1 | 156,95 |




## Kettle

By Bosch. Stainless steel body. 1.7 l capacity. Heating capacity: approx. 1800 watts. Safety lid lock. 360° centre connecter for easy lifting and placing. Indicator light. Concealed heating element. Boil-dry protection. Automatic steam stop. The kettle switches itself off automatically after the kettle is removed from the base. On/Off switch. Cord retractor. Weight 1.25 kg. Mains connection 220-240 V, 50-60 Hz.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PK59.1** | 1 | 53,70 |

# Kettles




## Kettle

By Severin. Casing made of high grade stainless steel, capacity approx. 1.5 l. Power capacity approx. 1800 W. Cordless with separate base. **Automatic steam stop.** On/off switch. Continuously adjustable thermostat with indicator lamp. The water heater cuts out after the set temperature or the boiling point is reached. **360°-central-cordless-system (can be attached from any direction)**. Overheating (heating element switches off automatically when there is no water in kettle or when the heating element becomes calcified) and excess temperature safety system. Covered heating element. Cord storage. Colour stainless steel, brushed/black. Power supply 220 V, 50 Hz.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y533.1** | 1 | 44,95 |




## Thermos flasks Columbus 2000

By Leifheit. With practical snap. High-quality, double-walled vacuum flask. With aroma press button for single-handed pouring. Contents 1 litre.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① black | **X232.1** | 1 | 23,55 |
| ② blue | **X233.1** | 1 | 23,55 |
| ③ white | **X231.1** | 1 | 23,55 |




NEU
NOUVEAU
NEW

## Kettle with temperature adjustment

Made of stainless steel and glass. Volume 1.7 l. Adjustable temperature from 40 to 100 °C in 5 °C steps. Automatic switch-off after the set temperature has been reached. Separate keep-hot function for approx. 30 min (selectable only in the temperature range from 40 to 95 °C). With LCD display. Detachable lid for easier cleaning, large opening. Concealed heating element. Overheating protection. Power 2200 W. Dimensions: W 240 x D 150 x H 260 mm.
Power supply 220-240 V, 50/60 Hz.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HHY9.1** | 1 | 84,20 |



## Rotilabo®-thermal jug

With insulating body made of stainless steel. Pump mechanism for easy pouring. Carry handle. Capacity: 3 l. Dimensions: H 360 x ∅ 150 mm. Weight: approx. 1.6 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE85.1** | 1 | 53,65 |




## Immersion thermostats SC 100, SC 150 and AC 200

By Thermo.

**Standard thermostats SC 100 and SC 150**

- Simultaneous display of set and actual temperature
- Display resolution 0.1 or 0.01 °C can be selected
- Pumps have a 2 step turbulence reduction system
- USB interface (except SC 100)
- Head can be turned in 90°-increments in bath
- Immersion depth 90 to 145 mm
- Over-temperature warning
- **With screw clamp for bath tub max. 26 mm**

**Advanced Thermostat AC 200**

like SC 100 and SC 150, but also comes with:

- Pumps have a 3 step turbulence reduction system
- Programmable application temperature alarm with user-selected signal tone (on/off), safe temperature condition or switch-off function
- Interval programming, with the option of being able to alter the interval during operation
- Timer with real-time clock for critical applications
- **With bath bridge (adjustable from 300 to 800 mm) for attaching to bath tubs**

**Technical specifications:**

| Model | SC 100 | ① SC 150 | ② AC 200 |
|---|---|---|---|
| Working temperature (°C) | +25 to +100 | +25 to +150 | +25 to +200 |
| Temperature constancy (K) | ±0.02 | | ±0.01 |
| Heating capacity (W) | 2000 | | |
| Max. pump pressure (mbar) | 300 | | 475 |
| Max. flow (l/min) | 17 | | 20 |
| Max. pump pressure (mbar) | - | | 330 |
| Dimensions W x H x D (mm) | 165 x 333 x 195 | | 165 x 368 x 195 |
| Safety class | I (NFL) | III (FL) | |

I (NFL) = non-flammable liquids
III (FL) = flammable liquids

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SC 100 | **LP51.1** * | 1 | 984,00 |
| SC 150 | **LP52.1** * | 1 | 1282,00 |
| AC 200 | **LP53.1** * | 1 | 1982,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Accessories for immersion thermostats SC 100, SC 150 and AC 200

By Thermo.

**Tap water cooling spiral for SC 100, SC 150**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE43.1** * | 1 | 146,00 |

**Tap water cooling spiral for AC 200**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LP55.1** * | 1 | 146,00 |

* Longer delivery times possible. Please check with our Sales Department.




## Circulating thermostats with integral bath

By Thermo.

- Has a pump circulating set and is ideal for tempering external and closed applications
- Simultaneous display of set and actual temperature
- Display resolution 0.1 or 0.01 °C can be selected
- Bath tubs made of polyphenylene oxide (PPO)
- Thermostat heads can be turned invariably in 90° steps in bath (except SC 100-S5P)
- Pumps with 2 step turbulence reduction system
- Tube olives for tubes with inner-∅ 8 and 12 mm
- Integrated handles
- If bath lid or cooling spiral are required, please order separately

**Technical specifications:**

| Model | ① SC 100-S5P | SC 100-S14P | SC 100-S21P |
|---|---|---|---|
| Working temperature (°C) | Working temperature of 13 °C **over** room temperature to +100 °C | | |
| Temperature constancy (K) | ±0.02 | | |
| Heating capacity (W) | 2000 | | |
| Max. pump pressure (mbar) | 300 | | |
| Max. flow (l/min) | 17 | | |
| Bath volume (l) | 3 to 5 | 8 to 14 | 13 to 21 |
| Bath opening (mm)<br>Depth (mm) | 130 x 135<br>160 | 300 x 190<br>160 | 300 x 375<br>160 |
| Safety class | I (NFL) | | |

I (NFL) = non-flammable liquids

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SC 100-S5P | **LP57.1** * | 1 | 1215,00 |
| SC 100-S14P | **LP58.1** * | 1 | 1327,00 |
| SC 100-S21P | **LP59.1** * | 1 | 1340,00 |

* Please check with our Sales Department for delivery period of these products.

## Accessories for SC 100-S5P, SC 100-S14P and SC 100-S21P

By Thermo.

**Tap water cooling spiral for SC 100-S5P, incl. bath lid**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE44.1** * | 1 | 285,00 |

**Tap water cooling spiral for SC 100-S14P and SC 100-S21P, without bath lid**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LP55.1** * | 1 | 146,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Bath lid for SC 100-S5P | **LP61.1** * | 1 | 64,30 |
| Bath lid for SC 100-S14P | **LP62.1** * | 1 | 103,00 |
| Bath lid for SC 100-S21P | **LP63.1** * | 1 | 130,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Thermostats




## Immersion thermostats, CORIO™ C-series

By Julabo. For internal standard applications.
Flexible use, e.g. for changing bath tanks.

**Technical specifications:**

| Model | CORIO™ C | CORIO™ CD |
|---|---|---|
| Working temperature (°C) | +20 to +100 | +20 to +150 |
| Temperature constancy (K) | ±0.03 | |
| Display resolution (°C) | 0.1 | |
| Setting resolution (°C) | 0.1 | |
| Heating output (W) | 2000 | |
| Max. pump pressure (mbar) | 100 | 350 |
| Max. flow (l/min) | 6 | 15 |
| Dimensions W x D x H (mm) | 132 x 160 x 362 | |
| Safety class | I (NFL) | III (FL) |

I (NFL) = non-flammable liquids
III (FL) = flammable liquids

**Delivery incl.** bath clamp for wall thickness up to 30 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| CORIO™ C | **CXX7.1** * | 1 | 662,00 |
| CORIO™ CD | **CXX8.1** * | 1 | 769,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Water cooling coil

By Julabo.
**For CORIO™ C series thermostats.** Suitable for work at near ambient temperature. Attachable cooling coil for counter-cooling with cooling water.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXX9.1** | 1 | 96,00 |

## Stainless steel bath tanks

By Julabo.
**For CORIO™ C series immersion thermostats.**
Suitable for temperatures of up to 150 °C.

| Volulme (l) | Outer dimensions L x W x D (mm) | Inner dimensions L x W x D (mm) | Art. No. | Pack Qty. | € each |
|---|---|---|---|---|---|
| 5 | 350 x 190 x 180 | 300 x 150 x 150 | **CXY0.1** | 1 | 225,00 |
| 13 | 380 x 330 x 180 | 330 x 300 x 150 | **CXY1.1** | 1 | 390,00 |
| 17 | 380 x 330 x 230 | 330 x 300 x 200 | **CXY2.1** | 1 | 460,00 |
| 19 | 560 x 330 x 180 | 500 x 300 x 150 | **CXY3.1** | 1 | 450,00 |
| 27 | 560 x 330 x 230 | 500 x 300 x 200 | **CXY4.1** | 1 | 580,00 |




## Immersion thermostat, model MA

By Julabo.
- MULTI-DISPLAY (LED) for actual value and up to 3 desired values, excess and insufficient temperature warning functions, excess temperature protection and for pumping capacity stage
- PID-Temperature control with disturbance offset
- **Pumping capacity electronically adjustable in steps**
- Membrane keypad for setting desired values, warning and safety values and various other menu functions
- Early-warning system warns of sinking liquid levels before safety cut-off engages
- Adjustable excess temperature protection system has LED indicator
- With RS 232-interface
- Excess temperature and sub-level protection for flammable tempering liquids (FL)

**Technical specifications:**

| | |
|---|---|
| Working temperature | +20 to +200 °C |
| Temperature constancy | ±0.01 K |
| Heater capacity | 2 kW |
| Max. flow | 11 to 16 l/min |
| Max. pump pressure | 0.45 bar |
| Dimensions (W x D x H) | 130 x 150 x 330 mm |

**Delivery incl.** clamps for max 26 mm thick bath tubs.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y891.1** * | 1 | 1375,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Attachable cooling spiral

By Julabo.
For immersion thermostat MA.
Suitable for working near the ambient temperature.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L328.1** | 1 | 99,00 |




## Immersion thermostats Alpha, Silver and Gold

By Lauda.

① **Alpha**
- Three-key operation
- LED-display with 0.1 °C display resolution
- Display of set and actual temperature
- Heating and malfunction indicator lamps
- With timer function (max. runtime 99 h, 59 min)
- With screw clamp for saple tubs up 25 mm thick

② **Silver**
- LCD-display with 0.01 °C display resolution
- Operated with cursor keys and softkeys
- Simultaneous display of set and actual temperature
- Pump with six adjustable output levels
- With screw clamp for sample tubs up 25 mm thick
- USB-port

③ **Gold**
- Colour TFT-display with 0.01 °C display resolution
- Operated with cursor keys and softkeys
- Simultaneous display of set and actual temperature
- Graphical display of temperature characteristics
- Interval programming
- Timer
- Programmer with five programs and 150 segments
- Pump with six adjustable output levels
- With screw clamp for sample tubs up to 25 mm thick
- USB-port

**Technical specifications:**

| Model | ① Alpha | ② Silver | ③ Gold |
|---|---|---|---|
| Working temperature (°C) | +25 to +100 | +20 to +200 | |
| Temperature constancy (K) | ±0.05 | ±0.01 | |
| Heating capacity (kW) | 1.5 | 2.0 | 2.6 |
| Max. pump pressure | 0.2 | 0.55 | |
| Max. flow (l/min) | 15 | 22 | |
| Min. bath depth (mm) | 150 | | |
| Safety class | I (NFL) | III (FL) | |

III (FL) = flammable liquids;
I (NFL) = non-flammable liquids

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Alpha | **KP35.1** * | 1 | 810,00 |
| Silver | **LX94.1** * | 1 | 1370,00 |
| Gold | **LX95.1** * | 1 | 1770,00 |

## Accessories for immersion thermostats Alpha, Silver and Gold

By Lauda.

**Attachable cooling spiral for immersion thermostats Alpha**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KP44.1** * | 1 | 59,10 |

**Attachable cooling spiral for immersion thermostats Silver and Gold**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LX96.1** * | 1 | 130,00 |

* Longer delivery times possible. Please check with our Sales Department.




## Sample tubs

By Lauda.
Suitable for immersion thermostat models Alpha, Silver and Gold.

**Stainless steel bath tubs**
Up to 200 °C. With drain outlet.

| Volume (l) | Inner length (mm) | Inner width (mm) | Inner height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 3,5 | 240 | 135 | 150 | **LX97.1** * | 1 | 296,00 |
| 11 | 329 | 300 | 150 | **LX98.1** * | 1 | 421,00 |
| 16 | 329 | 300 | 200 | **LX99.1** * | 1 | 498,00 |
| 19 | 505 | 300 | 150 | **LY00.1** * | 1 | 536,00 |
| 25 | 505 | 300 | 200 | **LY01.1** * | 1 | 600,00 |
| 40 | 750 | 300 | 200 | **LY02.1** * | 1 | 1340,00 |

**Polycarbonate tubs**
Up to 100 °C. Transparent.

| Volume (l) | Inner length (mm) | Inner width (mm) | Inner height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 6 | 420 | 130 | 160 | **LY03.1** * | 1 | 257,00 |
| 12 | 315 | 300 | 160 | **LY04.1** * | 1 | 383,00 |
| 15 | 130 | 416 | 310 | **LY05.1** * | 1 | 383,00 |
| 20 | 490 | 300 | 160 | **LY06.1** * | 1 | 510,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Thermostats







## Bath thermostats CORIO™ C-BT-series

By Julabo.
**Applications:** sample temperature control, sample preparation for serology and clinical chemistry, analysis and materials testing.

**Technical specifications:**

| Model | ① C-BT5 | ② C-BT19 | ③ C-BT27 |
|---|---|---|---|
| Working temperature (°C) | +20 to +100 | | |
| Temperature constancy (K) | ±0.03 | | |
| Display resolution (°C) | 0.1 | | |
| Setting resolution (°C) | 0.1 | | |
| Heating output (W) | 2000 | | |
| Max. pump pressure (mbar) | 100 | | |
| Max. flow (l/min) | 6 | | |
| Bath opening (mm)<br>Bath depth (mm) | 150 x 150<br>150 | 300 x 350<br>150 | 300 x 350<br>200 |
| Bath volume (l) | 3 to 5 | 14 to 19 | 20 to 27 |
| Dimensions W x D x H (mm) | 230 x 380 x 380 | 380 x 580 x 380 | 380 x 580 x 430 |
| Safety class | I (NFL) | | |

I (NFL) = non-flammable liquids

**Delivery incl.** transparent bath tank made of Makrolon.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| CORIO™ C-BT5 | **CXY5.1** * | 1 | 826,00 |
| CORIO™ C-BT19 | **CXY6.1** * | 1 | 927,00 |
| CORIO™ C-BT27 | **CXY7.1** * | 1 | 967,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Water cooling coil

By Julabo.
For CORIO™ C-series thermostats. Suitable for work at near ambient temperature. Attachable cooling coil for counter-cooling with cooling water.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXX9.1** | 1 | 96,00 |

## Immersion thermostats with baths Alpha A-series

By Lauda. For tempering liquids to max +85 °C in open vessels.

- 3-key operation
- LED-Display, display resolution 0.1 °C
- Actual or set value
- With timer function (max. runtime 99 h, 59 min)
- Control indicator lamp for heating and breakdown
- Pump capacity can be reduced to 5 l/min
- Thermostats can be attached via clamp and are therefore suitable for all standard baths (bath depth min. 150 mm)
- Can be upgraded with pump circulating set and ideal for tempering external, closed applications (please order separately)

**Technical specifications:**

| Model | Alpha A 6 | ① Alpha A 12 | Alpha A 24 |
|---|---|---|---|
| Working temperature (°C) | +25 to +100 | | |
| Temperature constancy (K) | ±0.05 | | |
| Heating capacity (W) | 1500 | | |
| Max. pump pressure (mbar) | 200 | | |
| Max. flow (l/min) | 15 | | |
| Bath volume (l) | 2.5 to 5.5 | 8 to 12 | 18 to 25 |
| Bath opening (mm)<br>Bath depth (mm) | 145 x 161<br>150 | 235 x 161<br>200 | 295 x 374<br>200 |
| Safety class | I (NFL) | | |

I (NFL) = non-flammable liquids

**Delivery incl.** bath made of stainless steel.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Alpha A 6 | **KP36.1** * | 1 | 1200,00 |
| Alpha A 12 | **KP37.1** * | 1 | 1275,00 |
| Alpha A 24 | **KP38.1** * | 1 | 1490,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| ② Pump circulating set | **KP39.1** | 1 | 59,10 |
| ③ Water pipe cooler coil for Alpha-series | **KP44.1** * | 1 | 59,10 |

* Longer delivery times possible. Please check with our Sales Department.

▶ Rotitherm®-heating and cooling mediums see page 1147

# Circulating bath thermostats







## Circulating thermostats E5-series

With possible temperature control in stainless steel bath. Temperature control of small, external, closed vessels possible via pressure pump.

**E5-series**

- For max. working temperatures +100 °C
- Programmable timer function (up to 99.99 min)
- LCD display, display resolution 0.1 °C
- Actual or set value reading, (set value reading via keystroke, actual value reading is permanently visible)
- Adjustable key locking mechanism
- Limit value signal optical and/or acoustic
- Adjustable set value limit and automatic alarm
- Excess temperature and sub-level protection for non flammable temperature control liquids (NFL)

**E5s-series**

Like model E5, however for max working temperatures +150 °C.

**Technical specifications:**

| Model | E5-B4 | E5-B6 | E5-B12 | E5-B16 |
|---|---|---|---|---|
| Working temperature (°C) | +25 to +100 | | | |
| Constancy of temperature (K) | ±0.1 | | | |
| Heating capacity (W) | 1000 | | | |
| Max. pump pressure (mbar) | 120 | | | |
| Max. flow (l/min) | 5 | | | |
| Bath volume (l) | 4 | 6 | 12 | 16 |
| Bath opening W x D (mm) | 115 x 115 | 230 x 75 | 230 x 270 | |
| Bath depth (mm) | 150 | | | 200 |

| Model | E5s-B4 | E5s-B6 | E5s-B12 | E5s-B16 | E5s-B22 |
|---|---|---|---|---|---|
| Working temperature (°C) | +25 to +150 | | | | |
| Constancy of temperature (K) | ±0.1 | | | | |
| Heating capacity (W) | 1800 | | | | |
| Max. pump pressure (mbar) | 120 | | | | |
| Max. flow (l/min) | 5 | | | | |
| Bath volume (l) | 4 | 6 | 12 | 16 | 22 |
| Bath opening W x D (mm) | 115 x 115 | 230 x 75 | 230 x 270 | | |
| Bath depth (mm) | 150 | | | 200 | 250 |

**Delivery incl.** bath tub lid, pump outlet and cooling coil.

| Type | Bath volume | Max. temp. (°C) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| E5-B4 | 4 | +100 | **KA69.1** * | 1 | 1123,40 |
| E5-B6 | 6 | +100 | **KA70.1** * | 1 | 1198,65 |
| E5-B12 | 12 | +100 | **KA71.1** * | 1 | 1247,00 |
| E5-B16 | 16 | +100 | **KA72.1** * | 1 | 1279,25 |
| E5s-B4 | 4 | +150 | **KA73.1** * | 1 | 1171,75 |
| E5s-B6 | 6 | +150 | **KA74.1** * | 1 | 1247,00 |
| E5s-B12 | 12 | +150 | **KA75.1** * | 1 | 1279,25 |
| E5s-B16 | 16 | +150 | **KA76.1** * | 1 | 1316,90 |
| E5s-B22 | 22 | +150 | **KA77.1** * | 1 | 1349,15 |

* Longer delivery times possible. Please check with our Sales Department.

## Bath/circulation thermostats, CORIO™ CD-B-series

By Julabo. For internal standard applications.
Flexible use, e.g. for changing bath tanks.

- External pump connections each with 2 connectors for hoses with 8 and 12 mm inner ∅
- Simple changeover between internal and external circulation
- USB port
- Integrated drain screw (except in model CD-B5)

**Technical specifications:**

| Model | CD-B5 | ① CD-B13 | ② CD-B27 |
|---|---|---|---|
| Working temperature (°C) | +20 to +150 | | |
| Temperature constancy (K) | ±0.03 | | |
| Display resolution (°C) | 0.1 | | |
| Setting resolution (°C) | 0.1 | | |
| Heating output (W) | 2000 | | |
| Max. flow (l/min) | 15 | | |
| Max. pump pressure (mbar) | 350 | | |
| Bath opening (mm)<br>Bath depth (mm) | 150 x 150<br>150 | 300 x 180<br>150 | 300 x 350<br>200 |
| Bath volume (l) | 3 to 5 | 9 to 13 | 17 to 27 |
| Dimensions W x D x H (mm) | 230 x 380 x 410 | 380 x 400 x 420 | 380 x 580 x 470 |
| Safety class | III (FL) | | |

III (FL) = flammable liquids

**Delivery incl.** stainless steel bath tank.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| CORIO™ CD-B5 | **CXY8.1** * | 1 | 1191,00 |
| CORIO™ CD-B13 | **CXY9.1** * | 1 | 1378,00 |
| CORIO™ CD-B27 | **CYA0.1** * | 1 | 1568,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Water cooling coil

By Julabo. For CORIO™ CD-series thermostats. Suitable for work at near ambient temperature. Integrable cooling coil for counter-cooling with cooling water.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CYA1.1** | 1 | 95,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Bath lid for CORIO™ CD-B5 | **CYA2.1** | 1 | 96,00 |
| Bath lid for CORIO™ CD-B13 | **CYA3.1** | 1 | 133,00 |
| Bath lid for CORIO™ CD-B27 | **CYA4.1** | 1 | 150,00 |

# Circulating bath thermostats






## Heat thermostats E 4 S and E 20 S

By Lauda. With bath tubs rated for up to 200 °C. Inner basin made of stainless steel. Outer shell made of powder-coated sheet steel. Supplied complete with cooling spiral.

**Circulating thermostat E 4 S**

- **For temperature control of external, closed circuits and simultaneous temperature control in a thermostat bath**
- LCD display with 0.01 °C display resolution
- Operated with cursor keys and softkeys
- Simultaneous display of set and actual temperature
- USB port
- Pump connections with 13 mm plastic connector as standard
- **Delivery incl.** bath lid

**Heat thermostat E 20 S**

- For internal temperature control of liquids in a bath
- LCD display with 0.01 °C display resolution
- Operated with cursor keys and softkeys
- Simultaneous display of set and actual temperature
- USB port
- **Delivery without** bath lid (please order separately)

**Technical specifications:**

| Model | E 4 S | E 20 S |
|---|---|---|
| Working temperature | +20 to +200 °C | |
| Temperature constancy | ±0.01 K | |
| Heating output | 2.0 kW | |
| Max. pump pressure | 0.55 bar | |
| Max. flow | 22 l/min | |
| Bath capacity | 3.5 l | 19 l |
| Bath opening | 135 x 105 mm | 300 x 365 mm |
| Bath depth | 150 mm | |
| Safety class | III (FL) | |

III (FL) = flammable liquids

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Circulting thermostat E 4 S | **LX89.1** * | 1 | 1900,00 |
| Heat thermostat E 20 S | **LX90.1** * | 1 | 2170,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Bath lid, made of stainless steel, two-piece for E 20 S | **LX91.1** * | 1 | 192,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Circulating thermostats with stainless steel bath

By Thermo. For temperature control of external, closed circuits, e.g. densimeters, viscometers, photometers, refractometers, etc. Simultaneous temperature control in thermostat bath possible.

- Simultaneous display of set and actual temperature
- Display resolution 0.1 or 0.01 °C can be selected
- Stainless steel bath for oil
- Thermostat heads can be turned invariably in 90° steps in the bath
- Pumps with 2 step turbulence reduction system
- Drainage outlet (on the front)
- Bath with handles
- Olives for tubes with 8 and 12 mm inner-Ø
- A water cooling coil is optionally available (please order separately).

**Technical specifications:**

| Model | SC 150-S13 | SC 150-S21 |
|---|---|---|
| Working temperature (°C) | Working temperature of +13 °C **over** room temperature to +150 °C | |
| Temperature constancy (K) | ±0.02 | |
| Heating capacity (W) | 2000 | |
| Max. pump pressure (mbar) | 300 | |
| Max. flow (l/min) | 17 | |
| Bath volume (l) | 8 to 13 | 9 to 21 |
| Bath opening (mm)<br>Depth (mm) | 239 x 110<br>200 | 296 x 310<br>150 |
| Safety class | III (FL) | |

III (FL) = flammable liquids

**Delivery incl.** circulating set for external circulation and bath lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SC 150-S13 | **LP64.1** * | 1 | 2096,00 |
| SC 150-S21 | **LP65.1** * | 1 | 2257,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Water cooling spiral for cooling tasks. Can be connected to tap | **LP55.1** * | 1 | 146,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Circulating bath thermostats





## Bath and circulating thermostats models MA-12 and MA-26

By Julabo. For external temperature control of measuring instruments, gauge heads and other closed objects. Simultaneous temperature control in thermostat bath possible.

- MULTI-DISPLAY (LED) indicates actual value, up to 3 set values, excess and low temperature warning signals, excess temperature protection and pump performance stages
- Setting/display resolution 0.01 °C (to 99.99 °C), 0.1 °C (from 100 °C)
- PID-Temperature control with disturbance offset
- **Pumping capacity electronically adjustable in steps**
- Keypad for setting desired values, warning and safety values and various other menu functions
- Early-warning system warns of sinking liquid levels before safety cut-off engages
- Adjustable excess temperature protection system has LED indicator
- With RS 232-interface
- Excess temperature and sub-level protection for flammable tempering liquids (FL)

**Technical specifications:**

| **Model** | **MA-12** | **MA-26** |
|---|---|---|
| Working temperature (°C) | +20 to +200 | |
| Temperature constancy (K) | ±0.01 | |
| Heater capacity | 2 kW | |
| Max. flow (l/min) | 11 to 16 | |
| Max. pump pressure (bar) | 0.45 | |
| Bath opening W x D (mm) | 220 x 150 | 220 x 300 |
| Bath depth (mm) | 200 | 200 |
| Bath volume (l) | 12 | 26 |
| Dimensions W x D x H (mm) | 300 x 430 x 450 | 360 x 610 x 450 |

**Delivery incl.** stainless steel bath tub, lid for tub, cooling spiral and pump outlets.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Model MA-12 | **Y893.1** * | 1 | 2449,00 |
| Model MA-26 | **Y894.1** * | 1 | 2759,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Circulating bath thermostat PC300-S7

By Thermo. For temperature control in bath or external open and closed circuits.

- 8-language full text display and numerical input via keys in large colour display
- Powerful pressure and suction pump allows open and closed external applications
- Pump with 5-stage turbulence reduction system
- 5-interval programming with 10 segments; options for ramp processing during operation
- Programmable application temperature alarm with signal that can be selected by the user (On/Off) or switch-off function
- Timer with real-time clock for critical applications
- USB interface
- With stainless steel bath
- Thermostat heads can be turned invariably in 90° steps on the bath
- Drain orifice (on the front) and handles
- Connectors for tubes with 8 and 12 mm inner ∅

**Technical specifications:**

| | |
|---|---|
| Working temperature | +20 to +300 °C |
| Temperature constancy | ±0.01 K |
| Heating output | 3000 W |
| Max. flow | 24 l/min |
| Max. pump pressure | 560 mbar |
| Max. pump suction | 380 mbar |
| Bath capacity | 7 l |
| Bath opening<br>Depth | 239 x 110 mm<br>200 mm |
| Safety class | III (FL) |

III (FL) = flammable liquids

**Delivery incl.** circulation set for external circulation and bath lid.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE45.1** * | 1 | 3534,00 |

## Accessories for circulating bath thermostat PC300-S7

By Thermo.

**Attachable cooling spiral for PC300-S7**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE47.1** * | 1 | 285,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Recirculating coolers




## Thermoelectric circulation thermostats LAUDA LOOP

By Lauda.
**Applications:** temperature control for refractometers, polarimeters, electrophoresis chambers or small bioreactors.

- Refrigerant-free temperature control with Pertier technology
- Power-controlled fans
- 3-key operation with OLED display, display resolution 0.1 °C
- RS 232 interface

**Technical specifications:**

| Model | | LOOP L 100 | LOOP L 250 |
|---|---|---|---|
| Alpha | | 4 to 80 | |
| Temperature constancy (K) | | ±0.1 | |
| Heating output (W) | | 200 | 400 |
| Cooling capacity (W) | 20 °C | 120 | 250 |
| | 10 °C | 60 | 130 |
| Max. pump pressure (mbar) | | 0.8 | |
| Max. flow (l/min) | | 2.6 | |
| Capacity (l) | | 0.3 | |
| Dimensions: W x D x H (mm) | | 175 x 301 x 266 | 261 x 368 x 312 |
| Weight (kg) | | 6.9 | 11.9 |
| Power supply | | 230 V, 50/60 Hz | |

**Delivery incl.** pump connection glands for hoses with ID 6.4 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Loop L 100 | **HHY7.1** * | 1 | 1850,00 |
| Loop L 250 | **HHY8.1** * | 1 | 2880,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Accel-series circulating coolers

By Thermo. For external, closed applications with water as a tempering medium, for example for cooling electrophoresis equipment. The integrated stainless steel bath design minimises the volume and evaporation of tempering medium, however it does not allow access to the bath for direct tempering of samples.

**Features**:

- Digital temperature display
- LCD-Display with multi-lingual text menu control (German, English, French)
- 5 user-defined set temperatures
- Energy savings feature
- Liquid level indicator
- 2.8 litres internal volume of bath
- Pump speed control - allows the user to set the pump speed at either 50 or 100 % for tighter control
- Pump for hoses with 12 mm inner-∅
- With discharge nozzle on the front for convenient changing of water
- USB-port
- Low-level alarm

**Technical specifications:**

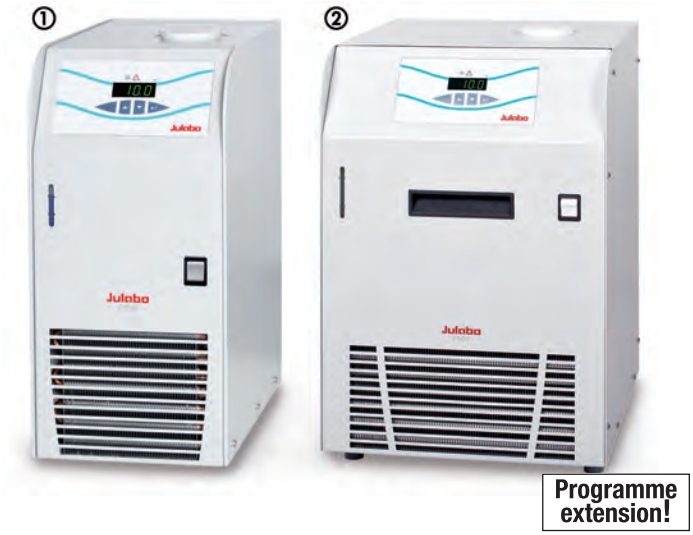
| Model | Accel 250 | Accel 500 |
|---|---|---|
| Working temperature range (°C) | -10 to +80 | |
| Temperature constancy (K) | ±0.1 | |
| Heating power (W) | 2000 | |
| Cooling capacity at 20 °C (W) | 250 | 500 |
| Pump pressure (mbar) | 300 | |
| Pump rate of delivery (l/min) | 15 | |
| Dimensions L x W x H (mm) | 620 x 232 x 487 | |
| Weight (kg) | 30 | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Accel 250 | **PE51.1** * | 1 | 2444,00 |
| Accel 500 | **APT5.1** * | 1 | 2978,00 |

* Longer delivery times possible. Please check with our Sales Department.

▶ Rotitherm®-heating and cooling mediums see page 1147

# Recirculating coolers




**Programme extension!**




## F-series compact recirculating coolers

By Julabo. **Applications:** rotary evaporator, Soxhlet extractors, distillation equipment, gas chromatographs etc.
For external, closed-circuit applications.

**Equipment:**
- LED temperature display, display resolution 0.1 °C
- PID temperature control
- Draincock for easy drainage
- Level indicator

**Technical specifications:**

| Model | | ① F250 | ② F500 | F1000 |
|---|---|---|---|---|
| Working temperature range (°C) | | -10 to +40 | 0 to +40 | |
| Temperature constancy (K) | | ±0.5 | | |
| Heating output (W) | | 0 | | |
| Cooling capacity (W) | 20 °C<br>10 °C<br>5 °C<br>0 °C<br>-5 °C | 250<br>220<br>210<br>180<br>90 | 500<br>400<br>300<br>250<br>- | 1000<br>700<br>550<br>250<br>- |
| Max. pump pressure (mbar) | | 350 | 500 | 1000 |
| Max. pump flow (l/min) | | 15 | 24 | 23 |
| Capacity (l) | | 1.7 to 2.6 | 5 to 7.5 | 7 to 9.5 |
| Dimensions W x D x H (mm) | | 240 x 400 x 520 | 375 x 440 x 590 | 375 x 490 x 640 |
| Weight (kg) | | 27 | 34 | 45 |
| Power supply | | 230 V, 50 Hz | | |

**Delivery incl.** 2 hose connectors suitable for hoses with 8 and 10 mm inner ∅ (model F250) or hoses with 8 and 12 mm inner ∅ (model F500, F1000).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| F250 | **AXX4.1** * | 1 | 2020,00 |
| F500 | **AXX5.1** * | 1 | 2875,00 |
| F1000 | **HHK6.1** * | 1 | 3600,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Microcool recirculating coolers

By Lauda.
**Applications:** cooling of rotary evaporators, distillation systems and analytical apparatus, as well as supply of cold traps.

**Features**
- LED temperature display, display resolution 0.1 °C
- Time-controlled starting and shutdown of the circulation chiller (Auto-Start or Auto-Shut-Down-Timer)
- Illuminated sight glass for checking the thermostating liquid level
- Filler neck on top of apparatus at front
- Removable front grid for cleaning the condenser
- RS 232 interface

**Additional features of MC 600 and MC 1200**
- Bypass adjusting wheel for regulating the pump pressure
- Pressure gauge for displaying the pump pressure
- Four rollers with holding brakes

**Technical data:**

| Model | ① MC 250 | ② MC 600 | ③ MC 1200 |
|---|---|---|---|
| Working temperature range | -10 to +40 °C | | |
| Temperature constancy | ±0.5 °C | | |
| Heating capacity | 0 W | | |
| Cooling capacity (W)<br>+20 °C<br>+10 °C<br>0 °C<br>-10 °C | <br>250<br>200<br>150<br>90 | <br>600<br>500<br>360<br>150 | <br>1200<br>1050<br>750<br>400 |
| Pump pressure (mbar)<br>Pump delivery rate (l/min) | 350<br>16 | 1300<br>35 | |
| Capacity (l) | 2 to 4 | 4 to 8 | 7 to 14 |
| Timer | 1 min up to 99 h, 59 min | | |
| Dimensions W x D x H (mm) | 200 x 350 x 465 | 350 x 480 x 595 | 450 x 550 x 650 |
| Weight (kg) | 26 | 51 | 64 |
| Power supply | 230 V, 50 Hz | | |

**Delivery incl.** 10 mm pump connector (model MC 250).
Two 10 mm hose connectors with a G 3/4" union nut are required for models MC 600 and MC 1200. Please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① MC 250 | **AEP2.1** * | 1 | 2150,00 |
| ② MC 600 | **AEP3.1** * | 1 | 2970,00 |
| ③ MC 1200 | **AEP4.1** * | 1 | 3740,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 10 mm hose connector with G 3/4" union nut | **AEP5.1** * | 1 | 14,25 |

* Longer delivery times possible. Please check with our Sales Department.

# Refrigerating thermostats



## Refrigerated circulation

By Thermo. For temperature control in bath or for open and closed external circuits.

- Simultaneous display of set and actual temperature
- Display resolution 0.1 or 0.01 °C can be selected
- Stainless steel bath
- Thermostat heads can be turned invariably in 90° steps on the bath
- Drain cock (on the front)
- With integrated handles
- Olives for tubes with 8 and 12 mm inner ∅

**Technical specifications:**

| Model | SC 100-A10 | SC 150-A25 |
|---|---|---|
| Working temperature (°C) | -10 to +100 | -25 to +150 |
| Temperature constancy (K) | ±0.02 | |
| Heating output (W) | 2000 | |
| Cooling capacity at 20 °C (W) | 240 | 500 |
| Max. flow (l/min) | 17 | |
| Max. pump pressure (mbar) | 300 | |
| Bath capacity (l) | 6 | 12 |
| Bath opening (mm)<br>Depth (mm) | 137 x 124<br>150 | 173 x 183<br>200 |
| Safety class (FL) | I | III |

I (NFL) = non-flammable liquids
III (FL) = flammable liquids

**Delivery incl.** bath lid and circulation set for external circulation.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SC 100-A10 | **PC14.1** * | 1 | 2791,00 |
| SC 150-A25 | **PC15.1** * | 1 | 3766,00 |

* Longer delivery times possible. Please check with our Sales Department.




**Programme extension!**

## Refrigerating circulating thermostats, CORIO™ CD-F-series

By Julabo. For temperature control of samples in baths or for enclosed external instruments such as refractometers, polarimeters, photometers, viscosimeters, electrophoresis cells, chromatography columns and rotary evaporators.

- External pump connections each with 2 connectors for hoses with 8 and 12 mm inner ∅
- With drain outlet
- Handles (front and back) for easy transportation
- USB port

**Technical specifications:**

| Model | | ① CORIO™ CD-200F | ② CORIO™ CD-300F | ② CORIO™ CD-600F |
|---|---|---|---|---|
| Working temperature range (°C) | | -20 to +150 | -25 to +150 | -35 to +150 |
| Temperature constancy (K) | | ±0.03 | | |
| Display resolution (°C) | | 0.1 | | |
| Setting resolution (°C) | | 0.1 | | |
| Heating output (W) | | 2000 | | |
| Cooling capacity (kW) | at 20 °C<br>0 °C<br>-20 °C | 0.22<br>0.17<br>0.06 | 0.31<br>0.28<br>0.11 | 0.6<br>0.53<br>0.22 |
| Max. pump pressure (mbar) | | 350 | | |
| Max. flow (l/min) | | 15 | | |
| Bath opening (mm)<br>Bath depth (mm) | | 130 x 150<br>150 | | 220 x 150<br>150 |
| Bath volume (l) | | 3 to 4 | | 5 to 7.5 |
| Dimensions W x D x H (mm) | | 230 x 390 x 650 | 240 x 420 x 660 | 330 x 470 x 690 |
| Safety class | | III (FL) | | |
| Power supply | | 230 V, 50 Hz | | |

III (FL) = flammable liquids

**Delivery incl.** bath lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| CORIO™ CD-200F | **CYA5.1** * | 1 | 2909,00 |
| CORIO™ CD-300F | **HHK5.1** * | 1 | 3369,00 |
| CORIO™ CD-600F | **CYA6.1** * | 1 | 4234,00 |

* Longer delivery times possible. Please check with our Sales Department.







## Table refrigerating thermostats Alpha RA-series

By Lauda. For controlling temperature of external, closed electric loads. Simultaneous internal temperature control possible.

- 3-key operation
- LCD display, display resolution 0.1 °C
- Actual or set value
- With timer function (max. runtime 99 h, 59 min)
- Control lamp for heating, cooling and breakdown.
- Front panel can be removed to clean the condenser
- With drain outlet on the back to empty tempering liquid
- Bath tubs made of stainless steel

**Technical specifications:**

| Model | Alpha RA 8 | Alpha RA 12 | Alpha RA 24 |
|---|---|---|---|
| Working temperature (°C) | -25 to +100 | | |
| Temperature constancy (K) | ±0.05 | | |
| Heating capacity (W) | 1500 | | |
| Cooling capacity at 20 °C (W) | 225 | 325 | 425 |
| Max. pump pressure (mbar) | 200 | | |
| Max. flow (l/min) | 15 | | |
| Bath volume (l) | 5 to 7.5 | 9.5 to 14.5 | 14 to 22 |
| Bath opening (mm) | 165 x 190 | 300 x 190 | 350 x 290 |
| Bath depth (mm) | 160 | | |
| Safety class | I (NFL) | | |

I (NFL) = non-flammable liquids

**Delivery incl.** lid for bath and circulating pump kit.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Alpha RA 8 | **KP41.1** * | 1 | 3010,00 |
| Alpha RA 12 | **KP42.1** * | 1 | 3570,00 |
| Alpha RA 24 | **KP43.1** * | 1 | 4460,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Table refrigerating thermostat models RE 415 S and RE 415 G

By Lauda. For controlling temperature of external loads. Simultaneous internal temperature control possible. Compact outer dimensions.
**Delivery incl.** thermostat with drain outlet, recessed handles and bath lid.

① **RE 415 S**
- LCD display with 0.01 °C display resolution
- Operation by means of cursor keys and softkeys
- Simultaneous display of set and actual temperature
- USB port
- Hose connectors for hoses with 10 mm inside ∅

② **RE 415 G**
- Colour TFT display with 0.01 °C display resolution
- Operation by means of cursor keys and softkeys
- Simultaneous display of set and actual temperature
- Graphical display of temperature characteristics
- Interval function
- Timer
- USB port
- Hose connectors for hoses with 10 mm inside ∅

**Technical specifications:**

| Model | ① RE 415 S | ② RE 415 G |
|---|---|---|
| Working temperature | -15 to +200 °C | |
| Temperature constancy | ±0.02 K | |
| Display resolution | 0.01 °C | |
| Setting resolution | 0.01 °C | |
| Heating output | 2.0 kW | 2.6 kW |
| Cooling capacity at 20 °C | 180 W | |
| Max. pump pressure | 0.55 bar | |
| Max. flow | 22 l/min | |
| Bath capacity | 4 l | |
| Bath opening / bath depth | 130 x 105 / 160 mm | |
| Safety class | III (FL) | |

III (FL) = flammable liquids

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RE 415 S | **LX92.1** * | 1 | 3540,00 |
| RE 415 G | **LX93.1** * | 1 | 3970,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Refrigerating thermostats




## Refrigerating circulating thermostat model F12-MA

By Julabo. For temperature control of external closed instruments such as photometers, refractometers, viscometers, etc. Simultaneous temperature control of smaller objects is possible directly in the thermostat bath. Equipped with drain valve for emptying tempering liquid and with removable ventilation grid.

- MULTI-DISPLAY (LED) indicates actual value, up to 3 set values, excess and low temperature warning signals, excess temperature, and stage pump performance protection
- PID-Temperature control with disturbance offset
- **Pumping capacity electronically adjustable in steps**
- Membrane keypad for setting desired values, warning and safety values and various other menu functions
- Early-warning system warns of sinking liquid levels before safety cut-out engages
- Adjustable excess temperature protection visible via LED
- With RS 232-interface
- Excess temperature and sub-level protection for flammable tempering liquids (FL)

**Technical specifications:**

| | |
|---|---|
| Working temperature | -20 to +200 °C |
| Temperature constancy | ±0.01 K |
| Heater capacity | 2 kW |
| Cooling capacity at 20 °C | 160 W |
| Max. flow | 11 to 16 l |
| Max. pump pressure | 0.45 bar |
| Bath opening (W x D) | 150 x 160 mm |
| Bath depth | 150 mm |
| Bath volume | 4.5 l |
| Dimensions (W x D x H) | 200 x 360 x 560 mm |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y896.1** * | 1 | 3614,00 |

* Longer delivery times possible. Please check with our Sales Department.




① 

## Refrigerative circulating thermostats

By Thermo. For temperature control in bath or for open and closed external circuits.

- Simultaneous display of set and actual temperature
- Display resolution 0.1 or 0.01 °C can be selected
- Stainless steel bath
- Thermostat heads can be turned invariably in 90° steps on the bath
- Drain cock (on the front)
- With integrated handles
- Connectors for tubes with 8 and 12 mm inner-∅
- A bath lid is included with the AC 150-A25 B model. If a bath lid is required for the AC 150-A10B model, please order separately.

**Technical specifications:**

| **Model** | **AC 150-A10B** | **① AC 150-A25B** |
|---|---|---|
| Working temperature (°C) | -10 to +100 | -25 to +150 |
| Temperature constancy (K) | ±0.01 | |
| Heating capacity (W) | 2000 | |
| Cooling capacity at 20 °C (W) | 250 | 500 |
| Max. pump pressure (mbar) | 475 | |
| Max. flow (l/min) | 20 | |
| Max. pump pressure (mbar) | 330 | |
| Bath volume (l) | 18 to 30 | 13 to 20 |
| Bath opening (mm) | 295 x 375 | 220 x 243 |
| Bath depth (mm) | 200 | 230 |
| Safety class | III (FL) | |

III (FL) = flammable liquids

**Delivery incl.** circulating set for external circulation.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| AC 150-A10B | **LP68.1** * | 1 | 4197,00 |
| AC 150-A5B | **LP69.1** * | 1 | 4331,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Bath lid for AC 150-A10B | **LP71.1** * | 1 | 117,00 |

* Longer delivery times possible.Please check with our Sales Department.



## VersaCool 7 refrigerated circulation thermostat

By Thermo. For heating and cooling. For external closed-circuit temperature control tasks or direct use in circulating baths.

- Languages: German, English, French and four others
- Intuitively operated colour touchscreen (screen size 14.4 cm)
- Electronically adjustable pump output levels (40 to 100 %)
- Graphical display of temperature profile
- Programmable with 30 program steps for up to 10 different programs (max. process time per program step 999 h, max. 10 repetitions per step)
- Integrated data logger incl. 4 GB SSD card
- USB port for reading out the data logger and storing ramp profiles. Ramp profiles can be used for various baths by using the download and upload functions of the USB flash drive
- Overtemperature protection
- RS 232, RS 485 and Micro USB port
- Bluetooth communication port - for remote control and monitoring via iOS or Android smartphone
- Timer function
- Pt 100 external sensor connection for measurement and control in external system. Please order temperature sensor Pt 100 separately

**Technical specifications:**

| | | |
|---|---|---|
| Operating temperature range | | -20 to +150 °C |
| Temperature constancy | | ±0.02 K |
| Heating capacity | at 230 V<br>at 115 V | 2000 W<br>1200 W |
| Cooling capacity | 20 °C<br>0 °C<br>-10 °C<br>-20 °C | 425 W<br>200 W<br>100 W<br>50 W |
| Max. pump pressure | | 1200 mbar |
| Max. pump flow | | 14.6 l |
| Bath capacity | | 7 l |
| Bath opening | | 173 x 297 mm |
| Bath depth | | 150 mm |
| Dimensions (W x D x H) | | 258 x 585 x 474 mm |
| Safety class | | III (FL) |
| Weight | | 36 kg |
| Power supply | | 200-240 V, 50/60 Hz to 100-120V, 50/60 Hz |

III (FL) = flammable liquids

**Delivery incl.** bath lid (can be attached to open right or left or placed loosely on top), 2 hose connectors for hoses with 8 and 12 mm inner ∅ and 4 GB SSD card.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CAY7.1** * | 1 | 6462,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Stainless steel sensor probe Pt 100, L 150 x ∅ 3 mm, 3 m connecting cable | **CAY8.1** * | 1 | 430,00 |
| Software for controlling VersaCool 7 and reading out the data logger | **CAY9.1** * | 1 | 86,40 |

* Longer delivery times possible. Please check with our Sales Department.




## Refrigerating circulating thermostats F32-ME and FP50-ME

By Julabo. For heating and cooling. For external closed-circuit temperature control tasks or direct use in thermostat baths.

**Equipment:**

- VFD display for indicating set values and actual values, display resolution 0.01 °C
- PID temperature control
- Electronically adjustable pump output levels
- Early warning system for low liquid level.
- Adjustable high temperature cut-out
- Integrated programmer for 1 program with 10 program steps
- Pt 100 external sensor connection for measurement and control in external system. If external control is required, please order Pt 100 sensor separately

**Technical specifications:**

| Model | | ① F32-ME | ② FP50-ME |
|---|---|---|---|
| Working temperature (°C) | | -35 to +200 | -50 to +200 |
| Temperature constancy (K) | | ±0.01 | |
| Heating output (W) | | 2000 | |
| Cooling capacity (W) | 20 °C<br>0 °C<br>-20 °C<br>-30 °C<br>-40 °C | 450<br>390<br>150<br>60<br>- | 900<br>800<br>500<br>320<br>160 |
| Max. pump pressure (mbar) | | 230 to 450 | |
| Max. pump flow (l/min) | | 11-16 | |
| Bath volume (l) | | 8 | |
| Bath opening (mm) | | 180 x 120 | |
| Bath depth (mm) | | 150 | |
| Dimensions W x D x H (mm) | | 310 x 420 x 640 | 420 x 490 x 700 |
| Safety class | | III (FL) | |
| Weight (kg) | | 37 | 55 |
| Power supply | | 230 V, 50 Hz | |

III (FL) = flammable liquids

**Delivery incl.** 2 hose connectors for hoses with 8 and 10 mm inner ∅.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| F32-ME | **AXY6.1** * | 1 | 5154,00 |
| FP50-ME | **AXY7.1** * | 1 | 6889,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Stainless steel sensor probe Pt 100, L 300 x ∅ 6 mm, 1.5 m connecting cable | **AXY8.1** * | 1 | 265,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Water baths



## Low-temperature circulation thermostat AC200-G50

By Thermo. For temperature control of samples in baths or for open external instruments such as jacketed reaction vessels. Typical applications: material tests, analytical equipment, calibration and crystallisation.

- Languages: German, English, French and two others
- Timer with real-time clock
- Ramp programming for 1 ramp with 30 steps
- Alarm for temperature too high/too low, level alarm
- 3 stage pump
- External pump connections each with 2 connectors for hoses with 8 and 12 mm inner ∅

**Technical specifications:**

| | | |
|---|---|---|
| Working temperature | | -50 to +200 °C |
| Temperature constancy | | ±0.01 K |
| Display resolution | | 0.01 °C |
| Setting resolution | | 0.01 °C |
| Heating capacity | | 2000 W |
| Cooling capacity at | 20 °C<br>-20 °C<br>-40 °C | 1000 W<br>600 W<br>180 W |
| Max. pump pressure | | 475 mbar |
| Max. flow | | 20 l/min |
| Max. pump suction | | 330 mbar |
| Bath opening<br>Bath depth | | 208 x 104 mm<br>200 mm |
| Bath capacity | | 6 to 12 l |
| Dimensions (W x D x H) | | 419 x 554 x 851 mm |
| Weight | | 62 kg |
| Safety class | | III (FL) |

III (FL) = flammable liquids

**Delivery incl.** bath lid.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CYX2.1** * | 1 | 6016,00 |

* Longer delivery times possible. Please check with our Sales Department.




## Water baths, WB-series

- Stainless steel inner tank
- LCD display for displaying nominal/actual temperature values
- Integrated digital clock (1 min to 99 h, 59 min or continuous)
- Overheating protection
- Heater exposed on floor

**WB-12 and WB-22:** operating temperature range from 5 °C **and** room temperature to 100 °C (adjustment range from 10 to 100 °C).

**WB-22-P:** operating temperature range from 5 °C **and** room temperature to 85 °C (adjustment range from 10 to 85 °C).
With built-in circulation pump for faster and more even heat distribution within the bath.

**Technical specifications:**

| Model | WB-12 | WB-22 | WB-22-P |
|---|---|---|---|
| **Useable volume** | | | |
| Capacity approx. (l) | 12 | 22 | 22 |
| Width (mm) | 390 | 490 | 490 |
| Depth (mm) | 220 | 290 | 290 |
| Height (mm) | 150 | 150 | 150 |
| **Units** | | | |
| Width (mm) | 480 | 680 | 680 |
| Depth (mm) | 310 | 365 | 365 |
| Height incl. lid (mm) | 375 | 395 | 395 |
| Temperature constancy (±K) | 0.5 | 0.5 | 0.2 |
| Heating capacity (kW) | 900 | 1100 | 1100 |
| Max. number of test tubes | 4 | 8 | 8 |
| Weight | 12 | 18 | 19 |
| Power supply | 230 V, 50 Hz | | |

**Delivery incl.** removable shelf and stainless steel cover.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| WB-12 | **EEA3.1** | 1 | 521,40 |
| WB-22 | **EEA4.1** | 1 | 854,65 |
| WB-22-P | **EEA5.1** | 1 | 946,00 |

## Test tube rack for WB series water baths

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for 20 test tubes with ∅ 13 mm | **EEA6.1** | 1 | 51,60 |
| for 20 test tubes with ∅ 18 mm | **EEA7.1** | 1 | 51,60 |
| for 5 test tubes with ∅ 31 mm | **EEA8.1** | 1 | 51,60 |



## Water baths Aqualine

By Lauda.
**For working temperature range 30 to 95 °C (temperature settings range from 10 to 95 °C).**

- Inside tub made of stainless steel
- Homogeneous temperature distribution and easy cleaning as heating elements are under bath tub (no fixtures inside tub)
- With digital temperature display
- Integrated overheating protection

**Technical specifications:**

| Model | AL 2 | AL 5 | AL 12 | AL 18 | AL 25 |
|---|---|---|---|---|---|
| **Useable space** | | | | | |
| Volume (l) | 1.7 | 5 | 11.7 | 18.2 | 25.2 |
| Bath opening (mm) | 300 x 151 | | 329 x 300 | 505 x 300 | 505 x 300 |
| Bath depth (mm) | 65 | 150 | 150 | 150 | 200 |
| Units | | | | | |
| Width (mm) | 343 | 343 | 372 | 548 | 548 |
| Depth (mm) | 186 | 186 | 335 | 335 | 335 |
| Height with lid (mm) | 290 | 290 | 325 | 325 | 375 |
| Temperature constancy (±K) | 0.2 | | | | |
| Heating output (kW) | 0.5 | | 1.0 | 1.2 | |
| Power supply | 230 V, 50/60 Hz | | | | |

**Delivery incl.** roof-shaped lid for bath made of plastic. Prevents condensed water from dripping into the samples when opening the lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| AL 2 | **HA67.1** | 1 | 633,00 |
| AL 5 | **HA68.1** | 1 | 660,00 |
| AL 12 | **HA69.1** | 1 | 733,00 |
| AL 18 | **HA70.1** | 1 | 855,00 |
| AL 25 | **HA71.1** | 1 | 929,00 |




## Water baths WBT-series

**For working range from 25 to 100 °C.**

- Inside tub made of stainless steel
- Microprocessor-controlled temperature control units
- Digital temperature display
- Adjustable upper and lower desired value limit
- Visual and/or acoustic limit value alarm (acoustic)
- With dry run protection
- The memory function saves 3 parameter combinations of set temperature and time
- Tub is empied via outlet with screw drain plug on base. A drain cock is also available as an option (please order separately)
- Water bath WBT 1 is supplied with a round flad lid, all other models are equipped with a slanting lid
- Heater exposed on floor. **Delivery incl.** removable shelf.

**Technical specifications:**

| Model | WBT 1 | WBT 6 | WBT 12 | WBT 22 |
|---|---|---|---|---|
| **Useable space** | | | | |
| Volume (l) | approx. 1-2 | approx. 2-6 | approx. 4-12 | approx. 6-22 |
| Bath opening (mm) | ∅ 130 | 215 x 230 | 390 x 230 | 455 x 230 |
| Bath depth (mm) | 120 | 120 | 120 | 170 |
| **Unit** | | | | |
| Width (mm) | 230 | 320 | 490 | 570 |
| Depth (mm) | 240 | 340 | 340 | 340 |
| Height with lid (mm) | 220 | 260 | 260 | 310 |
| Temp. constancy (±K) | 0,25 | 0,60 | 0,60 | 0,60 |
| Heating output (W) | 700 | 1000 | 1600 | 2000 |
| Weight (kg) | 5 | 7.5 | 10.5 | 12.5 |
| Power supply | 230 V, 50-60 Hz | | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| WBT1 | **EA02.1** * | 1 | 632,10 |
| WBT6 | **EA03.1** * | 1 | 736,40 |
| WBT12 | **EA04.1** * | 1 | 849,25 |
| WBT22 | **EA05.1** * | 1 | 940,65 |

## Accessories for water baths WBT-series

**Round test tube racks for water bath WBT 1**
Made of stainless steel. Holding capacity of bath: 1 per pack

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for 36 test tubes ∅ 10.5 mm | **EA07.1** * | 1 | 77,40 |
| for 36 test tubes ∅ 11.5 mm | **EA08.1** * | 1 | 77,40 |
| for 24 test tubes ∅ 14.5 mm | **EA09.1** * | 1 | 77,40 |
| for 16 test tubes ∅ 18.5 mm | **EA10.1** * | 1 | 77,40 |
| for 6 test tubes ∅ 32 mm | **EA11.1** * | 1 | 77,40 |

**Test tube racks for water baths WBT 6 to WBT 22**
Made of stainless steel. Holding capacity of water baths:
WBT 6 = 3 racks, WBT 12 = 5 racks, WBT 22 = 6 racks.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for 56 test tubes ∅ 10.5 mm | **EA12.1** * | 1 | 52,70 |
| for 56 test tubes ∅ 11.5 mm | **EA13.1** * | 1 | 52,70 |
| for 33 test tubes ∅ 14.5 mm | **EA14.1** * | 1 | 52,70 |
| for 18 test tubes ∅ 18.5 mm | **EA15.1** * | 1 | 52,70 |
| for 6 test tubes ∅ 32 mm | **EA16.1** * | 1 | 52,70 |

**Drain cock for water baths WBT 1 to WBT 22**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Drain cock, complete | **EA17.1** | 1 | 79,55 |

# Water baths







NEU
NOUVEAU
NEW

## Water bath precision series

By Thermo.

- **For a working temperature range of 30 to 100 °C** (except for the GP 02 model which can only be used up to 90 °C)
- Microprocessor-controlled temperature regulator
- Digital temperature display
- Integrated timer for programming on/off times, timer function (1 to 99 mins) or continuous operation
- Memory function can save up to four setpoint temperatures
- Equipped with protection against overheating
- Model GP 15 Dual (5/10 l) comes with two baths, the temperature of which can be controlled separately. A different temperature can be set for each bath.
- Heating elements under the bath tank (no fittings in bath tank)
- Internal water drainage tube with integrated quick-release coupling (only with models GP 10, GP 20, GP 28 and GP 15 Dual)

**Technical specifications:**

| Model | GP 02 | ① GP 05 | GP 10 | ② GP 20 | GP 28 | ③ GP 15 Dual |
|---|---|---|---|---|---|---|
| **Usable volume** | | | | | | |
| Capacity (l) | 2 | 5 | 10 | 20 | 28 | 5/10 |
| Width (mm) | 155 | 300 | 330 | 500 | 500 | 300/330 |
| Depth (mm) | 138 | 154 | 301 | 297 | 297 | 154/301 |
| Height (mm) | 150 | 150 | 150 | 150 | 200 | 150/150 |
| **Units** | | | | | | |
| Width (mm) | 199 | 355 | 383 | 555 | 555 | 587 |
| Depth (mm) | 230 | 246 | 393 | 392 | 392 | 392 |
| Height without lid (mm) | 233 | 232 | 233 | 233 | 282 | 233 |
| Temperature constancy (±K) | ±0.2 | | | | | |
| Heating output (W) | 200 | 300 | 800 | 1200 | 1200 | 300/800 |
| Power supply | 100-155 V / 200-230 V, 50/60 Hz | | | | | |

**Delivery incl.** transparent lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| GP 02 | **HAC0.1** | 1 | 612,00 |
| GP 05 | **HAC1.1** | 1 | 678,00 |
| GP 10 | **HAC2.1** | 1 | 817,00 |
| GP 20 | **HAC3.1** | 1 | 920,00 |
| GP 28 | **HAC4.1** | 1 | 1023,00 |
| GP 15 Dual | **HAC5.1** | 1 | 1388,00 |

## Pura™-series water baths

By Julabo.
For a temperature range from 25 to 99.9 °C.

- Digital temperature display
- Internal timer function (max. 99 h, 59 min in 1-min steps), with signal after expiry of the time, optionally with or without heating switch-off
- Integrated drain cock (for tubes with ID 12 mm)
- Easy to clean, since there are not fittings in the bath
- USB port
- Enamelled basin base
- Boil-dry protection and carrier handles installed
- **Foldable bath cover available as accessory, please order separately**

**Technical specifications:**

| Model | ① Pura™ 4 | ② Pura™ 10 | Pura™ 14 | ③ Pura™ 22 | Pura™ 30 |
|---|---|---|---|---|---|
| **Usable volume** | | | | | |
| Capacity (l) | 0.4 to 4.8 | 1 to 10 | 1 to 14 | 2 to 22 | 2 to 30 |
| Bath opening W x D (mm) | 120 x 270 | 220 x 270 | 300 x 270 | 540 x 270 | 760 x 270 |
| Bath depth (mm) | 170 | | | | |
| **Units** | | | | | |
| Width (mm) | 210 | 310 | 420 | 630 | 850 |
| Depth (mm) | 380 | | | | |
| Height incl. lid (mm) | 300 | | | | |
| Temperature constancy (±K) | 0.2 | | | | |
| Heating capacity (kW) | 0.8 | 1.3 | 1.3 | 2 | 2 |
| Weight (kg) | 5 | 6.2 | 9.5 | 13 | 16.5 |
| Power supply | 230 V, 50/60 Hz | | | | |

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | Pura™ 4 | **HCH1.1** | 1 | 680,00 |
| ② | Pura™ 10 | **HCH2.1** | 1 | 770,00 |
| | Pura™ 14 | **HCH3.1** | 1 | 805,00 |
| ③ | Pura™ 22 | **HCH4.1** | 1 | 880,00 |
| | Pura™ 30 | **HCH5.1** | 1 | 1045,00 |

## Accessories for Pura™-series water baths: foldable bath cover, transparent

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for Pura™ 4 | **HCH6.1** | 1 | 85,00 |
| for Pura™ 10 | **HCH7.1** | 1 | 134,00 |
| for Pura™ 14 | **HCH8.1** | 1 | 145,00 |
| for Pura™ 22 | **HCH9.1** | 1 | 177,00 |
| for Pura™ 30 | **HCK0.1** | 1 | 217,00 |




## Water baths WNB-series

By Memmert.

**Features**

- Temperature setting ranges from 10 to 95 °C, with additional boiling level optional
- Control range begins at least 5 °C **above** ambient temperature
- Available with shaking device (see next page)
- With programmable hold-time and switch-on delay
- Electronic microprocessor-PID-regulator
- Mechanical temperature limiter TB
- Integrated digital clock (from 1 min to 99 h and 59 min)
- Stainless steel work area
- Bath can be emptied via outlet valve
- Heater is located under deep-drawn, easy-to-clean ribs.
- **We recommend ordering the matching floor grid if no test tube racks are to be used**

**Technical specifications:**

| Models | WNB 7 | WNB 10 | WNB 14 | WNB 22 | WNB 29 | WNB 45 |
|---|---|---|---|---|---|---|
| **Useable space** | | | | | | |
| Volume approx. (l) | 7 | 10 | 14 | 22 | 29 | 45 |
| Length (mm) | 240 | 350 | 350 | 350 | 590 | 590 |
| Width (mm) | 210 | 210 | 290 | 290 | 350 | 350 |
| Height (mm) | 140 | 140 | 140 | 220 | 140 | 220 |
| **Device** | | | | | | |
| Length (mm) | 468 | 578 | 578 | 578 | 818 | 818 |
| Width (mm) | 356 | 356 | 436 | 436 | 516 | 516 |
| Height, with flat lid (mm) | 238 | 238 | 238 | 296 | 238 | 296 |
| Height, with slanting lid (mm) | 337 | 337 | 347 | 405 | 343 | 401 |
| Number of ring openings (flat lid) | 1 | 3 | 6 | 6 | 8 | 8 |
| ∅ openings (flat lid) (mm) | 187 | 107 | 87 | 87 | 107 | 107 |
| Accuracy, temporal / spatial | ±0.1 / ±0.25 °C | | | | | |

**① Water baths with slanting lid**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| WNB 7 | **L362.1** * | 1 | 636,00 |
| WNB 10 | **L363.1** * | 1 | 713,00 |
| WNB 14 | **L364.1** * | 1 | 778,00 |
| WNB 22 | **L365.1** * | 1 | 862,00 |
| WNB 29 | **L366.1** * | 1 | 1061,00 |
| WNB 45 | **L367.1** * | 1 | 1274,00 |

**② Water baths with flat lid and set of rings**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| WNB 7 | **L368.1** * | 1 | 649,00 |
| WNB 10 | **L369.1** * | 1 | 731,00 |
| WNB 14 | **L370.1** * | 1 | 801,00 |
| WNB 22 | **L402.1** * | 1 | 885,00 |
| WNB 29 | **L403.1** * | 1 | 1114,00 |
| WNB 45 | **L404.1** * | 1 | 1327,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Test tube trays for WNB 10 / WNB 14 / WNB 22 / WNB 29 / WNB45

**Test tube trays, 2-row**

| No. of holes | ∅ (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 40 | 10 | 40 | **L406.1** * | 1 | 47,80 |
| 40 | 12 | 40 | **L407.1** * | 1 | 47,80 |
| 24 | 14,5 | 42 | **L408.1** * | 1 | 47,80 |
| 24 | 18 | 50 | **L409.1** * | 1 | 47,80 |
| 20 | 21 | 55 | **L410.1** * | 1 | 54,10 |
| 12 | 32 | 80 | **L411.1** * | 1 | 57,60 |

**Test tube trays, 3-row**

| No. of holes | ∅ (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 60 | 10 | 50 | **L412.1** * | 1 | 57,60 |
| 60 | 12 | 55 | **L413.1** * | 1 | 57,60 |
| 36 | 14,5 | 60 | **L414.1** * | 1 | 57,60 |
| 36 | 18 | 70 | **L415.1** * | 1 | 57,60 |
| 30 | 21 | 80 | **L416.1** * | 1 | 57,60 |

**Test tube trays, 4-row**

| No. of holes | ∅ (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 80 | 10 | 64 | **L417.1** * | 1 | 66,55 |
| 80 | 12 | 75 | **L418.1** * | 1 | 66,55 |
| 48 | 14,5 | 85 | **L419.1** * | 1 | 66,55 |
| 48 | 18 | 95 | **L420.1** * | 1 | 69,25 |
| 40 | 21 | 110 | **L421.1** * | 1 | 69,25 |

## Test tube trays for WNB 7

| No. of holes | ∅ (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 56 | 18 | - | **L422.1** * | 1 | 81,25 |

## Floor grids for water baths WNB-series

Both sides can be used. Height 30 mm or 60 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For WNB 7 | **N895.1** * | 1 | 47,80 |
| For WNB 10 | **N896.1** * | 1 | 49,75 |
| For WNB 14/22 | **N897.1** * | 1 | 55,45 |
| For WNB 29/45 | **N898.1** * | 1 | 112,50 |

* Longer delivery times possible. Please check with our Sales Department.

# Water baths



## HB 10 heating bath

By IKA.
Suitable as water bath or oil heating bath for precise liquid temperature control.

- LCD display for displaying nominal/actual temperature values
- Integrated carry handles
- Adjustable safety circuit, for safe shutdown in the event of a fault (50 to 190 °C)
- Protection against dry running
- Product in contact with stainless steel 1.4404
- Heating element is positioned under the bath tank for easy cleaning (there are no fittings in the bath tank).

**Technical data:**

| | |
|---|---|
| **Heating function** | |
| Temperature range | Room temperature to 180 °C |
| Heating capacity | 1300 W |
| Setting accuracy | ±1 K |
| Controller variance<br>3 l water / 90 °C<br>3 l silicone oil / 50 mPas / 150 °C | <br>±1 K<br>±2 K |
| **General data** | |
| Max. bath volume | 3 l |
| Outer height | 185 mm |
| Inner height | 134 mm |
| Dimensions (W x H x D) | 295 x 190 x 265 mm |
| Weight | 3 kg |
| Power supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AET1.1** | 1 | 1562,00 |

▶ For water bath preservatives, see page 1119



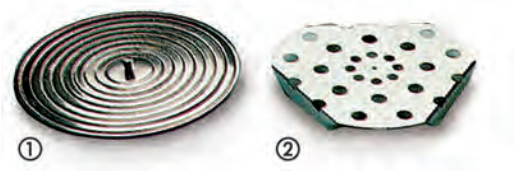
## Heating bath HBR 4 control with magnetic drive

By IKA. **Effective volume 4 l**. Interior is free of heating coils (no fixtures in bath tub). Made of stainless steel. Optionally low-viscosity oil (50 mPas) or water as heat transfer medium. Digital display for desired, actual and safety temperatures as well as for speed. **Integrated magnetic drive rotates heating medium,** which enables better heat distribution in bath.
Heating element under the bath tank (no fittings in bath tank).
With RS 232-interface. Two carrying handles.

**Technical specifications:**

| | |
|---|---|
| **Heating function** | |
| Temperature range | Room temp. max 200 °C |
| Heating capacity | 1000 W |
| Setting accuracy | ±1 K |
| Deviation (3 l $H_2O$, 90 °C) | ±1 K |
| Temperature display | digital |
| **Stirrer drive** | |
| rpm-range | 100 to 800 rpm |
| **General specifications** | |
| Volume | 4 l |
| Inner height / -∅ | Height 160 mm, ∅ 200 mm |
| Outer height / -∅ | Height 250 mm, ∅ 250 mm |
| Weight | 4.4 kg |
| Power supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LN86.1** | 1 | 3319,00 |




## ① Set of rings for water bath HBR 4 control

To cover bath. Consists of 10 rings with a ∅ of 25 to 185 mm.
Prevents dust, heat loss or water contamination of oil baths and oil mist formation when working with oil.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9700.1** | 1 | 472,00 |

## ② Intermediate bottom for water bath HBR 4 control

Made of stainless steel. For better heat distribution or without disrupting the movement of the rotating stirring bar.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9689.1** | 1 | 215,00 |



## Oil baths, ONE-series

By Memmert.

**Features**

- Temperature setting ranges from +20 to +200 °C
- Control range begins at least 5 °C above ambient temperature
- Digital setpoint setting (0.1 °C-increments) and actual value display
- Integrated digital clock (1 min to 999 h)
- Stainless steel work area
- With programmable hold-time and switch-on delay
- We recommend ordering the corresponding grid if no test tube rack is to be used
- Bath can be emptied via outlet valve

**Technical specifications:**

| Models | ONE 7 | ONE 10 | ONE 14 | ONE 22 | ONE 29 | ONE 45 |
|---|---|---|---|---|---|---|
| **Useable space** | | | | | | |
| Volume approx. (l) | 7 | 10 | 14 | 22 | 29 | 45 |
| Length (mm) | 240 | 350 | 350 | 350 | 590 | 590 |
| Width (mm) | 210 | 210 | 290 | 290 | 350 | 350 |
| Height (mm) | 140 | 140 | 140 | 220 | 140 | 220 |
| **Housing** | | | | | | |
| Length (mm) | 468 | 578 | 578 | 578 | 818 | 818 |
| Width (mm) | 356 | 356 | 436 | 436 | 516 | 516 |
| Height (mm) | 337 | 337 | 347 | 405 | 343 | 401 |
| Accuracy temporal / spatial (°C) | ±0.3 / ±1.0 | | | | | |

**Delivery incl.** slanting lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ONE 7 | **EX21.1** * | 1 | 974,00 |
| ONE 10 | **EX22.1** * | 1 | 1034,00 |
| ONE 14 | **EX23.1** * | 1 | 1088,00 |
| ONE 22 | **EX24.1** * | 1 | 1170,00 |
| ONE 29 | **EX25.1** * | 1 | 1357,00 |
| ONE 45 | **EX26.1** * | 1 | 1551,00 |

## Grids for oil baths, ONE-series

By Memmert. Both sides can be used. Height 30 mm or 60 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For ONE 7 | **N895.1** * | 1 | 47,80 |
| For ONE 10 | **N896.1** * | 1 | 49,75 |
| For ONE 14/22 | **N897.1** * | 1 | 55,45 |
| For ONE 29/45 | **N898.1** * | 1 | 112,50 |

## Test tube racks for ONE 10 to ONE 45

By Memmert. Test tube racks, 2-row.

| No. of holes | ∅ (mm) | Width | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 40 | 12 | 40 | **L407.1** * | 1 | 47,80 |
| 24 | 18 | 50 | **L409.1** * | 1 | 47,80 |

* Longer delivery times possible. Please check with our Sales Department.



## Water bath with circulation pump WPE 45

By Memmert.

**Equipment:**

- Digital display for temperature or countdown timer (1 min to 999 h)
- Pump can be switched on and off
- Pump switch-off at end of program
- Textured stainless steel housing
- Bath drainage by drain valve
- For use, we recommend a bottom grid (please order separately)

**Overheat protection (3-level)**

- If overheating occurs due to a fault, the heater is switched off when the setpoint is exceeded by approx. 10 °C.
- Independently working, adjustable electronic overtemperature controller TWW (protection class 3.1) or temperature limiter TWB (protection class 2)
- Mechanical temperature limiter TB (protection class 1) for heater switch-off when max. bath temperature is exceeded by approx. 30 °C

**Technical specifications:**

| | |
|---|---|
| Working temperature range | 15 °C **above** room temperature up to +95 °C and additional boiling mode (only available when pump is switched off) |
| Temperature adjustment range | 10 to 95 °C |
| Temperature constancy (in time/space) | ±0.1/±0.3 °C |
| Display resolution | 0.1 to 95 °C |
| Heating output | 2800 W |
| Capacity | 45 l |
| Inner dimensions (L x W x H) | 590 x 350 x 220 mm |
| Outer dimensions (L x W x H) | 818 x 516 x 401 mm |
| Weight | 35 kg |
| Power supply | 230 V, 50-60 Hz |

**Delivery incl.** stainless steel gable cover.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YY20.1** | 1 | 1766,00 |

## Accessories: bottom grid for water bath with circulation pump WPE 45

Usable on both sides. Height 30 or 60 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N898.1** * | 1 | 112,50 |

* Longer delivery times possible. Please check with our Sales Department.

# Shaking water baths



## WNB-series water baths with shaking device

By Memmert.

- Adjustment range from 10 to 95 °C, with additional heat setting
- Range of adjustment begins at 5 °C **above** ambient temperature
- Integrated digital clock (1 min to 99 h and 59 min)

With 15 mm horizontal back-and-forth shaking strokes.
Continuously variable frequency adjustment (35 to 160 strokes per min).
**Delivery incl.** mounting frame for perforated mounting plate and test tube rack. Bath drainage by drain valve.

**Note**: to operate the water bath, you require either a perforated mounting plate with fixing clamps or test tube racks (please order separately). The perforated mounting plate includes a holding basket which is also sufficient for general operation.

**Without lid. If a stainless steel lid is required, please include with first order.**

**Technical specifications:**

| Model | WNB 14 | WNB 22 | WNB 29 | WNB 45 |
|---|---|---|---|---|
| **Useable volume** | | | | |
| Capacity approx. (l) | 14 | 22 | 29 | 45 |
| Length (mm) | 350 | 350 | 590 | 590 |
| Width (mm) | 290 | 290 | 350 | 350 |
| Height (mm) | 140 | 220 | 140 | 220 |
| **Unit** | | | | |
| Length (mm) | 578 | 578 | 818 | 818 |
| Width (mm) | 436 | 436 | 516 | 516 |
| Height (mm), with lid | 347 | 405 | 343 | 401 |
| **Max. holding capacity of holding clamps** | | | | |
| 100 ml flask<br>200 ml flask<br>300 ml flask<br>500 ml flask | 12<br>6<br>6<br>5 | 12<br>6<br>6<br>5 | 18<br>14<br>14<br>8 | 18<br>14<br>14<br>8 |
| Time/space resolution | ±0.1 / ±0.25 °C | | | |
| Power supply | 230 V, 50/60 Hz | | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| WNB 14 | **N899.1** * | 1 | 1349,00 |
| WNB 22 | **N900.1** * | 1 | 1433,00 |
| WNB 29 | **YL74.1** * | 1 | 2009,00 |
| WNB 45 | **YL75.1** * | 1 | 2222,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Accessories for WNB-series water baths with shaking device

By Memmert.

### Steam-trapping slanting lid

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For WNB 14 and WNB 22 | **N901.1** * | 1 | 97,85 |
| For WNB 29 and WNB 45 | **YL76.1** * | 1 | 175,00 |

### Perforated fixative plate for clamps with basket

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For WNB 14 and WNB 22 | **N902.1** * | 1 | 101,75 |
| For WNB 29 and WNB 45 | **YL77.1** * | 1 | 183,00 |

### Clamps for flasks

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Clamps for 100 ml flasks | **N903.1** * | 1 | 29,35 |
| Clamps for 200 ml flasks | **N904.1** * | 1 | 32,00 |
| Clamps for 300 ml flasks | **N905.1** * | 1 | 32,00 |
| Clamps for 500 ml flasks | **N906.1** * | 1 | 34,00 |

### Insert racks for test tubes for WNB 14 and 22

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Insert racks for 110 test tubes ∅ 14.5 mm | **N907.1** * | 1 | 122,10 |
| Insert racks for 90 test tubes ∅ 18.0 mm | **N908.1** * | 1 | 122,10 |
| Insert racks for 25 test tubes ∅ 32.0 mm | **N909.1** * | 1 | 122,10 |

### Insert racks for test tubes for WNB 29 and 45

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Insert racks for 216 test tubes ∅ 14.5 mm | **YL78.1** * | 1 | 226,00 |
| Insert racks for 180 test tubes ∅ 18 mm | **YL79.1** * | 1 | 226,00 |
| Insert racks for 54 test tubes ∅ 32 mm | **YL80.1** * | 1 | 226,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Shaking water bath SBS40

By Stuart.

- Optionally available with tray for back and forth shaking movements (type SBS40/1) or tray for circular movements (type SBS40/2)
- The shaking movement is produced by inserting the tray
- Loading configurations per tray:
  e.g. Erlenmeyer flasks - 8 x 250 ml or 6 x 500 ml or 4 x 1000 ml
- Each tray includes 15 springs for attaching bottles, beakers and bulbs in different sizes
- Digital temperature display (resolution 0.1 °C)
- With overheating protection and drain cock

**Technical specifications:**

| | |
|---|---|
| Capacity | 24 l |
| Working temperature range | Infinitely adjustable from 19 to 95 °C, control range starts at 10 °C above ambient temperature |
| Temperature stability | ±0.25 °C |
| Shaking frequency | 20 to 130 rpm, infinitely adjustable |
| Shaking amplitude (stroke) | 20 mm |
| Inner dimensions (W x D x H) | 300 x 500 x 200 mm |
| Outer dimensions (W x D x H) | 335 x 580 x 320 mm |
| Weight | 17 kg |
| Power supply | 230 V, 50 Hz |

**Delivery without** stainless steel cover, shaking tray and test tube racks (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AK06.1** * | 1 | 2679,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Shaking tray SBS40/1 for back and forth movement | **AK07.1** * | 1 | 497,00 |
| Shaking tray SBS40/2 for circular movement | **AK08.1** * | 1 | 531,00 |
| Stainless steel gable cover with insulated handle | **AK09.1** * | 1 | 345,00 |

* Longer delivery times possible. Please check with our Sales Department

## Accessories for shaking water bath SBS40

By Stuart. **Test tube racks**

Made of stainless steel. Max. capacity of a shaking tray: 2 pce.

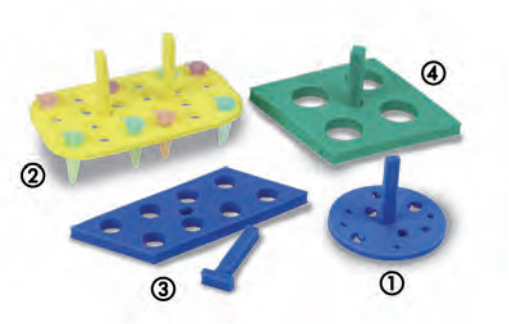
| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For 143 reaction vials 1.5/2.0 ml | **XY08.1** | 1 | 239,00 |
| For 120 culture tubes ∅ 13 mm | **XY09.1** | 1 | 239,00 |
| For 72 culture tubes ∅ 16 mm | **XY10.1** | 1 | 239,00 |
| For 30 culture tubes ∅ 26 mm | **XY11.1** | 1 | 239,00 |
| For 56 centrifuge tubes 15 ml | **XY12.1** | 1 | 239,00 |
| For 25 centrifuge tubes 50 ml | **XY13.1** | 1 | 239,00 |



## Floating pellets

Made of **PP**. Protect against evaporation and fast temperature loss. Decrease hazardous vapours. Resistant to many acids, bases, solvents and mineral oils. Temperature stable up to +100 °C.

| ∅ (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 | for 0,10 $m^2$ | **A753.1** | 250 | 27,45 |
| 38 | for 0,13 $m^2$ | **A754.1** | 100 | 38,60 |
| 45 | for 0,20 $m^2$ | **A755.1** | 100 | 42,95 |




## Rotilabo®-floating racks

Made of foam **HDPE**. Excellent for tempering centrifuge and micro-centrifuge tubes in water baths. With handle for easier immersion and removal. The racks float fully loaded on the surface, the tubes however, remain immersed in water.

| **Model** | ① | ② | ③ | ④ |
|---|---|---|---|---|
| for tubes | 0.2/0.5/1.5/2.0 ml | 1.5/2 ml | 15 ml | 50 ml |
| Number of holes | 18 | 24 | 8 | 4 |
| L x W x H (mm) | round, ∅ 82 x H 60 | 150 x 82 x 69 | 130 x 59 x 65 | 105 x 105 x 65 |
| Colour | blue | yellow | blue | green |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① | **LP92.1** | 5 | 17,15 |
| ② | **P199.1** | 5 | 17,10 |
| ③ | **P200.1** | 5 | 17,10 |
| ④ | **P201.1** | 5 | 17,10 |

# Block thermostats





## Digital single/dual block thermostats

For precise heating of reaction vials, test tubes, type Falcon® centrifuge tubes and 96 well PCR trays.

- Stainless steel housing
- With LED temperature display
- Integrated timer function
- Suitable for one or two interchangeable blocks depending on model

**Technical specifications:**

| | |
|---|---|
| Working temperature range | 5 °C **above** ambient temperature up to 150 °C |
| Temperature adjustment range | 0 to 150 °C |
| Resolution / accuracy | ±0.3 °C / 0.1 °C |
| Integrated timer | 1 min to 99 h, 59 min in 1-min steps or continuous operation container blocks |
| Heating-up time | approximately 35 min to 100 °C |
| Dimensions (W x D x H) | 210 x 290 x 120 mm |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** lift rod for changing blocks and detachable lid for microlitre container blocks. Does not include interchangeable blocks (please order separately).

| Type | Capacity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Single block thermostat | 1 interchangeable block | **PY25.1** | 1 | 391,30 |
| Dual block thermostat | 2 interchangeable blocks | **YC47.1** | 1 | 485,90 |

## Interchangeable blocks for single/dual block thermostats

Made of aluminium.

**Interchangeable blocks for reaction vials**
Dimensions: W 90 x D 76 x H 51 mm

| Type | Usable for | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 48 reaction vials 0.2 ml | Single/dual | **PY26.1** | 1 | 145,15 |
| 24 0.5 ml reaction vials | Single/dual | **PY27.1** | 1 | 145,15 |
| 24 1.5 ml reaction vials | Single/dual | **PY28.1** | 1 | 145,15 |
| 24 reaction vials 2.0 ml | Single/dual | **PY29.1** | 1 | 145,15 |

**Interchangeable blocks for test tubes/sample vials**
Dimensions: W 90 x D 76 x H 51 mm

| Type | Usable for | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 tubes ∅ 12 mm | Single/dual | **PY30.1** | 1 | 145,15 |
| 12 tubes ∅ 16 mm | Single/dual | **PY31.1** | 1 | 145,15 |
| 6 tubes ∅ 20 mm | Single/dual | **YC48.1** | 1 | 107,25 |
| 6 tubes ∅ 25 mm | Single/dual | **YC49.1** | 1 | 107,25 |

**Interchangeable blocks for type Falcon® centrifuge tubes**
Dimensions: W 90 x D 76 x H 83 mm

| Type | Usable for | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12 centrifuge tubes 15 ml | Single/dual | **PY32.1** | 1 | 145,15 |
| 5 centrifuge tubes 50 ml | Single/dual | **PY33.1** | 1 | 145,15 |

**Interchangeable block for custom fabrication**
Dimensions: W 90 x D 76 x H 51 mm

| Type | Usable for | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Without drill holes | Single/dual | **YC50.1** | 1 | 107,25 |

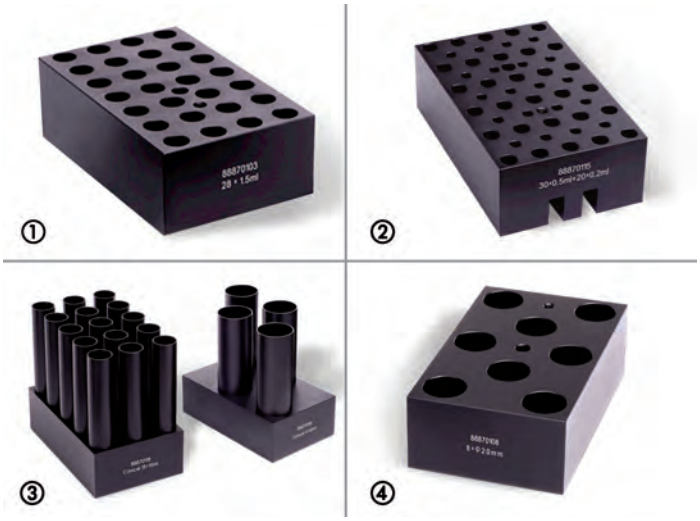
**Interchangeable blocks for 96 well PCR trays and microtitration plates**

**Please note:** only 1 PCR block or microtitration plate can be used in a dual-block thermostat (due to block size).

| Type | Usable for | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| PCR plate, 96 well (with/without frame) | Single | **PY34.1** | 1 | 299,95 |
| PCR plate, 96 well (with/without frame) | Dual | **YC51.1** | 1 | 282,75 |
| Microtitration plate, 96 well | Dual | **YC52.1** | 1 | 213,95 |

# Block thermostats




## Touchscreen block thermostats

By Thermo. For precision temperature control of reaction vials, test tubes and centrifuge vials of the type Falcon®.

- 4.3″ touchscreen display with time and temperature display
- PID thermostat
- Integrated timer function
- 10 user-definable programs for up to 5 successive steps with different temperature and operating time
- Connectivity for external Pt 1000 temperature sensor (please order separately); in this case, temperature is controlled and displayed using the external sensor instead of the built-in temperature sensor

**Technical specifications:**

| | |
|---|---|
| Operating temperature range | 5 °C **above** ambient temperature up to 130 °C |
| Temperature adjustment range | 0 to 135 °C |
| Resolution / accuracy | ±1 °C / 0.1 °C |
| Timer | 0 to 99 h 59 min in 1 min increments or continuous operation |
| Heating-up time | 1/2 block thermostat: 30 to 130 °C approximately 20 min 4-block thermostat: 30 to 130 °C approximately 25 min |
| Dimensions (W x D x H) | 1-block thermostat: 200 x 373 x 100 mm<br>2-block thermostat: 200 x 403 x 100 mm<br>4-block thermostat: 200 x 535 x 100 mm |
| Weight | 1-block thermostat: 3.4 kg<br>2-block thermostat: 3.7 kg<br>4-block thermostat: 5.1 kg |
| Power supply | 200-240 V, 50/60 Hz |

**Delivery incl.** lift rod for changing blocks.
Does not include interchangeable blocks (please order separately).

| Type | Capacity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1-block thermostat | 1 exchangeable thermoblock | **CTN8.1** | 1 | 507,00 |
| 2-block thermostat | 2 exchangeable thermoblocks | **CTN9.1** | 1 | 575,00 |
| 4-block thermostat | 4 exchangeable thermoblocks | **CTP0.1** | 1 | 702,00 |

## Exchangeable thermoblocks for touchscreen block thermostats

① **Exchangeable thermoblock for reaction vials**
Dimensions: W 124 x D 76 x H 39 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 28 reaction vials 1.5 ml | **CTP1.1** | 1 | 61,90 |
| 28 2 reaction vials 2.0 ml | **CTP2.1** | 1 | 61,90 |

② **Combined exchangeable thermoblocks for reaction vials**
Dimensions: W 124 x D 76 x H 39 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 30/20 reaction vials 0.5/0.2 ml | **CTP3.1** | 1 | 120,00 |
| 18/10 reaction vials 1.5/2.0 ml | **CTP4.1** | 1 | 87,50 |

③ **Exchangeable thermoblocks for centrifuge vials of type Falcon®**
Dimensions: W 124 x D 76 x H 113 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 15 centrifuge tubes 15 ml | **CTP5.1** | 1 | 291,00 |
| 4 centrifuge tubes 50 ml | **CTP6.1** | 1 | 291,00 |

④ **Exchangeable thermoblocks for test tubes**
Dimensions: W 124 x D 76 x H 39 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 15 tubes ∅ 16 mm | **CTP7.1** | 1 | 83,20 |
| 12 tubes ∅ 18 mm | **CTP8.1** | 1 | 83,20 |
| 8 tubes ∅ 20 mm | **CTP9.1** | 1 | 67,30 |

**External temperature sensor**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| External Pt 1000 temperature sensor | **CTT0.1** | 1 | 26,70 |

# Block thermostats







## Single-block thermostat Accublock™ Mini

**For precision temperature control of 12 x 1.5 ml reaction vials.**

- Temperature adjustment via digital display
- Digital display of actual temperature
- Acoustic timer adjustable from 1 min to 19 h, 59 min (has no effect on heater performance; no shutdown upon expiration of the timer)
- Integrated aluminium block; ports have been adapted to fit 1.5 ml reaction vials

**Technical specifications:**

| | |
|---|---|
| Operating temperature range | 5 °C **above** ambient temperature up to 100 °C |
| Temperature adjustment range | 20 to 101 °C |
| Resolution | 0.1 °C |
| Temperature accuracy | ±0.2 °C |
| Heating-up time | approximately 20 min to 100 °C |
| Dimensions (W x D x H) | 110 x 140 x 55 mm |
| Weight | 1.4 kg |
| Mains connection | 230 V, 50/60 Hz |

**Delivery incl.** AccuRack™ for fast loading and unloading of reaction vials.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE74.1** | 1 | 382,70 |

## Rotilabo®-block thermostat model H 250

Block thermostat for use in biological, physical and chemical laboratories.

**Features**

- Two removeable aluminium blocks
- Digital temperature display (set/actual value)
- **With connection for external temperature sensor (please order separately)**
- Control LED for heating, set/actual value control and time
- **Integrated short-time alarm (1 to 480 min), time setting in minute increments.**
- Switching function of timer:
  1. Timer without influencing heater function
  2. Timer switches the heater off after the time has lapsed
- Stainless steel casing with solid Al hotplate
- **For faster heating times and higher temperature precision: the block inserts can be fixed to the hotplate with a screw**

**Technical specifications:**

| | |
|---|---|
| Working temperature range | +25 to +250 °C |
| Temperature constancy | ±0.1 K |
| Heating times | to 100 °C approx. 15 min<br>to 200 °C approx. 30 min |
| Timer signal | acoustic |
| Unit dimensions (W x D x H) | 240 x 280 x 110 mm |
| Dimensions of heating blocks (W x D x H) | 78 x 115 x 49 mm |
| Heating capacity | 500 W |
| Voltage | 230 V, 50/60 Hz |

**Delivery incl.** block thermostat H 250, screws, 6 kt-wrench and removal rod. Comes without heating blocks (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y264.1** | 1 | 750,35 |

## Accessories for Rotilabo®-block thermostat model H 250

**Heating blocks for different reaction tubes**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 24 tubes/test tubes ∅ 10 mm | **Y265.1** | 1 | 127,95 |
| 24 tubes/test tubes ∅ 12 mm | **Y266.1** | 1 | 127,95 |
| 12 tubes/test tubes ∅ 16 mm | **Y267.1** | 1 | 127,95 |
| 12 tubes/test tubes ∅ 19 mm | **Y268.1** | 1 | 127,95 |

**Heating blocks for centrifuge tubes**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 40 centrifuge tubes 0.5 ml | **Y269.1** | 1 | 127,95 |
| 24 centrifuge tubes 1.5 ml | **Y270.1** | 1 | 127,95 |
| 24 centrifuge tubes 2.0 ml | **Y271.1** | 1 | 127,95 |

**External temperature sensor**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| External temperature sensor Pt 100 | **Y272.1** | 1 | 167,70 |





## Cooling and heating block thermostat TK 23

By Hettich Benelux. For dry, clean and speedy **cooling and heating.** For centrifuge tubes, sample vials and microtiter plates.

**Features:**

- **Cooling function up to 16 °C below room temperature, heating up to +90 °C**
- Active counter-cooling with Peltier elements
- LCD-display with background lighting for all set and actual values
- **Allows direct input of temperature curves**
- Programming and transmitting data is also possible via the integrated USB-interface 2.0

**Programmable control:**
Programmable with 30 program steps for up to 9 different programs. Program-parameters: Set temperature, process time (max. 99 h / endless), rise time (The time in which the set temperature should be reached) etc.

**Technical specifications:**

| | |
|---|---|
| Working temperature range | 16 °C **below** room temperature up to +90 °C |
| Temperature setting range | -10 to +90 °C |
| Accuracy / Resolution | ±0.1 °C / 0.1 °C |
| Medium heating speed | approx. 4 °C/min from +41 °C |
| Medium cooling speed | approx. 5 °C/min below +20 °C<br>approx. 2 °C/min to +20 °C |
| Dimensions (W x D x H) | 220 x 345 x 195 mm |

**Delivery without** changing block (please order the changing block separately).

| Type | Capacity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Cooling and heating block thermostat TK 23 | 2 changing blocks | **HA03.1** | 1 | 1751,20 |

## Changing blocks for block-thermostat TK 13

By Hettich Benelux. For additional suitable blocks, please see changing blocks for cooling and heating ThermoMixers.

**Changing blocks for centrifuge tubes**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 24 reaction vials 1.5 ml tapered | **AY23.1** * | 1 | 236,50 |
| 24 reaction vials 2.0 ml cylindrical | **AY24.1** * | 1 | 236,50 |

**Chaniging blocks for sample tubes**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14 centrifuge tubes, each 15 ml, type Falcon® | **AY27.1** * | 1 | 327,90 |

* Longer delivery times possible. Please check with our Sales Department.

## Heating thermoshaker

By Thermo. For heating and mixing in 0.5/1.5 ml reaction vials, 50 ml test tubes or 96-well plates. With circular shaking action.

Applications: cultivating bacteria and yeast, enzyme reactions, denaturation of DNA, RNA and proteins, etc.

- VFD display
- PID controller for constant shaking action and precise temperature control
- Programmable with 10 program steps for max 7 different programs (program parameters: nominal temperature, process time per program step and shaking frequency)
- 2 timer modes (1 min to 99 h, 59 min):
  - Process time does not begin to elapse until nominal temperature is reached
  - Timer starts immediately after setting the required process time

**Technical specifications:**

| | |
|---|---|
| Operating temperature range | 5 °C **above** ambient temperature up to +100 °C |
| Temperature adjustment range | 0 to +100 °C |
| Resolution / accuracy | ±0.5 °C / 0.1 °C |
| Average heating rate: | approx. 5 °C/min from +41 °C |
| Max. recommended shaking frequency | Block for 96 well plates: 150 to 1500 rpm<br>Block for 0.5 ml vials: 150 to 1200 rpm<br>Block for 1.5 ml vials: 150 to 1200 rpm<br>Block for 50 ml tubes: 150 to 800 rpm |
| Timer | 1 min to 99 h, 59 min / continuous operation |
| Shaking stroke | 2 mm |
| Dimensions (W x D x H) | 249 x 325 x 120 mm |
| Weight | 8.3 kg |
| Voltage | 230 V, 50/60 Hz |

**Delivery without** interchangeable block (please order separately).

| Shaking movement | Capacity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| round | 1 insertion block | **ATX7.1** * | 1 | 1143,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Interchangeable blocks for heating thermoshaker

By Thermo.

**Interchangeable blocks for reaction vials**

Dimensions: W 98 x D 76.5 x H 30/41 mm

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 48 reaction vials 0.5 ml tapered | **ATX8.1** * | 1 | 143,00 |
| 24 reaction vials 1,5 / 2,0 ml tapered | **ATX9.1** * | 1 | 247,00 |

**Interchangeable block for 96-well plates**

Dimensions: W 111 x D 76.5 x H 15 mm

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PCR plate 96-well | **ATY0.1** * | 1 | 286,00 |

**Interchangeable block for test tubes 50 ml (∅ 30 mm)**

Dimensions: W 98 x D 76.5 x H 51 mm

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6 test tubes 50 ml (∅ 30 mm) | **ATY1.1** * | 1 | 247,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Thermoshaker




## Cooling and heating thermoshaker Basic and Pro

Applications: enzyme reactions, transformations, denaturation of DNA and RNA, isolation of DNA fragments from agarose gels, proteins, protein purification and cultivation of bacteria or yeasts.

**Features:**
- Two-line plain text display with backlit LCD display
- Simultaneous display of actual and nominal values
- Timer operation: 1 min to 99 h, 59 min; adjustable in 1 min increments or continuous operation
- Shortmix function

**Heating thermoshaker Basic**
- For rapid heating and mixing
- Memory function saves 5 combinations of rpm and time parameters

**Cooling and heating thermoshaker Pro**
- For cooling, heating and mixing
- 5 individually adjustable program segments with an option for combining segments to create a ramp or to activate each segment individually

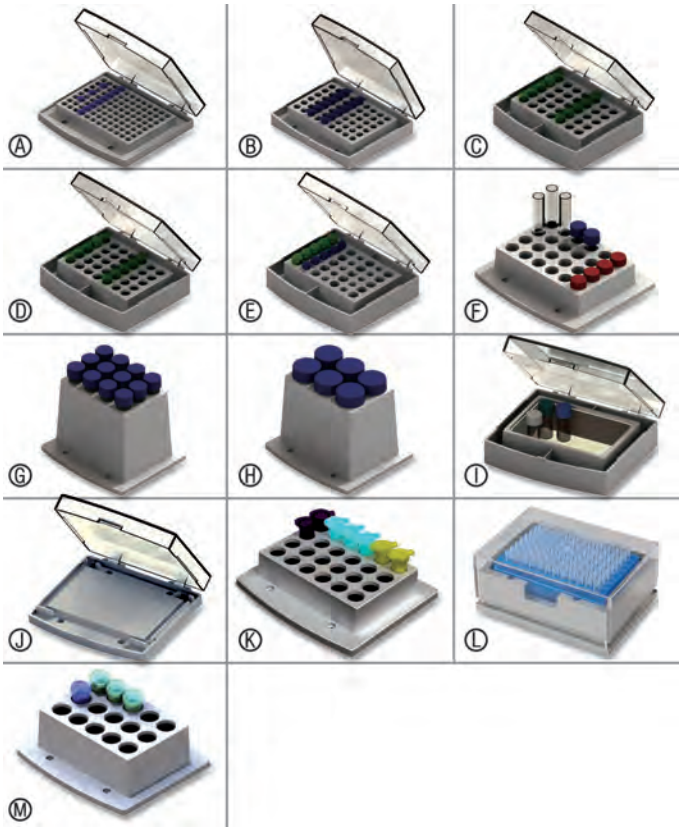
**Technical specifications:**

| | | |
|---|---|---|
| Operating temperature range | Basic:<br>Pro: | 5 °C **above** room temperature up to +100 °C<br>20 °C **below** room temperature up to +100 °C |
| Temperature adjustment range | 4 to +100 °C | |
| Resolution / accuracy | <±0.5 / 0.1 °C | |
| Average heating rate: | from 20 to 100 °C in approx. 13 min | |
| Medium cooling rate * | Basic:<br>Pro: | -<br>from 100 to 20 °C in approx. 14 min<br>from 20 to 4 °C in approx. 13 min |
| Timer | 1 min to 99 h, 59 min / continuous operation | |
| Shaking frequency | 200 to 1500 rpm adjustable in increments of 10 | |
| Shaking stroke | 2 mm | |
| Dimensions (W x D x H) | 220 x 280 x 170 mm | |
| Weight | 9 kg | |
| Voltage | 230 V, 50 Hz | |

*at 22 °C room temperature

**Delivery without** exchangeable thermoblocks (please order separately; refer to Exchangeable thermoblocks for cooling and heating thermoshaker Basic and Pro).

| Type | Temperature range | Capacity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Basic | Heating | 1 exchangeable thermoblock | **CPL7.1** | 1 | 1386,75 |
| Pro | Heating and cooling | 1 exchangeable thermoblock | **CPL8.1** | 1 | 2031,75 |




## Exchangeable thermoblocks for cooling and heating thermoshaker Basic and Pro

Suitable for Basic and Pro models

**Exchangeable thermoblocks incl. lid for reaction vials**

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| A | 96 PCR vials 0.2 ml | **CPL9.1** | 1 | 295,65 |
| B | 54 reaction vials 0.5 ml | **CPN0.1** | 1 | 295,65 |
| C | 35 reaction vials 1.5 ml | **CPN1.1** | 1 | 295,65 |
| D | 35 reaction vials 2.0 ml | **CPN2.1** | 1 | 295,65 |
| E | 15 reaction vials 0.5 and 20 x 1.5 ml | **CPN3.1** | 1 | 295,65 |
| M | 15 reaction vials 5 ml (max. 1200 rpm) | **CPN4.1** | 1 | 295,65 |

**Exchangeable thermoblocks for sample tubes and vials**

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| F | 24 sample tubes ∅ 12 mm (max. 1200 rpm) | **CPN5.1** | 1 | 295,65 |
| K | 24 test tubes ∅ 14 mm (max. 1200 rpm) | **CPN6.1** | 1 | 295,65 |

**Exchangeable thermoblocks for centrifuge tubes**

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| G | 12 centrifuge vials 15 ml type Falcon® (max. 750 rpm) | **CPN7.1** | 1 | 295,65 |
| H | 6 centrifuge vials 50 ml type Falcon® (max. 750 rpm) | **CPN8.1** | 1 | 295,65 |

**Water bath block incl. lid**

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| I | Water bath block (L 103 x W 67 x D 29 mm) | **CPN9.1** | 1 | 295,65 |

**Exchangeable thermoblock incl. lid for microtiter plates**

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| J | Microtiter plates 96 | **CPP0.1** | 1 | 295,65 |

**Exchangeable thermoblock incl. lid for deepwell plate**

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| L | 96 well deepwell plate (max. 900 rpm, max. up to 80 °C only) | **CPP1.1** | 1 | 295,65 |




## Cooling and heating Thermoshaker thermal mixer

By Thermo.
Applications: genetic analysis, DNA and RNA extraction, sample preparation and many more.

**Features**

- Heating/cooling and shaking can be performed independently
- LCD display shows setpoint and actual values for runtime, shaking frequency and temperature
- Digital timer function with alarm signal
- Short heating and cooling times, and shaking frequency reached fast

**Technical specifications:**

| | | |
|---|---|---|
| Operating temperature range | | 15 °C **below** room temperature up to +100 °C |
| Temperature adjustment range | | 4 to +100 °C |
| Accuracy | at 4 °C<br>at 37 °C<br>at 100 °C | ±0.6 K<br>±0.1 K<br>±0.3 K |
| Resolution | | 0.1 °C |
| Average heating rate: | | 5 °C/min |
| Medium cooling rate | | from 100 to 25 °C in approx. 15 min (5 °C/min)<br>from 25 to 4 °C in approx. 8 min (1.8 °C/min) |
| Timer | | 1 min to 96 h (in 1-min increments) |
| Shaking frequency | | 250 to 1400 rpm adjustable in increments of 10 |
| Shaking stroke | | 2 mm |
| Dimensions (W x H x D) | | 205 x 130 x 230 mm |
| Weight | | 4 kg |
| Voltage | | 120-240 V, 50/60 Hz |

**Delivery without** interchangeable blocks (please order separately, see exchangeable thermoblocks for cooling and heating Thermoshaker thermal mixer).

| Temperature range | Capacity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Heating and cooling | 1 exchangeable thermoblock | **HEH6.1** | 1 | 1688,00 |

## Exchangeable thermoblocks for cooling and heating Thermoshaker thermal mixer

By Thermo.

**Interchangeable blocks for reaction vials**

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | 24 1.5 ml reaction vials | **HEH7.1** | 1 | 870,00 |
| - | 24 reaction vials 2.0 ml | **HEH8.1** | 1 | 870,00 |
| ② | 20 reaction vials 0.2 ml and 12 x 1.5 ml | **HEH9.1** | 1 | 870,00 |
| ③ | 20 reaction vials 0.5 ml and 12 x 1.5 ml | **HEK0.1** | 1 | 870,00 |

**Interchangeable blocks for 96-well plates**

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ④ | 96-well plates or tube strips for rimless plates and plates with mid-height rim and round indentations. | **HEK1.1** | 1 | 870,00 |



## Heating thermoshaker, models MHR 13 / MHR 23 / MHL 23

By Hettich Benelux. For dry, clean and speedy **heating and mixing**. For centrifuge tubes, vials and microtiter plates.

**Round shaking movement (Model MHR 13 / 23):** Particularly ideal for dissolving critical DNA-pellets in the tips of conical centrifuge tubes.

**Linear shaking movement (Model MHL 23):** Jerky movement for better mixing of low sample volumes in the µl-range.

**Features for all models:**

- With timer, short-mix-function (e.g. for vortexing) and interval shaking with snipping effect
- Background-light LCD-display for all set and actual values
- **With direct input of temperature curves with different shaking frequencies**
- Programming and transmitting of data is also possible with the integrated USB-interface 2.0
- Control unit can be removed for connection to an extension lead

**Programmable control:**
Programmable with 30 program steps for max 9 different programs. Program-parameters: Set temperature, process time (max. 99 h / infinite), rise time (time in which the set temperature should be reached), shaking frequency, interval shaking, breaks etc.

**Double heating thermoshaker MHR 23 / MHL 23**
Suitable for 2 insertion blocks. Same position when stopped.

**Technical specifications:**

| | |
|---|---|
| Working temperature range | 3 °C **above** room temperature to +130 °C |
| Temperature setting range | 0 to +140 °C |
| Accuracy / resolution | ±0.1 °C / 0.1 °C |
| Medium heating speed | approx 4 °C/min from +41 °C<br>approx 5 °C/min to +40 °C |
| Shaking frequency | MHR 13 / MHR 23: 200 to 1500 rpm<br>MHL 23: 200 to 1300 rpm |
| Shaking stroke | 3 mm |
| Dimensions (W x D x H) | 220 x 345 x 160 mm |
| Voltage | 110/220 V, 50 Hz |

**Delivery incl.** control panel. Comes without changing blocks (please order separately, see changing blocks for cooling and heating thermoshakers).

| Type | Shaking movement | Capacity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| MHR 13 | round | 1 changing block | **HA05.1** * | 1 | 1918,90 |
| MHR 23 | round | 2 changing blocks | **EY98.1** * | 1 | 2191,95 |
| MHL 23 | linear | 2 changing blocks | **EY99.1** * | 1 | 2191,95 |

* Longer delivery times possible. Please check with our Sales Department.

▶ Interchangeable blocks, see page 958

# Thermoshaker



## Cooling and heating thermoshaker MKR 13 and MKR 23

By Hettich Benelux. For dry, clean and speedy **cooling, heating and mixing**. Suitable for centrifuge tubes, vials and microtiter plates.

**Round shaking movement:** Especially suited for dissolving critical DNA-pellets in the conical tips of conical centrifuge tubes.

**Features:**

- **Cooling function up to 16/10 °C below room temperature, heating up to +100/75 °C**
- Active counter-cooling with Peltier elements
- The coolers with speed-regulated ventilators conduct the heat and the cold outside
- With timer, short-mix-function (e.g. for vortexing) and interval shaking with snipping effect
- LCD-display with background lighting for all set and actual values
- **Direct input of temperature curves with different shaking frequencies.**
- Programming and transmitting data is also possible via the integrated USB-interface 2.0

**Programmable control:**
Programmable with 30 program steps for up to 9 different programs. Program-parameters: Set temperature, process time (max. 99 h / endless), rise time (the time in which the set temperature should be reached), shaking frequency, interval shaking, interval etc.

**Technical specifications:**

| | |
|---|---|
| Working temperature range | MKR 13: 16 °C **below** room temperature to +100 °C<br>MKR 23: 13 °C **below** room temperature to +75 °C |
| Temperature setting range | MKR 13: -10 to +105 °C<br>MKR 23: 0 to +75 °C |
| Accuracy / Resolution | MKR 13: ±0.1 °C / 0.1 °C<br>MKR 23: ±0.3 °C / 0.1 °C |
| Medium heating speed | approx 5 °C/min from +41 °C<br>approx 6 °C/min to +40 °C |
| Medium cooling speed | approx 3 °C/min below +20 °C<br>approx 7 °C/min to +20 °C |
| Shaking frequency | MKR 13: 200 to 1500 rpm<br>MKR 23: 200 to 1200 rpm |
| Shaking lift | 3 mm |
| Dimensions (W x D x H) | 220 x 345 x 195 mm |
| Voltage | 110/220 V, 50 Hz |

**Delivery incl.** control panel. Comes without insertion block (please order separately, see insertion blocks for cooling and heating thermoshakers).

| Type | Shaking movement | Capacity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| MKR 13 | round | 1 Changing block | **HA02.1** * | 1 | 2191,95 |
| MKR 23 | round | 2 Changing blocks | **KA68.1** * | 1 | 2632,70 |

* Longer delivery times possible. Please check with our Sales Department.



## Interchangeable blocks for cooling and heating thermoshaker

By Hettich Benelux.
**Suitable for models**
**MHR 13, MHR 23, MHL 23, MKR 13, MKR 23 and TK 23.**
Made of aluminium.

**Interchangeable blocks for centrifuge tubes**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 96 reaction vials 0.2 ml tapered | **AY21.1** * | 1 | 236,50 |
| 8 reaction vials 0.5 ml tapered | **AY22.1** * | 1 | 236,50 |
| 24 reaction vials 1.5 ml tapered | **AY23.1** * | 1 | 236,50 |
| 24 reaction vials 2.0 ml cylindrical | **AY24.1** * | 1 | 236,50 |
| 24 reaction vials 0.5 and 1.5 ml (combined block) | **ANN7.1** * | 1 | 328,95 |

**Interchangeable blocks for sample vials**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 24 sample vials ∅ 10.3 x D 46 mm, round bottom | **AY25.1** * | 1 | 327,90 |
| 24 sample vials ∅ 16.5 x D 46 mm, round bottom | **AY26.1** * | 1 | 327,90 |
| 24 sample vials ∅ 12.0 x D 20 mm, flat bottom | **TA95.1** * | 1 | 236,50 |
| 24 sample vials ∅ 15.0 x D 30 mm, flat bottom | **TA96.1** * | 1 | 236,50 |
| 24 sample vials ∅ 17.0 x D 30 mm, flat bottom | **TA97.1** * | 1 | 236,50 |
| 24 sample vials ∅ 19.0 x D 25 mm, flat bottom | **TA98.1** * | 1 | 236,50 |
| 12 sample vials ∅ 23.0 x D 56 mm, flat bottom | **TA99.1** * | 1 | 236,50 |
| 8 sample vials ∅ 28.0 x D 40 mm, flat bottom | **TC00.1** * | 1 | 327,90 |

**Interchangeable blocks with lid (for block insulation) for centrifuge tubes**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 14 centrifuge tubes, each 15 ml, type Falcon® | **AY27.1** * | 1 | 327,90 |
| 6 centrifuge tubes, each 50 ml, type Falcon® | **AY28.1** * | 1 | 327,90 |

**Interchangeable blocks for cuvettes**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 36 rectangular cells, 12.5 mm outer width | **TC01.1** * | 1 | 327,90 |

**Interchangeable blocks for deepwell plate**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 96-well deepwell plate | **TC02.1** * | 1 | 327,90 |

**Interchangeable blocks for custom design**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Without hole, H 25 mm | **TC03.1** * | 1 | 218,25 |
| Without hole, H 37 mm | **TC04.1** * | 1 | 236,50 |
| Without hole, H 50 mm | **TC05.1** * | 1 | 236,50 |

**Interchangeable blocks for microtiter plates**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Microtiter plate 96, U-/V-profile | **AY29.1** * | 1 | 327,90 |
| Microtiter plate 96, flat profile | **AY30.1** * | 1 | 327,90 |

**Interchangeable blocks for PCR®-plates**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PCR-plate 96, V-profile | **AY31.1** * | 1 | 327,90 |
| PCR-plate 384 | **AY32.1** * | 1 | 327,90 |

**Interchangeable blocks for DURAN®-bottles**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2 DURAN® bottles 50 ml, ∅ 47 mm, D 60 mm | **ANN8.1** * | 1 | 383,80 |
| 1 DURAN® bottle 250 ml, ∅ 71.5 mm, D 74 mm | **ANN9.1** * | 1 | 437,55 |

**Interchangeable blocks for cryo-vials**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 24 cryo-vials, ∅ 13 mm, D 30 mm, flat bottom | **ANP0.1** * | 1 | 328,95 |
| 24 cryo-vials, ∅ 13 mm, D 40 mm, round bottom | **ANP1.1** * | 1 | 328,95 |

* Longer delivery times possible. Please check with our Sales Department.




## Rotary evaporator RV 10-series

By IKA.

**General features of all models:**

- **Motorised lift (stroke displacement 140 mm) with adjustable height limit**
- Digital speed display
- Rotates intermittently clockwise and anticlockwise for drying processes (interval cycle for direction reversal is adjustable from 1 to 60 s)
- Timer function for time lapse controls (1 to 199 min)
- Water-oil heating bath with integrated carry handles
- Heating bath with adjustable safety circuit
- Push-off mechanism to loosen tightly fitting flasks
- Includes Woulff bottle

**RV 10 digital**

- Temperature adjustment/display via scale
- Control deviation ±5 K
- Heating bath with digital temperature display
- Control deviation ±1 K

① **RV 10 control**

**Model with integrated vacuum controller for automatic distillation**, both for volume-based processes and full drying depending on application.

- Integrated solvent library contains distillation-specific parameters for standard distillation, expandable by user.
- Programmable volume-controlled distillation processes
- Colour graphic display shows distillation curves
- Ramp programming (speed/time and vacuum/time)
- Automatic ventilation and switch-off of heating bath after test

**Technical specifications:**

| Model | RV 10 digital | RV 10 control |
|---|---|---|
| Speed range | 20 to 280 rpm | |
| Temp. range of heating bath | From room temperature to 180 °C | |
| Heating output | 1300 W | |
| Setting accuracy | 1 K | |
| Control deviation | ±1 K | |
| Heating bath capacity | 3 l | |
| Dimensions of heating bath (W x H x D) | 295 x 190 x 265 mm | |
| Adjustable head angle | 0 to 45 ° | |
| Integral vacuum controller | no | yes |
| Required accessories | - | Solenoid valve RV 10.4002 |
| Hose connectors | Connection for water hoses ID 5 mm<br>Connection for vacuum hoses ID 10 mm | |
| Dimensions without glassware (W x D x H) | 530 x 410 x 570 mm | |
| Dimensions with glassware (W x D x H) | 680 x 410 x 990 mm | |
| Weight | 28 kg | |

**Delivery incl.** heating bath and vertical glassware. A PTFE inlet tube, 1000 ml evaporator flask (NS 29/32) and 1000 ml receiving flask (KS 35/20) are included.
Available in two versions: with standard glassware or coated glassware (condenser and receiving flask are coated for shatter protection).

**RV 10 digital**

| Model | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| RV 10 digital V | Standard glassware | **PE52.1** * | 1 | 3685,00 |
| RV 10 digital V-C | Coated glassware | **PE53.1** * | 1 | 3993,00 |

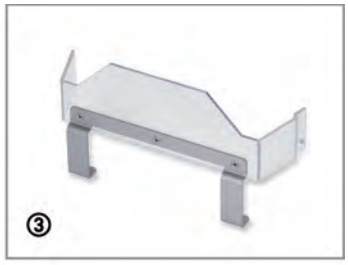
**RV 10 control**

Additional **delivery incl.** magnetic valve laboratoryvacuum RV 10.4002. (The integrated check valve prevents external interference with the working pressure of the recipient. Tube clip for tubes ID 10 mm.)

| Model | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| RV 10 control V | Standard glassware | **PE54.1** * | 1 | 6112,00 |
| RV 10 control V-C | Coated glassware | **PE55.1** * | 1 | 6484,00 |

* Longer delivery times possible. Please check our Sales Department.




## Accessories for RV 10-series

By IKA.

② **Protective cover**

Recommended if it is not possible to work in a fume hood. Protects from splashes of hot liquid and in case of evaporator flask breaking.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE57.1** * | 1 | 513,00 |

③ **Protective shield**

Ideal accessory for protection against splashes of hot liquid.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE58.1** * | 1 | 170,00 |

* Longer delivery times possible. Please check with our Sales Department.

▶ Vacuum pump systems, see page 365

# Rotary evaporators




## Rotary evaporators Hei-VAP-series

By Heidolph. For standard distillation, crystallization, upgrading solutions and separating solvents.

**General features for all models:**

- Control panel: Removeable, with cable connection (length 1.3 m) for remote control operation
- Fast and easy reduction of steam feedthrough
- Heating bath switches off automatically when set bath temperature has been exceeded by 5 °C or when water level is too low
- Double-wall heating bath protects against burns and insulates against heat loss
- Safe changing of bath liquid via nozzle
- All models are available either as a space-saving version with vertical cooler (Model G3) or in the standard version with diagonal cooler (G1)
- XL-cooler for higher evaporation rate through improved seal and extended cooling surface

① **Hei-VAP Value digital**

- Digital display showing nominal and actual heating bath temperatures
- Model with manual lift
- Rotary speed and temperature of hotbath can be set via knobs

**Hei-VAP Advantage HL**

- Model with manual lift
- Digital 3.5" LCD display with speed indicator, heating bath temperature and steam temperature (Please note: A boiling temperature sensor is required to indicate the steam temperature. Please order separately.)
- With timer function to end operation automatically

② **Hei-VAP Advantage ML**

- Like Hei-VAP Advantage HL, but with motor-driven lift
- The sample with motor-driven lift evaporators is protected against thermal damage, because the flask is automatically lifted out of bath in the event of a power cut.

**Technical specifications:**

| Model | Hei-VAP Value HL | Hei-VAP Advantage HL | Hei-VAP Advantage ML |
|---|---|---|---|
| Manual / Motor-driven lift | Manual lift | | Motor-driven lift |
| Lifting speed | manually | | approx. 30 mm/s |
| Speed range | 20 to 280 rpm | | |
| Speed indicator | Digital | 3.5“ LCD display | |
| Temperature range of heating bath | 20 to 210 °C | | |
| Heating power | 1300 W | | |
| Control accuracy of heating bath | ±1 K | | |
| Volume of heating bath | 4.5 l | | |
| ∅ Heating bath | 255 mm | | |
| Timer | no | yes | yes |
| Remote control functions<br>- Start Rotation<br>- Start Heating bath<br>- Lift | <br>yes<br>yes<br>no | <br>yes<br>yes<br>no | <br>yes<br>yes<br>yes |
| Dimensions W x D x H (mm) | 395 x 490 x 430 | | 395 x 420 x 430 |
| Evaporation rate 20/40 °C<br>- Acetone<br>- Ethanol<br>- Water | 2.4 / 4.7 l/h<br>1.6 / 3.2 l/h<br>0.5 / 1.0 l/h | | |
| Voltage | 230 V, 50/60 Hz | | |

**Delivery incl.** devices with heating bath and glass kit. Glass kit consists of glass sleeve shaft, cooler, discharge tube, evaporator flask 1000 ml (standard ground joint 29/32) and collecting flask 1000 ml (standard ground joint 35/20).

**Hei-VAP Value digital with standard glass kit**

| Glass kit | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Diagonal cooler G1 | Manual lift | **LH08.1** * | 1 | 2838,00 |
| Vertical cooler G3 | Manual lift | **LH09.1** * | 1 | 3053,00 |
| Vertical cooler G3 XL | Manual lift | **HEX3.1** * | 1 | 3175,00 |

**Hei-VAP Value digital with coated glass kit**

| Glass kit | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Diagonal cooler G1B | Manual lift | **LH10.1** * | 1 | 2923,00 |
| Vertical cooler G3B | Manual lift | **LH11.1** * | 1 | 3166,00 |
| Vertical cooler G3B XL | Manual lift | **HEX4.1** * | 1 | 3303,00 |

**Hei-VAP Advantage with standard glass kit**

| Glass kit | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Diagonal cooler G1 | Manual lift (Model HL) | **LH12.1** * | 1 | 3071,00 |
| Diagonal cooler G1 | Motor-driven lift (Model ML) | **LH13.1** * | 1 | 3304,00 |
| Vertical cooler G3 | Manual lift (Model HL) | **LH14.1** * | 1 | 3388,00 |
| Vertical cooler G3 XL | Manual lift | **HEX5.1** * | 1 | 3531,00 |
| Vertical cooler G3 | Motor-driven lift (Model ML) | **LH15.1** * | 1 | 3587,00 |
| Vertical cooler G3 XL | Motor-driven lift (Model ML) | **HEX6.1** * | 1 | 3732,00 |

**Hei-VAP Advantage with coated glass kit**

| Glass kit | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Diagonal cooler G1B | Manual lift (Model HL) | **LH16.1** * | 1 | 3152,00 |
| Diagonal cooler G1B | Motor-driven lift (Model ML) | **LH17.1** * | 1 | 3353,00 |
| Vertical cooler G3B | Manual lift (Model HL) | **LH18.1** * | 1 | 3492,00 |
| Vertical cooler G3B XL | Manual lift | **HEX7.1** * | 1 | 3640,00 |
| Vertical cooler G3B | Motor-driven lift (Model ML) | **LH19.1** * | 1 | 3685,00 |
| Vertical cooler G3B XL | Motor-driven lift (Model ML) | **HEX8.1** * | 1 | 3834,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Accessories for rotary evaporators Hei-VAP-series

By Heidolph.

**Boiling temperature sensor** for digital display of steam temperature. Only for Hei-VAP Advantage HL/ML

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X818.1** | 1 | 204,00 |

**Protective shield** for attaching to rim of bath

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LH20.1** | 1 | 115,00 |

**Protective cover**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LH21.1** | 1 | 267,00 |



## RV 8-series rotary evaporators

By IKA.

**General information:**

- Manual lift with integrated safety lift-out-function (single-handed operation, suitable for left and right handed users)
- Digital displays for rotation speed and heating bath temperature
- Adjustable immersion angle and height
- Piston fixture with integral push-off mechanism for easier changing of evaporating flasks
- Available in two versions: with standard glassware or coated glassware (condenser and receiving flask are coated for shatter protection).

**Heating bath HB 10**

- Universal water / oil heating bath with integral carrying handles
- Locking function prevents accidental changing of heating bath settings
- Run-dry monitoring
- Adjustable safety temperature
- Also available as "stand-alone" device usable for other applications

**Technical specifications:**

| | |
|---|---|
| Speed range | 5 to 300 rpm |
| Temp. range of heating bath | From room temperature to 180 °C |
| Heating output | 1300 W |
| Setting accuracy | 1 °C |
| Control deviation | ±1 K |
| Heating bath capacity | 3 l |
| Dimensions of heating bath (W x D x H) | 320 x 310 x 210 mm |
| Adjustable head angle | 0 to 45 ° |
| Hose connectors | Connection for water hoses ID 5 mm<br>Connection for vacuum hoses ID 10 mm |
| Dimensions without glassware (W x D x H) | 510 x 345 x 490 mm |
| Dimensions with glassware (W x D x H) | 630 x 345 x 760 mm |
| Weight | 17.2 kg |

**Delivery incl.** heating bath and vertical glassware. With PTFE inlet tube and 1000 ml evaporating flask (NS 29/32) and 1000 ml receiving flask (KS 35/20).

| Model | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| RV 8 V | Standard vertical glassware | **NH24.1** * | 1 | 2513,00 |
| RV 8 V-C | Coated vertical glassware | **NH25.1** * | 1 | 2654,00 |

## Accessories for RV 8-series

By IKA.

**Protective hood HB 10.2**

Recommended if it is not possible to work in an extractor hood.
Protects against splashes and evaporator piston breakage.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE57.1** * | 1 | 513,00 |

**Protective shield HB 10.1**

Protects against splashes.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE58.1** * | 1 | 170,00 |

* Longer delivery times possible. Please check with our Sales Department.



## N°ICE electronic ice bath

By Techne. Space-saving sample chiller with general-purpose heat treatment bath for various vial types and sizes. Ceramic beads are used instead of ice as a chilling medium. This allows unlimited cooling times and avoids the problem of floating samples in thawing ice as well as contamination by coolants. As a time saving option, the bucket of beads can be pre-incubated in the fridge and simply inserted into the unit as and when required.

- Peltier cooling technology
- Max. capacity approx. 60 1.5 ml vials
- Ceramic beads are autoclavable and suitable for multiple use

**Technical specifications:**

| | |
|---|---|
| Temperature range / resolution | 0.0 to 40.0 °C |
| Temperature accuracy | ±1 °C |
| Average cooling time from 20 to 4 °C | approx. 60 min |
| Average cooling time from 20 to 0 °C | approx. 3-4 h |
| Dimensions (L x W x H) | 190 x 240 x 225 mm |
| Dimensions of heat treatment bath (L x W x H) | 155 x 108 x 70 mm |
| Weight | 4.5 kg |
| Power supply | 100-230 V, 50/60 Hz |

**Delivery incl.** aluminium heat treatment bath and 1.7 kg of ceramic beads (∅ 1.5-2.5 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AKN5.1** | 1 | 1249,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement heat treatment bath | **AKN6.1** | 1 | 114,00 |
| Replacement ceramic beads, ∅ 1.5-2.5 mm, 1.7 kg | **AKN7.1** | 1 | 104,00 |

# Incubators



## Inca mini microtiter plate incubator

**For a single standard microtiter plate.**

- Minimum space requirement
- Temperature or runtime display (3-digit LCD display)
- Timer with audio signal (does not affect heater function; no deactivation on expiration of timer).
- ABS plastic housing

**Technical specifications:**

| | |
|---|---|
| Temperature range | +5 °C **above** ambient temperature up to 45 °C |
| Resolution of temperature display | 0.5 °C |
| Temperature adjustment range | 10 to 45 °C |
| Temperature variation | ±0.5 °C |
| Timer | 1 to 999 min in 1-min increments |
| Dimensions (W x D x H) | 120 x 180 x 100 mm |
| Permissible ambient temperatures | 10 to 40 °C at 80 % rel. humidity |
| Heating output | 15 W |
| Weight | 920 g |
| Power supply | 100-230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YX78.1** | 1 | 493,45 |




## Rotilabo®-microtest plates

Made of transparent **PS**. With 96 alphanumerically coded cavities. Different base profiles available. Produced under sterile working conditions. Stackable.
Dimensions: L 128 x W 85 x H 15 mm.
**Delivery without** cover plate, please order separately.

| Type | Volume per well (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① U-profile (round) | 345 | **9291.1** | 100 | 46,25 |
| ② V-profile (conical) | 335 | **9292.1** | 100 | 52,70 |
| ③ F-profile (flat) | 405 | **9293.1** | 100 | 57,00 |

## Cover plates for Rotilabo®-microtest plates

Made of **PS**. Prevents contaminations and liquid loss.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9297.1** | 100 | 42,20 |




## DipSlide incubator EM4

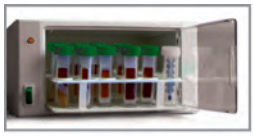
Lightweight, small incubator specially designed for DipSlides.
With transparent, easily removable cover for quick insertion and removal of DipSlides. Easy to operate, even for inexperienced users.
A stand insert and a thermometer are also supplied.
Also usable without a stand for incubation of Petri dishes and contact plates.

**Technical specifications:**

| | |
|---|---|
| Capacity | 23 DipSlides |
| Temperature range | Room temperature to 44 °C |
| Capacity | 4 l |
| Inner dimensions (W x H x D) | 180 x 125 x 180 mm |
| Outer dimensions (W x H x D) | 230 x 180 x 230 mm |
| Weight | 1.5 kg |
| Power supply | 220 V, 25 W |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KK43.1** | 1 | 461,20 |

▶ Drying cabinets from p. 979








## Cultura® M mini incubator

For the incubation of 18 dip slides (e.g. Roti®-DipSlides) or 12 petri dishes for verification of bacteria, fungi and yeasts, as well as other small-sized vials.

- **Operating temperature range from +5 °C above room temperature to 45 °C; temperature adjustment range from 25 to 45 °C**
- Thermometer in tube with special petroleum filling. Measurement range 7 to 60 °C. Graduations 1 °C. Accuracy ±1 °C. Dimensions: H 95 x ∅ 25 mm.
- Transparent full-vision door for visual inspection
- Minimal footprint, i.e. space-saving

**Technical specifications:**

| | |
|---|---|
| Volume | 4 l |
| Temperature variance | ±1 °C |
| Internal dimensions (W x D x H) | 220 x 150 x 120 mm |
| External dimensions (W x D x H) | 310 x 168 x 155 mm |
| Weight | 1.1 kg |
| Power supply | 230 V, 50 Hz |

**Delivery incl.** test thermometer in tube and shelf.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AHH9.1** | 1 | 235,45 |

## Accessories for Cultura® M mini incubator

**Multirack**

Suitable for mini incubator Cultura® M. Made of ABS.
For 18 vials (∅ 25 to 30 mm). Dimensions: W 213 x D 142 x H 50 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AHK0.1** | 1 | 75,20 |

## Mini incubator

Space-saving unit for incubating culture bottles, petri dishes, microtitration plates and other small-volume vessels.

- **Operating temperature range from + 5 °C above ambient temperature to 60 °C; temperature adjustment range from 20 to 60 °C**
- Cable conduit (∅ 55 mm) at the rear
- Loading options, e.g. 48 petri dishes or 28 microtitration plates in 96 well format
- Thermometer holder (∅ 7 mm) on the top allows the inner temperature to be monitored

**Technical specifications:**

| | |
|---|---|
| Capacity | 9.2 l |
| Temperature deviation at 37 °C | ±0.7 °C |
| Inner dimensions (W x Dx H) | 230 x 200 x 200 mm |
| Outer dimensions (W x D x H) | 285 x 280 x 335 mm |
| Shelves: standard / max. number | 1 / 3 |
| Shelf dimensions (L x W) | 220 x 180 mm |
| Weight | 8.3 kg |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** 1 shelf. Please order thermometer separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC53.1** | 1 | 536,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Additional shelf, L 220 x W 180 mm | **YC54.1** | 1 | 48,35 |
| Glass thermometer, -20 to +100 °C, 1 °C graduations | **E742.1** | 1 | 11,70 |

# Incubators




## Small incubator Heratherm IMC18

By Thermo.
- Minimal footprint for space-restricted lab areas
- Microprocessor control
- Round edges make it easy to clean
- With Peltier cooling
- Interior lighting facilitates sample monitoring
- Fan for air circulation; runs permanently and is not adjustable

**Technical specifications:**

| | |
|---|---|
| Capacity | 18 l |
| Temperature range | 17 to 40 °C |
| Resolution of temperature display | 1 °C |
| Temperature deviation at 37 °C | temporal: ±0.2 °C, spatial: ±1.2 °C |
| Inner dimensions (W x H x D) | 180 x 310 x 290 mm |
| Outer dimensions (W x H x D) | 260 x 415 x 470 mm |
| Shelves: Standard / max. quantity | 2 / 3 |
| Max. load-carrying capacity of removable insert | 2 kg |
| Weight | 7.2 kg |
| Power supply | 100-240 V, 50/60 Hz |

**Delivery incl.** 2 shelves.

**With glass front – standard model**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PL74.1** | 1 | 675,00 |

**With darkened front panel**
For incubation without the influence of light, cool, long-term storage in the dark, light-sensitive micro-organisms, and much more.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HAP4.1** | 1 | 731,00 |

Accessories:

| | | | |
|---|---|---|---|
| Additional shelves for IMC18 | **PL75.1** | 1 | 32,80 |




## TIN-series small incubators

- **Operating temperature range from +5 °C above room temperature to 70 °C; temperature adjustment range from 20 to 70 °C**
- Digital timer (adjustable from 1 min to 99 hrs or continuous run)
- Glass window in the door for monitoring the samples
- Natural air flow (convection)
- Stainless steel interior
- Test opening (∅ 5 mm) on top e.g. for introducing sensors

**Technical specifications:**

| **Type** | **TIN-IN16B** | **TIN-IN35B** |
|---|---|---|
| Capacity (l) | 16 | 35 |
| Temperature deviation at 37 °C (°C) | ±0.4 | |
| Inner dimensions W x H x D (mm) | 270 x 230 x 255 | 360 x 300 x 320 |
| Outer dimensions, W x D x H (mm) | 505 x 370 x 400 | 595 x 440 x 460 |
| Shelves: Standard/max. number | 2/6 | |
| Heating time up to 37 °C (min) | 18 | 22 |
| Weight (kg) | 23 | 33 |
| Rated power (W) | 85 | 125 |
| Power supply | 230 V, 50/60 Hz | |

| Type | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| TIN-IN16B | 16 | **EEH0.1** | 1 | 747,15 |
| TIN-IN35B | 35 | **EEH1.1** | 1 | 870,75 |

## Accessories for TIN-series incubators

**Stainless steel rack**

| For model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| TIN-IN16B | **EEH2.1** | 1 | 51,60 |
| TIN-IN35B | **EEH3.1** | 1 | 64,35 |



## Heratherm incubators

By Thermo.
**General Protocol** and **Advanced Protocol models**

**General features:**
- **Outside temperature range:**
  **General Protocol model:**
  **from +5 °C above room temperature to 75 °C**
  **Advanced Protocol model:**
  **from +5 °C above room temperature to 105 °C**
- Interior made of stainless steel
  General Protocol model: stainless steel 1.4016
  Advanced Protocol model: stainless steel 1.4301
- Housing interior with round edges make it easy to clean
- With additional interior glass door
- RS 232 port
- Natural convection minimizes dessication of samples; air circulation achieves more accurate temperatures
- Outlet connection 230 V, 50 Hz
- **Delivery incl.** 2 removable inserts

**Technical specifications:**

| Type | IGS60 | IGS100 | IGS180 | IMH60 | IMH100 | IMH180 |
|---|---|---|---|---|---|---|
| Capacity (l) | 75 | 117 | 194 | 66 | 104 | 178 |
| **Inner dimensions (mm)** | | | | | | |
| Width | 354 | 464 | 464 | 354 | 464 | 464 |
| Height | 508 | 608 | 708 | 508 | 608 | 708 |
| Depth | 414 | 414 | 589 | 368 | 368 | 543 |
| **Outer dimensions[1] (mm)** | | | | | | |
| Width | 530 | 640 | 640 | 530 | 640 | 640 |
| Height | 720 | 820 | 920 | 720 | 820 | 920 |
| Depth | 565 | 565 | 738 | 565 | 565 | 738 |
| **Removable inserts** | | | | | | |
| **Delivery incl.** | 2 | | | | | |
| Max. capacity | 13 | 16 | 19 | 13 | 16 | 19 |
| **Other** | | | | | | |
| Rated power (W) | 300 | 520 | 710 | 850 | 1100 | 1300 |
| Weight (kg) | 40 | 51 | 65 | 45 | 56 | 70 |
| **Temperature deviation at 37 °C** | | | | | | |
| temporal (°C) | ±0.2 | | | ±0.1 | | |
| spatial (°C) | ±0.6 | | | ±0.6/±0.2[2] | ±0.6/±0.3[2] | ±0.6/±04[2] |

[1] Depth of handle and display (65 mm) not included in the measurement; adjustable feet (35 mm) not included in height - clearance required to back wall: 80 mm

[2] Values refer to: fan switched off/fan at full speed

**General Protocol incubators**
- Integrated timer (1 min up to 99 h, 59 min)
- Microprocessor control
- Actual temperature display
- Setting accuracy ±0.1 K
- Automatic over temperature alarm

**Models with natural convection**

| Type | Volume (l) | Temperature range up to °C | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| IGS60 | 75 | 75 | **PL96.1** * | 1 | 1234,00 |
| IGS100 | 117 | 75 | **PL97.1** * | 1 | 1740,00 |
| IGS180 | 194 | 75 | **PL98.1** * | 1 | 2414,00 |

* Longer delivery times possible. Please check with our Sales Department.

**Incubators Advanced Protocol**
- Digital timer for daily/weekly on/off cycles
- Setting accuracy ±0.1 K
- Cable conduit (∅ 50 mm) at the rear
- Automatic over temperature alarm
- With varnished housing
- With air-circulation fan: dual convection with settable fan speed from 0 (corresponds to natural convection) to 100 %

**Models with air-circulation fan**

| Type | Volume (l) | Temperature range up to °C | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| IMH60 | 66 | 105 | **PL99.1** * | 1 | 1898,00 |
| IMH100 | 104 | 105 | **PP00.1** * | 1 | 2527,00 |
| IMH180 | 178 | 105 | **PP01.1** * | 1 | 3613,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Accessories for incubators Heratherm

By Thermo.
**Removable insert kit:** 1 removable insert with 2 attachment clamps.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| IGS60 | **PP02.1** | 1 | 100,00 |
| IGS100 | **PP03.1** | 1 | 123,00 |
| IGS180 | **PP04.1** | 1 | 134,00 |
| IMH60 | **PP05.1** | 1 | 100,00 |
| IMH100 | **PP06.1** | 1 | 123,00 |
| IMH180 | **PP07.1** * | 1 | 134,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Incubators



## IN and INplus incubators

By Memmert.

**General features:**

- **Operating temperature range from 5 °C above room temperature to 80 °C**
  Set temperatures from 20 to 80 °C
  Adjustment accuracy 0.1 K
- Interior made of stainless steel (1.4301)
- Fully insulated stainless steel door (two-wing from size 450 upwards)
- **With additional inner glass door**
- Fresh air supply by electronically adjustable exhaust flap
- Structured stainless steel housing
- Incl. factory calibration certificate valid for +37 °C

**Other features:**

- **Natural air circulation (convection)**
- German, English, French and Spain language options
- Digital timer (adjustable from 1 min to 99 d, 23 h) or continuous duty
- "SetpointWAIT" function - process time does not start until the nominal temperature is achieved

**Technical specifications:**

| **Model sizes** | **30** | **55** | **75** | **110** | **160** | **260** | **450**[1)] | **750**[1)] |
|---|---|---|---|---|---|---|---|---|
| Capacity (l) | 32 | 53 | 74 | 108 | 161 | 256 | 449 | 749 |
| **Inner dimensions (mm):** | | | | | | | | |
| Width | 400 | 400 | 400 | 560 | 560 | 640 | 1040 | 1040 |
| Height | 320 | 400 | 560 | 480 | 720 | 800 | 720 | 1200 |
| Depth | 250 | 330 | 330 | 400 | 400 | 500 | 600 | 600 |
| **Outer dimensions (mm):** | | | | | | | | |
| Width | 585 | 585 | 585 | 745 | 745 | 824 | 1224 | 1224 |
| Height | 707 | 787 | 947 | 867 | 1107 | 1186 | 1247 | 1726 |
| Depth (without door handle)[2)] | 434 | 514 | 514 | 584 | 584 | 684 | 784 | 784 |
| **Stainless steel grids** | | | | | | | | |
| **Delivery incl.** | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Max. capacity | 3 | 4 | 6 | 5 | 8 | 9 | 8 | 14 |
| **Other** | | | | | | | | |
| Power consumption (W) | 800 | 1000 | 1250 | 1400 | 1600 | 1700 | 1800 | 2000 |
| Power supply | 230 V, 50/60 Hz | | | | | | | |
| Weight (kg) | 44 | 55 | 65 | 74 | 96 | 110 | 170 | 215 |
| **Temperature variation** | | | | | | | | |
| Time (°C)<br>Spatial (°C) | Model IN <±0.2 / model INplus <±0.05<br>Model IN <±0.7 / model INplus <±0.7 | | | | | | | |

1) With castors, movable and lockable
2) Door handle: 56 mm

**Delivery incl.** stainless steel grids
(models 30 and 55: 1 grid, models 75 to 750: 2 grids)

**IN models**

- Graphical single TFT display with touchscreen for operation and display of temperature, program runtime and air flap position
- Integrated data logger with 10-year memory
- With Ethernet communication port for log data readout
- Overtemperature protection

| Type | Model size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| IN | 30 | **TY30.1** * | 1 | 998,00 |
| IN | 55 | **TY31.1** * | 1 | 1232,00 |
| IN | 75 | **TY32.1** * | 1 | 1459,00 |
| IN | 110 | **TY33.1** * | 1 | 1721,00 |
| IN | 160 | **TY34.1** * | 1 | 2292,00 |
| IN | 260 | **TY35.1** * | 1 | 3057,00 |
| IN | 450 | **TY36.1** * | 1 | 4072,00 |
| IN | 750 | **TY37.1** * | 1 | 5505,00 |

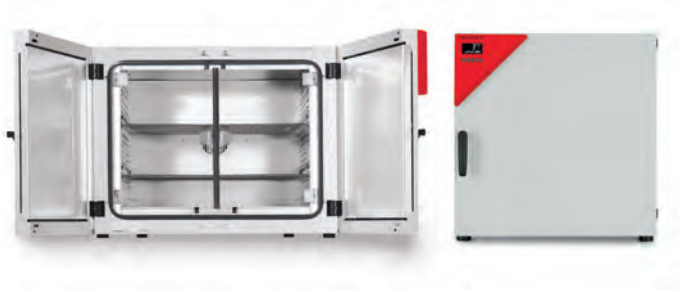
* Longer delivery times possible. Please check with our Sales Department.

**INplus models**

- Two graphical TFT displays with touchscreen for operation and display of temperature, program runtime, air damper position and graphical display of program flow
- Integrated data logger with 10-year memory
- **Display of recorded log data (max. 10000 values correspond to approx. 1 week) directly on the instrument**
- Application-specific correction of heat output distribution between the upper and lower heating groups within an adjustment range from -50 to +50 %
- With Ethernet communication port for log data readout as well as for transmitting and launching programs and online logging
- With sterilization program: 4-hour program at 160 °C for sterilization of the interior incl. all fittings and all sensors
- **USB port for installing programs and reading out the data logger incl. software (to create ramp programs and 7-day programs)**
- Definition of individual Min/Max values for high/low temperature protection

| Type | Model size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| INplus | 30 | **TY38.1** * | 1 | 1666,00 |
| INplus | 55 | **TY39.1** * | 1 | 1880,00 |
| INplus | 75 | **TY40.1** * | 1 | 2121,00 |
| INplus | 110 | **TY41.1** * | 1 | 2383,00 |
| INplus | 160 | **TY42.1** * | 1 | 2972,00 |
| INplus | 260 | **TY43.1** * | 1 | 3663,00 |
| INplus | 450 | **TY44.1** * | 1 | 4752,00 |
| INplus | 750 | **TY45.1** * | 1 | 6228,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Microbiological incubators, models BD and BF

By Binder.

**General features:**

- **Operating temperature range from 7 °C and room temperature to 100 °C**
  Setting temperatures from 30 to 100 °C
  Setting accuracy: ±0.1 °C
- Models with volumes of 400 l or higher come with a double-panel door
- With integrated timer with range from 0 to 99 h
- With additional inner door of safety glass
- 100 °C disinfection routine for reduced cross-contamination
- Adjustable air renewal and rear exhaust ∅ 50 mm
- Class 3.1 temperature safety device (DIN 12880) with visual alarm
- Mains connection 230 V, 50/60 Hz

Models BD/BF 56, BD/BF 115 and BD/BF 260 also have:
USB port for recording data (time, actual temperature value, set temperature value, etc.)

**Technical specifications:**

| **Models** | | **BD 23** | **BD 56/ BF 56** | **BD 115/ BF 115** | **BD 260/ BF 260** | **BD 400/ BF 400** | **BD 720/ BF 720** |
|---|---|---|---|---|---|---|---|
| Capacity (l) | BD<br>BF | 20<br>20 | 57<br>59 | 112<br>114 | 253<br>257 | 400<br>400 | 737<br>734 |
| **Inner dimensions (mm):** | | | | | | | |
| Width | BD<br>BF | 222<br>- | 360<br>400 | 510<br>550 | 610<br>650 | 1000<br>1000 | 960<br>1000 |
| Height | BD<br>BF | 330<br>- | 420<br>440 | 530<br>550 | 760<br>780 | 800<br>800 | 1280<br>1300 |
| Depth | BD<br>BF | 277<br>- | 380<br>340 | 420<br>380 | 545<br>510 | 500<br>500 | 600<br>565 |
| **Outer dimensions (mm):** | | | | | | | |
| Width | | 435 | 560 | 710 | 815 | 1235 | 1165 |
| Height | | 495 | 625 | 735 | 965 | 1025 | 1590 |
| Depth [1] | BD<br>BF | 620<br>- | 640<br>640 | 680<br>680 | 815<br>815 | 860<br>875 | 910<br>910 |
| **Grids, chrome plated** | | | | | | | |
| **Delivery incl.** | | 2 | 2 | 2 | 2 | 2 | 2 |
| Max. capacity | | 3 | 4 | 5 | 7 | 10 | 15 |
| **Other** | | | | | | | |
| Rated power (W) | BD<br>BF | 200<br>- | 300<br>400 | 350<br>400 | 850<br>900 | 850<br>850 | 1250<br>1250 |
| Power supply | | 230 V, 50/60 Hz | | | | | |
| Weight (kg) | BD<br>BF | 26<br>- | 38<br>38 | 54<br>54 | 85<br>85 | 135<br>145 | 170<br>165 |
| **Temperature variance** | | | | | | | |
| temporal (°C) | BD<br>BF | ±0.2<br>- | ±0.2<br>±0.1 | ±0.1<br>±0.1 | ±0.2<br>±0.1 | ±0.1<br>±0.2 | ±0.1<br>±0.1 |
| spatial (°C) | BD<br>BF | ±0.5<br>- | ±0.5<br>±0.3 | ±0.4<br>±0.3 | ±0.4<br>±0.3 | ±0.5<br>±0.4 | ±0.5<br>±0.4 |

1) Incl. door handle and exhaust

**Delivery incl.** 2 grids, chrome plated.

**BD models**
**With natural air circulation (convection)**

| Type | Model size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| BD | 23 | **CKE6.1** * | 1 | 1512,55 |
| BD | 56 | **CKE7.1** * | 1 | 1495,35 |
| BD | 115 | **CKE8.1** * | 1 | 2011,35 |
| BD | 260 | **CKE9.1** * | 1 | 3374,45 |
| BD | 400 | **CKH0.1** * | 1 | 4828,90 |
| BD | 720 | **CKH1.1** * | 1 | 6562,90 |

* Longer delivery times possible. Please check with our Sales Department.

**BF models**
**With forced air circulation (fan)**

- Fan speed cannot be regulated or switched off
- Timer function selection:
  - Heater is switched off when the set time expires
  - The set timer does not start until the actual value reaches the selected set value. Heater is switched off when the set time expires.
  - Heater is switched on after set time expires and stays in continuous operation.

| Type | Model size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| BF | 56 | **CKH2.1** * | 1 | 2030,70 |
| BF | 115 | **CKH3.1** * | 1 | 2650,95 |
| BF | 260 | **CKH4.1** * | 1 | 4087,15 |
| BF | 400 | **CKH5.1** * | 1 | 5107,35 |
| BF | 720 | **CKH6.1** * | 1 | 6821,95 |

* Longer delivery times possible. Please check with our Sales Department.

## Accessories for incubators of models BD and BF

By Binder.
**Grids, chrome plated**

| for type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| BD 23 | **CKE0.1** | 1 | 44,55 |
| BD 56 | **CKE1.1** | 1 | 71,20 |
| BF 56 | **ECY1.1** | 1 | 71,20 |
| BD 115 | **CKE2.1** | 1 | 109,65 |
| BF 115 | **ECY2.1** | 1 | 109,65 |
| BD 260 | **CKE3.1** | 1 | 205,35 |
| BF 260 | **ECY3.1** | 1 | 205,35 |
| BD 400, BF 400 | **CKE4.1** | 1 | 226,85 |
| BD 720, BF 720 | **CKE5.1** | 1 | 247,25 |

# Incubators



## Heratherm high-capacity incubators

By Thermo.

**General features:**

- Free-standing units with fixed rollers
- With internal glass door
- Stainless steel interior
- RS 232 port
- Mains connection 230 V, 50 Hz

**Technical specifications:**

| Type | IGS400 | IGS750 | IMH400-S | IMH750-S |
|---|---|---|---|---|
| Capacity (l) | 405 | 747 | 381 | 702 |
| **Inner dimensions (mm)** | | | | |
| Width | 544 | 1004 | 544 | 1004 |
| Height | 1307 | 1307 | 1335 | 1335 |
| Depth | 569 | 569 | 524 | 524 |
| **Outer dimensions[1] (mm)** | | | | |
| Width | 778 | 1261 | 778 | 1261 |
| Height | 1545 | 1545 | 1545 | 1545 |
| Depth | 770 | 770 | 770 | 770 |
| **Removable shelves** | | | | |
| **Delivery incl.** | 2 | | | |
| Max. capacity | 39 | | | |
| **Other** | | | | |
| Rated power (W) | 1200 | 1500 | 1400 | 1600 |
| Weight (kg) | 145 | 201 | 144 | 205 |
| **Temperature deviation at 37 °C** | | | | |
| temporal (°C) | ±0.4 | | ±0.2 | |
| spatial (°C) | ±0.5 | ±1.3 | ±0.2 | ±0.3 |

[1] not including depth of handle and display (65 mm) and height of rollers (108 mm); required clearance to rear panel 120 mm.

**Delivery incl.** 2 stainless steel perforated shelves.

**General Protocol:**

- **Operating temperature range from +5 °C above room temperature to 75 °C**
- With natural convection
- Integrated timer (1 min to 99 h, 59 min)
- Actual temperature display; setting accuracy ±0.1 K

| Type | Volume (l) | Temperature range up to °C | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| IGS400 | 405 | 75 | **XH26.1** * | 1 | 4150,00 |
| IGS750 | 747 | 75 | **XH27.1** * | 1 | 5679,00 |

**Advanced Protocol:**

- **Operating temperature range from +5 °C above room temperature to 105 °C**
- Setting accuracy ±0.1 K
- Mechanical convection - 2-stage fan: can run fast or slow, but cannot be switched off
- Cable feedthrough (∅ 19 mm), e.g. for fitting sensors
- An audible alarm sounds if the door is accidentally left open
- Switch on/off after a pre-set time
- Weekly setting or real-time control
- Programmable control for temperature ramps and dwell times (memory for 10 programs each with 10 individual steps)

| Type | Volume (l) | Temperature range up to °C | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| IMH400-S | 381 | 105 | **XH28.1** * | 1 | 5188,00 |
| IMH750-S | 702 | 105 | **XH29.1** * | 1 | 6554,00 |

## Accessories for Heratherm high-capacity incubators

By Thermo.

**Perforated shelf kit:** 1 shelf with 2 supports.

| for type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| IGS400, IMH400-S | **XH30.1** * | 1 | 208,00 |
| IGS750, IMH750-S | **XH31.1** * | 1 | 278,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Incubator inserts

Made of PP, stackable. For easy organisation of petri dishes and convenient transfer to other incubation or storage systems.
With 16 ventilation holes and 2 labelling spaces.
Outer dimensions: L 251 x W 237 x H 35 mm.
Loading options: e.g. 5 Petri dishes ∅ 100 mm
or 15 Petri dishes ∅ 60 mm or 21 culture bottles 25 $cm^2$.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC19.1** | 3 | 57,85 |

# Cooling incubators



## Peltier cooling incubators IPP-series

By Memmert.

**General features:**

- **Operating temperature range from 0 to 70 °C**
  Set temperatures from 0 to 70 °C
  Adjustment accuracy 0.1 K
- Interior made of stainless steel (1.4301)
- Fully insulated stainless steel door (two-wing from size 450 upwards)
- **With additional inner glass door**
- Structured stainless steel housing
- Incl. factory calibration certificate valid for +10 °C and +37 °C

**Other features:**

- Language settings: German, English, French and Spanish
- Digital timer (adjustable from 1 min to 99 d, 23 h) or continuous duty
- "SetpointWAIT" function - process time does not start until the nominal temperature is achieved

**Technical specifications:**

| **Model sizes** | **30** | **55** | **110** | **260** |
|---|---|---|---|---|
| Capacity (l) | 32 | 53 | 108 | 256 |
| **Inner dimensions (mm):** | | | | |
| Width | 400 | | 560 | 640 |
| Height | 320 | 400 | 480 | 800 |
| Depth[1)] | 250 | 330 | 400 | 500 |
| **Outer dimensions (mm):** | | | | |
| Width | 585 | | 745 | 824 |
| Height | 707 | 787 | 867 | 1186 |
| Depth (without door handle)[2)] | 524 | 604 | 674 | 774 |
| **Stainless steel grids** | | | | |
| **Delivery incl.** | 1 | 1 | 2 | 2 |
| Max. capacity | 3 | 4 | 5 | 9 |
| **Other** | | | | |
| Number of Peltier elements | 1 | 1 | 2 | 3 |
| Power consumption (W) | 125 | 175 | 350 | 525 |
| Power supply | 230 V, 50/60 Hz | | | |
| Weight (kg) | 51 | 62 | 80 | 115 |
| **Temperature variation** | | | | |
| Time (°C)<br>Spatial (°C) | 0.1<br>0.4 | | | |

1) Less 10 mm for Peltier fan
2) Door handle: 56 mm

**Delivery incl.** stainless steel grids
(models 30 and 55: 1 grid, models 110 and to 260: 2 grids)

**IPP models**

- Graphical single TFT display with touchscreen for operation and display of temperature and program runtime
- Integrated data logger with 10-year memory
- With Ethernet communication port for log data readout
- Overtemperature protection

| Type | Model size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| IPP | 30 | **TY46.1** * | 1 | 2463,00 |
| IPP | 55 | **TY47.1** * | 1 | 2682,00 |
| IPP | 110 | **TY48.1** * | 1 | 3999,00 |
| IPP | 260 | **TY49.1** * | 1 | 5647,00 |

**Models IPP-Soc**

**Same as model IPP, but version with inner socket**
(current capacity 220 V/2.2 A) can be switched off via the master switch and is not separately switchable.

| Type | Model size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| IPP-Soc | 30 | **TY50.1** * | 1 | 2793,00 |
| IPP-Soc | 55 | **TY51.1** * | 1 | 3012,00 |
| IPP-Soc | 110 | **TY52.1** * | 1 | 4329,00 |
| IPP-Soc | 260 | **TY53.1** * | 1 | 5977,00 |

* Longer delivery times possible. Please check with our Sales Department.

**IPPplus models**

- Two graphical TFT displays with touchscreen for operation and display of temperature, program runtime, air damper position and graphical display of program flow
- Integrated data logger with 10-year memory
- **Display of recorded log data (max. 10000 values correspond to approx. 1 week) directly on the instrument**
- Application-specific correction of the heat output distribution between the upper and lower heating groups within an adjustment range from -50 to +50 %
- With Ethernet communication port for log data readout as well as for transmitting and launching programs and online logging
- **USB port for installing programs and reading out the data logger incl. software (to create ramp programs and 7-day programs)**
- Definition of individual Min/Max values for high/low temperature protection

| Type | Model size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| IPPplus | 30 | **TY54.1** * | 1 | 2772,00 |
| IPPplus | 55 | **TY55.1** * | 1 | 2989,00 |
| IPPplus | 110 | **TY56.1** * | 1 | 4305,00 |
| IPPplus | 260 | **TY57.1** * | 1 | 6028,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Cooling incubators





## Peltier cooling incubators KT-series

By Binder.

**General features:**

- **Operating temperature range: from 4 to 100 °C**
  Setting accuracy: ±0.1 °C
- 5.7 inch LCD monitor and turn/push button for input
- Variable time and weekday programming
  - Storage capacity for up to 60 programs (in KT 53 version) or 100 programs (in KT 115 version)
  - Measurement data can be saved to internal memory
  - Readout of programs and data via USB port
  - Adjustable fan speed (min. speed 30 %)
- With additional inner door of safety glass
- Ethernet interface
- Class 3.1 temperature safety device (DIN 12880) with visual and audible alarms

**Technical specifications:**

| Models | KT 53 | KT 115 |
|---|---|---|
| Volume (l) | 53 | 102 |
| **Inner dimensions (mm):** | | |
| Width | 400 | 600 |
| Height | 400 | 455 |
| Depth | 334 | 355 |
| **Outer dimensions (mm):** | | |
| Width | 660 | 860 |
| Height | 635 | 715 |
| Depth[1)] | 695 | 815 |
| **Stainless steel grids** | | |
| **Delivery incl.** | 2 | 2 |
| Max. capacity | 5 | 6 |
| **Other** | | |
| Rated power (W) | 400 | 700 |
| Power supply | 200-240 V, 50/60 Hz | |
| Weight (kg) | 63 | 83 |
| **Temperature variance** | | |
| temporal (°C) | ±0.1 | |
| spatial (°C) | ±0.3 | ±0.3 |

1) incl. door handle

**Delivery incl.** 2 stainless steel grids.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| KT 53 | **CKK0.1** * | 1 | 4226,90 |
| KT 115 | **CKK1.1** * | 1 | 5186,90 |

* Longer delivery times possible. Please check with our Sales Department.

## Cooling incubators KB-series

By Binder.

**General features:**

- **Operating temperature range:**
  KB 23: from 0 to 100 °C
  KB 53 and KB 115: from -5 to 100 °C
  Setting accuracy: ±0.1 °C
- **Cooling compression refrigerator**
- Controller with 2 programs each with 10 individual steps
  - Integrated 7 day programmable timer with real time function
  - Adjustable ramp function via program editor
  - Adjustable fan speed (min. speed 30 %)
- With additional inner door of safety glass
- Class 3.1 temperature safety device (DIN 12880) with visual and audible alarms
- Mains connection 230 V, 50 Hz

**Technical specifications:**

| Models | KB 23 | KB 53 | KB 115 |
|---|---|---|---|
| Volume (l) | 20 | 53 | 115 |
| **Inner dimensions (mm):** | | | |
| Width | 222 | 400 | 600 |
| Height | 330 | 400 | 480 |
| Depth | 277 | 330 | 400 |
| **Outer dimensions (mm):** | | | |
| Width | 435 | 635 | 835 |
| Height | 620 | 835 | 1025 |
| Depth[1)] | 595 | 660 | 700 |
| **Stainless steel grids** | | | |
| **Delivery incl.** | 2 | 2 | 2 |
| Max. capacity | 3 | 4 | 5 |
| **Other** | | | |
| Power consumption (W) | 340 | 460 | 460 |
| Power supply | 230 V, 50 Hz | | |
| Weight (kg) | 44 | 75 | 106 |
| **Temperature variance** | | | |
| Temporal (°K) | ±0.1 | | |
| Spatial (°K) | ±0.3 | ±0.2 | ±0.2 |

1) incl. door handle

**Delivery incl.** 2 stainless steel grids.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| KB 23 | **CKH7.1** * | 1 | 4593,50 |
| KB 53 | **CKH8.1** * | 1 | 4988,00 |
| KB 115 | **CKH9.1** * | 1 | 5961,95 |

* Longer delivery times possible. Please check with our Sales Department.

# Cooling incubators



NEU
NOUVEAU
NEW

## Cooling incubators Heratherm® IMP series

By Thermo.
**Applications:** Development processes for new products, quality assurance in the food, beverage and cosmetics industry, water analysis, as well as cell culture and microbiological analyses.

**General features:**
- **Operating temperature range: from 5 to 70 °C**
  Setting accuracy: ±0.1 °C
- Pelleting technology
- Heated door minimizes condensation
- Timer with weekly/daily or real-time mode
- Programming option for defined temperature ramps, with cooling and dwell time: storage of up to 10 programs with 10 temperature stages, loop program and selection mode at end of cycle
- Adjustable over-temperature shut-down
- Fan speeds adapt for power optimization
- Inside glass door for sample monitoring
- **Cable conduit for data monitoring (42 mm) on rear side**
- RS 232 interface
- Stainless steel interior (1.4301/ASTM 304)

**Technical specifications:**

| Model | | IMP180 table device | IMP400 floor-mounted device |
|---|---|---|---|
| Capacity (l) | | 178 | 381 |
| **Inner dimensions (mm)** | | | |
| Width | | 464 | 544 |
| Height | | 708 | 1335 |
| Depth | | 543 | 524 |
| **Outer dimensions (mm)** | | | |
| Width | | 640 | 778 |
| Height | | 920* | 1545** |
| Depth | | 738* | 770** |
| **Removable shelves** | | | |
| Max. capacity | | 9 | 17 |
| Shelf size W x D (mm) | | 439 x 505 | 528 x 498 |
| **Other** | | | |
| Power consumption (Wh/h) | | 80 | 150 |
| Power supply | | 100-230 V, 50/60 Hz | |
| Weight | | 97 | 216 |
| **Temperature variance** | | | |
| temporal (°C) | | ±0.1 | |
| spatial (°C) | at 20 °C | ±0.2 | ±0.3 |
| | at 37 °C | ±0.5 | ±0.7 |

*Depth of handle/display not included in depth (65 mm); adjustable feet not included in height (35 mm)
**Depth of handle/display not included in depth (65 mm); rollers not included in height (180 mm)

**Delivery incl.** 2 stainless steel perforated shelves.

**Standard version**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| IMP180 | **HCE7.1** * | 1 | 5481,00 |
| IMP400 | **HCE8.1** * | 1 | 7613,00 |

**With inside socket** - not switchable

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| IMP180 | **HCE9.1** * | 1 | 6090,00 |
| IMP400 | **HCH0.1** * | 1 | 8120,00 |

## Accessories for cooling incubators Heratherm® IMP series

By Thermo.
Removable shelf kit: 1 shelf with 2 supports

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| IMP180 | **PP07.1** * | 1 | 134,00 |
| IMP400 | **XH30.1** * | 1 | 208,00 |

* Longer delivery times possible. Please check with our Sales Department.

# CO2-incubateurs




## $CO_2$ incubator Midi 40

By Thermo. For use in cell culture to breed small cultures, or where space is limited in the laboratory.

- **Working temperature from +5 °C above room temperature to 60 °C (in steps of 0.1 °C) and $CO_2$ concentrations up to 20 % (in steps of 0.1 %)**
- Digital display for easy input of °C, $CO_2$ content and alarm limits
- Setpoints can be secured using a key-operated switch to prevent unwanted alteration of the operating parameters
- Seam-free interior made of stainless steel (non-corrosive stainless steel, type 304) with 4 extractable shelves
- Removable water container for a relative humidity of up to 95 %
- Inside door made of safety glass is heated by the outside door to avoid condensation
- To supply the incubator with $CO_2$, a separate gas cylinder or a central compressed-gas tank is required
- Conditioned water (demineralised/distilled and autoclaved and/fully desalinated/distilled and autoclaved) is required for humidification

**Technical specifications:**

| | |
|---|---|
| Capacity | 40 l |
| Temperature deviation at 37 °C | ±0.4 K |
| $CO_2$ consistency | ±0.10 % |
| Internal dimensions (W x D x H) | 305 x 355 x 355 mm |
| Outer dimensions (W x D x H) | 470 x 597 x 465 mm |
| Dimensions perforated trays (W x D) | 343 x 292 mm |
| Required input pressure | 1.0 bar, 99.5 Vol.-% medical classification $CO_2$ |
| Intake-air filtration | $CO_2$ filter, PTFE filter 0.3 µm |
| Weight | 32 kg |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** 4 perforated stainless steel trays, water container (∅ 12.7 mm), $CO_2$ filter and hose set (ID 1.59 mm, AD 6.35 mm, approx. L 0.5 m).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ETT3.1** * | 1 | 3933,00 |

* Longer delivery times possible. Please check with our Sales Department.




## $CO_2$ incubator BB 15

By Thermo. With air jacket heating for constant temperature as well as a second control circuit that assumes control of the set temperature in the case of a fault. The chamber floor is used as water reservoir (an electric suction pump is included in the scope of delivery for changing the water). The large water surface and direct heat transfer from the heated base achieve a faster humidity recovery time.

- **Working temperature from 3 °C above room temperature to 55 °C (in steps of 0.1-°C) and $CO_2$ concentrations up to 20 % (in steps of 0.1-%)**
- Digital display for °C and $CO_2$ content
- Tube penetration 42 mm in the rear wall allows operation of additional devices
- Stainless steel interior
- Constant moisture at 37 °C approx. 95 % rF
- Additional inside door made of glass, heated outside door
- To supply the incubator with $CO_2$, a separate gas cylinder or a central compressed-gas tank is required
- Conditioned water (demineralised/distilled and autoclaved and/fully desalinated/distilled and autoclaved) is required for humidification

**Technical specifications:**

| | |
|---|---|
| Capacity | 151 l |
| Temperature deviation time / space | ±0.1 / ±0.5 K |
| $CO_2$ consistency | ±0.3 % |
| Inner dimensions (W x H x D) | 470 x 607 x 530 mm |
| Outer dimensions (W x H x D) | 637 x 867 x 766 mm |
| Dimensions perforated trays (W x D) | 423 x 455 mm |
| Shelves<br>**Delivery incl.** / max. capacity | 3 / 10 |
| Required input pressure | 0.8 to 1.0 bar, 99.5 Vol.-% medical $CO_2$ quality |
| Intake-air filtration | $CO_2$ filter, PTFE filter 0.3 µm, filter housing PP |
| Weight | 70 kg |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** 3 perforated plate insert, hose set (ID 4 mm, AD 10 mm, approx. L 3 m), $CO_2$ filter and electric immersion pump.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ETT4.1** * | 1 | 5006,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Drying and warming cabinets



## Universal heating and drying cabinets

By Memmert.
**UN, UNplus, UF and UFplus models**

**General features:**
- **Operating temperature range from 5 °C (UN/UNplus) or 10 °C (UF/UFplus) above room temperature to 300 °C**
  Set temperatures from 20 to 300 °C
  Adjustment accuracy to 99.9 °C: 0.1 K from 100 °C: 0.5 K
- Interior made of stainless steel (1.4301)
- Fully insulated stainless steel door (two-wing from size 450 upwards)
- Fresh air supply by electronically adjustable exhaust flap
- Structured stainless steel housing
- **Incl.** factory calibration certificate valid for +160 °C
- **Power supply of models 30 to 260: 230 V, 50/60 Hz**
  **Power supply of models 450 and 750:**
  **400 V and 3 x 220 V, 50/60 Hz**

**Other features:**
- German, English, French and Spain language options
- Digital timer (adjustable from 1 min to 99 d, 23 h) or continuous duty
- "SetpointWAIT" function - process time does not start until the nominal temperature is achieved

**Technical specifications:**

| Model sizes | 30 | 55 | 75 | 110 | 160 | 260 | 450[1] | 750[1] |
|---|---|---|---|---|---|---|---|---|
| Capacity (l) | 32 | 53 | 74 | 108 | 161 | 256 | 449 | 749 |
| **Inner dimensions (mm):** | | | | | | | | |
| Width | 400 | 400 | 400 | 560 | 560 | 640 | 1040 | 1040 |
| Height | 320 | 400 | 560 | 480 | 720 | 800 | 720 | 1200 |
| Depth[2] | 250 | 330 | 330 | 400 | 400 | 500 | 600 | 600 |
| **Outer dimensions (mm):** | | | | | | | | |
| Width | 585 | 585 | 585 | 745 | 745 | 824 | 1224 | 1224 |
| Height | 707 | 787 | 947 | 867 | 1107 | 1186 | 1247 | 1726 |
| Depth (without door handle)[3] | 434 | 514 | 514 | 584 | 584 | 684 | 784 | 784 |
| **Stainless steel grids** | | | | | | | | |
| Delivery incl. | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Max. capacity | 3 | 4 | 6 | 5 | 8 | 9 | 8 | 14 |
| **Other** | | | | | | | | |
| Power consumption (W) | 1600 | 2000 | 2500 | 2800 | 3200 | 3400 | 5800 | 7000 |
| Power supply | 230 V, 50/60 Hz | | | | | | 400 V and 3 x 220 V, 50/60 Hz | |
| Weight (kg) | 44 | 55 | 65 | 74 | 96 | 110 | 170 | 215 |
| **Temperature variation** | | | | | | | | |
| Time (°C)<br>Spatial (°C) | Models UN/UF <±0.5 / models UNplus/UFplus <±0.25<br>Models UN/UF <±2.7 / models UNplus/UFplus <±2.2 | | | | | | | |

1) With castors, movable and lockable
2) Less 39 mm for forced air circulation (convection) equipment
3) Door handle: 56 mm

**Delivery incl.** stainless steel grids
(models 30 and 55: 1 grid, models 75 to 750: 2 grids)

**Models UN and UF**
- Graphical single TFT display with touchscreen for operation and display of temperature, program runtime and air flap position
- Integrated data logger with 10-year memory
- With Ethernet communication port for log data readout
- Overtemperature protection
- **Additional feature of UF model:** low-noise air turbine for air circulation mode (air turbine can be adjusted and switched off)

**Type UN, with natural air circulation (convection)**

| Type | Model size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| UN | 30 | **TX98.1** * | 1 | 971,00 |
| UN | 55 | **TX99.1** * | 1 | 1125,00 |
| UN | 75 | **TY00.1** * | 1 | 1373,00 |
| UN | 110 | **TY01.1** * | 1 | 1592,00 |
| UN | 160 | **TY02.1** * | 1 | 2120,00 |
| UN | 260 | **TY03.1** * | 1 | 2834,00 |
| UN | 450 | **TY04.1** * | 1 | 3757,00 |
| UN | 750 | **TY05.1** * | 1 | 5097,00 |

**Type UF, with forced air circulation (ventilator)**

| Type | Model size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| UF | 30 | **TY06.1** * | 1 | 1155,00 |
| UF | 55 | **TY07.1** * | 1 | 1391,00 |
| UF | 75 | **TY08.1** * | 1 | 1646,00 |
| UF | 110 | **TY09.1** * | 1 | 1922,00 |
| UF | 160 | **TY10.1** * | 1 | 2531,00 |
| UF | 260 | **TY11.1** * | 1 | 3259,00 |
| UF | 450 | **TY12.1** * | 1 | 4268,00 |
| UF | 750 | **TY13.1** * | 1 | 5760,00 |

* Longer delivery times possible. Please check with our Sales Department.

**Models UNplus and UFplus**
- Two graphical TFT displays with touchscreen for operation and display of temperature, program runtime, air damper position and graphical display of program flow
- Integrated data logger with 10-year memory
- **Display of recorded log data (max. 10000 values correspond to approx. 1 week) directly on the instrument**
- Application-specific correction of heat output distribution between the upper and lower heating groups within an adjustment range from -50 to +50 %
- With Ethernet communication port for log data readout as well as for transmitting and launching programs and online logging
- Definition of individual Min/Max values for high/low temperature protection
- **USB port for installing programs and reading out the data logger incl. software (to create ramp programs and 7-day programs)**
- **Additional feature of UF/UFplus models:** low-noise air turbine for air circulation mode (air turbine can be adjusted and switched off)

**Type UNplus, with natural air circulation (convection)**

| Type | Model size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| UNplus | 30 | **TY14.1** * | 1 | 1617,00 |
| UNplus | 55 | **TY15.1** * | 1 | 1765,00 |
| UNplus | 75 | **TY16.1** * | 1 | 1964,00 |
| UNplus | 110 | **TY17.1** * | 1 | 2251,00 |
| UNplus | 160 | **TY18.1** * | 1 | 2804,00 |
| UNplus | 260 | **TY19.1** * | 1 | 3387,00 |
| UNplus | 450 | **TY20.1** * | 1 | 4366,00 |
| UNplus | 750 | **TY21.1** * | 1 | 5726,00 |

**Type UFplus, with forced air circulation (ventilator)**

| Type | Model size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| UFplus | 30 | **TY22.1** * | 1 | 1706,00 |
| UFplus | 55 | **TY23.1** * | 1 | 2025,00 |
| UFplus | 75 | **TY24.1** * | 1 | 2234,00 |
| UFplus | 110 | **TY25.1** * | 1 | 2576,00 |
| UFplus | 160 | **TY26.1** * | 1 | 3210,00 |
| UFplus | 260 | **TY27.1** * | 1 | 3852,00 |
| UFplus | 450 | **TY28.1** * | 1 | 4904,00 |
| UFplus | 750 | **TY29.1** * | 1 | 6422,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Drying and warming cabinets



## Heratherm drying cabinets

By Thermo.
General Protocol and Advanced Protocol models

**General features:**
- **Temperature range:**
  **General Protocol model: 50 to 250 °C**
  **Advanced Protocol model: 50 to 330 °C**
- Interior made of stainless steel
  General Protocol model: stainless steel 1.4016
  Advanced Protocol model: stainless steel 1.4301
- Smooth housing interior and round edges make it easy to clean
- Automatic over temperature alarm
- Microprocessor control
- Setting accuracy ±1 K
- RS 232 port
- **Natural convection** for gentle drying and heating with low air turbulence (e. g. powder or film) or **air circulating** for fast drying and heating
- Outlet connection 230 V, 50 Hz

**Technical specifications:**

| Type | OGS60/ OGH60 | OGS100/ OGH100 | OGS180/ OGH180 | OMS60/ OMH60 | OMS100/ OMH100 | OMS180/ OMH180 |
|---|---|---|---|---|---|---|
| Capacity (l) | 65/61 | 105/99 | 176/168 | 66/62 | 104/97 | 179/170 |
| **Inner dimensions (mm)** | | | | | | |
| Width | 328 | 438 | 438 | 354 | 464 | 464 |
| Height | 480 | 580 | 680 | 508 | 608 | 708 |
| Depth | 415/389 | 414/389 | 589/564 | 368/343 | 368/343 | 543/518 |
| **Outer dimensions[1] (mm)** | | | | | | |
| Width | 530 | 640 | 640 | 530 | 640 | 640 |
| Height | 720 | 820 | 920 | 720 | 820 | 920 |
| Depth | 565 | 565 | 738 | 565 | 565 | 738 |
| **Removable inserts** | | | | | | |
| **Delivery incl.** | 2 | | | | | |
| Max. capacity | 13 | 16 | 19 | 13 | 16 | 19 |
| **Other** | | | | | | |
| Rated power (W) | 1800 | 3100 | 3100 | 1400 | 3060 | 3060 |
| Weight (kg) | 42/44 | 53/55 | 66/69 | 42/44 | 53/55 | 66/69 |
| **Temperature deviation at 150 °C** | | | | | | |
| temporal (°C) | ±0.4/ ±0.3 | ±0.4/ ±0.3 | ±0.4/ ±0.3 | ±0.3/ ±0.2 | ±0.3/ ±0.2 | ±0.3/ ±0.2 |
| spatial (°C) | ±4.4/ ±2.5 | ±4.0/ ±3.0 | ±4.0/ ±2.5 | ±2.8/ ±1.8 | ±2.5/ ±1.3 | ±2.8/ ±1.8 |

[1] Depth of handle and display (65 mm) not included; adjustable feet (35 mm) not included in height.

**Delivery incl**. 2 removable inserts.

**Drying cabinets Heratherm General Protocol:**
- Integrated timer (1 min up to 99 h, 59 min)
- Actual temperature display
- Models with air-circulation fan: air turbine cannot be set or switched off

**General Protocol with natural convection**

| Type | Volume (l) | Temperature range up to °C | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| OGS60 | 65 | 250 | **PL56.1** * | 1 | 1068,00 |
| OGS100 | 105 | 250 | **PL57.1** * | 1 | 1573,00 |
| OGS180 | 176 | 250 | **PL58.1** * | 1 | 2134,00 |

**General Protocol with air-circulating fan**

| Type | Volume (l) | Temperature range up to °C | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| OMS60 | 66 | 250 | **PL59.1** * | 1 | 1405,00 |
| OMS100 | 104 | 250 | **PL60.1** * | 1 | 1964,00 |
| OMS180 | 179 | 250 | **PL61.1** * | 1 | 2686,00 |

**Drying cabinets Heratherm Advanced Protocol**
- Switch on/off after a pre-set time
- Weekly setting or real-time control
- Programmable control for temperature increase interval times (memory for 10 programs each with 10 individual steps)
- Bushing (∅ 19 mm) at the back enables sensor to be inserted, e.g. for independent data monitoring
- Housing varnished on outside
- Models with air-circulation fan: controllable fan speed for application-specific air flow rates (cannot be switched off completely)

**Advanced Protocol with natural convection**

| Type | Volume (l) | Temperature range up to °C | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| OGH60 | 61 | 330 | **PL62.1** * | 1 | 1629,00 |
| OGH100 | 99 | 330 | **PL63.1** * | 1 | 2124,00 |
| OGH180 | 168 | 330 | **PL64.1** * | 1 | 2686,00 |

**Advanced Protocol with air-circulating fan**

| Type | Volume (l) | Temperature range up to °C | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| OMH60 | 62 | 330 | **PL65.1** * | 1 | 2019,00 |
| OMH100 | 97 | 330 | **PL66.1** * | 1 | 2679,00 |
| OMH180 | 170 | 330 | **PL67.1** * | 1 | 3470,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Accessories for Heratherm drying cabinets

By Thermo.
Removable shelf kit: 1 shelf with 2 supports

| for type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| OGS60, OGH60 | **PL68.1** | 1 | 66,60 |
| OGS100, OGH100 | **PL69.1** | 1 | 89,00 |
| OGS180, OGH180 | **PL70.1** | 1 | 112,00 |
| OMS60, OMH60 | **PL71.1** | 1 | 66,60 |
| OMS100, OMH100 | **PL72.1** | 1 | 89,20 |
| OMS180, OMH180 | **PL73.1** | 1 | 112,00 |



## Universal heating and drying ovens, models ED, FD and FED

By Binder.

- **Operating temperature range from 15 °C and room temperature to 300 °C**
  Setting temperatures from 30 to 300 °C; Setting accuracy: ±1 °C
- Adjustable air renewal and rear exhaust ∅ 50 mm
- Models with volumes of 400 l or higher come with a double-panel door
- With integrated timer with range from 0 to 99 h
- **Power supply of models 23 to 260: 230 V, 50/60 Hz**
  **Power supply of models 400 and 720: 400 V, 50/60 Hz. 3 N ~**

Models ED/FD/FED 56, ED/FD/FED 115
and ED/FD/FED 260 also have: USB port for recording data

**Technical specifications:**

| Models | | ED 23/ FD 23 | ED 56/ FD 56/ FED 56 | ED 115/ FD 115/ FED 115 | ED 260/ FD 260/ FED 260 | ED 400/ FED 400 | ED 720/ FED 720 |
|---|---|---|---|---|---|---|---|
| Capacity (l) | ED<br>FD<br>FED | 20<br>20<br>- | 57<br>60<br>60 | 114<br>116<br>116 | 255<br>259<br>259 | 400<br>400<br>400 | 720<br>720<br>720 |
| **Inner dimensions (mm):** | | | | | | | |
| Width | ED<br>FD/FED | 222<br>222 | 360<br>400 | 510<br>550 | 610<br>650 | 1000<br>1000 | 1000<br>1000 |
| Height | ED<br>FD/FED | 330<br>330 | 420<br>440 | 530<br>550 | 760<br>780 | 800<br>800 | 1200<br>1200 |
| Depth | ED<br>FD<br>FED | 300<br>300<br>- | 380<br>345<br>345 | 425<br>385<br>385 | 550<br>515<br>515 | 520<br>-<br>500 | 620<br>-<br>600 |
| **Outer dimensions (mm):** | | | | | | | |
| Width | | 435 | 560 | 710 | 810 | 1235 | 1235 |
| Height | | 495 | 625 | 735 | 965 | 1025 | 1530 |
| Depth[1)] | ED<br>FD<br>FED | 620<br>605<br>- | 640<br>640<br>640 | 680<br>680<br>680 | 815<br>815<br>815 | 860<br>-<br>875 | 950<br>-<br>980 |
| **Grids, chrome plated** | | | | | | | |
| **Delivery incl.** | | 2 | 2 | 2 | 2 | 2 | 2 |
| Max. capacity | | 3 | 4 | 5 | 7 | 10 | 15 |
| **Other** | | | | | | | |
| Rated power (W) | ED<br>FD/FED | 800<br>800 | 1050<br>1100 | 1250<br>1300 | 2250<br>2300 | 3400<br>3400 | 5000<br>5000 |
| Power supply | | 230 V, 50/60 Hz | | | | 400 V, 3 N ~ | |
| Weight (kg) | ED<br>FD<br>FED | 22<br>33<br>- | 40<br>40<br>40 | 50<br>50<br>50 | 85<br>85<br>85 | 125<br>-<br>145 | 174<br>-<br>195 |
| **Temperature variance** | | | | | | | |
| temporal (°C) | ED<br>FD/FED | ±0.3<br>±0.3 | ±0.4<br>±0.3 | ±0.4<br>±0.3 | ±0.7<br>±0.3 | ±0.3<br>±0.3 | ±0.3<br>±0.3 |
| spatial (°C) | ED<br>FD<br>FED | ±2.5<br>±2.2<br>- | ±2.5<br>±1.7<br>±1.4 | ±2.0<br>±1.7<br>±1.2 | ±2.0<br>±1.5<br>±1.5 | ±3<br>-<br>±2.5 | ±2.8<br>-<br>±2 |

1) Incl. door handle and exhaust

**Delivery incl.** 2 grids, chrome plated.

**ED models**
**With natural air circulation (convection)**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ED 23 | **CKA5.1** * | 1 | 1335,15 |
| ED 56 | **CKA6.1** * | 1 | 1270,65 |
| ED 115 | **CKA7.1** * | 1 | 1873,75 |
| ED 260 | **CKA8.1** * | 1 | 3502,35 |
| ED 400 | **CKA9.1** * | 1 | 4535,45 |
| ED 720 | **CKC0.1** * | 1 | 6221,05 |

**Model FD**
**With forced air circulation (fan)**
Fan speed cannot be regulated or switched off

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| FD 23 | **CKC1.1** * | 1 | 1744,75 |
| FD 56 | **CKC2.1** * | 1 | 1678,10 |
| FD 115 | **CKC3.1** * | 1 | 2309,10 |
| FD 260 | **CKC4.1** * | 1 | 3822,70 |

**Model FED**
**With forced air circulation (fan)**
- Adjustable fan speed (min. speed 30 %)
- 1 programmable temperature ramp
- RS 422 port
- Timer function selection:
  - Heater is switched off when set time expires
  - The set timer does not start until the actual value reaches the selected set value. Heater is switched off when the set time expires.
  - Heater is switched on after set time expires and stays in continuous operation.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| FED 56 | **CKC5.1** * | 1 | 2255,35 |
| FED 115 | **CKC6.1** * | 1 | 3003,55 |
| FED 260 | **CKC7.1** * | 1 | 4382,80 |
| FED 400 | **CKC8.1** * | 1 | 5621,20 |
| FED 720 | **CKC9.1** * | 1 | 7534,70 |

* Longer delivery times possible. Please check with our Sales Department.

## Accessories for heating ovens and drying cabinets of models ED, FD and FED

By Binder.
**Grids, chrome plated**

| for type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ED 23, FD 23 | **CKE0.1** | 1 | 44,55 |
| ED 56 | **CKE1.1** | 1 | 71,20 |
| FD 56, FED 56 | **ECY1.1** | 1 | 71,20 |
| ED 115 | **CKE2.1** | 1 | 109,65 |
| FD 115, FED 115 | **ECY2.1** | 1 | 109,65 |
| ED 260 | **CKE3.1** | 1 | 205,35 |
| FD 260, FED 260 | **ECY3.1** | 1 | 205,35 |
| ED 400, FED 400 | **CKE4.1** | 1 | 226,85 |
| ED 720, FED 720 | **CKE5.1** | 1 | 247,25 |

# Drying and warming cabinets



## Heratherm high capacity drying cabinets

By Thermo.
**General features:**
- Free-standing units with fixed rollers
- Stainless steel interior
- RS 232 port
- Mains connection 230 V, 50 Hz

**Technical specifications:**

| Type | OGS400 | OGS750 | OMH400 | OMH750 |
|---|---|---|---|---|
| Capacity ( l) | 419 | 774 | 396 | 731 |
| **Inner dimensions (mm)** | | | | |
| Width | 544 | 1004 | 544 | 1004 |
| Height | 1307 | 1307 | 1335 | 1335 |
| Depth | 590 | 590 | 545 | 545 |
| **Outer dimensions[1] (mm)** | | | | |
| Width | 778 | 1261 | 778 | 1261 |
| Height | 1545 | 1545 | 1545 | 1545 |
| Depth | 770 | 770 | 770 | 770 |
| **Removable shelves** | | | | |
| **Delivery incl.** | 2 | | | |
| Max. capacity | 39 | | | |
| **Other** | | | | |
| Rated power (W) | 2400 | 3000 | 2400 | 3000 |
| Weight (kg) | 136 | 182 | 135 | 185 |
| **Temperature deviation at 150 °C** | | | | |
| temporal (°C) | ±0.5 | | ±0.3 | ±0.4 |
| spatial (°C) | ±3.0 | ±3.7 | ±2.1 | ±3.1 |

[1] not including depth of handle and display (65 mm) and height of rollers (108 mm); required clearance to rear panel 120 mm.

**Delivery incl.** 2 removable shelves.

**General Protocol:**
- **Operating temperature range from 10 °C above room temperature to 250 °C**
- With natural convection
- Integrated timer (1 min to 99 h, 59 min)
- Actual temperature display; setting accuracy ±1 K

| Type | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| OGS400 | 419 | **XH32.1** * | 1 | 3714,00 |
| OGS750 | 774 | **XH33.1** * | 1 | 5134,00 |

**Advanced Protocol:**
- **Operating temperature range from10 °C above room temperature to 250 °C**
- Setting accuracy ±1 K
- Mechanical convection - 2-stage fan: can run fast or slow, but cannot be switched off
- Cable feedthrough (∅ 19 mm), e.g. for fitting sensors
- An audible alarm sounds if the door is accidentally left open
- Switch on/off after a pre-set time
- Weekly setting or real-time control
- Programmable control for temperature ramps and dwell times (memory for 10 programs each with 10 individual steps)

| Type | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| OMH400 | 396 | **XH34.1** * | 1 | 4807,00 |
| OMH750 | 731 | **XH35.1** * | 1 | 6336,00 |

## Accessories for Heratherm high-capacity drying cabinets

By Thermo.
**Wire mesh shelf kit:** shelf with 2 supports.

| for type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| OGS400, OMH400 | **XH36.1** * | 1 | 180,00 |
| OGS750, OMH750 | **XH37.1** * | 1 | 218,00 |

* Longer delivery times possible. Please check with our Sales Department.







## LHT high-temperature laboratory ovens

By Carbolite Gero.

- For maximum temperatures of 400, 500 or 600 °C depending on unit type
- Only 10 minutes recovery time at 400 or 500 °C after the door has been open for 1 min
- Polished stainless steel inner chamber
- Rugged powder coated outer housing
- High-performance recirculating air fan in the inner chamber (non-regulable)
- Adjustable digital overtemperature protection
- PID thermostat with digital display (nominal/actual temperature display)

**Technical specifications:**

| Type | LHT 4/30 | LHT 5/30 | LHT 6/30 |
|---|---|---|---|
| Capacity (l) | 30 | | |
| Max. temperature (°C) | 400 | 500 | 600 |
| **Dimensions** | | | |
| Inner dimensions W x H x D (mm) | 300 x 300 x 305 | | |
| Outer dimensions W x D x H (mm) | 830 x 570 x 570 | | |
| **Removable shelves** | | | |
| Delivery incl. / max. capacity (pce.) | 2 / 2 | | |
| **Temperature variation** | | | |
| Temporal (°C) | ±0.5 | | |
| Spatial (°C) | ±5 | | |
| **Other** | | | |
| Heating rates up to max. temp. (min) | 50 | 50 | 70 |
| Power consumption (W) | 1000 | 2000 | 2000 |
| Weight (kg) | 73 | | |
| Power supply | 230 V, 50 Hz | | |

**Delivery incl.** 2 grid shelves.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| LHT 4/30 | **NP16.1** * | 1 | 7100,40 |
| LHT 5/30 | **NP17.1** * | 1 | 7735,70 |
| LHT 6/30 | **NP18.1** * | 1 | 8360,30 |

* Longer delivery times possible. Please check with our Sales Department.

## Economy laboratory furnaces ELF series

By Carbolite Gero. For temperatures up to 1100 °C.

- General-diffuse heating coils on both side walls
- Furnace chamber comprising vacuum formed fibre insulation
- With abrasion-resistant base plate
- Double-walled housing for low ambient temperatures
- Short heating-up times of approx. 35 min
- Exhaust vent (∅ 30 mm)
- Forward hinged door
- PID thermostat with digital display (nominal/actual temperature display)
- Input of a temperature control profile with 2 segments (heating rate and hold time) using the timer function
- Built-in timer function (runtime: 99 h and 59 min)
- The timer can be operated in 5 different modes, e.g. the timer waits until the set temperature is reached, then begins to count down and on expiration shuts off the heater.
- **Please pay attention to supply voltages**

**Technical specifications:**

| Type | ELF 11/6b | ELF 11/14b | ELF 11/23 |
|---|---|---|---|
| Capacity (l) | 6 | 14 | 23 |
| **Inner dimensions (mm)** | | | |
| Width | 180 | 220 | 255 |
| Height | 165 | 210 | 235 |
| Depth | 200 | 300 | 400 |
| **Outer dimensions (mm)** | | | |
| Width | 410 | 450 | 505 |
| Height | 580 | 630 | 715 |
| Depth | 420 | 520 | 660 |
| **Other** | | | |
| Power consumption (W) | 2000 | 3000 | 6100 |
| Weight (kg) | 20 | 31 | 52 |
| Power supply | 230 V, 1-phase, 50 Hz with safety plug 16 A fuse | | 230 V, 2-phase, 50 Hz with 16A CEE plug 16 A fuse per phase |

| Type | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ELF 11/6b | 6 | **HY65.1** * | 1 | 2408,00 |
| ELF 11/14b | 14 | **XK56.1** * | 1 | 2773,50 |
| ELF 11/23 | 23 | **XK57.1** * | 1 | 4260,25 |

* Longer delivery times possible. Please check with our Sales Department.

# Muffle furnaces






## AAF Series Economy muffle/ashing furnaces

By Carbolite Gero. For temperatures up to 1100 °C.

- Ceramic muffles heated from 4 sides for good temperature homogeneity (AAF 11/3 and AAF 11/7), AAF 11/18 model is heated from 2 sides with covered heating elements
- Parallel swing-up doors
- Hot door insulation is always facing away from the user
- Vacuum-formed fibre insulation
- Heating-up time: approx. 100 min
- Preheated air intake for optimal temperature distribution
- Air exchange rate: approx. 5 to 6 air changes per minute
- Exhaust outlet with vent (∅ 50 mm)
- With door contact switch
- PID thermostat with digital display (nominal/actual temperature display)
- Input of a temperature control profile with 2 segments (heating rate and hold time) using the timer function
- Built-in timer function (runtime: 99 h and 59 min)
- The timer can be operated in 5 different modes, e.g. the timer waits until the set temperature is reached, then begins to count down and on expiration shuts off the heater.
- **Please pay attention to supply voltages**

**Technical specifications:**

| Type | AAF 11/3 | AAF 11/7 | AAF 11/18 |
|---|---|---|---|
| Capacity (l) | 3 | 6.9 | 18.4 |
| **Inner dimensions (mm)** | | | |
| Width | 150 | 170 | 196 |
| Height | 90 | 90 | 235 |
| Depth | 250 | 455 | 400 |
| **Outer dimensions (mm)** | | | |
| Width | 375 | 430 | 505 |
| Height | 585 | 650 | 705 |
| Depth | 485 | 740 | 675 |
| **Other** | | | |
| Power consumption (kW) | 2.1 | 3.9 | 7.25 |
| Weight (kg) | 22 | 63 | 70 |
| Power supply | 230 V, 1-phase, 50 Hz with safety plug 16 A fuse | 230 V, 2-phase, 50 Hz with 16A CEE plug 16 A fuse per phase | 230 V, 3-phase, 50 Hz with 16A CEE plug 16 A fuse per phase |

**Delivery incl.** Inconel bottom trays with handle (AAF11/3 and AAF11/7) or Inconel rack with handle for loading with samples on two levels (AAF11/18).

| Type | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| AAF 11/3 | 3 | **HY89.1** * | 1 | 3338,95 |
| AAF 11/7 | 6,9 | **XK54.1** * | 1 | 4635,40 |
| AAF 11/18 | 18,4 | **XK55.1** * | 1 | 6069,45 |

* Longer delivery times possible. Please check with our Sales Department.

## Muffle furnace Heraeus® M 104 Comfort

By Thermo. Suitable for calcining, incinerating, baking, preheating and drying analytic samples. Load matrerial through the revolving door, which can also be used for holding the material.
The hot inner side is always away from the user.

**Additional features**

- Temperature select limiter
- Low temperatures of external furnace walls (<60 °C)
- High-quality, asbestos-free insulation material
- **Electronic control with digital display (variance temperature display)**
- **24-hour timer**
- Annealing chamber manufactured from robust, abrasion-proof ceramics

**Technical specifications:**

| | |
|---|---|
| Nominal temperature | 1000 °C |
| Working space volume | 3.5 l |
| Working space dim. (W x H x D) | 170 x 130 x 160 mm |
| Outer dimensions (W x H x D) | 456 x 646 x 570 mm |
| Weight | 51 kg |
| Power input | 2500 W |
| Current | 230 V, 56/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X640.1** * | 1 | 4817,00 |

* Longer delivery times possible. Please check with our Sales Department.


▶ For drying and circulating cabinets that can reach max. 300 °C, see page 979

▶ Vacuum pumps for humid gases see page 358

# Vacuum drying cabinets




## Vacuum drying cabinet Heraeus® VT-series

By Thermo. Fields of application: pharmaceutics, biochemistry, cosmetics industry and electronics. Ideal for gentle, rapid drying and for thermal treatment of temperature-sensitive or easily decomposable substances and electronic components. Vacuum drying eliminates any danger of contamination of sensitive samples through floating particles and the risk of oxidation is lower.

**General features of all models:**

- **Working temperature of 15 °C above room temperature to +200 °C**
- Max. physical temperature tolerance ±4 °C (at 200 °C)
- Analogue pressure display
- **Attainable end vacuum: 0.01 mbar**
- Inner trays are made of corrosion-proof, electropolished stainless steel (1.4571)
- Double-plated safety glass in door window
- Microprocessor-controlled temperature regulator
- Digital temperature display
- Jacket heating
- Temperature control limiter (protection class 2 in acc. with DIN 12880)
- In-house vacuum or a vacuum pump is required for operation. Please order vacuum connection set separately.

**VT 6025 comfort**
Inert gas connection (AD ∅ 4 mm) with precision valve and pressure relief valve for precise discharge of non-flammable, non-toxic gases (VDI 20465).

**Technical specifications:**

| | |
|---|---|
| Effective space volume | 25 l |
| Outer dimensions (W x D x H) | 480 x 450 x 600 mm |
| Inner dimensions (W x D x H) | 300 x 307 x 275 mm |
| Trays: standard / max. number | 2 / 4 |
| Nominal output | 1.3 kW |
| Tube shaft for vacuum connection | ∅ 20 mm |
| Weight | 58 kg |
| Power supply | 230 V, 50/60 Hz |

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| VT 6025 | without inert gas connection | **Y718.1** | 1 | 4930,00 |
| VT 6025 comfort | with inert gas connection | **ATN9.1** | 1 | 5614,00 |

## Accessories for Heraeus® VT-series

By Thermo.

**Spare tray**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y719.1** | 1 | 152,00 |

**Vacuum connection set**
For connection to vacuum pump, tube ID 10 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y720.1** * | 1 | 211,00 |

* Longer delivery times possible. Please check with our Sales Department.




NEU
NOUVEAU
NEW

## Tube furnace MTF series

By Carbolite Gero.
For the heat treatment of small amounts of samples. Directly wound resistance wire heating system on a ceramic supporting tube.

- Horizontal configuration; control is located directly below the furnace
- PID temperature controller with digital display
- Input of a temperature control profile with 2 segments (heating rate and hold time) using the timer function
- Built-in timer function (runtime: 99 h and 59 min)
- The timer can be operated in 5 different modes, e.g. the timer waits until the set temperature is reached, then begins to count down and, on expirary, shuts off the heater.

**Technical specifications:**

| Type | MTF 12/25/250 | MTF 12/25/400 | MTF 12/38/250 | MTF 12/38/400 |
|---|---|---|---|---|
| Maximal temperature (°C) | 1200 | | | |
| Permanent operating temperature (°C) | 1100 | | | |
| Tube inner ∅ (mm) | 25 | | 38 | |
| Heated length (mm) | 250 | 400 | 250 | 400 |
| Heat-up time (min) | 15 | 25 | 25 | 25 |
| Outside dimensions H x W x D (mm) | 375 x 370 x 375 | | 430 x 450 x 375 | |
| Length of furnace housing (mm) | 300 | 450 | 300 | 450 |
| Max. power (W) | 700 | 1000 | 1000 | 1500 |
| Weight (kg) | 10 | 15 | 15 | 17 |
| Power supply | 230 V, single-phase, 50 Hz with shock-proof plug | | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MTF 12/25/250 | **HEX9.1** * | 1 | 3298,10 |
| MTF 12/25/400 | **HEY0.1** * | 1 | 3653,95 |
| MTF 12/38/250 | **HEY1.1** * | 1 | 3481,95 |
| MTF 12/38/400 | **HEY2.1** * | 1 | 3986,10 |

* Longer delivery times posiible. Please check with our Sales Department.

# Heating leads





## Electric barrel heaters WODL-series

By Winkler. Ideal for heating and reducing the viscosity of solids and liquids in barrels and canisters allowing them to be filled into smaller containers or pumped more easily.

**Features:**

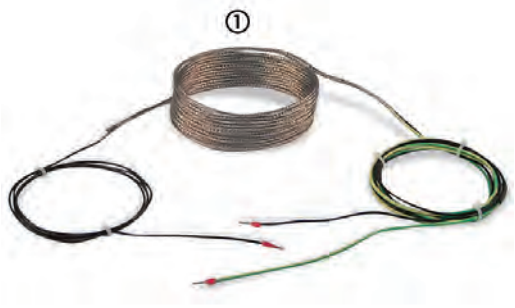
- Direct heating at place of installation
- Outside casing made of siliconised glass cloth
- Simple attachment via tension belt with adjustable snap lock
- Temperature range: room temp. max 70 °C
- Infinitely adjustable temperature setting (Scale in 10 °C-steps)
- 3 m connecting cable
- Voltage 230, 50/60 Hz

**Technical specifications:**

| **Model** | Container | Output (W) | Dimensions W x L (mm) | Heated length (mm) |
|---|---|---|---|---|
| **WODL-30** | Canister 30 l | 75 | 200 x 1020 | 900 |
| **WODL-60** | Canister 60 l | 150 | 300 x 1250 | 1200 |
| **WODL-120** | Canister 120 l | 250 | 400 x 1650 | 1500 |
| **WODL-220** | Barrels 200-220 l | 375 | 500 x 1950 | 1800 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| WODL-30 | **LK10.1** * | 1 | 600,95 |
| WODL-60 | **LK11.1** * | 1 | 600,95 |
| WODL-120 | **LK12.1** * | 1 | 675,10 |
| WODL-220 | **LK13.1** * | 1 | 708,45 |

* Longer delivery times possible. Please check with our Sales Department.




## Laboratory heating cords HSS-series

With braided resistance wires. Ideal for temperatures **to max. 450 °C.** High flexibility enables cord to be used for extremely close coiling radius (<15 mm). **Not moisture proof.**

- Connector cable: 1.5 m
- Min. bending radius: 6 mm
- ∅: 3.5 to 4.5 mm
- No shockproof plug, please order separately

**For control system, see accessories for heating leads.**

| Model | Length (m) | Power (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| I | 0,6 | 75 | **C996.1** | 1 | 72,60 |
| II | 1 | 100 | **C997.1** | 1 | 79,05 |
| III | 2 | 250 | **C998.1** | 1 | 102,15 |
| IV | 3 | 350 | **C999.1** | 1 | 118,25 |
| V | 4 | 500 | **E001.1** | 1 | 134,40 |
| VI | 5 | 600 | **E002.1** | 1 | 155,90 |

## ① Laboratory heating cables HST-series

Ideal for **temperatures to max. 250 °C. Moisture-proof.**
With braided resistance wires. High tensile strength. Pliant and flexible.

- Connector cable: 1.5 m
- Min. bending radius: 10 mm
- ∅: 2.5 to 3.5 mm
- No shockproof plug, please order separately

**For control system, see accessories for heating leads.**

| Model | Length (m) | Power (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| I | 1,1 | 30 | **C993.1** | 1 | 77,40 |
| II | 2 | 50 | **C994.1** | 1 | 84,95 |
| III | 4 | 100 | **C995.1** | 1 | 105,35 |

## Installation set

For assembling a shockproof plug to heating cords or cables.
Set consists of shockproof plug and a silicone tube.
Silicone tube: Length 1.5 m, ∅ 8 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E059.1** | 1 | 24,65 |

## Glass fabric tape

With silicone adhesive. To attach heating leads. Adhesive to +200 °C.
Dimensions width 15 mm, length 50 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E060.1** | 1 | 84,40 |

## Glass fiber tape

Ideal for bending and wrapping heating leads and temperature sensors.
Suitable to max. +450 °C.
Dimensions: 0.16 mm thick, width 25 mm, length 50 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E061.1** | 1 | 33,80 |

▶ Temperature control unit for heating leads see page 987







## Laboratory heating tapes HBSI/HBS-series

**Technical specifications:**

| Type | ① HBSI | ② HBS |
|---|---|---|
| Nominal temperature | 200 °C | 450 °C |
| Mains connection: | 1.5 m | 0.5 m |
| Min. bending radius | 20 mm | 10 mm |
| Dimensions (thickness x width) | 5 x 24 mm | 5 x 30 mm |

**For control system, see accessories for heating leads.**

① **HBSI-heating tape**

Ideal for **temperatures to max. 200 °C. Moisture-proof.** With braided resistance wires. Flexible, hard-wearing and grounded. Protective grounding on each individual lead. Covered in a silicone sheath for extra protection against environment influence or mechanical damage. PTFE insulation also protects heating conductor from chemical influence. **Delivery incl.** shockproof plug.

| Model | Length (m) | Power (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| I | 1 | 100 | **E003.1** | 1 | 156,95 |
| II | 2 | 200 | **E004.1** | 1 | 188,15 |
| III | 3 | 300 | **E005.1** | 1 | 232,20 |
| IV | 4 | 400 | **E006.1** | 1 | 287,05 |
| V | 5 | 500 | **E007.1** | 1 | 349,40 |

② **HBS-heating tape**

Ideal for temperatures **to max. 450 °C.** Due to high working temperature, it is **not moisture-proof**. With braided resistance wires. Pliant, highly flexible and earthed. **Delivery incl.** shockproof plug.

| Model | Length (m) | Power (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| I | 0,5 | 100 | **C988.1** | 1 | 112,90 |
| II | 1 | 250 | **C989.1** | 1 | 121,50 |
| III | 2 | 500 | **C990.1** | 1 | 148,35 |
| IV | 3 | 750 | **C991.1** | 1 | 198,90 |
| V | 5 | 1250 | **C992.1** | 1 | 285,95 |

▶ Socket strips, see page 882
▶ Thermometers from page 781

## Temperature control unit HT 30

**Accessories for heating leads and heating tapes**

Multi-purpose use. With 220 V socket. Capacity 2200 W. With electronic power output to 10 A. The unit enables controlled and gentle heating of heating lines/heating mantles. Electronic power disc allows connected nominal capacity to be reduced from 100 % to 0 % or to be adjusted to individual needs. Adjustment of digital desired value for exact setting of required temperature **(control and operation process possible only via separate Pt 100 sensor)**. The actual temperature can read off an LED trend display or an optional actual temperature display (please order separately).

**Technical specifications:**

| | |
|---|---|
| Switching capacity at 220 V | 2300 W |
| Accuracy | 1 % |
| Gain control | 0.5 % to 5 % |
| Protection class | I |
| System of protection | IP 30 |
| Mains cable | 1.5 m (detachable), with shock proof plug on the backside |
| Dimensions of enclosure | 75 x 115 x 145 mm |

**Delivery without** temperature sensor, please order seperately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E047.1** | 1 | 548,25 |

## Temperature sensor Pt 100 for thermostat HT 30

Sheath made of stainless steel 1.4571.

**For regulating heating cords and heating tape**

With cable (L 1 m) and connector.

| Temp. range | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 250 °C | 30 | 3 | **E048.1** | 1 | 107,00 |
| 500 °C | 50 | 4 | **E049.1** | 1 | 127,95 |

**For regulating heating mantles**

With cable (L 1.5 m), handle and connector.

| Temp. range | Length (mm) | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 450 °C | 160 | 3 | **AEP8.1** | 1 | 155,90 |
| 450 °C | 250 | 3 | **AEP9.1** | 1 | 170,95 |
| 450 °C | 500 | 3 | **AET0.1** | 1 | 177,40 |

## ① Actual temperature display for thermostat HT 30

For digital display of the actual temperature of the optional temperature sensor. Display resolution 1 °C.
Dimensions: L 60 x W 80 x D 20 mm. Length of power cord 1 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHC8.1** | 1 | 168,80 |

# Heating mantles







## Pilz®-standard heating mantles WHG series

By Winkler. For working temperatures up to 450 °C.

- Heating element made of highly flexible glass fiber yarn for even heat distribution and gentle treatment of round flasks
- With heating zone switch
- **Up to 1000 ml with the built-in heating zone switch in the feed cable, from 2000 ml heating zone switch in housing**
- Heating mantles 500 to 20000 ml: Bottom operning ∅ 60 mm
- Attachment to support rings or tripod stands with clasps
- Length of power cable: 1.5 m
- **With protective switch**
- Power supply voltage: 230 V, 50/60 Hz

**① Model WHG2 - For working temperatures up to 450 °C**

| for flask vol. (ml) | Heating zones | Power (W) | Flask ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 25 | 1 | 40 | 41 | **KH06.1** | 1 | 338,65 |
| 50 | 1 | 70 | 51 | **KH07.1** | 1 | 345,10 |
| 100 | 2 | 110 | 64 | **KH08.1** | 1 | 348,30 |
| 250 | 2 | 200 | 85 | **KH09.1** | 1 | 355,85 |
| 500 | 2 | 300 | 105 | **KH10.1** | 1 | 371,95 |
| 1000 | 2 | 450 | 131 | **KH11.1** | 1 | 434,30 |
| 2000 | 2 | 700 | 166 | **KH12.1** | 1 | 646,10 |
| 3000 | 2 | 800 | 185 | **KH13.1** | 1 | 718,10 |
| 4000 | 2 | 1000 | 207 | **KH14.1** | 1 | 755,75 |
| 5000 | 2 | 1200 | 223 | **KH15.1** | 1 | 887,95 |
| 6000 | 2 | 1400 | 236 | **KH16.1** | 1 | 906,25 |
| 10000 | 2 | 2000 | 279 | **KH17.1** | 1 | 1186,80 |
| 20000 | 2 | 2800 | 345 | **KH18.1** | 1 | 1643,70 |

**② Model WHG4R - For working temperatures up to 450 °C, however with increased heating output and 4 heating zones**

| for flask vol. (ml) | Heating zones | Power (W) | Flask ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 4000 | 4 | 1000 | 207 | **KH25.1** | 1 | 1109,40 |
| 6000 | 4 | 1400 | 236 | **KH26.1** | 1 | 1220,15 |
| 10000 | 4 | 2000 | 279 | **KH27.1** | 1 | 1523,30 |
| 20000 | 4 | 2800 | 345 | **KH28.1** | 1 | 1952,20 |

## Tripod stand for standard heating mantles

① Made of stainless steel. For supporting standard heating mantles, Models WHG2, WHG2R and WHG4R.

| Heating mantle (ml) | Ring-∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 100 | 110 | **KH29.1** | 1 | 135,45 |
| 250 | 140 | **KH30.1** | 1 | 135,45 |
| 500 | 160 | **KH31.1** | 1 | 135,45 |
| 1000 | 188 | **KH32.1** | 1 | 135,45 |
| 2000 | 222 | **KH33.1** | 1 | 135,45 |
| 3000 | 238 | **KH34.1** | 1 | 164,50 |
| 4000 | 261 | **KH35.1** | 1 | 166,65 |
| 5000 | 277 | **KH36.1** | 1 | 181,70 |
| 6000 | 291 | **KH37.1** | 1 | 203,20 |
| 10000 | 334 | **KH38.1** | 1 | 278,45 |
| 20000 | 410 | **KH39.1** | 1 | 327,90 |

## Support rings for standard heating mantles

② Made of stainless steel. For supporting standard heating mantles Models WHG2, WHG2R and WHG4R in tripods.

| Heating mantle (ml) | Ring-∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 25 | 90 | **KH40.1** | 1 | 53,75 |
| 50 | 90 | **KH41.1** | 1 | 54,30 |
| 100 | 110 | **KH42.1** | 1 | 55,90 |
| 250 | 140 | **KH43.1** | 1 | 57,00 |
| 500 | 160 | **KH44.1** | 1 | 58,05 |
| 1000 | 188 | **KH45.1** | 1 | 60,20 |
| 2000 | 222 | **KH46.1** | 1 | 63,45 |
| 3000 | 238 | **KH47.1** | 1 | 84,95 |
| 4000 | 261 | **KH48.1** | 1 | 89,25 |

## Shockproof plug with multi-pole coupling

③ For heating mantles in the WHG and WHLG series

Doesn‘t have residual current circuit breaker function. Use when the operator network incorporates a residual current circuit breaker system. Cable length 1.0 m. Voltage 230 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PP37.1** | 1 | 18,85 |

**Please note:**
Older heating mantles may only be operated with a residual current circuit breaker (FI).

# Heating mantles







## Pilz®-heating mantles WHLG series

By Winkler. For working temperatures up to 450 °C.

- Heating element made of highly flexible glass fiber yarn for even heat distribution and gentle treatment of round flasks
- Plastic coated metal housing
- **Model WHLSG2/ER - With spill-proof heating basin made of metal for catching any spilt liquids should the glass vessel break**
- With integrated fitting for connection of stand clamps. Please order stand clamps separately.
- Length of power cable: 1.5 m
- **With protective plug**
- Power supply voltage: 230 V, 50/60 Hz

**① Model WHLG2 - With built-in heating zone switch**

| for flask vol. (ml) | Heating zones | Power (W) | Dimensions ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 1 | 50 | 160 x 180 | **KE87.1** | 1 | 294,55 |
| 100 | 1 | 100 | 160 x 180 | **KE88.1** | 1 | 299,95 |
| 250 | 2 | 150 | 160 x 180 | **KE89.1** | 1 | 306,40 |
| 500 | 2 | 200 | 210 x 190 | **KE90.1** | 1 | 331,10 |
| 1000 | 2 | 300 | 210 x 190 | **KE91.1** | 1 | 371,95 |
| 2000 | 2 | 500 | 280 x 220 | **KE92.1** | 1 | 421,40 |
| 3000 | 2 | 600 | 280 x 220 | **KE93.1** | 1 | 450,45 |

**② Model WHLG2/ER - With power controller for infinitely variable adjustment from 0 to 100 %**

| for flask vol. (ml) | Heating zones | Power (W) | Dimensions ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 1 | 50 | 160 x 180 | **KE94.1** | 1 | 360,15 |
| 100 | 1 | 100 | 160 x 180 | **KE95.1** | 1 | 363,35 |
| 250 | 2 | 150 | 160 x 180 | **KE96.1** | 1 | 376,25 |
| 500 | 2 | 200 | 210 x 190 | **KE97.1** | 1 | 406,35 |
| 1000 | 2 | 300 | 210 x 190 | **KE98.1** | 1 | 445,05 |
| 2000 | 2 | 500 | 280 x 220 | **KE99.1** | 1 | 518,15 |
| 3000 | 2 | 600 | 280 x 220 | **KH00.1** | 1 | 545,05 |

**③ Model WHLSG2/ER - With spill-proof heating basin made of metal and power controller for infinitely variable adjustment from 0 to 100 %**

| for flask vol. (ml) | Heating zones | Power (W) | Dimensions ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 250 | 2 | 120 | 160 x 180 | **KH01.1** | 1 | 521,40 |
| 500 | 2 | 200 | 210 x 190 | **KH02.1** | 1 | 542,90 |
| 1000 | 2 | 300 | 210 x 190 | **KH03.1** | 1 | 557,95 |
| 2000 | 2 | 500 | 280 x 220 | **KH04.1** | 1 | 606,30 |

## Accessories for Pilz®-heating mantles

By Winkler.

**Stand clamps**

For attaching heating mantles, Models WHLG2, WHLG2/ER and WHLSG2/ER in tripods. For max. ∅ 13 mm support rods.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KH05.1** | 1 | 30,75 |

## Heating mantles ITA-series

- Max. heating temperature range up to 450 °C
- Heating element protected against escape of fluid
- Infinitely variable temperature control via dial with 10-step scale
- "Chimney effect" for cool housing outer walls
- LED power indicator during operation
- Housing surface made of ABS
- Version with electro-magnetic stirring function available
- Dimensions: W 192 x D 290 x H 131 mm
- Power supply voltage: 230 V, 50 Hz

**① Standard model**

| for flask vol. (ml) | Flask ∅ (mm) | Power (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 64 | 150 | **HCK2.1** | 1 | 481,60 |
| 250 | 85 | 200 | **HCK3.1** | 1 | 502,05 |
| 500 | 105 | 300 | **HCK4.1** | 1 | 524,60 |
| 1000 | 131 | 400 | **HCK5.1** | 1 | 531,05 |

**② Design with magnetic stirrer**

Speed range 200 to 800 rpm.

| for flask vol. (ml) | Flask ∅ (mm) | Power (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 64 | 150 | **HCK6.1** | 1 | 861,10 |
| 250 | 85 | 200 | **HCK7.1** | 1 | 880,45 |
| 500 | 105 | 300 | **HCK8.1** | 1 | 903,00 |
| 1000 | 131 | 400 | **HCK9.1** | 1 | 922,35 |

# Melting point measuring unit




## Pilz®-heating mantles, model WHU2ER

By Winkler. For operating temperature up to 450 °C.

- Heating element made of highly flexible glass fibre yarn for even heat distribution and gentle treatment of round flasks
- **With power controller for continuously variable adjustment from 0 to 100 %**
- Plastic coated metal housing
- With integrated fitting for connecting a stand clamp Please order stand clamp separately
- **With protective plug with FI function** (length of cable 1 m)
- Power supply voltage: 230 V, 50/60 Hz

| for flask vol. (ml) | Heating zones | Power (W) | Dimensions ∅ x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 4000 | 2 | 700 | 288 x 166 | **NP32.1** * | 1 | 750,35 |
| 5000 | 2 | 860 | 318 x 166 | **NP33.1** * | 1 | 858,95 |
| 6000 | 2 | 1000 | 318 x 166 | **NP34.1** * | 1 | 897,65 |
| 10 000 | 2 | 1400 | 368 x 194 | **NP35.1** * | 1 | 1009,45 |
| 20 000 | 2 | 2400 | 438 x 234 | **NP36.1** * | 1 | 1353,45 |

## Accessories for model WHU2ER

By Winkler.

**Stand clamp STK 1**

Made of cast aluminium. For attaching the heating mantles to stands. For stand rods up to ∅ 13 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NP37.1** * | 1 | 27,95 |

* Longer delivery times possible. Please check with our Sales Department.




## CFS battery capillary filling device

To quickly and safely fill melting-point determination capillaries. Suitable for capillaries with a diameter of 1 to 1.5 mm and a length of 60 to 100 mm.

- Lengthy stoking and tapping are no longer required, the capillaries are cleanly and repeatedly filled to the bottom
- No direct contact with dangerous substances
- Clear housing protects against glass breakage

**Usage:**
The capillaries are carefully inserted into the filling funnel until their open side matches the lowest point of the funnel. Insert the funnel containing the capillaries into the unit. By turning the funnel guide, the height is adjusted until the capillaries touch the bottom and the funnel overlaps the guide by a few millimetres (see figure). The funnel is filled with a spatula tip's worth of the sample, and the unit switches on. The capillaries are filled using powerful vibrations. The unit switches off automatically after 10 seconds. The filling process can be repeated as often as required.

**Note:** The samples must be dry and finely powdered.
Unit dimensions: ∅ 80 x height 140 mm.
**Delivery incl.** AC-adapter.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YT60.1** | 1 | 304,25 |



NEU
NOUVEAU
NEW

## MPM-series melting point measuring units

For measuring the melting point of pulverulent substances in glass capillaries.

**Equipment features of all models:**

- Digital temperature control
- Indirect, non-glare and anti-dazzle illumination of the substance during visual measurement using the magnifier
- Height-adjustable table tripod (360 to 460 mm)
- With USB interface
- Software makes it possible to create a measurement log in PDF format (incl. diagram with transparency progression for the MPM-HV 3 model)

**MPM-HV 3 semi-automatic/fully automatic multi-function unit**
**For testing one sample.**
Choice of two measuring procedures (visual or automatic).
Fully automatic measurement: Set the required temperature (approx. 3 °C below the expected melting point).
Once the preselected temperature is reached, a filled capillary is inserted.

**MPM-H 3 semi-automatic unit**
**For testing a maximum of three samples at the same time.**
Semi-automatic melting point measuring unit. Once the preselected temperature is reached, a filled capillary is inserted and a visual inspection of the capillary is performed using the magnifier. After the "Start" button is pressed again, the unit continues to heat up at a rate of 1 °C/min.
As soon as the sample has melted, the value can be read on the display.

**Technical specifications:**

| | |
|---|---|
| Measurement range | 25.0 to 360.0 °C |
| Resolution | 0.1 °C |
| Accuracy | ±0.4 °C |
| Heat-up rate during quick heating | To 200 °C – approx. 4 min<br>to 350 °C – approx. 8 min |
| Heat-up rate during measuring | 1 °C/min |
| Magnifier | 3-way |
| Dimensions (W x D x H) | 230 x 65 x 260 mm |
| Weight | Unit 4 kg, tripod 2.8 kg |
| Power supply | 115-230 V, 50 Hz |

**Delivery incl.** required melting point measuring unit and 100 melting point tubes, USB cable, software and protective cover.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MPM-HV 3 | **HCE4.1** | 1 | 1591,00 |
| MPM-H 3 | **HCE5.1** | 1 | 1408,25 |

**Accessories:**

| | | | |
|---|---|---|---|
| Melting point tubes, open at one side.<br>External ∅ 1.45 mm, internal ∅ 1.0 mm, L 80 mm | **HCE6.1** | 100 | 9,15 |



## Microscope slide drying bench MH6616

By Electrothermal. For faster preparation of microscope slides.
For up to 50 microscope slides (76 x 26 mm). Suitable for temperatures ranging from 10 °C **above** room temperature to 100 °C.

Microscope slides can be placed in various positions:
- On the drying bars
- Leaning against the drying bars
- Placed flat without the drying bars

**Technical specifications:**

| | |
|---|---|
| Heating output | 150 W |
| Max. hot plate temperature | 100 °C |
| Dimensions (W x D x H) | 390 x 180 x 95 mm |
| Heating output | 150 W |
| Weight | 1.8 kg |
| Power supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YL72.1** | 1 | 645,00 |



## Tissue flotation bath MH8517

By Electrothermal. For flotation and drying of sectioned tissue samples. Suitable for use in pathological, histological, chemical and bacteriological laboratories.

- Matt black PTFE coating on aluminium vessel allows observation and manipulation of specimens
- With wide edge for placement and drying of sections
- A temperature of 45 °C is reached in approx. 40 min
- With over-temperature cut-out
- A bath lid is available to protect water against contamination. Please order separately

**Technical specifications:**

| | |
|---|---|
| Capacity | 2.25 l |
| Temperature range | from 10 °C **above** room temperature to 70 °C (temperature adjustment range from 30 to 80 °C) |
| Accuracy | ±0.5 °C |
| Inner dimensions (∅ x H) | 220 x 80 mm |
| Outer dimensions (∅ x H) | 330 x 140 mm |
| Output | 240 W |
| Weight | 2.7 kg |
| Power supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YL70.1** | 1 | 750,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Bath lid for tissue flotation bath MH8517 | **YL71.1** | 1 | 115,00 |



## Paraffin wax dispenser MH8523B

By Electrothermal. Suitable for paraffin waxes with melting points from 45 to 65 °C. Wax is dispensed through the heated, non-drip tap; suitable for direct pouring into moulds or frames. Infinitely variable temperature control and separate drain tap temperature control with interchangeable filter. Aluminium housing with matt black aluminium lid, with matt black PTFE lining.

**Technical specifications:**

| | |
|---|---|
| Filling capacity | 4.5 l |
| Temperature range | 5 °C **above** room temperature up to 75 °C |
| Accuracy | ±1.5 °C |
| Inner dimensions (H x ∅) | 150 x 200 mm |
| Outer dimensions (H x ∅) | 280 x 300 mm |
| Heating output | 185 W |
| Weight | 4.5 kg |
| Power supply | 230 V, 50/60 Hz |

* Plus 100 mm for drain tap

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YL68.1** * | 1 | 2595,00 |

* These products may be subject to delivery times. Please consult our sales department.

# Heating equipment



## Electric sand baths model ST 72 and ST 82

With variable temperature adjustment. Temperature range 50 to 300 °C. Very sturdy model for continuous operation. Hotplates made of aluminium alloy with screwed on and sealed high-grade steel frame, working height 50 mm. Even heat distribution. Housing made of high-grade steel. 1.7 m power cable.

**Technical specifications:**

| Model | ST 72 | ST 82 |
|---|---|---|
| Output (W) | 2200 | 2850 |
| Dimensions W x D x H (mm) | 360 x 360 x 220 | 360 x 510 x 220 |
| Weight (g) | 1400 | 2100 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ST 72 | **L165.1** * | 1 | 1220,15 |
| ST 82 | **L166.1** * | 1 | 1431,90 |

* Longer delivery times possible. Please check with our Sales Department.



## Hotplates

With variably adjustable temperature setting. Control lamp. Lower part with high heat-resistance coating.

Two models available:
- Upper part enamelled white
- Upper part brushed stainless steel

**Technical specifications:**

| Type | Hotplates, single | Twin hotplate |
|---|---|---|
| Output | 1500 W | 1500 W / 1000 W |
| ∅ Heating ring | 180 mm | 180 / 150 mm |
| Dimensions (W x D x H) Upper part enamelled white | 250 x 290 x 85 mm | 500 x 290 x 85 mm |
| Dimensions (W x D x H) Upper part brushed stainless steel | 262 x 285 x 80 mm | 460 x 290 x 77 mm |

| Type | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Hotplates, single | Upper part enamelled white | **P853.1** | 1 | 42,95 |
| Hotplates, single | Upper part brushed stainless steel | **EC13.1** | 1 | 49,25 |
| Twin hotplate | Upper part enamelled white | **K705.1** | 1 | 49,35 |
| Twin hotplate | Upper part brushed stainless steel | **EC14.1** | 1 | 69,90 |



## High-speed incinerator model SVR/E

Max. 950 °C with infinitely variable temperature control. For single and series incineration - even of liquid substances. The upper level has 8 openings each with 34 mm ∅ and will hold a porcelain crucible of max. 50 mm ∅ for drying or preheating.
Upper part and housing made of high-grade steel.
Integrated 120-minute signal clock with switch for continuous operation.
Comes ready-to-use with 1.5 m cable and shockproof plug.

**Technical specifications:**

| | |
|---|---|
| Output | 2500 W |
| Dimensions | 450 x 310 x 180 mm |
| Weight | 7000 g |
| Voltage | 220 V |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L163.1** * | 1 | 1546,95 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare heating element | **L164.1** * | 1 | 335,40 |

* Longer delivery times possible. Please check with our Sales Department.



## CT 1810 ceramic glass heating plate

- With plastic housing
- Schott Ceran® cooking surface
- Stepless temperature regulation (power control from 7 to 100 %; scale with 12 stages)
- Overheating protection, residual heat indicators and pilot light

**Technical specifications:**

| | |
|---|---|
| Heating output | 1800 W |
| Max. hot plate temperature | 450 °C |
| Heated zone | ∅ 180 mm |
| Dimensions (W x D x H) | 400 x 300 x 80 mm |
| Weight | 2.4 kg |
| Electrical supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NA85.1** | 1 | 152,65 |

▶ Multi-sockets, see page 882



## Glass ceramic hotplate CT 2203/TC

- Housing made of brushed stainless steel
- Dual circuit heating technology
- Large heating zone can be switched on (∅ 210 mm)
- Schott Ceran® cooking surface
- With 9-stage heating power
- Heating element with extremely short warm-up time
- Control lamp, residual heat display
- Automatic operating time limitation (1 to 10 h depending on cooking temperature stage)

**Technical specifications:**

| | |
|---|---|
| Heating power | 1000 W (∅ 140 mm)<br>2200 W (∅ 210 mm) |
| Max hotplate temperature | 460 °C |
| Heated zone | ∅ 140 or ∅ 210 mm |
| Dimensions (W x D x H) | 305 x 410 x 75 mm |
| Weight | 3.2 kg |
| Power supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EY75.1** | 1 | 213,95 |



## Induction hotplate CT 2215/IN

A magnetic coil generates the heat directly in the bottom of the pot.
**Can only be used with induction-suitable pots.**

- Housing made of stainless steel
- Schott Ceran®-hotplate
- Temperature selection in 21 stages from 60 to 260 °C
- Power selection in 9 stages (70/130/180/270/350/500/820/1280/2200 W)
- Electronic regulation using touch controls
- Timer: 1 to 99 min
- Pot detector
- Automatic power-off and audio signal
- Residual heat and operation indicator

**Technical specifications:**

| | |
|---|---|
| Heating output | 2200 W |
| Temperature selection is stages from | 60 to 260 °C, adjustable in 10 °C increments |
| Heated zone | ∅ 80 to 200 mm |
| Dimensions (L x W x H) | 380 x 333 x 65 mm |
| Electrical supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NA86.1** | 1 | 203,20 |



## Twin hotplate CT 3400/E

- With brushed stainless steel housing and Ceran®-glass-ceramic cooktop
- Freely-adjustable energy control using retractable rotary knob
- Dual-circuit heating technology:
  1st heating zone: ∅ 145 mm
  2nd heating zone: selectable ∅ (140 or 210 mm)
- Warning lamps, residual heat indicator and overheating protection

**Technical specifications:**

| | |
|---|---|
| Heating capacity | ∅ 145 mm = 1200 W<br>∅ 140/210 mm = 2200 W |
| Max. hot plate temperature | 460 °C |
| Dimensions (W x D x H) | 550 x 310 x 65 mm |
| Weight | 3.7 kg |
| Power supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHK9.1** | 1 | 284,90 |



## Stainless steel pots

Made of high-grade 18/10 steel. With sandwich base and handles. Suitable for use on hot plates and induction hobs, not usable on magnetic stirrers. Suitable lids please order separately. Autoclavable.

| Volume (l) | ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2,5 | 160 | 130 | **EE93.1** | 1 | 24,30 |
| 3,5 | 200 | 110 | **EE94.1** | 1 | 31,10 |
| 4 | 200 | 150 | **EE95.1** | 1 | 33,90 |

## Lids

For stainless steel pans. Made of high-grade 18/10 steel. Welded handles.

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 160 | **EE98.1** | 1 | 8,55 |
| 200 | **EE99.1** | 1 | 11,65 |

# Hotplates



## REC digital hotplate

- Glass ceramic installation surface
- Digital display of hotplate nominal temperature (adjustable in 5 °C increments)
- Hot Top Indicator (hot surface warning)
- Elevated control panel for protection against leaking fluids

**Technical specifications:**

| | |
|---|---|
| Heating output | 800 W |
| Max. hot plate temperature | 25 to 550 °C |
| Control accuracy | ±10 K |
| Mounting surface | 180 x 180 mm |
| Dimensions (W x D x H) | 203 x 344 x 94 mm |
| Weight | 3.3 kg |
| Power supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACP8.1** | 1 | 301,00 |



## CultureTemp™ 37 °C cell culture hotplate

Housing made of PP, hotplate made of aluminium. Improves the viability of cells after removal from the incubator. With digital display and non-adjustable hotplate temperature of 37 °C. Acoustic timer adjustable from 1 to 15 min (has no effect on heater performance; no shutdown upon expiration of the timer). With LED for monitoring the heating function.

**Technical specifications:**

| | |
|---|---|
| Hotplate temperature | 37 °C (non-adjustable) |
| Temperature stability | ±1 °C |
| Timer | 1 to 15 min in 1-min increments |
| Set-up dimensions (W x D) | 203 x 178 mm |
| Dimensions (W x D x H) | 249 x 254 x 57 mm |
| Weight | 1.1 kg |
| Power supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHC7.1** | 1 | 512,80 |



## Digital hotplates C-MAG HP-series

By IKA.

**General information for all models**

- Base made of glass ceramics
- Temperature setting via digital display (LED)
- Digital display of hotplate desired temperature
- Error code malfunction indicator
- Fixed safety circuit of 550 °C
- Hot Top Indicator (warning in case of hot surface)

**Models C-MAG HP 7 and C-MAG HP 10:**
Additionally with DIN-socket 12878 for connecting an electronic contact thermometer e.g. ETS-D5 for high-precision temperature control.

**Technical specifications:**

| Model | C-MAG HP 4 | C-MAG HP 7 | C-MAG HP 10 |
|---|---|---|---|
| Heating capacity (W) | 250 | 1000 | 1500 |
| Max. hotplate temperature (°C) | 50 to 500 | | |
| Control accuracy (K) | ±10 | | |
| Platform surface W x D (mm) | 100 x 100 | 180 x 180 | 260 x 260 |
| Dimensions W x D x H (mm) | 150 x 260 x 105 | 220 x 330 x 105 | 300 x 415 x 105 |
| Weight (kg) | 3 | 5 | 6 |
| Power supply | 230 V, 50/60 Hz | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| C-MAG HP 4 | **LN75.1** | 1 | 471,00 |
| C-MAG HP 7 | **LN76.1** | 1 | 550,00 |
| C-MAG HP 10 | **LN77.1** | 1 | 703,00 |



## Hotplates US150 and UC150

By Stuart.

**Features**

- Microprocessor-controlled heating element
- Platforms are optionally available in glass ceramic (generally good resistance to chemical attack, high temperature, 120 x 120 mm heated zone) or aluminium (very rugged, 150 x 150 mm heated zone)
- Temperature control with LED display, colour LEDs aid reading current actual temperature
- Safety warning lamp comes on at temperatures over 50 °C

**Technical specifications:**

| Model | US150 | UC150 |
|---|---|---|
| Heating output (W) | 700 | 500 |
| Hotplate material | Aluminium/silicon coated | Glass ceramic |
| Heated zone (mm) | 150 x 150 | 120 x 120 |
| Max. hotplate temperature (°C) | 325 | 450 |
| Hotplate surface (mm) | 150 x 150 | 150 x 150 |
| Dimensions W x D x H (mm) | 172 x 248 x 120 | 172 x 248 x 120 |
| Weight (kg) | 2.2 | |
| Mains connection | 230 V, 50 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| US150 | **PY70.1** | 1 | 363,00 |
| UC150 | **PY71.1** | 1 | 360,00 |



## Infrared laboratory cooker SLK 12

By SI Analytics.

- With glass-ceramic hob
- Heating area with 2 zones for small and large vessels
- Stainless steel housing with steel base
- Non-heated edge zones allow vessels to be partially heated or completely taken off the hob
- Indicator lamp for indication of operating state and residual heat

**Technical specifications:**

| | |
|---|---|
| Heating output | 700/1700 W |
| Max. hot plate temperature | approx. 550 °C |
| Heated zones | ∅ 110 / ∅ 180 mm |
| Hotplate surface (W x D) | 300 x 300 mm |
| Dimensions (W x D x H) | 330 x 300 x 73 mm |
| Weight | 4.5 kg |
| Power supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TP34.1** | 1 | 504,20 |



## Digital hotplate SD 160

By Stuart. Hotplate with high temperature stability.

- Microprocessor-controlled
- Safety warning indicator light for temperatures over +50 °C
- Digital display with simultaneous desired/actual temperature readings
- Aluminium hotplate enables even heat distribution

**Technical specifications:**

| | |
|---|---|
| Heater capacity | 700 W |
| Max. hotplate temp. | 8 °C **above** ambient temperature up to 325 °C |
| Adjustable temperature | 20 to 325 °C |
| Display resolution | 1 °C |
| Temperature fluctuation in working plate area | ±0.2 °C at 37 °C<br>±1.0 °C at 150 °C |
| Temperature stability | ±0.25 °C |
| Surface hotplate (W x D) | 160 x 160 mm |
| Dimensions (W x D x H) | 190 x 300 x 110 mm |
| Weight | 2.5 kg |
| Current | 230 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH85.1** | 1 | 838,00 |

# Hotplates



## Infrared hotplate CR 300

By Stuart.
- Chemically resistant ceramic surface
- With safety warning lamp for temperatures over 50 °C
- Efficient infrared heating at 900 W
- Heats 1 litre of water 30 % faster than conventional ceramic hotplates at 1200 W
- For a liquid volumes up to 10 l

**Technical specifications:**

| | |
|---|---|
| Heater capacity | 900 W |
| Max. hotplate temp. | 50 to 450 °C |
| Heated area | ∅ 140 mm |
| Surface hotplate (W x D) | 300 x 300 mm |
| Dimensions (W x D x H) | 300 x 365 x 105 mm |
| Weight | 4 kg |
| Current | 230 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE52.1** * | 1 | 989,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Hotplates CB 500 and SB 500

By Stuart. With a large working surface for heating several samples, e.g. 30 beakers à 100 ml. Safety warning lamp for temperatures over +50 °C.

**Technical specifications:**

| **Model** | **CB 500** | **SB 500** |
|---|---|---|
| Heating capacity (W) | 2250 | 1500 |
| Hotplate material | ceramic | aluminium |
| Heated zone (mm) | 450 x 250 | 500 x 300 |
| Max. hotplate temp. (°C) | 50 to 375 | 50 to 300 |
| Surface hotplate W x D (mm) | 500 x 300 | |
| Dimensions W x D x H (mm) | 520 x 360 x 130 | |
| Weight (kg) | 12 | |
| Current | 230 V, 50 Hz | |

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| CB 500 | **Y407.1** * | 1 | 995,00 |
| SB 500 | **Y408.1** * | 1 | 985,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Hotplates CB 300 and SB 300

By Stuart. Safety warning indicator light for temperatures over 50 °C.

**Technical specifications:**

| **Model** | **CB 300** | **SB 300** |
|---|---|---|
| Heating capacity (W) | 1200 | 600 |
| Hotplate material | ceramic | aluminium |
| Heated zone (mm) | 200 x 200 | 300 x 300 |
| Max. hotplate temp. (°C) | 50 to 450 | 50 to 300 |
| Surface hotplate W x D (mm) | 300 x 300 | |
| Dimensions W x D x H (mm) | 300 x 365 x 105 | |
| Weight (kg) | 6 | |
| Current | 230 V, 50 Hz | |

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| CB 300 | **Y409.1** * | 1 | 765,00 |
| SB 300 | **Y410.1** * | 1 | 750,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Digital hotplates SD 300 and SD 500

By Stuart. With large surface area for simultaneous heating of several samples.
- Microprocessor-controlled
- Surface area Model SD 300: 300 x 300 mm
  Surface area Model SD 500: 300 x 500 mm
- Digital display with a resolution of 1 °C
- Aluminium hotplate enables even heat distribution

**Technical specifications:**

| **Model** | **SD 300** | **SD 500** |
|---|---|---|
| Heater capacity | 600 W | 1500 W |
| Max. hotplate temp. | 50 to 300 °C | |
| Temperature fluctuation in working plate area | ±2 °C | |
| Temperature stability | ±1.5 °C | |
| Dimensions (W x D x H) | 320 x 365 x 105 mm | 520 x 360 x 130 mm |
| Weight | 6.0 kg | 12.0 kg |
| Current | 230 V, 50/60 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SD 300 | **AH86.1** * | 1 | 1022,00 |
| SD 500 | **AH87.1** * | 1 | 1145,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Laboratory cooker/stirrer model SLR

By SI Analytics. For stirring and heating liquids.

- With glass-ceramic hotplate
- Residual heat display and excess temperature protection
- Temperature shock resistance over 700 °C
- With large, clear LCD display
- **Bar graph indicates average speed of stirrer and average heating capacity**
- Heating capacity can be set in 24 different stages
- By attaching Pt 1000 temperature sensor the temperature control can be regulated between 25 °C and 200 °C (accuracy ±2 to ±5 K) depending on amount of liquid, heat capacity and ambient temperature
- Please order temperature sensor, support rod and holder separately

**Technical specifications:**

| | |
|---|---|
| **Heating function** | |
| Heating capacity | 900 W |
| Heated area | ∅ 155 mm |
| Max. hotplate temp. | approx. 550 °C |
| Setting accuracy with temp. sensor | 1 °C |
| Digital set/actual temperature with connected temperature sensor | |
| **Stirring function** | |
| Max. speed | 100 to 1100 rpm |
| Setting accuracy | approx. 10 rpm |
| Set/actual speed display | yes |
| Max. stirring volume | 20 l |
| **General specifications** | |
| Hotplate surface | 235 x 235 mm |
| Dimensions (L x W x H) | 370 x 240 x 85 mm |
| Max. load | 25 kg |
| Current | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T989.1** | 1 | 901,95 |

## Accessories for laboratory cooker SLR

By SI Analytics.

**Temperature sensor**
With stainless steel shaft (V4A). Sensor Pt 1000. Measuring range -30 to +200 °C. Length 170 mm, ∅ 4 mm. 1 m fixed cable with 2 x 4 mm pin plug.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T990.1** | 1 | 204,25 |

**Support rod**
With fastening nut (M8) made of stainless steel. Length 450 mm, ∅ 10 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T991.1** | 1 | 55,65 |

**Holder**
For temperature sensor Pt 1000.
Clamp with extension rod made of stainless steel.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T992.1** | 1 | 198,90 |



## Acid-resistant hotplate CP 300

By Stuart. Ideal for aggressive liquids, concentrated acids or alkaline solutions, for trace analysis etc.

**Design:**

- Hotplate enclosure made of PTFE with ceramic hotplate surface
- Safety warning indicator light for temperatures over +50 °C
- Remote controllable via separate control unit with PTFE-coated connection lead (control unit can be positioned outside working area)

**Technical specifications:**

| | |
|---|---|
| Heating power | 900 W |
| Hotplate material | Ceramic |
| Housing material | PTFE |
| Max. hotplate temp. | 400 °C |
| Heated area | 200 x 200 mm |
| Surface hotplate (W x D) | 300 x 300 mm |
| Dimensions (W x D x H) | 320 x 360 x 60 mm |
| Control line: Length | 2 m |
| Weight | 11 kg |
| Current | 230 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KN92.1** * | 1 | 3100,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Magnetic stirrers

## Overview of hotplate- and magnetic stirrer

| Max. stirring volume (l) | Speed range (rpm) | Hotplate | No. of stirring places | Material of stirrers surface | Art. No. | Page |
|---|---|---|---|---|---|---|
| 0,25 | 80-1500 | No | 15 | High grade steel | **EHY9.1** | 1006 |
| 0,250 | 300-1800 | No | 1 | PP | **KE48.1** | 999 |
| 0,4 | 80-1500 | No | 6 | High grade steel | **EHY8.1** | 1006 |
| 0,8 | 15-1500 | No | 1 | Polyester film | **KX33.1** | 1001 |
| 0,8 | 130-990 | No | 15 | High grade steel | **X544.1** | 1006 |
| 1 | 0-1500 | No | 1 | Glass | **KX28.1** | 1001 |
| 1,0 | 2500 | No | 1 | Polyester film | **0863.1** | 1000 |
| 1 | 10-1200 | No | 4 | ABS | **CK78.1** * | 1004 |
| 1 | 100-1000 | No | 1 | ABS | **N497.1** | 999 |
| 1 | 100-1000 | No | 1 | ABS | **N498.1** | 999 |
| 1 | 100-1000 | No | 1 | High grade steel | **0045.1** | 1000 |
| 1 | 100-1000 | No | 1 | ABS | **N499.1** | 999 |
| 1 | 130-1400 | No | 1 | High grade steel | **LY27.1** | 1005 |
| 1,5 | 0-1300 | No | 1 | ABS | **CC53.1** | 1002 |
| 1,5 | 0-1500 | No | 1 | Glass | **KX23.1** | 1001 |
| 1,5 | 130-1400 | No | 1 | High grade steel | **EH16.1** * | 1005 |
| 2 | 0-1000 | Yes | 5 | High grade steel | **XT36.1** | 1008 |
| 2 | 0-1200 | No | 5 | High grade steel | **XT33.1** | 1007 |
| 2,5 | 100-1000 | No | 1 | High grade steel | **0046.1** | 1000 |
| 3 | 0-1100 | No | 1 | ABS | **AAN1.1** | 998 |
| 3 | 80-2000 | No | 6 | High grade steel | **X176.1** | 1006 |
| 3 | 80-2000 | No | 15 | High grade steel | **X177.1** | 1006 |
| 3 | 100-1500 | Yes | 1 | High grade steel | **TT78.1** | 1010 |
| 3 | 100-1500 | No | 1 | ABS | **XP52.1** | 1000 |
| 3 | 100-1500 | Yes | 1 | Ceramic coated steel | **TT79.1** | 1010 |
| 3 | 130-1000 | No | 1 | High grade steel | **X543.1** | 1001 |
| 4 | 0-1000 | Yes | 10 | High grade steel | **XT37.1** | 1008 |
| 4 | 0-1200 | No | 10 | High grade steel | **XT34.1** | 1007 |
| 4 | 10-1800 | No | 1 | ABS | **AH70.1** | 1004 |
| 5 | 0-1100 | No | 1 | High grade steel | **L904.1** | 1002 |
| 5 | 0-2200 | No | 1 | PVDF | **EP84.1** | 1000 |
| 5 | 80-2000 | No | 1 | High grade steel | **LY28.1** | 1001 |
| 5 | 100-1500 | No | 1 | Ceramics | **LN38.1** | 1002 |
| 5 | 100-1500 | Yes | 1 | Glass ceramics | **XT59.1** | 1014 |
| 5 | 100-1500 | Yes | 1 | Ceramics | **LN35.1** | 1012 |
| 6 | 0-1000 | Yes | 15 | High grade steel | **XT38.1** | 1008 |
| 6 | 0-1200 | No | 15 | High grade steel | **XT35.1** | 1007 |
| 8 | 100-1200 | No | 1 | Epoxide coating steel | **EHY7.1** | 999 |
| 10 | 100-1500 | Yes | 1 | Glass ceramics | **XT60.1** | 1014 |
| 10 | 100-1500 | Yes | 1 | Ceramics | **LN36.1** | 1012 |
| 10 | 100-1500 | Yes | 1 | Ceramics | **LY79.1** | 1013 |
| 10 | 100-2000 | Yes | 1 | High grade steel | **Y888.1** | 1009 |
| 15 | 50-1500 | Yes | 1 | Glass ceramics | **CKK2.1** | 1011 |
| 15 | 50-1500 | Yes | 4 | Aluminium | **CKK3.1** | 1007 |
| 15 | 50-1500 | Yes | 1 | Aluminium | **AAN2.1** | 1009 |
| 15 | 50-2000 | Yes | 1 | High grade steel | **XT23.1** | 1012 |
| 15 | 50-2000 | Yes | 1 | Enamel coating | **XT24.1** | 1012 |
| 15 | 100-1500 | Yes | 1 | Ceramics | **LN37.1** | 1012 |
| 15 | 100-1500 | Yes | 3 | Aluminium, Silicone alloy | **KN82.1** | 1008 |
| 15 | 100-1500 | Yes | 1 | Glass ceramics | **XT61.1** | 1014 |
| 15 | 100-1500 | No | 1 | Ceramics | **LN40.1** | 1002 |
| 15 | 100-1500 | Yes | 1 | Aluminium | **KN94.1** * | 1016 |
| 15 | 100-1500 | Yes | 1 | Ceramics | **KN93.1** * | 1016 |
| 15 | 100-2000 | Yes | 1 | Aluminium | **CHA5.1** | 1011 |
| 15 | 100-2000 | Yes | 1 | Aluminium | **PY72.1** | 1011 |
| 15 | 100-2000 | Yes | 1 | Ceramics | **PY73.1** | 1011 |
| 15 | 100-2000 | Yes | 1 | Glass ceramics | **CHA6.1** | 1011 |
| 20 | 0-1500 | No | 1 | High grade steel | **XP53.1** | 1000 |
| 20 | 30-1400 | Yes | 1 | Silumin with ceramic layer | **HA13.1** | 1017 |
| 20 | 50-1500 | Yes | 1 | Aluminium | **EYE7.1** | 1010 |
| 20 | 50-1500 | Yes | 1 | Aluminium | **EY83.1** | 1015 |
| 20 | 50-1700 | Yes | 1 | High grade steel | **XT54.1** | 1016 |
| 20 | 50-1700 | Yes | 1 | Enamel coating | **XT55.1** | 1016 |
| 20 | 100-1000 | No | 1 | POM | **EH13.1** * | 1004 |
| 20 | 100-1000 | No | 1 | High grade steel | **EH14.1** * | 1004 |
| 20 | 100-1400 | Yes | 1 | Silumin with ceramic layer | **HCK1.1** | 1015 |
| 20 | 100-1400 | Yes | 1 | Silumin with ceramic layer | **HA08.1** | 1014 |
| 20 | 100-1400 | Yes | 1 | Silumin with ceramic layer | **HA10.1** | 1015 |
| 20 | 100-2000 | Yes | 1 | Aluminium with ceramic layer | **HLN1.1** | 1013 |
| 38 | 200-1300 | No | 1 | ABS/PC | **HH67.1** | 1003 |
| 38 | 200-1300 | No | 1 | ABS/PC | **HH66.1** | 1003 |
| 40 | 100-2000 | No | 1 | High grade steel | **Y822.1** | 1003 |

* Longer delivery times possible. Please check with our Sales Department.




## Rotilabo®-mini magnetic stirrer M 3

- For stirring volumes up to 3 l
- Continuously adjustable speed range
- ABS housing

**Technical specifications:**

| | |
|---|---|
| Stirring volume ($H_2O$) | 3 l |
| Max. speed | 1100 rpm |
| Motor power (output): | 0.6 W |
| Mounting surface | 130 x 150 mm |
| Permissible operating temperature | 5 to 40 °C at 80 % rel. humidity |
| Dimensions (W x D x H) | 130 x 150 x 50 mm |
| Weight | 400 g |
| Power supply | 100 to 240 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AAN1.1** | 1 | 81,70 |




## Mini magnetic stirrer Topolino

By IKA. For maximum stirring volume 250 ml.
- Infinitely variable speed range
- PP base

**Technical specifications:**

| | |
|---|---|
| Stirring volume ($H_2O$) | 250 ml |
| Speed range | 300 to 1800 rpm |
| Motor power: Input / output | 1.1 / 0.8 W |
| Max. magnetic rod (L x ∅) | 40 x 6 mm |
| Platform size | ∅ 80 mm |
| Max. operating temperature | 5 to 40 °C at 80 % rh |
| Dimensions (W x D x H) | 95 x 110 x 40 mm |
| Weight | 300 g |

**Delivery incl.** power unit.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KE48.1** | 1 | 105,00 |




## Mini-magnetic stirrers HI 180

ABS housing.

**Technical specifications:**

| | |
|---|---|
| Stirring capacity | max. 1000 ml |
| Rpm | 100 to 1000 rpm |
| Dimensions | ∅ 137 mm, height 51 mm; weight 640 g |
| Ambient temperature | 0 to +50 °C / 95 % rh |
| Power supply | 220/240 V, 50/60 Hz |

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| dark blue | **N497.1** | 1 | 121,00 |
| green | **N498.1** | 1 | 121,00 |
| light blue | **N499.1** | 1 | 121,00 |



## Small magnetic stirrer – AGE

Robust epoxy-coated steeling casing.
Control panel is recessed to protect it against leaking liquids.

**Technical specifications:**

| | |
|---|---|
| Stirring volume ($H_2O$) | 8 l |
| Speed | 100 to 1200 rpm |
| Motor rating input / output | 40/30 |
| Mounting surface | 171 x 190 mm |
| Dimensions (W x D x H) | 171 x 190 x 75 mm |
| Permissible ambient conditions | 5 to 40 °C at 80 % rel. humidity |
| Weight | 1.8 kg |
| Power supply | 230 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EHY7.1** | 1 | 160,20 |

# Magnetic stirrers




## RSM-series magnetic stirrers

**RSM-10 B**
- Speed adjustment via digital display (LED display)
- ABS housing and platform

**RSM-01 S**
- With stainless steel platform
- Solid metal housing
- Levelling feet for uneven surfaces

**Technical specifications:**

| Type | ① RSM-10 B | ② RSM-01 S |
|---|---|---|
| Max. stirring capacity $H_2O$ (l) | 3 | 20 |
| Speed (rpm) | 100-1500 | 0-1500 |
| Motor power: input / output (W) | 5 / 3 | 30 / 18 |
| Speed display | LED | - |
| Speed display accuracy (rpm) | 10 | - |
| Installation surface (mm) | ∅ 135 | |
| Dimensions W x D x H (mm) | 155 x 215 x 75 | 160 x 280 x 85 |
| Weight (kg) | 0.8 | 2.8 |
| Power supply | 200-240 V, 50/60 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RSM-10 B | **XP52.1** | 1 | 161,25 |
| RSM-01 S | **XP53.1** | 1 | 295,65 |




## Magnetic stirrers HI 200 and HI 300

With variable adjustment of speed. 100 to 1000 rpm.
Housing made of stainless steel. Power supply 220 V, 50/60 Hz.

**Type 200 M**, for max. 1 l
Dimensions: W 120 x H 48 x D 140 mm, weight 600 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0045.1** | 1 | 204,00 |

**Type 300 N**, for max. 2.5 l
Dimensions: W 180 x H 70 x D 190 mm, weight 1300 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0046.1** | 1 | 248,00 |




## Small magnetic stirrer MINI-MR standard

By IKA. Ideal for simple stirring operations **to 1000 ml**. White set-up plate with centring points, ideal for titrations and for observing colour reactions.

**Technical specifications:**

| | |
|---|---|
| rpm range: | 2500 rpm |
| Motor power: reception / delivery | 3/2 W |
| Platform | 115 x 115 mm, Polyester foil |
| Outer dimensions (W x H x D) | 115 x 37 x 129 mm |
| Weight | 250 g |
| Current | 100-240 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0863.1** | 1 | 210,00 |




## Small magnetic stirrer Hei-Mix S

By Heidolph. Electronic speed control.
With PVDF platform and polyamide housing.

**Technical specifications:**

| | |
|---|---|
| Stirring volume ($H_2O$) | 5 l |
| Speed max. | 2200 rpm |
| Connection capacity | 7 W |
| Platform | ∅ 104 mm |
| Dimensions (W x D x H) | 126 x 140 x 80 mm |
| Max. operating temperature | 0-40 °C at 80 % rh |
| Weight | 1.2 kg |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EP84.1** | 1 | 234,00 |




## Magnetic stirrers, lab disc

By IKA. Adjustable reversing operation with direction change every 30 sec.
- High IP protection (IP 65)
- Flat housing

**Technical specifications:**

| | |
|---|---|
| Max. Stirring volume ($H_2O$) | 800 ml |
| Speed range | 150 to 1500 rpm |
| Motor power: Input / Output: | 5 / 3 W |
| Platform size | ∅ 100 mm |
| Dimensions (W x D x H) | 116 x 175 x 12 mm |
| Current | 100 to 240 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KX33.1** | 1 | 272,00 |




## Small magnetic stirrer, color squid / big squid

By IKA. With digital speed display (LED).
Glass platform, plastic base made of TPC-ET.

**Technical specifications:**

| **Model** | **① color squid** | **② big squid** |
|---|---|---|
| Max. stirring volume ($H_2O$) | 1000 ml | 1500 ml |
| Max. speed | 0 to 2500 rpm | |
| Speed display | digital | |
| Motor power: Input / Output | 3 / 2 W | |
| Platform | ∅ 115 mm | ∅ 160 mm |
| Dimensions W x D x H (mm) | 145 x 160 x 45 mm | 183 x 203 x 45 |
| Power supply | 100 to 240 V, 50/60 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Color squid white | **KX28.1** | 1 | 249,00 |
| ② Big squid white | **KX23.1** | 1 | 274,00 |




## Mono Direct and Maxi Direct Digital magnetic stirrers

By Thermo.

**General specifications of both models**
- Nonwearing Cimarec stirrer drive
- Stainless steel housing
- Automatic start-up for safe acceleration of the stirring rod

**Mono Direct**
- Up to 3 litres stirring capacity
- LED status display

**Maxi Direct Digital**
- Up to 5 litres stirring capacity
- With digital stirring speed display
- Constant stirring at low speeds of 80 rpm
- A memory function stores the most recent settings

**Technical specifications:**

| **Model** | **Mono Direct** | **Maxi Direct Digital** |
|---|---|---|
| Max. stirring capacity $H_2O$ (l) | 3 | 5 |
| Speed (rpm) | 130 to 1000 | 80 to 2000 |
| Dimensions W x D x H (mm) | 180 x 215 x 35 | |
| Output settings (W) | 1/5 | 5/10/15/20 |
| Protection class | IP 32 | IP 62 |
| Perm. operating temperatures | -10 to +40 °C at 95 % rH | |
| Weight (g) | 1400 | 2500 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Mono Direct | **X543.1** | 1 | 204,00 |
| Maxi Direct Digital | **LY28.1** | 1 | 491,00 |

# Magnetic stirrers



## Portable magnetic stirrer SM27

By Stuart. Housing made of ABS-plastic. **Outlet or battery-operated**, can also be used in climatic cabinest, incubators and in field research. Battery-service life approx. 600 h.

**Technical specifications:**

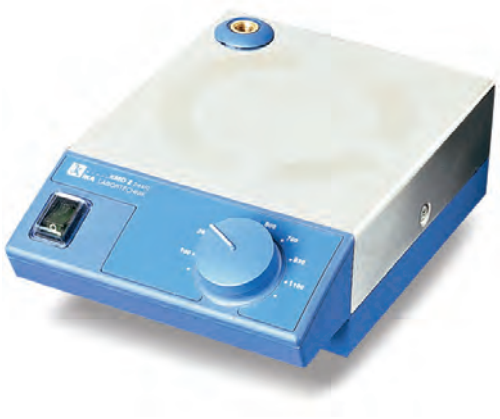
| | |
|---|---|
| Max. stirring volume ($H_2O$) | 1.5 l |
| rpm range | to 1300 rpm |
| Ambient temperature | -0 to 40 °C at 80 % rh |
| Dimensions (W x D x H) | 150 x 160 x 70 mm |
| Weight | 1.3 kg |

**Delivery incl.** 4 Mono 1.5 V batteries. Please order power unit separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CC53.1** | 1 | 437,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Power unit for magnetic stirrer SM27 | **CC54.1** | 1 piece | 95,50 |
| 12-V-Adapter (for cigarette lighter) | **CC55.1** | 1 piece | 79,50 |
| Mono/D 1.5 V battery | **1024.2** | 2 pieces | 6,35 |



## Small magnetic stirrer KMO 2 basic

By IKA. For max. 5 l volume. High-grade steel housing on sides protects unit from liquids penetrating into unit and enables easy cleaning. With receptacle for retort stand rod.

**Technical specifications:**

| | |
|---|---|
| Motor power: input / output | 14/4 W |
| Stirring capacity (water) | 5 l |
| Rpm range | 0 to 1100 rpm |
| Dimensions (W x H x D) | 140 x 75 x 200 mm |
| Weight | 1,4 kg |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L904.1** | 1 | 799,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Stand rod | **A315.1** | 1 | 57,00 |



## Magnetic stirrers C-MAG MS-series

By IKA.
- Glass ceramic platform
- Offset operation surface protects against spilt liquids

**Technical specifications:**

| **Model** | **C-MAG MS 4** | **C-MAG MS 10** |
|---|---|---|
| Max. stirring volume $H_2O$ (l) | 5 | 15 |
| rpm-range | 100 to 1500 rpm | |
| Motor power: Input / Output | 15 / 1.5 W | |
| Platform surface W x D (mm) | 100 x 100 | 260 x 260 |
| Dimensions W x D x H (mm) | 150 x 260 x 105 | 300 x 415 x 105 |
| Permissible working temperature | 5 to 40 °C at 80 % rh | |
| Weight (kg) | 3 | 6 |
| Power supply | 230 V, 50/60 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| C-MAG MS 4 | **LN38.1** | 1 | 465,00 |
| C-MAG MS 10 | **LN40.1** | 1 | 699,00 |



121°C

## Rotilabo® Economy magnetic bars

PTFE coated. Similar to cylindrical magnetic bar, but with rounded edges to intensify the stirring effect even at low speeds. Autoclavable.

| ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 12 | **XA17.1** | 10 | 9,05 |
| 8 | 25 | **XA18.1** | 10 | 12,60 |
| 8 | 40 | **XA19.1** | 10 | 14,55 |
| 8 | 50 | **XA20.1** | 10 | 19,50 |



## Magnetic stirrer POWER DIRECT

By Thermo.
**Powerful magnetic stirrer for max 40 litre stirring volume.**
Compact and flat design. Broad magnetic field enables stirring over a 40 mm range. Ideal for thick glass bases, round flasks or double-shelled containers.

- Stainless steel housing
- Quick-stop within 2 sec
- 4-stage stirring power (5/10/15/20 watt)
- Digital display for exact speed setting
- Memory function for last settings

**Technical specifications:**

| | |
|---|---|
| Stirring volume ($H_2O$) | 100 ml to 40 l |
| Rpm range | 100 to 2000 rpm |
| Dimensions (W x D x H) | 240 x 294 x 30 mm |
| Tolerable working temperature | -10 to +40 °C at 95 % rF |
| Weight | 3 kg |

**Delivery incl.** long-range power unit (100-240 V/24 VDC).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y822.1** | 1 | 858,00 |

## Magnetic followers, KOMET 50

By Thermo. Extra strong magnetic followers, more than three times the torque of conventional followers. PTFE-coated. Round.
Dimensions: ∅ 21 mm x L 50 mm.
Ideal for magnetic stirrer POWER DIRECT.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y825.1** | 1 | 37,80 |

▶ For magnetic stirring rods, see page 1018




## Magnetic stirrers MegaMag Genie® and Digital MegaMag Genie®

By Scientific Industries. From gentle to intensive mixing of low-viscous liquids. Housing made of ABS/PC.

① **MegaMag Genie®**
Strong magnetic stirrer for up to 38 litres.

② **Digital MegaMag Genie® like MegaMag Genie®**, but additionally with speed and time setting (Timer function) via digital display. Speed can be increased in 10 rpm increments.

**Technical specifications:**

| Model | MegaMag Genie® | Digital MegaMag Genie® |
|---|---|---|
| Number of stirring points | 1 | |
| Stirring volume ($H_2O$) per stirring point (l) | 38 | |
| Speed range (rpm) | 200 to 1300 | |
| Speed display | Scale | Digital |
| Timer | - | 1 to 99 min or permanent operation |
| Platform size L x W (mm) | 305 x 305 | |
| Dimensions L x W x H (mm) | 305 x 310 x 130 | |
| Permissible ambient conditions | 0 to 38 °C at 95 % rh | |
| Weight | 3000 g | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① MegaMag Genie® | **HH66.1** | 1 | 794,45 |
| ② Digital MegaMag Genie® | **HH67.1** | 1 | 994,40 |

# Magnetic stirrers





## Programmable magnetic stirrer MagStir Genie® and multipoint stirrer MultiMagStir Genie®

By Scientific Industries.

**General features of both models:**

For gentle mixing (e.g. of cell suspensions) in interval operation.
Reversing mode can be adjusted for a more effective mixing of the medium.

- Microprocessor-controlled
- Stirring power can be pre-selected (Low, Medium, High) depending on the different stirring requirements, e.g. stirring power "High" for viscous liquids
- Interval and reversing mode possible

**Four programs are available:**

- **Manual-Mode**
  For stirring without/with a direction of rotation change-over (reversal operation) and timer-function (1 sec to 99 h).
- **Automatic-Mode**
  For activating operator-defined stirring profiles.
- **Profile-Mode**
  For programming and saving 4 operator-defined stirring profiles. Each stirring profile can save 9 different intervals e.g. speed, stirring direction (clockwise or anti-clockwise), intervals acceleration (from 5 to 300 rpm per sec) and time (including stirring intervals).
- **Setup-Mode**
  For programming the manual mode. The following are programmable: ramp acceleration from 5 to 300 rpm per sec (i.e. the time required until the set speed has been reached), the stirring power as well as the length and interval function of the automatic rotational direction change-over (adjustable from 1 sec to 59 min).

### Multipoint magnetic stirrers MultiMagStir Genie®

With 4 synchronous-running stirring points for routine testing.
Suitable for 4 Erlenmeyer flasks or 1000 ml beakers.

**Technical specifications:**

| Model | MagStir Genie® | MultiMagStir Genie® |
|---|---|---|
| Number of stirring places | 1 | 4 |
| Max. stirring volume ($H_2O$) per stirring place | 4000 ml | 1000 ml |
| Distance between stirring points | - | 165 mm |
| Speed max. | 10 to 1800 rpm | 10 to 1200 rpm |
| Speed accuracy | ±0.1 % | |
| Max. operating temperature | 0 to 38 °C at 95 % rh | |
| Area per stirring point | ∅ 100 mm | ∅ 75 mm |
| Dimensions (W x D x H) | 160 x 200 x 55 mm | 325 x 375 x 48 mm |
| Max. load | 5000 g | 10000 g |
| Weight | 1000 g | 3200 g |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MagStir Genie® | **AH70.1** | 1 | 650,40 |
| MultiMagStir Genie® | **CK78.1** * | 1 | 1288,95 |

* Longer delivery times possible. Please check with our Sales Department.

## Magnetic stirrers MOBIL 10 and MOBIL 25, remote-controllable

By Thermo.

**General features of both models:**

Ideal for stirring in warming cabinets, climatic test cabinets and cold chambers. Also for integration in systems.

- Remote-controllable (wired) via separate control unit, Telemodule 10 M
- Motor quick-stop without after-running for high operational safety, protects glass vessels from breaking
- Infinitely adjustable speed

**Magnetic stirrer MOBIL 10**
Easy-to clean and **robust casing made of POM**

**Magnetic stirrer MOBIL 25**
Watertight and pressure-resistant enclosed stainless steel casing for direct stirring in hot water baths or in steam sterilizers

**Technical specifications for magnetic stirrers:**

| Type | MOBIL 10 | MOBIL 25 |
|---|---|---|
| Max. stirring volume ($H_2O$) | 0.1 to 20 l | |
| rpm range | 100 to 1000 rpm | |
| Stirring capacity | 10 W | |
| Housing material | POM | high-grade steel 1.4305 |
| Dimensions (∅ x H) | 128 x 34 mm | |
| Control line length/∅ | 2 m/0.4 mm | |
| Max. operating temperature | +5 to +56 °C at 95 % rh | -10 to +143 °C in saturated steam |
| Permissible operating overpressure/vacuum | - | +3.0/-1.0 bar |
| System of protection | IP 66 | IP 68 |
| Weight | 0.7 kg | 1.7 kg |

**Technical specifications for Telemodule 10 M:**

| | |
|---|---|
| Constancy of speed | ±1 % |
| Nominal stirring power | 10 W |
| Dimensions (W x D x H) | 63 x 96 x 50 mm |
| Safe ambient temperature | +10 to +40 °C at 80 % rh |
| System of protection | IP 20 |
| Weight | 0.5 kg |
| Current | 230 V, 50/60 Hz |

**Delivery without** control unit Telemodule 10 M, please order separately (is required to operate device).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MOBIL 10, without Telemodule 10 M | **EH13.1** * | 1 | 446,00 |
| MOBIL 25, without Telemodule 10 M | **EH14.1** * | 1 | 914,00 |
| **Accessories:** | | | |
| Control unit Telemodule 10 M | **EH15.1** * | 1 | 255,00 |

* Longer delivery times possible. Please check with our Sales Department.






## Micro Magnetic stirrer Cimarec

By Thermo. With induction drive. Compact design for low stirring volumes. Ideal for operation in demanding environments and water baths.

**Micro magnetic stirrer**
- High temperature resistance up to 95 °C in water and 120 °C in air
- Hermetically-sealed stainless steel housing, waterproof and dustproof to IP 68
- Can be remotely controlled with separate Telemodul 20 C control unit

**Telemodul 20 C control unit**
- Graphic display
- Vertical mixing (Shake mode)
- 3 function-definable program keys for quick starting of routines
- Three-stage adjustable start-up times for safe acceleration of the magnetic rod
- Intermittent operation with freely selectable stirring times and intervals as well as rotation direction reversal (5 sec to 1 h)
- Four-stage adjustable nominal stirring power (25/50/75/100 %)

**Technical specifications of magnetic stirrer:**

| | |
|---|---|
| Max. stirring capacity ($H_2O$) | 1 l |
| Speed range | 130 to 1400 rpm |
| Stirring power | 2/4/6/8 W |
| Dimensions (W x D x H) | 48 x 48 x 16 mm |
| Control cable length / ∅ | 2 m / 4 mm |
| Perm. operating temperature in air | -10 to +120 °C at 95 % rH |
| Perm. operating temperature in water | 0 to +95 °C at 100 % rH |
| Protection class | IP 68 |
| Weight | 0.2 kg |

**Technical specifications of Telemodul 20 C:**

| | |
|---|---|
| Speed constancy | ±1 % |
| Output voltage | 20 VDC |
| Dimensions (W x D x H) | 155 x 165 x 95 mm |
| Perm. ambient temperature | 0 to +40 °C at 80 % rH |
| Electrical supply | 100-240 V, 50/60 Hz |

**Delivery incl.** Micro Magnetic stirrer and Telemodul 20 C control unit.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LY27.1** | 1 | 749,00 |

## Magnetic stirrer Compact 20, remote controllable

By Thermo. For stirring applications directly in water baths (up to +50 °C), hot and cold chambers, in damp brooding chambers and for built in systems.

**Magnetic stirrer Compact 20**
- Stainless steel housing
- Non-wearing Cimarec-inductive drive
- Remote controllable via separate control unit Telemodul 20 C
- Hermetically sealed; waterproof in compliance with IP 68

**Technical specifications:**

| | |
|---|---|
| Max. stirring volume ($H_2O$) | 1.5 l |
| Rpm range | 130 to 1400 rpm |
| Dimensions (W x D x H) | 120 x 120 x 35 mm |
| Control line: Length / ∅ | 2 m/4 mm |
| Max. operating temperature | -10 to +56 °C at 100 % rh |
| Permissible operating temperature in water | 0 to +50 °C |
| Weight | 1 kg |

**Control unit Telemodul 20 C**
- Microprocessor steering
- Grafic display
- Vertical mixing (shake-mode)
- 3 allocatable program keys for speedy starting of routines, the last setting at any one time will be automatically stored
- Three-stage adjustable start-up time for safe acceleration of magnetic rod
- Interval operation with freely selectable stirring and break times plus reversal of rotation direction (5 sec to 1 h)
- Four-stage adjustable nominal stirring power (25/50/75/100 %), higher power for viscous fluid volumes, reduced power for heat-free long-term operation

**Technical specifications:**

| | |
|---|---|
| Constancy of speed | ±1 % |
| Nominal stirring power | 20 W |
| Output voltage | 20 VDC |
| Dimensions (W x D x H) | 155 x 165 x 95 mm |
| Safe ambient temperature | 0 to +40 °C at 80 % rh |
| Input voltage | 100-240 V, 50/60 Hz |
| Weight | 0.6 kg |

**Delivery incl.** Magnetic stirrer Compact 20 and control unit Telemodul 20.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH16.1** * | 1 | 757,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Magnetic stirrers



## Digital 6 and 15 multipoint magnetic stirrer

- Stainless steel plate
- Digital speed display
- Constant speed, even after changes in medium viscosity
- With timer (1 to 900 sec or continuous mode) or adjustable reversing mode with opposite direction of rotation (5 to 900 sec)

**Technical specifications:**

| Type | Digital 6 | Digital 15 |
|---|---|---|
| **Magnetic stirrer drive** | | |
| Number of stirring points | 6 | 15 |
| Stirring capacity per stirring point (ml) | 400 | 250 |
| Clearance between stirring points (mm) | 100 | 74 |
| Speed display | LED | |
| Motor power: input/output (W) | 3.6/3.0 | 9/8 |
| Speed range (rpm) | 80-1500 | |
| Setting accuracy (rpm) | 10 | |
| Footprint per stirring point (mm) | Ø 85 | Ø 64 |
| **Other** | | |
| Dimensions: W x D x H (mm) | 230 x 370 x 52 | |
| Permitted operating temperature | 5 to 40 °C at 80 % rel. humidity | |
| Weight (kg) | 1.75 | 2.1 |
| Power supply | 100-240 V, 50-60 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Digital 6 multipoint magnetic stirrer | **EHY8.1** | 1 | 641,80 |
| Digital 15 multipoint magnetic stirrer | **EHY9.1** | 1 | 899,80 |



## Multi-position magnetic stirrer POLY 15

By Thermo. Durable Cimarec-stirring mechanism. Powder-coated stainless steel housing. Digital display enables exact speed setting. Memory function stores final settings used. For max. 15 x 250 ml beakers or 6 x 1000 ml Erlenmeyer flasks.

**Technical specifications:**

| | |
|---|---|
| Stirring points | 15 |
| Volume per stirring place | 1 to 800 ml |
| Stirring capacity | 10 W |
| Rpm | 130 to 990 rpm |
| Dimensions (W x D x H) | 240 x 420 x 35 mm |
| Ambient working temperature | -10 to +40 °C at 95 % rh |
| Weight | 6000 g |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X544.1** | 1 | 819,00 |



## Multipoint magnetic stirrers 6 and 15

By Thermo.

**Features**

- With Cimarec stirring mechanism
- Stainless steel shell. Hermetically sealed.
  **Shell is therefore water/dustproof, easy to clean and to service**
- **Not suitable for underwater operation**
- 4-stage (5/10/15/20 watt) adjustable stirring power; higher power output for larger and viscose stirring volume, reduced power for heat-free, long-time operation
- **4-digit LED display**
- Memory function stores final settings used

**Technical specifications:**

| Model | Multipoint 6 | Multipoint 15 |
|---|---|---|
| Number of stirring points, e.g. for | 6<br>6 Erlenmeyer flasks 1000 ml | 15<br>15 glass beakers 250 ml |
| Distance between points | 130 mm | 65 mm |
| Volume per stirring place | 1 ml to approx. 3000 ml | |
| Rpm range: | 80 to 2000 rpm | |
| Dimensions (W x D x H) | 240 x 420 x 35 mm | |
| Protective system acc. to DIN 40050 | IP 64 | |
| Ambient temperature | -10 to +56 °C at 100 % rh | |
| Current | 230 V, 50/60 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Multipoint 6 | **X176.1** | 1 | 1290,00 |
| Multipoint 15 | **X177.1** | 1 | 1616,00 |



## RO series multi-position magnetic stirrer

By IKA. A silent-running coil drive ensures identical speeds in all stirring positions. This allows mass screenings to be performed under reproducible conditions.

- Digital speed display
- Stainless steel surface
- Stirring positions are arranged in line to make maximum use of surface area (1 x 5. 2 x 5 or 3 x 5)
- Adjustable reversing mode with change of direction (adjustable to 30/60/90/120 s)
- Eco mode for fatigue-free extended operation with reduced output (max. speed is limited to 600 rpm)

**Technical specifications:**

| Model | RO 5 | RO 10 | RO 15 |
|---|---|---|---|
| **Magnetic stirrer drive** | | | |
| Number of stirring positions | 5 | 10 | 15 |
| Max. stirring capacity per stirring position (l) | 0.4 | | |
| Max. stirring capacity with other vessels (l) | 2 | 4 | 6 |
| Distance between stirring positions (mm) | 90 | | |
| Speed display | LED | | |
| Speed range (rpm) | 0 to 1200 | | |
| Setting accuracy (rpm) | 10 | | |
| Installation surface (mm) | 120 x 470 | 190 x 470 | 280 x 470 |
| **Other** | | | |
| Dimensions W x D x H (mm) | 120 x 570 x 60 | 190 x 570 x 60 | 280 x 570 x 60 |
| Weight (kg) | 3 | 5 | 7 |
| Power supply | 100-240 V, 50/60 Hz | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RO 5 | **XT33.1** | 1 | 1249,00 |
| RO 10 | **XT34.1** | 1 | 1399,00 |
| RO 15 | **XT35.1** | 1 | 1949,00 |



## Multi-position magnetic stirrer with heater type AM4

- Four independently controlled stirring/heating positions
- With aluminium hotplates
- Powerful motor keeps stirring speeds constant even when viscosity changes

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer drive** | |
| Number of stirring points | 4 |
| Max. stirring capacity ($H_2O$) per stirring position | 15 l |
| Speed display | Scales |
| Speed per stirring position | 50 to 1500 rpm |
| **Heating function** | |
| Max. temperature per stirrer/hotplate | 50 to 370 °C |
| Heating capacity | 4 x 600 W |
| Installation area per stirrer/hotplate | ∅ 155 mm |
| Centre-to-centre distance between individual stirring positions | 186 mm |
| **Other** | |
| Dimensions (W x D x H) | 715 x 246 x 115 mm |
| Weight | 8.6 kg |
| Power supply | 230 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CKK3.1** | 1 | 1288,95 |



## Rotilabo®-stirring magnets - removers

Different types and lengths available. With powerful magnet.
Ideal for retrieving lost magnetic rods or "fishing" them out of liquid.

| Material | ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PTFE | 10 | 150 | **E448.1** | 1 | 12,30 |
| PTFE | 10 | 250 | **E449.1** | 1 | 13,55 |
| PTFE | 10 | 350 | **E450.1** | 1 | 15,70 |
| PTFE | 10 | 450 | **E451.1** | 1 | 17,20 |
| PP | 10 | 350 | **E452.1** | 1 | 10,75 |
| PP | 10 | 450 | **E453.1** | 1 | 11,85 |

# Heating and magnetic stirrers





## Multipoint magnetic stirrer with hotplate SB 162-3

By Stuart.

**Equipment:**

- Hotplates with aluminium/silicone alloy for uniform temperature distribution
- The stirring/heating points have independent control system
- With separate safety warning lamp for each stirrer/hotplate;
- lights up when hotplate temperature exceeds 50 °C

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer drive** | |
| Number of stirring points | 3 |
| Max. stirring volumes ($H_2O$) per stirring point | 15 l |
| Speed display | Scales |
| Rpm range | 100 to 1500 rpm |
| **Heating function** | |
| Max. temperature per stirrer/hotplate | 325 °C |
| Heating output | 3 x 700 W |
| Installation area per stirrer/hotplate | 160 x 160 mm |
| **Other** | |
| Dimensions (W x D x H) | 600 x 270 x 110 mm |
| Weight | 11 kg |
| Current | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KN82.1** | 1 | 1338,00 |

## RT series multi-position magnetic stirrer with heater

By IKA. For simultaneous mixing at 5, 10 or 15 stirring positions with identical intensity and homogeneous temperature distribution.

- Digital speed and temperature display
- **With integrated heating/cooling plate**
- Stainless steel surface
- Stirring positions are arranged in-line for optimal use of surface area (1 x 5. 2 x 5 or 3 x 5)
- Adjustable reversing mode with change of direction (adjustable to 30/60/90/120 s)
- Eco mode for fatigue-free extended operation with reduced output

**Technical specifications:**

| **Model** | **RT 5** | **RT 10** | **RT 15** |
|---|---|---|---|
| **Magnetic stirrer drive** | | | |
| Number of stirring positions | 5 | 10 | 15 |
| Max. stirring capacity per stirring position (l) | 0.4 | | |
| Max. stirring capacity with other vessels (l) | 2 | 4 | 6 |
| Distance between stirring positions (mm) | 90 | | |
| Speed display | LED | | |
| Speed range (rpm) | 0 to 1000 | | |
| Setting accuracy (rpm) | 10 | | |
| **Heating function** | | | |
| Temperature display | LED | | |
| Temperature range (°C) | From room temperature to 120 °C | | |
| Max. medium temperature (depending on vessel) (°C) | 70 | | |
| Setting accuracy (K) | ±1 | | |
| Installation surface (mm) | 110 x 495 | 180 x 495 | 270 x 495 |
| **Other** | | | |
| Dimensions W x D x H (mm) | 120 x 610 x 60 | 190 x 610 x 60 | 280 x 610 x 60 |
| Weight (kg) | 4 | 7.5 | 10.5 |
| Power supply | 220-240 V, 50/60 Hz | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RT 5 | **XT36.1** | 1 | 2249,00 |
| RT 10 | **XT37.1** | 1 | 2999,00 |
| RT 15 | **XT38.1** | 1 | 3749,00 |



## Rotilabo®-heating magnetic stirrer MH 15

- Aluminium hotplate with protective coating
- With elevated control panel to protect against leaking liquids
- Constant speed, even after changes in medium viscosity
- Front panel with °C and rpm-scale

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer drive** | |
| Max. stirring capacity ($H_2O$) | 15 l |
| Max. speed | 50 to 1500 rpm |
| Motor rating input / output | 30 / 23 W |
| **Heating function** | |
| Heating output | 600 W |
| Temperature range | 50 to 370 °C |
| Mounting surface | ∅ 155 mm |
| **Other** | |
| Dimensions (W x D x H) | 165 x 280 x 115 mm |
| Weight | 2.6 kg |
| Power supply | 230 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AAN2.1** | 1 | 238,65 |




## Heating and magnetic stirrer RH basic 2

By IKA.

- Stainless steel hotplate
- Preset safety circuit limits hotplate temperature to 400 °C

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer** | |
| Stirring volume ($H_2O$) | 10 l |
| Motor power: Input / Output | 15 W / 2 W |
| Rpm range | 100 to 2000 rpm |
| **Heater** | |
| Heating power | 400 W |
| Temperature range | Room temperature to max. 320 °C |
| Control accuracy | ±15 K |
| Platform surface | ∅ 125 mm |
| **Others** | |
| Dimensions (W x D x H) | 168 x 220 x 105 mm |
| Weight | 2400 g |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y888.1** | 1 | 364,00 |



## Rotilabo®-stirring magnets bars - set I

**Set consists of the 10 magnets** most commonly used.
PTFE-coated magnets, cylindric.
Come in a plain, polystyrene storage box (pocket format).
Dimensions: L 120 x W 93 x D 12 mm.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **C267.1** | 1 | 26,45 |

# Heating and magnetic stirrers



## Magnetic stirrers with heating RSM-10HS and RSM-10HP

- Temperature and speed adjustment via digital display (LED display)
- Digital display of nominal and actual temperature
- **Direct connection for medium temperature probe Pt 1000**
- Fixed safety circuit of 320 °C
- Platform made of stainless steel or ceramic coated steel (optional)

**Technical specifications:**

| Type | RSM-10HS | RSM-10HP |
|---|---|---|
| **Magnetic stirrer drive** | | |
| Max. stirring capacity ($H_2O$) | 3 l | |
| Speed range | 100 to 1500 rpm | |
| Speed display | LED | |
| Speed display accuracy | 10 rpm | |
| Motor rating input / output | 5 / 3 W | |
| **Heating function** | | |
| Hotplate material | Stainless steel | Ceramic coated steel |
| Temperature range | From room temperature to 280 °C | |
| Temperature display | LED | |
| Heating output | 500 W | |
| Temperature control accuracy | ±10 K | |
| Control accuracy with sensor probe immersed in medium (please order sensor separately) | ±2 K | |
| Set-up area | ∅ 135 mm | |
| **Other** | | |
| Dimensions (W x D x H) | 155 x 215 x 100 mm | |
| Weight | 1.4 kg | |
| Power supply | 200-240 V, 50/60 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RSM-10HS | **TT78.1** | 1 | 263,40 |
| RSM-10HP | **TT79.1** | 1 | 274,15 |

## Accessories for RSM-10HS and RSM-10HP

**Temperature probe Pt 1000**
Made of V4A. Length of probe 190 mm, ∅ 3 mm. Handle 50 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TT80.1** | 1 | 80,65 |

**Stand kit**
For attaching a single sensor probe.
**Delivery incl.** stand rod M8 (L 340 mm, ∅ 10 mm), holding rod for Pt 1000 sensor (L 160 mm, ∅ 10 mm) and cross sleeve.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YK80.1** | 1 | 64,50 |



## Rotilabo®-magnetic stirrer with heating MH 20 Digital set with integrated contact thermometer

- Temperature and speed setting via digital display
- Integrated contact thermometer with full functionality for direct control of the medium temperature up to 250 °C via Pt 100 sensor (please order accessory for fastening the sensor separately)
- Aluminium hotplate with protective coating made of ceramic
- Constant speed, even after changes in medium viscosity
- A safety warning lamp indicates temperatures above 50 °C
- Adjustable safety circuit for the hotplate temperature (50 to 370 °C)

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer drive** | |
| Max. stirring capacity ($H_2O$) | 20 l |
| Speed display | digital |
| Max. speed | 50 to 1500 rpm in steps of 10 rpm |
| **Heating function** | |
| Heating output | 630 W |
| Temperature display | digital |
| Temperature range for hotplate | 50 to 370 °C |
| Setting accuracy | ±1 K with temperature sensor<br>±5 K without temperature sensor |
| Control accuracy with temperature sensor in the medium | ±2 K |
| Control accuracy, temperature without sensor | ±10 K |
| Mounting surface | ∅ 155 mm |
| **Other** | |
| Dimensions (W x D x H) | 165 x 280 x 115 mm |
| Weight | 2.6 kg |
| Power supply | 230 V, 50-60 Hz |

**Delivery incl.** heating and magnetic stirrer MH 20 Digital and stainless steel temperature sensor Pt 100, ∅ 3 mm, L 250 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYE7.1** | 1 | 439,70 |

## Accessories for Rotilabo®-magnetic stirrer with heater MH 20 Digital set

**Accessories for fastening the sensor**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Stand rod | **EYE8.1** | 1 | 31,40 |
| Holder for temperature sensor | **EYE9.1** | 1 | 42,95 |

**Spare temperature sensor Pt 100**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spare stainless steel temperature sensor Pt 100, ∅ 3 mm, L 250 mm | **EYH0.1** | 1 | 96,65 |



## AREC.T heater and magnetic stirrer with timer

- Digital display of heating plate setpoint temperature
- Hotplate made of white ceramic
- With elevated control panel to protect against leaking liquids
- Safety warning lamp comes on at temperatures over 50 °C
- Powerful motor keeps stirring speeds constant even when viscosity changes
- **Timer - switches the stirring and heating function off on expiration of the preset countdown**

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer drive** | |
| Max. stirring capacity ($H_2O$) | 15 l |
| Speed display | Scale |
| Max. speed | 50 to 1500 rpm |
| Motor power input | 30 W |
| **Heating function** | |
| Heating capacity | 800 W |
| Temperature range | Room temperature to 550 °C |
| Temperature display | LED |
| Setting accuracy | ±5 K |
| Control accuracy | ±10 K |
| Mounting surface | 180 x 180 mm |
| **Countdown function** | |
| Timer function | 1 to 999 min in 1-min increments |
| **Other** | |
| Dimensions (W x D x H) | 203 x 344 x 94 mm |
| Weight | 3.5 kg |
| Power supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CKK2.1** | 1 | 435,40 |




## US152 and UC152 series heating and magnetic stirrer

By Stuart.
**Features:**

- Microprocessor-controlled heating system
- Platforms are optionally available in glass ceramic (good resistance to chemicals, withstands high temperature, 120 x 120 mm heated zone) or aluminium (very rugged, 150 x 150 mm heated zone)
- A safety warning lamp indicates temperatures above 50 °C

**US152 and UC152 with scale**

Temperature control with LED display, colour LEDs aid reading current actual temperature.

**US152D and UC152D with LED display**

With digital display of actual temperature. Operating temperature range from 5 °C and room temperature to 325/450 °C (model US152D/UC152D). Minimum setting temperature 25 °C.
Setting accuracy/resolution: ±5 °C. Control accuracy ±10 °C.

**Technical specifications:**

| **Model** | **② US152** | **③ US152D** | **① UC152** | **④ UC152D** |
|---|---|---|---|---|
| **Magnetic stirrer drive** | | | | |
| Max. stirring capacity $H_2O$ (l) | 15 | | | |
| Speed range (rpm) | 100 to 2000 | | | |
| **Heating function** | | | | |
| Hotplate material | Aluminium/silicon-coated | | Glass ceramic | |
| Max. hotplate temperature (°C) | 325 | | 450 | |
| Temperature display | Scale | LED | Scale | LED |
| Heating output (W) | 700 | | 500 | |
| Heated zone (mm) | 150 x 150 | | 120 x 120 | |
| Hotplate surface (mm) | 150 x 150 | | | |
| **Other** | | | | |
| Dimensions W x D x H (mm) | 172 x 248 x 120 | | | |
| Weight (kg) | 2.9 | | | |
| Power supply | 230 V, 50 Hz | | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| US152 | **PY72.1** | 1 | 395,00 |
| US152D | **CHA5.1** | 1 | 468,00 |
| UC152 | **PY73.1** | 1 | 426,00 |
| UC152D | **CHA6.1** | 1 | 479,00 |

# Heating and magnetic stirrers





## RH series heating and magnetic stirrer

By IKA.

- With adjustable safety circuit for hot plate temperatures from 50 to 370 °C
- With DIN 12878 socket for connecting an electronic contact thermometer, e.g. ETS-D5 (please order separately, see contact thermometer), to control the medium temperature.

**Additional features of RH digital**

- Digital display of temperature and speed
- Error code display
- Easy operation by membrane keyboard

**Technical specifications:**

| Type | RH basic | RH digital |
|---|---|---|
| **Magnetic stirrer drive** | | |
| Stirring volume of $H_2O$ (l) | 15 | |
| Motor power: input / output (W) | 15/2 | |
| Speed display | Scale | LED |
| Speed range (rpm) | 50 to 2000 | |
| **Heating function** | | |
| Heating power (W) | 600 | |
| Temperature display | Scale | LED |
| Temperature range (°C) | 50 to 320 | |
| Setting accuracy (K) | - | ±5 |
| Control accuracy (K) with temperature probe in medium (please order contact thermometer ETS-D5 separately) | ±0.5 | |
| Installation surface (mm) | ∅ 135 | |
| **Other** | | |
| Dimensions W x D x H (mm) | 160 x 246 x 90 | |
| Weight (kg) | 2 | |
| Power supply | 220-240 V, 50/60 Hz | |

**Stainless steel hotplate**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RH basic | **XT23.1** | 1 | 499,00 |
| RH digital | **XT24.1** | 1 | 598,00 |

**Hotplate with enamel coating**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RH basic | **XT25.1** | 1 | 523,00 |
| RH digital | **XT26.1** | 1 | 623,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Type H 102 protective hood for RH basic | **XT27.1** | 1 | 15,00 |
| Type H 103 protective hood for RH digital | **XT28.1** | 1 | 15,00 |

## C-MAG HS-series magnetic stirrers with heating

By IKA.

**General information for all models**

- Hotplate made of glass ceramics
- Temperature setting via digital display (LED)
- Digital display of hotplate desired temperature
- Error code malfunction indicator
- Fixed safety circuit of 550 °C
- Hot Top Indicator (Warning in case of hot surface)

**Models C-MAG HS 7 and C-MAG HS 10:**
Additionally has a DIN-socket 12878 for connecting to an electronic contact thermometer e.g. ETS-D5 for high-precision temperature control.

**Technical specifications:**

| Model | C-MAG HS 4 | C-MAG HS 7 | C-MAG HS 10 |
|---|---|---|---|
| **Magnetic stirrer drive** | | | |
| Max. stirring volume $H_2O$ (l) | 5 | 10 | 15 |
| Speed indicator | Scale | | |
| rpm-range | 100 to 1500 rpm | | |
| Motor power: Input / Output | 15 / 1.5 W | | |
| **Heating function** | | | |
| Heating output (W) | 250 | 1000 | 1500 |
| Temperature range (°C) | 50 to 500 | | |
| Control accuracy (K) | ±10 | | |
| Platform surface W x D (mm) | 100 x 100 | 180 x 180 | 260 x 260 |
| **Other** | | | |
| Dimensions W x D x H (mm) | 150 x 260 x 105 | 220 x 330 x 105 | 300 x 415 x 105 |
| Weight (kg) | 3 | 5 | 6 |
| Power supply | 230 V, 50/60 Hz | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| C-MAG HS 4 | **LN35.1** | 1 | 499,00 |
| C-MAG HS 7 | **LN36.1** | 1 | 549,00 |
| C-MAG HS 10 | **LN37.1** | 1 | 749,00 |



NEU
NOUVEAU
NEW



## Heater and magnetic stirrer AREX-6 digital complete set

- Heating plate made of aluminium with ceramic coating
- Clear white LED display with icons for easy identification and navigation through the menus
- Temperature and speed setting via digital display
- Integrated contact thermometer with full functionality, for direct control of the medium temperature up to 250 °C via Pt 100 sensor
- Timer function - switches the stirring and heating function off on expiration of the preset countdown
- Adjustable reversing mode with change of direction (from 5 s to 99 min, 59 x in 1s steps)
- Independent safety circuits protect the device in the event of overtemperature
- Adjustable max. temperature limit
- Probe Detector Alarm: Detects if the temperature sensor is not immersed in the medium
- Resistant cast housing (IP 42)
- Constant speed, even after changes in medium viscosity

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer drive** | |
| Max. stirring capacity (H2O) | 20 l |
| Speed display | digital |
| Max. speed | 30 to 1700 rpm in steps of 5 rpm |
| **Heating function** | |
| Heating output | 600 W |
| Temperature range | Room temperature to 370 °C |
| Temperature display | digital |
| Setting accuracy | 1 °C |
| Control accuracy | ±1 °C |
| Mounting surface | ∅ 135 mm |
| **Countdown function** | |
| Timer function | 1 to 99 min in 1-min increments |
| **Other** | |
| Dimensions (W x D x H) | 160 x 280 x 105 mm |
| Weight | 2.6 kg |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** stainless steel temperature measuring probe Pt 100 (∅ 3 mm, L 250 mm), tripod rod and holder for temperature sensor.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HLN1.1** | 1 | 642,85 |

## Accessories for heater and magnetic stirrer AREX-6 Digital

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spare stainless steel temperature sensor Pt 100, ∅ 3 mm, L 250 mm | **EYH0.1** | 1 | 96,65 |
| Temperature sensor, glass-coated Pt 100, ∅ 5 mm, L 250 mm | **HLN2.1** | 1 | 138,70 |
| Silicone protective hood for AREX-6 Digital | **HLN3.1** | 1 | 25,65 |

## Magnetic stirrer with heater C-MAG HS 7 complete set

By IKA.

**Magnetic stirrer with heater C-MAG HS 7**

- Ceramic glass heating plate
- Temperature setting via digital display (LED)
- Digital display of set heating plate temperature
- Error code display in the event of mistake
- Fixed safety circuit of 550 °C
- Hot Top Indicator (hot surface warning)
- Bushing for connecting a contact thermometer ETS-D5

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer drive** | |
| Max. stirring capacity ($H_2O$) | 10 l |
| Speed display | Scale |
| Speed range | 100 to 1500 rpm |
| Motor rating input / output | 15 / 1.5 W |
| **Heating function** | |
| Heating output | 1000 W |
| Temperature range | 50 to 500 °C |
| Control accuracy | ±10 K |
| Set-up dimensions (W x D) | 180 x 180 mm |
| **Other** | |
| Dimensions (W x D x H) | 220 x 330 x 105 mm |
| Weight | 5 kg |
| Electrical supply | 230 V, 50/60 Hz |

**Contact thermometer ETS-D5:**
Control of medium temperature with display of actual temperature. Bushed connection according to DIN 12878 for connecting a contact thermometer. Temperature regulation to prevent overheating.

**Technical specifications:**

| | |
|---|---|
| Measuring/control range | -50 to 450 °C |
| Resolution | 0.1 °C |
| Measuring accuracy | ±0.2 K |
| Setting accuracy | ±0.1 K |
| Control deviation | ±0.5 K |
| Dimensions (W x D x H) | 82 x 22 x 83 mm |

**Complete set, delivery incl.**

- Heating and magnetic stirrer C-MAG HS 7
- Contact thermometer ETS-D5 incl. stainless steel temperature sensor Pt 1000
- Support rod, holding rod and boss head clamp

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LY79.1** | 1 | 699,00 |

# Heating and magnetic stirrers



## C-MAG HS-Digital series heater and magnetic stirrer

By IKA.

- Ceramic glass heating plate
- Large LCD display for simultaneous display of actual and nominal hot plate temperature (actual temperature display by connected temperature sensor with 0.1 °C resolution)
- Direct connectivity for Pt 1000.60 medium temperature sensor
- **Integrated contact thermometer with full functionality**
- Error code display in the event of fault
- Hot surface warning
- Safety circuit with default setting of 550 °C for hot plate temperature

**Technical specifications:**

| Model | HS 4 digital | HS 7 digital | HS 10 digital |
|---|---|---|---|
| **Magnetic stirrer drive** | | | |
| Max. stirring capacity $H_2O$ (l) | 5 | 10 | 15 |
| Motor power: power input / output (W) | 15 / 1.5 | | |
| Speed display | Scale | | |
| Speed range (rpm) | 100 to 1500 | | |
| **Heating function** | | | |
| Heating output (W) | 250 | 1000 | 1500 |
| Temperature display | LCD | | |
| Temperature range (°C) | 50 to 500 | | |
| Setting accuracy (K) | ±1 | | |
| Control accuracy with temperature probe immersed in medium (K) | ±0.5 | | |
| Installation surface (mm) | 100 x 100 | 180 x 180 | 260 x 260 |
| **Other** | | | |
| Dimensions W x D x H (mm) | 150 x 260 x 105 | 215 x 330 x 105 | 300 x 415 x 105 |
| Weight (kg) | 3 | 5 | 6 |
| Power supply | 230 V, 50/60 Hz | | |

**Delivery incl.** Pt 1000.60 stainless steel temperature sensor.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| HS 4 digital | **XT59.1** | 1 | 599,00 |
| HS 7 digital | **XT60.1** | 1 | 699,00 |
| HS 10 digital | **XT61.1** | 1 | 849,00 |

## Accessories for C-Mag HS-Digital-series

By IKA.

**Accessories for attaching temperature sensor PT 100**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Stand rod | **A315.1** | 1 | 57,00 |
| Clamp | **A316.1** | 1 | 25,00 |
| Holder rod | **HA16.1** | 1 | 25,00 |

**Temperature sensor**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Replacement stainless steel temperature measuring sensor Pt 1000.60 | **XT31.1** | 1 | 112,00 |
| Glass temperature measuring sensor Pt 1000.70 | **XT32.1** | 1 | 123,00 |



## MR Hei-Standard magnetic stirrers with heating

By Heidolph.

**Features**:

- Heating power 800 W
- Max stirring volume 20 l
- Hotplate made of silumin with ceramic layer
- Independent safety circuit switches off the heating 25 °C over the preset hotplate temperature with a separate circuit
- Residual heat warning

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer drive** | |
| Max stirring volume ($H_2O$) | 20 l |
| Speed range | 100 to 1400 rpm |
| Control accuracy of speed | ±2 % |
| **Heater function** | |
| Heating power | 800 W |
| Temperature range | Room temperature to 300 °C |
| Setting accuracy | ±5 K |
| Control accuracy temperature | ±5 K |
| Platform size | ∅ 145 mm |
| **Other** | |
| Dimensions (W x D x H) | 173 x 277 x 94 mm |
| Weight | 2.6 kg |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HA08.1** | 1 | 607,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Silicone cover | **HA09.1** | 1 | 18,00 |

▶ Contact thermometer see page 1017



**Programme extension!**

## MR Hei-Tec and MR Hei-Connect magnetic stirrer with heating

By Heidolph.

- Digital display of hotplate set temperature and set speed
- Heating power 800 W
- Max. stirring volume 20 l
- Hotplate made of silumin with ceramic layer
- Independent safety circuit switches off the heating 25 °C over the preset hotplate temperature with a separate circuit
- **Direct connection of medium temperature sensor PT 1000 possible**. (Please order required temperature sensor and accessories for mounting the sensor probe separately).
- Integrated contact thermometer with full functionality
- Residual heat warning

**Model MR Hei-Connect**

- With RS 232 interface for process documentation and reproducible results

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer drive** | |
| Max stirring volume ($H_2O$) | 20 l |
| Rpm range | 100 to 1400 rpm |
| Control accuracy of speed | ±2 % |
| **Heater function** | |
| Heating power | 800 W |
| Temperature range | Room temperature to 300 °C |
| Setting accuracy | ±1 K |
| Control accuracy temperature | ±5 K |
| Control accuracy with optional sensor in medium | ±1 K |
| Platform size | ∅ 145 mm |
| **Other** | |
| Dimensions (W x D x H) | 173 x 277 x 94 mm |
| Weight | 2.6 kg |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MR Hei-Tec | **HA10.1** | 1 | 705,00 |
| MR Hei-Connect | **HCK1.1** | 1 | 933,00 |

Accessories:

| | | | |
|---|---|---|---|
| **Silicone cover** for control panel and unit | **HA12.1** | 1 | 18,00 |

## Accessories for MR Hei-Tec and MR Hei-Connect magnetic stirrer

By Heidolph.

**Temperature probe PT 1000 made of V4A**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T041.1** | 1 | 128,00 |

**Temperature probe PT 1000 with glass sheath**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T042.1** | 1 | 183,00 |

**Stand kit**

For attaching a single sensor probe.

**Delivery incl.** M10 stand rod (L 425 mm, ∅ 13 mm) and holding device with cable terminal strip (L 85 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ALN8.1** | 1 | 117,00 |



## Heating and magnetic stirrer RCT basic *safety control*

By IKA.

- Temperature and speed control via digital display
- Digital display of preset safe temperature limit
- Hot top indicator (warns when surface is hot)
- Adjustable safety circuit to regulate hotplate temperature (50 to 360 °C)
- Hotplate made of aluminium
- **Direct connection of medium temperature sensor PT 1000 possible**. (Please order the accessories for attaching the sensor separately).
- Integrated contact thermometer with full functionality
- DIN socket 12878 for connecting an electronic contact thermometer e.g. ETS-D5 for precise temperature control (please order separately, see contact thermometer)

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer drive** | |
| Max stirring volume ($H_2O$) | 20 l |
| Motor power: input / output | 16 / 9 W |
| Speed display | digital |
| Rpm range | 50 to 1500 rpm |
| **Heater function** | |
| Heating power | 600 W |
| Temperature display | digital |
| Temperature range | Room temperature to 310 °C |
| Setting accuracy | ±1 K |
| Control accuracy with temperature sensor in medium (contact thermometer ETS-D5 please order separately) | PT 1000: ±1 K<br>ETS-D5: ±0.5 K |
| Platform size | ∅ 135 mm |
| **Other** | |
| Dimensions (W x D x H) | 160 x 270 x 85 mm |
| Weight | 2.5 kg |

**Delivery incl.** protective hood and PT 1000 temperature sensor.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EY83.1** | 1 | 738,00 |

## Accessories for RCT basic *safety control*

By IKA.

**Accessories for attaching temperature sensor PT 1000**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Stand rod | **A315.1** | 1 | 57,00 |
| Clamp | **A316.1** | 1 | 25,00 |
| Holder rod | **HA16.1** | 1 | 25,00 |

**Spare protective hood H 100 for RCT basic**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spare protective hood | **HY25.1** | 1 | 15,00 |

# Heating and magnetic stirrers



## Heating and magnetic stirrers with large hotplate models CB 302 and SB 302

By Stuart.

**Features**

- Hotplate comes either in chemically-resistant ceramic or robust aluminium
- Safety warning lamp for temperatures over 50 °C

**Technical specifications:**

| Model | CB 302 | SB 302 |
|---|---|---|
| **Magnetic stirrer drive** | | |
| Max stirring volume ($H_2O$) | 15 l | |
| Speed display | Scale | |
| rpm range | 100 to 1500 rpm | |
| **Heating function** | | |
| Heating power | 1200 W | 600 W |
| Temperature range | Max. room temperature 450 °C | Max. room temperature 300 °C |
| Hotplate material | Ceramic | Aluminium |
| Heated area | 200 x 200 mm | 300 x 300 mm |
| Hotplate surface | 300 x 300 mm | |
| **Other** | | |
| Dimensions (W x D x H) | 300 x 365 x 105 mm | |
| Weight | 7 kg | |
| Power supply | 230 V, 50 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| CB 302 | **KN93.1** * | 1 | 971,00 |
| SB 302 | **KN94.1** * | 1 | 998,00 |

* Longer delivery times possible. Please check with our Sales Department.



## RET control safety magnetic stirrer with heater

By IKA.

**Type**

- Digital display of time and speed
- Straightforward TFT display for easy navigation through menus
- Temperature display resolution 0.01 °C
- Connectivity for Pt 100.70 temperature probe
- **Integrated contact thermometer with full functionality**
- Timer and countdown function
- Magnet break-off detection, intermittent mode
- USB and RS 232 ports for activation and documentation of the magnetic stirrer

**pH function**

- With integrated pH electrode connection (BNC socket)
- Measurement range 0 to 14 pH; resolution 0.01 pH; accuracy ±0.1 pH
- Does not include pH single-rod measuring cell (please order separately; you will find a large selection of pH electrodes with BNC connectors in the section "Measuring instruments")

**Integrated weighing function**

- Max. weighing range 5000 g, readability 1 g
- Linearity ±1 g

**Technical specifications:**

| | |
|---|---|
| **Magnetic stirrer drive** | |
| Max. stirring capacity ($H_2O$) | 20 l |
| Motor rating input / output | 16/9 W |
| Speed display | TFT |
| Speed range | 50 to 1700 rpm |
| **Heating function** | |
| Heating output | 600 W |
| Temperature display | TFT |
| Temperature range | Room temp. up to 340 °C |
| Setting accuracy | ±0.1 K |
| Control accuracy with temperature probe immersed in medium | ±0.2 K |
| Mounting surface | ∅ 135 mm |
| **Other** | |
| Dimensions (W x D x H) | 160 x 270 x 85 mm |
| Power supply | 220-240 V, 50/60 Hz |

**Delivery incl.** Pt 100.70 stainless steel temperature probe and type H 104 protective hood.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RET control with stainless steel hot plate | **XT54.1** | 1 | 1299,00 |
| RET control with enamelled hot plate | **XT55.1** | 1 | 1349,00 |

## Accessories for RET control

**Accessories for attaching temperature sensor Pt 100.70**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Stand rod | **A315.1** | 1 | 57,00 |
| Clamp | **A316.1** | 1 | 25,00 |
| Holder rod | **HA16.1** | 1 | 25,00 |

**Stainless steel temperature sensor**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Replacement Pt 100.70 stainless steel temperature sensor | **H949.1** | 1 | 107,00 |
| Glass Pt 100.51 temperature sensor | **XT56.1** | 1 | 245,00 |

**Replacement protective hood for RET control**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Protective hood H 104 | **XT30.1** | 1 | 15,00 |



## Magnetic stirrer with heating MR Hei-End

By Heidolph.

- Heater capacity 800 W
- **Digital display of speed and temperature (set- and actual value)**
- Max stirring volume 20 l
- Hotplate made of silumin with ceramic layer
- Independent safety circuit switches the heating off as soon as a pre-set temperature difference, above the set-temperature has been reached
- With display indicating residual heat when the device has been switched off until the temperature falls below 50 °C
- Comes with RS 232 interface and analog outlet
- A Pt 1000 temperature sensor can be connected directly (please order separately)
- Residual heat warning

**Technical specifications:**

| **Magnetic stirrer drive** | |
|---|---|
| Max. stirring volume ($H_2O$) | 20 l |
| Speed display | digital |
| Rpm range | 30 to 1400 rpm |
| Control accuracy of speed | ±1 % |
| **Heating function** | |
| Heater capacity | 800 W |
| Temperature display | digital |
| Ideal for temperatures | max. room temperature 300 °C |
| Setting accuracy | ±1 K |
| Control accuracy temperature | ±5 K |
| Control accuracy with sensor in medium (with optional PT 1000) | ±0.2 K |
| Platform | ∅ 145 mm |
| **Others** | |
| Dimensions (W x D x H) | 173 x 277 x 94 mm |
| Weight | 2.6 kg |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HA13.1** | 1 | 1276,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| **Silicone cover** for control panel and unit | **HA12.1** | 1 | 18,00 |

## Accessories for magnetic stirrers MR Hei-End

By Heidolph.

**Temperature sensor Pt 1000 made of V4A**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T041.1** | 1 | 128,00 |

**Temperature sensor Pt 1000 with glass sheath**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T042.1** | 1 | 183,00 |

**Stand kit**

For attaching a single sensor probe.

**Delivery incl.** M10 stand rod (L 425 mm, ∅ 13 mm) and holding device with cable terminal strip (L 85 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ALN8.1** | 1 | 117,00 |




## Contact thermometer ETS-D5

By IKA.

- For all magnetic stirrers with contact thermometer terminals according to DIN 12878
- Temperature control overheating
- Different control modes (= operating modes) can be selected

**Technical specifications:**

| **Temperature** | |
|---|---|
| Temperature range | -50 to 450 °C |
| Resolution | 0.1 °C |
| Accuracy | ±0.2 K |
| Setting accuracy | 0.1 K |
| Standard tolerance | ±0.5 K |
| **General specifications** | |
| Dimensions without sensor (W x D x H) | 82 x 22 x 83 mm |
| Current | 230 V, 50 Hz |

**Delivery incl.** stainless steel sensor Pt 1000 type H 67.60 (L 260 mm, ∅ 3 mm) and connector cable. Please order the accessories for attaching the contact thermometer separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EY84.1** | 1 | 329,00 |

## Accessories for contact thermometers ETS-D5

By IKA.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Extension lead, L 1 m | **K859.1** | 1 | 164,00 |
| Measuring probe with glass sheath, L 260 x ∅ 6 mm | **K856.1** | 1 | 251,00 |
| Spare measuring probe Pt 1000 type H 62.51, L 260 x ∅ 3 mm | **K855.1** | 1 | 168,00 |
| Stand rod | **A315.1** | 1 | 57,00 |
| Clamp | **A316.1** | 1 | 25,00 |
| Holder rod | **HA16.1** | 1 | 25,00 |

# Magnetic followers



## Rotilabo® Economy magnetic bars

PTFE coated. Similar to cylindrical magnetic bar, but with rounded edges to intensify the stirring effect even at low speeds. Autoclavable.

| ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 12 | **XA17.1** | 10 | 9,05 |
| 8 | 25 | **XA18.1** | 10 | 12,60 |
| 8 | 40 | **XA19.1** | 10 | 14,55 |
| 8 | 50 | **XA20.1** | 10 | 19,50 |



## Rotilabo®-micro-magnetic bars

PTFE coated. For very small vessels. Autoclavable.

| ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1.5 | 8 | **PK70.1** | 10 | 11,95 |
| 1.5 | 15 | **PK74.1** | 10 | 20,25 |
| 2 | 2 | **PK65.1** | 10 | 13,25 |
| 2 | 5 | **0955.2** | 10 | 15,20 |
| 2 | 7 | **0973.2** | 10 | 12,60 |
| 3 | 3 | **PK66.1** | 10 | 15,05 |
| 3 | 6 | **PK68.1** | 10 | 10,25 |
| 3 | 8 | **PK71.1** | 10 | 13,25 |
| 3 | 10 | **PK72.1** | 10 | 12,70 |
| 3 | 13 | **PK73.1** | 10 | 13,55 |
| 3 | 20 | **PK75.1** | 10 | 22,70 |
| 3 | 30 | **PK76.1** | 10 | 25,30 |



## Rotilabo®-triangular magnetic stirring rods

PTFE-coated. Autoclavable.

| ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 12 | **1661.1** | 1 | 2,30 |
| 8 | 20 | **1662.1** | 1 | 3,80 |
| 8 | 25 | **5069.1** | 1 | 2,40 |
| 14 | 25 | **4551.1** | 1 | 3,35 |
| 9 | 35 | **4557.1** | 1 | 3,15 |
| 14 | 40 | **1825.1** | 1 | 3,45 |
| 12 | 50 | **1842.1** | 1 | 3,80 |
| 14 | 55 | **1843.1** | 1 | 4,55 |
| 18 | 80 | **1844.1** | 1 | 6,45 |



## Rotilabo®-cylindric magnetic stirring bars

PTFE-coated. Autoclavable.

| ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2 | 5 | **0955.1** | 1 | 2,05 |
| 2 | 5 | **0955.2** | 10 | 15,20 |
| 3 | 6 | **AKP1.1** | 1 | 2,05 |
| 3 | 6 | **AKP1.2** | 10 | 14,20 |
| 2 | 7 | **0973.1** | 1 | 1,75 |
| 2 | 7 | **0973.2** | 10 | 12,60 |
| 3 | 8 | **0989.1** | 1 | 1,95 |
| 3 | 8 | **0989.2** | 10 | 14,00 |
| 6 | 10 | **0994.1** | 1 | 1,85 |
| 6 | 10 | **0994.2** | 10 | 11,85 |
| 4,5 | 12 | **0999.1** | 1 | 1,65 |
| 4,5 | 12 | **0999.2** | 10 | 10,65 |
| 6 | 13 | **AKP2.1** | 1 | 2,30 |
| 6 | 13 | **AKP2.2** | 10 | 16,70 |
| 8 | 13 | **AKP3.1** | 1 | 2,70 |
| 8 | 13 | **AKP3.2** | 10 | 21,20 |
| 10 | 13 | **AKP4.1** | 1 | 2,80 |
| 10 | 13 | **AKP4.2** | 10 | 21,30 |
| 4,5 | 15 | **1204.1** | 1 | 1,75 |
| 4,5 | 15 | **1204.2** | 10 | 10,65 |
| 6 | 15 | **AKP5.1** | 1 | 2,05 |
| 6 | 15 | **AKP5.2** | 10 | 16,15 |
| 6 | 20 | **AKP6.1** | 1 | 2,15 |
| 6 | 20 | **AKP6.2** | 10 | 16,80 |
| 7 | 20 | **AKP7.1** | 1 | 2,40 |
| 7 | 20 | **AKP7.2** | 10 | 18,75 |
| 8 | 20 | **1237.1** | 1 | 2,15 |
| 8 | 20 | **1237.2** | 10 | 14,85 |
| 5 | 25 | **AKP8.1** | 1 | 2,50 |
| 5 | 25 | **AKP8.2** | 10 | 19,70 |
| 6 | 25 | **2152.1** | 1 | 2,05 |
| 6 | 25 | **2152.2** | 10 | 15,70 |
| 8 | 25 | **AKP9.1** | 1 | 2,60 |
| 8 | 25 | **AKP9.2** | 10 | 22,80 |
| 6 | 30 | **2153.1** | 1 | 2,15 |
| 6 | 30 | **2153.2** | 10 | 18,10 |
| 7 | 30 | **AKT0.1** | 1 | 2,60 |
| 7 | 30 | **AKT0.2** | 10 | 21,75 |
| 8 | 30 | **AKT1.1** | 1 | 2,80 |
| 8 | 30 | **AKT1.2** | 10 | 22,70 |
| 6 | 35 | **1292.1** | 1 | 2,40 |
| 6 | 35 | **1292.2** | 10 | 19,35 |
| 7 | 40 | **AKT2.1** | 1 | 2,90 |
| 7 | 40 | **AKT2.2** | 10 | 23,65 |
| 8 | 40 | **1306.1** | 1 | 2,50 |
| 8 | 40 | **1306.2** | 10 | 20,10 |
| 8 | 45 | **1309.1** | 1 | 2,90 |
| 8 | 45 | **1309.2** | 10 | 24,10 |
| 8 | 50 | **1482.1** | 1 | 3,35 |
| 8 | 50 | **1482.2** | 10 | 27,75 |
| 12 | 55 | **1484.1** | 1 | 8,20 |
| 10 | 60 | **1486.1** | 1 | 4,30 |
| 10 | 60 | **1486.2** | 10 | 32,50 |
| 10 | 70 | **AKT3.1** | 1 | 5,50 |
| 10 | 70 | **AKT3.2** | 10 | 47,85 |
| 10 | 80 | **1487.1** | 1 | 5,95 |
| 10 | 80 | **1487.2** | 10 | 46,70 |
| 12 | 120 | **1488.1** | 1 | 25,80 |

# Magnetic followers



## Rotilabo®-magnetic stirring rods with centre ring

PTFE-coated. Cylindric. Autoclavable.

| ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 8 | **1489.1** | 1 | 2,05 |
| 3 | 8 | **1489.2** | 10 | 18,85 |
| 4,5 | 12 | **1490.1** | 1 | 2,30 |
| 4,5 | 12 | **1490.2** | 10 | 19,90 |
| 4,5 | 15 | **1491.1** | 1 | 2,05 |
| 4,5 | 15 | **1491.2** | 10 | 18,85 |
| 6 | 20 | **1500.1** | 1 | 2,15 |
| 6 | 20 | **1500.2** | 10 | 19,70 |
| 6 | 25 | **1553.1** | 1 | 2,30 |
| 6 | 25 | **1553.2** | 10 | 21,00 |
| 6 | 30 | **1555.1** | 1 | 2,40 |
| 6 | 30 | **1555.2** | 10 | 21,85 |
| 6 | 35 | **1556.1** | 1 | 2,40 |
| 8 | 40 | **1600.1** | 1 | 3,15 |
| 8 | 45 | **1610.1** | 1 | 3,35 |
| 8 | 50 | **1613.1** | 1 | 3,80 |
| 10 | 60 | **1614.1** | 1 | 4,30 |
| 10 | 70 | **1659.1** | 1 | 5,30 |



## Rotilabo®-ellipsoidal magnetic stirring rods

PTFE-coated. Autoclavable.

| ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 | 10 | **NK66.1** | 1 | 3,70 |
| 6 | 15 | **NK67.1** | 1 | 3,35 |
| 10 | 25 | **NK68.1** | 1 | 4,85 |
| 10 | 30 | **NK69.1** | 1 | 5,95 |
| 10 | 20 | **1848.1** | 1 | 2,60 |
| 12 | 25 | **1849.1** | 1 | 3,05 |
| 13 | 35 | **NK70.1** | 1 | 7,55 |
| 13 | 40 | **NK71.1** | 1 | 8,60 |
| 16 | 30 | **1853.1** | 1 | 3,90 |
| 16 | 35 | **1895.1** | 1 | 4,45 |
| 20 | 40 | **1896.1** | 1 | 5,60 |
| 20 | 50 | **1897.1** | 1 | 7,85 |
| 20 | 64 | **1909.1** | 1 | 10,15 |
| 20 | 70 | **1928.1** | 1 | 11,95 |

▶ Heating and magnetic stirrers from page 998



## Rotilabo®-glass-encased magnetic bars

Magnetic core coated with borosilicate glass, cylindrical. Smooth surface offering universal chemical resistance. Temperature stable up to 350 °C. Autoclavable.

| ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 | 6 | **PK60.1** | 10 | 41,95 |
| 5 | 12 | **PK61.1** | 10 | 44,10 |
| 6 | 25 | **PK62.1** | 10 | 46,15 |
| 8 | 45 | **PK63.1** | 10 | 51,10 |
| 8 | 60 | **PK64.1** | 10 | 55,70 |



## KOMET stirring magnets

Extra strong stirring magnets. More than three times the torque of conventional stirrers. For viscous media, high speed up to 2000 rpm and more distance between stirring rod and magnetic stirrer. PTFE-coated. Autoclavable.

| Type | ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Komet 15 | 9 | 15 | **Y823.1** | 1 | 18,90 |
| Komet 30 | 12 | 29 | **Y824.1** | 1 | 29,95 |
| Komet 50 | 21 | 50 | **Y825.1** | 1 | 37,80 |
| Komet 90 | 24 | 90 | **Y826.1** | 1 | 132,50 |



## Rotilabo®-dumbell magnetic stirring rods

Very good stirring properties due to side stabilizing disc. Autoclavable.

| ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 8 | 35 | **1943.1** | 1 | 11,30 |
| 8 | 55 | **1957.1** | 1 | 12,15 |

# Magnetic followers



## Rotilabo®-tube stirring magnets

PTFE coated. Autoclavable.

| ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 9 | 6 | **LT59.1** | 1 | 2,60 |
| 10 | 6 | **LT60.1** | 1 | 2,70 |
| 20 | 10 | **LT61.1** | 1 | 3,05 |
| 30 | 12 | **LT62.1** | 1 | 3,90 |



## Rotilabo®-special stirring magnets

PTFE coated. Autoclavable.

**Ball shaped**

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12 | **LT63.1** | 1 | 3,25 |

**Bulb stirring magnet**, height 6 mm.

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 9 | **LT64.1** | 1 | 2,50 |



## Rotilabo®-tablet form style stirring magnet

PTFE-coated. Autoclavable.

| ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 22 | 15 | **3003.1** | 1 | 8,95 |
| 30 | 12 | **4490.1** | 1 | 10,00 |
| 40 | 14 | **4517.1** | 1 | 18,95 |



## Rotilabo®-stirring magnets

In different colours, PTFE-coated. Autoclavable.

| Colour | ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| red | 2 | 5 | **A937.1** | 1 | 3,90 |
| red | 2 | 7 | **A938.1** | 1 | 4,10 |
| red | 3 | 10 | **A939.1** | 1 | 4,20 |
| red | 3 | 13 | **A940.1** | 1 | 4,55 |
| yellow | 2 | 5 | **A941.1** | 1 | 3,90 |
| yellow | 2 | 7 | **A942.1** | 1 | 4,10 |
| yellow | 3 | 10 | **A943.1** | 1 | 4,20 |
| yellow | 3 | 13 | **A944.1** | 1 | 4,55 |
| blue | 2 | 5 | **A945.1** | 1 | 3,90 |
| blue | 2 | 7 | **A946.1** | 1 | 4,10 |
| blue | 3 | 10 | **A947.1** | 1 | 4,20 |
| blue | 3 | 13 | **A948.1** | 1 | 4,55 |



## Rotilabo® magnetic bars, cross-shaped

PTFE coated. All-purpose magnetic bar with stable rotation position. Autoclavable.

| ∅ (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | 5 | **XA21.1** | 10 | 21,65 |
| 20 | 8 | **XA22.1** | 10 | 29,05 |
| 25 | 9 | **XA23.1** | 10 | 32,90 |
| 30 | 10 | **XA24.1** | 10 | 39,05 |
| 38 | 11 | **XA25.1** | 5 | 26,05 |
| 50 | 15 | **XA26.1** | 5 | 48,95 |
| 60 | 20 | **XA27.1** | 5 | 70,65 |

# Magnetic followers



## Rotilabo®-stirring magnets with centre ring

PTFE-coated, in different colours. Autoclavable.

| Colour | ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| red | 8 | 13 | **A950.1** | 1 | 4,30 |
| red | 8 | 15 | **A951.1** | 1 | 4,75 |
| red | 8 | 22 | **A952.1** | 1 | 5,30 |
| red | 8 | 25 | **A953.1** | 1 | 5,60 |
| red | 8 | 38 | **A954.1** | 1 | 6,35 |
| red | 8 | 51 | **A955.1** | 1 | 6,70 |
| red | 13 | 75 | **A956.1** | 1 | 13,15 |
| yellow | 8 | 13 | **A958.1** | 1 | 4,30 |
| yellow | 8 | 15 | **A959.1** | 1 | 4,75 |
| yellow | 8 | 22 | **A960.1** | 1 | 5,30 |
| yellow | 8 | 25 | **A961.1** | 1 | 5,60 |
| yellow | 8 | 38 | **A962.1** | 1 | 6,35 |
| yellow | 8 | 51 | **A963.1** | 1 | 6,70 |
| yellow | 13 | 75 | **A964.1** | 1 | 13,15 |
| blue | 8 | 13 | **A966.1** | 1 | 4,30 |
| blue | 8 | 15 | **A967.1** | 1 | 4,75 |
| blue | 8 | 22 | **A968.1** | 1 | 5,30 |
| blue | 8 | 25 | **A969.1** | 1 | 5,60 |
| blue | 8 | 38 | **A189.1** | 1 | 6,35 |
| blue | 8 | 51 | **A190.1** | 1 | 6,70 |
| blue | 13 | 75 | **A191.1** | 1 | 13,15 |



## Rotilabo®-stirring magnets bars - set I

**Set consists of the 10 magnets** most commonly used.
PTFE-coated magnets, cylindric.
Come in a plain, polystyrene storage box (pocket format).
Dimensions: L 120 x W 93 x D 12 mm.

**Contents:**

| Length (mm) | ∅ (mm) | number |
|---|---|---|
| 15<br>20<br>25 | 4.5<br>7<br>6 | 1<br>2<br>2 |
| 30<br>40<br>50 | 6<br>8<br>8 | 1<br>2<br>2 |

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **C267.1** | 1 | 26,45 |




## Rotilabo®-magnetic vane stir bar

PTFE-coated. For effective stirring, e.g. in test tubes, centrifuge tubes, reaction vials etc.
Heat stable from -200 to +250 °C. Autoclavable.

| Image | Type | Height (mm) | ∅ (mm) | For test tube ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| ① | triangular | 9 | 5,5 | 6-7 | **YH15.1** | 10 | 32,05 |
| ① | triangular | 11 | 8 | 9-10 | **YH16.1** | 10 | 33,35 |
| ② | triangular, long | 16 | 10 | 11-12 | **YH17.1** | 10 | 41,10 |
| ③ | round | 10 | 13 | 14-15 | **YH18.1** | 10 | 34,55 |
| ④ | round, long | 20 | 13 | 14-15 | **YH19.1** | 10 | 43,75 |



## Rotilabo®-stirring magnets bars - set II

PTFE-coated, cylindric magnets. **18 rods assorted** in practical storage box, dimensions: L 187 x W 97 x D 32 mm.
Assortment of most widely used stirring magnets.

**Contents:**

| Length (mm) | ∅ (mm) | number |
|---|---|---|
| 10<br>15<br>20 | 6<br>6<br>7 | 2<br>2<br>2 |
| 25<br>30<br>40 | 8<br>8<br>8 | 2<br>2<br>2 |
| 50<br>60<br>80 | 8<br>10<br>10 | 2<br>2<br>2 |

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **X171.1** | 1 | 47,30 |

# Magnetic followers



121°C

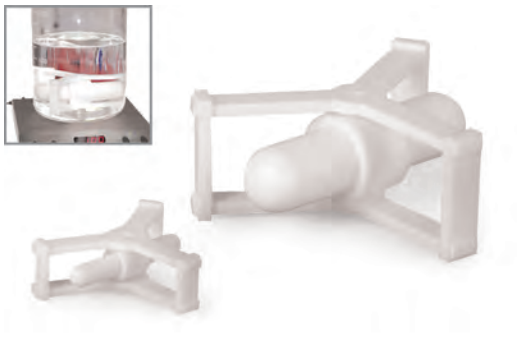
## Rotilabo®-turbo-magnetic bar set III

PTFE-encased magnetic bar, cylindrical. Samarium-cobalt magnet has a strong magnetic field compared to conventional solenoid. Identified by a black marking (chemically inert). **14 pce. in standard sizes, sorted**, in a handy storage box. Dimensions: L 187 x W 97 x D 32 mm. Autoclavable.

**Contents:**

| Length (mm) | ∅ (mm ) | Quantity |
|---|---|---|
| 8<br>12 | 3<br>4.5 | 2<br>2 |
| 20<br>25 | 6<br>6 | 2<br>2 |
| 30<br>40 | 6<br>8 | 2<br>2 |
| 50<br>60 | 8<br>10 | 1<br>1 |

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **PK77.1** | 1 | 79,15 |



121°C

## Beakerliner magnetic bars

**With guide cage.** PTFE-encased magnetic core mounted axially in a PTFE guide cage. No shear action on the bottom of the beaker, smooth running in glass beakers, even on an uneven bottom. Autoclavable.

| Suitable for low type beakers (ml) | Cage outer ∅ (mm) | Cage height (mm) | Stirring bar ∅ x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 250, 400 | 67 | 21 | 8 x 50 | **TA88.1** | 1 | 106,00 |
| 600, 800, 1000 | 74 | 29 | 9 x 60 | **TA89.1** | 1 | 119,35 |
| 2000 | 103 | 32 | 10 x 80 | **TA90.1** | 1 | 184,90 |



## Rotilabo®-stirring magnets - removers

Different types and lengths available. With powerful magnet.
Ideal for retrieving lost magnetic rods or "fishing" them out of liquid.

| Material | ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| PTFE | 10 | 150 | **E448.1** | 1 | 12,30 |
| PTFE | 10 | 250 | **E449.1** | 1 | 13,55 |
| PTFE | 10 | 350 | **E450.1** | 1 | 15,70 |
| PTFE | 10 | 450 | **E451.1** | 1 | 17,20 |
| PP | 10 | 350 | **E452.1** | 1 | 10,75 |
| PP | 10 | 450 | **E453.1** | 1 | 11,85 |



## Stir bar catcher

Made of PS. With powerful permanent magnet. For retention of magnetic bars and easy transfer of solutions. Suitable for magnetic bars with max. length 80 mm. Dimensions: L 87 x W 28 x H 42 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC30.1** | 1 | 21,20 |



## Stirring spatula

Made of **PP**, white. For stirring different specimens.
Length 244 mm, rod ∅ 6 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TT16.1** | 10 | 10,25 |



## Rotilabo®-stirring rods

For stirring different types of samples.
Different models and dimensions available. Autoclavable.

**Made of flexible PTFE.** With spatulate ends. Rod-∅ 8 mm.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 150 | **EX96.1** | 1 | 4,75 |
| 200 | **EX97.1** | 1 | 5,40 |
| 250 | **EX98.1** | 1 | 6,05 |
| 300 | **EX99.1** | 1 | 7,00 |

**Made of PTFE with stainless steel core.** Can be bent if required.
Remains bent. Round ends. Rod-∅ 6 mm.

| Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 150 | **EY00.1** | 1 | 6,60 |
| 200 | **EY01.1** | 1 | 7,20 |
| 250 | **EY02.1** | 1 | 7,55 |
| 300 | **EY03.1** | 1 | 9,70 |
| 350 | **EY04.1** | 1 | 11,10 |
| 400 | **EY05.1** | 1 | 12,15 |



## Stirring magnet fish-clip® holders

Ideal for stirring sensitive liquids such as cell suspensions or tissue cultures. Magnet is placed into vessel with the flexible rotor clamp and can be fixed over the vessel base at the required height. When the magnetic stirrer is switched on the rod magnet will turn with controlled movements, protecting the substance and vessel. The support rod does not turn and the stopper remains gastight.

- Rotor and support rod made of PVDF
- Support rod: length 250 mm, ∅ 10 mm
- Stable to 160 °C, autoclavable

**Delivery incl.** magnetic follower.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For magnetic followers ∅ 6 mm | **Y899.1** | 1 | 41,90 |
| For magnetic followers ∅ 8 mm | **Y900.1** | 1 | 41,90 |

## Accessories for magnetic follower holders fish-clip®

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Clamp stopper made of silicone for NS 19/26 | **Y901.1** | 1 | 4,75 |
| Clamped joint GL 25 | **Y903.1** | 1 | 10,30 |
| Clamped joint GL 32 with NS-adapter 29/32 | **Y906.1** | 1 | 35,10 |




## Roti®-Speed-stirrer

For universal use, e.g. for stirring even the smallest samples in reaction vials etc.

- Ergonomic pen handle
- High-quality steel spring chuck and quality ball bearings for perfectly smooth operation
- Locking button enables easy changing of tools
- **Speed infinitely adjustable from 5000 to 20 000 rpm**
- Powerful motor for constant torque
- Length 220 mm, weight 230 g
- Complete with mains adapter in portable case
- **Please order stirring apparatus separately!**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N372.1** | 1 | 99,45 |

## Stainless steel tools for Roti®-Speed-stirrer

### High-performance stirring tools

Design protected. Ideal for mixing and suspending samples.
Excellent for effective mixing. Good flow form. ∅ stirring shaft 3 mm.

| Image | Length (mm) | Stirrer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 90 | 7 | **N373.1** | 1 | 34,90 |
| ② | 98 | 11 | **N539.1** | 1 | 38,50 |

### High-performance tool, type micro pestle

Cone-shaped micro pestle for applications in 1.5 ml centrifuge tubes.
Stirring shaft-∅ 3 mm. Cone reduces from 8 to 2.5 mm, cone length 15 mm.

| Image | Length (mm) | Stirrer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ③ | 98 | 8 | **EX63.1** | 1 | 36,45 |

Accessories:

| | | | |
|---|---|---|---|
| **Rotilabo®-micro-centrifuge tubes, 1.5 ml**, made of PP, graduated, colourless | **4182.1** | 1000 | 17,15 |

## Additional tools for Roti®-Speed-stirrer

**Combined set, 13-piece.** Suitable for Roti® speed stirrer.
For cutting, separating, milling, polishing and drilling.

**Set content:**
1 ball-shaped fine cutter 2.3 mm, 1 cylindrical fine cutter 2.3 mm,
1 ball-shaped white corundum abrasive pencil 5.0 mm and 1 cone-shaped white corundum abrasive pencil 5.0 mm,
1 micro drill 1.0 and 2.3 mm,
5 cutting discs ∅ 22 mm,
1 saw blade ∅ 22 and
1 tool holder ∅ 2.35 mm.

| Image | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ④ | **YY99.1** | 1 | 13,95 |

# Laboratory stirrers




## Rod mixers

① **Model M 100d**

For grinding, stirring and mixing samples. Suitable both for large and small amounts. Two-stage switch: **7000 rpm and 10 000 rpm**.
Power supply 230 V, 50 Hz. **Capacity 120 W**.
Dimensions: overall length 320 mm, ∅ protective mantle 58 mm.
Weight 850 g. Comes with multi-function knife and wall attachment.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **8290.1** | 1 | 100,85 |

② **Model G 200:**

Suitable for volumes from 1 to 20 litres. Two-stage switch: **10 000 rpm and 17 000 rpm**. Power supply 230 V, 50 Hz. **Capacity 200 W**.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **C527.1** | 1 | 198,90 |




## ES and DLS laboratory stirrers

① **ES model**
- For simple stirring tasks
- Clamping range of chuck 1 to 10 mm
- Push-through stirring element

② **DLS model**
- Electronic control for constant speed even after change in viscosity of medium
- Digital display of nominal and actual speed
- Integrated timer function (adjustable up to 999 min, 59 s)
- Clamping range of chuck 1 to 10 mm
- Push-through stirring element

**Technical specifications:**

| **Model** | ① **ES** | ② **DLS** |
|---|---|---|
| Stirring volume of $H_2O$ (l) | 15 | 25 |
| Max. viscosity (mPa · s) | 1000 | 25 000 |
| Motor power: input / output (W) | 45/30 | 180/120 |
| Max. torque on stirrer shaft (N · cm) | 15 | 40 |
| Speed range (rpm) | 50 to 1300 | 50 to 2000 |
| Speed display | Scale | LCD |
| Extension arm ∅/length (mm) | 13/150 | |
| Dimensions W x D x H (mm) | 80 x 200 x 160 | 80 x 196 x 215 |
| Weight (kg) | 1.3 | 2.5 |
| Power supply | 80 to 260 V, 50/60 Hz | |

**Delivery without** stirring apparatus, stand and boss head (please order separately - refer to stirrer accessories).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① ES | **ACP3.1** | 1 | 462,25 |
| ② DLS | **ACP4.1** | 1 | 848,20 |




## Mechanical laboratory stirrer RZR 1

By Heidolph.
- For simple stirring tasks
- 2-step gear
- Max. chucking capacity 8 mm
- Push-through stirring element

**Technical specifications:**

| | |
|---|---|
| Stirring volume ($H_2O$) | 20 l |
| Max. viscosity | 40 000 mPa · s |
| Motor rating input / output | 77/18 W |
| Max. torque at the stirrer shaft | 100 N · cm |
| Speed range I | 35 to 250 rpm |
| Speed range II | 280 to 2200 rpm |
| Speed display | Scale |
| Extension arm ∅/length | 13/300 mm |
| Dimensions W x H x D | 71 x 250 x 172 mm |
| Weight | 2.7 kg |
| Power supply | 230 V, 50 Hz |

**Stirring apparatus**, stand and boss head not included (please order separately - refer to stirrer accessories).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLT4.1** | 1 | 568,00 |




## RSO series laboratory stirrers

① **Analogue stirrers RSO-20A/40A**
For stirring volumes of up to 20/40 l. With digital LED speed display. Extremely quiet running. Speed continuously variable up to 2200 rpm. Stirrer tools can be inserted. Clamping range of chuck 0.5 to 10 mm.

② **Digital/electronic stirrer model RSO-20D**
For stirring capacities up to 20 l as well as constant speed at changing medium viscosity. With LCD speed display. Display of nominal and actual speed or trend torque display. RS 232 port Soft starting. Stirrer tools can be inserted. Clamping range of chuck 0.5 to 10 mm.

**Technical specifications:**

| **Model** | **RSO-20A** | **RSO-20D** | **RSO-40A** |
|---|---|---|---|
| Stirring volume of $H_2O$ (l) | 20 | | 40 |
| Max. viscosity (mPa · s) | 10 000 | | 50 000 |
| Motor power: input / output (W) | 70 / 50 | | 130 / 100 |
| Max. torque (N · cm) | 30 | | 60 |
| Speed range (rpm) | 50 to 2200 | | |
| Speed deviation on load reversal (rpm) | - | ±3 | - |
| Torque display | no | yes | no |
| RS 232 port | no | yes | no |
| Extension arm ∅ / length (mm) | 16 / 200 | | |
| Dimensions W x D x H (mm) | 83 x 186 x 220 | | |
| Weight (kg) | 2.5 | | 3.5 |
| Voltage | 100-240 V, 50-60 Hz | | |

**Delivery without** stirrer tools, stand and bosshead (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RSO-20A analogue with LED display | **TA74.1** | 1 | 639,65 |
| RSO-20D digital with LCD display | **TA75.1** | 1 | 854,65 |
| RSO-40A analogue with LED display | **TA76.1** | 1 | 962,15 |

## ③ Stand set for RSO series laboratory stirrers

With locknut to additionally secure the stand rod and prevent accidental removal. Chucking capacity of cross sleeve for stand and extension arm: 4 to 24 mm. Max. weight load: 5 kg.
Dimensions: W 200 x D 310 x H 800 mm.
**Delivery incl.** stand plate, stand rod, cross sleeve and immersion limiter to prevent accidental piercing of the vessel base.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA77.1** | 1 | 209,65 |

# Laboratory stirrers




## EUROSTAR 20-series electronic laboratory stirrers

By IKA. A microprocessor controlled system ensures that a constant speed is maintained. Electronic safety circuit for shutting off device in case of fault or overload. Discrepancies between nominal and actual speeds are corrected automatically and continuously. For constant speed even with changes in medium viscosity.

- Digital speed display
- Continuously variable speed
- Push-through stirrer shafts
- Chuck tensioning range 0.5 to 10 mm (EUROSTAR 20 digital only)
- EUROSTAR 20 high speed digital: drive shaft with tapered seat for supplied precision stirrer shaft R 6000 (L 280 mm, max. immersion depth 220 mm). Special precision stirrer is separately available.

**Technical specifications:**

| Model | ① EUROSTAR 20 digital | ② EUROSTAR 20 high speed digital |
|---|---|---|
| Stirring volume of $H_2O$ (l) | 15 | 20 |
| Max. viscosity (mPa · s) | 10000 | |
| Motor power: power input / output (W) | 56/44 | 171/133 |
| Max. torque at the stirrer shaft (N· cm) | 20 | |
| Speed range (rpm) | 30 to 2000 | 150 to 6000 |
| Speed display | LED | |
| Extension arm ∅ / length (mm) | 16/220 | |
| Dimensions W x D x H (mm) | 86 x 208 x 248 | 86 x 208 x 325 |
| Weight (kg) | 4.4 | 5.3 |
| Power supply | 230 V, 50/60 Hz | |

**Delivery without** stirring tool, stand and sleeve
(please order separately - see stirrer accessories).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| EUROSTAR 20 digital | **XT16.1** | 1 | 899,00 |
| EUROSTAR 20 high speed digital | **XT17.1** | 1 | 1699,00 |

## Accessories for EUROSTAR 20 high speed digital:

By IKA. **Special precision stirrers**
Only suitable for use with precision stirrer shaft R 6000 of the EUROSTAR 20 high speed digital. Max. speed 6000 rpm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Propeller stirrer, stirrer ∅ 55 mm | **AHK5.1** | 1 | 220,00 |
| Propeller stirrer, stirrer ∅ 45 mm | **AHK6.1** | 1 | 177,00 |
| Dissolver stirrer, stirrer ∅ 42 mm | **AHK7.1** | 1 | 242,00 |

## Accessories for EUROSTAR 20-serie:

By IKA. **Quick-action chuck**
Stirring tools can be replaced without a chuck key.
Not suitable for EUROSTAR 20 high speed digital.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Quick-action chuck for EUROSTAR 20 digital | **XT18.1** | 1 | 82,00 |



## Stirrer RW 20 digital

By IKA. **For stirring volumes of up to 20 l.** Robust, slim-line stirrer **with digital display.** Two speed ranges for standard use from 60 to 2000 rpm. Clamping range of chuck 0.5 to 10 mm. Stirrer tools can be inserted.

**Technical specifications:**

| | |
|---|---|
| Stirring volume ($H_2O$) | 20 l |
| Max. viscosity | 10 000 mPa · s |
| Motor power: input / output | 70 / 35 W |
| Max torque at chuck clamping (at 100 rpm) | 150 N · cm |
| rpm range I | 60 to 500 rpm |
| rpm range II | 240 to 2000 rpm |
| Speed display | Digital |
| Extension rod-∅ / Length | 13 mm / 160 mm |
| Dimensions (W x D x H) | 88 x 212 x 294 mm |
| Weight | 3100 g |
| Current | 230 V, 50 Hz |

**Delivery without** stirrer tools, stand, or bosshead
(please order separately - see stirrer accessories).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EY86.1** | 1 | 1099,00 |







## Hei-TORQUE Value series
## Electronic laboratory stirrers

By Heidolph. For constant speed, even after changes in medium viscosity Glass display with touch elements. Safety-oriented start/stop function (slide for start/stop). Protection class IP 54.

- Digital display of nominal/actual speed
- Continuously adjustable speed
- Push-through stirrer shafts
- Display of torque trend to detect changes in viscosity (using symbols)
- Clamping range of chuck 2.5 to 12.5 mm
- Quick-Chuck quick-action chuck

**Technical specifications:**

| Model | Hei-TORQUE Value 100 | Hei-TORQUE Value 200 | Hei-TORQUE Value 400 |
|---|---|---|---|
| Stirring volume ($H_2O$) (l) | 50 | | 100 |
| Max. viscosity (mPa · s) | 60 000 | 100 000 | 250 000 |
| Motor power input / output (W) | 90/50 | 120/80 | 150/90 |
| Max. torque on stirrer shaft (N · cm) | 100 | 200 | 400 |
| Speed range (rpm) | 10 to 2000 | | 100 to 400 |
| Speed range II (rpm) | - | - | 20 to 2000 |
| Speed display | Digital monochrome 2.4″ | | |
| Extension arm ∅ / length (mm) | 13/160 | | |
| Dimensions W x D x H (mm) | 86 x 241 x 257 | | 93 x 241 x 257 |
| Weight (kg) | 4.1 | 5.0 | 5.2 |
| Power supply | 230 V, 50/60 Hz | | |

**Delivery without** stirring apparatus, boss head and stand (please order separately - see stirrer accessories).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Hei-TORQUE Value 100 | **CLT1.1** | 1 | 1050,00 |
| Hei-TORQUE Value 200 | **CLT2.1** | 1 | 1450,00 |
| Hei-TORQUE Value 400 | **CLT3.1** | 1 | 1850,00 |

## Electronic laboratory stirrers
## Hei-TORQUE Precision series

By Heidolph. For constant speed, even after changes in medium viscosity Glass display with touch elements. Safety-oriented start/stop function (slide for start/stop). Protection class IP 54.

- Digital display for
  - Countdown function (adjustable from 1 min to 24 h)
  - Storage of 7 favourites (combination of countdown and rpm)
  - Ramp function with up to 7 steps
  - Graphical display of process progress
  - Time
- Continuously adjustable speed
- Plain text torque display with value (resolution 0,1 N · cm)
- Push-through stirrer shafts
- USB port
- Quick-Chuck quick-action chuck with clamping range 2.5 to 12.5 mm
- **For Hei-TORQUE Precision 100 and 200 models:** Stir counter-clockwise

**Technical specifications:**

| Model | Hei-TORQUE Precision 100 | Hei-TORQUE Precision 200 | Hei-TORQUE Precision 400 |
|---|---|---|---|
| Stirring volume ($H_2O$) (l) | 50 | | 100 |
| Max. viscosity (mPa · s) | 60 000 | 100 000 | 250 000 |
| Motor power input / output (W) | 90/50 | 120/80 | 150/90 |
| Max. torque on stirrer shaft (N · cm) | 100 | 200 | 400 |
| Speed range (rpm) | 10 to 2000 | | 100 to 400 |
| Speed range II (rpm) | - | - | 20 to 2000 |
| Speed display | 3.2″ digital colour | | |
| Extension arm ∅ / length (mm) | 13/160 | | |
| Dimensions W x D x H mm | 86 x 273 x 241 | | 93 x 273 x 241 |
| Weight (kg) | 4,1 | 5,0 | 5,2 |
| Voltage | 230 V, 50 Hz | | |

**Delivery without** stirring apparatus, boss head and stand not included (please order separately - refer to stirrer accessories).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Hei-TORQUE Precision 100 | **CPK0.1** * | 1 | 1250,00 |
| Hei-TORQUE Precision 200 | **CPK1.1** * | 1 | 1650,00 |
| Hei-TORQUE Precision 400 | **CPK2.1** * | 1 | 2175,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Laboratory stirrers





## EUROSTAR-40/60/100/200 digital electronic laboratory stirrer

By IKA. A microprocessor controlled system ensures that a constant speed is maintained. Electronic safety circuit for shutting off device in case of fault or overload. Discrepancies between nominal and actual speeds are corrected automatically and continuously. For constant speed even with changes in medium viscosity.

- Digital speed display
- Continuously variable speed
- Push-through stirrer shafts
- Chuck tensioning range 0.5 to 10 mm

**Technical specifications:**

| Model | EUROSTAR 40 digital | EUROSTAR 60 digital | EUROSTAR 100 digital | EUROSTAR 200 digital |
|---|---|---|---|---|
| Stirring volume of $H_2O$ (l) | 25 | 40 | 100 | 100 |
| Max. viscosity (mPa · s) | 30000 | 50000 | 70000 | 100000 |
| Motor power: power input / output (W) | 112/87 | 168/132 | 174/142 | 121/99 |
| Max. torque at the stirrer shaft (N · cm) | 40 | 60 | 100 | 200 |
| Speed range (rpm) | 30 to 2000 | | 30 to 1400 | 6 to 400 |
| Speed range II (rpm) | - | | | 30 to 2000 |
| Speed display | LED | | | |
| Extension arm ∅ / length (mm) | 16/220 | | | |
| Dimensions W x D x H (mm) | 86 x 208 x 248 | | | 91 x 209 x 274 |
| Weight (kg) | 4.4 | | | 4.6 |
| Power supply | 230 V, 50/60 Hz | | | |

**Delivery without** stirring tool, stand and sleeve (please order separately - see stirrer accessories).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| EUROSTAR 40 digital | **XT19.1** | 1 | 1199,00 |
| EUROSTAR 60 digital | **XT20.1** | 1 | 1299,00 |
| EUROSTAR 100 digital | **XT21.1** | 1 | 1899,00 |
| EUROSTAR 200 digital | **XT22.1** | 1 | 2399,00 |

## Accessories for EUROSTAR-40/60/100/200 digital

By IKA. **Quick-action chuck**
Stirring tools can be replaced without a chuck key.

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Quick-action chuck for EUROSTAR-series | **XT18.1** | 1 | 82,00 |

## EUROSTAR 60/100 control electronic laboratory stirrers

By IKA. **With removable remote control and digital TFT display.**
A microprocessor controlled system ensures that a constant speed is maintained. **Integrated torque trend indicator** measures the change in viscosity of the sample. Electronic safety circuit for shutting off device in case of fault or overload. Discrepancies between nominal and actual speeds are corrected automatically and continuously.
For constant speed even with changes in medium viscosity.

- Programmable functions, e.g. start/stop function (adjustable up to 9 h, 59 min, 59 sec)
- **Integrated temperature measurement function (a temperature sensor is required to display temperatures, please order separately)**
- Intermittent mode (adjustable up to 59 min, 59 sec)
- Timer (adjustable up to 99 h, 59 min, 59 sec)
- Continuously variable speeds
- Push-through stirrer shafts
- With RS 232 port and USB port
- Chuck tensioning range 0.5 to 10 mm

**Technical specifications:**

| Model | EUROSTAR 60 control | EUROSTAR 100 control |
|---|---|---|
| Stirring volume of $H_2O$ (l) | 40 | 100 |
| Max. viscosity (mPa · s) | 50000 | 70000 |
| Motor power: power input / output (W) | 168/131 | 174/142 |
| Max. torque at the stirrer shaft (N · cm) | 60 | 100 |
| Speed range (rpm) | 30 to 2000 | 30 to 1300 |
| Speed display | TFT | |
| Change of rotation direction (clockwise or anticlockwise) | No | Yes |
| Extension arm ∅ / length (mm) | 16/220 | |
| Dimensions W x D x H (mm) | 86 x 230 x 267 | |
| Power supply | 230 V, 50/60 Hz | |

**Delivery without** stirring tool, stand and sleeve (please order separately - see stirrer accessories).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| EUROSTAR 60 control | **XT44.1** | 1 | 1799,00 |
| EUROSTAR 100 control | **XT45.1** | 1 | 2299,00 |

## Accessories:

By IKA.
**Stainless steel temperature sensor type H 67.60**
L 250 x ∅ 3 mm. With sensor cable L 1 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCE3.1** | 1 | 114,00 |



## Plate stands

With anti-slip foil on plate.The support rod is also fixed under the plate with a nut to prevent accidental removal of rod. Support rod-∅: 16 mm. Max. load: 5 kg.

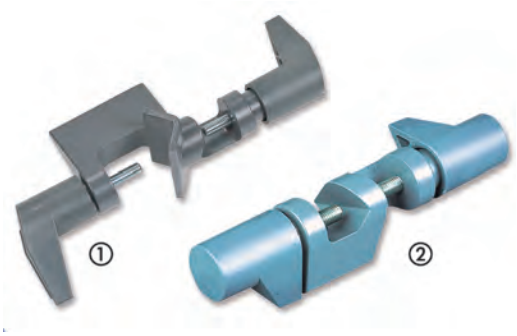
| Type | Width (mm) | Depth (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| R1825 | 200 | 316 | 560 | **CC13.1** | 1 | 235,00 |
| R1826 | 200 | 316 | 800 | **CC14.1** | 1 | 259,00 |
| R1827 | 200 | 316 | 1000 | **CC15.1** | 1 | 281,00 |



## H-stands

Suitable for large, heavy units and attachments, e.g. stirrer. With H-foot for non-tilting stand. With compensator screw for uneven workplaces. Support rod-∅: 34 mm. Max. load: 10 kg. Model R 2723 also comes with pressure spring telescopic support stand for smooth moving of heavy units or attachments. Height of lift: 390 mm.

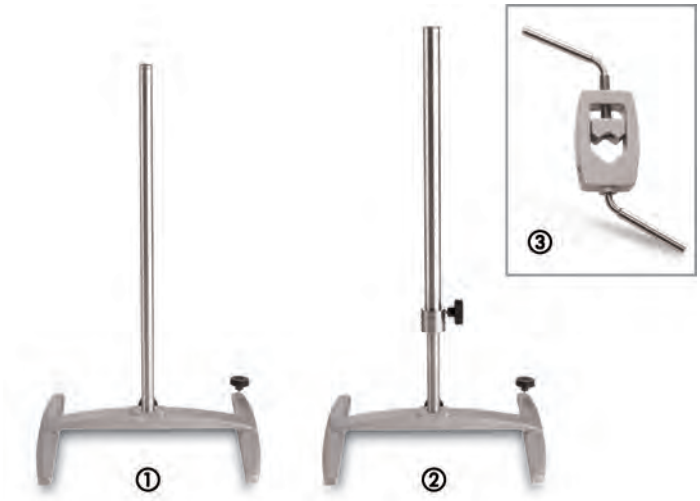
| Type | Width (mm) | Depth (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| R2722 | 460 | 420 | 1010 | **CC16.1** | 1 | 605,00 |
| R2723 | 460 | 420 | 620-1010 | **CC17.1** | 1 | 1123,00 |




## Cross sleves

Made with aluminium casting.

| Type | for stand type | Clamping range stand (mm) | Clamping range bracket (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① R 270 | R 2722, R 2723 | 25-36 | 5-21 | **CC18.1** | 1 | 96,00 |
| ② R 182 | R 1825, R 1826, R 1827 | 6-16 | 6-16 | **CY92.1** | 1 | 71,00 |




## S2-series H-stands

**S2 and S2 XXL** models
Made of V2A. The support rod is additionally secured with a nut which prevents it from being unscrewed accidentally. Support rod ∅ 25 mm. With levelling screw. Max. weight load: 4 kg.

**Tele S2 model**
same as S2 and S2 XXL but with retractable support rod variable in length from 725 to 1025 mm. Support rod ∅ 32 mm.

| Type | Width (mm) | Depth (mm) | Height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① S2 | 345 | 420 | 700 | **TL67.1** | 1 | 247,00 |
| S2 XXL | 345 | 420 | 1000 | **TL68.1** | 1 | 291,00 |
| ② Tele S2 | 345 | 420 | 725-1025 | **TL69.1** | 1 | 585,00 |

## Accessories for S2-series H-stands

③ **Clamp**
Made of V2A and cast aluminium. For rod ∅ 13 to 32 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TL70.1** | 1 | 108,00 |

# Stirrer accessories

**Agitator types**

**Anchor agitator:** Reduced deposits on the vessel wall. Tangential stream with high shear rate. Suitable for semi-fluid mediums (medium to high viscosity).

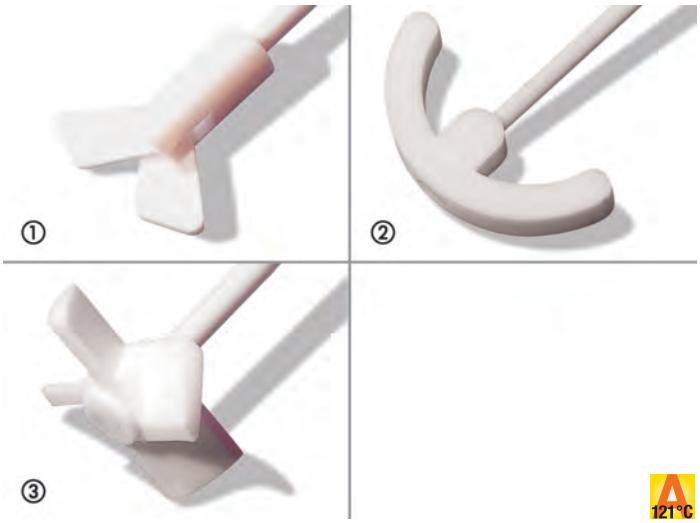
**Dissolver agitator:** Radial stream. High turbulence and shear forces. For use at medium to high speeds.

**Surface agitator:** Less turbulence. Gentle handling of the product. For use at low to medium speeds.

**Half-moon agitator:** The semi-round shape of the agitator blade is ideally suited to agitating in round-bottomed flasks, the tip function makes it easy to insert the agitator shaft into vessels which have been ground or have a narrow neck. Suitable for agitating liquids with low to medium viscosity. For use at medium speeds.

**Propeller agitator:** Standard agitator. Axial direction. For mixing mediums with low to medium viscosity. Ideal for homogenising and suspending.

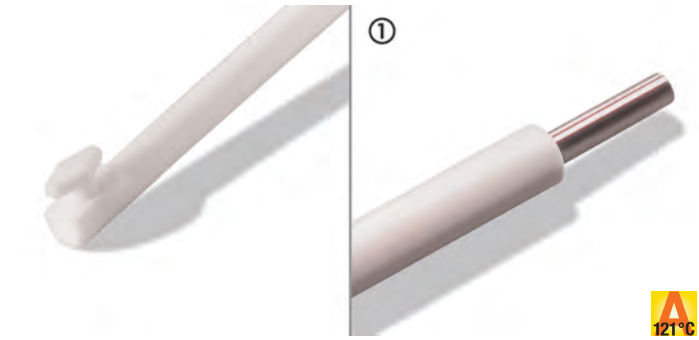
**Centrifugal agitator:** Double-leaf; thanks to the moveable agitator leaf, the agitator shaft can be easily inserted into the vessels with a narrow neck. The leaves open when the speed increases. For use at medium to high speeds.




## Rotilabo®-Eco stirrer shafts

Made of **PTFE-coated** stainless steel. Chemically inert and non-breakable. Temperature stable from -200 to +250 °C. Shaft- ∅ 6 mm. Autoclavable.

| Image | Type | Shaft length (mm) | Stirrer ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| ① | Centrifugal | 300 | 40 | **YT25.1** | 1 | 60,10 |
| ① | Centrifugal | 400 | 40 | **YT26.1** | 1 | 61,20 |
| ① | Centrifugal | 500 | 50 | **YT27.1** | 1 | 62,50 |
| ② | Armature | 300 | 80 | **YT28.1** | 1 | 48,40 |
| ② | Armature | 400 | 80 | **YT29.1** | 1 | 49,45 |
| ② | Armature | 500 | 80 | **YT30.1** | 1 | 50,10 |
| ③ | Propeller | 300 | 40 | **YT31.1** | 1 | 58,50 |
| ③ | Propeller | 400 | 40 | **YT32.1** | 1 | 60,65 |
| ③ | Propeller | 500 | 50 | **YT33.1** | 1 | 63,25 |




## Rotilabo®-stirrer shafts

Made of **PTFE-coated** stainless steel. For replaceable stirrer blades; please order separately (Art. No. YT20.1ff).
Temperature stable from -200 to +250 °C. Autoclavable.

| Shaft length (mm) | Shaft ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 300 | 6 | **YT08.1** | 1 | 34,00 |
| 400 | 6 | **YT09.1** | 1 | 34,65 |
| 500 | 6 | **YT10.1** | 1 | 35,70 |
| 300 | 8 | **YT11.1** | 1 | 44,00 |
| 400 | 8 | **YT12.1** | 1 | 44,40 |
| 500 | 8 | **YT13.1** | 1 | 45,05 |
| 550 | 9,5 | **YT14.1** | 1 | 46,25 |
| 650 | 9,5 | **YT15.1** | 1 | 46,45 |

① **With tapered chucking ∅ 6.35 mm** (length 50 mm) for easier stirrer shaft insertion.

| Shaft length (mm) | Shaft ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 650 | 9,5 | **YT16.1** | 1 | 49,45 |
| 750 | 9,5 | **YT17.1** | 1 | 51,00 |
| 650 | 10 | **YT18.1** | 1 | 55,80 |
| 750 | 10 | **YT19.1** | 1 | 57,30 |



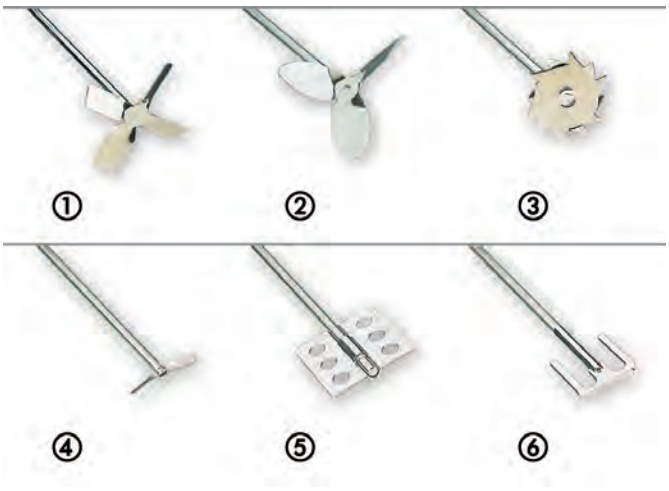

## Rotilabo®-stirrer blades with smooth ends

Made of PTFE. Suitable for Rotilabo® stainless steel stirrer shafts (Art. No. YT08.1ff). Hole ∅ 6.5 mm, blade thickness 3.2 mm.
Temperature stable from -200 to +250 °C. Autoclavable.

| Suitable for round-bottom flasks | Dimensions L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 250 ml | 65 x 25 | **YT20.1** | 5 | 20,65 |
| 500 ml | 75 x 25 | **YT21.1** | 5 | 21,65 |
| 2000 ml | 105 x 25 | **YT22.1** | 5 | 24,20 |
| 4000 ml | 125 x 25 | **YT23.1** | 5 | 26,70 |
| 6000 ml | 150 x 25 | **YT24.1** | 5 | 29,25 |

# Stirrer accessories






## Stirring blades made of high-grade steel

**Encased in PTFE.** Stirrer is completely made of PTFE. High-grade steel core provides for the required hold in the spring chuck of stirrer. Stirring unit and blade are firmly attached together: will not be separated in the rotating media once stirrer has been switched off. As the stirred materials only have contact with PTFE, the stirring blades are almost totally chemical-resistant and are stable during high temperature operations. **Stirring blades are similar to (KPG) glass blades and can be replaced by them. With tapered collet, for easier clamping of stirrer shafts**.

**Crescent**

| Length (mm) | ∅ Chuck (mm) | Shaft ∅ (mm) | Dimensions blade (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 450 | 6,5 | 8 | 90 x 24 x 3 | **K072.1** | 1 | 153,75 |
| 450 | 8 | 10 | 90 x 24 x 3 | **K074.1** | 1 | 162,35 |
| 600 | 6,5 | 8 | 90 x 24 x 3 | **K073.1** | 1 | 165,55 |
| 600 | 8 | 10 | 90 x 24 x 3 | **K075.1** | 1 | 186,00 |
| 800 | 14 | 16 | 125 x 35 x 3,5 | **K076.1** | 1 | 260,15 |

**Propeller**

| Length (mm) | ∅ Chuck (mm) | Shaft ∅ (mm) | Dimensions blade (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 450 | 4,7 | 6 | ∅ 50 | **K077.1** | 1 | 138,70 |
| 450 | 6,5 | 8 | ∅ 75 | **K078.1** | 1 | 201,05 |
| 450 | 8,0 | 10 | ∅ 75 | **K079.1** | 1 | 210,70 |

**Anchor**

| Length (mm) | ∅ Chuck (mm) | Shaft ∅ (mm) | Dimensions blade (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 360 | 6,5 | 8 | 60 x 40 | **K080.1** | 1 | 195,65 |
| 600 | 6,5 | 8 | 100 x 60 | **K081.1** | 1 | 224,70 |

## Stirring blades

By IKA. For laboratory stirrers. Made of high-grade steel, except the anchor stirrer (Art.No. Y443.1 and Y444.1) and propeller stirrer (Art.No. A328.1) which are made of fine cast metal. Individual choice depends on use, viscosity and amount of medium.

**① Propeller stirrer, 4-winged**

| Stirrer ∅ (mm) | ∅ Shaft (mm) | Shaftlength (mm) | Max. speed (rpm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | 8 | 350 | 2000 | **0867.1** | 1 | 128,00 |
| 100 | 8 | 540 | 800 | **Y436.1** | 1 | 156,00 |
| 150 | 13 | 800 | 600 | **Y437.1** | 1 | 552,00 |

**② Propeller stirrers, 3-winged**

| Stirrer ∅ (mm) | ∅ Shaft (mm) | Shaftlength (mm) | Max. speed (rpm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 45 | 8 | 350 | 2000 | **A328.1** | 1 | 255,00 |
| 140 | 10 | 550 | 800 | **Y438.1** | 1 | 253,00 |
| 140 | 10 | 800 | 400 | **Y439.1** | 1 | 309,00 |

**③ Dissolver stirrer**

| Stirrer ∅ (mm) | ∅ Shaft (mm) | Shaftlength (mm) | Max. speed (rpm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 80 | 8 | 350 | 2000 | **A322.1** | 1 | 226,00 |

**④ Centrifugal stirrer**

| Stirrer ∅ (mm) | ∅ Shaft (mm) | Shaftlength (mm) | Max. speed (rpm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 60/15 | 8 | 350 | 2000 | **A324.1** | 1 | 137,00 |
| 100/24 | 8 | 550 | 800 | **Y440.1** | 1 | 181,00 |

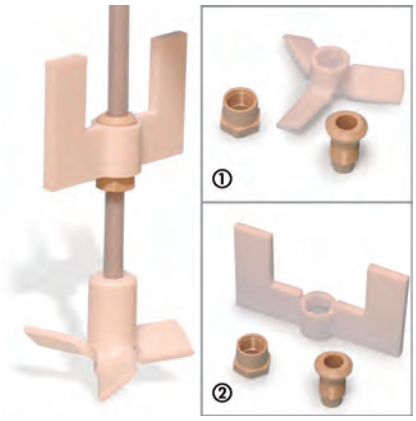
**⑤ Paddle stirrer**

| Stirrer ∅ (mm) | ∅ Shaft (mm) | Shaftlength (mm) | Max. speed (rpm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 70 | 8 | 550 | 800 | **Y441.1** | 1 | 147,00 |
| 150 | 10 | 550 | 800 | **Y442.1** | 1 | 307,00 |

**⑥ Anchor stirrer**

| Stirrer ∅ (mm) | ∅ Shaft (mm) | Shaftlength (mm) | Max. speed (rpm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 45 | 8 | 350 | 1000 | **Y443.1** | 1 | 321,00 |
| 90 | 8 | 350 | 1000 | **Y444.1** | 1 | 359,00 |

# Stirrer accessories




## Spare blades for stirrer shafts

**Made of a PTFE/PEEK compound**. For fixing on to stirrer shafts made of PTFE with metal core, glass or metal.
The spare blades can be positioned freely and fixed securely in height and turning position with the aid of a clamping attachment.
Temperature stable from -200 to +250 °C, without strain.
**Delivery incl.** flat wrench

① **Propeller-spare blades, 3-winged**

| for shaft ∅ (mm) | Dimensions blade (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 8 | ∅ 75 | **CK98.1** | 1 | 85,50 |
| 10 | ∅ 75 | **CK99.1** | 1 | 74,95 |

② **Anchor-spare blades**

| for shaft ∅ (mm) | Dimensions blade (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 8 | 60 x 40 | **CT00.1** | 1 | 84,80 |
| 8 | 100 x 60 | **CT01.1** | 1 | 115,05 |
| 10 | 80 x 50 | **CT02.1** | 1 | 90,95 |
| 10 | 100 x 60 | **CT03.1** | 1 | 109,65 |




DURAN WHEATON KIMBLE
Material DURAN®

## KPG stirrer shafts

Made of DURAN®. Shaft contact surface (L 160 mm) ground and polished.

① **Type WG 10 with propellor stirrer, 4-blade.**
Suitable for flasks with min. 60 mm inner neck ∅. Stirrer ∅ 58 mm.

| Shaft ∅ x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 x 320 | **NL72.1** | 1 | 64,50 |
| 10 x 370 | **NL73.1** | 1 | 64,35 |

② **Type WS 10 with centrifugal stirrer with movable blades.**
Suitable for flasks with min. 25 mm inner neck ∅. Circle ∅ 57 mm.

| Shaft ∅ x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 x 320 | **NL76.1** | 1 | 65,55 |
| 10 x 370 | **NL77.1** | 1 | 65,55 |
| 10 x 410 | **NL78.1** | 1 | 65,55 |
| 10 x 440 | **NL79.1** | 1 | 69,65 |



Material DURAN®

## KPG-Stirrers with side stirring blade

Made of DURAN®. Stirring blade and securing screw made of PTFE. For NS 29/32. Length of the ground and polished KPG-running surface 160 mm. Drive pin ∅ 8 x L 40 mm.

| for round bottom flasks (ml) | Agitator shaft ∅ x L (mm) | Dimensions blade (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100 | 10 x 310 | 50 x 18 x 3 | **KL66.1** | 1 | 77,00 |
| 250/500 | 10 x 310 | 68 x 24 x 3 | **KL67.1** | 1 | 78,50 |
| 1000/2000/3000 | 10 x 390 | 75 x 24 x 3 | **KL68.1** | 1 | 80,40 |
| 4000/5000 | 10 x 480 | 125 x 24 x 3 | **KL69.1** | 1 | 106,45 |

## KPG-Stirrers with movable blades

Made of DURAN®. Stirring blade made of PTFE. With ground, polished shaft and coupling pin. For NS 29/32. Shaft-∅ 10 mm. Drive pin ∅ 8 x L 40 mm.

| for round bottom flasks (ml) | Length (mm) | Stirring circle (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 100/250 | 310 | 50 | **KL71.1** | 1 | 71,45 |
| 500 | 310 | 90 | **KL72.1** | 1 | 71,50 |
| 1000 | 400 | 90 | **KL73.1** | 1 | 71,50 |
| 2000/3000 | 460 | 90 | **KL74.1** | 1 | 71,80 |
| 4000/5000 | 520 | 90 | **KL75.1** | 1 | 71,55 |




Material DURAN®

## Accessories for KPG-stirrers

Made of DURAN®.

① **KPG-bearing sleeve (stirring stopper)**
Core: standard ground glass joint 29 /32.
Contact surface ground and polished.

| Nominal ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | 125 | **KX58.1** | 1 | 50,20 |

② **KPG-agitator**
Shaft contact surface ground and polished.

| Nominal ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 | 240 | **KX59.1** | 1 | 26,45 |

# Stirrer accessories




DURAN WHEATON KIMBLE
Material DURAN®

## KPG stirrer bearings

Made of DURAN®. Stirrer contact surface ground and polished, either above the ground glass cone (type HQ 10) or below the ground glass cone (type HT 10). With ground glass cone 29/32 and glycerine reservoir (only type HQ 10, Art. No. NL68.1).

| Type | Stirrer contact surface ∅ x L (mm)<br>Stirrer contact surface ∅ x L (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① HQ 10 | 10 x 75 | 170 | **NL68.1** | 1 | 57,20 |
| ② HT 10 | 10 x 65 | 120 | **NL69.1** | 1 | 87,50 |



DURAN WHEATON KIMBLE
Material DURAN®

## KPG stirrer plugs, type HB 10

Made of DURAN®. Stirrer guide (GL 32 threaded tube with ground glass cone) with matching stirrer socket. Contact surface ground and polished, ∅ 10 x L 75 mm. GL screw cap with O-ring allows the stirrer shaft to be sealed.

| Cone (ground glass) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 24/29 | **NL70.1** | 1 | 55,45 |
| 29/32 | **NL71.1** | 1 | 56,90 |



## Flexible glass agitator coupling

For stirring in glass apparatus with KPG-stirrers. Counterbalances any inexactness in assembly. An exact alignment of agitator motor and shaft is unnecessary. Operates as an elastic link between laboratory stirrer and agitator shaft. Ideal for motor shafts with 8 to 10 mm chucking capacity and stirring tools with ∅ 8 to 10 mm shaft.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KL60.1** | 1 | 103,20 |



## PTFE stirrer plugs for standard ground-glass joints

Ground element made of **PTFE** with GL 25 screw cap made of **PPS** . Guide for stainless steel, glass and PTFE stirrer shafts. Embossed ring seals on the PTFE ground glass cone to fit ground glass sleeve. With special seal made of PTFE and FPM O-ring. Controlled pressure of the GL screw cap on the O-ring ensures proper sealing against the stirrer shaft. Temperature stable from -50 to 250 °C.

| Cone (ground glass) | for shaft ∅ (mm) | Total length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 19/26 | 8 | 65 | **CKN9.1** | 1 | 33,15 |
| 24/29 | 8 | 69 | **CKP0.1** | 1 | 38,40 |
| 24/29 | 10 | 70 | **CKP1.1** | 1 | 43,15 |
| 29/32 | 8 | 74 | **CKP2.1** | 1 | 37,55 |
| 29/32 | 10 | 72 | **CKP3.1** | 1 | 35,45 |
| 45/40 | 10 | 80 | **CKP4.1** | 1 | 53,70 |



## All-purpose stirrer plugs

For round flasks. Glass part made of borosilicate. Liner, sealing and pressure screw made of PTFE. Mostly chemical and temperature stable. Reliably leakproof, even during long-term use. Total length 140 mm. Patented under DE 35 12 647. Can be used without lubricant.

| Cone (ground glass) | Shaft ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 45 | 8 | **1791.1** | 1 | 203,75 |
| 45 | 10 | **1792.1** | 1 | 203,75 |
| 29 | 8 | **1793.1** | 1 | 203,75 |
| 29 | 10 | **1794.1** | 1 | 203,75 |

## Set of seals for all-purpose stirrer plug

Made of PTFE/silicone, 4 pieces.

| Shaft ∅ (mm) | Art. No. | Pack Qty. (set) | € |
|---|---|---|---|
| 8 | **X532.1** | 1 | 31,20 |
| 10 | **X533.1** | 1 | 36,90 |



## Clutch for laboratory stirrer assembly

Corrosion-proof, made of PTFE. with rod end made of elastic polyamide. Prevents cuts, ensures proper working even at high rpm and during long-term use.

Stirring rod: ∅ 5-8 mm.
Shaft: ∅ 7 mm, length 120 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2939.1** | 1 | 87,65 |

# Flocculator devices



## Flock testers AL-series

By Aqualytic. For various applications, e.g. for testing the effectiveness of flocculants and precipitants.

**AL30 analog**
- Accommodates 4 low form beakers up to 1000 ml in size
- Portable, for mobile use
- Stirring points are arranged in a circle around a lamp
- Switchable centre column light (OFF/ON)
- Speed and time adjustment by rotary knob
- Height adjustment of the stirrer blades during operation
- **Delivery incl.** 12-V adapter (for the cigarette lighter) and mains adapter

**AL40 and AL50**
- Accommodates 4/6 low or high form beakers up to 1000 ml in size
- Illuminated back panel for glare-free sample observation
- Switchable backlight (OFF/ON)
- Continuously variable stirring speed
- Digital rpm and timer display
- Height adjustment of the stirrer blades during operation
- **Delivery incl.** mains adapter

**Technical specifications:**

| Type | AL30 analog | AL40 | AL50 |
|---|---|---|---|
| Number of stirring points | 4 | 4 | 6 |
| Speed range | 20-40-50-100-120 rpm | 10 to 300 rpm / continuous operation | |
| Timer | 0 to 30 min / continuous operation | 0 to 999 min / 0 to 99 h / continuous operation | |
| Dimensions L x W x H (mm) | 250 x 320 x 250 | 645 x 347 x 260 | 935 x 347 x 260 |
| Weight (kg) | 4.9 | 13 | 17 |
| Power supply | 100-240 V, 50/60 Hz | | |

**Delivery without** beakers, please order separately.

| Type | Stirring points | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| AL30 analog | 4 | **YC36.1** * | 1 | 1305,05 |
| AL40 | 4 | **YC37.1** * | 1 | 1817,85 |
| AL50 | 6 | **YC38.1** * | 1 | 2147,85 |

* Longer delivery times possible. Please check with our Sales Department.

**Accessories:**

| | | | |
|---|---|---|---|
| 1000 ml beaker, low form | **C118.1** | 1 | 11,90 |
| 1000 ml beaker, high form | **C130.1** | 1 | 12,15 |
| 1000 ml Griffin beaker, PMP, low form | **2899.1** | 1 | 8,40 |



## Flocculator SW6

By Stuart. For reproducible analysis of flocculation conditions during sewage water treatment.

- **For simultaneous treatment of 6 samples in beakers up to 1000 ml**
- Uniform adjustable stirring speed for similar conditions on all sampling areas
- Digital-display for speed and time
- **With timer-function**
  Acoustic alarm indicates end of set time and all stirring units are switched off. The timer then counts the minutes from when the agitor blades stand still
- The stainless steel agitor blades can be adjusted in height during the run
- The device has an illuminated base and black rear wall for antiglare and high-contrast observation of samples
- **Memory-function stores 2 parameter-combinations of speed and time**

**Technical specifications:**

| | |
|---|---|
| Number of stirring places | 6 |
| rpm range | 25 to 250 rpm |
| Timer function | 0 to 99 min /continuous run |
| Output | 200 W |
| Dimensions (W x D x H) | 750 x 210 x 460 mm |
| Weight | 17 kg |
| Current | 230 V, 50 Hz |

**Delivery without** beakers, please order separately.
Devices for simultaneous addition of reagents and flocculators is also available.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CA98.1** | 1 | 2780,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Charging mechanism | **CA99.1** | 1 | 196,00 |
| 1000 ml beaker, high form | **C130.1** | 1 | 12,15 |

▶ Absorbers for chemicals from page 693
▶ Lubricating grease and other lubricants, see page 1138





## Dispersing system T 10 basic ULTRA-TURRAX®

By IKA. Systems can be hand-held or used on a stand.

- **For volumes from 0.5 to 100 ml**
- Infinitely adjustable speed setting
- Easy changing of dispersing tools with quick-clamp coupling
- Plastic disposable dispersing tools for PCR-analytics are available (please ask our Sales Department)

**Technical specifications:**

| | |
|---|---|
| Motor power: input / output | 125 / 75 W |
| rpm range | 8000 to 30000 rpm |
| Speed display | Scale |
| Max. on-time ON / OFF | max. 10 min / min. 5 min |
| Dimensions (W x D x H) | 56 x 66 x 178 mm |
| Weight | 0.5 kg |

**Delivery incl.** storage case and arm clamp R 200.
Please order dispersing tools, muffle and stand separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH01.1** | 1 | 1259,00 |

## Dispersing tool for T 10 basic

By IKA. Made of stainless steel. Enables you to change and dismantle tools for cleaning without using additional tools.

| **Type** | **S 10 N - 5 G** | **S 10 N - 8 G** | **S 10 N - 10 G** |
|---|---|---|---|
| Working range (ml) | 0.5 to 10 | 1 to 50 | 1 to 100 |
| ∅ Stator (mm) | 5 | 8 | 10 |
| ∅ Rotor (mm) | 3.8 | 6.1 | 7.6 |
| Gap length between stator and rotor (mm) | 0.1 | 0.25 | 0.2 |
| Immersion depth Min/Max (mm) | 20 / 75 | 20 / 95 | 20 / 100 |
| Materials touching product | PTFE, AISI 316L | | |
| Ideal for temperatures | to 180 °C | | |
| Ultimate fineness, suspensions | 5-25 µm | | |
| Ultimate fineness, emulsions | 1-10 µm | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S 10 N - 5 G | **EH02.1** | 1 | 1099,00 |
| S 10 N - 8 G | **EH03.1** | 1 | 1099,00 |
| S 10 N - 10 G | **EH04.1** | 1 | 1099,00 |

## Accessories for T 10 basic

By IKA.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **Small stand R 104**, W 242 x D 355 mm, rod-∅ 10 mm, stand rod-height 370 mm | **EH05.1** | 1 | 136,00 |
| Clamp | **A316.1** | 1 | 25,00 |

## T 18 digital ULTRA-TURRAX®-dispersing system complete set

By IKA.
Dispersing system T 18 digital ULTRA-TURRAX®
High-speed dispersing system. Additional speed range enables working at high peripheral velocity.

- With digitised speed display
- Compact, slim form

**Technical specifications:**

| | |
|---|---|
| Motor capacity: input / ouput | 500 W / 300 W |
| Speed adjustment | progressively adjustable |
| rpm range | 3000 to 25 000 rpm |
| Speed display | LED |
| Dimensions (W x D x H) | 87 x 106 x 271 mm |
| Weight | 2500 g |
| Protective system in acc. with DIN 40050 | IP 20 |
| Current | 220-240 V, 50/60 Hz |

**Dispersing tool S 18 N - 19 G**
**Technical specifications:**

| | |
|---|---|
| Operative range | 10 to 1500 ml |
| ∅ stator | 19 mm |
| ∅ rotor | 12.7 mm |
| Materials touching product | PTFE, AISI 316L |

**Complet set delivery incl.**

- Ultra Turrax®
- Extension rod and dispersing tools S 18 N - 19 G
- Boss head and stand must be ordered separately

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XX04.1** | 1 | 1599,00 |

## Accessories for T 18 digital

By IKA.
**Dispersing tool S 18 N - 10 G**
**Technical specifications:**

| | |
|---|---|
| Operative range | 1 to 100 ml |
| ∅ stator | 10 mm |
| ∅ rotor | 7.5 mm |
| Materials touching product | PTFE, AISI 316L |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T598.1** | 1 | 868,00 |

# Dispersing/Homogenizing systems



## POLYTRON® PT 1200 E handheld disperser

By Kinematica. Ideal for quick processing of small sample quantities.
Soft start (active after power-on, e.g. at preselected speed).
Application volumes from 0.05 to 250 ml.

**Technical specifications:**

| | |
|---|---|
| Motor rating (input / output) | 100/72 W |
| Speed adjustment | Continuously variable |
| Speed range | 500 to 25 000 rpm |
| Speed display | Scale |
| Dimensions (W x D x H) | 44 x 55 x 220 mm |
| Weight | 440 g (drive)<br>310 g (power adapter) |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** benchtop power adapter.
Please order disperser unit and special stand ST-P 13/320 separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLX3.1** * | 1 | 1209,40 |

* Longer delivery times possible. Please check with our Sales Department.

## Disperser units for PT 1200 E

Applications: homogenisation of animal and vegetable tissue samples in a variety of liquids and volumes, extraction of active ingredients/substances from vegetable samples, disruption of animal and vegetable cells as well as intensive mixing.

**Technical specifications:**

| Model | PT-DA 03/2 EC-E050 | PT-DA 05/2 EC-E085 | PT-DA 07/2 EC-E107 | PT-DA 12/ 2EC-E123 |
|---|---|---|---|---|
| Working range (ml) | 0.05 to 2 | 0.1 to 5 | 0.5 to 10 | 3 to 250 |
| Stator ∅ (mm) | 3.5 | 5.5 | 7.8 | 12 |
| Rotor ∅ (mm) | 2.2 | 3.0 | 5.0 | 9.0 |
| Min/max immersion depth (mm) | 20/50 | 25/85 | 25/107 | 25/123 |
| Materials in contact with product | PTFE, AISI 316L | | | |
| Temperature range (°C) | up to 180 | | | |
| Approx. suspension fineness (µ) | 5 | | | |
| Approx. emulsion fineness (µ) | 1 | | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PT-DA 03/2EC-E050 | **CLX4.1** * | 1 | 1063,20 |
| PT-DA 05/2EC-E085 | **CLX5.1** * | 1 | 1126,60 |
| PT-DA 07/2EC-E107 | **CLX6.1** * | 1 | 1182,50 |
| PT-DA 12/2EC-E123 | **CLX7.1** * | 1 | 1261,00 |

## ST-P13/320 stainless steel plate stand

**Delivery incl.** anti-slip mat with height-adjustable mounting for drive and base station.
Dimensions: L 130 x W 150 x H 320 mm. Weight 1 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLX8.1** * | 1 | 180,60 |

* Longer delivery times possible. Please check with our Sales Department.



## POLYTRON® PT 2500 E stand dispersion unit

By Kinematica. Powerful motor keeps constant even when viscosity changes. Digital actual speed display (3-digit).
Application volumes from 0.05 to 2500 ml.

**Technical specifications:**

| | |
|---|---|
| Motor rating (input / output) | 500/300 W |
| Speed adjustment | Continuously variable |
| Speed range | 500 to 30 000 rpm |
| Speed display | Digital |
| Dimensions (L x W x H) | 157 x 76 x 236 mm |
| Weight | 1.8 kg |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** boom (∅ 12 mm).
Dispersion units, please order boss head and stand separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLT8.1** | 1 | 1502,85 |

## Dispersion units for POLYTRON® PT 2500 E

Applications: production of fine dispersions and emulsions, dispersing of plant, human or animal tissue, resins and pigments.
The dispersion units for the PT 1200 E drive from the current catalogue can also be used.

**Technical specifications:**

| Model | PT-DA 12/ 2EC-E157 | PT-DA 20/ 2EC-E192 | PT-DA 25/ 2EC-E192 |
|---|---|---|---|
| Working range (ml) | 0.2 to 250 | 100 to 2000 | 100 to 2500 |
| Stator ∅ (mm) | 11.8 | 20 | 25 |
| Rotor ∅ (mm) | 9 | 15 | 18 |
| Approx. min/max immersion depth (mm) | 30/157 | 30/192 | 30/107 |
| Materials in contact with product | PTFE, AISI 316L | | |
| Temperature range (°C) | up to 180 | | |
| Approx. suspension fineness (µ) | 5 | | |
| Approx. emulsion fineness (µ) | 1 | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PT-DA 12/2EC-E157 | **CLT9.1** | 1 | 1374,95 |
| PT-DA 20/2EC-E192 | **CLX0.1** | 1 | 1266,35 |
| PT-DA 25/2EC-E192 | **CLX1.1** | 1 | 1555,55 |

## ST-P20/600 stainless steel plate stand

Dimensions: L 200 x W 310 x H 600 mm. Weight 2.5 kg.
**Delivery incl.** two stand rods and boss head.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLX2.1** * | 1 | 332,20 |

* Longer delivery times possible. Please check with our Sales Department.



## Dispersing System ULTRA-TURRAX® T 25 digital

By IKA.
High-performance dispersing system with a wide field of application.
**Examples of application:**
For producing emulsions and dispersions, for homogenizing sewage samples and for sample preparation.
- Workable volume ($H_2O$): 1 to 2000 ml
- Infinitely variable speed setting
- **With digital speed display**

**Technical specifications:**

| | |
|---|---|
| Motor power: reception / delivery | 700/500 W |
| rpm range | 3000 to 25 000 rpm |
| Speed display | digital |
| Dimensions (W x D x H) | 87 x 106 x 271 mm |
| Weight | 2.5 kg |
| Mains connection | 220-240 V, 50/60 Hz |

**Delivery incl.** ULTRA-TURRAX® T 25 digital with extension rod (L 175 x ∅ 13 mm). Please order dispersing tools, boss head, and stand separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AN58.1** | 1 | 1749,00 |

## Dispersing tools for ULTRA-TURRAX® T 25 digital

By IKA.
**Technical specifications:**

| **Model** | **S 25 N - 8 G** | **S 25 N - 18 G** | **S 25 N - 25 G** |
|---|---|---|---|
| Working range (ml) | 1 to 50 | 10 to 1500 | 50 to 2000 |
| ∅ Stator (mm) | 8 | 18 | 25 |
| ∅ Rotor (mm) | 6.1 | 12.7 | 17 |
| Gap between Stator and Rotor (mm) | 0.25 | 0.3 | 0.5 |
| Immersion depth Min/Max (mm) | 27/85 | 40/165 | 40/165 |
| Materials touching product | PTFE, AISI 316L | | |
| Ideal for temperatures | up to 180 °C | | |
| Final fineness, suspension (µm) | 10-50 | 10-50 | 15-50 |
| Final fineness, emulsion (µm) | 1-10 | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S 25 N - 8 G | **AN59.1** | 1 | 1199,00 |
| S 25 N - 18 G | **AN60.1** | 1 | 899,00 |
| S 25 N - 25 G | **AN61.1** | 1 | 1149,00 |



## Polytron® PT 10-35 GT stand dispersing unit

By Kinematica. For working volumes of up to 8 l. Powerful motor keeps constant even when viscosity changes. Soft start (e.g. at a preselected speed). Audible fault warning. Digital actual speed display (3-digit).

**Technical specifications:**

| | |
|---|---|
| Motor rating (input/output) | 1200/800 W |
| Speed adjustment | Continuously variable |
| Speed range | 500 to 30,000 rpm |
| Speed display | Digital |
| Dimensions (L x W x H) | 95 x 210 x 247 mm |
| Weight | 3.2 kg |
| Power supply | 230 V, 50 Hz |

**Delivery incl.** extension arm (∅ 12 mm, L 200 mm). Dispersion units, please order boss head and stand separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EET2.1** | 1 | 2007,05 |

## Dispersing aggregates for Polytron® PT 10-35 GT

**PT-DA 20/2EC-F193 and PT-DA 30/2EC-F250 aggregates**
For producing dispersions and emulsions. Disperses plant and animal tissue, resins and pigments. Can be used for cell disruption.

Biotrona® **PT-DA 36/3BEC-F250 aggregate**
For highly turbulent mixing with low shear forces. Rapidly dissolves and suspends solids. For tasks that involve mixing highly viscous media.

**Technical specifications:**

| **Model** | **PT-DA 20/ 2EC-F193** | **PT-DA 30/ 2EC-F250** | **PT-DA 36/ 3BEC-F250** |
|---|---|---|---|
| Working range (ml) | 20 to 2000 | 100 to 4000 | 500 to 8000 |
| Stator ∅ (mm) | 20 | 30 | 36 |
| Rotor ∅ (mm) | 15 | 23 | 30 |
| Approx. min./max. immersion depth (mm) | 40/170 | 40/230 | 90/230 |
| Materials in contact with product | PTFE, AISI 316L | GL-Bronze/AISI 316L | |
| Temperature range (°C) | Max. 180 | | |
| Approx. suspension fineness (µ) | 1 to 20 | 5 to 25 | n.a. |
| Approx. emulsion fineness (µ) | 1 to 5 | 1 to 10 | n.a. |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| PT-DA 20/2EC-F193 | **EET3.1** | 1 | 1480,30 |
| PT-DA 30/2EC-F250 | **EET4.1** | 1 | 1875,90 |
| PT-DA 36/3BEC-F250 | **EET5.1** | 1 | 2187,65 |

# Disintegrators / Homogenizers



## Compact Ultrasonic Processors UP50H and UP100H

By Hielscher.
- Small, compact ultrasonic processors
- Application range: ultrasonic processingor homogenizing of liquids and disintegration of cells
- With pulse switch for temperature sensitive samples
- Useable as hand or stand unit (please order stand separately)

**Technical specifications:**

| Model | UP50H | UP100H |
|---|---|---|
| For vol. max. (ml) | 200 | 500 |
| Output (W) | 50 | 100 |
| Working frequency | 30 kHz, is regulated automatically | |
| Power regulator | Amplitude 20 to 100 %, infinitely variable | |
| Pulse range | 10 to 100 % per seconde, infinitely variable | |
| Dimensions L x W x H (mm) | 180 x 130 x 50 | |
| Protection | IP 40 | |
| Weight (g) | 800 | |
| Power supply | 230 V, 50/60 Hz | |

**Delivery incl.** unit with case and stand holder for stand with ∅ 16 mm, without sonotrode (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| UP50H | **Y509.1** * | 1 | 2322,00 |
| UP100H | **Y510.1** * | 1 | 2703,65 |

## Sonotrodes for UP50H and UP100H

By Hielscher.
Made of titanium. Length 80 mm.

| Type | Sample volume (ml) | Tip-∅ (mm) | max. immersion depth (mm) |
|---|---|---|---|
| **MS1** | 0.1-5 | 1 | 5 |
| **MS2** | 2-50 | 2 | 30 |
| **MS3** | 5-200 | 3 | 30 |
| **MS7** | 20-500 | 7 | 30 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MS1 | **Y512.1** * | 1 | 326,80 |
| MS2 | **Y513.1** * | 1 | 265,55 |
| MS3 | **Y514.1** * | 1 | 265,55 |
| MS7 | **Y515.1** * | 1 | 216,10 |

## Accessories for UP50H / UP100H

**Stand**
Made of stainless steel. Base plate L 300 x W 150 mm.
Height 600 mm. ∅ 16 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y525.1** * | 1 | 204,25 |

* Longer delivery times possible. Please check with our Sales Department.



## Ultrasonic homogenizers SONOPULS-series

By Bandelin.
**Application:** Cell disruption, homogenizing, emulsifying, suspending, process acceleration, sonochemistry and degassing.
- LED-display for pulsation, time as well as actual value display of the amplitude
- Amplitude setting range: 10 to 100 %
- Ultrasonic operation modes: Continuous or pulsating (for temperature-sensitive samples); Pulse range 10 to 100 %, can be saved
- Continuous run or timer operation (adjustable 1 s to 99 min; can be saved)
- Operating frequency 20 kHz constant sound
- Outlet supply: 230 V, 50/60 Hz

**Technical specifications:**

| Model | SONOPULS HD 2070-set | SONOPULS HD 2200-set |
|---|---|---|
| For volume to | 50 ml | 900 ml |
| Max. HF-power | 70 W | 200 W |
| Scope of delivery | • Generator<br>• Ultrasonic transformer<br>• Graduated horn SH 70 G<br>• Micro tip MS 73, ∅ 3 mm | • Generator<br>• Ultrasonic transformer<br>• Booster horn SH 213 G<br>• Titan plate TT 13, ∅ 13 mm |

Please order support frame separately.
Optionally available: Noise protection box for reducing noise level.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| HD 2070-Set | **HC85.1** * | 1 | 2901,45 |
| HD 2200-Set | **HC86.1** * | 1 | 3536,75 |

## Sonotrodes for HD 2070 and HD 2200

By Bandelin.
**Technical specifications:**

| Model | Tip-∅ (mm) | Length (mm) | Volume HD 2070 (ml) | Volume HD 2200 (ml) |
|---|---|---|---|---|
| **Micro tips MS 72** | 2 | 191 | 1 to 25 | 2 to 30 |
| **Micro tips MS 73** | 3 | 175 | 2 to 50 | 50 to 90 |
| **Conical tips KE 76** | 6 | 135 | 8 to 100 | 10 to 350 |
| **Titan plate TT 13** | 13 | 5 | 10 to 200 | 20 to 900 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Micro tips MS 72 | **HC87.1** * | 1 | 208,55 |
| Micro tips MS 73 | **HC88.1** * | 1 | 146,20 |
| Conical tips KE 76 | **HC89.1** * | 1 | 159,10 |
| Titan plate TT 13 | **HC90.1** * | 1 | 67,75 |

## Accessories for SONOPULS HD 2070 and HD 2200

By Bandelin.

**Support frame set HG 20:** Made of stainless steel.
For mounting the ultrasonic transformer. With brackets.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HC93.1** * | 1 | 996,55 |

* Longer delivery times possible. Please check with our Sales Department.



## Digital ultrasonic disintegrator UP200Ht

By Hielscher.
**Applications:** sample preparation, homogenisation, dispersion, disagglomeration (e.g. nanoparticles), emulsification, lysis and cell disruption, extraction, degassing and sonochemistry.

- Use as handheld device or mounted on a stand
- Colour touch display and digital setting and monitoring functions
- Amplitude or power output control
- Countdown function: 0.1 sec to 99 d
- Automatic data storage on integrated SD card reader in 100 ms cycles; records amplitude, power output, time and temperature
- Temperature range monitoring: acoustic irradiation is interrupted if the medium temperature is above or below the setpoint
- Operation and monitoring via LAN cable, i.e. a browser can be used for display and remote control (no need to install software on PC)
- With LED sample illuminator
- Protection against dry running

**Technical specifications:**

| | |
|---|---|
| Output | 200 W |
| Operating frequency | 26 kHz |
| Power output control | Amplitude 20 to 100 %, continuously variable in 1 % increments |
| Pulse range | 10 to 100 % per second, in 0.1 sec increments,<br>100 % = continuous duty |
| Temperature display (with connected sensor) | -50 to +200 °C |
| Dimensions (W x H x D) | 300 x 190 x 90 mm |
| Weight | 1.4 kg |
| Power supply | 100 to 240 V, 50/60 Hz |

**Delivery incl.** carry case, boom arm (L 200 x ∅ 12 mm), cross clamp, 3 m network cable, 1 GB SD/USB combo card and Pt 100 temperature sensor.
Please order sonotrodes and stand separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YH05.1** * | 1 | 3364,75 |

## Accessories for ultrasonic disintegrator UP200Ht

By Hielscher.
**Sonotrodes**
Made of titanium.

| Type | Sample volume (ml) | Length (mm) | Tip ∅ (mm) |
|---|---|---|---|
| **S26d2** | 2 to 50 | 120 | 2 |
| **S26d7** | 20 to 500 | 95 | 7 |
| **S26d14** | 50 to 1000 | 80 | 14 |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S26d2 | **YH06.1** * | 1 | 288,10 |
| S26d7 | **YH07.1** * | 1 | 288,10 |
| S26d14 | **YH08.1** * | 1 | 309,60 |

**Stand**
Made of stainless steel. Base plate L 300 x W 150 mm.
Height 600 mm. ∅ 16 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y525.1** * | 1 | 204,25 |

* Longer delivery times possible. Please check with our Sales Department.




## Cell disruptors Disruptor Genie® analog and digital

By Scientific Industries. Suitable for a variety of homogenization processes of yeast cells, bacteria, plant and animal tissue and pellet resuspensions using glass beads (please order separately), or anything that requires extremely violent high-speed agitation.

**Disruptor Genie® analog**
- With fixed set speed
- Timer: 0 to 15 minutes or continuous operation

**Disruptor Genie® digital**
- With variable speed control
- Timer: 0 to 99 min or continuous operation
- After 10 minutes, the mixer switches to "sleep"-mode

**Technical specifications:**

| Type | Disruptor Genie® analog | Disruptor Genie® digital |
|---|---|---|
| Speed range | 2850 rpm | Adjustable from 1000 to 2850 rpm |
| Speed display/timer | - / scale | digital / digital |
| Time range | 0 to 15 min | 0 to 99 min |
| Dimensions (L x W x H) | 165 x 122 190 mm | |
| Weight | 4.5 kg | |
| Electrical supply | 230 V, 50/60 Hz | |

**Delivery incl.** TurboMix®-holder and mount for 12 microcentrifuge tubes 1.5/2.0 ml. Glass beads please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Disruptor Genie® Analog | **AH30.1** | 1 | 728,85 |
| Disruptor Genie® Digital | **PA66.1** | 1 | 843,90 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare-holder for 12 microcentrifuge tubes 1.5/2.0 ml | **AH31.1** | 1 | 99,45 |
| Glass beads ∅ 0.1 mm | **N029.1** | 450 g | 59,15 |
| Glass beads ∅ 0.5 mm | **N030.1** | 450 g | 59,15 |
| Glass beads ∅ 1.0 mm | **N031.1** | 450 g | 59,15 |
| Glass beads ∅ 2.7 mm | **N032.1** | 450 g | 59,15 |

**Recommended useage of beads:**

| Material | ∅ Beads (mm) |
|---|---|
| Bacteria | 0.1 |
| Yeast/fungi | 0.5 |
| Tissue | 1.0 |

# Disintegrators / Homogenizers




## BeadBeater®

For rapid, efficient and safe cell disintegration.

**Method of operation:**
A fast running impeller wheel accelerates the movement of small beads in a specially formed vessel to a very high speed. The system is completely hermetically sealed and allows no air to enter into the sample, preventing harmful aerosols from forming. The unit is easy-to-use and maintenance free. The beads precipitate within a few seconds and can be reused.

- Suitable for sample volume max. 100 g (wet weight) in 200 ml media
- Ideal for sensitive proteins and enzymes

**Delivery incl.** 350 ml vessel made of PC. Beads please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N025.1** | 1 | 1220,15 |

## Spare vessel for BeadBeater®

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spare vessel, 350 ml, PC | **N026.1** | 1 | 95,65 |
| High-grade steel vessel, 350 ml | **N027.1** | 1 | 245,10 |
| ① Vessel, PC, stainless steel guide bushing,15 ml | **EN04.1** | 1 | 349,40 |
| ② Vessel, PC, stainless steel guide bushing, 50 ml | **EN05.1** | 1 | 349,40 |

## Accessories for BeadBeater®

**Glass Beads**

| ∅ (mm) | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|
| 0,1 | **N029.1** | 450 | 59,15 |
| 0,5 | **N030.1** | 450 | 59,15 |
| 1,0 | **N031.1** | 450 | 59,15 |
| 2,7 | **N032.1** | 450 | 59,15 |

**Zirconia/Glass-Beads**

| ∅ (mm) | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|
| 0,1 | **N033.1** | 450 | 88,30 |
| 0,5 | **N034.1** | 450 | 88,30 |
| 1,0 | **N035.1** | 450 | 88,30 |
| 2,3 | **N036.1** | 450 | 88,30 |

**Zirconia-Beads**

| ∅ (mm) | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|
| 0,7 | **N037.1** | 450 | 153,75 |
| 1,0 | **N038.1** | 450 | 153,75 |
| 2,0 | **N039.1** | 450 | 153,75 |

**Stainless steel Beads**

| ∅ (mm) | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|
| 1,5 | **P329.1** | 45 | 88,15 |


▶ Clips for bags, see page 538

▶ Homogenizing bags, see page 253








## BagMixer® 400-series

By Interscience. The Bag Mixer® ensures safe and easy separation of bacteria from solid samples. A sterile plastic bag is added together with the closed sample and a diluent into the Bag Mixer®. For most samples 30 to 60 seconds mixing is sufficient. The filtrate can then be removed with a pipette and analysed immediately without any danger of changing or contamination. Housing and mixing chamber are made of rustproof stainless steel.

**BagMixer® 400 P**
- With stainless steel flap
- Preset speed (8 strokes/s)
- Adjustable mixing time: 30 to 210 sec or permanent run

**BagMixer® 400 W**
- With glass flap made of armour plate glass
- Preset speed (8 strokes/s)
- Adjustable mixing time: 30 to 210 sec or permanent run
- **Delivery incl**. drip pan

**BagMixer® 400 CC**
- With glass flap made of armour plate glass
- LCD display indicates mixing time and speed
- Variable speed setting: 4, 6, 8 or 10 strokes/s
- Adjustable mixing time: 1 sec to 1 h with count-down display or permanent run
- With additional indicator display for mixing blade intensity
- Distance between mixing blades and door can be adjusted for better results
- **Delivery incl.** drip pan

**Technical specifications:**

| | |
|---|---|
| Capacity | 50 to 400 ml |
| Dimensions (L x W x H) | 420 x 260 x 265 mm |
| Weight | 16.5 kg |
| Current | 220/110 V, 50/60 Hz |

Note: stainless steel rack can only be used in combination with closure clips (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① BagMixer 400 P | **KL16.1** * | 1 | 1825,35 |
| ② BagMixer 400 W | **T211.1** * | 1 | 2279,00 |
| ③ BagMixer 400 CC | **KL17.1** * | 1 | 2969,15 |
| ④ Rack made of high-grade steel for 10 bags | **T213.1** * | 1 | 149,45 |
| Closure clips | **T212.1** * | 10 | 30,60 |

* Longer delivery times possible. Please check with our Sales Department.

## Accessories for homogenizers

**Homogenizing bags**

**Sterile.** Whirl Park® made of PE for use with homogenizer (Stomacher® 400 circulator, Bag Mixers®). Thickness: 100 µm. With labelling area and filter. A third layer of finely perforated PE enables solids to be separated when used in homogenizers.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Homogenizing bags W 150 x H 230 mm | **P310.2** | 250 | 213,95 |
| Homogenizing bags W 190 x H 300 mm | **P311.2** | 250 | 267,70 |




## BagMixer® 400 S / SW lab blenders

By Interscience. Effective mixing of solid or liquid samples in laboratory blender bag. Optimal microorganism extraction. Sample material is quickly prepared for analysis without complex cleaning.

**General specifications of both models**
- Digital display of speed and time
- Adjustable mixing intensity
- Removable pedals
- 4 adjustable speeds: 4, 6, 8, 10 impacts/sec
- Adjustable mixing time: 1 to 59 minutes or continuous operation
- LightCode System: colour LED light under the door indicates the mixing status (green: mixing operation finished; orange: active mixing operation)
- LED interior light
- Integrated drip pan
- Low noise (approx. 48 dB)

② **SW model**
- Window flap with double glazing
- LiquidSensor: mixing stops immediately and automatically if a leak is detected by the sensor

**Technical specifications:**

| | |
|---|---|
| Capacity | 50 to 400 ml |
| Dimensions (W x D x H) | 290 x 450 x 37 mm |
| Weight | 26 kg |
| Power supply | 110-240 V, 50/50 Hz |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① BagMixer® 400 S | **CEC0.1** * | 1 | 3423,90 |
| ② BagMixer® 400 SW | **CEC1.1** * | 1 | 4168,85 |

* Longer delivery times possible. Please check with our Sales Department.



## Homogeniser bag stand BagOpen®

**For opening and holding bags.**
For single 400 ml bags. Self-adhesive pads adhere to the outer walls of the bag and to the side walls of the stand and hold the bag open.
Reduces risk of sample contamination.
Dimensions: W 80 x D 150 x H 250 mm.

**Delivery incl.** 2 adhesive pads.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XX17.1** | 1 | 115,05 |



## Stomacher® 400 circulator

By Seward.
**Ideal for extracting, mixing, homogenizing or dispersing.**
Capacity 80 to 400 ml. The Stomacher® 400 circulator is indispensible in the laboratory when preparing and blending food samples and other substances for analysis. The sample and diluent are placed into the machine in a sealed plastic bag. The bag is held securely in the unit during treatment. There is no contact between the sample and machine.
This eliminates any danger of contamination. With regard to hygiene, security and general efficiency the Stomacher® 400 circulator compares well with other units, which must be cleaned or even sterilized after use. Blending takes only 30 seconds for most substances.

**Procedure:**
Two reciprocating paddles beat against the bag repeatedly and press its contents against the door. This quiet and yet powerful movement distributes the sample quickly so that the extraction of soluble substances and the detection of even deep-seated micro-organisms is easier than when using standard blending processes.The sample can be removed from the bag with a pipette after blending. The Stomacher® 400 circulator can be reused again immediately.

**Special Characteristics:**
- Control panel: keyboard and LCD display
- Count Down display indicates processing
- User-defined speed and time setting
  - 3 programs can be stored for easier operation
  - Setting possibilities:
  1.) Paddle speed (rpm: 200/low, 230/normal, 260/high)
  2.) Time (from 1 sec to 99 min and 59 sec)
- Durable and robust aluminium casing

Dimensions: W 350 x D 335 x H 280 mm. Weight 23 kg.
Power supply 220 V, 50 Hz

**Delivery incl.** 1000 homogenizing bags standard.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Stomacher® 400 circulator | **H453.1** * | 1 | 4727,85 |
| Rack for 10 Stomacher® bags | **H454.1** * | 1 | 164,50 |

* Longer delivery times possible. Please check with our Sales Department.

## Homogenizing bags

By Nasco. Made of **PE**. γ-**sterile**. 70 µm thick.
Suitable for use in homogenizers. Available with and without filter.
The filter holds back solid particles and stops the pipettes from becoming blocked.

| Volume (ml) | W x H (mm) | Filter type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 80 | 105 x 150 | without | **AYY6.1** | 1500 | 101,05 |
| 400 | 180 x 300 | without | **EP15.1** | 500 | 46,80 |
| 400 | 190 x 300 | over whole surface | **EP16.1** | 500 | 222,55 |
| 400 | 190 x 300 | side filters | **EP17.1** | 500 | 222,55 |
| 3500 | 380 x 510 | without | **AYY7.1** | 100 | 34,05 |




## A 10 basic analysis mill

By IKA. Comminutes hard, brittle materials, as well as soft and fibrous materials. Integrated cooling water connections (for hoses with an inner ∅ of 8 mm). A choice of stainless steel beaters and a cutter that can be swapped depending on the material to be comminuted.
Can only be operated with the lid closed.

- Digital timer (can be set to between 1 sec and 5 min) that shows the comminuting time
- Interval function (if the timer function has been activated, the equipment runs for 15 sec and then stops for 1 sec, repeating this pattern until the set time has elapsed)

**Technical specifications:**

| | |
|---|---|
| Usable volume | 50 ml |
| Power: Consumption/output | 300/240 W respectively |
| Max. duty time | 5 min on/10 min off |
| Max. speed (fixed) | 25,000 rpm |
| Max. circumferential speed | 70 m/sec |
| Max. feed size | 6 mm (impact grinding)<br>10 mm (cutting) |
| Grinding chamber can be cooled by | Water: Yes<br>Dry ice: Yes<br>Liquid nitrogen: No |
| Dimensions (W x D x H) | 130 x 145 x 250 mm |
| Weight | 2.9 kg |
| Power supply | 220-240 V, 50/60 Hz |

**Delivery incl.** ① A 10.1 stainless steel beater (stainless steel 1.4034) suitable for most brittle materials up to a Mohs hardness of 5 and A 10.4 grinding chamber reducer (stainless steel 1.4301) for small sample material volumes.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EEA9.1** | 1 | 1699,00 |

## Accessories for A 10 basic analysis mill

By IKA.

② **A 10.3 carbide beater**
Made from tungsten carbide for relatively hard materials up to a Mohs hardness of 9.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EEC0.1** | 1 | 224,00 |

③ **A 10.2 star-shaped cutter**
For fibrous materials such as paper and plant material, as well as plastics, including material with a low specific weight.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EEC1.1** | 1 | 121,00 |

**Mohs' hardness scale**
Designation of degree of hardness of minerals, metals and other products at different hardness stages. Each stage is marked by a reference mineral.

| | | | |
|---|---|---|---|
| 1 Mohs | talc | 6 Mohs | feldspar |
| 2 Mohs | gypsum | 7 Mohs | quartz |
| 3 Mohs | calcite | 8 Mohs | topaz |
| 4 Mohs | fluorspar | 9 Mohs | corundum |
| 5 Mohs | apatite | 10 Mohs | diamond |



## A11 basic analysis mill

By IKA. Batch mills with two milling processes:

- **Impact milling of hard, brittle grinding material with a stainless steel beater up to max. Mohs' hardness scale 6**
  (beater is included in delivery)
- **Blade milling of soft, fibrous grinding material with a cutting knife**
  (not included in delivery)

Damp and sticky process materials can be ground with addition of water. A standard grinding beaker made of ETFE, fiber-glass reinforced with stainless steel inlet (AISI 316L), effective volume 80 ml is included in the delivery. This enables you to embrittle the grinding material with liquid nitrogen directly in the grinding chamber.

**Technical specifications:**

| | |
|---|---|
| Capacity: input / output | 300 / 160 W |
| Max. operating time | Short-time service (KB 1/10): 1 min ON / 10 min OFF |
| On-load speed | 19 500 rpm |
| No-load speed | 28 000 rpm |
| Peripheral speed | 53 m/s |
| System of protection | IP 43 |
| Dimensions (W x D x H) | 85 x 85 x 240 mm |
| Weight | 1500 g |
| Mains supply | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T534.1** | 1 | 1999,00 |

## Accessories for A11 basic analysis mill

By IKA.

**Cutting blade** (made of stainless steel AISI 440B)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T539.1** | 1 | 146,00 |

**Beater for grinding material** to max. Moh's hardness scale 9 (made of stainless steel AISI 440B)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T536.1** | 1 | 186,00 |

**Funnel**
Prevents splashing when filling liquid nitrogen into standard 80 ml grinding beaker.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y974.1** | 1 | 203,00 |

**Grinding beaker (actual volume 250 ml)**
made of PC with stainless steel inlet. Not suitable for $N_2$-cooling, only to be used with double beaters (Art. No. Y975.1).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T535.1** | 1 | 507,00 |

**Doublebeater**
made of titanium. Max. Moh's hardness 3.
Only to be used with 250 ml grinding beaker (Art. No. T535.1).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y975.1** | 1 | 400,00 |

**Spare grinding beaker** (effective volume: 80 ml)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T537.1** | 1 | 371,00 |

**Spare beater** (max. Moh's hardness scale 6)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T538.1** | 1 | 86,00 |



## Universal blender

By Severin.

**Features**

- Capacity approx. 260 W
- Polystyrole beaker 650 ml
- Max. speed approx. 3900 rpm
- Pulse switch
- Stainless steel blade
- Rubber anti-slip device

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y384.1** | 1 | 34,35 |



## Stand mixer

By Severin. For simple mixing and emulsifying tasks.

**Features**

- Removable 1.5 l glass mixing attachment with removable drip tray
- Capacity approx. 550 W
- Two speed settings with additional pulse mode option
- Lid with opening for refilling
- Removeable stainless steel blade
- Dimensions: L 210 x W 180 x H 402 mm
- Cord wind

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X477.1** | 1 | 53,55 |



## La Moulinette XXL blender

Blends foods such as meat, nuts, herbs and vegetable samples within just a few seconds.

- Motor power 1000 W
- Easy to operate - to blend samples, simply push down the lid about three times
- Total capacity 550 ml, capacity of blending container 300 g
- Cover for processing viscous foods
- Transparent container for monitoring food preparation
- Cable storage compartment
- Dimensions: W 194 x H 353 x D 194 mm
- Weight 2.8 kg
- Mains connection 230 V, 50 Hz

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CCE4.1** | 1 | 117,20 |



## Universal mixer RBB pro

For milling, mixing and emulsifying.

**Features:**

- 3 adjustable speeds (4000, 8000 and 14000 rpm)
- **Power consumption 550 W**
- Stainless steel motor housing, chrome plated
- Safety control system: motor only runs when lid is closed
- With soft start feature (prevents liquids from splashing up after switching on)
- With overload/overheating safety cut-out
- With pulse function, for stirring briefly
- Blending beaker is impact resistant and dishwasher safe, capacity 2 l
- Dimensions total: H 493, ∅ 190 mm
- Dimensions of mixer attachments: H 265 x W 182 mm
- Power supply: 230 V, 50 Hz

**Delivery incl.** specified blending beaker and lid with hole for adding ingredients.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Universal mixer with polycarbonate beaker | **PT04.1** | 1 | 822,40 |
| Universal mixer with stainless steel beaker | **PT05.1** | 1 | 1026,65 |



## Universal mixer GK 900 W

For thorough reducing, mixing and emulsifying.

**Features**

- Infinitely adjustable from 1000 to 17 000 rpm
- **Power consumption 900 W**
- Die cast zinc motor housing, chrome-plated
- With soft start (prevents liquid from splashing up after switching on)
- Safety control: motor only runs lid is attached
- With overload and overheating protection
- Motor block dimensions: height 226 mm, ∅ 190 mm
- Power supply: 230 V, 50/60 Hz

**Choice of four different mixing beakers:**

- 4 l polycarbonate attachment. Dimensions: W 300 x H 280 mm
- 2 l polycarbonate attachment. Dimensions: W 240 x H 280 mm
- 4 l stainless steel attachment. Dimensions: W 290 x H 300 mm
- 2 l stainless steel attachment. Dimensions: W 230 x H 280 mm

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Universal mixer with 4 l polycarbonate beaker | **X534.1** | 1 | 1235,20 |
| Universal mixer with 2 l polycarbonate beaker | **CYX3.1** | 1 | 1129,85 |
| Universal mixer with 4 l stainless steel beaker | **CYX4.1** | 1 | 1498,55 |
| Universal mixer with 2 l stainless steel beaker | **X535.1** | 1 | 1235,20 |



## Laboratory universal mixer with type RMBL sound protection hood

For reducing, mixing and emulsifying.

**Features:**

- 6 speed settings
- Version with protective hood for noise reduction and increased safety in the laboratory
- 12 storable cycles for automatic processing (max. cycle duration 30 min, time is determined by current mixing operation)
- Pulse function
- Stainless steel motor base
- Thermal circuit breaker

**Technical specifications:**

| | |
|---|---|
| Power requirement | 900 W for continuous operation |
| Speed settings | 1300, 3500, 6000, 8700, 12 000 and 16 000 rpm |
| Dimensions | W 225 x D 265 x H 495 mm |
| Weight | app. 10 mm |
| Power supply | 230 V, 50 Hz |

**Delivery incl.** sound protection hood. Without mixing attachment (please order required mixing attachment separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CYX5.1** | 1 | 1476,00 |

## Mixing attachments for universal mixer RMBL

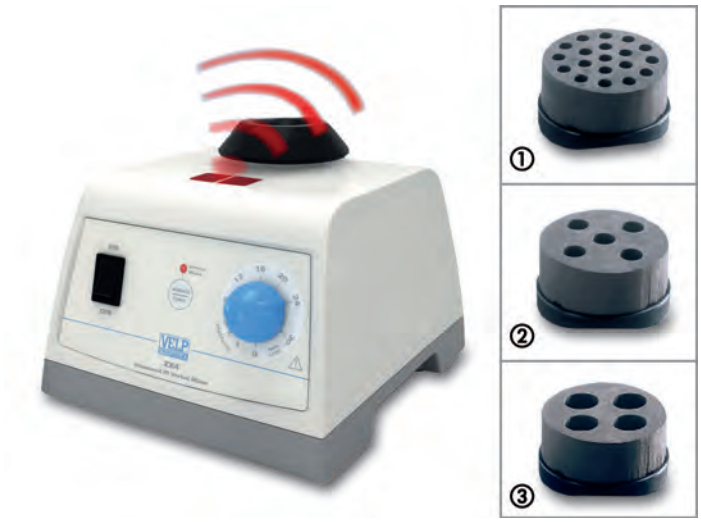
**Cutter head type "Laboratory":**
Made of stainless steel. For ultra fine processing and low quantities.

**Cutter head "High-Power":**
Made of stainless steel. 4 blades shaped for optimal stirring, intensive and quick processing, as well as crushing ice cubes.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 125 ml glass attachment incl. laboratory cutter head | **CYX6.1** | 1 | 267,70 |
| 250 ml glass attachment incl. laboratory cutter head | **CYX7.1** | 1 | 277,35 |
| 500 ml glass attachment incl. laboratory cutter head | **CYX8.1** | 1 | 410,65 |
| 1000 ml glass attachment incl. laboratory cutter head | **CYX9.1** | 1 | 445,05 |
| 2000 ml polycarbonate attachment incl. High-Power cutter head | **CYY0.1** | 1 | 176,30 |
| 2000 ml stainless steel attachment incl. High-Power cutter head | **CYY1.1** | 1 | 365,50 |

# Vortexer, small shakers






## RS series test tube shakers

**General information for both models**
For mixing small sample quantities in test tubes, centrifuge tubes, reaction vials etc.
- Continuous / touch operation
- Robust housing design
- Slip-resistant silicon feet

**RS-VF 10**
With fixed speed of 2500 rpm

**RS-VA 10**
With variable speed control from 0 to 2500 rpm

**Technical specifications:**

| Type | RS-VF 10 | RS-VA 10 |
|---|---|---|
| Shaking motion | circular, vibrating | |
| Shaking stroke | 4 mm | |
| Speed range | 2500 rpm | 0-2500 rpm |
| Dimensions (W x H x D) | 127 x 160 x 130 mm | |
| Weight | 3.5 kg | |
| Mains connection | 220-230 V, 50 Hz | |

**Delivery incl.** standard attachment for test tubes and small containers.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RS-VF 10 | **PX87.1** | 1 | 134,40 |
| RS-VA 10 | **PX88.1** | 1 | 165,55 |

## Accessories for RS series test tube shakers

**One-hand attachment, large**
For single-handed shaking of Erlenmeyer flasks, bottles etc.
With rubber mat (∅ 99 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PX89.1** | 1 | 34,40 |

## Test tube shaker with infrared sensor type ZX4

- IR sensor mode or continuous duty is selectable
- When the non-contact IR sensor is activated, the test tube shaker starts the typical vortex movement at the previously set speed as soon as a test tube is detected in the immediate vicinity
- Rugged housing with non-slip feet

**Technical specifications:**

| | |
|---|---|
| Shaking motion | Circular, vibrating |
| Shaking stroke | 4.5 mm |
| Speed range | 0 to 3000 rpm |
| Dimensions (W x D x H) | 150 x 165 x 130 mm |
| Weight | 2.7 kg |
| Mains voltage | 100 to 240 V, 50/60 Hz |

**Delivery incl.** standard attachment for test tubes and small vessels.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACN9.1** | 1 | 166,65 |

## Accessories for test tube shaker type ZX4

**① Attachment for 19 1.5/2.0 ml reaction vials**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACP0.1** | 1 | 37,60 |

**② Attachment for 5 sample vials ∅ 16 mm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACP1.1** | 1 | 37,60 |

**③ Attachment for 4 centrifuge vials 50 ml (29 mm)**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACP2.1** | 1 | 46,20 |

# Vortexer, small shakers



## Vortex mixer with multifunctional attachment

Suitable for continuous or intermittent operation, with touch function, activated by applying pressure to the shaker attachment.

- With multifunctional attachment for six different vial types and a microtiter plate:
  2 x 50 ml centrifuge vials (horizontal loading)
  2 x 15 ml centrifuge vials (horizontal loading)
  4 x 1.5/2.0 ml reaction vials (vertical loading)
  6 x 0.5 ml reaction vials (vertical loading)
  24 x 0.2 ml reaction vials (vertical loading)
  2 x 5 ml reaction vials (horizontal loading)
  1 x microtiter plate
- A standard attachment for single-handed shaking of test tubes and vials is also integrated in the multifunctional platform
- Speed adjustment in 3 stages
- Attachment can be removed for cleaning

**Technical specifications:**

| | |
|---|---|
| Shaking motion | Circular, vibrating |
| Shaking stroke | 3.7 mm |
| Speed range | 1000, 2000 or 3000 rpm |
| Dimensions (W x H x D) | 171 x 197 x 190 mm |
| Weight | 4 kg |
| Power supply | 220 to 240 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CNH7.1** | 1 | 220,40 |



## Test tube shaker lab dancer

By IKA. For mixing small sample amounts via touch function.
- For small tubes with a ∅ of up to 30 mm such as test tubes, centrifuge tubes and vials
- With preset rpm of 2800 rpm

**Technical specifications:**

| | |
|---|---|
| Shaking movement | Rotary |
| Shaking lift | 4.5 mm |
| Speed range | 2800 rpm |
| Max. shaking volume | 1 test tube 50 ml |
| Motor power: Input / output | 1.2 / 0.8 W |
| Dimensions (W x H x D) | 100 x 70 x 110 mm |
| Weight | 550 g |

**Delivery incl.** wall power supply 12 V.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AN62.1** | 1 | 257,00 |



## Rotilabo®-vortex mixing adapters

For 1.5 ml microcentrifuge tubes. Ideal for all vortex or test tube shakers with rubber plate or mounting device for test tubes. Features solid shaft with affixed round plate for holding microcentrifuge tubes. A second movable plate prevents the tubes from falling out. Shaft length 165 mm with rounded grip (∅ 25 mm) on top end.

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For 8 micro-centrifuge tubes | **L660.1** | 1 | 118,25 |
| For 20 micro-centrifuge tubes | **L661.1** | 1 | 134,40 |

▶ Stands for centrifuge tubes see page 231

# Vortexer, small shakers







## Test tube shakers REAX top and REAX control

By Heidolph. Compact, high-performance shakers. Relatively heavy, pressurized housing for high safety. The shaker has been constructed in such a way that it prevents splashing liquid from penetrating into the unit. Practical changeover switch from interval to continuous operation.

**Technical specifications:**

| Model | REAX top | REAX control |
|---|---|---|
| Motion | circular, vibrating | |
| Shaking frequency | 0 to 2500 rpm | |
| Orbit | 5 mm | |
| Control accuracy | not controlled | ±2 % |
| Power consumption | 42 W | 42 W |
| Weight | 3300 g | |
| Dimensions (W x D x H) | 134 x 172 x 105 mm | |
| System of protection | IP 22 | |
| Ambient temperature | +5 to +40 °C at 85 % rh | |

**Delivery incl.** small receptacle plate for vials up to 20 mm ∅.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| REAX top | **L952.1** | 1 | 284,00 |
| ① REAX control | **L953.1** | 1 | 402,00 |

## Accessories for REAX top and REAX control

By Heidolph.

② **Mounting plate, large**
For flasks up to 50 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L954.1** | 1 | 31,00 |

③ **Supporting rod with vessel holder**
For secure holding of test tubes and flasks in continuous operation. Supporting rod made of V2A, length 210 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H826.1** | 1 | 76,00 |

④ **Holding rack 10**
For max. 10 centrifuge tubes (∅ 10 mm, L 60 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L955.1** | 1 | 31,00 |

## Shaker Vortex Genie® 1

By Scientific Industries.

- Robust construction with high stability
- For speedy and intensive mixing of samples
- Unit starts automatically at maximum speed by pressing down the holder, thus reducing the vortex time

**Technical specifications:**

| | |
|---|---|
| Shaking motion | rotary |
| Speed max. | 2700 rpm |
| Safe ambience conditions | -0 to +38 °C at 95 % rh |
| Dimensions of unit (L x W x H) | 165 x 122 x 190 mm |
| Weight | 4.0 kg |
| Current | 230/240 V, 50 Hz |

**Delivery incl.** standard holder (Inner-∅ 25 mm) for one-handed shaking of test tubes, sample vials and centrifuge tubes.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH32.1** | 1 | 306,40 |

## Accessories for shaker Vortex Genie® 1

By Scientific Industries.

**Shaker dish (∅ 75 mm)**
For single-handed shaking of beakers, Erlenmeyer flasks, bottles etc. **Delivery without** rubber plate (please order separately, necessary for operating with shaker dish).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P507.1** | 1 | 33,15 |

**Rubber plate, with knobs**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P508.1** | 1 | 33,15 |

# Vortexer, small shakers




## Vortex-Genie®-series

By Scientific Industries. Robust and reliable shakers for speedy mixing and shaking of samples

- Multiple accessories: e.g. adapter tops for test tubes, beakers, centrifuge tubes etc.
- Adapter tops can be changed easily with the snap fit system

① **Vortex-Genie® 2**
Interval operation (with automatic start and by pressing the top) or permanent run possible.

② **Vortex-Genie® 2T with integrated timer**
Possible settings: 1 to 60 sec (Interval operation), 1 to 60 min (Hands-free mode) or permanent run.

③ **Digital Vortex-Genie® 2 with speed and time adjustment (Timer function) via digital display**
Possible settings: 1 to 99 sec (Interval operation), 1 to 99 min (Hands-free mode) or permanent run. Mixer switches over to "Sleep"-mode after 10 minutes without operation.
Speed can be increased in 10 rpm increments.

④ **Digital Vortex Genie® 2 Pulse same as Digital Vortex Genie® 2, with additional functions** (but without touch function):

- Programmable pulse function for various applications
- Depending on the selected pulse and interval times, the mixer can be used for high-speed and intensive mixing of specimens or for intermittent mixing
- The programmable pulse function is, for example, suited to heat-sensitive specimens which are required to be held in suspension without heating
- Pulse and interval times (On/Off) are adjustable from 0.1 sec to 99 min

**Technical specifications:**

| Model | ① Vortex-Genie® 2 | ② Vortex-Genie® 2T | ③ + ④ Digital Vortex-Genie® 2/ Digital Vortex Genie® 2 Pulse |
|---|---|---|---|
| Shaking movement | circular | | |
| Speed display/Timer | Scale/No | Scale/Scale | Digital/Digital |
| rpm range (rpm) | 600 to 2700 | 600 to 2700 | 500 to 2850 |
| Timer:<br>Interval operation<br>Hands-free mode | - | <br>1 to 60 sec<br>1 to 60 min | <br>1 to 99 sec<br>1 to 99 min |
| Dimensions L x W x H (mm) | 165 x 122 x 165 | | |
| Permissible ambient conditions | 0 to 38 °C at 95 % rh | | |
| Weight (kg) | 4 | | |
| Mains supply | 230 V, 50/60 Hz | | |

**Delivery incl.** standard top (Inner-∅ 2.5 cm) and shaking plate (∅ 7.5 cm).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Vortex-Genie® 2 | **P505.1** | 1 | 364,45 |
| ② Vortex-Genie® 2T | **X561.1** | 1 | 418,20 |
| ③ Digital Vortex-Genie® 2 | **HH64.1** | 1 | 451,50 |
| ④ Digital Vortex-Genie® 2 Pulse | **PK04.1** | 1 | 489,15 |




## Accessories for Vortex-Genie®-series

By Scientific Industries.

① **TurboMix® holder**
For simultaneous shaking of twelve 1.5/2.0 ml microcentrifuge tubes.
Suitable for cell disintegration with glass beads.
Higher efficiency when mixing.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| TurboMix® | **P517.1** | 1 | 278,45 |

② **Spare standard holder**
For single-handed shaking of test tubes.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spare standard holder | **P506.1** | 1 | 33,15 |

③ **Shaker dish and spare rubber plate**
For single-handed shaking of beakers, Erlenmeyer flasks, bottles, etc.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Shaker dish | **P507.1** | 1 | 33,15 |
| Rubber plate | **P508.1** | 1 | 33,15 |




## Accessories for Vortex-Genie®-series

By Scientific Industries.

④ **Shaker dish and holder for microcentrifuge tubes**
For shaking and mixing samples in microcentrifuge tubes.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Shaker dish ∅ 15 cm | **P509.1** | 1 | 48,60 |
| Holder for 60 microcentrifuge tubes | **P510.1** | 1 | 29,35 |

⑤ **Shaker dish and holder for micro well plates**
Ideal for shaking cell cultures and other samples in microwell plates.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Shaker dish ∅ 15 cm | **P509.1** | 1 | 48,60 |
| Holder for microtitre plates | **P511.1** | 1 | 30,00 |

⑥ **Angular dish and rubber bands**
For shaking and mixing samples in beakers, Erlenmeyer flasks, bottles.
Vessels are safely secured with rubber bands.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Angular dish | **P512.1** | 1 | 124,70 |
| Rubber bands | **P513.1** | 2 | 9,55 |

⑦ **Angular dish and holders for test tubes**
For shaking several test tubes simultaneously.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Angular dish | **P512.1** | 1 | 124,70 |
| Holder for 12 test tubes 9-16 mm | **P514.1** | 1 | 17,15 |
| Holder for 8 test tubes 14-29 mm | **P515.1** | 1 | 14,95 |
| Holder for 4 test tubes 29-37 mm | **P516.1** | 1 | 15,95 |

**Holder for centrifuge tubes**
For shaking and mixing samples in centrifuge tubes.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Holder for 12 centrifuge tubes 15 ml (∅ 17 x L 120 mm) | **LY19.1** | 1 | 160,20 |
| ⑧ Holder for 6 centrifuge tubes 50 ml (∅ 30 x L 115 mm) | **LY20.1** | 1 | 146,20 |
| ⑨ Holder for 6 centrifuge tubes 50 ml, 6 centrifuge tubes 15 ml and 12 microcentrifuge tubes 1,5/2,0 ml | **XX95.1** | 1 | 181,70 |

# Vortexer, small shakers




## Vortex 2 test tube shaker

By IKA. For short operation (touch function) or continuous operation.
- Stands firmly thanks to sturdy zinc die-cast casing
- Attachments click into place
- Numerous accessories, e.g. attachments for reaction vessels, microtitration plates, etc.

**Technical specifications:**

| | |
|---|---|
| Shaking motion | Circular, vibrating |
| Shaking stroke | 4 mm |
| Speed range | 500 to 2500 rpm |
| Dimensions (W x D x H) | 120 x 140 x 138 mm |
| Weight | 3.9 kg |
| Power supply | 220-240 V or 115 V or 100 V, 50/60 Hz |

**Delivery incl.** standard attachment VG 3.1.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EHP7.1** | 1 | 219,00 |

## Attachments for Vortex 2

By IKA.

① **Replacement standard attachment VG 3.1**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE35.1** | 1 | 9,00 |

② **Single-handed attachment VG 3.2**
For shaking conical flasks, bottles, etc. with one hand.
With rubber insert (∅ 88 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE36.1** | 1 | 20,00 |

③ **Universal attachment VG 3.3**
For attaching different inserts for test tubes and microtitration plates, etc.
Please order separately. See accessories for universal attachment VG 3.3.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE37.1** | 1 | 22,00 |

## Accessories for universal attachment VG 3.3

By IKA.

④ **Test tube inserts**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for 54 centrifuge tubes 1.5/2.0 ml (Type VG 3.31) | **EE38.1** | 1 | 56,00 |
| for 18 test tubes ∅ 10 mm (Type VG 3.32) | **EE39.1** | 1 | 29,00 |
| for 12 test tubes ∅ 12 mm (Type VG 3.33) | **EE40.1** | 1 | 29,00 |
| for 8 test tubes ∅ 16 mm (Type VG 3.34) | **EE41.1** | 1 | 29,00 |
| for 8 test tubes ∅ 20 mm (Type VG 3.35) | **EE42.1** | 1 | 29,00 |

⑤ **Erlenmeyer flask tightening strap VG 3.36**
Tightening strap for 1 Erlenmeyer-/round flask from 100 to 250 ml.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Erlenmeyer tightening strap VG 3.36 | **EE43.1** | 1 | 29,00 |

⑥ **Microtiter plate insert VG 3.37**, for 1 microtiter plate

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Microtiter plate insert VG 3.37 | **EE44.1** | 1 | 29,00 |




## Test tube shaker Vortex Genius 3

By IKA. For short-time operation (touch function), activated by pressing the top of the shaker, or for continuous operation.
- Infinitely adjustable speed setting
- With a variety of accessories: e.g. attachment for test tubes, centrifuge tubes etc. (please order separately)
- Simple "Click-on" of attachment

**Technical specifications:**

| | |
|---|---|
| Shaking motion | rotary |
| Shaking stroke | 4 mm |
| Adjustable speed range | 500 to 2500 rpm |
| Dimensions (W x D x H) | 127 x 149 x 136 mm |

**Delivery incl.** standard attachments for test tubes and small vessels.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE34.1** | 1 | 367,00 |

## Attachment for Vortex Genius 3

By IKA.

① **Spare standard attachment VG 3.1**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE35.1** | 1 | 9,00 |

② **Single-hand attachment VG 3.2**
For single-handed shaking of Erlenmeyer flasks, bottles etc.
With rubber insert (∅ 88 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE36.1** | 1 | 20,00 |

③ **Universal attachment VG 3.3**
Ideal for mounting different inserts for test tubes and microtiter plates, etc.
Please order separately. See accessories for universal attachment VG 3.3.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE37.1** | 1 | 22,00 |

## Accessories for universal attachment VG 3.3

By IKA.

④ **Test tube inserts**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for 54 centrifuge tubes 1.5/2.0 ml (Type VG 3.31) | **EE38.1** | 1 | 56,00 |
| for 18 test tubes ∅ 10 mm (Type VG 3.32) | **EE39.1** | 1 | 29,00 |
| for 12 test tubes ∅ 12 mm (Type VG 3.33) | **EE40.1** | 1 | 29,00 |
| for 8 test tubes ∅ 16 mm (Type VG 3.34) | **EE41.1** | 1 | 29,00 |
| for 8 test tubes ∅ 20 mm (Type VG 3.35) | **EE42.1** | 1 | 29,00 |

⑤ **Erlenmeyer flask tightening strap VG 3.36**
Tightening strap for 1 Erlenmeyer-/round flask from 100 to 250 ml.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Erlenmeyer tightening strap VG 3.36 | **EE43.1** | 1 | 29,00 |

⑥ **Microtiter plate insert VG 3.37**, for 1 microtiter plate

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Microtiter plate insert VG 3.37 | **EE44.1** | 1 | 29,00 |

# Shakers, Mixers




## Vortex 4 basic small shaker

By IKA. Suitable for shaking small vessels. Suitable for short-time use (touch function), activated by applying pressure to the shaker attachment, or for continuous operation. Rugged die cast zinc housing.

Two operating modes are selectable.
Mode A: safe mode with attachment detection and speed limiter.
Mode B: without attachment detection.

**Technical specifications:**

| | |
|---|---|
| Shaking motion | rotary |
| Shaking stroke | 4.5 mm |
| Max. speed | 3000 rpm |
| Speed display | Scale |
| Timer | No |
| Time range | - |
| Dimensions (W x D x H) | 176 x 190 x 63 mm |
| Weight | 3.0 kg |

**Scope delivery Vortex 4 basic incl.:** Standard attachment MS 3.1. ①, Universal attachment MS 3.3 ② and single-hand attachment MS 1.21 ③.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TK48.1** | 1 | 381,00 |

## Attachments for Vortex 4 basic

By IKA.

**① Replacement standard attachment MS 3.1**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EY89.1** | 1 | 15,00 |

**⑤ Microtitration attachment MS 3.4**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EY91.1** | 1 | 45,00 |

**② Universal attachment MS 3.3**

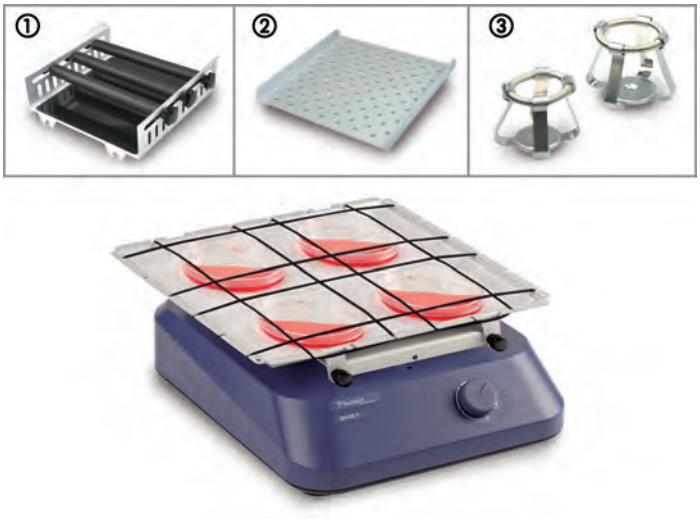
For attachment of various inserts for test tubes and sample tubes.
See Accessories for universal attachment 3.3.
Please order inserts separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TK50.1** | 1 | 15,00 |

## Accessories for universal attachment 3.3

By IKA.
**One-hand attachment and test tube inserts**

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ③ One-hand attachment (type MS 1.21) | **TK51.1** | 1 | 20,00 |
| For 14 test tubes, each ∅ 10 mm (type MS 1.31) | **TK52.1** | 1 | 45,00 |
| ④ For 6 test tubes, each ∅ 12 mm (type MS 1.32) | **EY90.1** | 1 | 45,00 |
| For 4 test tubes, each ∅ 16 mm (type MS 1.33) | **TK53.1** | 1 | 45,00 |




## RS-series platform shakers

Suitable for agitating 5 Petri dishes, with optional attachment for Erlenmeyer flasks.
- Max. load capacity: 3 kg
- Continuous speed adjustment

**Technical specifications:**

| Model | RS-OS 5 | RS-LS 5 |
|---|---|---|
| Type of motion | orbital | linear |
| Speed range (rpm) | 0 to 200 | |
| Shaking amplitude (stroke in mm) | 20 | |
| Shaking area W x D (mm) | 240 x 240 | |
| Dimensions W x D x H mm | 245 x 125 x 310 | |
| Weight (kg) | 3.1 | |
| Perm. ambient conditions | 4 to +40 °C at 80 % RH | |
| Power supply | 100 to 240 V, 50/60 Hz | |

**Delivery incl.** tray top with 6 fixing straps.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RS-OS 5 | **CAX8.1** | 1 | 499,90 |
| RS-LS 5 | **CAX9.1** | 1 | 499,90 |

## Accessories for RS series platform shakers

**① Universal tray**
Various loading options, e.g. 6 250 ml Erlenmeyer flasks.
**Delivery incl.** 3 adjustable clamping rolls.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Universal tray | **CAY0.1** | 1 | 145,15 |

**② Spring clip tray**
For shaking Erlenmeyer flasks.
With holes for individual fastening of spring clips.
**Delivery without** spring clips (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spring clip tray | **CAY1.1** | 1 | 145,15 |

**③ Spring clips**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spring clips for 25 ml flasks (max. 18) | **CAY2.1** | 1 | 28,95 |
| Spring clips for 50 ml flasks (max. 18) | **CAY3.1** | 1 | 31,10 |
| Spring clips for 100 ml flasks (max. 9) | **CAY4.1** | 1 | 31,10 |
| Spring clips for 250 ml flasks (max. 6) | **CAY5.1** | 1 | 40,75 |
| Spring clips for 500 ml flasks (max. 4) | **CAY6.1** | 1 | 43,55 |








## Digital orbital shaker

- Circular movement
- Plates, petri dishes, glass plungers and culture bottles can be secured flexibly using rubber straps
- Digital display of speed and running time
- Electronic speed control with softstart function
- Loading options: e.g. 9 x 250 ml Erlenmeyer flasks or 4 x 500 ml Erlenmeyer flasks or 4 x 1000 ml Erlenmeyer flasks or 16 x 250 ml beakers or 4 x 1000 ml beakers

**Technical specifications:**

| | |
|---|---|
| Speed control range | 20 to 300 rpm |
| Shaking amplitude (stroke) | 19 mm |
| Timer | 1 min to 49 h or continuous operation |
| Shaking surface area | 279 x 279 mm |
| Dimensions (W x D x H) | 314 x 312 x 197 mm |
| Loading capacity | 4.5 kg |
| Ambient conditions | +2 to +40 °C at 80 % rel. humidity |
| Power supply | 100-240 V, 50/60 Hz |

**Delivery incl.** platform with rubber mat and 8 rubber straps.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY67.1** | 1 | 747,15 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement rubber mat | **PY68.1** | 1 | 54,85 |
| Replacement rubber straps | **PY69.1** | 8 | 54,85 |

## Platform shaker mini 100 Orbital-Genie™

By Scientific Industries.

- Max. load capacity: 3 kg
- Continuous speed adjustment
- Optionally extendible to 3 tiers with additional platforms (see figure ①; please order separately)

**Technical specifications:**

| | |
|---|---|
| Action | orbital |
| Speed range | 20 to 100 rpm |
| Shaking amplitude (stroke) | 19 mm |
| Shaking area (W x D) | 290 x 290 mm |
| Dimensions (W x D x H) | 350 x 350 x 90 mm |
| Weight | 3.5 kg |
| Permissible ambient conditions | 0 to +38 °C at 95% RH |
| Power supply | 230 V, 50 Hz |

**Delivery incl.** dish attachment and anti-slip mat.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HHP1.1** | 1 | 857,85 |

## ① Attachment system for Mini 100 Orbital-Genie™

By Scientific Industries.
With additional platforms, extendible as 2nd and 3rd tier.
Shaking area dimensions 290 x 290 mm.
Dimensions: W 318 x D 318 x H 114 mm. Weight 1.3 kg.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HHP2.1** | 1 | 163,40 |




## Shakers Titramax 100 and Vibramax 100

By Heidolph. For universal use.
- Motion: circular vibrating
- Infinitely adjustable speed setting
- Speed display scale
- With overheating protection
- Minimal self-heating
- Maintenance-free motor

**Technical specifications:**

| Model | Titramax 100 | Vibramax 100 |
|---|---|---|
| rpm range | 150 to 1350 rpm | |
| Orbit | 1.5 mm | 3 mm |
| Weight capacity | 2 kg | |
| Time switch | 0 to 120 min or continuous run | |
| Power consumption | 15 W | |
| Dimensions of working surface (W x D) | 220 x 220 mm | |
| Dimensions of unit (W x H x D) | 245 x 125 x 310 mm | |
| System of protection | IP 30 | |
| Weight | 5500 g | |
| Current | 230/240 V, 50/60 Hz | |

**① Titramax 100**
The purpose-made holders can hold up to 4 microtiter plates, size 85 x 128 mm.

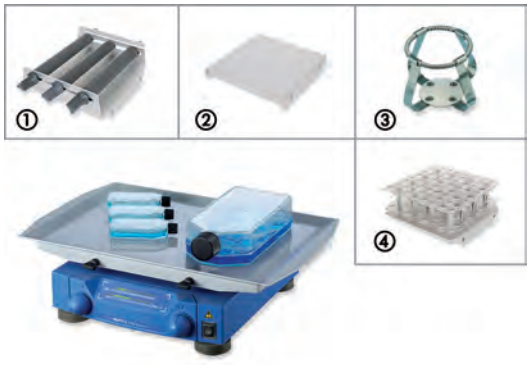
**② Vibramax 100**
Standard equipment: Rubber platform with beaded edge.
Optional accessory: platform with two tension rollers (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Titramax 100 | **H831.1** * | 1 | 872,00 |
| Vibramax 100 | **H832.1** * | 1 | 891,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| ③ Universal-top for Vibramax 100, with 2 adjustable tighteners | **H833.1** * | 1 | 121,00 |
| Clamping roller for universal attachment | **LY48.1** * | 1 | 34,00 |

* Longer delivery times possible. Please check with our Sales Department.




## Orbital shaker KS 130 basic complete set

By IKA. Suitable for mixing liquids in various vessels through the use of different attachments.

- Circular movement
- Speed display: 10 LED display bar with scale in graduations of 80 rpm
  Time adjustment: 10 LED display bar with scale in increments of 5 min
- Max. shaking weight: 2 kg

**Technical specifications:**

| | |
|---|---|
| Speed control range | 80 to 800 rpm |
| Shaking amplitude (stroke) | 4 mm |
| Timer | 5 to 50 min or continuous duty |
| Dimensions (W x D x H) | 270 x 316 x 98 mm |
| Perm. ambient conditions | +5 to +50 °C at 80 % rel. humidity |
| Weight | 8.8 kg |

**Delivery incl.** dish attachment AS 130.3 (surface area: W 340 x D 220 mm) for culture bottles and petri dishes with integrated non-slip mat.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PA19.1** | 1 | 1499,00 |

## Attachment systems and accessories for KS 130 basic shaker

By IKA.

**① Universal attachment AS 130.1**
Can be adjusted to fit all types of vessel with infinitely adjustable clamping rolls. Surface area: 220 x 220 mm.
**Delivery incl.** 3 clamping rolls.

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Universal attachment AS 130.1 | **PA23.1** | 1 | 299,00 |

**② Fixing clip attachment AS 130.2**
Suitable for shaking round bottomed flasks, volumetric flasks and Erlenmeyer flasks, etc. Dimensions: W 230 x D 230 x H 24 mm.
**Holding clamps not included (please order separately).**

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fixing clip attachment AS 130.2 | **PA24.1** | 1 | 90,00 |

**③ Fixing clips**

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fixing clips for 25 ml flasks (max. 20) | **X185.1** * | 1 | 21,00 |
| Fixing clips for 50 ml flasks (max. 12) | **X186.1** * | 1 | 21,00 |
| Fixing clips for 100 ml flasks (max. 12) | **X187.1** * | 1 | 21,00 |
| Fixing clips for 200/250 ml flasks (max. 4) | **X188.1** * | 1 | 41,00 |
| Fixing clips for 500 ml flasks (max. 4) | **X189.1** * | 1 | 41,00 |

* Longer delivery times possible. Please check with our Sales Department.

**④ Test tube attachment AS 130.4**
For intensive shaking of small tubes, test tubes and centrifuge tubes, etc. For 64 test tubes with diameters from 10 to 16 mm.
Minimum test tube height: 80 mm. Dimensions: W 200 x D 230 x H 95 mm.

| Model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Test tube attachment AS 130.4 | **PA25.1** | 1 | 201,00 |



## Rotamax 120 platform shaker

By Heidolph. Suitable for agitating 5 petri dishes, with optional attachment for Erlenmeyer flasks up to 1000 ml.

- Max. load capacity: 2 kg
- Continuous speed adjustment
- Speed display with scale

**Technical specifications:**

| | |
|---|---|
| Type of motion | Orbital |
| Speed range | 20-300 rpm |
| Shaking amplitude (stroke) | 20 mm |
| Timer | 0-120 min / continuous operation |
| Shaking area (W x D) | 220 x 220 mm |
| Dimensions (W x H x D) | 245 x 125 x 310 mm |
| Weight | 5.5 kg |
| Perm. ambient conditions | 0 to +50 °C at 80 % rH |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** non-slip rubber mat with raised edge.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LY47.1** | 1 | 956,00 |

## Accessories for Rotamax 120 platform shaker

By Heidolph.

① **Universal attachment**
With 2 adjustable clamping rollers

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Universal attachment | **H833.1** * | 1 | 121,00 |

**Clamping roller for universal attachment**
Additional clamping roller suitable for universal attachment.

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Clamping roller for universal attachment | **LY48.1** * | 1 | 34,00 |

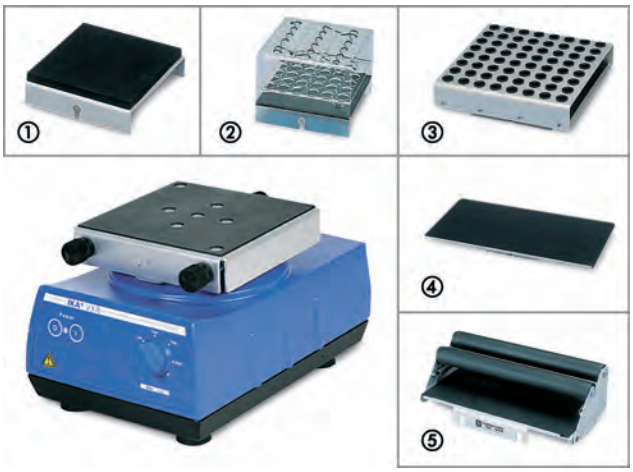
② **Tablar 100 perforated platform**
For shaking Erlenmeyer flasks. Perforated for individual arrangement of flasks, secured with spring clips.
**Delivery without** spring clips (please order separately).

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tablar 100 perforated platform | **LY49.1** * | 1 | 73,00 |

③ **Spring clips for Tablar 100**

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spring clips for 25 ml flasks (max. 16) | **HL12.1** * | 1 | 18,00 |
| Spring clips for 50 ml flasks (max. 16) | **HL13.1** * | 1 | 20,00 |
| Spring clips for 100 ml flasks (max. 8) | **HL14.1** * | 1 | 23,00 |
| Spring clips for 250 ml flasks (max. 5) | **HL15.1** * | 1 | 30,00 |
| Spring clips for 500 ml flasks (max. 3) | **HL16.1** * | 1 | 32,00 |
| Spring clips for 1000 ml flasks (max. 2) | **HL17.1** * | 1 | 38,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Shaker VXR basic Vibrax®

By IKA.

**Features**

- Movement: circular
- Infinitely adjustable speed setting
- Speed display with scale
- Load max. 2 kg (including platform)
- Units have been designed for continuous operation
- **Delivery without platform** (please order separately)

**Technical specifications:**

| | |
|---|---|
| Rpm range | 0 to 2200 rpm |
| Shaking stroke | 4 mm |
| Motor power: input / output | 35/13.2 W |
| Dimensions (W x D x H) | 157 x 247 x 130 mm |
| Weight (without platform) | 5700 g |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y517.1** | 1 | 1362,00 |

## Top systems for shaker VXR basic

By IKA.

① **Single-hand top VX 1**
For shaking single, not fixed vessels from 1 to 250 ml.
Dimensions: W 130 x D 135 x H 40 mm. Weight 160 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y518.1** | 1 | 85,00 |

② **Test tube glass holder VX 2**
For up to 36 test tubes or centrifuge tubes with ∅ 16 mm.
Dimensions: W 140 x D 145 x H 115 mm. Weight 300 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y519.1** | 1 | 359,00 |

③ **Test tube rack VX 2E**
For shaking of up to 64 1.5 ml test tube.
Dimensions: W 210 x D 210 x H 65 mm. Weight 790 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y520.1** | 1 | 359,00 |

④ **Tray top VX 7**
For gentle shaking, e.g. culture flasks and petri dishes.
Dimensions: W 410 x D 210 x H 40 mm. Weight 740 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y521.1** | 1 | 249,00 |

⑤ **Universal top VX 8**
For quick and secure clamping of e.g. two 500 ml Erlenmeyer flasks.
Span range 25 to 135 mm. Min. height of vessel 80 mm.
Dimensions: W 265 x D 136 x H 60 mm. Weight 760 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y522.1** | 1 | 599,00 |

# Shakers, Mixers



① + ②



③

## Shakers

By Heidolph. Infinitely adjustable speed. With timer or permanent run capabilities. Different attachments can be mounted as required. Weight 8 kg. Electrical supply 230/240 V, 50/60 Hz.

**Technical specifications:**

| Model | UNIMAX 1010 | PROMAX 1020 | DUOMAX 1030 | POLYMAX 1040 |
|---|---|---|---|---|
| Motion | circular | back and forward | see-saw | three dimensional tumbling |
| Shaking frequency (rpm) | 30-500 | 20-250 | 2-50 | 2-50 |
| Orbit (mm) | 10 | 32 | - | - |
| Angle | - | - | 5° | 5° |
| W x D x H (mm) | 320 x 375 x 125 | 320 x 375 x 125 | 320 x 375 x 185 | 320 x 375 x 195 |
| Table (mm) | 258 x 290 | 258 x 290 | 258 x 290 | 258 x 290 |
| Speed display | digital | digital | Scale | Scale |
| Timer | digital 0 - 999 min | digital 0 - 999 min | timer 0 - 120 min | timer 0 - 120 min |

**Delivery incl.** rubber support with beaded rim. Can be used with incubator (compatible with Incubator 1000, Art. No. H844.1).

① **UNIMAX 1010**

Rotating (circular) movement. Digital display. Membrane keyboard control panel. Shaking frequency can be set with the turn switch.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H834.1** * | 1 | 1477,00 |

**PROMAX 1020**

Back and forward movement. Digital display. Key pad control panel. Shaking frequency can be set with the turn switch.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H835.1** * | 1 | 1431,00 |

**DUOMAX 1030**

Seesaw motion, angle of inclination 5°. Rotary switch control.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H836.1** * | 1 | 1371,00 |

③ **POLYMAX 1040**

Three dimensional tumbling motion, angle of inclination 5°. Rotary switch control.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H837.1** * | 1 | 1388,00 |

## Accessories for UNIMAX 1010, PROMAX 1020, DUOMAX 1030 and POLYMAX 1040

By Heidolph.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tray for 14 Erlenmeyer flasks 50 ml | **H838.1** * | 1 | 175,00 |
| Tray for 9 Erlenmeyer flasks 100 ml | **H839.1** * | 1 | 161,00 |
| ② Tray for 5 Erlenmeyer flasks 250 ml | **H840.1** * | 1 | 149,00 |
| Tray for 4 Erlenmeyer flasks 500 ml | **KA78.1** * | 1 | 147,00 |
| Tray for 2 Erlenmeyer flasks 1000 ml | **KA79.1** * | 1 | 138,00 |
| Tray with 2 tension rolls, general-purpose use | **H841.1** * | 1 | 239,00 |
| Tray for 4 separating funnels 50 ml or 100 ml | **H842.1** * | 1 | 229,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Incubator 1000 for 5 kg-class shakers

By Heidolph.

**Properties**

- Rapid heating, no condensation in system
- Dimensions of incubation hood: W 546 x H 267 x D 394 mm
- Suitable for large volume or high vessels, e.g. Erlenmeyer flasks up to 1000 ml
- Compatible with Unimax 1010, Promax 1020, Duomax 1030 and Polymax 1040 models (please order separately)
- Hinged hood

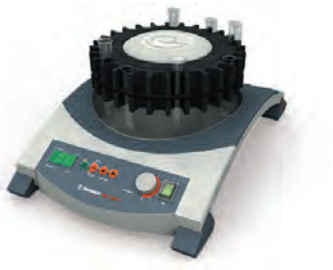
**Technical specifications of heating module:**

| | |
|---|---|
| Ideal for temperatures | +5 °C **over** room temperature to 65 °C |
| Heating | electr. recirculating air heating with fan |
| Heating capacity | 300 W |
| Temperature control | electronic, with 2-digit display of set and actual value |
| Temperature accuracy | ±2 K to 50 K; ±4 K from 50 to 65 K |
| Temperature sensor | Pt 100 |
| Power supply | 230/240 V, 50/60 Hz |

**Delivery incl.** heating module with incubation hood.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H844.1** * | 1 | 1710,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Shaker Multi Reax

By Heidolph.

**Properties:**

- Digital rpm display
- Motion: circular, vibrating
- Has overheating protection
- Time switch: 0 to 999 min (with acoustic signal) or continuous run
- With space for 26 tubes, ∅ 10 to 16 mm, length max. 160 mm and for 12 tubes, ∅ 16 to 32 mm, length max. 120 mm

**Technical specifications:**

| | |
|---|---|
| rpm | 150 to 2000 rpm |
| Orbit | 3 mm |
| Power consumption | 33 W |
| Dimensions of unit (W x D x H) | 270 x 410 x 172 mm |
| Safe ambient conditions | -0 to +50 °C at 80 % rh |
| Weight | 9800 g |
| Current | 230/240 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y359.1** * | 1 | 1249,00 |

* Longer delivery times possible. Please check with our Sales Department.




## Small shakers KM 2 battery-driven and KM 2

By Edmund Bühler.

② **Small shakers KM 2 Battery**

- Circular shaking movement
- LED display to set the speed and runtime, as well as the representation of the charging status
- Low heat emission also enables **use in refrigerators or incubators** (working temperature between +4 and +45 °C at 95 % rF.)
- Mains-free operation via rechargeable battery (minimum operating time under max. load 40 h)
- Battery can be recharged with a mains/battery charger or switched on permanent run. Mains pack have to be placed outside refrigerator/incubator.

**Delivery incl.** basic unit including vibration platform and fine-rib mat.

① **Small shaker KM 2**

- Space-saving circular shaker
- LED display to set the speed and runtime
- Robust, hard-wearing shell

**Delivery incl.** basic unit including vibration platform and fine-rib mat.

**Technical specifications for KM 2 battery-driven and KM 2:**

| | |
|---|---|
| rpm range | 30 to 220 rpm |
| Shaking amplitude (stroke) | 20 mm |
| Time switch | 0 to 99 h, 59 min /continuous run |
| Shaking surface (W x D) | 200 x 295 mm |
| Max. load | 2 kg |
| Dimensions (W x D x H) | 250 x 415 x 145 mm |
| Weight | approx. 10 kg |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| KM 2 battery-driven with mains pack | **H696.1** * | 1 | 1875,90 |
| KM 2 | **L646.1** * | 1 | 1445,90 |

* Longer delivery times possible. Please check with our Sales Department.

## Accessories for KM 2 battery and KM 2

By Edmund Bühler.

③ **Universal tray**

Can be individually fit with spring clips. Length 300 x W 356 mm. Suitable for loading e.g. 8 x 500 ml or 12 x 250 ml Erlenmeyer flasks. Without spring clips (for spring clips, see shaker-accessories).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L647.1** | 1 | 208,55 |

**Tension roller KM**

To fix standing vessels safely on small shaker KM 2 battery-driven and KM 2. Suitable for loading e.g. 2 x 1000 ml or 9 x 100 ml Erlenmeyer flasks. Tension roller KM is attached to the rim of shaker vibrating plate with star grip screws.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T519.1** | 1 | 46,25 |



## KL 2 combination shaker

By Edmund Bühler. Practical small shaker which can be switched over at any time **from circular to reciprocating movement**.

- **Max. load: 2 kg**
- Variable, electronic control
- Accessories (Tension roller, Clamping roller, Spring roller, see shaker accessories)
- Suitable for loading e.g. 4 x 500 ml or 2 x 1000 ml Erlenmeyer flasks
- Standard equipment: basic unit including platform system with 3 tension rollers h and fine-rib mat

**Technical specifications:**

| | |
|---|---|
| rpm range | 30 to 420 rpm |
| Shaking amplitude (stroke) | 8 mm |
| Time switch | 0 to 120 min / continuous run |
| Shaking surface (W x D) | 300 x 300 mm |
| Dimensions (W x D x H) | 355 x 455 x 195 mm |
| Weight | 12.5 kg |
| Current | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P436.1** * | 1 | 1709,25 |

* Longer delivery times possible. Please check with our Sales Department.



## Flask shaker SF1

By Stuart. Simulates a powerful hand movement.

- For max. 8 Erlenmeyer flasks or 500 ml screw thread bottles
- Robust construction with 4 vibration-absorbing feet

**Technical specifications:**

| | |
|---|---|
| Speed | 8-800 oscillations/min |
| Timer | 10-60 min / permanent operation |
| Shaking amplitude (stroke) | 1.5 mm |
| Load capacity | 3 kg |
| Dimensions (W x D x H) | 780 x 270 x 240 mm |
| Weight | 8.3 kg |
| Mains supply | 230 V, 50 Hz |

**Delivery incl.** clamps.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EP81.1** * | 1 | 1730,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Shakers, Mixers




## Laboratory shakers Unimax 2010, Promax 2020 and Polymax 2040

By Heidolph. Can be used with various tops for mixing liquids in Erlenmeyer flasks, staining troughs and Petri dishes.

- Digital Speed display
- **Large platform for holding numerous samples, shaking surface: W 390 x D 340 mm**
- Max. load capacity 10 kg

**Technical specifications:**

| Model | Unimax 2010 | Promax 2020 | Polymax 2040 |
|---|---|---|---|
| Movement type | circular | reciprocating | tumbling |
| Speed range (min$^{-1}$) | 20 to 400 | | 2.5 to 50 |
| Shaking amplitude stroke (mm) | 20 | | - |
| Angle of inclination (°) | - | | 5 |
| Timer | 0-120 min / permanent operation | | |
| Dimensions W x D x H (mm) | 426 x 455 x 135 | | 426 x 455 x 208 |
| Perm. ambient conditions | 0 to +50 °C at 80 % rh | | |
| Weight (kg) | 16 | | |
| Power supply | 230/240 V, 50 Hz | | |

**Delivery incl.** rubber top with beaded edge rim.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Unimax 2010 | **HL06.1** * | 1 | 2128,00 |
| Promax 2020 | **HL07.1** * | 1 | 2229,00 |
| ① Polymax 2040 | **HL08.1** * | 1 | 2253,00 |

## Adapter systems and accessories for laboratory shakers

By Heidolph.

**② Base frame for tension rollers**

Together with tensions rollers for attaching various vessels.
**Delivery without** tensions rollers, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Base frame for tension rollers | **HL09.1** * | 1 | 165,00 |

**③ Tension roller for base frame**

Together with base frame for attaching various standing vessels.
Suitable for loading: e.g. 20 Erlenmeyer flasks 100 ml or
9 Erlenmeyer flasks 500 ml. Please order at least 2 rollers.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tension roller for base frame | **HL10.1** * | 1 | 52,00 |

**④ Universal tray 2000**

For shaking Erlenmeyer flasks. With bore holes for individual mounting with spring clips.
**Delivery without** spring clips, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Universal tray 2000 | **HL11.1** * | 1 | 165,00 |

**⑤ Spring clips for universal tray 2000**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spring clip for 25 ml flask (max. 36) | **HL12.1** * | 1 | 18,00 |
| Spring clip for 50 ml flask (max. 36) | **HL13.1** * | 1 | 20,00 |
| Spring clip for 100 ml flask (max. 23) | **HL14.1** * | 1 | 23,00 |
| Spring clip for 250 ml flask (max. 12) | **HL15.1** * | 1 | 30,00 |
| Spring clip for 500 ml flask (max. 9) | **HL16.1** * | 1 | 32,00 |
| Spring clip for 1000 ml flask (max. 5) | **HL17.1** * | 1 | 38,00 |
| Spring clip for 2000 ml flask (max. 3) | **KA43.1** * | 1 | 53,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Compact shakers KS-series

By Edmund Bühler.
**Models KS:**

- Model KS 15 A: circular movement
- Model KS 15 B: reciprocating movement
- Without digital display

**Models KS control:**

- Model KS 15 A control: circular movement
- Model KS 15 B control: reciprocating movement
- With digital display of set/actual speed
- Preset-function of last selected setting respectively programming of selective sequences (shaking frequency/length possible)

**Technical specifications:**

| | |
|---|---|
| Speed range | 30 to 420 rpm |
| Shaking amplitude (stroke) | 17 mm |
| Weight capacity | 15 kg |
| Time switch | KS 15 A/B control: 1 min - 100 h / continuous operating<br>KS 15 A/B: 0- 120 min or continuous run |
| Dimensions (W x D x H) | 510 x 490 x 150 mm |
| Weight | 22 kg |
| Current | 230 V, 50/60 Hz |

**Delivery without** top (please order separately).
With the incubation hood TH 15 unit can be used as shaking incubator (please order separately Art. No. L492.1, see shaker-accessories).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| KS 15 A | **P432.1** * | 1 | 1770,55 |
| KS 15 B | **P433.1** * | 1 | 1830,75 |
| KS 15 A control | **L490.1** * | 1 | 2237,10 |
| KS 15 B control | **L491.1** * | 1 | 2302,65 |

## Accessories for compact shakers KS-series

By Edmund Bühler.

**Standard attachment Combifix KS**

Attachment rack with 3 tensioning bars and finely fluted rubber mat. Shaking surface 400 x 275 mm. For safe attachment of standing vessels. Can be loaded with: e.g. 20 Erlenmeyer flasks 100 ml or 2 Erlenmeyer flasks 2000 ml. Can also be used for other vessels when additional bars are used (see shaker accessories).

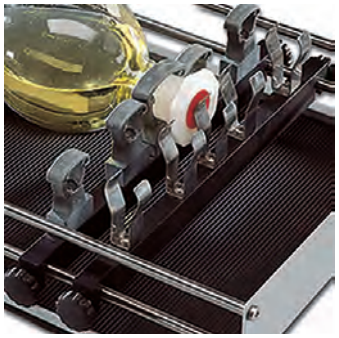
| Art. No. | Pack Qty. | € |
|---|---|---|
| **T497.1** * | 1 | 359,05 |

**Universal tray KS**

Coated tray with holes which can be individually fit with spring clips or test tube racks. Shaking surface 430 x 300 mm.
Suitable for loading e.g. 15 x 250 ml or 5 x 1000 ml Erlenmeyer flasks.
**Delivery without** spring clips
(please order separately, see shaker-accessories).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P434.1** * | 1 | 235,45 |

* Longer delivery times possible. Please check with our Sales Department.

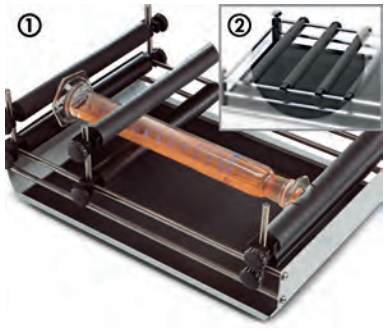


## Clamping roller / Spring roller

**Fits**
- Compact shaker KS 15A/B (L490.1, L491.1, P432.1, P433.1)
- Compact shaker (P436.1)
- Standard tray KS (T497.1)

For securing spherical separating funnels both rollers are required.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Clamping roller | **L669.1** | 1 | 115,05 |
| Spring roller | **L670.1** | 1 | 101,05 |




## Tension rollers h / v

**Fits**

Compact shaker KS 15A/B (L490.1, L491.1, P432.1, P433.1), compact shaker KL 2 (P436.1) and standard tray KS (T497.1)

**Tension roller h**

Ideal for securing all vessels with flat base, e.g. Erlenmeyer flasks, glass beakers, test tube holders.

**Tension roller v**

Is used in combination with tension roller h to secure lying vessels or to support the side of tall vessels.

Max distance between rollers: 60 mm

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ② Tension roller h | **P435.1** | 1 | 68,05 |
| ① Tension roller v | **L668.1** | 1 | 84,50 |



## Test tube trays made of stainless steel

Can be secured to platforms with tension bars h. Can be attached to the standard trays: in combination with the swivel base (please order separately). Swivel base also enables the angle of the rack to be varied.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for 68 test tubes ∅ 14 mm | **T498.1** | 1 | 67,40 |
| for 44 test tubes ∅ 16 mm | **T499.1** | 1 | 67,40 |
| for 44 test tubes ∅ 18 mm | **T500.1** | 1 | 67,40 |
| for 14 sample-/centrifuge tubes ∅ 30 mm | **AH14.1** | 1 | 80,10 |
| Swivel base for test tube holders | **T501.1** | 1 | 41,95 |

## Spring clips

For securing Erlenmeyer flasks on the multi-purpose platforms.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for 10 ml Erlenmeyer flasks | **L648.1** | 1 | 15,70 |
| for 25 ml Erlenmeyer flasks | **L649.1** | 1 | 16,80 |
| for 50 ml Erlenmeyer flasks | **L650.1** | 1 | 17,95 |
| for 100 ml Erlenmeyer flasks | **L651.1** | 1 | 21,30 |
| for 250 ml Erlenmeyer flasks | **L652.1** | 1 | 26,90 |
| for 500 ml Erlenmeyer flasks | **L653.1** | 1 | 31,40 |
| for 1000 ml Erlenmeyer flasks | **L654.1** | 1 | 34,75 |
| for 2000 ml Erlenmeyer flasks | **L655.1** | 1 | 47,10 |



## Incubation hood TH 15

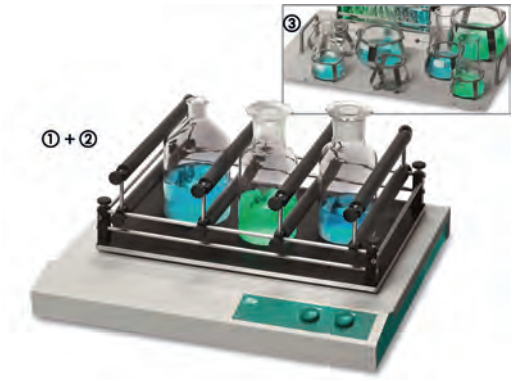
**Fits**
- Compact shaker KS 15A/B (L490.1, L491.1, P432.1, P433.1)
- Micro titre plate shaker TiMix 5 (T490.1, T491.1, T492.1)

**Technical specifications:**

| | |
|---|---|
| Ideal for temperatures | +5 °C over room temperature to +50 °C |
| Temperature sensor | Pt 100 |
| Control accuracy | ±1 % of set value |
| Air circulation | 240 $m^3/h$ |
| Dimensions (L x W x H) | 510 x 460 x 470 mm |
| Power supply | 230 V, 50/60 Hz, 343 VA |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L492.1** * | 1 | 3147,60 |

* Longer delivery times possible. Please check with our Sales Department.




## Universal shakers SM 30

By Edmund Bühler. Desktop shakers for high load in permanent run.
- All desired parameters can be set with control knobs
- Electronic speed control with gentle start-up
- Consistant of speed and run times are also possible with different loads
- Time switch: 0 to 120 min or continuous run
- Different shaking movements:
  Model A: revolvable
  Model B: see-saw (horizontal)
  Model C: can be switched over from circulating to see-saw

**Together with the incubation hood TH 30 can be used as a shaking incubator (Please order incubation hood separately).**

**Technical specifications:**

| | |
|---|---|
| Speed range | 15 to 300 rpm, infinitely variable |
| Shaking amplitude (stroke) | 26 mm (Models A + C)<br>30 mm (Model B) |
| Max. load | 30 kg |
| Ambient temperature | 5 to 50 °C at 85 % rh |
| Dimensions (W x D x H) | 680 x 615 x 160 mm |
| Weight | 32 kg |
| Current | 230 V, 50/60 Hz |

**Delivery incl.** base unit plus vibrating plate and rubber mat.
Comes without holder (please order desired holder separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Model A | **AH15.1** * | 1 | 2845,55 |
| Model B | **AH16.1** * | 1 | 2905,75 |
| Model C | **AH17.1** * | 1 | 3766,80 |

## Attachment systems for universal shakers SM 30

By Edmund Bühler.

**Attachment rack Combifix SM, Set A**

Rack with 5 tensioning bars h. For secure attachment of different standing vessels. Can be loaded with: e.g. 6 Erlenmeyer flasks 2000 ml or 20 Erlenmeyer flasks 250 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH18.1** * | 1 | 399,90 |

② **Platform rack Combifix SM, Set B**

Rack with 4 tensioning bars h and 4 tensioning bars v.
Ideal for clamping horizontal vessels between the bars or for high vessels.
Distance between bars h + v: max. 60 mm.
Loading: e.g. 6 Erlenmeyer flasks 2000 ml or 12 Erlenmeyer flasks 500 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH19.1** * | 1 | 498,80 |

③ **Universal tray SM**

Laminated board with bore holes for individual attachment of spring clips and test tube racks. Can be loaded with: e.g. 11 Erlenmeyer flasks 1000 ml or 23 Erlenmeyer flasks 250 ml.
**Delivery without** spring clips and test tube racks (please order separately, see shaker accessories).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH20.1** * | 1 | 268,75 |

* Longer delivery times possible. Please check with our Sales Department.



## Incubation hood TH 30

By Edmund Bühler. Heating and cooling chambers with standard and UV-lighting. Combined with the SM-shakers it can be used either as a complete shaking incubator or independently. A socket for smaller appliances is mounted inside the hood.

**Standard features:**
- Coated metal casing with 3 windows
- The front door opens upwards
- Safety switch-off of UV-light and automatic stop of shaker when front door is opened (when combined with universal shakers SM 30)

**Technical specifications:**

| | |
|---|---|
| Ideal for temperatures | 5 °C above room temperature to 50 °C |
| Temperature constancy | ±1 % of desired value |
| Lighting | Standard 15 W<br>UV-lighting 15 W |
| Temperature sensor | PT 100 |
| Inner dimensions (W x D x H) | 660 x 540 x 430 mm<br>(High enough for 2 l Erlenmeyer flasks) |
| Outer dimensions (W x D x H) | 680 x 610 x 560 mm |
| Weight | 33 kg |
| Current | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH21.1** * | 1 | 4002,25 |

**Options:**
**Extended temperature range up to 60 °C.**
Installation of additional heating appliances is possible to achieve temperatures of max 60 °C. **Please order with first order, if required.**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH22.1** * | 1 | 252,65 |

**Cooling device for TH 30**

Installation of cooling coil and connecting sleeves for connection of an external cooling device (circulating cooler etc. Please order separately). Depending on the cooling capacity of the cooling device, temperatures of app. 5 °C below room temperature can be achieved.
**Please order with first order, if required.**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH23.1** * | 1 | 576,20 |

* Longer delivery times possible. Please check with our Sales Department.



## $CO_2$-resistant orbital shaker KM $CO_2$

By Edmund Bühler.

**Features:**

- Circular movement
- High-grade materials and stainless steel components especially for $CO_2$ concentrations up to 20 % and humidity of up to 95 % rF
- External control unit (corded L 2.0 m, ∅ 12 mm) with LED display for speed (resolution 5 rpm) and runtime (resolution 1 min). Control unit can be fastened to magnetic surfaces.
- Low heat emission

**Technical specifications:**

| | |
|---|---|
| Speed control range | 30 to 220 rpm |
| Shaking amplitude (stroke) | 20 mm |
| Load capacity | 2 kg |
| Timer | 0 to 99 h, 59 min or continuous operation |
| Shaking area (W x D) | 200 x 295 mm |
| Dimensions (W x D x H) | 230 x 340 x 145 mm |
| Permissible ambient conditions | 4 to 45 °C at 95 % rel. humidity; 0 to 20 % ($CO_2$ concentration) |
| Weight | 7.6 kg |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** external control unit and base unit with rubber mat.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ENE2.1** | 1 | 2359,65 |

## Accessories for $CO_2$-resistant orbital shaker KM $CO_2$

By Edmund Bühler.

**Universal tray**

For individual equipping with spring clips. L 300 x W 356 mm. Variable loading options, e.g. 5 x 1000 ml Erlenmeyer flasks or 12 x 250 ml Erlenmeyer flasks.
**Delivery without** spring clips (spring clips see shaker accessories).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L647.1** | 1 | 208,55 |

**Tension roller KM**

For secure fastening of standing vessels. Suitable for loading e.g. 2 x 1000 ml or 12 x 50 ml Erlenmeyer flasks. The tension roller KM is attached to the rim of shaker vibrating plate with star grip screws.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T519.1** | 1 | 46,25 |




## $CO_2$ resistant orbital shaker

By Thermo.

**Features:**

- Circular movement
- Protects specially treated mechanical components against $CO_2$ concentrations of up to 20 % and humidity of up to 95 %
- External control unit (corded L 2.0 m, ∅ 6 mm) with LED display for speed (resolution 1 rpm) and runtime (resolution 1 min)
- Low-maintenance magnetic drive
- Minimal heat emission, does not affect the conditions inside the $CO_2$ incubator
- Stainless steel construction for protection against corrosive $CO_2$ gas

**Technical specifications:**

| | |
|---|---|
| Speed control range | 30 to 300 rpm |
| Shaking amplitude (stroke) | 19 mm |
| Load capacity | 6 kg |
| Timer | 0 to 99 h 59 min or continuous operation |
| Dimensions (W x D x H) | 360 x 300 x 96 mm (shaker)<br>95 x 158 x 26 mm (control unit) |
| Permissible ambient conditions | 4 to 60 °C at 95 % rel. humidity; 0 to 20 % ($CO_2$ concentration) |
| Weight | 13 kg |
| Power supply | 100-240 V, 50/60 Hz |

**Delivery incl.** external control unit. Without all-purpose aluminium pullout tray and fixing clips (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CXT3.1** | 1 | 2539,00 |

## Accessories for $CO_2$ resistant orbital shaker

**All-purpose aluminium pullout tray**

For shaking Erlenmeyer flasks. Perforated for individual arrangement of flasks, secured with spring clips.
**Delivery without** fixing clips (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| All-purpose aluminium pullout tray | **CXT4.1** | 1 | 152,00 |

**Fixing clips**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fixing clips for 50 ml flasks (max. 30) | **CXT5.1** | 1 | 9,30 |
| Fixing clips for 100 ml flasks (max. 15) | **CXT6.1** | 1 | 9,95 |
| Fixing clips for 150 ml flasks (max. 15) | **CXT7.1** | 1 | 12,90 |
| Fixing clips for 200 ml flasks (max. 15) | **CXT8.1** | 1 | 15,80 |
| Fixing clips for 250 ml flasks (max. 15) | **CXT9.1** | 1 | 15,00 |
| Fixing clips for 500 ml flasks (max. 9) | **CXX0.1** | 1 | 21,50 |
| Fixing clips for 1000 ml flasks (max. 6) | **CXX1.1** | 1 | 35,00 |
| Fixing clips for 2000 ml flasks (max. 4) | **CXX2.1** | 1 | 51,00 |
| Fixing clips for 3000 ml flasks (max. 2) | **CXX3.1** | 1 | 63,60 |
| Fixing clips for 5000 ml flasks (max. 1) | **CXX4.1** | 1 | 84,70 |

**Test tube racks**

Variable inclination angle. Dimensions: L 285 x W 125 x H 175 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For 40 ∅ 16 mm tubes (max. 2) | **CXX5.1** | 1 | 81,40 |

# Shakers for microtitration plates





## Shaker Multi Vortex Genie®

By Scientific Industries. Robust and reliable shaking device for mixing and shaking of samples in Erlenmeyer flasks or vials.

**Properties**

- Digital display for speed and time
- Speed increase in steps of 10 rpm
- Robust metal case
- Secure stand at high speed thanks to supports with high vibration damping
- Can be loaded with e. g. max. 6 Erlenmeyer flasks 250 ml or 2 multi racks each for 12 test tubes (max. tube ∅ 10-29 mm, length min. 85 mm)
- After 10 minutes not in use, the mixer switches to "sleep" mode

**Technical specifications:**

| | |
|---|---|
| Type of motion | circular, vibrating |
| Speed control range | 250 to 950 rpm |
| Timer | 1 to 99 min or continuous operation |
| Orbit | 4 mm |
| Shaking area (W x D) | 238 x 264 mm |
| Loading capacity | 4.0 kg |
| Dimensions (W x D x H) | 310 x 270 x 195 mm |
| Perm. ambient conditions | 0 to +38 °C at 90 % rH |
| Weight | 11.3 kg |
| Power supply | 230 V, 50 Hz |

**Delivery incl.** platform with clamp/tension roller (for securely attaching standing vessels) and 2 multi-racks.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LX88.1** * | 1 | 2203,75 |

* Longer delivery times possible. Please check with our Sales Department.




## MicroPlate Genie®-series microtitre plate shakers

By Scientific Industries. Specially designed for small samples in MT plates.

- Circular movement
- High speed for optimal mixing

**MicroPlate Genie®**
For powerful shaking of 1 MT plate.

**Digital MicroPlate Genie® Pulse**
**like MicroPlate Genie®,** but with extra functions:

- Digital display of speed and running time
- Choice of standard shake mode or pulse mode
- Depending on the selected pulse and pause duration, rapid and vigorous mixing or an intermittent mixing function is available
- Pulse and pause duration (On/Off) is adjustable from 0.1 sec to 99 min

**Multi-MicroPlate Genie®**
For reliable shaking of 4 MT plates. An additional attachment for a further 4 MT plates is optional (please order separately).

**Technical specifications:**

| Type | MicroPlate Genie® | Digital MicroPlate Genie® Pulse | Multi-MicroPlate Genie® |
|---|---|---|---|
| Number of microtitration plates | for 1 MT plate | | for 4 MT plates (8 MT plates with optional attachment) |
| Speed control range (rpm) | 750 to 2700 | 500 to 2850 | 750 to 2700 |
| Shaking amplitude (mm) | 1 | | |
| Speed display/Timer | Scale/Scale | Digital / Digital | Scale/Scale |
| Time range | 1 to 60 min / continuous duty | | |
| Dimensions W x D x H (mm) | 165 x 165 x 165 | | 350 x 240 x 165 |
| Weight (kg) | 2.75 | | 3.7 |
| Power supply | 230 V, 50/60 Hz | | |

| Image | Type | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① | MicroPlate Genie® | **CH98.1** * | 1 | 618,15 |
| ② | Digital MicroPlate Genie® Pulse | **XP69.1** * | 1 | 815,95 |
| ③ | Multi-MicroPlate Genie® | **EH53.1** * | 1 | 800,90 |

* Longer delivery times possible. Please check with our Sales Department

## Attachment for Multi-MicroPlate Genie®

By Scientific Industries. For 4 additional MT-plates attached.
As a 2nd rack on top of the standard attachment.
Can only be used together with Multi-MicroPlate Genie® (EH53.1).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH54.1** | 1 | 145,15 |

# Shakers for microtitration plates



## Magnetic shaker Monoshake

By Thermo. Ideal for shaking liquids in microwell plates
- Space efficient overall size
- Movement: circular
- Automatic centric zero positioning of shaking platform

**Technical specifications:**

| | |
|---|---|
| Rpm range | 100 to 2000 rpm |
| Shaking amplitude (stroke) | 2 mm |
| Accuracy zero position | ±0.1 mm |
| Ambient temperature | +5 to +40 °C at 95 % rh |
| Housing material | Aluminium/brass (nickel-plated) |
| Dimensions (W x D x H) | 146 x 103 x 47 mm |
| Current | 230 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X826.1** * | 1 | 859,00 |

* Longer delivery times possible. Please check with our Sales Department

▶ Microwell plates see page 464





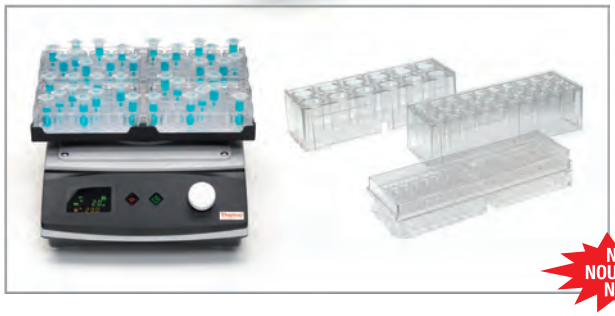

## Rotilabo®-microtest plates

Made of transparent **PS**. With 96 alphanumerically coded cavities.
Different base profiles available. Produced under sterile working conditions.
Stackable.
Dimensions: L 128 x W 85 x H 15 mm.
**Delivery without** cover plate, please order separately.

| Type | Volume per well (µl) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① U-profile (round) | 345 | **9291.1** | 100 | 46,25 |
| ② V-profile (conical) | 335 | **9292.1** | 100 | 52,70 |
| ③ F-profile (flat) | 405 | **9293.1** | 100 | 57,00 |

▶ For multichannel pipettors, see page 443





NEU
NOUVEAU
NEW

## Compact microtiter shaker

By Thermo.
For strong shaking of 4 MT plates.

- Digital display of speed and running time
- Reaction vial holders are optionally available as accessories (please order 2 identical frames separately).
  2 frames must be attached to the MT shaker for a balanced operation.

**Technical specifications:**

| | |
|---|---|
| Speed control range | 150 to 1200 rpm |
| Shaking amplitude | 3 mm |
| Timer | 1 min to 99 h, 59 min / continuous operation |
| Shaking area (W x D) | 267 x 185 mm |
| Load capacity | 4 kg |
| Permissible ambient conditions | 4 to 60 °C at 80 % rel. humidity |
| Weight | 7.7 kg |
| Dimensions (W x D x H) | 249 x 329 x 127 mm |
| Power supply | 100-240 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HKP3.1** | 1 | 888,00 |

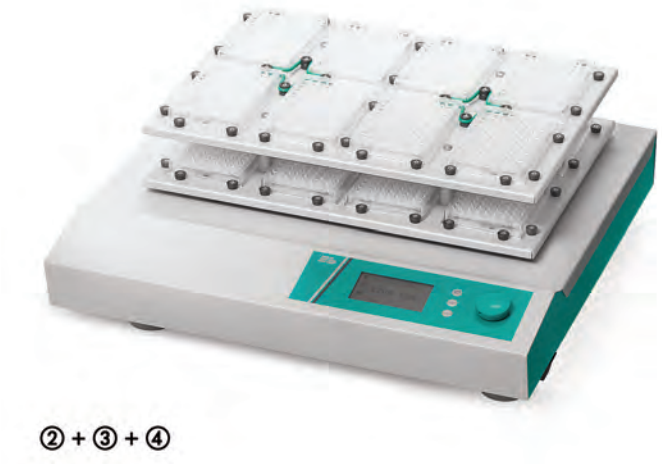
**Accessories:**

| | | | |
|---|---|---|---|
| Halter for 80 (5 x 16) reaction vials 1.5 ml | **HKP4.1** | 1 | 27,90 |
| Holder for 30 x 3 ml 10 x 15 ml centrifuge tubes | **HKP5.1** | 1 | 22,90 |
| Holder for 12 (2 x 6) 50 ml centrifuge tubes | **HKP6.1** | 1 | 22,90 |

# Shakers for microtitration plates



① + ⑤



② + ③ + ④

## Microwell plate shakers TiMix 5

By Edmund Bühler.
**Available** with either platforms for **8 or 16 microtitre plates**. A variety of other platforms enable various other applications. Adjustable mass balance ensures stability with different loads. Temperature control of samples is possible when an incubation hood (TH 15) is placed on device (please order separately).

**Model TiMix 5**

High speed for best possible mixing of small sample volumes.
**Delivery incl.** basic unit without platform (please order separately).

**Model TiMix 5 control**

With digital display of set/actual speed. Preset-function of last selected setting or programming of selective sequences possible (shaking frequency/length).
**Delivery incl.** basic unit without platform (please order separately).

**Technical specifications:**

| Model | TiMix 5 | TiMix 5 control |
|---|---|---|
| Time switch | 0 to 120 min / continuous run | 1 min to 30 h / continuous run |
| rpm range | 100 to 1400 rpm, electronically infinitely variable | |
| Shaking amplitude (stroke) | 3 mm | |
| Weight capacity | max. 5 kg | |
| Shaking surface (W x D) | 400 x 300 mm | |
| Dimensions (W x D x H) | 460 x 470 x 188 mm | |
| Weight | approx. 18 kg | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① TiMix 5 | **T490.1** * | 1 | 2139,25 |
| ② TiMix 5 control | **T491.1** * | 1 | 2795,00 |

* Longer delivery times possible. Please check with our Sales Department

## Platforms / accessories for Microwell plate shakers TiMix 5

By Edmund Bühler.

③ **Standard top TiMix 5**

For 8 microtiter plates and for Microwell-, Deepwell- and other plates in microtiter plate-format.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T493.1** * | 1 | 263,40 |

④ **Extension plate TiMix 5**

For an additional 8 plates on a 2nd level on top of the standard top TiMix 5. Comes with attachment material.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T494.1** * | 1 | 291,35 |

⑤ **Top with tension bushes for microtiter plates**

For 8 standard-microwell plates.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T495.1** * | 1 | 414,95 |

**Platform with large spring collets for 2 microwell plates**

Directly on top of each other.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T496.1** * | 1 | 471,95 |

**Universal tray without spring clips** (spring clips see shaker accessories).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P434.1** * | 1 | 235,45 |

**Standard platform KS**

With 3 tension bars h for different vessels with flat base.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T497.1** * | 1 | 359,05 |

**Incubation hood TH 15**

Temperature control of samples possible when incubation hood is attached. (see shaker accessories).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L492.1** * | 1 | 3147,60 |

* Longer delivery times possible. Please check with our Sales Department.

# Incubation shaker




## Microtitration plate shakers SSM5 and SSL5

By Bibby Scientific.

- A combination of high speed and low amplitude produces the vibration shaking action required to mix small quantities
- Digital display of speed and running time
- Reaction vial holders are optionally available as accessories (please order separately). Up to 2 racks can be attached to one appliance

**Technical specifications:**

| Type | SSM5 | SSL5 |
|---|---|---|
| Number of microtitration plates | For 4 MT plates | For 8 MT plates |
| Speed display | LED | |
| Speed control range (rpm) | 250 to 1250 in increments of 10 | |
| Shaking amplitude | 1.5 mm | |
| Timer display | LED | |
| Timer | 1 s to 9999 min / continuous operation | |
| Shaking area (mm) | 220 x 220 | 306 x 306 |
| Load capacity (kg) | 1 | 2 |
| Permissible ambient conditions | 4 to 40 °C at 80 % rel. humidity | |
| Dimensions W x D x H (mm) | 240 x 300 x 160 | 360 x 420 x 160 |
| Power supply | 230 V, 50 Hz | |

**Delivery incl.** anti-slip mat.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SSM5 | **YH91.1** * | 1 | 971,00 |
| SSL5 | **YH92.1** * | 1 | 1931,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Holder for 50 microcentrifuge tubes 1.5 ml | **YH93.1** * | 1 | 126,00 |
| Holder for 50 microcentrifuge tubes 0.5 ml | **YH94.1** * | 1 | 126,00 |
| Holder for 50 microcentrifuge tubes 0.2 ml | **YH95.1** * | 1 | 115,70 |

* Longer delivery times possible. Please check with our Sales Department.




## Ventura series incubator shakers

**For 4 standard microtiter plates or deepwell plates.**

- LCD display for simultaneous indication of temperature, runtime and speed
- Timer with audio signal (does not affect heater function; no deactivation on expiration of timer).
  A separate timer can be started for each microtiter plate.
  The shaking motion stops on expiration of the last timer.
- With transparent lid

**Technical specifications:**

| Type | Ventura Standard | Ventura Deepwell |
|---|---|---|
| Microtiter plate type | For standard MT plates with H 15 mm | For deepwell plates with H 45 mm |
| Temperature range | +5 °C **above** ambient temperature up to 45 °C | |
| Resolution of temperature display | 1 °C | |
| Temperature adjustment range | 15 to 45 °C | |
| Temperature variation | ±1 °C | |
| Speed control range | 600 to 1300 rpm in 10 rpm increments | |
| Shaking amplitude (stroke) | 1.5 mm | |
| Timer | 1 to 9999 min in 1-min increments | |
| Dimensions (W x D x H) | 200 x 520 x 220 mm | 200 x 520 x 260 mm |
| Heating output | 100 W | |
| Permissible ambient temperatures | 12 to 30 °C at 80 % rel. humidity | |
| Weight | 4200 g | |
| Power supply | 100-230 V, 50/60 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Ventura Standard | **YX79.1** * | 1 | 2176,90 |
| ② Ventura Deepwell | **YX80.1** * | 1 | 2176,90 |

* Longer delivery times possible. Please check with our Sales Department.

# Incubation shaker



## KS 3000 i control incubator shaker

By IKA. For shaking, mixing and heating/cooling samples.
- Circular movement
- LED display for speed and time adjustment as well as temperature
- With RS 232 port and USB port
- Additional PT 1000.60 temperature probe for temperature control directly within samples (included)

**Technical specifications:**

| | |
|---|---|
| Temperature range | 5 °C above ambient temperature up to +80.0 °C |
| Temperature accuracy / resolution | ±0.1 °C / 0.1 °C |
| Control accuracy with sensor probe | ±0.5 K |
| Speed control range | 10 to 500 rpm |
| Shaking amplitude (stroke) | 20 mm |
| Timer | 1 min to 999 h or continuous operation |
| Inner dimensions (W x D x H) | 330 x 330 x 260 mm |
| Outer dimensions (W x D x H) | 465 x 695 x 430 mm* |
| Heating output | 1000 W |
| Power supply | 230 V, 50/60 Hz |

*Required floor space: 600 x 600 mm

**Delivery without** rack attachment
(please order desired rack attachment separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XT43.1** * | 1 | 4999,00 |

## Attachment systems for KS 3000 i control

By IKA.

① **Universal attachment AS 260.1**

Suitable for use with all types of vessel thanks to infinitely adjustable clamping rolls. Installation surface 320 x 320 mm. Variable loading options, e.g. 8 250 ml Erlenmeyer flasks or 15 100 ml Erlenmeyer flasks.

**Delivery incl.** 4 clamping rolls.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Universal attachment AS 260.1 | **X182.1** * | 1 | 499,00 |

② **Fixing clip attachment AS 260.2**

Suitable for shaking round-bottom flasks, volumetric flasks and Erlenmeyer flasks, etc. Dimensions: W 330 x D 330 x H 24 mm.
**Does not include fixing clips (please order separately).**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fixing clip attachment AS 260.2 | **X184.1** * | 1 | 127,00 |

**Fixing clips**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fixing clips for 25 ml flasks (max. 31) | **X185.1** * | 1 | 21,00 |
| Fixing clips for 50 ml flasks (max. 23) | **X186.1** * | 1 | 21,00 |
| Fixing clips for 100 ml flasks (max. 23) | **X187.1** * | 1 | 21,00 |
| Fixing clips for 200/250 ml flasks (max. 11) | **X188.1** * | 1 | 41,00 |
| Fixing clips for 500 ml flasks (max. 9) | **X189.1** * | 1 | 41,00 |
| Fixing clips for 1000 ml flasks (max. 5) | **PA26.1** * | 1 | 41,00 |

③ **Dish attachment AS 260.3**

For the gentle movement of cell cultures or nutrient media in petri dishes etc. Installation surface: 320 x 320 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dish attachment AS 260.3 | **X183.1** * | 1 | 107,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Incubation shaker KS 4000 i control

By IKA.
- Movement: circular
- LED display for speed and time setting plus temperature
- Integrated PID temperature control
- With RS 232 interface
- Socket for use of an additional PT 1000.60 temperature probe in the working area (included)

**Technical specifications:**

| | |
|---|---|
| Temperature range | 5 °C **above** room temperature to +80.0 °C |
| Temperature constancy / Resolution | ±0.1 °C / 0.1 °C |
| Speed range | 10 to 500 rpm |
| Control accuracy with sensor probe | ±0.5 K |
| Shaking amplitude (stroke) | 20 mm |
| Time switch | 1 min to 999 h or permanent run |
| Max. load | 20 kg |
| Height of interior | 280 mm |
| Outer dimensions (W x D x H) | 580 x 750 x 520 mm* |
| Heating power | 1000 W |
| Power supply | 230 V, 50/60 Hz |

*Required floor space 600 x 600 mm

**Delivery without** top attachment
(please order desired attachment separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KH89.1** * | 1 | 6049,00 |

## Top attachment systems for KS 4000 i control

By IKA.

① **Universal top AS 4000.1**

Attachment holder with 6 infinitely adjustable tension rollers for universal fit to all vessels. Floor space W 380 x D 410 mm.
Can hold: e.g. 2 Erlenmeyer flasks 2000 ml or 9 Erlenmeyer flasks 500 ml

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Universal top AS 4000.1 | **KH90.1** * | 1 | 799,00 |

② **Clamp holder AS 4000.2**

For shaking Erlenmeyer flasks and bottles with a circular cross-section.
**Doesn't come with clamps (please order separately).**

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Clamp holder AS 4000.2 | **KH91.1** * | 1 | 665,00 |

**Retaining clamps**

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Retaining clamps for 25 ml flasks (max. 50) | **X185.1** * | 1 | 21,00 |
| Retaining clamps for 50 ml flasks (max. 48) | **X186.1** * | 1 | 21,00 |
| Retaining clamps for 100 ml flasks (max. 25) | **X187.1** * | 1 | 21,00 |
| Retaining clamps for 250 ml flasks (max. 16) | **X188.1** * | 1 | 41,00 |
| Retaining clamps for 500 ml flasks (max. 12) | **X189.1** * | 1 | 41,00 |
| Retaining clamps for 1000 ml flasks (max. 7) | **PA26.1** * | 1 | 41,00 |

③ **Top attachment for dishes AS 4000.3**

For gentle shaking of cell cultures or nutrient media in Petri dishes.
Floor space W 430 x D 430 mm.

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tray top AS 4000.3 | **KH92.1** * | 1 | 174,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Incubation shaker



## Incubator shakers SI-500

By Stuart. Ideal for tempering samples and at the same time shaking and mixing them.

- Circular movement
- Digital LED-display for speed, timer and temperature
- Smoked acrylic glazing
- With pull-out platform for easy removal and filling of samples
- With timer: at the end of the preset time, the shaking movement stops and the temperature is maintained
- Air circulation for constant heating of samples
- With USB-interface for recording the temperature sequence
- Suitable for loading: e.g. 12 Erlenmeyer flasks 250 ml or 9 Erlenmeyer flasks 500 ml or 6 Erlenmeyer flasks 1000 ml
- Alternatively 4 centrifuge or vial racks can be attached. Tilt angle can be adjusted by 30°. Please order reaction and centifuge tube racks separately.

**Technical specifications:**

| | |
|---|---|
| Temperature range | 5 °C **above** room temperature to 60 °C |
| Constancy of temperature / Resolution | ±0.5 °C / 0.1 °C |
| Speed range | 30 to 300 rpm |
| Shaking amplitude (stroke) | 16 mm |
| Max. load | 10 kg |
| Timer | 1 sec to 9 d |
| Shaking area (W x D) | 335 x 335 mm |
| Inner dimensions (W x D x H) | 422 x 408 x 250 mm |
| Outer dimensions (W x D x H) | 450 x 474 x 522 mm |
| Heating power | 250 W |
| Weight | 30 kg |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** platform with 4 tensioning bars and USB-cable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KA99.1** * | 1 | 4598,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Racks made of stainless steel for SI-500

By Stuart.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for 64 reaction tubes 1.5 ml | **KC00.1** | 1 | 345,00 |
| for 25 centrifuge tubes 15 ml | **KC01.1** | 1 | 345,00 |
| for 12 centrifuge tubes 50 ml | **KC02.1** | 1 | 345,00 |



## Incubation shaker MaxQ Digital 4000 set

By Thermo.

- Circular movement
- Digital display for speed, time and temperature on three individual displays
- Visual/audible signals alert you to temperature and speed deviate from optimal levels
- Automatic unbalanced load sensor stops the device if increased vibration is detected. An acoustic/visual alarm is issued at the same time.
- Soft start feature prevents sudden starts and stops.
- **Clamp starter kit** comprising 1 x 250 ml, 1 x 500 ml, 1 x 1000 ml and 1 x 2000 ml flask clamps

**Technical specifications:**

| | |
|---|---|
| Temperature range | 10 °C **above** ambient temperature up to +80 °C |
| Temperature accuracy / resolution | ±0.1 °C / 0.1 °C |
| Speed control range | 15 to 500 $min^{-1}$ |
| Shaking amplitude (stroke) | 19 mm |
| Max. load | 22.7 kg |
| Timer | 0.1 min to 999.9 h or continuous operation |
| Inside dimensions (L x W x H) | 508 x 533 x 330 mm |
| Outside dimensions (L x W x H) | 813 x 572 x 559 mm |
| Heating output | 1000 W |
| Weight | 75.8 kg |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** universal tray (457 x 457 mm), clamp starter kit (holding clamps for flasks from 250 to 2000 ml) and adhesion mat (210 x 210 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LY29.1** * | 1 | 6706,75 |

## Accessories for MaxQ Digital 4000

By Thermo.

**Additional holding clamps**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Retainer clips for microliter / deep-well plate (max. 10) | **LY30.1** * | 1 | 25,90 |
| Holding clamps for flasks 10 ml (max. 113) | **LY31.1** * | 1 | 22,90 |
| Holding clamps for flasks 25 ml (max. 64) | **LY32.1** * | 1 | 23,95 |
| Holding clamps for flasks 50 ml (max. 32) | **LY33.1** * | 1 | 25,90 |
| Holding clamps for flasks 125 ml (max. 32) | **LY34.1** * | 1 | 24,90 |
| Holding clamps for flasks 250 ml (max. 16) | **LY35.1** * | 1 | 29,90 |
| Holding clamps for flasks 300 ml (max. 16) | **LY36.1** * | 1 | 31,95 |
| Holding clamps for flasks 500 ml (max. 16) | **LY37.1** * | 1 | 35,00 |
| Holding clamps for flasks 1000 ml (max. 9) | **LY38.1** * | 1 | 45,00 |
| Holding clamps for flasks 2000 ml (max. 6) | **LY39.1** * | 1 | 57,80 |

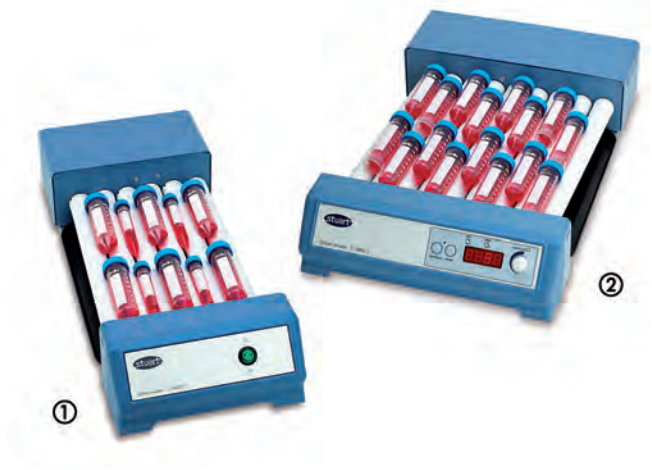
**Test tube stand**, with variable tilt angle.
Dimensions Art No LY40.1: L 248 x W 127 x H 70 mm.
Dimensions Art No LY41.1: L 248 x W 110 x H 82 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| For 72 tubes ∅ 14 to 17 mm (max. 4) | **LY40.1** * | 1 | 249,00 |
| For 24 tubes ∅ 26 to 30 mm (max. 4) | **LY41.1** * | 1 | 248,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Roller mixers






## Tilt/roller mixer RS-TR series

Simultaneous rolling and tilting movement for thorough mixing of samples, e.g. in centrifuge tubes and sample tubes. For vessels with max. ∅ 100 mm.

**RS-TR 05:**
with variable speed control from 0 to 70 rpm using analog rotary knob with scale.

**RS-TR 10:**
with speed control from 10 to 70 rpm with illuminated LCD display for setting time and speed.

**Technical specifications:**

| Model | RS-TR 05 | RS-TR 10 |
|---|---|---|
| Number of rollers | 6 | |
| LCD display | - | Yes |
| Timers | - | 1-1199 min or continuous operation |
| Speed range (rpm) | 0 to 70 | 10 to 70 |
| Dimensions per roller L x ∅ (mm) | 280 x 30 | 340 x 30 |
| Dimensions W x D x H (mm) | 260 x 460 x 120 | 260 x 530 x 120 |
| Ambient conditions | 5 to 40 °C at 80 % rel. humidity | |
| Weight (kg) | 4.5 | 5.1 |
| Power supply | 100-240 V, 50/60 Hz | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RS-TR 05 | **XK30.1** | 1 | 424,65 |
| RS-TR 10 | **XK31.1** | 1 | 747,15 |

## Tilt/roller mixers SRT series

By Stuart. With simultaneous rolling and tilting movement for thorough mixing.

- With spillage tub
- Rollers are easily removable to accommodate larger vessels with max. ∅ 100 mm
- Removable side panels prevent tubes from falling out accidentally during operation

Two models with different roller numbers available:
**SRT6 and SRT9:** With fixed speed of 33 rpm
**SRT6D and SRT9D:** With variable speed control from 5 to 60 rpm, digital speed display and timer function.

**Technical specifications:**

| Model | ① SRT 6 | SRT 9 | SRT 6D | ② SRT 9D |
|---|---|---|---|---|
| Number of rollers | 6 | 9 | 6 | 9 |
| Timer | - | | 1 sec to 90 min or 1 min to 9 h | |
| Speed | 33 rpm | | 5 to 60 rpm | |
| Amplitude | 16 mm | | | |
| Dimensions of each roller (L x ∅) | 340 x 30 mm | | | |
| Dimensions W x D x H (mm) | 565 x 240 x 110 | 565 x 360 x 110 | 565 x 240 x 110 | 565 x 360 x 110 |
| Permissible working temp. | 4 to 60 °C at 80 % rh | | | |
| Weight | 5.1 kg | 6.9 kg | 5.1 kg | 6.9 kg |
| Power supply | 230 V, 50 Hz | | | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SRT 6 | **HA30.1** | 1 | 918,00 |
| SRT 9 | **HA31.1** | 1 | 1120,00 |
| SRT 6D | **HA32.1** | 1 | 1249,00 |
| SRT 9D | **HA33.1** | 1 | 1420,00 |

# Roller mixers





## Roller series tilt/roller mixers

By IKA. Simultaneous tilt and roll movements. Rollers are easily removable to accommodate larger vessels with max. ∅ 185 mm.

Two model versions with different numbers of rollers are available:
**Roller basic:** with fixed speed of 30 rpm
**Roller digital:** with variable speed control from 5 to 80 rpm, digital speed display and timer function.

**Technical specifications:**

| Model | Roller 6 basic | Roller 10 basic | Roller 6 digital | Roller 10 digital |
|---|---|---|---|---|
| Number of rollers | 6 | 10 | 6 | 10 |
| LED display | - | | yes | |
| Timers | - | | 1 sec to 99 h or continuous duty | |
| Speed range (rpm) | 30 | | 5 to 80 | |
| Dimensions per roller L x ∅ (mm) | 325 x 32 | | | |
| Dimensions W x D x H (mm) | 240 x 545 x 115 | 380 x 545 x 115 | 240 x 545 x 115 | 380 x 545 x 115 |
| Ambient conditions | 4 to 50 °C at 80 % rel. humidity | | | |
| Weight (kg) | 4 | 6 | 4 | 6 |
| Power supply | 100-240 V, 50/60 Hz | | | |

**Delivery incl.** side protection plates (prevents the tubes from jumping out at the sides).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Roller 6 basic | **XT39.1** | 1 | 1299,00 |
| Roller 10 basic | **XT40.1** | 1 | 1599,00 |
| Roller 6 digital | **XT41.1** | 1 | 1399,00 |
| Roller 10 digital | **XT42.1** | 1 | 1699,00 |

## Small Bottle cell culture roller mixer

By Wheaton. Suitable for bottles with ∅ 108 to 121 mm. Both outer rollers can be moved to the inside so that bottles with ∅ 75 mm can also be accommodated. Each tier is designed to hold at least 2 bottles.

**Technical specifications:**

| | |
|---|---|
| Capacity | 2 positions |
| Can be extended with **optional** accessories up to | 6 positions with 2 additional tiers |
| Speed range (depending on bottle diameter) | 0.1 to 3.8 rpm (max. bottle ∅ 110 mm) |
| Max. bottle dimensions | ∅ 108 to 121 mm, max. L 290 mm |
| Dimensions (W x D x H) | 320 x 325 x 180 mm |
| Permissible ambient conditions | 10 to 40 °C at 80% rel. humidity |
| Weight | 8.2 kg |
| Power supply | 100 to 240 V, 50/60 Hz |

**Delivery incl.** standard roller system for 2 bottles.
Please order extension kit for additional bottles separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EPX8.1** | 1 | 1489,95 |

## Extension kit (tiers) for Small Bottle roller mixer

By Wheaton. For extension with max. 2 additional platforms as 2nd and 3rd tiers. Each tier must be ordered separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EPX9.1** | 1 | 456,90 |

# Rocker





## Mini-Bottle cell culture roller mixer

By Wheaton. Specially designed for mixing and stirring small quantities in bottles. For serum bottles (from 30 ml), media bottles (100 to 125 ml) and culture tubes (38 x 200 mm). Each tier is designed to hold at least 4 bottles.

**Technical specifications:**

| | |
|---|---|
| Capacity | 4 positions |
| Can be extended with **optional** accessories up to | 12 positions with 2 additional tiers |
| Speed range (depending on bottle diameter) | 3 to 45 rpm (max. bottle ∅ 38 mm)<br>2 to 30 rpm (max. bottle ∅ 60 mm) |
| Max. bottle dimensions | ∅ 38 to 60 mm, max. L 240 mm |
| Dimensions (W x D x H) | 320 x 325 x 180 mm |
| Permissible ambient conditions | 10 to 40 °C at 80 % rel. humidity |
| Weight | 8 kg |
| Power supply | 100 to 240 V, 50/60 Hz |

**Delivery incl.** standard roller system for 4 bottles.
Please order extension kit for additional bottles separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EPX7.1** | 1 | 1757,65 |

## Extension kit (tiers) for Mini-Bottle roller mixer

By Wheaton. For extension with max. 2 additional platforms as 2nd and 3rd tiers. Each tier must be ordered separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EYH1.1** | 1 | 602,00 |



## Tilting mixers Speci-Mix and Vari-Mix for sample tubes

By Thermo. For gentle, tilt-mixing of samples in sample tubes

**Speci-Mix:** with fixed speed 18 rpm and fixed tilt angle of 48°

**Vari-Mix:** with variable speed control in the range 2 to 20 rpm and manual tilt angle setting from 1 to 48°

Silicone attachment can be used on both sides. A closing lip integrated on one side prevents short tubes from slipping (L<107 mm).
The other side is intended for longer tubes.

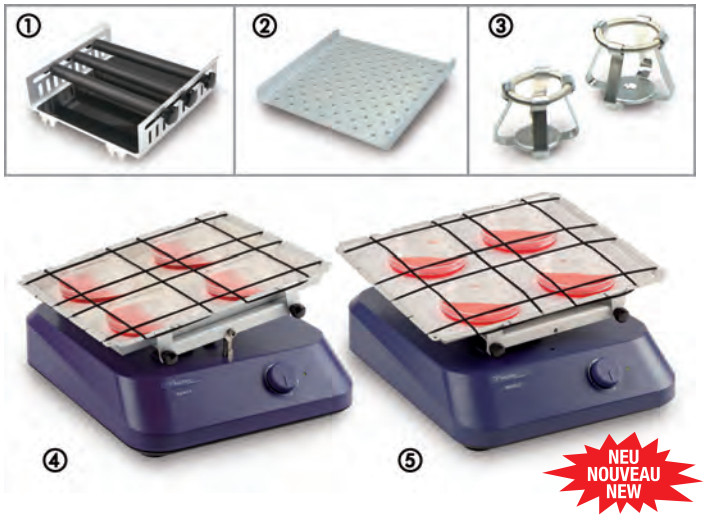
**Technical specifications:**

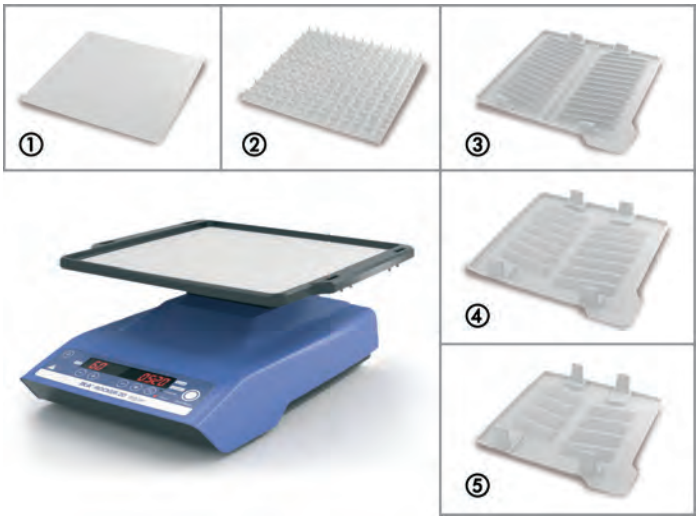
| **Model** | **Speci-Mix** | **Vari-Mix** |
|---|---|---|
| Type of motion | Tilt motion | |
| Number of sample tubes | 8 (L 10-20 mm) or<br>3 (L 22-30 mm) | 16 (L 10-20 mm) or<br>7 (L 22-30 mm) |
| Speed (rpm) | 18 | 2-20 |
| Tilt angle (°) | 48 | 1 to 48 |
| Dimensions: L x W x H (mm) | 139 x 191 x 107 | 139 x 381 x 107 |
| Ambient conditions | +4 to +40 °C at 80 rF | |
| Weight (kg) | 1.4 | 26 |

**Delivery incl.** attachment made of silicone.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Speci-Mix | **PP08.1** | 1 | 426,00 |
| Vari-Mix | **PP09.1** | 1 | 682,00 |

# Rocker




## Rocking and 3D-shakers RS-series

- Continuous speed adjustment
- With optional tray for Erlenmeyer flasks or with additional universal tray for adaptation to all types of vial through infinitely adjustable clamping rolls (please order desired tray separately)

**Technical specifications:**

| Model | ④ RS-RS 5 | ⑤ RS-DS 5 |
|---|---|---|
| Action | Rocking motion | Wobbling motion |
| Speed range (rpm) | up to 80 | |
| Tilt angle | 7° | |
| Shaking area W x D (mm) | 240 x 240 | |
| Load capacity (kg) | 3 | |
| Permissible ambient conditions | 4 to +40 °C at 80 % RH | |
| Dimensions W x H x D (mm) | 270 x 330 x 110 | |
| Weight (kg) | 2.9 | 3.2 |
| Power supply | 100-240 V, 50/60 Hz | |

**Delivery incl.** tray top with 6 fixing straps.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ④ RS-RS 5 | **HEH4.1** | 1 | 521,40 |
| ⑤ RS-DS 5 | **HEH5.1** | 1 | 521,40 |

## Accessories for rockingand 3D-shakers RS-series

① **Universal tray**
Various loading options, e.g. 6 x 250 ml Erlenmeyer flasks.
**Delivery incl.** 3 adjustable clamping rolls.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Universal tray | **CAY0.1** | 1 | 145,15 |

② **Spring clip tray**
For shaking Erlenmeyer flasks.
With holes for individual fastening of spring clips.
**Delivery without** spring clips (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spring clip tray | **CAY1.1** | 1 | 145,15 |

③ **Spring clips**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spring clips for 25 ml flasks (max. 18) | **CAY2.1** | 1 | 28,95 |
| Spring clips for 50 ml flasks (max. 18) | **CAY3.1** | 1 | 31,10 |
| Spring clips for 100 ml flasks (max. 9) | **CAY4.1** | 1 | 31,10 |
| Spring clips for 250 ml flasks (max. 6) | **CAY5.1** | 1 | 40,75 |
| Spring clips for 500 ml flasks (max. 4) | **CAY6.1** | 1 | 43,55 |

## Rocker 2D series gyratory shakers

By IKA. Various attachments are available for different applications.
Suitable for petri dishes, culture bottles and sample tubes.

**Rocker 2D basic:**
- With digital speed display
- Fixed tilt angle

**Rocker 2D digital:**
- With digital speed and timer display
- Manually adjustable tilt angle

**Technical specifications:**

| Model | Rocker 2D basic | Rocker 2D digital |
|---|---|---|
| Type of motion | Rocking movement | |
| Speed display | LED | |
| Speed range (rpm) | 5 to 80 | |
| Timer display | - | LED |
| Timer | - | 1 sec to 99.9 h or continuous operation |
| Tilt angle (°) | 8 | 0 to 15 |
| Shaking area W x D (mm) | 240 x 240 | |
| Load capacity (kg) | 2 | |
| Ambient conditions | 4 to 50 °C at 80 % rel. humidity | |
| Dimensions W x D x H (mm) | 280 x 330 x 150 | |
| Weight (kg) | 2.2 | |
| Power supply | 100-240 V, 50/60 Hz | |

**Delivery incl.** basic table, ① non-slip all-purpose mat for securing culture bottles, petri dishes etc.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rocker 2D basic | **XT46.1** | 1 | 749,00 |
| Rocker 2D digital | **XT47.1** | 1 | 849,00 |

## Accessories for Rocker-series

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ② Textured mat for test tubes | **CHH3.1** | 1 | 23,95 |
| ③ Attachment for 28 5 ml sample tubes (∅ 12 mm) | **XT48.1** | 1 | 31,00 |
| ④ Attachment for 16 ml sample tubes (∅ 16 mm) | **XT49.1** | 1 | 31,00 |
| ⑤ Attachment for 10 ml sample tubes (∅ 28 mm) | **XT50.1** | 1 | 31,00 |

## Extension table for Rocker-series

Additional platform attachable to basic table as a 2nd level.
Please order desired attachment/met separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Extension table for Rocker series | **XT51.1** | 1 | 57,00 |

# Rocker




## Gyratory shakers ProBlot 25/25 XL

For dyeing, bleaching and washing gels, DNA-extraction, and for hybridisation.

- Gentle, linear tilting movement
- Tilt angle is fixed
- With antislip rubber mat
- With timer (0-120 min)

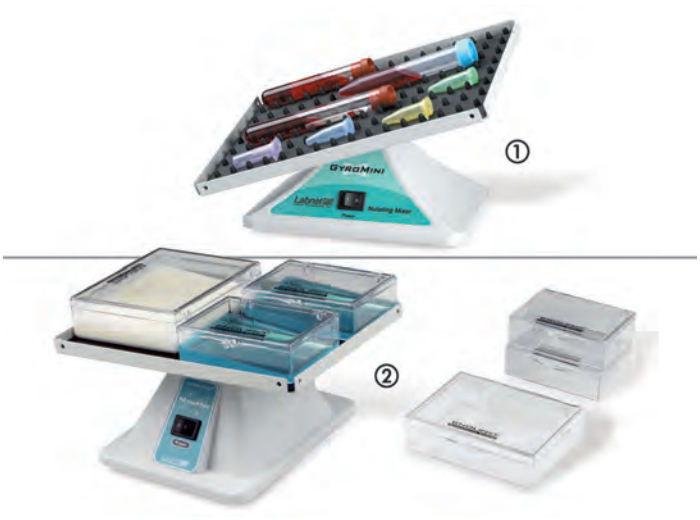
| Model | ProBlot | | | |
|---|---|---|---|---|
| | ① 25 | ② 25 D | 25 XL | 25 XLD |
| Platform design | Standard | with 2 platforms | Standard | with 2 platforms |
| Shaking surface (mm) | 260 x 200 | | 300 x 300 | |
| Dimensions W x D x H (mm) | 290 x 320 x 145 | | 325 x 360 x 145 | |

**Technical specifications:**

| | |
|---|---|
| Movement | Tilting movement |
| Speed range | 10-120 rpm |
| Timer | 0-120 min / continuous operation |
| Angle of inclination | 7° |
| Distance to 2nd platform (ProBlot 25 D and ProBlot 25 XLD only) | 9 cm |
| Load capacity | 5 kg |
| Ambient conditions | +4 to +40 °C at 80 % rH |
| Weight | 6 kg |
| Power supply | 230 V, 50/60 Hz |

| Type | Platform design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ProBlot 25 | Standard | **LX35.1** * | 1 | 876,15 |
| ProBlot 25 D | with 2 platforms | **LX36.1** * | 1 | 921,30 |
| ProBlot 25 XL | Standard | **LX37.1** * | 1 | 972,90 |
| ProBlot 25 XLD | with 2 platforms | **LX38.1** * | 1 | 1026,65 |

* Longer delivery times possible. Please check with our Sales Department.




## GyroMini™ and Enduro MiniMix™ 3D rocker shakers

**General specifications of both models**

- Space-saving design with small footprint
- Speed and angle of inclination are preset

① **GyroMini™ 3D rocker shaker**

**For sample tubes.** For gentle mixing of samples, e.g. in blood sample tubes or centrifuge tubes.

Loading options: 60 x 1.5/2.0 ml reaction vials or 16 x 15 ml centrifuge tubes or 8 x 50 ml centrifuge tubes or 20 x 7 ml standard blood sample tubes.

② **Enduro MiniMix™ 3D rocker shaker**

**For sensitive gels and blots.** The smaller angle of inclination prevents gels/blots from drying out and/or breaking.

**Technical specifications:**

| Model | GyroMini™ | Enduro MiniMix™ |
|---|---|---|
| Type of motion | Orbital 3D rocking motion | |
| Speed range (rpm) | 20 | |
| Tilt angle (°) | 20 | 5 |
| Shaking area W x D (mm) | 240 x 170 | |
| Load capacity (g) | 800 | |
| Dimensions W x D x H (mm) | 240 x 170 x 150 | |
| Permissible ambient conditions | +4 to +40 °C at 80 % rel. humidity | |
| Weight (kg) | 0.88 | |
| Power supply | 230 V, 50 Hz | |

**GyroMini™ 3D rocker shaker**

**Delivery incl.** removable silicon mat.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ET51.1** | 1 | 539,65 |

**Enduro MiniMix™ 3D rocker shaker**

**Delivery incl.** non-slip rubber mat and 2 large blotting boxes.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NP21.1** | 1 | 461,20 |

## Accessories for Enduro MiniMix™

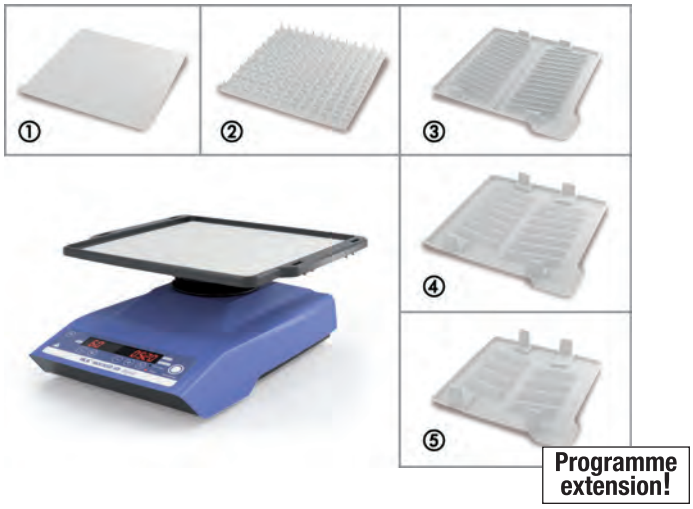
**Blotting box, large.**
Dimensions: L 117 x W 89 mm. For 6-10 ml of solution.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NP22.1** | 10 | 66,05 |

**Blotting box, small.**
Dimensions: L 91 x W 66 mm. For 3-5 ml of solution.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NP23.1** | 10 | 59,65 |

# Rocker






## Rocker 3D-series wobble shakers

By IKA. Various attachments are available for different applications. Ideal for shaking low-foaming samples, DNA extraction, colouring and decolouring.

**Rocker 3D basic:**
Fixed tilt angle and speed.

**Rocker 3D digital:**
- With digital speed and timer display
- Manually adjustable tilt angle

**Technical specifications:**

| Model | Rocker 3D basic | Rocker 3D digital |
|---|---|---|
| Type of motion | Wobble motion | |
| Speed display | - | LED |
| Speed range (rpm) | 30 | 5 to 80 |
| Timer display | - | LED |
| Timer | - | 1 sec to 99.9 h or continuous operation |
| Tilt angle (°) | 8 | 0 to 15 |
| Shaking area W x D (mm) | 240 x 240 | |
| Load capacity (kg) | 2 | |
| Ambient conditions | 4 to 50 °C at 80 % rel. humidity | |
| Dimensions W x D x H (mm) | 280 x 330 x 165 | 280 x 330 x 185 |
| Weight (kg) | 2.2 | |
| Power supply | 100-240 V, 50/60 Hz | |

**Delivery incl.** basic table, ① non-slip all-purpose mat for securing culture bottles, petri dishes etc.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rocker 3D basic | **XT52.1** | 1 | 799,00 |
| Rocker 3D digital | **XT53.1** | 1 | 899,00 |

## Accessories for Rocker-series

By IKA.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ② Textured mat for test tubes | **CHH3.1** | 1 | 23,95 |
| ③ Attachment for 28 5 ml sample tubes (∅ 12 mm) | **XT48.1** | 1 | 31,00 |
| ④ Attachment for 16 ml sample tubes (∅ 16 mm) | **XT49.1** | 1 | 31,00 |
| ⑤ Attachment for 10 ml sample tubes (∅ 28 mm) | **XT50.1** | 1 | 31,00 |

## Extension table for Rocker-series

By IKA.
Additional platform attachable to basic table as a 2nd level.
Please order desired attachment/met separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Extension table for Rocker series | **XT51.1** | 1 | 57,00 |

## 3D rocker shakers GyroTwister™

**With orbital 3D rocking motion.** For DNA extraction, staining and destaining of gels and for cultivation/aeration applications.

- Continuous speed adjustment
- Model with fixed or adjustable tilt angle

**Technical specifications:**

| Model | Standard | Vario |
|---|---|---|
| Type of motion | Orbital 3D rocking motion | |
| Speed range | 3-60 rpm | |
| Timer | 20 to 120 min or continuous operation | |
| Tilt angle | 7° (fixed) | Manual adjustable from 3 to 10° |
| Shaking surface area, platform type M (L x W) | 300 x 300 mm | |
| Load capacity | 5 kg | |
| Dimensions (W x D x H) | 330 x 352 x 210 mm | |
| Permissible ambient conditions | +4 to +70 °C at 80 % rel. humidity | |
| Weight | 6.6 kg | |
| Power supply | 230 V, 50 Hz | |

**Delivery incl.** platform type M (L 300 x W 300 mm) with integrated anti-slip mat and dimpled mat for test tubes.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Standard | **YC55.1** | 1 | 1204,00 |
| Vario | **YC56.1** | 1 | 1431,90 |

## Platforms for GyroTwister™

**Delivery incl.** anti-slip mat.

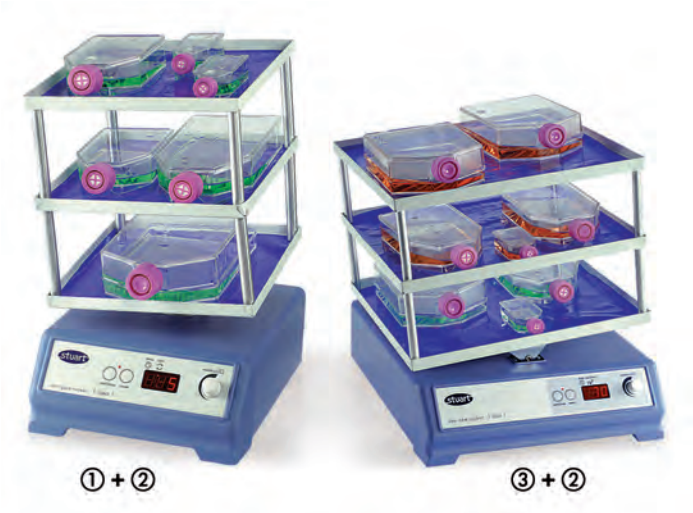
**Platform type L**
Dimensions: L 400 x W 400 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Platform type L | **YC57.1** | 1 | 179,55 |

**Platform type XL**
Dimensions: L 500 x W 500 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Platform type XL | **YC58.1** | 1 | 203,20 |

# Overhead mixers, rotators






## ① 3D gyratory shakers SSM3 and SSL3

By Stuart. **With circulating 3D-seesaw movement.**
Ideal for DNA-extraction, staining and bleaching gels,
and for particularly low foaming.

**General informations for both models**
- Gentle seesaw movement
- Digital LED-display for speed and timer
- Can alternatively be extended to 3 levels with 2 additional platforms (see diagram; please order separately)

① **Model SSM3**
- Mini-platform for minimal sampling
- Shaking surface (W x D) 235 x 235 mm
- Space efficient design

③ **Model SSL3**
- Large platform for holding numerous samples
- Shaking surface (W x D) 335 x 335 mm

**Technical specifications:**

| Model | SSM3 | SSL3 |
|---|---|---|
| Motion | Circular 3D-seesaw movement | |
| rpm range | 5 to 70 rpm | |
| Time switch | 0 to 999 min or continuous run | |
| Angle of inclination | Manually adjustable from 3 to 12° | |
| Shaking surface (W x D) | 235 x 235 mm | 335 x 335 mm |
| Weight capacity | 3 kg | 10 kg |
| Dimensions (W x D x H) | 240 x 300 x 165 mm | 360 x 420 x 170 mm |
| Ambient temperature | +4 to +40 °C at 80 % rh | |
| Weight | 5 kg | 10 kg |
| Power supply | 230 V, 50/60 Hz | |

**Delivery incl.** 1 platform with integrated anti-slip mat.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SSM3 | **AT53.1** * | 1 | 898,00 |
| SSL3 | **EP82.1** * | 1 | 1212,00 |

## ② Platform for 3D gyratory shaker SSM3 and SSL3

By Stuart.
With two further platforms as 2nd and 3rd levels.
Quick to assemble, no tools required.
**Delivery incl.** 8 retaining bars.

| For model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SSM3 | **AT54.1** * | 1 | 229,00 |
| SSL3 | **EP83.1** * | 1 | 298,00 |

* Longer delivery times possible. Please check with our Sales Department.

## Tube-Revolver test tube rotator

By Thermo. For mixing samples in test tubes.
- With LED speed display
- Turntable can be positioned at any angle (exception: turntable for 50 ml centrifuge tubes can only be positioned horizontally or vertically)
- Turntable are easy to replace
- Overhead mixing function with activable agitation mode (additional shaking every 40° during every second rotation cycle)
- Max. 4 turntables can be attached at once (exception: only 1 turntable can be attached for 50 ml centrifuge tubes)

**Technical specifications:**

| | |
|---|---|
| Speed: | 10 to 40 rpm |
| Dimensions (W x D x H) | 225 x 154 x 195 mm |
| Permissible operating temperature | 4 to 60 °C at 80 % rel. humidity |
| Weight | 1,2 kg |
| Power supply | 100-240 V, 50/60 Hz |

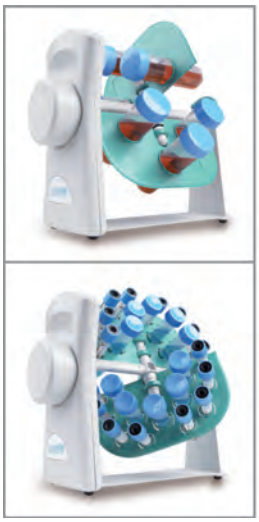
**Delivery incl.** 2 turntables for 7 centrifuge tubes 15 ml, 2 turntables for 7 blood collection tubes 5/7 ml, 2 turntables for 15 reaction vials 1.5/2.0 ml, 2 turntables for 21 reaction vials 0.5/0.8 ml and 1 turntable for 6 centrifuge tubes 50 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ATX1.1** | 1 | 358,00 |

## Turntables for Tube-revolver

By Thermo.

| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 7 centrifuge tubes 15 ml (∅ 16-17 mm) | **ATX2.1** | 2 | 8,95 |
| 7 blood collection tubes 5/7 ml (∅ 12-13 mm) | **ATX3.1** | 2 | 8,95 |
| 15 reaction vials 1.5/2.0 ml (∅ 10-11 mm) | **ATX4.1** | 2 | 8,95 |
| 21 reaction vials 0.5/0.8 ml (∅ 7.5-8.5 mm) | **ATX5.1** | 2 | 8,95 |
| 6 reaction vials 50 ml (∅ 28-29 mm) | **ATX6.1** | 1 | 13,50 |







## Rotator Revolver Mixer for reaction vials and sample tubes

For a variety of mixing tasks in microbiology, biochemistry and histochemistry.

- Sample containers can be positioned horizontally and vertically, as well as in any intermediate position
- Both halves of the particular rotary module can be arranged separately
- With fixed speed of 20 rpm
- Gentle horizontal mixing for applications such as hybridisation (rolling mixing motion); or vertical positioned tubes for overhead mixing of blood sample tubes for example
- Rotary module halves can be fixed without tools

**Technical specifications:**

| | |
|---|---|
| Speed | 20 rpm |
| Dimensions (W x D x H) | 239 x 127 x 225 mm |
| Permissible operating temperature | 4 to 65 °C at 80 % rel. humidity |
| Weight | 2.0 kg |
| Mains connection | 230 V, 50/60 Hz |

**Delivery incl.** rotary module for 36 reaction vials 1.5/2.0 ml.
Please order any required additional rotary modules separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PP49.1** | 1 | 442,90 |

## Rotary plate for rotator Revolver Mixer

| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 centrifuge tubes 15 ml and 16 blood sample tubes 5/7 ml | **PP50.1** | 1 | 56,90 |
| 6 centrifuge tubes 50 ml | **PP51.1** | 1 | 56,25 |

## RS-RR 5 overhead rotator

With soft rotating overhead mixing function for reaction vials and other test tubes / centrifuge vials.

- Analog variable speed adjustment
- Adjustable screw feet

**Technical specifications:**

| | |
|---|---|
| Speed range | 0 to 80 rpm |
| Max. load<br>1.5/2.0 ml reaction vials<br>15 ml centrifuge vials<br>50 ml centrifuge vials | <br>34 pcs.<br>22 pcs.<br>16 pcs. |
| Dimensions (W x D x H) | 530 x 150 x 190 mm |
| Weight | 1.7 kg |
| Power supply | 100-240 V, 50/60 Hz |

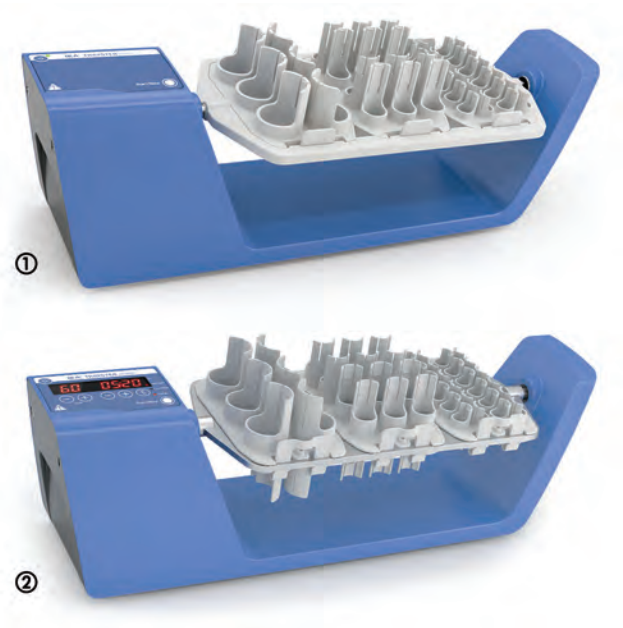
**Delivery incl.** 36 clips for reaction vials 1.5/2.0 ml and 12 clips for centrifuge tubes 15/50 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHA4.1** | 1 | 499,90 |

## Fastening clips for RS-RR 5 overhead rotator

| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Reaction vials 1.5/2.0 ml (∅ 11 mm) | **CHA1.1** | 12 | 24,65 |
| Centrifuge vials 15 ml (∅ 17 mm) | **CHA2.1** | 12 | 24,65 |
| Centrifuge vials 50 ml (∅ 29 mm) | **CHA3.1** | 12 | 24,65 |

# Overhead mixers, rotators






## Trayster overhead mixer for reaction vials and test tubes

By IKA. For a wide range of mixing applications in molecular biology.
For mixing samples in reaction vials, test tubes and blood sample tubes.
Suitable for separating and mixing powdery and liquid samples.
With soft rotating overhead mixing function.

**Trayster basic:** With fixed speed
**Trayster digital:** With infinitely variable speed adjustment and timer function

**Technical specifications:**

| Model | ① Trayster basic | ② Trayster digital |
|---|---|---|
| Speed display | - | LED |
| Speed range (rpm) | 20 | 5-80 |
| Timer display | - | LED |
| Timer | - | 1 s to 99 h or continuous operation |
| Permissible ambient conditions | 4 to +50 °C at 80 % rel. humidity | |
| Dimensions W x D x H (mm) | 460 x 160 x 150 | |
| Weight (kg) | 1.7 | |
| Power supply | 100-240 V, 50/60 Hz | |

**Delivery incl.** standard pullout tray for a total of 3 inserts.
Inserts are not included. Please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① Trayster basic | **ANE5.1** | 1 | 749,00 |
| ② Trayster digital | **ANE6.1** | 1 | 849,00 |

## Inserts for Trayster standard pullout tray

By IKA.

| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 24 reaction vials 1.5/2.0 ml (Ø 11 mm) | **ANE7.1** | 1 | 36,00 |
| 24 test tubes 5 ml (Ø 12 mm) | **ANE8.1** | 1 | 36,00 |
| 12 centrifuge tubes 15 ml (Ø 17 mm) | **ANE9.1** | 1 | 36,00 |
| 6 centrifuge tubes 50 ml (Ø 29 mm) | **ANH0.1** | 1 | 36,00 |

## RS-RD 5 rotator

For soft and gentle mixing of samples in various tubes/vials.
- Analog variable speed adjustment
- Adjustable screw feet
- Fixed 90° rotation angle

**Technical specifications:**

| | |
|---|---|
| Speed range | 0 to 80 rpm |
| Max. load<br>1.5/2.0 ml reaction vials<br>15 ml centrifuge vials<br>50 ml centrifuge vials | <br>48 pcs.<br>8 pcs.<br>8 pcs. |
| Dimensions (W x D x H) | 220 x 300 x 310 mm |
| Weight | 2.0 kg |
| Power supply | 100-240 V, 50/60 Hz |

**Delivery incl.** 36 clips for reaction vials 1.5/2.0 ml and 12 clips for centrifuge tubes 15/50 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CHA0.1** | 1 | 499,90 |

## Fastening clips for RS-RD 5 rotator

| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Reaction vials 1.5/2.0 ml (Ø 11 mm) | **CHA1.1** | 12 | 24,65 |
| Centrifuge vials 15 ml (Ø 17 mm) | **CHA2.1** | 12 | 24,65 |
| Centrifuge vials 50 ml (Ø 29 mm) | **CHA3.1** | 12 | 24,65 |






## Loopster-series rotators

By Ika. Suitable for soft separation and mixing of powdery and liquid samples. Freely adjustable rotary angle (0 to 90°).
Different attachments enable units to be used for a variety of applications.

**Loopster basic:** with fixed speed.

**Loopster digital:** with infinitely adjustable speed, digital timer function and speed display.

**Technical specifications:**

| Model | ① Loopster basic | ② Loopster digital |
|---|---|---|
| Speed display | - | LED |
| Speed range | 20 rpm | 5 to 80 rpm |
| Timer display | - | LED |
| Timer | - | 1 sec to 99 h or continuous operation |
| Dimensions (W x D x H) | 300 x 300 x 360 mm | |
| Permissible ambient conditions | 4 to 50 °C at 80 % rel. humidity | |
| Weight | 3.0 kg | |
| Power supply | 100-240 V, 50/60 Hz | |

**Delivery without** turntables. Please order required turntables separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Loopster basic | **ANH1.1** | 1 | 649,00 |
| Loopster digital | **ANH2.1** | 1 | 749,00 |

## Standard turntables for Loopster-series

By IKA.

| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 48 reaction vials 1.5/2.0 ml (Ø 11 mm) | **ANH3.1** | 1 | 172,00 |
| 24 test tubes 5 ml (Ø 12 mm) | **ANH4.1** | 1 | 124,00 |
| 20 centrifuge tubes 15 ml (Ø 17 mm) | **ANH5.1** | 1 | 124,00 |
| 12 test tubes 30 ml (Ø 25 mm) | **ANH6.1** | 1 | 124,00 |
| 12 centrifuge tubes 50 ml (Ø 29 mm) | **ANH7.1** | 1 | 124,00 |

## Universal turntable for Loopster-series

By IKA.
Individually configurable. Fastening clips are required for attaching test tubes. Please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Universal turntable | **ANH8.1** | 1 | 104,00 |

## Fastening clips for universal turntables

By IKA.

| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Reaction vials 1.5/2.0 ml (Ø 11 mm) (max. 36 clips) | **ANH9.1** | 12 | 32,00 |
| Test tubes 5 ml (Ø 12 mm) (max. 24 clips) | **ANK0.1** | 12 | 32,00 |
| Centrifuge tubes 15 ml (Ø 17 mm) (max. 12 clips) | **ANK1.1** | 12 | 32,00 |
| Test tubes 30 ml (Ø 25 mm) (max. 8 clips) | **ANK2.1** | 12 | 32,00 |
| Centrifuge tubes 50 ml (Ø 29 mm) (max. 8 clips) | **ANK3.1** | 12 | 32,00 |

## Rotators SB 2 and SB 3

By Stuart. Ideal for gentle mixing samples in culture tubes, blood vials or sample tubes.

- Rotary dish for different vessels available
- Angle of rotary dish is adjustable
- **Model SB 2**: with fixed speed
- **Model SB 3**: with variable speed, digital speed display and timer function

**Technical specifications:**

| Model | SB 2 | SB 3 |
|---|---|---|
| Rpm | 20 rpm | adjustable from 2-40 rpm |
| Speed display | none | digital |
| Timer function | none | 1 to 999 min |
| Dimensions (W x D x H) | 200 x 270 x 240 mm | |
| Max. operating temperature | 4 to 60 °C at 80 % rh | |
| Weight | 3200 g | |
| Power supply | 230 V, 50 Hz | |

**Delivery incl.** base unit without rotary dish.
Please order the desired rotary dishes separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| SB 2 | **Y549.1** | 1 | 415,00 |
| SB 3 | **Y550.1** | 1 | 598,00 |

## Rotary dishes for rotators SB 2 and SB 3

By Stuart.

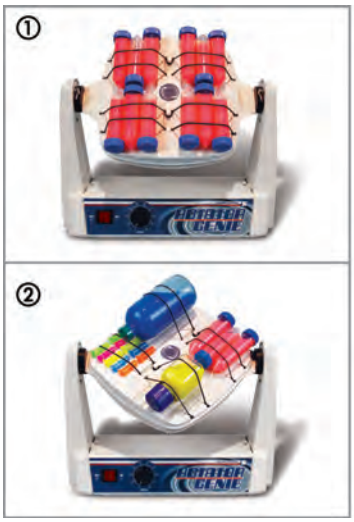
| For | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 46 tubes 1,5/2,0 ml | **Y551.1** | 1 | 215,00 |
| 20 sample vials Ø 9-20 mm | **Y552.1** | 1 | 215,00 |
| 12 centrifuge tubes 50 ml | **Y553.1** | 1 | 215,00 |
| 63 culture tubes Ø 12 mm | **Y554.1** | 1 | 289,00 |
| 63 culture tubes Ø 16 mm | **Y555.1** | 1 | 241,00 |

## Double mounting for 2 turntables

By Stuart. Allows the simultaneous use of 2 turntables.
Please order required turntable separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XK80.1** | 1 | 109,00 |

# Overhead mixers, rotators







## Rotator Genie™

By Scientific Industries. Overhead rotator for mixing specimens in reaction vials, culture tubes, test tubes etc.
- Easy, tool-free platform replacement
- The platforms can be loaded from both sides (assuming they are loaded evenly)

**Standard platform**

① With rubber straps for flexible attachment of different vessels and tubes with diameters of up to 85 mm. For strap length adjustment, clamps are provided at the centre of the platform.
② The standard platform attaches variably to the mixer at an angle of 90°. Various mixing actions are possible thanks to the flexible attachment system and different tube placements.

③ **Magnetic platform**

Mounts for tubes and other specimens can be attached to the magnetic plate (please order mounts separately).

**Technical specifications:**

| | |
|---|---|
| rpm: | 5 to 35 rpm |
| Dimensions of standard platform | 260 x 260 mm |
| Dimensions of magnetic platform | 292 x 292 mm |
| Overall dimensions (W x D x H) | 400 x 175 (290 with horizontal platform) x 400 mm |
| Weight | 5.2 kg |
| Mains connection | 230 V, 50/60 Hz |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ① ② Rotator Genie with standard platform and 8 straps | **PH63.1** | 1 | 962,15 |
| ③ Rotator Genie with magnetic platform | **PH64.1** | 1 | 1005,15 |

## Additional platforms for Rotator Genie™

By Scientific Industries.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Standard platform with 8 rubber straps | **PH65.1** | 1 | 195,65 |
| Magnetic platform | **PH66.1** | 1 | 231,15 |

## Accessories for magnetic platform

By Scientific Industries.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Holder with 12 clips for tubes from 10 to 13 mm | **P519.1** | 6 | 192,45 |
| Holder with 6 clips for tubes from 15 to 17 mm | **P520.1** | 6 | 192,45 |
| Holder with 3 clips for tubes from 28 to 30 mm | **P521.1** | 6 | 192,45 |
| Magnetic strip for bags, 75 x 75 mm | **P522.1** | 16 | 83,85 |




## Multi-functional shaker Roto-Shake Genie®

By Scientific Industries. Extremely versatile shaker with tilting, revolving and shaking movements. Depending on the positioning of the vials, different mixing movements can be attained: revolving, tilting/shaking, tilting/revolving, tilting/rolling, revolving/rolling as well as a combination of these movements. The moving part consists of a double-sided, magnetic stainless steel plate, 34 x 20 cm. Easy to operate, **Change-over from rotating to tilting movement as achieved using a single hand movement.** Holders for vials with a diameter of 10 to 13 mm, 15 to 17 mm, or 28 to 30 mm or magnetic strips for holding the bags 75 x 75 mm can be placed on the magnetic plates.

**Technical specifications:**

| | |
|---|---|
| Dimensions (L x W x H) | 508 x 252 x 267 mm (With mounted platform: width 305 mm) |
| Weight | 11 800 g |
| Speed | Tilting: infinitely variable from 10 to 70 cycles per minute. Revolving: infinitely variable from 5 to 35 rpm |
| Vibrating angle | ±10° from the horizontal line |
| Ambient conditions | 0 to 38 °C |

**Delivery incl.** 1 Multi-function mixer Roto-Shake Genie®, 1 holder with 12 clips for 10 to 13 mm tubes, 1 holder with 6 clips for 15 to 17 mm tubes, 1 holder with 3 clips for 28 to 30 mm tubes, 4 magnetic strips for 2 bags 75 x 75 mm, 1 shaking platform (203 x 305 mm) with slip-resistant map for petri dishes etc.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P518.1** | 1 | 1428,70 |

## Accessories for Roto-Shake Genie® and Enviro-Genie®

By Scientific Industries.

**Holders with 12 clips for tubes-Ø 10 to 13 mm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P519.1** | 6 | 192,45 |

**Holders with 6 clips for tubes-Ø 15 to 17 mm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P520.1** | 6 | 192,45 |

**Holders with 3 clips for tubes-Ø 28 to 30 mm**

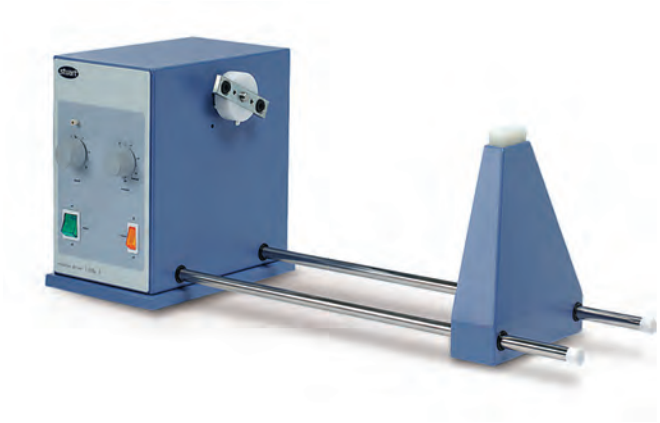
| Art. No. | Pack Qty. | € |
|---|---|---|
| **P521.1** | 6 | 192,45 |

**Magnetic strips for bags 75 x 75 mm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P522.1** | 16 | 83,85 |

**24 magnetic strips for bags 75 x 75 mm and 2 trays**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P523.1** | 1 | 264,45 |



## Rotator STR4

By Stuart. Supplied with various rotary modules for different applications.

**Technical specifications:**

| | |
|---|---|
| Time switch | 10 to 60 min /continuous run |
| Rotation speed | 6 to 60 rpm |
| Dimensions (W x D x H) | 650 x 250 x 250 mm |
| Weight | 6400 g |
| Current | 230 V, 50 Hz |

**Delivery incl.** basic unit without rotary module
(please order the desired rotary module separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X466.1** * | 1 | 1175,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Rotary module for sample vials for rotator STR4

By Stuart. 4 different holders can be attached to the rotary module via clip mechanism

**Delivery incl.** rotary module for sample vials without clip holders (please order separately).

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rotary module for sample vials | **X467.1** * | 1 | 399,00 |

**Clip holders**

| Design | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for 12 vials ∅ 12 mm | **X468.1** * | 2 | 165,00 |
| for 10 vials ∅ 16 mm | **X469.1** * | 2 | 156,00 |
| for 8 vials ∅ 19 mm | **X470.1** * | 2 | 156,00 |
| for 7 vials ∅ 24 mm | **X471.1** * | 2 | 156,00 |

* Longer delivery times possible. Please check with our Sales Department.



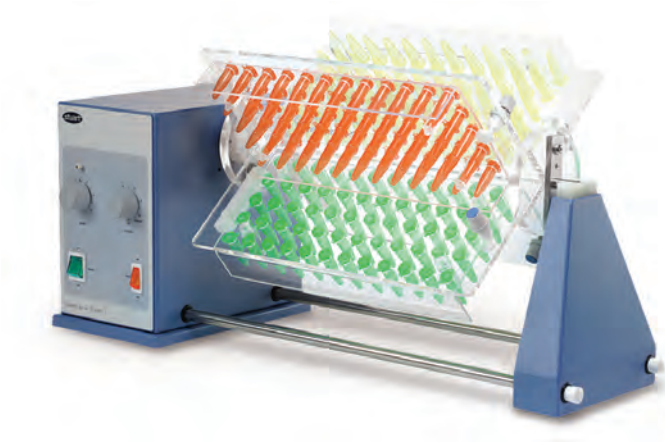
## Rotary module for rotator STR4

By Stuart. To attach 4 vessels (bottles, cans) with adjustable velcro straps.

- With 4 x divided acrylic glass holder
- Max. vessel dimensions: length 300 mm, ∅ 120 mm
- Max. load: 5000 g

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X472.1** * | 1 | 452,00 |

* Please check with our Sales Department for delivery period of these products.



## Rotary module for centrifuge vials for rotator STR4

By Stuart. 4 racks for 60 each centrifuge tubes 1.5 ml.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rotary module for centrifuge tubes | **X473.1** * | 1 | 910,00 |
| Spare rack for 60 x 1.5 ml tubes | **X474.1** * | 1 | 106,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Overhead mixers, rotators





## Temperature-controllable multifunction mixer Enviro-Genie®

By Scientific Industries. Mixing, stirring and tempering units for 5 different applications: **cooling - incubating - rotating - tilting/shaking - stirring**

- Easy-to-read, digital display
- With large window for viewing samples
- **Change-over from rotating to tilting in one movement**
- Holders for vials and other vessels, e.g. for blood and sample vials, centrifuge tubes, tissue culture bottles, staining vessels, sample bags can be placed on the magnetic platform.
- **Temperature range adjustable from +4 to +75 °C**
- With visual and acoustic alarm for temperature and time
- Programmable timer function (up to 96 h)
- **Two magnetic stirrers are integrated in the incubator**, reverse mode is possible. Max. stirring amount per platform: 1 litre. Platform-∅: 90 mm each.
- RS 232-interface

**Technical specifications:**

| | |
|---|---|
| **Speed** | |
| Rotating | 1 to 35 rpm |
| Tilting | 2 to 70 cycles per min |
| Stirring | 1 to 2000 rpm |
| **Heating and cooling function** | |
| Ideal for temperatures | +4 to +75 °C |
| Resolution | 0.1 °C |
| Accuracy | ±0.2 °C |
| **Dimensions** | |
| Outer dimensions (W x D x H) | 622 x 495 x 368 mm |
| Inner dimensions (W x D x H) | 362 x 254 x 260 mm |
| **Others** | |
| Max. load | 4500 g |
| Volume | 24 l |
| Weight | 36 kg |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** 1 Multi-function mixer Enviro-Genie®, 1 double-sided magnetic platform (200 x 340 mm), 1 holder with 12 clips for 10 to 13 mm tubes, 1 holder with 6 clips for 15 to 17 mm tubes, 1 holder with 3 clips for 29 to 32 mm tubes, 4 magnetic strips for 2 bags 15.3 x 15.3 cm, 1 wire rack, 1 shaking tray (203 x 305 cm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH71.1** * | 1 | 7057,40 |

* Longer delivery times possible. Please check with our Sales Department.



## Overhead mixer REAX 2

By Heidolph. Extremely versatile mixer with electronically regulated rotor speed. Can be used with two alternative holders. **Holder 1** for mixing of max. 20 test tubes ∅ 10-18 mm please order separately.

**Technical specifications:**

| | |
|---|---|
| Rpm | 20 to 100 rpm |
| Power consumption | 27 W |
| System of protection | IP 21 |
| Ambient temperature | 0 to +40 °C at 80 % rh |
| Dimensions (W x D x H) | 510 x 180 x 235 mm |
| Weight | 5200 g |
| Power supply | 230 V, 50 Hz |

**Delivery incl.** universal holder for attaching closed vessels or test tube racks. Height continuously adjustable from 45 to 160 mm.

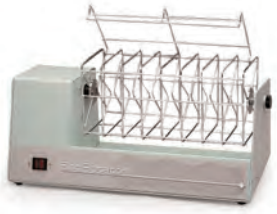
| Art. No. | Pack Qty. | € |
|---|---|---|
| **H827.1** * | 1 | 1416,00 |

## Accessories for overhead mixer REAX 2

By Heidolph.
**Holder 1**
For attaching max. 20 test tubes (∅ 10-18 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H828.1** * | 1 | 217,00 |

* Longer delivery times possible. Please check with our Sales Department.



## Mixer BagRotator

By Scientific Industries. Even overhead, rotational movements for mixing substances in sample bags and blood bags etc.

- Suitable for simultaneous mixing of 40 bags each with 300 ml volume
- The rotary module (= basket) is divided into 8 compartments; each compartment can be filled with 5 bags
- The extremely gentle mixing movement prevents accidental damage to bag
- Speed remains constant even with maximum load

**Technical specifications:**

| | |
|---|---|
| Fixed speed | 3 rpm |
| Dimensions (W x D x H) | 508 x 252 x 267 mm |
| Weight | 7.7 kg |
| Current | 230 V, 50 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CH97.1** * | 1 | 1138,45 |

* Longer delivery times possible. Please check with our Sales Department.





## Overhead mixer REAX 20-series

By Heidolph. Enables overhead rotation of vessels of different sizes and properties. Suitable for mixing cylinders and wide neck bottles with a length of 160 to 270 mm and diameter up to 136 mm. Ideal for water, sewage water and mud analysis in accordance with DIN 36414. Infinitely adjustable speed range.

**Technical specifications:**

| Model | REAX 20/4 | REAX 20/8 | REAX 20/12 |
|---|---|---|---|
| Capacity | 4 bottles | 8 bottles | 12 bottles |
| Speed | 1 to 16 rpm | | |
| Output (W) | 280 W | | |
| Dimensions W x H x D (mm) | 490 x 465 x 520 | 770 x 465 x 520 | 1050 x 465 x 520 |
| Perm. ambient conditions | 0 to 40 °C at 80 % rh | | |
| Weight (kg) | 23 | 28 | 33 |
| Mains supply | 230 V, 50 Hz | | |

**Delivery incl.** holder for 2 l-bottles.

| Product | Capacity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Overhead mixer REAX 20/4 | 4 bottles | **KH64.1** * | 1 | 2702,00 |
| Overhead mixer REAX 20/8 | 8 bottles | **H830.1** * | 1 | 3050,00 |
| Overhead mixer REAX 20/12 | 12 bottles | **KH65.1** * | 1 | 3460,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| Attachment set for 4 x 1.0 l bottles | **KH66.1** * | 1 | 59,00 |
| Attachment set for 4 x 0.5 l bottles | **KH67.1** * | 1 | 59,00 |

* Longer delivery times possible. Please check with our Sales Department.

▶ Homogenizing bags, see page 253




## ① Rotilabo®-mini-centrifuge

With openings for **6 microcentrifuge tubes** 1.5/2.0 ml. Maximum speed **6000 rpm** (equivalent to 2000 x g). **Small, handy and powerful. Start and stop** are **controlled by an extra switch**. Features transparent polycarbonate lid. Centrifuge is supplied with adapter for 0.5 ml micro-centrifuges tubes. Dimensions: H 120 x W 130 x D 150 mm. Weight: 494 g. Power supply 220 V, 50/60 Hz.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T464.1** | 1 | 241,90 |

## ② Rotilabo®-centrifuge with butterfly-rotor

Same as Art. No. **T464.1**, however suitable for PCR-strips of 2 x 8 microcentrifuge tubes at 200 µl per strip.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T465.1** | 1 | 224,70 |



## Mini-centrifuge with microscope slide rotor

**For speedy drying of microscope slides, e.g. for micro-array analysis.** Suitable for all micro-array slides 25 x 76 x 1 mm. Dries micro-array substrates in less than 10 s.

- Rotor capacity: 2 microscope slides
- The liquid is retained in the microscope slide cassettes
- Cassettes can be removed for cleaning or replaced when necessary
- Max. speed 4000 tr/min (500 to 850 x g)
- Space efficient, compact unit (∅ 127 mm)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH48.1** | 1 | 590,20 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare cassettes for microscope slides | **AH49.1** | 1 Pair | 138,70 |

# Microlitre centrifuges



## Rotilabo®-mini-centrifuge "Uni-fuge"

- Replaceable rotor system
  (for easy insertion and removal of all rotors included in delivery)
- **Start and stop are controlled by a supplementary switch**
- Small, handy and powerful
- With transparent PC-lid

**Technical specifications:**

| | |
|---|---|
| Speed max. | 6000 rpm |
| Max. RCF | 2000 x g |
| Dimensions (W x D x H) | 130 x 150 x 120 mm |
| Weight | 494 g |
| Power supply | 220 V, 50/60 Hz |

**Delivery incl.** standard rotor for centrifuge tubes 6 x 1.5/2.0 ml, adapter for 0.5 ml centrifuge tubes and a rotor for PCR®-tube strips with 2 x 8 centrifuge tubes à 200 µl per strip.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CX73.1** | 1 | 224,70 |



## Rotilabo®-microlitre centrifuge Gusto™

- Max. capacity: 12 x 1.5/2.0 ml reaction vials
- Digital display of speed and running time
- Actual status display during operation
- Pulse button for short spin
- Optional display of rpm or x g
- Rotor changing without tools

**Technical specifications:**

| | |
|---|---|
| Max. speed | 12500 rpm adjustable in increments of 100 |
| Min. speed | 500 rpm |
| Max. RCF | 9800 x g |
| Operating time | 1 s to 30 min, adjustable in increments of 1 s per short cycle |
| Dimensions (W x H x D) | 171 x 114 x 203 mm |
| Power supply | 100-240 V, 50/60 Hz |

**Delivery incl.** 12-place microlitre rotor with lid, PCR® tube strip rotor for 4 x 8 tube strips à 200 µl per strip and 12 adapters for 0.5 and 0.2 ml reaction vials.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XP51.1** | 1 | 682,65 |



## Mini G mini centrifuge

By IKA.

- Max. capacity: 8 x 1.5/2.0 ml reaction vials
- Rotor interchangeable without tools
- **Digital operating time display (adjustable from 1 to 99 min)**

**Technical specifications:**

| | |
|---|---|
| Max. speed | 6000 rpm |
| Max. RCF | 2000 x g |
| Dimensions (W x D x H) | 155 x 175 x 105 mm |
| Power supply | 230 V, 50/60 Hz |

**Delivery incl.** standard rotor for 8 x 1.5/2.0 ml reaction vials and a rotor for PCR® tube strips with 4 x 8 reaction vials, each 200 µl per strip and adapters for 0.5/0.4/0.2 ml reaction vials.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XT15.1** | 1 | 313,00 |

# Microlitre centrifuges






NEU
NOUVEAU
NEW

## Microlitre centrifuge CD-2012 high speed

**Features:**
- Max. capacity: 12 x 1.5/2.0 ml reaction vials
- Illuminated display of speed and running time
- Optional display of rpm or x g
- Impulse button for short spinning of samples

**Technical specifications:**

| | |
|---|---|
| Max. speed | 15000 rpm, adjustable in increments of 100 |
| Min. speed | 500 rpm |
| Max. RCF | 15100 x g |
| Operating time | 30 sec to 99 min, adjustable in steps of 1 sec / continuous operation / short cycle |
| Dimensions (W x H x D) | 260 x 250 x 140 mm |
| Weight | 6 kg |
| Power supply | 110-240 V, 50/60 Hz |

**Delivery incl.** 12-position microlitre rotor with lid.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HEA7.1** | 1 | 854,65 |

## Adapter for microlitre centrifuges CD-2012

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for reaction vials 0.2 ml | **HEA8.1** | 24 | 52,70 |
| for reaction vials 0.5 ml | **HEA9.1** | 24 | 52,70 |

## Microlitre centrifuges Force-series

**Design:**
- **Max. capacity: 18 centrifuge tubes 1.5/2.0 ml**
- Microprocessor control
- Digital-display for speed and operating time
- Display alternatively from rpm or x g
- Speed can be increased in 1000 x increments
- Impulse function for centrifuging samples
- Safety lid catch

**Technical specifications:**

| | |
|---|---|
| Speed max. | 13000 rpm |
| Min. speed | 1000 rpm |
| Max. RCF | 14000 x g |
| Max. capacity | 18 x 1.5 / 2.0 ml |
| Timer function | to 99 min |
| Dimensions (W x D x H) | 267 x 236 x 178 mm |
| Weight | 5.5 kg |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AC72.1** | 1 | 1388,50 |

## Adapters for microlitre centrifuges Force-series

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| for 0.5 ml centrifuge tubes 0.5 ml | **N890.1** | 6 | 54,00 |
| for 0.4 ml centrifuge tubes | **N891.1** | 6 | 54,10 |
| for 0.2 ml centrifuge tubes | **N892.1** | 6 | 54,00 |

# Microlitre centrifuges




## Microlitre centrifuge MIKRO 185

By Hettich. Sample preparation for molecular biological applications, as well as in the PCR laboratory and much more.

- Max. capacity 24 x 1.5/2.0 ml reaction vials
- Adjustment of centrifuging time, rpm or RCF by means of membrane keyboard

**Technical specifications:**

| | |
|---|---|
| Max. speed | 13300 rpm, adjustable in increments of 100 rpm |
| Min. speed | 500 rpm |
| Maximum RCF (in rotor type 1226) | 17008 x g |
| Operating time | 1 to 99 min / continuous duty / short cycle (pulse key) |
| Dimensions (H x W x D) | 228 x 262 x 352 mm |
| Weight | 10 kg |
| Power supply | 208-240 V, 50/60 Hz |

**Delivery without** microlitre rotor. Please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANP9.1** | 1 | 1244,85 |

## Microlitre rotors for MIKRO 185

By Hettich.

① **24-tube microlitre rotor (45°) type 1226**

- For 24 x 1.5/2.0 ml reaction vials
- Max. speed 13300 rpm max. RCF 17008 x g

**Delivery incl.** lid with bioseal, phenol resistant and autoclavable.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 24-tube microlitre rotor type 1226 | **ANT0.1** | 1 | 334,35 |

**12-tube microlitre rotor (45°) type 1252**

- For 12 x 1.5/2.0 ml reaction vials
- Max. speed 13300 rpm max. RCF 14041 x g

**Delivery incl.** lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12-tube microlitre rotor type 1252 | **ANT1.1** | 1 | 209,65 |

**18-tube microlitre rotor (45°) for Spin Column Kits type 1213**

- For Micro Spin Column Kits (micro tubes with filter cartridge) 18 x 1.5/2.0 ml
- Max. speed 13300 rpm max. RCF 15030 x g

**Delivery without** lid. Please order separately if required.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 18-tube microlitre rotor type 1213 | **ANT2.1** | 1 | 248,35 |
| Lid type 1246 with bioseal for rotor type 1213 | **ANT3.1** | 1 | 192,45 |

**Accessories:**

| | | | |
|---|---|---|---|
| Adapter sleeves for 0.2 ml reaction vials | **AA67.1** * | 6 | 11,80 |
| Adapter sleeves for 0.5 ml reaction vials | **Y059.1** * | 6 | 12,70 |
| Adapter sleeve, tapered, for 1.5 ml vials | **AA68.1** * | 6 | 12,90 |

* Longer delivery times possible. Please check with our Sales Department.



## Heraeus® Pico® and Fresco® microlitre centrifuges

By Thermo.

**General information for all models**

- **Max. capacity: 24 x 1.5/2.0 ml centrifuge tubes**
- Available in the 17 000 x g- and 21 100 x g version
- Optional display of rpm or x g
- Speed can be increased in increments of 100
- Various sets available with different rotors. e.g. a two-row rotor for holding 18 x 1.5/2.0 ml- and 18 x 0.5 m centrifuge tubes

**Cooling centrifuge models Fresco® 17 and Fresco® 21**

- Cooled microlitre centrifuges
- With stop-period cooling

**Technical specifications:**

| Model | Pico® 17 and Fresco® 17 | Pico® 21 and Fresco® 21 |
|---|---|---|
| Maximum speed | 13 300 rpm | 14 800 rpm |
| Minimum speed | 300 $min^{-1}$ | |
| Maximum RCF | 17 000 x g | 21 100 x g |
| Operating time | 1 to 99 min / Continuous Run / Quick Run | |
| Temperature setting range | Pico® 17 / 21: Air-cooled or without cooling function | |
| | Fresco® 17 / 21: -9 to +40 °C in 1 °C increments | |
| Dimensions (H x W x D) | Pico® 17 / 21: 243 x 225 x 352 mm | |
| | Fresco® 17 / 21: 295 x 330 x 445 mm | |
| Power supply | 230 V, 50/60 Hz | |

**Heraeus® Pico® and Fresco® packages with 1 rotor**

Centrifuge incl. 24 x 1.5/2.0 ml rotor with aerosol-tight ClickSeal lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Heraeus® Pico® 17 with 24-place rotor | **HE09.1** * | 1 | 1735,00 |
| Heraeus® Fresco® 17 with 24-place rotor | **HE10.1** * | 1 | 4186,00 |
| Heraeus® Pico® 21 with 24-place rotor | **HE11.1** * | 1 | 2196,00 |
| Heraeus® Fresco® 21 with 24-place rotor | **HE12.1** * | 1 | 4680,00 |

**Heraeus® Pico® and Fresco® packages with 2 rotors**

Centrifuge **incl.** 24 x 1.5/2.0 ml rotor with aerosol-tight ClickSeal lid and two-row 18 x 0.5 ml and 18 x 1.5/2.0 ml rotor with screw lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Heraeus® Pico® 21 with 24- and 36-place rotor | **HE13.1** * | 1 | 2589,00 |
| Heraeus® Fresco® 21 with 24- and 36-place rotor | **HE14.1** * | 1 | 5218,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 10-place microliter rotor for 5 ml reaction tubes with aerosol-tight ClickSeal lid | **HAA9.1** * | 1 | 488,00 |

## Reducing sleeves for Pico® and Fresco®

By Thermo.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Reducing sleeves for 0.5 ml centrifuge tubes | **X118.1** * | 24 | 153,00 |
| Reducing sleeves for 0.4 ml/0.25 ml centrifuge tubes | **X119.1** * | 24 | 154,00 |
| Reducing sleeves for 0.2 ml centrifuge tubes | **X121.1** * | 24 | 153,00 |

**Accessories:**

| | | | |
|---|---|---|---|
| 10-place microliter rotor for 5 ml reaction tubes with aerosol-tight ClickSeal lid | **HAA9.1** * | 1 | 488,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Microlitre centrifuges



## Table centrifuges Mikro 220 / 220 R

By Hettich.

**General specifications for both models**

- 9 braking and starting ramps plus unbraked run-out possible
- Memory capacity for 10 programs
- Automatic rotor recognition
- Optional display of rpm or x g upon entry of rotor radius
- Window in lid
- Metal housing
- Safety features: Emergency unlocking device, motor overheating protection, unbalance switch-off

**Cooling centrifuge Mikro 220 R cooled**

- Infinitely variable from -20 to +40 °C in 1 °C-increments
- Precooling function

**Technical specifications:**

| Model | Mikro 220 classic | Mikro 220 R cooled |
|---|---|---|
| Max. speed (in microlitre rotor) | 18 000 rpm, adjustable to increments of 10 | |
| Min. speed | 500 rpm | |
| Max. RCF (in microlitre rotor) | 31 514 x g | |
| Min. RCF | 24 x g | |
| Operation time | 1 to 99 min, continuous run, impulse key | |
| Temperature range | - | -20 to +40 °C |
| Dimensions (W x D x H) | 330 x 420 x 313 mm | 330 x 650 x 313 mm |
| Weight | 21 kg | 42 kg |
| Power supply | 220-240 V, 50/60 Hz | |

**Delivery without** rotor (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Mikro 220 classic | **LE07.1** * | 1 | 2772,45 |
| Mikro 220 R cooled | **LE08.1** * | 1 | 5020,25 |

* Longer delivery times possible. Please check with our Sales Department.




## Rotors and accessories for Mikro 220 / 220 R

By Hettich.

| Model | ① 1195-A | ② 1189-A | ③ 1160 | ④ 1016 |
|---|---|---|---|---|
| Max. capacity | 24 x 1.5/2.0 ml | 30 x 1.5/2.0 ml | 6 PCR-Strips | 3 x 50 ml |
| Max. speed | 18 000 rpm | 14 000 rpm | 14 000 rpm | 6000 rpm |
| Max. RCF | 31 514 x g | 21 255 x g | 18 845 x g | 3783 x g |

*Rotor suitable only for Micro 220 R (Art.-No. LE08.1).

**① 24-place microlitre rotor model 1195-A**

- Max. capacity 24 x 1.5/2.0 m centrifuge tubes
- High performance: max. 18 000 rpm, max. RCF 31514 x g

**Delivery incl.** lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 24-place microlitre rotor Model 1195-A | **LE09.1** * | 1 | 437,55 |
| Adapter sleeves for 0.5 ml reaction vials | **Y059.1** * | 6 | 12,70 |
| Adapter sleeves for 0.2 ml reaction vials | **AA67.1** * | 6 | 11,80 |

**② 30-place microlitre rotor for centrifuge tubes model 1189-A**

- Max. capacity 30 x 1.5/2.0 ml centrifuge tubes
- High performance: max. 14 000 rpm, max. RCF 21255 x g

**Delivery incl.** lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 30-place microlitre rotor Model 1189-A | **LE10.1** * | 1 | 548,25 |
| Adapter sleeves for 0.5 ml reaction vials | **Y059.1** * | 6 | 12,70 |
| Adapter sleeves for 0.2 ml reaction vials | **AA67.1** * | 6 | 11,80 |

**③ 6-place angle rotor for PCR-strips type 1160**

- For PCR-tube strips of 6 x 8 centrifuge tubes à 200 µl per strip
- Max. speed 14000 rpm, max. RCF 18845 x g

**Delivery without** lid (please order separately if required).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6-place PCR-strip angle rotorType 1160 | **LE11.1** * | 1 | 533,20 |
| Lid for PCR-strip rotor Type 1160 | **LE12.1** * | 1 | 117,20 |

**④ 6-place angle rotor for PCR-strips type 1016**

- **Rotor only suitable for Mikro 220 R (Art. No. LE08.1)**
- Max. capacity 3 x 50 ml
- Max. speed 6000 rpm, max. RCF 3783 x g

**Delivery without** adapter for vials, please order separately.
Adapters are required to operate.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6-place angle rotor for vials Type 1016 | **LE13.1** * | 1 | 564,40 |

**Adapters for angle rotor type 1016**

| Nominal volume of vial | 15 ml | 15 ml type Falcon® | 50 ml type Falcon® |
|---|---|---|---|
| Number of containers per rotor | 6 | 6 | 3 |
| Adapters required per rotor | 6 | 6 | 3 |
| Max. tube length | 100 mm | 120 mm | 115 mm |
| Max. tube ∅ | 17 mm | 17 mm | 29 mm |
| Shape of bottom | round | conical | conical |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Adapter for 15 ml standard test tubes | **LE14.1** * | 1 | 33,35 |
| Adapter for 15 ml tubes of type Falcon® | **LE15.1** * | 1 | 33,35 |
| Adapter for 50 ml tubes of type Falcon® | **LE16.1** * | 1 | 33,35 |

* Longer delivery times possible. Please check with our Sales Department.

# Microlitre centrifuges



## Microlitre centrifuges MIKRO 200/200 R

By Hettich.

**Standard features for both models:**

- **Max capacity: 24 x 1.5/2.0 ml centrifuge tubes**
- Motor-driven lid lock
- Parameter input via keypad
- Actual value display during run
- Impulse button for quick-run pre-centrifuging
- "Open lid" button
- RCF button
- Safety: lid catch, emergency unlock, motor overheating protection and automatic unbalance switch-off

**Cooling Centrifuge Mikro 200 R**

- Infinitely adjustable from -10 to +40 °C in 1 °C increments
- Pre-cooling function (in 10 to 15 min to +4 °C)
- Stand-by cooling maintains desired temperature
- Cooling automatically switches off when lid is open or after a pre-set time

**Technical specifications:**

| Model | MIKRO 200 classic | MIKRO 200 R cooled |
|---|---|---|
| Maximum rpm speed | 14 000 rpm, adjustable in 100 increments | |
| Minimum rpm speed | 500 rpm | |
| Maximum RCF | 18 626 x g | |
| Operation time | 1 to 99 min / continuous run / short run | |
| Temperature range | - | **-10 °C to +40 °C** |
| Min. Temperature at max. speed | - | +4 °C |
| Dimensions (W x H x D) | 275 x 260 x 347 mm | 281 x 260 x 547 mm |
| Weight | 11.5 kg | 28.5 kg |
| Power supply | 220-240 V, 50/60 Hz | |

**Delivery without** rotor. Please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MIKRO 200 classic | **AA69.1** * | 1 | 1820,00 |
| MIKRO 200 R cooled | **AA70.1** * | 1 | 4440,85 |

## Accessories for MIKRO 200/200 R centrifuges

By Hettich.

**Angle rotor for max 24 centrifuge tubes 1.5 / 2.0 ml**

50° angle, with standard lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Angle rotor for 24 x 1.5/2.0 ml | **AA71.1** * | 1 | 318,20 |

**Aerosol-tight lid, autoclavable**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Lid, aerosol-tight | **AA72.1** * | 1 | 127,95 |

**Reducing bushes**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Adapter sleeves for 0.5 ml reaction vials | **Y059.1** * | 6 | 12,70 |
| Adapter sleeves for 0.2 ml reaction vials | **AA67.1** * | 6 | 11,80 |

**Reducing bush for conical 1.5 ml centrifuge tubes**

Positive reduction, recommended for high-speed centrifuging.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Adapter sleeve, tapered, for 1.5 ml vials | **AA68.1** * | 6 | 12,90 |

* Longer delivery times possible. Please check with our Sales Department.



## Compact PCR plate centrifuge C1000

For 2 PCR plates in 96-well format.

- Suitable for skirted, non-skirted or semi-skirted plates (with/without half frame)
- To prevent soiling inside the rotor, only PCR plates that have been hot-laminated or sealed with film should be used
- PCR plates are inserted vertically into the rotor
- Fast centrifugation of droplets or condensate

**Technical specifications:**

| | |
|---|---|
| Max. speed | 2500 rpm |
| Max. RZB | 500 x g |
| Max. capacity | 2 PCR plates |
| Dimensions (W x D x H) | 190 x 210 x 183 mm |
| Weight | 1.5 kg |
| Voltage | 230 V, 50/60 Hz |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PP33.1** | 1 | 696,60 |

## Adapter for strips and small PCR plates

The adapter's dimensions are identical to those of a standard 96 well PCR plate. Suitable for 0.2 ml PCR tubes, 8 ml PCR reaction vials, 12 ml PCR reaction vials, 24 well PCR plates and 48 well PCR plates.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA20.1** | 2 | 61,30 |



## Haematocrit centrifuge 200

By Hettich. For determining the percentage by volume of erythrocytes in blood.
Haematocrit determination for diagnostic purposes and drug testing.
- Adjustment of time and speed
- Remaining runtime and rotational speed are shown on the display
- Safety: lid locking and holding, imbalance switch-off

**Technical specifications:**

| | |
|---|---|
| Max. speed | 13000 rpm, adjustable in increments of 100 rpm |
| Min. speed | 500 rpm |
| Max. RCF | 16060 x g |
| Operating time | 1 to 99 min / continuous duty / short cycle (pulse key) |
| Dimensions (H x W x D) | 228 x 262 x 352 mm |
| Weight | 10 kg |
| Power supply | 208-240 V, 50/60 Hz |

**Delivery without** haematocrit rotor. Please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANX2.1** | 1 | 1750,10 |

## Rotor for haematocrit centrifuge 200

By Hettich.
**24-tube haematocrit rotor**
- For 24 standard capillary tubes
- Each capillary has its own chamber and is cushioned by holding trays at the outer rim
- Max. speed 13000 rpm max. RCF 16060 x g

**Delivery incl.** lid with integrated evaluation disc.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANX3.1** | 1 | 149,45 |



## Manual centrifuge

By Hettich. With 4-place oscillating rotors for 15 ml centrifuge tubes.
- With clamp device (max. span width approx. 40 mm) for attaching the centrifuge to lab desktops, etc.
- Dimensions: W 140 x D 175 x H 285 mm
- Weight approx. 0.9 kg

**Technical specifications:**

| | |
|---|---|
| Max. capacity | 4 x 15 ml |
| Speed max. | 3000 rpm |
| Max. RCF | 1076 x g |
| Max. tube length | 125 mm |
| Max. tube ∅ | 17 mm |

**Delivery without** oscillating rotor, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Manual centrifuge, without rotor | **EE90.1** | 1 | 143,00 |
| **Accessories:** | | | |
| 4-place oscillating rotor | **EE91.1** | 1 | 129,00 |



❄❄ S

## Rotilabo®-centrifuge tubes

Made of highly transparent **PP**. Lid made of PE. **Sterile** or unsterile. With printed, black graduation. Certified free of nucleases, endotoxins and metals (<1 ppm). Not cytotoxic. Temperature stability: from -80 to +122 °C.

**Without vertical lip, with white labelling area,** centrifugable (fixed angle rotor) max. 17 000 x g (15 ml-vials) resp. 20 000 x g (50 ml-vials).

| Volume (ml) | Design | ∅ x H (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 15 | unsterile | 17 x 120 | 50 in a bag | **N458.1** | 500 | 110,75 |
| 15 | **sterile** | 17 x 120 | 50 in a bag | **N459.1** | 500 | 120,40 |
| 15 | unsterile | 17 x 120 | 25 in a rack | **N460.1** | 500 | 137,60 |
| 15 | **sterile** | 17 x 120 | 25 in a rack | **N461.1** | 500 | 148,35 |
| 50 | unsterile | 29 x 115 | 50 in a bag | **N462.1** | 500 | 131,15 |
| 50 | **sterile** | 29 x 115 | 50 in a bag | **N463.1** | 500 | 144,05 |
| 50 | unsterile | 29 x 115 | 25 in a rack | **N464.1** | 500 | 155,90 |
| 50 | **sterile** | 29 x 115 | 25 in a rack | **N465.1** | 500 | 160,20 |

**With vertical lip, with white labelling area,** centrifugable up to 10 000 x g

| Volume (ml) | Design | ∅ x H (mm) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 50 | unsterile | 29 x 117 | 50 in a bag | **X063.1** | 500 | 156,95 |
| 50 | **sterile** | 29 x 117 | 50 in a bag | **X064.1** | 500 | 183,85 |

# Centrifuges







## CD-0412 small benchtop centrifuge

With 12-slot angle rotor (45°) for centrifuging blood sample vessels, urine test tubes and centrifuge tubes (Falcon type).

- Illuminated display
- Centrifugation time, in rpm or x g
- The timer starts once the selected speed is reached
- Safety: Cover lock, speed monitoring system and protection against overheating

**For use of the following types of vessel:**
- 12 x 15 ml standard test tubes (∅ 17 x L 100 mm)
- 6 x 15 ml Falcon centrifuge tubes (∅ 17 x L 120 mm)
- 12 x 2.7-4.3 ml blood vials (∅ 13 x L 75 mm)
- 12 x 4.5-4.9 ml blood vials (∅ 11 x L 92 mm, ∅ 13 x L 90 mm)
- 12 x 7.5-10 ml blood vials (∅ 15/16 x L 92 mm)
- 12 x 9-10 ml blood vials (∅ 16 x L 92 mm)
- 12 x 9.5-10 ml urine test tubes (∅ 15 x L 100 mm)

**Technical specifications:**

| | |
|---|---|
| Maximum speed | 4500 rpm, adjustable in increments of 100 rpm |
| Minimum speed | 300 rpm |
| Maximum RCF | 2490 x g |
| Operating time | 30 s to 99 min/continuous run function/short cycle (pulse key) |
| Dimensions (W x D x H) | 140 x 255 x 245 mm |
| Weight | 6.7 kg |
| Power supply | 100-240 V, 50/60 Hz |

**Delivery incl.** 12-slot angle rotor, adapter set (socket-∅ inner 16 mm, H 80 mm) and spacers (H 21 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EEE2.1** | 1 | 747,15 |

## EBA 200 and 200 S small centrifuge

By Hettich. For centrifugation of blood and urine samples, clarification of water and soil samples, etc.

**General specifications of both models:**
- Lid can be opened at the touch of a button
- Housing and lid made of impact resistant plastic, metal lid inner
- Overheating protection
- **With 8-tube angle rotor**

For use of the following types of vessel:
- 8 x 15 ml standard test tubes (∅ 17 x L 100 mm)
- 4 x 15 ml centrifuge tubes of type Falcon (∅ 17 x L 120 mm)
- 4 x 8 ml urine test tubes (∅ 16 x L 125 mm)
- 8 x 7.5-10 ml blood collection tubes (∅ 15/16 x L 92 mm)
- 8 x 4.5-4.9 ml blood collection tubes (∅ 11 x L 92 mm, ∅ 13 x L 90 mm)
- 8 x 10 ml blood collection tubes (∅ 15 x L 102 mm)

**Technical specifications:**

| Model | EBA 200 | EBA 200 S |
|---|---|---|
| Max. speed | 6000 rpm, adjustable in increments of 100 rpm | 8000 rpm, adjustable in increments of 100 rpm |
| Min. speed | 500 rpm | |
| Max. RCF | 3461 x g | 6153 x g |
| Operating time | 1 to 99 min / continuous duty / short cycle (pulse key) | |
| Dimensions (H x W x D) | 228 x 262 x 352 mm | |
| Weight | 8 kg | 10 kg |
| Power supply | 208-240 V, 50/60 Hz | |

**Delivery incl.** 8-tube angle rotor for max. capacity 8 x 15 ml.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| EBA 200 | **ANT4.1** | 1 | 1091,15 |
| EBA 200 S | **ANT5.1** | 1 | 2026,40 |

**Accessories:**

| | | | |
|---|---|---|---|
| Adapter type 1054-A for 5/6 ml vials (∅ 12 x L 75/82 mm) | **ANT6.1** | 1 | 19,60 |






## Small centrifuge EBA 270

By Hettich. **With 6-slot oscillating rotor** for centrifuging blood sample vessels, urine test tubes and standard centrifuge tubes.

- Variable speed and cycle time
- Display of parameters during centrifugation
- "Open lid" key for one-touch opening
- Safety: lid lock, emergency lid lock release, imbalance switch-off and metal lid
- Stainless steel centrifuging chamber

**For use of the following types of vessel:**

- 15 ml standard test tubes (∅ 17 x L 100 mm)
- 5/6 ml standard test tubes (∅ 12 x L 75/82 mm)
- 2.6-2.9 ml blood sample vessels (∅ 13 x L 65 mm), 2.7-3 ml (∅ 11 x L 66 mm)
- 4-5.5 ml blood sample vessels (∅ 15 x L 75 mm), 4.5-5 ml (∅ 11 x L 92 mm), 4.9 ml (∅ 13 x L 90 mm), 7.5-8.5 ml (∅ 15 x L 92 mm), 9-10 ml (∅ 16 x L 92 mm), 10 ml (∅ 15 x L 102 mm)
- 1.6-5 ml urine test tubes (∅ 13 x L 75 mm), 4.5-7 ml (∅ 13 x L 100 mm), 4-7 ml (∅ 16 x L 75 mm), 8.5-10 ml (∅ 16 x L 100 mm)

**Technical specifications:**

| | |
|---|---|
| Max. speed | 4000 rpm, adjustable in increments of 100 rpm |
| Min. speed | 500 rpm |
| Max. RCF | 2254 x g |
| Operating time | 1 to 99 min 59 sec / continuous or intermittent duty |
| Dimensions (W x D x H) | 326 x 389 x 239 mm |
| Weight | 13 kg |
| Mains connection | 208-240 V, 50/60 Hz |

**Delivery incl.** 6-slot oscillating rotor (90), 6 sleeves with hole ∅ 17.5 x L 80 mm and 6 sleeves with hole-∅ 17.5 x L 50 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PH35.1** | 1 | 1175,00 |

## Medifuge small benchtop centrifuge with 2-in-1 hybrid rotor

By Thermo. With eight-slot hybrid rotor for centrifuging blood sample vessels, urine test tubes and standard centrifuge tubes. Depending on whether fixed-angle buckets (45°) or swing-out buckets (90°) are used in the rotor, various types of centrifugation are possible. Mixed bucket configurations (fixed-angle and swing-out buckets) are also possible.

- Centrifugation time, variably adjustable in rpm or x g
- Memory for four programs with one-touch button
- Three braking profiles – standard, soft and brake off

For using the following vessel types:

**Fixed-angle buckets**

- 8 x 15 ml centrifuge tubes, Falcon type (∅ 17 x L 120 mm)
- 8 x 15 ml standard test tubes (∅ 17 x L 100 mm)
- 8 x 6/12/15 ml glass tubes (∅ 12/16 x L 100/125 mm)
- 8 x 1.2-4.3 ml blood vials (∅ 8-13 x L 66/75 mm)
- 8 x 4.5-4.9 ml blood vials (∅ 11 x L 92 mm/∅ 13 x L 90 mm )
- 8 x 7.5-10 ml blood vials (∅ 15/16 x L 92 mm)
- 8 x 9-10 ml blood vials (∅ 16 x L 92 mm)
- 8 x 9.5-10 ml urine test tubes (∅ 15 x L 100 mm)

**Swing-out buckets**

- 8 x 15 ml standard test tubes (∅ 17 x L 100 mm)
- 8 x 6/12/15 ml glass tubes (∅ 12/16 x L 100 mm)
- 8 x 1.2-4.3 ml blood vials (∅ 8-13 x L 66/75 mm)
- 8 x 4.5-4.9 ml blood vials (∅ 11 x L 92 mm, ∅ 13 x L 90 mm )
- 8 x 7.5-10 ml blood vials (∅ 15/16 x L 92 mm)
- 8 x 9-10 ml blood vials (∅ 16 x L 92 mm)
- 8 x 9.5-10 ml urine test tubes (∅ 15 x L 100 mm)

**Technical specifications:**

| | |
|---|---|
| Maximum speed | 4900 rpm, adjustable in increments of 100 rpm |
| Minimum speed | 300 rpm |
| Maximum RCF | Fixed-angle bucket: 3114 x g<br>Swing-out bucket: 3490 x g |
| Operating time | 1-99 min/continuous run function/short cycle (pulse key) |
| Dimensions (W x D x H) | 241 x 325 x 450 mm |
| Power requirement | 130 W |
| Weight | 15.5 kg |
| Power supply | 220-230 V, 50/60 Hz |

**Delivery incl.** DualSpin™-rotor with fixed-angle and swing-out bucket set (each with eight fixed-angle and swing-out buckets) and adapter set for various vessels.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EEE1.1** | 1 | 1119,00 |

# Centrifuges




NEU
NOUVEAU
NEW

## Benchtop centrifuge Frontier FC 5706

By Ohaus. For sample preparation and sedimentation of cells, yeasts, bacteria, etc.

- Optional display of rpm or x g
- Backlit LCD display
- Depending on the rotor, suitable for max. 6 x 50 ml centrifuge tubes of type Falcon® or 12 x 15 ml standard tubes
- Lid with locking system
- Unbalance sensor

**Technical specifications:**

| | |
|---|---|
| Max. speed | 6000 rpm, adjustable in increments of 50 rpm |
| Min. speed | 200 rpm |
| Max. RZB (in angle rotor) | 4427 x g |
| Operating time | 10 secs to 99 h, 99 min, 99 secs or continuous operation |
| Dimensions (W x D x H) | 291 x 392 x 266 mm |
| Weight | 10.5 kg |
| Power supply | 230 V, 50/60 Hz |

**Delivery without** rotor (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HNP6.1** | 1 | 1180,00 |

## Accessories for benchtop centrifuge Frontier FC 5706

① **12-fold angle rotor (32°), type 1520 for 15 ml tubes**
For 12 standard tubes, 15 ml with round base (∅ 17 x L 100 mm, max. RZB 4427 x g) or with optional adapter for reaction vials.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12-fold angle rotor, type 1520 | **HNP7.1** | 1 | 287,00 |

**Adapter for 12-tube angle rotor type 1520**

| | | | |
|---|---|---|---|
| Vessel nominal volume (ml) | 7 | 5 | 1.5/2.0 |
| Required number of adapters per rotor | 12 | 12 | 12 |
| Max. vessel length (mm) | 100 | 65 or 75 | 42 |
| Max. vessel ∅ (mm) | 13 | 13 | 11 |
| Max. RCF | 4265 x g | 3621 x g | 3058 x g |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Adapter for 7 ml vessels | **HNP8.1** | 2 | 41,00 |
| Adapter for 5 ml reaction vials | **HNP9.1** | 2 | 37,00 |
| Adapter for 1.5/2.0 ml reaction vials | **HNT0.1** | 6 | 69,00 |

## Accessories for benchtop centrifuge Frontier FC 5706

② **6-fold angle rotor (40°), type 5015 for 50 ml tubes**
For 6 centrifuge tubes, 50 ml, type Falcon® (∅ 30 x L 115 mm, max. RZB 4427 x g) or with optional adapter for 15 ml centrifuge tubes, type Falcon®.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6-fold angle rotor, type 5015 | **HNT1.1** | 1 | 503,00 |

**Adapter for 6-tube angle rotor type 5015**

| | | | |
|---|---|---|---|
| Vessel nominal volume (ml) | 30 | 15 | 15, Type Falcon® |
| Required number of adapters per rotor | 6 | 6 | 6 |
| Max. vessel length (mm) | 95 or 100 | 100 or 105 | 120 |
| Max. vessel ∅ (mm) | 25 | 17 | 17 |
| Bottom shape | Round | Round | Conical |
| Max. RCF | 4306 x g | 4225 x g | 4185 x g |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Adapter for 30-ml vessels | **HNT2.1** | 2 | 86,00 |
| Adapter for 15 ml standard test tubes | **HNT3.1** | 2 | 86,00 |
| Adapter for 15 ml tubes of type Falcon® | **HNT4.1** | 2 | 60,00 |






## Benchtop centrifuge Rotofix 32 A

By Hettich. For sample preparation in research and industrial laboratories.

**Design:**
- Display of actual status during run
- Window in lid
- Automatic rotor recognition
- Optional display of rpmor x g
- Metal casing and lid are covered with a blow/scratchproof coating
- Safety: lid locking device and tumbler, unbalance switch-off, emergency unlocking device

**Technical specifications:**

| | |
|---|---|
| Max. speed (in angular rotor) | 6000 rpm |
| Min. speed | 500 rpm |
| Max. RCF (in angular rotor) | 4146 x g |
| Setting range | in steps of 100 |
| Operation time | 1 to 99 min / continuous operation / button for short run |
| Dimensions (W x D x H) | 366 x 430 x 257 mm |
| Weight | 25 kg |

**Delivery without** rotor, please order separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Table centrifuge Rotofix 32 A | **EC34.1** * | 1 | 1894,15 |

## Accessories for Rotofix 32 A

By Hettich.

① **12-place fixed angle rotor type 1613 for 15 ml vials**
For 12 standard 15 ml vials with round base (∅ 17 x L 100 mm) or 6 centrifuge tubes 15 ml (∅ 17 x L 120 mm) with conical base. Max. speed 6000 rpm, max. RCF 4146 x g.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 12-place angular rotor Type 1613 | **EC35.1** * | 1 | 306,40 |

② **8-place swinging bucket rotor type 1617 (45°) for 15/50 ml centrifuge tubes**
For 50 ml centrifuge tubes with conical base (∅ 29 x L 115 mm). An additional adapter is required for 15 ml centrifuge tubes (∅ 17 x L 120 mm), please order separately. Max. speed 4000 rpm, max. RCF 2469 x g.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 8-place oscillating rotor Type 1617 | **EC36.1** * | 1 | 599,85 |
| Adapter for centrifuge tubes 15 ml | **EC37.1** * | 1 | 21,50 |

③ **4-place swinging bucket rotor type 1624 (90°) for tube beaker**
For attaching 4 tube beakers. Max. speed 4000 rpm, max. RCF 2308 x g. Please order tube beakers separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4-place oscillating rotor Type 1624 | **EC38.1** * | 1 | 338,65 |

**Tube beaker for standard 15 ml tubes**
For centrifuging standard 15 ml tubes (∅ 17 x L 100 mm) with round base. Number of tubes: 4 tubes per beaker, 16 tubes per rotor. 4 tube beakers are required when working with swinging bucket rotor Type 1624.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Tube beaker for rotor Type 1624 | **EC39.1** * | 1 | 34,40 |

* Longer delivery times possible. Please check with our Sales Department.





## EBA 280 small centrifuge

By Hettich. Centrifugation of water and soil samples as well as sedimentation of cells, yeasts, bacteria, etc.
- Programmable control system with 10 memory slots
- Adjustment of centrifuging time, rpm or RCF
- Input of start and stop times in increments from 1 to 9
- Safety: lid locking and holding, emergency lid lock release

**Technical specifications:**

| | |
|---|---|
| Max. speed | 6000 rpm, adjustable in increments of 100 rpm |
| Min. speed | 500 rpm |
| Maximum RCF (in rotor type 1226) | 3703 x g |
| Operating time | 1 to 99 min / continuous duty / short cycle (pulse key) |
| Dimensions (H x W x D) | 242 x 326 x 389 mm |
| Weight | 11 kg |
| Power supply | 200-240 V, 50/60 Hz |

**Delivery without** rotor. Please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANT7.1** | 1 | 2223,10 |

## Rotor and accessories for EBA 280

**6-tube angle rotor (35°) type 1137**
- Max. capacity 6 x 50 ml
- Max. speed 6000 rpm max. RCF 3703 x g
- Rotor is suitable for 6 x 50 ml standard test tubes (∅ 34 x L 100 mm) without adapter
- If an adapter is required for standard, Falcon® or Oak-Ridge-tubes, please order separately

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 6-tube angle rotor (35°) type 1137 | **ANT8.1** | 1 | 546,10 |

**Adapter for 6-tube angle rotor type 1137**

| Nominal capacity of vessel | 7 ml | 15 ml | 25 ml | 15 ml type Falcon® |
|---|---|---|---|---|
| Number of vessels per rotor | 18 | 6 | | |
| Required number of adapters per rotor | 6 | 6 | | |
| Max. vessel length (mm) | 100 | 100 | 100 | 120 |
| Max. vessel ∅ (mm) | 12 | 17 | 24 | 17 |
| Bottom shape | round | round | round | conical |

| Nominal capacity of vessel | 50 ml type Falcon® | 30 ml type Oak-Ridge | 50 ml type Oak-Ridge |
|---|---|---|---|
| Number of vessels per rotor | 3 | 6 | |
| Required number of adapters per rotor | 3 | 6 | |
| Max. vessel length (mm) | 115 | 95 | 107 |
| Max. vessel ∅ (mm) | 29 | 26 | 29 |
| Bottom shape | conical | round | round |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Adapter for 7 ml standard test tubes | **ANT9.1** | 1 | 36,05 |
| Adapter for 15 ml standard test tubes | **LE14.1** * | 1 | 33,35 |
| Adapter for 25 ml standard test tubes and for 30 ml tubes of type Oak-Ridge | **ANX0.1** | 1 | 36,05 |
| Adapter for 15 ml tubes of type Falcon® | **LE15.1** * | 1 | 33,35 |
| Adapter for 50 ml tubes of type Falcon® | **LE16.1** * | 1 | 33,35 |
| Adapter for 50 ml tubes of type Oak-Ridge | **ANX1.1** | 1 | 36,05 |

* Longer delivery times possible. Please check with our Sales Department.

# Centrifuges




## Benchtop centrifuges Universal 320 / 320 R

By Hettich.

**General specifications for both models**

- Short accelerating and breaking times
- It is possible to select between 9 breaking and accelerating intervals or a brakeless run-out
- Memory capacity for 10 programs
- Automatic rotor recognition
- Optional display of rpm or x g upon entry of rotor radius
- Simple rotor change
- Window in lid
- Metal housing
- Security: emergency unlocking device, motor overheating protections, unbalance switch-off

**Cooling centrifuge Universal 320 R cooled**

- Infinitely variable from -20 to +40 °C in 1 °C-increments
- Precooling function

**Technical specifications:**

| Model | Universal 320 classic | Universal 320 R cooled |
|---|---|---|
| Max. speed (in microlitre rotor) | 15 000 rpm, adjustable to steps of 10 | |
| Min. speed | 500 rpm | |
| Max. RCF (in microlitre rotor) | 21 382 x g | |
| Min. RCF | 24 x g | |
| Operation time | 1 to 99 min, continuous run, impulse key | |
| Temperature range | - | -20 to +40 °C |
| Dimensions (W x D x H) | 395 x 520 x 346 mm | 401 x 695 x 346 mm |
| Weight | 29 kg | 52 kg |
| Power supply | 220-240 V, 50/60 Hz | |

**Delivery without** rotor (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Universal 320 classic | **EC40.1** * | 1 | 3034,75 |
| Universal 320 R cooled | **EC41.1** * | 1 | 5751,25 |

* Longer delivery times possible. Please check with our Sales Department.

▶ More rotors and adapters are available upon request!




## Rotors and accessories for Universal 320 / 320 R

By Hettich.

| Type | ① 1420 | ② 1617 | ③ 1460/1453 | ④ 1494 |
|---|---|---|---|---|
| Max. capacity | 24 x 1.5/2.0 ml | 8 x 50 ml | 8 MT-plates | 4 x 50 ml |
| Speed max. | 15 000 rpm | 5000 rpm | 4000 rpm | 5000 rpm |
| Max. RCF | 21 382 x g | 3875 x g | 2218 x g | 4165 x g |

① **Microlitre rotor type 1420**

- Max. capacity 24 x 1.5/2.0 ml
- High performance: max. 15 000 rpm, max. RCF 21382 x g

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Microlitre rotor Type 1420 | **EC42.1** * | 1 | 401,00 |

② **8-place oscillating rotor type 1617 (45°) for centrifuge tubes 15/50 ml**

For 8 conical 50 ml centrifuge tubes (∅ 29 x L 115 mm).
An additional adapter will be required for centrifuge tubes 15 ml (∅ 17 x L 120 mm), (please order separately).
Max. speed 5000 rpm, max. RCF 3875 x g.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 8-place oscillating rotor Type 1617 | **EC36.1** * | 1 | 599,85 |
| Adapter for centrifuge tubes 15 ml | **EC37.1** * | 1 | 21,50 |

③ **2-place oscillating rotor for microtiter plates type 1460/1453**

- Incl. 2 hangers for 8 microtiter plates (L 128 x W 86 x H 15 mm)
- Max. speed 4000 rpm, max. RCF 2218 x g

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2-place oscillating rotor Type 1460/1453 | **EC43.1** * | 1 | 1140,60 |

④ **4-place oscillating rotor type 1494 (90°) for vials**

- Max. capacity 4 x 50 ml
- Max. speed 5000 rpm, max. RCF 4165 x g

**Delivery without** insertion beaker and adapter for vials (please order separately). 4 insertion beakers and the designated adapter are required to operate.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4-place oscillating rotor type 1494 | **EC44.1** * | 1 | 498,80 |
| Insertion beaker type 1427 for rotor type 1494 | **EC45.1** * | 1 | 176,30 |

**Adapter for insertion beaker**

| Nominal volume of vial | 15 ml | 15 ml Type Falcon® | 50 ml Type Falcon® |
|---|---|---|---|
| Max. vials per adapter | 6 | 1 | 1 |
| Number of containers per rotor | 24 | 4 | 4 |
| Max. tube length | 100 mm | 120 mm | 115 mm |
| Max. tube ∅ | 17 mm | 17 mm | 29 mm |
| Base shape | round | conical | conical |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Adapters for 15 ml-tubes | **EE32.1** * | 1 | 59,70 |
| Adapter for 15 ml-vials Type Falcon® | **EC46.1** * | 1 | 77,95 |
| Adapter for 50 ml-vials Type Falcon® | **EC47.1** * | 1 | 122,55 |

* Longer delivery times possible. Please check with our Sales Department.




## Benchtop centrifuges Heraeus Megafuge 8-series

By Thermo.

**General specifications of both models:**

- 2 profiles configurable for fast or gentle acceleration and deceleration times
- Optional display of revolutions in rpm or x g
- Safe rotor-changing at the touch of a button (without additional tools) for quick changeover between various applications and easy cleaning
- 3 program memory with one-touch key, with naming option
- Direct, brushless induction motor
- Illuminated display
- Text messages in various languages: German, English, French, Spanish, Russian, Italian and Dutch
- **Annual inspection acc. to BGR 500 recommended**

**Megafuge 8R cooling centrifuge**

- Infinitely adjustable from -10 to +40 °C in increments of 1 °C
- Precool function

**Technical specifications:**

| Model | Megafuge 8 | Megafuge 8R |
|---|---|---|
| Max. speed (in microlitre rotor) | 14 000 rpm adjustable in increments of 100 | |
| Min. speed (rpm) | 300 | |
| Max. RCF (in microlitre rotor) | 21 693 x g | |
| Min. RCF | 10 x g | |
| Max. runtime | 9 h 99 min / continuous operation / Quick Run | |
| Temperature adjustment range (°C) | - | -10 to +40 |
| Dimensions W x D x H (mm) | 370 x 480 x 310 | 460 x 670 x 320 |
| Weight (kg) | 35 | 71 |
| Power supply | 230 V, 50/60 Hz | |

**Delivery without** rotor (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Megafuge 8 | **NN26.1** * | 1 | 2116,00 |
| Megafuge 8R | **APT4.1** * | 1 | 4988,00 |

* Longer delivery times possible. Please check with our Sales Department.




## Rotors and accessories for Megafuge 8

**Technical specifications:**

| Type | ① TX-150 | ② MicroClick | ③ M-10 | ④ HIGHConic III |
|---|---|---|---|---|
| Max. capacity (ml) | 8 x 50 | 30 x 1.5/2.0 | 4 MT plates | 6 x 50 |
| Max. speed (rpm) | 4500 | 14 000 | 4400 | 8700 |
| max. RCF (x g) | 3260 | 21 693 | 2576 | 10 155 |

① **Oscillating rotor TX-150 (90°) - cell culture kit**

For centrifuging 15 ml or 50 ml vials of the type Falcon®.

- Max. capacity 8 x 50 ml
- Max. speed 4500 rpm max. RCF 3260 g

**Delivery incl.** 4 oval beakers suitable for 8 50 ml vials of the type Falcon® (no adapter required) and 8 adapters for 15 ml vials of the type Falcon®.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Oscillating rotor TX-150, cell culture kit | **NN27.1** * | 1 | 1969,00 |

② **30-place microlitre rotor MicroClick (45°)**

for 30 x 1.5/2 ml reaction vials

- Max. capacity 30 x 1.5 / 2.0 ml
- Max. speed 14 000 rpm max. RCF 21 693 x g

**Delivery incl.** aerosol-tight lid.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| MicroClick microlitre rotor | **NN28.1** * | 1 | 996,00 |
| Adapter sleeves for 0.5 ml reaction vials | **NN29.1** * | 30 | 195,00 |
| Adapter sleeves for 0.2 ml reaction vials | **NN30.1** * | 30 | 195,00 |

③ **Microtitration plate rotor M-10**

- For 4 standard microtiter plates or 2 deepwell plates
- Max. speed 4400 rpm max. RCF 2576 x g
- **An M-10 rotor and two open carriers are required for operation (please order both products separately)**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Microtitration plate rotor M-10 | **NN31.1** * | 1 | 1105,00 |
| Open carrier | **NN32.1** * | 2 | 608,00 |

④ **Fixed angle rotor HIGHConic III (45°)**

- Max. capacity 6 x 50 ml
- Max. speed 8700 rpm max. RCF 10 155 x g
- Rotor is suitable for 50 ml vials of the type Falcon® **without adapter**

**Delivery incl.** aerosol-tight screw cap.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fixed angle rotor HIGHConic III | **NN33.1** * | 1 | 1660,00 |

**Adapter for fixed angle rotor HIGHConic III**

| Nominal capacity of vessel | 15 ml type Falcon® | 16 ml tubes | 1.5/2.0 ml reaction vials |
|---|---|---|---|
| Number of vessels per rotor | 6 | | 12 |
| Required number of adapters per rotor | 6 | | |
| Max. vessel length (mm) | 123 | | 11 |
| Max. vessel ∅ (mm) | 17 | 18 | 40 |
| Bottom shape | Conical | Round | Conical |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Adapter for 15 ml type Falcon® vessels | **NN34.1** * | 6 | 379,00 |
| Adapter for 16 ml round bottom tubes | **NN35.1** * | 6 | 379,00 |
| Adapter for 1.5/2.0 ml reaction vials | **NN36.1** * | 6 | 379,00 |

* Longer delivery times possible. Please check with our Sales Department.

# Centrifuges



## Benchtop centrifuges Megafuge 16/16R

By Thermo.

**General specifications of both models**:

- 6 program presets with speed buttons
- Multilingual display of programming steps, run conditions, alarms and servicing information
- Selection of 9 acceleration profiles and 10 braking profiles
- Optional display of revolutions in rpm or x g
- **Easy** tool-less fitting and changing of rotors with a single push of a button
- **Electronic** imbalance detection
- Motor-operated lid lock
- **Annual inspection acc. to BGR 500 recommended**

**Megafuge 16R cooling centrifuge**

- Infinitely adjustable from -10 to +40 °C in increments of 1 °C
- Precool function

**Technical specifications:**

| Model | Megafuge 16 | Megafuge 16R |
|---|---|---|
| Max. speed (in microlitre rotor) | 15200 rpm adjustable in increments of 100 | |
| Min. speed | 300 rpm | |
| Max. RCF (in microlitre rotor) | 25830 x g | |
| Min. RCF | 17 x g | |
| Max. runtime | 1 min to 9 h, 99 min / continuous operation / Quick-Run | |
| Temperature adjustment range | - | -10 to +40 °C |
| Dimensions H x W x D (mm) | 360 x 440 x 605 | 360 x 623 x 605 |
| Weight (kg) | 57.5 | 91.5 |
| Power supply | 230 V, 50/60 Hz | |

**Delivery without** rotor (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Megafuge 16 | **XP77.1** * | 1 | 3487,00 |
| Megafuge 16 R | **XP78.1** * | 1 | 5826,00 |

* Longer delivery times possible. Please check with our Sales Department.




## Rotors and accessories for Megafuge 16/16R

By Thermo.

| Type | ① TX-400 (90°) | ② Micro 30 x 2 | ③ M-20 |
|---|---|---|---|
| Max. capacity (ml) | 4 x 400 | 30 x 1.5/2.0 | 6 MT plates |
| Max. speed (rpm) | 5000 | 15200 | 4000 |
| Max. RCF | 4696 x g | 25830 x g | 2272 x g |

① **Oscillating rotor TX-400 (90°)**

- Max. capacity 4 x 400 ml
- Max. speed 5000 rpm max. RCF 4696 x g
- **Delivery without** round cup, lid and adapter for tubes (please order separately). 4 round cups and 4 adapters are required for operation.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Oscillating rotor TX-400 | **XP79.1** * | 1 | 1344,00 |
| Round cup for TX-400 | **XP80.1** * | 4 | 1204,00 |
| ClickSeal lid for round cups | **XP81.1** * | 4 | 333,00 |

**Adapter for oscillating rotor TX-400**

| Nominal capacity of vessel | 15 ml type Falcon® | 50 ml type Falcon® | 25 ml universal tubes | 250 ml type Nalgene® Oak Ridge bottle |
|---|---|---|---|---|
| Number of vessels per rotor | 36 | 16 | 12 | 4 |
| Required number of adapters per rotor | 4 | | | |
| Max. vessel length (mm) | 121 | 116 | 110 | 135 |
| Max. vessel ∅ (mm) | 17 | 29.5 | 25 | 62 |
| Bottom shape | Conical | | Round | |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Adapter for 15 ml type Falcon® vessels | **XP82.1** * | 4 | 338,00 |
| Adapter for 50 ml type Falcon® vessels | **XP83.1** * | 4 | 338,00 |
| Adapter for 25 ml universal tubes | **XP84.1** * | 4 | 340,00 |
| Adapter for 250 ml Oak Ridge bottle | **XP85.1** * | 4 | 339,00 |

② **30-place angle rotor for 30 x 1.5/2.0 ml Micro reaction vials**

- **Aerosol tight**
- Max. capacity 30 x 1.5/2.0 ml
- High performance: max. 15200 rpm max. RCF 25830 x g
- **Delivery incl.** aerosol-tight lid

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Microlitre rotor type 30 x 2 | **XP86.1** * | 1 | 1008,00 |
| Reducing sleeves for 0.5 ml centrifuge tubes | **X118.1** * | 24 | 153,00 |
| Reducing sleeves for 0.2 ml centrifuge tubes | **X121.1** * | 24 | 153,00 |

③ **Microtitration plate rotor M-20**

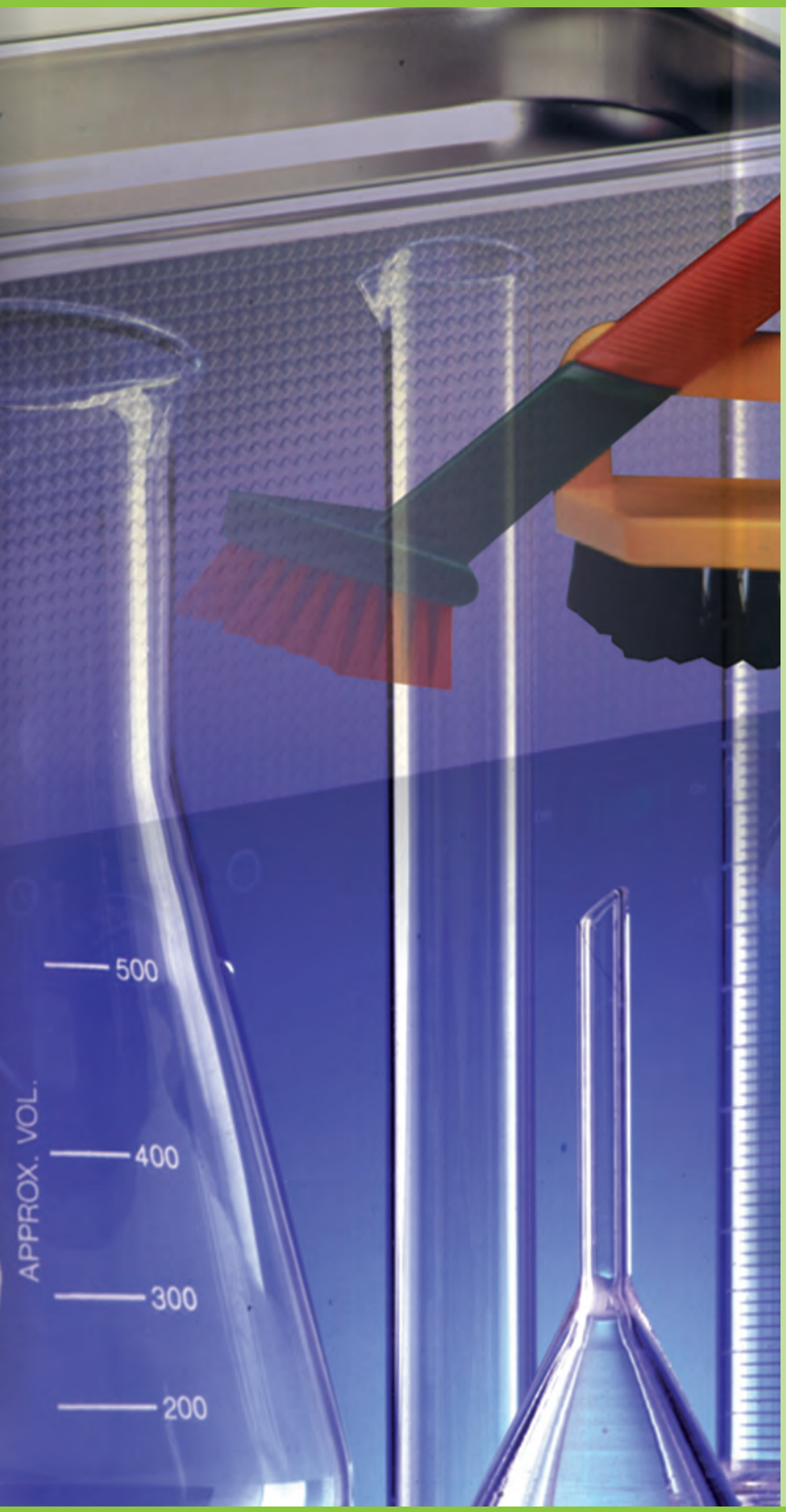
- For 2 x 3 standard microtitration plates or 2 x 1 deepwell plates
- Max. speed 4000 rpm max. RCF 2272 x g
- Max. H 65 mm
- **Delivery incl.** 2 supports and 2 adapters, but without lid (if a lid is required, an additional support set with lid must be ordered separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Microtitration plate rotor M-20 | **XP89.1** * | 1 | 1473,00 |

**Aerosol tight support set with lid for microtitration plate rotor M-20**
Microtitration plates max. H 45 mm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Aerosol-tight support set | **XP90.1** * | 2 | 834,00 |

* Longer delivery times possible. Please check with our Sales Department.




# Cleaning, Care & Aids


| | |
|---|---|
| Adhesive- and isolation tapes | 1144 |
| Adhesives | 1142 |
| Anti-static spray | 1124 |
| APIEZON®-lubricants and waxes | 1139 |
| Bench-Top protection paper | 1130 |
| Boiling chips | 1148 |
| Brushes, cleaning utensils | 1132 |
| Casting resins, epoxides | 1143 |
| Cleaning agents (floor, glass and stainless steel) | 1119 |
| Descaler | 1119 |
| Disinfectants for instruments | 1112 |
| Disinfecting agents | 1112 |
| Disinfecting agents for surfaces | 1113 |
| Floor mops | 1135 |
| Gasleak detectors | 1146 |
| Glass beads / Beads® | 1148 |
| Heating bath fluids | 1147 |
| Label remover | 1121 |
| Magnesia scoops and rods | 1148 |
| neodisher® for laboratory dishwashers | 1108 |
| Office cleaning agents | 1125 |
| Preservatives (wood, metal, etc.) | 1141 |
| Release agents | 1141 |
| RBS® for laboratory dishwashers | 1106 |
| Sealing agents | 1145 |
| Sealing agents / greases | 1138 |
| Solvents | 1121 |
| Sprays | 1122 |
| Universal cleaners RBS® | 1104 |
| Ultrasonic baths and accessories | 1094 |
| Ultrasonic cleaners | 1107 |
| Vacuum cleaners | 1136 |
| Water bath preservatives | 1119 |
| Wipes | 1126 |
| Wipes / cellulose tissues | 1126 |

# Ultrasonic baths




## Mini ultrasonic cleaning unit

For cleaning spectacles, instruments and other small parts.
Plastic housing with oscillating tray made of stainless steel 1.4301.

- Timer (1, 3, 5, 7 or 9 min selectable)
- Operating frequency approx. 42 kHz

**Technical specifications:**

| | |
|---|---|
| Capacity | 0.5 l |
| Outer dimensions (L x W x H) | 193 x 120 x 123 mm |
| Inner dimensions of tank (L x W x H) | 160 x 90 x 50 mm |
| Inner dimensions of perforated basket (L x W x H) | 140 x 70 x 40 mm |
| Ultrasonic output | 40 W |
| Power supply | 220-240 V, 50/60 Hz |

**Delivery incl.** cover and basket made of plastic.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXH1.1** | 1 | 55,90 |




## Mini ultrasonic cleaning unit

For cleaning small parts. Vibration tank and housing made of stainless steel 1.4301. Power supply 220-240 V, 50/60 Hz.

- Timer 1-60 min or continuous operation
- Operating frequency approx. 40 kHz

**Technical specifications:**

| | |
|---|---|
| Capacity | 0.7 l |
| Outer dimensions (L x W x H) | 175 x 110 x 175 mm |
| Inner dimensions of tank (L x W x H) | 150 x 85 x 65 mm |
| Inner dimensions of perforated basket (L x W x H) | 145 x 80 x 55 mm |
| Ultrasonic output | 60 W |

**Delivery incl.** cover and perforated basket made of stainless steel.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLL4.1** | 1 | 138,70 |




## Mini ultrasonic cleaning unit with heater

For cleaning small parts.
Vibration tank and housing made of stainless steel 1.4301.
Power supply 220-240 V, 50/60 Hz.

- Timer 1-15 min or continuous operation
- Heating is adjustable up to approx. 80 °C
- Operating frequency approx. 45 kHz

**Technical specifications:**

| | |
|---|---|
| Capacity | 0.8 l |
| Outer dimensions (L x W x H) | 200 x 110 x 160 mm |
| Inner dimensions of tank (L x W x H) | 180 x 90 x 50 mm |
| Inner dimensions of perforated basket (L x W x H) | 178 x 85 x 40 mm |
| Ultrasonic output | 60 W |
| Heating capacity | 120 W |

**Delivery incl.** cover and perforated basket made of stainless steel.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLL5.1** | 1 | 186,00 |

# Ultrasonic baths




## Ultrasonic cleaning units H-series

Compact universal cleaning units for cleaning laboratory utensils, allowing faster dissolution and degassing of fluids.
Vibration tank and housing made of stainless steel1.4301.
Mains connection 220-240 V, 50/60Hz.

**Features:**
- Timer 1-60 min or continuous operation
- Heating is adjustable up to approx. 80 °C
- Operating frequency approx. 45 kHz
- Models H 30 to H 120 with outlet

**Technical specifications:**

| Model | Capacity (l) | Inner dimensions of tank L x W x H (mm) | Outer dimensions L x W x H (mm) | Heating output (W) | Ultrasonic output (W) |
|---|---|---|---|---|---|
| **H 22** | 1.65 | 240 x 140 x 65 | 300 x 170 x 225 | 150 | 120 |
| **H 30** | 2.6 | 240 x 140 x 100 | 300 x 165 x 225 | 180 | 180 |
| **H 40** | 3.55 | 300 x 150 x 100 | 330 x 175 x 225 | 200 | 240 |
| **H 60** | 5.3 | 300 x 150 x 150 | 330 x 175 x 290 | 250 | 240 |
| **H 120** | 9 | 500 x 135 x 150 | 600 x 165 x 355 | 350 | 300 |

**Delivery incl.** cover and perforated basket made of stainless steel.

| Model | Volume (l) | Inner dimensions of perforated basket L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| H 22 | 1,65 | 220 x 120 x 50 | **CPK5.1** | 1 | 299,95 |
| H 30 | 2,6 | 220 x 120 x 60 | **CPK6.1** | 1 | 435,40 |
| H 40 | 3,55 | 280 x 140 x 85 | **CPK7.1** | 1 | 532,15 |
| H 60 | 5,3 | 285 x 140 x 135 | **CPK8.1** * | 1 | 643,95 |
| H 120 | 9 | 480 x 120 x 135 | **CPK9.1** * | 1 | 978,25 |

* Longer delivery times possible. Please check with our Sales Department.




## Digital ultrasonic cleaning units, D-series

High-performance universal cleaning units with digital display for cleaning laboratory utensils, allowing faster dissolution and degassing of fluids.
Vibration tank and housing made of stainless steel 1.4301.
Mains connection 220-240 V, 50/60 Hz.

**Features:**
- Timer 1-30 min or continuous operation
- Heating is adjustable up to approx. 80 °C
- Power control 50/100 %
- Sweep technology
- Degas function
- Operating frequency approx. 40 kHz
- Models D 30 to D 280 with outlet

**Technical specifications:**

| Model | Capacity (l) | Inner dimensions of tank L x W x H (mm) | Outer dimensions L x W x H (mm) | Heating output (W) | Ultrasonic output (W) |
|---|---|---|---|---|---|
| **D 20 Q** | 1.55 | 150 x 140 x 100 | 175 x 165 x 225 | 60 | 80 |
| **D30** | 2.6 | 240 x 140 x 100 | 265 x 165 x 225 | 120 | 160 |
| **D40** | 3.55 | 300 x 150 x 100 | 330 x 175 x 225 | 120 | 160 |
| **D60** | 5.3 | 300 x 150 x 150 | 330 x 175 x 290 | 120 | 240 |
| **D130** | 13.0 | 300 x 240 x 200 | 330 x 270 x 355 | 200 | 400 |
| **D280** | 28.0 | 500 x 300 x 200 | 530 x 330 x 360 | 300 | 640 |

**Delivery incl.** cover and perforated basket made of stainless steel.

| Model | Volume (l) | Inner dimensions of perforated basket L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| D 20 Q | 1,55 | 125 x 120 x 60 | **CPL0.1** | 1 | 327,90 |
| D 30 | 2,6 | 220 x 120 x 85 | **CPL1.1** | 1 | 585,90 |
| D 40 | 3,55 | 280 x 140 x 85 | **CPL2.1** | 1 | 751,45 |
| D 60 | 5,3 | 280 x 135 x 135 | **CPL3.1** * | 1 | 848,20 |
| D 130 | 13,0 | 280 x 225 x 180 | **CPL5.1** * | 1 | 1682,40 |
| D 280 | 28,0 | 480 x 290 x 190 | **CPL6.1** * | 1 | 2080,15 |

* Longer delivery times possible. Please check with our Sales Department.

# Ultrasonic baths




## Ultrasonic compact baths

By Bandelin.

- Power supply 230 V, 50/60 Hz
- Robust stainless steel shell
- Unit frequency 35 kHz
- Protected against drips and splashes
- For intensive and gentle cleaning of glassware, metal parts, electronic components, instruments etc.
- For degassing liquids
- For accelerating slurry processes
- For manufacturing emulsions

① **SONOREX SUPER ultrasonic compact baths**

- Timer 1 to 15 min or continuous run
- Type "H"-units with heating 30-80 °C, can be set in 5°-increments (except Type RK 31 H: Heating cannot be adjusted but is permanently set at 65 °C)

② **SONOREX DIGITEC ultrasonic compact baths**

- Membrane keypad with clear symbols
- Timer 1 to 30 min or continuous run
- "H"-units with heating 20 to 80 °C, adjustable in 5°-increments
- Safety switch-off after 12 h
- LED-display for temperature and heating phase
- Warning-LED for excess temperature
- Degas - function can be activated

① **SONOREX SUPER ultrasonic compact baths**

**Delivery without** perforated basket and lid (optional) (please order separately).

| Type | Volume (l) | Tubs-inner dimensions L x W x H (mm) | Unit-outer dimensions L x W x H (mm) | Maximum output (W) | HF-effective output (W) | Drainage - ball stop-cock | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|---|
| **RK 31** | 0,9 | 190 x 85 x 60 | 205 x 100 x 155 | 240 | 30 | without | **P390.1** * | 1 | 320,35 |
| **RK 31 H** | 0,9 | 190 x 85 x 60 | 205 x 100 x 155 | 240 | 30 | without | **P391.1** * | 1 | 376,25 |
| **RK 52** | 1,8 | 150 x 140 x 100 | 175 x 165 x 225 | 240 | 60 | without | **P392.1** * | 1 | 559,00 |
| **RK 52 H** | 1,8 | 150 x 140 x 100 | 175 x 165 x 225 | 240 | 60 | without | **P393.1** * | 1 | 713,80 |
| **RK 100 H** | 3,0 | 240 x 140 x 100 | 260 x 160 x 250 | 320 | 80 | without | **P394.1** * | 1 | 752,50 |
| **RK 102 H** | 3,0 | 240 x 140 x 100 | 260 x 160 x 250 | 480 | 120 | G ¼″ | **P395.1** * | 1 | 1072,85 |
| **RK 103 H** | 4,0 | 240 x 140 x 150 | 260 x 160 x 310 | 640 | 160 | G ¼″ | **P396.1** * | 1 | 1095,45 |
| **RK 255 H** | 5,5 | 300 x 150 x 150 | 325 x 175 x 305 | 640 | 160 | G ¼″ | **P397.1** * | 1 | 1233,05 |
| **RK 106** | 5,6 | ∅ 240 x 130 | ∅ 265 x 270 | 480 | 120 | G ¼″ | **P398.1** * | 1 | 951,40 |
| **RK 156** | 6,0 | 500 x 140 x 100 | 530 x 165 x 245 | 480 | 120 | G ¼″ | **P399.1** * | 1 | 1122,30 |
| **RK 156 BH** | 9,0 | 500 x 140 x 150 | 530 x 165 x 300 | 860 | 215 | G ¼″ | **P400.1** * | 1 | 1510,40 |
| **RK 510** | 9,7 | 300 x 240 x 150 | 325 x 265 x 305 | 640 | 160 | G ½″ | **P401.1** * | 1 | 1122,30 |
| **RK 510 H** | 9,7 | 300 x 240 x 150 | 325 x 265 x 305 | 640 | 160 | G ½″ | **P402.1** * | 1 | 1383,55 |
| **RK 514 H** | 13,5 | 325 x 300 x 150 | 355 x 325 x 305 | 860 | 215 | G ½″ | **P403.1** * | 1 | 1892,00 |
| **RK 514 BH** | 18,7 | 325 x 300 x 200 | 355 x 325 x 385 | 860 | 215 | G ½″ | **P404.1** * | 1 | 1953,30 |
| **RK 1028 H** | 28 | 500 x 300 x 200 | 535 x 325 x 400 | 1200 | 300 | G ½″ | **P405.1** * | 1 | 2549,90 |

② **SONOREX DIGITEC ultrasonic compact baths**

**Delivery without** perforated basket and lid (optional) (please order separately).

| Type | Volume (l) | Tubs-inner dimensions L x W x H (mm) | Unit-outer dimensions L x W x H (mm) | Maximum output (W) | HF-effective output (W) | Drainage - ball stop-cock | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|---|
| **DT 31** | 0,9 | 190 × 85 × 60 | 205 × 100 × 170 | 240 | 30 | without | **HE28.1** * | 1 | 392,40 |
| **DT 31 H** | 0,9 | 190 × 85 × 60 | 205 × 100 × 170 | 240 | 30 | without | **HE29.1** * | 1 | 448,30 |
| **DT 52** | 1,8 | 150 × 140 × 100 | 175 × 165 × 230 | 240 | 60 | without | **HE30.1** * | 1 | 564,40 |
| **DT 52 H** | 1,8 | 150 × 140 × 100 | 175 × 165 × 230 | 240 | 60 | without | **HE31.1** * | 1 | 719,20 |
| **DT 100** | 3 | 240 × 140 × 100 | 260 × 160 × 250 | 320 | 80 | without | **HE32.1** * | 1 | 629,95 |
| **DT 100 H** | 3 | 240 × 140 × 100 | 260 × 160 × 250 | 320 | 80 | without | **HE33.1** * | 1 | 757,90 |
| **DT 102 H** | 3 | 240 × 140 × 100 | 260 × 160 × 250 | 480 | 120 | G ¼″ | **HE34.1** * | 1 | 1084,70 |
| **DT 103 H** | 4 | 240 × 140 × 150 | 260 × 160 × 310 | 640 | 160 | G ¼″ | **HE35.1** * | 1 | 1106,20 |
| **DT 106** | 5,6 | ∅ 240 x 130 | ∅ 265 × 270 | 480 | 120 | G ¼″ | **HE36.1** * | 1 | 963,20 |
| **DT 156** | 6 | 500 × 140 × 100 | 530 × 165 × 245 | 640 | 160 | G ¼″ | **HE37.1** * | 1 | 1133,05 |
| **DT 156 BH** | 9 | 500 × 140 × 150 | 530 × 165 × 300 | 860 | 215 | G ¼″ | **HE38.1** * | 1 | 1526,50 |
| **DT 255** | 5,5 | 300 × 150 × 150 | 325 × 175 × 295 | 640 | 160 | G ¼″ | **HE39.1** * | 1 | 1023,40 |
| **DT 255 H** | 5,5 | 300 × 150 × 150 | 325 × 175 × 295 | 640 | 160 | G ¼″ | **HE40.1** * | 1 | 1244,85 |
| **DT 510** | 9,7 | 300 × 240 × 150 | 325 × 265 × 305 | 640 | 160 | G ½″ | **HE41.1** * | 1 | 1133,05 |
| **DT 510 H** | 9,7 | 300 × 240 × 150 | 325 × 265 × 305 | 640 | 160 | G ½″ | **HE42.1** * | 1 | 1394,30 |
| **DT 514** | 13,5 | 325 × 300 × 150 | 355 × 325 × 305 | 860 | 215 | G ½″ | **HE43.1** * | 1 | 1625,40 |
| **DT 514 H** | 13,5 | 325 × 300 × 150 | 355 × 325 × 305 | 860 | 215 | G ½″ | **HE44.1** * | 1 | 1902,75 |
| **DT 514 BH** | 18,7 | 325 × 300 × 200 | 355 × 325 × 385 | 860 | 215 | G ½″ | **HE45.1** * | 1 | 1964,05 |
| **DT 1028** | 28 | 500 × 300 × 200 | 535 × 325 × 400 | 1200 | 300 | G ½″ | **HE46.1** * | 1 | 2212,35 |
| **DT 1028 H** | 28 | 500 × 300 × 200 | 535 × 325 × 400 | 1200 | 300 | G ½″ | **HE47.1** * | 1 | 2561,75 |

* Longer delivery times possible. Please check with our Sales Department.



## Lids for ultrasonic baths SONOREX

By Bandelin. Made of stainless steel.

| For model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| RK/DT 31, RK/DT 31 H | **P406.1** | 1 | 20,45 |
| RK/DT 52, RK/DT 52 H | **P407.1** | 1 | 37,65 |
| DT 100, RK/DT 100 H, RK/DT102 H, RK/DT 103 H | **P408.1** | 1 | 36,55 |
| DT 255, RK/DT 255 H | **P411.1** | 1 | 47,30 |
| RK/DT 106 | **P412.1** | 1 | 60,20 |
| RK/DT 156, RK/DT 156 BH | **P413.1** | 1 | 65,60 |
| RK/DT 510, RK/DT 510 H | **P415.1** | 1 | 55,90 |
| RK/DT 514, RK/DT 514 H, RK/DT 514 BH | **P416.1** | 1 | 64,50 |
| DT 1028, RK/DT 1028 H | **P418.1** | 1 | 74,20 |



## Insertion baskets for ultrasonic baths SONOREX

By Bandelin. Made of stainless steel. Measurements without holder.

| For model | Inner dimensions: L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| RK/DT 31, RK/DT 31 H | 170 x 65 x 50 | **P419.1** | 1 | 37,65 |
| RK/DT 52, RK/DT 52 H | 120 x 110 x 40 | **P420.1** | 1 | 50,55 |
| DT 100, RK/DT 100 H, RK/DT102 H | 200 x 110 x 40 | **P421.1** | 1 | 59,15 |
| RK/DT 103 H | 200 x 110 x 40 | **P423.1** | 1 | 64,50 |
| DT 255, RK/DT 255 H | 260 x 110 x 40 | **P424.1** | 1 | 70,95 |
| RK/DT 106 | ∅ 215 x 50 | **P425.1** | 1 | 112,90 |
| RK/DT 156 | 460 x 100 x 50 | **P426.1** | 1 | 192,45 |
| RK/DT 156 BH | 460 x 100 x 50 | **P427.1** | 1 | 194,60 |
| RK/DT 510, RK/DT 510 H | 250 x 195 x 50 | **P428.1** | 1 | 170,95 |
| DT 514, RK/DT 514 H | 275 x 245 x 50 | **P429.1** | 1 | 189,20 |
| RK/DT 514 BH | 275 x 245x 50 | **P430.1** | 1 | 191,35 |
| DT 1028, RK/DT 1028 H | 455 x 245 x 50 | **P431.1** | 1 | 247,25 |

▶ Compact Ultrasonic Processors
see page 1038



## SONOREX PR 140 D/DH ultrasonic pipette cleaner

By Bandelin. Ultrasonic pipette cleaner to gently clean volumetric glass or plastic devices up to a length of 755 mm.

- Short cleaning times
- Timer (1, 2, 3, 4, 5, 10, 15, 30 min or continuous run)
- Particularly robust thanks to the V4A stainless steel tray (1.4571)
- Drop handles for easier transportation
- Ball valve means that it can be emptied quickly and easily
- Model PR 140 DH with optional heating (can be adjusted from 20-80 °C) to increase the cleaning effect, e.g. in the case of grease residue and stubborn soiling

**Technical specifications:**

| **Model** | **PR 140 D** | **PR 140 DH** |
|---|---|---|
| Capacity | Min. 9 to max. 18 l | |
| Inner dimensions (L x W x H) | 150 x 150 x 895 mm (useful depth 850 mm) | |
| Outer dimensions (L x W x H) | 330 x 330 x 1003 mm | |
| Operating frequency | 35 kHz | |
| Peak ultrasonic output | 860 W | |
| HF power | 200 $W_{eff}$ | |
| Heating output | - | 700 W |
| Weight | 19.5 kg | 19.7 kg |
| Power supply | 230 V, alternatively 115 V, 50/60 Hz | |

Number of pipettes to be cleaned in the pipette basket:
9 mm ∅ - approx. 90 pcs; 10.7 mm ∅ - approx. 55 pcs; 14 mm ∅ - approx. 35 pcs; 20.0 mm ∅ - approx. 15 pcs; 29 mm ∅ - approx. 10 pcs.

**Delivery incl.** stainless steel lid and PE pipette basket (inner dimensions: ∅ x H 120 x 275 mm).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Model PR 140 D | **ECX9.1** * | 1 | 3086,35 |
| Model PR 140 DH | **ECY0.1** * | 1 | 3430,35 |

* Longer delivery times possible. Please check with our Sales Department.

# Ultrasonic baths




## Ultrasonic units, Elmasonic S series

By Elma. For intensive cleaning of laboratory instruments made of glass, plastic and metal. Suitable for degassing HPLC-solvents and beverage samples containing carbon dioxide.

- Operating frequency 37 kHz
- Housing made of stainless steel
- **Sweep-Function:** continuous frequency change for fast and consistent cleaning
- **Degas-Function:** for degassing cleaning solutions and liqids
- Timer 0-30 min and continuous run, safety switch- off after 12 h
- Quick run function on the S 30 and later models
- Some models have a heating component which can run dry, and is infinitely adjustable from 30-80°C
- **Autostart-function:** Ultrasonic cleaning begins when the preselected cleaning temperature has been reached
- LED displays for ultrasound function and heating („H“ devices only)

**Delivery without** perforated basket and lid (optional) (please order separately).

| Model | Volume (l) | Tubs-inner dimensions L x W x H (mm) | Unit-outer dimensions L x W x H (mm) | Effektive ultrasonic power (W) | Maximum ultrasonic power (W) | Heating power (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|---|
| **S 10 (with lid)** | 0,8 | 190 x 85 x 60 | 206 x 116 x 178 | 30 | 240 | - | **CC84.1** * | 1 | 290,25 |
| **S 10H (with lid)** | 0,8 | 190 x 85 x 60 | 206 x 116 x 178 | 30 | 240 | 60 | **CC85.1** * | 1 | 354,75 |
| **S 15** | 1,75 | 151 x 137 x 100 | 175 x 180 x 212 | 35 | 280 | - | **CC86.1** * | 1 | 521,40 |
| **S 15H** | 1,75 | 151 x 137 x 100 | 175 x 180 x 212 | 35 | 280 | 60 | **CC87.1** * | 1 | 618,15 |
| **S 30** | 2,75 | 240 x 137 x 100 | 300 x 179 x 214 | 80 | 320 | - | **CC88.1** * | 1 | 591,25 |
| **S 30H** | 2,75 | 240 x 137 x 100 | 300 x 179 x 214 | 80 | 320 | 200 | **CC89.1** * | 1 | 655,75 |
| **S 40** | 4,25 | 240 x 137 x 150 | 300 x 179 x 264 | 140 | 560 | - | **CC90.1** * | 1 | 849,25 |
| **S 40H** | 4,25 | 240 x 137 x 150 | 300 x 179 x 264 | 140 | 560 | 200 | **CC91.1** * | 1 | 978,25 |
| **S 60** | 5,75 | 300 x 151 x 150 | 365 x 186 x 264 | 150 | 600 | - | **CC92.1** * | 1 | 978,25 |
| **S 60H** | 5,75 | 300 x 151 x 150 | 365 x 186 x 264 | 150 | 600 | 400 | **CC93.1** * | 1 | 1150,25 |
| **S 70** | 6,9 | 505 x 137 x 100 | 564 x 179 x 214 | 150 | 600 | - | **CC94.1** * | 1 | 1128,75 |
| **S 70H** | 6,9 | 505 x 137 x 100 | 564 x 179 x 214 | 150 | 600 | 600 | **CC95.1** * | 1 | 1230,90 |
| **S 80** | 9,4 | 505 x 137 x 150 | 564 x 179 x 264 | 150 | 600 | - | **CC96.1** * | 1 | 1230,90 |
| **S 80H** | 9,4 | 505 x 137 x 150 | 564 x 179 x 264 | 150 | 600 | 600 | **CC97.1** * | 1 | 1424,40 |
| **S 180** | 18 | 327 x 300 x 200 | 390 x 340 x 321 | 200 | 800 | - | **CC98.1** * | 1 | 1671,65 |
| **S 180H** | 18 | 327 x 300 x 200 | 390 x 340 x 321 | 200 | 800 | 800 | **CC99.1** * | 1 | 1929,65 |

* Longer delivery times possible. Please check with our Sales Department.





## Plastic lids

By Elma. For ultrasonic baths Elmasonic S. Noise inhibiting. Can be used as a drainage tray.

| For model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| S 15 / S 15H | **CE01.1** * | 1 | 19,35 |
| S 30 / S 30H; S 40 / S 40H | **CE02.1** * | 1 | 21,50 |
| S 60 / S 60H | **CE03.1** * | 1 | 27,45 |
| S 70 / S 70H; S 80 / S 80H | **CE04.1** * | 1 | 35,50 |
| S 180 / S 180H | **CE05.1** * | 1 | 37,65 |

* Longer delivery times possible. Please check with our Sales Department.

## Insert baskets

By Elma. Made of electropolished stainless steel 1.4301. Handles with heat-insulated coating. For ultrasonic baths Elmasonic S.

| For model | L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S 10 / S 10H | 177 x 73 | **CE06.1** * | 1 | 37,65 |
| S 15 / S 15H | 112 x 103 | **CE07.1** * | 1 | 40,85 |
| S 30 / S 30H | 198 x 106 | **CE08.1** * | 1 | 47,85 |
| S 40 / S 40H | 190 x 105 | **CE09.1** * | 1 | 54,85 |
| S 60 / S 60H | 255 x 115 | **CE10.1** * | 1 | 67,75 |
| S 70 / S 70H | 465 x 106 | **CE11.1** * | 1 | 161,25 |
| S 80 / S 80H | 455 x 106 | **CE12.1** * | 1 | 188,15 |
| S 180 / S 180H | 280 x 250 | **CE13.1** * | 1 | 166,65 |

* Longer delivery times possible. Please check with our Sales Department.

▶ Special-ultrasonic cleaner Ultrasonol®, see page 1102

# Ultrasonic baths



## Plastic insert tubs

By Elma.

| For model | Inner L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| S 15, S 15H | 95 x 95 x 57 | **C309.1** | 1 | 18,30 |
| S 30, S 30H, P 30 H, X-tra | 200 x 95 x 57 | **0613.1** | 1 | 20,45 |
| S 40, S 40H | 200 x 95 x 57 | **C310.1** | 1 | 20,45 |



## High-grade steel insert covers

By Elma. For beakers.

| For model | Design | ∅ boreholes (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| S 10, S 10H | for 2 beakers | 80 | **H555.1** | 1 | 28,50 |
| S 15, S 15H | for 1 beaker | 95 | **H556.1** | 1 | 36,05 |
| S 30, S 30H, S 40, S 40H, P 30 H | for 2 beakers | 95 | **H557.1** | 1 | 45,70 |




## Immersion baskets

By Elma. Can be used with all types of device.

① Made of **polyethylene**

| Working measurement ∅ (mm) | Working measurement height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 74 | 40 | **H558.1** | 1 | 9,90 |

② Made of **stainless steel**, mesh 0.8 mm.

| Working measurement ∅ (mm) | Working measurement height (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 59 | 60 | **H559.1** | 1 | 38,70 |



## Elmasonic P digital ultrasonic cleaning units

By Elma.

- Stainless steel vibration tank and housing
- Digital LED display for clear indication of frequency, output, actual and nominal temperatures and timer
- 3/8″ drainage valve on back of unit (operated at the side)
- Ultrasonic frequency is switchable between 37 kHz (basic cleaning, mixing, dissolving) and 80 kHz (mild cleaning, low noise)
- Ultrasonic intensity is adjustable from 30 % (for sensitive surfaces) to 100 % in increments of 10%
- Automatic frequency switch-over for simultaneous coarse and fine cleaning
- **Sweep function** for an optimised sound field distribution
- **Pulse function** for intensification of ultrasonic cleaning power by up to 20 %
- Auto **Degas function** for quick degassing
- Temperature-controlled ultrasonic cleaning
- Dry run safe heating, adjustable from 30 to 80 °C in increments of 10°
- Automatic safety switch-off at a bath temperature of 90 °C or after more than 12 h of continuous duty

**Technical specifications:**

| Type | Internal dimensions of tank L x W x H (mm) | External dimensions of unit L x W x H (mm) | Heating output (W) | Effective / maximum ultrasonic power (W) |
|---|---|---|---|---|
| **P 30H** | 240 x 137 x 100 | 300 x 179 x 221 | 200 | 100 / 400 |
| **P 60H** | 300 x 151 x 150 | 365 x 186 x 271 | 400 | 150 / 600 |
| **P 70H** | 505 x 137 x 100 | 568 x 179 x 221 | 600 | 220 / 880 |
| **P 120H** | 300 x 240 x 200 | 365 x 278 x 321 | 800 | 330 / 1320 |
| **P 180H** | 327 x 300 x 200 | 390 x 340 x 321 | 800 | 330 / 1320 |
| **P 300H** | 505 x 300 x 200 | 568 x 340 x 321 | 1200 | 380 / 1520 |

**Delivery without** perforated basket and lid (optional) (please order separately).

| Type | Volume (l) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| P 30H | 2,75 | **LX70.1** | 1 | 1015,90 |
| P 60H | 5,75 | **LX71.1** | 1 | 1397,50 |
| P 70H | 6,9 | **LX72.1** | 1 | 1472,75 |
| P 120H | 12,75 | **LX73.1** | 1 | 2107,00 |
| P 180H | 18,0 | **LX74.1** | 1 | 2316,65 |
| P 300H | 28,0 | **LX75.1** | 1 | 2687,50 |

## Covers

By Elma. For Elmasonic P ultrasonic cleaning units.
Sonic-absorbing. Usable as a drip tray.

| For model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| P 30H | **CE02.1** * | 1 | 21,50 |
| P 60H | **CE03.1** * | 1 | 27,45 |
| P 70H | **CE04.1** * | 1 | 35,50 |
| P 120H | **LX84.1** | 1 | 35,50 |
| P 180H | **CE05.1** * | 1 | 37,65 |
| P 300H | **LX85.1** | 1 | 44,10 |

## Stainless steel baskets

By Elma. For Elmasonic P ultrasonic cleaning unit.
Made of stainless steel, with heat-insulating coated handles.

| For model | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| P 30H | 198 x 106 x 50 | **CE08.1** * | 1 | 47,85 |
| P 60H | 255 x 115 x 75 | **CE10.1** * | 1 | 67,75 |
| P 70H | 465 x 106 x 50 | **CE11.1** * | 1 | 161,25 |
| P 120H | 250 x 190 x 115 | **LX86.1** | 1 | 145,15 |
| P 180H | 280 x 250 x 115 | **CE13.1** * | 1 | 166,65 |
| P 300H | 455 x 250 x 115 | **LX87.1** | 1 | 188,15 |

* Longer delivery times possible. Please check with our Sales Department.

# Ultrasonic baths




## Elmasonic S 50 R

By Elma. Ultrasonic cleaning unit for cleaning test sieves, HPLC solvent degassing and sample preparation. With microprocessor-controlled ultrasound modes and special programs for routine laboratory applications and cleaning tasks.

- **Sieve cleaning function:**
  Strong cleaning pulses make for optimal sieve cleaning
- **Degas/(Autodegas) function:**
  Efficient and noise-reduced degassing of HPLC solvents and carbonate drink samples
- **Sample preparation function:**
  For routine tasks such as mixing, dissolving, dispersing and cleaning
- Short-time operation between 1 and 30 minutes or continuous duty, adjustable using rotary switch
- LED display of set cleaning time and remaining cleaning time
- Cleaning bath made of cavitation resistant stainless steel
- Can be connected to laboratory stand for noise-reduced operation
- Plastic carry handles

**Technical specifications:**

| | |
|---|---|
| Outer dimensions of unit | ∅ 260 x H 350 mm |
| Inner dimensions of bath | ∅ 240 x H 130 mm |
| Total power consumption | 150 W |
| Effective ultrasonic power | 150 W |
| Max. ultrasonic power | 600 W |
| Ultrasonic frequency | 37 kHz |
| Max. filling capacity | 5.3 l |
| Weight | 5 kg |

**Delivery without** accessories (please order separately).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE61.1** | 1 | 892,25 |

## Accessories for Elmasonic S 50 R

**Cover**
Made of PP, blue, sound-absorbing.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE62.1** | 1 | 27,95 |

① **Cover with opening**
Made of PP, blue. Opening ∅ 97 mm. Cover with opening in combination with rubber ring suitable for 600 ml beakers (low form) and 1000 ml beakers (high form). Please order rubber ring separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE63.1** | 1 | 27,95 |

**Rubber ring**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE64.1** | 1 | 3,15 |

② **Sieve holder for laboratory sieves**
Made of stainless steel 1.4301.
Suitable for laboratory sieve ∅ 100 and 200 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE65.1** | 1 | 62,35 |

③ **Insertion basket**
Made of stainless steel. Basket inner dimensions ∅ 220 x H 70 mm. Mesh size 10 x 10 mm. Handles with heat-insulating coating.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE66.1** | 1 | 84,95 |

**Set of fixtures for glass flasks for HPLC degassing**
**Delivery incl.** three finger clamp, fastening sleeve and stand rod (length 600 mm).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YE67.1** | 1 | 52,70 |



## Noise protection boxes for ultrasonic cleaning devices

By Elma. Noise protection boxes for ultrasonic cleaning devices reduce typical cavitation noises by approx. 20 dBA and subjective noises by 75 %. Cover made of Plexiglas to identify the unit function and fill level. Integrated air extraction to remove steam from the box, manually connectible. This allows the box to be used directly at work stations in chemical laboratories, dental laboratories and workshops.

**Technical specifications:**

| Type | Noise protection box, size M | Noise protection box, size L |
|---|---|---|
| For Elmasonic models | S 10, S 15, S 30, P 30, S 40, S 60, P 60 | S 90, S 100, S 120, P 120, S 130, X-tra 30, X-tra 50, X-tra 70, Transsonic TI-H-5 |
| Inner dimensions W x D x H (mm) | 380 x 240 x 315 | 440 x 310 x 480 |
| Outer dimensions W x D x H (mm) | 465 x 415 x 360 | 530 x 490 x 530 |
| Weight (kg) | 12.6 | 15.2 |
| Current | 230 V, 50 Hz | |
| Power input (W) | 18 | |

**Delivery without** ultrasonic cleaning unit (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Noise protection box, size M | **YP19.1** | 1 | 596,65 |
| Noise protection box, size L | **YP20.1** | 1 | 645,00 |

# Ultrasonic baths




NEU
NOUVEAU
NEW



## Ultrasonic devices Elmasonic xtra TT

By Elma. Powerful ultrasonic baths with permanently integrated sweep function for uniform cleaning. Oscillating bath made of cavitation resistant stainless steel. With LED display for ultrasonic and heating function.

- Ultrasonic frequency 37 kHz
- Permanently integrated sweep function for uniform distribution of the ultrasonic power in the entire cleaning bath
- Switchable dynamics function enhances the ultrasonic peak performance and improves the cleaning effect
- Permanent operation of brief operation adjustable between 1 and 30 min.
- Temperature selectable from 30-80 °C in steps of 5°
- Adjustable limit temperature, LED warning display if exceeded
- Auto-start function: ultrasonic starts automatically when the preselected temperature is reached
- Drain ball valve 3/8″
- Heating protected against dry running
- Automatic safety switch-off after 8 hours continuous operation or 90 °C bath temperature
- Removable power cable with rubber connector

**Technical specifications:**

| Type | xtra TT 30 H | xtra TT 60 H | xtra TT 120 H | xtra TT 200 H |
|---|---|---|---|---|
| Working volume (l) | 2.0 | 5.0 | 10.0 | 13.0 |
| Volume max. (l) | 3.0 | 6.5 | 14.0 | 18.0 |
| Bath inside dim. L x W x H (mm) | 240 x 130 x 100 | 300 x 150 x 150 | 300 x 240 x 200 | 320 x 280 x 200 |
| Basket inside dim. L x W x H (mm) | 196 x 112 x 49 | 257 x 132 x 74 | 262 x 222 x 114 | 280 x 250 x 114 |
| Basket load max. (kg) | 1.0 | 3.0 | 7.0 | 8.0 |
| Effective ultrasonic power (W) | 140 | 150 | 200 | 300 |
| Heating output (W) | 200 | 400 | 800 | 1200 |
| Outer dim. of unit L x W x H (mm) | 360 x 230 x 250 | 420 x 250 x 300 | 440 x 340 x 350 | 420 x 390 x 330 |
| Weight (kg) | 6.0 | 10.0 | 11.0 | 13.0 |
| Power supply | 220-240 V, 50/60 Hz | | | |

**Supplied without** lid, please order insert basket separately.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| xtra TT 30 H | **HHH7.1** | 1 | 962,15 |
| xtra TT 60 H | **HHH8.1** | 1 | 1284,65 |
| xtra TT 120 H | **HHH9.1** | 1 | 1929,65 |
| xtra TT 200 H | **HHK0.1** | 1 | 2252,15 |

## Accessories

By Elma. **Insert baskets**
Made of stainless steel. For ultrasonic units Elmasonic xtra TT.
Mesh size 6 x 1 mm.

| for type | Basket inside dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| xtra TT 30 H | 196 x 112 x 49 | **HHK1.1** | 1 | 84,95 |
| xtra TT 60 H | 257 x 132 x 74 | **HHK2.1** | 1 | 117,20 |
| xtra TT 120 H | 262 x 222 x 114 | **HHK3.1** | 1 | 138,70 |
| xtra TT 200 H | 280 x 250 x 114 | **HHK4.1** | 1 | 170,95 |

## Ultrasonic multi-frequency baths Transsonic TI-H

By Elma.

- Frequencies (35/130 kHz) can be switched over for intensive cleaning and gentle cleaning of sensitive surfaces
- Stainless steel shell. Oscillating tub made of 1.5 mm strong special stainless steel, extremely robust and hard wearing
- Degas-function for rapid, effective degassing
- Sweep-function for optimum sound field distribution
- Outlet on back of housing, electrical control via push-button
- With heating, adjustable from 30-80 ° C

**Technical specifications:**

| Type | Capacity (l) | Tub interior L x W x H (mm) | Unit outer measurements L x W x H (mm) | Maximum ultrasonic power (W) |
|---|---|---|---|---|
| **TI-H-5** | 3.7 | 240 x 130 x 150 | 340 x 265 x 370 | 400 |
| **TI-H-10** | 8.6 | 300 x 240 x 150 | 400 x 390 x 370 | 800 |
| **TI-H-15** | 12.2 | 300 x 240 x 200 | 400 x 390 x 420 | 800 |
| **TI-H-20** | 16.8 | 330 x 300 x 200 | 460 x 450 x 420 | 1000 |

**Delivery without** perforated basket and lid (optional) (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| TI-H-5 | **T712.1** * | 1 | 1970,50 |
| TI-H-10 | **T713.1** * | 1 | 2209,15 |
| TI-H-15 | **T714.1** * | 1 | 2480,05 |
| TI-H-20 | **T715.1** * | 1 | 2602,60 |

## High-grade steel lids

By Elma. For ultrasonic multi-frequency baths.

| For model | Art. No. | Pack Qty. | € |
|---|---|---|---|
| TI-H-5 | **T716.1** * | 1 | 39,80 |
| TI-H-10 | **T717.1** * | 1 | 45,15 |
| TI-H-15 | **T718.1** * | 1 | 45,15 |
| TI-H-20 | **T719.1** * | 1 | 50,55 |

## Baskets

By Elma. Made of stainless steel. For multi-frequency baths.

| For model | Inner L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| TI-H-5 | 210 x 110 x 140 | **T720.1** * | 1 | 126,85 |
| TI-H-10 | 270 x 220 x 140 | **T721.1** * | 1 | 179,55 |
| TI-H-15 | 270 x 220 x 185 | **T722.1** * | 1 | 179,55 |
| TI-H-20 | 300 x 280 x 185 | **T723.1** * | 1 | 191,35 |

* Longer delivery times possible. Please check with our Sales Department.

# Ultrasonic cleaners




## Ultrasonol® 7 - neutral

**Gentle on materials, this special cleaner assists and intensifies the ultrasonic cleaning process.**

- Also suitable for sensitive objects and materials. Non-irritating and non-toxic
- Non-flammable, non-gassing, biodegradable
- Liquid concentrate pH 7

Use 2-10 % in water.

Reaction time approx. 10 min; after washing, rinse thoroughly and dry.

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5356.1** | 1 l | 15,60 |
| **5356.2** | 5 l | 56,55 |
| **5356.4** | 20 kg | 176,65 |




## Ultrasonol® 11 - alkaline

**This highly effective special cleaner assists and intensifies the ultrasonic cleaning process.**

- Removes distillation residues, tars, resins, Canada balsam, adhesives, silicones, greases, oils and similar contaminants
- Non-flammable, non-gassing, biodegradable
- Liquid concentrate pH 12.9

Use 2-10 % in water.

Reaction time 1 to 10 min; after washing, rinse thoroughly and dry.

**Danger** H290-H314-EUH031

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5354.1** | 1 l | 14,75 |
| **5354.2** | 5 l | 55,50 |



## Ultrasonic cleaner EC 10

**Alkalic cleaning concentrate.**

Suitable for thorough ultrasonic cleaning of laboratory equipment and technical instruments, and objects made of steel, glass, plastic and ceramics. Removes blood, saliva, proteins, albumen- and bone residue as well as grease, oil, grinding and polishing paste.

**Dosage:** 5 % in ultrasonic and immersion baths, higher dosages can be used for heavy contamination.

**Danger** H290-H315-H318

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CC48.1** | 1 l | 16,15 |

## Ultrasonic cleaner Elma clean 70

**Alkalic, universal cleaning concentrate.**

For thorough cleaning of laboratory equipment, tools and instruments made of glass, ceramics, alkaline-stable plastic, rubber (e.g. respiratory masks), metal and light metal. Removes oils, greases, dust, soot and other organic impurities.

**Dosage:** 1-5 % at 20-80 °C, in immersion bath without ultrasound 5-10 %.

**Danger** H315-H318

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CC46.1** | 1 l | 14,55 |

## Ultrasonic cleaner Elma clean 75

**Ammoniacal cleaning concentrate for use in the laboratory, in workshops and for cleaning jewellery**

Removes dirt particles, grease, oil, skin-, grinding-, polishing- and lapping residue. Precious metals and nonferrous metal become brighter. May attack zinc, aluminium and light metal alloys.

**Dosage:** 5-10 %; in immersion bath without ultrasound 15 %.

**Danger** H315-H318-H336-H412

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CC47.1** | 1 l | 16,15 |

## Ultrasonic cleaner Elma clean 65

**Gentle neutral cleansers with corrosion inhibitor.**

For instruments and metals made of sensitive materials such as glass, plastic, rubber and metal. Removes finger prints, dust, pigments, light greases and oils.

**Dosage:** 2-5 % at 20-80 °C.

**Danger** H318

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CC45.1** | 1 l | 14,55 |

## Ultrasonic cleaner EC 60

**Acidic instruments cleaner for the laboratory and workshop.**

Suitable for cleaning laboratory equipment and tools made of stainless steel, glass and plastic. Removes metal oxides and mineral dirt, e.g. lime, rust, mineral oils and greases.

**Dosage:** 1-10 % at 40-70 °C, in immersion bath without ultrasound >3 %.

**Danger** H290-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CC44.1** | 1 l | 23,65 |

# RBS® laboratory cleaning agent

### Advantages at a glance:

- **No residues:** all RBS® cleaning agents wash off without leaving any traces. No residues of cleaner are visible on the cleaned article after rinsing. For consistent and error-free analytical results.
- **Safe and environmentally friendly:** RBS® cleaning solutions produce no harmful vapours or unpleasant odours under normal working conditions, and therefore are safe to use. All surfactants contained in the product are biodegradable.
- **Effective:** efficiently removes stubborn residues due to excellent emulsifying, wetting and dispersing properties. A safe alternative to hazardous bases or acid mixtures (e.g. alkaline baths, chromic-sulphuric acid).
- **Inexpensive:** RBS® cleaning agents are highly economical due to their low usage concentration.

| RBS®-qualities | Manual cleaning | Immersion bath cleaning | Ultrasonic bath cleaning | Lab dishwashers | Pre-purificaton and neutralizing | Post- purification | Chlorinated substances | Not foaming | Phosphate-free | For hard water | For sensitive objects |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RBS® 25 | x | x | x | | | | x | | | | |
| RBS® 35 | x | x | x | | | | x | | | x | |
| RBS® 50 | x | x | x | x | | | x | x | | x | |
| RBS® Neutral T | x | x | | | | | | | | | x |
| RBS® IND 470 | x | x | x | | | | | | x | x | |
| RBS® pF T | x | x | | | | | x | | x | x | |
| RBS® T 105 | x | x | x | | | | x | | | x | |
| RBS® T 115 | x | x | x | | | | x | | x | x | |
| RBS® T 230 | | x | x | | | | | | | x | x |
| RBS® T 305 | x | x | | | | | | | | x | |
| RBS® A 375 | | | | x | x | x | | x | x | | |
| RBS® NA 2 | | | | x | x | x | | x | | | |
| RBS® B 210 T | | | | x | | | | x | | x | x |
| RBS® SOLID | | | | x | | | x | x | | x | |
| RBS® A 285 SOLID pF | | | | x | | | | x | x | x | |
| RBS® R 60 | | | | x | | x | | x | | | |
| RBS® R 60 pF | | | | x | | x | | x | x | | x |




**Programme extension!**

## All RBS®-cleaners at a glance

**For manually or self-actingly cleaning**

| Type | Type | pH | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| RBS® 25 | liquid | basic | **AL89.1** | 5 l | 59,75 |
| RBS® 35 | liquid | basic | **9238.1** | 1 l | 16,40 |
| RBS® 35 | liquid | basic | **9238.2** | 5 l | 67,90 |
| RBS® 35 | liquid | basic | **9238.4** | 20 kg | 192,80 |
| RBS® IND 470 | liquid | basic | **TA00.1** | 5 l | 51,15 |
| RBS® IND 470 | liquid | basic | **TA00.2** | 20 kg | 154,85 |
| RBS® Neutral T | liquid | neutrally | **0180.1** | 1 l | 16,75 |
| RBS® Neutral T | liquid | neutrally | **0180.2** | 5 l | 64,10 |
| RBS® Neutral T | liquid | neutrally | **0180.4** | 20 kg | 198,20 |
| RBS® pF T | liquid | basic | **9243.1** | 1 l | 16,20 |
| RBS® pF T | liquid | basic | **9243.2** | 5 l | 67,55 |
| RBS® pF T | liquid | basic | **9243.4** | 20 kg | 217,00 |
| RBS® T 105 | liquid | basic | **PY99.1** | 5 l | 37,15 |
| RBS® T 115 | liquid | basic | **LY18.1** | 5 l | 39,00 |
| RBS® T 230 | liquid | neutrally | **LY17.1** | 5 l | 36,85 |
| RBS® T 305 | liquid | acid | **KT39.1** | 5 l | 48,15 |

**For mechanically pre- and secondary cleaning**

| Type | Type | pH | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| RBS® NA 2 | liquid | acid | **AL93.1** | 5 l | 55,45 |
| RBS® A 375 | liquid | acid | **TK44.1** | 5 l | 44,35 |

**For mechanically first cleaning**

| Type | Type | pH | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| RBS® 50 | liquid | basic | **9232.1** | 1 l | 21,35 |
| RBS® 50 | liquid | basic | **9232.2** | 5 l | 95,15 |
| RBS® 50 | liquid | basic | **9232.4** | 20 kg | 268,40 |
| RBS® B 210 T | liquid | basic | **KC19.1** | 5 l | 61,25 |
| RBS® SOLID | pulver | basic | **5715.1** | 5 kg | 55,15 |
| RBS® A 285 SOLID pF | pulver | basic | **HNY8.1** | 4,5 kg | 49,35 |

**For mechanically pre-cleaning**

| Type | Type | pH | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| RBS® R 60 | liquid | acid | **AL94.1** | 5 l | 55,45 |
| RBS® R 60 pF | liquid | acid | **AL96.1** | 5 l | 67,05 |

- Effective cleaning of laboratory glassware, plastics, porcelain, ceramics, crystal, stainless steel, etc. in laboratories (analysis, monitoring, research and development), universities, institutes, industry etc.
- Effective against grease, oils, salts, limescale, proteins, radioactive contamination and other chemical and biological residues.
- Suitable for manual cleaning, dishwashers and ultrasound baths or for automatic cleaning in immersion bath

# RBS laboratory cleaning agent



## RBS® 25

**Alkaline liquid laboratory cleaning concentrate**
- **For manual cleaning**
- **For cleaning in immersion baths and ultrasonic baths**

Cleans and degreases surfaces made of glass, ceramics, porcelain, synthetics, or stainless steel. Also suitable for industrial applications (processing of electronic components, wafers, lenses, etc.).

- pH value use concentration 2 %: approx. 11.9
- Density 1.094 g/ml
- Foaming
- **Ingredients:** sodium hydroxide, sodium hypochloride solution, surfactants, phosphates

**Use concentration:** 20 ml per litre of water. Temperatures up to approx. 50 °C accelerate the cleaning process. Items to be cleaned should remain in the immersion bath for 3 hours. Rinse thoroughly with deionised water.

**Danger** H290-H314-EUH031

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AL89.1** | 5 l | 59,75 |



## RBS® 35

**Alkaline liquid laboratory cleaning concentrate**
- **For mechanical cleaning and normal dirt**
- **For cleaning in immersion baths and ultrasonic baths**
- **Also suitable for use with hard water**

For cleaning and degreasing all non-corrosive materials and surfaces. Also suitable for industrial cleaning and degreasing of metals, electronic components, wavers, lenses, etc. Rinses off trace-free.

- pH value use concentration 2 %: approx. 11.5
- Density 1.07 g/ml
- Slightly foaming
- **Ingredients:** sodium hydroxide, tetrapotassium diphosphate, sodium carbonate, sodium hypochlorite solution, surfactants

**Use concentration:** 20 ml per litre of water; increase the dosage for stubborn dirt.

Rinse thoroughly with deionised water.

**Danger** H290-H314-EUH031

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9238.1** | 1 l | 16,40 |
| **9238.2** | 5 l | 67,90 |
| **9238.4** | 20 kg | 192,80 |



## RBS® 50

**Highly alkaline liquid laboratory cleaning concentrate**
- **For stubborn dirt**
- **For universal cleaning, immersion bath and ultrasonic bath cleaning, as well as for laboratory dishwashers**

For cleaning and degreasing all non-ferrous material and surfaces. Also removes problematic substances such as radioactive residues, Canada balsam, silicones, etc. For industrial applications to treat metal parts, lenses, electronic components, etc.

- pH pure product: 13.5
- Density 1.244 g/ml
- Non foaming
- Also suitable for use with hard water
- **Ingredients:** tetrapotassium diphosphate, sodium hydroxide, sodium hypochlorite solution, mineral salts

**Use concentration:**

**Manual and automatic cleaning:** 10 ml per litre of water.

**Cleaning in dishwashers and ultrasonic baths :**

3-5 ml per litre of water. Dishwasher cleanable, particularly effective in combination with RBS NA 2 and/or RBS R 60.
Rinse thoroughly with deionised water.

**Danger** H290-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9232.1** | 1 l | 21,35 |
| **9232.2** | 5 l | 95,15 |
| **9232.4** | 20 kg | 268,40 |

## RBS® Neutral T

**Neutral liquid laboratory cleaning concentrate**
- **For manual or automatic cleaning**
- **In tissue culture and microbiology**

Suitable for all, particularly sensitive materials and surfaces. Non-corrosive, no damaging influence on the culture growth.

- Chlorine-free
- pH-neutral cleaning solution
- Density 1.072 g/ml
- Slightly foaming
- **Ingredients:** surfactants, isotridecanol, ethylene glycol monophenyl ether, phosphates
- Biodegradable

**Use concentration:** 4 to 6 % v/v depending on amount of dirt.

Rinse thoroughly with deionised water.

**Danger** H318

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0180.1** | 1 l | 16,75 |
| **0180.2** | 5 l | 64,10 |
| **0180.4** | 20 kg | 198,20 |

# RBS laboratory cleaning agent




## RBS® IND 470

Alkaline liquid laboratory cleaning concentrate for decontaminating radioactive residues (tested for $^{99}Mo$, $^{192}Ir$, $^{131}I$). Also removes greases, silicone oils, carbonates, metal particles, dust and organic substances. Suitable for automatic or manual ultrasound cleaning of objects, containers and surfaces made of glass, stainless steel and plastic.
**Halogen free** (Cl; I; Br; F < 20 µg/g) and **phosphate free** (P < 5 µg/g).

- pH pure product: 14.0
- Density at 20 °C: 1.06
- Slightly foaming
- **Ingredients:** potassium hydroxide, isotridecanol, surfactants
- Unsuitable for corrodible metals
- Also suitable for use with hard water

**Use concentration:** 2 % v/v for normal contamination, temperatures up to approx. 50 °C accelerate the cleaning process. Soak parts to be decontaminated in a 10 % solution at 60 °C for at least 6 h.
Rinse thoroughly with deionised water.

**Danger** H290-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TA00.1** | 5 l | 51,15 |
| **TA00.2** | 20 kg | 154,85 |

## RBS® pF T

**Alkaline liquid laboratory cleaning concentrate**
- **Phosphates-free**
- **For manual or automatic cleaning**
- **Also suitable for use with hard water**

Particularly suitable for use in analytic laboratories.
Equalizes water hardness. Rinses off trace-free.

- pH value use concentration 2 %: approx. 11.8
- Density 1.072 g/ml
- Slightly foaming
- **Ingredients:** tetrasodium salt, sodium hydroxide, sodium carbonate, sodium hypochloride solution, surfactants
- Biodegradable

**Use concentration:** 20 ml per litre of water; increase the dosage for stubborn dirt.
Rinse thoroughly with deionised water.

**Danger** H290-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9243.1** | 1 l | 16,20 |
| **9243.2** | 5 l | 67,55 |
| **9243.4** | 20 kg | 217,00 |




## RBS® T 115

Alkaline liquid laboratory cleaning concentrate with excellent emulsifying and wetting properties. For self and manual cleaning or use in ultrasonic baths. Strongly recommended for laboratory glass, quartz, porcelains or synthetics. Removes organic and inorganic substances such as fats, proteins, distillation residues, and biological contaminants. Reduces water hardness and counteracts scaling. Is free of phosphates and is therefore suitable for use in analytical labs. Biodegradable.

- **Phosphates-free**
- pH of a 2 % cleaning solution: 11.7
- Density at 20 °C: 1.08
- Slightly foaming
- **Ingredients:** tetrasodium salt, sodium hydroxide, sodium carbonate, sodium hypochlorite solution, surfactants
- Unsuitable for corroding metals and sensitive materials
- Also suitable for use with hard water

**Application concentration:** 2 % v/v (higher concentrations can be used to remove stubborn dirt). Temperatures up to approx. 50 °C accelerate the cleaning process. Rinse thoroughly with deionised water.

**Danger** H290-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LY18.1** | 5 l | 39,00 |



## Dosing pumps for RBS® canisters

Made of **HDPE**.

| Suitable for RBS® canister size | Dosing volume/stroke (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 l (DIN 55) | 25 | **HL77.1** | 1 | 9,70 |
| 30 l (DIN 60) | 100 | **P242.1** | 1 | 59,45 |


- ▶ Erlenmeyer flasks see page 16
- ▶ Measuring cylinder see page 20
- ▶ Glass beakers see page 10
- ▶ Funnels see page 163

# RBS for laboratory dishwashers




## RBS® T 105

Alkaline liquid laboratory cleaning concentrate. For self and manual cleaning or use in ultrasound baths. Suitable for laboratory glassware, stainless steel, porcelain and plastics. Removes organic and biological substances, such as greases, distillation residues, proteins and cell cultures. Reduces water hardness and counteracts scaling.
Rinses off easily without leaving a residue.

- pH-value cleaning solution 2 %: 11.8
  pH-value concentrate: 13.3
- Density at 20 °C: 1.12
- Foaming
- **Ingredients:** tetrapotassium diphosphate, surfactants, sodium hypochlorite solution
- Unsuitable for corrodible metals
- Also suitable for use with hard water

**Use concentration:** 2 % v/v (higher concentrations can be used to remove stubborn dirt). Temperatures up to approx. 50 °C accelerate the cleaning process. Rinse thoroughly with deionised water.

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY99.1** | 5 l | 37,15 |

## RBS® T 230

Neutral liquid laboratory cleaning concentrate for cleaning sensitive materials such as volumetric glassware, aluminium, zinc, tin, PS or PC. Non-corrosive and fully biodegradable. Self-acting (no mechanical cleaning required). Also suitable for use in microbiology, as it has no harmful effect on culture growth.

- **Chlorine- and oxidant-free**
- pH-neutral cleaning solution
- Density at 20 °C: 1.07
- Non-corrosive, non-toxic and non-irritant
- Slightly foaming
- **Ingredients:** surfactants, isotridecanol, ethylene glycol monophenyl ether, phosphates
- Also suitable for use with hard water

**Usage concentration:** 4 to 6 % v/v, i.e. 40 to 60 ml RBS® T 230 per litre of water depending on contamination. Objects should be fully immersed for cleaning.
**Application time:** 2 to 12 h. Temperatures up to approx. 60 °C accelerate the cleaning process. Stubborn dirt be removed by brush or rinsing prior to application. Rinse thoroughly with deionised water.

**Danger** H318

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LY17.1** | 5 l | 36,85 |

## RBS® T 305

Acidic liquid laboratory cleaning concentrate for manual cleaning.
Particularly well suited to the removal of grease, oils, limescale residue, metal oxides, salts and inorganic residues from glass, ceramic, porcelain and non-corrosive stainless steel surfaces, and acid-resistant synthetics. Also for cleaning floors, workbenches and animal cages.
Apply the cleaning agent, allow it to act; if necessary, brush off and rinse thoroughly with water.

- **Free of chlorine**
- pH value use concentration: 1.5 to 1.2
- Density 1.40 g/ml
- Foaming
- **Ingredients:** phosphoric acid, isotridecanol, surfactants
- Biodegradable
- Also suitable for use with hard water

**Use concentration:** 2 to 5 % v/v depending on amount of dirt.

**Danger** H290-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KT39.1** | 5 l | 48,15 |

## RBS® SOLID

**Powder-based, alkaline high-performance detergent for laboratory dishwashers**

Suitable for laboratory glassware, quartz, stainless steel and alkaline-resistant synthetics. Removes grease, oils, distillation residues and other organic and anorganic substances. Rinses off trace-free.

- pH value use concentration 0.3 %: 10.6
- **Ingredients:** tetrapotassium diphosphate, sodium carbonate, sodium silicate, sodium dichlorisocyanurate dihydrate, surfactants
- Biodegradable
- Also suitable for use with hard water

**Application concentration:** 0.1 % v/v, higher concentrations can be used to remove stubborn dirt. Temperatures between 50 and 90 °C accelerate the cleaning process. Particularly effective in combination with RBS® NA 2 and/or RBS® R 60. Rinse with deionised water.

**Danger** H290-H332-H314-H335-H411-EUH031

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5715.1** | 5 kg | 55,15 |

## RBS® A 285 SOLID pF

**Powder-based, alkaline high-performance detergent for laboratory dishwashers**

Suitable for laboratory glassware, stainless steel, porcelain and alkali-resistant plastics. Removes greases, oils, distillation residues and other organic and mineral substances. Rinses off trace-free.

- Free of phosphates, EDTA and NTA
- pH value use concentration 0.3 %: 11.4
- **Constituents:** anionic and non-ionic surfactants, carbonates, silicates, sodium hydroxide
- Surfactants, biodegradable
- Also suitable for use with hard water

**Application concentration:** 0.1 % m/v, for high levels of contamination or high water hardness, the concentration can be increased to 3 g per litre. Temperature between 50 and 95 °C accelerate the cleaning process. Especially in combination with RBS® A 375 and/or RBS® R 60 pF.
Rinse with deionized water.

**Danger** H315-H318-H335

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HNY8.1** | 4,5 kg | 49,35 |

# RBS for laboratory dishwashers




## RBS® A 375

**Liquid, acidic pre-rinse and neutralisation agent for laboratory glassware washers**

Removes lime scale deposits, hydroxides and many other residues from glass, plastic, porcelain, ceramic, crystal, stainless steel etc.

- **Free of surfactant, chlorine and phosphate**
- Rinses off easily without leaving a residue
- Also suitable for use with hard water
- Non foaming
- pH value (0.5 %): 2.6
- **Ingredients:** citric acid, lactic acid

**Prewash:** removes stubborn dirt and stains, increasing the effectiveness of alkaline main cleaning concentrates.
**Rinsing:** neutralises alkaline cleaning concentrate residues after the main cleaning cycle and protects the garment and machine from lime scale deposits.

**Usage concentration:** 0.2 % (in the case of stubborn dirt/stains or hard water, the concentration can be increased up to 0.5 %).
Rinse with deionised water to ensure residue-free results.
Particularly effective in combination with RBS® 50.

**Danger** H315-H318

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TK44.1** | 5 l | 44,35 |

## RBS® NA 2

**Liquid, acidic pre-rinse and neutralisation agent for laboratory glassware washers**

**Prewash:** removes stubborn dirt such as carbonates, hydroxides, salts and organic bases. Enhances the performance of alkaline main wash cycle detergents.
**Rinsing:** neutralizes alkaline detergent residues and prevent limescale deposits on the parts cleaned and in the dishwashers.

- **Free from tensides and chlorine**
- pH value use concentration: 2.2 to 1.8
- Density 1.378 g/ml
- Non foaming
- **Ingredients:** phosphoric acid

**Use concentration:** 0.2 to 0.5 % v/v. Particularly effective in combination with RBS® SOLID, RBS® B 210 T or RBS® 50. Rinse with deionised water.

**Danger** H290-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AL93.1** | 5 l | 55,45 |

## RBS® B 210 T

**Mildly alkaline cleaning concentrate for laboratory glassware washers**

- **For sensitive instruments and parts in laboratories and industry**
- **High cleaning effect**

Effectively removes dust and inorganic contaminants.
Also suitable for aluminium and synthetics, such as PC and PS.
No defoamers or neutralising agents.

- **Free from chlorine**
- pH value in use concentration: 9.7
- Density 1.178 g/ml
- **Ingredients:** Na-EDTA, diethylene glycol, mineral salts
- Also suitable for use with hard water

**Use concentration:** 0.5 % v/v. Higher concentrations can be used to remove stubborn contamination. Temperatures from 40-60 °C speed up the cleaning process. Rinse with deionised water.

**Danger** H318

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KC19.1** | 5 l | 61,25 |

## RBS® R 60

**Liquid, slightly acidic neutralisation agent for laboratory glassware washers**

Neutralizes alkaline detergent residues and prevents limescale deposits on item cleaned and in the dishwashers. Accelerates the drying process and produces a glossy finish.

- **Free of chlorine**
- pH value use concentration: 6.3 to 3.6
- Density 1.016 g/ml
- Non-foaming
- **Ingredients:** surfactants, sodium cumolsulphonate, 2-propanol, phosphoric acid

**Use concentration:** 0.1 to 0.3 % v/v. Particularly effective in combination with RBS® 50 and/or RBS® SOLID. Rinse with deionised water.

**Warning** H226-H290-H315-H319-H412

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AL94.1** | 5 l | 55,45 |

## RBS® R 60 pF

**Liquid, slightly acidic neutralisation agent for laboratory glassware washers**

Neutralizes alkaline detergent residues and prevents limescale deposits on item cleaned and in the dishwasher. Accelerates the drying process and produces a glossy finish. Free of phosphates and therefore suitable for use in analytical labs.

- **Free of phophates and chlorine**
- pH value use concentration: 6.5 to 4.4
- Density 1.015 g/ml
- Non-foaming
- **Ingredients:** surfactants, sodium cumolsulphonate, 2-propanol, citric acid, amidosulphuric acid

**Use concentration:** 0.1 to 0.3 % v/v. Rinse with deionised water.

**Warning** H226-H315-H319-H412

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AL96.1** | 5 l | 67,05 |

# Universal cleaner

| neodisher®-Grades | Manual washing/immersion bath | Laboratory glassware washers | Pre-wash | Post-wash and neutralisation | CE approved | Chlorinated ingredients | Low-foaming | Phosphates-free | For hard water | For easily breakable objects |
|---|---|---|---|---|---|---|---|---|---|---|
| neodisher® DuoClean | | x | | | x | | | x | x | |
| neodisher® EM | | x | x | | | | x | | x | |
| neodisher® anti-foaming agent S | | x | x | x | x | | x | x | x | x |
| neodisher® FA | | x | | | x | | | | x | |
| neodisher® LaboClean A8 | | x | | | | x | | | x | |
| neodisher® LaboClean F | | x | | | | | | x | | |
| neodisher® LaboClean FLA | | x | | | | | | x | | |
| neodisher® LaboClean FM | | x | | | | | | x | x | |
| neodisher® LaboClean FT | | x | | | | x | | | | |
| neodisher® LaboClean GK | | x | | | | x | x | | x | |
| neodisher® LaboClean LA | | x | | | | | x | | x | |
| neodisher® LaboClean PLM | | x | | | | | x | | | x |
| neodisher® LaboClean UW | | x | | | | x | | x | | x |
| neodisher® LM 2 | x | | x | | x | | x | | x | |
| neodisher® LM 3 | x | x | x | | | | | x | | |
| neodisher® LM 10 | x | | x | | | x | x | | | |
| neodisher® MA | | x | | | x | | x | | x | x |
| neodisher® N | | x | x | x | x | | x | | x | |
| neodisher® PM 5 | x | | | | x | | | | x | x |
| neodisher® PolyKlar | | x | | x | | x | | | | x |
| neodisher® TS | | x | | x | | x | | | | x |
| neodisher® Z | | x | x | x | x | | x | x | x | x |




## neodisher® LaboClean A8

By Dr. Weigert. **Alkaline intensive cleanser (powder)** with extraordinary cleaning power and high soil carrying capacity. **Free of tensides.**

For mechanical cleaning. Removes blood, serum, food residues, pharmaceuticals, colours, paint, gelatine and other organic residues. Contains phosphates, disodium metasilicate, sodium hydroxide, sodium carbonate and dichloroisocyanurate. Not suitable for aluminium and light metal alloys.

**Danger** H290-H314-H335-H411-EUH031

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N330.1** | 1 kg | 12,35 |
| **N330.2** | 10 kg | 87,60 |
| **N330.3** | 25 kg | 205,35 |

## neodisher® LaboClean UW

By Dr. Weigert. **Mild, alkaline cleaning agent (powder)**, protects the material. **Free of phosphates.**

For mechanical cleaning of laboratory glassware and other utensils in water laboratories, serological institutes and in the phosphates industry. Removes anorganic and organic contamination. Contains disodium metasilicate, sodium carbonate, sodium nitrilotriacetate and sodium perborate. Reduced efficiency with hard water.

**Danger** H314-H335

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y222.1** | 10 kg | 112,90 |

## neodisher® LaboClean GK

By Dr. Weigert. **Mild, alkaline cleaning agent (powder). Free of phosphates and surfactants.**

For mechanical cleaning of synthetics and glassware for cell and tissue cultures in the area of microbiology, virology and nuclear medicine, as well as in isotope laboratories. Removes nutrient media, cell and tissue residues, radioactive contaminations, organic colour and pigment contaminations. Easy to rinse. Contains trisodium phosphates and dichloroisocyanurate.

**Warning** H315-H319-H335-H411

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N331.1** | 10 kg | 115,05 |

## neodisher® LaboClean PLM

By Dr. Weigert. **Mildly alkaline defoaming cleaner (powder)** for mechanical cleaning of laboratory glassware and laboratory utensils. Ideal for removing blood, protein, oils, ointments, cream bases and felt-tip pen markings. Contains sodium carbonate, sodium metasilicate and surfactants. **Free of chlorine and oxidants.**

**Danger** H314-H335

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLP2.1** | 10 kg | 130,10 |

## neodisher® LaboClean LA

By Dr. Weigert. **Highly alkaline intensive cleaner (powder)** with a highly emulsifying, dispersing and defoaming action for mechanical cleaning of laboratory glassware and laboratory utensils. Ideal for removing greases, oils, resins, paraffin wax and organic dyes. Contains sodium hydroxide and disodium metasilicate. **Chlorine-free.** Also suitable for use with hard water.

**Danger** H290-H314-H335

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLP1.1** | 3 kg | 40,85 |
| **CLP1.2** | 25 kg | 291,35 |

## neodisher® LaboClean F

By Dr. Weigert. **Highly alkaline intensive cleaner (powder)** with high cleaning power for mechanical cleaning of laboratory glassware and laboratory utensils. Ideal for removing greases, oils, paraffin wax, resins, organic dyes and felt-tip pen markings. Good complexing and dispersing effect. Contains sodium hydroxide, sodium metasilicate and sodium carbonate. **Free of phosphates, chlorine and surfactants.**

**Danger** H290-H314-H335

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLN9.1** | 3 kg | 40,70 |
| **CLN9.2** | 25 kg | 295,65 |




## neodisher® PM 5

By Dr. Weigert. **Mildly alkaline cleaner (powder)** for manual and automatic cleaning of laboratory glassware and other materials in an immersion bath. High cleaning power for blood and protein, food leftovers as well as inorganic and organic residues. Material tolerant and easily rinsed off. Contains phosphates, sodium carbonate and surfactants.

**CE approved according to 93/42/EEC directive.**

**Warning** H315-H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLP5.1** | 3 kg | 80,65 |

## neodisher® MA

By Dr. Weigert. **Mild, alkaline cleaning agent (powder)** with de-foaming properties. **Free of chlorine and oxidative additives.**

For mechanical cleaning of medical utensils, laboratory glassware and babies bottles. Removes residues of blood, protein and food.
Excellent cleaning properties and very gentle on materials.
Contains phosphates, disodium metasilicate and a nonionic tenside.
Suitable for all water hardness levels.
**CE mark according to MPG.**

**Danger** H314-H335

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AA59.1** | 1 kg | 15,30 |
| **AA59.2** | 10 kg | 104,60 |




## neodisher® LM 2

By Dr. Weigert. **Mildly alkaline cleaner (liquid concentrate)** for use in immersion and ultrasonic baths as well as for manual cleaning.
Removes organic residues such as blood and protein from laboratory glassware, instruments and objects made of ceramic, stainless steel and plastics. Easy to rinse off and low-foaming, ideal for cleaning pipettes.
Contains potassium hydroxide, surfactants and phosphates.
**Chlorine-free.**

**CE approved according to 93/42/EEC directive.**

**Warning** H315-H319-EUH208

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLP3.1** | 10 l | 148,35 |
| **CLP3.2** | 20 kg | 239,75 |




## neodisher® LM 3

By Dr. Weigert. **Liquid alkaline universal cleaning agent. Phosphates-free, chlorine-free and low-foaming.**

For mechanical and manual cleaning and use in immersion baths. Removes all anorganic and organic residues, blood, protein and food remains, as well as radioactive substances. Also for pre-cleaning laboratory glassware and for cleaning pipettes and viscometers. Contains potassium hydroxide and amphotere tenside. Not suitable for aluminium and light metal alloys.

**Danger** H290-H314-EUH208

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y223.1** | 1 l | 17,45 |
| **Y223.2** | 10 l | 136,55 |

## neodisher® LM 10

By Dr. Weigert. **Alkaline cleaner with oxidising action (liquid concentrate)** for manual washing of laboratory glassware in an immersion bath. For decontamination of radioactively contaminated objects and removal of stubborn organic residues.
Contains potassium hydroxide, phosphates and sodium hydroxide.
Surfactant and foam-free. Also suitable for pre-washing glassware before main wash cycle. No intermediate rinsing required.

**Danger** H290-H314-H412

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLP4.1** | 10 l | 151,60 |

## neodisher® LaboClean FM

By Dr. Weigert. **Alkaline intensive cleaner (liquid concentrate)** with a highly emulsifying and dispersing action for mechanical cleaning of laboratory glassware and laboratory utensils. Ideal for removing oils, greases, resins, paraffin wax and organic dyes. Contains sodium hydroxide and surfactants. **Free of phosphates, chlorine and oxidants.**
Also suitable for use with hard water.

**Danger** H290-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLP0.1** | 5 l | 60,10 |
| **CLP0.2** | 20 l | 196,75 |

## neodisher® LaboClean FLA

By Dr. Weigert. **Alkaline intensive cleanser (liquid)** with extraordinary cleaning power and high soil carrying capacity.
**Free of tensides, chlorine, phosphor compounds and oxidants.**

For mechanical cleaning. Removes stubborn, oil-based residues and other organic dirt. Contains polycarboxylate, potassium hydroxide and sodium nitrilotriacetate. Reduced efficiency with hard water.
Not suitable for aluminium and light metal alloys.

**Danger** H290-H302-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N333.1** | 5 l | 49,30 |
| **N333.2** | 10 l | 91,00 |
| **N333.3** | 25 kg | 161,25 |

# Universal cleaner




## neodisher® LaboClean FT

By Dr. Weigert. **Liquid, alkaline cleaning agent**.
Oxidizing, **free of tensides.**

Particularly effective for residue-free cleaning of pharmacy glassware, infusion flasks, glassware for cell and tissue cultures, as well as in the areas of microbiology, virology and nuclear medicine. Removes residual nutrient media, blood, protein, radioactive contamination, residues of tissue cultures and cell layers as well as other organic residues.
Contains phosphates, potassium hydroxide and sodium hypochlorite. Reduced efficiency with hard water .

**Danger** H290-H314-H400-H411

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N334.1** | 12 kg | 102,15 |
| **N334.3** | 25 kg | 201,05 |

## neodisher® FA

By Dr. Weigert. **Liquid alkaline cleaning agent - free of tensides, chlorine and oxidizing additives.**

For mechanical cleaning of medical utensils, laboratory glassware and babies bottles. Removes blood, protein and nutrient media as well as gelantine. Very good cleaning action and very gentle on materials (colour changes might occur with titanium). Contains phosphates, disodium and potassium metasilicate. **CE mark according to MPG.**

**Danger** H290-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N332.1** | 5 l | 55,10 |
| **N332.3** | 25 kg | 173,10 |




## neodisher® DuoClean

By Dr. Weigert. **Highly alkaline liquid detergent.**
**Free of phosphates, silicates and oxidizing agents.**

For mechanical cleaning of surgical instruments made of stainless steel and other alkali-resistant surfaces. High cleaning action for removing blood proteins and stubborn OP residues, even for other particularly adhesive dirt. Contains sodium hydroxide and amphotere tensides.
**CE mark according to MPG.**

**Danger** H290-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KP95.1** | 5 l | 55,90 |
| **KP95.2** | 20 l | 192,45 |




## neodisher® N

By Dr. Weigert. **Liquid acidic neutralisation and cleaning agent.**
**Free of tensides.**

For mechanical cleaning of laboratory glass. Ideal for neutralising carried over alkaline residue in first rinsing or for acidic pre-cleaning. Removes limescale and other acid-soluble residue. Easy to rinse. Contains phosphoric acid. **CE mark according to MPG.** Not suitable for anodised aluminium, non-ferrous metals and acid-resistant synthetics.

**Danger** H290-H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N335.1** | 1 l | 20,10 |
| **N335.2** | 5 l | 81,85 |
| **N335.3** | 12 kg | 125,80 |
| **N335.4** | 25 kg | 239,75 |

## neodisher® TS

By Dr. Weigert. **Acidic neutralising and clear rinsing agent** for mechanical cleaning in food-processing plants and in livestock stalls. Prevents scaling, improves and accelerates drying. Suitable for objects made of glass, stainless steel, aluminium and plastics such as polycarbonate and polyetherimide. Contains citric acid, phosphates and surfactants.

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLP7.1** | 1 l | 12,85 |
| **CLP7.2** | 10 l | 97,85 |

## neodisher® PolyKlar

By Dr. Weigert. **Acidic clear rinsing agent (liquid)** for the mechanical treatment of animal cages. Ideal for polycarbonate, polysulfone, polyphenylsulfone and polyetherimide. Adjusted for acidity. Neutralises alkaline residues and prevents corrosion of polycarbonate and polysulfone during the subsequent autoclaving process. Prevents the formation of stress cracks after autoclaving. Improves and accelerates drying. **Surfactant-free.** Contains citric acid and polycarboxylates.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLP6.1** | 10 l | 116,10 |

# Universal cleaner



## neodisher® Z

By Dr. Weigert. **Liquid acidic neutralisation and cleaning agent. Free of tensides, phosphates and nitrogen**

For mechanical cleaning of laboratory glass. Ideal for neutralising carried over alkaline residue in first rinsing or for acidic pre-cleaning. Removes limescale and other acid-soluble residue. Especially gentle on materials. Contains citric acid. **CE mark according to MPG**. No suitable for anodised aluminium and non-ferrous metals.

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N336.1** | 1 l | 15,45 |
| **N336.2** | 5 l | 64,35 |



## neodisher® EM

By Dr. Weigert. Liquid, **emulsifying and dispersing additive** to intensify the cleaning power of cleaning agents during mechanical cleaning of laboratory glassware and laboratory utensils. Suitable for removing stubborn residues of solids, paraffin wax, oils and greases. With defoaming action. Contains surfactants. Also suitable for use with hard water.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLN8.1** | 5 l | 125,80 |

## neodisher® anti-foaming agent S

**Neutral liquid concentrate** based on emulsified silicone oil, designed to hinder the formation of foam in dishwashers.
Can be used to remove foaming residues, such as surfactants, proteins and soaps including all neodisher® cleaning agents for pre-wash and main wash cycles. High effectiveness even at low temperatures.
Dispensing: depending on type and quantity of foaming impurities, add 0.05-0.1 ml/l using suitable dispensing apparatus or manually.
**CE mark in accordance with directive 93/42/EEC.**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC39.1** | 1 l | 32,85 |
| **YC39.2** | 10 l | 301,00 |



## Dishwasher cleaner

Intensive cleaning powder for all standard dishwashers. Even the most tenacious dirt can be removed and chalky deposits reduced.
Dosage depends on water hardness: 1-2 g/litre fresh water to 8° dH, 2-3 g/litre fresh water from 9° dH.

**Danger** H302-H314-H335-H412-EUH206

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N047.1** | 5 kg | 21,45 |

## Clear rinsing agent

Lime removing, flow-foam clear rinsing agent containing citric acid.
For all standard dishwashers. Also highly effective when machine is full with different ware, e.g. porcelain, plastic, metal. Dosage depends on water hardness: 0.5-0.8 ml/litre fresh water at 8° dH, 0.9-1.0 ml/litre fresh water from 9° dH.

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N048.1** | 1 l | 6,40 |

## Dishwasher regenerating salt

High-purity dishwasher salt for dishwashers. Effective water softening, protects dishes and machine from scale deposits. Completely soluble.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fine grained, 0.1-1.6 mm | **N049.1** | 2 kg | 7,50 |
| Coarse grained, 1.0-6.5 mm | **NH60.1** | 2 kg | 11,65 |

# Disinfecting agents




## Korsolex® extra

**Aldehyde instruments disinfectant** on the basis of aldehydes and quaternary ammonium compounds. For thermolabile and -stable instruments, e.g. in endoscopy. Suitable for glass, ceramics, stainless steel, nonferrous heavy metal, aluminium, plastic, hard plastic, silicon, rubber, hard rubber, latex and procelain. **VAH- and IHO-listed**, **CE-identification** acc. to MPG.
**Spectrum of activity:** bactericidal, levurocidal, tuberculocidal, partially virucidal (incl. HBV, HIV, HCV) and virucidal. Also effective against germs restistant to antibiotics and Helicobacter pylori within the framework of VAH-concentrations. Economical operating concentration of 1-4 %.
Can be used in high-grade steel ultrasonic baths.

**Use disinfectants carefully.**
**Always read the labels and product information before use!**

**Danger**
H226-H302+H332-H315-H317-H318-H334-H335-H341-H350-H410

| Art. No. | Pack Qty. | € |
|---|---|---|
| **Y863.1** | 2 l | n. a. |
| **Y863.2** | 5 l | n. a. |




## Korsolex® basic

**Aldehyde disinfectant for thermolabile and -stable instruments** based on glutaral and (Ethylendioxy) dimethanolusing. Can be used in the dipping method and for all standard circulation methods of semi-automatic to fully automatic models in cold methods.
Also suitable for ultrasonic disinfection.
**Spectrum of activity:** bactericidal, levurocidal, fungicidal, tuberculocidal, mycobactericidal, sporicidal, partially virucidal (incl. HBV, HIV, HCV), virucidal. Also effective against SARS-coronavirus, germs resistant to antibiotics and Helicobacter pylori within the framework of VAH-concentrations. Concentration for use: 1 to 5 %.
**VAH-, IHO- and RKI-listed**, **CE-designation in accordance with MPG.**

**Use disinfectants carefully.**
**Always read the labels and product information before use!**

**Danger** H302+H332-H314-H317-H334-H335-H341-H350

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AK41.1** | 2 l | n. a. |
| **AK41.2** | 5 l | n. a. |




## Korsolex® med AF

**Aldehyde-free instrument disinfectant** based on amine.
Suitable for instruments made of stainless steel, glass, ceramic, aluminium, hard rubber and rigid plastic; with corrosion inhibitors for good compatability of materials. Powerful soil-dissolving effect, high protein resilience.
**Spectrum of activity:** bactericidal, levurocidal, tuberculocidal, mycobactericidal, partially virucidal (incl. HBV, HIV, HCV, adeno-, polyoma-, rotavirus). **VAH- and IHO-listed**, **CE-marking** in accordance with MPG and MDD. Free from aldehyde, QAV, phenol and chlorine.
Can be used in stainless steel ultrasonic baths.
Economical concentration (0,25-5 %).

**Use disinfectants carefully.**
**Always read labels and product information carefully before use!**

**Danger** H226-H302-H314-H372-H400-H411

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KY66.1** | 2 l | n. a. |
| **KY66.2** | 5 l | n. a. |



## Helipur® H plus N

**Alcohol and aldehyde-based formaldehyde-free** instrument disinfectant. Also suitable for heat-sensitive materials and instruments, such as flexible endoscopes and anesthesiology accessories.
**Spectrum of activity:** bactericidal (incl. MRSA and TbB), fungicidal, limited virucidal efficacy (incl. HBV, HIV, HCV) and virucidal, adeno-, polyoma-, rota- and polivirus.
**Listing:** VAH, IHO and DGHM, **CE- marking in accordance with MPG**.
Usable in ultrasonic baths. Exceptionally economical usage concentration (1-1.5 %) and short reaction time (15-30 min).

**Use disinfectants carefully.**
**Always read the labelling and product information before use!**

**Danger** H302+H332-H334-H335-H314-H317-H412

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LK27.1** | 1 l bottle | 23,45 |
| **LK27.2** | 5 l canister | 102,70 |

▶ Measuring jugs and dosing pumps see p. 1118

# Disinfecting agents for surfaces



## Meliseptol®

**Ready-to-use alcohol-based fast-acting disinfectant without additional active substances**. Also suitable for hard-to-reach areas and objects. Can be applied by wiping or spraying on.
**Spectrum of activity:** bactericidal (incl. MRSA, TbB and mycobacteria), fungicidal, limited virucidal efficacy (incl. HBV, HIV, HCV) and effective against rotavirus, adenovirus and norovirus.
**Listings:** VAH, IHO and DGHM. **CE approved in accordance with German Medical Products Act**.
Short reaction time of 1 min.
**Use disinfectants carefully.**
**Always read the labelling and product information before use!**
**Warning** H226-H318-H336

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EAA6.1** | 250 ml spray bottle with spray head | 6,90 |
| **EAA6.2** | 1 l spray bottle without spray pump | 12,15 |
| **EAA6.3** | 5 l canister | 48,95 |

Accessories:

| | | | |
|---|---|---|---|
| Spray pump for 1 l spray bottle | **LP76.1** | 1 | 6,05 |



## Meliseptol® Foam pure

**Ready-to-use disinfecting foam** based on propane-1-ol and didecyldimethyl ammonium chloride for **fast-acting disinfection of medical products and sensitive surfaces**.
Aerosol-free, also suitable for use in the food industry. Good compatibility, even with alcohol-sensitive materials such as acrylic glass, examination tables, vaginal probes and ultrasound probes.
Aldehyde, amine and fragrance free, neutral odour.
**Spectrum of activity:** bactericidal (including MRSA and TbB), fungicidal, limited virucidal efficacy (including HBV, HIV and HCV) and active against rota viruses, polyoma viruses, noro viruses and aviary influenza viruses.
**Listing:** VAH, IHO and DGHM, **CE mark according to MPG**.
Rated "very good" in dermatological tests. Short reaction time ≤5 min.
**Use disinfectants carefully.**
**Always read the labelling and product information before use!**
**Danger** H226-H318

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 750-ml foam sprayer bottle | **XP56.1** | 1 | 12,40 |
| 5 l canister | **XP56.2** | 1 | 47,10 |




## Meliseptol® rapid

**Ready-to-use, fast-acting alcoholic spray disinfectant** on an alcohol base. Aldehyde- and alkylamine-free.
Also suitable for difficult to reach surfaces and objects.
**Spectrum of activity:** bactericidal, (incl. MRSA and TbB), fungicidal, virucidal to a limited extent (incl. HBV, HIV, HCV) and virucidal (incl. Noro-virus).
**Listing:** VAH, IHO and DGHM, **CE- marking in accordance with MPG**.
Ready-to-use. Very fast acting, reaction time 1 min;
10 min. for virucidal efficacy.
**Use disinfectants carefully.**
**Always read marking and product information carefully before use!**
**Danger** H226-H318-H336

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LK31.1** | 250 ml spray bottle with spray head | 7,00 |
| **LK31.2** | 1 l spray bottle without spray pump | 12,40 |
| **LK31.3** | 5 l canister | 51,10 |

Accessories:

| | | | |
|---|---|---|---|
| Spray pump for 1 l spray bottle | **LP76.1** | 1 | 6,05 |



## B. Braun Wipes

Fleece wipes dispenser system for filling with disinfectant solution for cleaning and disinfection of surfaces. Absorbent and lint-free fleece wipes made of 100 % PET reliably release the active ingredients during surface disinfection.

- Practical removal of individual tear-off wipes
- Economical in use of wipes and application solution
- Reclosable lid protects against contamination and evaporation of solutions
- Tested with B. Braun surface disinfectant, e.g. Meliseptol® rapid and Foam Pure
- Ready-to-use solution can be used up to four weeks after preparation

**Delivery without** fleece roll (please order separately).

**B. Braun Wipes**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2.5 l dispenser system with grey lid | **CAT1.1** | 1 | 24,55 |
| Fleece roll with 100 wipes, each 19 x 36 cm | **CAT2.1** | 1 | 23,55 |
| ECO fleece roll with 120 wipes, each 19 x 36 cm | **CAT3.1** | 1 | 15,05 |

**B. Braun Wipes mini ECO**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 700 ml dispenser system with grey lid | **CAT4.1** | 1 | 9,60 |
| ECO fleece roll with 60 wipes, each 15 x 20 cm | **CAT5.1** | 1 | 7,50 |

# Disinfecting agents for surfaces




## neoform K Spray

By Dr. Weigert. Ready-to-use fast-acting disinfectant (propane-1-ol and ethanol based) for quick disinfection of surfaces and equipment in the foods sector. Also suitable for use in refrigerated areas.
**Spectrum of activity:** bactericidal, fungicidal, limited virucidal efficacy and effective against norovirus. Dries without leaving any residue, no additional rinsing needed. DVG and IHO listed.

**Use disinfectants with care.**
**Always read the label and the product information before use!**

**Danger** H226-H319-H336

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLP9.1** | 0,75 l | 16,15 |
| **CLP9.2** | 10 l | 146,20 |




## Mikrobac® food

**Aldehye-free surface disinfectant for the food sector** with active substances benzyl-C12-C18-alkyldimethylammoniumchloride and N-(3-Aminopropyl)-N-dodecylpropan-1,3-diamin.
Mikrobac® food can be used as a disinfectant in all areas of the kitchen and food processing (also suitable for the milk and milk processing industry). Ideal for cleaning and disinfecting floors, tiles, work surfaces, transport containers, equipment used for processing treating, and for industrial dishwashers.
**Spectrum of activity:** bactericidal (incl. salmonellae and listeria), levuoricidal, partially virucidal (incl. HBV, HIV, HCV).
Concentration for use: 0.5 to 3.0 %. **VAH-listed.**

**Use disinfectants carefully.**
**Always read the labels and product information before use!**

**Danger** H226-H302-H314-H410

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AK43.2** | 2 l | n. a. |
| **AK43.3** | 5 l | n. a. |




## neoform K plus

By Dr. Weigert. Disinfectant (liquid concentrate), decyldimethylammonium chloride and N-(3-aminopropyl)-N-dodecylpropan-1.3-diamine based. For combined cleaning and disinfection of surfaces and objects in the foods sector. Outstanding cleaning results and safe disinfection.
**Spectrum of activity:** bactericidal, yeasticidal, limited virucidal efficacy. Free of fragrance and colouring agents.

**Use disinfectants with care.**
**Always read the label and the product information before use!**

**Danger** H302-H314-H400-H411

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CLP8.1** | 2 l | 21,45 |
| **CLP8.2** | 10 l | 85,75 |




## Kohrsolin® extra

**Surface disinfectant with aldehyde.**
Active substances: (Ethylene dioxy)dimethanol, glutaral, didecyldimethyl ammonium chloride. For day-to-day preventive application and for final disinfection. The disinfectant has good cleaning power, wide spectrum of activity, and low dosage. Short reaction time (1 h).
Compatibility of material tested for: Metals: Stainless steel (V2A), aluminium, copper, brass. Plastics: PE, PP, PS, PU, PVC, silcone, rubber, latex, Macrolon®, Plexiglass®, Teflon®.
No material damage is likely if used correctly.

**Register: VAH, IHO, RKI list (in acc. with §18 IfSG), CE-designation in compliance with MPG.**
**Spectrum of activity:** bactericidal, levurocidal, fungicidal, sporicidal, tuberculocidal, viricidal, partially viricidal (incl. HBV, HIV, HCV), Hepatitis A-, MNV-, Adeno-, Polyoma- and Rotavirus. Concentration: 0.25-4 %.

**Use disinfectants carefully.**
**Always read labels and production information before use!**

**Danger** H226-H302+H332-H314-H317-H334-H335-H341-H350-H410

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Liquid concentrate, 5 l | **KC13.1** | 1 | n. a. |



## Bacillol® AF

**Ready-to use aldehyde and fragrance free fast-acting disinfectant based on propan-1-ol, propan-2-ol and aldehyde**.
Excellent wetting, fast acting and drying, leaves no visible residue.

**Applications:** for fast disinfection of alcohol-resistant surfaces by wiping or spraying, if fast effect and residue-free drying are required, e g.
- In sensitive areas with direct product contact (class C/D cleanrooms)
- If medical equipment and inventory falls under the Medical Products Act (to MPG)
- In hospitals and nursing homes (to BPD)
- In canteens and in the foodstuffs industry (to BPD)

**Spectrum of activity:** bactericidal, levurocidal, fungicidal, tuberculocidal, mycobactericidal, partially virucidal (incl. HBV, HIV, HCV), murine norovirus, adeno-, polyoma- and rota-viruses. **Listing:** VAH, DVG, IHO, RKI. **CE-mark of conformity** to MPG. Ready to use.
Reaction time: 1 min or longer.

**Use disinfectants carefully.**
**Always read the labelling and product information before use!**

**Danger** H226-H318-H336

| Art. No. | Packaging | Pack Qty. | € |
|---|---|---|---|
| **PY18.1** | bottle | 1 l | n. a. |
| **PY18.2** | canister | 5 l | n. a. |

Accessories:

| | | | |
|---|---|---|---|
| Spray nozzle for 500 ml and 1 l bottles | **X827.1** | 1 | 7,50 |



## Bacillol® 30 foam

**Ready-to-use alcohol-based fast-acting disinfectant** for sensitive surfaces. Very gentle on materials, also suitable for sensitive materials such as Plexiglas®, Makrolon® and Polysulfon. User-friendly application in easy-to-use spray bottle with foam spray head for optimal wetting.

**Spectrum of activity:** bactericidal, yeasticidal, limited virucidal efficacy (incl. HBV, HIV, HCV), and effective against murine norovirus, polyoma virus and rotavirus.
**Applications:** for rapid disinfection of sensitive plastic surfaces, medical inventory and surfaces in clinics, surgeries and laboratories. Also suitable for the disinfection of displays and keyboards as well as control panels on mobile and stationary communication devices.
**Listing: VAH, IHO. CE-mark of conformity to MPG.**
**Active ingredients:** ethanol, propan-2-ol, propan-1-ol and n-alkyl aminopropyl glycine.

**Use disinfectants carefully.**
**Always read the label and product information before use!**

**Warning** H226-H319-H336

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ANY8.1** | 750 ml bottle incl. foam spray head | n. a. |
| **ANY8.2** | 5 l canister | n. a. |



## Bacillol® plus

**Ready-to use spray bottle speed-disinfecting agent** made with a propanol and glutaral base. Free from formaldehyde. Enables excellent wetting of even highly inaccessible surfaces and objects. Effective after 30 seconds. Fast drying without any visible residue, gentle on materials.
**VAH-listed**, **CE-identification** acc. to MPG.
**Spectrum of activity:** bactericidal, levurocidal, fungicidal, tuberculocidal, mycobactericidal, partially virucidal (incl. HBV/HIV/HCV, adeno, polyoma and rota viruses).
Ideal for wiping or spraying. Spray head for 500 ml and 1 l bottles not included in delivery, please order separately.

**Use disinfectants carefully.**
**Always read the labels and product information before use!**

**Danger** H226-H318-H336

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L300.1** | 500 ml | n. a. |
| **L300.2** | 1 l | n. a. |
| **L300.3** | 5 l | n. a. |

Accessories:

| | | | |
|---|---|---|---|
| Spray nozzle for 500 ml and 1 l bottles | **X827.1** | 1 | 7,50 |



## Kohrsolin® FF

**Surface disinfectant** on the basis of glutaral, benzyl-C12-18-alkyl-dimethylammoniumchlorid and didecyldimethylammoniumchlroid. Formaldehyde-free. Suitable for disinfecting washable surfaces and objects by wiping them. Low concentration (0.25 to 4 %), good material compatibility and environmentally friendly.
The ready-to-use solution can be dried up almost totally residue-free.
**VAH- and IHO-listed, CE-identification** acc. to MPG.
**Spectrum of activity:** bactericidal, levurocidal, fungicidal, tuberculocidal, partially virucidal (incl. HBV, HIV, HCV), virucidal, MNV, adeno-, polyoma- and rotavirus also effective against clostridium difficile spores.

**Use disinfectants carefully.**
**Always read the labels and product information before use!**

**Danger**

H302+H332-H315-H317-H318-H334-H335-H400-H411

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L301.1** | 125 bags x 40 ml | n. a. |
| **L301.2** | 5 l | n. a. |

# Disinfecting agents for surfaces



## Bode X-Wipes

**All-purpose fleece wipes dispenser system for filling with all liquid Bode surface disinfectants.**
Absorbent and tear resistant fleece wipes made of 100 % PET (60 g/m$^2$) ensure optimal release of active ingredients during disinfection.

- Colour sealing cap for easier differentiation between products in use
- Smooth surfaces and 3-part lid system protect against contamination or evaporation of the solution
- Minimal processing required before use of fleece roll in the foil bag, bag can be filled directly with application solution
- Shelf life of application solution: approx. 28 days

**Applications:**
disinfection of surfaces in areas where a maximum of hygiene, economy and utility is required. Suitable for pre-cleaning and disinfection of non-soakable medical instruments and endoscopes.

**Bode X-Wipes 2.5 litre wipes dispenser**
**Delivery without** wipes (please order separately).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Wipes dispenser with blue lid | **CAT6.1** | 1 | n. a. |
| Wipes dispenser with red lid | **CAT7.1** | 1 | n. a. |
| Wipes dispenser with green lid | **CAT8.1** | 1 | n. a. |

**Bode X-Wipes fleece rolls**
For 2.5 litre wipes dispenser, wipe size 20 x 38 cm.
**Delivery incl.** self-adhesive security label for labelling with product name, concentration and filling date.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Fleece roll with 90 wipes | **CAT9.1** | 1 | n. a. |
| Fleece roll with 90 wipes in foil bag, incl. cutter ring | **CAX0.1** | 1 | n. a. |



## Meliseptol® Wipes sensitive

**Ready-to-use, fast-acting disinfectant wipes for medical products and sensitive surfaces.** Soft, non-linting fleece avoids scratching. Very good compatibility, even with alcohol-sensitive materials such as acrylic glass, Makrolon®, silicone rubber, latex and rubber as well as examination tables, vaginal probes and ultrasound probes.
Aldehyde, amine, dye and fragrance free, neutral odour.
Propane-1-ol and didecyldimethylammonium chloride based impregnating fluid.
**Spectrum of activity:** bactericidal (including MRSA and TbB), fungicidal, limited virucidal efficacy (including HBV, HIV and HCV) and effective against rota viruses, polyoma viruses, noro viruses and aviary influenza viruses.
**Listing:** VAH, IHO and DGHM, **CE mark according to MPG**.
Rated "very good" in dermatological tests. Short reaction time ≤5 min.
Wipe dimensions: 152 x 200 mm.
**Use disinfectants carefully. Always read the labelling and product information before use.**
**Danger** H318

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dispenser box containing 60 wipes | **XP57.1** | 1 | 14,30 |
| Refill pack containing 60 wipes | **XP57.2** | 1 | 10,25 |



## Bacillol® Tissues

**Ready-to use wipes for speedy disinfection of surfaces.**
Made with a propanol base. Free from perfume and aldehydes.
Suitable for all alcohol-insensitive surfaces, smaller areas, stock and instruments. Moistes and dries difficult to reach areas well and quickly without streaking. Are kind to the skin. Begin to work after only 30 seconds (in accordance to the new VAH standards).
**VAH- and IHO-listed, CE-designation in compliance with MPG.**
**Spectrum of activity:** bactericidal, levurocidal, fungicidal, tuberculocidal, mycobactericidal, partially virucidal (incl. HBV, HIV, HCV), Adenovirus, Noro-, MNV-, Polyoma- and Rotavirus.
**Use disinfectants carefully.**
**Always read labels and product information before use!**
**Warning** H226-H319

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dispenser box with 100 wipes | **KC11.1** | 1 | n. a. |
| Refill pack with 100 wipes | **KC12.1** | 1 | n. a. |



## Meliseptol® HBV wipes

**Ready-to-use fast-acting disinfection wipes** for easy disinfection of alcohol-resistant surfaces. Alcohol-based impregnating fluid, aldehyde and alkylamine free. Packed individually for hygiene in practical dispenser box, dermatologically tested.
**Spectrum of activity:** bactericidal (incl. MRSA and TbB), fungicidal, limited virucidal efficacy (including HBV, HIV and HCV) and virucidal (incl. noro viruses).
**Listing:** VAH, IHO and DGHM, **CE mark according to MPG**.
Ready to use. Very fast acting, reaction time 1 min; 10 min. for virucidal efficacy. Dimensions tissues: 145 x 200 mm.
**Use disinfectants carefully.**
**Always read the labelling and product information before use!**
**Danger** H228-H318-H336

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dispenser box containing 100 wipes | **XP58.1** | 1 | 11,20 |
| Refill pack containing 100 wipes | **XP58.2** | 1 | 7,80 |



## Bacillol® AF tissues

Alcohol-based, fast-acting disinfection wipes with a broad efficacy spectrum for simple disinfection of alcohol-resistant surfaces in accordance with BPD: surfaces in industrial kitchens and food processing areas and in sensitive areas where there is direct contact with products; surfaces in healthcare facilities as well as surfaces of non-invasive medical devices.
**Spectrum of activity:** bactericidal, yeasticidal, fungicidal, tuberculocidal, mycobactericidal, limited virucidal efficacy (incl. HBV, HIV, HCV, adeno virus, polyoma virus, rotavirus and murine norovirus).

- Supplied with **Bacillol® AF** pre-soaked, ready -to-use disinfection wipes
- Rapid and comprehensive action
- Aldehyde, colourant and fragrance free
- Practical wipe folding system allows easy and safe removal of individual tissues from the resealable flowpack packaging
- High-quality, tear resistant and absorptive PET fleece, Wipe size 180 x 200 mm
- Good wetting and rapid drying

**Use disinfectants carefully.**
**Always read the label and product information before use!**

**Warning** H226-H319

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Flowpack containing 80 wipes | **AHC1.1** | 1 pieces | n. a. |



## Kohrsolin® extra tissues

Aldehyde-containing disinfection wipes with virucidal activity for daily prophylactic disinfection as well as for specific disinfection where a broader spectrum of efficacy is required.
**Applications:** for washable surfaces on medical devices and inventory, and in hygiene-sensitive areas in the pharmaceuticals industry, cosmetics industry and laboratories.
**Spectrum od activity:** bactericidal, yeasticidal, fungicidal, tuberculocidal, mycobactericidal, sporicidal (Clostridium difficile spores), limited virucidal efficacy (incl. HBV, HIV, HCV), virucidal and effective against murine norovirus, hepatitis A virus, polyoma virus and rotavirus.

- Supplied with **Kohrsolin® extra** pre-soaked, ready-to-use disinfection wipes
- Rapid and comprehensive action
- Good material compatibility
- Practical wipe folding system allows easy and safe removal of individual tissues from the resealable flowpack packaging
- High-quality, tear resistant and absorptive PET fleece, Wipe size 180 x 200 mm
- Good wetting and cleaning, leaves minimal residue

**Use disinfectants carefully.**
**Always read the label and product information before use!**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Flowpack containing 80 wipes | **APA0.1** | 1 | n. a. |



## Bacillol® 30 tissues

Nonaggressive disinfection wipes for rapid disinfection of sensitive surfaces in food processing areas, in sensitive areas where there is direct contact with products, surfaces in healthcare facilities as well as surfaces of medical devices and inventory. Also suitable for the disinfection of displays, keyboards and control panels on sensitive equipment.
**Spectrum of activity:** bactericidal, yeasticidal, limited virucidal efficacy (incl. HBV, HIV, HCV, polyoma virus, rotavirus and murine norovirus).

- Supplied with **Bacillol® 30 Foam** pre-soaked, ready-to-use disinfection wipes
- Rapid and comprehensive action
- Aldehyde, colourant and fragrance free
- Tested for material compatibility with PC, PS, Plexiglas®, latex and synthetic leather (examination tables etc.)
- Practical wipe folding system allows easy and safe removal of individual tissues from the resealable flowpack packaging
- High-quality, tear resistant and absorptive PET fleece, Wipe size 180 x 200 mm
- Good wetting and rapid drying

**Use disinfectants carefully.**
**Always read the label and product information before use!**

**Warning** H226-H319

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Flowpack containing 80 wipes | **ANY9.1** | 1 | n. a. |



## Kohrsolin® FF tissues

**Aldehyde-containing disinfection wipes for prophylactic surface disinfection**.
**Applications:** for washable surfaces on medical devices and inventory, and in hygiene-sensitive areas in the pharmaceuticals industry, cosmetics industry and laboratories.
**Spectrum of activity:** bactericidal, yeasticidal, fungicidal, limited virucidal efficacy (incl. HBV, HIV, HCV) and effective against murine norovirus, adeno virus, polyoma virus and rotavirus.

- Supplied with **Kohrsolin® FF** pre-soaked, ready-to-use disinfection wipes
- Formaldehyde-free
- Excellent material compatibility
- Practical wipe folding system allows easy and safe removal of individual tissues from the resealable flowpack packaging
- High-quality, tear resistant and absorptive PET fleece, Wipe size 180 x 200 mm
- Good wetting and cleaning, leaves very little residue

**Use disinfectants carefully.**
**Always read the label and product information before use!**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Flowpack containing 80 wipes | **APA1.1** | 1 | n. a. |

# Disinfecting agents for surfaces



## Mikrobac® tissues

**Nonaggressive alcohol and aldehyde free disinfection wipes for rapid disinfection** of sensitive, alcohol-sensitive medical devices and work surfaces in clinics, surgeries, nursing homes and laboratories.
**Spectrum of activity:** bactericidal, yeasticidal, limited virucidal efficacy (incl. HBV, HIV, HCV) and effective against murine norovirus, adeno virus, polyoma virus and rotavirus.

**Active ingredients:** didecyldimethylammonium chloride and benzyl-C12-18-alkyl dimethyl ammonium chloride.

- Fast-acting
- Alcohol, aldehyde, colourant and fragrance free
- Excellent material compatibility
- Practical wipe folding system allows easy and safe removal of individual tissues from the resealable flowpack packaging
- High-quality, tear resistant and absorptive PET fleece
- Good wetting and cleansing effect

**Use disinfectants carefully.**
**Always read the label and product information before use!**

**Mikrobac® Tissues**
Wipe size 180 x 200 mm.
For convenient disinfection of small surfaces, range approx. 1 m².

H412

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Flowpack containing 80 wipes | **APA2.1** | 1 | n. a. |

**Mikrobac® Tissues XXL**
Wipe size 250 x 380 mm.
For complete disinfection of large surfaces, range approx. 2 m².

H412

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Flowpack containing 40 wipes | **APA3.1** | 1 | n. a. |



## Flow pack wall holder

Made of stainless steel. For safe storage of Mikrobac® Tissues, Kohrsolin® FF and Kohrsolin® extra Tissues as well as Bacillol® 30 and Bacillol® AF Tissues. Easy removal of wipes with one hand avoids contamination.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **APA4.1** | 1 | 51,55 |




## Disinfection tubs

Made of PVC. High-quality disinfection tubs for safe make-up of disinfection and cleaning solutions for manual treatment of instruments.
- Basket insert enables the user to remove instruments by hand without coming into direct contact with the disinfectant and allows instruments to be drip dried before use
- Moulded handles in the tub and basket ensure safe handling
- Resistant to all BODE cleaning agents and disinfectants
- Temperature stable up to +59 °C
- 30-litre tub with drain cock

**Delivery incl.** lid and basket insert made of PVC.

| Volume (l) | Design | L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 3 | White lid with slit | 300 x 200 x 110 | **APT0.1** | 1 | 60,20 |
| 5 | Transparent lid | 550 x 200 x 120 | **APT1.1** | 1 | 81,70 |
| 10 | Transparent lid | 390 x 290 x 170 | **APT2.1** | 1 | 91,40 |
| 30 | Transparent lid | 615 x 400 x 220 | **APT3.1** | 1 | 192,45 |




## Dosing pumps

For sample removal from BODE-carboys (Korsolex®, Kohrsolin®, Bacillol®, Dismofix® and Microbac®). For 2-litre bottles and 5-litre canisters. Alternatively with 10 ml or 20 ml dispensing volumes.

| Dosing volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 ml | **AK03.1** | 1 | 10,70 |
| 20 ml | **AK04.1** | 1 | 10,70 |

## Measuring jugs

With measuring scale, ideal for preparing ready-to-use solutions. Capacity 250 ml.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AK05.1** | 1 | 3,95 |




## AKASOLV Aqua Care

Water bath stabiliser for preventing the formation of algae, fungi and bacteria in water baths and thermostat circuits.

**AKASOLV Aqua Care - With blue colour indicator.**
If the blue coloration disappears, a new water bath solution must be prepared. Low usage concentration (0.1 %): 100 ml of concentrate are sufficient for 100 l of demineralised water.
**Use biocidal products with care.**
**Always read the label and the product information before use!**

**Warning** H315-H319-H411

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AN93.1** | 100 ml | 16,35 |

**AKASOLV Aqua Care CF - Without colour indicator**.
Depending on contamination and/or after 3 months at the latest, prepare a new water bath. Low usage concentration (0.1 %): 100 ml of concentrate are sufficient for 100 l of demineralised water.
**Use biocidal products with care.**
**Always read the label and the product information before use!**

**Warning** H315-H319-H411

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CPY8.1** | 100 ml | 16,35 |




## Micropur® water steriliser

Based on silver ions. Kills bacteria in water tanks and containers and keeps water free of germs, algae and odour.
**Use biocidal products with care.**
**Always read the label and the product information before use!**

**Warning** H410

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Standard tablets for 1 l water each | **0591.1** | 100 | 23,65 |
| Large tablets for 10 l water each | **0593.1** | 40 | 27,90 |




## Dishwashing detergent ECO 11

Extremely versatile, cleans fast and thoroughly.
High foam properties, very gentle on the skin, with citrus scent.
Usage: 50-100 ml per 10 l water.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY16.1** | 1 l | 3,20 |
| **PY16.2** | 10 l | 20,40 |

## All-purpose cleaner ECO 1

Surfactant and lemon based, with ammonium chloride. Quick and thorough cleaning of all washable surfaces and floors, removes coarse dirt and greasy films. Gentle on materials, kind to the skin, pleasant scent.

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY17.1** | 1 l | 3,60 |
| **PY17.2** | 10 l | 23,40 |




## Neutral cleaner G530

Surfactant-based. For manual cleaning of all water-resistant materials and surfaces. High grease-dissolving power, high foam activity. Cleaned objects dry quickly and streak-free, no additional drying by hand needed. Gentle on materials, kind to the skin, pleasant scent. Suitable for use in foodstuffs processing businesses, also ideal as a dishwashing detergent. Tried and tested in car washes and industry.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY15.1** | 1 l | 6,40 |
| **PY15.2** | 10 l | 43,75 |

# Universal cleaners




## Concentryl® ActiveFoam

Alkaline degreaser for the foodstuffs sector. Active foam thoroughly removes all grease and oil from stainless steel, glass and other alkaline resistant surfaces.

**Danger** H314

| Art. No. | Pack Qty. | € |
|---|---|---|
| **NH50.1** | 1 l | 9,65 |




## Citric acid

For removing lime deposits. Odourless, non-toxic, does not attack materials, biodegradable. For use, dilute 10-100 g citric acid in 1 litre of cold water depending on contamination.

**Warning** H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1818.1** | 1 kg | 15,60 |

## Descaler

Ideal for removing lime deposits. Contents: Formic acid 83 %, inhibitors and colorants. Biodegradable. For use dissolve about 50 ml descaler in 1 l water.

**Danger** H290-H302+H332-H314-EUH071

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0023.1** | 500 ml | 8,50 |




## Stainless steel care PRO127

For the care and protection of all washable metal objects.
Removes greasy films, dust, streaks, water marks and fingerprints.
Leaves glossy, streak-free surfaces, protects against re-soiling.
Easy to use. Note: do not use on hot surfaces.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY19.1** | 500 ml | 17,05 |




## Methylated spirit

Denatured ethyl alcohol.
Suitable for use as a detergent, a fuel additive and an antifreeze agent.

**Danger** H225-H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AL30.1** | 1 l bottle | n. a. |
| **AL30.2** | 10 l canister | n. a. |
| **AL30.3** | 20 l canister | n. a. |

# Universal cleaners



## Rotisol®

Universal alcoholic solvent, extraction agent, mobile phase, and elution medium, for dehydrating in histology, recrystallisation, etc. Mixable with water.
Ingredients:
dehydrated ethanol ~99 % · acetone ~5 % · methyl ethyl ketone ~1 % · Flp 12 °C · Kp 56-80 °C · D ~0.79 · highly flammable.

**Danger** H225-H319-EUH066

| Art. No. | Pack Qty. | € |
|---|---|---|
| **7917.3** | 1 l | n. a. |
| **7917.1** | 2,5 l | n. a. |
| **7917.2** | 25 l | n. a. |




## Silvosol®

Removes stains of silver nitrate, film developer or iodine from surfaces and textiles. Apply undiluted by gently dabbing.

**Warning** H290-H351-H361d-H412

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0047.1** | 250 ml | 17,15 |
| **0047.2** | 1 l | 35,45 |



## Roti-Plasticlean®

Plastic cleaner with antistatic effect. Ideal for plastic casing, furniture and floors. Cleans and protects against embrittlement.

**Warning** H226-H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1953.1** | 500 ml | 20,35 |

## Cable cleanser

For cleaning and degreasing stripped cables.
Not suitable for plastic cables.

**Danger** H226-H304-H315-H317-H410

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5235.1** | 1 l | 22,05 |

## Label remover

Pure vegetable. Dab on generously, allow to act, repeat if necessary, pull off label. Wipe off remaining glue with label remover.

**Danger** H226-H304-H315-H317-H410

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2958.1** | 1 l | 20,10 |




## Moss and algae remover

Concentrate based on quaternary ammonium compounds and cleaning boosters. Removes moss, algae and slime-forming micro-organisms from all slightly alkaline-resistant surfaces. Also suitable for use on stone and wood. Re-infestation is prevented in the long term. Depending on the degree of soiling, dilute to appropriate concentration (1-5 times).
Note: check objects beforehand to ensure they are suitable for cleaning. Protect non-cleanable surfaces.
**Use biocidal products with care.**
**Always read the label and the product information before use!**

**Danger** H315-H318-H411

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PY20.1** | 1 l | 20,00 |

# Sprays







## Label remover 130

Removes self-adhesive labels quickly and effectively.
Applications: casing, clothing, print cylinders, glass ceramics, non-porous materials. Propellant: propane.

**Danger** H222-H229-H315-H317-H336-H410

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P530.1** | 200 ml | 9,05 |

## Label remover SOLVENT 50 SUPER

With NSF certificate, specially for the food, animal feeds and packaging industries. Label remover with attachable dosing brush.
Propellant: $CO_2$. NSF K3-certified for use in foodstuff-related industries.

**Danger** H222-H229-H315-H319-H336-H411

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KL91.1** | 200 ml | 13,25 |




## Inox Kleen stainless steel cleaning spray

**Special, aqueous cleaning and care foam for stainless steel, aluminium and chrome.**
Registered for use in the food industry acc. to NSF A7/C1.
Removes dirt, fingerprints and water stains quickly.
Leaves an even glossy finish after cleaning.
A wafer-thin, water-repellent protective film gives long-lasting gloss.
Propellant: propane/butane.

**Warning** H229-H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YK85.1** | 500 ml | 13,95 |




## Multischaum 77

**Universal foam cleaner.**
Contains highly surface active ingredients for powerful and gentle removal of dirt from all glass, ceramic, paint, metal or plastic surfaces.
The cleansing foam is very stable and does not run off on vertical surfaces.
With antistatic effect. Propellant: Propane/butane.

**Danger** H222-H229-H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YK87.1** | 400 ml | n. a. |




## Cold cleaner

Ideal for cold cleaning and removing grease.
Speedy, residue-free evaporation. Dissolves fat, oil, tar, wax, etc.
Application: machine parts, electric motors, switches, relays, etc.
Propellant: $CO_2$.

**Danger** H222-H229-H315-H336-H411

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P529.1** | 400 ml | 11,40 |




## Compressed-air dust spray

For easy removal of dust and small ammounts of dirt from sensitive parts or in places that are difficult to reach. Comes with attachable capillary tube for precise application. Dry, strong air jet. Application: metrology, microscopy, precision mechanics, photography and optics, etc.
Propellant: tetrafluoroethane.

**Warning** H229

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P528.1** | 200 ml | 10,70 |
| **P528.2** | 400 ml | 18,25 |




## Compressed air spray 360

**With 360° nozzle.** According to the safety test required by Aerosol Directive 75/324/EEC, this product does not present a fire or explosion hazard when used as directed. Contains pure, dry pressurised gas. Special 360° nozzle allows spraying from any position in hard-to-reach areas. For removing dust and dirt in fine mechanics, electronics and electrical engineering.
Propellant: tetrafluorethane.
**Delivery incl.** spray tube for targeted application.

**Warning** H229

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YK83.1** | 200 ml | n. a. |




## Compressed air spray 67 NF

Non-flammable compressed gas spray (compliant to 2008/47/EC), based on ecofriendly raw materials technology. Has a much lower Global Warming Potential than conventional compressed gas sprays.
Highly pure, oil free and leaves no residues.
Application: for removing dust and dirt from systems, devices and machines in precision mechanics, optics, electronics and electrical engineering.
Propellant: hydrofluoro-olefin (HFO).
**Delivery incl.** nozzle for targeted use.

**Warning** H229

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TC26.1** | 200 ml | 17,15 |




## High pressure compressed air spray 67

**With extra-powerful spray jet.**
According to the safety test required by Aerosol Directive 75/324/EEC, this product does not present a fire or explosion hazard in the presence of ignition sources. Contains pure, dry pressurised gas. The extra-powerful pressurised gas jet is ideal for removing large and stubborn dust and dirt deposits in electrical systems and equipment.
Propellant: tetrafluorethane.
**Delivery incl.** spray tube for targeted application.

**Warning** H229

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YK84.1** | 340 ml | n. a. |

# Sprays




## Cold spray

Enables quick and easy fault-finding during thermal breakdown.
Speedy cooling to -50 °C. Cools, freezes, shrinks.
Application: thermostats, transistors, diodes, etc.
Propellant: tetrafluoroethane.
**Warning** H229

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P525.1** | 200 ml | 10,70 |




## Rust remover spray

**With surface active penetrating oil and $MoS_2$ additive.** The silicone free fine oil penetrates even the tiniest gaps and cracks quickly, wets surfaces and reduces friction. For easy removal of fastener elements such as screws, bolts or nuts. The $MoS_2$ additive prevents repeat seizing and aids future removal. Propellant: $CO_2$.
**Delivery incl.** spray tube for targeted application.
**Warning** H223-H229

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YK88.1** | 300 ml | n. a. |




## Cold spray 75 NF

Non-flammable cold spray (compliant to 2008/47/EC), based on ecofriendly raw materials technology. Has a much lower Global Warming Potential than conventional cold sprays. High cooling effect to at least -50 °C.
Application: rapid cooling of electronic components and surfaces, testing of thermostats and thermocouples, cold shrinkage of metal parts and shock freezing of rubber, plastic or histological preparations.
Propellant: hydrofluoro-olefin (HFO).
**Delivery incl.** nozzle for targeted use.
**Warning** H229

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TC27.1** | 200 ml | 17,15 |




## Anti-static spray

Prevents electrostatic charging and subsequently dust. Ideal for plastics, screens, EDP-equipment, casing, telephones, floors, seat covers, polished metal parts, wooden surfaces, etc. Propellant: propane.
**Danger** H222-H229-H319-H336

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P531.1** | 200 ml | 7,40 |




## TFT screen cleaning foam

Gentle special cleaner for TFT screens and LCDs. The resistant active foam cleans without solvents such as alcohol, petroleum ether or ammonia. Propellant: propane/butane.

**Warning** H229

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KL90.1** | 200 ml | 10,70 |




## Cleaning set

For environmentally friendly cleaning of telephones, faxes, computers, screens, keyboards and other plastic casing. **Includes 125 ml surface cleaner** for antistatic cleaning of appliance surfaces and plastic casing, **125 ml screen cleanser** with antistatic effect, **20 non-fluffing fleece wipes, 1 microfibre tissue, 2 telephone wipes, 1 fax wipe** for cleaning document reader and rubber transport roller and **2 small cleaning rods** and **1 spatula** for small areas and crevices.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **H993.1** | 1 | 16,10 |



## Cleanser stick

Using the adhesive power of the tip, the stick removes impurities sticking to smaller vessels such as lenses from objectives, eyepieces or cameras. The tip can be cleaned with water. Total length 12 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AK15.1** | 1 | 12,70 |




## TFT screen cleaning cloths

Screen cleaner Duotuch: The damp cleaning cloth provides streak-free, effective cleaning of all TFT, CRT and LCD monitors, and all notebooks and handhelds. The dry cloth guarantees gentle cleaning of the monitor surface.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KL92.1** | 1 folding box with 10 damp/dry cleaning cloths | 5,20 |




## Wet wipes

Wet wipes for cleaning surfaces with alcohol. Made of cellulose rayon tissue. For non-streaking and anti-static cleaning of office equipment such as keyboards, fax machines, photocopiers, telephones and other smooth surfaces. 100 wipes, 138 x 220 mm in refillable dispenser and sealed in aluminium foil. Dispenser dimensions: ∅ 85 mm, H 190 mm.

**Warning: Not suitable for TFT monitors.**

**Warning** H226-H319

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dispenser | **E170.1** | 1 | 6,40 |
| Refill pack with 100 wipes | **E171.1** | 1 | 5,30 |

# Wipes



## Polytex®-wipes

100 % **PP**. Colour blue. Non-fluffing, highly absorbent, washable, tearproof and solvent-proof. Wipes at 40 x 42 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EH09.2** | 12 x 35 wipes | 74,75 |
| **EH09.3** | 35 wipes | 7,50 |



## Microfibre cloths

Made of 80% polyester and 20% polyamide. Knitted microfibre cloths with high cleaning performance. Washable up to 95 °C.
Dimensions: 36 x 36 cm. Colour blue.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCA2.1** | 5 | 8,10 |



## All-purpose cloths

Made of viscose. All-purpose cleaning cloths for damp and wet cleaning of all water-resistant surfaces. Very absorbent, durable and resistant to cleaning agents, washable up to 95 °C. Dimensions: 35 x 40 cm.
Colour: White/blue.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCA1.1** | 20 | 16,15 |



## Microfibre cloths

Made of 85% polyester and 15% polyamide. Soft, long-lasting microfibre cloths with low surface friction. High cleaning performance, dirt, grease and dust particles are lifted and held inside the cloth.
Washable up to 95 °C. Dimensions: 40 x 40 cm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| yellow | **HCA3.1** | 5 | 32,20 |
| green | **HCA4.1** | 5 | 32,20 |
| rosé | **HCA5.1** | 5 | 32,20 |
| blue | **HCA6.1** | 5 | 32,20 |




## Rotilabo®-dishcloths

Made of cotton. Robust, low-linting, fast-drying and adsorptive.
With hanging loop. Suitable for foodstuffs.

| Type | Weight per unit area ($g/m^2$) | L x W (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Dishtowel | 210 | 70 x 50 | **YX97.1** | 1 | 3,05 |
| ② Glass towel | 210 | 60 x 45 | **YX98.1** | 1 | 4,10 |
| ③ Kitchen towel | 110 | 100 x 50 | **YX99.1** | 1 | 3,20 |




## Antistatic cloth

Made from **blended fabrics**. The highly conductive properties of the tissue safely remove electrically charged particles. The ultra-soft microfibres gently remove dust and all types of soiling from film, electronic circuit boards, CDs, monitor and scanner screens as well as plastic.
Washable at 40 °C. Dimensions: 250 x 450 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AK11.1** | 1 | 14,85 |





## KIMTECH® Pure multi-purpose tissues

By Kimberly-Clark. Made of **PP**, white, low fluff, soft and highly absorbent. Ideal for absorbing acids, bases, solvents, oils, and aqueous solutions, etc. **Suitable for application in clean rooms, ISO-class 7 and higher.**
Type Extra, 38 x 35 cm, 70 µm thick.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 7624 | **0393.3** | pack of 35 tissues in a bag | 15,60 |
| 7624 | **0393.4** | pack of 420 tissues in a carton | 159,10 |




## Wypall® L20

By Kimberly-Clark. Made of 100 % recycled cellulose. Special AIRFLEX® structure for higher absorption capacity. Highly absorbent, for water and oil. Tear resistant, also suitable for cleaning sensitive surfaces.
Preperforated tissues, 33 x 38 cm, white.

| Ply | Roll width (cm) | ∅ (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 33 | 30 | **EA31.1** | 1 roll à 380 m | 35,40 |




## Wypall® X70

By Kimberly-Clark. 1-ply, white. Tightly spunbonded cellulose fibres. Extremely tearproof and strong when wet or dry.
Can be wrung out and reused. Solvent-stable and quick-absorbance.
**Roll with 42 x 38 cm preperforated wipes.**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 8383 | **X216.1** | 1 Box | 56,75 |

1-ply, white. Tightly spunbonded cellulose fibres. Extremely tearproof and strong when wet or dry. Can be wrung out and reused. Solvent-stable and quick-absorbance.
**Roll with 42 x 38 cm preperforated wipes.**

| Type | Roll width (cm) | ∅ (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 8384 | 42 | 30 | **X217.1** | 1 roll à 210 m | 175,25 |







## Wypall®-paper towels

By Kimberly-Clark. Ultra-thick paper towels made of a textile-like and ultrasoft AIRFLEX® material with extremely high tear strength even when wet. Outstanding water and oil absorbency, for fast absorption of large quantities of liquid.

**Wypall® L40, single ply, white,** cellulose/latex blend

| Type | Towel size L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 7471, quarter-folded | 317 x 330 | **NH08.1** | 1 box = 18 x 56 towels | 158,05 |
| 7452, perforated | 315 x 340 | **NH09.1** | 1 roll = 750 towels | 138,70 |

**Wypall® L30 ULTRA+, 3-ply, blue,** for high-performance applications

| Type | Towel size L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 7425 | 235 x 380 | **NH10.1** | 1 roll = 750 towels | 57,25 |
| 7426 | 330 x 380 | **NH11.1** | 1 roll = 750 towels | 75,25 |

# Wipes




## Rotizell®-tissues

2-ply, made of 100 % bleached **FFC pulp**.
Extra soft, absorbent, low fluff fibres. Tissue size 21 x 20 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0087.2** | 1 carton (25 x 150 pieces) | 44,95 |




## KIMTECH® Science laboratory tissues

By Kimberly-Clark.
- Two-ply, white, bleached without using chlorine
- **Made of 100 % pure pulp** - therefore particularly absorbent and soft
- Suitable for application with solvents and chemicals
- Low-fluffing and especially ideal for sensitive areas
- Excellent for wiping smaller amounts of liquid and for cleaning pipettes and slides

| Product | Towel size L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 7558 | 200 x 205 | **P502.1** | 1 box à 200 tissues | 6,90 |
| 7558 | 200 x 205 | **P502.4** | 15 boxes à 200 tissues | 79,50 |
| 7557 | 200 x 210 | **X213.1** | 1 box à 100 tissues | 4,70 |
| 7557 | 200 x 210 | **X213.3** | 24 boxes à 100 tissues | 77,90 |




## Rotilabo®-wall dispenser

Made of **stainless steel**. Suitable for all Rotiprotect® glove dispensers and Rotizell®-tissues (0087.2). By lightly pressing the two metal hoops together, other dispensers of max. 7.5 cm width can be inserted.
Comes with two loops for wall attachment. Dowels and screws included.

| Type | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| For one box | 180 x 85 x 135 | **Y383.1** | 1 | 22,05 |
| For three boxes | 245 x 100 x 477 | **AC07.1** | 1 | 53,25 |




## KIMTECH® Science precision tissues

By Kimberly-Clark. 1-ply, white. Made from specially treated, extremely low fluff and absorbent fibres **(100 % cellulose)**. Ideal for precise wiping during sensitive applications, e.g. cleaning electronic components and contacts, optical lenses and slides. Easy removal from dispenser box.

| Product | Towel size L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 7551 | 304 x 304 | **AA63.1** | 1 box à 196 tissues | 16,45 |
| 7551 | 304 x 304 | **AA63.2** | 15 boxes à 196 tissues | 181,70 |
| 7552 | 213 x 114 | **AA64.1** | 1 box à 280 tissues | 7,00 |
| 7552 | 213 x 114 | **AA64.2** | 30 boxes à 280 tissues | 154,80 |



## Sekuroka®-folded hand towels

Made of 100 % recycled paper, soft tissue quality, highly absorbent and tough. Suitable for folded towel dispenser CY02.1, ETY2.1 and EYY1.1.

| Type | Size (mm) | Art. No. | Pack Qty. (Sheet) | € |
|---|---|---|---|---|
| 2-ply, tissue, natural, zigzag folds | 23,5 x 23 | **CY03.1** | 20 x 160 | 31,10 |
| 2-ply, tissue, green, zigzag folds | 23,5 x 23 | **CY04.1** | 20 x 160 | 31,15 |
| 1-ply, crepe, natural, quire folding | 25 x 33 | **CY05.2** | 24 x 154 | 36,15 |



## KC Professional wipers

By Kimberly-Clark. Disposable cleaning cloths with central dispenser, suitable for rough surfaces. Preperforated cloths, 32 x 31 cm, white.

| Type | Art. No. | Pack Qty. (box) | € |
|---|---|---|---|
| 38667 | **CLT0.1** | 6 rolls à 60 tissues | 186,00 |



## Rotizell®-wipes

On large rolls.

**Wypall® X70**

Highly absorbent cellulose fibres in a spunbonded fleece of polypropylene. Absorbs liquids immediately, very high absorption capacity. Highly tear resistant and robust. Solvent-resistant, reusable. Preperforated tissues, 42 x 38 cm, white.

| Ply | Roll width (cm) | ∅ (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 1 | 42 | 30 | **X217.1** | 1 roll à 210 m | 175,25 |

**Wypall® L20**

Made of 100 % recycled cellulose. Special AIRFLEX® structure for higher absorption capacity. Highly absorbent, for water and oil. Tear resistant, also suitable for cleaning sensitive surfaces. Preperforated tissues, 33 x 38 cm, white.

| Ply | Roll width (cm) | ∅ (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 33 | 30 | **EA31.1** | 1 roll à 380 m | 35,40 |

**XL2 1500**

Made of soft cellulose. Highly absorbent and tear resistant, suitable for water and oil. Preperforated tissues, 26.5 x 38 cm, white.

| Ply | Roll width (cm) | ∅ (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 26,5 | 39 | **AN56.1** | 2 rolls à 570 m | 76,35 |

**XXL2 Blue**

Made of cellulose. Highly absorbent and tear resistant, ideal for dust, grease and oils. Preperforated tissues, 38 x 38 cm, blue.

| Ply | Roll width (cm) | ∅ (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 2 | 38 | 29 | **4695.1** | 2 rolls à 380 m | 84,60 |

**XXL3 1000**

Made of cellulose. Highly absorbent and tear resistant, ideal for dust, grease and oils. Preperforated tissues, 38 x 38 cm, white.

| Ply | Roll width (cm) | ∅ (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 3 | 38 | 39 | **AN57.1** | 1 roll à 380 m | 51,50 |

**L3 Blue**

Made of cellulose. Highly absorbent and tear resistant, ideal for dust, grease and oils. Preperforated tissues, 22 x 38 cm, blue.

| Ply | Roll width (cm) | ∅ (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 3 | 22 | 39 | **A972.1** | 2 rolls à 380 m | 75,05 |

**Absorptive crepe tissue S**

Made of recycled cellulose. Highly absorbent. Tissue size: 24 x 38 cm, light grey.

| Ply | Roll width (cm) | ∅ (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 4 | 24 | 35 | **1997.1** | 2 rolls à 300 m | 62,25 |



## Rotizell®-dispenser

With cut-off bar and holder for a waste bag.
Overall dimensions: W 104 x H 48 x D 64 cm. Max. roll width 42 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0273.1** | 1 | 79,05 |

## Rotizell® waste disposal bags

Made of PE, blue. Especially tearproof and tensile.
**120 litres:** 700 x 1100 mm, strength 40 µm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5382.2** | 1 roll with 25 bags | 7,45 |





## Rotizell®-roll-off stand

Silver, with tear bar. Dimensions: W 44 x H 97 x D 38 cm.
Max. roll width 34 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1798.1** | 1 | 44,40 |

## Wall roll holder

Suitable for wipes rolls of maximum 42 cm roll width. Robust design.
With tear bar and holder for waste bags (120 l).
Overall dimensions: W 49 x H 58 x D 27 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **AH00.1** | 1 | 52,60 |

# Wipes and backings



## Rotizell®-wipes T

Double-ply cellulose. Lint free. 64 perforated tissues L 25 x W 26 cm on 1 roll. Inner ∅ 38 mm, for standard wall dispensers.
Made of recycled paper. Unbleached.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0264.1** | Cartons of 28 rolls | 39,25 |

## Rotilabo®-roll holder

With plastic foot and roll-stop device for fixing roll to tear off sheets.
Roll is elevated 2 cm above working surface, therefore always stays dry.
Rolls are easy to change.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K879.1** | 1 | 21,45 |



## Mini single-sheet paper dispenser

- Hygienic removal of one towel at a time
- Easy to fill
- Viewing slot enables towel level to be checked
- Plastic, white
- Dimensions: W 16 x D 13.5 x H 31 cm

For wall assembly, incl. wall fittings. Matching tissue papers (Art. No. EE85.1) please order separately.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE84.1** | 1 | 32,20 |

## Tissue papers

100 % cellulose, white, 2-ply. W 11 x L 18 cm.
9000 tissues, with point-to-point embossing.
Suitable for mini single-sheet paper dispenser (Art. No. EE84.1).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE85.1** | 36 packs à 250 towels | 53,65 |



## Rotilabo®-absorbent papers

**Bench-Top Protection Paper**

Highly absorbent white paper, coated on one side with water-resistant PE. Suitable as a protective working surface for lab tops or for lining cupboards and drawers. Protects surfaces against chemicals, dirt and contamination. Also suitable for analytical and isotope laboratories.

**Weight:** 144 g/m², absorbency approx. 250-280 g/m²

| Cut | Size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Sheets | 48 cm x 60 cm | **1941.1** | 100 | 176,00 |
| Roll | 48 cm x 100 m | **1959.1** | 1 | 259,00 |
| Roll | 60 cm x 100 m | **1006.1** | 1 | 315,00 |

**Weight:** 125 g/m², absorbency approx. 170 g/m²

| Cut | Size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Sheets | 42 cm x 52 cm | **HY90.1** | 100 | 62,50 |
| Sheets | 46 cm x 57 cm | **HY91.1** | 100 | 67,60 |
| Sheets | 50 cm x 60 cm | **HY92.1** | 100 | 90,70 |
| Roll | 49 cm x 50 m | **HY93.1** | 1 | 90,50 |
| Roll | 60 cm x 50 m | **HY94.1** | 1 | 108,60 |
| Roll | 92 cm x 50 m | **HY95.1** | 1 | 145,15 |

**Weight:** 225 g/m², absorbency approx. 200 g/m²

| Cut | Size | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Sheets | 46 cm x 57 cm | **HY96.1** | 50 | 67,75 |
| Sheets | 50 cm x 60 cm | **HY97.1** | 50 | 61,90 |
| Roll | 49 cm x 50 m | **HY98.1** | 1 | 169,85 |
| Roll | 60 cm x 50 m | **HY99.1** | 1 | 206,40 |
| Roll | 92 cm x 50 m | **KA00.1** | 1 | 293,50 |

▶ Blotting papiers see chapter electrophoresis!



## Rotilabo®-Joseph-wipes

Low-linting fine grade paper for cleaning and drying. Highly absorptive.
Surface weight 25 g/m².

| Design | L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Single | 150 x 150 | **XP41.1** | 200 | 6,15 |
| Folded | 350 x 350 | **XP42.1** | 500 | 48,40 |

# Wipes and backings



## Rotizell®-ply cellulose tissues

Absorbent and tear-proof. Made of recycled paper, 40 x 60 cm.

Creped, single ply, light grey

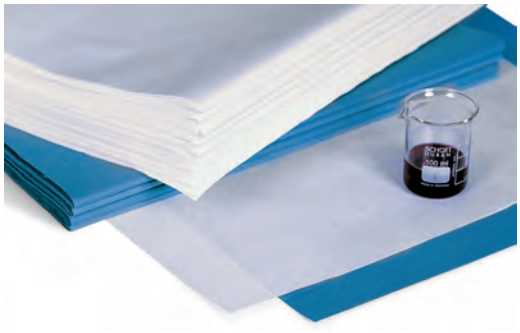
| Art. No. | Pack Qty. | € |
|---|---|---|
| **1745.1** | 1 x 5 kg | 21,45 |
| **1745.2** | 3 x 5 kg | 50,80 |

Creped, single ply, bleached bright

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X859.1** | 1 x 5 kg | 42,50 |
| **X859.2** | 3 x 5 kg | 113,95 |

4-ply, horse-nail embossed, bleached bright

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1746.1** | 1 x 5 kg | 54,85 |



## Rotilabo®-filter papers

100 % cellulose quality filter papers. High absorbency.
Standard filter paper with a smooth surface for analysis. Colour white.
Larger sizes are ideal as surface protection paper or working surface.

**Type 600**
Weight 64 g/m², thickness 0.15 mm. Retention 10-20 µm.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 420 | 520 | **XP43.1** | 500 | 65,70 |
| 500 | 500 | **XP44.1** | 500 | 74,40 |
| 600 | 600 | **XP45.1** | 500 | 107,50 |

**Type 601**
Weight 73 g/m², thickness 0.16 mm. Retention 5-13 µm.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 450 | 450 | **XP46.1** | 500 | 180,60 |
| 460 | 570 | **XP47.1** | 100 | 42,05 |

**Type 122**
Weight 73 g/m², thickness 0.17 mm. Retention 17-30 µm.

| Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 520 | 520 | **XP48.1** | 500 | 169,85 |
| 600 | 600 | **XP49.1** | 500 | 199,95 |



## Sponge wipes

Made of approx. 70% cellulose and approx. 30% cotton. Universal, environmentally-friendly wet-wipe cloth for efficient cleaning. Absorbent, soft and low-lint, washable up to 90 °C. Dimensions: 20 x 18 cm.

| Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|
| blue | **HCA8.1** | 10 | 7,85 |
| yellow | **HCA9.1** | 10 | 7,85 |
| red | **HCC0.1** | 10 | 7,85 |



## Fleece dishcloths

Made of 80% cotton/viscose and 20% synthetic fibres.
For wet and dry cleaning. Tear-proof, soft and absorbent.
Washable up to 60 °C. Dimensions: 35 x 35 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCC1.1** | 25 | 12,85 |




## Cotton wool

Made of 100 % cotton, perforated. For filtering and cleaning.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| perforated | **0571.1** | 1.1 kg (14 x 80 g) | 24,65 |
| not perforated | **PE40.1** | 700 g (7 x 100 g) | 13,95 |

# Dish washing brushes and sponges



## Scrub sponges

With abrasive layer for removal of stubborn dirt on sensitive surfaces.
Washable up to 40 °C. Dimensions: L 95 x W 70 x H 45 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HCA7.1** | 6 | 4,05 |



## Rotilabo®-dish washing brushes set

Made of breakproof plastic, with nylon bristles.
Length 28 cm, weight approx. 50 g.
**Delivery incl.** 12 dish washing brushes: 6 round brushes,
6 elongated brushes, the latter with tough scratching bristles at tip.

| Art. No. | Pack Qty. (assortment) | € |
|---|---|---|
| **0667.1** | 1 | 32,05 |




## Scrub sponges Scotch-Brite™ Universal

By 3M. For gentle cleaning of sensitive surfaces, such as glass,
ceramic, porcelain and chrome. Highly absorbent and non-abrasive.
Two sides: cleaning fleece/sponge. Dimensions: L 90 x W 70 x H 40 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **TT83.1** | 3 packs of 2 | 10,70 |




## Rotilabo® cleaning brushes

Especially for cleaning laboratory glass and plastic containers.
Made of soft, scratch-resistant PE foam. Does not absorb liquids
and is considerably more hard-wearing than standard brush materials.

**Pliable for vessels with narrow necks**

| Type | ∅ Head (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 20 | 410 | **Y111.1** | 1 | 12,80 |

**Round head for tall vessels**

| Type | ∅ Head (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ② | 55 | 425 | **EEH7.1** | 1 | 12,85 |
| ③ | 70 | 480 | **Y109.1** | 1 | 11,65 |

**Round head for medium-size vessels**

| Type | ∅ Head (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ④ | 55 | 340 | **EEH8.1** | 1 | 11,80 |

**Round head for small vessels**

| Type | ∅ Head (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ⑤ | 50 | 230 | **EEH9.1** | 1 | 10,70 |
| ⑥ | 60 | 250 | **Y110.1** | 1 | 11,65 |

**Special brush with bristles for cleaning test tubes and particularly narrow vessels.** Flexible to adapt to the shape of the vessel.

| Type | ∅ Head (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ⑦ | 20 | 220 | **Y112.1** | 1 | 8,20 |



## Scouring spiral pads

By 3M. Made of stainless high-grade steel. For removal of stubborn dirt.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EE55.1** | 4 packs with 3 pads | 10,00 |



## Rotilabo®-cleaning brushes

Made of natural bristles/wool head or all-wool. Galvanised twist-in wire.

| Brush ∅ x L (mm) | Total length (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 5 x 85 | 280 | Natural bristles/wool head | **XK58.1** | 5 | 11,75 |
| 8 x 85 | 280 | Natural bristles/wool head | **XK59.1** | 5 | 11,65 |
| 10 x 60 | 230 | Natural bristles/wool head | **XK60.1** | 5 | 11,50 |
| 12 x 85 | 280 | Natural bristles/wool head | **XK61.1** | 5 | 11,60 |
| 15 x 85 | 280 | Natural bristles/wool head | **XK62.1** | 5 | 11,60 |
| 20 x 105 | 270 | Natural bristles/wool head | **XK63.1** | 5 | 11,75 |
| 30 x 115 | 270 | Natural bristles/wool head | **XK64.1** | 5 | 18,20 |
| 35 x 100 | 330 | Wool | **XK65.1** | 1 | 7,85 |
| 40 x 130 | 520 | Natural bristles/wool head | **XK66.1** | 1 | 6,40 |
| 50 x 150 | 320 | Natural bristles/wool head | **XK67.1** | 1 | 5,35 |
| 55 x 140 | 390 | Wool | **XK68.1** | 1 | 7,85 |
| 60 x 145 | 520 | Natural bristles/wool head | **XK69.1** | 1 | 6,50 |



## Rotilabo®-cleaning brushes

Made of **Nylon**. Overall length 300 mm.

| Brush ∅ x L (mm) | Twist-in wire | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 2 x 60 | Chrome nickel | **XK71.1** | 5 | 15,25 |
| 3 x 100 | Chrome nickel | **XK72.1** | 5 | 12,60 |
| 4 x 100 | galvanised | **XK73.1** | 5 | 12,70 |
| 5 x 100 | galvanised | **XK74.1** | 5 | 12,70 |
| 8 x 100 | galvanised | **XK75.1** | 5 | 12,85 |
| 10 x 100 | galvanised | **XK76.1** | 5 | 12,85 |
| 20 x 100 | galvanised | **XK77.1** | 5 | 13,95 |
| 30 x 100 | galvanised | **XK78.1** | 5 | 14,95 |
| 50 x 100 | galvanised | **XK79.1** | 5 | 18,20 |



## Rotilabo®-cleaning brush with joint

Made of natural bristles with wooden handle.

| Total length (mm) | Brush length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 440 | 50 | **XK70.1** | 1 | 19,15 |




## Rotilabo® cleaning brushes

Bristle materials:
1: brass 0.15
2: bronze 0.15
3: natural fibres / perlon
4 to 5: horsehair
6 to 11: pig bristles
9, 10 and 11: with woollen head

| Type | Total length (mm) | Brush length (mm) | Brush ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 1 | 300 | 100 | 25 | **2018.1** | 5 | 37,95 |
| 2 | 300 | 100 | 15 | **2023.1** | 5 | 36,70 |
| 3 | 500 | 150 | 80 | **2017.1** | 5 | 63,20 |
| 4 | 480 | 120 | 63 | **1850.1** | 5 | 33,25 |
| 5 | 370 | 85 | 50 | **2013.1** | 10 | 41,40 |
| 6 | 500 | 100 | 18 | **1202.1** | 10 | 25,75 |
| 7 | 500 | 100 | 12 | **2003.1** | 10 | 25,05 |
| 8 | 500 | 100 | 6 | **2002.1** | 10 | 25,05 |
| 9 | 270 | 115 | 30 | **2011.1** | 10 | 20,10 |
| 10 | 270 | 80 | 20 | **2009.1** | 10 | 18,10 |
| 11 | 280 | 70 | 15 | **2019.1** | 10 | 19,10 |

## Rotilabo®-brushes set

| Type | Design | Art. No. | Pack Qty. (assortment) | € |
|---|---|---|---|---|
| Set of 12 | 4 brushes each, type 6, 7, 8 | **2006.1** | 1 | 40,30 |
| Set of 8 | 1 each of types 1, 2, 3, 4, 5, 9, 10, 11 | **2027.1** | 1 | 50,75 |



## Rotilabo®-scrubbing brushes

Made of wood. S-shape. Bristles made of PP. L 210 x W 70 x H 35 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ET48.1** | 5 | 11,95 |

# Brushes




## Rotilabo® special brushes

With bristles and PE-foam head. Ergonomically shaped, wide, flat handle for easily twisting the brush. For cleaning laboratory glass and plastic containers. Specially designed for wide-neck barrels, beakers and cylinders.

| Type | ∅ Head (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① | 50 | 385 | **EEK0.1** | 1 | 11,40 |
| ② | 50 | 500 | **EEK1.1** | 1 | 12,80 |




## Rotilabo® hose brushes

With Nylon bristles, abrasion-proof and highly resistant to chemicals, heat resistant to approx. 100 °C.

| Type | Total length (mm) | Brush length (mm) | Brush ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| h | 1180 | 60 | 6 | **KE69.1** | 2 | 19,15 |
| i | 2500 | 150 | 8 | **KE70.1** | 2 | 26,00 |
| j | 1500 | 150 | 9 | **KE71.1** | 2 | 17,40 |
| k | 1500 | 150 | 16 | **KE72.1** | 2 | 17,55 |




## Rotilabo® hose/burette brushes

With uncoloured pig bristles, durable, highly resistant to chemicals, heat resistant up to approx. 150 °C.

| Type | Total length (mm) | Brush length (mm) | Brush ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| e | 1000 | 150 | 12 | **KE66.1** | 5 | 21,70 |
| f | 1000 | 150 | 15 | **KE67.1** | 5 | 22,90 |
| g | 1000 | 150 | 30 | **KE68.1** | 5 | 25,05 |



## Pipe cleaners

Made of cotton, with stiff wire. Tapered, ∅ 1.5-6 mm.
Length approx. 170 mm Ideal for cleaning hard-to-reach small parts such as nozzles, drill holes, connectors, stopcocks, pipettes and hoses.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC35.1** | 80 | 5,70 |




## Rotilabo® pipette brushes

With uncoloured natural bristles. Durable, highly resistant to chemicals, heat resistant to approx. 150 °C.

| Type | Total length (mm) | Brush length (mm) | Brush ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| a | 400 | 100 | 5/10/5 | **KE62.1** | 5 | 21,65 |
| b | 490 | 190 | 4/20/4 | **KE63.1** | 5 | 27,45 |
| c | 450 | 180 | 12/25 | **KE64.1** | 5 | 22,95 |
| d | 160 | 70 | 10 | **KE65.1** | 5 | 11,85 |



## Antistatic brushes

Made of natural and synthetic fibres. Conductive fibres free surfaces, (e.g. glass, plastic materials and electronic components) of electrically charged particles and dust particles.
Operative range max. 65 °C, washable.

| Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 20 | **AK12.1** | 1 | 18,20 |
| 30 | **AK37.1** | 1 | 41,40 |
| 60 | **AK14.1** | 1 | 53,25 |

# Wipers and brush and dustpan set




## PROFI floor mops

By Leifheit. With convenient foot control and changeable mop heads for universal use on all floor surfaces. Aluminium handle with hanging loop and non-slip grip. Flexible, flat-folding 360-degree swivel head enables effective cleaning in a wavy line. Wiping width 420 mm.
**Delivery incl.** PROFI micro duo mop head.

| Type | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Aluminium handle | 140 | **XP59.1** | 1 | 50,00 |
| Extending handle | 80-135 | **XP60.1** | 1 | 50,00 |

## Mop heads for PROFI floor mops

① **PROFI micro duo**
Duo-fibre system enables easy dirt pickup. Suitable for all floor types.
Washable at 60 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XP61.1** | 1 | 22,50 |

② **PROFI cotton plus**
Containing cotton, ideal for tiles and stone floors.
Also removes coarse dirt. Washable at 60 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XP62.1** | 1 | 22,50 |

③ **PROFI static plus**
For dry cleaning. Attracts dust and hairs using static electricity.
Washable at 40 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XP63.1** | 1 | 22,50 |



## PROFI Evo mop wringer

By Leifheit. Made of PP. Capacity: 8 litres. Sturdy foot-operated mop wringer allows cleaning without bending down, using force or getting hands in dirty water.
The wringer can be stowed inside the bucket to save space.
With sturdy carry handle and two built-in castors for easy transport.
Ideal for use in combination with PROFI floor mops.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XP64.1** | 1 | 83,85 |



## Powerslide window wiper

By Leifheit. Made of ABS. For streak-free cleaning of smooth surfaces. Movable joint reduces wrist strain. Locking mechanism on handle to control wiping angle. Wiper width 280 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XP65.1** | 1 | 12,70 |



## Brush and dustpan set

By Leifheit. Made of PP. Ergonomic non-slip handle.
With special bristles and flexible rubber lip for easy collection of dirt.
Large dirt chamber for safe transport.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **XP66.1** | 1 | 14,55 |



## Rotilabo®-brush and dustpan set

Made of PP. Square. Dustpan with brush comb and lip.
Bristles made of polymex. L 330 x W 195 x H 90 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ET50.1** | 1 | 6,40 |

# Floor and multi-purpose vacuum cleaners




## Floor vacuum cleaner GL 30 ProEnergy

By Bosch.

- QuattroPower System: High-performance technology for excellent cleaning with low energy consumption
- Very light weight and practical to handle
- Less frequent replacement of dust bags and lower follow-on costs due to large 4 l dust bag volume
- Washable high-performance hygiene filter. Exhaust air is cleaner than the room air. Suitable for allergy sufferers
- With electronic suction power regulation with rotary control, telescopic tube, filter change display, automatic cable retractions, 4 castors, park and set-aside aid

**Technical specifications:**

| | |
|---|---|
| Dimensions (W x H x D) | 260 x 287 x 400 mm |
| Weight | 4.3 kg (without suction accessories) |
| Power requirement | 650 W |
| Power supply | 220-240 V, 50 Hz |
| Sound power level | 75 dB (A) |
| Energy efficiency class | A |
| Dust emission class | A |
| Hard floor surface cleaning class | b |
| Carpet flooring cleaning class | c |
| Dust bag volume | 4 l |
| Length of cable | 7 m |
| Action radius | 10 m |
| **Incl. accessories** | 1 x switchable roller nozzle SilentClean Premium, 1 x crevice nozzle, 1 x upholstery nozzle |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXL1.1** | 1 | 224,70 |

## Spare dust bag set for floor vacuum cleaner GL 30 ProEnergy

By Bosch.

**Delivery incl.** 4 dust bags with seal and 1 micro-hygiene filter.

| Art. No. | Pack Qty. (set) | € |
|---|---|---|
| **EXL2.1** | 1 | 16,10 |




## Floor vacuum cleaner Relaxx'x ProSilence Plus - bagless

By Bosch.

- Bagless SensorBagless™ technology
- QuattroPower System: High-performance technology for excellent cleaning with low energy consumption
- Intelligent SelfClean system: automatic self-cleaning of the integrated filter system
- SilenceSound System™: for an especially quite operating noise
- Telescopic tube with clip lock
- Electronic suction power regulation with rotary control
- Ergo Premium handle for effortless vacuum cleaning
- Park and set aside aid, automatic cable retraction, 4 castors

**Technical specifications:**

| | |
|---|---|
| Dimensions (W x H x D) | 310 x 320 x 470 mm |
| Weight | 6.7 kg (without suction accessories) |
| Power requirement | 700 W |
| Power supply | 220-240 V, 50 Hz |
| Sound power level | 74 dB (A) |
| Energy efficiency class | A |
| Dust emission class | A |
| Hard floor surface cleaning class | A |
| Carpet flooring cleaning class | c |
| Suction container volume | 3 l |
| Length of cable | 8 m |
| Action radius | 11 m |
| **Incl. accessories** | 1 x switchable roller nozzle, 1 x hard floor surface nozzle, 1 x XXL upholstery nozzle, 1 x extra long crevice nozzle |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EXL0.1** | 1 | 392,40 |

# Floor and multi-purpose vacuum cleaners




## Multi-purpose vacuum cleaner NSG uClean 1432 ST

For dry and wet cleaning. Suitable for dust, coarse dirt particles and water.

Features:
- 32 l impact resistant special plastic container
- Water level detection
- Carry handle with hose reel and connector fixture
- Storage depots for accessories
- 2 swivel castors
- Parking aid

**Technical specifications:**

| | |
|---|---|
| Dimensions | L 42 x B 39 x H 64 cm |
| Weight | 9,3 kg |
| Container volume | Gross 32 l, dust 28 l, water 21 l |
| Power requirement | max. 1400 W |
| Vacuum | max. 259 mbar |
| Air flow | max. 69 l/s |
| Splash protection | IP 24 |
| Length of cable | 8 m |
| Suction hose | L 1.75 m/∅ 4.9 cm |
| **Incl. accessories** | 1 suction hose (∅ 4.9 cm, 1.75 m), 2 suction pipes (length 50 cm), 1 floor nozzle (width 36 cm), 1 coarse dirt nozzle, 1 crevice nozzle (length 16 cm), 1 fleece filter bag, 1 foam filter for extracting water and 1 dust filter cartridge. |

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Multi-purpose vacuum cleaner NSG uClean 1432 ST | **X247.1** | 1 | 304,25 |
| Replacement fluted filter cartridge FP 3600 | **X248.1** | 1 | 39,70 |
| Replacement fleece filter bag FBV rd 30-35 | **X249.1** | 5 | 44,10 |
| Replacement foam filter FSS 1200 | **X250.1** | 1 | 19,30 |

▶ Tubes see page 371



NEU
NOUVEAU
NEW

## Wet and dry battery-operated vacuum cleaner

By Fakir. Cordless vacuum cleaner for wet and dry spills.
Capacity for dry dirt 400 ml, for liquids 250 ml. Dust container is easy to empty, washable filter. With lithium ion battery and charge indicator light. Operating time up to 23 min.

**Technical specifications:**

| | |
|---|---|
| Dimensions (W x H x D) | 115 x 128 x 410 mm |
| Weight | 985 g |
| Power consumption | 7.4 V; 2 Ah |
| Mains connection, charging dock | 100-240 V, 50/60 Hz |

**Delivery incl.** 1 x crevice nozzle, 1 x upholstery brush, 1 x liquids nozzle, 1 x charging dock with accessories deposit for wall mounting.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HNP5.1** | 1 | 78,50 |



## Air pressure suction gun

For dust extraction. Has a NW 10 connection for flexible pressure tubing to fit pneumatic systems or pressure gas bottles (nitrogen, air, argon). The easy to empty dust bag made of felt can be disposed off completely if needed. Vacuum hose and vacuum nozzle are 20 cm in length when connected and can be rotated in every direction. The opening slit is 70 x 5 mm. For air pressure up to approx. 6 bar. Suction volume 700 l/min. Vacuum 40 kPa (0.4 bar). Weight approx. 700 g.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Air pressure suction gun | **5776.1** | 1 | 267,70 |
| Spare dust bag with screw cap | **5777.1** | 1 | 91,40 |



## Air pressure gun made of aluminium

Electroplated, robust version. With short jet for thin stream.
Working pressure up to 15 bar. Equipped with lever valve, connector for tubing with inner span 7 mm. With integrated loop for hanging.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5454.1** | 1 | 17,00 |

# Grease



## Silicone greases Rotisilon®

**Rotisilon® A**

Grease for glass connections and lubricant for rubber on glass.
Liquid, temperature range -48 to +150 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0830.1** | 250 ml | 16,05 |
| **0830.2** | 1 l | 42,90 |

**Rotisilon® B**

All-purpose grease, especially suitable for stopcocks.
Vaseline-like, transparent, temperature range from -45 to +180 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0836.1** | 250 g | 24,65 |
| **0836.2** | 1 kg | 85,90 |

**Rotisilon® C/D**

For normal vacuum (water jet pump). Paste consistency, transparent, temperature stable from -40 to +200 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **8537.1** | 100 g | 23,55 |




## KWS-grease

**For vacuum, high vacuum and backflow distillation.**
Silicone-free, acid- and alkali-proof. For greasing ground glass joints, can be applied at temperatures between -40 and +200 °C. Vapour pressure $10^{-5}$ mbar. Excellent adhesion viscosity and releasing properties.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0930.2** | 50 g | 28,95 |
| **0930.1** | 100 g | 50,50 |



## Vaseline

For lubricating ground joints, desiccators, stopcocks, etc. Silicone-free, FDA-compliant. Density approx. 0.8 g/cm$^3$, melting point approx. 52 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E746.1** | Tube with 100 g | 4,25 |




## KORASILON®-pastes

For use as grinding paste, sealing paste, lubricant and protective paste. Moisture repellent. Also suitable as a sealant for electrical appliances, as a lubricant paste for cooling units and as a mould release agent. Temperature resistant in the range -50 to +200 °C.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| low viscosity | **0855.1** | 35 g | 6,35 |
| medium viscosity | **0856.1** | 35 g | 6,35 |
| high viscosity | **0857.1** | 35 g | 6,35 |

## KORASILON®-pastes assortment

Assortment of 2 x each tube low viscosity, medium viscosity and high viscosity.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0858.1** | 6 x 35 g | 28,50 |




## KORASILON® M-S 2 pastes

For use as an anti-friction, lubricating and release agent for grinding, apparatus, seals, valves, cables and wires etc. Suitable for use as an assembly aid and as a protective and sealing paste. Colourless, odourless, non-toxic, insoluble in water, resistant to salt water and hot steam. Good electrical insulation, inert to many chemicals and resistant to micro-organisms.

Compliant with BfR Recommendation XV. Silicone.
Compliant with FDA 178.3570 "Lubricants with incidental food contact".
**With NSF-H1 approval**.
Temperature stable from -40 to +200 °C.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| M-S 2-300, low viscosity | **APA5.1** | 35 g | 10,70 |
| M-S 2-270, medium viscosity | **APA6.1** | 35 g | 10,70 |
| M-S 2-200, high viscosity | **APA7.1** | 35 g | 10,70 |




## Grinding grease, water-soluble

Transparent grinding grease, washes off with water. Vacuum-proof up to $10^{-3}$ mbar. Usable from -30 to +200 °C without change in consistency. Does not resinify. Biodegradable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **E691.1** | 80 g | 26,85 |

▶ Glass components, see page 143




## APIEZON®-lubricants

High lubricating and gettering properties. Extremely low steam pressures.

- Chemically inert
- Silicone free
- Non-toxic
- Temperature resistant
- 10 years shelf life

❄❄❄

| Type | Features | Melting point | Steam pressure (at +20 °C) | Temperature range | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| **AP 100** | **High vaccum;** good lubrication, resists alkali, acid and corrosive gases. Particulary good for polished ground glass joints. | +47 °C | 7 x $10^{-11}$ torr | +10 to +30 °C | **C986.1** | 50 g | 146,20 |
| **AP 101** | Heavy duty grease for a **wide temperature range**. Medium vacuum. | > +200 °C | <1 x $10^{-5}$ torr | -40 to +180 °C | **C987.1** | 50 g | 70,75 |
| **L** | Special quality lubricant, free of additives for high vacuums. With high absorption capacity for other hydrocarbons. High resistance to radation. **Can also be used in stationary phases in gas chromatography**. Free of halogene. | +47 °C | 7 x $10^{-11}$ torr | +10 to +30 °C | **1682.1** | 50 g | 135,45 |
| **M** | All-purpose lubricant, similar to type L, but stiffer. Free of halogene. | +44 °C | 1,7 x $10^{-9}$ torr | +10 to +30 °C | **1683.1** | 100 g | 113,95 |
| **N** | High vacuum lubricant **for cryo-applications**, rubbery, tenacious. Free of halogene. | +43 °C | 6 x $10^{-10}$ torr | -269 to +30 °C | **1684.1** | 25 g | 149,45 |
| **T** | All-purpose lubricant. For medium vacuum. Free of halogene. | +125 °C | 4,6 x $10^{-9}$ torr | +10 to +120 °C | **1685.1** | 25 g | 127,95 |
| **H** | Versatile lubricant for very high temperatures. Does not melt at high temperatures over 40 °C. | > +250 °C | 1,7 x $10^{-9}$ torr | -10 to +240 °C | **1686.1** | 25 g | 135,45 |




## APIEZON®-waxes and sealing agent

**APIEZON®-waxes W, W 40, W 100**
Provides lasting, high-vacuum sealing, excellent gettering properties and low vapour pressure. Is resistant to acids such as hydrofluoric acid, nitric acid and acetic acid. Can be removed with hydrocarbons and chlorinated hydrocarbons.

**APIEZON®-sealing kit Q**
Ideal for sealing joints and for filling cracks. Especially suitable for vacuum technology when extremely low vapour pressure is not required. Waterproof.

❄

| Type | Features | Melting point | Steam pressure (at +20 °C) | Temperature range | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|---|---|---|
| **W** | Sealing agent for seams which can heat up during operation. | 80 to 90 °C | 4.5 x $10^{-9}$ torr | -10 to +75 °C | **AL06.1** | 1 kg | Block | 117,20 |
| | | | | | **AL06.2** | ~20 g | Stick | 8,20 |
| **W 40** | Sealing agent can be poured into or around a seam. | 40 to 50 °C | 6 x $10^{-8}$ torr | -10 to +35 °C | **AL07.1** | 250 g | Can | 141,90 |
| **W 100** | The soft wax reduces the risk of cracking in response to vibration loads. | 50 to 60 °C | 4.5 x $10^{-9}$ torr | -10 to +45 °C | **AL08.1** | 250 g | Can | 143,00 |
| **Sealing kit Q** | Versatile sealing compound for vacuum technology. | 40 to 50 °C | 1 x $10^{-4}$ torr | -10 to +30 °C | **AL09.1** | 1 kg | Can | 143,00 |

# Lubricants




## APIEZON®-high-temperature vacuum lubricant PFPE 501

Chemically inert lubricant, gliding and sealing agent based on perfluoropolyether and PTFE. Can be used between -15 and +250 °C.

- Extremely resistant to solvents and aggressive chemicals (including halogens, nitric acid, as well as gaseous and liquid oxygen)
- High load-carrying capacity, as well as excellent sliding friction thanks to film-forming, highly dense perfluoropolyether structure
- Non-flammable, not poisonous
- Versatile; protects, lubricates and seals stock, valves, gears, threads, o-rings, seals, etc.

**Technical specifications:**

| | |
|---|---|
| Relative density at 25 °C | 2003 g/cm$^3$ |
| Steam pressure at 25 °C | 1.3 x 10$^{-12}$ torr |
| Four-ball test acc. to ASTM D2266 (40 kg) | 0.94 mm |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YT61.1** | 100 g | 165,55 |




## Ballistol®-oil and -spray

Pure, mildly alkaline special oil with cleaning, conserving, protecting, regenerating, impregnating, lubricating and disinfecting properties. Low surface tension, wets even the smallest cracks and gaps. Does not gum or cure. Free from chlorinated hydrocarbons, environmentally friendly and biologically degradable. Also suitable for use on wood and leather. Dermatologically tested and approved for parts coming into contact with product in the foodstuffs industry.

**Ballistol®-oil**

**Warning** H-226

| Art. No. | Packaging | Pack Qty. | € |
|---|---|---|---|
| **AA74.1** | glass | 50 ml | 5,50 |
| **AA74.2** | glass | 500 ml | 24,30 |

**Ballistol®-spray**

**Danger** H222-H229

| Art. No. | Packaging | Pack Qty. | € |
|---|---|---|---|
| **AA75.1** | spray can | 200 ml | 9,65 |

▶ Laboratory glass see page 10




## PTFE paste

Suitable for sealing fine threads and cuts. High viscosity, good lubrication properties, good electrical resistance properties. Chemically inert. Temperature stable from -30 to +300 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0124.1** | 100 g | 128,50 |




## Limesoil

Super lubricant® for quick fit connections and stopcocks. Protects glass against seizing and metals against corrosion. Produces a non-tearing film and is resistant to aggressive substances such as methylisobutylketone, IPA, etc. No flowing, no pulling strings.
**Temperature range: -40 to +185 °C**. Steam pressure: 9.33 x 10$^{-4}$ N/m$^2$ (7 x 10$^{-6}$ Torr) at +20 °C and 1.33 N/m$^2$ (10$^{-2}$ Torr) at +100 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **3067.1** | 50 g | 55,90 |



## Rotifluid®

Low-viscosity mineral oil-based lubricant for precision mechanics.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1264.1** | 200 ml | 8,50 |
| **1266.1** | 1 l | 19,90 |




## Sprayflon®

Multi-purpose PTFE-lubricant, gliding and separating agent with extremely low friction factor. Resistant against water, oil and aggressive substances. Anti-adhesive, dirt repellent, prevents freezing and is temperature stable to +260 °C. Free of grease and silicone. Propellant propane/butane.

**Danger** H222-H229

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K007.1** | 300 ml | 16,05 |



## Paraloid™ B-72

Transparent, light-resistant thermoplastic acrylic resin for conserving samples. Also ideal for coating and sealing wood, stone, metals, and other materials. The coat is permanently stable and non-yellowing. Compatible with cellulose, silicone, PVC, and many other plastics and metals. Resistant to water and many chemicals. Dissolves in toluene or ethyl acetate. Can be applied with brush, spray gun or in immersion bath. Hardens by air drying or heat exposure (approx. 30 mins at 150 °C)

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9639.1** | 1 kg | 60,75 |
| **9639.2** | 5 kg | 174,70 |







## KORASILON universal silicone spray

Solvent-free, ready-to-use release agent, lubricant and preservative with dielectric properties and a wide range of applications:

- **Lubricant:** reduces surface friction and optimises lubrication effect
- **Impregnating agent:** water and dirt repellent
- **Antifreeze:** prevents freezing and sticking of seals
- **Preservative and care product** for rubber, plastics, wood, metals etc.
- **Release agent:** allows residue-free demoulding of plastic products
- **Electrically insulating**, prevents current leakage at electrical contacts
- Heat resistant up to approx. 350 °C

**Delivery incl.** additional spray nozzle with extension capillary tubing.

**Danger** H222-H229

| Art. No. | Pack Qty. | € |
|---|---|---|
| **5432.1** | 400 ml | 9,65 |

## KORASILON release agent M

Silicone-based mould release agent for duromers and thermoplastic materials. With high, long-lasting release capacity. Its extremely thin spray film is easy to apply and provides improved lubricity, surface gloss and scratch resistance.
Heat resistant up to approx. 150 °C, leaves no residues on hot surfaces.

**Danger** H222-H229-H315-H336-H411

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0895.1** | 400 ml | 8,95 |



## Zaponlack varnish

Fast drying, clear varnish with a nitrocellulose base. Crystal clear, for protecting copper or brass against oxidation, and for fixing paper, wood, glass, leather, etc. Apply by brushing, spraying or dipping.

**Danger** H225-H315-H318-H336-H412-EUH066

| Art. No. | Pack Qty. | € |
|---|---|---|
| **6804.1** | 500 ml | 34,95 |



## Urea-hydrogen peroxide

Easily dissolving oxidation agent. Tablet ∅ 12 mm, weight 1,0 g. $H_2O_2$ content 35 %, weight minimum. Active-oxygen 16.5 % / weight minimum. For bleaching and fixing.

**Danger** H272-H315-H318-H335

| Art. No. | Pack Qty. | € |
|---|---|---|
| **7641.1** | 500 tablets (= 500 g) | 37,10 |




## Instant glue CA 221

Ethyl cyanoacrylate based single-component instant glue for plastics, metals and porcelain. The adhesive bonds are to a large degree temperature and chemical resistant. Not suitable for permanent contact with water. Starts to harden in less than 1 minute and cures fully after 8-10 hours. Storage temp. +10 °C. Shelf life approx. 6 months.

**Warning** H315-H319-H335

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0258.1** | Dispenser bottle 10 ml | 6,40 |




## Thermokitt Roth 1100 °C

Heat resistant embedding medium, seals and glues metal, glass, ceramic, porcelain. Has ideal electric resistance properties, ideal insulation for heating elements. **With stands temperatures to +1100 °C**, is free of phosphate and resistant to oil, acids, and solvents. The components of powder (component 1) and liquid (component 2) are mixed in a ratio of 2:1 by weight. Sets after 24 hours. Kit for mixing 300 g ready to use medium.

Set contains component 1 (powder, Art. No. 2391) and component 2 (liquid, Art. No. 2392). Contents of this kit may not be bought separately.

**Danger** H290-H302-H314-H372

| Art. No. | Pack Qty. | € |
|---|---|---|
| **3040.1** | 200 g components 1 and 100 g components 2 | 38,60 |




## One components silicone rubber

For gluing, sealing, covering. High temperature stability, virtually chemical resistant. UV/ozone resistant. Polymerizes at room temperature through air humidity to a permanently elastic rubber. Ready-to-use in tubes of 85 ml.

**Scrintec® 600, oxime cross-linking**
Paste-like, **transparent**. Temperature stable from -50 to +180 °C.
Spec. weight 1.02 g/cm³, shore-hardness 20 °.

**Warning** H317-EUH208

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Scrintec® 600 | **E046.1** | 1 tube | 12,85 |

**Scrintec® 901, acetic acid cross-linking**
Liquid, **opaque red**. Temperature stable from -60 to +250 °C.
Spec. weight 1.20 g/cm³, shore-hardness 35°.

**Warning** H315

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Scrintec® 901 | **2024.1** | 1 tube | 13,95 |




## Autostic FC8

Single-component adhesive filler for connecting, sealing, coating or gluing ceramics, glass, quartz crystal, metal etc. **Max. usage temperature +1000 °C**, non-flammable. Ready to use, viscosity 3000 MPa. Setting occurs at room temperature or can be accelerated by heating at up to 90 °C. Depending on temperature, humidity and the properties of the material to be glued as well as the required layer thickness, setting is complete after 36-48 h.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0279.1** | Tin 500 g (250 ml) | 42,80 |




## Araldit® Epoxy Systems

Suitable for joining metal, ceramic, or plastic together in any combination. Also ideal for filling gaps in these materials.

**Araldit® adhesive B 1**

On an epoxy base, low viscosity, transparent.
For connecting metal parts and filling hollow spaces.
Hardens with hardener H 2 (Percentage by weight 100:8).

**Warning** H315-H317-H319-H410-EUH205

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2530.1** | 500 g | 70,85 |

**Araldit® Resin G 2**

Epoxy resin, low viscosity. Suitable for casting and embedding electronic components. Curing at room temperature with hardener H 2 (percentage by weight 10:1).

**Warning** H315-H317-H319-H411-EUH205

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2545.1** | 500 g | 36,45 |

**Aradur® hardener H2**, liquid

**Danger** H302+H312-H314-H317-H412

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2551.1** | 100 g | 15,30 |
| **2551.2** | 500 g | 53,25 |



## Plexit® 55 Röhm

Viscous acryl-resin for embedding. Hardens after addition of a catalyst and blue light (340-400 nm). Makes crystal clear blocks, that can be worked mechanically.
Hardening with catalyst (percentage by volume 100:1 to 100:2).

**Acryl-resin-se**

Set contains resin (Art. No. PL78) and catalyst (Art. No. 2494).
Resin may not be bought separately.

**Danger** H225-H315-H317-H335

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2490.1** | 1 l resin and 10 g catalyst | 50,00 |
| **2490.2** | 2,5 l resin and 25 g catalyst | 96,25 |

**Thinner 30**

**Danger** H225-H315-H317-H335

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2498.1** | 1 l | 41,85 |

**Catalyst 22 N**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2494.1** | 50 g | 9,60 |
| **2494.2** | 250 g | 18,50 |




## Araldite® Rapid

Two component all-purpose glue, made with an epoxid-resin base. Suitable for many materials, except for PP, PE, PTFE, PVC and Acryl. Fast setting, heat resistant up to +100 °C, resistant against alcohol, water, petrol, mineral oils and similar substances. Mixing 1:1. Process of setting starts after 5 min, will support itself after another 15 mins and is fully stable after 8-10 h.
Kit contains 15 ml each of component A and B.

**Warning** H315-H319-H317-H411-EUH205

| Art. No. | Pack Qty. | € |
|---|---|---|
| **3131.1** | Two kits (= 60 ml glue) | 39,70 |



## Two component sealing resin Metaflux®

Two-component epoxy resin for quick repair of metal, porcelain, wood and stone, for sealing pipes and tanks, and for filling out irregularities and holes. Also ideal under water. Hardens within 3 hours at 20 °C.
Heat-resistant up to +200 °C, suitable for mechanical processing.
Compressive strength 7840 N/cm², tensile strength 2940 N/cm².
Mixture 1:1.

**Warning** H315-H319-H317-H412

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1279.1** | 400 g | 38,60 |



## Hot glue gun Gluematic 5000

By Steinel. Cordless hot melt applicator with extremely high melting capacity.

- Very short heating times
- Glue is heated automatically when the unit is placed onto the charger
- Electronic temperature control using state-of-the-art PTC heating technology
- Continuous operation with power cable possible
- Energy-saving standby mode
- Mechanical glue stick feeder for speedy, well-metred working
- Replaceable glue nozzles

**Technical specifications:**

| | |
|---|---|
| Dimensions (L x W x H) | 185 x 32 x 180 mm |
| Weight (without stand) | 330 g |
| Output | Working phase approx. 120 W, warm-up phase approx. 500 W |
| Warm-up phase | 3-5 min. |
| Melt temperature | 210-220 °C |
| Delivery rate | approx. 22 g/min. |

**Delivery incl.** charger with drip protection, short nozzle ∅ 2.0 mm, long nozzle ∅ 2.8 mm, 5 Ultra Power glue stick, power cable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PE36.1** | 1 | 68,75 |

**Accessories:**

| | | | |
|---|---|---|---|
| Glue sticks Ultra Power, 250 g, ∅ 11 mm | **PE37.2** | 10 | 10,70 |
| Glue sticks Transparent, 250 g, ∅ 11 mm | **PE38.2** | 10 | 10,70 |
| Fine nozzle ∅ 1.0 mm | **PE39.1** | 1 | 8,30 |




## Temperature stable adhesive tapes

Self-adhesive tape. Ideal for extreme temperatures. Temperature stable from **-196 to +287 °C**. Suitable for use in the cryo sector, incubators, autoclaves, sterilizers, etc. Surface with textile finish, can be marked.

| Width (mm) | Length (m) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 12,7 | 7,6 | **L034.1** | 1 | 32,25 |
| 19,0 | 7,6 | **L035.1** | 1 | 36,35 |
| 25,4 | 7,6 | **L036.1** | 1 | 54,10 |



## tesaband® Premium

Fabric tape, 25 mm wide. Wear and tear resistant. Good adhesion even on rough surfaces. Can be written on. Temperature resistant up to +130 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1263.2** | 1 roll (25 m) | 24,30 |

▶ More adhesive tapes starting on page 682



## Electro insulation tape

Made of high-gloss PVC, synthetic rubber adhesive.
Heat resistant from -10 to 105 °C. Resistant to moisture, oil, diluted acids and alkalis, as well as UV radiation. Penetration resistance 40 kV/mm. Good adhesive force and high flexibility, elongation at break ≥ 160 %, tear strength 18.0 N/mm².
Width 19 mm, thickness 0.19 mm, roll length 20 m, weight 100 g.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1256.1** | 1 roll | 5,70 |



## Scotch Mount 4032 double-sided adhesive foam tape

Double-sided self adhesive, made of polyurethane. For fixing down surfaces to prevent slipping, or as a stick-on tape for pin-up boards, posters, etc. Slightly stretchable, good adhesion, and is easy to remove.
Width 25 mm, 0.8 mm thick.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1283.1** | 1 roll (11 m) | 29,60 |



❄❄

## PTFE thread sealant tape

Protects, seals and secures all types of thread. Highly flexible, usable from -190 to +260 °C. Chemically inert. Tape width 12 mm, thickness 0.08 mm. Roll length 12 m.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1715.1** | 3 rolls = 36 m | 4,80 |

▶ PTFE-spray, see page 1141



❄❄

## PTFE flat sealing tape

Self-adhesive, for pipe connections and other surfaces.
Soft, easily adaptable, smoothes out irregularities.
Temperature range: 240 to +270 °C. Pressure range: up to 120 bar.
Vacuum leakage rate for helium: 1.3 x $10^3$ mbar/sec at 20 N/$m^2$.
Surface pressure. Width 3.0 mm, 1.5 mm thick.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0801.1** | 2,5 m | 41,00 |




## O-ring set from Loctite®

Ideal for making different sized O-ring seals. Work pack with approx. 20 g special glue, cutter, 1 m elastic bands each with ∅ 1.6; 2.4; 3.0; 5.7 and 8.4 mm and instructions. Drying time for rings approx. 10 min.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1725.1** | 1 Set | 85,70 |



## Sekuroka®-velcro fastening

**Easily removable**, consists of loop and hook components with self-adhesive back. Fastener is closed by gently pressing hooks into the loops. Ideal for applications where a high amount of opening and closing is expected. Approx. 2.5 mm thick when closed.
Length 230 cm, width 25.4 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **K956.1** | 1 | 42,80 |



## Sekuroka®-snap fastening

**Self-adhesive, flexible.** With interlocking semi-spherical heads (62 heads/$cm^2$). Provides extremely secure and resilient connections to most materials with high, permanent adhesive power.
Approx. 5.8 mm thick when closed. Length 230 mm, width 25.4 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0295.1** | 1 | 39,25 |



## Heat protection foil

Self-adhesive, made of 0.05 mm thick aluminium foil.
Ideal for covering windows and other smooth surfaces. 50 cm wide.
Temperature stable to +80 °C.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0193.1** | roll 5 m | 23,60 |

▶ Hotplates, see page 992
▶ Temperature control baths, see page 937

# Gas-leak tester




## Gas-leak tester Roth

Special liquid for finding smallest leaks in tubing or hollow spaces that are under gas or air pressure. Nontoxic, non-inflammable, non-corrosive. Suitable for compressed air, butane, natural gas, town gas, propane, $CO_2$, $O_2$, $N_2$, $H_2$ and ammonia. Spray possible leakage area.
Bubbles appear at site of leak.

| Art. No. | Packaging | Pack Qty. | € |
|---|---|---|---|
| **2686.1** | pump spray bottle | 500 ml | 17,15 |




## ECO leak finder spray

For reliable location of leaks on gas pipes and compressed air systems. Produces easily visible foam bubbles at the site of leaks. Suitable for e.g. natural gas, propane, butane, acetylene, nitrogen, carbon dioxide, refrigerant and oxygen. Compatible with plastics and metals, non-corrosive. DVGW-tested in accordance with DIN EN 14291:NG-5170AS0069 and with NSF-P1 registration for food technology.

Propellant: $N_2O$.

**Warning** H229-H319

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HAN3.1** | 500 ml | 10,45 |



## Gas leak detector testo 316-1

By Testo. Ideal for tracing leaks in pipes, flanges, screw connectors, gas pipes etc.  For methane. With visual and acoustic alarm.
Sensor has extremely short reaction time.

**Technical specifications:**

| | |
|---|---|
| Range | 0 to 10.000 ppm CH4 |
| Alarm threshold | >200 ppm LED yellow / >10.000 ppm LED red |
| Battery life | >5 h |
| Working temperature | 4 to 45 °C |
| Dimensions (L x W x H) | 190 x 57 x 42 mm |
| Weight | 300 g |

**Delivery incl.** battery (9 V).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **P757.1** | 1 | 215,00 |



## Rotitherm® heating and cooling mediums

For filling water baths, cooling chests, thermostats, etc.

**Technical specifications:**

| Rotitherm® | H 250 | M 220 | M 150 | K + H |
|---|---|---|---|---|
| Density at 0 °C<br>Density at 23 °C<br>Density at +180 °C | 1.05 g $cm^{-3}$<br>0.90 g $cm^{-3}$ | 1.00 g $cm^{-3}$<br>0.85 g $cm^{-3}$ | 1.00 g $cm^{-3}$<br>0.85 g $cm^{-3}$ | -<br>1.15 g $cm^{-3}$<br>1.034 g $cm^{-3}$ |
| Thermal stability | +250 °C | +220 °C | +150 °C | +170 °C |
| Coefficient of thermal conductivity W/ (m x K) | 0.131 | 0.170 | 0.163 | approx. 0.176 |
| Combustion point | >360 °C | >360 °C | >370 °C | - |
| Pour point | -65 °C | <-50 °C | <-50 °C | <-39 °C |
| Flashpoint | >300 °C | >320 °C | >310 °C | >290 °C |

**Rotitherm® H 250**

Silicone oil for heating baths.

| | |
|---|---|
| Steam pressure | at +20 °C: ~ 1,33 x $10^{-4}$ N/m ($10^{-6}$ Torr)<br>at +150 °C: ~ 1,33 x $10^{-2}$ N/m ($10^{-4}$ Torr) |
| Kinematic viscosity | at +20 °C: 200 $mm^2$ $s^{-1}$ (cSt)<br>at +100 °C: 34 $mm^2$ $s^{-1}$ (cSt) |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Siliconöl Rotitherm® H 250 | **1670.1** | 1 l | 127,95 |
| Siliconöl Rotitherm® H 250 | **1670.2** | 10 l | 1073,95 |

**Rotitherm® M 220**

Silicone oil for heating baths. Brown.

| | |
|---|---|
| Steam pressure | at +20 °C: ~$10^{-4}$ mbar<br>at +150 °C: ~$10^{-2}$ mbar |
| Kinematic viscosity | at +20 °C: 1000 $mm^2$ $s^{-1}$ (cSt)<br>at +100 °C: 300 $mm^2$ $s^{-1}$ (cSt) |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rotitherm® M 220 | **0991.1** | 1 l | 44,00 |

**Rotitherm® M 150**

Silicone oil for heating baths.

| | |
|---|---|
| Steam pressure | $10^{-5}$ to $10^{-4}$ mbar from +25 °C to +175 °C |
| Kinematic viscosity | at +25 °C: 100 $mm^2$ $s^{-1}$ (cSt)<br>at +100 °C: 32 $mm^2$ $s^{-1}$ (cSt) |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rotitherm® M 150 | **0990.1** | 1 l | 32,15 |
| Rotitherm® M 150 | **0990.2** | 5 l | 139,25 |

**Rotitherm® K + H**

Heat transfer fluid for cooling and heating baths. Due to the low pour point, Rotitherm® K+H can also be used as a coolant. Mixes with water in any ratio, non-sensitive to water hardness. Mixtures with 10-30 % proportion of water can be used up to -55 °C. Does not form build-up even when heated and can easily be removed using water.

| | |
|---|---|
| Kinematic viscosity: concentrate | at +20 °C: 300 $mm^2$ $s^{-1}$ (cSt)<br>at +60 °C: 39 $mm^2$ $s^{-1}$ (cSt)<br>at +100 °C: 12 $mm^2$ $s^{-1}$ (cSt) |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Rotitherm® K + H | **7143.1** | 1 l | 37,55 |
| Rotitherm® K + H | **7143.2** | 5 l | 137,10 |



## Rotisol®

Universal alcoholic solvent, extraction agent, mobile phase, and elution medium, for dehydrating in histology, recrystallisation, etc. Mixable with water.
Ingredients:
dehydrated ethanol ~99 % · acetone ~5 % · methyl ethyl ketone ~1 % · Flp 12 °C · Kp 56-80 °C · D ~0.79 · highly flammable.

**Danger** H225-H319-EUH066

| Art. No. | Pack Qty. | € |
|---|---|---|
| **7917.3** | 1 l | n. a. |
| **7917.1** | 2,5 l | n. a. |
| **7917.2** | 25 l | n. a. |



## Floating pellets

Made of **PP**. Protect against evaporation and fast temperature loss. Decrease hazardous vapours. Resistant to many acids, bases, solvents and mineral oils. Temperature stable up to +100 °C.

| ∅ (mm) | Design | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 | for 0,10 $m^2$ | **A753.1** | 250 | 27,45 |
| 38 | for 0,13 $m^2$ | **A754.1** | 100 | 38,60 |
| 45 | for 0,20 $m^2$ | **A755.1** | 100 | 42,95 |

▶ For heating baths, see page 950

▶ Further silicone oils see chapter chemicals A-Z!

# Aids




## Boiling pebbles

Prevent delayed boiling. Ensure uniform distillation of low-viscosity liquids.

**Type A:** for standard distillation. Natural stone product mainly made of quartz. Contains small amounts of iron. Granules are approx. 5-8 mm. Suitable for vacuum distillation.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1691.1** | 75 g = about 1000 pebbles | 16,70 |

**Type B:** for analysis. Natural, alkalic alumosilicates, without ceolit. Granules are approx. 5 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1692.1** | 80 g = about 1700 pebbles | 18,25 |

## Boiling pebbles made of PTFE

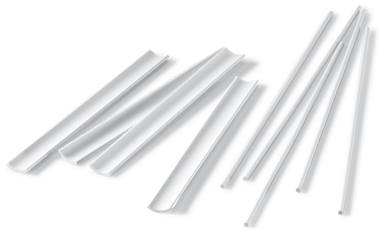
Irregularly formed granulate. Prevent uncontrolled overheating of solutions during warming up of volatile liquids. Resistant and inert against most aggressive chemicals (acids, bases, hydrocarbons).
Doesn't scratch glass and leaves no powdery deposits.
Maximum working temperature +260 °C. Granules 1 to 5 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **L429.1** | 50 g | 7,35 |

## Boiling pebbles, resistant

For preparative and analytical operations in biochemistry, biotechnology, microbiology, microanalysis, etc. Can be used in vacuumes and in high-vacuum distillation, even with minimal amounts of liquid. Do not abrade or absorb solvents, are immediately effective after every interruption. Are also suitable for strong acids, bases, aggressive solvents and oxidation agents. Can be sterilized by calcinating. Granules are approx. 3-4 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **H751.1** | 50 g = ca. 1785 pebbles | 30,05 |



## Magnesia scoops

For annealing and incineration of samples, as well as for the production of oxygen melts for the detection of chromium, manganese etc. and for bead tests. W 9 x L 100 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **6537.1** | 25 | 20,40 |

## Magnesia rods

Ideal for flame analysis of sodium, etc. For borax-bead analysis of cobalt. For bead tests. ∅ 1.5 x L 140 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **6543.1** | 25 | 23,15 |



## Glass beads

Reflex beads made of soda-lime glass. Specific weight approx. 2.5 g/cm$^3$.

**Technical Specifications:**
Apparent density depending on size 1.46-1.51 kg/l. Refraction index 1.5188. Chemical composition: $SiO_2$ 72.3 %; $Na_2O$ 13.3 %; CaO 8.9 %; MgO 4.0 %; other 1.5 %.

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,25-0,5 | **A553.1** | 1 kg | 26,80 |
| 0,75-1,0 | **A554.1** | 1 kg | 26,80 |
| 1,25-1,65 | **A555.1** | 1 kg | 26,80 |
| 1,7-2,1 | **A556.1** | 1 kg | 26,80 |
| 2,85-3,45 | **A557.1** | 1 kg | 26,80 |

## Glass beads

Glass beads made of high-purity soda-lime glass. Manufactured using a special process which can produce beads of extremely accurate roundness from a 4 mm size range.
- very smooth surface
- low proportion of air bubbles

Can be used as stirring and mixing beads for aerosol sprays or as a ball valve for bottle caps. Because of their high purity the beads can used as grinding and dispersing beads during wet grinding of pigments, agrochemicals, biological and other preparations.

**Technical specifications:** Refractive index 1.5159.
Chemical composition: $SiO_2$ 68.1 %; $Na_2O$ 15.0 %; CaO 8.3 %; MgO 2.5 %; $Al_2O_3$ 3.3 %; other 2.80 %. Specific weight approx. 2.5 g/cm$^3$.

| ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 4 ± 0.3 | **HH55.1** | 1 kg | 26,80 |
| 5 ± 0.3 | **HH56.1** | 1 kg | 26,80 |
| 10 ± 0.5 | **HH57.1** | 1 kg | 26,80 |
| 15 ± 0.5 | **HH58.1** | 1 kg | 26,80 |
| 20 ± 0.5 | **HH59.1** | 1 kg | 61,85 |

## Beads®

### Glass Beads®

| ∅ (mm) | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|
| 0,1 | **N029.1** | 450 | 59,15 |
| 0,5 | **N030.1** | 450 | 59,15 |
| 1,0 | **N031.1** | 450 | 59,15 |
| 2,7 | **N032.1** | 450 | 59,15 |

### Zirconia/Glass-Beads®

| ∅ (mm) | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|
| 0,1 | **N033.1** | 450 | 88,30 |
| 0,5 | **N034.1** | 450 | 88,30 |
| 1,0 | **N035.1** | 450 | 88,30 |
| 2,3 | **N036.1** | 450 | 88,30 |

### Zirconia-Beads®

| ∅ (mm) | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|
| 0,7 | **N037.1** | 450 | 153,75 |
| 1,0 | **N038.1** | 450 | 153,75 |
| 2,0 | **N039.1** | 450 | 153,75 |

### Stainless steel Beads®

| ∅ (mm) | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|
| 1,5 | **P329.1** | 45 | 88,15 |

# Life Science

## Electrophoresis


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# Electrophoresis


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| Gel Documentation | | |
| | Gel Documentation Systems | 1213 |
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# Roti®-PAGE Precast Gels

ready-to-use

**ready-to-use, for rapid and easy protein gel electrophoresis**

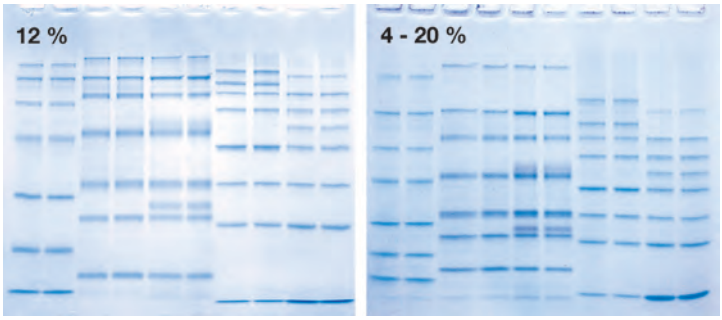


- Sharp resolution
- Very easy application
- Compatible with most minigel chambers
- Shelf life: 12 weeks from date of manufacture
- Well tested Rotiphorese® quality
- Suitable for denaturing and native electrophoresis
- Consistent lot-to-lot and get-to-gel performance
- In-process controlled manufacturing and functional testing of every lot
- Well suited and optimised for all standard down-stream applications, like, e.g. gel staining (Coomassie®, fluorescence, silver), gel drying (vacuum, gel drying frames) and Western-Blotting (Semi-Dry, Tank)

Store at +4 °C
Transport temp.: cooled



**Gel parameters:**
Cassette size (l x w): 9 x 10 and 10 x 10 cm
Gel size (l x w): 7.1 x 8,3 bzw. 8,1 x 8,3 cm
Gel thickness: 1 mm
Gel matrix continuous (10 % or 12 % polyacrylamide) or in gradient (4 - 20 %)
Stacking gel 4 % polyacrylamide
Buffer system Tris/Glycine without SDS
Package contains Tris/Glycin buffer with 0,02 % sodium azide




**Roti®-PAGE with 12 % gel matrix or gradient gel matrix (4-20 %)**
Coomassie Staining. Denaturing gel run in Tris/Glycin buffer with 0,1 % SDS. 1 hour, 25 mA (150 V, ramping to 300 V).
Lane 1-2: 8 µl Roti®-Mark STANDARD (Art. No. T851);
Lane 3-4: 5 µl Roti®-Mark PRESTAINED (Art. No. T852);
Lane 5-6: 5 µl Roti®-Mark BICOLOR (Art. No. 2806);
Lane 7-8: 7,5 µl Roti®-Mark 10-150 (Art. No. T850);
Lane 9-10: 7,5 µl Roti®-Mark WESTERN (Art. No. 0948).

Gel plates may be separated very easily by using the comb without tearing the preciou s gel.





Precast mini gels for rapid and easy gel electrophoresis in laboratory and students courses. Roti®-PAGE mini gels come precast and are very easy and quick to use.
Our proven and tested Rotiphorese® quality and the standardised tris-glycine buffer system are compatible with all running and loading buffers according to Lämmli and all downstream applications (Western Blot, MS-analysis, sequencing etc.).
All Roti®-PAGE Minigels include 4 % polyacrylamide stacking gels and yield a sharp band separation in the recommended protein range. Because of their variable format of 9 x 10 cm or 10 x 10 cm, the gel plates fit all standard mini-electrophoresis chambers and can be separated easily after the run without damaging the precious gel. The gel matrix contains no SDS (for native gels), a running buffer containing SDS is recommended for denaturing gels (e.g. Rotiphorese® 10x SDS-PAGE, Art. No. 3060).

# Electrophoresis · PAGE Precast Gels

## Compatibility

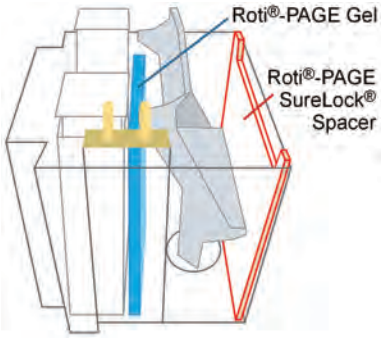
Both gel sizes of Roti®-PAGE Precast Gels (9 x 10 cm and 10 x 10 cm) are well compatible with both series of Roth's vertical electrophoresis units, classical green line (Art. No. Y001-Y004) and injection-moulded line Rotiphorese®-PROclamp (Art. No. 3501-3503).

| Unit | 9 x 10 cm | 10 x 10 cm |
|---|---|---|
| BioRad® Mini PROTEAN® I, II & III and Ready Gel® Cell | **yes** | not comp. |
| CBS Scientific MGV System 10 x 8 cm unit | **yes** | not comp. |
| CBS Scientific MGV System 11.3 x 10 cm unit | not comp. | **yes** |
| Cleaver Scientific omniPAGE mini | **yes** | **yes** |
| Fisher EC 120-2 | **yes** | **yes** |
| Fisher FBVE units | not comp. | **yes** |
| Gibco BRL Mini-V8 | **yes** | not comp. |
| Hoefer Mighty Small SE 250*, 260 & 280 | **yes** | **yes** |
| Hoefer Mini VE | not comp. | **yes** |
| Invitrogen Novex® Xcell Units (incl. MiniCell) | **yes** | **yes** |
| Life Technologies - BioMetra® Mini V | **yes** | not comp. |
| LONZA PAGE® Minigel Chamber | **yes** | **yes** |
| Novex® Xcell Units (incl. MiniCell) | **yes** | **yes** |
| peQLab Perfect Blue™ Twin S | **yes** | **yes** |
| Scieplas TV50 and TV100 | **yes** | **yes** |
| Serva BlueVertical™ Mini Slab Gel System BV 102 | **yes** | **yes** |
| Sigma Aldrich Mini Techware 10 x 8 cm unit | **yes** | not comp. |
| Sigma Aldrich Mini Techware 11.3 x 10 cm unit | not comp. | **yes** |
| Thermo Scientific EC 120 mini vertical gel system | **yes** | **yes** |
| Thermo Scientific Owl Penguin™ Modell P8DS-1 | not comp. | **yes** |



For units of other suppliers this list applies. In case other units are used or special adaptors are required, please ask our technical service under info@carlroth.com

Store at +4 °C
Transport temp.: cooled




▶ Roti®-PAGE adaptors for Biorad® PROTEAN and Invitrogen™ SureLock® units see Electrophoresis / Accessories page 1210

### Important information on refrigerated transports

All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
**Additional costs** resulting from such, **will be invoiced** (further information on request).

**Please note:**
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.

## PAGE Precast Gels - Order List

| Product | Wells | Gel plates | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **Roti®-PAGE 10 %** continuous matrix for proteins of 25 to 200 kD | 10 | 9x10 cm | **2838.1** | 2 gels | 42,50 |
| | | | **2838.2** | 10 gels | 179,45 |
| | | 10x10 cm | **2839.1** | 2 gels | 42,50 |
| | | | **2839.2** | 10 gels | 179,45 |
| **Roti®-PAGE 12 %** continuous matrix for proteins of 20 to 100 kD | 10 | 9x10 cm | **2840.1** | 2 gels | 42,50 |
| | | | **2840.2** | 10 gels | 179,45 |
| | | 10x10 cm | **2841.1** | 2 gels | 42,50 |
| | | | **2841.2** | 10 gels | 179,45 |
| **Roti®-PAGE Gradient (4-20 %)** Matrix in Gradient 4-20 % for proteins of 5 to 200 kD | 10 | 9x10 cm | **2842.1** | 2 gels | 42,50 |
| | | | **2842.2** | 10 gels | 179,45 |
| | | 10x10 cm | **2843.1** | 2 gels | 42,50 |
| | | | **2843.2** | 10 gels | 179,45 |
| **Roti®-PAGE Gradient (4-20 %)** Matrix in Gradient 4-20 % for proteins of 5 to 200 kD | 12 | 9x10 cm | **2844.1** | 2 gels | 42,50 |
| | | | **2844.2** | 10 gels | 179,45 |
| | | 10x10 cm | **2845.1** | 2 gels | 42,50 |
| | | | **2845.2** | 10 gels | 179,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Rotiphorese®-Acrylamide Ready-Made Solutions

## The right choice for each and every application

The large variety of different Rotiphorese®-solutions provides you with the right product for each and every application. Rotiphorese®-gel solution may be used both in protein and nucleic acid electrophoresis. Rotiphorese®-ready-to-use solutions for manual sequencing facilitate the preparation of sequencing gels of a constant high quality - also suitable for automatic sequencers.

## Safe

Acrylamide ia a strong nerve poison which has clearly proved to be carcinogenic and to change the genetic make-up during animal testing. Acrylamide is resorbed primarily through the skin. The formation of dust when working with the solid matter is particularly critical.
A hazard which can be easily avoided by using the Rotiphorese® ready-to-use solution.

## Superior quality

Rotiphorese®-Acrylamide and -Bisacrylamide solutions from ROTH have the highest purity level. They are produced from substances free from acrylic acid. Oxidation products are removed from the solution by a selective absorption process. A new formation of such and/or polymerisation of the solution is prevented by gaseous stabilisation of the solution.
In order to guarantee a high consistency of our Rotiphorese®-solutions, each batch undergoes electrophoretic testing.




**Simple codification in product term**

Rotiphorese® Gel 30 (37.5:1)

Concentration in %

Ratio acrylamide / bisacrylamide

## Recommendation for Use of Rotiphorese® Ready-Made Gel Solutions

| Analysis of | Gel solution | Art. No. |
|---|---|---|
| Proteins/peptides >15 kDa, DNA fragments and DNA/protein interaction | Gel 30 (37,5:1) | 3029.1 |
| | Gel 40 (37,5:1) | T802.1 |
| Proteins/peptides <30 kDa and DNA oligonucleotides | Gel 40 (29:1) | A515.1 |
| DNA sequences (manual sequencing) | Rotiphorese®-DNA sequencing system | A431.1 |
| | Gel 40 (19:1) | 3030.1 |
| DNA sequences (short-run automat. sequencing) | NF solution 40 % (19:1) | A516.1 |
| DNA sequences (long-run automat. sequencing) | NF solution 30 % (29:1) | A124.1 |
| | NF solution 40 % (29:1) | A121.1 |

# Ready-Made Solutions Acrylamide/Bisacrylamide-Mix

ready-to-use

Rotiphorese® Gel 30 and Gel 40 are ready-to-use, gas-stabilised acrylamide solutions with different concentrations and with different ratios of acrylamide to bisacrylamide. Rotiphorese®-ready-to-use solutions can be used directly.

## Rotiphorese® Gel 30 (37,5:1)

**ready-to-use, gas stabilised, aqueous 30 % acrylamide and bisacrylamide stock solution at a ratio of 37,5:1**

For preparation of protein gels in electrophoresis.
Storage temp.: +8 °C

**Danger** H302-H315-H317-H319-H340-H350-H361f-H372

Cross linking 2,7.

| | | | |
|---|---|---|---|
| **3029.3** | 250 ml | glass | 24,20 € |
| **3029.2** | 500 ml | glass | 37,55 € |
| **3029.1** | 1 l | glass | 64,00 € |
| Original pack 6 x 1 l | | | 60,80/1 l |

## Rotiphorese® Gel 40 (19:1)

**ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 19:1**

Ideal for the preparation of sequencing gels and other DNA gels used for separating small DNA fragments.
Storage temp.: +8 °C

**Danger** H302+H332-H315-H317-H319-H340-H350-H361f-H372

Cross linking 5.

| | | | |
|---|---|---|---|
| **3030.2** | 250 ml | glass | 30,65 € |
| **3030.1** | 1 l | glass | 74,10 € |
| Original pack 6 x 1 l | | | 70,40/1 l |

## Rotiphorese® Gel 40 (29:1)

**ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 29:1**

For preparation of protein- or DNA gels. Particularly ideal for the analysis of protein/DNA interactions, or peptides.
Storage temp.: +8 °C

**Danger** H302+H332-H315-H317-H319-H340-H350-H361f-H372

Cross linking 3,3.

| | | | |
|---|---|---|---|
| **A515.2** | 250 ml | glass | 32,80 € |
| **A515.1** | 1 l | glass | 79,45 € |
| Original pack 6 x 1 l | | | 75,48/1 l |

## Rotiphorese® Gel 40 (37,5:1)

**ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 37,5:1**

For preparation of protein gels.
Storage temp.: +8 °C

**Danger** H302+H332-H315-H317-H319-H340-H350-H361f-H372

Cross linking 2,7.

| | | | |
|---|---|---|---|
| **T802.2** | 250 ml | glass | 29,60 € |
| **T802.1** | 1 l | glass | 70,85 € |
| Original pack 6 x 1 l | | | 67,31/1 l |

# Acrylamide and Bisacrylamide Stock Solutions

PAGE solutions are always a mixture of acrylamide and bisacrylamide. Acrylamide forms linear polymers, whereas bisacrylamide crosslinks these linear polymers forming pores of a special size. The pore size may be altered by varying the total gel concentration (% T) and the percentage of the crosslink (% C). With the Rotiphorese® stock solutions the desired T/C rate can be produced. You need an acrylamide stock solution (Gel A or Gel A-40) and a bisacrylamide stock solution (Gel B).

For detailed instructions regarding gel preparation with Rotiphorese® Gel A, A-40 and B please see user manual and technical information brochure „PAGE Instructions“.

## Rotiphorese® Gel A

**30 % acrylamide solution**

Storage temp.: +8 °C

**Danger** H302-H315-H319-H317-H340-H350-H361f-H372

Ready-to-use, stabilised 30 % acrylamide stock solution. In combination with Rotiphorese® Gel B (2 % bisacrylamide stock solution, Art. No. 3039) gels with up to 20 % total acrylamide concentration can be produced.

| | | | |
|---|---|---|---|
| **3037.2** | 250 ml | glass | 21,00 € |
| **3037.1** | 1 l | glass | 51,50 € |
| Original pack 6 x 1 l | | | 48,93/1 l |

## Rotiphorese® Gel A-40

**40 % acrylamide solution**

Storage temp.: +8 °C

**Danger** H302+H332-H315-H319-H317-H340-H350-H361f-H372

Ready-to-use, stabilised 40 % acrylamide stock solution. In combination with Rotiphorese® Gel B (2 % bisacrylamide stock solution, Art. No. 3039) gels with up to 25 % total acrylamide concentration can be produced.

| | | | |
|---|---|---|---|
| **7748.1** | 250 ml | glass | 27,85 € |
| **7748.2** | 1 l | glass | 66,15 € |
| Original pack 6 x 1 l | | | 62,84/1 l |

## Rotiphorese® Gel B

**2 % bisacrylamide solution**

Storage temp.: +8 °C

Ready-to-use, stabilised 2 % bisacrylamide stock solution. In combination with Rotiphorese® Gel A (30 % acrylamide stock solution, Art. No. 3037) or Rotiphorese® Gel A-40 (40 % acrylamide stock solution, Art. No. 7748) gels with up to 25 % total acrylamide concentration can be produced

| | | | |
|---|---|---|---|
| **3039.2** | 250 ml | glass | 19,60 € |
| **3039.1** | 1 l | glass | 45,70 € |
| Original pack 6 x 1 l | | | 43,42/1 l |

Please note our **Technical Information Brochure** on the Internet next to the products:

**PAGE – polyacrylamide gel electrophoresis**
General technical information

# Rotiphorese® NF Ready-to-Use Solutions for Automated Sequencing

ready-to-use

Rotiphorese® ready-to-use solutions for automated sequencing **are special fluorescence-free acrylamide/ bisacrylamide mixtures** of highest quality as required for automatic sequencing.
Made from 4x cristallised acrylamide.

## Rotiphorese® NF-Acrylamide/ Bis-solution 30 % (29:1)

**ready-to-use, gas stabilised, aqueous 30 % acrylamide and bisacrylamide stock solution at a ratio of 29:1, fluorescence free**

Made from 4x cristallised acrylamide. Tested for automatic sequencers.
Storage temp.: +8 °C

**Danger** H302-H315-H317-H319-H340-H350-H361f-H372

Cross linking 3,3.

| | | | |
|---|---|---|---|
| **A124.1** | 250 ml | glass | 46,15 € |
| **A124.2** | 1 l | glass | 141,40 € |
| Original pack 6 x 1 l | | | 134,33/1 l |

## Rotiphorese® NF-Acrylamide/ Bis-solution 40 % (19:1)

**ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 19:1, fluorescence free**

Made from 4x cristallised acrylamide. Tested for automatic sequencers.
Storage temp.: +8 °C

**Danger** H302+H332-H315-H317-H319-H340-H350-H361f-H372

Cross linking 5.

| | | | |
|---|---|---|---|
| **A516.1** | 250 ml | glass | 47,85 € |

## Rotiphorese® NF-Acrylamide/ Bis-solution 40 % (29:1)

**ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 29:1, fluorescence free**

Made from 4x cristallised acrylamide. Tested for automatic sequencers.
Storage temp.: +8 °C

**Danger** H302+H332-H315-H317-H319-H340-H350-H361f-H372

Cross linking 3,3.

| | | | |
|---|---|---|---|
| **A121.1** | 250 ml | glass | 38,60 € |

▶ Fluorescence free urea see page 1156
▶ Fluorescence free 10 x TBE buffer see page 1166

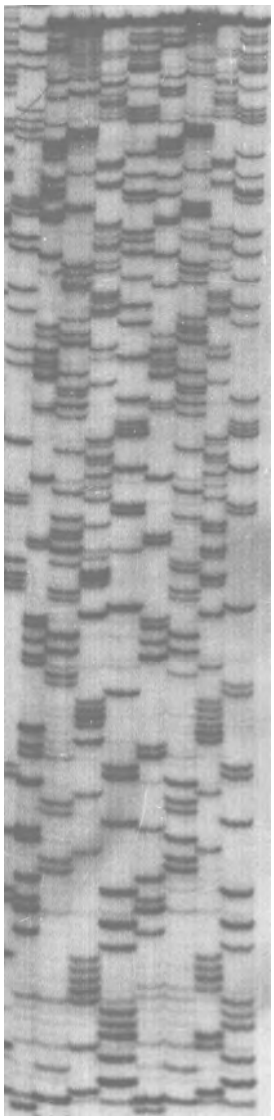
**Instructions for use**
can be found on the Internet next to the product description.

**Fluorescence-free**
NF acrylamide solutions are very well suited for application in fluorescence-labelled automated sequencing, e.g. using LI-COR or ABI slab gel sequencers.

# Ready-Made Solutions for Manual Sequencing

- For preparing 4-20 % sequencing gels
- No tedious dissolving of urea
- Prevents acrylamide dusts
- Simple handling



## Rotiphorese® DNA sequencing system

Set of ready-to-use solutions for preparation of DNA sequencing gels.
Storage temp.: +4-15 °C

**Danger** H340-H350-H372-H361f-H302-H315-H319-H317

Convenient set containing three ready-made solutions for easy and fast casting of sequencing gels. Solutions are produced in Rotiphorese® quality and are perfectly matched - providing superior, reproducible quality and high sequence resolution.
Handling is most simple: Measure and mix certain amounts of all three components, add APS and TEMED, and cast the gel.

**The following components are included:**
1 l Rotiphorese® sequencing gel concentrate (Art. No. 3043.1) - ready-to-use, stabilised solution of 25 % acrylamide/bisacrylamide 19:1 with 50 % urea (8,3 M).
1 l Rotiphorese® sequencing gel diluent (Art. No. 3047.1) - 50 % (g/v; 8,3 M) solution of urea in water.
250 ml Rotiphorese® sequencing gel buffer concentrate (Art. No. 3050.1) - 10x TBE with 50 % urea (8,3 M).
Detailed instructions-for-use are included in the set. One set is sufficient for 50 6 % gels (30 x 40 cm) with 40 % urea (e.g. in Roth Sequencing Electrophoresis Unit, Art. No. AE28.1).

| | | | |
|---|---|---|---|
| **A431.1** | 1 kit | glass | 104,85 € |

## Rotiphorese® Sequencing gel concentrate

Ready-to-use solution (19:1) for the preparation of gels containing 0-20 % monomer, for electrophoresis.
Storage temp.: +4-15 °C

**Danger** H302-H315-H319-H317-H340-H350-H361f-H372

Ready-to-use, stabilised solution of 25 % acrylamide/bisacrylamide 19:1. For the preparation of polyacrylamide sequencing gels containing 0-20 % monomer; 23,75 % acrylamide,1,25 % methylene bisacrylamide and 50 % urea (8,3 M). Cross linking 5.
Also part of the DNA sequencing system (Art. No. A431.1).

| | | | |
|---|---|---|---|
| **3043.2** | 100 ml | glass | 13,15 € |
| **3043.1** | 1 l | glass | 57,95 € |
| Original pack 6 x 1 l | | | 55,05/1 l |

## Rotiphorese® Sequencing gel diluent

50 % (g/v; 8,3 M) solution of urea in water for diluting Rotiphorese® Sequencing gel concentrate.
Storage temp.: +4-15 °C
Also part of the DNA sequencing system (Art. No. A431.1).

| | | | |
|---|---|---|---|
| **3047.1** | 1 l | glass | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |

## Rotiphorese® Sequencing gel buffer concentrate

50 % (g/v; 8,3 M) solution of urea in 10x TBE (1 M Tris-borate, 20 mM EDTA buffer, pH 8,3), for electrophoresis.
Storage temp.: +4-15 °C

**Warning** H315-H319

Also part of the DNA sequencing system (Art. No. A431.1).

| | | | |
|---|---|---|---|
| **3050.1** | 250 ml | glass | 24,20 € |

# Reagents for PAGE

## Acrylamide, 2x cryst.

**≥98 %, 2x cryst., extra pure**
For gel electrophoresis
Propene amide, acrylic acid amide
$C_3H_5NO$
M 71,08 g/mol

**Danger**
H301-H312+H332-H315-H319-H317-H340-H350-H361f-H372

Standard acrylamide, inexpensive and versatile.
For all standard applications.

| | | | |
|---|---|---|---|
| **7871.1** | 500 g | plastic | 48,30 € |
| Original pack 6 x 500 g | | | 45,89/500 g |
| **7871.2** | 1 kg | plastic | 62,90 € |
| Original pack 6 x 1 kg | | | 59,76/1 kg |
| **7871.3** | 2,5 kg | plastic | 124,60 € |
| **7871.4** | 5 kg | plastic | 207,40 € |

## Acrylamide, 4x cryst.

**≥99,9 %, p.a., 4x cryst.**
For gel electrophoresis.
Propene amide, acrylic acid amide
$C_3H_5NO$
M 71,08 g/mol

**Danger**
H301-H312+H332-H315-H319-H317-H340-H350-H361f-H372

Top-quality acrylamide, particularly suitable for sequencing gels and flourescence labelled applications.

| | | | |
|---|---|---|---|
| **7906.1** | 100 g | plastic | 34,30 € |
| **7906.3** | 250 g | plastic | 73,65 € |
| **7906.4** | 500 g | plastic | 126,75 € |
| Original pack 6 x 500 g | | | 120,41/500 g |
| **7906.2** | 1 kg | plastic | 232,10 € |
| Original pack 6 x 1 kg | | | 220,50/1 kg |

## Acrylamide, BioScience

**≥99,9 %, BioScience Grade, 4x cryst.**
For molecular biology
Propene amide, acrylic acid amide
$C_3H_5NO$
M 71,08 g/mol

**Danger**
H301-H312+H332-H315-H319-H317-H340-H350-H361f-H372

Top-quality acrylamide for electrophoresis, especially suitable for molecular biological applications.

| | | | |
|---|---|---|---|
| **0189.1** | 100 g | plastic | 41,85 € |
| **0189.2** | 500 g | plastic | 160,20 € |
| Original pack 6 x 500 g | | | 152,19/500 g |

## Bisacrylamide

**≥98 %, for gel electrophoresis**
Bis, N,N'-Methylene bisacrylamide, MBAA
$C_7H_{10}N_2O_2$
M 154,17 g/mol
Storage temp.: +4 °C

**Warning** H302

| | | | |
|---|---|---|---|
| **7867.1** | 50 g | plastic | 30,65 € |
| **7867.2** | 100 g | plastic | 48,30 € |

## Urea

**≥99,5 %, p.a., BioScience-Grade**
For molecular biology and biochemistry.
Carbamide
$CH_4N_2O$ • M 60,06 g/mol

| | | | |
|---|---|---|---|
| **2317.3** | 500 g | plastic | 30,00 € |
| Original pack 6 x 500 g | | | 28,50/500 g |
| **2317.1** | 1 kg | plastic | 52,60 € |
| Original pack 6 x 1 kg | | | 49,97/1 kg |
| **2317.4** | 2,5 kg | plastic | 115,60 € |
| **2317.2** | 5 kg | plastic | 203,20 € |

## Rotiphorese® NF-Urea

**tested for automatic sequencers, fluorescence free**
$CH_4N_2O$ • M 60,06 g/mol
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **A120.1** | 1 kg | plastic | 63,35 € |
| Original pack 6 x 1 kg | | | 60,18/1 kg |

## APS

**≥98 %, p.a., ACS**
Oxidizing agent for Cu, for separation of Mn and Cr. For electrophoresis. Polymerisation catalyst.
Ammonium persulphate, Ammonium peroxydisulphate
$(NH_4)_2S_2O_8$ • M 228,20 g/mo

**Danger** H334-H272-H302-H335-H315-H319-H317

Polymerisation catalyst for acrylamide/ bisacrylamide polymerisation.
Use 10 % APS solution - fill 1 g of APS with water to an end volume of 10 ml. Prepare freshly or store in aliquots at -20 °C. Freeze and thaw infrequently.

| | | | |
|---|---|---|---|
| **9592.3** | 50 g | plastic | 9,90 € |
| **9592.2** | 100 g | plastic | 13,15 € |
| **9592.5** | 500 g | plastic | 27,85 € |
| Original pack 6 x 500 g | | | 26,46/500 g |
| **9592.1** | 1 kg | plastic | 37,10 € |
| Original pack 6 x 1 kg | | | 35,25/1 kg |
| **9592.4** | 2,5 kg | plastic | 70,45 € |

## TEMED

**≥99 %, p.a., for electrophoresis**
N,N,N',N'-Tetramethylethylenediamine, 1,2-Bis(dimethylamino)-ethane
$C_6H_{16}N_2$ • M 116,21 g/mo

**Danger** H225-H302-H314-H332

Catalyst for acrylamide polymerisation; filled under argon. Working concentration, e.g. when preparing sequencing gels: 40 µl TEMED for 100 ml gel casting solution.

| | | | |
|---|---|---|---|
| **2367.3** | 25 ml | glass | 19,25 € |
| **2367.1** | 100 ml | glass | 37,55 € |
| **2367.2** | 250 ml | glass | 75,15 € |

## TEMED

**≥98,5 %, for synthesis**
N,N,N',N'-Tetramethylethylenediamine, 1,2-Bis(dimethylamino)-ethane
$C_6H_{16}N_2$ • M 116,21 g/mol

**Danger** H225-H302-H314-H332

Catalyst for acrylamide polymerisation; filled under argon.
The solution may contain sediment. It can be filtered before use.
Lot-specific colour variation may range from slight to considerable yellow.

| | | | |
|---|---|---|---|
| **8142.1** | 100 ml | glass | 26,35 € |
| **8142.2** | 500 ml | glass | 96,25 € |
| **8142.3** | 1 l | glass | 180,10 € |

## Rotiphorese®-PAGE Matrix Buffer plus

**4x concentrated SDS-PAGE matrix buffer, for electrophoresis**

Ready-made buffer solution for pouring of optimized SDS-PAGE gels.

SDS-Page buffer, Gel matrix buffer

Storage temp.: +4 °C • Transport temp.: cooled

- Increases protein separation quality significantly
- Superior band dissemination from 5 kDa to 250 kDa
- Higher gel strength and longer shelf life
- Compatible with all common gel loading and running buffers
- Compatible with all common gel staining methods
- Also well suitable for 2D gels and prior to Western Blotting
- 250 ml sufficient for approx. 100 mini gels

Rotiphorese®-PAGE Matrix Buffer plus is a 4x concentrated gel matrix buffer for enhanced protein separation and significantly higher gel strenth. Rotiphorese®-PAGE Matrix Buffer plus can be used for preparation of both stacking gel and resolving gel by simply replacing the Laemmli/TRIS-, or TRICIN-, buffer system. Even gels with stacking gels of only one acrylamide concentration, show a protein separation quality comparable to that of gradient gels. Band depiction is significantly enhanced compared to standard buffer systems.
Rotiphorese®-PAGE Matrix Buffer plus also provides increased gel strength, making handling of the gels much more convenient, for instance during separation of the glass plates or during transport. Gel stability is increased, leading to longer shelf lifes of self-made gels. Gels prepared with Rotiphorese®-PAGE Matrix Buffer plus may also very well be used for 2D protein analysis or for subsequent Western Blotting onto NC or PVDF membranes.

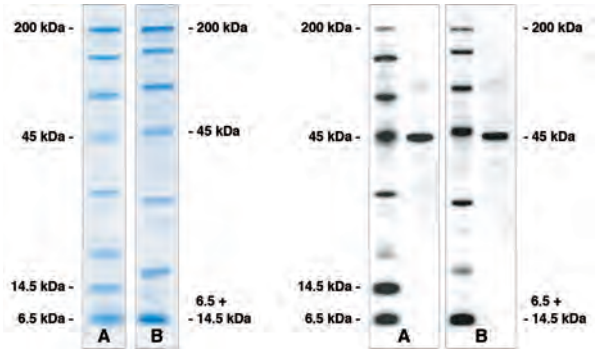



**Figure 1 and 2:**
Coomassie® stained gel and Western blot. HeLa extract on PVDF, detected via HRP chemoluminescence.
A: 10 % PAGE using Rotiphorese®-PAGE Matrix buffer plus,
B: 12 % PAGE using standard Tris glycine SDS buffer.



**Figure 4:**
Stability of a 6 % PA gel.

One bottle of 250 ml is sufficient for pouring of approx. 100 mini gels.

| | | | |
|---|---|---|---|
| **8996.1** | 250 ml | plastic | 110,65 € |



## Roti®-Stock 20 % SDS

**BioScience-Grade, ready-to-use, 0,2 µm filtered**

For molecular biology and electrophoresis.

SDS 20 % ready-to-use solution

**Danger** H318-H315-H335

20 % stock solution sodium dodecyl sulphate. Store the solution away from light in a dry place. SDS-stock solution and other solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
With original seal.

**Composition:**

20 % SDS in deionised water, 0,2 µm filtered

| | | | |
|---|---|---|---|
| **1057.1** | 1 l | glass | 138,70 € |
| Original pack 6 x 1 l | | | 131,77/1 l |

## SDS Pellets

**≥99,5 %, Rotiphorese®-Grade, for electrophoresis**

Anionic detergent

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

$C_{12}H_{25}NaO_4S$

M 288,38 g/mol

**Danger** H302-H315-H318-H412

Ultrapure, dust-free SDS in special quality for electrophoresis.
Each batch is tested for its functionality in electrophoresis.

**Guarantee analysis:**

Appearance.....white rods
Assay (titration).....≥99,5 %
pH value (10 % in water).....6,5-9
Water (KF).....≤1,0 %
UV-absorption (20 % in $H_2O$):
410 nm.....≤0,1
Solubility (10 % in $H_2O$).....clear, colourless
Colour count (APHA, 10 % in $H_2O$).....≤10
Turbidity (10 %, water).....≤2,5 NTU
Chloride (Cl).....≤0,01 %
Lead (Pb).....≤0,0002 %

| | | | |
|---|---|---|---|
| **8029.1** | 100 g | plastic | 26,35 € |
| **8029.2** | 250 g | plastic | 52,60 € |
| **8029.3** | 500 g | plastic | 91,30 € |
| Original pack 6 x 500 g | | | 86,74/500 g |
| **8029.4** | 1 kg | plastic | 170,95 € |
| Original pack 6 x 1 kg | | | 162,40/1 kg |

## Roti®fair 10% SDS

**for 1000 ml/pouch, for biochemistry, molecular biology and electrophoresis**

Anionic detergent for preparation of bioanalytical solutions.

SDS powder (pouch), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

**Danger** H228-H302+H332-H315-H318-H335-H412

Exactly pre-weighed pouches for convenient and rapid preparation of SDS solution.
Prepared solution may be sterilized by filtration (0,22 µm). The solution should be stored at room temperature. SDS-stock solution and solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
10 % SDS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

**Formulation:**

Prepared solution contains: 10 % SDS, pH value 3,0 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1157.1** | 5 pouches | box | 596,65 € |

## Roti®fair SDS 0.5g

**0,5 g/tablet, for biochemistry, molecular biology and electrophoresis**

Anionic detergent for preparation of bioanalytical solutions.

SDS (tablet), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

**Danger** H228-H302+H332-H315-H318-H335-H412

Exactly pre-weighed tablets for convenient and rapid preparation of SDS solution.
Roti®fair SDS 0.5g may also be used for preparation of SDS containing solutions, by adding the favoured number of SDS tablets directly during preparation of the solution.
Prepared solution may be sterilized by filtration (0,22 µm). The solution should be stored at room temperature. SDS-stock solution and solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
10 % SDS solution is prepared by dissolution of 1 tablet in 5 ml highly pure water. Concentrations of 0,05-20 % may be prepared.

**Formulation:**

Prepared solution contains when prepared in deionized or distilled water: SDS in favoured concentration, dependent on the amount of water used.

| | | | |
|---|---|---|---|
| **1156.1** | 50 tablets | plastic | 46,80 € |

## Roti®fair reagents

**High-pure reagents and buffer mixes in pouches or as tablets.**



▶ For a complete list, refer to the section entitled "Biochemistry"

# Agaroses and Gelling Reagents

Our agarose Roti®garose is a neutral polysaccharide which is obtained in many purification steps from the cell wall of certain algae, called Rhodophyceae. Roti®garose forms very clear gels with all standard running buffers and will result in a sharp and clear separation of your biomolecules. Extremely pure agarose with very low interference binding to staining reagents. Roti®garose produces a low background and high contrast appearance after staining.



- For clear and sharp bands
- Gels with high transparency
- Low background
- Suitable for all standard running buffers and high-speed buffer systems
- Compatible with all nucleic acid staining systems
- Non-toxic in cell immobilisation assays
- Of course DNase and RNase free

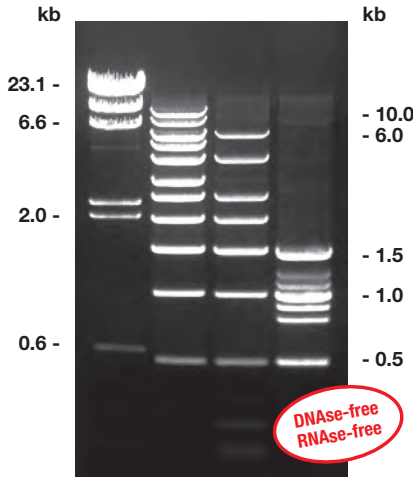
**Roth has the right agarose for every application:**

| Roti®garose | Art. No. | Application |
|---|---|---|
| **Standard** | 3810 | Routine gels, student´s courses, general analyses (1-20 kb). |
| **NEEO ultra quality** | 2267 | All standard applications, qualitative and quantitative gels, screening and blotting. Range 500 bp-20 kb. |
| **Agarose Tablets** | HP67 | Highly reproducible gels, or simple applications in students courses. Suitable for all standard-gels (0,5-0,25 %). For fragments ≥300 bp. |
| **GTQ** | 6352 | Genetic engineering quality, for DNA-elution of fragments ≥500 bp without melting the agarose* |
| **Broad Range** | T846 | For the total analytical range (200 bp up to 40 kb), Pulsed-Field electrophoresis, blotting, shift assays. Ideal when only a few agaroses are to be used in the laboratory. |
| **Pulsed-Field** | 3771 | Separation of large fragments (up to 20 kb), Pulsed Field gel electrophoresis (PFGE) |
| **HR PLUS** | HP30 | Analysis of fragments between 100 and 3000 bp |
| **High Resolution** | K297 | Analysis of fragments between 50 and 1000 bp |
| **Low Melt** | 6351 | With low melting and gelling temperatures (MT ≤65,5 °C, GT ≤28 °C). For gel elution from melted agarose. Range 500 bp-20 kb. |
| **LM / PCR** | HP31 | Genetic engineering quality with low melting and gelling temperatures (MT ≤65 °C, GT ≤35 °C). For DNA-elution of fragments <1500 bp from melted agarose. |
| **Super LM** | HP45 | With extremely low melting and gelling temperatures. (MT ≤62 °C, GT ≤20 °C). For gel elution from melted agarose. Recommended for in-gel analysis, capillary electrophoresis and cell and tissue culture. For fragments ≥1000 bp. |
| **MEEO ultra quality** | 2268 | With medium EEO. For immune, serum and antibody electrophoresis. Range 500 bp-10 kb. |
| **HEEO ultra quality** | 2269 | With high EEO. For protein precipitation and countercurrent electrophoresis. |
| **Synergel®** | 0184 | Agarose additive for finer pore formation. Increases the separative power of the agarose. For fragments from 10 bp up. |

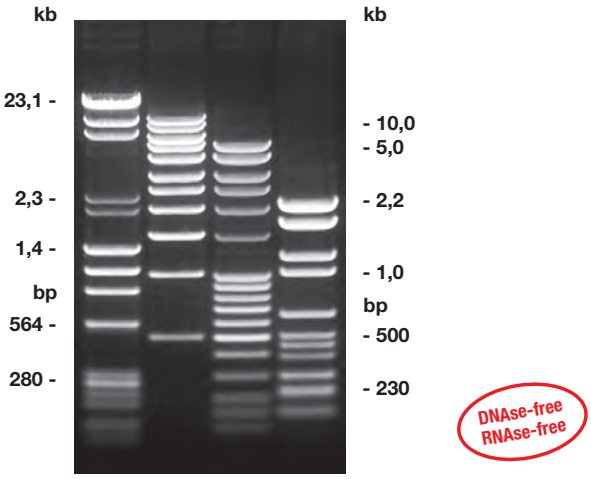
* **Tip:** Use Kit Roti®-Prep Gel Extraction (Art. No. 8510.1)




1.2 % agarose in 1 x TAE




1.2 % agarose in 1 x TAE




## Agarose Standard

**Roti®garose for DNA/RNA-electrophoresis**

General agarose for routine gels, student's courses, and standard analyses (1 kb-20 kb).

- Inexpensive agarose for routine gels and standard analyses
- Good separation efficiency for nucleic acids of 1 to 20 kb length
- Easily melting, non-foaming agarose
- Low background fluorescence after ethidium bromide staining
- Very cost-effective

**Figure** (left to right): Roth Lambda *Hind* III Marker (Art. No. X910.1) 0,6 µg, 1 kbp DNA Ladder (Art. No. Y014.1) 0,8 µg, DNA-Marker short-run *extended* (Art. No. CL05.1) 0,4 µg, PCR-Marker DNA*score* (Art. No. T146.1) 0,5 µg.

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO). | ≤0,12 |
| Sulphate ($SO_4$). | ≤0,15 % |
| Loss on drying. | ≤10 % |
| Ash. | ≤0,6 % |
| Gel strength (1 % gel). | ≥1100 g/cm² |
| Gelling temperature (1,5 % gel). | 36 ±2 °C |
| Melting temperature (1,5 % gel). | 90-95 °C |
| DNases, RNases. | none detected |

| | | | |
|---|---|---|---|
| **3810.1** | 10 g | plastic | 16,35 € |
| **3810.2** | 100 g | plastic | 66,55 € |
| **3810.3** | 500 g | plastic | 263,40 € |
| Original pack 6 x 500 g | | | 250,23/500 g |
| **3810.4** | 1 kg | plastic | 424,65 € |
| Original pack 6 x 1 kg | | | 403,42/1 kg |

## Agarose NEEO ultra-quality

**Roti®garose low electroendosmosis (EEO = 0,05-0,13)**

High-quality agarose for all general applications (500 bp-20 kb).

- Excellent separative power for nucleic acids of 500 bp to 20 kb
- High gel strength for stable gels and good handling
- Extremely low EEO allows speedy and efficient separation of nucleic acid molecules
- Fast melting, non-foaming agarose

**Figure:** (left to right) Roth Lambda *Hind* III / phiX *Hae* III marker (Art. No. CP49.1) 1 µg, 1 kbp DNA-ladder (Art. No. Y014.1) 0,8 µg, 100 bp-DNA-ladder *extended* (Art. No. T835.1) 0,8 µg, pBR328 Mix I (Art. No. T146.1) 0,8 µg.

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO). | ≤0,12 |
| Water content. | ≤8,5 % |
| Ash. | ≤0,6 % |
| Sulphate ($SO_4$). | ≤0,14 % |
| Gel strength (1 % gel). | ≥1200 g/cm² |
| Gelling temperature (1,5 % gel). | 36 ±2,0 °C |
| Melting temperature (1,5 % gel). | 90-95 °C |
| DNases, RNases. | none detected |

| | | | |
|---|---|---|---|
| **2267.1** | 10 g | plastic | 19,25 € |
| **2267.2** | 100 g | plastic | 91,95 € |
| **2267.5** | 250 g | plastic | 209,65 € |
| **2267.4** | 500 g | plastic | 396,70 € |
| Original pack 6 x 500 g | | | 376,87/500 g |
| **2267.3** | 1 kg | plastic | 665,45 € |
| Original pack 6 x 1 kg | | | 632,18/1 kg |

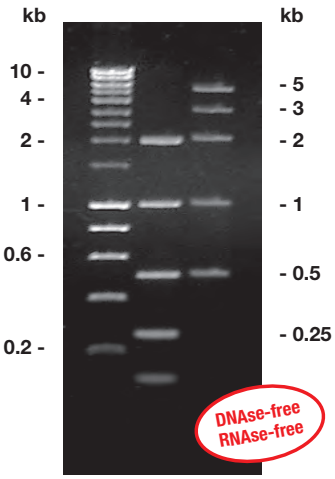


Please note our **Technical Information Brochure** on the Internet next to the agaroses:

**Roti®garoses** and gel electrophoresis.




1 % agarose in 0.5 x TBE




1.5 % agarose in 1 x TAE




## Agarose-Tablets

**Roti®garose 0,5 g agarose/tablet**

Standard agarose with low EEO, for routine analyses (≥300 bp).

- Easy-to-use and safe tablets for constant gel strength and well reproducible gels
- Reliable agarose for routine analyses
- for detection of inserts or PCR amplificates of over 300 bps
- Agarose with high gel strength, applicable from 0,5 to 2,5 %
- Compatible with all standard running buffers and nucleic acid-staining methods

**Guarantee analysis:**

Electroendosmosis (EEO). ....0,05-0,1
Water content. ....<10 %
Sulphate ($SO_4$). ....<0,2 %
Gel strength (1,5 % gel). ....≥1200 g/cm²
Gelling temperature. ....37 ±2,0 °C
Melting temperature. ....89 ±1,0 °C
DNases, RNases. ....none detected

| | | | |
|---|---|---|---|
| **HP67.1** | 10 g | plastic | 23,55 € |
| **HP67.2** | 50 g | plastic | 74,95 € |
| **HP67.3** | 100 g | plastic | 137,60 € |
| **HP67.5** | 300 g new size | plastic | 376,25 € |

## Agarose GTQ

**Roti®garose genetic engineering quality**

Especially tested agarose for gel elution and biomolecular approaches (500 bp-20 kb).

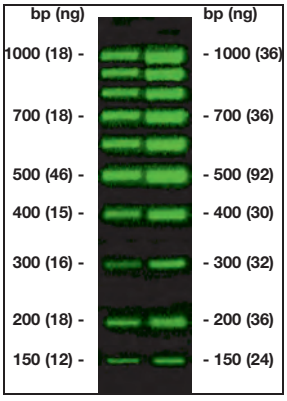
- Genetic technology quality (GTQ)
- For preparative DNA/RNA-electrophoresis of 500 bp to 20 kb
- Recommended for all molecular-biological routine methods like blotting, cloning, sequencing etc.
- No DNA binding
- No inhibition of restriction enzymes and ligases
- Particular low gel background after ethidium bromide staining

**Figure:** High-through put screening with very short running distance. Plasmids of 2,65 and 4,36 kb. Lanes 1 and 15: Roth DNA marker short run 1 (Art. No. 0146.1) 0,2 µg per lane.

**Guarantee analysis:**

Electroendosmosis (EEO). ....≤0,11
Water content. ....≤8 %
Ash. ....≤0,5 %
Sulphate ($SO_4$). ....≤0,1 %
Gel strength (1 % gel). ....≥1200 g/cm²
Gel strength (1,5 % gel). ....≥2300 g/cm²
Gelling temperature. ....36 ±2,0 °C
Melting temperature. ....92 ±2,0 °C
DNases, RNases. ....none detected
DNA binding. ....none detected

| | | | |
|---|---|---|---|
| **6352.1** | 10 g | plastic | 25,30 € |
| **6352.2** | 100 g | plastic | 155,90 € |
| **6352.4** | 500 g | plastic | 643,95 € |
| Original pack 6 x 500 g | | | 611,75/500 g |

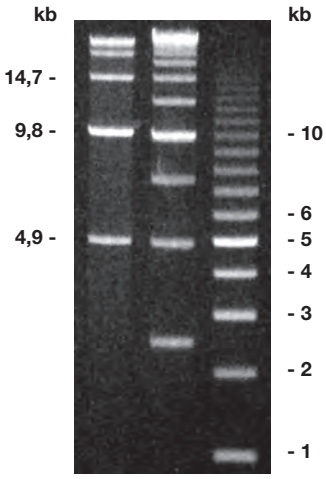



### Agarose as Gelling Reagent

Chemically, agarose is a galactan which is capable of forming extremely solid gels, even at a low concentration. The pore size of the gels is determined by the concentration of the agarose used. Because there are no ionic groups in the gel, hydrophilic materials without any interaction with the gel matrix will also be separated according to their size. The high hysteresis of the agarose, that is the thermal stability after solidification, ensures that the gels remain reliably stable even during heat-producing running conditions.

▶ **Roti®-GelStain Red, Roti®-GelStain** and **Roti®-Load DNAstain** – non-toxic ready-made solutions for fluorescent staining see page 1186

0.5 % agarose in 1 x TAE




DNAse-free
RNAse-free

## Agarose Broad Range

**Roti®garose BioScience-Grade**

For gel electrophoresis, total size range (200 bp-40 kb).

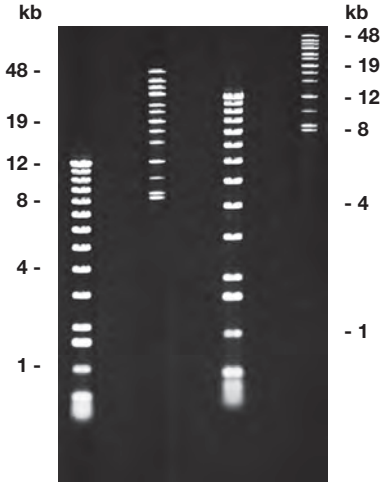
- High-molcular linear polymer of particularly high DNA mobility in electrophoresis
- The ideal choice for Pulse Field gel electrophoresis
- Excellent for resolving DNAfragments between 200 bp and 40 kb in conventional gel electrophoresis
- Low EEO allows speedy and efficient resolution of very large DNA-molecules
- Extremely high gel strength guarantees good handling even at low concentrations of 0,3 % agarose
- Also suitable for separation of particles like ribosomes, virions or chromosomes

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO). | ≤0,12 |
| Ash content. | ≤0,25 % |
| Sulphate ($SO_4$). | ≤0,12 % |
| Turbidity (1,5 % solution). | ≤4 NTU |
| Loss on drying. | ≤7 % |
| Gel strength (1 % gel). | ≥1800 g/cm² |
| Gel strength (1,5 % gel). | ≥3200 g/cm² |
| Gelling temperature. | 34,5-37,5 °C |
| Melting temperature. | 86,5-89,5 °C |
| DNA-separation (≥1000 bp) | complies |
| DNases, RNases. | none detected |

| | | | |
|---|---|---|---|
| **T846.1** | 10 g | plastic | 24,20 € |
| **T846.2** | 100 g | plastic | 126,35 € |
| **T846.3** | 500 g | plastic | 536,45 € |
| Original pack 6 x 500 g | | | 509,63/500 g |

0.3 resp. 0.5 % agarose in 1 x TAE




DNAse-free
RNAse-free

## Agarose Pulsed-Field

**Roti®garose for Pulsed Field electrophoresis, genetic engineering quality**

Special agarose for separation of large fragments (20-50 kb).

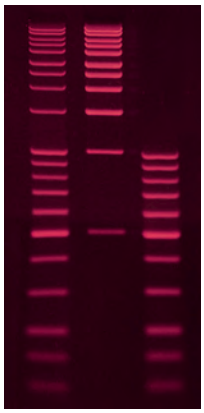
- Optimised for separation of fragments of 20 to 50 kb or for Pulsed Field Gel Electrophoresis (PFGE)
- High gel-strength agarose for tearproof gels that are easy to handle
- High DNA mobility for fast and efficient gel electrophoresis
- Low background fluorescence after ethidium bromide staining
- In general, suitable for separation of fragments larger than 1000 bp
- Tested for absence of DNAses, RNAses and DNA binding

**Figure** (left to right): 0,3 % Agarose Pulsed-Field, extended 1kbp Ladder (1 µg) and High Molecular Weight Marker (0,3 µg, heated for 10 mins. at 65 °C); then same markers on 0,5 % Agarose Pulsed-Field.

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO). | ≤0,05 |
| Sulphate ($SO_4$). | ≤0,10 % |
| Loss on drying. | ≤10 % |
| Gel strength (1 % gel). | ≥1800 g/cm² |
| Gelling temperature. | 36 ±1,5 °C |
| Melting temperature. | 90-95 °C |
| DNases, RNases. | none detected |

| | | | |
|---|---|---|---|
| **3771.1** | 10 g | plastic | 29,60 € |
| **3771.2** | 25 g | plastic | 53,65 € |
| **3771.3** | 100 g | plastic | 166,65 € |
| **3771.4** | 250 g | plastic | 338,65 € |



▶ **Ethidium bromide solutions -** as high concentrated stock solution or ready-to-use in convenient dropper bottles see page 1188

**Electroendosmosis (EEO)**

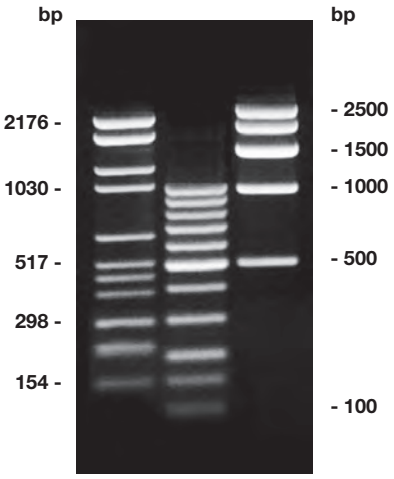
**Osmotic liquid migration caused by electric current**

In gel matrices of agarose gels, minor impurities caused by cations (sulphate ester) are frequent. When an electric field is applied they move in the direction of the cathode, generating an electroosmotic flow (EOF) of the entire aqueous medium towards the negative pole. The migration speed of the flow depends, amongst other things, on the strength of the electric field and the frictional force generated by the gel matrix. The EOF always runs in the direction of the cathode, that is opposite to the movement of the anions separated during nucleic acid electrophoresis, and slows down their migration.

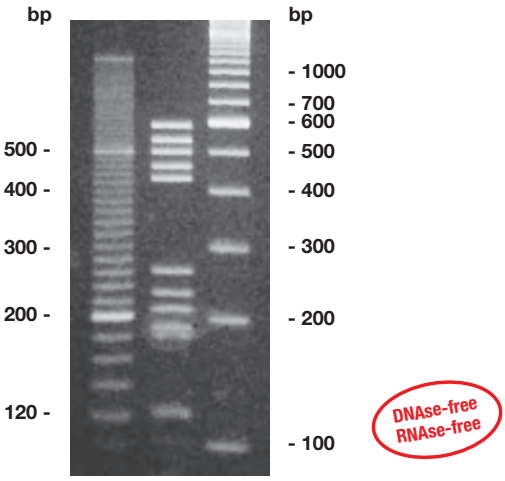
In the event of an agarose with high EEO, many cations are present, which generate a strong EOF. Furthermore, the gel strength is low, causing only weak frictional force. The strong EOF can lead to a change of behaviour during the run of the negatively-charged molecules (DNA/RNA) when using the agarose MEEO or HEEO. In extreme case anions with low self-mobility can even be diverted and transported in the direction of the cathode, causing band shifting.

# Electrophoresis · Agarose & Gelling Reagents

1.5 % agarose in 1 x TAE




3 % agarose in 1 x TAE




## Agarose HR-PLUS

**Roti®garose for analytical gels**

Special agarose for use in the main analytical range (100 bp-3 kb).

- Reliable agarose for routine analyses in the range of 100 to 3000 bp
- Superior separation efficiency and high gel strength, usable in concentrations of up to 3 % agarose
- Very well suited for analysis of PCR amplificates, restriction digests and for blotting
- Low gel background
- Compatible with all standard nucleic acid-staining methods
- Separation range in 1 x TAE:
  1 % proof agarose gel: 1000-3000 bp
  1,5 % proof agarose gel: 300-2000 bp
  2,5 % proof agarose gel: 100-1000 bp

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO). | ≤0,12 |
| Water content. | ≤7 % |
| Ash. | ≤4 % |
| Sulphate ($SO_4$). | ≤0,11 % |
| Gel strength (1,5 % gel). | ≥1500 g/cm² |
| Gelling temperature (1,5 % gel). | ~36 °C |
| Melting temperature (1,5 % gel). | ~88 °C |
| Turbidity (1,5 % solution). | ≤4 NTU |
| DNases, RNases. | none detected |
| DNA binding. | very low |

| | | | |
|---|---|---|---|
| **HP30.1** | 10 g | plastic | 45,05 € |
| **HP30.2** | 100 g | plastic | 278,45 € |
| **HP30.3** | 500 g | plastic | 1073,95 € |
| Original pack 6 x 500 g | | | 1020,25/500 g |

## Agarose High Resolution

**Roti®garose for small fragments**

Special agarose for PCR gels and small DNA fragments (50 bp-1 kb).

- High resolution of PCR-products and DNA fragments in the 50-1000 bp range
- Low gel background after staining, even for highly concentrated gels
- Can be used in concentrations of up to 5 % agarose
- Low DNA binding and low EEO for efficient separation of very small fragments
- Tip: cool the gel for 30 mins. at 4-8 °C before use for superior separation
- Separation range in 1 x TAE:
  1,8 % proof agarose gel: 500-1000 bp
  3,0 % proof agarose gel: 150-600 bp
  4,5 % proof agarose gel: 50-350 bp

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO). | ≤0,12 |
| Water content. | ≤7 % |
| Ash. | ≤0,35 % |
| Sulphate ($SO_4$). | ≤0,11 % |
| Gel strength (1,5 % gel). | ≥600 g/cm² |
| Gel strength (3 % gel). | ≥1500 g/cm² |
| Gelling temperature (3 % gel). | ≤35,5 °C |
| Melting temperature (3 % gel). | ≤80 °C |
| Turbidity (1,5 % solution). | ≤5 NTU |
| DNases, RNases. | none detected |

| | | | |
|---|---|---|---|
| **K297.1** | 10 g | plastic | 53,65 € |
| **K297.2** | 100 g | plastic | 346,70 € |
| **K297.3** | 500 g | plastic | 1494,25 € |
| Original pack 6 x 500 g | | | 1419,54/500 g |

## Agarose MEEO ultra-quality

**Roti®garose medium electroendosmosis (EEO = 0,16-0,19)**

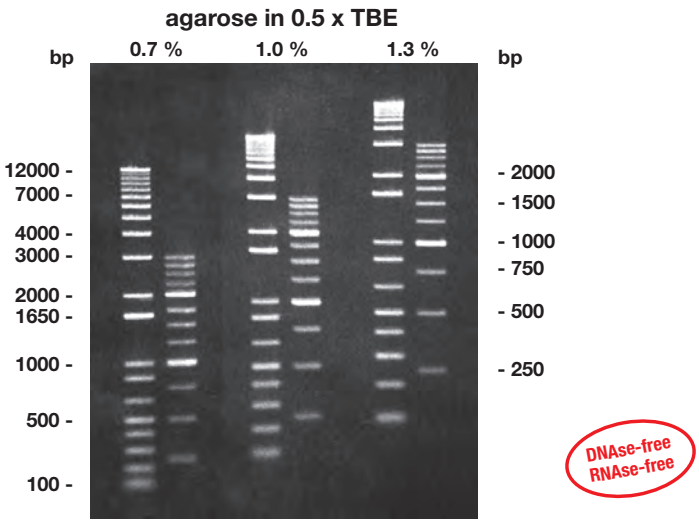
Special agarose for immuno, countercurrent, serum and antibody electrophoresis (500 bp-10 kb).

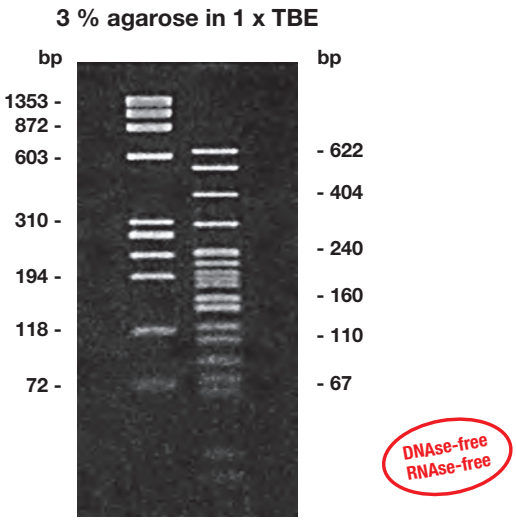
- Suitable for separation of nucleic acids between 500 bp and 10 kb
- Gels are well-to-handle and have a strong matrix, even when using thin gels of 1-2 mm

| | | | |
|---|---|---|---|
| **2268.1** | 10 g | plastic | 20,35 € |
| **2268.2** | 100 g | plastic | 112,80 € |
| **2268.4** | 500 g | plastic | 471,95 € |
| Original pack 6 x 500 g | | | 448,35/500 g |
| **2268.3** | 1 kg | plastic | 794,45 € |
| Original pack 6 x 1 kg | | | 754,73/1 kg |

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO). | 0,16-0,19 |
| Water content. | ≤7 % |
| Ash. | ≤0,5 % |
| Sulphate ($SO_4$). | ≤0,14 % |
| Gel strength (1 % gel). | ≥1000 g/cm² |
| Gel strength (1,5 % gel). | ≥2200 g/cm² |
| Gelling temperature (1,5 % gel). | 36 ±1,5 °C |
| Melting temperature (1,5 % gel). | 88 ±1,5 °C |
| Turbidity (1,5 % solution). | ≤4 NTU |




## Agarose Low Melt

**Roti®garose with low melting and gelling temperature**

Particularly for gel elution and in-gel-application in a wide size range (500 bp-20kb).

Hydroxyethyl agarose

- Low melting point and low gelling temperature
- High transparency and very low self fluorescence. For particular clear gels.
- The ideal solution when nucleic acid fragments or proteins are to be recovered after electrophoretic resolution
- Suitable for enzymatic reactions in liquid agarose (in-gel-applications)
- Excellent for immobilising microorganisms and virus-plaque-assays
- Suitable for cell culture applications (animal and plant)
- Tested for stability after autoclaving

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO). | ≤0,12 |
| Water content. | ≤7 % |
| Ash. | ≤0,4 % |
| Sulphate ($SO_4$). | ≤0,12 % |
| Gel strength (1,5 % gel). | ≥500 g/cm² |
| Gelling temperature (1,5 % gel). | ≤28 °C |
| Melting temperature (1,5 % gel). | ≤65,5 °C |
| Turbidity (1,5 % solution). | ≤4 NTU |
| DNases, RNases. | none detected |

| | | | |
|---|---|---|---|
| **6351.1** | 5 g | plastic | 37,55 € |
| **6351.5** | 25 g | plastic | 154,30 € |
| **6351.2** | 100 g | plastic | 536,45 € |
| **6351.4** | 500 g | plastic | 2144,65 € |
| Original pack 6 x 500 g | | | 2037,42/500 g |

## Agarose LM/PCR

**Roti®garose with low melting and gelling temperature, genetic engineering quality**

Particularly for gel elution of small fragments (50 bp-1500 bp).

Hydroxyethyl agarose

High resolution low melting agarose in genetic engineering quality. For optimal fragment separation, DNA recovery and cloning of PCR amplificates.

- Low melting point and low gelling temperature
- Fine resolution of fragments from 50 to 1500 bp
- Very well suited for analysis and recovery of PCR amplificates and fragments derived from restriction digests
- Also well suitable for in-gel-applications
- Low gel background, compatible with all standard nucleic acid-staining methods
- Low viscosity agarose, recommended for use in concentrations of 3 to 6 % agarose. Note: gels of 2 % agarose and lower are fragile

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO). | ≤0,13 |
| Water content. | ≤7 % |
| Ash. | ≤0,45 % |
| Sulphate ($SO_4$). | ≤0,12 % |
| Gel strength (4 % gel). | ≥800 g/cm² |
| Gelling temperature (4 % gel). | ≤35 °C |
| Melting temperature (4 % gel). | ≤65 °C |
| Turbidity (4 % solution). | ≤6 NTU |
| DNases, RNases. | none detected |
| DNA binding. | none detected |
| In-gel-processing. | complies |
| Agarase digest. | complies |

| | | | |
|---|---|---|---|
| **HP31.1** | 5 g | plastic | 40,75 € |
| **HP31.2** | 100 g | plastic | 547,20 € |
| **HP31.3** | 250 g | plastic | 1073,95 € |

## Agarose HEEO ultra-quality

**Roti®garose high electroendosmosis (EEO = 0,23-0,26)**

Special agarose for protein separation and countercurrent electrophoresis.

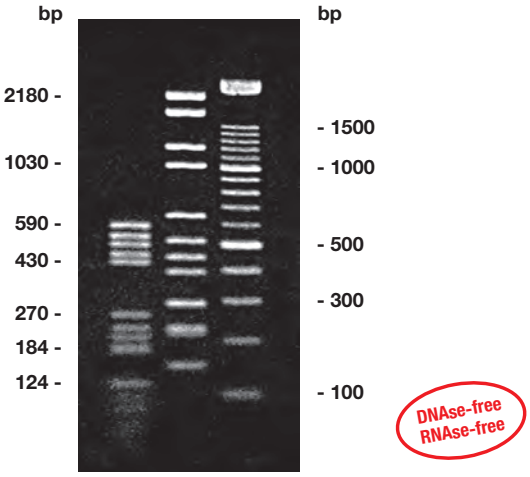
- Gels are well-to-handle and have a strong matrix, even when using thin gels of 1-2 mm
- Very clear and transparent matrix, even for thick gels

| | | | |
|---|---|---|---|
| **2269.1** | 10 g | plastic | 22,05 € |
| **2269.2** | 100 g | plastic | 118,80 € |
| **2269.3** | 1 kg | plastic | 837,45 € |
| Original pack 6 x 1 kg | | | 795,58/1 kg |

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO). | 0,23-0,26 |
| Water content. | ≤7 % |
| Ash. | ≤1,0 % |
| Sulphate ($SO_4$). | ≤0,2 % |
| Gel strength (1 % gel). | ≥750 g/cm² |
| Gel strength (1,5 % gel). | ≥1200 g/cm² |
| Gelling temperature (1,5 % gel). | 36 ±1,5 °C |
| Melting temperature (1,5 % gel). | 88 ±1,5 °C |
| Turbidity (1,5 % solution). | ≤4 NTU |

1.8 % agarose in 1 x TAE




DNAse-free RNAse-free

## Agarose Super LM

**Roti®garose with particularly low melting and gelling temperature**

Particularly for gel elution from melted agarose, capillary electrophoresis and in-gel processing (≥1000 bp).

Hydroxyethyl agarose

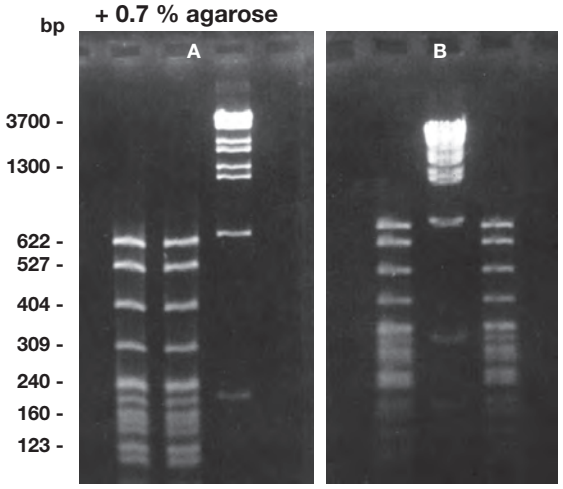
- Fine resolution of fragments over 1000 bp
- Very well suited for analysis and recovery of longer PCR amplificates or other longer fragments like vectors, rare cutter digestions etc.
- Recommended for in-gel-applications, virus plaque-assays and tissue/cell culture applications
- Low gel background, compatible with all standard nucleic acid-staining methods
- Lower gel strength than Agarose Low Melt. Recommended for use in concentrations of over 1 % agarose

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO). | ≤0,12 |
| Water content. | ≤7 % |
| Ash. | ≤0,35 % |
| Sulphate ($SO_4$). | ≤0,14 % |
| Gel strength (1,5 % gel). | ≥300 g/cm² |
| Gelling temperature (1,5 % gel). | ≤20 °C |
| Melting temperature (1,5 % gel). | ≤62 °C |
| Turbidity (1,5 % solution). | ≤4 NTU |
| DNases, RNases. | none detected |

| | | | |
|---|---|---|---|
| **HP45.1** | 5 g | plastic | 39,70 € |
| **HP45.2** | 100 g | plastic | 550,95 € |
| **HP45.3** | 250 g | plastic | 1101,90 € |

1.5 % Synergel™ + 0.7 % agarose — 4 % agarose




DNAse-free RNAse-free

## Synergel™

**≥99 %, for gel electrophoresis**

Agarose additive

Storage temp.: +20 °C

- Enhances separation of nucleic acid fragments
- For extremely clear gels

Synergel™ is a synergistic gelling and sieving agent consisting of a modified polysaccharide which, when combined with agarose, forms a hydrogen bonded binary gel system. The addition of Synergel™ to agarose improves gel performance by providing superior separation and definition of DNA fragments up to 30 kb. A gel mixture containing 0,7 % agarose and 0,7 % Synergel™, e.g., will produce improved results when compared to a 2 % agarose-only gel. Synergel™ also provides greater optical clarity, which allows higher quality photodocumentation of stained gels.

**Figure 1** compares separation qualities of **A:** 1,5 % Synergel™ / 0,7 % agarose and **B:** 4 % high-resolution agarose (NuSieve®). Please see also figures for pUC19 markers T149 and X901.

Standard buffer systems like phosphate, acetate or borate buffered Tris-EDTA may be used in forming the gel. RNA may also be separated in this system by using a 2,2 M formaldehyde-containing buffer. Nucleic acid may be electroeluted or transferred to membranes following standard Southern/Northern blotting protocols.

**Type analysis:**

| | |
|---|---|
| Colour. | white to almost white powder |
| Odour. | slightly salty |
| pH (1 % solution). | 9 |
| DNase, RNase. | none detected |

| | | | |
|---|---|---|---|
| **0184.2** | 10 g | plastic | 30,00 € |
| **0184.1** | 100 g | plastic | 209,65 € |

Please note our **Technical Information Brochure** on the Internet next to the agaroses:

**Roti®garoses** and gel electrophoresis.

**How to Calculate Required Synergel™**

1. What percentage agarose gel is currently being used?
2. The gel will inevitably contain 0.7 % agarose (the minimum agarose concentration required to ensure gel stability). Hence, subtract 0.7 % from the agarose total.
3. Divide the difference by 2. The result is the percentage of Synergel™ to be added to the 0.7 % agarose.

**Example:**

*Convert a 1 % agarose to a 1 % Synergel™/agarose gel*

a. Substract 0.7 % from the 1 % agarose: 1 % - 0.7 % = 0.3 %
b. Divide the difference by 2: 0.3 % : 2 = 0.15 %
c. 0.15 % (150 mg / 100 ml) is the amount of Synergel™ added to 0.7 % agarose (0.7 g / 100 ml) to produce the functional equivalent of a 1 % agarose gel.

# Carrier Ampholytes

## Roti®lyte

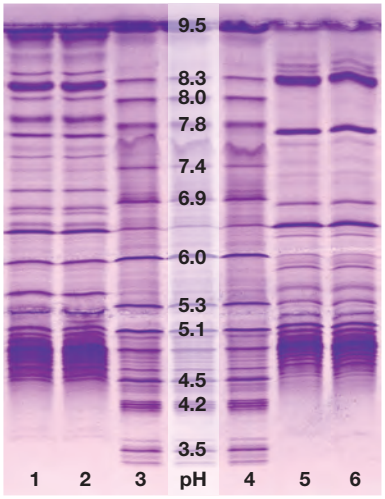



**Figure:**
pH range 3-10, gel thickness 350 µm
Lanes 1, 2, 5, 6: Potato extracts (10 µl)
Lanes 3, 4: Protein standard (10 µl)

**40 % solution in water, sterile filtered (0,2 µm)**
Carrier ampholytes for isoelectric focussing (IEF).

- Reliable formation of a finely graded linear pH gradient
- Sharp band resolution due to high buffer capacity at pI
- High conductivity, no overheating of the gel
- Short staining- and destaining periods
- Compatible with all standard staining methods

Roti®lyte carrier ampholytes consist of a diverse mixture of sterile filtered hydrous polyamino-polysulfone-polycarboxylic acids. Due to the multitude of isoelectric points (pIs) present, those amphoteric molecules form a very finely graded, linear pH gradient in the electric field, hence making them particularly suitable for isoelectric focusing (IEF).
Roti®lyte carrier ampholytes excel by their high buffer capacity and conductivity, leading to excellent band definition. Even proteins differing by just 0,01 pH units may be discriminated efficiently. Due to their low molecular weight of 1000 Da in maximum, the ampholytes disperse quickly in the gel, therefore guaranteeing an even distribution of sample proteins during IEF. Since there is virtually no unspecific binding of dyes, no background staining happens, and Roti®lyte ampholytes are perfectly compatible with all standard staining methods. They are well soluble in trichloroacetic acid, and may easily be removed from the gel during subsequent fixation.

Store unopened bottles at +4 °C. Opened bottles should be aliquoted and stored at -20 °C. Avoid frequent freeze and thaw cycles. Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

| Product | Concentration | Conductivity (mS/cm) | pH lower limit | pH upper limit | Art. No. | Pack qty. (ml) | € |
|---|---|---|---|---|---|---|---|
| **Roti®lyte pH 3-5** | 40 % | 0,1-0,3 | 3,0±0,5 | 5,1±0,5 | **5834.1** | 10 | 202,65 |
| | | | | | **5834.2** | 25 | 450,45 |
| **Roti®lyte pH 3-6** | 40 % | 0,05-0,5 | 3,3±0,3 | 6,2±0,5 | **5835.1** | 10 | 192,45 |
| | | | | | **5835.2** | 25 | 428,95 |
| **Roti®lyte pH 3-7** | 40 % | 0,2-0,7 | 3,3±0,3 | 7,0±0,5 | **5839.1** | 10 | 192,45 |
| | | | | | **5839.2** | 25 | 428,95 |
| **Roti®lyte pH 3-10** | 40 % | 0,2-0,9 | 3,3±0,3 | 10,0±0,6 | **5841.1** | 10 | 181,70 |
| | | | | | **5841.2** | 25 | 375,20 |
| **Roti®lyte pH 4-6** | 40 % | 0,1-0,2 | 4,0±0,5 | 6,1±0,5 | **5845.1** | 10 | 202,65 |
| | | | | | **5845.2** | 25 | 450,45 |
| **Roti®lyte pH 4-7** | 40 % | 0,1-0,2 | 4,0±0,2 | 7,0±0,2 | **5850.1** | 10 | 192,45 |
| | | | | | **5850.2** | 25 | 428,95 |
| **Roti®lyte pH 5-6** | 40 % | 0,05-0,5 | 5,3±0,3 | 6,2±0,5 | **5851.1** | 10 | 202,65 |
| | | | | | **5851.2** | 25 | 450,45 |
| **Roti®lyte pH 5-7** | 40 % | 0,1-0,2 | 5,0±0,5 | 7,1±0,5 | **5856.1** | 10 | 202,65 |
| | | | | | **5856.2** | 25 | 450,45 |
| **Roti®lyte pH 5-8** | 40 % | 0,1-0,5 | 5,0±0,5 | 8,0±0,6 | **5857.1** | 10 | 192,45 |
| | | | | | **5857.2** | 25 | 428,95 |
| **Roti®lyte pH 6-7** | 40 % | 0,1-0,2 | 6,0±0,2 | 7,0±0,2 | **5858.1** | 10 | 202,65 |
| | | | | | **5858.2** | 25 | 450,45 |
| **Roti®lyte pH 6-8** | 40 % | 0,15-0,55 | 6,2±0,4 | 8,0±0,5 | **5860.1** | 10 | 202,65 |
| | | | | | **5860.2** | 25 | 450,45 |
| **Roti®lyte pH 7-9** | 40 % | 0,2-0,9 | 7,0±0,3 | 9,0±0,3 | **5861.1** | 10 | 202,65 |
| | | | | | **5861.2** | 25 | 450,45 |
| **Roti®lyte pH 8-10** | 40 % | 0,1-0,3 | 7,5±0,5 | 9,5±0,6 | **5864.1** | 10 | 202,65 |
| | | | | | **5864.2** | 25 | 450,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Electrophoresis Gel Buffer Solutions

Time sparing ready-made buffers saving valuable time and significantly reducing your effort to prepare electrophoresis buffers. Each batch is manufactured from reagents of the highest purity and is subsequently filtered.

**For gel electrophoresis and molecular biology.**

ready-to-use



## Rotiphorese® 10x SDS-PAGE

10x concentrated SDS-PAGE running buffer, for electrophoresis.

Tris-glycine-SDS buffer

Solution consisting of 0,25 M Tris, 1,92 M glycine and 1 % (w/v) SDS in distilled, deionised water for protein analysis.
Acc. to Laemmli (1970), *Nature* 227:680.

| | | | |
|---|---|---|---|
| **3060.1** | 1 l | glass | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |
| **3060.3** | 2,5 l | glass | 66,55 € |
| Original pack 4 x 2,5 l | | | 63,22/2,5 l |
| **3060.2** | 5 l | plastic | 94,50 € |
| Original pack 2 x 5 l | | | 89,78/5 l |

## Rotiphorese® 10x TBE Buffer

**10-times concentrated buffer**

Ideal for preparation of sequencing gels and as running buffer in electrophoresis.

Storage temp.: +20 °C

**Danger** H315-H319-H360FD

Containing 1,0 M Tris-Borate pH 8,3 and 20 mM EDTA in distilled, deionised water; pH 8,3. Suitable for manufacturing sequencing gels with Rotiphorese® Gel 40 and as a running buffer.
Mix before use!

| | | | |
|---|---|---|---|
| **3061.1** | 1 l | glass | 27,45 € |
| Original pack 6 x 1 l | | | 26,08/1 l |
| **3061.3** | 2,5 l | glass | 55,40 € |
| Original pack 4 x 2,5 l | | | 52,63/2,5 l |
| **3061.2** | 5 l | plastic | 85,90 € |
| Original pack 2 x 5 l | | | 81,61/5 l |

## Rotiphorese® NF 10 x TBE Buffer

Ready-to-use 10x TBE-buffer for preparing sequencing gels, also tested and optimised as running buffer in electrophoresis for automatic sequencers, fluorescence-free.

Storage temp.: +20 °C

**Warning** H315-H319

10-times concentrated buffer formulated specially for automated sequencing. 10x stock solution contains 0,89 M Tris-Borate and 22 mM EDTA in distilled, deionised water; pH 8,3. Suitable for manufacturing sequencing gels with Rotiphorese®-NF Acrylamide/Bis-solution 40 % (19:1) and as running buffer.
Mix before use!

| | | | |
|---|---|---|---|
| **A118.1** | 2,5 l | glass | 96,65 € |
| Original pack 4 x 2,5 l | | | 91,82/2,5 l |

**Concerning the Rotiphorese® buffers 10x TAE, 50x TAE and 10x TBE**

During prolonged storage salt crystals may precipitate, which are easily resolubilised by gentle heating and shaking. The quality of the buffer is not affected by this procedure. Do not take out buffer solution when any precipitate is visible.

## Rotiphorese® 50x TAE Buffer

Buffer concentrate for DNA electrophoresis.

Storage temp.: +20 °C

**Warning** H315-H319-H335

50-times concentrated running buffer, containing 2 M Tris, 1 M acetic acid and 50 mM EDTA in distilled, deionised water; pH 8,5.
Mix before use!

| | | | |
|---|---|---|---|
| **CL86.1** | 1 l | glass | 57,55 € |
| Original pack 6 x 1 l | | | 54,67/1 l |
| **CL86.3** | 2,5 l | glass | 110,65 € |
| Original pack 4 x 2,5 l | | | 105,12/2,5 l |
| **CL86.2** | 5 l | plastic | 169,35 € |
| Original pack 2 x 5 l | | | 160,88/5 l |

## Rotiphorese® 10x TAE Buffer

Buffer concentrate for DNA electrophoresis.

Storage temp.: +20 °C

10-times concentrated running buffer, containing 0,4 M Tris, 0,2 M acetic acid and 10 mM EDTA in distilled, deionised water; pH 8,3.
Mix before use!

| | | | |
|---|---|---|---|
| **T845.1** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |
| **T845.2** | 5 l | plastic | 68,70 € |
| Original pack 2 x 5 l | | | 65,27/5 l |

## Rotiphorese® 10x TAE Buffer *light*

**with reduced EDTA concentration**

Buffer concentrate for DNA electrophoresis, ideal for DNA elution gels or in-gel-applications.

Storage temp.: +20 °C

Rotiphorese® 10x TAE-buffer *light* is particularly ideal for agarose gels in DNA-elution. Although the reduced EDTA-content lowers the contamination of the eluted DNA with EDTA and therefore prevents any interference of enzymatic activity, e.g. from ligases, isomerases or polymerases, the buffer properties still remain totally intact.
Particularly suitable for in-gel-applications when used with Rotigarose® Low Melt (Art. No. 6351).
10-times concentrated serial buffer, containing 0,4 M Tris-acetate and 1 mM EDTA in distilled, deionised water; pH 8,3.
Mix before use!

| | | | |
|---|---|---|---|
| **0122.1** | 1 l | glass | 25,70 € |
| Original pack 6 x 1 l | | | 24,42/1 l |

Please note our **Technical Information Brochure** on the Internet next to the products:

**PAGE – polyacrylamide gel electrophoresis**
General technical information



# Roti®fair reagents

**High-pure reagents and buffer mixes in pouches or as tablets.**

Roti®-fair - the new range of user-friendly reagent formulations. For simplest application, optimal quality and reproducible results. One tablet or the content of one pouch is simply dissolved in the respective amount of water - the desired solution is ready for use. Simply adapt the amount of water in order to vary the concentration, for instance for preparation of a higher concentrated stock solution.

- **Easy-to-use** - simply dissolve contents of one pouch or one tablet in water
- **Timesaving** - no need for weighing of several reagents or adjustment of pH
- **Convenient** - dry reagents for direct use spare preparation of long-term stored stock solutions
- **Reliable** - stringent quality control ensures high lot-to-lot consistency

## Roti®fair SDS-PAGE

**for electrophoresis**

Buffer for protein electrophoresis.

SDS-PAGE powder (pouch), Tris-glycine-SDS buffer

**Warning** H315-H319-H335

Exactly pre-weighed pouches for convenient and rapid preparation of SDS-PAGE solution.
Running buffer for protein gel electrophoresis. Contains SDS und may therefore also used with SDS-free gels. Nach: Laemmli (1970), *Nature* 227:680.
Prepared solution may be sterilized by filtration (0,22 µm). For storage, buffer solution should be kept at room temperature.
1x SDS-PAGE solution is prepared by dissolution of 1 pouch in 1000 ml respectively 5000 ml highly pure water.

**Formulation:**

Prepared 1x SDS-PAGE solution contains: 25 mM Tris, 0,192 M glycine, 0,1 % SDS, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

**For 1000 ml/pouch**

| | | | |
|---|---|---|---|
| **1249.1** | 10 pouches | box | 89,15 € |

**For 5000 ml/pouch**

| | | | |
|---|---|---|---|
| **1250.1** | 10 pouches | box | 188,15 € |

## Roti®fair 50x TAE

**for electrophoresis**

Buffer concentrate for DNA electrophoresis.

TAE powder (pouch)

**Warning** H315-H319-H335

Exactly pre-weighed pouches for convenient and rapid preparation of TAE solution.
Running buffer for DNA gel electrophoresis. TAE is recommended for gel analysis of large fragments and for gel elution, when high recovery rates are needed. Additionally, TAE is the buffer of choice for native or denaturing RNA gels.
Prepared solution may be sterilized by filtration (0,22 µm).
For long-term storage, buffer solution should be kept at room temperature.
50x TAE solution is prepared by dissolution of 1 pouch in 500 ml respectively 1000 ml highly pure water.

**Formulation:**

Prepared 50x TAE solution contains: 2 M Tris acetate, 50 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

**For 500 ml/pouch**

| | | | |
|---|---|---|---|
| **1234.1** | 5 pouches | box | 396,70 € |

**For 1000 ml/pouch**

| | | | |
|---|---|---|---|
| **1240.1** | 5 pouches | box | 708,45 € |

## Roti®fair 1x TBE

**for 1000 ml/pouch, for electrophoresis**

Buffer for DNA electrophoresis.

TBE powder (pouch)

**Danger** H315-H319-H335-H360FD

Exactly pre-weighed pouches for convenient and rapid preparation of TBE solution.
Running buffer with high buffering capacity for DNA gel electrophoresis. TBE is recommended for analytical gels, high-through-put gels, small fragments, and when sharp band resolution is required. Due to the lower EDTA content, TBE is well suited for gels prior to cloning, however, recovery rate is generally lower than from TAE gels.

**Formulation:**

Prepared 1x TBE solution contains: 89 mM Tris-Borat, 2 mM EDTA, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1241.1** | 10 pouches | box | 77,95 € |

## Roti®fair 5x TBE

**for 1000 ml/pouch, for electrophoresis**

Buffer concentrate for DNA electrophoresis.

TBE powder (pouch)

**Danger** H315-H319-H335-H360FD

Description see Roti®fair 1 x TBE (Art No. 1241).

**Formulation:**

Prepared 5x TBE solution contains: 0,445 M Tris borate, 10 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1242.1** | 10 pouches | box | 169,35 € |

## Roti®fair 10x TBE

**for 1000 ml/pouch, for electrophoresis**

Buffer concentrate for DNA electrophoresis.

TBE powder (pouch)

**Danger** H315-H319-H335-H360FD

Description see Roti®fair 1 x TBE (Art No. 1241).

**Formulation:**

Prepared 10x TBE solution contains: 0,89 M Tris borate, 20 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

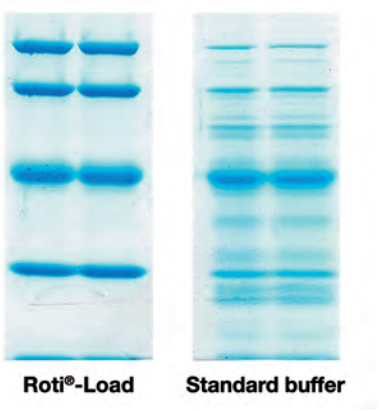
| | | | |
|---|---|---|---|
| **1243.1** | 10 pouches | box | 278,45 € |

# Gel Loading Buffers for Proteins

ready-to-use

**Roti®-Load 1 (reducing)** as well as **Roti®-Load 2 and 3 (non-reducing)** represent special gel loading buffers for protein gel electrophoresis. They have been designed to protect your proteins during sample preparation and to stabilise sensitive peptide bonds. Protein degradation is efficiently prevented by those buffer systems. Roti®-Load are 4x concentrated ready-to-use solutions, which may be used directly for sample loading.

Roti®-Load 1 and 2: Modified formulation acc. to Laemmli (*Nature* 227, 1970).




## Roti®-Load 1

**reducing, 4x conc.**

Protein gel loading buffer, modified formulation acc. to Laemmli.

Storage temp.: +15-25 °C

**Danger**

H302+H332-H311-H315-H317-H318-H373-H411

- Formulation acc. to Laemmli (modified)
- Stabilises peptide bands
- Prevents protein degradation
- Improves gel separation

Well tested and proven sample buffer for protein gel electrophoresis that has been modified and further developed based on the original formulation acc. to Laemmli (Nature 227, 1970).
Roti®-Load 1 prevents degradation of proteins while heating during sample preparation, additionally keeping the sample pH value constant during gel electrophoresis. Being a phosphate-buffered ready-to-use solution, Roti®-Load 1 already contains all necessary denaturing and reducing reagents, bromophenol blue as dye and glycerol as density increasing reagent.

Contains SDS (approx. 8 % w/v), β-mercapto ethanol (approx. 20 % v/v), glycerol (approx. 40 % v/v) and bromophenol blue (approx. 0,015 % w/v). Phosphate buffered.

| | | | |
|---|---|---|---|
| **K929.1** | 10 ml | glass | 17,75 € |
| **K929.2** | 4 x 10 ml | glass | 51,10 € |
| **K929.3** | 10 x 10 ml | glass | 117,20 € |

## Roti®-Load 2

**non reducing, 4x conc.**

Protein gel loading buffer, modified formulation acc. to Laemmli.
For protein complexes, secondary structures, and for native gels.

Storage temp.: +20 °C

- Formulation acc. to Laemmli (modified)
- Stabilises peptide bands
- For protein complexes and secondary structures
- For native gels

Well tested and proven sample buffer for protein gel electrophoresis that has been modified and further developed based on the original formulation acc. to Laemmli (Nature 227, 1970).
For depiction of protein complexes, secondary structures, and for native gels.
Roti®-Load 2 prevents degradation of proteins while heating during sample preparation, additionally keeping the sample pH value constant during gel electrophoresis. Being a phosphate-buffered ready-to-use solution, Roti®-Load 2 already contains all necessary denaturing reagents, bromophenol blue as dye and glycerol as density increasing reagent. Roti®-Load 2 may be supplemented with 20 µl/ml DTT solution (1 M), in order to gain a loading buffer using DTT as reducing reagent rather than β-Mercaptoethanol.

Contains SDS (approx. 8 % w/v), glycerol (approx. 40 % v/v) and bromophenol blue (approx. 0,015 % w/v). Phosphate buffered.

| | | | |
|---|---|---|---|
| **K930.1** | 10 ml | glass | 14,95 € |

## Roti®-Load 3 (LDS)

**non reducing, 4x conc.**

Protein gel loading buffer for ready-made gels and cooled gels.

Storage temp.: +20 °C

**Warning** H315-H319

- Optimised for ready-made gels
- Superior solubility at low temperatures
- Stabilises proteins in the gel

Modified, non-reducing protein sample-gel loading buffer for gels under denaturing or native conditions. During sample preparation and heating, Roti®-Load 3 (LDS) efficiently prevents degradation of your proteins, also stabilising the pH value during the run. This new gel loading buffer is based on a triethanolamine buffered ready-to-use solution, in which the standard sodium dodecylsulphate (SDS) has been replaced by lithium dodecylsulphate (LDS). At low temperatures, LDS is much better soluble than SDS. Hence, no crystallisation of LDS takes place, and protein stability as well as band resolution is significantly enhanced. Additionally, the formulation of Roti®-Load 3 (LDS) has been optimised for ready-made gels, particularly Roti®-PAGE gels, but also ready-made gels of other standard suppliers. For reducing conditions, Roti®-Load 3 (LDS) may be supplemented with 20 µl/ml DTT solution (1 M) or with β-mercaptoethanol.

Contains LDS (approx. 4 % w/v), glycerol (approx. 40 % v/v) and Ficoll 400 (approx. 4 % w/v), plus phenol red (approx. 0,025 % w/v) and Coomassie® G250 (approx. 0,025 % w/v). Triethanolamine buffered.

| | | | |
|---|---|---|---|
| **3359.1** | 10 ml | glass | 20,35 € |

**Selecting a suitable Roti®-Load gel loading buffer for proteins**

**Roti®-Load 1** is suitable **for all PAGE standard gels**. It has denaturing and reducing properties.

**Roti®-Load 2** is suitable **for protein complexes, secondary structures and native gels**. It has denaturing properties, but it does not have reducing properties. It is possible to enrich the buffer solution with reducing agents such as ß-Mercaptoethanol or DTT.

**Roti®-Load 3** is suitable **for native gels, precast gels and cooled gels**. The buffer solution contains LDS. Unlike SDS, LDS does not crystallise out at low temperatures. In addition, the buffer solution is optimally adapted for precast gels. Roti®-Load 3 has denaturing properties, but does not have reducing properties. It is possible to enrich the buffer solution with reducing agents such as ß-Mercaptoethanol or DTT.

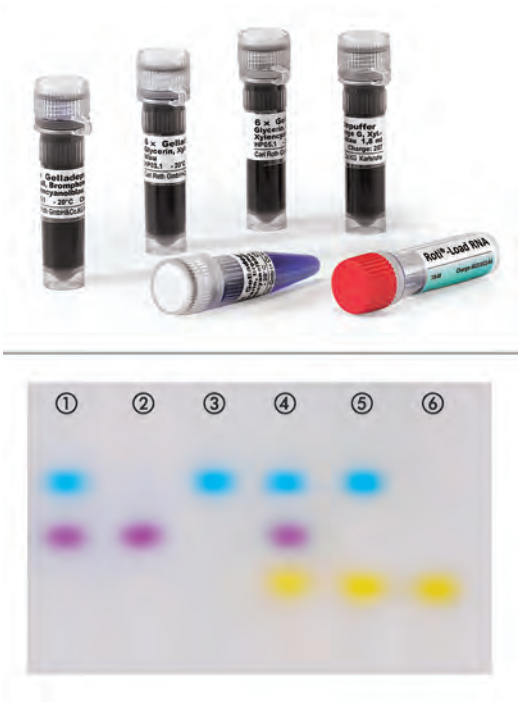
**Glycerine** is the standard reagent for increasing the density of samples.

**SDS (sodium dodecyl sulphate), LDS (lithium dodecyl sulphate)** are anionic surfactants. They form a negatively charged mantle around the protein molecules, which results in a denaturing effect. This process is reversible. Irreversible denaturation only occurs if the samples are boiled. Negative charging allows the molecules to be separated during electrophoresis.

**ß-mercaptoethanol, DTT (dithiothreitol)** are reducing agents which split disulphide bridges in protein molecules. Increased unfolding of the molecule occurs. This process is reversible.

# Gel Loading Buffers for Nucleic Acids

ready-to-use




The ROTH gel loading buffers are special buffers for nucleic acid electrophoresis. Each batch is tested for its functionality in electrophoresis. The gel loading buffers are ready-to-use solutions, which may be used directly.

**Roti®-Load DNA** buffer solutions contain Tris, sodium acetate and EDTA, with additional tracking dyes. For increasing the density when loading the gel, they are available in three different variations - with glycerol, ficoll and saccharose.

**Roti®-Load RNA** buffer solution contains formamide, MOPS, sodium acetate, EDTA and formaldehyde and bromophenol blue, and has been adjusted to pH 7,0. Due to the included ethidium bromide, the DNA is stained already during gel loading.

**Roti®-Load DNAstain** is a new generation of gel loading buffers providing fluorescent and non-toxic staining of DNA even during gel loading (see also next page).

| Product | Use | Concentration | Dye | Incl. DNA stain | Figure | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|---|---|---|
| **Roti®-Load DNA (with glycerol)** | Standard applications, routine gels | 6x | BP, XC | - | ① | **X904.1** | 5 x 1,8 ml | 38,20 |
| **Roti®-Load DNA 1x (with glycerol)** | Standard applications, pelleted DNA | 1x | BP, XC | - | ① | **0100.1** | 5 x 1,0 ml | 34,30 |
| **Roti®-Load DNA (with ficoll)** | Small amounts of DNA, especially sharp bands | 6x | BP, XC | - | ① | **X905.1** | 5 x 1,8 ml | 41,85 |
| **Roti®-Load DNA (with saccharose)** | Big sample volumes, big fragments | 6x | BP | - | ② | **T847.1** | 5 x 1,0 ml | 61,85 |
| **Roti®-Load DNA short-run (with glycerol)** | Short separation distances, fast gels | 6x | BP | - | ② | **0095.1** | 5 x 1,8 ml | 41,40 |
| **Roti®-Load DNA short-run 1x (with glycerol)** | Short separation distances, fast gels, pelleted DNA | 1x | BP | - | ② | **0099.1** | 5 x 1,0 ml | 34,30 |
| **Roti®-Load DNA small (with glycerol)** | Small or very big fragments | 6x | XC | - | ③ | **HP03.1** | 5 x 1,8 ml | 44,00 |
| **Roti®-Load DNA orange 1 (with glycerol)** | Very short separation distances, small fragments, high concentrated or High Resolution agarose | 6x | OG | - | ⑥ | **HP04.1** | 5 x 1,8 ml | 48,95 |
| **Roti®-Load DNA-orange 2 (with glycerol)** | Mixture of small and big fragments | 6x | XC, OG | - | ⑤ | **HP05.1** | 5 x 1,8 ml | 48,95 |
| **Roti®-Load DNA-tricolor (with glycerol)** | Broad size range, high flexibility | 6x | BP, XC, OG | - | ④ | **HP06.1** | 5 x 1,8 ml | 48,95 |
| **Roti®-Load RNA** | Separation of RNA fragments | 1,3x | BP, EB | - | ② | **T848.1** | 2 x 0,5 ml | 60,10 |
| **Roti®-Load DNAstain 1** | Simultaneous gel staining, bigger fragments | 6x | BP, XC, EG | yes | ① | **5783.1** | 1,0 ml | 36,45 |
| **Roti®-Load DNAstain 1** | Simultaneous gel staining, bigger fragments | 6x | BP, XC, EG | yes | ① | **5783.2** | 5 x 1,0 ml | 110,65 |
| **Roti®-Load DNAstain 2** | Simultaneous gel staining, medium fragments | 6x | XC, OG, EG | yes | ⑤ | **5784.1** | 1,0 ml | 36,45 |
| **Roti®-Load DNAstain 2** | Simultaneous gel staining, medium fragments | 6x | XC, OG, EG | yes | ⑤ | **5784.2** | 5 x 1,0 ml | 110,65 |
| **Roti®-Load DNAstain 3** | Simultaneous gel staining, small fragments | 6x | OG, EG | yes | ⑥ | **6472.1** | 1 ml | 36,45 |
| **Roti®-Load DNAstain 3** | Simultaneous gel staining, small fragments | 6x | OG, EG | yes | ⑥ | **6472.2** | 5 x 1,0 ml | 110,65 |

BP = Bromphenol blue XC = Xylene cyanole OG = Orange G EG=EvaGreen® EB = Ethidium bromide

Safety instructions see chapter Chemicals A-Z

**Selecting a suitable Roti®-Load gel loading buffer for Nucleic Acids**

Care should be taken to ensure that the dyes contained in the gel stop before smallest relevant DNA bands. This ensures that the buffer can be stopped in time. However, the selected dyes may overlay the bands shown. In this case, select a loading buffer that does not contain any unwanted dyes.

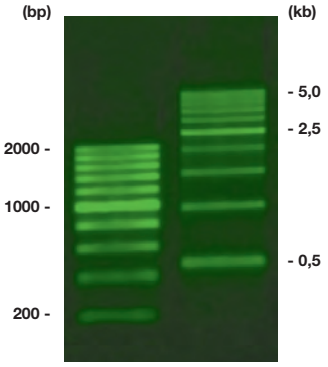
Bromophenol blue and xylene cyanol can be used as colour markers in all **standard gels**. If a relevant band is overlaid by one of these colour markers, choose a gel loading buffer containing Orange G. If **small fragments** are to be assayed, the gel loading buffer should contain Orange G in order to mark the run. If relevant bands are overlaid, however, a choice can be made between bromophenol blue or xylene cyanol depending on the size of the bands. A loading buffer without xylene cyanol is usually used for assaying **large fragments**.

**Glycerine** is the standard reagent for increasing the density of samples.

**Ficoll® 400** produces particularly well-defined bands.

**Sucrose** provides the greatest increase in density.

# Electrophoresis · Gel Loading Buffers




**For UV- and blue light**

DNAse-free

ready-to-use

## Roti®-Load DNAstain

**6x conc. gel loading buffer, ready-to-use, DNAse-free**

DNA-gel loading buffer with fluorescent DNA-dye EvaGreen®.
Storage temp.: -20 °C • Transport temp.: room temp.

- Alternative for ethidium bromide, non-toxic, non-mutagen
- Nearly as sensitive as ethidium bromide, up to 1,5 ng/mm² nucleic acid
- For use with common broad-band ethidium bromide photo filters
- Excitation possible via UV light (320 nm) and blue light (~470 nm)
- Compatible with all usual down-stream applications

New, versatile reagent for gel loading and simultaneous staining of double stranded nucleic acid in agarose- and polyacrylamide gels.
Roti®-Load DNAstain detects up to 0,2 ng per band, and is, therefore, as sensitive as ethidium bromide. Due to its most simple application as gel loading buffer it reduces the time needed for gel analysis significantly.
This innovative reagent contains the intercalating dye EvaGreen®, which has been developed specifically for DNA analysis. DNA integrity is not influenced by EvaGreen®; hence, gel eluted DNA may directly be applied to standard down-stream applications, like, e.g., ligation, PCR, transformation, transfection etc. without interfering effects. Due to the low membrane permeability of the dye, Roti®-Load DNAstain is non mutagenic, non toxic, and environment friendly.
Roti®-Load DNAstain can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, nucleic acid-bound Roti®-Load DNAstain emits a brightly coloured green fluorescence (525 nm) that may be documented by all usual broadband ethidium bromide- or SYBR® Green foto filters.

The **figure** depicts 50 ng DNA per band, or 75 ng (1000 bp and 2,5 kb), respectively. Each lane has been loaded and concurrently stained using 1 µl Roti®-Load DNAstain.

**Excitation maximum** (bound to DNA): approx. 320 nm and 470-500 nm
**Emission maximum** (bound to DNA): 525 nm
1 ml is sufficient for running and staining of approx. 500 lanes.

## Roti®-Load DNAstain 1

Roti®-Load DNAstain 1 contains: Tris, EDTA, bromophenol blue, xylencyanol, EvaGreen®.
**Recommended for staining of dsDNA- and dsRNA-fragments of over 500 bp.**

| | | | |
|---|---|---|---|
| **5783.1** | 1,0 ml | plastic | 36,45 € |
| **5783.2** | 5 x 1,0 ml | plastic | 110,65 € |

## Roti®-Load DNAstain 2

Roti®-Load DNAstain 2 contains: Tris, EDTA, xylencyanol, orange G, EvaGreen®.
**Emission maximum** (bound to DNA): 525 nm
**Recommended for staining of dsDNA- and dsRNA-fragments of 100-2000 bp.**

| | | | |
|---|---|---|---|
| **5784.1** | 1,0 ml | plastic | 36,45 € |
| **5784.2** | 5 x 1,0 ml | plastic | 110,65 € |

## Roti®-Load DNAstain 3

Roti®-Load DNAstain 3 contains: Tris, EDTA, orange G, EvaGreen®.
**Recommended for staining of dsDNA- and dsRNA-fragments of under 500 bp.**

| | | | |
|---|---|---|---|
| **6472.1** | 1 ml | plastic | 36,45 € |
| **6472.2** | 5 x 1,0 ml | plastic | 110,65 € |

**Running distance in bp of xylene cyanol (XC) and bromophenol blue (BPB), with respect to agarose, gel concentration and buffer system used.**

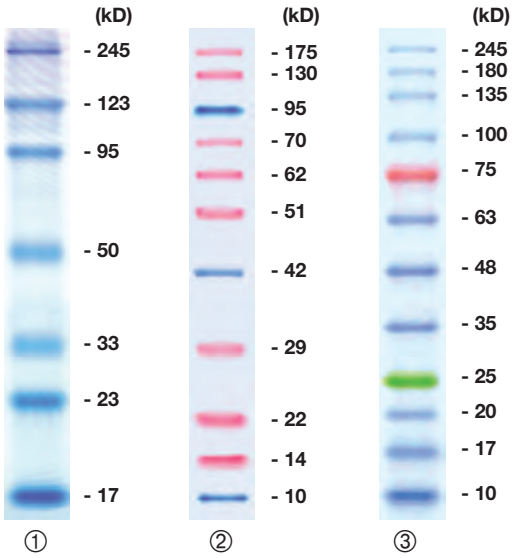
| | | | | | |
|---|---|---|---|---|---|
| **3810 Standard** | | 0.3 % | 0.5 % | 1 % | 1.5 % |
| 1xTAE | XC | 16 000 | 6 200 | 2 800 | 1 300 |
| | BPB | 1 600 | 500 | 300 | 150 |
| 1xTBE | XC | 12 000 | 4 200 | 1 800 | 900 |
| | BPB | 1 300 | 400 | 200 | 70 |
| **2267 NEEO** | | 0.5 % | 1 % | 1.5 % | 2 % |
| 1xTAE | XC | 16 000 | 6 100 | 2 800 | 1 300 |
| | BPB | 1 650 | 500 | 300 | 150 |
| 1xTBE | XC | 12 000 | 4 100 | 1 800 | 850 |
| | BPB | 1 350 | 400 | 200 | 70 |
| **HP67 Agarose Tablets** | | 0.5 % | 1 % | 1.5 % | 2 % |
| 1xTAE | XC | 15 000 | 5 000 | 2 600 | 1 500 |
| | BPB | 1 800 | 650 | 400 | 200 |
| 1xTBE | XC | 11 000 | 4 000 | 1 800 | 800 |
| | BPB | 1 100 | 350 | 150 | 60 |
| **6352 GTQ** | | 0.5 % | 1 % | 1.5 % | 2 % |
| 1xTAE | XC | 15 000 | 5 000 | 2 600 | 1 500 |
| | BPB | 1 800 | 650 | 400 | 200 |
| 1xTBE | XC | 11 000 | 4 000 | 1 800 | 800 |
| | BPB | 1 100 | 350 | 150 | 60 |
| **T846 Broad Range** | | 0.3 % | 0.7 % | 1.2 % | 1.7 % |
| 1xTAE | XC | 30 000 | 11 200 | 3 900 | 1 700 |
| | BPB | 4 000 | 1 200 | 520 | 300 |
| 1xTBE | XC | 18 000 | 10 000 | 4 500 | 1 800 |
| | BPB | 2 200 | 950 | 450 | 200 |
| **3771 Pulsed-Field** | | 1 % | 2 % | 3 % | 4 % |
| 1xTAE | XC | 24 800 | 13 000 | 6 100 | 2 600 |
| | BPB | 3 550 | 2 050 | 760 | 400 |
| 1xTBE | XC | 19 400 | 10 000 | 4 000 | 1 900 |
| | BPB | 2 550 | 1 500 | 500 | 250 |
| **HP30 HR PLUS** | | 1 % | 2 % | 3 % | 4 % |
| 1xTAE | XC | 2 500 | 1 000 | 400 | 200 |
| | BPB | 250 | 150 | 100 | 60 |
| 1xTBE | XC | 1 500 | 600 | 200 | 120 |
| | BPB | 100 | 60 | 50 | <50 |
| **K297 High Resolution** | | 2 % | 3 % | 4 % | 5 % |
| 1xTAE | XC | 600 | 300 | 160 | 100 |
| | BPB | 100 | 80 | 40 | 25 |
| 1xTBE | XC | 400 | 150 | 80 | 50 |
| | BPB | <50 | <50 | <20 | <20 |
| **6351 Low Melt** | | 1 % | 1.5 % | 2 % | 2.5 % |
| 1xTAE | XC | 2 800 | 1 350 | 720 | 410 |
| | BPB | 425 | 225 | 120 | 75 |
| 1xTBE | XC | 1 600 | 800 | 400 | 200 |
| | BPB | 200 | 80 | 40 | 20 |
| **HP31 LM / PCR** | | 2 % | 3 % | 4 % | 5 % |
| 1xTAE | XC | 600 | 300 | 120 | 60 |
| | BPB | 100 | 80 | 40 | 20 |
| 1xTBE | XC | 400 | 150 | 60 | 40 |
| | BPB | 50 | 40 | 20 | 10-20 |
| **HP45 Super LM** | | 1 % | 1.5 % | 2 % | 2.5 % |
| 1xTAE | XC | 2 800 | 1 350 | 720 | 410 |
| | BPB | 425 | 225 | 120 | 75 |
| 1xTBE | XC | 1 600 | 800 | 400 | 200 |
| | BPB | 200 | 80 | 40 | 20 |

# Protein Markers Roti®-Mark

Perfect separation behaviour in the gel. Protein markers from Roth are acylated and pre-reduced, for optimal running behaviour in the gel. For each batch, intensity of bands is optimised and electrophoretically tested. All protein markers are offered as ready-to-use solutions which may be applied directly to the gel.

## Protein Markers, prestained

| Marker | PRESTAINED | BI-PINK | TRICOLOR |
|---|---|---|---|
| Art. No. | T852 (fig. 1) | 8269 (fig. 2) | 8271 (fig. 3) |
| Size Range (kD) | 17 - 245 | 10 - 175 | 10 - 245 |
| Number of Fragments | 7 | 11 | 12 |
| Reinforced band at (kD) | - | - | - |
| Quantitation | not recomm. | not recommended | not recommended |
| Staining | blue prestained | pink prestained | blue prestained |
| Additional reference bands | - | 3 blue prestained bands (10 kD, 40 kD, 90 kD) | 2 prestained bands (25 kD green, 75 kD red) |
| Detection in Western-Blot | no detection | no detection | no detection |
| Number of Lanes in minigel | 200 / ml | 200 / ml | 200 / ml |
| Delivery | ready-to-use | ready-to-use | ready-to-use |




### Roti®-Mark PRESTAINED ①

ready-to-use

**Protein marker, prestained**
**Size range: 17-245 kD**
**Number of protein bands: 7**
**Number of lanes/ml: approx. 200 (mini gels)**
Storage temp.: -20 °C • Transport temp.: room temp.

**Warning** H319

The proteins of this marker are prestained. Roti®-Mark PRESTAINED is, therefore, an ideal size marker for controlling the gel run and for quick and reliable evaluation of transfer efficiency during Western Blot.
**Fig.:** 12 % SDS-PAGE (Tris)

| | | | |
|---|---|---|---|
| **T852.3** | 100 µl | plastic | 57,95 € |
| **T852.1** | 250 µl | plastic | 96,65 € |
| **T852.2** | 4 x 250 µl | plastic | 342,95 € |

Please note: Reliable size determination of proteins cannot be performed using prestained markers. For this, we recommend the use of our unstained marker Roti®-Mark 10-150 PLUS (Art. No. X879) with one prestained protein.

### Roti®-Mark BI-PINK ②

ready-to-use

**Protein marker, prestained**
**Size range: 10-175 kD**
**Number of protein bands: 11**
**Number of lanes/ml: approx. 200 (mini gels)**
Storage temp.: -20 °C • Transport temp.: room temp.

Protein marker including bicolour-prestained proteins of 10 up to 175 kD. In order to visualise separation during the gel run and for better orientation in the gel, three proteins of approx. 10, 40 and 90 kD have been prestained in blue in addition to the pink coloured bands. All proteins excel by having a very even running behaviour and form distinct bands. The marker is designed as ready-to-use solution for direct application to the gel.
**Fig.:** 15 % SDS-PAGE (Tris)

| | | | |
|---|---|---|---|
| **8269.1** | 500 µl | plastic | 166,10 € |

### Roti®-Mark TRICOLOR ③

ready-to-use

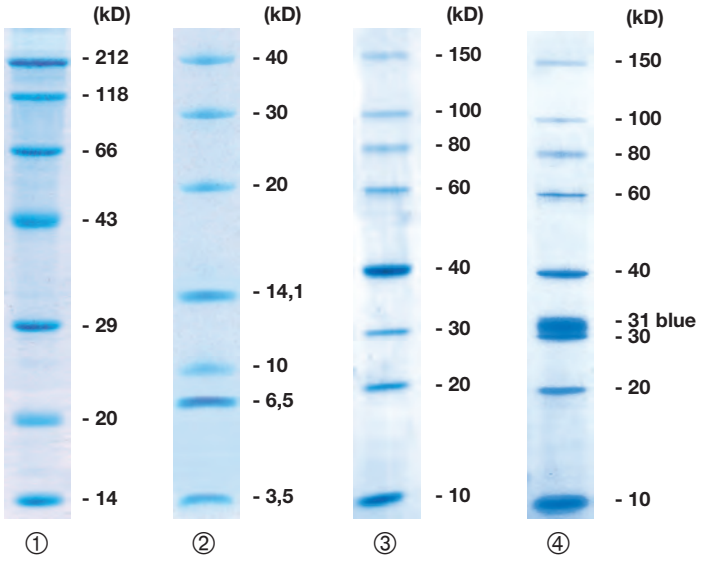
**Protein marker, prestained**
**Size range: 10-245 kD**
**Number of protein bands: 12**
**Number of lanes/ml: approx. 200 (mini gels)**
Storage temp.: -20 °C • Transport temp.: room temp.

Protein marker including tricolour-prestained proteins of 10 up to 245 kD. In order to visualise separation during the gel run and for better orientation in the gel, two proteins of approx. 25 and 75 kD have been prestained in green and red, respectively, in addition to the blue coloured bands. All proteins excel by having a very even running behaviour and form distinct bands. The marker is designed as ready-to-use solution for direct application to the gel.
**Fig.:** 4-20 % gradient SDS-PAGE (Tris)

| | | | |
|---|---|---|---|
| **8271.1** | 500 µl | plastic | 166,10 € |

# Protein Markers, unstained

| Marker | STANDARD | PETIT | 10-150 | 10-150 PLUS | WESTERN |
|---|---|---|---|---|---|
| Art. No. | T851 (fig. 1) | 9299 (fig. 2) | T850 (fig. 3) | X879 (fig. 4) | 0948 (fig. 5) |
| Size Range (kD) | 14 - 212 | 3,5 - 40 | 10 - 150 | 10 - 150 | 10 - 120 |
| Number of Fragments | 7 | 7 | 8 | 9 | 8 |
| Reinforced band at (kD) | 43 | - | 40 | 40 | 20 |
| Quantitation | recommended | recommended | recommended | recommended | recommended |
| Staining | unstained | unstained | unstained | 1 blue prestained band (30 kD) | unstained |
| Detection in Western-Blot | no detection | no detection | detection by anti-His possible | detection by anti-His possible | detection by conjugate 0949 |
| Number of Lanes in minigel | 200 / ml | 200 / ml | 200 / ml | 200 / ml | 200 / ml |
| Delivery | ready-to-use | ready-to-use | ready-to-use | ready-to-use | ready-to-use |




## Roti®-Mark STANDARD ①

ready-to-use

**Protein marker, not prestained**
**Size range: 14-212 kD**
**Number of protein bands: 7**
**Number of lanes/ml: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

**Warning** H319

Roti®-Mark STANDARD is an ideal protein-size marker for routine applications. Proteins are solubilised in nonreducing buffer acc. to Laemmli.
**Fig.:** 12 % SDS-PAGE (Tris)

| | | | |
|---|---|---|---|
| **T851.3** | 200 µl | plastic | 34,30 € |
| **T851.1** | 1 ml | plastic | 96,65 € |
| **T851.2** | 4 x 1 ml | plastic | 342,95 € |

## Roti®-Mark PETIT ②

ready-to-use

**Protein marker, not prestained**
**Size range: 3,5-40 kD**
**Number of protein bands: 7**
**Number of lanes/ml: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

Roti®-Mark PETIT is a finely graded protein marker for small size range. It consists of four genetically engineered proteins with defined, regular molecular weight and, in addition, of three native proteins for better visualization of the small size range. The marker is dissolved in non-reducing Laemmli buffer and can be used directly.
Roti®-Mark PETIT is an ideal addition to Roti®-Mark 10-150 (Art.-No. T850).
**Fig.:** 16,5 % SDS-PAGE (Tris-Tricine)

| | | | |
|---|---|---|---|
| **9299.1** | 100 µl | plastic | 61,85 € |
| **9299.2** | 500 µl | plastic | 180,10 € |

## Roti®-Mark 10-150 ③

ready-to-use

**Protein marker, not prestained**
**Size range: 10-150 kD**
**Number of protein bands: 8**
**Number of lanes/ml: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

**Warning** H319

Roti®-Mark 10-150 consists of a set of genetically engineered proteins with defined, regular molecular weight. The proteins are not glycosylated and therefore display homogeneous electrophoretic behaviour. An enhanced 40 kD band provides easy orientation in the gel.
Roti®-Mark 10-150 has been assembled from a set of **His-tagged, recombinant proteins** that may be detected during Western-Blot analysis using anti-His antibodies.
**Fig.:** 4-20 % gradient SDS-PAGE (Tris)

| | | | |
|---|---|---|---|
| **T850.1** | 500 µl | plastic | 116,65 € |
| **T850.2** | 100 µl | plastic | 51,50 € |

## Roti®-Mark 10-150 PLUS ④

ready-to-use

**Protein marker with additional prestained protein**
**Size range: 10-150 kD**
**Number of protein bands: 9**
**Number of lanes/ml: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

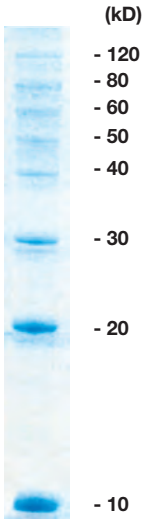
**Warning** H319

**Reliable size determination as well as control of running behaviour and transfer.**
This marker represents an advanced version of marker Roti®-Mark 10-150 and is supplemented with an additional prestained carbo anhydrase (approx. 31 kD). Roti®-Mark 10-150 PLUS consists of a set of genetically engineered proteins with defined, regular molecular weight. The proteins are not glycosylated and therefore display homogeneous electrophoretic behaviour. Whilst in prestained markers the apparent molecular size in the gel may differ from the actual size of the proteins, Roti®-Mark 10-150 PLUS exhibits a strictly size-dependent running behaviour. The additional prestained protein enables easy control of the run as well as of the subsequent transfer. Therefore, this marker adds the benefits of prestained protein markers to a reliable determination of the molecular weight of separated proteins. The enhanced 40 kD-band allows easy orientation in the gel.
Roti®-Mark 10-150 PLUS has been assembled from a set of **His-tagged, recombinant proteins** that may be detected during Western-Blot analysis using anti-His antibodies.
**Fig.:** 4-20 % gradient SDS-PAGE (Tris)

| | | | |
|---|---|---|---|
| **X879.1** | 500 µl | plastic | 145,15 € |
| **X879.2** | 100 µl | plastic | 57,55 € |

# Protein Markers for Western blotting

| Marker | WESTERN |
|---|---|
| Art. No. | 0948 (fig. 5) |
| Size Range (kD) | 10 - 120 |
| Number of Fragments | 8 |
| Reinforced band at (kD) | 20 |
| Quantitation | recommended |
| Staining | unstained |
| Detection in Western-Blot | detection by anti-His possible |
| Number of Lanes in minigel | 200 / ml |
| Delivery | ready-to-use |




⑤

## Roti®-Mark WESTERN-Marker ⑤

ready-to-use

**Protein marker, not prestained**
**Size range: 10-120 kD**
**Number of protein bands: 8**
**Number of lanes/ml: approx. 200 (mini gels)**
Storage temp.: -20 °C • Transport temp.: room temp.

**Warning** H319

Finely graded protein marker for medium size range. The unstained proteins enable correct size evaluation in gel. Roti®-Mark WESTERN-Marker has been assembled from a set of **His-tagged, recombinant proteins** and can be detected directly in Western-Blot using anti-His antibodies. Subsequently, staining through chemoluminescence or colour reaction is possible. Consequently you will obtain the ladder size directly on your printout, X-ray film or membrane - this rules out the possibility of any errors through inaccurate transfer of the bands. Marker proteins are solubilised in a non-reducing buffer acc. to Laemmli.
**Fig.:** 12 % SDS-PAGE (Tris), 10 µl marker solution.

| | | | |
|---|---|---|---|
| **0948.1** | 500 µl | plastic | 192,45 € |

**Instructions for use**
can be found on the Internet next to the product description.

## Anti His-HRP

ready-to-use

**1 mg/ml, polyclonal, affinity purified**
Polyclonal antibody for detection of His-tagged proteins in Western Blot and ELISA
**Recommended dilution:** 1:1.000 - 1:10.000
Primary Anti His antibody, HRP-conjugated
Storage temp.: -20 °C • Transport temp.: cooled
**Target:** C-terminal or N-terminal His-tagged proteins
**Conjugation:** Horse Radish Peroxidase (HRP)
**Application:** Immuno blotting (Western-, dot blotting), ELISA
**Purification and specificity:** Purified from monospecific antiserum by affinity chromatography on immobilised oligo histidine. Tested for Western Blot and ELISA.

| | | | |
|---|---|---|---|
| **3894.1** | 100 µl | plastic | 295,65 € |

## Anti His pAB

ready-to-use

**1 mg/ml, polyclonal, affinity purified**
Polyclonal antibody for detection and isolation of His-tagged proteins
**Recommended dilution:** 1:1.000 - 1:10.000
Primary anti His antibody
Storage temp.: -20 °C • Transport temp.: cooled
**Target:** C-terminal or N-terminal His-tagged proteins
**Conjugation:** none
**Application:** Immuno blotting (Western-, dot blotting), ELISA, protein isolation
**Purification and specificity:** Purified from monospecific antiserum by affinity chromatography on immobilised oligo histidine. Tested for Western Blot and ELISA.

| | | | |
|---|---|---|---|
| **3742.1** | 100 µl | plastic | 244,60 € |

## Anti His Serum

ready-to-use

**polyclonal**
Polyclonal serum for detection and isolation of His-tagged proteins
**Recommended dilution:** 1:1.000
Primary anti His antibody
Storage temp.: -20 °C • Transport temp.: cooled
**Target:** C-terminal or N-terminal His-tagged proteins
**Conjugation:** none
**Application:** Immuno blotting (Western-, dot blotting), ELISA, protein isolation
**Purification and specificity:** Tested for Western Blot and ELISA

| | | | |
|---|---|---|---|
| **3735.1** | 100 µl | plastic | 200,50 € |

▶ Reagents for Western Blot and ELISA see chapter Biochemistry - Western and ELISA!

▶ Additional data and further antibodies see page 1288

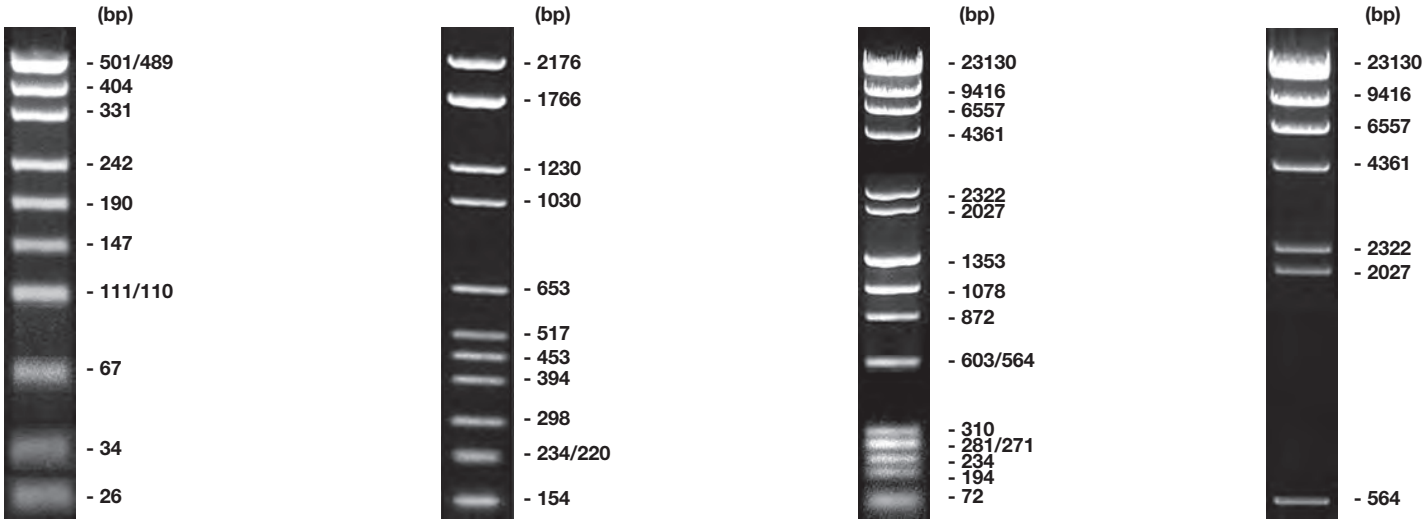
# DNA Markers

Roth offers a multifaceted marker range including DNA markers for each application required. Our DNA-markers produce sharp, clear bands. Terminally, the unregular markers carry sticky *Eco*R I sites and, therefore, end-labelling methods can be applied easily.

## Unevenly Distributed DNA Markers

These markers are recommended for DNA quantitation in the gel.
DNA amounts of all bands are depicted in the included instructions-for-use.

| Marker | pUC19-Marker ready-to-use | pUC19/MspI | pBR328-Marker ready-to-use | pBR328 Mix I | Lambda Hind III / phiX Hae III Marker | Lambda Hind III Marker |
|---|---|---|---|---|---|---|
| Art. No. | X901 (fig. 1) | T149 (fig. 2) | X902 (fig. 3) | T146 (fig. 4) | CP49 (fig. 5) | X910 (fig. 6) |
| Size range (bp) | 26 - 501 | 26 - 501 | 154 - 2176 | 154 - 2176 | 72 - 23130 | 125 - 23130 |
| Number of fragments | 10 | 10 | 11 | 11 | 17 | 8 |
| Reinforced band at (bp) | - | - | - | - | - | - |
| Quantitation | recommended | recommended | recommended | recommended | recommended | recommended |
| Number of lanes in minigel | 200 / ml | 200 / 100 µg | 200 / ml | 200 / 100 µg | 200 / 100 µg | 200 / 100 µg |
| Delivery | ready-to-use | lyophilised | ready-to-use | lyophilised | lyophilised | lyophilised |




### pUC19-Marker ready-to-use ①

ready-to-use

**DNA marker ready-to-use**
**Size range: 26-501 bp**
**Number of fragments: 10**
**Number of lanes per ml: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

The marker was manufactured using pUC19-DNA and restriction endonuclease *Msp* I.
**Made from natural plasmids: fragment sizes can be validated!**
DNA-ladder for analysis of small DNA fragments. The concentration of the individual fragments is equimolar so that rough quantification of the analysed DNA is possible.
The ready-to-use pUC19-marker has already been dissolved in 1x concentrated gel loading buffer Roti®-Load DNA (with glycerol, Art. No. 0100.1) and can be used directly. It has a concentration of 0,1 µg DNA/µl marker-solution.
**Fig.:** 1 % agarose (NEEO, Art. No. 2267) + 2 % Synergel™ (Art. No. 0184)

| | | | |
|---|---|---|---|
| **X901.1** | 500 µl (50 µg) | plastic | 59,05 € |
| **X901.2** | 4 x 500 µl (4 x 50 µg) | plastic | 209,65 € |

### pUC19/Msp I ②

**DNA marker + gel loading buffer**
**Size range: 26-501 bp**
**Number of fragments: 10**
**Number of lanes per 100 µg: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

The marker was manufactured by using pUC19-DNA and restriction endonuclease *Msp* I.
**Made from natural plasmids: fragment sizes can be validated!**
DNA-ladder for analysis of small DNA fragments. The concentration of the individual fragments is equimolar so that rough quantification of the analysed DNA is possible.
**Fig.:** 1 % agarose (NEEO, Art. No. 2267) + 1 % Synergel™ (Art. No. 0184)
The DNA marker is supplied in lyophilised form. Sample buffer for dissolving the lyophilised DNA-fragments is included.

| | | | |
|---|---|---|---|
| **T149.1** | 50 µg + gel loading buffer | plastic | 74,75 € |
| **T149.2** | 4 x 50 µg + gel loading buffer | plastic | 246,20 € |

## pBR328-Marker ready-to-use ③

**DNA marker ready-to-use**
**Size range: 154-2176 bp**
**Number of fragments: 11**
**Number of lanes per ml: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

The marker was manufactured by mixing fragments obtained by restriction digest of pBR328 using the endonucleases *Hinf* I and *Bgl* I.
**Made from natural plasmids: fragment sizes can be validated!**
DNA-ladder for analysis of small DNA fragments. The concentration of the individual fragments is equimolar so that rough quantitation of the analysed DNA is possible.
The ready-to-use pBR328-marker has been dissolved in 1x concentrated gel loading buffer Roti®-Load DNA (with glycerol) and can be used directly. It has a concentration of 0,1 µg DNA/µl marker-solution.
**Fig.:** 1,5 % agarose (NEEO, Art. No. 2267)

| | | | |
|---|---|---|---|
| **X902.1** | 500 µl (50 µg) | plastic | 62,90 € |
| **X902.2** | 4 x 500 µl (4 x 50 µg) | plastic | 235,45 € |

## pBR328 Mix I ④

**DNA marker + gel loading buffer**
**Size range: 154-2176 bp**
**Number of fragments: 11**
**Number of lanes per 100 µg: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

The marker was manufactured by mixing fragments obtained by restriction digest of pBR328 using the endonucleases *Hinf* I and *Bgl* I.
**Made from natural plasmids: fragment sizes can be validated!**
DNA-ladder for analysis of small DNA fragments. The concentration of the individual fragments is equimolar so that rough quantitation of the analysed DNA is possible.
**Fig.:** 1,5 % agarose (NEEO, Art. No. 2267)
The DNA marker is supplied in lyophilised form. Sample buffer for dissolving the lyophilised DNA-fragments is included.

| | | | |
|---|---|---|---|
| **T146.1** | 50 µg + gel loading buffer | plastic | 74,10 € |

## Lambda Hind III / phiX Hae III Marker ⑤

**DNA marker + gel loading buffer**
**Size range: 72-23130 bp**
**Number of fragments: 17**
**Number of lanes per 100 µg: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

Versatile marker for depiction of all standard DNA fragment lengths.
By mixing high molecular weight Lambda (*Hind* III) fragments with short-sequence phiX-174 (*Hae* III) fragments a marker was designed which covers a broad range from 200 bp up to 20 kb. Most fragments are distributed in an equimolar way, additionally allowing rough DNA quantification in the gel. Due to this equimolarity, however, the smallest bands of 125 bp, 118 bp and 72 bp can not be detected efficiently in standard gels. Optimal results are obtained with a running distance of approx. 10 cm.
The marker was manufactured by restricting unmethylated DNA with the restriction endonucleases *Hind* III and *Hae* III. Depending on the application, the lyophilised marker can be resolubilised directly in the sterile-filtered 1x-gel loading buffer Roti®-Load DNA (with glycerol) (Art. No. 0100.1) or in TE-buffer.
**Fig.:** 1 % agarose (NEEO, Art. No. 2267).

| | | | |
|---|---|---|---|
| **CP49.1** | 50 µg + gel loading buffer | plastic | 137,10 € |

## Lambda Hind III Marker ⑥

**DNA marker + gel loading buffer**
**Size range: 125-23130 bp**
**Number of fragments: 8**
**Number of lanes per 100 µg: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

The marker was manufactured by using unmethylated Lambda-DNA and restriction endonuclease *Hind* III.
Classical standard for analysis of middle-range DNA fragments. Since the marker is produced by restriction digest of Lambda-DNA, fragments are mostly distributed in an equimolar way (with the exception of the 4361 bp fragment), additionally allowing rough quantification of the DNA analysed. Depending on the application, the lyophilised marker can be resolubilized directly in the sterile-filtered 1x-gel loading buffer Roti®-Load DNA (with glycerol) (Art. No. 0100.1) or in TE-buffer.
**Fig.:** 1 % agarose (NEEO, Art. No. 2267)

| | | | |
|---|---|---|---|
| **X910.1** | 100 µg + gel loading buffer | plastic | 58,60 € |

▶ DNA-quantitation standards QSK
see page 1243

**Tips for estimating the amount of DNA in agarose gels**

- Please make sure to quantitatively dissolve the comparative DNA (e.g. the marker) in buffer, in order to obtain the full DNA-concentration.
- Allow the gel to run far enough so that the bands have adequate space, the DNA can then disperse in the bands and stain well.
- Stain the gel thoroughly - we recommend staining after the gel run. Staining the DNA by adding ethidium bromide to the agarose will not achieve an even distribution in the gel and is frequently not quantitative.
- Apply several lanes of comparative-DNA with different quantities so that various bands can be compared. A calibration curve may also be plotted to determine the exact concentration.
- For comparison it is best to use bands of similar size to your DNA (maximum ±50 % of the fragment length).
- Ethidium bromide is integrated much more effectively between the base pair stacks in linear DNA than in cyclic DNA. Therefore, please make sure that the conformation of the DNA whose concentration you wish to estimate is identical to that of the comparative DNA. In the event of cyclic DNA, i.e. isolated plasmids, cyclic DNA should also be used, e.g. plasmid-DNA pUC19 (Art. No. X911.1) or pBR322 (Art. No. X912.1). If you are using a DNA-marker as a comparative DNA and wish to measure cyclic DNA, you should initially linearize an aliquot of the DNA through restriction digestion and apply the preparation to the gel.
- In the event of a Lambda/*Hind* III marker: Do not use the 4.4 kb band of the marker for concentration analysis, as it is often not quantitatively present but coupled to the large fragment via the cos-site. Should you require the 4.4 kb band, please take care to heat the marker prior to applying (5 minutes at 65 °C).
- Only use the large marker fragments of a Lambda marker for concentration estimation when your fragments are in the same size range. Many visual systems do not depict the staining of the large bands proportionally to the DNA-amount.

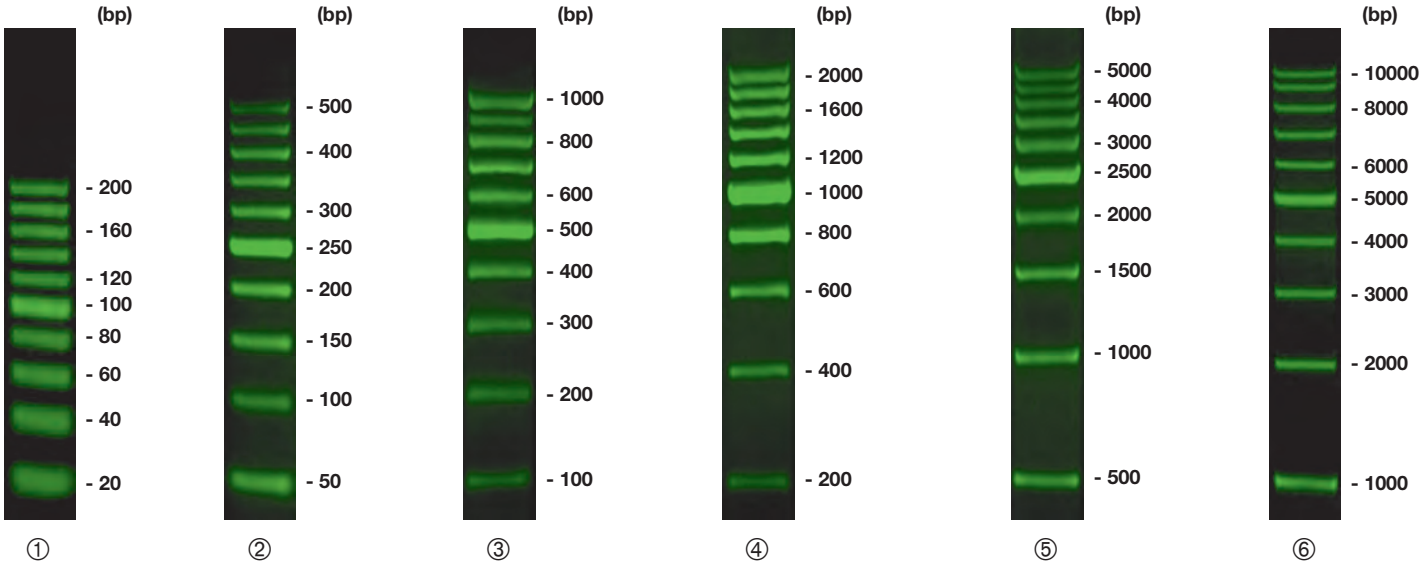
The DNA-markers are supplied ready-to-use or in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included. We use Roti®-Load DNA with glycerol (Art. No. 0100.1) as gel loading buffer. The dissolved markers are ready-to-use and can be applied to gels immediately.

**Tips for use of DNA length markers**

- Storage: Store marker in small aliquots at -20 °C. One aliquot can be stored at +4 °C for permanent use.
- Application amount: Apply more marker when markers with higher band numbers are used. Applied amount can be reduced, however, for short separation distances. Application on polyacrylic amide gels may be reduced to ⅛ to ½ of the marker amount used for agarose gels.
- Fast running gels: Roth markers are established with respect to high separation efficiency even when applying high voltages. Be sure, however, to use sufficient and fresh gel running buffer made with water of good quality.
- "Falsely" running bands: Under extreme conditions, (e.g. high voltages, short running distances, salt content in the probes >150 mM) implausible results may occur, which are often caused by partial strand separation of the DNA. For amendments we recommend: a) Supplementation of the marker with restriction enzyme buffer in order to increase the salt content, b) use lower separation voltages, c) make sure to efficiently remove evolving heat, e.g. by cooling the gel prior to or during the run.

# Evenly Distributed DNA Markers with Fluorescent Stain

| Marker | 20 bp-DNA-Fluoro-Ladder | 50 bp-DNA-Fluoro-Ladder | 100 bp-DNA-Fluoro-Ladder | 200 bp-DNA-Fluoro-Ladder | 500 bp-DNA-Fluoro-Ladder | 1 kbp DNA-Fluoro-Ladder |
|---|---|---|---|---|---|---|
| Art. No. | 8262 (fig. 1) | 8263 (fig. 2) | 8264 (fig. 3) | 8265 (fig. 4) | 8266 (fig. 5) | 8267 (fig. 6) |
| Size range (bp) | 20 - 200 | 50 - 500 | 100 - 1000 | 200 - 2000 | 500 - 5000 | 1000 - 10000 |
| Number of fragments | 10 | 10 | 10 | 10 | 10 | 10 |
| Reinforced band at (bp) | 100 | 250 | 500 | 1000 | 2500 | 5000 |
| Färbung | fluorescent/green | fluorescent/green | fluorescent/green | fluorescent/green | fluorescent/green | fluorescent/green |
| Quantitation | possible | possible | possible | possible | possible | possible |
| Number of lanes in minigel | 200 / ml | 200 / ml | 200 / ml | 200 / ml | 200 / ml | 200 / ml |
| Delivery | ready-to-use | ready-to-use | ready-to-use | ready-to-use | ready-to-use | ready-to-use |




## 20 bp-DNA-Fluoro-Ladder ①

ready-to-use

**DNA-Marker ready-to-use, prestained with DNA fluorescent dye**

**Size range: 20-200 bp**
**Number of fragments: 10**
**Number of lanes per ml: approx. 200 (Minigel)**

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of very small DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 100 bp fragment has been enhanced for easy analysis of the gel. Orange G was included as tracking dye. The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly. It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
**Excitation maximum** (bound to DNA): approx. 320 nm and 470-500 nm
**Emission maximum** (bound to DNA): 525 nm
**The 20 bp-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 3 (Art. No. 6472).**

| | | |
|---|---|---|
| **8262.1** | 500 µl (50 µg) | 134,40 € |

## 50 bp-DNA-Fluoro-Ladder ②

ready-to-use

**DNA-Marker ready-to-use, prestained with DNA fluorescent dye**

**Size range: 50-500 bp**
**Number of fragments: 10**
**Number of lanes per ml: approx. 200 (Minigel)**

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of small DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 250 bp fragment has been enhanced for easy analysis of the gel. Orange G was included as tracking dye.
The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly. It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
**Excitation maximum** (bound to DNA): approx. 320 nm and 470-500 nm
**Emission maximum** (bound to DNA): 525 nm
**The 50 bp-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 3 (Art. No. 6472).**

| | | |
|---|---|---|
| **8263.1** | 500 µl (50 µg) | 117,20 € |

## 100 bp-DNA-Fluoro-Ladder ③

**DNA-Marker ready-to-use, prestained with DNA fluorescent dye**
**Size range: 100-1000 bp**
**Number of fragments: 10**
**Number of lanes per ml: approx. 200 (Minigel)**

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of small DNA fragments. Delivered in ready-to-use format for direct application to gels. The 500 bp fragment has been enhanced for easy analysis of the gel. Orange G and xylene cyanole were included as tracking dyes.
The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly.
It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
**Excitation maximum** (bound to DNA): approx. 320 nm and 470-500 nm
**Emission maximum** (bound to DNA): 525 nm
**The 100 bp-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 2 (Art. No. 5784).**

| | | |
|---|---|---|
| **8264.1** | 500 µl (50 µg) | 107,40 € |

## 200 bp-DNA-Fluoro-Ladder ④

**DNA-Marker ready-to-use, prestained with DNA fluorescent dye**
**Size range: 200-2000 bp**
**Number of fragments: 10**
**Number of lanes per ml: approx. 200 (Minigel)**

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 1000 bp fragment has been enhanced for easy analysis of the gel. Bromophenol blue and xylene cyanole were included as tracking dyes.
The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly. It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
**Excitation maximum** (bound to DNA): approx. 320 nm and 470-500 nm
**Emission maximum** (bound to DNA): 525 nm
**The 200 bp-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 1 (Art. No. 5783).**

| | | |
|---|---|---|
| **8265.1** | 500 µl (50 µg) | 96,65 € |

## 500 bp-DNA-Fluoro-Ladder ⑤

**DNA-Marker ready-to-use, prestained with DNA fluorescent dye**
**Size range: 500-5000 bp**
**Number of fragments: 10**
**Number of lanes per ml: approx. 200 (Minigel)**

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 2500 bp fragment has been enhanced for easy analysis of the gel. Bromophenol blue and xylene cyanole were included as tracking dyes.
The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly. It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
**Excitation maximum** (bound to DNA): approx. 320 nm and 470-500 nm
**Emission maximum** (bound to DNA): 525 nm
**The 500 bp-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 1 (Art. No. 5783).**

| | | |
|---|---|---|
| **8266.1** | 500 µl (50 µg) | 83,75 € |

## 1 kbp-DNA-Fluoro-Ladder ⑥

**DNA-Marker ready-to-use, prestained with DNA fluorescent dye**
**Size range: 1000-10000 bp**
**Number of fragments: 10**
**Number of lanes per ml: approx. 200 (Minigel)**

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of big DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 5 kb fragment has been enhanced for easy analysis of the gel. Bromophenol blue and xylene cyanole were included as tracking dyes.
The bands of the marker are prestained with the fluorescent dye EvaGreen®, which has been developed specifically for DNA analysis. Due to the low membrane permeability of the dye, the marker is non mutagenic, non-toxic, and environment friendly. It can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, the nucleic acid-bound dye emits a brightly coloured green fluorescence that may be documented by all usual broadband ethidium bromide filters or SYBR® Green foto filters.
**Excitation maximum** (bound to DNA): approx. 320 nm and 470-500 nm
**Emission maximum** (bound to DNA): 525 nm
**The 1 kb-DNA-Fluoro-Ladder is an ideal addition to the with EvaGreen® prestained gel loading buffer Roti®-Load DNAstain 1 (Art. No. 5783).**

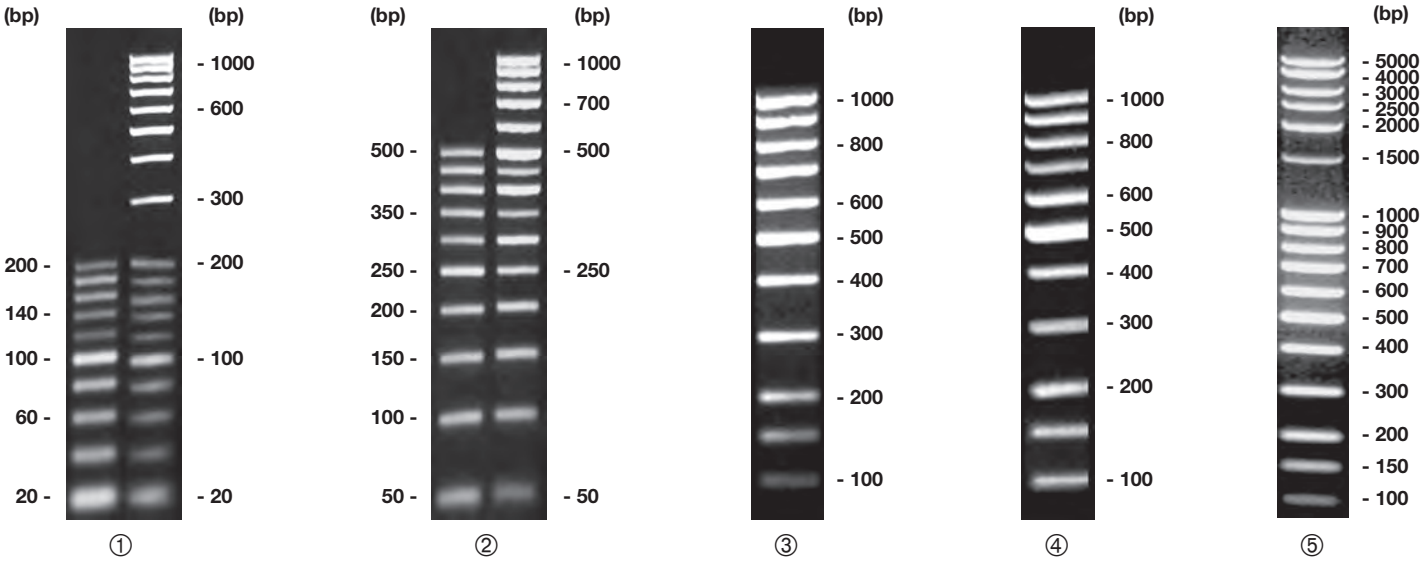
| | | |
|---|---|---|
| **8267.1** | 500 µl (50 µg) | 74,10 € |

▶ **DNA-gel loading buffers** with fluorescent dye EvaGreen®
see page 1170

Please note: Reliable size determination of unstained DNA fragments cannot performed using prestained markers.
To make the running distances comparable it is necessary to stain the DNA fragments, too. We recommend using the gel loading buffer Roti®-Load DNAstain. The buffer contains - as well as the Fluoro ladders - the non-toxic fluorescent dye EvaGreen®, which is detectable with UV- and blue light.

# Evenly Distributed DNA Markers (Unstained)

| Marker | 20 bp-DNA Ladder | 50 bp-DNA Ladder | 100 bp-DNA Ladder equimolar | 100 bp-DNA Ladder equalized | 100 bp-DNA Ladder extended |
|---|---|---|---|---|---|
| Art. No. | 2805 (fig. 1) | 2810 (fig. 2) | T834 (fig. 3) | T833 (fig. 4) | T835 (fig. 5) |
| Size range (bp) | 20 - 200 | 50 - 500 | 100 - 1000 | 100 - 1000 | 100 - 5000 |
| Number of fragments | 10 | 10 | 11 | 11 | 17 |
| Reinforced band at (bp) | 100 | 250 | 500 | 500 | 500 |
| Quantitation | possible | possible | recommended | possible | possible |
| Number of lanes in minigel | 200 / ml | 200 / ml | 200 / 100 µg | 500 / 100 µg | 160 / 100 µg |
| Delivery | ready-to-use | ready-to-use | lyophilised | lyophilised | lyophilised |




## 20 bp-DNA-Ladder ①

ready-to-use

**DNA marker ready-to-use**
**Size range: 20-200 bp**
**Number of fragments: 10**
**Number of lanes per ml: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of very small DNA fragments. Delivered in ready-to-use format for direct application to gels. The 100 bp fragment has been enhanced for easy analysis of the gel. All fragments are quantified, enabling quantitation of sample DNA in the gel. In order to avoid overlay of bands by bromophenol blue or xylene cyanol, Orange G was included as dye. We recommend use of this marker on the following special agaroses: High Resolution (Art. No. K297), HR-PLUS (Art. No. HP30), LM/PCR (Art. No. HP31), or an agarose with additional Synergel™ (Art. No. 0184). The 20 bp DNA-Ladder is highly compatible with the 100 bp DNA-Ladder *equimolar* (Art. No. T834). The two markers can easily be combined, resulting in a highly versatile ladder from 20 bp up to 1000 bp (right lane in figure).
**Fig.:** 1,4 % agarose (High Resolution, Art. No. K297) + 0,8 % Synergel™ (Art. No. 0184) in 1 x TAE.

| | | | |
|---|---|---|---|
| **2805.1** | 500 µl (50 µg) | plastic | 117,20 € |

## 50 bp-DNA-Ladder ②

ready-to-use

**DNA marker ready-to-use**
**Size range: 50-500 bp**
**Number of fragments: 10**
**Number of lanes per ml: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of small DNA fragments. Delivered in ready-to-use format for direct application to gels. The 250 bp fragment has been enhanced for easy analysis of the gel. All fragments are quantified, enabling quantitation of sample DNA in the gel. In order to avoid overlay of bands by bromophenol blue or xylene cyanol, Orange G was included as dye. We recommend use of this marker on the following special agaroses: High Resolution (Art. No. K297), HR-PLUS (Art. No. HP30), LM/PCR (Art. No. HP31), or an agarose with additional Synergel™ (Art. No. 0184). The 50 bp DNA-Ladder is highly compatible with the 100 bp DNA-Ladder *equimolar* (Art. No. T834). The two markers can easily be combined, resulting in a highly versatile ladder from 50 bp up to 1000 bp (right lane in figure).
**Fig.:** 1,1 % agarose (High Resolution, Art. No. K297) + 0,8 % Synergel™ (Art. No. 0184) in 1 x TAE.

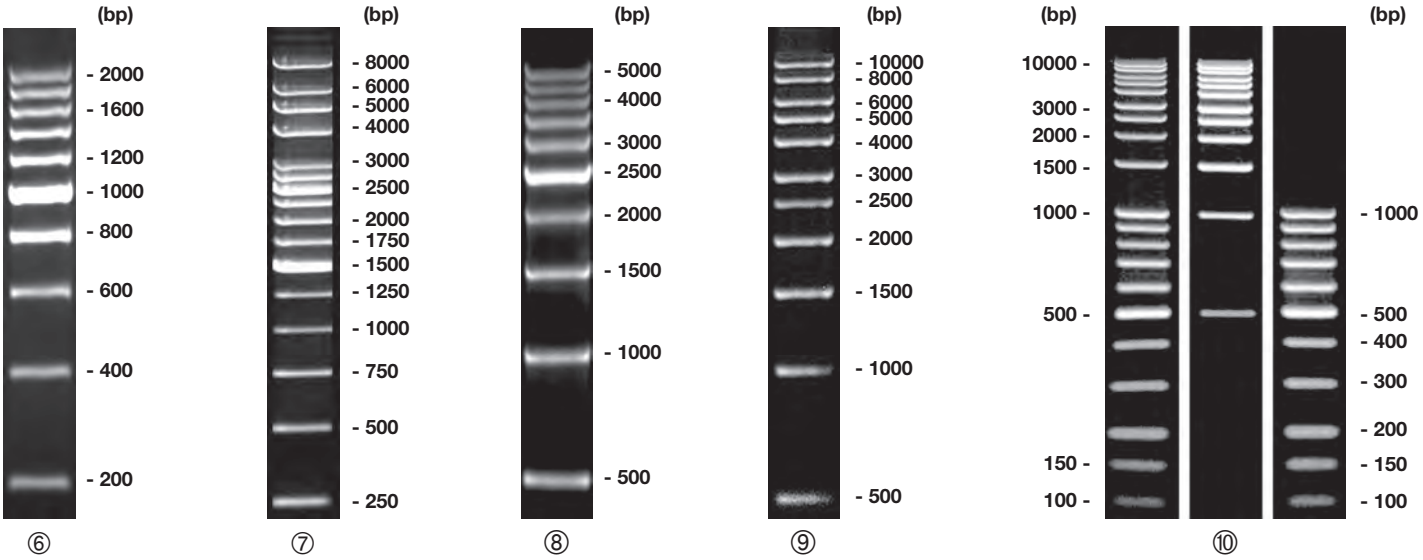
| | | | |
|---|---|---|---|
| **2810.1** | 500 µl (50 µg) | plastic | 98,40 € |

The DNA-markers are supplied ready-to-use or in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included. We use Roti®-Load DNA with glycerol (Art. No. 0100.1) as gel loading buffer. The dissolved markers are ready-to-use and can be applied to gels immediately.

**For direct detection of the marker DNA in the gel under UV- or blue light** we recommend to use lyophilized marker DNA. The marker DNA is first solubilized in sterile water or 1xTE buffer, then Roti®-Load DNAstain (6x conc.) is added. The so prepared marker may be aliquoted and stored at -20 °C.

Roti®-Load DNAstain contains a fluorecent dye which may be excited by UV- or blue light, emitting at 525 nm.

| Marker | 200 bp-DNA Ladder | 250 bp-DNA Ladder | 500 bp-DNA Ladder | 1 kbp DNA Ladder | DNA Ladder combi |
|---|---|---|---|---|---|
| **Art. No.** | **8272 (fig. 6)** | **T918 (fig. 7)** | **8273 (fig. 8)** | **Y014 (fig. 9)** | **CL22 (fig. 10)** |
| Size range (bp) | 200 - 2000 | 250 - 8000 | 500 - 5000 | 500 - 10000 | 100 - 10000 |
| Number of fragments | 10 | 16 | 10 | 11 | 20 |
| Reinforced band at (bp) | 1000 | 1500, 2500 | 2500 | - | 500 |
| Quantitation | possible | - | possible | - | - |
| Number of lanes in minigel | 200 / ml | 200 / 100 µg | 200 / ml | 200 / 100 µg | 200 / 140 µg |
| Delivery | ready-to-use | lyophilised | ready-to-use | lyophilised | lyophilised |




## 100 bp-DNA-Ladder *equimolar* ③

**DNA ladder + gel loading buffer**
**Size range: 100-1000 bp**
**Number of fragments: 11**
**Number of lanes per 100 µg: approx. 200 (mini gels)**
Storage temp.: -20 °C • Transport temp.: room temp.

**Routine marker for small fragments.**

The individual bands of the marker are present in the mixture in the same molar concentration (equimolar).
**Fig.:** 1,8 % agarose (NEEO, Art. No. 2267)
The DNA-ladder is supplied in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

| | | | |
|---|---|---|---|
| **T834.1** | 50 µg + gel loading buffer | plastic | 74,75 € |
| **T834.2** | 4 x 50 µg + gel loading buffer | plastic | 284,90 € |

## 100 bp-DNA-Ladder *equalized* ④

**DNA ladder + gel loading buffer**
**Size range: 100-1000 bp**
**Number of fragments: 11**
**Number of lanes per 100 µg: approx. 500 (mini gels)**
Storage temp.: -20 °C • Transport temp.: room temp.

**Ideal for analysis of fragments ≤500 bp.**

The DNA-quantity per band was set in such a way that the intensity of the individual bands is comparable (equalized).
**Fig.:** 1,8 % agarose (NEEO, Art. No. 2267)
The DNA-ladder is supplied in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

| | | | |
|---|---|---|---|
| **T833.1** | 20 µg + gel loading buffer | plastic | 73,65 € |
| **T833.2** | 4 x 20 µg + gel loading buffer | plastic | 283,30 € |

## 100 bp-DNA-Ladder *extended* ⑤

**DNA ladder + gel loading buffer**
**Size range: 100-5000 bp**
**Number of fragments: 17**
**Number of lanes per 100 µg: approx. 160 (mini gels)**
Storage temp.: -20 °C • Transport temp.: room temp.
Fragment sizes 100 to 1000 bp are equimolar.
**Fig.:** 1,8 % agarose (NEEO, Art. No. 2267)
The DNA-ladder is supplied in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

| | | | |
|---|---|---|---|
| **T835.1** | 50 µg + gel loading buffer | plastic | 74,75 € |
| **T835.2** | 4 x 50 µg + gel loading buffer | plastic | 284,90 € |

## 200 bp-DNA-Ladder ⑥

ready-to-use

**DNA marker ready-to-use**
**Size range: 200-2000 bp**
**Number of fragments: 10**
**Number of lanes per ml: approx. 200 (mini gels)**
Storage temp.: -20 °C • Transport temp.: room temp.
Regular DNA ladder for the analysis of DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 1000 bp fragment has been enhanced for easy analysis of the gel. All fragments are quantified, enabling quantitation of sample DNA in the gel. Bromophenol blue and xylene cyanol are included as tracking dyes. We recommend use of this marker on the following special agaroses: HR-PLUS (Art. No. HP30), LM/PCR (Art. No. HP31), or an agarose with additional Synergel™ (Art. No. 0184). The 200 bp DNA-Ladder is highly compatible with the 20 bp DNA-Ladder (Art. No. 2805). The two markers can easily be combined, resulting in a highly versatile ladder from 20 bp up to 2000 bp .

| | | | |
|---|---|---|---|
| **8272.1** | 500 µl (50 µg) | | 87,65 € |

## 250 bp-DNA-Ladder ⑦

**DNA ladder + gel loading buffer**
**Size range: 250-8000 bp**
**Number of fragments: 16**
**Number of lanes per 100 µg: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

Universal marker for size analysis of plasmids and DNA-insertions. Two fragments of 1500 and 2500 bp have been reinforced for easy orientation in the gel. The DNA amount per band has been optimised in such a way that a small running distance and low amounts of marker are sufficient for optimum separation.
**Fig.:** 1,8 % agarose (NEEO, Art. No. 2267)
The ladder is supplied in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

| | | | |
|---|---|---|---|
| **T918.1** | 50 µg + gel loading buffer | plastic | 80,55 € |

## 500 bp-DNA-Ladder ⑧

**DNA marker ready-to-use**
**Size range: 500-5000 bp**
**Number of fragments: 10**
**Number of lanes per ml: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

Regular DNA ladder for the analysis of DNA fragments. Delivered in *ready-to-use* format for direct application to gels. The 2500 bp fragment has been enhanced for easy analysis of the gel. All fragments are quantified, enabling quantitation of sample DNA in the gel. Bromophenol blue and xylene cyanol are included as tracking dyes. We recommend use of this marker on the following special agaroses: GTQ (Art. No. 6352), Broad Range (Art. No. T846), or an agarose with additional Synergel™ (Art. No. 0184). The 500 bp DNA-Ladder is highly compatible with the 50 bp DNA-Ladder (Art. No. 2810). The two markers can easily be combined, resulting in a highly versatile ladder from 50 bp up to 5 kb.

| | | | |
|---|---|---|---|
| **8273.1** | 500 µl (50 µg) | | 69,80 € |

## 1 kbp DNA-Ladder ⑨

**DNA ladder + gel loading buffer**
**Size range: 500-10000 bp**
**Number of fragments: 11**
**Number of lanes per 100 µg: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

Universal marker for electrophoretic separation of fragments between 500 bp and 10 kb, optimally suited for size determination of inserts, plasmids, and restricted DNA. The mass of the larger fragments was reduced, allowing to obtain clear and distinct bands with short running distances even for the large marker fragments.
The terminal sticky *Eco*R I-restriction sites allow simple labelling of the marker fragments via end-labelling techniques.
The 1 kbp DNA-ladder is highly compatible with the 100 bp DNA-ladder (equalised: T833.1).
**Fig.:** 1.2 % agarose (NEEO, Art. No. 2267). Additional band at 125 bp.
The DNA-ladder is supplied in lyophilised form.
Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

| | | | |
|---|---|---|---|
| **Y014.1** | 50 µg + gel loading buffer | plastic | 35,40 € |
| **Y014.2** | 4 x 50 µg + gel loading buffer | plastic | 122,05 € |

The DNA-markers are supplied ready-to-use or in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included. We use Roti®-Load DNA with glycerol (Art. No. 0100.1) as gel loading buffer. The dissolved markers are ready-to-use and can be applied to gels immediately.

**Instructions for use**
can be found on the Internet next to the product description.

## DNA-Ladder combi ⑩

**DNA marker + gel loading buffer**
**Size range: 100-10000 bp**
**Number of fragments 20**
**Number of lanes per 40 µg + 100 µg: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

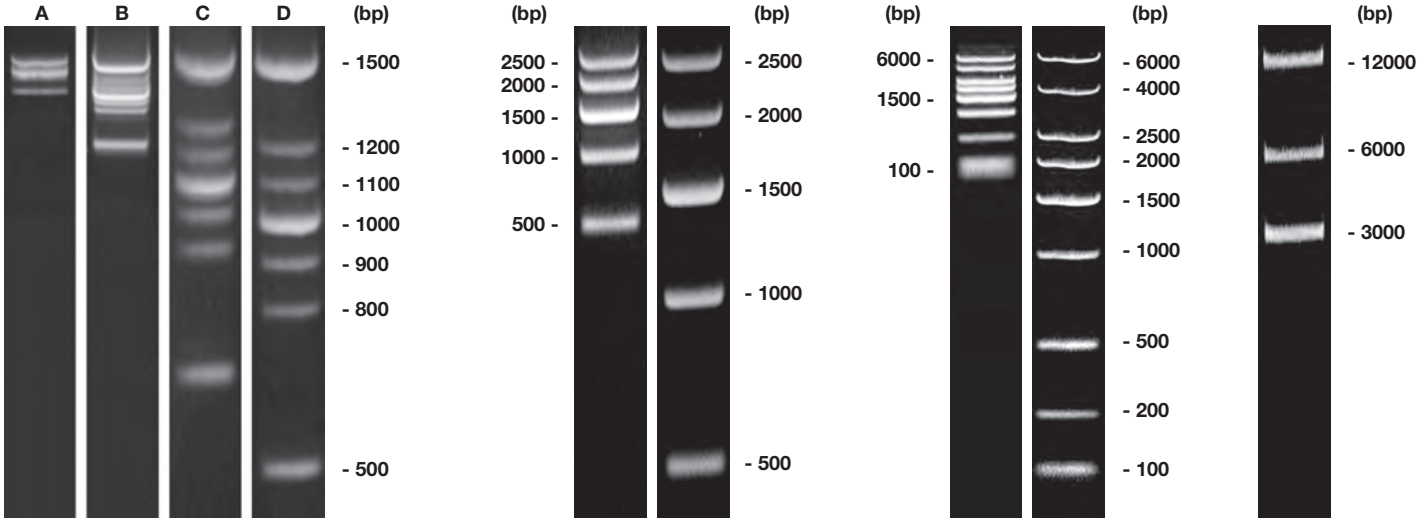
Versatile DNA-marker combination for gels and DNA-fragments of different size. DNA-ladder combi combines the advantages of the 100 bp ladder, equalized (Art. No. T833), with the versatile 1 kbp DNA-ladder (Art. No. Y014). Subsequently we now have a marker set that completely covers both the medium size range up to 10 kb (see figure of Art. No. Y014) as well as enabling clear size analysis in the small fragment range. The two markers come in separate tubes to ensure high flexibility in the laboratory. They can, therefore, be used separately or combined. The bands below 500 bp were enhanced aligning their intensity in the gel to the large fragments. The 500 bp band was specially enhanced for easy orientation in the gel.
The **figure** shows a gel mixture of 0,9 % Agarose + 0,5 % Synergel® with (left to right): 0,4 µg 100 bp Ladder, equalized + 0,3 µg 1 kbp Ladder; 0,5 µg 1 kbp Ladder, 0,4 µg 100 bp Ladder, equalized. The DNA-ladder is supplied in lyophilised form. Gel loading buffer for dissolving the lyophilised DNA-fragments is included.

| | | | |
|---|---|---|---|
| **CL22.1** | 20 µg + 50 µg + gel loading buffer | plastic | 107,40 € |



# DNA Markers for Short Runs

| Marker | PCR-Marker DNAscore | DNA-Marker short run 1 | DNA-Marker short run extended | DNA-Marker ccc-Plasmid |
|---|---|---|---|---|
| Art. No. | T917 (fig. 1) | 0146 (fig. 2) | CL05 (fig. 3) | 0149 (fig. 4) |
| Size range (bp) | 500 - 1500 | 500 - 2500 | 100 - 6000 | 3000 - 12000 |
| Number of fragments | 7 | 5 | 9 | 3 |
| Reinforced bands at (bp) | 500, 1000, 1500 | 1500 | 1500 | - |
| Quantitation | possible | possible | possible | - |
| Number of lanes in minigel | 200 / 100 µg | 400 / 100 µg | 300 / 100 µg | 1000 / 100 µg |
| Delivery | lyophilised | lyophilised | lyophilised | lyophilised |




① ② ③ ④

## PCR-Marker DNA*score* ①

**DNA marker + gel loading buffer**

**Size range: 500-1500 bp**
**Number of fragments: 7**
**Reinforced bands: 500 bp, 1000 bp, 1500 bp**
**Band for DNA quantitation: 1000 bp**
**Number of lanes per 100 µg: approx. 200 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

PCR-Marker DNAscore resolves extremely quickly and is therefore excellent for analysing PCR-fragments and for routine-analysis.
The 500 bp, 1000 bp and 1500 bp bands have been reinforced in their intensity for speedy and simple orientation.
The special 1000 bp band allows the marker to be used for quantifying in gel. Depending on the resolved segment, the marker changes its appearance (see **figure**):
**A) 1,0 cm:** The marker shows three bands (500 bp, 1000 bp, 1500 bp).
**B) 1,5 cm:** Four satellite bands flank the 1000-bp-band.
**C) 3-4 cm:** All bands are resolved. Efficient size analysis of fragments with a difference of 50 bp is possible.
**D) 6-7 cm:** The marker can also be used for quantfying after approx. 6 cm run: the 1000-bp-band corresponds to140 ng DNA (when loading 0,5 µg DNA-marker).

| | | | |
|---|---|---|---|
| **T917.1** | 50 µg + gel loading buffer | plastic | 80,55 € |

## DNA-Marker short-run 1 ②

**DNA marker + gel loading buffer**

**Size range: 500-2500 bp**
**Number of fragments: 5**
**Number of lanes per 100 µg: approx. 400 (mini gels)**
The perfect DNA-marker for very short gel running distances and high-through-put approaches.

Storage temp.: -20 °C • Transport temp.: room temp.

Best results are already obtained at 18 mm running distance in a 1,5 % agarose gel (see figure). The fragment mass is optimised for very short runs. The 1500 bp fragment has been enhanced for easy analysis of the gel.
**Fig.:** 1,5 % agarose (NEEO, Art. No. 2267). Left - running distance 18 mm, Right - running distance 40 mm.

| | | | |
|---|---|---|---|
| **0146.1** | 50 µg + gel loading buffer | plastic | 71,95 € |

## DNA-Marker short-run *extended* ③

**DNA marker + gel loading buffer**

**Size range: 100-6000 bp**
**Number of fragments: 9**
**Number of lanes per 100 µg: approx. 300 (mini gels)**

Storage temp.: -20 °C • Transport temp.: room temp.

New DNA marker, optimised for all standard applications in the lab. Due to the lesser number of fragment bands, the short-run, extended DNA-Marker separates very efficiently even on very short running distances, making it a versatile tool also for high-throughput and short-term electrophoresis. Best results are already obtained at 15 mm running distance / 7 minutes runtime in a 1,5 % agarose gel with 0,3 µg DNA loading per lane (see **figure**).
The fragment mass is optimised for very short runs and the enhanced 1 500 bp fragment provides easy orientation for analysis.
**Fig.:** Left - 1,5 % agarose (NEEO, Art. No. 2267), running distance 15 mm. Right - 1,2 % agarose, running distance 35 mm.

| | | | |
|---|---|---|---|
| **CL05.1** | 50 µg + gel loading buffer | plastic | 83,75 € |

## DNA-Marker ccc-plasmid ④

**DNA marker + gel loading buffer**

**Size range: 3000-12000 bp**
**Number of fragments: 3**
**Number of lanes per 100 µg: approx. 1000 (mini gels)**
A “covalently closed circle“ DNA-marker for rapid determination of plasmid size and estimation of plasmid concentration following DNA-preparation.

Storage temp.: -20 °C • Transport temp.: room temp.

The excellent separation efficiency of the marker even on short running distances allows for the application in high-throughput approaches. Best results are already obtained at 20 mm running distance in a 1,2 % agarose gel (see figure).
**Fig.:** 1,2 % agarose (NEEO, Art. No. 2267), running distance 20 mm.

| | | | |
|---|---|---|---|
| **0149.1** | 10 µg + gel loading buffer | plastic | 61,20 € |

The DNA-ladders are supplied in lyophilised form. A short-run-optimised sample buffer for dissolving the lyophilised DNA-fragments is included (Art. No. 0099.1).
The dissolved markers are ready-to-use and can be applied to gels immediately.

# Staining of Protein Gels

ROTH provides a large selection of high-quality staining kits and reagents for proteins, differing in their sensitivity and range of application.
The table below will help you to select the staining method best suitable for your particular application.

## Summary Staining of Protein Gels

| Product | Sensitivity | Description |
|---|---|---|
| **Roti®-Black P** | 1 ng/mm² | **Silver** staining kit. Highly sensitive. Simple, fast and reproducible. |
| **Roti®-Blue** | 10 ng/mm² | Coomassie®-solution for colloidal staining of proteins. **Destaining not required**. Non-fixing staining for protein gel elution possible. Proteomics-compatible. |
| **Roti®-Blue quick** | 10 ng/mm² | Solution for **rapid**, highly specific **staining** of proteins. **Destaining not required.** Non-fixing staining, compatible with blotting and Proteomics. |
| **Roti®-White** | 15 ng/mm² | **Zinc** staining. Fast and reversible. Proteins can be transferred onto a blotting membrane after staining. Protein gel elution possible. |
| **Rotiphorese®-Blue R** | 50 ng/mm² | **Coomassie®** staining solution concentrate for rapid staining |
| **Coomassie® Blue G250 (C.I. 42655)** | 60 ng/mm² | Dye for performing Coomassie® staining. $OD_{max}$ = 595 |
| **Coomassie® Blue R250 (C.I. 42660)** | 50 ng/mm² | Dye for performing Coomassie® staining. $OD_{max}$ = 550 |

**Suitability of protein stainings**

| Product | Sensitivity | Rapid Gel Analysis | Gel Drying | Elution/ Transfer | 2D-Gels | MS-Analysis |
|---|---|---|---|---|---|---|
| **Roti®-Black P** | 1 ng/mm² | - | +++ | - | +++ | - |
| **Roti®-Blue** | 10 ng/mm² | - | +++ | +++ | - | +++ |
| **Roti®-Blue quick** | 10 ng/mm² | +++ | +++ | ++ | - | ++ |
| **Roti®-White** | 15 ng/mm² | + | - | +++ | - | + |
| **Roti®-Blue R** | 50 ng/mm² | +++ | + | - | - | - |

+++: recommended  +: suitable  -: not recommended

▶ Gel staining trays and other accessories see page 1212

**Instructions for use**
can be found on the Internet next to the product description.

Please note our **Technical Information Brochure** on the Internet next to the products:

**Coomassie® Gel Staining**
Basics and mechanisms of Coomassie® dyes




## Roti®-Blue quick

**ready-to-use 1x conc. solution**

Solution for rapid, sensitive staining of protein gels.
Storage temp.: +4 °C

- Particularly fast, specific staining
- First bands are visible within 3 mins.
- No background - no destaining necessary
- Very simple application without heating, methanol, or acetic acid
- Stabilised for a longer shelf life

Roti®-Blue quick provides a new, very fast staining method for proteins in polyacrylamide gels. Due to the modern formulation, the dye binds highly specifically to proteins, but not to the gel matrix, hence eliminating the need to destain the gel. First bands are clearly visible within 3 mins.!

| Protein amount / band | Approximate staining duration |
|---|---|
| ≥1 µg | 3 mins. |
| ≥100 ng | 15 mins. |
| ≥10 ng | 60 mins. |

The sensitivity of staining equals that of Roti®-Blue (Art. No. A152), so bands of 10 ng protein can be detected.
Roti®-Blue quick is, therefore, approx. 5times more sensitive than standard Coomassie® staining solutions. Roti®-Blue quick staining is also fully compatible with usual down-stream applications like, membrane transfer & Western blotting, MS analysis (incl. MALDI) and protein gel elution.

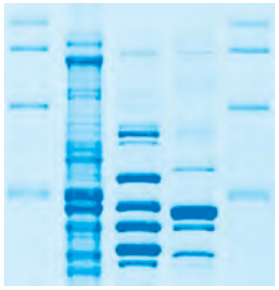


**Figure:**
SDS-PAGE with 3 µl Roti®-Mark Standard and samples.
Staining duration: 20 mins.

1 l solution is sufficient for approx. 40 mini gels.

| | | | |
|---|---|---|---|
| **4829.1** | 250 ml | glass | 64,40 € |
| **4829.2** | 1 l | glass | 220,40 € |
| Original pack 6 x 1 l | | | 209,38/1 l |



ready-to-use

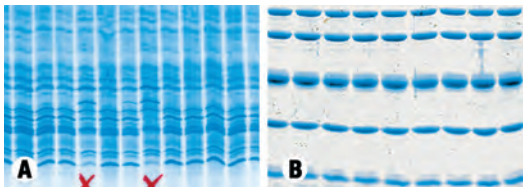
## Roti®-Blue

**5x concentrated**

Colloidal Coomassie® staining solution for protein gels.
Storage temp.: +20 °C

- Most simple application
- No destaining necessary
- 5 x more sensitive than Coomassie® R250

Roti®-Blue is a colloidal Coomassie® brilliant blue G250 staining agent for proteins in polyacrylamid gels. Its colloidal features enable the staining agent to be bound to the proteins with high specificity and only minimally to the gel matrix. There is no longer any need for the extensive washing steps for background decoloring. Roti®-Blue is approximately 5 x more sensitive than standard Coomassie® staining solutions. Staining time takes 2 to 12 hours depending on the desired band intensity.
Due to the fact that proteins may be stained without fixing the gel, membrane transfer and gel elution are still possible following staining.
**Particularly well suited for staining prior to MS-analyses (e.g. MALDI) and prior to gel elution.**




**Figures:**
**A:** Horizontal IEF for determination of wheat-varieties.
With kind permission of R. Knoblauch, LTZ Referat 23, Karlsruhe
**B:** SDS-PAGE Roti®-Mark Standard.

1 l concentrate is sufficient for 50 mini gels.

| | | | |
|---|---|---|---|
| **A152.2** | 250 ml | plastic | 30,65 € |
| **A152.1** | 1 l | plastic | 88,70 € |
| Original pack 6 x 1 l | | | 84,27/1 l |

## Brilliant blue G 250 (C.I. 42655)

For preparing staining solution for protein analysis in gel electrophoresis.
Coomassie® blue G 250
$C_{47}H_{48}N_3O_7S_2Na$
M 854,03 g/mol
Do not use for staining of membranes following protein transfer.

| | | | |
|---|---|---|---|
| **9598.1** | 10 g | glass | 28,95 € |
| **9598.2** | 100 g | plastic | 149,45 € |

**Safety data sheets**
can be found on the Internet next to the product description.



ready-to-use

## Rotiphorese® Blue R

**Brillant Blue R concentrate**

For Coomassie® staining of protein gels.

**Danger** H225-H370-H315-H319-H311+H331+H301

Concentrate for easy preparation of Coomassie® Blue R staining solutions. Rotiphorese®-blue is ideal for staining proteins in SDS-PAGE gels. It saves any tedious weighing of staining powder and having to prepare the mixture.

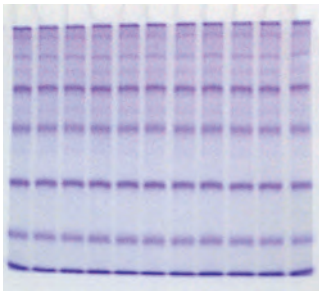


**Figure:**
Gel stained by Rotiphorese®-Blue R, 12 % PAA in Tris, Roti®-Mark STANDARD (Art. No. T851).
Concentrate contains Coomassie® Blue R, methanol and pure acetic acid. Rotiphorese® concentrate Blue R can be diluted with 400-600 ml deionised water to obtain the following compositions:

| Dilution with water | 397.5 ml | 507.5 ml | 602.5 ml |
|---|---|---|---|
| yields staining solution | approx. 1 l | approx. 1.1 l | approx. 1.2 l |
| methanol | 50 % | 45 % | 41.5 % |
| pure acetic acid | 10 % | 9 % | 8.3 % |
| water | 39.75 % | 45.78 % | 50 % |
| **Blue R** | **0.25 %** | **0.22 %** | **0.2 %** |

Dilution can be carried out in the supplied bottle.
The solution should be filtered before use.

600 ml concentrate are sufficient for approx. 12 mini gels.

| | | | |
|---|---|---|---|
| **3074.1** | 600 ml | glass | 31,10 € |

## Brilliant blue R 250 (C.I. 42660)

For preparing staining solution for protein analysis in gel electrophoresis.
Coomassie® Brillant Blue R 250
$C_{45}H_{44}N_3NaO_7S_2$
M 825,99 g/mol
Only conditionally use for staining of membranes after protein transfer.

| | | | |
|---|---|---|---|
| **3862.1** | 10 g | glass | 23,15 € |
| **3862.2** | 100 g | glass | 94,10 € |

▶ White light-light boxes see page 770





## Roti®-Black P

**silver staining kit for proteins**

**Danger** H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

- Sensitive silver staining
- Transparent gel
- Reliable results

Roti®-Black is a kit for speedy, reproducible silver staining of proteins in free and foil-supported gels.
High sensitivity in combination with very low background enables detection of proteins from 1 ng/mm² on. 1 kit is adequate for staining 10 gels. Staining can be performed in unsupported gels without methanol. Included is an easy-to-follow instruction manual which will guarantee reliable results.

This Kit contains sodium thiosulphate (Art. No. L534), silver nitrate (Art. No. L535), empty test tubes (Art. No. L536), formaldehyde (Art. No. L537), and sodium carbonate (Art. No. L538).
Contents of this Kit may not be bought separately. Shipped without racket.

| | | |
|---|---|---|
| **L533.1** | for 10 gels of 10 ml vol. each | 75,15 € |
| **L533.2** | for 10 gels of 40 ml vol. each | 90,85 € |

**Silver staining of proteins and DNA-gels**

Roti®-Black silver staining kits have been optimized to provide you with the most sensitive staining possible. Adding **thiosulfate** during the sensibilization and generation process reduces the background and increases contrast (acc. to Blum *et al.*, (1987) *Electrophoresis* 8:93-9). **Formaldehyde** should preferably be fresh when applied and it reduces the silver ions ($Ag^+$) to so-called silver seed crystals.

**We recommend to:**

- Wash the gels carefully after each step otherwise there may be side reactions in the form of stains, spots, increased background or secondary bands.
- Fix the gels carefully. Inadequate fixation impairs band formation and increases the background. Fresh and high-quality fixatives should be used and adapted to the volume and duration of gel strength.

## Roti®-Bleach

**decolorisation kit for silver staining**

Storage temp.: +20 °C

Easy decolorising of overstained silver gels in foil-supported or free PAA gels. The new staining consistency is firmly preserved. Suitable for both, DNA- and protein gels.

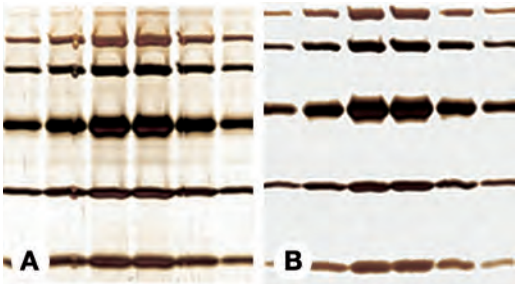



**Figure:**
A) Overstained silver gel
B) Same gel after subsequent optimisation with Roti®-Bleach

This Kit contains sodium thiosulphate (Art. No. N767) and potassium hexacyanoferrate (Art. No. N768).
Contents of this Kit may not be bought separately. Shipped without racket.

| | | |
|---|---|---|
| **N766.1** | for 10 gels with 10 ml or 5 gels with 40 ml vol. each | 59,70 € |

## Silver nitrate

**≥99,9 %, for staining of proteins, Proteicolor®**

$AgNO_3$

M 169,88 g/mol

**Danger** H272-H314-H400-H410

Proteicolor® is a special quality silver nitrate for reproducible staining of proteins and 1,2 Diol-groups, of glycoproteins and polysaccharides in polyacrylamide and agarose gels. Staining with Proteicolor® can also be used for highly sensitive identification of RNA and DNA.

| | | | |
|---|---|---|---|
| **6207.1** | 50 g | plastic | 131,70 € |

# Staining of DNA Gels

Nucleic acid dyes for agarose and acrylamide gels, for laboratories and practical applications. We offer you high-quality stains with high sensitivity (silver stains), standard stains (ethidium bromide) in user-friendly dropper bottles, and non-toxic fluorescent dyes for blue or UV light.
The following table provides an overview of the various stains and their respective sensitivity levels.

## Summary Staining of Nucleic Acid in Gels

| Product | Sensitivity | Description | Excitation |
|---|---|---|---|
| **Roti®-Black N** | <0.1 ng/mm² | **Silver** staining of DNA polyacrylic amide gels | White light |
| **Roti®-Black NSeq** | <0.1 ng/mm² | **Silver** staining of DNA sequencing gels | White light |
| **Ethidium bromide solution** | 1.5 ng/mm² | Standard **fluorescent** staining | 254-330 nm, 500 nm UV- and blue light |
| **EvaGreen® fluorescent dye** | 1.5 ng/mm² | Non-toxic, green **fluorescent** staining | 320 nm, 470-500 nm UV- and blue light |
| **Roti®-GelStain** | 1.5 ng/mm² | Non-toxic, green **fluorescent** staining | 290-320 nm UV-light |
| **Roti®-GelStain Red** | 1.5 ng/mm² | Non-toxic, red **fluorescent** staining | 310 nm, 540 nm UV- and blue light |
| **Roti®-Load DNAstain gel loading buffer** | 1.5 ng/mm² | Non-toxic, green **fluorescent** staining Dye: EvaGreen® | 320 nm, 470-500 nm UV- and blue light |
| **Roti®-Methylene blue staining concentrate** | 10 ng/mm² | Reversible, non-toxic **blue** staining | White light |



## Roti®-Black NSeq

**silver staining kit for sequencing gels**

**Danger** H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

Roti®-Black NSeq is a kit for ultra-sensitive and reproducible staining of DNA in denaturing and non-denaturing gels.
Detection limit <0.1 ng/mm².
Roti®-Black NSeq is the ideal choice for detecting minute DNA amounts in sequencing gels (Microsatellite-DNA or SSLP – simple sequence length polymorphisms). The enclosed instruction manual is easy to follow and guarantees reliable results. The gels are stained on the glass plate.

This Kit contains silver nitrate (Art. No. P082), formaldehyde (Art. No. P083), sodium thiosulphate (Art. No. P084), sodium carbonate (Art. No. P085), and stop solution (Art. No. P086). Contents of this Kit may not be bought separately. Shipped without racket.

| | | |
|---|---|---|
| **P081.1** | for 10 gels of max. 48 ml gel volume | 135,35 € |

# Colorimetric Staining of Nucleic Acids in Gels



## Roti®-Black N

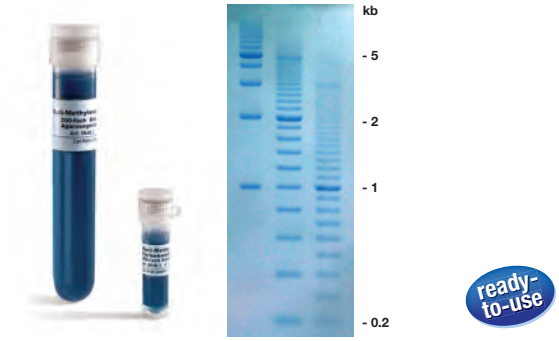
**silver staining kit for DNA-polyacrylamide gels**

**Danger** H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

- Ultra-sensitive
- Easy-to-follow guide
- Transparent gel

Roti®-Black N is a kit for ultra-sensitive and reproducible staining of DNA in polyacrylamide gels.
Detection limit for DNA is <0.1 ng/mm². Roti®-Black N is, therefore, an excellent alternative to using radioactivity or bioluminescent systems.
Roti®-Black N results in an intensive staining of nucleic acids, yet the gel matrix remains highly transparent. The enclosed instruction manual is easy to follow and guarantees reliable results.
This Kit contains silver nitrate (Art. No. N770), formaldehyde (Art. No. N771), sodium thiosulphate (Art. No. N772), sodium carbonate (Art. No. N774), and stop solution (Art. No. N773).
Contents of this Kit may not be bought separately. Shipped without racket.

| | | |
|---|---|---|
| **N769.1** | for 10 gels of max. 10 ml gel volume | 92,35 € |
| **N769.2** | for 10 gels of max. 40 ml gel volume | 155,90 € |




## Roti®-Methylene blue staining concentrate

For reversible staining of DNA in agarose gels, 200x concentrate.
Storage temp.: +4 °C

**Warning** H226-H319

- Highly reversible alternative to ethidium bromide
- High sensivity (in minimum 10 ng/band)
- No transilluminator required
- Solution can be used repeatedly
- Sufficient for more than 50 mini gels

The staining solution was specially developed for sensitive staining of DNA in agarose gels. Sensitivity reaches up to 10 ng per DNA-band. Staining can be conducted in a simple staining bowl, a transilluminator is not required. The diluted staining solution can be used several times.
Roti®-Methylene blue staining concentrate binds to the negativly charged DNA backbone by salt bridges formed through quaternary ammonia complexes. The staining is very easy to remove by washing or replacement by salts.

**Applications:** DNA agarose gels, DNA polyacrylic amide gels, reversible staining of Southern- and Northern-blots.
12 ml Roti®-methylene blue staining concentrate is sufficient for more than 50 mini gels.

| | | | |
|---|---|---|---|
| **0648.1** | 3 ml | plastic | 36,45 € |
| **0648.2** | 12 ml | plastic | 110,20 € |

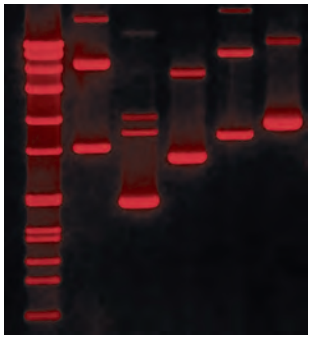
# Non-Toxic Fluorescent Staining of Nucleic Acids in Gels

Non-toxic and non-carcinogenic dyes for fluorescent staining of nucleic acids in agarose gels. Highly sensitive and applied just like ethidium bromide.

The **Roti®-GelStain** dyes are used as additives to the gel solution and the running buffer, partly also post-run staining is possible.

**Eva Green®** is added directly to the loading buffer. Ready-made loading buffers with Eva Green® are the **Roti®-Load DNAstain** solutions.

All dyes can be excited by UV light, additionally, Eva Green® and Roti®-GelStain Red can be excited by blue light. Resulting signals may be detected by ethidium bromide broadband photo filters.



**For UV- and blue light**

DNAse-free RNAse-free · ready-to-use · NEW

## Roti®-GelStain Red

**for electrophoresis**

Red fluorescent staining reagent for non-toxic staining of nucleic acids in agarose gels and polyacrylamide gels.

Alternative for ethidium bromide, Ethidium bromide substitute

Storage temp.: +4 °C • Transport temp.:

- Alternative to ethidium bromide, non-toxic, non-mutagen
- Detection of > 0.3 ng nucleic acid per band
- Usuable with the same filters as ethidium bromide
- Excitation via UV light (310 nm) and blue light (540 nm)
- Compatible with all usual down-stream applications

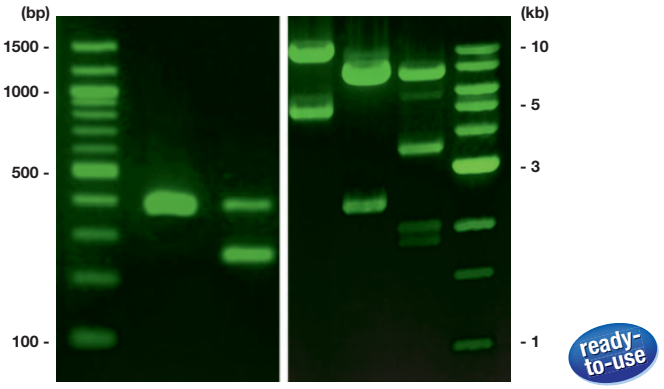
Roti®-GelStain Red is a new designed red fluorescent dye that can be used like ethidium bromide for staining in gel (addition to gel solution). Due to the low membrane permeability of the dye Roti®-GelStain Red is non-mutagenic and non-toxic. It is suitable for staining of dsDNA, ssDNA and RNA. Bound to nucleic acid it emits a brightly red fluorescence that can be documented by all usual ethidium bromide foto filters. Roti®-GelStain Red is compatible with all usual down-stream applications.
**Excitation maximum** (bound to DNA): approx.310 nm and 540 nm
**Emission maximum** (bound to DNA): 630 nm

**Type analysis:**

Appearance. ..... red, transparent liquid, no precipitation
Staining of DNA in agarose gels. ..... complies
Staining of DNA in PA gels. ..... complies

| | | | |
|---|---|---|---|
| **0984.1** | 1 ml | plastic | 97,85 € |
| **0984.2** | 1 x 5 ml | plastic | 440,75 € |

**For UV-light**




## Roti®-GelStain

**Fluorescent staining, ready-to-use, for electrophoresis**

For non-toxic fluorescent staining of nucleic acids in agarose gels. Green fluorescence.

Storage temp.: +4 °C

Roti®-GelStain is a new, versatile staining reagent for detection of all nucleic acids in agarose gels.

- Alternative for ethidium bromide, non-toxic, non-mutagen
- Nearly as sensitive as ethidium bromide, up to 1,5 ng/mm² nucleic acid
- For use with common broad-band ethidium bromide photo filters
- Compatible with all usual down-stream applications

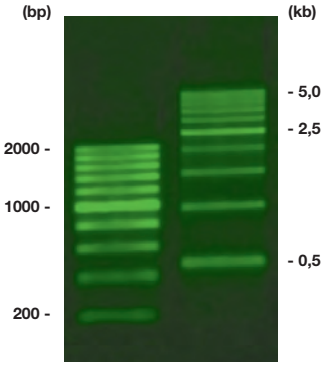
The dye may be used exactly in the same way as ethidium bromide - for staining in-gel, staining through running buffer, or post-run staining -, and may replace this toxic and potentially mutagen reagent completely. Roti®-GelStain detects up to 1,5 ng/mm² nucleic acid, which is approx. 0,2 ng per band, and is, therefore, nearly as sensitive as ethidium bromide.
When bound to nucleic acids in agarose gels, Roti®-GelStain emits a brightly green fluorescence that may be documented by all usual broad-band ethidium bromide or SYBR® Green foto filters. Roti®-GelStain is compatible with all standard down-stream applications and has been successfully tested for use with gel extraction, ligation, transformation and transfection.

The **figure** depicts amplicons of a mouse genotyping (left), and restriction digested DNA (right), respectively, separated in 2,5 and 1 % agarose Roti®garose NEEO with Roti®-GelStain (5 µl / 100 ml agarose). Pictures were taken using standard ethidium bromide photo filters.With kind permission of Prof. R. Slany, Dept. of Genetics, Friedrich Alexander University, Erlangen.

**Excitation maximum** (bound to DNA): 290-320 nm
**Emission maximum** (bound to DNA): 515 nm
Suitable for staining of dsDNA, ssDNA and RNA.

1 ml is sufficient for staining of approx. 600 minigels (with 30 ml agarose each).

| | | | |
|---|---|---|---|
| **3865.1** | 1 ml | plastic | 91,30 € |
| **3865.2** | 5 x 1 ml | plastic | 413,90 € |




**For UV- and blue light**

DNAse-free

ready-to-use

## Roti®-Load DNAstain

**6x conc. gel loading buffer, ready-to-use, DNAse-free**

DNA-gel loading buffer with fluorescent DNA-dye EvaGreen®.
Storage temp.: -20 °C • Transport temp.: room temp.

- Alternative for ethidium bromide, non-toxic, non-mutagen
- Nearly as sensitive as ethidium bromide, up to 1,5 ng/mm² nucleic acid
- For use with common broad-band ethidium bromide photo filters
- Excitation possible via UV light (320 nm) and blue light (~470 nm)
- Compatible with all usual down-stream applications

New, versatile reagent for gel loading and simultaneous staining of double stranded nucleic acid in agarose- and polyacrylamide gels.
Roti®-Load DNAstain detects up to 0,2 ng per band, and is, therefore, as sensitive as ethidium bromide. Due to its most simple application as gel loading buffer it reduces the time needed for gel analysis significantly.
**This innovative reagent contains the dye EvaGreen®**, which has been developed specifically for DNA analysis. DNA integrity is not in fluenced by EvaGreen®; hence, gel eluted DNA may directly be applied to standard down-stream applications, like, e.g., ligation, PCR, transformation, transfection etc. without interfering effects. Due to the low membrane permeability of the dye, Roti®-Load DNAstain is non mutagenic, non toxic, and environment friendly.
Roti®-Load DNAstain can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Rotiphorese® PROfessional runVIEW, Art. No. 4849.1). When excited, nucleic acid-bound Roti®-Load DNAstain emits a brightly coloured green fluorescence (525 nm) that may be documented by all usual broadband ethidium bromide- or SYBR® Green foto filters.

The **figure** depicts 50 ng DNA per band, or 75 ng (1000 bp and 2,5 kb), respectively. Each lane has been loaded and concurrently stained using 1 µl Roti®-Load DNAstain.

**Excitation maximum** (bound to DNA): approx. 320 nm and 470-500 nm
**Emission maximum** (bound to DNA): 525 nm
1 ml is sufficient for running and staining of approx. 500 lanes.

## Roti®-Load DNAstain 1

Roti®-Load DNAstain 1 contains: Tris, EDTA, bromophenol blue, xylencyanol, EvaGreen®.
**Recommended for staining of dsDNA- and dsRNA-fragments of over 500 bp.**

| | | | |
|---|---|---|---|
| **5783.1** | 1,0 ml | plastic | 36,45 € |
| **5783.2** | 5 x 1,0 ml | plastic | 110,65 € |

## Roti®-Load DNAstain 2

Roti®-Load DNAstain 2 contains: Tris, EDTA, xylencyanol, orange G, EvaGreen®.
**Recommended for staining of dsDNA- and dsRNA-fragments of 100-2000 bp.**

| | | | |
|---|---|---|---|
| **5784.1** | 1,0 ml | plastic | 36,45 € |
| **5784.2** | 5 x 1,0 ml | plastic | 110,65 € |

## Roti®-Load DNAstain 3

Roti®-Load DNAstain 3 contains: Tris, EDTA, orange G, EvaGreen®.
**Recommended for staining of dsDNA- and dsRNA-fragments of under 500 bp.**

| | | | |
|---|---|---|---|
| **6472.1** | 1 ml | plastic | 36,45 € |
| **6472.2** | 5 x 1,0 ml | plastic | 110,65 € |

**For UV- and blue light**

## Eva Green® Fluorescent Dye

**for electrophoresis, 100x concentrated**

For fluorescent staining of nucleic acids in agarose- and polyacrylamide gels.
Storage temp.: -20 °C • Transport temp.: room temp.

- Direct addition to DNA sample
- For excitation with UV light and blue light
- Non-toxic alternative for ethidium bromide

EvaGreen® is a staining reagent for detection of double stranded nucleic acid in agarose- and polyacrylamide gels. The dye is added directly to the DNA/Loading buffer mixture and then loaded onto the gel. EvaGreen® bounds to nucleic acids emitting a brightly coloured fluorescence.
The sensitivity reaches up to 0,2 ng per band.
EvaGreen® is an intercalating fluorescent dye, but due to its low membrane permeability it is non mutagenic, non-toxic, and environment friendly.
EvaGreen® has been developed specifically for gentle DNA analysis. DNA integrity is not influenced; hence, gel eluted DNA may directly be applied to standard down-stream applications, like, e.g., ligations, PCR, transformation, transfection etc. without interfering effects.
EvaGreen® can be excited by UV- and blue light, making it fully compatible with standard UV-transilluminators as well as with modern blue-light illumination (see also Roti®-PROfessional runVIEW, Art. No. 4849.1). The gels may be documented by all usual broadband ethidium bromide- or SYBR® Green foto filters.
**Excitation maximum** (bound to DNA): approx. 320 nm and 470-500 nm
**Emission maximum** (bound to DNA): 525 nm
500 µl is sufficient for running and staining of approx. 500 lanes.

| | | | |
|---|---|---|---|
| **8905.1** | 500 µl | plastic | 87,65 € |

Please note our **Technical Information Brochure** on the Internet next to the products:

**Roti®-Load-DNAstain / EvaGreen®**
Data on mutagenicity and environmental safety

Please note our **Technical Information Brochure** on the Internet next to the products:

**Gel staining of nucleic acids**
Background and mechanisms of the various stains

**Ethidium bromide** is a strong mutagenic and toxic substance. For your own safety, always wear gloves and respiratory protection to prevent contamination when working with this substance. After use, dispose of solutions correctly. They may not be discarded into the environment.

The following procedure is recommended (acc. to INSERM, Dossier prevention, Number 2, 2nd Ed., September 88):

1. Collect and dispose of as hazardous waste.
2. Break down EtBr with potassium permanganate and HCl (P. Quillardet, M. Hofnung, *Trends Genet.* 4,89 [1988]).
3. Break down EtBr with hypophosphoric acid and sodium nitrite (Lunn and Sansone; *Analyt. Biochem.* 162, 453-458 [1987]).
4. Absorption of EtBr with Amberlite® XAD-16 (Lunn and Sansone) or with activated carbon (Bensaude, O. Method, *Trends Genet.* 4, 89-90 [1988]) from the solution.

We recommend disposure by **Sekuroka® Decon-Bags** (Art. No. T856)

# Ethidium bromide

**For UV- and blue light**



In spite of newly developed fluorescent staining reagents ethidium bromide remains the standard staining technic for nucleic acid in electrophoresis. Ethidium bromide is a carcinogenic substance which shouldn't come in contact with skin.
In order to minimise this danger we offer ready-to-use ethidium bromide solution in dropper bottles for easy handling and maximum safety.

Excitation maxima (unbound):
210 nm, 285 nm, 470 nm
**Excitation maxima** (bound to DNA):
330 nm, 500 nm
Excitation possible via DNA at 254 nm
**Emission maximum:** 605 nm




## Sekuroka® Decon-Bags

Absorber bags for removing ethidium bromide from liquids.

Sekuroka® Decon-Bags are a simple method for removal of ethidium bromide from solutions. The bags contain a special type of activated carbon which absorbs ethidium bromide effectively and safely. One bag can absorb 2.5 mg ethidium bromide. Efficiency is >99 %. The application is extremely simple: Place the absorber bag in the ethidium bromide solution, incubate for 24 hours under stirring and dispose of the bag as hazardous waste in accordance with local regulations.
Bag size: 6 x 2.5 cm.
**Also suitable for absorption of propidium iodide, PicoGreen® and SYBR® Green!**

| | | |
|---|---|---|
| **T856.2** | 10 Bags | 30,00 € |
| **T856.1** | 50 Bags | 126,35 € |
| **T856.3** | 250 Bags | 536,45 € |


- ▶ Gel Documentation System see page 1215
- ▶ Transilluminators, UV-hand-held lamps and UV-hand-held magnifiers see chapter Labware - Optical Instruments and Lamps!


## Ethidium bromide solution 0,025 % in dropper bottle

**aqueous solution (250 µg/ml)**

For staining of DNA or RNA in agarose gels during electrophoresis.

In spite of newly developed fluorescent staining reagents ethidium bromide remains the standard staining technic for nucleic acid in electrophoresis. Ethidium bromide is a carcinogenic substance which shouldn't come in contact with skin.
In order to minimise this danger we offer ready-to-use ethidium bromide solution in dropper bottles for easy handling and maximum safety.

**Application:**
Two drops will suffice for staining a 50 ml agarose gel.
Add directly to melted agarose.

**Please store in the dark!**

| | | | |
|---|---|---|---|
| **HP47.1** | 15 ml | plastic | 29,60 € |
| **HP47.2** | 5 x 15 ml | plastic | 104,20 € |

## Ethidium bromide solution 0,5 % in dropper bottle

**aqueous solution (5 mg/ml)**

For counterstaining of nuclei in histology and cytology.
For staining of DNA/RNA after electrophoresis.

**Warning** H332

**Application:**
In order to prepare a staining solution add 5 drops of ethidium bromide solution to 500 ml water, buffer, or electrophoresis running buffer, respectively. Nuclei / nucleic acids are stained red.

**Please store in the dark!**

| | | | |
|---|---|---|---|
| **HP46.1** | 15 ml | plastic | 29,60 € |
| **HP46.2** | 5 x 15 ml | plastic | 104,20 € |

## Ethidium bromide solution 1 %

**1 % solution in water (10 mg/ml)**

Homidium bromide, 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide

**Warning** H332-H341

Stock solution for fluorescent detection of nucleic acids.
Detection limit: 1.5 ng/mm$^2$.
Excitation maxima (unbound): 210 nm, 285 nm, 470 nm
Excitation maximum (bound to DNA): 330 nm, 500 nm
Excitation possible via DNA at 254 nm
Emission maximum: 605 nm.
**Please store in the dark!**

| | | | |
|---|---|---|---|
| **2218.1** | 10 ml | glass | 10,65 € |
| **2218.4** | 15 ml | dropp. bottle | 30,00 € |
| **2218.2** | 30 ml | glass | 22,05 € |
| **2218.3** | 100 ml | glass | 53,65 € |

## Ethidium bromide

**≥98 %**

For DNA-staining.

Homidium bromide, 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide

$C_{21}H_{20}BrN_3$
M 394,33 g/mol
Storage temp.: +20 °C

**Danger** H330-H341-H302

Fluorescent dye with specific DNA binding capacity. Intercalates between base pair stacks of dsDNA, causing weaker staining of ssDNA or RNA. For staining of DNA/RNA in gels and for counterstaining of nuclei in histological and cytological analyses. Store in the dark!
Excitation maximum: 518 nm
Emission maximum: 605 nm

| | | | |
|---|---|---|---|
| **7870.1** | 1 g | glass | 23,15 € |
| **7870.2** | 5 g | glass | 90,85 € |

# Horizontal Electrophoresis: Systems & Modules

A large range of different electrophoresis chambers for agarose or acrylamide gel electrophoresis is available.

- Corrosion-free, gold-plated contacts. Conducting cables are linked directly to the safety lid, current flow is automatically stopped by opening the lid.
- The safety lid can only be closed in one direction, a mix-up of orientation is excluded
- The platinum electrodes are protected by a special construction
- Our entire range of electrophoresis chambers is CE-certified
- For all chambers a wide range of accessories is available, such as combs, spacers and gel casting trays
- All gel casting trays are **UV-transparent**

Depending on the model, the gels can be cast directly in the chamber or on a special gel casting tray. The different combs can be adjusted in height and are available in three or four colour-coded thicknesses.

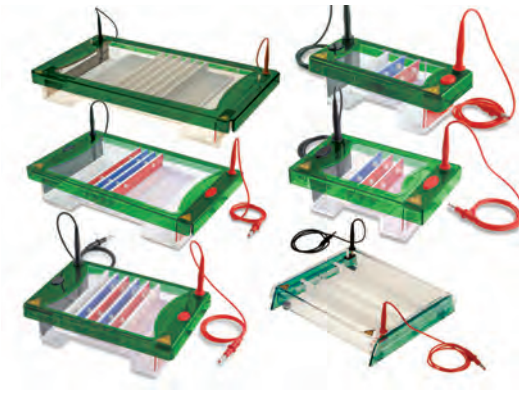
### Overview of Horizontal Electrophoresis Units acc. to Gel Size

| Gel Size | Suitable for | Unit | Art. No. |
|---|---|---|---|
| 6 x 7.5 cm | Agarose | MINIeasy | N562.1 |
| 7 x 7 cm | Agarose | PROfessional I | 2788.1 |
| 8 x 10 cm | Agarose | MINIeasy | N817.1 |
| 10 x 10 cm | Agarose | PROfessional II | 2799.1 |
| 10 x 11.5 cm | Agarose | MIDI 1 | N576.1 |
| 15 x 15 cm | Agarose | PROfessional III | 2850.1 |
| 15 x 15 cm | Agarose | PROfessional runVIEW | 4849.1 |
| 15 x 15 cm | Agarose | MIDI PLUS | HP70.1 |
| 15 x 7 to 15 x 20 cm | Agarose | VARIA 1 | AE17.1 |
| 15 x 20 cm | Agarose | PROfessional III Stretch 20 | 9940.1 |
| 15 x 25 cm | Agarose | PROfessional III Stretch 25 | 9941.1 |
| 20 x 20 cm | Agarose | PROfessional IV | 2941.1 |
| 20 x 20 cm | Agarose | MIDI 2 | N596.1 |
| 20 x 20 cm | Agarose | MIDI 2 cooled | N618.1 |
| 24 x 20 cm | Acetate | PROfessional Acetate | 3099.1 |
| 25 x 25 cm | Agarose, IEP, Membrane | MULTI (flat bed) | CP51.1 |
| 25 x 30 cm | Agarose | MAXI | N610.1 |
| 25 x 30 cm | Agarose | MAXI cooled | N619.1 |
| 26 x 32 cm | Agarose | PROfessional V | 3000.1 |

TIP

Maximum voltage for horizontal gels: 10 V/cm gel length

# Rotiphorese®-PROfessional - Product Line for Lab Bench and Student´s Courses



- Made of robust acrylic glass
- High-grade quality
- Injection moulded without bonding
- Absolutely leak proof
- Extremely easy to operate
- Wide range of accessories
- Easily replaceable electrodes
- Excellent value for money
- UV-transparent gel trays



TIP

- **PROfessional runVIEW real-time Electrophoresis**



# PROfessional runVIEW
# Real-time Electrophoresis under Blue Light

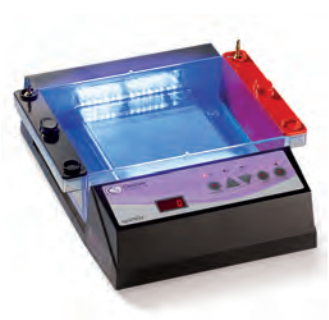


## Rotiphorese® Unit PROfessional runVIEW

**Gel size (w x l): 15 x 15 cm**
**Dimensions gel unit (w x l x h): 26.5 x 17.5 x 9 cm**
**Number of samples: max. 210 samples (using 6 comb slots)**
**Buffer volume: 500 ml**

- **All-in-one system for real-time electrophoresis:** unit, power supply and illuminator combined
- Watch your bands migrate through the gel in blue light - without mutagen or retina damaging effects
- Recommended for use with Roti®-Load DNAStain (green), compatible with ethidium bromide (red) and SYBR® Green (green)
- First choice for rapid gel analysis, gel elution and all control gels
- The unit Rotiphorese® PROfessional III (Art. No. 2850.1) may be customised by the runView Base station (Art. No. 4850.1)

Innovative, new all-in-one system for electrophoresis - with integrated Power Supply and illuminator. Stained DNA is made visible during the run by excitation with blue light of 470 nm wave length and a special lid with integrated emission filter for green fluorescence. Another special lid with an intergrated ethidium bromide filter is available as accessory (Art. No 8549.1). DNA stained during the run by Roti®-Load DNAStain (green), ethidium bromide (red), or SYBR® Green (green), can be watched in real-time without having damaging effects caused by short wave lengths.



Unit under blue light, without lid



Unit under blue light, with green-filtering lid

**Delivery incl.** Rotiphorese® PROfessional runVIEW Base (base station with integrated blue light and power supply), horizontal gel unit Rotiphorese® PROfessional III, special lid for blue light with integrated spectral emission filter (green filter) and electrophoresis power leads (4 mm plugs), 1 UV-transparent gel casting tray (15 x 15 cm) with gel casting gates, and eight double sided combs: 2x 4-sample / 16-sample (1 mm); 4x 20- / 28-sample (1 mm, multichannel compatible); 1x 4- / 16-sample (3 mm); 1x 20- / 28-sample (3 mm, multichannel compatible).

| Art. No. | Pack Qty | € |
|---|---|---|
| **4849.1** | 1 unit | 1746,90 |



## Rotiphorese® PROfessional runVIEW Base

**Base station for real-time electrophoresis.**
- Combination of power supply and blue light illuminator
- Special lid for detection of green fluorescent dyes
- Optimal supplement to electrophoresis unit Rotiphorese® PROfessional III

The special lid is also separately available (Art. No. 8557.1), as well a lid for red fluorescent dyes (Art. No. 8549.1).

**Delivery incl.** power supply with blue light illuminator, power cord, special lid with integrated spectral emission filter for green fluorescence, **suitable for electrophoresis unit PROfessional III** (Art. No. 2850.1).

| Art. No. | Pack Qty | € |
|---|---|---|
| **4850.1** | 1 unit | 1488,90 |



## Rotiphorese® PROfessional runVIEW Base MINI

**Base station for real-time electrophoresis.**
- Blue light illuminator, adaptable-size
- Special lid for detection of green fluorescent dyes
- Optimal supplement to electrophoresis units Rotiphorese® PROfessional I and II

The special lid is available in 2 different sizes and can also be bought separately: Art. No. 9959.1 for PROfessional I, Art. No. 9962.1 for PROfessional II. Convenient power supplies are EV1450 (Art. No. CP56.1) or Roth MINI (Art. No. 2907.1).

**Technical data base station MINI:**

| | |
|---|---|
| Wave length (excitation) | 470 nm (blue) |
| Ambient temperature | 15-40 °C |
| Rated voltage | 100-240 V |

**Delivery incl.** blue light illuminator (adjustable to 2 different sizes), power cord, special lid with integrated spectral emission filter for green fluorescence.

**For electrophoresis unit Rotiphorese® PROfessional I**

| Art. No. | Pack Qty | € |
|---|---|---|
| **9958.1** | 1 unit | 819,15 |

**For electrophoresis unit Rotiphorese® PROfessional II**

| Art. No. | Pack Qty | € |
|---|---|---|
| **9961.1** | 1 unit | 826,70 |

▶ For technical data see product description on the Internet!

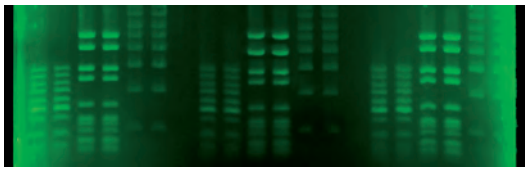


## Rotiphorese® PROfessional runVIEW lid

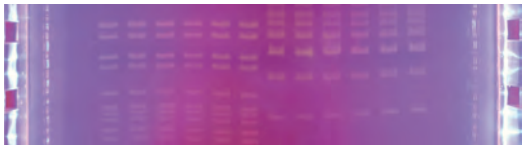
**Special lid for real-time electrophoresis** with the runVIEW system.

Every lid has a built-in fan and an integrated spectral emission filter for blue light (orange for red fluorescence, yellow for green fluorescence). Together with the runVIEW system they make stained DNA visible during the run.

The lids are different in size. They are suitable for the electrophoresis units PROfessional I, II and III. Together with the lids and a runVIEW base device the chambers can be upgraded for real-time electrophoresis (for detailed information see Rotiphorese® PROfessional runVIEW base devices, Art. No. 9958.1 / 9961.1 / 4850.1).



Marker DNA with Roti®-Load DNAstain under blue light (green filter lid). Picture taken during the run. 100 bp Ladder, pBR328 Mix I and 1 kbp Ladder (1.2 µg each) in 1 % agarose / 0.5x TBE.



Marker DNA with Roti®-Load DNAstain under blue light (red filter lid). Picture taken during the run. pBR328 Mix I and kbp Ladder (1.2 µg each) in 1 % agarose / 0.5x TBE.

| Type | Filter type | Colour filter insert | Use | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|---|
| **for unit PROfessional I** | green filter | yellow | green fluorescence | **9959.1** | 1 unit | 193,50 |
| **for unit PROfessional II** | green filter | yellow | green fluorescence | **9962.1** | 1 unit | 204,25 |
| **for unit PROfessional III** | red filter | orange | red fluorescence | **8549.1** | 1 unit | 149,45 |
| **for unit PROfessional III** | green filter | yellow | green fluorescence | **8557.1** | 1 unit | 145,15 |

▶ Suitable gel documentation system see page 1214



| Colour | Comb thickness |
|---|---|
| black | 0,75 mm |
| white | 1,0 mm |
| red | 1,5 mm |
| blue | 2,0 mm |

# PROfessional Standard Units



## Rotiphorese® Unit PROfessional I

**Gel size (w x l): 7 x 7 cm**
**Unit dimensions (w x l x h): 21 x 9 x 9 cm**
**Number of samples: max. 32 samples (using 2 comb slots)**
**Buffer volume: 225 ml**

- First choice for rapid single-bench analyses
- Seven different combs available in four thicknesses, including preparative combs with broad wells
- Gel trays with 7 and 10 cm length available
- Compatible with multi-channel pipettors (see table)
- For real-time electrophoresis upgradeable with Rotiphorese® PROfessional runVIEW Base MINI (Art. No. 9958.1)

**Delivery incl.** horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (7 x 7 cm) with gel casting gates, and two combs (1 mm, 8 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **2788.1** | 1 unit | 396,70 |

## PROfessional I accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **PROfessional I Gel casting tray 7 x 7 cm** | **2784.1** | 1 tray | 49,40 |
| **PROfessional I Gel casting tray 7 x 10 cm** | **2785.1** | 1 tray | 58,35 |
| **PROfessional I Gel casting dams** | **2765.1** | 1 pair | 45,50 |
| **PROfessional I Positive electrode** | **2767.1** | 1 electr. | 77,40 |
| **PROfessional I Negative electrode** | **2769.1** | 1 electr. | 77,40 |

## PROfessional I combs

| Sample volume for a 5 mm thick gel | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 + 1** | 2 + 2** | 4 + 2** | 8 | 10 | 12* | 16 |
| 0.75 mm | 152 µl | 68 µl | 36 µl | 19 µl | 14 µl | 10 µl | 7 µl |
| 1.0 mm | 203 µl | 90 µl | 48 µl | 25 µl | 18 µl | 14 µl | 10 µl |
| 1.5 mm | 304 µl | 135 µl | 72 µl | 37 µl | 27 µl | 20 µl | 15 µl |
| 2.0 mm | 405 µl | 180 µl | 96 µl | 50 µl | 36 µl | 27 µl | 20 µl |

*Compatible with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

| Wells | 1 + 1 | 2 + 2 | 4 + 2 | 8 | 10 | 12 | 16 |
|---|---|---|---|---|---|---|---|
| Thickness | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. |
| 0,75 mm | **2737.1** | **2738.1** | **2739.1** | **2740.1** | **2741.1** | **2742.1** | **2743.1** |
| 1,0 mm | **2744.1** | **2745.1** | **2746.1** | **2747.1** | **2748.1** | **2749.1** | **2750.1** |
| 1,5 mm | **2751.1** | **2752.1** | **2753.1** | **2754.1** | **2755.1** | **2756.1** | **2757.1** |
| 2,0 mm | **2758.1** | **2759.1** | **2760.1** | **2761.1** | **2762.1** | **2763.1** | **2764.1** |
| Pack Qty. | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| € | 31,20 | 31,20 | 31,20 | 31,20 | 31,20 | 31,20 | 31,20 |





## Rotiphorese® Unit PROfessional II

**Gel size (w x l): 10 x 10 cm**
**Unit dimensions (w x l x h): 22 x 12.5 x 9 cm**
**Number of samples: max. 80 samples (using 4 comb slots)**
**Buffer volume: 300 ml**

- First choice for all rapid routine analyses
- Seven different combs available in four thicknesses, including preparative combs with broad wells
- Gel trays with 7 and 10 cm length available
- Compatible with multi-channel pipettors (see table)
- For real-time electrophoresis upgradeable with Rotiphorese® PROfessional runVIEW Base MINI (Art. No. 9961.1)

**Delivery incl.** horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (10 x 10 cm) with gel casting gates, and two combs (1 mm, 16 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **2799.1** | 1 unit | 408,50 |

## PROfessional II accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **PROfessional II Gel casting tray 10 x 7 cm** | **3147.1** | 1 tray | 60,20 |
| **PROfessional II Gel casting tray 10 x 10 cm** | **3148.1** | 1 tray | 60,20 |
| **PROfessional II Gel casting dams** | **3146.1** | 1 pair | 60,20 |
| **PROfessional II Positive electrode** | **3141.1** | 1 electr. | 80,65 |
| **PROfessional II Negative electrode** | **3142.1** | 1 electr. | 80,65 |

## PROfessional II combs

| Sample volume for a 5 mm thick gel | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2 + 2** | 4 + 2** | 8 | 10* | 12 | 16 | 20* |
| 0.75 mm | 118 µl | 57 µl | 30 µl | 20 µl | 17 µl | 12 µl | 10 µl |
| 1.0 mm | 158 µl | 77 µl | 41 µl | 27 µl | 23 µl | 16 µl | 14 µl |
| 1.5 mm | 236 µl | 115 µl | 61 µl | 41 µl | 34 µl | 24 µl | 20 µl |
| 2.0 mm | 315 µl | 153 µl | 81 µl | 54 µl | 45 µl | 32 µl | 27 µl |

*Compatible with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

| Wells | 2 + 2 | 4 + 2 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|
| Thickness | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. |
| 0,75 mm | **3150.1** | **3151.1** | **3157.1** | **3158.1** | **3161.1** | **3177.1** | **3178.1** |
| 1,0 mm | **3181.1** | **3188.1** | **3202.1** | **3203.1** | **3204.1** | **3206.1** | **3208.1** |
| 1,5 mm | **3212.1** | **3213.1** | **3219.1** | **3220.1** | **3222.1** | **3227.1** | **3229.1** |
| 2,0 mm | **3230.1** | **3233.1** | **3234.1** | **3238.1** | **3239.1** | **3244.1** | **3245.1** |
| Pack Qty. | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| € | 35,50 | 35,50 | 35,50 | 35,50 | 35,50 | 35,50 | 35,50 |

TIP

Maximum sample size depends on the height of the gel.
Rule of thumb (all values in mm): Max. sample per well =
Broadth of teeth x comb thickness x (gel height - 3)

## Rotiphorese® Unit PROfessional III

**Gel size (w x l): 15 x 15 cm**
**Unit dimensions (w x l x h): 26.5 x 17.5 x 9 cm**
**Number of samples: max. 210 samples (using 6 comb slots)**
**Buffer volume: 500 ml**

- First choice for all standard analyses
- For high flexibility in application: Gel trays with 7, 10 and 15 cm length available
- Seven different combs available in four thicknesses, including preparative combs with broad wells
- Compatible with multi-channel pipettors (see table)
- For real-time electrophoresis upgradeable with Rotiphorese® PROfessional runVIEW Base (Art. No. 4850.1)

**Delivery incl.** horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (15 x 15 cm) with gel casting gates, and two combs (1 mm, 20 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **2850.1** | 1 unit | 450,45 |

## PROfessional III accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **PROfessional III Gel casting tray 15 x 7 cm** | **3250.1** | 1 tray | 70,95 |
| **PROfessional III Gel casting tray 15 x 10 cm** | **3251.1** | 1 tray | 70,95 |
| **PROfessional III Gel casting tray 15 x 15 cm** | **3252.1** | 1 tray | 70,95 |
| **PROfessional III Stretch Gel casting tray 15 x 20 cm** | **9940.1** | 1 tray | 96,75 |
| **PROfessional III Stretch Gel casting tray 15 x 25 cm** | **9941.1** | 1 tray | 96,75 |
| **PROfessional III Gel casting dams** | **3262.1** | 1 pair | 57,85 |
| **PROfessional III Positive electrode** | **3247.1** | 1 electr. | 96,25 |
| **PROfessional III Negative electrode** | **3248.1** | 1 electr. | 96,25 |

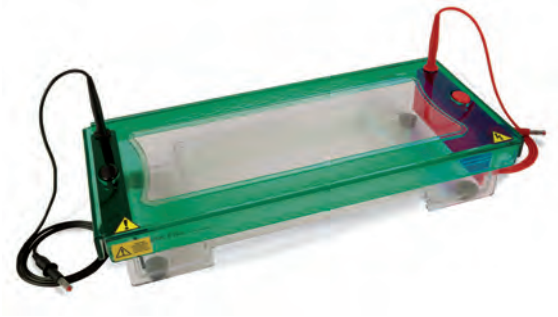
## PROfessional III combs

| Sample volume for a 5 mm thick gel | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 4 + 2** | 10 | 12 | 16* | 20 | 28* | 35 |
| 0.75 mm | 91 µl | 34 µl | 30 µl | 20 µl | 16 µl | 8 µl | 7 µl |
| 1.0 mm | 122 µl | 45 µl | 41 µl | 27 µl | 21 µl | 11 µl | 10 µl |
| 1.5 mm | 182 µl | 68 µl | 61 µl | 41 µl | 32 µl | 17 µl | 15 µl |
| 2.0 mm | 243 µl | 90 µl | 81 µl | 54 µl | 43 µl | 32 µl | 20 µl |

*Compatible with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

| Wells | 4 + 2 | 10 | 12 | 16 | 20 | 28 | 35 |
|---|---|---|---|---|---|---|---|
| Thickness | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. |
| 0,75 mm | **3263.1** | **3266.1** | **3269.1** | **3270.1** | **3276.1** | **3281.1** | **3283.1** |
| 1,0 mm | **3302.1** | **3308.1** | **3309.1** | **3312.1** | **3317.1** | **3332.1** | **3334.1** |
| 1,5 mm | **3339.1** | **3347.1** | **3350.1** | **3365.1** | **3368.1** | **3370.1** | **3372.1** |
| 2,0 mm | **3373.1** | **3374.1** | **3378.1** | **3379.1** | **3381.1** | **3382.1** | **3384.1** |
| Pack Qty. | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| € | 43,00 | 43,00 | 43,00 | 43,00 | 43,00 | 43,00 | 43,00 |



## Rotiphorese® Unit PROfessional III Stretch 20

**Gel size (w x l): 15 x 20 cm**
**Unit dimensions (w x l x h): 17,5 x 41 x 9 cm**
**Number of samples: max. 280 samples (using 8 comb slots)**
**Buffer volume: 1000 ml**

- First choice for all standard analyses
- For high flexibility in application: Gel trays with 7, 10, 15, 20 and 25 cm length available
- Seven different combs available in four thicknesses, including preparative combs with broad wells
- Compatible with multi-channel pipettors (see table)
- For gel trays, combs and further accessories see Rotiphorese® unit PROfessional III (Art. No. 2850).

**Delivery incl.** horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (15 x 20 cm) with gel casting gates, and 4 combs (1 mm, 28 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **9938.1** | 1 unit | 600,95 |

## Rotiphorese® Unit PROfessional III Stretch 25

**Gel size (w x l): 15 x 25 cm**
**Unit dimensions (w x l x h): 17,5 x 41 x 9 cm**
**Number of samples: max. 350 samples (using 10 comb slots)**
**Buffer volume: 1000 ml**

- First choice for all standard analyses
- For high flexibility in application: Gel trays with 7, 10, 15, 20 and 25 cm length available
- Seven different combs available in four thicknesses, including preparative combs with broad wells
- Compatible with multi-channel pipettors (see table)
- For gel trays, combs and further accessories see Rotiphorese® unit PROfessional III (Art. No. 2850).

**Delivery incl.** horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (15 x 25 cm) with gel casting gates, and 4 combs (1 mm, 28 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **9939.1** | 1 unit | 611,70 |





## Rotiphorese® Unit PROfessional IV

**Gel size (w x l): 20 x 20 cm**
**Unit dimensions (w x l x h): 39.5 x 23 x 9 cm**
**Number of samples: max. 500 samples (using 10 comb slots)**
**Buffer volume: 1200 ml**

- For large gels or higher sample numbers
- For high flexibility in application: Gel trays with 10, 20 and 25 cm length available
- Eight different combs available in four thicknesses, including preparative combs with broad wells
- With practical and easy-to-use gel cooling, independently of water supply or temperature baths
- Compatible with multi-channel pipettors (see table)

**Delivery incl.** horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (20 x 20 cm) with gel casting gates, and two combs (1 mm, 20 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **2941.1** | 1 unit | 751,45 |

## PROfessional IV accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **PROfessional IV Gel casting tray 20 x 10 cm** | **3392.1** | 1 tray | 96,25 |
| **PROfessional IV Gel casting tray 20 x 20 cm** | **3393.1** | 1 tray | 100,15 |
| **PROfessional IV Gel casting tray 20 x 25 cm** | **3394.1** | 1 tray | 123,65 |
| **PROfessional IV Gel casting dams** | **3397.1** | 1 pair | 62,60 |
| **PROfessional IV Cooling set** | **3386.1** | 1 set | 127,95 |
| **PROfessional IV Positive electrode** | **3390.1** | 1 electr. | 110,75 |
| **PROfessional IV Negative electrode** | **3391.1** | 1 electr. | 110,75 |

## PROfessional IV combs

| Sample volume for a 5 mm thick gel | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 4 + 2** | 16 | 20* | 25 | 30 | 36* | 40* | 50 |
| 0.75 mm | 115 µl | 30 µl | 20 µl | 16 µl | 13 µl | 11 µl | 8 µl | 8 µl |
| 1.0 mm | 153 µl | 41 µl | 27 µl | 21 µl | 17 µl | 14 µl | 11 µl | 10 µl |
| 1.5 mm | 230 µl | 61 µl | 41 µl | 32 µl | 26 µl | 22 µl | 17 µl | 16 µl |
| 2.0 mm | 306 µl | 81 µl | 54 µl | 42 µl | 34 µl | 29 µl | 23 µl | 21 µl |

*Compatible with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

| Wells | 4 + 2 | 16 | 20 | 25 | 30 | 36 | 40 | 50 |
|---|---|---|---|---|---|---|---|---|
| Thick-ness | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. |
| 0,75 mm | **3401.1** | **3409.1** | **3410.1** | **3413.1** | **3414.1** | **3416.1** | **3417.1** | **3419.1** |
| 1,0 mm | **3422.1** | **3427.1** | **3428.1** | **3430.1** | **3431.1** | **3432.1** | **3435.1** | **3437.1** |
| 1,5 mm | **3438.1** | **3440.1** | **3441.1** | **3442.1** | **3443.1** | **3444.1** | **3445.1** | **3446.1** |
| 2,0 mm | **3447.1** | **3449.1** | **3450.1** | **3452.1** | **3453.1** | **3454.1** | **3456.1** | **3458.1** |
| Pack Qty. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| € | 48,20 | 48,20 | 48,20 | 48,20 | 48,20 | 48,20 | 48,20 | 48,20 |





## Rotiphorese® Unit PROfessional V

**Gel size (w x l): 26 x 32 cm**
**Unit dimensions (w x l x h): 50 x 28 x 9 cm**
**Number of samples: max. 672 samples (using 12 comb slots)**
**Buffer volume: 1400 ml**

- For very long gels or high sample numbers
- For high flexibility in application:
  Gel trays with 16, 24 and 32 cm length available
- With practical and easy-to-use gel cooling, independently of water supply or temperature baths
- Compatible with multi-channel pipettors (see table)

**Delivery incl.** horizontal gel chamber, safety lid with integral power leads (4 mm plugs), 1 UV-transparent gel casting tray (26 x 32 cm), and six combs (1 mm, 28 teeth). For sealing of the tray during gel pouring we recommend to use the temperature stable Sekuroka®-adhesive tape, Art. No. L035.1

| Art. No. | Pack Qty | € |
|---|---|---|
| **3000.1** | 1 unit | 1138,45 |

## PROfessional V accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **PROfessional V Gel casting tray 26 x 16 cm** | **3019.1** | 1 tray | 143,00 |
| **PROfessional V Gel casting tray 26 x 24 cm** | **3020.1** | 1 tray | 169,85 |
| **PROfessional V Gel casting tray 26 x 32 cm** | **3021.1** | 1 tray | 169,85 |
| **PROfessional V cooling set** | **3009.1** | 1 set | 153,75 |
| **PROfessional V Positive electrode** | **3001.1** | 1 electr. | 131,15 |
| **PROfessional V Negative electrode** | **3002.1** | 1 electr. | 131,15 |

## PROfessional V combs

| Sample volume for a 5 mm thick gel | | |
|---|---|---|
| | 28* | 56* |
| 0.75 mm | 25 µl | 10 µl |
| 1.0 mm | 34 µl | 14 µl |
| 1.5 mm | 51 µl | 20 µl |
| 2.0 mm | 68 µl | 27 µl |

*Compatible with multi-channel pipettors

| Wells | 28 | 56 |
|---|---|---|
| Thickness | Art. No. | Art. No. |
| 0,75 mm | **3023.1** | **3024.1** |
| 1,0 mm | **3027.1** | **3031.1** |
| 1,5 mm | **3038.1** | **3055.1** |
| 2,0 mm | **3056.1** | **3058.1** |
| Pack Qty. | 1 | 1 |
| € | 70,90 | 70,90 |

TIP

Maximum sample size depends on the height of the gel.
Rule of thumb (all values in mm): Max. sample per well =
Broadth of teeth x comb thickness x (gel height - 3)

## Rotiphorese® Unit PROfessional Acetate

**Max size of analysis (w x l): 24 x 20 cm**
**Unit dimensions (w x l): 30 x 30 cm**

- Compact high resolution system for electrophoresis of acetate strips and membranes
- Suitable for both standard and wet cellulose acetate electrophoresis
- For high flexibility in application

**Delivery incl.** horizontal gel chamber, safety lid with integral power leads (4 mm plugs), adjustable support for different lengths of membrane strips.

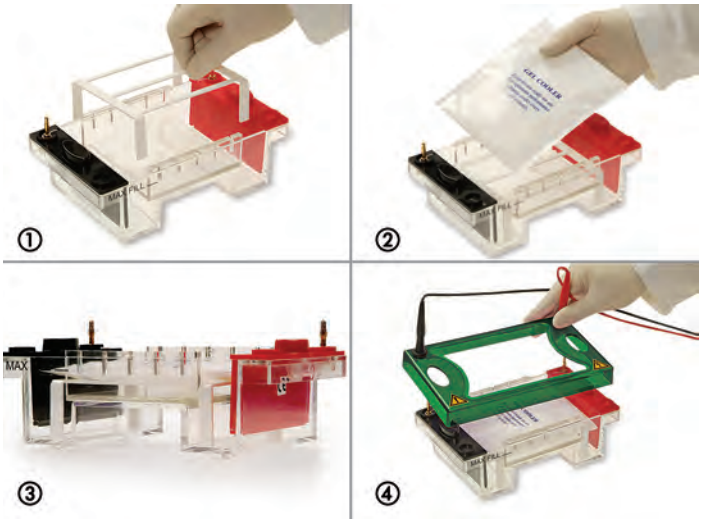
| Art. No. | Pack Qty | € |
|---|---|---|
| **3099.1** | 1 unit | 642,85 |



PROfessional gel casting dams (example)

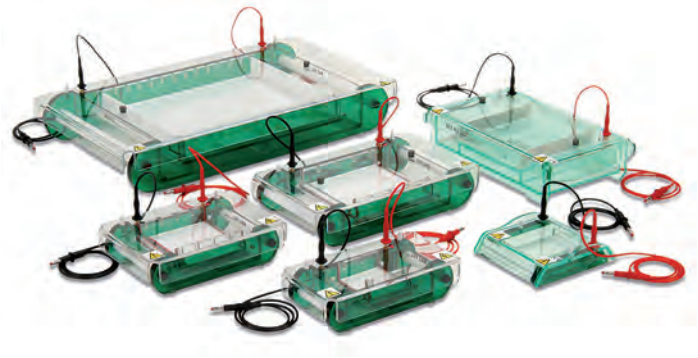
## Convenient Gel Cooling System

Larger Rotiphorese®-PROfessional units may be cooled by a highly efficient and very easy to applicate cooling system via precooled pads.




① Set cooling frame into buffer-filled chamber covering the gel
② Load gel and carefully apply precooled cool pack
③ Side view
④ Add lid and start gel run

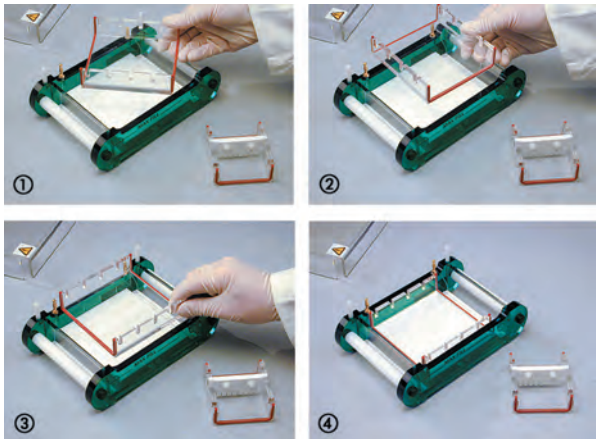
# The Classic Line - Compact Horizontal Electrophoresis Chambers



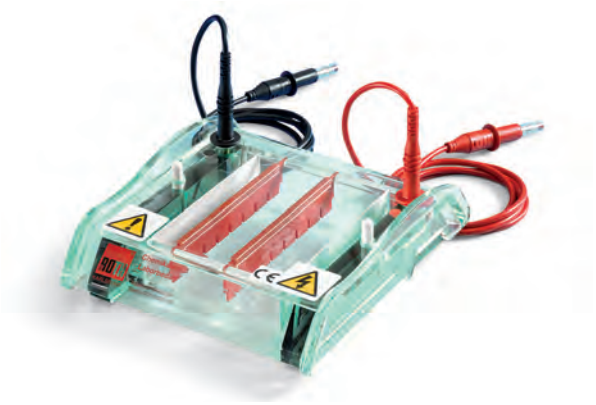
- High-grade quality
- Firmly standing
- Robust construction made of acrylic glass
- Chemically bonded contact points
- Platinum electrodes are protected by a special construction
- Wide range of accessories
- UV-transparent gel trays

## Convenient in-Tank Gel Pouring

Big benefit: Several instruments of the classic line allow very convenient in-tank gel pouring - fast and definitely leak-proof.




① Remove the gel tray from the chamber. Turn the tray by 90°.
② Press the tray carefully into the chamber so that the silicone rubber forms a tight, leak-free seal with the walls of the chamber. Pour slightly precooled agarose into the tray.
③ Allow the agarose to polymerise, then lift the tray from the chamber and insert it back by positioning it in the direction of the run.
④ The gel is ready for sample loading and for electrophoresis.



## MINI*easy* Electrophoresis Unit

**Gel size (w x l): 8 x 10 cm**
**Unit dimensions (w x l x h): 13.5 x 15 x 3 cm**
**Number of samples: max. 32 samples (using 2 comb slots)**
**Buffer volume: 50 ml**

- Complete gel chamber for speedy analysis
- The entire chamber can be placed on a UV-transilluminator
- Low buffer quantity needed
- Tank-gel casting (casting tray cannot be removed)

**Delivery incl.** horizontal gel chamber, safety lid with integral power leads (4 mm plugs), two gel casting gates and two combs (1.5 mm; 8 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **N817.1** | 1 unit | 419,25 |

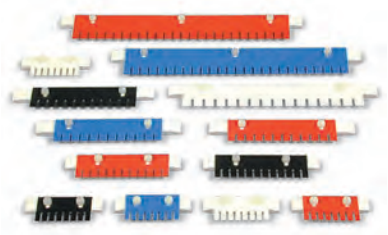
## MINI*easy* Gel casting gates

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **MINI*easy* Gel casting gates** | **N818.1** | 1 pair | 25,70 |

## MINI*easy* Combs

| No. of teeth | Broadth of teeth (mm) | Space between teeth (mm) |
|---|---|---|
| 8 | 10 | 2 |
| 12 | 6 | 2 |
| 16 | 4 | 2 |

| Wells | 8 | 12 | 16 |
|---|---|---|---|
| Thickness | Art. No. | Art. No. | Art. No. |
| 1,0 mm | **N820.1** | **N821.1** | **N819.1** |
| 1,5 mm | **N823.1** | **N824.1** | **N822.1** |
| Pack Qty. | 1 | 1 | 1 |
| € | 32,05 | 32,05 | 32,05 |



| Colour | Comb thickness |
|---|---|
| black | 0,75 mm |
| white | 1,0 mm |
| red | 1,5 mm |
| blue | 2,0 mm |



## MINI Electrophoresis Unit

**Gel size (w x l): 6 x 7.5 cm**
**Unit dimensions (w x l x h): 13 x 24 x 6.5 cm**
**Number of samples: max. 32 samples (using 2 comb slots)**
**Buffer volume: 325 ml**

- Platinum electrodes are protected from damage by a special construction
- Four different combs available in three thicknesses
- Compatible with multi-channel pipettors (combs with 12 teeth)
- Gel may be poured into the chamber

**Delivery incl.** horizontal gel tank, safety lid with integral power leads (4 mm plugs), removable gel casting tray, two combs (1 mm, 8 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **N562.1** | 1 unit | 471,95 |

## MINI Accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **MINI Gel casting tray** | **N575.1** | 1 tray | 85,40 |
| **Approx. 1 m silicone sealing hose** | **T811.1** | 1 piece | 21,00 |

## MINI Combs

| No. of teeth | Broadth of teeth (mm) | Space between teeth (mm) |
|---|---|---|
| 8 | 4,5 | 2 |
| 12* | 2,5 | 2 |
| 16 | 2,2 | 1 |

*Compatibel with multi-channel pipettors

| Wells | 8 | 12 | 16 |
|---|---|---|---|
| Thickness | Art. No. | Art. No. | Art. No. |
| 1,0 mm | **N564.1** | **N565.1** | **N566.1** |
| 1,5 mm | **N568.1** | **N569.1** | **N570.1** |
| 2,0 mm | **N572.1** | **N573.1** | **N574.1** |
| Pack Qty. | 1 | 1 | 1 |
| € | 42,95 | 42,95 | 42,95 |



## MINI External Casting Unit

For casting max. three gels outside the chamber.
Simply insert the gel casting trays into the casting unit.
No additional sealing required.

| Art. No. | Pack Qty | € |
|---|---|---|
| **T828.1** | 1 unit | 89,80 |



## MIDI 1 Electrophoresis Unit

**Gel size (w x l): 10 x 11.5 cm**
**Unit dimensions (w x l x h): 16.5 x 23 x 6.5 cm**
**Number of samples: max. 80 samples (using 4 comb slots)**
**Buffer volume: 450 ml**

- Platinum electrodes are protected from damage by a special construction
- Six different combs available in three thicknesses
- Compatible with multi-channel pipettors (see table)
- Gel may be poured into the chamber

**Delivery incl.** horizontal gel tank, safety lid with integral power leads (4 mm plugs), removable gel casting tray, two combs (1 mm, 16 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **N576.1** | 1 unit | 536,45 |

## MIDI 1 Accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **MIDI 1 Gel casting tray** | **N595.1** | 1 tray | 96,25 |
| **Approx. 1 m silicone sealing hose** | **T811.1** | 1 piece | 21,00 |

## MIDI 1 Combs

| No. of teeth | Broadth of teeth (mm) | Space between teeth (mm) |
|---|---|---|
| 8 | 9 | 2,5 |
| 10* | 7 | 2 |
| 12 | 5,5 | 2 |
| 16 | 3,6 | 2 |
| 20* | 3 | 1,5 |

*Compatibel with multi-channel pipettors

| Wells | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|
| Thickness | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. |
| 1,0 mm | **N578.1** | **N579.1** | **N580.1** | **N581.1** | **N582.1** |
| 1,5 mm | **N584.1** | **N585.1** | **N586.1** | **N587.1** | **N588.1** |
| 2,0 mm | **N590.1** | **N591.1** | **N592.1** | **N593.1** | **N594.1** |
| Pack Qty. | 1 | 1 | 1 | 1 | 1 |
| € | 45,10 | 45,10 | 45,10 | 45,10 | 45,10 |

## MIDI 1 External Casting Unit

For casting max. three gels outside the chamber.
Simply insert the gel trays into the casting unit.
No additional sealing required.

| Art. No. | Pack Qty | € |
|---|---|---|
| **T829.1** | 1 unit | 106,45 |





## MIDI PLUS Electrophoresis Unit

**Gel size (w x l): 15 x 15 cm**
**Unit dimensions (w x l x h): 21,5 x 33,5 x 7 cm**
**Number of samples: max. 120 samples (using 4 comb slots)**
**Buffer volume: 1200 ml**

- Platinum electrodes are protected from damage by a special construction
- Convenient in buffer recirculation
- Eight different combs available in three thicknesses, including preparative combs with broad wells
- Compatible with multi-channel pipettors (see table)
- Gold standard for all routine gels in the lab

**Delivery incl.** horizontal gel chamber, safety lid with integral power leads (4 mm plugs), two connections for buffer recirculation, removable gel casting tray with gel casting gates, and two combs (1 mm, 16 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **HP70.1** | 1 unit | 548,25 |

## MIDI PLUS Accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **MIDI PLUS Gel casting tray incl. gates** | **HP71.1** | 1 tray | 198,90 |
| **MIDI PLUS Gel casting gates** | **HP72.1** | 1 pair | 67,00 |
| **Approx. 1 m silicone sealing hose** | **T811.1** | 1 piece | 21,00 |

## MIDI PLUS Combs

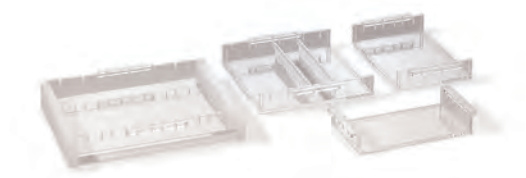
| No. of teeth | Broadth of teeth (mm) | Space between teeth (mm) |
|---|---|---|
| 1+1** | 138 | 2 |
| 2+1** | 68 | 2 |
| 4+1** | 33 | 2 |
| 10 | 12,8 | 2 |
| 16* | 6,4 | 2 |
| 20 | 5,9 | 2 |
| 25 | 3,5 | 2 |
| 30* | 2,5 | 2 |

*Compatibel with multi-channel pipettors

**Combs with extremely wide wells (for preparative gels)

| Wells | 1+1 | 2+1 | 4+1 | 10 | 16 | 20 | 25 | 30 |
|---|---|---|---|---|---|---|---|---|
| Thick-ness | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. |
| 1,0 mm | **HP73.1** | **HP74.1** | **HP75.1** | **HP76.1** | **HP77.1** | **HP78.1** | **HP79.1** | **HP80.1** |
| 1,5 mm | **HP81.1** | **HP82.1** | **HP83.1** | **HP84.1** | **HP85.1** | **HP86.1** | **HP87.1** | **HP88.1** |
| 2,0 mm | **HP89.1** | **HP90.1** | **HP91.1** | **HP92.1** | **HP93.1** | **HP94.1** | **HP95.1** | **HP96.1** |
| Pack Qty. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| € | 53,60 | 53,60 | 53,60 | 53,60 | 53,60 | 53,60 | 53,60 | 53,60 |





## VARIA 1 Electrophoresis Unit

**Gel size (w x l): variable, 15 x 7 to 15 x 20 cm**
**Unit dimensions (w x l x h): 31.5 x 19 x 7 cm**
**Number of samples: max. 60/90/120/180 samples (using 2/3/4/6 comb slots in a 7/10/15/20 cm long gel tray)**
**Buffer volume: 700 ml**

- Superior flexibility in one chamber through 4 gel trays of different lengths
- Convenient in buffer recirculation
- Asymmetric electrode offset preventing accidental polarity reversal
- Colour coded combs with five different tooth sizes
- Developed by Scientists for Scientists

**Delivery incl.** horizontal gel tank, safety lid with integral power leads (4 mm plugs), two connections for buffer circulation, two gel casting gates, four removable gel casting trays of 7, 10, 15 and 20 cm length, respectively, two combs (1 mm, 15 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **AE17.1** | 1 unit | 611,70 |

## VARIA Accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **VARIA Gel casting tray 15 x 7 cm without gates** | **AE74.1** | 1 tray | 74,65 |
| **VARIA Gel casting tray 15 x 10 cm without gates** | **AE75.1** | 1 tray | 92,95 |
| **VARIA Gel casting tray 15 x 15 cm without gates** | **AE76.1** | 1 tray | 107,05 |
| **VARIA Gel casting tray 15 x 20 cm without gates** | **AE77.1** | 1 tray | 136,55 |

## VARIA 1 Combs

| No. of teeth | Broadth of teeth (mm) | Space between teeth (mm) |
|---|---|---|
| 10 | 12,8 | 2 |
| 16* | 6,4 | 2 |
| 20 | 5,9 | 2 |
| 25 | 3,2 | 2 |
| 30* | 2,5 | 2 |

*Compatibel with multi-channel pipettors

| Wells | 10 | 20 | 25 | 30 |
|---|---|---|---|---|
| Thickness | Art. No. | Art. No. | Art. No. | Art. No. |
| 1,0 mm | **0085.1** | **0089.1** | **0090.1** | **0091.1** |
| 1,5 mm | **0085.1** | **0105.1** | **0106.1** | **-** |
| 2,0 mm | **-** | **0128.1** | **0129.1** | **-** |
| Pack Qty. | 1 | 1 | 1 | 1 |
| € | 59,70 | 59,70 | 59,70 | 59,70 |

# Electrophoresis · Units





## MIDI 2 Electrophoresis Unit

**Gel size (w x l): 20 x 20 cm**
**Unit dimensions (w x l x h): 27 x 47.5 x 8 cm**
**Number of samples: max. 160 samples (using 4 comb slots)**
**Buffer volume: 2200 ml**

- Platinum electrodes are protected from damage by a special construction
- Convenient in buffer recirculation
- Four different combs available in three thicknesses
- Compatible with multi-channel pipettors (see table)
- Very robust unit, optimised for large standard gels
- Available with cooled base plate

**Delivery incl.** horizontal gel tank, safety lid with integral power leads (4 mm plugs), two connections for buffer recirculation, removable gel casting tray, two gel casting gates and two combs (1 mm, 16 teeth).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **MIDI 2 standard model** | **N596.1** | 1 unit | 805,20 |
| **MIDI 2 with cooled base plate** | **N618.1** | 1 unit | 994,40 |

## MIDI 2 Accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **MIDI 2 Gel casting tray incl. gates** | **N609.1** | 1 tray | 209,65 |
| **MIDI 2 Gel casting gates** | **T812.1** | 1 pair | 107,00 |
| **Approx. 1 m silicone sealing hose** | **T811.1** | 1 piece | 21,00 |

## MIDI 2 Combs

| No. of teeth | Broadth of teeth (mm) | Space between teeth (mm) |
|---|---|---|
| 16 | 8,5 | 3 |
| 20* | 7 | 2 |
| 28 | 4,8 | 2 |
| 40* | 2,75 | 2 |

*Compatibel with multi-channel pipettors

| Wells | 16 | 20 | 28 | 40 |
|---|---|---|---|---|
| Thickness | Art. No. | Art. No. | Art. No. | Art. No. |
| 1,0 mm | **N597.1** | **N598.1** | **N599.1** | **N600.1** |
| 1,5 mm | **N601.1** | **N602.1** | **N603.1** | **N604.1** |
| 2,0 mm | **N605.1** | **N606.1** | **N607.1** | **N608.1** |
| Pack Qty. | 1 | 1 | 1 | 1 |
| € | 59,15 | 59,15 | 59,15 | 59,15 |

**Instructions for use**
can be found on the Internet next to the product description.





## MAXI Electrophoresis Unit

**Gel size (w x l): 25 x 30 cm**
**Unit dimensions (w x l x h): 33 x 56 x 9 cm**
**Number of samples: max. 624 samples (using 12 comb slots)**
**Buffer volume: 3000 ml**

- Platinum electrodes are protected from damage by a special construction
- Convenient in buffer recirculation
- Two different combs available in three thicknesses
- Compatible with multi-channel pipettors (see table)
- Optimised for very high sample numbers and for long separation distance
- Available with cooled base plate

**Delivery incl.** horizontal gel tank, safety lid with integral power leads (4 mm plugs), two connections for buffer recirculation, removable gel casting tray, two gel casting gates and six combs (1 mm, 26 teeth).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **MAXI standard model** | **N610.1** | 1 unit | 1101,90 |
| **MAXI with cooled base plate** | **N619.1** | 1 unit | 1256,70 |

## MAXI Accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **MAXI Gel casting tray 30 cm incl. gates** | **N617.1** | 1 tray | 246,20 |
| **MAXI Gel casting gates** | **T813.1** | 1 pair | 108,60 |
| **Approx. 1 m silicone sealing hose** | **T811.1** | 1 piece | 21,00 |

## MAXI Combs

| No. of teeth | Broadth of teeth (mm) | Space between teeth (mm) |
|---|---|---|
| 26* | 7 | 2 |
| 52* | 3 | 1,5 |

*Compatible with multi-channel pipettors

| Wells | 26 | 52 |
|---|---|---|
| Thickness | Art. No. | Art. No. |
| 1,0 mm | **N611.1** | **N612.1** |
| 1,5 mm | **N613.1** | **N614.1** |
| 2,0 mm | **N615.1** | **N616.1** |
| Pack Qty. | 1 | 1 |
| € | 80,65 | 80,65 |



## Flat Bed Electrophoresis Unit MULTI

**For all precast horizontal gels and for Iso Electric Focussing**
**Gel size (w x l): max. 25 x 25 cm**
**Unit dimensions (w x l x h): 46 x 41 x 11.5 cm**
**Number of samples: variable**

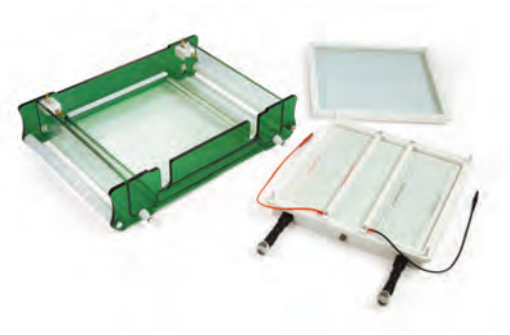
- For high voltage electrophoresis up to 5000 Volt
- Variable applications using tank mounted electrodes or adjustable electrodes for wicked horizontal gels/IEF
- Including cooling unit and buffer drainage system
- Superior separation quality and robust construction

**Technical data:**
Length 46 cm, width tank only 34 cm, width incl. cooling connectors 43 cm, height 11.5 cm, weight 9.6 kg.

We recommend using Circulation Cooler Accel 250 (Art. No. PE51.1) and Power Supply EV 233 (Art. No. A541.1).

**Delivery incl.** horizontal flat bed electrophoresis chamber with buffer chambers and integral electrodes, safety lid, one removable ceramic cooling plate (27 cm width x 27 cm length), one glass electrode frame, one adjustable anode- and cathode electrode, glass electrode weight, drainage tubing (outer ∅ 12 mm), cable set (2 mm plug) and adapter pair for 4 mm socket.

| Art. No. | Pack Qty | € |
|---|---|---|
| **CP51.1** | 1 unit | 1779,15 |



## MULTI Accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **Ceramic cooling plate 27 x 27 cm** | **CP54.1** | 1 plate | 333,25 |
| **Glass electrode frame** | **CP55.1** | 1 frame | 317,15 |
| **Anode electrode** | **CP52.1** | 1 electr. | 239,75 |
| **Cathode electrode** | **CP53.1** | 1 electr. | 239,75 |



## COMPAC-50™ Comet Assay System

Complete system for rapid high throughput single cell gel electrophoresis (SCGE).

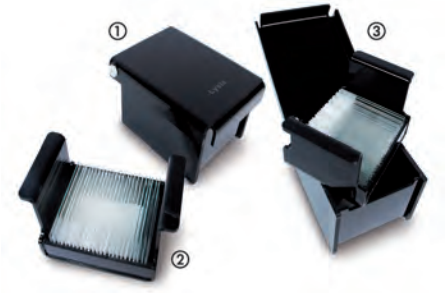
- Space-saving, compact system
- Chamber and accessories are made of ebony acrylic material to protect DNA samples against light
- 2 slide carriers for processing of up to 50 slides simultaneously
- Time-saving electrophoresis (length per run ca. 20 min)
- Integrated ceramic cooling platform with cool pack, no additional chiller necessary

**Technical specifications:**

| | |
|---|---|
| Dimensions (W x L x H) | 26,5 x 15 x 15 cm |
| Total slide capacity | 50 slides (25 x 75 mm) |
| Slide capacity per slide carrier | 25 slides (25 x 75 mm) |
| Volume | 550 ml |
| Recommended running conditions | 27 V / 450 mA for 20 min |
| Recommended power supplies | Roth-STANDARD, EV2310, EV2650 |

**Delivery incl.** 1 Comet Assay tank, 1 safety lid incl. power cables, 2 slide carriers for 25 slides each, 10 treatment dishes, 1 cool pack, 1 level bubble

| Art. No. | Pack Qty | € |
|---|---|---|
| **9963.1** | 1 piece | 1825,35 |




## COMPAC-50™ Comet Assay System Accessories

① treatment dish for slide carrier
② slide carrier
③ open dish with slide carrier

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **COMPAC-50™ slide carrier for 25 slides** | **9964.1** | 1 piece | 169,85 |
| **COMPAC-50™ treatment dish** | **9965.1** | 1 piece | 92,45 |
| **COMPAC-50™ treatment dish** | **9984.1** | 4 pieces | 310,70 |
| **COMPAC-50™ positive electrode** | **9966.1** | 1 piece | 120,40 |
| **COMPAC-50™ negative electrode** | **9967.1** | 1 piece | 120,40 |
| **Electrophoresis cables Rotiphorese® PROfessional** | **6848.1** | 1 pair | 52,85 |

# Vertical Electrophoresis Systems & Modules

- Simultaneous electrophoresis of minimum two gels
- Inner buffer volume ensures even distribution of heat in gel and prevents "smiling"
- Gel casting module enables speedy and simultaneous casting of two gels
- **Suitable for standard ready-to-use gels**

**Wide field of application**
- Separation of proteins, nucleic acids and peptides
- Isoelectric focussing
- Electro-transfer of proteins and nucleic acids

**Safety lid with integral power leads**
Orientation cannot be mixed up as the lid can only be closed if properly used. Power supply is automatically interrupted when lid is opened.

**Platinum electrodes - gold-plated, corrosion-free contacts**
Electrodes are made of pure platinum. They are protected by a special construction and can be replaced easily by the user.

**Colour coding of spacers and combs**
Regular colour coding of spacers and combs facilitates selection of the right tool during gel preparation, preventing assembly of wrong components.

| Colour | Thickness | Application |
|---|---|---|
| violet | 0.5 mm | for ultra finely resolved bands |
| black | 0.75 mm | for finely resolved bands |
| white | 1.0 mm | standard |
| red | 1.5 mm | for bigger sample volumina and gels of 2nd dimension |
| blue | 2.0 mm | for big sample volumina and preparative gels |

# Rotiphorese®-PROclamp - Units with Clamping System for Vertical Electrophoresis



- Double electrophoresis unit - **for running of up to 4 gels in parallel**
- With fast-clamping technique - for rapid and easy-to-handle insertion of glass plates and gels
- MINI: Compatible with all major brands of 10 x 10 to 8 x 10 cm precast gels
- Effective buffer cooling independent of running water or chillers
- Colour coded spacers and combs in 5 thicknesses available - 0,5 up to 2 mm
- Extensive range of accessories available incl. glass plates with fixed spacers and blotting modules
- Compatible with multi-channel pipettors (combs are marked *)
- Version MINI for 10 x 10 cm gels, version MAXI for 20 x 20 cm gels

Tight and leak-proof insertion of glass plates in seconds - by modern **fast-clamping techniques:** (MINI: clamps, MAXI: waves).





① Position running module on bench surface
② Insert glass plates (incl. spacers) from above
③ Tighten clamps - Ready-to-go!



## Rotiphorese® Units PROclamp MINI

**Glass plates: 10 x 10 cm**
**Max. sample capacity per gel: 20**
**Buffer volume (upper / lower tank): 100 ml/300 ml**
**Unit dimensions (w x l x h): 19 x 13 x 15 cm**

- Double electrophoresis unit - **for running of up to 4 gels in parallel**
- With fast-clamping technique - for rapid and easy-to-handle insertion of glass plates and gels
- Compatible with all major brands of 10 x 10 cm to 8 x 10 cm precast gels
- Effective buffer cooling independent of running water or chillers
- Colour coded spacers and combs in 5 thicknesses available - 0.5 up to 2 mm
- Extensive range of accessories available incl. glass plates with fixed spacers and blotting module (Art. No. 3517.1)
- Compatible with multi-channel pipettors (combs are marked *)

**Delivery incl.** (basic equipment):
1 vertical electrophoresis chamber incl. buffer tank, safety lid incl. cable (4 mm plugs) and 1 running module for electrophoresis of up to 4 gels in parallel, dummy plate for run of one gel only and gel cooling set. For run of 3 or 4 gels, please additionally order PROclamp MINI notched glass plates with fixed spacers (thickness 1 mm: Art. No. 3563.1) and suitable combs, e. g. Art. No. 3638.1.

**Complete Set with accessories and gel casting module**
**Additionally included:** 2 glass plates with fixed spacers (thickness 1 mm), 2 notched glass plates, 2 combs (thickness 1 mm, 12 wells), gel opener and 1 gel casting module for rapid and leak-proof gel casting.

| Art. No. | Pack Qty | € |
|---|---|---|
| **3501.1** | 1 unit | 747,15 |

**Set with Accessories**
**Additionally included:** 2 glass plates with fixed spacers (thickness 1 mm), 2 notched glass plates, 2 combs (thickness 1 mm, 12 wells), gel opener.

| Art. No. | Pack Qty | € |
|---|---|---|
| **3502.1** | 1 unit | 640,70 |

**Set for precast gels** (without further accessories)
Run of max. 2 gels in parallel possible.

| Art. No. | Pack Qty | € |
|---|---|---|
| **3503.1** | 1 unit | 602,00 |

## PROclamp MINI Spare Parts

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **PROclamp MINI buffer tank without lid** | **3509.1** | 1 tank | 85,05 |
| **PROclamp MINI running module** | **3504.1** | 1 module | 321,45 |
| **PROclamp MINI lid for buffer tank (w/o cables)** | **3511.1** | 1 lid | 64,90 |
| **PROclamp MINI gel casting module** | **3506.1** | 1 module | 162,35 |
| **Replacement rubber mat for gel casting module** | **3507.1** | 1 mat | 43,20 |
| **PROclamp MINI cooling set** | **3512.1** | 1 set | 39,30 |

▶ Tank-Blotting modules for PROclamp MINI see page 1216

## PROclamp MINI Glass Plates

| Type | Width (mm) | Length (mm) | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **Standard glass plates** | 100 | 100 | 2 | **3528.1** | 1 pair | 24,10 |
| **Notched glass plates** | 100 | 100 | 2 | **3522.1** | 1 pair | 31,20 |
| **Dummy plate** | 100 | 100 | 5 | **3520.1** | 1 plate | 18,45 |

## PROclamp MINI Spacers

With labelled upper side

| Thickness (mm) | Width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5 | 12 | 101 | **3570.1** | 1 pair | 18,10 |
| 0,75 | 12 | 101 | **3573.1** | 1 pair | 18,10 |
| 1,0 | 12 | 101 | **3578.1** | 1 pair | 18,10 |
| 1,5 | 12 | 101 | **3579.1** | 1 pair | 18,10 |
| 2,0 | 12 | 101 | **3584.1** | 1 pair | 18,10 |

## PROclamp MINI Standard Glass Plates

(100 x 100 mm) with fixed spacers

| Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,5 | **3531.1** | 1 pair | 26,45 |
| 0,75 | **3537.1** | 1 pair | 26,45 |
| 1,0 | **3542.1** | 1 pair | 26,45 |
| 1,5 | **3547.1** | 1 pair | 26,45 |
| 2,0 | **3548.1** | 1 pair | 26,45 |

## PROclamp MINI Notched Glass Plates

(100 x 100 mm) with fixed spacers, for pouring of double-gels

| Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,5 | **3552.1** | 1 pair | 45,65 |
| 0,75 | **3561.1** | 1 pair | 45,65 |
| 1,0 | **3563.1** | 1 pair | 45,65 |
| 1,5 | **3567.1** | 1 pair | 45,65 |
| 2,0 | **3568.1** | 1 pair | 45,65 |

## PROclamp MINI Combs

| Max. sample volume per well | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1+1** | 5 | 8 | 10* | 12 | 16* | 20 |
| 0,5 mm | 325 µl | 50 µl | 30 µl | 20 µl | 18 µl | 13 µl | 10 µl |
| 0,75 mm | 500 µl | 70 µl | 40 µl | 30 µl | 25 µl | 20 µl | 15 µl |
| 1,0 mm | 650 µl | 100 µl | 60 µl | 40 µl | 35 µl | 25 µl | 20 µl |
| 1,5 mm | 1000 µl | 140 µl | 80 µl | 60 µl | 50 µl | 40 µl | 30 µl |
| 2,0 mm | 1300 µl | 200 µl | 120 µl | 80 µl | 70 µl | 50 µl | 40 µl |

*Compatibel with multi-channel pipettors

**Comb with especially broad well + narrow marker well (for preparative gels)

| Wells | 1+1 | 5 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|
| Thickness | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. |
| 0,5 mm | **3585.1** | **3587.1** | **3593.1** | **3595.1** | **3597.1** | **3598.1** | **3599.1** |
| 0,75 mm | **3600.1** | **3605.1** | **3606.1** | **3610.1** | **3612.1** | **3614.1** | **3615.1** |
| 1,0 mm | **3622.1** | **3623.1** | **3632.1** | **3633.1** | **3638.1** | **3640.1** | **3641.1** |
| 1,5 mm | **3642.1** | **3644.1** | **3649.1** | **3656.1** | **3657.1** | **3658.1** | **3659.1** |
| 2,0 mm | **3662.1** | **3664.1** | **3665.1** | **3667.1** | **3668.1** | **3672.1** | **3674.1** |
| Pack Qty. | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| € | 31,10 | 31,10 | 31,10 | 31,10 | 31,10 | 31,10 | 31,10 |

▶ Compatible Gel Multicaster for pouring of 12 gels see page 1211




## Rotiphorese® Unit PROclamp MINI Wide

**Glass plates (w x l): 20 x 10 cm**
**Max. sample capacity per gel: 48**
**Buffer volume (upper / lower tank): 250 / 600 ml**
**Unit dimensions (w x l x h): 26 x 16 x 16 cm**

- For vertical electrophoresis of wide mini gels (20 x 10 cm)
- Double electrophoresis unit - **for running of 4 gels in parallel**
- Up to 48 samples per gel (capacity equivalent to 2 mini gels)
- Innovative new wave-screw-clamp technology
- Effective buffer cooling independent of running water or chillers
- Extensive range of accessories available, combs of the PROclamp MAXI and spacers of the PROclamp MINI unit are compatible

**Delivery incl.:** 1 vertical electrophoresis unit consisting of buffer tank, safety lid incl. 2 cables (4 mm plugs), running module, gel cooling pack. For the run of 3 or 4 gels, please additionally order PROclamp MINI Wide notched glass plates with fixed spacers, thickness 1 mm (Art. No. 1427.1) and suitable combs, e.g. Art. No. 5957.1.

**Additionally included:** 2 standard glass plates with fixed spacers (thickness 1 mm), 2 notched glass plates, 1 dummy plate (for run of one gel only), 2 combs (thickness 1 mm, 24 wells), 4 yellow wave-clamps for electrophoresis of 3 or 4 gels (substitute green clamps), 1 gel casting module.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1395.1** | 1 piece | 983,65 |

## PROclamp MINI Wide Spare Parts

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **PROclamp MINI Wide buffer tank w/o lid** | **1396.1** | 1 piece | 413,90 |
| **PROclamp MINI Wide replacement lid w/o cable** | **1400.1** | 1 piece | 209,65 |
| **Electrophoresis cables Rotiphorese® PROfessional** | **6848.1** | 1 pair | 52,85 |
| **PROclamp MINI Wide running module** | **1401.1** | 1 piece | 331,10 |
| **PROclamp MAXI gel casting module** | **5792.1** | 1 piece | 211,80 |
| **Sealing pads for PROclamp MAXI gel casting module** | **5793.1** | 1 piece | 64,95 |
| **PROclamp MINI Wide cooling pack** | **1429.1** | 1 piece | 61,85 |

## PROclamp MINI Wide Glass Plates

| Type | Width (mm) | Length (mm) | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **Standard glass plates** | 200 | 100 | 4 | **1404.1** | 1 pair | 31,20 |
| **Notched glass plates** | 200 | 100 | 4 | **1405.1** | 1 pair | 55,90 |
| **Dummy plate** | 200 | 100 | 10 | **1421.1** | 1 piece | 21,00 |

## PROclamp MINI Wide Standard Glass Plates

(200 x 100 mm) with fixed spacers

| Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,75 | **1422.1** | 1 pair | 45,15 |
| 1,0 | **1423.1** | 1 pair | 45,15 |
| 1,5 | **1424.1** | 1 pair | 45,15 |
| 2,0 | **1425.1** | 1 pair | 45,15 |

## PROclamp MINI Wide Notched Glass Plates

(200 x 100 mm) with fixed spacers, for pouring of double-gels

| Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,75 | **1426.1** | 1 pair | 70,45 |
| 1,0 | **1427.1** | 1 pair | 70,45 |

## PROclamp MINI Spacers

With labelled upper side

| Thickness (mm) | Width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,5 | 12 | 101 | **3570.1** | 1 pair | 18,10 |
| 0,75 | 12 | 101 | **3573.1** | 1 pair | 18,10 |
| 1,0 | 12 | 101 | **3578.1** | 1 pair | 18,10 |
| 1,5 | 12 | 101 | **3579.1** | 1 pair | 18,10 |
| 2,0 | 12 | 101 | **3584.1** | 1 pair | 18,10 |

## PROclamp MAXI Combs

| | Max. sample volume per well | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1+1** | 5 | 10 | 18* | 24 | 30 | 36* | 48 |
| 0,75 mm | 1100 µl | 160 µl | 80 µl | 40 µl | 30 µl | 25 µl | 20 µl | 15 µl |
| 1,0 mm | 1500 µl | 200 µl | 100 µl | 50 µl | 40 µl | 35 µl | 25 µl | 20 µl |
| 1,5 mm | 2200 µl | 320 µl | 160 µl | 80 µl | 60 µl | 50 µl | 40 µl | 30 µl |
| 2,0 mm | 3000 µl | 400 µl | 200 µl | 100 µl | 80 µl | 70 µl | 50 µl | 40 µl |

*Compatibel with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

| Wells | 1+1 | 5 | 10 | 18 | 24 | 30 | 36 | 48 |
|---|---|---|---|---|---|---|---|---|
| Thick-ness | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. |
| 0,75 mm | **5925.1** | **5928.1** | **5934.1** | **5936.1** | **5940.1** | **5941.1** | **5944.1** | **5947.1** |
| 1,0 mm | **5949.1** | **5952.1** | **5953.1** | **5955.1** | **5957.1** | **5959.1** | **5960.1** | **5961.1** |
| 1,5 mm | **5962.1** | **5964.1** | **5967.1** | **5968.1** | **5969.1** | **5970.1** | **5971.1** | **5972.1** |
| 2,0 mm | **5974.1** | **5977.1** | **5981.1** | **5983.1** | **5984.1** | **5999.1** | **6005.1** | **6007.1** |
| Pack Qty. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| € | 42,80 | 42,80 | 42,80 | 42,80 | 42,80 | 42,80 | 42,80 | 42,80 |



## Rotiphorese® Unit PROclamp MAXI

**Glass plates: 20 x 20 cm**
**Max. sample capacity per gel: 48**
**Buffer volume (upper/lower tank): 640 ml/1000 ml**
**Unit dimensions (w x l x h): 30 x 18 x 27 cm**

- For large-format vertical gel electrophoresis (20 x 20 cm)
- Double electrophoresis unit - **for running of up to 4 gels in parallel**
- Innovative new wave-screw-clamp technology
- Detachable inner cooling coil for optional cooling
- Spacers and combs in 4 thicknesses available - 0,75 up to 2 mm
- Compatible with multi-channel pipettors (combs are marked *)
- Extensive range of accessories available incl. glass plates with fixed spacers and blotting module (5816.1)

**Delivery incl.:** 1 vertical electrophoresis chamber incl. buffer tank, safety lid incl. 2 cables (4 mm plugs), detachable cooling coil, and 1 running module for running of up to 4 gels in parallel. For run of 3 or 4 gels, please additionally order PROclamp MAXI notched glass plates with fixed spacers (thickness 1 mm: Art. No. 5906.1) and suitable combs, for example Art. No. 5957.1.

**Accessories included:** 2 standard glass plates with fixed spacers (thickness 1 mm), 2 notched glass plates, 1 dummy plate (for run of one gel only), 2 combs (thickness 1 mm, 24 wells), 4 yellow wave-clamps for electrophoresis with 3 or 4 gels (substitute green clamps), and 1 gel casting module for rapid and leak-proof gel casting.

| Art. No. | Pack Qty | € |
|---|---|---|
| **5769.1** | 1 unit | 1353,45 |

## PROclamp MAXI Spare Parts

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **PROclamp MAXI running module** | **5786.1** | 1 module | 465,50 |
| **PROclamp MAXI gel casting module** | **5792.1** | 1 module | 211,80 |
| **Sealing pads for PROclamp MAXI gel casting module** | **5793.1** | 1 set | 64,95 |
| **PROclamp MAXI buffer tank (w/o lid and cooling coil )** | **5807.1** | 1 tank | 536,45 |
| **PROclamp MAXI lid for buffer tank (w/o cables)** | **5809.1** | 1 lid | 241,90 |
| **PROclamp MAXI cooling coil** | **5812.1** | 1 coil | 147,30 |

▶ Tank-Blotting modules for PROclamp MAXI see page 1216

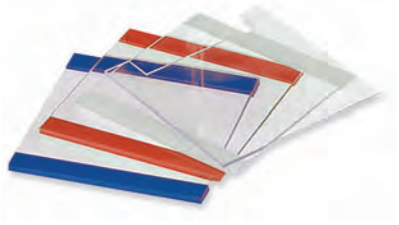
## PROclamp MAXI Glass Plates

| Type | Width (mm) | Length (mm) | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **Standard glass plates** | 200 | 200 | 4 | **5870.1** | 1 pair | 35,50 |
| **Notched glass plates** | 200 | 200 | 4 | **5871.1** | 1 pair | 72,05 |
| **Dummy plate** | 200 | 200 | 10 | **5875.1** | 1 plate | 26,50 |

## PROclamp MAXI Spacers

With labelled upper side

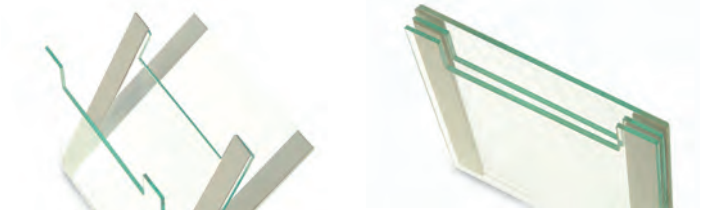
| Thickness (mm) | Width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,75 | 19 | 200 | **5908.1** | 1 pair | 26,05 |
| 1,0 | 19 | 200 | **5917.1** | 1 pair | 26,05 |
| 1,5 | 19 | 200 | **5921.1** | 1 pair | 26,05 |
| 2,0 | 19 | 200 | **5922.1** | 1 pair | 26,05 |



## PROclamp MAXI Standard Glass Plates

(200 x 200 mm) with fixed spacers

| Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,75 | **5877.1** | 1 pair | 60,10 |
| 1,0 | **5878.1** | 1 pair | 60,10 |
| 1,5 | **5893.1** | 1 pair | 60,10 |
| 2,0 | **5897.1** | 1 pair | 60,10 |



## PROclamp MAXI Notched Glass Plates

(200 x 200 mm) with fixed spacers, for pouring of double-gels

| Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 0,75 | **5904.1** | 1 pair | 93,55 |
| 1,0 | **5906.1** | 1 pair | 93,55 |
| 1,5 | **6011.1** | 1 pair | 95,70 |
| 2,0 | **6020.1** | 1 pair | 95,70 |

## PROclamp MAXI Combs

| | Max. sample volume per well | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1+1** | 5 | 10 | 18* | 24 | 30 | 36* | 48 |
| 0,75 mm | 1100 µl | 160 µl | 80 µl | 40 µl | 30 µl | 25 µl | 20 µl | 15 µl |
| 1,0 mm | 1500 µl | 200 µl | 100 µl | 50 µl | 40 µl | 35 µl | 25 µl | 20 µl |
| 1,5 mm | 2200 µl | 320 µl | 160 µl | 80 µl | 60 µl | 50 µl | 40 µl | 30 µl |
| 2,0 mm | 3000 µl | 400 µl | 200 µl | 100 µl | 80 µl | 70 µl | 50 µl | 40 µl |

*Compatibel with multi-channel pipettors

**Comb with especially broad wells + narrow marker well (for preparative gels)

| Wells | 1+1 | 5 | 10 | 18 | 24 | 30 | 36 | 48 |
|---|---|---|---|---|---|---|---|---|
| Thick-ness | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. | Art. No. |
| 0,75 mm | **5925.1** | **5928.1** | **5934.1** | **5936.1** | **5940.1** | **5941.1** | **5944.1** | **5947.1** |
| 1,0 mm | **5949.1** | **5952.1** | **5953.1** | **5955.1** | **5957.1** | **5959.1** | **5960.1** | **5961.1** |
| 1,5 mm | **5962.1** | **5964.1** | **5967.1** | **5968.1** | **5969.1** | **5970.1** | **5971.1** | **5972.1** |
| 2,0 mm | **5974.1** | **5977.1** | **5981.1** | **5983.1** | **5984.1** | **5999.1** | **6005.1** | **6007.1** |
| Pack Qty. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| € | 42,80 | 42,80 | 42,80 | 42,80 | 42,80 | 42,80 | 42,80 | 42,80 |

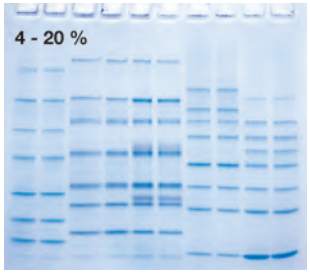
# The Classic Line -
# Compact Vertical Electrophoresis Chambers with Glass Plate Stops



- Double electrophoresis unit - **for running of up to 2 gels in parallel**
- High-grade quality and robust, made of acrylic glass
- With glass plate stops
- MINI: compatible with most 10 x 10 cm ready made gels (max. width 10,0 cm)
- Chemically bonded contact points
- Wide range of accessories
- Coolable versions with reliable water cooled system
- Version MINI for 10 x 10 cm gels, version MAXI for 20 x 20 cm gels, and 33 x 45 cm unit for sequencing gels

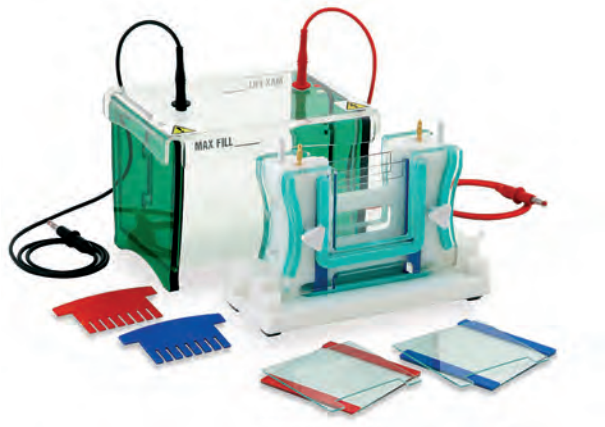
**Modular system**
Tanks are compatible with different electrophoresis modules, keeping costs and space to a minimum. The electrophoresis units are available as *standard* and as *coolable* device.

Different versions of MINI and MAXI vertical dual plate electrophoresis chambers are available.
The **full version** includes the buffer tank (*standard* or *coolable*), the running module for gel run and a gel casting module including glass plates and combs for immediate electrophoresis.



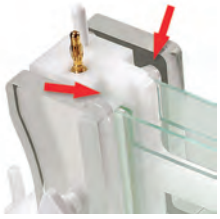



▶ Roti®-Page ready-made gels, compatible with Roth' vertical units, see page 1151




## MINI Vertical Dual Plate Electrophoresis Units

**Glass plates: 10 x 10 cm**
**Max. sample capacity per gel: 20**
**Buffer volume (upper/lower tank): 100 ml/300 ml**
**Unit dimensions (w x l x h): 20 x 15 x 14 cm**



With glass plate stops – for reliable pouring of gels and optimised results

- Double electrophoresis unit - **for running of up to 2 gels in parallel**
- High-grade quality and robust, made of acrylic glass
- With glass plate stops
- Compatible with most 10 x 10 cm to 8 x 10 cm ready made gels (max. width 10,0 cm)
- Chemically bonded contact points
- Wide range of accessories
- Coolable versions with reliable water cooled system

**Delivery incl.** 1 vertical electrophoresis chamber with buffer tank, lid and cables (4 mm plugs), 1 running module for simultaneous electrophoresis of two gels. The chamber is available as *standard* and as *coolable* device.
**Accessories included:**
2 glass plates, 2 separate spacer pairs (spacer thickness 1 mm), 2 notched glass plates, 1 dummy plate (for electrophoresis of one gel only), 2 combs (12 teeth, 1 mm thick).

**Y001.1 and Y002.1:** With additional gel casting module.

**Standard**, with buffer tank, running module, gel casting module and accessories

| Art. No. | Pack Qty | € |
|---|---|---|
| **Y001.1** | 1 unit | 912,70 |

**Coolable**, with buffer tank, running module, gel casting module and accessories

| Art. No. | Pack Qty | € |
|---|---|---|
| **Y002.1** | 1 unit | 1101,90 |

**Standard, without gel casting module**, with buffer tank, running module and accessories

| Art. No. | Pack Qty | € |
|---|---|---|
| **Y003.1** | 1 unit | 686,95 |

**Coolable, without gel casting module**, with buffer tank, running module and accessories

| Art. No. | Pack Qty | € |
|---|---|---|
| **Y004.1** | 1 unit | 912,70 |

## MINI Vertical Spare Parts

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **MINI Buffer tank without lid** | **Y005.1** | 1 tank | 256,95 |
| **Spare lid for MINI buffer tank** | **Y009.1** | 1 lid | 170,95 |
| **MINI Running module** | **Y007.1** | 1 module | 600,95 |
| **U-shaped fixing plate with seals for MINI running module** | **Y010.1** | 2 plates | 149,45 |
| **Seals for MINI running module** | **Y011.1** | 2 sets | 98,80 |
| **Spare screws for MINI running module** | **Y012.1** | 4 screws | 54,85 |
| **MINI Gel casting module** | **Y008.1** | 1 module | 267,70 |
| **Sealing pads for MINI gel casting module** | **Y013.1** | 1 set | 21,40 |
| **Platinum spare electrode ∅ 0.2 mm, 650 mm** | **T794.1** | 1 electr. | 127,95 |

## MINI Vertical Glass Plates

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **Standard glass plates (10 x 10 cm)** | **0513.1** | 2 plates | 35,30 |
| **Notched glass plates (10 x 10 cm)** | **0520.1** | 2 plates | 74,75 |
| **Dummy plate** | **0537.1** | 1 plate | 24,75 |

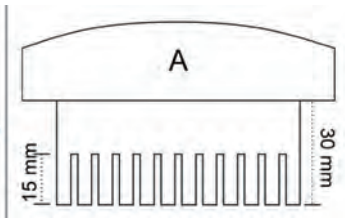
## MINI Vertical Spacers

| Thickness (mm) | Width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,75 | 12 | 100 | **N624.1** | 2 spacers | 27,85 |
| 1,0 | 12 | 100 | **N625.1** | 2 spacers | 27,85 |
| 1,5 | 12 | 100 | **N626.1** | 2 spacers | 27,85 |
| 2,0 | 12 | 100 | **N627.1** | 2 spacers | 27,85 |

## MINI Vertical Glass Plates with Fixed Spacers

| Thickness (mm) | Glass plate (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,75 | 100 x 100 | **0523.1** | 1 pair | 73,05 |
| 1,0 | 100 x 100 | **0530.1** | 1 pair | 73,05 |
| 1,5 | 100 x 100 | **0531.1** | 1 pair | 73,05 |
| 2,0 | 100 x 100 | **0536.1** | 1 pair | 73,05 |



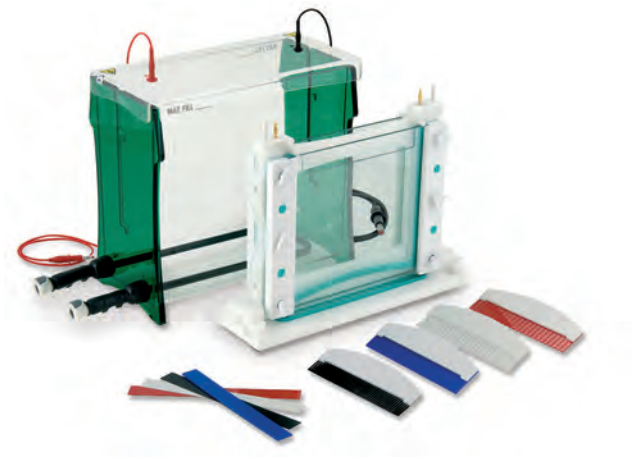



## MINI Vertical Combs

| No. of teeth | Broadth of teeth (mm) | Height of teeth(mm) |
|---|---|---|
| 8* | 5,5 | 15 |
| 10 | 4 | 15 |
| 12 | 4 | 15 |
| 16* | 2,5 | 15 |
| 20 | 2 | 15 |

*Compatibel with multi-channel pipettors

| Wells | 8 | 10 | 12 | 16 |
|---|---|---|---|---|
| Thickness | Art. No. | Art. No. | Art. No. | Art. No. |
| 0,75 mm | **0550.1** | **N638.1** | **N639.1** | **N640.1** |
| 1,0 mm | **0554.1** | **N643.1** | **N644.1** | **N645.1** |
| 1,5 mm | **0555.1** | **N648.1** | **N649.1** | **N650.1** |
| 2,0 mm | **0556.1** | **N653.1** | **N654.1** | - |
| Pack Qty. | 1 | 1 | 1 | 1 |
| € | 39,70 | 40,25 | 40,25 | 40,25 |



## MAXI Vertical Dual Plate Electrophoresis Units

**Glass plates: 20 x 20 cm**
**Max. sample capacity per gel: 48**
**Buffer volume (upper/lower tank): 650 ml/1000 ml**
**Unit dimensions (w x l x h): 28,5 x 15 x 27,5 cm**



With glass plate stops – for reliable pouring of gels and optimised results

- Double electrophoresis unit - **for running of up to 2 gels in parallel**
- High-grade quality and robust, made of acrylic glass
- With glass plate stops
- Chemically bonded contact points
- Wide range of accessories
- Coolable versions with reliable water cooled system

**Delivery incl.** 1 vertical electrophoresis chamber with buffer tank, lid and cables (4 mm plugs), 1 running module for simultaneous electrophoresis of two gels. The chamber is available as *standard* and as *coolable* device.
**Accessories included:** 2 glass plates, 2 separate spacer pairs (spacer thickness 1 mm), 2 notched glass plates, 1 dummy plate (for electrophoresis of one gel only), 2 combs (24 teeth, 1 mm thick).

**X950.1 and X951.1**: With additional gel casting module.

**Standard**, with buffer tank, running module, gel casting module and accessories.

| Art. No. | Pack Qty | € |
|---|---|---|
| **X950.1** | 1 unit | 1300,75 |

**Coolable**, with buffer tank, running module, gel casting module and accessories.

| Art. No. | Pack Qty | € |
|---|---|---|
| **X951.1** | 1 unit | 1574,90 |

**Standard, without gel casting module**, with buffer tank, accessories and running module

| Art. No. | Pack Qty | € |
|---|---|---|
| **X952.1** | 1 unit | 1100,80 |

**Coolable, without gel casting module**, with buffer tank, accessories and running module

| Art. No. | Pack Qty | € |
|---|---|---|
| **X953.1** | 1 unit | 1331,95 |

# Electrophoresis · Units

## MAXI Vertical Spare Parts

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **MAXI Buffer tank without lid** | **X954.1** | 1 tank | 456,90 |
| **MAXI Coolable buffer tank without lid** | **X955.1** | 1 tank | 870,75 |
| **Spare lid for MAXI buffer tank** | **X958.1** | 1 lid | 198,90 |
| **MAXI Running module** | **X956.1** | 1 module | 783,70 |
| **Seals for MAXI running module** | **X960.1** | 2 sets | 160,20 |
| **Spare screws for MAXI running module** | **X961.1** | 6 screws | 23,55 |
| **MAXI Gel casting module** | **X957.1** | 1 module | 310,70 |
| **Sealing pads for MAXI gel casting module** | **X963.1** | 1 set | 35,40 |
| **Platinum spare electrode ∅ 0.2 mm, 650 mm** | **T794.1** | 1 electr. | 127,95 |

## MAXI Vertical Glass Plates

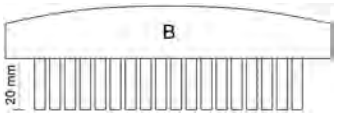
| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **Plain glass plates (20 x 20.5 cm)** | **0649.1** | 2 plates | 59,05 |
| **Notched glass plates (20 x 20.5 cm)** | **0650.1** | 2 plates | 88,70 |
| **Dummy plate** | **0651.1** | 1 plate | 62,90 |

## MAXI Vertical Spacers

| Thickness (mm) | Width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,75 | 20 | 200 | **N632.1** | 2 spacers | 27,85 |
| 1,0 | 20 | 200 | **N633.1** | 2 spacers | 31,95 |
| 1,5 | 20 | 200 | **N634.1** | 2 spacers | 31,95 |
| 2,0 | 20 | 200 | **N635.1** | 2 spacers | 31,95 |

## MAXI Vertikal Glass Plates with Fixed Spacers

| Thickness (mm) | Glass plate (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,75 | 200 x 205 | **0658.1** | 1 pair | 61,30 |
| 1,0 | 200 x 205 | **0659.1** | 1 pair | 61,30 |
| 1,5 | 200 x 205 | **0664.1** | 1 pair | 61,30 |



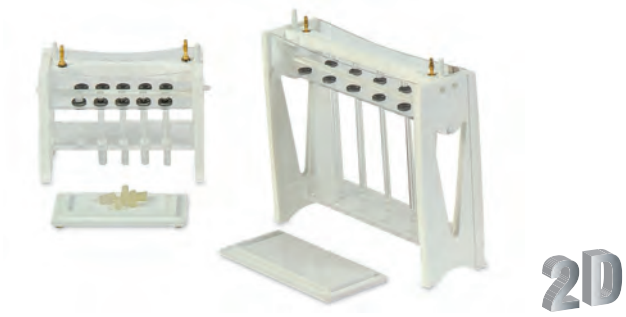

## MAXI Vertical Combs

| No. of teeth | Broadth of teeth (mm) | Height of teeth (mm) |
|---|---|---|
| 18* | 6,5 | 20 |
| 24 | 5 | 20 |
| 36* | 3 | 20 |
| 48 | 2,5 | 20 |

*Compatibel with multi-channel pipettors

| Wells | 18 | 24 | 36 | 48 |
|---|---|---|---|---|
| Thickness | Art. No. | Art. No. | Art. No. | Art. No. |
| 0,75 mm | **N673.1** | **N677.1** | **N679.1** | **N680.1** |
| 1,0 mm | **N683.1** | **N685.1** | **N687.1** | **N688.1** |
| 1,5 mm | **N691.1** | **N693.1** | **N695.1** | **N696.1** |
| Pack Qty. | 1 | 1 | 1 | 1 |
| € | 45,10 | 45,10 | 45,10 | 45,10 |

**Instructions for use**
can be found on the Internet next to the product description.




## Capillary Running Modules

**For Isoelectric Focussing (IEF) during 2D-gel electrophoresis and for preparative capillary protein gels**

**Capillary length: max. 8 or 17 cm, resp.**
**Max. sample capacity per gel: 10**

- Versatile - for 1 to 10 capillary gels in parallel
- Applicable for capillaries of 1 mm and 4 mm internal diameter
- Protected and highly resistant platinum electrodes
- Easy handling and reliable, distinct separation

Moduls for Vertical Double Electrophoresis Units of the classical line. Easy-to-use, modular system compatible with the vertical electrophoresis systems MINI (Art. No. Y001-Y004) and MAXI (Art. No. X950-X953).
**Delivery incl.** capillary running module. Please order glass capillaries, blanking ports, and gel extraction platform separately.

**MINI Capillary Running Module, capillary length max. 8 cm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2811.1** | 1 | 600,95 |

**MAXI Capillary Running Module, capillary length max. 17 cm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2816.1** | 1 | 934,20 |

## Blanking Ports

Made of silicone, suitable for MINI and MAXI Capillary Running Modules.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2815.1** | 10 | 37,00 |

## Glass Capillaries for Electrophoresis

Glass capillaries for capillary protein electrophoresis.

| Type | Length (cm) | Inner ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| MINI | 8 | 1 | **2812.1** | 10 | 93,45 |
| MAXI | 17 | 1 | **2817.1** | 10 | 101,50 |

## Gel Extraction Platforms

Preformed platforms for safe and easy collection, cutting, and transfer of fragile capillary gels. Please order blanking ports separately.

| Type | For gels of | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| MINI | max. 8 cm | **2814.1** | 1 | 51,20 |
| MAXI | max. 17 cm | **2819.1** | 1 | 81,20 |

Recommended Combination for 2D-Gel Electrophoresis:

| Unit | MINI (Art. No.) | MAXI (Art. No.) |
|---|---|---|
| Vertical electrophoresis unit | Y001.1 | X950.1 |
| Capillary running module | 2811.1 | 2816.1 |
| Blanking ports | 2815.1 | 2815.1 |
| Glass capillaries | 2812.1 | 2817.1 |
| Gel extraction platform | 2814.1 | 2819.1 |
| Power Supply EV3150 | A542.1 | A542.1 |
| 1 pair of spacers, 1.5 mm thick (2. dimension) | 3579.1 | 5921.1 |
| 1+1 comb, 1.5 mm thick (2. dimension) | 3642.1 | 5962.1 |



## Sequencing Electrophoresis Unit

**Glass plates (w x l): 33 x 45 cm**
**Max. sample capacity per gel: 96**
**Buffer volume (upper/lower tank): 500 ml/500 ml**
**Unit dimensions (w x l x h): 50 x 21,5 x 63 cm**

- Robust construction made of acrylic glass
- Safety cover with integral connectors
- User-replaceable electrodes made of pure platinum
- Removable lower buffer tank for easy cleaning
- Optional thermostatic fan kit
- Accessories may be bought separately
- Heavy duty aluminium back plate helps disperse heat evenly
- CE certified
- For SSCP-gels, DDRT-PCR analyses, and extra long protein gels

**Delivery incl.** chamber with safety lid and integral power leads (2 mm plugs), one set of glass plates (1x plain, 1x notched) one pair of spacers (0,35 mm), one sharktooth comb (0,35 mm, 48 teeth).

| Art. No. | Pack Qty | € |
|---|---|---|
| **AE28.1** | 1 | 1672,70 |

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **Cooling and heating kit** | **N705.1** | 1 kit | 1198,65 |

## Glass Plates

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **Notched glass plate (33 x 45 cm)** | **N706.1** | 2 plates | 183,85 |
| **Plain glass plate (33 x 45 cm)** | **N707.1** | 2 plates | 103,40 |

## Spacers

| Thickness (mm) | Width (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0,25 | 20 | 450 | **N708.1** | 2 spacers | 42,90 |
| 0,35 | 20 | 450 | **N709.1** | 2 spacers | 42,90 |
| 1,0 | 20 | 450 | **N710.1** | 2 spacers | 42,90 |
| 1,5 | 20 | 450 | **AE39.1** | 2 spacers | 42,90 |

## Combs

| Wells | 48 | 80 |
|---|---|---|
| Thickness | Art. No. | Art. No. |
| 1,0 mm | **AE31.1** | **AE35.1** |
| 1,5 mm | **AE32.1** | **AE36.1** |
| Pack Qty. | 1 | 1 |
| € | 61,50 | 61,50 |

## Sharktooth Combs

| Wells | 48 | 96 |
|---|---|---|
| Thickness | Art. No. | Art. No. |
| 0,25 mm | **N719.1** | **N721.1** |
| 0,35 mm | **N722.1** | **N724.1** |
| Pack Qty. | 1 | 1 |
| € | 61,50 | 61,50 |

# Power Supplies




**CONSORT**
**Well-known Power Supplies in new outfit**

## Power Supply Series EV

**Low cost power supplies for all applications**

The upgraded Consort series with new design - powerful, easy to operate and low priced.

- Small and compact devices
- On screen help in 4 languages for application and for solving errors
- Automatic cross-over to show which of the 3 parameters (V, mA, W) is kept constant during the run
- Automatic recovery after power failure
- Connection of up to 4 units possible (4 mm sockets)
- Password protection
- High safety standard
- 3 years warranty

Further properties of the devices (except EV0220):

- Storing of up to 9 methods possible
- Setting of a voltage gradient (Voltage Ramp Mode)
- Timer Mode
- Data logging of electrophoresis runs (of about 100 hours)
- Firmware updates via USB interface possible
- Remote control by PC possible

**Technical specifications:**
**Units in the small and medium performance range**

| Model | EV0220 | EV1450 | EV2310 | EV2650 | EV2230 | EV2320 |
|---|---|---|---|---|---|---|
| Formerly known as | - | EV245 | EV231 | EV265 | - | - |
| Voltage (V) (±2 % max. V) | 0-200 | 0-400 | 0-300 | 0-600 | 0-1500 | 0-3000 |
| Max. intensity of current | 200 mA | 500 mA | 1000 mA | 500 mA | 300 mA | 150 mA |
| Max. output | 20 W | 50 W | 150 W | 150 W | 150 W | 150 W |
| Timer | no | 0-99,59 h | | | | |
| Volt-hours | no | 0-99,99 kVh | | | | |
| Display | grafical | | | | | |
| Resolution | 1 V / 1 mA / 1 W | | | | | |
| Programs | simple mode | 9 x 9 parameter settings | | | | |
| Outlets (parallel socket pairs) | 4 (4 mm) | | | | | |
| Min. load resistor | 30 Ω | 30 Ω | 10 Ω | 30 Ω | 300 Ω | 600 Ω |
| Leak recognition | yes | | | | | |
| Ambient temp. | 0-40 °C | | | | | |
| Dimensions (cm) | 24 x 20 x 13 cm | | | | | |
| Weight | 3 kg | | 6 kg | | | |
| Current | 210-250 V, 50/60 Hz, 75 W | | 210-250 V, 50/60 Hz, 200 W | | | |

▶ Ready-to-use gel solutions for sequencing gels see page 1155

# Electrophoresis · Power Supplies

**Units in the high performance range**

| Model | EV3020 | EV3610 | EV3150 | EV3330 | EV3620 |
|---|---|---|---|---|---|
| Formerly known as | EV202 | EV261 | EV215 | EV233 | - |
| Voltage (V) (±2 % max. V) | 0-300 | 0-600 | 0-1200 | 0-3000 | 0-6000 |
| Max. intensity of current | 2000 mA | 1000 mA | 500 mA | 300 mA | 150 mA |
| Max. output | 300 W | 300 W | 300 W | 300 W | 300 W |
| Timer | 0-99,59 h | | | | |
| Volt-hours | 0-99,99 kVh | | | | |
| Display | LCD, 2 x 16 characters | | | | |
| Resolution | 1 V / 1 mA / 1 W | | | | |
| Programs | 9 x 9 parameter settings | | | | |
| Outlets (parallel socket pairs) | 4 (4 mm) | | | | |
| Min. load resistor | 5 Ω | 15 Ω | 70 Ω | 600 Ω | 1200 Ω |
| Leak recognition | yes | | | | |
| Ambient temp. | 0-40 °C | | | | |
| Dimensions (cm) | 31 x 26 x 13 cm | | | | |
| Weight | 10 kg | | | | |
| Current | 210-250 V, 50/60 Hz, 360 W | | | | |

**Power Supply EV0220**
Small basically power supply for horizontal and vertical mini gels, suitable for teaching purposes.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-200 | 0-200 | 0-20 | **1289.1** | 1 | 493,45 |

**Power Supply EV1450** (formerly EV245)
Suitable for horizontal and vertical mini gels, MINI-blots and for electro-elution.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-400 | max. 500 | max. 50 | **CP56.1** | 1 | 525,70 |

**Power Supply EV2310** (formerly EV231)
Suitable for horizontal and vertical gels, for blotting and for mini gel applications.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-300 | 0-1000 | 0-150 | **A545.1** | 1 | 686,95 |

**Power Supply EV2650** (formerly EV265)
Suitable for horizontal and vertical gels and for electro-elution. Particularly suited for electrophoresis with multiple units.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-600 | 0-500 | 0-150 | **A544.1** | 1 | 686,95 |

**Power Supply EV2230**
Suitable for horizontal and vertical gels and for electroelution.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-1500 | 0-300 | 0-150 | **1294.1** | 1 | 983,65 |

**Power Supply EV2320**
Suitable for electroelution, for horizontal and vertical gels, optimal for runs at high speed.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-3000 | 0-150 | 0-150 | **1298.1** | 1 | 1048,15 |

**Power Supply EV3020** (formerly EV202)
Suitable for tank and semi-dry blotting.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-300 | 0-2000 | 0-300 | **A543.1** | 1 | 966,45 |

**Power Supply EV3610** (formerly EV261)
Versatile Power Supply, suitable for horizontal and vertical gels, for electro-elution, for minigel-blotting and for Comet Assays.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-600 | 0-1000 | 0-300 | **2804.1** | 1 | 966,45 |

**Power Supply EV3150** (formerly EV215)
Optimal for isoelectric focussing and DNA-sequencing.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-1200 | 0-500 | 0-300 | **A542.1** | 1 | 934,20 |

**Power Supply EV3330** (formerly EV233)
Optimal for DNA-sequencing and IEF using flat bed units.
With 4 mm male connectors. Delivery includes 2 adapter pairs: 4 mm plug / 4 mm socket (undeep); 4 mm plug / 2 mm socket.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-3000 | 0-300 | 0-300 | **A541.1** | 1 | 1471,70 |

**Power Supply EV3620**
For isoelectric focusing and for DNA sequencing.
Optimal for long vertical gels.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 0-6000 | 0-150 | 0-300 | **1300.1** | 1 | 1593,15 |

**Recommendation of suitable Power Supplies**

| Unit | for 1-2 Units | for 3-4 Units |
|---|---|---|
| **MINIeasy** | Roth-MINI, EV0220, EV1450 | Roth-MINI, EV1450, EV2310 |
| **PROfessional I** | | |
| **MINI** | | |
| **PROfessional II** | Roth-STANDARD, EV1450, EV2310 | Roth-STANDARD, EV2310, EV2650 |
| **MIDI 1** | | |
| **PROfessional III** | Roth-STANDARD, EV2310, EV2650 | Roth-BLOT, EV2650, EV2230 |
| **MIDI PLUS** | | |
| **PROfessional IV** | EV2650, EV3610 | Roth-BLOT, EV2650, EV3610 |
| **MIDI 2** | | |
| **PROfessional V** | | Roth-BLOT, EV3610 |
| **MAXI** | | |
| **VARIA 1** | | Roth-BLOT, EV2650, EV3610 |
| **PROfessional Acetat** | Roth-STANDARD, EV2310 | Roth-STANDARD, EV2650, EV2230 |
| **MULTI** | EV3150 | EV3330 |
| **PROclamp MINI** | Roth-STANDARD, EV0220, EV1450, EV2310 | Roth-STANDARD, EV2310, EV2650 |
| **PROclamp MINI Wide** | | |
| **MINI vertikal** | | |
| **PROclamp MAXI** | Roth-BLOT, EV2310, EV3610 | Roth-BLOT, EV2650, EV3150 |
| **MAXI vertikal** | | |
| **Sequencing** | EV3330, EV3620 | EV3330, EV3620 |
| **IEF** | EV3150, EV3330 | EV3150, EV3330 |
| **MINI-Blotting** | Roth-MINI, EV1450, EV2310 | EV2310, EV3610 |
| **MAXI-Blotting** | Roth-BLOT, EV2310, EV3610 | Roth-BLOT, EV3610, EV3020 |
| **Electroelution** | Roth-MINI, EV1450, EV3610, EV2230, EV2320 | Roth-STANDARD, EV2650, EV3610, EV3150 |
| **COMPAC-50 Comet Assay** | Roth-MINI, EV1450, EV3610, EV2230, EV2320 | Roth-STANDARD, EV2650, EV3610, EV3150 |

When connecting several units, a higher voltage must be applied in order to attain the same intensity of current and output and, subsequently, the same separating capacity.




## Roth Power Supplies

**The Roth series - upgraded version and new design**

Three units for all applications in electrophoresis:
Roth MINI, STANDARD and BLOT.

- Compact and easy to operate
- Constant parameters
- Timer with alarm function
- Comply to all relevant safety standards
- 1 year warranty

Models Power Pro (Roth STANDARD and BLOT):
- Up to 30 individual protocols with 1-6 steps savable
- Pre-programmed options for special applications
- Connection with up to 5 units possible

**Technical specifications:**

| Type | ① MINI | ② STANDARD | ② BLOT |
|---|---|---|---|
| Model | nanoPAC-300P | PowerPro300 | PowerPro3AMP |
| Voltage (V) | 10-300 | 5-300 | 5-300 |
| Max. intensity of current | 1-400 mA | 1-700 mA | 10-3000 mA |
| Max. output | 60 W | 150 W | 300 W |
| Timer | 1-999 mins | 1-999 mins | 1-999 mins |
| Volt-hours | 49.995 kVh | | |
| Display | LED display | 2,4″ TFT | 2,4″ TFT |
| Resolution | 1 V, 1 mA | 1 V, 1 mA | 1 V, 10 mA, 1 W |
| Type of output V/mA/W | Constant V or mA with automatic crossover | | |
| | - | During constant mode not adjusted parameters are automatically set to maximum | |
| Programs | Manually adjustable (Constant Mode) | | |
| | 2-step program, editable | 30 programs, each with up to 6 steps editable (Program Mode) | |
| | 2-step program, pre-assigned | Pre-assigned programs for different applications (Typical running condition Mode) | |
| Outlets (parallel socket pairs) | 2 (4 mm) | 5 (4 mm) | 5 (4 mm) |
| Min. load resistor | 5 Ω | 3 Ω | 0.1 Ω |
| Safety detections | No load<br>Over load<br>Over temperature | No load<br>Over load<br>Leakage | No load<br>Over load<br>Leakage |
| Protection | - | Over temperature | Over temperature |
| Automatic recovery after power failure | - | Yes | Yes |
| IQ/OQ protocols | - | Yes, optional | Yes, optional |
| Ambient temp. | 4-40 °C | 4-40 °C | 4-40 °C |
| Regulatory | CE, ETL, FCC | CE, ETL | CE |
| Dimensions (cm) | 14 x 19,1 x 8,4 | 21,5 x 33,5 x 10,4 | 21,5 x 33,5 x 10,4 |
| Weight | 1,0 kg | 2,1 kg | 2,1 kg |
| Rated voltages | 100-240 V, 50-60 Hz, 2,5 A | 100-240 V, 47-60 Hz, 200 W | 100-240 V, 47-60 Hz, 410 W |

**Roth Power Supply MINI**

For horizontal mini gels, rapid analyses of nucleic acids and for students courses.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| max. 300 | max. 400 | max. 60 | **2907.1** | 1 | 521,40 |

**Roth Power Supply STANDARD**

For standard applications, all middle sized horizontal gels (routine gels) and for vertical mini gels. Suitable for cold-room operation.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| max. 300 | max. 700 | max. 150 | **2908.1** | 1 | 676,20 |

**Roth Power Supply BLOT**

For large dimension horizontal gels, vertical maxi gels (e.g. 20 x 20 cm) and blotting. For high flexibility in application. Suitable for cold-room operation.

| Voltage (V) | Intensity of current (mA) | Output (W) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| max. 300 | max. 3000 | max. 300 | **2909.1** | 1 | 1236,25 |

# Accessories




## Electrophoresis Cables

Suitable for up to 1000 volt. Cable length 1 m.

| Image | Model | ∅ socket (mm) | ∅ plug (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|---|---|
| ① | Classic Line | 4 | 4 | **N843.1** | 1 | 85,50 |
| ② | Rotiphorese® PROfessional | 4 | 4 | **6848.1** | 1 | 52,85 |



## Semi Dry Blotter Cables

Suitable for up to 1000 volt. Cable length 1 m. Narrow socket sheaths.

| ∅ socket (mm) | ∅ plug (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 4 | 4 | **6072.1** | 1 | 57,85 |




## Adapters

By using the appropriate pair of adapters, electrophoresis cables may fit to any customary power supply.

| ∅ socket (mm) | ∅ plug (mm) | Art. No. | Pack Qty. (pair) | € |
|---|---|---|---|---|
| 2 | 4 | **T843.1** | 1 | 16,85 |
| 4 | 2 | **K294.1** | 1 | 8,10 |
| 4 | 4 | **K295.1** | 1 | 5,95 |

## Silicone Sealing Hose

for horizontal gel casting trays (Art. No. N575.1 and N595.1), ∅ 4 mm, ~1 m.

| Art. No. | Pack Qty | € |
|---|---|---|
| **T811.1** | 1 pieces | 21,00 |

## Platinum Spare Electrode

for vertical and horizontal electrophoresis units, ∅ 0,2 mm

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T794.1** | 1 electr. (650 mm) | 127,95 |
| **1428.1** | 1 electr. (500 mm) NEW | 98,40 |



TIP

## Roti®-PAGE buffer dam

Special buffer dams made for running of a single Roti®-PAGE gel in **PROTEAN®** units made by BioRad®.
The Roti®-PAGE PROTEAN® buffer dams are somewhat longer than the original buffer dams from BIORAD®, providing the full height needed for building the inner buffer reservoir for runs of single 9x10 cm Roti®-PAGE gels.

Suitable for BioRad® Mini PROTEAN® I, II, III, Tetra, and Ready Gel® Cell.
Size (w x h x t): 10.1 x 9.3 x 0.4 cm

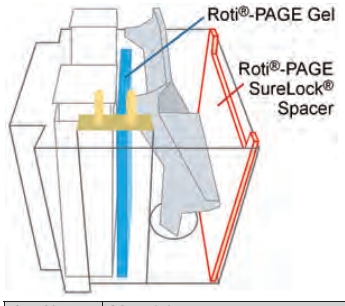
| Art. No. | Material | Pack Qty. | € |
|---|---|---|---|
| **4715.1** | Acrylic glass | 1 | 24,20 |



TIP

## Roti®-PAGE-Spacer

Spacer for insertion into **Novex® XCell SureLock®** Mini-Cell units made by Invitrogen™.
This spacer compensates the slightly less thick Roti®-PAGE gels, enabling the simultaneous run of two Roti®-PAGE gels in Novex units. When running two Roti®-PAGE gels, the SureLock® Spacer is simply inserted into the tank (see figure).
Size: Width 10 cm, thickness 0.2 cm, height 9 cm (notch) and 10 cm (full heigth).




| Art. No. | Material | Pack Qty. | € |
|---|---|---|---|
| **4731.1** | Acrylic glass | 1 | 19,90 |



## Glass Plate Racks

ROTH MINI and MAXI glass plate racks for safe drying and storage of glass plates for vertical gel electrophoresis. Black acrylic glass.

| Type | Dimensions L x W x H (cm) | for max. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Mini** | 27 x 8 x 9 | 20 glass plates (up to 2 mm thick) | **N860.1** | 1 | 57,85 |
| **Maxi** | 17 x 17 x 17 | 10 glass plates (up to 5 mm thick) | **N861.1** | 1 | 85,95 |



## MINI and MIDI Gradient Mixer

For preparing polyacrylic amide gel gradients or centrifugation gradients (sucrose or caesium chloride gradients).

The mixers are manufactured from one acrylic block. They consist of two chambers, a storage area and a mixing chamber with a connecting valve. A second valve regulates the discharge from the chamber. A magnetic follower placed into the mixing chamber enables a steady and constant gradient to be produced with the magnetic stirrer. The mixers have a flat bottom and come with a rod on the back which can be attached to a holder. Connection for 4 mm FEP- tubes.

| Type | Total filling volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| MINI | 30 | **N857.1** | 1 | 543,95 |
| MIDI | 100 | **N858.1** | 1 | 628,90 |

▶ Tube Pump Sci-Q 323 for gradient mixers see page 353
▶ Rotilabo®-FEP-hoses see page 371

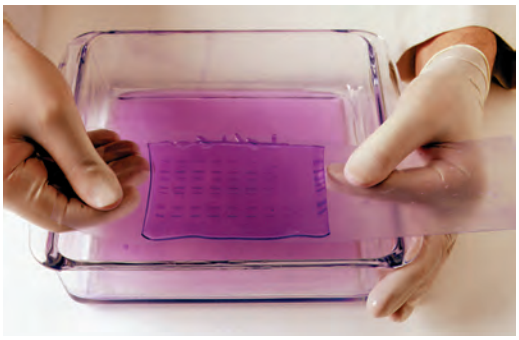


## Levelling Table

ROTH levelling tables enable casting of horizontal gels of equal thickness, featuring easy-to-turn rotating feet on the corners. Tables also have an air bubble in the centre for precise horizontal alignment.

Table surface: 20 x 30 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N854.1** | 1 | 213,95 |



## Gel Handler®

**Flexible UV transparent sheets for supporting, manipulating and photographing gels**

Made of polyolefin material. Gel Handler® sheets are slid under gels in solution for easy lifting and moving.

**Properties:**

- **Cuttable** - may be cut with scissors into convenient pieces
- **Chemically inert** - autoclaving and washing with diluted acids and bases is possible
- **UV-transparent** - higher transparency than UV-transparent acrylic material
- **Very flexible** - slide easily under the gel and eliminate air bubbles when placed on a transilluminator
- **Resistant** - the surface of the transilluminator is protected from scratching when excising segments of a gel with a razor or spatula

**Technical specifications:**

| Optical density 3896.1 | |
|---|---|
| 254 nm emission wave length | 0.14 OD |
| 300 nm emission wave length | 0.04 OD |

| Dimensions L x W (cm) | Thickness (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 21 x 28 | 0,13 | **3896.1** | 10 | 67,40 |
| 21 x 28 | 0,26 | **3897.1** | 5 | 67,40 |



## Gel Multi Caster

Multiple gel casting system, tailored for use with Rotiphorese® PROclamp vertical electrophoresis units (10 x 10 cm gel glass plates). The number or the thickness of gels being poured is variable. After pouring the glass plates can be easily separated by the included separation sheets. With level bubble for optimal levelling of gels.

**Delivery incl.** gel casting chamber, 1 bottom silicone gasket for top filling, 1 level bubble, 1 clip, 12 separation sheets, 9 spacer plates with different diameters: 1 x 12 mm, 5 x 5 mm, 3 x 3 mm

| Type | for max. gels | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Multi Caster 12 x** | 12 | **3118.1** | 1 | 607,40 |



## Gel Scoops

ROTH gel scoops enable easy transport of gels in staining solutions or to a transilluminator. Even low concentrated agarose gels are protected against breaking.

ROTH gel scoops are UV-transparent.

| Type | Overall length (mm) | Scoop width (mm) | Length of scooping surface (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **MINI** | 235 | 60 | 82 | **N850.1** | 1 | 68,80 |
| **MIDI 2** | 430 | 200 | 250 | **N852.1** | 1 | 85,90 |
| **MAXI** | 520 | 250 | 330 | **N853.1** | 1 | 98,40 |



121 °C

Wiederverwendbar
Reusable

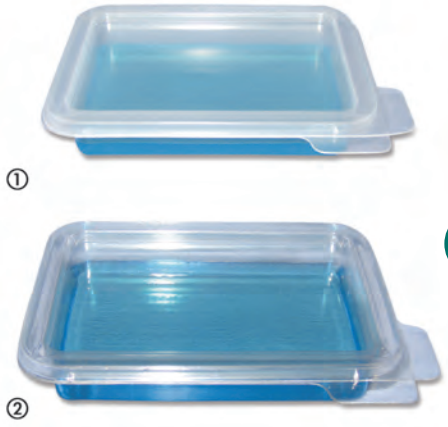
## Blot incubation trays

**Compatible with Western- and Southern blotting methods**

Developed for incubation of filter membranes during signal detection after Western- and Southern blotting. The incubation trays can safely be stacked, and, due to the tightly sealing lids, evaporation of solution is prevented even during long incubation periods. The size, adapted to typical membrane sheets, reduces the amount of buffer needed during incubation. In case of version MINI, the 5 trays may be used separately as well as in uniform. Stabile, autoclavable, and reusable.

Made from polypropylene.

| Model | Material | Dimensions W x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **MINI** | PP | 16 x 115 | **4810.1** | 5 | 56,55 |
| **MIDI** | PP | 90 x 90 | **4811.1** | 5 | 83,75 |
| **MAXI** | PP | 165 x 165 | **4812.1** | 5 | 182,75 |



① ②

Wiederverwendbar
Reusable

## Gel Staining Trays

**Compatible with all standard staining methods**

- tightly-sealing, recessed lids
- can be stacked safely and without slipping on the shaker

The staining trays, available in two sizes, are a practical and cheap alternative to plastic household bowls. The asymmetric array of the marking on the edges and drainage outlets on all corners guarantee easy handling and simple orientation of gel.

① The **PP** (polypropylene) trays are heat-resistant, **microwave-proof** and excellent for staining protein/peptide gels.

② The **PETG** (polyethyleneterephtalate) trays have a clear, **UV-permeable bottom** for fluorescence staining of agarose gels (wave length ≥330 nm).

| Type | Material | Inner-Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **MIDI** | PP | 143 x 100 x 25 | **CP58.1** | 20 | 116,10 |
| **MINI** | PETG | 113 x 75 x 25 | **CP59.1** | 20 | 85,95 |
| **MIDI** | PETG | 143 x 100 x 25 | **CP60.1** | 20 | 116,10 |



❄❄

## Staining chamber

By Nalgene®. Made of **PMP** for staining, fixing, and bleaching membranes, electrophoresis gels etc. With lid made of **PP**-copolymer and leakproof drain plug made of **LDPE** for problem-free draining of liquid without gel manipulation. Chamber with handles on both side for easy transport. Capacity with gel under shaking conditions: 500 to 750 ml. Temperature stable from -70 to +70 °C.

**Not UV-transparent.**

| L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 125 x 125 x 50 | **H591.1** | 1 | 33,00 |




## FlowMesh™

Permeable support mesh for gels and filter membranes. Sturdy, versatile, and convenient. Re-usable and easily cut to size.

FlowMesh™ max be used for the following applications (e.g.):

**Gel support** - Place FlowMesh™ above or below a gel to protect from tearing, bending, or folding. May be used during gel staining, destaining, probing, equilibration etc.

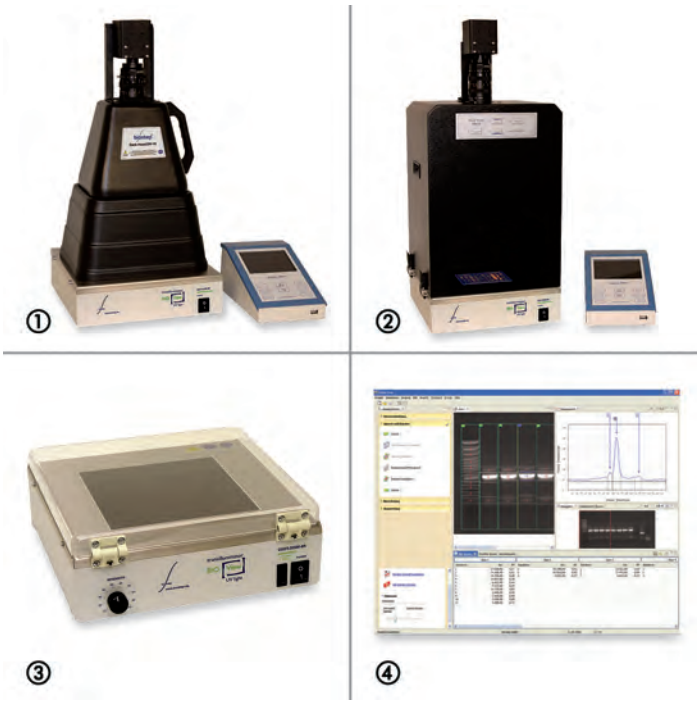
**Spacing** - Use FlowMesh™ as permeable spacer for separation of gels and membranes during stacking.

**Membrane stabilisation** - Use on one or both sides of membranes during storage or hybridisation, while keeping the membrane fully accessible for blocking, probing and washing.

FlowMesh™ is made of polypropylene mesh approximately 0,3 mm thick with 1 mm strand spacings and approx. 70 % void volume. Between two flat sheets separated by FlowMesh™ is 2,7 ml/100 cm² void volume. Size: 27,8 cm x 21,7 cm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2796.1** | 20 | 71,50 |

# Gel Documentation




## Gel documentation systems

By Biostep. PC-independent imaging systems e.g. for acquisition of DNA/RNA bands in agarose gels or protein bands in polyacrylamide gels. Standard version with ethidium bromide filter.

**CCD-Camera** model B8-437G
- Resolution 752 x 582 pixel
- Manual zoom objective 8 - 48 mm
- Camera control via external operation terminal 5,6″ LCD display, keypad and USB-connection
- Functions: Live image mode for easy positioning of gels, setting of exposure time (manual or automatic), image inverting, recognition of image manipulation (GLP), staring image settings and storage data onto a USB-stick

① **Typ Gerix 1005**
Attachable dark hood for use in combination with a transilluminator with UV-protection shield.

② **Typ Gerix 1020**
Stationary dark hood with white top light and sliding door. Integrated UV protective shield can be pushed up for gel positioning. Attachable to transilluminator with 4 clamps. Transilluminator will automatically switch off in the case of overheating.

**Delivery incl.** dark hood, CCD-camera and operation terminal. Please order transilluminator, thermal printer and evaluation software separately.

| Type | Dimensions W x D x H (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| ① **Gerix 1005** | 30 x 25 x 59 | **LL53.1** | 1 | 4025,90 |
| ② **Gerix 1020** | 32,5 x 32 x 67 | **LL54.1** | 1 | 4708,50 |

## Accessories for gel documentations systems

By Biostep.
③ **Transilluminators**
- Homogenous illumination
- Temperature-controlled ventilation (except K-model)
- Filter lid made of stainless steel
- Dimensions W 32,5 x D 32,2 x H 10,5 cm
- Filter size 20 x 20 cm

Please order UV-protection and blue light filter shield separately.

| Type | Wave-length (nm) | Tubes | Intensity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **UST-20M-8K** | 312 | 6 x 8 W | - | **LL55.1** | 1 | 822,40 |
| **UST-20M-8E** | 312 | 8 x 8 W | 50-100 % | **LL56.1** | 1 | 1073,95 |
| **UST-20M-8R** | 312 | 8 x 8 W | 10-100 % | **LL57.1** | 1 | 1284,65 |
| **USDT-20SM-8K** | 254/312 | 2 x (4 x 8) W | - | **LL58.1** | 1 | 1127,70 |
| **USDT-20SM-8R** | 254/312 | 2 x (4 x 8) W | 10-100 % | **LL59.1** | 1 | 1342,70 |
| **USDT-20ML-8K** | 312/365 | 2 x (4 x 8) W | - | **LL60.1** | 1 | 1127,70 |
| **USDT-20ML-8R** | 312/365 | 2 x (4 x 8) W | 10-100 % | **LL61.1** | 1 | 1342,70 |
| **BST-20G-D2R** | 470 | LED-matrix 224 | 10-100 % | **LL62.1** | 1 | 1235,20 |

## Accessories for gel documentations systems

By Biostep.
**UV-tubes**
- 8 watt
- Dimensions: L 300 x Ø 12 mm

| Wavelength (nm) | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **254** | **LL70.1** | 1 | 22,60 |
| **312** | **LL71.1** | 1 | 34,40 |
| **365** | **LL72.1** | 1 | 26,90 |

## Accessories for gel documentations systems

By Biostep.
**Protection/filter shields for transilluminators**
- Dimensions: W 32,5 x D 32,2 x H 2,5 cm
- 4 sides blocking edges

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **UV-protection shield** | **LY13.1** | 1 | 78,30 |
| **Filter shield for blue light** | **LL65.1** | 1 | 84,75 |

## Accessories for gel documentations systems

By Biostep.
④ **Analysis software Gelix One® 210, single license**
- Imports bmp, png, tif, jpg images
- Reduces background noise
- Manual band detection and processing
- Molecular weight determination
- Manual standard allocation
- Exports data table
- Reporting and printing function
- For operating systems: Win XP, Win 7

| Art. No. | Pack Qty. | € |
|---|---|---|
| **LL67.1** | 1 | 507,40 |

## Accessories for gel documentations systems

By Biostep.
**Thermal printer Mitsubishi P93E**
- Thermosensitive print technology, 256 shades of grey
- Resolution 325 dpi
- Printing speed approx. 3 s/printout
- Standard paper: Thermal paper roll K61B, width 110 mm, approx. length 21 m
- High density paper: Thermal paper roll K65HM, width 110 mm, approx. length 21 m

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **Printer** | **LL68.1** | 1 | 966,45 |
| **Paper K61B** | **LL69.1** | 4 | 38,70 |
| **Paper K65HM** | **LL66.1** | 4 | 85,50 |

▶ Other Transilluminators see page 771



NEW

## Rotiphorese® runDOC gel documentation system

By Cleaver Scientific. Gel documentation system for the Professional runVIEW real-time electrophoresis system.
It consists of
- Darkroom hood
- Digital camera (12.1 MP)
- One filter for green and one for red fluorescence

The darkroom hood fits exactly to the runVIEW gel unit. After excitation by the blue light illuminator of the runVIEW base station the fluorescent gel bands are made visible by the filter slide integrated in the darkroom hood. Subsequently, they can be documented by the integrated camera.

**Technical data camera:**

| | |
|---|---|
| Typ | 5x optical /4x digital zoom |
| | DIGIC-5 processor |
| Effective pixels | 12.1 MP |
| Image resolution | 640 x 480 up to 400 x 3000 |
| Sensor | 1/1.7" type high sensitivity CMOS |
| File format | RAW, JEPG |
| Computer interface | USB 2.0 Hi-speed (Mini-B-jack) |
| Video out | NTSC / PAL |

**Technical data lens:**

| | |
|---|---|
| Focal length | 6.1-30.5 mm |
| Aperture | f/1.8(W)-f/2.9(T) |
| Shutter speed | 15-1/4000s |

**Technical data filters**:

| Filter type | Colour filter | Use |
|---|---|---|
| Green filter | yellow | EvaGreen, Roti®-Load DNAstain, green fluorescence |
| Red filter | orange | Roti®Gelstain Red, Ethidiumbromid, red fluorescence |

**Delivery incl.** darkroom hood with integrated camera (12.1 MP), green filter for blue light, red filter for blue light.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1315.1** | 1 | 2147,85 |



NEW

## Rotiphorese® PROfessional runVIEW darkroom hood

By Cleaver Scientific.
The runVIEW darkroom hood is a portable, lightweight hood designed exclusively for use with the runVIEW system. It aids viewing the samples in bright lit areas during the run and has no further functions. For complete gel documentation please order the runDOC system (Art. No. 1315.1).

The hood is placed directly over the runVIEW unit, which includes an integrated power supply and a blue light illuminator. The illuminator provides the excitation source for the DNA and the special lid of the unit makes the gel bands visible.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **1348.1** | 1 piece | 220,40 |

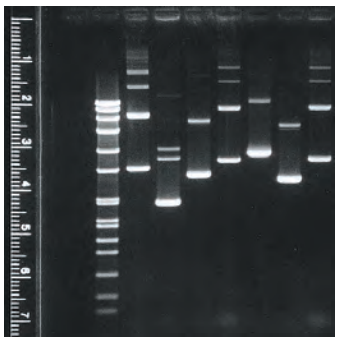


## Rotiphorese® runDOC gel documentation system accessories

By Cleaver Scientific.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **runDOC Green filter for blue light** | **1361.1** | 1 | 117,20 |
| **runDOC Red filter für for blue light** | **1349.1** | 1 | 117,20 |
| **Mains charger cable (optional) for runDOC camera** | **1392.1** | 1 | 55,90 |

▶ **Rotiphorese® Unit PROfessional run VIEW**
for real-time electrophoresis under blue light see page 1190



TIP

## Fluorescent Rulers

For documentation of DNA fragments in agarose gels. Rulers fluoresce within the same range as EtBr-DNA complexes, are clearly visible on both types of transilluminators (300 nm and 350 nm) and are therefore an excellent aid when photographing agarose gels.
Rulers are only 7 mm wide and therefore fit into one lane of the gel.
The kit contains 4 rulers:
2 x 20 cm for long gels and 2 x 10 cm for mini gels.

| Art. No. | Pack Qty. (Kit) | € |
|---|---|---|
| **K162.1** | 1 | 49,40 |




## Gel Drying Frames

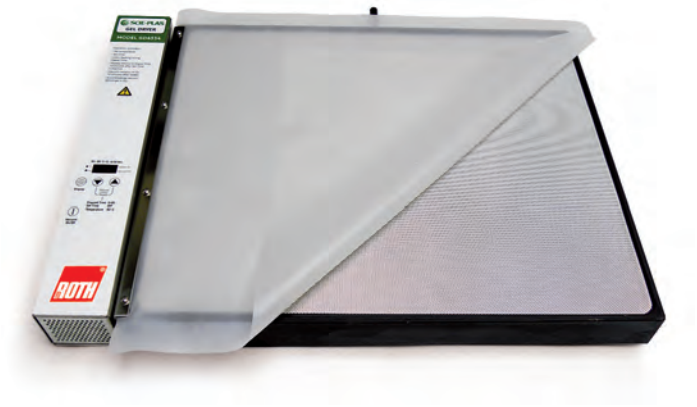
For easy drying of gels between 2 cellophane papers. Enables drying of gels without heat or vacuum. The cellophane sheets (spare packs) may also be used for drying of gels on vacuum gel dryers (60 °C). Cellophane sheets (cell glass) are uncoated. Each set contains 2 frames, 2 backs, 8 clamps and 50 cellophane sheets.

**MINI gel drying frames,**
**size 14 x 14 cm (overall), 11,7 x 11,7 cm (cutout)**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **MINI Set** | **K420.1** | 1 set | 134,40 |
| **Spare clamps for frame MINI** | **T826.1** | 4 clamps | 21,40 |
| **Spare pack of cellophane MINI** | **K422.1** | 50 sheets | 21,00 |

**MAXI gel drying frames,**
**size 24 x 24 cm (overall), 22,5 x 22,5 cm (cutout)**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **MAXI-Set** | **K421.1** | 1 set | 203,20 |
| **Spare clamps for frame MAXI** | **T827.1** | 4 clamps | 24,20 |
| **Spare pack of cellophane MAXI** | **K423.1** | 50 sheets | 29,25 |



## Vacuum Gel Dryer

- Heatable
- For fast and even gel drying
- For drying protein and sequencing gels
- Particularly even distribution of temperature over entire drying surface
- Precise adjustment of temperature of up to 80 °C
- Digital display of temperature
- Timer for heating element and vacuum pump (1-minute increments)
- Very robust construction
- All accessories are also available individually

**Technical Specifications:**

| Model | MIDI | MAXI |
|---|---|---|
| Drying surface | 44 x 34 cm | 49 x 41 cm |
| Measurements (H x W x D) | 85 x 550 x 435 mm | 85 x 680 x 480 mm |
| Weight | 8 kg | 13 kg |
| Heating element | 800 W | |
| Vacuum timer | 0-10 h | |
| Temperature timer | 0-10 h | |
| Digital display | 40-80 °C | |
| Accuracy | ±2 % | |
| Mains connection | 220-240 V, 50-60 Hz | |

**IMPORTANT:**
In order to achieve efficient drying, the vacuum pump should achieve a flow rate of 1000-6000 l/h (equals 1-6 $m^3$/h). We recommend use of the Membrane Vacuum Pump (Art. No. T789.1) and the Rotilabo® vacuum silicone tube (Art. No. 9746.1).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **MIDI vacuum-gel dryer incl. accessories** | **T781.1** | 1 | 2413,40 |
| **MAXI vacuum-gel dryer incl. accessories** | **T782.1** | 1 | 2568,20 |

## Vacuum Gel Dryer Accessories

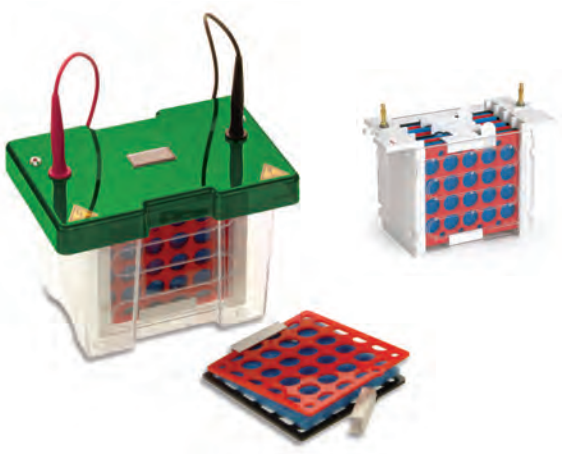
| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **MIDI stainless steel screen** | **T818.1** | 1 | 188,15 |
| **MIDI Mylar-mat (PET)** | **T820.1** | 1 | 53,25 |
| **MIDI porous polyethylene mat** | **T822.1** | 1 | 145,15 |
| **MIDI silicone cover** | **T824.1** | 1 | 192,45 |
| **MAXI stainless steel screen** | **T819.1** | 1 | 256,95 |
| **MAXI Mylar-mat (PET)** | **T821.1** | 1 | 61,85 |
| **MAXI porous polyethylene mat** | **T823.1** | 1 | 192,45 |
| **MAXI silicone cover** | **T825.1** | 1 | 235,45 |


- ▶ Membrane Vacuum Pump (Art. No. T789.1) see page 357
- ▶ Woulff´s bottle (Art. No. H955.1) and Accessory Kit see page 174
- ▶ Vacuum silicone tube (Art. No. 9746.1) see page 373

# Blotting Units

## Tank Blotting

- Electro tank blotting system for blotting of up to 4 gels in parallel
- For transferring proteins and nucleic acids
- Ideal for large and temperature-sensitive proteins
- The short distance between the electrodes guarantees an evenly high current strength across the blotting area and reduces the amount of heat generated
- Hinged cassettes – for most easy handling and rapid blot set up
- Open design, rigid cassettes for maximum current transfer and even blotting contact
- Colour coded cassettes and asymmetrical lid ensure correct blot set up and blotting direction
- **Modules fit the vertical electrophoresis system Rotiphorese® PROclamp (see page 1180)**



### Rotiphorese® PROclamp MINI Tank Blotting System

**Maximum blotting area: 4 gels of up to 10 x 10 cm**

- Can be used with all gels of 10 x 10 cm in maximum
- Compatible with the Rotiphorese® PROclamp MINI unit for vertical electrophoresis (Art. Nos. 3501.1-3503.1)

**Delivery incl.** 1 Rotiphorese® PROclamp MINI buffer tank, safety lid with cables and 1 PROclamp MINI blotting module for max. 4 gels, incl. 4 cassettes and 4 pairs of fibre blotting mats.

| Art. No. | Pack Qty | € |
|---|---|---|
| **3513.1** | 1 unit | 693,40 |



### Rotiphorese® PROclamp MAXI Tank Blotting System

**Maximum Blotting area: 4 gels of up to 20 x 20 cm**

- Can be used with all gels of 20 x 20 cm in maximum
- Compatible with the Rotiphorese® Unit PROclamp MAXI for vertical electrophoresis (Art. No. 5769.1)

**Delivery incl.** 1 Rotiphorese® PROclamp MAXI buffer tank, safety lid with cables, removable cooling coil, and 1 PROclamp MAXI blotting module for max. 4 gels, incl. 4 cassettes and 18 fibre blotting mats.

| Art. No. | Pack Qty | € |
|---|---|---|
| **5814.1** | 1 unit | 1116,95 |

### Rotiphorese® PROclamp MINI Tank Blotting Module

**Rotiphorese® PROclamp MINI Tank Blotting Module**

Blotting insert compatible with the Rotiphorese® PROclamp MINI system for vertical electrophoresis (Art. Nos. 3501.1-3503.1). Blotting module for max. 4 gels, incl. 4 cassettes and 4 pairs of fibre blotting mats.

| Art. No. | Pack Qty | € |
|---|---|---|
| **3517.1** | 1 unit | 412,80 |

### Rotiphorese® PROclamp MAXI Tank Blotting Module

**Rotiphorese® PROclamp MAXI Tank Blotting Module**

Blotting insert compatible with the Rotiphorese® PROclamp MAXI system for vertical elektrophoresis (Art. No. 5769.1). Blotting module for max. 4 gels, incl. 4 cassettes and 18 fibre blotting mats.

| Art. No. | Pack Qty | € |
|---|---|---|
| **5816.1** | 1 unit | 594,50 |

### PROclamp MINI Blotting Accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **PROclamp MINI compression cassette (no mats)** | **3518.1** | 1 unit | 43,20 |
| **PROclamp MINI blotting mats** | **3519.1** | 4 pairs | 43,20 |

### PROclamp MAXI Blotting Accessories

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| **PROclamp MAXI compression cassette (no mats)** | **5827.1** | 1 unit | 72,05 |
| **PROclamp MAXI blotting mats** | **5829.1** | 6 mats | 72,05 |

# Semi-Dry-Blotting



## Semi Dry Blotters

**For transfer of proteins and nucleic acids.**

- Durable, corrosion-free electrodes
- Fast, steady transfer
- Minimum heat development
- Low buffer use

As the electrodes are made of high-grade steel (cathode, lid) and platinised titanium (anode, base), they will last indefinitely if used correctly. There is no build-up of deposits on the transfer surface, the buffers cannot penetrate into the electrodes. The extremely constant electric field over the entire transfer surface guarantees optimal results with all transfer membranes.

**MINI Semi-dry-blotter, transfer surface 10 x 10 cm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T787.1** | 1 | 665,45 |

**MAXI Semi-dry-blotter, transfer surface 20 x 20 cm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **T788.1** | 1 | 1342,70 |



## Semi Dry Blotters PROfessional

**For transfer of proteins and nucleic acids.**

- Fast transfer with uniform heat dispersion
- Superior blotting quality due to screw down lid and long life electrodes
- Minimum heat development and buffer use

Semi Dry Blotters PROfessional offer rapid transfer times for blotting of proteins, as well as nucleic acids, being compatible with gel thicknesses from 0,25 up to 10 mm.

Semi Dry Blotters PROfessional utilise a screw down lid, which secures the blot sandwich (optionally) and allows complete control of pressure ensuring even transfer. Uniform heat dispersion across the transfer surface ensures stable blotting parameters and no heat induced sample loss or transfer distortions. The electrodes (platinum coated anode, base, and stainless steel cathode, lid) will exhibit no corrosion when used with accurately prepared transfer buffers, and provide many years of trouble free use.

Unit dimensions (w x h x d): 16,5 x 15 x 5,5 cm (MINI)
and 26 x 26 x 7 cm (MAXI)

**Semi dry blotter PROfessional MINI, transfer surface 10 x 10 cm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KK58.1** | 1 | 663,30 |

**Semi dry blotter PROfessional MAXI, transfer surface 20 x 20 cm**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KK59.1** | 1 | 1340,55 |

**Buffers recommended for Tank blotting**

Acc. to **Towbin** *et al.*, 1997: 25 mM Tris, 192 mM glycin, 20 % methanol. Optional: 0-0,1 % SDS.

Acc. to **Bjerrum und Schaefer-Nielsen**, 1986: 48 mM Tris, 39 mM glycin, 0-20 % methanol. Optional: 0-0.1 % SDS.

Acc. to **Dunn**, 1986: 10 mM $NaHCO_3$, 3 mM $NaCO_3$, 20 % methanol.

**Buffers recommended for Semy Dry blotting**

**Discontinuous buffer system:** Roti®-Blot 1 - for standard proteins or Roti®-Blot 2 - for hydrophobic proteins.

Continuous **Tris-glycin buffer** acc. to Bjerrum and Schaefer-Nielsen, 1986: 48 mM Tris, 39 mM glycin, 0-20 % methanol. Optional: 0,01-0,1 % (usually 0,0375 %) SDS.

Continuous **CAPS buffer** for blotting of basic proteins and prior to N-terminal sequencing: 0,22 % CAPS (pH 10,5-11,0), 10 % methanol.

**Do not adjust pH of the buffer** (exception: CAPS stock solution). Adding acid or base to the buffer will result in higher conductivity, leading to increased formation of heat as well as ions. Subsequently, this results in brown, "burnt" looking blotting paper and damage to the electrode plates.

**Methanol** prevents the gel from swelling during transfer (mandatory for gradient gels!) and improves the absorption of proteins to NC membranes. For transfer of native or big proteins, reduce or omit methanol.

**SDS** improves transfer efficiency of large proteins and protein binding to PVDF membranes, however increasing relative current, power and temperature. Don't use SDS for Semi-Dry blotting of small proteins to NC membranes. For tank blotting use 0,02 % SDS in minimum.

For **blotting of native proteins** use buffer acc to Bjerrum and Schaefer-Nielsen with 0,04 % SDS and 0-10 % methanol.



## Rotilabo®-sealing roller

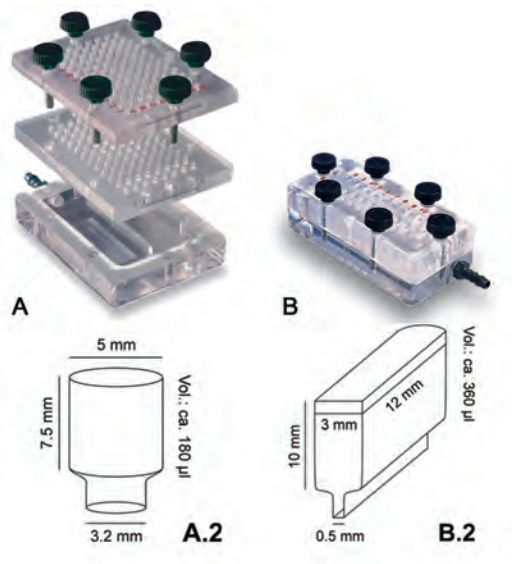
Frame made of **metal**, with **rubber** roller. For more effective sealing of microtest-, PCR- and Deep-Well-plates with sealing foil or sealing mats because the roller presses them on more evenly. Also usable for evenly smoothing out gel, transfer membrane and blotting-paper during blot-assembly. Roll width: 100 mm, ∅ roll: 30 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **HE23.1** | 1 | 37,85 |

Please note our **Technical Information Brochure** on the Internet next to the products:

**Transfer Buffers**

Tips and protocols




## Dot Blotter and Slot Blotter

**For rapid transfer of DNA,**
**RNA and immunological antibody screening methods.**

- Robust acrylic construction
- Precision lapped mating surfaces prevent sample leakage
- Steady transfer
- Very simple assembly
- Alpha-numeric sample identification

A permanent filter template is provided with each manifold to simplify the cutting of filters to exact size.

A vacuum of approximately 600 mm Hg (0,8 Bar, relative pressure) is required during sample application. We recommend LABOPORT®-Membrane vacuum pump (Art. No. Y371.1) with hose stems for hose inner ∅ 8 mm (Art. No. EL44.1) and the following hoses: Rotilabo®-Vacuum-Silicone hose, inner ∅ 8 mm (Art. No. 9746.1) or Rotilabo®-Vacuum-Rubber hose, inner ∅ 8 mm (Art. No. 0680.1).

### Dot-blotter (A)

**Max. sample capacity: 96 per transfer**
**Wells per row: 12**
**Wells per column: 8**
**Volume per well: approx. 180 µl (for shape of wells, see figure A.2)**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Dot-Blotter | **T790.1** | 1 | 657,90 |

### Slot-blotter (B)

**Max. sample capacity: 48 per transfer**
**Wells per row: 16**
**Wells per column: 3**
**Volume per well: approx. 360 µl (for shape of wells, see figure B.2)**

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Slot-Blotter | **T791.1** | 1 | 703,05 |

**Instructions for use**
can be found on the Internet next to the product description.

# Transfer Filter Membranes

## Transfer Membranes Made of Nitrocellulose

Pure nitrocellulose membranes for reliable protein standard applications

- Free of cellulose acetate
- High absorption capacity
- Very low background
- 0,2 µm or 0,45 µm pore size
- Easy to block
- For all standard detection systems

Please note: Membranes made of nitrocellulose age and should be replaced anually!




### Roti®-NC

**Transfer membrane for protein analyses, colony- and plaque-lifts**
**Binding capacity for proteins: 125-200 µg/cm²**
**Made of 100 % nitrocellulose**

**Warning** H228

High-quality transfer membrane for all detection systems - extremely suitable for all protein transfer and detection methods. The membrane stands out for its particularly high mechanical stability. The pure 100 % nitrocellulose quality membrane is easy to block and allows for background-free blots with perfect bands. The pore size of 0,2 µm is suitable for proteins and peptides of all sizes. The best retention rate is achieved when blotting proteins of up to 70 kDa. Its excellent protein binding capacity not only efficiently prevents the blot from going through during transfer, but also guarantees highly sensitive detection of even low protein amounts.

Membrane thickness: 0,15 ± 0,05 mm

Pore size: 0,2 µm

**Applications:** Optimised for proteins of ≤70 kDa. Western- and far-western-blot, colony- and plaque-lifting of nucleic acids and proteins, immunoblots, dot-blots.

| Pore size | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| 0,2 µm | 30 x 400 | **9302.1** | 1 roll | 381,65 |
| 0,2 µm | 30 x 300 | **HP40.1** | 1 roll | 266,60 |
| 0,2 µm | 20 x 300 | **HP41.1** | 1 roll | 261,25 |
| 0,2 µm | 10,2 x 13,3 | **HP42.1** | 10 sheets | 91,40 |
| 0,2 µm | 20 x 20 | **HP43.1** | 10 sheets | 209,65 |
| 0,2 µm | ∅ 9,0 | **HP44.1** | 50 disks | 170,95 |



## Roti®-NC 0.45

**Transfer membrane for protein analyses, Southern- und Northern-Blots**

**Binding capacity for proteins: ≥125 µg/cm²**

**Made of 100 % nitrocellulose**

**Warning** H228

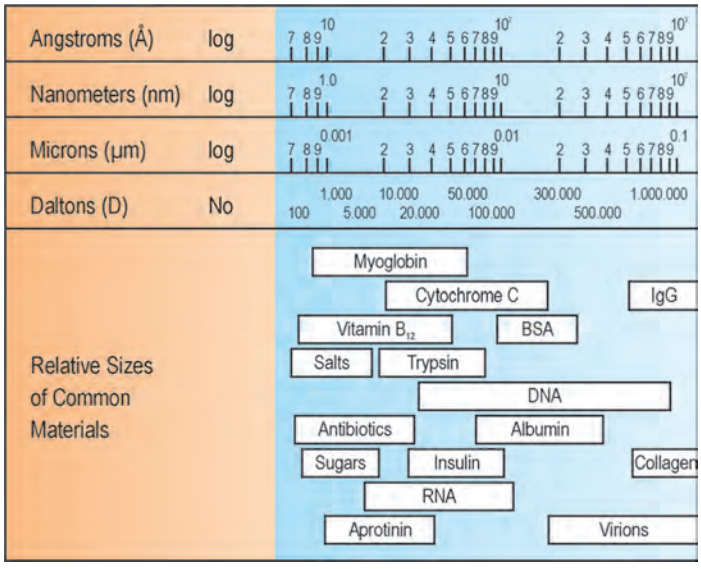
High-quality transfer membrane for all detection systems - extremely suitable for all protein transfer and detection methods. The Roti®-NC 0.45 membrane offers very good mechanical stability, standing out for its particularly smooth structure and even membrane thickness. The pure 100 % nitrocellulose quality membrane is easy to block and allows for background-free blots with perfect bands. The pore size of 0,45 µm is suitable for proteins and peptides of all sizes. The best retention rate is achieved when blotting proteins of ≥20 kDa. Having a high protein binding capacity, the membrane not only efficiently prevents protein loss during transfer, but also guarantees very sensitive detection of even low protein amounts.

Membrane thickness: 0,15 ± 0,01 mm

Pore size: 0,45 µm

**Applications:** Optimised for proteins ≥20 kDa. Western- and far-Western-blots, Southern- and Northern blots, colony- and plaque-lifting of nucleic acids and proteins, dot- and slot blots.

| Pore size | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| 0,45 µm | 30 x 400 | **9201.1** | 1 roll | 381,65 |
| 0,45 µm | 30 x 300 | **9200.1** | 1 roll | 284,90 |






## Amersham Protran®

**Transfer membrane for most nucleic acid and protein immobilising techniques**

**Binding capacity: 80-90 µg/cm² (0,2 µm) or 75-85 µg/cm² (0,45 µm)**

**Made from 100 % nitrocellulose.**

**Warning** H228

Multiple use - ideal for most nucleic acid and protein immobilising techniques. Pure nitro-cellulose, free from cellulose acetate and triton. They have a high binding capacity and low background. The fibre-reinforced version allows extensive handling of membrane, easier cutting, repeated hybridisation and automated immobilising.

**Applications:** Southern, Northern, Western transfer, colony and plaque hybridisation, immunoblots, nucleic acid and protein dot-blot, slot-blot, electrophoretic transfer of proteins. (Nitrocellulose should only conditionally be used for electrophoretic transfer of nucleic acids, because of the high salt concentrations required for the transfer).

Membranes of 0,45 µm pore size allow for DNA transfer (minimum 300 bp) and protein transfer (minimum 20 kD).

**Amersham Protran® 0.2 µm NC**

**Replaces Protran® BA 83 from Whatman®**

Ideal for all protein and nucleic acid transfers.

**Pore size 0.2 µm**

| Pore size | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| 0,2 µm | 20 x 20 | **4684.1** | 25 sheets | 532,15 |
| 0,2 µm | 10,2 x 13,3 | **0028.1** | 10 sheets | 202,10 |
| 0,2 µm | 30 x 400 | **4685.1** | 1 roll | 559,00 |
| 0,2 µm | 20 x 400 | **0031.1** | 1 roll | 428,95 |

**Amersham Protran® 0.45 µm NC**

**Replaces Protran® BA 85 from Whatman®**

Ideal for all protein and nucleic acid transfers.

**Pore size 0.45 µm**

| Pore size | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| 0,45 µm | ∅ 2,5 | **4589.1** | 100 disks | 114,00 |
| 0,45 µm | ∅ 8,2 | **4592.1** | 50 disks | 220,00 |
| 0,45 µm | 20 x 20 | **4674.1** | 25 sheets | 535,35 |
| 0,45 µm | 10,2 x 13,3 | **0030.1** | 10 sheets | 166,65 |
| 0,45 µm | 30 x 400 | **4675.1** | 1 roll | 481,60 |
| 0,45 µm | 20 x 400 | **0041.1** | 1 roll | 407,45 |

**Amersham Protran® supported 0.2 µm NC**

**Replaces Protran® BA-S 83 from Whatman®**

Reinforced with a synthetic, inert material for improved elasticity and reaction to wetness. Suitable for protein and nucleic acid transfers which require a better resistance to wetness, such as repeated screening of the same blot.

**Pore size 0.2 µm**

| Pore size | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| 0,2 µm | 20 x 20 | **5945.1** | 25 sheets | 623,50 |
| 0,2 µm | 30 x 400 | **4756.1** | 1 roll | 639,65 |

**Amersham Protran® supported 0.45 µm NC**

**Replaces Protran® BA-S 85 from Whatman®**

Reinforced with a synthetic, inert material for improved elasticity and reaction to wetness. Suitable for protein and nucleic acid transfers which require a better resistance to wetness, such as repeated screening of the same blot.

**Pore size 0.45 µm**

| Pore size | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| 0,45 µm | 20 x 20 | **5930.1** | 25 sheets | 639,65 |
| 0,45 µm | 30 x 400 | **4705.1** | 1 roll | 537,50 |

# Transfer Membranes Made of PVDF

For optimal results with all protein transfer techniques

- Well suited for all protein blots
- Best signal-to-noise ratio
- Very robust
- 0,2 µm or 0,45 µm pore size
- Suitable for long-term exposition
- Suitable for all detection systems
- May be used for peptide sequencing



## Roti®-Fluoro PVDF

**Premium PVDF membrane from ROTH, suitable for direct fluorescence detection**

Roti®-Fluoro PVDF is a white, microporous membrane made from naturally hydrophobic polyvinylidene fluoride. The membrane is of superior protein binding capacity, making it perfectly suited for all standard and special applications in the field of protein analysis.

Roti®-Fluoro PVDF is of 0.2 µm pore size and binds proteins tenaciously via hydrophobic interactions. It enables very sensitive protein detection by keeping the background very low, resulting in a good signal-to-noise ratio with all standard detection systems. The mechanically rigid membrane is of high tensile strength and tear-proof, and does not crack or curl during handling. Therefore, signals remain clear and distinct, and are undisturbed by false-positive signals caused by membranes crinkles.

Roti®-Fluoro PVDF has been **specially optimised for direct detection via fluorescence.**

Briefly immerse Roti®-Fluoro PVDF membrane in 100 % methanol prior to transfer until no more white areas are visible. This transfer membrane is then compatible with every aqueous blot system.

**Applications:** Western- and Far-Western-Blot, analysis of small peptides, Immunoblot, Dot-blot, binding assays, N-terminal sequencing

**Detection systems:** Fluorescence, radioactivity, colour

| Pore size | Binding | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| 0,2 µm | hydrophobic | 13 x 20 | **2831.1** | 2 sheets | 33,00 |
| 0,2 µm | hydrophobic | 26 x 330 | **2803.1** | 1 roll | 332,20 |



## Roti®-PVDF 0.2

**PVDF membrane with 0,2 µm pore size**

**Binding capacity for proteins: ≥125 µg/cm²**

Roti®-PVDF 0.2 is a hydrophobic, microporous polyvinylidene membrane, free from adjuvants and detergents. It has been optimised for transfer and highly sensitive detection of proteins of up to 70 kDa, but is also perfectly suited for blotting of bigger proteins. The membrane shows superior protein binding parameters and stands out for its particularly low background. It may also be used very well after repeated stripping and harsh washing processes.

This mechanically rigid transfer membrane can be easily cut to the desired gel size and it remains flexible and tear-proof even when dry.

Briefly immerse Roti®-PVDF 0.2 membrane in 100 % methanol prior to transfer until no more white areas are visible. This transfer membrane is then compatible with every blotting system.

Membrane thickness: 140 ± 20 µm

Pore size: 0,2 µm

Due to production processes, the membrane shows two different sides - one smooth and one raw. For optimally distinct bands, please use the smooth side for protein binding.

**Applications:** Optimised for proteins of ≤70 kDa. Western-blot, Dot-blot, lipopolysaccharide- and amino acid analysis, bindings assays, N-terminal peptide sequencing.

**Detection systems:** Chemoluminescence, radioactivity, colour

| Pore size | Binding | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| 0,2 µm | hydrophobic | 30 x 300 | **8989.1** | 1 roll | 338,65 |





## Roti®-PVDF

**PVDF membrane from ROTH.**

Roti®-PVDF is a hydrophobic, microporous polyvinylidene membrane. It is free from adjuvants and detergents. This membrane enables efficient transfer of proteins over a wide molecular weight range.

This mechanically rigid transfer membrane can be easily cut to the desired gel size and it remains flexible and tear-proof even when dry.

Briefly immerse Roti®-PVDF membrane in 100 % methanol prior to transfer until no more white areas are visible. This transfer membrane is then compatible with every aqueous blot system.

Membrane thickness: 125 ± 25 µm

Pore size: 0,45 µm

**Applications:** Optimised for proteins ≥20 kDa. Western-blot, Dot-blot, lipopolysaccharide- and amino acid analysis, binding assays, N-terminal peptide sequencing.

**Detection systems:** Chemoluminescence, radioactivity, colour

**Not suitable for use with infrared densitometers (700 nm/800 nm).**

| Pore size | Binding | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| 0,45 µm | hydrophobic | 26,5 x 375 | **T830.1** | 1 roll | 349,40 |

## Immobilon-P

**Original PVDF membrane from Millipore, for outstanding Western Blots.**

The Immobilon-P membrane consists of microporous polyvinylidene fluoride (PVDF) with a high binding capacity for all biomolecules, particularly for proteins, independently of the transfer method or gel used. The efficient signal-to-noise ratio allows long exposure times and provides a high sensitivity during detection even when working with low protein amounts.

Membrane thickness: 100-145 µm

Pore size: 0,45 µm

**Instructions for use:** Compared to nitrocellulose the Immobilon-P membrane is much easier to handle and much better to stain, and shows superior resistance to organic solvents. Furthermore, the open pore structure provides easy access of antibodies or other peptides used for detection to bound protein, and enables efficient removal of unbound molecules, efficiently reducing the background.

Immobilon-PVDF membrane is ideal when performing immunodetection. The rapid immunodetection method additionally provides a tool to reduce the time span needed for the process by several hours. During Western Blot, the superior qualities of the PVDF membrane not only supersede a blocking step, but also reduce number and time span of washing steps considerably without compromising on specificity or sensitivity.

**Applications:** Western-blot, Dot- and Slot-blot, amino acid analysis, binding assays, detection of glycoproteins, N-terminal peptide sequencing.

**Detection systems:** Radioactivity, chemoluminescence, colour

| Pore size | Binding | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| 0,45 µm | hydrophobic | 26,5 x 375 | **T831.1** | 1 roll | 436,45 |

## Technical Parameters of ROTH-Transfer Membranes

| Membrane | Material | Characteristics | Thickness (µm) | Binding capacity (µg/cm²) | Pore size (µm) | Immobilisation |
|---|---|---|---|---|---|---|
| **Roti®-Fluoro PVDF** | Polyvinyliden fluoride | hydrophobic | 125±25 | 300 | 0,2 | not necessary |
| **Roti®-PVDF 0.2** | Polyvinyliden fluoride | hydrophobic | 140±20 | ≥125 | 0,2 | not necessary |
| **Roti®-PVDF** | Polyvinyliden fluoride | hydrophobic | 125±25 | ca. 200 | 0,45 | not necessary |
| **Immobilon P** | Polyvinyliden fluoride | hydrophobic | 120±25 | 150-300 | 0,45 | not necessary |
| **Roti®-Nylon 0.2** | Nylon 6,6 | neutral/amphoteric | 150±20 | 500 | 0,2/0,45 | UV, baking |
| **Roti®-Nylon plus** | Nylon 6,6 | hydrophilic, positively charged | 160±20 | 500 | 0,45 | not necessary, UV and baking possible |
| **Roti®-NC** | Nitrocellulose | electrostatic, hydrophobic | 150±50 | 125-200 | 0,2 | UV, baking (max. 80 °C) |
| **Roti®-NC 0.45** | Nitrocellulose | electrostatic, hydrophobic | 150±10 | ≥125 | 0,45 | UV, baking (max. 80 °C) |
| **Amersham Protran®** | Nitrocellulose | electrostatic, hydrophobic | Unknown | 11-72 | 0,2/0,45 | UV, baking (max. 80 °C) |
| **Amersham Protran® supported** | Nitrocellulose | electrostatic, hydrophobic | Unknown | 86-110 | 0,2/0,45 | UV, baking (max. 80 °C) |

# Transfer Membranes Made of Nylon

For perfect Southern- and Northern-Blots

- Very low background
- Suitable for all staining techniques
- Superior performance in nucleic acid absorption
- Available as roll, easy-to-use pre-cut membranes and disks – the perfect size for each application




## Roti®-Nylon plus

**Ideal for DNA/RNA-transfers.**

Roti®-Nylon plus is a cationic, einforced nylon 6.6-membrane with 0.45 µm pore size and extremely high tensile strength. The positively charged membrane surface guarantees rapid and efficient binding of DNA and RNA. May be steam sterilised.

Also available in convenient pre-cut sheets of standard gel size.

Membrane thickness: 150 ± 20 µm

**Instructions for use:** Nucleic acids can be cross-linked to the membrane by baking (80 °C, 15 min) or through UV exposure. No cross-linking is required for alkaline transfer as the negatively charged DNA forms a very stable complex with the positively charged Roti®-Nylon membrane.

**Applications:** Southern- and Northern-blot, Dot-blot, DNA fingerprinting, macro- and microarrays

**Detection systems:** Radioactivity, chemoluminescence, fluorescence

| Pore size | Load | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| 0,45 µm | positive | 30 x 300 | **K058.1** | 1 roll | 305,30 |
| 0,45 µm | positive | 10 x 10 | **HP34.1** | 10 sheets | 134,40 |
| 0,45 µm | positive | 10 x 15 | **HP35.1** | 10 sheets | 160,20 |
| 0,45 µm | positive | 20 x 20 | **HP36.1** | 10 sheets | 241,90 |
| 0,45 µm | positive | 22,2 x 22,2 | **HP37.1** | 10 sheets | 274,15 |




## Roti®-Nylon 0.2

**Ideal for DNA/RNA transfer, particularly for colony- and plaque-lifting, as well as for all multiple rehybridisations.**

**Especially recommended for Northern-blots.**

Roti®-Nylon 0.2 is a neutral, enhanced Nylon membrane. Based on the material it provides a superior tensile strength and is extremely resistant against alcohol, acetone, and many other organic solvents. In a buffer pH of 6,5 Roti®-Nylon 0.2 is uncharged and by means of the surface-standing amino- and carboxy-groups has superior hydrophilic qualities. The charge of the membrane (ζ-potential) may be altered through the pH of the buffer - the membrane is positively charged at pH <6,5 and negatively charged at pH >6,5.

Membrane of particulary high DNA-binding capacity. Available as roll (pore size 0,2 µm) for high-flexible usage, and as disks (pore size 0,45 µm) for colony- and plaque-lifting. May be steam sterilised.

Membrane thickness: 150 ± 20 µm

**Instructions for use:** Covalent bondage of transferred nucleic acids is achieved by cross linking (baking for 15 min at 80 °C or UV-cross linking for 20 sec at 260 nm). Due to the excellent signal-to-noise ratio of the membrane, very sensitive detection (single copy-gene detection) and multiple rehybridisation is possible without loosing sensitivity.

**Applications:** Southern- and Northern blot, Dot blot, DNA fingerprinting, ELISA, colony- and plaque lifting, macro- and microarrays

**Detection systems:** Radioactivity, chemoluminescence, fluorescence

| Pore size | Load | Dimensions W x L (cm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| 0,2 µm | neutral | 30 x 300 | **AE50.1** | 1 roll | 317,15 |
| 0,45 µm | neutral | ∅ 13,2 | **HP39.1** | 50 disks | 342,95 |

**Size Comparison of Membrane Pores and Biomolecules**

| Biomolecules / Membrane Pores | Size (kD) |
|---|---|
| genomic DNA (human) | >11000000 |
| *E. coli* | approx. 1500000 |
| 0.45 µm | approx. 5000 |
| 0.2 µm | approx. 2000 |
| DNA 3 kb | approx. 1000 |
| RNA 1 kb | approx. 300 |
| Antibodies (IgG) | approx. 150 |
| Proteins in the lab | approx. 10 - 300 |
| BSA (Albumin) | 69 |

**Application of ROTH-Transfer Membranes**

| Biomolecules | Nylon plus | Nylon 0.2 | PVDF 0.2 | PVDF | Fluoro PVDF | NC | NC 0.45 |
|---|---|---|---|---|---|---|---|
| DNA | +++ | + | - | - | - | + | + |
| RNA | + | +++ | - | - | - | + | + |
| Proteins | - | + | +++ | +++ | +++ | + | + |
| **Detection System** | | | | | | | |
| Colour | +++ | +++ | +++ | +++ | +++ | +++ | +++ |
| Radioactivity | +++ | +++ | +++ | +++ | +++ | +++ | +++ |
| Chemoluminescence | +++ | +++ | +++ | +++ | - | + | + |
| Fluorescence | +++ | +++ | - | - | +++ | - | - |

+++: recommended  +: suitable  -: not

# Blotting Papers




**Programme extension!**

## Rotilabo®-Blotting Papers

High quality paper for blotting, chromatography and filtration.
With good absorption qualities and smooth surface - for distinct bands and sample spots.

| Thickness | Weight | Capillary rise (acc. to Klemm) |
|---|---|---|
| 0,17 mm | 81 g/m² | 70-90 mm / 10 min |
| 0,35 mm | 192 g/m² | 55-65 mm / 10 min |
| 0,75 mm | 320 g/m² | 150-160 mm / 10 min |
| 1,0 mm | 400 g/m² | 130-145 mm / 10 min |
| 1,5 mm | 570 g/m² | 250-300 mm / 10 min |

### Thickness 0,17 mm

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 x 130 mm | **CL68.1** | 100 | 46,00 |
| 200 x 200 mm | **CL69.1** | 100 | 49,70 |
| 460 x 570 mm | **CL70.1** | 100 | 198,90 |
| 580 x 600 mm | **CL71.1** | 100 | 227,90 |

### Thickness 0,35 mm

Conventional thickness for all general protocols. Equivalent to 3MM.

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 x 130 mm | **CL64.1** | 100 | 30,65 |
| 200 x 200 mm | **CL65.1** | 100 | 56,55 |
| 460 x 570 mm | **CL66.1** | 100 | 223,60 |
| 580 x 600 mm | **CL67.1** | 100 | 256,95 |

### Thickness 0,75 mm

Paper of optimised thickness, perfectly suited for Semi Dry- and Tank-Blotting. Superior transfer efficiciency due to high liquid absorption, with being nicely flexible and to cut easy.

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 x 130 mm | **0942.1** | 100 | 47,20 |
| 200 x 200 mm | **0943.1** | 100 | 99,15 |
| 580 x 600 mm | **0945.1** | 100 | 436,45 |

### Thickness 1,0 mm

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 150 x 150 mm | **CL72.1** | 25 | 21,90 |
| 200 x 200 mm | **CL73.1** | 25 | 36,50 |
| 580 x 600 mm | **CL74.1** | 25 | 145,90 |

### Thickness 1,5 mm

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 580 x 600 mm | **CL75.1** | 25 | 199,00 |




## Gel Blotting Papers

Original Whatman®-blotting paper for wicking, blots and drying. Made from specially selected cellulose. Superior for applications in electrophoresis and chromatography.

**Thickness 0,34 mm** (Whatman® 3MM), flow rate 130 mm/30 min.
**Also available in convenient rolls!**

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 102 x 133 mm | **0043.1** | 100 | 19,95 |
| 200 x 200 mm | **0048.1** | 100 | 71,00 |
| 460 x 570 mm | **4926.1** | 100 | 259,00 |
| 580 x 680 mm | **4928.1** | 100 | 392,00 |
| 10 cm x 100 m (roll) | **CL87.1** | 1 | 142,00 |
| 15 cm x 100 m (roll) | **CL88.1** | 1 | 196,00 |
| 19 cm x 100 m (roll) | **CL89.1** | 1 | 245,00 |

**Thickness 1,5 mm** (GB005) extra thick, mass per unit area: 550 g/m².
Particularly recommended for Semi-Dry-Blotting.

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 150 x 150 mm | **A125.1** | 25 | 74,20 |
| 200 x 200 mm | **AE19.1** | 25 | 92,75 |
| 580 x 580 mm | **A126.1** | 25 | 376,00 |

## Whatman® Chromatography Papers

Whatman® chromatography papers for blotting, chromatography and filtration. Made from specially selected cellulose.

**Thickness 0,18 mm** (Whatman® 1CHR), flow rate 130 mm/30 min.
**Also available in convenient rolls!**

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 x 300 mm | **CL37.1** | 100 | 44,50 |
| 200 x 200 mm | **CL38.1** | 100 | 50,80 |
| 250 x 250 mm | **CL39.1** | 100 | 79,00 |
| 460 x 570 mm | **CL40.1** | 100 | 171,00 |
| 580 x 680 mm | **CL41.1** | 100 | 268,00 |
| 20 mm x 100 m (roll) | **7606.1** | 1 | 27,95 |
| 30 mm x 100 m (roll) | **CL42.1** | 1 | 37,80 |
| 40 mm x 100 m (roll) | **CL43.1** | 1 | 42,65 |
| 50 mm x 100 m (roll) | **7607.1** | 1 | 51,00 |
| 100 mm x 100 m (roll) | **CL44.1** | 1 | 96,75 |
| 150 mm x 100 m (roll) | **7608.1** | 1 | 124,00 |

**Thickness 0,36 mm** (Whatman® 3CHR), flow rate 130 mm/30 min.
For general applications with medium/heavy solute loadings.

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 460 x 570 mm | **7604.1** | 100 | 343,00 |

**Thickness 0,92 mm** (Whatman® 17CHR), flow rate 190 mm/30 min.
For the heaviest solute loadings.

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 70 x 90 mm | **7600.1** | 100 | 66,50 |
| 25 x 220 mm | **7601.1** | 100 | 67,95 |
| 460 x 570 mm | **7602.1** | 25 | 256,00 |
| 460 x 570 mm | **7603.1** | 100 | 952,00 |

# Blotting Reagents

## TRIS

**≥99,9 %, Blotting-Grade**

For Western blotting and immunodetection

**Warning** H315-H319-H335

Tris of very high purity, tested for absence of heavy metals and protease. Particularly suitable for Western blotting and protein immunodetection.

| | | | |
|---|---|---|---|
| **0188.1** | 250 g | plastic | 35,40 € |
| **0188.2** | 500 g | plastic | 60,75 € |
| Original pack 6 x 500 g | | | 57,71/500 g |
| **0188.3** | 1 kg | plastic | 98,80 € |
| Original pack 6 x 1 kg | | | 93,86/1 kg |
| **0188.4** | 2,5 kg | plastic | 188,15 € |

## Glycine

**≥99 %, Blotting-Grade**

For Western blotting

Glycin of very high purity, tested for absence of heavy metals, ammonia, and hydrolysable substances. Well soluble and particularly suitable for Western blotting.

| | | | |
|---|---|---|---|
| **0079.1** | 250 g | plastic | 25,30 € |
| **0079.2** | 500 g | plastic | 47,20 € |
| Original pack 6 x 500 g | | | 44,84/500 g |
| **0079.3** | 1 kg | plastic | 75,15 € |
| Original pack 6 x 1 kg | | | 71,39/1 kg |
| **0079.4** | 2,5 kg | plastic | 149,45 € |

## SDS

**≥99,5 %, Blotting-Grade**

For Western- and Southern blotting

**Danger** H228-H302+H332-H315-H318-H335-H412

SDS of particularly high purity, tested for absence of heavy metals and for UV-absorption qualities. Particularly suitable for Western- and Southern blotting, as well as for immunodetection and assays in molecular biology.

| | | | |
|---|---|---|---|
| **0183.1** | 100 g | plastic | 48,30 € |
| **0183.2** | 250 g | plastic | 101,60 € |
| **0183.3** | 500 g | plastic | 165,45 € |
| Original pack 6 x 500 g | | | 157,18/500 g |

## Methanol

**≥99,9 %, Blotting-Grade**

For Western blotting

**Danger** H225-H301+H311+H331-H370

Methanol of very high purity, tested for absence of heavy metals, sulphates, and organic impurities. Particularly suitable for Western blotting.

| | | | |
|---|---|---|---|
| **0082.1** | 500 ml | glass | 22,05 € |
| **0082.2** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |
| **0082.3** | 2,5 l | glass | 60,75 € |
| Original pack 4 x 2,5 l | | | 57,71/2,5 l |

## Roti®fair TG-Western

**for electrophoresis**

Buffer for protein electrophoresis and transfer.

TG buffer powder (pouch), Tris-glycine buffer

**Warning** H315-H319-H335

Exactly pre-weighed pouches for convenient and rapid preparation of TG-Western solution.
SDS-free running buffer for native protein gel electrophoresis. Optimum base for preparation of Western blot transfer buffer by addition of 5-20 % methanol (Blotting-Grade, Art. No. 0082).
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, buffer solution should be kept at room temperature.
1x TG-Western solution is prepared by dissolution of 1 pouch in 1000 ml respectively 5000 ml highly pure water.

**Formulation:**

Prepared 1x TG-Western solution contains: 25 mM Tris, 0,192 M glycine, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

**For 1000 ml/pouch**

| | | | |
|---|---|---|---|
| **1269.1** | 10 pouches | box | 81,20 € |

**For 5000 ml/pouch**

| | | | |
|---|---|---|---|
| **1276.1** | 10 pouches | box | 170,95 € |

## Roti®-Stock 20 % SDS

**BioScience-Grade, ready-to-use, 0,2 µm filtered**

S ready-to-use

For molecular biology and electrophoresis.

SDS 20 % ready-to-use solution

**Danger** H318-H315-H335

20 % stock solution sodium dodecyl sulphate. Store the solution away from light in a dry place. SDS-stock solution and other solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
With original seal.

**Composition:**

20 % SDS in deionised water, 0,2 µm filtered

| | | | |
|---|---|---|---|
| **1057.1** | 1 l | glass | 138,70 € |
| Original pack 6 x 1 l | | | 131,77/1 l |

## Ponceau S (C.I. 27195)

**for histology and electrophoresis**

For reversible protein staining on membranes and for microscopy.

Scarlet red

**Warning** H315-H319-H335

Compatible with PVDF and NC membranes.
Staining of NC membranes: 0.2-2 % Ponceau S in 3 % trichloroacetic acid (Art. No. 8789.1) + 3 % sulphosalicylic acid (Art. No. 4119.1), incubate for 1-5 mins. at room temperature. Enhance contrast by incubation in water acidified by a few drops acetic acid.
Staining of PVDF membranes: 0.1-1 % Ponceau S in 10 % acetic acid (Art. No. 6755.1), incubate 1-5 mins. at room temperature. Ponceau S stained bands on PVDF only appear bright and distinct after drying (not recommended if Western blotting shall be performed).
Prior to Western blot analysis decolourise in PBS (Art. No. 1058.1) or TBS (Art. No. 1060) for 10-20 mins. at room temperature.

| | | | |
|---|---|---|---|
| **5938.2** | 10 g | glass | 25,70 € |
| **5938.1** | 25 g | glass | 52,15 € |





## Roti®-Blot 1

**Discontinuous transfer buffer for semi dry blotting.**

ready-to-use

Storage temp.: +20 °C

**Warning** H315-H319

- Optimised for semi dry blotting
- Superior blotting results for peptides and proteins of every size
- Special formulation with reduced acid formation - for optimal electrode protection

Roti®-Blot has a much better transfer efficiency than a tris-glycine buffer. Roti®-Blot also enables proteins >100 kD to be transferred completely by simply extending the transfer time.
**A kit consists of:**
Anode buffer Roti®-Blot A, 1 l (10 x concentration) (Art. No. L510)
Cathode buffer Roti®-Blot K, 1 l (10 x concentration) (Art. No. L511)
Both solutions may be bought separately.

| | | | |
|---|---|---|---|
| **L509.1** | 1 Set | glass | 98,80 € |

## Roti®-Blot A

**anode buffer to Roti®-Blot 1, 10x conc.**

ready-to-use

Storage temp.: +20 °C

**Warning** H315-H319

| | | | |
|---|---|---|---|
| **L510.1** | 1 l | glass | 59,70 € |
| Original pack 6 x 1 l | | | 56,72/1 l |

## Roti®-Blot K

**cathode buffer to Roti®-Blot 1, 10x conc.**

ready-to-use

Storage temp.: +20 °C

| | | | |
|---|---|---|---|
| **L511.1** | 1 l | glass | 61,85 € |
| Original pack 6 x 1 l | | | 58,76/1 l |

## Amido black 10 B (C.I. 20470)

**p.a.**

For irreversible staining of proteins on membranes and for quantification of proteins in detergent containing solutions.

Naphthol blue black

Compatible with PVDF and NC membranes.
Staining solution: 0.5 % amido black in 50 % methanol (Art. No. 4627.1) / 10 % acetic acid (Art. No. 3738.1). Stain for 1-5 min at room temperature. Reduce background in 50 % methanol at room temperature.

| | | | |
|---|---|---|---|
| **9590.1** | 25 g | glass | 37,55 € |

## Roti®fair SSPE

**for 200 ml/tablet, for molecular biology**

Buffer solution for DNA- and RNA hybridisation.

Sodium sodium phosphate EDTA, SSPE buffer (tablets)

Exactly pre-weighed tablets for convenient and rapid preparation of phosphate buffered salt solution (SSPE).
SSPE is frequently used for Southern- and Northern hybridisations, as well as for washing steps during Microarray techniques. Roti®fair SSPE may also be used very well in imunocytochemistry and for cell suspension prior to FACS analyses.
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, buffer solution should be kept at +4 °C.
1x SSPE solution is prepared by dissolution of 1 tablet in 200 ml highly pure water.

**Formulation:**

Prepared 1x SSPE solution contains: 0,15 M NaCl, 1 mM EDTA, 10 mM Na-phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1233.1** | 100 tablets | plastic | 99,90 € |

## Roti®fair 20x SSC

**for 1000 ml/pouch, for molecular biology**

Concentrated buffer solution for Southern- and Northern transfer.

SSC buffer powder (pouch), Sodium sodium citrate

Exactly pre-weighed pouches for convenient and rapid preparation of SSC solution.
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving. For long-term storage, buffer solution should be kept at +4 °C.
20x SSC solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

**Formulation:**

Prepared 20x SSC solution contains: 3,0 M NaCl, 0,3 M Na-Citrat, pH-value 7,0 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1232.1** | 5 pouches | box | 153,20 € |

## Roti®-Stock 20x SSC

**BioScience-Grade, ready-to-use, steam sterilised**

S ready-to-use

For molecular biology.

SSC 20x ready-to-use solution

20fold stock solution sodium/sodiumcitrate. Undiluted or after dilution with sterile water to 10x, 6x, 1x or 0,1x SSC one receives a versatile buffer for blotting, hybridising or washing of Southern- or Dot/Slot-Blots of DNA as well as for *in situ* hybridisation. Undiluted buffer is also suitable for neutral transfer of RNA onto unloaded membranes (e.g. Roti®-Nylon 0.2, Art. No. AE50.1).
With original seal.

**Composition:**

3 M NaCl, 300 mM sodium citrate in deionised water, pH-value 7.0, steam sterilised

| | | | |
|---|---|---|---|
| **1054.1** | 1 l | glass | 66,55 € |
| Original pack 6 x 1 l | | | 63,22/1 l |

# Molecular Biology


DNA-/RNA Isolation

| | | |
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| | Roti®-Phenols | 1227 |
| | Extraction Systems & -Kits | 1228 |
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| | | |
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DNA Synthesis
see chapter Organic- & Bioorganic Chemicals




# DNA-/RNA Isolation

## Roti®-Phenol

### Roti®-Phenol solutions for DNA- and RNA extraction

- Reduce exposure to toxic chemicals
- Prepared from phenol of highest purity
- Packed under argon for maximum stability
- Successfully tried and tested in many research laboratories



ready-to-use

**Mechanism**

Phenol and chloroform lead to denaturation of proteins which accumulate in the interphase. Isoamyl alcohol prevents foaming and very efficiently inhibits RNAses.

For distinct phase separation, Roti®-Aqua-Phenol needs a pH of ≤4.0 in the aqueous upper phase. If needed, the upper phase may be acidified by adding 1-2 drops of 1 N HCl. Draw solution from lower phase. Do not shake before use!

### Roti®-Phenol

**for extraction of nucleic acids**

Redistilled, in TE buffer equilibrated phenol, pH 7,5-8,0.

Storage temp.: +4 °C

**Danger** H301+H311+H331-H314-H341-H373-H411

Phenol solutions for nucleic acid isolation must be buffered and adjusted to the correct pH-value prior to use. Roti®-Phenol is a redistilled, in TE-buffer equilibrated ready-to-use phenol. Roti®-Phenol has been successfully tried and tested for isolating nucleic acids in many research laboratories. This quality product for molecular biology replaces the time consuming preparation of phenol and subsequently any exposure to toxic vapours. Covered with buffer and packed under argon. Store in the dark!
Draw solution from lower phase. Do not shake before use!

| | | | |
|---|---|---|---|
| **0038.1** | 100 ml | glass | 25,70 € |
| **0038.2** | 250 ml | glass | 50,45 € |
| **0038.3** | 500 ml | glass | 76,90 € |

### Roti®-Phenol/Chloroform/Isoamyl alcohol

**for extraction of nucleic acids**

Redistilled, in TE-buffer equilibrated phenol, chloroform and isoamyl alcohol at a ratio of 25:24:1, pH 7,5-8,0.

Storage temp.: +4 °C

**Danger** H301+H331-H312-H314-H341-H351-H361d-H372-H411

Ready-to-use solution for extraction of nucleic acids. Covered with buffer and packed under argon. Store in the dark!
Draw solution from lower phase. Do not shake before use!

| | | | |
|---|---|---|---|
| **A156.3** | 100 ml | glass | 36,05 € |
| **A156.1** | 250 ml | glass | 71,95 € |
| **A156.2** | 500 ml | glass | 119,90 € |

### Roti®-C/I

**for extraction of nucleic acids**

Chloroform/Isoamyl alcohol at a ratio of 24:1.

Storage temp.: +20 °C

**Danger** H331-H372-H351-H361d-H302-H315-H319

Mixture of chloroform and isoamyl alcohol of highest purity.
Ideal for extraction of DNA/RNA in combination with Roti®-Phenol.

| | | | |
|---|---|---|---|
| **X984.3** | 100 ml | glass | 11,00 € |
| **X984.1** | 250 ml | glass | 16,70 € |
| **X984.2** | 500 ml | glass | 25,70 € |

### Roti®-Aqua-Phenol

**for RNA extraction**

Redistilled, in water saturated phenol, pH 4,5-5.

Storage temp.: +4 °C

**Danger** H301+H311+H331-H314-H341-H373-H411

Optimal for RNA-isolation and other procedures, requiring a low phenol pH-value. The low pH results in interphase-enrichment of the DNA, reducing DNA-contamination in the RNA-eluate.
Also ideal for self-adjustment of pH-value. If required, buffer solution (e.g. TE buffer) may be added directly into the bottle, as Roti®-Aqua-Phenol comes in the following bottle sizes:
A980.2 - 100 ml in a 250 ml bottle
A980.1 - 250 ml in a 500 ml bottle
A980.3 - 500 ml in a 1 l bottle

Packed under argon for protection. Store in the dark!
Draw solution from lower phase. Do not shake before use!

| | | | |
|---|---|---|---|
| **A980.2** | 100 ml | glass | 21,40 € |
| **A980.1** | 250 ml | glass | 41,85 € |
| **A980.3** | 500 ml | glass | 62,90 € |

### Roti®-Aqua-P/C/I

**for RNA extraction**

Redistilled, in water saturated phenol, chloroform and isoamyl alcohol at a ratio of 25:24:1, pH 4,5-5.

Storage temp.: +4 °C

**Danger** H301+H331-H312-H314-H341-H351-H361d-H372-H411

Optimal for RNA-isolation and other procedures where a low phenol pH-value is desired. The low pH results in interphase-enrichment of the DNA, reducing DNA-contamination in the RNA-eluate.
Packed under argon for protection. Store in the dark!

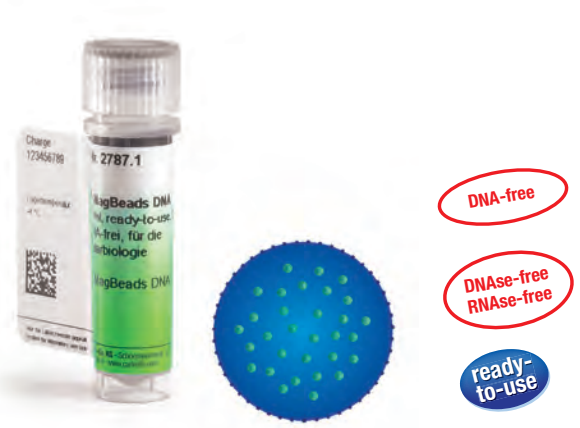
| | | | |
|---|---|---|---|
| **X985.3** | 100 ml | glass | 27,85 € |
| **X985.1** | 250 ml | glass | 48,95 € |
| **X985.2** | 500 ml | glass | 74,10 € |

Please note our **Technical Information Brochure** on the Internet next to the products:

**Phenolic DNA Isolation**
Background and protocol

**Safety data sheets**
can be found on the Internet next to the product description.

# Extraction Systems & -Kits




## Roti®-MagBeads DNA

**20 mg/ml, ready-to-use, DNAse- and DNA-free, for molecular biology**

Magnetic silica gel beads for isolation of genomic DNA.
Storage temp.: +4 °C

- For isolation of highly pure genomic DNA from blood, cell and tissue extracts and bacteria suspensions
- High DNA binding capacity for exceptional recovery rates
- High magnetic strength guarantees very efficient collection of the beads
- Suitable for manual and automated preparations

Roti®-MagBeads DNA is a matrix for simple and efficient isolation of DNA from solutions like blood, cell and tissue extracts and bacteria suspensions. Due to the high binding capacity, a very high magnetic strength, and fast bead collection, Roti®-MagBead DNA is particularly suited for manual and automated preparations.

The magnetic properties enable easy and quick washing steps, allowing one preparation to take place in approx. 20 mins. The small bead size of 1.2 µm in average provides a large surface with excellent coupling capacities. Handling is easy and identical to standardized protocols for beads of other suppliers, providing easy establishment of the assays. The high DNA binding capacity guarantees high recovery rates from a variety of buffer systems as well as directly from cell lysates. Isolated DNA can be easily eluted in small volumes.

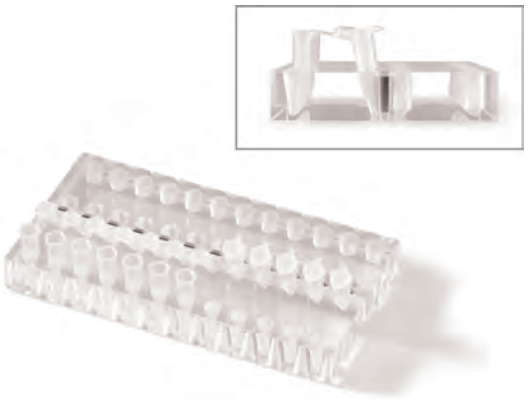
The Matrix of Roti®-MagBeads DNA consists of uniform, superparamagnetic silica beads with a deliberately designed uneven surface optimised for DNA binding. In those beads, nanometer-sized particles of magnetic iron(II/III)oxide are embedded in silicium oxide, resulting in high magnetic mobility with low aggregation potential. The surface is made from pure silicium oxide and allows application in pH values between 3 and 13, as well as at 95 °C in maximum.
Well suited for automated applications.




**Type analysis:**

Concentration. ..... 20 ±1 mg/ml
Size distribution. ..... 0,7-2,5 µm
Mean particle sizing. ..... 1,2 ±0,1µm
Bead number. ..... 0,6-2 x $10^{10}$ Beads/ml
Magnetic iron content. ..... ≥50 %
DNA binding capacity (whole blood). ..... ~2 µg/100 µg Beads
Suspension in ultrapure water (*aqua ad injectabila*) with 0,05 % sodium azide.

| | | | |
|---|---|---|---|
| **2787.2** | 50 µl | plastic | 14,20 € |
| **2787.1** | 2 ml | plastic | 129,55 € |



## Roti®-Mag Tube-Separator

For collection of magnetic beads in reaction tubes.

The Roti®-Mag Tube Separator has been designed for fast and efficient collection of Roti®-Mag Beads magnetic particles during elution of biological molecules in reaction tubes. The separator has been equipped with 12 particularly strong permanent magnets, providing magnetic force for separation in 1 to 24 tubes in parallel. It, therefore, enables for single tube preparation as well as high-throughput applications.

Short separation times (under 2 mins.) are allowed by the close proximity of magnets and tubes. The use of transparent acrylic glass ensures permanent visual control of the separation process without the need to remove the tubes from the block. 24 non-magnetic sockets for reaction tubes have been included to provide a whole working station for both, magnetic separation and resuspension.

Usable with 2 x 12 tubes of 1,5 and 2,0 ml volumes.

| Usable for | Art. No. | Pack Qty | € |
|---|---|---|---|
| 2 x 12 tubes á 1.5 and 2 ml | **2807.1** | 1 | 394,55 |



## Roti®-Mag 96well-Separator

For collection of magnetic beads in 96well plates.

The Roti®-Mag Tube Separator has been designed for fast and efficient high-throughput collection of Roti®-Mag Beads magnetic particles during elution of biological molecules in 96well plates. Each separator is made from acrylic glass and is equipped with 24 particularly strong permanent magnets of 7,5 mm diameter.

The close proximity of the magnets strongly pulls the beads of four adjacent wells, collecting the beads very efficiently and in short time (under 2 mins.) and, hence, enabling high speed and quantitative buffer exchange. For resuspension of the beads, plates are removed from the magnet stand.

Usable with 96well plates of 300 µl up to 2 ml well volume.

| Usable for | Art. No. | Pack Qty | € |
|---|---|---|---|
| 96well plates (300 µl - 2 ml) | **2808.1** | 1 | 394,55 |




## Roti®-Prep Plasmid MINI

**for molecular biology**

For fast and easy isolation of plasmid and cosmid DNA from recombinant bacteria.

Storage temp.: +20 °C

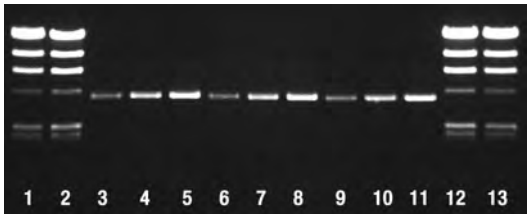
**Danger** H290-H302-H314

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- For all plasmids and cosmids of up to 10 kb length
- Up to 20 µg highly pure DNA, directly applicable to restriction digest, sequencing etc.
- 12 preparations in approx. 30 minutes

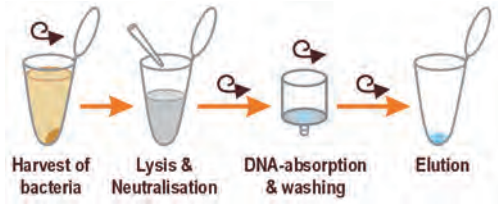
**New, optimised formulation. Coloured tracer for ideal DNA/membrane binding included.**

Designed for the isolation of high-purity plasmid or cosmid DNA from bacteria, Roti®-Prep Plasmid MINI Kit is based on the well-known "mini-prep" method, an alkaline lysis of bacteria followed by purification of the DNA from the cell debris, RNA and genomic DNA. The kit uses the easy-to-handle spin column technique, eliminating the need for time-consuming techniques like phenol-chloroform extraction and alcohol precipitation. The highly efficient and DNA-specific silica-gel membrane DNA absorption provides reliably high amounts of DNA, independently from vectors or bacterial strains used.

Up to 20 µg DNA can be isolated from up to 10 ml bacterial culture (5 preparations per column). DNA is free of RNA or protein contamination and can be directly applied to all standard down-stream applications like restriction digest, sequencing, *in vitro* transcription, transfection etc.




The **figure** depicts DNA of a 4 kb plasmid isolated by three equivalent kits
Lane 6, 7, 8: Roti®-Prep Plasmid MINI, 3 / 6 / 9 µl (1:10 dilution)




**The kit contains:**
RNAse A (Art. No. 3953), Lysis buffer (Art. No. 3970), Neutralisation buffer (Art. No. 3971), Washing buffer (Art. No. 3975), Elution buffer (Art. No. 3978), Column activation buffer (Art. No. 3980), Mini spin columns (10/50/250), 2 ml Collection tubes (10/50/250), detailed instructions-for-use. Excluding the columns, contents of this Kit may not be bought separately.

| | | |
|---|---|---|
| **HP29.4** | 10 prep. | 30,00 € |
| **HP29.1** | 50 prep. | 69,80 € |
| **HP29.2** | 250 prep. | 267,70 € |




## Roti®-Prep Plasmid MINI-XL

**for molecular biology**

For easy isolation of plasmids from up to 15 ml bacterial culture.

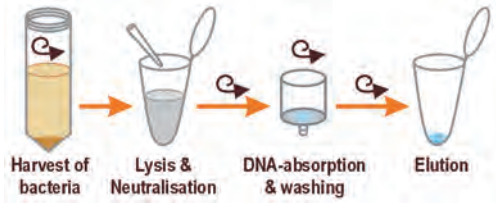
Storage temp.: +20 °C

**Danger** H225-H290-H302-H315-H318-H336

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Preparation from 5-15 ml bacteria culture
- Preparation within approx. 20 minutes
- Yield 60-70 µg (on average)

**MIDI preps in MINI size-fomat**

Roti®-Prep Plasmid MINI-XL is a further development of the classical Plasmid Mini extraction kit, which is based on an alkaline lysis and binding of the plasmid to the spin filter.
The binding capacity of the spin filter has been, compared to usual plasmid mini kits, considerably increased (approx. 80 µg plasmid DNA) and allows now a plasmid extraction from 5-15 ml bacteria culture. Since filter dimensions correspond to the usual miniprep spin filters, its application differs only slightly from other plasmid mini kits. Most significant difference is the afore done convenient lysis in a 15 ml tube.
The elution resulting in highly concentrated pure DNA in 100 µl, takes then place in a 1,5 ml tube, like in standard mini kits. Isolated DNA is free of RNA or protein contamination and can be directly applied to all standard down-stream applications like restriction digest, sequencing, *in vitro* transcription, transfection etc.




**The kit contains:**
Resuspension Buffer RB, Lysis Buffer LS, Neutralisation Buffer NB, Washing Buffer PA, Washing Solution PB, Elution Buffer XEB, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 96-99,8 % (p.a., Art. No. 9065) separately.

| | | |
|---|---|---|
| **8546.1** | 10 prep. | 25,30 € |
| **8546.2** | 50 prep. | 90,85 € |
| **8546.3** | 250 prep. | 342,95 € |

## Roti®-Prep Plasmid MINI Columns

**DNA-extraction columns for the Roti®-Prep Plasmid Kit**

Replacement columns and 2 ml tubes for additional DNA-extractions using the buffers of the Roti®-Prep Plasmid MINI Kit (Art. No. HP29). Detailed instructions-for-use can be found there.

Not suited for Roti®-Prep Plasmid MINI-XL (Art. No. 8546).

| Art. No. | Pack Qty | € |
|---|---|---|
| **2929.2** | 50 | 43,55 |




## Roti®-Prep Genomic DNA MINI

**for molecular biology**

For isolation of genomic DNA from tissues, rodent tails, FFPE tissues, buccal swabs, cell cultures.

Storage temp.: +20 °C

**Danger** H225-H315-H317-H318-H334-H335-H336-H411

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Preparation in approx. 15 minutes (excluding lysis)
- Yield up to 65 µg gDNA, depending on source material

Roti®-Prep Genomic DNA MINI has been developed for the isolation of genomic DNA from various sources.
The isolation is carried out through the proven and reliable spin column technique, which is very easy to handle and needs only few steps.

In addition to the especially on proteinase K adapted lysis buffer, the filtration spin column has been optimised, permitting particularly high extraction rates. Extraction from up to 40 mg tissue, therefore, allows a yield of up to 65 µg DNA. The thereby extracted DNA is free of RNA and proteins, and can directly be stored or used for downstream applications.

Suitable source material:
- Tissue (up to 40 mg)
- Rodent tails (0,5-1 cm)
- FFPE tissue (formalin-fixed, paraffin-embedded)
- Buccal swabs
- Cell culture (up to 5x10$^6$ cells)




**The kit contains:**
Lysis Buffer LSA, Binding Buffer BSN, Proteinase K, Washing Buffer WST, Elution Buffer EB, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 99,8 % (p.a., Art. No. 9065), RNase A (Art. No. 7156, not for FFPE tissue), and for FFPE tissue xylole (Art. No. 4436) or octane separately.

| | | |
|---|---|---|
| **8472.1** | 10 prep. | 38,60 € |
| **8472.2** | 50 prep. | 145,15 € |
| **8472.3** | 250 prep. | 568,70 € |




## Roti®-Prep Blood Genomic DNA MINI

**for molecular biology**

For isolation of DNA from whole blood

Storage temp.: +20 °C

**Danger** H225-H317-H319-H315-H334-H335-H336-H400

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Preparation in approx. 25 minutes
- Yield up to 30 µg gDNA

Roti®-Prep Blood Genomic DNA MINI has been specially designed for the isolation of high purity genomic DNA from blood samples.
The isolation is carried out through the proven and reliable spin column technique, which is very easy to handle and needs only few steps.

The Roti®-Prep Blood Genomic DNA MINI kit has been adapted to gain high purity DNA from fresh or frozen blood (EDTA or citrate stabilised) or whole blood, respectively. In order to get optimal results, two protocols, depending on sample amount, are provided. Furthermore, the properties of the binding buffer have been optimised to reach highest binding capacity with blood samples, permitting a yield of up to 30 µg gDNA out of 400 µl blood. Utilisation is uncomplicated and fast to achieve (approx. 25 minutes, lysis included), and offers best conditions for following downstream applications.

Isolated gDNA is free of EDTA, RNA, or proteins, and may directly be applied to all standard downstream applications like, for instance, restriction digest, PCR etc.




**The kit contains:**
Lysis Buffer LSN, Binding Buffer BR, Proteinase K, Washing Solution WSO, Washing Buffer WSH, Elution Buffer EB, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 99,8 % (p.a., Art. No. 9065) and RNase A (optional, Art. No. 7156) separately.

| | | |
|---|---|---|
| **8620.1** | 10 prep. | 34,30 € |
| **8620.2** | 50 prep. | 130,65 € |
| **8620.3** | 250 prep. | 514,95 € |

**Instructions for use**
can be found on the Internet next to the product description.




## Roti®-Prep RNA MINI

**for molecular biology**

For RNA isolation from eukaryotic cells, tissues, bacteria, biopsies.

Storage temp.: +20 °C

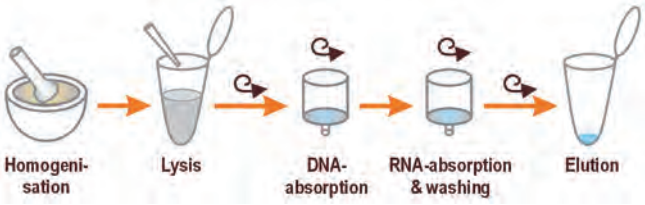
**Warning** H302+H312-H412-EUH032

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Use of DNase not necessary
- Preparation in approx. 15 to 40 minutes
- Yields up to 100 µg RNA, depending on source material
- Elution in 30-80 µl

Roti®-Prep RNA MINI has been developed for the isolation of total RNA from various sources.
The isolation is carried out through the proven and reliable spin column technique, which is very easy to handle and needs only few steps.

One of the critical points in RNA extraction is the presence of endogenous RNases, which can lead to high losses very early in extraction of the (in comparison to DNA) very sensitive RNA. Therefores the lysis buffer has been specially optimised to inactivate RNases, with highest efficiency, already at the early stage of the extraction.
Furthermore, in order to get a high-pure total RNA, one particularly for this purpose developed prefilter is used. This filter exclusively serves for binding and targeted removal of DNA impurities, and is discarded after use with the bound DNA. Thus, it is possible to omit application of DNase I.
Total RNA is then obtained from the DNA-free eluate through a simple "Binding-Washing-Elution" process.
In each preparation, up to 100 µg highly pure total RNA may be isolated.
One preparation takes (excluding lysis) approx. 10 mins.
Isolated RNA is free of DNA and enzyme inhibitors, and may directly be applied to RT-PCR or other downstream applications.

Suitable source material:
- Tissues (up to 20 mg)
- Eukaryotic cells (up to $5x10^6$)
- Bacteria Gram + and Gram - (up to $1x10^9$)
- Biopsies




**The kit contains:**
Lysis Buffer LSR, Washing Buffer WSA, Washing Solution WSL, RNase-free Water, spin filters (blue), spin columns (violet), collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 99,8 % (p.a., Art. No. 9065) and 70 % (p.a., Art. No. T868) separately.

| | | |
|---|---|---|
| **8485.1** | 10 prep. | 55,80 € |
| **8485.2** | 50 prep. | 213,95 € |
| **8485.3** | 250 prep. | 843,90 € |




## Roti®ZOL RNA

**for molecular biology**

Ready-made solution with green dye for isolation of total RNA

RNA isolation reagent

Storage temp.: +4 °C

**Danger** H290-H302+H312+H332-H314-H341-H373-EUH032

- Easy and very rapid two-step RNA isolation
- High recovery rates of intact, very pure total RNA
- Applicable on a broad range of tissues and cell types
- The purified RNA is ready for use in standard downstream applications such as RT-PCR

Roti®ZOL RNA is a ready-to-use, green-coloured solution for isolating total RNA from biological samples such as cells or tissue.
Roti®ZOL RNA is based on the phenolic isolation procedure known from Chomczynski and Sacchi (*Anal. Biochem.* (1987) 162:156-9). Due to the advanced and optimized formulation, Roti®ZOL RNA results in very high recovery rates of highly pure total RNA. Application is very convenient and preparation of several samples in parallel is finished in less than one hour. Additionally, the green colour significantly simplifies the separation of the RNA containing aqueous phase, the DNA containig interphase, and the protein containing phenolic phase during the process.

Typical RNA yield from $5x10^6$ cells: 30-35 µg
Typical purity of RNA prepared from $5x10^6$ cells: 2,08 ($A_{260}/A_{280}$)

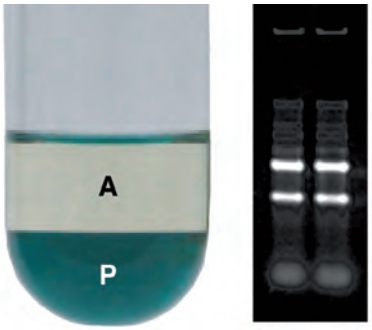



**Figure 1 and 2:**
Isolation of totalRNA by Roti®ZOL RNA.
Left: Tube after centrifugation.
A: Aqueous phase - RNA containig, P: Phenolic phase - protein containing. DNA accumulates in the A/P interphase.
Right: Typical gel of total RNA isolated by Roti®ZOL RNA (extracted from $5x10^6$ HL-60 cells).

1 ml Roti®ZOL RNA is used for RNA isolation from 100 mg tissue or $10^7$ cells, respectively.

| | | | |
|---|---|---|---|
| **9319.1** | 100 ml | plastic | 224,70 € |
| **9319.2** | 200 ml | plastic | 392,40 € |




## Roti®-Quick kit

**for molecular biology**

For RNA-isolation from cells and tissues.

Storage temp.: +4 °C

**Danger**

H225-H314-H301+H311-H330-H341-H351-H373-H336-H412-EUH032

- Easy, most versatile application
- High recovery rate of intact, very pure total RNA
- Column-free two-step isolation
- Applicable on nearly any tissue type

Column-free, ultra-flexible isolation system designed for reliable isolation of total RNA from almost any tissue. The Roti®-Quick Kit is suitable for use with cell culture material, biopsies, high-fat or high-protein tissue, blood (Üçeyler *et al. Neurology* (2007) 69:42-9), solid plant material, mitochondria (Backert *et al. Plant Molecular Biology* (1997) 33:1037-50), mycoplasms (Weiner *et al. Nucleic Acids Res.* (2000) 28:4488-96) and many more. The kit can be used for both fresh tissue and frozen material.

The Roti®-Quick Kit is based on the GITC isolation method by Chomczynski and Sacchi (Chomczynski and Sacchi. (1987) *Anal. Biochem.* 162:156) and includes three optimised ready-to-use solutions that were developed by molecular biologists and have proven effective for many years.

After the tissue has been homogenised, the RNA is purified in a single step and isolated by precipitation. Each isolation takes approximately 2,5 hours, and multiple isolations can easily be performed simultaneously. The incubation and centrifuging steps take about 2 hours. Preparation as given in the instruction-for-use is optimised for RNA isolation from approx. 0,2 g of tissue or cell material. The amount of material isolated per batch may easily be up- or downscaled to larger or smaller amounts of tissue.

The isolated total RNA is highly pure and may be used directly for all common down-stream applications, such as RT-PCR, Northern blotting and reverse transcription. Detailed instructions-for-use are enclosed with each kit.




**This Kit contains:**
Roti®-Quick Kit 1 (Art. No. A976), Roti®-Quick Kit 2 (Art. No. A977), and Roti®-Quick Kit 3 (Art. No. A978). Contents of this Kit may not be bought separately.

The Roti®-Quick Kit is sufficient for 20 isolations from 0,2 g tissue each.

| | | | |
|---|---|---|---|
| **A979.1** | 1 kit | cardboard | 87,65 € |




## Roti®-Prep Viral RNA/DNA MINI

**for molecular biology**

For isolation of viral DNA and RNA

Storage temp.: +20 °C

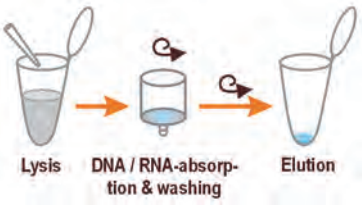
**Danger** H225-H315-H317-H319-H334-H335-H336-H411-EUH032

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Preparation within approx. 25 minutes
- Elution in 60 µl

Roti®-Prep Viral RNA/DNA MINI has been developed for the isolation of viral DNA and RNA from various kinds of source material.
The isolation is carried out via the proven and reliable spin column technique, which is very easy to handle and needs only few steps.

The kit enables the simultaneous extraction of viral ssDNA, dsDNA and ssRNA. The purification happens by using a carrier RNA, which engenders a higher binding of the nucleic acid (resp. its complex with the carrier RNA) on the spin filter and thus a higher recovery rate.
Furthermore, in order to achieve a maximum of nucleic acid purity for each source material, 5 specifically optimised protocols are provided.
Thus, within approx. 25 mins high-pure viral nucleic acid is eluted, free from inhibitors. This nucleic acid may directly be applied to further downstream applications, like RT-PCR, PCR, packaging etc.

Suitable source material:
- Tissues and biopsies (up to 20 mg)
- Cell culture supernatants, serum, plasma, cell-free body fluids (up to 400 µl)
- Swabs




**The kit contains:**
Lysis Buffer LSV, Binding Buffer BSN, Carrier CS, RNase-free Water, Proteinase K, Washing Buffer WSA, Washing Solution WSL, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 99,8 % (p.a., Art.-No. 9065) separately.

| | | |
|---|---|---|
| **8547.1** | 50 prep. | 213,95 € |




## Roti®-Prep PCR Purification

**for molecular biology**

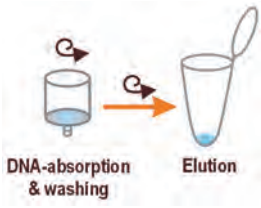
For concentration and purification of PCR products.
Storage temp.: +20 °C

**Danger** H225-H319-H336

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Purification in approx. 3 minutes
- For fragment length of 60 bp-30 kb
- Recovery rate up to 95 %
- Elution in 10 µl

Very fast purification and/or concentration of PCR products, between 60 bp and 30 kb length, through simple but effective spin column technique.

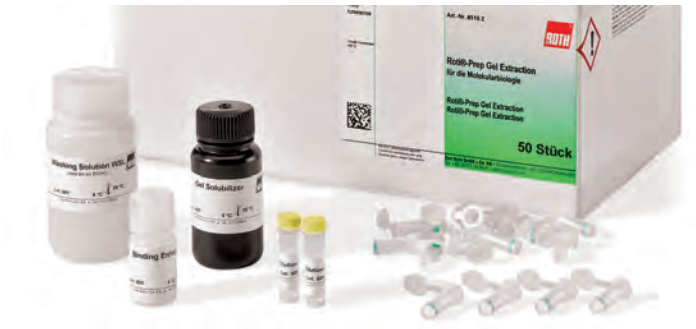
The high performance membrane used for the Roti®-Prep PCR Purification columns, allows purification or concentration of PCR products within approx. 3 minutes. The PCR product to be extracted (50 µl in maximum) is first mixed with binding buffer, which can be done separately or directly in the spin filter column. The nucleic acid is then eluted by centrifugation, without any additional washing step, in a minimum of 10 µl of water or buffer. Isolated DNA is free of residual nucleotides or PCR additives, and may directly be applied to all standard downstream applications like cloning or sequencing.




**The kit contains:**
Binding Buffer, Elution Buffer EB, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

| | | |
|---|---|---|
| **8503.1** | 10 prep. | 20,35 € |
| **8503.2** | 50 prep. | 75,15 € |
| **8503.3** | 250 prep. | 292,95 € |

**Instructions for use**
can be found on the Internet next to the product description.




## Roti®-Prep Gel Extraction

**for molecular biology**

For DNA extraction from agarose gels.
Storage temp.: +20 °C

**Warning** H290-H302+H312+H332-H315-H319-H412-EUH032

- Preparation by well-known mini spin-column system
- Fast, easy and efficient
- Extraction within approx. 20 minutes
- For fragment length of 100 bp-30 kb
- Recovery rate up to 90 %

DNA extraction from agarose gels through incubation and subsequent spin column process.
The gel slice to be extracted (up to 300 mg) is first solubilised in a lysis buffer through a simple 10 minute incubation.
After that, DNA is elutied via convenient spin filter centrifugation in approx. 10 mins.
A specially developed Binding Enhancer is admixed in order to enhance binding efficiency of the DNA to the filter, and thus yield and purity of the isolated DNA.
Furthermore, the Roti®-Prep Gel Extraction kit allows, if needed, to reduce elution volume down to 10 µl in order to obtain particularly highly concentrated DNA.

For gel runs both, TAE and TBE may be used. The kit is compatible with all standard gel loading buffers and gel staining reagents, even non-toxic ethidium bromide replacements like, for instance, Roti®-GelStain.

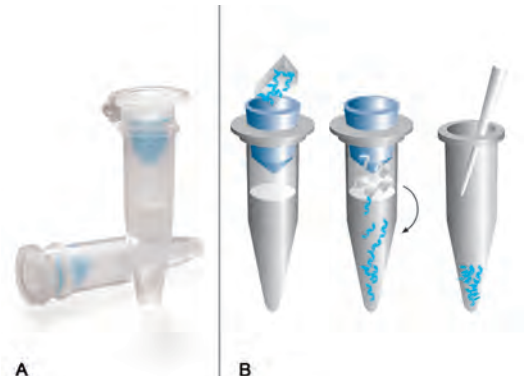
Isolated DNA is free of residual agarose, PCR- and ligase inhibitors, and cytotoxic reagents, and can directly be applied to all standard downstream applications like cloning, PCR, transformation and transfection.




**The kit contains:**
Binding Enhancer, Gel Solubizer, Washing Solution WSL, Elution Buffer EB, spin columns, collection tubes, elution tubes, detailed instructions-for-use. Contents of this Kit may not be bought separately.

Please order ethanol 96-99,8 % (p.a., Art. No. 9065) separately.

| | | |
|---|---|---|
| **8510.1** | 10 prep. | 20,35 € |
| **8510.2** | 50 prep. | 75,15 € |
| **8510.3** | 250 prep. | 292,95 € |




## Ultrafree®-DA gel extraction kit

Made by MERCK MILLIPORE
**for molecular biology**

For easy and speedy extraction of DNA fragments from agarose or polyacryl amide gels.

- Extraction in 10 minutes
- High recovery of fully intact DNA
- Highly efficient with all gel running buffers
- Easy application - even during student courses
- Convenient handling even of large sample numbers

Recovery of functionally intact DNA in one spin-step. The agarose slice is placed directly into the pre-assembled device and centrifuged for 10 minutes (fig. B). Melting or enzymatic digestion is not required. The agarose slice is nebulised and the DNA is filtered and purified during centrifugation. The eluate may simply be stored away in the extraction tube or collected from the tube in order to apply the DNA to subsequent analyses.

**Application:**

Compatible with all agaroses with standard gelling temperature (not compatible with Low-Melting agarose). Suitable for fragments of 100 bp up to 10,000 bp. Ideal also for labelled DNA, e.g. after fluorescence- or radioactive labelling. Reliable recovery rates for fragments of 100 bp up to 2,000 bp. The gel extraction units may be used with all standard gel running buffers. Following elution from gels run with Rotiphorese® 10 x TAE buffer *light* (Art. No. 0122.1), the DNA may be applied **directly** to cloning or sequencing.

One extraction unit consists of a 1,5 ml standard reaction tube and a removable nebuliser/filter unit.

Compatible with all standard Mini-centrifuges.

| Art. No. | Pack Qty | € |
|---|---|---|
| **AE86.1** | 1 kit (50 extraction units) | 141,90 |

▶ Tools for cutting of DNA bands like, for instance, Gel Cutting Tips see page 460

▶ Safety blades see page 322

**Instructions for use**
can be found on the Internet next to the product description.




## Roti®-Elution Tubes

**RNase-free, DNase-free and proteinase-free, free of PCR products. For gel elution and purification of DNA/RNA and proteins.**

- Ultrapure
- Easy-to-handle
- Very gentle process
- Typical recovery rate of >95 %
- Suitable for elution from agarose and PAGE
- Suitable for dialysis of biomolecules
- Suitable for oligoncleotides, dsDNA, ssDNA, RNA, proteins and protein/ nucleic acid complexes
- Compatibel with all popular electrophoresis units

Easy-to-handle system for gel elution and purification of DNA/RNA and proteins in solution (electro elution).

This very gentle method guarantees the non-disruptive purification of high-molecular or genomic DNA as well as of native protein complexes and long peptides. Using membranes of low MWCO, elution of very small DNA fragments is possible, making the tubes a very useful tool for the efficient desalting of primers within 60-100 min as well as for purification of siRNA (ss or duplexes).

Roti® elution tubes are suitable for elution of ssDNA (≥20 nt), dsDNA (15 bp-100 kb), RNA of each size, proteins of each size, and of protein/ nucleic acid complexes. The tubes may be applied to elution procedures from agarose- and polyacrylamide gels, as well as to all popular electrophoresis units. Used in floating racks, they are ideal for the purification of DNA, RNA or proteins by means of dialysis.

All Roti® Elutions Tubes are free of DNase, RNase, Proteinase and PCR products. All membranes are made from regenerated cellulose and can thus be exposed to a pH range of 2-12, to a temperature of +60 °C, and also to a variety of organic solvents. Additionally, the membranes are free of sulphate and heavy metals and were treated with EDTA. Hence, macromolecules (like proteins or nucleic acids) or other biological particles may be eluted and dialysed in native conformation, and are very well suited for subsequent activity tests.

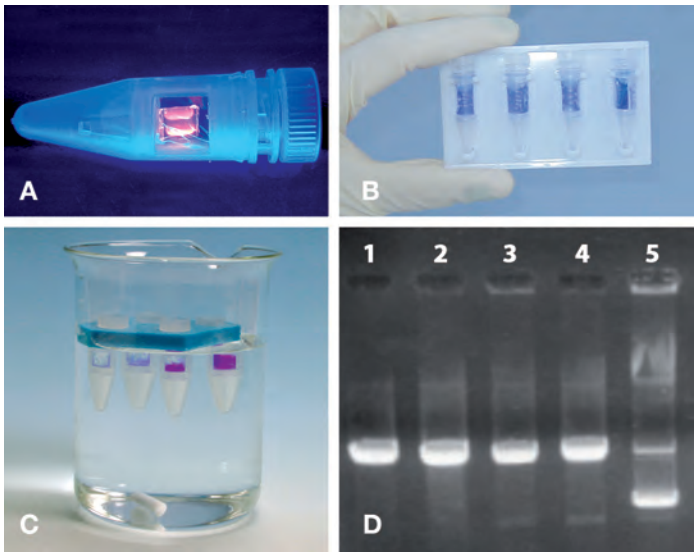
**Application:** Roti® elution tubes are very easy to handle, and therefore can be used in both individual tests and high-throughput applications. Thanks to the screw cap, the vials are easy to open, can easily be filled with gel slices and buffer and can be securely sealed.

The practical elution vial holder has sufficient stability for safe use in electrophoresis cell. Under current flow, the DNA/RNA/protein molecules initially migrate from the gel slice until they are halted by the dialysis membrane. By briefly reversing the polarity of the electrical field, the molecules can be separated from the membrane and pipetted out of the tube together with the buffer. By carefully selecting the tube and the amount of buffer, it is in many cases possible to achieve a high concentration directly within the elution buffer. The buffer can then easily be concentrated by using the usual methods (e.g. precipitation).

Roti® elution tubes with MWCO 1, 25 and 50 kDa are wet packed in stabilising solution (25 % ethanol, 2 mM EDTA) and should stored under refrigeration. All other elution vials are dry packed and can be stored at room temperature.

**Colour code of the Roti®-Elution Tubes MEGA**

| Colour | MWCO | Application |
|---|---|---|
| Blue | 3,5 kDa | Nucleic acids from 50 nt or 25 bp, proteines from 10 kDa |
| Red | 8 kDa | Nucleic acids from 250 nt or 100 bp,proteines from 25 kDa |
| Green | 14 kDa | Nucleic acids from 1000 nt or 500 bp,proteines from 45 kDa |




**Figures:**
**A:** Roti®-Elution Tube under UV-light with a DNA containing agarose slice stained by ethidium bromide
**B:** Roti®-Elution Tubes MIDI positioned in Roti® Elution Tube Tray
**C:** Dialysis of the restriction enzyme *Pst*I in enzyme buffer/8 M urea against pure enzyme buffer
**D:** Detection of enzymatic activity after dialysis by digestion on plasmid DNA (1-4). Untreated control (5).

**Typical applications:** Purification of DNA and proteins from gels, elution of genomic DNA or total RNA, preparation of DNA fragments prior to cloning, purification of siRNA for RNAi assays, purification/desalting of oligonucleotides/primers, purification of RNA or DNA for transfection or transformation, desalting or buffer change of protein solutions.

**Recommended choice of MWCO:**

| MWCO (kDa) | RNA/ssDNA | dsDNA | Proteins |
|---|---|---|---|
| 1 | 20-50 nt | 15-25 bp | 3-15 kDa |
| 3,5 | 50-250 nt | 25-100 bp | 10-30 kDa |
| 8 | 250-1000 nt | 100-500 bp | 25-50 kDa |
| 14 | 1-5 knt | 0,5-2 kb | 45-100 kDa |
| 25 | 5-30 knt | 2-10 kb | 80-200 kDa |
| 50 | >30 knt | 10-100 kb | >150 kDa |

**Technical specifications:**

| Typ | MWCO | Gel slice up to approx. (cm) | Packed | Storage temp. |
|---|---|---|---|---|
| MINI 8 | 8 | 0,4 x 1,0 | dry | +15-25 °C |
| MINI 14 | 14 | 0,4 x 1,0 | dry | +15-25 °C |
| MINI 25 | 25 | 0,4 x 1,0 | wet | +4 °C |
| MIDI 1 | 1 | 0,5 x 1,2 | wet | +4 °C |
| MIDI 3.5 | 3,5 | 0,5 x 1,2 | dry | +15-25 °C |
| MIDI 8 | 8 | 0,5 x 1,2 | dry | +15-25 °C |
| MAXI 3.5 | 3,5 | 1,0 x 2,0 | dry | +15-25 °C |
| MAXI 8 | 8 | 1,0 x 2,0 | dry | +15-25 °C |
| MAXI 14 | 14 | 1,0 x 2,0 | dry | +15-25 °C |
| MAXI 25 | 25 | 1,0 x 2,0 | wet | +4 °C |
| MAXI 50 | 50 | 1,0 x 2,0 | wet | +4 °C |
| MEGA 3.5/10 | 3,5 | preparative | dry | +15-25 °C |
| MEGA 3.5/15 | 3,5 | preparative | dry | +15-25 °C |
| MEGA 3.5/20 | 3,5 | preparative | dry | +15-25 °C |
| MEGA 8/10 | 8 | preparative | dry | +15-25 °C |
| MEGA 8/15 | 8 | preparative | dry | +15-25 °C |
| MEGA 8/20 | 8 | preparative | dry | +15-25 °C |
| MEGA 14/10 | 14 | preparative | dry | +15-25 °C |
| MEGA 14/15 | 14 | preparative | dry | +15-25 °C |
| MEGA 14/20 | 14 | preparative | dry | +15-25 °C |

**Roti®-Elution Tubes MINI**

| Type | Volume | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| MINI 8 | 10-250 µl | **9281.1** | 2 pieces | 12,40 |
| MINI 8 | 10-250 µl | **9281.2** | 30 pieces | 117,20 |
| MINI 8 | 10-250 µl | **9281.3** | 100 pieces | 299,95 |
| MINI 14 | 10-250 µl | **9283.1** | 2 pieces | 12,40 |
| MINI 14 | 10-250 µl | **9283.2** | 30 pieces | 117,20 |
| MINI 14 | 10-250 µl | **9283.3** | 100 pieces | 299,95 |
| MINI 25* | 10-250 µl | **9284.1** | 1 pieces | 10,25 |
| MINI 25* | 10-250 µl | **9284.2** | 5 pieces | 42,90 |

**Roti®-Elution Tubes MIDI**

| Type | Volume | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| MIDI 1* | 50-800 µl | **9263.1** | 1 pieces | 12,40 |
| MIDI 1* | 50-800 µl | **9263.2** | 5 pieces | 52,60 |
| MIDI 3.5 | 50-800 µl | **9266.1** | 2 pieces | 14,55 |
| MIDI 3.5 | 50-800 µl | **9266.2** | 30 pieces | 149,45 |
| MIDI 3.5 | 50-800 µl | **9266.3** | 100 pieces | 424,65 |
| MIDI 8 | 50-800 µl | **9294.1** | 2 pieces | 14,55 |
| MIDI 8 | 50-800 µl | **9294.2** | 30 pieces | 149,45 |
| MIDI 8 | 50-800 µl | **9294.3** | 100 pieces | 424,65 |

**Roti®-Elution Tubes MAXI**

| Type | Volume | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| MAXI 3.5 | 0,1-3 ml | **9421.1** | 2 pieces | 18,85 |
| MAXI 3.5 | 0,1-3 ml | **9421.2** | 30 pieces | 241,90 |
| MAXI 3.5 | 0,1-3 ml | **9421.3** | 100 pieces | 665,45 |
| MAXI 8 | 0,1-3 ml | **9425.1** | 2 pieces | 18,85 |
| MAXI 8 | 0,1-3 ml | **9425.2** | 30 pieces | 241,90 |
| MAXI 8 | 0,1-3 ml | **9425.3** | 100 pieces | 665,45 |
| MAXI 14 | 0,1-3 ml | **9427.1** | 2 pieces | 18,85 |
| MAXI 14 | 0,1-3 ml | **9427.2** | 30 pieces | 241,90 |
| MAXI 14 | 0,1-3 ml | **9427.3** | 100 pieces | 665,45 |
| MAXI 25* | 0,1-3 ml | **9428.1** | 1 pieces | 17,75 |
| MAXI 25* | 0,1-3 ml | **9428.2** | 5 pieces | 81,20 |
| MAXI 50* | 0,1-3 ml | **9489.1** | 1 pieces | 17,75 |
| MAXI 50* | 0,1-3 ml | **9489.2** | 5 pieces | 81,20 |
| MAXI 50* | 0,1-3 ml | **9489.3** | 30 pieces | 338,65 |

**Roti®-Elution Tubes MEGA**

| Type | Volume | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| MEGA 3.5/10 | max. 10 ml | **9371.1** | 1 pieces | 17,75 |
| MEGA 3.5/10 | max. 10 ml | **9371.2** | 10 pieces | 123,65 |
| MEGA 3.5/15 | max. 15 ml | **9380.1** | 1 pieces | 17,75 |
| MEGA 3.5/15 | max. 15 ml | **9380.2** | 10 pieces | 123,65 |
| MEGA 3.5/20 | max. 20 ml | **9381.1** | 1 pieces | 17,75 |
| MEGA 3.5/20 | max. 20 ml | **9381.2** | 10 pieces | 123,65 |
| MEGA 8/10 | max. 10 ml | **9390.1** | 1 pieces | 17,75 |
| MEGA 8/10 | max. 10 ml | **9390.2** | 10 pieces | 123,65 |
| MEGA 8/15 | max. 15 ml | **9393.1** | 1 pieces | 17,75 |
| MEGA 8/15 | max. 15 ml | **9393.2** | 10 pieces | 123,65 |
| MEGA 8/20 | max. 20 ml | **9394.1** | 1 pieces | 17,75 |
| MEGA 8/20 | max. 20 ml | **9394.2** | 10 pieces | 123,65 |
| MEGA 14/10 | max. 10 ml | **9396.1** | 1 pieces | 17,75 |
| MEGA 14/10 | max. 10 ml | **9396.2** | 10 pieces | 123,65 |
| MEGA 14/15 | max. 15 ml | **9397.1** | 1 pieces | 17,75 |
| MEGA 14/15 | max. 15 ml | **9397.2** | 10 pieces | 123,65 |
| MEGA 14/20 | max. 20 ml | **9398.1** | 1 pieces | 17,75 |
| MEGA 14/20 | max. 20 ml | **9398.2** | 10 pieces | 123,65 |

## Roti®-Elution Tube Trays

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| Roti® Elution Tube Tray MIDI for 4 Elution Tubes MINI | **9626.1** | 1 pieces | 13,45 |
| Roti® Elution Tube Tray MIDI for 4 Elution Tubes MIDI | **9627.1** | 1 pieces | 15,60 |
| Roti® Elution Tube Tray MAXI for 3 Elution Tubes MAXI | **9628.1** | 1 pieces | 18,85 |

Please order the respective Roti®-Elution Tube Tray separately.
The classification below refers only to Art. Nos. marked *

**Attention** H226-H319

# FTA® Technology

**Collect, transport, archive and isolate nucleic acids - all at room temperature.**



FTA® Cards utilize patented Whatman FTA® Technology that simplifies the handling and processing of nucleic acids. The cards contain chemicals that lyse cells, denature proteins and protect nucleic acids from nucleases, oxidative and UV damage.

FTA® Cards rapidly inactivate organisms, including blood-borne pathogens, and prevent the growth of bacteria and other microorganisms. Capture of nucleic acid is a most simple and highly rapid process which can be performed quite easily also by untrained personal. The captured DNA is stable for years at room temperature.

Indicating FTA® Cards change colour upon sample application to facilitate handling of colourless samples. Since FTA® Cards are suitable for virtually any cell type, this is a very versatile, ready-to-use and easy-to-handle tool for storage and isolation of genomic DNA.

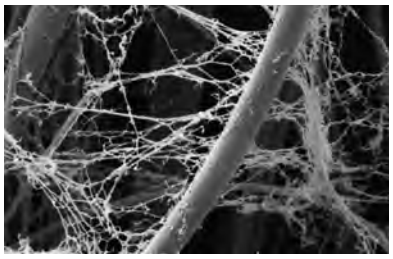


**Figure:**
Electron micrograph showing DNA entrapped within the FTA Matrix (magnification x 10,000).

**Instructions for use**
can be found on the Internet next to the product description.




## FTA® Cards

Made by GE Healthcare.
**Speciality cards for space- and time-saving collection, archival storage, and isolation of genomic DNA from a variety of sample material. Originally Whatman.**

- Capture nucleic acid in one easy step - simply apply blood or tissue material to the card
- Captured nucleic acid is ready for downstream applications in less than 30 mins.
- Genomic DNA collected on FTA® Cards is stable for years at room temperature
- Suitable for virtually any cell type
- Indicating FTA® Cards change colour upon sample application in order to facilitate handling of colourless samples

Simply apply your sample to the FTA® Card. Liquids are pipetted or trickled, tissue samples are pressed onto the surface. Cell membranes and organelles are automatically lysed and the released nucleic acids are entrapped in the fibres of the matrix (see figure). The nucleic acids remain immobilized and are stabilized for transport, immediate processing or long-term storage. Libraries and species DNA collections can be stored simply in a folder; single DNA samples can be filed in your lab manual. FTA® Cards facilitate sample collection in remote locations and simplify sample transport, thus, you can collect samples in the field without worrying about refrigeration.
Captured nucleic acids are used for downstream experiments by simply taking a small punch from the FTA® Card, wash with FTA® Purification Reagent and rinse with TE buffer (Roti®-Stock 100 x TE Buffer, Art. No. 1052.1). DNA on the washed punch is ready for use in a variety of applications given below. Genomic DNA stored on FTA® Cards at room temperature for over 14 years (and counting) has been successfully amplified by PCR. For RNA, being more sensitive than DNA, we recommend rapid analysis after only few weeks' storage at room temperature.

FTA® Cards contain chemicals that lyse cells, denature proteins and protect nucleic acids from nucleases, oxidative and UV damage. FTA® Cards rapidly inactivate organisms, including blood borne pathogens, and prevent the growth of bacteria and other microorganisms. Each card can be used for archival storage or multiple downstream applications of 1-2 (MINI) and 1-4 (CLASSIC) independent samples.

**Suitable for** blood, cultivated cells, buccal cells, plant material, bacteria, microorganisms, tissue and tissue homogenisations, virions, M13 plaques and more.

**Applications:** Storage of genomic DNA samples and libraries, collection of nucleic acid from animal tissue or cell cultures, or from plants or microorganisms during in-field-experiments.

**Downstream-Experiments:** E. g. PCR, real-time PCR, SNP and STR analysis, transgenetic identification, whole genome amplification, HLA typing, and genotyping **in** forensics, molecular biology, food and agriculture testing, drug discovery, genomics, species identification, and more.

WGK 2

| Type | Areas | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| MINI | 2 | **CL90.1** | 25 | 115,00 |
| MINI with colour indicator | 2 | **CL91.1** | 25 | 143,00 |
| CLASSIC | 4 | **CL93.1** | 25 | 130,00 |
| CLASSIC with colour indicator | 4 | **CL94.1** | 25 | 164,00 |



## FTA® CloneSaver Cards

Made by GE Healthcare.
**Speciality cards for space- and time-saving archival storage and isolation of Plasmid and BAC DNA. Originally Whatman.**

- Capture DNA in one easy step by simply applying the samples (recombinant bacteria, glycerol stocks etc.) to the card
- Captured nucleic acid is easily accessible for downstream applications
- DNA collected on FTA® CloneSaver Cards is stable for years at room temperature
- Store up to 96 clones on each card
- Standard 96well plate format and compatible with multi-channel pipettors

Apply few µl bacterial culture, resuspended colony or glycerol stock. Cells are lysed and plasmid or BAC DNA is stabilized for long-term storage or immediate processing. Captured nucleic acids are used for downstream experiments without the need for culture regrowth and plasmid purification. Simply take a small punch from the FTA® Card and wash with TE buffer (Roti®-Stock 100x TE Buffer, Art. No. 1052.1). DNA on the washed punch is ready for elution or for direct use in PCR, transformation, amplification by rolling circle followed by sequencing, and so on.
WGK 2

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| CloneSaver | **HP11.1** | 5 | 163,00 |




## FTA® Purification Reagent

**ready-to-use, for molecular biology**

For purification of nucleic acids stored on FTA® Cards. Originally Whatman.
Simple and rapid purification of nucleic acids stored on FTA® Cards.
Ensures superior quality DNA for PCR or SNP analysis.
Removes heme, PCR inhibitors and other potential contaminants.
WGK 2

| | | | |
|---|---|---|---|
| **CL99.1** | 500 ml | plastic | 359,00 € |



## Harris Uni-Core Punches

Made by GE Healthcare.
**GE Healthcare's disposable Uni-Core Punch addresses your laboratory's manual punching requirements. Designed for use with Whatman FTA® Cards, FTA® Elute Cards, and EasiCollect device.**

Uni-Core Punch is a disposable punch which has a polished steel tip that is case-hardened and can be sterilized. Each tip provides up to 500 punches before disposal. Uni-Core Punch is available in diameters from 1,0 to 6,0 mm for a variety of sampling needs. It is housed in a plastic handle and disposable for contamination control. Stainless steel cutting edges enable manual coring, retrieval, and controlled ejection of the FTA punch. Manual punching is preferred for laboratories with low sample volumes punching 1 to 50 samples per day.

Very easy application: By pressing the Micro tip down a tiny slice is punched from the FTA® card. This DNA containing sample is then washed and directly applied to downstream experiments.

Two cutting mats are included in the small packages (4 punches). Colour of the punches supplied may differ to that shown in the picture.

| Type | Cutting Mats | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| 1,0 mm | - | **6729.1** | 25 pieces | 122,00 |
| 1,2 mm | 2 | **HP15.1** | 4 pieces | 54,70 |
| 1,2 mm | - | **HP15.2** | 25 pieces | 122,00 |
| 2,0 mm | 2 | **HP16.1** | 4 pieces | 54,55 |
| 2,0 mm | - | **HP16.2** | 25 pieces | 122,00 |
| 3,0 mm | 2 | **6798.1** | 4 pieces | 53,45 |
| 3,0 mm | - | **6798.2** | 25 pieces | 122,00 |
| 6,0 mm | 2 | **6799.1** | 4 pieces | 52,95 |
| 6,0 mm | - | **6799.2** | 25 pieces | 122,00 |







## FTA® Foam Tip Applicator

Made by GE Healthcare.
**For application of saliva and buccal cells to FTA® Cards. Originally Whatman.**

Sterile. Non-abrasive foam head is same size as sample area on FTA® Cards and is, therefore, best suited for application of buccal samples. The oral mucosa is grazed with the foam head, which is then pressed onto the card field. We recommend the use of FTA® Cards with colour indicator (CLASSIC Art. No. CL 91.1 and MINI Art. No. CL94.1) for buccal and saliva samples.

| Art. No. | Pack Qty | € |
|---|---|---|
| **HP14.1** | 100 | 92,60 |









## FTA® Pouches

Made by GE Healthcare.
**For transporting or storing FTA® Cards. Originally Whatman.**

Seven laminated layers protect the card from exposure to gas or liquid contamination. Tamper-evident seal maintains sample security. Outer paper surface for labelling or writing.
CloneSaver pouches only: with additional resealable zip-lock closure.

| Type | for FTA® Cards of Type | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| MINI | MINI, MICRO | **CL92.1** | 100 | 59,15 |
| MAXI | CLASSIC | **CL95.1** | 100 | 107,00 |
| CloneSaver | CloneSaver | **HP12.1** | 50 | 145,00 |

▶ **Thermal cyclers, nucleotides** and **DNA polymerases** for PCR see page 1254

# Density Gradient Centrifugation



## Caesium chloride

**≥99,999 %, p.a., ultra quality**

Reagent for density gradient centrifugation.
CsCl
M 168,36 g/mol

**Warning** H361

For isolation and purification of nucleic acids in ultra-centrifugation. This extremely pure reagent is especially ideal for isolation of DNA, which is subsequently used in hybridisation and enzyme reactions.

| | | | | |
|---|---|---|---|---|
| **8627.4** | 10 g | new size | plastic | 22,05 € |
| **8627.3** | 50 g | | plastic | 48,30 € |
| **8627.1** | 100 g | | plastic | 80,55 € |
| **8627.5** | 250 g | new size | plastic | 145,15 € |
| **8627.2** | 1 kg | | plastic | 532,15 € |
| Original pack 6 x 1 kg | | | | 505,54/1 kg |

## Caesium chloride

**≥99,9 %, extra pure, for biochemistry**

Reagent for density gradient centrifugation.
CsCl
M 168,36 g/mol

**Warning** H361

Can be used for isolation and purification of nucleic acids in ultracentrifugation. Is a low cost alternative to CsCl ultra-quality, ideal for applications where extreme purity is not essential.
Highly concentrated solutions can show traces of cloudiness or opalescence as a result of 25 ppm water-insoluble ingredients.

| | | | | |
|---|---|---|---|---|
| **7878.4** | 25 g | new size | plastic | 19,90 € |
| **7878.1** | 100 g | | plastic | 46,15 € |
| **7878.3** | 250 g | | plastic | 100,55 € |
| **7878.5** | 500 g | new size | plastic | 181,70 € |
| Original pack 6 x 500 g | | | | 172,62/500 g |
| **7878.2** | 1 kg | | plastic | 353,70 € |
| Original pack 6 x 1 kg | | | | 336,02/1 kg |

## Caesium sulphate

**≥99,99 %, p.a.**

Reagent for density gradient centrifugation.
$Cs_2SO_4$
M 361,89 g/mol

**Warning** H302-H361

Cesium sulphate produces a gradient which is almost twice as steep compared with cesium chloride in similar centrifugal fields.
Floating densities in cesium sulphate gradients are approx. 1.4 g/cm³ for DNA and approx. 1.6 g/cm³ for RNA.

| | | | | |
|---|---|---|---|---|
| **9355.3** | 25 g | | plastic | 40,75 € |
| **9355.1** | 100 g | | plastic | 128,90 € |
| **9355.2** | 1 kg | | plastic | 880,45 € |
| Original pack 6 x 1 kg | | | | 836,43/1 kg |

## D(+)-Saccharose

**≥99,5 %, RNase/DNase free**

DNAse-free RNAse-free

Reagent for density gradient centrifugation.
D-Sucrose
$C_{12}H_{22}O_{11}$
M 342,30 g/mol
Sucrose gradient centrifugation has proven very effective in structural and functional analysis of macromolecular complexes. The distribution of macromolecules in gradients can be measured by UV absorption ($A_{254}$).

| | | | | |
|---|---|---|---|---|
| **9097.1** | 1 kg | | plastic | 36,05 € |
| Original pack 6 x 1 kg | | | | 34,25/1 kg |
| **9097.2** | 5 kg | BIG PACK | plastic | 153,65 € |

# Cell Isolation by Density Gradient Centrifugation

## Ficoll® 400

**for molecular biology and biochemistry**

For density gradient centrifugation; ingredient of gel loading buffers.
Non-ionic polymer of saccharose.
M ~400 000 g/mol

| | | | |
|---|---|---|---|
| **CN90.1** | 10 g | plastic | 39,70 € |
| **CN90.2** | 25 g | plastic | 83,75 € |
| **CN90.3** | 100 g | plastic | 267,70 € |

## Polysucrose 400

**BioScience-Grade, for molecular biology and biochemistry**

For density gradient centrifugation during cell separation and isolation of cell organelles.
Sucrose polymer, Sucrose-epichlorhydrin copolymer
$(C_{12}H_{22}O_{11})_n$ x $(C_3H_5ClO)_n$
M 450000 ±100000 g/mol
Storage temp.: +20 °C
May be used as direct replacement for Ficoll® in common protocols.

| | | | |
|---|---|---|---|
| **4668.1** | 10 g | plastic | 27,85 € |
| **4668.2** | 25 g | plastic | 64,40 € |
| **4668.3** | 100 g | plastic | 213,95 € |

## Roti®-Sep 1077

**CELLPURE® for density gradient centrifugation**

ready-to-use

Polysucrose based medium for separation of lymphocytes from whole blood.
Polysucrose solution, lymphocyte separation medium. Density 1,077 g/ml.
M ~400000 g/mol
Storage temp.: +4 °C

**Danger** H317-H334

| | | | |
|---|---|---|---|
| **0642.1** | 100 ml | plastic | 42,50 € |
| **0642.2** | 500 ml | plastic | 115,60 € |

▶ Further information on reagents for cell isolation see chapter Cell Biology!

# Enzymes

## Ribonuclease A

DNAse-free Protease-free

**90 U/mg (Kunitz), BioScience-Grade, free from salt**

Acc. to Hirs, extracted from bovine pancreas.

RNase A

M ~13 700 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Extracted from bovine pancreas for RNA separation, especially when isolating RNAfree DNA. The enzyme cleaves RNA and produces 3' terminal nucleoside phosphates. This quality product for molecular biology is free from salt, without proteases and is chromatographically homogeneous. Unit definition acc. to Kunitz.
DNAse content of the RNAse powder ist below detection limit. However, we nevertheless recommend pretreatment of the ribonuclease prior to using it for DNA isolation. DNAse free RNAse ist prepared by cooking the water-solubilised ribonuclease aliquots for 15 min.
Let cool to room temperature on bench top.

**Application:**
Stock solution: 10 mg/ml in water (pH ≤6,0) or 0,01 M sodium acetate (pH 5,2). Do not heat RNAse prepared in sodium acetate.
Working solution: 2-10 µg/ml in 10 mM Tris (pH 7,5), 15 mM NaCl.
Note: RNAse precipitates when concentrated solutions are heated/cooked at pH ≥7,0.
Store in aliquots at -20 °C.

| | | | |
|---|---|---|---|
| **7156.1** | 100 mg | glass | 72,60 € |
| **7156.2** | 500 mg | glass | 321,45 € |
| **7156.3** | 1 g | glass | 525,70 € |

## Ribonuclease

**>70 U/mg (Kunitz), free from salt and protease**

Purified by chromatography, for biochemistry.

RNase

Storage temp.: -20 °C • Transport temp.: room temp.

Extracted from bovine pancreas; free from salt, without proteases and chromatographically cleaned with specific activity of 70 U/mg (Kunitz). RNAse mixture containing approx. 70-80 % RNAse A.

**Application:**
Stock solution: 10 mg/ml in water
Working solution: 5-20 µg/ml in 10 mM Tris (pH 7,5), 15 mM NaCl.
DNAse free RNAse ist prepared by cooking the solubilised ribonuclease aliquots for 15 min. Let cool to room temperature on bench top and store in aliquots at -20 °C.

| | | | |
|---|---|---|---|
| **7164.1** | 100 mg | glass | 30,00 € |
| **7164.2** | 1 g | glass | 196,20 € |

## Lysozyme

**≥35000 FIP U/mg, BioScience-Grade, lyophilised**

From chicken egg white, free from albumin.

M ~14000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Salt and albumin free lyophilised powder. Quality product for molecular biology. Ideal for lysis of bacteria for preparing DNA.
1 FIP-Unit equals the amount of enzyme which reduces the absorbance by 0.001 per min. at 450 nm, 25 °C, pH 7.00 using a suspension of FIP *Micrococcus lysodeikticus* as substrate (acc. to *Pharmaceutical Enzymes* 1997).
1 FIP-Unit resembles approximately 1 Shugar-Unit.

| | | | |
|---|---|---|---|
| **8259.1** | 1 g | glass | 26,80 € |
| **8259.3** | 25 g | glass | 310,70 € |
| **8259.2** | 10 g | glass | 165,05 € |

▶ For further information on these enzymes see chapter Biochemistry!

## Zymolyase® 20T

**≥20 U/mg, for biochemistry and molecular biology**

For lysis of yeast cells. Isolated from *Arthrobacter luteus*.

Lyticase, β-1,3-glucan laminaripentaohydrolase

Storage temp.: +4 °C • Transport temp.: cooled

Zymolyase® 20T, produced by a submerged culture of *Arthrobacter luteus,* has strong lytic activity against living cell walls of various strains of yeast cells. Hence, it is frequently used in order to produce protoplasts or spheroplasts.
The essential enzyme for the lytic activity of Zymolyase®20T is β-1,3-glucan laminaripentaohydrolase. It hydrolyzes linear glucose polymers with β-1,3-linkages and releases specifically laminaripentaose as the main and minimum product unit. Zymolyase® 20T is prepared by ammonium sulfate precipitatation.
One unit of lytic activity is defined as the enzyme amount causing a decrease of 30 % in absorbance at 800 nm using 6 mg Brewer's yeast as substrate in Phosphate buffer (pH 7,5) at 25 °C. Lytic activity varies depending on the particular yeast strain, the growth stage of the yeast, and cultural conditions.

**Application:**
**Other enzymatic activities contained:** β-1,3-glucanase, protease, mannanase. Trace amounts of amylase, xylanase, phosphatase.
**Stability:** At 30 °C 70 % of the lytic activity is lost after 3 months.
**Optimum temperature and pH:** at pH 7,5 - 35 °C for lysis of viable yeast cells, at pH 6,5 - 45 °C for hydrolysis of yeast glucan.
**Specificity (lytic spectrum):** *Ashbya, Candida, Debaryomyces, Eremothecium, Endomyces, Hansenula, Hanseniaspora, Kloeckera, Kluyveromyces, Lipomyces, Metschnikowia, Pichia, Pullularia, Torulopsis, Saccharomyces, Saccharomycopsis, Saccharomycodes, Schwanniomyces*, etc.

| | | | |
|---|---|---|---|
| **9324.1** | 100 mg | glass | 77,30 € |
| **9324.2** | 500 mg | glass | 220,40 € |
| **9324.3** | 1 g | glass | 385,95 € |

## Zymolyase® 100T

**≥100 U/mg, for biochemistry and molecular biology**

For lysis of yeast cells. Isolated from *Arthrobacter luteus*.

Lyticase, β-1,3-glucan laminaripentaohydrolase

Storage temp.: +4 °C • Transport temp.: cooled

Zymolyase® 100T is prepared by ammonium sulphate precipitation, and is further purified by affinity chromatography.
For further information on product and application, see Zymolyase® 20 T.

| | | | |
|---|---|---|---|
| **9329.1** | 100 mg | glass | 278,45 € |
| **9329.2** | 500 mg | glass | 880,45 € |

## Proteinase K

DNAse-free RNAse-free

**lyophil., ≥30 mAnson U/mg**

Isolated from fungi (*Tritirachium album)*.

Storage temp.: +4 °C

**Danger** H315-H319-H334-H317-H335

A non-specific protease with strong proteolytic activity for degrading proteins in biological samples. A quality product for molecular biology with a broad scope of application.

| | | | |
|---|---|---|---|
| **7528.1** | 100 mg | glass | 90,20 € |
| **7528.5** | 250 mg | glass | 172,00 € |
| **7528.2** | 500 mg | glass | 306,40 € |
| **7528.3** | 500 mg (in a 30 ml glass bottle) TIP | | 342,95 € |
| **7528.4** | 1 g | glass | 514,95 € |
| **7528.6** | 5 g | glass | 2031,75 € |

# Precipitation & Concentration

## Glycogen

**lyophilised, from oysters**

DNA-free

For molecular biology and biochemistry.

Glycogen type 2.
Long-chain polysaccharide made of glucose. Most frequently used in biochemistry and as 'carrier' during precipitation of nucleic acids.
Recovery of precipitated DNA is significantly enhanced by addition of 50 µg/ml glycogen; even starting from solutions with very low DNA concentrations, efficient precipitation can be performed.
Contains no nucleic acid and doesn't hinder enzymatic *down-stream* applications.
Glycogen contains a central protein and should not be applied if DNA is to be used in protein binding-assays following precipitation. In these cases we recommend to use our glycogen-free coprecipitants.
Stock solution: 5 mg/ml in distilled, sterile water
Working concentration: 50 µg/ml

**Type analysis:**

Appearance. ..... bright powder
Origin. ..... oysters
Solubility (0,25 %, 1 M NaCl). ..... complies
Loss on drying. ..... ≤15 %
Specific rotation $[\alpha]_D^{20}$. ..... +170° to +200°

| | | | |
|---|---|---|---|
| **HP51.1** | 1 g | glass | 24,65 € |
| **HP51.2** | 5 g | plastic | 96,65 € |
| **HP51.3** | 10 g | plastic | 166,65 € |
| **HP51.4** | 25 g | plastic | 357,90 € |

**Instructions for use**
can be found on the Internet next to the product description.

**Tips for Application of Precipitation Salts**

| Precipitation Salts | Stock solution | Amount applied | Recommended for | Not recommended for |
|---|---|---|---|---|
| Ammonium acetate | 7.5 M | 1/2 volume | Removal of nucleotides or other contaminants | Kinase downstream experiments (phosphorylation) |
| Lithium chloride | 8.0 M | 1/10 volume | RNA precipitation | Very small RNA |
| Sodium acetate | 3.0 M (pH 5.2) | 1/10 volume | Routine DNA precipitation | Removal of nucleotides or other contaminants |
| Sodium chloride | 5.0 M | 1/20 volume | SDS containing solutions | Routine precipitations |




## Roti®-PinkDNA

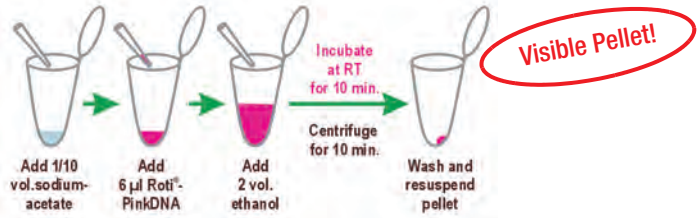
**for molecular biology**

Synthetic co-precipitant with dye for efficient precipitation of nucleic acids.
Storage temp.: +4 °C

- **Visible pellet due to included pink dye**
- **Recovery rates of up to 99 %**
- Simply add to ethanolic nucleic acid precipitation
- Recovered DNA is immediately applicable to all standard applications
- Ready-to-use

Stained precipitation additive for recovery of DNA from all solutions by ethanolic precipitation. Recovery rates of up to 99 % can be attained even from solutions with very weak nucleic acid concentration. The incorporated dye stains the DNA (reversibly) pink and facilitates location and lossless washing of pellets. Roti®-PinkDNA is produced synthetically and is free from nucleic acids. DNA or dsRNA precipitated with Roti®-PinkDNA is highly pure and can be used directly in all standard applications such as transformation, restriction digestion, cloning, sequencing, *in vitro* transcription etc.

**Suitable for all nucleic acid fragments, cyclic, and genomic DNA.** Not compatible with photometric concentration measurement at 260-280 nm.




**Guarantee analysis:**

Linear Polyacrylamide. ..... 5 mg/ml
DNA/RNA. ..... free
Dye. ..... complies

| | | | |
|---|---|---|---|
| **HP54.1** | 0,5 ml | plastic | 40,75 € |
| **HP54.2** | 1,5 ml | plastic | 115,60 € |
| **HP54.3** | 3 ml | plastic | 206,95 € |





## Roti®-Spin Centrifugal Devices

**For purification and concentration of biomolecules and for purification of solutions.**

- Applicable for nucleic acids, proteins/peptides, other biomolecules >6 kD and very small bioparticles
- Can be used to replace standard techniques like precipitation, dialysis, gel filtration, gel purification, column chromatography, gradient centrifugation etc.
- Gentle: No shearing of DNA of up to 100 kb, proteins remain native and enzymatically active
- Applicable for purification of all labelled probes (isotope-, fluorescent-, chromogenic labelling)
- Very high recovery rates of >90 % (when using devices of appropriate MWCO)

Centrifugal devices for ultrafiltration of biomolecules. The membranes made of highly chemical-resistant polyethersulfone have been tightly sealed to prevent leakage and loss of samples. Furthermore, the membranes underwent special treatment minimising the binding of biomolecules, in order to optimise sample recovery-rates.

Roti®-Spin Centrifugal Devices can be applied to a variety of applications and can be used to replace tedious and labour-intensive methods like gel filtration, gel purification or precipitation. Application is time-saving and very simple - only few centrifugal steps are necessary to concentrate and recover your sample. During this, the sample remains untouched in the upper reservoir, and cross-contamination is efficiently prevented even when large numbers of samples are handled. Centrifugation can easily be performed in the cold room or at specially designated benches like isotope laboratories or in laminar flow hoods.

**MWCO:**

For convenient and successful application, centrifugal devices with membranes in 4 colour-coded molecular weight cut-offs (MWCO) are available. In order to choose the appropriate MWCO please use the following thumb-rule:
Centrifugation of proteins/peptides: MWCO ≤1/3 of sample molecule size.
Centrifugation of nucleic acids: MWCO ≤ ½ sample molecule size.

**Overview for selection the right pore size**

| MWCO | Molec. size | DNA size |
|---|---|---|
| 3 kD | 10 - 20 kD | <50 bp |
| 10 kD | 30 - 90 kD | 50 - 200 bp |
| 30 kD | 90 - 180 kD | 200 bp - 1 kb |
| 100 kD | >300 kD | >1 kb |

**Sample volumes:**

Maximum sample volume: Roti®-Spin MINI 50-500 µl
Final concentrate volume: Roti®-Spin MINI 15-20 µl

**Applications (examples):**

Desalting or buffer exchange following restriction digest, PCR or such; separation of free nucleotides and polymerised DNA; removal of contaminating compounds (like DNA) from stock solutions (e.g. PCR-buffers); concentration of DNA or proteins; separation of proteins of different size; sample preparation prior to HPLC.

**Roti®-Spin MINI**

| Type | MWCO (kD) | Colour | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| Roti®-Spin MINI-3 | 3 | grey | **CL12.1** | 25 | 110,75 |
| Roti®-Spin MINI-10 | 10 | blue | **CL13.1** | 25 | 110,75 |
| Roti®-Spin MINI-30 | 30 | red | **CL14.1** | 25 | 110,75 |
| Roti®-Spin MINI-100 | 100 | clear | **CL15.1** | 25 | 110,75 |

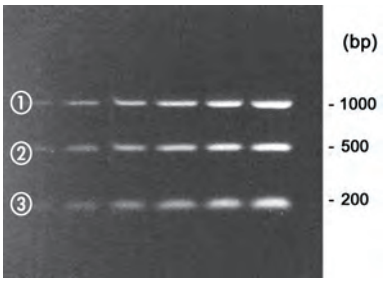
## Further Reagents for Nucleic Acid Precipitation

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Ammonium acetate** | ≥97 %, p.a., ACS | **7869.2** | 500 g | 27,85 |
| | | **7869.1** | 1 kg | 39,70 |
| | | **7869.3** | 2,5 kg | 67,65 |
| **Ethanol** | ≥99,8 %, p.a. | **9065.1** | 1 l | 81,20 |
| | | **9065.3** | 1 l | 80,10 |
| | | **9065.2** | 2,5 l | 163,95 |
| | | **9065.4** | 2,5 l | 161,80 |
| | | **9065.5** | 5 l | 291,90 |
| | | **9065.6** | 25 l | 1015,90 |
| **Lithium chloride** | ≥99,5 %, p.a., ultra quality | **3739.1** | 250 g | 49,35 |
| | | **3739.2** | 1 kg | 142,45 |
| **Polyethylene glycol 6000** | Ph.Eur. | **0158.4** | 500 g | 22,05 |
| | | **0158.1** | 1 kg | 32,15 |
| | | **0158.2** | 5 kg | 117,20 |
| | | **0158.3** | 50 kg | 858,95 |
| **Polyethylene glycol 8000** | Ph.Eur. | **0263.1** | 500 g | 21,40 |
| | | **0263.2** | 1 kg | 31,10 |
| | | **0263.3** | 5 kg | 109,55 |
| **2-Propanol** | ≥99,8 %, p.a., ACS, ISO | **6752.1** | 1 l | 24,20 |
| | | **6752.3** | 1 l | 23,15 |
| | | **6752.2** | 2,5 l | 54,75 |
| | | **6752.4** | 2,5 l | 52,60 |
| | | **6752.5** | 5 l | 81,60 |
| | | **6752.6** | 25 l | 238,15 |
| **Sodium acetate trihydrate** | ≥99,5 %, p.a., ACS, ISO | **6779.2** | 500 g | 18,20 |
| | | **6779.1** | 1 kg | 33,25 |
| | | **6779.3** | 5 kg | 103,75 |
| | | **6779.5** | 25 kg | 413,90 |
| **Sodium chloride** | ≥99,5 %, p.a., ACS, ISO | **3957.3** | 500 g | 16,05 |
| | | **3957.1** | 1 kg | 17,75 |
| | | **3957.2** | 5 kg | 64,40 |
| | | **3957.4** | 10 kg | 98,80 |
| | | **3957.5** | 25 kg | 192,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

# DNA-/RNA Analysis

## DNA Quantitation




ready-to-use

### DNA-quantifying marker

**DNA-fragments of precisely defined quantity for gel-quantitation**

Store at -20 °C • Transport temp.: room temp.

DNA-fragments of precisely defined concentration for easy quantifying of linear DNA of medium fragment length in agarose gels.
Also suitable for quantifying standard DNA via photometric measurement to establish light-cycler-controls.

#### DNA-quantifying marker QSK 1000

Fragment length: 1000 bp (see figure ①)
Concentration: 100 µg/ml in TE-buffer

| | | | |
|---|---|---|---|
| **L506.1** | 40 µg | plastic | 193,50 € |

#### DNA-quantifying marker QSK 500

Fragment length: 500 bp (see figure ②)
Concentration: 100 µg/ml in TE-buffer

| | | | |
|---|---|---|---|
| **L507.1** | 40 µg | plastic | 193,50 € |

#### DNA-quantifying marker QSK 200

Fragment length: 200 bp (see figure ③)
Concentration: 100 µg/ml in TE-buffer

| | | | |
|---|---|---|---|
| **L508.1** | 40 µg | plastic | 193,50 € |

### DAPI

**≥98 %, p.a.**

For DNA-staining.

M 350,3 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Fluorescent dye with specific DNA-binding capacity. For detection of mycoplasms in cell culture, for quantitative DNA measurement, and for chromosome counter staining. Store in the dark! Stabile for one year when solubilised, stored at -20 °C, and protected from light
Stock solution: 1 to 10 mg/ml in sterile water

Excitation maximum: 359 nm
Emission maximum: 461 nm

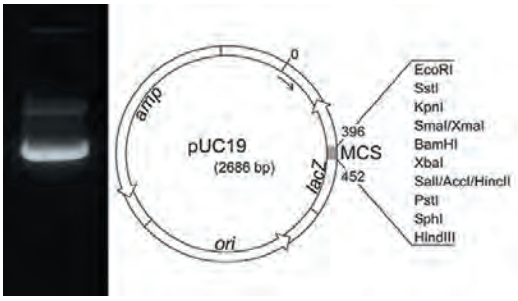
| | | | |
|---|---|---|---|
| **6335.1** | 25 mg | glass | 90,20 € |
| **6335.2** | 100 mg | glass | 252,65 € |

▶ Transilluminators, UV-handheld lamps and UV-handheld magnifiers see chapter Labware - Optical Instruments & Lamps!

# Plasmid DNA

The following plasmid DNA was prepared in low nuclease host bacteria and isolated through ion exchange chromatography. It is available in super-coiled form (ccc-form >95%) and, as a high-purity DNA ($OD_{260/280}$ > 1,70), it is ideal for different applications:

- Controlling transformation efficiency
- Comparison with plasmid ccc-forms of unknown size
- Cloning DNA-fragments
- Restriction (Preparing DNA-length markers)
- Calibrating DNA-separating or DNA-preparing processes or equipment
- Blocking DNA-chips with plasmid DNA of a defined sequence




### Plasmid DNA pUC19

High-purity plasmid-DNA of pUC19 (pUC19c, Acc. No. L09137) with a overall length of 2686 base pairs. Lyophilised.

Storage temp.: -20 °C • Transport temp.: room temp.

**$OD_{260/280}$: >1.70**
**genomic DNA: <2 %**
**oc-form: <3 %**
**ccc-form: >95 %**
**baise pairs: 2686**

pUC19 is a standard high-copy cloning vector for *E. coli* recombinants. The position of the Multi Cloning Site (MCS), which is inserted in frame into the LacZ-gene, enables a blue-white selection of insert containing plasmid DNA by α-complementation. The copy number of plasmids per cell depends on the temperature and is approx. 70-80 at 37 °C and over 200 at 42 °C.

| | | | |
|---|---|---|---|
| **X911.1** | 50 µg | plastic | 48,95 € |




### Plasmid DNA pBR322

High-purity plasmid-DNA of pBR322 (Acc. No. V01119) with a overall lenght of 4361 base pairs. Lyophilised.

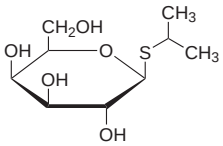
Storage temp.: -20 °C • Transport temp.: room temp.

**$OD_{260/280}$: >1.70**
**genomic DNA: <2 %**
**oc-form: <3 %**
**ccc-form: >95 %**
**base pairs: 4361**

The circular sequence was numbered in such a way that 0 lies in the middle of the singular *EcoR* I restriction site. The copy number of pBR322 is limited by the gene product of *rop* to 20 copies per cell. However, by adding chloroamphenicol (final concentration 170 µg/ml) to log-phase cultures and then incubating for 8 hours, the copy number can be increased considerably.

| | | | |
|---|---|---|---|
| **X912.1** | 50 µg | plastic | 57,95 € |

# Blue-/White Selection




## IPTG

**≥99 %, BioScience-Grade, dioxane free, animal free**

For molecular biology.
Isopropyl-β-D-thiogalactopyranoside
$C_9H_{18}O_5S$
M 238,30 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
Lactose analogon. Glucose-galactose-disaccharide. *lac*-promotor is induced by IPTG via inhibition of *lac*-repressor. Recommended for induction of *lac*-regulated vectors in expression assays, for instance blue-/white selection of recombinant *E. coli*, in bench-top as well as in production scale.

**Application:**
Stock solution: 0,5 M (1 g / 8,4 ml) in water (sterilise through 0,2 µm filter).
Final concentration in agar plates: 0,2 mM (add after autoclaving and cooling medium).
Final concentration in induction medium: 2 mM.

| | | | |
|---|---|---|---|
| **2316.1** | 250 mg | glass | 20,35 € |
| **2316.2** | 1 g | glass | 43,55 € |
| **2316.3** | 5 g | glass | 123,65 € |
| **2316.4** | 25 g | plastic | 418,20 € |
| **2316.5** | 100 g | plastic | 951,40 € |

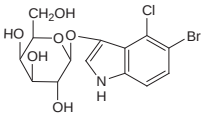
## IPTG

**≥99 %, for biochemistry**

Isopropyl-β-D-thiogalactopyranoside
$C_9H_{18}O_5S$
M 238,30 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
Standard reagent for biochemical assays. Main application as inducer of protein *in vitro* expression.

| | | | |
|---|---|---|---|
| **CN08.1** | 1 g | glass | 26,35 € |
| **CN08.2** | 5 g | glass | 70,85 € |
| **CN08.3** | 50 g | glass | 499,90 € |
| **CN08.4** | 100 g | glass | 848,20 € |




DNAse-free
Protease-free
RNAse-free

## X-β-Gal

**≥99 %, BioScience-Grade**

Colorimetric substrate of β-galactosidase.
For biochemistry and molecular biology.
5-Bromo-4-chloro-3-indoxyl-β-D-galactoside
$C_{14}H_{15}BrClNO_6$
M 408,6 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
Ideal for colorimetric detection of β-galactosidase activity, for instance during blue-/white selection.

**Application:**
Stock solution: 100 mg/ml (240 mM) in DMF, store at -20 °C in the dark.
Working solution: For blue/white selection of recombinant clones on agar plates use 0,3 µl stock solution per ml broth/agar.

| | | | |
|---|---|---|---|
| **2315.1** | 100 mg | glass | 20,45 € |
| **2315.2** | 500 mg | glass | 58,60 € |
| **2315.3** | 1 g | glass | 109,55 € |
| **2315.4** | 5 g | glass | 370,90 € |

▶ LB Media, LB Media with antibiotics
see page 1414

**α-Complementation (blue-white selection)**

Being a galacto pyranoside, IPTG inhibits the *lac* repressor, therefore leading to the induction the *lac* promotor. Subsequently, using the plasmid as matrix the C-terminal 146 amino acid fragment of the bacterial β-galactosidase is expressed, which functions as so called α-donor and complements the C-terminally deleted bacterial β-galactosidase. The then functional β-galactosidase restricts the galactoside X-Gal, resulting in a blue-coloured dye - therefore, these *lac*$^+$ clones are coloured dark blue. Since the C-terminal part of the α-donor is located **upstream** and the N-terminal part is located **downstream** of the multi cloning site of the plasmid, inserted DNA normally leads to frame shift or at least to major chain elongation, resulting in an unfunctional α-donor and no functional galactosidase - recombinant clones are white. The appearance of light blue clones either results form very short insertions or from the fact that in some plasmids the C-terminal fragment cloned upstream of the MCS is sufficient for α-complementation and restriction of a small amount of X-Gal.

**α-Complementation - protocol**

**Stock solution**

IPTG: 0.5 M (1 g /8.4 ml) in water, freeze sterile filtered and aliquoted
X-β-Gal: 100 mg/ml (240 mM) in DMF, store aliquoted and in the dark at -20 °C

**Approach**

Add 10 µl IPTG solution + 10 µl X-β-Gal solution per 25 ml autoclaved, cooled Agar and pour plates.
Alternatively, mix 10 µl IPTG and X-β-Gal solution with approx.100 µl sterile water and plate onto a hardened 9 cm agar petri dish.

# Hybridisation

## DNA Labelling



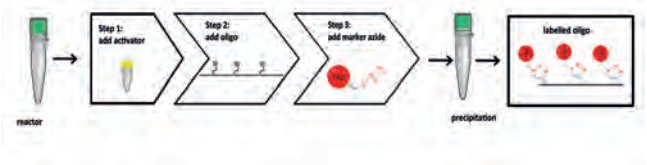

### Roti®kits for DNA labelling

For DNA labelling assays.
Transport temp.: cooled

**Warning** H226-H319-H335

- Highly reliable
- Easy to perform
- Fast detection procedure (only 30 min)
- Mild conditions (no DNA denaturation required)
- Modular system due to click chemistry
- Compatible with various dyes and readouts

The ROTI®kits for DNA labelling provide an easy-to-use tool for quick labelling of oligonucleotides. For this purpose, fluorescent dyes are coupled via click reaction with uracil derivatives (mostly ethynyldeoxyuridine, EdU) which are present in the DNA. This fast and elegant approach allows for direct labelling of DNA fragments with the desired fluorescent dye. Thus, the assay is perfectly adaptable to the present facilities and to the assay situation (e.g. for double or triple detection). The protocol includes only three steps and is quick and easy to perform:




**Oligonucleotides not included.**

The end of the product name specifies the included fluorescent marker.

**Components:**

Azide. ..... 1 mg
Activator. ..... 10 µl
Reactor S..... 7 x 2,5 mg
Solvent..... 1 ml
*Store at -20 °C (Azide, Activator); room temp. (Reactor S, Solvent)*

| Product | Marker | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| Oligo Click S-488 | 6-FAM | **7766.1** | 1 kit | 134,30 |
| Oligo Click M-488 | 6-FAM | **7767.1** | 1 kit | 138,70 |
| Oligo Click S-555 | 5-TAMRA | **7769.1** | 1 kit | 149,45 |
| Oligo Click M-555 | 5-TAMRA | **7770.1** | 1 kit | 155,90 |
| Oligo Click S-Biotin | Biotin Azide | **7771.1** | 1 kit | 111,30 |
| Oligo Click M-Biotin | Biotin Azide | **7772.1** | 1 kit | 116,00 |
| Oligo Click M Reload | - | **7765.1** | 1 kit | 76,90 |
| Oligo Click S Reload | - | **7764.1** | 1 kit | 61,85 |

For additional product data and safety information, see chapter Chemicals A-Z.

**Tip:**
The ending of the product name specifies the included marker:

- 488: 6-FAM-Azide
- 555: 5-TAMRA-Azide
- Biotin: Biotin Azide
- Reload: no marker included

# Ready-Made Buffers & Supplements



### Roti®-Hybri-Quick

**BioScience-Grade, ready-to-use, for molecular biology**

Ready-made buffer for DNA- and RNA hybridisation.

- Suitable for prehybridisation, hybridisation and washing
- For Southern- and Northern-hybridisations
- Suitable for all membrane types

Roti®-Hybri-Quick ready-to-use solution is an all-purpose solution for DNA-hybridisation experiments.
Optimised sodiumphosphate buffer with superior signal-to-noise ratio.
Compatible with all Southern- and Northern-hybridisations, all labelling and detection methods, and all types of membranes. Improved buffer formulation based on the hybridisation solution published by Church & Gilbert (*PNAS USA*, 81:1991-95).

| | | | |
|---|---|---|---|
| **A981.1** | 1 l | glass | 50,00 € |
| Original pack 6 x 1 l | | | 47,50/1 l |
| **A981.2** | 2,5 l | glass | 90,20 € |
| Original pack 4 x 2,5 l | | | 85,69/2,5 l |



### Roti®fair 20x SSC

**for 1000 ml/pouch, for molecular biology**

Concentrated buffer solution for Southern- and Northern transfer.

SSC buffer powder (pouch), Sodium sodium citrate

Exactly pre-weighed pouches for convenient and rapid preparation of SSC solution.
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.
For long-term storage, buffer solution should be kept at +4 °C.
20x SSC solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

**Formulation:**

Prepared 20x SSC solution contains: 3,0 M NaCl, 0,3 M Na-Citrat, pH-value 7,0 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1232.1** | 5 pouches | box | 153,20 € |



## Roti®-Stock 20x SSC

**BioScience-Grade, ready-to-use, steam sterilised**

For molecular biology.

SSC 20x ready-to-use solution

20fold stock solution sodium/sodiumcitrate. Undiluted or after dilution with sterile water to 10x, 6x, 1x or 0,1x SSC one receives a versatile buffer for blotting, hybridising or washing of Southern- or Dot/Slot-Blots of DNA as well as for *in situ* hybridisation. Undiluted buffer is also suitable for neutral transfer of RNA onto unloaded membranes (e.g. Roti®-Nylon 0.2, Art. No. AE50.1).
With original seal.

**Composition:**

3 M NaCl, 300 mM sodium citrate in deionised water, pH-value 7.0, steam sterilised

| | | | |
|---|---|---|---|
| **1054.1** | 1 l | glass | 66,55 € |
| Original pack 6 x 1 l | | | 63,22/1 l |

## Roti®fair SSPE

**for 200 ml/tablet, for molecular biology**

Buffer solution for DNA- and RNA hybridisation.

Sodium sodium phosphate EDTA, SSPE buffer (tablets)

Exactly pre-weighed tablets for convenient and rapid preparation of phosphate buffered salt solution (SSPE).
SSPE is frequently used for Southern- and Northern hybridisations, as well as for washing steps during Microarray techniques. Roti®fair SSPE may also be used very well in imunocytochemistry and for cell suspension prior to FACS analyses.
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, buffer solution should be kept at +4 °C.
1x SSPE solution is prepared by dissolution of 1 tablet in 200 ml highly pure water.

**Formulation:**

Prepared 1x SSPE solution contains: 0,15 M NaCl, 1 mM EDTA, 10 mM Na-phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1233.1** | 100 tablets | plastic | 99,90 € |

## Dextran sulphate 500 sodium salt

**for biochemistry and molecular biology**

Dextranhydrogensulphate 500 sodium salt

M ~500 000 g/mol

Dextran sulphate is a polyanion produced by esterification of dextran with chlorosulphonic acid. The standard product is based on dextran with a mean molecular weight of approx. 500.000 Dalton. Anionic dextrans such as dextran sulphate (10 % in hybridisation buffer) accelerate the hybridisation of nucleic acids by approx. 10fold.

| | | | |
|---|---|---|---|
| **5956.5** | 10 g | plastic | 30,00 € |
| **5956.3** | 25 g | plastic | 57,95 € |
| **5956.4** | 50 g | plastic | 99,45 € |
| **5956.1** | 100 g | plastic | 189,10 € |
| **5956.2** | 500 g | plastic | 837,45 € |
| Original pack 6 x 500 g | | | 795,58/500 g |

## Salmon Sperm DNA sodium salt

**ex salmon testes**

Deoxyribonucleic acid sodium salt, DNA from salmon sperm

Storage temp.: +4 °C

DNA from salmon sperm is used in Southern- and Northern hybridisation, in order to block unspecific probe binding prior to and during hybridisation (Sambrook, J. *et al.* (1989) *Molecular Cloning:* A Laboratory Manual, 2nd Edition).
Stock solution: 10 mg/ml in $H_2O$
Storage of stock solution: -20 °C in aliquots
Working concentration: 100 µg/ml

| | | | |
|---|---|---|---|
| **5434.1** | 5 g | plastic | 27,45 € |
| **5434.2** | 10 g | plastic | 42,90 € |

## Spermidine

**≥98 %, for biochemistry**

N-(3-Aminopropyl)-1,4-butanediamine

$C_7H_{19}N_3$

M 145,25 g/mol

Storage temp.: +4 °C

**Danger** H314

Ingredient vital for $CaCl_2$-transfektion (70 µM), tissue homogenisation (500 µM), *in vitro* transcription (20 mM), and in hybridisation buffers (1-20 mM).

| | | | |
|---|---|---|---|
| **7161.2** | 1 g | glass | 41,85 € |
| **7161.1** | 2,5 g | glass | 79,45 € |
| **7161.3** | 5 g | glass | 137,10 € |

# Blocking Reagents



## Denhardt's solution, lyophilised powder (50x)

**BioScience-Grade, for molecular biology**

Blocking reagent for hybridisation and stripping.

Storage temp.: +4 °C

Denhardt's lyophilised powder contains a mixture of different blocking agents that is used for nuclear acid hybridisation (Northern and Southern Blot) as well as for stripping of hybridised membranes. By prehybridisation the filter membranes with Denhardt's solution unspecific binding of DNA to the membrane is avoided.

**Application:** The bottle contains powder mix for 50 ml 50x stock solution. Add 48,8 ml water to gain exactly 50 ml stock solution. Sterilise stock solution by filtration (0,2 µm) and store in aliquots of 10 ml at -20 °C .
For hybridisation use 10x Denhardt's solution with 6x SSC (Roti®-Stock 20x SSC, Art. No. 1054.1) supplemented with 100 µg/ml denatured salmon sperm DNA and 1 % SDS (Roti®-Stock 20 % SDS, Art. No. 1057.1).

| | | | |
|---|---|---|---|
| **HP33.1** | Powder mix for 50 ml | plastic | 96,65 € |

## Albumin Fraction V



**≥98 %, powdered,**
**for molecular biology**
Wide range of applications,
e.g. as protein standard or
blocking reagent.
BSA
M ~66 000 g/mol
Storage temp.: +4 °C
BSA made of fresh bovine plasma by fractionation (Cohn method) and subsequent crystallisation from alcohol solution at a low temperature.
Molar extinction coefficient: 44.020 · $M^{-1}$ · $cm^{-1}$
(acc. to 0,667 x $cm^{-1}$ for a 0,1 % solution).

| | | | |
|---|---|---|---|
| **8076.1** | 10 g | plastic | 26,80 € |
| **8076.2** | 50 g | plastic | 84,40 € |
| **8076.4** | 200 g | plastic | 289,20 € |
| **8076.3** | 500 g | plastic | 643,95 € |
| Original pack 6 x 500 g | | | 611,75/500 g |
| **8076.5** | 1 kg | plastic | 1095,45 € |
| Original pack 6 x 1 kg | | | 1040,68/1 kg |

## Albumin Fraction V, biotin-free

**≥98 %, biotin-free, for molecular biology**
Excellent as blocking and stabilising reagent in all biotin/streptavidin-mediated detection systems.
BSA
M ~66 000 g/mol
Storage temp.: +4 °C
Tried and tested albumin preparation, suitable for all immunoassays, for stabilising proteins, enzymes and antibodies and as a blocking-reagent in hybridisation. Tested for its absence of biotin. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

| | | | |
|---|---|---|---|
| **0163.1** | 10 g | plastic | 33,25 € |
| **0163.2** | 50 g | plastic | 103,10 € |
| **0163.4** | 200 g | plastic | 360,15 € |
| **0163.3** | 500 g | plastic | 772,95 € |
| Original pack 6 x 500 g | | | 734,30/500 g |

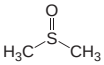
## Powdered milk

**blotting grade, powdered, low fat**
BLOTTO reagent
Lowfat powdered milk, especially suited for use as blocking reagent in immunological assays like Western-Blot analyses or ELISA. Fine powdered for easy application.
**Not suitable for biotin/streptavidine mediated detection systems. Milk contains biotin.**

| | | | |
|---|---|---|---|
| **T145.1** | 250 g | plastic | 14,20 € |
| **T145.2** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **T145.3** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **T145.5** | 2,5 kg | plastic | 75,15 € |
| **T145.4** | 5 kg BIG PACK | plastic | 139,65 € |

▶ Further accessoiries for hybridisation see chapter Biochemistry/Western-Blotting and chapters labware!

# General Reagents for Molecular Biology



## Dimethyl sulphoxide (DMSO)

**≥99,5 %, BioScience-Grade, for molecular biology**
Recommended for PCR, sequencing, hybridisation and cell culture.
DMSO
$C_2H_6OS$
M 78,13 g/mol

| | | | |
|---|---|---|---|
| **A994.1** | 100 ml | glass | 22,05 € |
| **A994.2** | 250 ml | glass | 34,30 € |

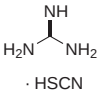


## Formamide, deionized

DNAse-free RNAse-free

**≥99,5 %, BioScience-Grade, RNAse / DNAse-free**
Formic acid amide
$CH_3NO$
M 45,04 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
**Danger** H351-H360FD-H373

| | | | |
|---|---|---|---|
| **P040.1** | 250 ml | plastic | 45,05 € |



## Guanidine thiocyanate

**≥99 %, for biochemistry**
Reagent for denaturation of proteins and for isolation of DNA and RNA.
GTC, Guanidinium isothiocyanate
$C_2H_6N_4S$
M 118,16 g/mol
**Warning** H302+H312+H332-H412-EUH032
Highly chaotropic agent that potently destroys the three-dimensional structure of proteins, leading to denaturation. Guanidinium (iso)thiocyanate contains potent anionic as well as cationic groups, that form strong hydrogen bonds. It, therefore, can be used to break protein disulfide bonds as well as to disrupt hydrophobic interactions, and is added during RNA extraction in order to inhibit RNAse activity.

Stock solution: 4 M or 8 M in water
Storage of stock solution: +4 °C
Working concentration: 4 M in hydrous buffer system (e.g. 25 mM sodium citrate, 0,5 % SDS)
For a 4 M solution, solubilise 472,64 g in distilled water and fill to 1 l.

| | | | |
|---|---|---|---|
| **0017.1** | 100 g | plastic | 28,95 € |
| **0017.3** | 500 g | plastic | 106,35 € |
| Original pack 6 x 500 g | | | 101,03/500 g |
| **0017.2** | 1 kg | plastic | 170,95 € |
| Original pack 6 x 1 kg | | | 162,40/1 kg |
| **0017.5** | 5 kg BIG PACK | plastic | 750,90 € |

## Roti®fair reagents

**High-pure reagents and buffer mixes in pouches or as tablets.**

Roti®-fair - the new range of user-friendly reagent formulations.
For simplest application, optimal quality and reproducible results.

One tablet or the content of one pouch is simply dissolved in the respective amount of water - the desired solution is ready for use. Simply adapt the amount of water in order to vary the concentration, for instance for preparation of a higher concentrated stock solution.

- **Easy-to-use**
  Simply dissolve contents of one pouch or one tablet in water
- **Timesaving**
  No need for weighing of several reagents or adjustment of pH
- **Convenient**
  Dry reagents for direct use spare preparation of long-term stored stock solutions
- **Reliable**
  Stringent quality control ensures high lot-to-lot consistency




| Product | Buffer/solution | Use | Final concentr. | pH value | Preparation scale | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|---|---|---|
| **Roti®fair 0.5M EDTA** | Ethylenediamine tetraacetic acid solution | For preparation of bioanalytical solutions, anticoagulant | 0,5 M | 8,0 ±0,05 | 500 ml/pouch | **1031.1** | 5 pouches | 252,65 |
| **Roti®fair 1M KCl** | Potassium chloride solution | For preparation of salt solutions and buffer concoctions | 1 M | - | 1000 ml/pouch | **1034.1** | 10 pouches | 169,35 |
| **Roti®fair 3M KCl** | Potassium chloride solution | For preparation of salt solutions and buffer concoctions | 3 M | - | 1000 ml/pouch | **1035.1** | 5 pouches | 145,15 |
| **Roti®fair Na-Acetate 5.2** | Sodium acetate solution | For isolation of nucleic acids | 3 M | 5,2 ±0,05 | 1000 ml/pouch | **1195.1** | 5 pouches | 284,90 |
| **Roti®fair 0.9% NaCl** | Sodium chloride solution | For preparation of salt solutions and buffer concoctions | 0,9 % | - | 1000 ml/tablet | **1067.1** | 10 tablets | 49,35 |
| | | | | | | **1067.2** | 100 tablets | 114,50 |
| **Roti®fair 0.9% NaCl** | Sodium chloride solution | For preparation of salt solutions and buffer concoctions | 0,9 % | - | 100 ml/tablet | **1053.1** | 100 tablets | 54,75 |
| **Roti®fair 3M NaCl** | Sodium chloride solution | For preparation of salt solutions and buffer concoctions | 3 M | - | 1000 ml/pouch | **1071.1** | 5 pouches | 77,95 |
| **Roti®fair 5M NaCl** | Sodium chloride solution | For preparation of salt solutions and buffer concoctions | 5 M | - | 1000 ml/pouch | **1079.1** | 5 pouches | 90,85 |
| **Roti®fair 0.02M Na-Phosphate 7.0** | Sodium phosphate solution | General solution for assays in molecular biology and biochemistry | 0,02 M | 7,0 ±0,05 | 1000 ml/pouch | **1090.1** | 10 pouches | 89,15 |
| **Roti®fair 0.02M Na-Phosphate 7.0** | Sodium phosphate solution | General solution for assays in molecular biology and biochemistry | 0,02 M | 7,0 ±0,05 | 5000 ml/pouch | **1094.1** | 10 pouches | 256,95 |
| **Roti®fair 1M Na-Phosphate 6.5** | Sodium phosphate solution | General solution for assays in molecular biology and biochemistry | 1 M | 6,5 ±0,05 | 1000 ml/pouch | **1095.1** | 10 pouches | 241,90 |
| **Roti®fair 1M Na-Phosphate 7.2** | Sodium phosphate solution | General solution for assays in molecular biology and biochemistry | 1 M | 7,2 ±0,05 | 1000 ml/pouch | **1097.1** | 10 pouches | 241,90 |
| **Roti®fair SDS 0.5g** | Sodium dodecyl sulphate solution | Anionic detergent for preparation of bioanalytical solutions | variable | - | 0,5 g/tablet | **1156.1** | 50 tablets | 46,80 |
| **Roti®fair 10% SDS** | Sodium dodecyl sulphate solution | Anionic detergent for preparation of bioanalytical solutions | 10 % | - | 1000 ml/pouch | **1157.1** | 5 pouches | 596,65 |
| **Roti®fair TBS 7.6** | Tris Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 7,6 ±0,05 | 500 ml/tablet | **1244.1** | 10 tablets | 54,75 |
| | | | | | | **1244.2** | 100 tablets | 263,40 |
| **Roti®fair TBS 8.0** | Tris Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 8,0 ±0,05 | 1000 ml/pouch | **1245.1** | 10 pouches | 97,30 |
| **Roti®fair 10x TBS 8.0** | Tris Buffered Saline | General solution for assays in molecular biology and biochemistry | 10x | 8,0 ±0,05 | 1000 ml/pouch | **1247.1** | 10 pouches | 643,95 |
| **Roti®fair TBST 7.6** | Tris Buffered Saline/Tween | General solution for assays in molecular biology and biochemistry | 1x | 7,6 ±0,05 | 500 ml/tablet | **1248.1** | 10 tablets | 65,05 |
| | | | | | | **1248.2** | 100 tablets | 306,40 |
| **Roti®fair 10x TE** | Tris EDTA buffer | Buffer solution for solubilisation and dilution of nucleic acids | 10x | 7,4 ±0,05 | 1000 ml/pouch | **1268.1** | 10 pouches | 213,95 |
| **Roti®fair 1M Tris 7.4** | Tris solution | General solution for assays in molecular biology and biochemistry | 1 M | 7,4 ±0,05 | 1000 ml/pouch | **1251.1** | 10 pouches | 375,20 |
| **Roti®fair 1M Tris 8.0** | Tris solution | General solution for assays in molecular biology and biochemistry | 1 M | 8,0 ±0,05 | 1000 ml/pouch | **1260.1** | 10 pouches | 375,20 |
| **Roti®fair 1M Tris 8.3** | Tris solution | General solution for assays in molecular biology and biochemistry | 1 M | 8,3 ±0,05 | 1000 ml/pouch | **1261.1** | 10 pouches | 375,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Good's Buffer Reagents for Application in Molecular Biology

In order to compensate for the low Tris buffering capacity at pH levels below 7,5, Good and colleagues 1966 developed a new reagent group as a buffer for this range: N-substituted amino sulphonic acids[1]. Amino sulphonic acids behave like strong hybrid ions at physiological pH levels (approx. 7,0) and facilitate a large spectrum of molecular biological processes by virtue of their high buffering capacity.

The group of 'Good's buffers' also includes sulphonic acids and reagents such as bicine, tricine and AMP with higher $pK_a$ values, thus providing buffer substances for the entire pH range between 5,5 and 11.

[1]Good *et al.* (1966) *Biochemistry* 5:467-477.

| Product | Buffer Reagent | $pK_a$ (at 25 °C) | pH Range | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|---|---|
| **ACES** | N-(2-Acetamido)-2-aminoethanesulphonic acid | 6,78 | 6,1-7,5 | ≥99 % | **9138.1** | 10 g | 21,00 |
| | | | | | **9138.2** | 100 g | 154,30 |
| **AMP** | 2-Amino-2-methyl-1-propanol | 6,69 | 8,7-10,4 | ≥90 % | **3121.1** | 250 ml | 36,45 |
| **AMPSO** | 3-N-(α,α-Dimethyl-hydroxyethyl)-amino-2-hydroxypropane sulphonic acid | 9,00 | 8,3-9,7 | ≥98 % | **7159.1** | 25 g | 47,20 |
| | | | | | **7159.2** | 100 g | 149,45 |
| **BES** | N,N-Bis-(2-hydroxyethyl)-2-aminoethane sulphonic acid | 7,09 | 6,4-7,8 | ≥99 % | **9134.1** | 25 g | 23,15 |
| | | | | | **9134.2** | 100 g | 63,35 |
| | | | | | **9134.3** | 250 g | 138,15 |
| | | | | | **9134.4** | 500 g | 220,40 |
| **BICINE** | N,N-Bis-(2-hydroxyethyl)-glycine | 8,26 | 7,6-9,0 | ≥99 % | **9162.1** | 50 g | 38,60 |
| | | | | | **9162.2** | 250 g | 125,25 |
| | | | | | **9162.3** | 500 g | 179,00 |
| **CAPS** | Cyclohexylamino propanesulphonic acid | 10,40 | 9,7-11,1 | ≥99 % | **9168.1** | 25 g | 18,85 |
| | | | | | **9168.3** | 100 g | 48,95 |
| | | | | | **9168.2** | 250 g | 111,70 |
| **CAPSO** | 3-N-Cyclohexylamino-2-hydroxypropane sulphonic acid | 9,60 | 8,9-10,3 | ≥98 % | **5584.3** | 25 g | 28,95 |
| | | | | | **5584.1** | 100 g | 87,00 |
| | | | | | **5584.2** | 500 g | 321,45 |
| **CHES** | 2-(Cyclohexylamino)-ethanesulphonic acid | 9,50 | 8,6-10,0 | ≥99 % | **9166.1** | 10 g | 13,90 |
| | | | | | **9166.3** | 25 g | 22,50 |
| | | | | | **9166.2** | 100 g | 62,25 |
| **DIPSO** | 3-N-Bis(hydroxyethyl)-amino-2-hydroxypropane sulphonic acid | 7,52 | 7,0-8,2 | ≥98 % | **7151.1** | 25 g | 70,85 |
| **HEPES** | N-2-Hydroxyethyl piperazine-N'-2-ethane sulphonic acid, Good's buffer | 7,48 | 6,8-8,2 | ≥99,5 %, BioScience-Grade | **6763.1** | 100 g | 35,40 |
| | | | | | **6763.2** | 500 g | 137,10 |
| | | | | | **6763.3** | 1 kg | 227,40 |
| **MES** | 2-(N-Morpholino)-ethane sulphonic acid | 6,10 | 5,5-6,7 | ≥99 % | **4256.2** | 100 g | 63,35 |
| | | | | | **4256.5** | 250 g | 137,10 |
| | | | | | **4256.3** | 500 g | 260,70 |
| | | | | | **4256.4** | 1 kg | 456,90 |
| **MOPS** | 3-(N-Morpholino) propane sulphonic acid | 7,14 | 6,5-7,9 | ≥99,5 % | **6979.2** | 250 g | 74,10 |
| | | | | | **6979.4** | 500 g | 127,40 |
| | | | | | **6979.3** | 1 kg | 244,60 |
| | | | | | **6979.5** | 2,5 kg | 521,40 |
| **MOPSO** | 3-(N-Morpholino)-2-hydroxypropane sulphonic acid | 6,87 | 6,2-7,6 | ≥99 % | **7117.1** | 25 g | 31,10 |
| | | | | | **7117.2** | 100 g | 94,50 |
| | | | | | **7117.3** | 1 kg | 697,70 |
| **PIPES** | Piperazine-N,N'-bis-(2-ethanesulphonic acid) | 6,76 | 6,1-7,5 | ≥99 % | **9156.1** | 25 g | 19,25 |
| | | | | | **9156.2** | 100 g | 55,40 |
| | | | | | **9156.3** | 250 g | 120,95 |
| | | | | | **9156.4** | 500 g | 205,90 |
| **POPSO** | Piperazine-N,N'-bis(2-hydroxypropane sulphonic acid) | 7,78 | 7,2-8,5 | ≥99 % | **6632.1** | 25 g | 38,60 |
| | | | | | **6632.2** | 100 g | 122,05 |
| **TAPS** | N-Tris(hydroxymethyl)-methyl-3-amino-propane sulphonic acid | 8,40 | 7,7-9,1 | ≥99 % | **6982.1** | 10 g | 13,45 |
| | | | | | **6982.2** | 100 g | 42,90 |
| | | | | | **6982.3** | 250 g | 85,90 |
| | | | | | **6982.4** | 500 g | 152,15 |
| **TAPSO** | 3-N-Tris(hydroxymethyl)-methylamino-2-hydroxypropanesulphonic acid | 7,61 | 7,0-8,2 | ≥99 % | **6628.1** | 25 g | 30,00 |
| | | | | | **6628.2** | 100 g | 85,90 |
| **TES** | N-[Tris-(hydroxymethyl)-methyl]-2-aminoethane sulphonic acid | 7,40 | 6,8-8,2 | ≥99 % | **9137.1** | 10 g | 26,35 |
| | | | | | **9137.2** | 100 g | 138,70 |
| | | | | | **9137.3** | 500 g | 278,45 |
| **TRICINE** | N-Tris-(hydroxymethyl)-methyl-glycine | 8,05 | 7,4-8,8 | ≥99 % | **6977.1** | 50 g | 26,80 |
| | | | | | **6977.4** | 250 g | 106,35 |
| | | | | | **6977.2** | 500 g | 203,20 |
| | | | | | **6977.3** | 1 kg | 306,40 |
| | | | | | **6977.5** | 2,5 kg | 617,05 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Tris Buffers

Tris (hydroxymethyl) aminomethane (or 'Tris' for short) was first described[1] in 1897 and then proposed as a pH-stabilising reagent for biological systems[2] in 1946. On account of its high water solubility, its very large buffering capacity and the fact that it behaves inertly in a large number of enzymatic reactions, it has been used for many years as a base reagent for standard buffers in all fields of molecular biology.

[1]Piloty *et* Ruff (1897) *Proc. Soc. Exp. Biol. Med.* 6:233-234.

[2]Gomori (1946) *Ber. Dtsch. Chem. Ges.* 30:1656-1665.

In addition to the original, alkaline Tris, the pre-buffered Tris hydrochloride (Tris-HCl) is also available today. 1 M Tris buffer can be manufactured directly with a defined pH buffering range through skilful mixing of Tris (alkaline) and Tris-HCl. The following table specifies the mixing ratio for each Tris.

*Please note:* the pH buffered by the Tris mixture depends heavily on the temperature. The values found is the literature always refer to a temperature of 25 °C (unless specified otherwise).

| Product | Buffer Reagent | $pK_a$ (at 25 °C) | pH Range | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|---|---|
| **BIS-TRIS** | Bis-(2-hydroxyethyl)imino-tris-(hydroxymethyl)-methane | 6,46 | 5,8-7,2 | ≥99 % | **9140.1** | 50 g | 52,60 |
| | | | | | **9140.2** | 250 g | 209,65 |
| | | | | | **9140.3** | 500 g | 352,10 |
| **BIS-TRIS-Propane** | 1,3-Bis[tris(hydroxymethyl)-methylamino]-propane | 6,80 | 6,3-9,5 | ≥98 % | **6999.1** | 25 g | 58,60 |
| | | | | | **6999.2** | 100 g | 209,65 |
| **Roti®fair 1M Tris 7.4** | Tris powder (pouch) | 8,06 | 7,5-9,0 | for 1000 ml/pouch, for biochemistry and molecular biology | **1251.1** | 10 pouches | 375,20 |
| **Roti®fair 1M Tris 8.0** | Tris powder (pouch) | 8,06 | 7,5-9,0 | for 1000 ml/pouch, for biochemistry and molecular biology | **1260.1** | 10 pouches | 375,20 |
| **Roti®fair 1M Tris 8.3** | Tris powder (pouch) | 8,06 | 7,5-9,0 | for 1000 ml/pouch, for biochemistry and molecular biology | **1261.1** | 10 pouches | 375,20 |
| **TRIS** | Tris(hydroxymethyl)-aminomethane | 8,06 | 7,5-9,0 | ≥99,9 %, p.a. | **4855.1** | 500 g | 50,45 |
| | | | | | **4855.2** | 1 kg | 89,15 |
| | | | | | **4855.5** | 2,5 kg | 185,45 |
| | | | | | **4855.3** | 5 kg | 370,90 |
| | | | | | **4855.4** | 10 kg | 704,15 |
| **TRIS hydrochloride** | Tris(hydroxymethyl)aminomethane hydrochloride, Tris-HCl | 8,06 | 7,5-9,0 | ≥99 %, p.a. | **9090.1** | 50 g | 13,90 |
| | | | | | **9090.2** | 500 g | 87,65 |
| | | | | | **9090.3** | 1 kg | 129,55 |
| | | | | | **9090.5** | 2,5 kg | 274,15 |
| | | | | | **9090.4** | 5 kg | 525,70 |

For additional product data and safety information, see chapter Chemicals A-Z.




Please note our **Technical Information Brochure** on the Internet next to the products:

**Biological Buffers**

### Roti®-Stock 100x TE

**BioScience-Grade, ready-to-use, steam sterilised**

For molecular biology.

TE 100x ready-to-use solution

**Warning** H315-H319

100fold stock solution Tris/EDTA. The most popular solution and storage buffer for DNA can be obtained by diluting 1:100 with sterile water. The accompanying EDTA inhibits traces of DNAses and therefore protects your valuable nucleic acids from degradation. However, many other enyzmes such as ligases will also be inhibited through the complexation of bivalent cations, therefore TE-buffer should not be used as a solution buffer for cloning.
With original seal.

**Composition:**

1 M Tris (pH 8,0), 100 mM EDTA (pH 8,0) in deionised water, steam sterilised

| | | | |
|---|---|---|---|
| **1052.1** | 1 l | glass | 81,60 € |
| Original pack 6 x 1 l | | | 77,52/1 l |

### Roti®fair 10x TE

**for 1000 ml/pouch, for molecular biology**

Concentrated buffer solution for solubilisation and dilution of nucleic acids.

TE buffer powder (pouch), Tris EDTA

**Warning** H315-H319-H335-H373

Exactly pre-weighed pouches for convenient and rapid preparation of TE solution.
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.
For long-term storage, buffer solution should be kept at +4 °C.
1x TE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

**Formulation:**

Prepared 10x TE solution contains: 0,1 M Tris-HCl, 10 mM EDTA, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1268.1** | 10 pouches | box | 213,95 € |

## Roti®-Stock 20 % SDS

**BioScience-Grade, ready-to-use, 0,2 µm filtered**

For molecular biology and electrophoresis.

SDS 20 % ready-to-use solution

**Danger** H318-H315-H335

20 % stock solution sodium dodecyl sulphate. Store the solution away from light in a dry place. SDS-stock solution and other solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
With original seal.

**Composition:**

20 % SDS in deionised water, 0,2 µm filtered

| | | | |
|---|---|---|---|
| **1057.1** | 1 l | glass | 138,70 € |
| Original pack 6 x 1 l | | | 131,77/1 l |



## Water

DNAse-free RNAse-free · ready-to-use · S

**BioScience Grade, nuclease-free, steam sterilised, DEPC treated water**

For molecular biology.

$H_2O$

M 18,02 g/mol

Distilled water mixed with DEPC and steam sterilised. By DEPC Histidin residues in proteins are modified to N-carbethoxy histidin, resulting in inhibition of RNases and DNases. DEPC decomposes to $CO_2$ and ethanol during sterilisation.
Also available as 50 reaction tubes or as 50 glass ampoules with 1 ml each nuclease free water in a tube rack.
After autoclaving, each lot is photometrically tested for optimal purity in the wave length range relevant for nucleic acid research.

| | | | | |
|---|---|---|---|---|
| **T143.1** | 250 ml | glass | | 25,70 € |
| **T143.2** | 500 ml | glass | | 28,95 € |
| **T143.3** | 1 l | glass | | 34,30 € |
| Original pack 6 x 1 l | | | | 32,59/1 l |
| **T143.4** | 50 x 1 ml | plastic | | 89,15 € |
| **T143.6** | 50 x 1 ml | glass ampoule | TIP | 103,10 € |
| **T143.5** | 5 x 20 ml | glass | | 20,35 € |

## Further Reagents for DNA/RNA Analysis

| Product | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **DAPI** | ≥98 %, p.a. | **6335.1** | 25 mg | 90,20 |
| | | **6335.2** | 100 mg | 252,65 |
| **DEPC** | ≥97 %, for biochemistry and molecular biology | **K028.3** | 5 ml | 25,70 |
| | | **K028.1** | 25 ml | 78,40 |
| | | **K028.2** | 100 ml | 138,15 |
| **1,4-Dithioerythritol** | ≥99 %, p.a. | **8814.1** | 5 g | 63,35 |
| | | **8814.3** | 10 g | 106,45 |
| | | **8814.2** | 25 g | 235,45 |
| **1,4-Dithiothreitol** | ≥99 %, p.a. | **6908.1** | 5 g | 57,55 |
| | | **6908.3** | 10 g | 85,90 |
| | | **6908.2** | 25 g | 204,15 |
| | | **6908.4** | 100 g | 600,95 |
| **Ethidium bromide** | ≥98 % | **7870.1** | 1 g | 23,15 |
| | | **7870.2** | 5 g | 90,85 |
| **Ethidium bromide solution 0.025 %** | aqueous solution (250 µg/ml) | **HP47.1** | 15 ml | 29,60 |
| | | **HP47.2** | 5 x 15 ml | 104,20 |
| **Ethidium bromide solution 0.5 %** | aqueous solution (5 mg/ml) | **HP46.1** | 15 ml | 29,60 |
| | | **HP46.2** | 5 x 15 ml | 104,20 |
| **Ethidium bromide solution 1 %** | 1 % solution in water (10 mg/ml) | **2218.1** | 10 ml | 10,65 |
| | | **2218.4** | 15 ml | 30,00 |
| | | **2218.2** | 30 ml | 22,05 |
| | | **2218.3** | 100 ml | 53,65 |
| **Ethylenediamine tetraacetic acid disodium salt dihydrate** | ≥99 %, p.a., ACS | **8043.3** | 100 g | 21,40 |
| | | **8043.1** | 250 g | 34,30 |
| | | **8043.2** | 1 kg | 100,55 |
| | | **8043.4** | 5 kg | 364,45 |
| | | **8043.5** | 25 kg | 826,70 |
| **Glycerol (anhydrous)** | ≥99,5 %, p.a., anhydrous | **3783.3** | 1 l | 56,45 |
| | | **3783.1** * | 1 l | 52,15 |
| | | **3783.4** | 2,5 l | 99,90 |
| | | **3783.2** | 2,5 l | 94,10 |
| **β-Mercaptoethanol** | ≥99 %, p.a. | **4227.3** | 100 ml | 14,55 |
| | | **4227.1** | 250 ml | 20,35 |
| | | **4227.2** | 1 l | 46,15 |
| **Propidiumiodide** | ≥95 %, p.a. | **CN74.1** | 25 mg | 67,20 |
| | | **CN74.2** | 50 mg | 117,20 |
| | | **CN74.3** | 100 mg | 209,65 |
| **SDS, ultra pure** | ≥99,5 %, for electrophoresis | **2326.1** | 100 g | 39,25 |
| | | **2326.4** | 250 g | 82,70 |
| | | **2326.2** | 500 g | 150,40 |
| | | **2326.3** | 500 g (in 2,5 l glass bottle for prep. of a 20 % sol.) | 156,45 |
| | | **2326.5** | 1 kg | 257,90 |
| **Tris-(2-carboxyethyl) phosphine-hydrochloride** | ≥98 %, for biochemistry | **HN95.1** | 1 g | 51,50 |
| | | **HN95.2** | 5 g | 166,55 |
| **Tween® 20** | Ph.Eur. | **9127.1** | 250 g | 20,35 |
| | | **9127.2** | 1 kg | 51,50 |
| | | **9127.3** | 2,5 kg | 89,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Decontamination & Purification




## Roti® Nucleic Acid-free

**ready-to-use solution for removal of nucleic acid contaminations from surfaces**

**Warning** H315-H319

Roti®-Nucleic Acid-free was specifically designed for extensive removal of nucleic acid contaminations. Being a mild reagent, Roti®-Nucleic Acid-free may be used on tables, laboratory devices, as well as on glass and plastic wares. By incubation or by wiping, laboratory benches, heating blocks, thermocyclers, pipettor shafts, reaction tubes a.s.o. can easily be cleaned. Contamination with foreign DNA or RNA, which may heavily interfere with sensitive assays like PCR, reverse transcription or sequencing, is hence efficiently eliminated.

| | | | | |
|---|---|---|---|---|
| **HP69.1** | 500 ml | spray bottle | | 69,35 € |
| **HP69.2** | 1 l | plastic | TIP | 92,35 € |
| Original pack 6 x 1 l | | | | 87,73/1 l |
| **HP69.3** | 2,5 l | plastic | | 205,90 € |
| Original pack 4 x 2,5 l | | | | 195,61/2,5 l |




## Roti® Nucleic Acid-free eXtra

**ready-to-use**

**Gentle solution for removal of nucleic acid contaminations from surfaces.**

Roti®-Nucleic Acid-free eXtra is a very gently and highly efficient solution that has been designed as nonhazardous alternative to our top-selling Roti®-Nucleic Acid-free.
The ready-to-use solution or spray may be used for fast elimination of all kinds of contaminating nucleic acids (e.g. gDNA, amplicons, plasmids, RNA) from surfaces without the need to handle dangerous liquids. By incubation or by wiping, laboratory benches, heating blocks, thermal cyclers, pipettor shafts, reaction tubes etc. can easily be cleaned.
Roti®-Nucleic Acid-free eXtra is suitable for use on a broad variety of materials for instance glass, ceramic, plastic, rubber, steel and precious metal, with the exception of light or non-ferrous metals. Contamination with foreign DNA or RNA, which may heavily interfere with sensitive assays like PCR, reverse transcription or sequencing, is hence efficiently eliminated.

| | | | | |
|---|---|---|---|---|
| **1312.1** | 500 ml | plastic | | 67,20 € |
| **1312.2** | 1 l | plastic | | 98,90 € |
| Original pack 6 x 1 l | | | | 93,96/1 l |
| **1312.3** | 2,5 l | plastic | | 225,75 € |
| Original pack 4 x 2,5 l | | | | 214,46/2,5 l |
| **1312.4** | 500 ml | spray bottle | TIP | 69,35 € |



## DNA AWAY®

**ready-to-use solution for removal of DNA-contaminations**

ready-to-use

**Warning** H315-H319

Suitable for PCR-applications. DNA AWAY® enables speedy and safe removal of DNA-contaminations, e.g. to prevent false-positive PCR results. For decontamination of surfaces as well as of lab ware like pipettors, thermocyclers, and reaction tubes.




**Figure A:** Full removal of DNA surface contaminations after 5 minutes (1 µg dried DNA each, a-d).

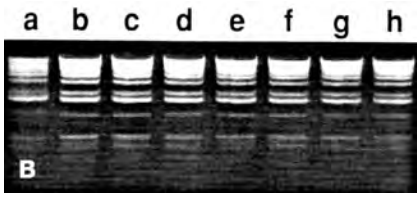



**Figure B:** No removal of solubilised DNA - for protection of your sample-DNA (1 µg DNA each, 5 minutes incubation).

| | | | |
|---|---|---|---|
| **X996.1** | 250 ml | plastic | 40,75 € |
| **X996.2** | 4 l | plastic | 214,90 € |

## DEPC

**≥97 %, for biochemistry and molecular biology**

Diethyl pyrocarbonate, Pyrocarbonic acid diethyl ester, Dicarbonic acid diethyl ester.
$C_6H_{10}O_5$
M 162,14 g/mol
Storage temp.: +4 °C

**Warning** H302+H332-H315-H319-H335

Histidin residues in proteins are modified to N-carbethoxy histidin, resulting in inhibition of RNases and DNases. DEPC decomposes to $CO_2$ and ethanol during steam sterilisation.
**Application:** 0,1 % DEPC over night under agitation. Autoclave.

| | | | |
|---|---|---|---|
| **K028.3** | 5 ml | glass | 25,70 € |
| **K028.1** | 25 ml | glass | 78,40 € |
| **K028.2** | 100 ml | plastic | 138,15 € |

**Instructions for use**
can be found on the Internet next to the product description.




ready-to-use

## RNase AWAY®

**ready-to-use solution for removal of RNAse-contaminations from surfaces**

**Warning** H315-H319

Quick and safe removal of RNases from labware made of plastic or glass, e.g. pipettes, gel chambers, glass discs, etc.
A safe alternative to DEPC. Reduces the use of carcinogenic DEPC in the laboratory considerably. RNase AWAY® does not corrode the surface and is not carcinogenic. Creates and preserves RNase-free surfaces. No mixing, baking or time-consuming waiting. RNase AWAY® is chemically stable and requires no special storing.

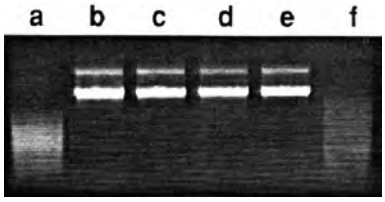



**Figure:** RNase-digestion of RNA (a, f), and removal of RNase by RNase AWAY® (d-e: undamaged RNA, 1µg poly(A)-RNA each).

Apply RNase AWAY® directly to surface, allow to work in, then rinse with water or dry with an RNase-free tissue cloth. For effective removing of RNases without influencing your DNA samples.

| | | | | |
|---|---|---|---|---|
| **A998.1** | 250 ml | plastic | | 48,30 € |
| **A998.4** | 475 ml | spray bottle | TIP | 74,75 € |
| **A998.2** | 1 l | plastic | | 100,55 € |
| Original pack 6 x 1 l | | | | 95,52/1 l |
| **A998.3** | 4 l | plastic | | 188,15 € |

# Thermal Cyclers



licenced

## Thermal Cycler ³PRIME

**Compact, easy-to-handle thermal cyclers for each work bench. Made by TECHNE.**

- Licensed for PCR
- New, upgraded generation
- Fast heating and cooling rates
- High temperature homogeneity
- Simple, intuitive programming
- 3,5˝ colour touch screen
- USB port
- Cost-efficient
- 4 years warranty on cyclers and blocks

New generation of reliable, inexpensive thermal cyclers specially developed for use on the individual bench, for student's courses and schools.

In order to enable very rapid heating and cooling rates at extremely low temperature variations in the block, an advanced block algorithm has been implemented, regulating the modern Peltier technology. The mono-tube blocks were specially designed to provide optimal contact between the PCR-vials and the block bore hole and are cut, with the most modern of technologies, out of high-grade material. In most ³PRIME instruments, the heated lid can be adjusted to the height of the PCR-vials, thus optimising the temperature and volume constancy in the sample. Intuitive programming and the newly designed colour touch screen with very easy handling, enable both simple as well as complex cycle protocols to be entered very easily and quickly. All thermal cycler models have 1000 program slots available. With Gradient Thermal Cycler a temperature gradient may be added freely to every temperature step of the program. Further data may be found online in our detailed product instruction manual or by calling one of our staff on the service hotline.



Purchase of this instrument conveys a limited non-transferable immunity from suit for the purchaser's own internal research and development and applied fields other than human *in vitro* diagnostics under non-real-time thermal cycler patents of Applied Biosystems LLC.

**Technical Data:**

| Type | Personal Cycler ³PRIME | Standard Cycler ³PRIMEX | Gradient Cycler ³PRIMEG |
|---|---|---|---|
| Sample capacity | 24 x 0,2 ml or 18 x 0,5 ml | 48 x 0,2 ml or 30 x 0,5 ml | 48 x 0,2 ml or 30 x 0,5 ml |
| Block temperature | 4 - 100 °C | | |
| Block uniformity at 55 °C | below ±0,3 °C | | |
| Temperature accuracy at 55 °C | below ±0,2 °C | | |
| Max. heating rate | 3,0 °C/sec | | |
| Max. cooling rate | 2,1 °C/sec | | |
| Peltier elements per block | 2 | 4 | 4 |
| Selectable lid temperature | 35 °C - 115 °C (disengageable) | | |
| Heated lid pressure | no | yes | 4 |
| Lid adjustable to tubes with | flat lid | flat and domed lids | flat and domed lids |
| Tubes | single tubes and strips | | |
| PCR plates | no | 48well plates* | 48well plates* |
| Max. number of programs | 1000 | | |
| Max. number of steps per program | 10 stages with 10 steps each | | |
| Max. repetition of cycles | 99 | | |
| "Hold" time | 1 sec - 4 h/59 min/59 sec | | |
| Increment/Decrement function | yes (temperature and time) | | |
| Ramp resolution | 0,1 °C/sec | | |
| Gradient temperature range | - | - | 30 - 80 °C |
| Max. gradient range | - | - | 14 °C |
| Min. gradient range | - | - | 1 °C |
| Gradient calculator | - | - | yes |
| Oligonucleotide $T_m$ calculator | yes (Nearest Neighbour method) | | |
| Display | 3,5˝ colour touch screen | | |
| Auto-restart function | yes (disengageable) | | |
| Data transfer | USB port | | |
| Password protection | yes | | |
| Warranty | 4 years or 80,000 cycles | | |
| Dimensions in cm (L x W x H) | 35 x 21 x 18 | | |
| Weight (kg) | 6 | | |
| Voltage | 100-230 V, 50-60 Hz | | |
| Power (W) | 155 | | |

*Heating block for 48 x 0,2 ml tubes only

**Thermal Cycler ³PRIME (Personal)**

| With heating block | Art. No. | Pack Qty | € |
|---|---|---|---|
| For 24 x 0,2 ml tubes | **4834.1** | 1 | 2749,85 |
| For 18 x 0,5 ml tubes | **4835.1** | 1 | 2749,85 |

**Thermal Cycler ³PRIMEX (Standard)**

| With heating block | Art. No. | Pack Qty | € |
|---|---|---|---|
| For 48 x 0,2 ml tubes | **4837.1** | 1 | 3574,40 |
| For 30 x 0,5 ml tubes | **4838.1** | 1 | 3574,40 |

**Thermal Cycler ³PRIMEG (Gradient)**

| With heating block | Art. No. | Pack Qty | € |
|---|---|---|---|
| For 48 x 0,2 ml tubes | **4847.1** | 1 | 4013,00 |
| For 30 x 0,5 ml tubes | **4848.1** | 1 | 4013,00 |




licenced

## Thermal Cycler PRIME

**Versatile, easy-to-handle thermal cyclers for each laboratory. Made by TECHNE.**

- Licensed for PCR
- New, upgraded generation
- Fast heating and cooling rates
- High temperature homogeneity
- Simple, intuitive programming
- 5,7″ colour touch screen
- 8 Peltier elements per block
- USB port
- Cost-efficient
- 4 years warranty on cyclers and blocks

New generation of versatile, inexpensive thermal cyclers for use in the laboratory.

In order to enable very rapid heating and cooling rates at extremely low temperature variations in the block, an advanced block algorithm has been implemented, regulating the modern Peltier technology. The mono-tube blocks were specially designed to provide optimal contact between the PCR-vials and can be exchanged in a matter of seconds without the need of tools. The heated lid can be adjusted to the height of the PCR-vials, thus optimising the temperature and volume constancy in the sample. The modern, intuitive programming, and the newly designed colour touch screen with very easy handling, enable both simple as well as complex cycle protocols to be entered very easily and quickly. All thermal cycler models have 1000 program slots available. With Thermal Cycler Gradient a temperature gradient may be added freely to every temperature step of the program. Further data may be found online in our detailed product instruction manual or by calling one of our staff on the service hotline.







Purchase of this instrument conveys a limited non-transferable immunity from suit for the purchaser's own internal research and development and applied fields other than human *in vitro* diagnostics under non-real-time thermal cycler patents of Applied Biosystems LLC.

**Technical Data:**

| Type | Standard Cycler PRIME | Gradient Cycler PRIMEG |
|---|---|---|
| Sample capacity | 96 x 0,2 ml or 60 x 0,5 ml or 33 x 0,2 ml plus 33 x 0,5 ml | |
| Block temperature | 4 - 100 °C | |
| Block uniformity at 55 °C | below ±0,3 °C | |
| Temperature accuracy at 55 °C | below ±0,25 °C | |
| Max. heating rate | 3,4 °C/sec | |
| Max. cooling rate | 1,0 °C/sec | |
| Peltier elements per block | 8 | |
| Selectable lid temperature | 35 °C - 115 °C (disengeable) | |
| Heated lid pressure | yes | |
| Lid adjustable to tubes with | flat and domed lids | |
| Tubes | single tubes and strips | |
| PCR plates | 96well and 384well plates | |
| Max. number of programs | 1000 | |
| Max. number of steps per program | 10 stages with 10 steps each | |
| Max. repetition of cycles | 99 | |
| "Hold" time | 1 sec - 4 h/59 min/59 sec | |
| Increment/Decrement function | yes (temperature and time) | |
| Ramp resolution | 0,1 °C/sec | |
| Gradient temperature range | - | 30 - 80 °C |
| Max. gradient range | - | 29 °C (19 °C with 384wells) |
| Min. gradient range | - | 1 °C |
| Gradient calculator | - | yes |
| Oligonucleotide $T_m$ calculator | yes (Nearest Neighbour method) | |
| Display | 5,7″ color touch screen | |
| Auto-restart function | yes (disengeable) | |
| Data transfer | USB port | |
| Password protection | yes | |
| Warranty | 4 years or 80 000 cycles | |
| Dimensions in cm (L x W x H) | 42 x 24 x 24 | |
| Weight (kg) | 9,4 | |
| Voltage | 100-230 V, 50-60 Hz | |
| Power (W) | 425 | |

**Thermal Cycler PRIME (Standard)**

| With heating block | Art. No. | Pack Qty | € |
|---|---|---|---|
| For 96 x 0,2 ml tubes and 96well plates | **4852.1** | 1 | 4353,75 |
| For 60 x 0,5 ml tubes | **4853.1** | 1 | 4353,75 |
| For 384well plates | **4854.1** | 1 | 4353,75 |
| Combi-block for 33 x 0,2 ml and 33 x 0,5 ml tubes | **0253.1** | 1 | 4353,75 |

**Thermal Cycler PRIMEG (Gradient)**

| With heating block | Art. No. | Pack Qty | € |
|---|---|---|---|
| For 96 x 0,2 ml tubes and 96well plates | **4863.1** | 1 | 4891,25 |
| For 60 x 0,5 ml tubes | **4864.1** | 1 | 4891,25 |
| For 384well plates | **4865.1** | 1 | 4891,25 |
| Combi-block for 33 x 0,2 ml and 33 x 0,5 ml tubes | **0257.1** | 1 | 4837,50 |

**Instructions for use**
can be found on the Internet next to the product description.



## Roti®-Pol DNA Polymerases

NEW

**For PCR. Recombinant, heat stable DNA polymerases from the thermophilic bacteria *Thermus aquaticus* or *Pyrococcus furiosus*.**

Roti®-Pol, the new series of DNA polymerases is the optimal choice for all PCR cycling protocols, as being performed in, for instance, analysis of cloning efficiency, for gene fishing, in routine screening processes, educational assays and much more. In combination with our specially designed buffers, the Roti®-Pol DNA polymerases deliver specific and reproducible PCR amplification with a wide range of PCR templates.

In addition to the **standard** Taq polymerase for PCR assays in general, the range also includes the antibody blocked **hot-start** version of the enzyme, which is recommended for particularly sequence specific approaches. This inhibited Taq polymerase is getting active only after the initial denaturation step, resulting in amplification of the target sequence without production of unwanted side products. Both Taq polymerases are available as **set of enzyme and buffer solutions** as well as premixed, 2x concentrated **master mixes**. The sets contain the DNA polymerase plus two 10x concentrated reaction buffers with $MgCl_2$, one of which has been specially designed for direct gel loading following the PCR reaction. Besides the DNA polymerase, the master mixes include dNTPs, $MgCl_2$, and all other components required for PCR except primers and template DNA, and are available in a colourless version for PCR only, plus a red ready-to-load version for subsequent direct gel electrophoresis.

With the **TaqHY** DNA polymerase we provide a modified Taq polymerase outstanding in robust performance, fast polymerisation rate and high yield of amplicons. Combining the benefits of both techniques, the **Hot-TaqHY** DNA polymerase has been designed by increasing the PCR sequence specificity of a quick and high yield modified Taq polymerase by antibody mediated inhibition.

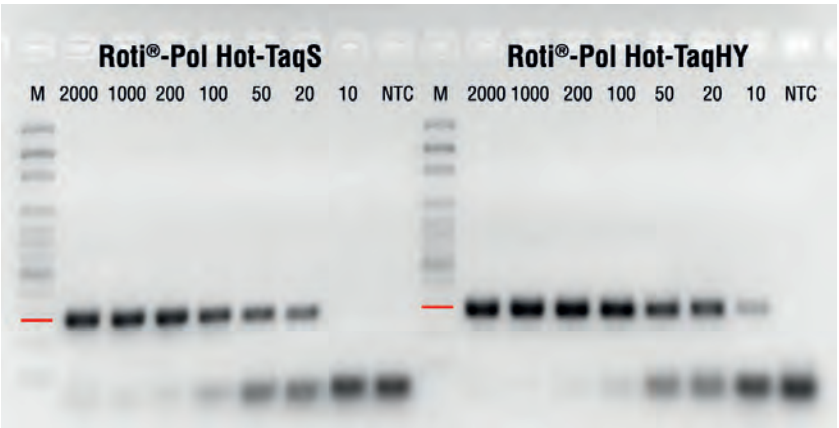
In combination with the attached specially adjusted high fidelity buffer, the **ProofRead** polymerase delivers highly sequence-true PCR amplicons and is recommended for amplification of target sequences of high GC content, or with complex secondary structures.

All **TaqUltra** DNA polymerase are being tested on absence of DNA (bacterial genomic DNA) which makes them particularly suitable for amplification of bacterial DNA. This polymerase is also available in standard version as well as the hot-start type **Hot-TaqUltra**.

**Contents**

| Product | Polymerase | Master mix (2x) | Reaction buffer | Art.-No. |
|---|---|---|---|---|
| **Roti®-Pol TaqS** | Standard Taq polymerase | - | colourless + red (ready to load) | 9223 |
| **Roti®-Pol TaqS Mix (2x)** | Standard Taq polymerase | colourless | - | 9239 |
| **Roti®-Pol TaqS Red-Mix (2x)** | Standard Taq polymerase | red (ready to load) | - | 9241 |
| **Roti®-Pol Hot-TaqS** | Hot start Taq polymerase | - | colourless + red (ready to load) | 9245 |
| **Roti®-Pol Hot-TaqS Mix (2x)** | Hot start Taq polymerase | colourless | - | 9248 |
| **Roti®-Pol Hot-TaqS Red-Mix (2x)** | Hot start Taq polymerase | red (ready to load) | - | 9256 |
| **Roti®-Pol TaqHY** | High yield / high performance Taq polymerase | - | colourless + red (ready to load) | 9345 |
| **Roti®-Pol Hot-TaqHY** | High yield / high performance hot-start Taq polymerase | - | colourless + red (ready to load) | 9346 |
| **Roti®-Pol ProofRead** | Proof reading / high fidelity Pfu polymerase | - | ProofRead | 9344 |
| **Roti®-Pol TaqUltra** | DNA free, ultra pure Taq polymerase | - | - | 9347 |
| **Roti®-Pol Hot-TaqUltra** | DNA free, ultra pure hot start Taq polymerase | - | - | 9350 |

**Figure:**
Sensitivity assay using Roti®-Pol Hot-TaqS and Hot-TaqHY, 1 U/reaction each (20 µl). 300 bp β-Actin fragment, 40 cycles. Template: 10 to 2000 pg human gDNA. Gel loading 10 µl each. M: 100 bp-DNA Ladder extended. NTC: no template control.






Roti®-Pol DNA polymerases are able to amplify PCR products up to 5 kb with genomic, viral, cDNA and plasmid DNA as template. The Taq DNA polymerases possess a 5' → 3' polymerase- as well as a 5'-flap endonuclease activity, generating amplicons with a 3'dA (adenine)-overhang which may well be used for TA-cloning purposes. In addition to the 5' → 3' polymerase activity, the Pfu DNA polymerase possesses a 3' → 5' (proof reading) exonuclease activity, rapidly substituting misincorporated bases during polymerization. These DNA fragments are blunt-ended.

For easy handling, all solutions are filled in tubes with **colour coded lids**. The red dye for direct gel loading, included in buffers and master mixes, migrates approx. as fast as a 1 kb DNA fragment in 1 % agarose gels.

| Product | Purity | Application | Amplicon Ends | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **Roti®-Pol TaqSRoti®-Pol TaqS** | 5 U/µl | Standard PCR | 3'dA | **9223.1** | 500 U | 60,10 |
| | | | | **9223.2** | 2500 U | 284,90 |
| **Roti®-Pol TaqS Mix (2x)** | ready-to-use, 2x conc. | Standard PCR | 3'dA | **9239.1** | 2,5 ml | 43,00 |
| | | | | **9239.2** | 12,5 ml | 172,00 |
| **Roti®-Pol TaqS Red-Mix (2x)** | ready-to-use, 2x conc. | Standard PCR with subsequent gel loading | 3'dA | **9241.1** | 2,5 ml | 47,30 |
| | | | | **9241.2** | 12,5 ml | 186,00 |
| **Roti®-Pol Hot-TaqS** | 5 U/µl | Particularly sequence specific standard PCR | 3'dA | **9245.1** | 200 U | 60,20 |
| | | | | **9245.2** | 1000 U | 287,05 |
| **Roti®-Pol Hot-TaqS Mix (2x)** | ready-to-use, 2x conc. | Particularly sequence specific standard PCR | 3'dA | **9248.1** | 2,5 ml | 64,50 |
| | | | | **9248.2** | 12,5 ml | 301,00 |
| **Roti®-Pol Hot-TaqS Red-Mix (2x)** | ready-to-use, 2x conc. | Particularly sequence specific standard PCR with subsequent gel loading | 3'dA | **9256.1** | 2,5 ml | 68,80 |
| | | | | **9256.2** | 12,5 ml | 318,20 |
| **Roti®-Pol TaqHY** | 5 U/µl | Fast PCR protocols and/or high yield, GC rich template DNA | 3'dA | **9345.1** | 500 U | 66,55 |
| | | | | **9345.2** | 2500 U | 318,20 |
| **Roti®-Pol Hot-TaqHY** | 5 U/µl | Particularly sequence specific, fast PCR protocols and/or high yield, GC rich template DNA | 3'dA | **9346.1** | 200 U | 67,65 |
| | | | | **9346.2** | 1000 U | 320,35 |
| **Roti®-Pol ProofRead** | 5 U/µl | High fidelity PCR with exact sequence replication | blunt | **9344.1** | 200 U | 77,40 |
| | | | | **9344.2** | 1000 U | 365,50 |
| **Roti®-Pol TaqUltra** | 5 U/µl, DNA-free | PCR of bacterial gDNA | 3'dA | **9347.1** | 200 U | 143,00 |
| | | | | **9347.2** | 1000 U | 698,75 |
| **Roti®-Pol Hot-TaqUltra** | 5 U/µl, DNA-free | Particularly sequence specific PCR of bacterial gDNA | 3'dA | **9350.1** | 200 U | 149,45 |
| | | | | **9350.2** | 1000 U | 733,15 |

For research use only. Not approved for use in clinical or *in vitro* diagnostics.

Store at -20 °C • Transport temp.: cooled



**Instructions for use**
can be found on the Internet next to the product description.

# Nucleotides

- Available as ready-to-use set or mix, for contamination-free applications
- Purity ≥98 % (HPLC-tested)
- Tested for “long-run-PCR“ of up to 30 kb
- DNAse-, RNAse-, Protease- and Phosphatase-free
- Free of PCR inhibitors like modified bases and tetra-pyrophosphate
- Adjusted to pH 8,5 for superior stability even during larger numbers of freeze-and-thaw cycles
- Also available adjusted to pH 7,0 for special applications (see below)
- Highly efficient enzymatic fabrication*

**Applicable to**
PCR, light-cycling, cDNA synthesis, labelling and primer-extension, mutagenesis-assays, sequencing reactions and *in vitro* transcription.

*of dATP, dGTP, dCTP and dUTP. dTTP ist synthesized chemically.

All Roth nucleotides are manufactured from highest-quality reagents and are most thoroughly tested for quality. This testing procedure not only includes standard-PCR (fig. 1) but also ‘longrange-PCR’ of up to 30 kb, repeated quantitative light-cycling reactions (fig. 2), and tests for physical stability (fig. 3).

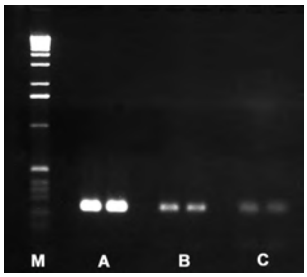



**Fig. 1**
Sensitivity assay I: Amplification of a 260 bp fragment of human genomic DNA with (left to right) 250 ng (A), 25 ng (B) and 2,5 ng (C) DNA as template (two replicates).

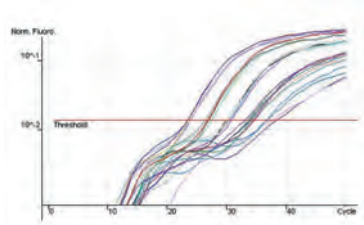


**Fig. 2**
Sensitivity assay II: Quantitative light-cycling-PCR on recombinant DNA with (left to right) 10 ng, 1 ng, 100 pg, 10 pg, 1 pg DNA as template (six replicates).

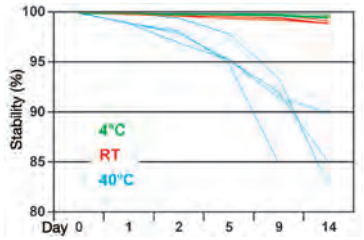



**Fig. 3**
Stability testing: HPLC analysis of all four dNTPs following incubation periodes of 1-14 days at different temperatures (4 °C - green; room temperature - red; 40 °C - blue). Stability of nucleotides is >99 % even after 14 days incubation at room temperature. Even after an incubation period of 9 days at 40 °C, 85 % of all nucleotide molecules are still intact.

# dNTP Sets




## dNTP-Set 1

**≥99 %, dATP, dTTP, dGTP, dCTP**

dNTP-Set 1, composed of the nucleotide-single solutions:
dATP, dTTP, dGTP, dCTP.
Concentration: 100 mM per dNTP.
Deoxynucleoside triphosphate set
Storage temp.: -20 °C • Transport temp.: cooled

| | | |
|---|---|---|
| **K039.1** | 4 x 25 µmol (250 µl), 100 mM | 98,40 € |
| **K039.2** | 5 x 4 x 25 µmol (250 µl), 100 mM | 407,45 € |

## dNTP-Set 1 (pH 7)

**≥99 %, dATP, dTTP, dGTP, dCTP**

dNTP-Set 1 (pH 7), composed of the nucleotide-single solutions:
dATP, dTTP, dGTP, dCTP.
Concentration: 100 mM per dNTP, **pH 7,0 ±0,1**
Deoxynucleoside triphosphate set
Storage temp.: -20 °C • Transport temp.: cooled

| | | |
|---|---|---|
| **0178.1** | 4 x 25 µmol (250 µl), 100 mM | 98,40 € |
| **0178.2** | 5 x 4 x 25 µmol (250 µl), 100 mM | 407,45 € |

## dNTP-Set 2

**≥99 %, dATP, dUTP, dGTP, dCTP**

dNTP-Set 2, composed of the nucleotide-single solutions:
dATP, dUTP, dGTP, dCTP.
Concentration: 100 mM per dNTP.
Deoxynucleoside triphosphate set
Storage temp.: -20 °C • Transport temp.: cooled

| | | |
|---|---|---|
| **L540.1** | 4 x 25 µmol (250 µl), 100 mM | 98,80 € |
| **L540.2** | 5 x 4 x 25 µmol (250 µl), 100 mM | 413,90 € |

## dNTP-Set 3

**≥99 %, dATP, dTTP, dITP, dCTP**

dNTP-Set 3, composed of the nucleotide-single solutions:
dATP, dTTP, dITP, dCTP.
Concentration: 100 mM per dNTP.
Deoxynucleoside triphosphate set
Storage temp.: -20 °C • Transport temp.: cooled

| | | |
|---|---|---|
| **P731.1** | 4 x 25 µmol (250 µl), 100 mM | 98,80 € |
| **P731.2** | 5 x 4 x 25 µmol (250 µl), 100 mM | 413,90 € |

**Valid for all nucleotides:**
Storage temp.: -20 °C
Transport temp.: cooled

## dNTP Mixes

### Roti®-Mix PCR 1

**2 mM (per dNTP) dATP, dTTP, dGTP, dCTP**

Roti®-Mix PCR 1, nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 2 mM per dNTP.
Storage temp.: -20 °C • Transport temp.: cooled

| | | | |
|---|---|---|---|
| **L541.1** | 1 ml | plastic | 24,20 € |
| **L541.2** | 5 x 1 ml | plastic | 94,50 € |

### Roti®-Mix PCR 2

**2 mM (per dNTP) dATP, dUTP, dGTP, dCTP**

Roti®-Mix PCR 2, nucleotide-mixture containing dATP, dUTP, dGTP, dCTP.
Concentration: 2 mM per dNTP.
Storage temp.: -20 °C • Transport temp.: cooled

| | | | |
|---|---|---|---|
| **L542.1** | 1 ml | plastic | 24,20 € |
| **L542.2** | 5 x 1 ml | plastic | 94,50 € |



### Roti®-Mix PCR 3

**10 mM (per dNTP) dATP, dTTP, dGTP, dCTP**

Roti®-Mix PCR 3, nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 10 mM per dNTP.
Storage temp.: -20 °C • Transport temp.: cooled

| | | | |
|---|---|---|---|
| **L785.1** | 0,2 ml | plastic | 24,20 € |
| **L785.2** | 5 x 0,2 ml | plastic | 94,50 € |
| **L785.3** | 5 x 1 ml | plastic | 392,40 € |

### Roti®-Mix PCR 3 (pH 7)

**10 mM (pro dNTP) dATP, dTTP, dGTP, dCTP**

Roti®-Mix PCR 3 (pH 7), nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 10 mM per dNTP, **pH 7,0 ±0,1**
Storage temp.: -20 °C • Transport temp.: cooled

| | | | |
|---|---|---|---|
| **0179.1** | 0,2 ml | plastic | 24,20 € |
| **0179.2** | 5 x 0,2 ml | plastic | 94,50 € |

### Roti®-Mix PCR 4

**10 mM (per dNTP) dATP, dUTP, dGTP, dCTP**

Roti®-Mix PCR 4, nucleotide-mixture containing dATP, dUTP,dGTP, dCTP.
Concentration: 10 mM per dNTP.
Storage temp.: -20 °C • Transport temp.: cooled

| | | | |
|---|---|---|---|
| **L786.1** | 0,2 ml | plastic | 24,20 € |
| **L786.2** | 5 x 0,2 ml | plastic | 94,50 € |

## dNTP Solutions

### dATP solution

**≥99 %, 100 mM solution**

2'-Deoxyadenosine-5'-triphosphate
$C_{10}H_{13}N_5O_{12}P_3$
M 488,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{259}$ = 15,4 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K035.1** | 25 µmol (250 µl) | plastic | 33,25 € |

### dCTP solution

**≥99 %, 100 mM solution**

2'-Deoxycytidine-5'-triphosphate
$C_9H_{13}N_3O_{13}P_3$
M 464,13 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{272}$ = 9,1 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K038.1** | 25 µmol (250 µl) | plastic | 33,25 € |

### dGTP solution

**≥99 %, 100 mM solution**

2'-Deoxyguanosine-5'-triphosphate
$C_{10}H_{13}N_5O_{13}P_3$
M 504,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{252}$ = 13,7 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K037.1** | 25 µmol (250 µl) | plastic | 33,25 € |

### dTTP solution

**≥99 %, 100 mM solution**

2'-Deoxythymidine-5'-triphosphate
$C_{10}H_{14}N_2O_{14}P_3$
M 479,14 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{267}$ = 9,6 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K036.1** | 25 µmol (250 µl) | plastic | 33,25 € |

### dUTP solution

**≥99 %, 100 mM solution**

2'-Deoxyuridine-5'-triphosphate
$C_9H_{12}N_2O_{14}P_3$
M 465,12 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{262}$ = 10,2 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **L539.1** | 25 µmol (250 µl) | plastic | 33,25 € |

### dITP solution

**≥99 %, 100 mM solution**

2'-Deoxyinosine-5'-triphosphate
$C_{10}H_{12}N_4O_{13}P_3$
M 489,14 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{249}$ = 12,2 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **P732.1** | 25 µmol (250 µl) | plastic | 33,25 € |

## Parameters of Nucleotide Solutions

| Nucleotides | Art. No. | pH value | Solvent |
|---|---|---|---|
| dNTP-Solution | K035-K038, L539, P732 | 8.5 ±0.1 | Water |
| dNTP-Set | K039, L540, P731 | 8.5 ±0.1 | Water |
| dNTP-Mix | L541, L542, L785, L786 | 8.5 ±0.1 | Water |
| dNTP-Set or -Mix | 0178, 0179 | 7.0 ±0.1 | Water |
| NTP-Solution | K045-K048 | 8.0 ±0.2 | 20 mM Tris-HCl* |
| NTP-Set | K049 | 8.0 ±0.2 | 20 mM Tris-HCl* |
| ddNTP-Solution | K040-K043 | 8.0 ±0.2 | Water |
| ddNTP-Set | K044 | 8.0 ±0.2 | Water |
| Labelled Nucleotides | 1047, 1048, 1049 | 7.5 ±0,2 | Water |

*For highly efficient Reverse Transcription

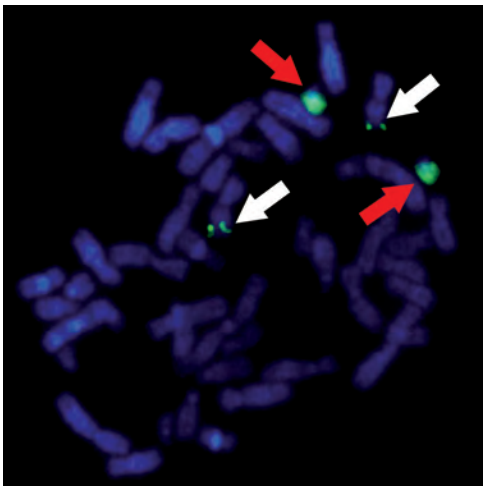


**Figure:**
Detection of chromosome wcp21q (whole chromosome paint, red arrows) and band 11q23 (BAC, bacterial artificial chromosome, white arrows) by FISH, labelling with fluorescein-12-dUTP.
With kind permission of PD Dr. Thomas Liehr, Institute of Human Genetics and Anthropology, Friedrich-Schiller University, Jena.

# Labelled dNTPs




- Ultra pure
- Stabile
- pH 7.5
- Tested for the lack of endo- and exonucleases, ribonucleases, and phosphatases

**Applications:**
Non-radioactive labelling of DNA via enzymatic reactions like e.g. PCR, reverse transcription, nick-end-translation, end-labelling, or random-priming. Can be incorporated by all standard DNA-polymerases (Taq-polymerase, T4 DNA-polymerase, Klenow fragment and so on).

## Biotin-11-dUTP

**≥95 %, 1 mM solution**

For non-radioactive, enzymatic labelling of DNA.

Biotin-aminocaproyl-[5-(3-aminoallyl)-2'-deoxyuridine-5'-triphosphate]

$C_{28}H_{42}N_6O_{17}P_3S$

M 859,65 g/mol

Storage temp.: -20 °C • Transport temp.: cooled

$\varepsilon_{240}$ = 10.7 E x mmol$^{-1}$ x cm$^{-1}$; $\varepsilon_{289}$ = 7.1 E x mmol$^{-1}$ x cm$^{-1}$; pH: 7.5 ±0.2

Biotin-11-dUTP is able to replace dTTP in growing DNA-strands and is used for efficient non-radioactive DNA-labelling. As a general rule, the labelled DNA is then detected using streptavidin-conjugates by colorimetric (e.g. streptavidin-AP) or fluorometric (e.g. fluorescein-streptavidin) assays. Biotin-11-dUTP can be used for double staining techniques in combination with rhodamine-12-dUTP or fluorescein-12-dUTP and corresponding antibodies.

| | | | |
|---|---|---|---|
| **1047.1** | 25 nmol (25 µl) | plastic | 117,20 € |
| **1047.2** | 50 nmol (50 µl) | plastic | 196,20 € |

## Fluorescein-12-dUTP

**≥95 %, 1 mM solution**

For non-radioactive, enzymatic labelling of DNA.

Fluorescein-6-carboxyaminocaproyl-[5-(3-aminoallyl)-2'-deoxyuridine-5'-triphosphate]

$C_{39}H_{38}N_4O_{21}P_3$

M 991,66 g/mol

Storage temp.: -20 °C • Transport temp.: cooled

$\varepsilon_{495}$ (pH 9) = 70.0 E x mmol$^{-1}$ x cm$^{-1}$; pH: 7.5 ±0.2

Fluorescein-12-dUTP is able to replace dTTP in growing DNA-strands and is used for efficient non-radioactive DNA-labelling. Detection of labelled nucleic acids can be done by direct analysis of fluorescent signals (e.g. by fluorescence microscopy) or by incubation with AP-coupled anti-fluorescein antibodies.
Fluorescein-12-dUTP can also be used for double staining techniques in combination with rhodamine-12-dUTP or biotin-11-dUTP and corresponding antibodies or streptavidin-complexes, respectively.
Excitation: 494 nm
Emission: 520 nm

| | | | |
|---|---|---|---|
| **1048.1** | 25 nmol (25 µl) | plastic | 178,35 € |
| **1048.2** | 50 nmol (50 µl) | plastic | 317,15 € |

## Rhodamine-12-dUTP

**≥95 %, 1 mM solution**

For non-radioactive, enzymatic labelling of DNA.

Rhodamine-6-carboxyaminocaproyl-[5-(3-aminoallyl)-2'-desoxyuridine-5'-triphosphate]

$C_{39}H_{41}N_6O_{19}P_3$

M 990,7 g/mol

Storage temp.: -20 °C • Transport temp.: cooled

$\varepsilon_{505}$ (pH 7) = 8.5 E x mmol$^{-1}$ x cm$^{-1}$; pH: 7.5 ±0.2

Rhodamine-12-dUTP is able to replace dTTP in growing DNA-strands and is used for efficient non-radioactive DNA-labelling. Detection of labelled nucleic acids can easily be done by direct analysis of fluorescent signals (e.g. by fluorescence microscopy).
Rhodamine-12-dUTP can also be used for double staining techniques in combination with fluorescein-12-dUTP or biotin-11-dUTP and corresponding antibodies or streptavidin-complexes, respectively.
Rhodamine Green, mixture of 5/6 isomeres
Excitation: 505 nm
Emission: 530 nm (red)

| | | | |
|---|---|---|---|
| **1049.1** | 25 nmol (25 µl) | plastic | 181,70 € |
| **1049.2** | 50 nmol (50 µl) | plastic | 310,70 € |

# dNTP Lyophilisates

## dATP

**≥95 %, lyophilised**

2'-Deoxyadenosine-5'-triphosphate tri-sodium salt
$C_{10}H_{13}N_5O_{12}P_3Na_3 \cdot 3\ H_2O$
M 611,17 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{259}$ = 15.4 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K050.1** | 10 mg | plastic | 23,15 € |
| **K050.2** | 100 mg | plastic | 145,15 € |

## dCTP

**≥95 %, lyophilised**

2'-Deoxycytidine-5'-triphosphate tri-sodium salt
$C_9H_{13}N_3O_{13}P_3Na_3 \cdot 3\ H_2O$
M 587,14 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{272}$ = 9.1 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K053.1** | 10 mg | plastic | 23,15 € |
| **K053.2** | 100 mg | plastic | 145,15 € |

## dGTP

**≥95 %, lyophilised**

2'-Deoxyguanosine-5'-triphosphate tri-sodium salt
$C_{10}H_{13}N_5O_{13}P_3Na_3 \cdot 3\ H_2O$
M 627,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{252}$ = 13.7 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K052.1** | 10 mg | plastic | 23,15 € |
| **K052.2** | 100 mg | plastic | 145,15 € |

## dTTP

**≥95 %, lyophilised**

5'-Deoxythymidine-5'-triphosphate tri-sodium salt
$C_{10}H_{14}N_2O_{14}P_3Na_3 \cdot 3\ H_2O$
M 602,15 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{267}$ = 9.6 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K051.1** | 10 mg | plastic | 23,15 € |
| **K051.2** | 100 mg | plastic | 145,15 € |

### Important information on refrigerated transports

All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
**Additional costs** resulting from such, **will be invoiced** (further information on request).

**Please note:**
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.

# NTP Set

## NTP-set

**≥99 %, ATP, CTP, GTP, UTP**

NTP-Set, consisting of the single nucleotide solutions: ATP, CTP, GTP, UTP.
Concentration: 100 mM per NTP.
Ribonucleoside triphosphate-set
Storage temp.: -20 °C • Transport temp.: cooled

| | | | |
|---|---|---|---|
| **K049.1** | 4 x 25 µmol (250 µl), 100 mM | plastic | 127,95 € |
| **K049.2** | 5 x 4 x 25 µmol (250 µl), 100 mM | plastic | 424,65 € |

# NTP Solutions

## ATP solution

**≥99 %, 100 mM solution**

Adenosine-5-triphosphate
$C_{10}H_{13}N_5O_{13}P_3$
M 504,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{259}$ = 15.4 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K045.1** | 25 µmol (250 µl) | plastic | 40,75 € |

## CTP solution

**≥99 %, 100 mM solution**

Cytidine-5'-triphosphate
$C_9H_{13}N_3O_{14}P_3$
M 480,13 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{271}$ = 9.0 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K048.1** | 25 µmol (250 µl) | plastic | 40,75 € |

## GTP solution

**≥99 %, 100 mM solution**

Guanosine-5'-triphosphate
$C_{10}H_{13}N_5O_{14}P_3$
M 520,15 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{253}$ = 13.7 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K047.1** | 25 µmol (250 µl) | plastic | 40,75 € |

## UTP solution

**≥99 %, 100 mM solution**

Uridine-5'-triphosphate
$C_9H_{12}N_2O_{15}P_3$
M 481,11 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{262}$ = 10.0 E x mmol$^{-1}$ x cm$^{-1}$

| | | | |
|---|---|---|---|
| **K046.1** | 25 µmol (250 µl) | plastic | 40,75 € |

## NTP Lyophilisates

### ATP

**≥98 %, lyophilised**
Adenosine-5-triphosphate di-sodium salt
$C_{10}H_{14}N_5O_{13}P_3Na_2 \cdot 3\ H_2O$
M 605,18 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{259}$ = 15.4 E x mmol$^{-1}$ x cm$^{-1}$

| | | | | |
|---|---|---|---|---|
| **K054.1** | 1 g | | plastic | 28,85 € |
| **K054.3** | 10 g | | plastic | 115,60 € |
| **K054.6** | 100 g | new size | plastic | 461,10 € |

### CTP

**≥98 %, lyophilised**
Cytidin-5'-triphosphate, di-sodium salt
$C_9H_{14}N_3O_{14}P_3Na_2 \cdot 3\ H_2O$
M 581,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{271}$ = 9.0 E x mmol$^{-1}$ x cm$^{-1}$

| | | | | |
|---|---|---|---|---|
| **K057.1** | 100 mg | | plastic | 57,55 € |
| **K057.4** | 1 g | | plastic | 230,60 € |
| **K057.5** | 10 g | new size | plastic | 922,25 € |

### GTP

**≥90 %, lyophilised**
Guanosine-5'-triphosphate di-sodium salt
$C_{10}H_{14}N_5O_{14}P_3Na_2 \cdot 3\ H_2O$
M 621,18 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{253}$ = 13.7 E x mmol$^{-1}$ x cm$^{-1}$

| | | | | |
|---|---|---|---|---|
| **K056.1** | 100 mg | | plastic | 57,55 € |
| **K056.4** | 1 g | | plastic | 230,60 € |
| **K056.5** | 10 g | new size | plastic | 922,25 € |

### UTP

**≥90 %, lyophilised**
Uridine-5'-triphosphate tri-sodium salt
$C_9H_{12}N_2O_{15}P_3Na_3 \cdot 3\ H_2O$
M 604,12 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{262}$ = 10.0 E x mmol$^{-1}$ x cm$^{-1}$

| | | | | |
|---|---|---|---|---|
| **K055.1** | 100 mg | | plastic | 57,65 € |
| **K055.3** | 1 g | new size | plastic | 230,60 € |

## ddNTP Set

### ddNTP-Set

**≥98 %, ddATP, ddCTP, ddGTP, ddTTP**
ddNTP-set, composed of the nucleotid-single solutions ddATP, ddCTP, ddGTP, ddTTP.
Concentration: 10 mM per ddNTP.
Dideoxynucleoside triphosphate set
Storage temp.: -20 °C • Transport temp.: cooled
pH 8.0 ±0.5

| | | | | |
|---|---|---|---|---|
| **K044.1** | 4 x 1 µmol (100 µl), 10 mM | | plastic | 150,00 € |

## ddNTP Solutions

### ddATP solution

**≥98 %, 10 mM solution**
2',3'-Dideoxyadenosine-5'-triphosphate
$C_{10}H_{13}N_5O_{11}P_3$
M 472,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{272}$ = 9.6 E x mmol$^{-1}$ x cm$^{-1}$; pH 8.0 ±0.5

| | | | | |
|---|---|---|---|---|
| **K040.1** | 1 µmol (100 µl) | | plastic | 46,15 € |

### ddCTP solution

**≥98 %, 10 mM solution**
2',3'-Dideoxycytidine-5'-triphosphate
$C_9H_{13}N_3O_{12}P_3$
M 448,13 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{272}$ = 9.6 E x mmol$^{-1}$ x cm$^{-1}$; pH 8.0 ±0.5

| | | | | |
|---|---|---|---|---|
| **K043.1** | 1 µmol (100 µl) | | plastic | 46,15 € |

### ddGTP solution

**≥98 %, 10 mM solution**
2',3'-Dideoxyguanosine-5'-triphosphate
$C_{10}H_{13}N_5O_{12}P_3$
M 488,16 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{252}$ = 13.7 E x mmol$^{-1}$ x cm$^{-1}$; pH 8.0 ±0.5

| | | | | |
|---|---|---|---|---|
| **K042.1** | 1 µmol (100 µl) | | plastic | 46,15 € |

### ddTTP solution

**≥98 %, 10 mM solution**
2',3'-Dideoxythymidine-5'-triphosphate
$C_{10}H_{14}N_2O_{13}P_3$
M 463,14 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
$\varepsilon_{267}$ = 9.5 E x mmol$^{-1}$ x cm$^{-1}$; pH 8.0 ±0.5

| | | | | |
|---|---|---|---|---|
| **K041.1** | 1 µmol (100 µl) | | plastic | 46,15 € |

▶ **Reagents for DNA synthesis** - see chapter Organic- and Bioorganic Chemicals!

# Reagents for PCR




## Mineral Oil

**for molecular biology**

For overlaying PCR and other enzymatic reactions.

H413

Light, colourless oil, particularly suitable for overlaying PCR and other enzymatic reactions such as restriction digestion, priming reactions or whole-mount *in situ* reactions incubated in warm temperatures. Prevents fluid loss and reduces any danger of cross-contamination.

Each batch is functionally tested for its suitability in PCR.

**Type analysis:**

Colour.....clear, colourless
Density (25 °C).....0,818-0,880
Viscosity (40 °C).....≤33,5 cSt
Readily carbonizable substances.....complies
Solid paraffin.....complies
Suitable for PCR.....complies

| | | | |
|---|---|---|---|
| **HP50.1** | 10 ml | glass | 13,90 € |
| **HP50.4** | 15 ml | dropp. bottle | 23,15 € |
| **HP50.2** | 50 ml | plastic | 27,85 € |
| **HP50.3** | 250 ml | plastic | 83,35 € |

TIP

## Water

**ROTIPURAN® Low organic**

High-purity water for sample preparation in organic trace analysis and for molecular biology.

$H_2O$

M 18,02 g/mol

**Guarantee analysis:**

TOC (Total Organic Carbon).....≤20 ppb
Fluorescence (as quinine).....≤100 ppt
Optical absorbance:
200 nm.....≤0,01
254 nm.....≤0,005
300 nm.....≤0,005
400 nm.....≤0,005

| | | | |
|---|---|---|---|
| **HN57.1** | 1 l | glass | 64,00 € |
| Original pack 6 x 1 l | | | 60,80/1 l |
| **HN57.2** | 4 l | glass | 104,85 € |

▶ RNAse-/DNAse free water for molecular biology see page 1251

# Ready-Made Primers

- Superior purity
- Standardised quality
- Immediately available

## Roth poly d(T)$_{12-18}$ Primer

**HPLC-purified, lyophilised**

For sequence unspecific priming during reverse transcription.
Mix of d(T) 12 to 18mers. 5 $OD_{260}$ units.
Storage temp.: -20 °C • Transport temp.: room temp.
Delivery includes 5 x 1 $OD_{260}$ units (31.2 µg or 7.3 nmol DNA each) poly d(T)$_{12-18}$ Primer in one vial each and 1 ml DEPC-treated water for molecular biology (DNAse-free, RNAse-free).

| | | | |
|---|---|---|---|
| **HP27.1** | 1 kit | | 51,10 € |

## Roth Hexanucleotide Random-Primer Mix

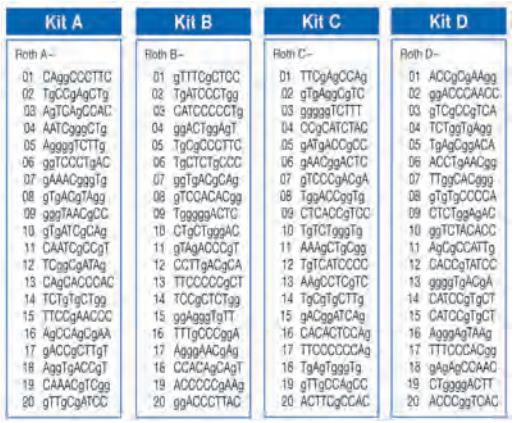
**HPLC-purified, lyophilised**

For random priming during probe generation or during total genome-amplification.
$N_6$ mix (N for A, G, C, T). 10 $OD_{260}$ units.
Storage temp.: -20 °C • Transport temp.: room temp.
Delivery includes 10 x 1 $OD_{260}$ units (27.4 µg or 15.3 nmol DNA each) of hexanucleotide mixture in one vial each and 1 ml DEPC-treated water for molecularbiology (DNAse-free, RNAse-free).

| | | | |
|---|---|---|---|
| **HP28.1** | 1 kit | | 67,65 € |

## Roth Random-Primer kits for RAPD-PCR

20 x 10mer/kit. 2.0 $OD_{260}$ units per primer, aliquoted in 2 vials each. Desalted and lyophilised.
Storage temp.: -20 °C • Transport temp.: room temp.
Primer set for rapid amplification of polymorphic DNA (RAPD)-PCR. For analysing DNA-polymorphisms or the change in genetic expression samples.
20 x 10mers with 60-80 % GC-assay.

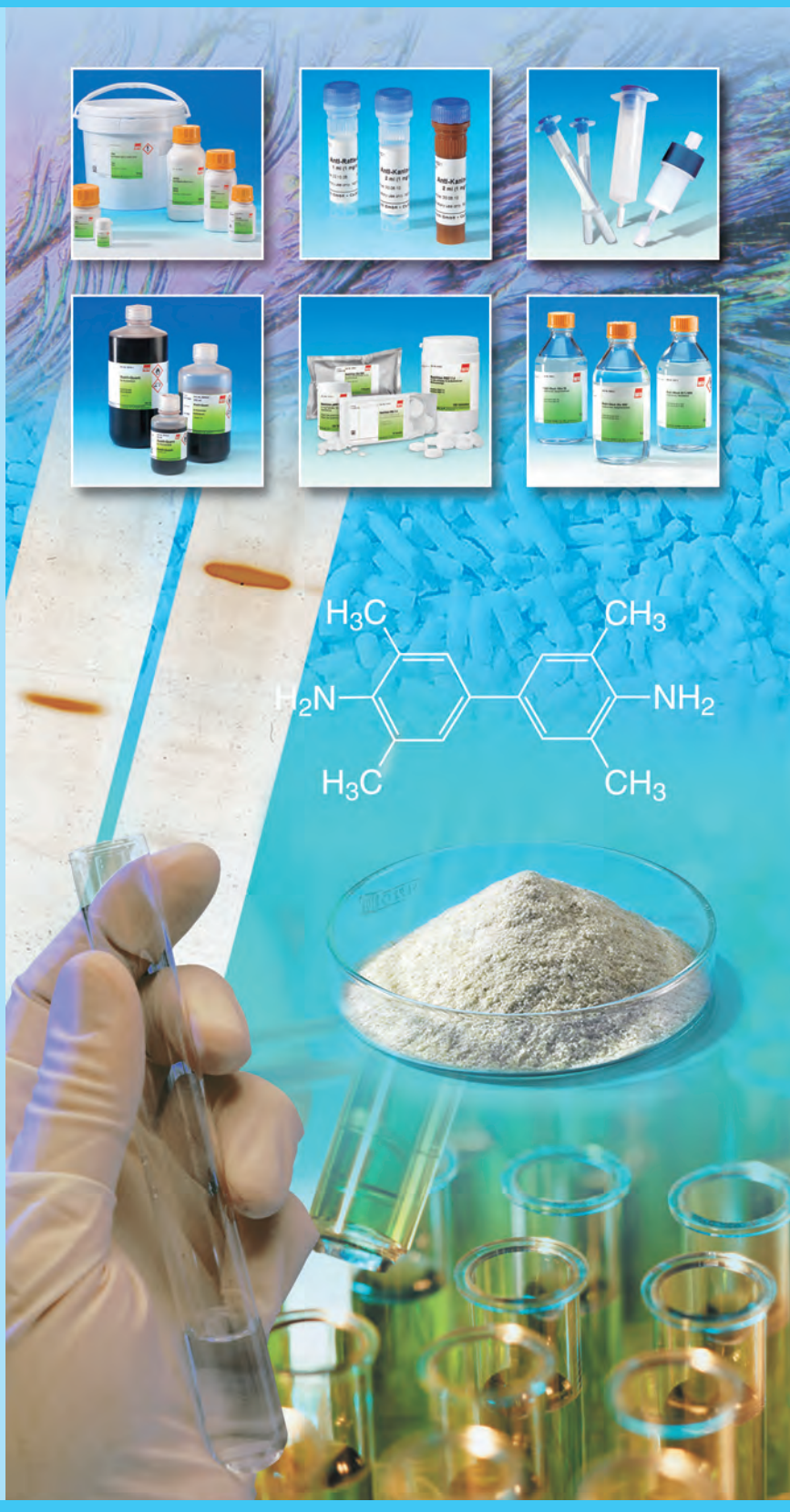



| | | | |
|---|---|---|---|
| **HP22.1** | 1 kit | Kit A | 198,90 € |
| **HP23.1** | 1 kit | Kit B | 198,90 € |
| **HP24.1** | 1 kit | Kit C | 198,90 € |
| **HP25.1** | 1 kit | Kit D | 198,90 € |

1 OD DNA is defined as the amount of DNA recieved by lyophilisation of 1 ml solution containing DNA-concentrations of 1 OD.

# Biochemistry


| | | | |
|---|---|---|---|
| Roti®fair (Tablets and Pouches) | TIP | | 1265 |
| Biological Buffers | | | 1267 |
| Detergents | | | 1270 |
| Enzymes | | | 1276 |
| Coenzymes | | | 1280 |
| Inhibitors | Inhibitor Cocktails | | 1281 |
| | Individual Inhibitors | | 1282 |
| Substrates | | | 1287 |
| Albumins | | | 1294 |
| Protein Isolation | | | |
| | Magnetic Beads | | 1297 |
| | Separators | | 1299 |
| | Ultra Filtration | | 1299 |
| | Affinity Chromatography | | 1300 |
| | Reagents | | 1305 |
| Scintillation | | | 1307 |
| Protein Quantitation | | | 1308 |
| Western & ELISA | | | |
| | Western-Blot Marker | | 1310 |
| | Blocking Reagents | | 1310 |
| | Antibodies | | 1312 |
| TIP | Ready-Made Solutions, Pre-Mix, Tablets & Pouches | NEW | 1314 |
| | Substrates | | 1317 |
| | Enhancers | | 1318 |
| | Accessories | | 1320 |

# Roti®fair Reagents

## High-pure reagents and buffer mixes in pouches or as tablets.

Roti®fair - the new range of user-friendly reagent formulations.
For simplest application, optimal quality and reproducible results.

One tablet or the content of one pouch is simply dissolved in the respective amount of water - the desired solution is ready for use. Simply adapt the amount of water in order to vary the concentration, for instance for preparation of a higher concentrated stock solution.

- **Easy-to-use** - simply dissolve contents of one pouch or one tablet in water
- **Timesaving** - no need for weighing of several reagents or adjustment of pH
- **Convenient** - dry reagents for direct use spare preparation of long-term stored stock solutions
- **Reliable** - stringent quality control ensures high lot-to-lot consistency



| Product | Buffer/solution | Use | Final conc. | pH value | Preparation scale | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|---|---|---|
| **Roti®fair BBS** | Borate Buffered Saline | Coating of ELISA plates and blocking supplement | 1x | 8,2 ±0,05 | 500 ml/tablet | **1005.1** | 100 tablets | 255,35 |
| **Roti®fair BSC** | Buffered Sodium Citrate | Buffer solution for isolation of blood cells | 0,109 M / 3,2 % | - | 1000 ml/pouch | **1026.1** | 5 pouches | 136,00 |
| | | | | | 100 ml/pouch | **1011.1** | 10 pouches | 88,70 |
| **Roti®fair CBB** | Carbonate bicarbonate buffer | Coating of microtiter plates and tubes for immunoassays | 1x | 9,6 ±0,05 | 100 ml/tablet | **1027.1** | 8 tablets | 37,55 |
| | | | | | | **1027.2** | 24 tablets | 69,35 |
| | | | | | | **1027.3** | 100 tablets | 110,20 |
| **Roti®fair 0.5M EDTA** | Ethylenediamine tetraacetic acid solution | For preparation of bioanalytical solutions, anticoagulant | 0,5 M | 8,0 ±0,05 | 500 ml/pouch | **1031.1** | 5 pouches | 252,65 |
| **Roti®fair 20% Glucose** | D(+)-Glucose solution | For preparation of nutrient media | 20 % | - | 1000 ml/pouch | **1030.1** | 5 pouches | 162,90 |
| **Roti®fair Glycine 3.0** | Glycine solution | For preparation of buffer solutions with acidic pH and elution buffer in affinity chromatography | 0,1 M | 3,0 ±0,05 | 1000 ml/pouch | **1032.1** | 10 pouches | 97,75 |
| **Roti®fair HBS** | HEPES Buffered Saline | General buffer base and for calcium phosphate mediated transfection | 1 M | 7,4 ±0,05 | 500 ml/tablet | **1033.1** | 12 tablets | 62,25 |
| | | | | | | **1033.2** | 100 tablets | 260,70 |
| **Roti®fair 1M KCl** | Potassium chloride solution | For preparation of salt solutions and buffer concoctions | 1 M | - | 1000 ml/pouch | **1034.1** | 10 pouches | 169,35 |
| **Roti®fair 3M KCl** | Potassium chloride solution | For preparation of salt solutions and buffer concoctions | 3 M | - | 1000 ml/pouch | **1035.1** | 5 pouch | 145,15 |
| **Roti®fair 0.9% NaCl** | Sodium chloride solution | For preparation of salt solutions and buffer concoctions | 0,9 % | - | 1000 ml/tablet | **1067.1** | 10 tablets | 49,35 |
| | | | | | | **1067.2** | 100 tablets | 114,50 |
| | | | | | 100 ml/tablet | **1053.1** | 100 tablets | 54,75 |
| **Roti®fair 3M NaCl** | Sodium chloride solution | For preparation of salt solutions and buffer concoctions | 3 M | - | 1000 ml/pouch | **1071.1** | 5 pouch | 77,95 |
| **Roti®fair 5M NaCl** | Sodium chloride solution | For preparation of salt solutions and buffer concoctions | 5 M | - | 1000 ml/pouch | **1079.1** | 5 pouch | 90,85 |
| **Roti®fair Na-Acetate 5.2** | Sodium acetate solution | For isolation of nucleic acids | 3 M | 5,2 ±0,05 | 1000 ml/pouch | **1195.1** | 5 pouches | 284,90 |
| **Roti®fair 0.02M Na-Phosphate 7.0** | Sodium phosphate solution | General solution for assays in molecular biology and biochemistry | 0,02 M | 7,0 ±0,05 | 1000 ml/pouch | **1090.1** | 10 pouches | 89,15 |
| | | | | | 5000 ml/pouch | **1094.1** | 10 pouches | 256,95 |
| **Roti®fair 1M Na-Phosphate 6.5** | Sodium phosphate solution | General solution for assays in molecular biology and biochemistry | 1 M | 6,5 ±0,05 | 1000 ml/pouch | **1095.1** | 10 pouches | 241,90 |
| **Roti®fair 1M Na-Phosphate 7.2** | Sodium phosphate solution | General solution for assays in molecular biology and biochemistry | 1 M | 7,2 ±0,05 | 1000 ml/pouch | **1097.1** | 10 pouches | 241,90 |
| **Roti®fair PBS 7.2** | Phosphate Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 7,2 ±0,05 | 1000 ml/tablet | **1106.1** | 10 tablets | 74,10 |
| | | | | | | **1106.2** | 100 tablets | 353,70 |
| **Roti®fair PBS 7.4** | Phosphate Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 7,4 ±0,05 | 10 l/pouch | **1101.1** | 1 pouch | 39,25 |
| | | | | | 25 l/pouch | **1102.1** | 1 pouch | 79,05 |
| | | | | | 50 l/pouch | **1103.1** | 1 pouch | 121,40 |
| | | | | | 100 l/pouch | **1104.1** | 1 pouch | 196,20 |
| **Roti®fair PBS 7.4** | Phosphate Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 7,4 ±0,05 | 100 ml/tablet | **1107.1** | 100 tablets | 56,90 |
| | | | | | 200 ml/tablet | **1108.1** | 100 tablets | 93,45 |
| | | | | | 500 ml/tablet | **1111.1** | 12 tablets | 50,00 |
| | | | | | | **1111.2** | 100 tablets | 198,90 |
| | | | | | 1000 ml/tablet | **1112.1** | 10 tablets | 73,65 |
| | | | | | | **1112.2** | 100 tablets | 353,70 |
| **Roti®fair 10x PBS 7.4** | Phosphate Buffered Saline | General solution for assays in molecular biology and biochemistry | 10x | 7,4 ±0,05 | 1000 ml/pouch | **1105.1** | 5 pouches | 96,65 |

| Product | Buffer/solution | Use | Final conc. | pH value | Preparation scale | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|---|---|---|
| **Roti®fair PBS potassium-free 7.4** | Phosphate Buffered Saline, potassium-free | Potassium-free, general solution for assays in molecular biology and biochemistry | 1x | 7,4 ±0,05 | 1000 ml/tablet | **1113.1** | 10 tablets | 73,65 |
| | | | | | | **1113.2** | 100 tablets | 353,70 |
| **Roti®fair PBS potassium-free 7.4** | Phosphate Buffered Saline, potassium-free, **high-phosphate** | Potassium-free, high-phosphate general solution for assays in molecular biology and biochemistry | 1x | 7,4 ±0,05 | 1000 ml/tablet | **1114.1** | 100 tablets | 403,15 |
| **Roti®fair PBST 7.4** | Phosphate Buffered Saline/ Tween | General solution for assays in molecular biology and biochemistry | 1x | 7,4 ±0,05 | 500 ml/tablet | **1115.1** | 12 tablets | 63,35 |
| | | | | | | **1115.2** | 100 tablets | 256,95 |
| | | | | | 1000 ml/tablet | **1116.1** | 10 tablets | 82,25 |
| | | | | | | **1116.2** | 100 tablets | 396,70 |
| **Roti®fair pNPP 5mg** | pNPP, p-Nitrophenyl phosphate | Substrate solution for alkaline phosphatase | 1 mg/ml | - | 5 mg/tablet | **1117.1** | 24 tablets | 90,85 |
| | | | | | | **1117.2** | 100 tablets | 134,40 |
| **Roti®fair pNPP 20mg** | pNPP, p-Nitrophenyl phosphate | Substrate solution for alkaline phosphatase | 1 mg/ml | - | 20 mg/tablet | **1128.1** | 24 tablets | 97,30 |
| | | | | | | **1128.2** | 100 tablets | 349,40 |
| **Roti®fair SDS 0.5g** | Sodium dodecyl sulphate solution | Anionic detergent for preparation of bioanalytical solutions | variable | - | 0,5 g/tablet | **1156.1** | 50 tablets | 46,80 |
| **Roti®fair 10% SDS** | Sodium dodecyl sulphate solution | Anionic detergent for preparation of bioanalytical solutions | 10 % | - | 1000 ml/pouch | **1157.1** | 5 pouches | 596,65 |
| **Roti®fair SDS-PAGE** | Tris-glycine-SDS buffer | Buffer for protein electrophoresis | 1x | 8,3 ±0,05 | 1000 ml/pouch | **1249.1** | 10 pouches | 89,15 |
| | | | | | 5000 ml/pouch | **1250.1** | 10 pouches | 188,15 |
| **Roti®fair 20x SSC** | Sodium sodium citrate buffer | Buffer solution for Southern- and Northern transfer | 20x | 7,0 ±0,05 | 1000 ml/pouch | **1232.1** | 5 pouches | 153,20 |
| **Roti®fair SSPE** | Sodium sodium phosphate EDTA buffer | Buffer solution for DNA- and RNA hybridisation | 1x | 7,4 ±0,05 | 200 ml/tablet | **1233.1** | 100 tablets | 99,90 |
| **Roti®fair 50x TAE** | Tris acetate EDTA buffer | Buffer solution for DNA electro-phoresis | 50x | 8,3 ±0,05 | 500 ml/pouch | **1234.1** | 5 pouches | 396,70 |
| | | | | | 1000 ml/pouch | **1240.1** | 5 pouches | 708,45 |
| **Roti®fair 1x TBE** | Tris borate EDTA buffer | Buffer solution for DNA electro-phoresis | 1x | 8,3 ±0,05 | 1000 ml/pouch | **1241.1** | 10 pouches | 77,95 |
| **Roti®fair 5x TBE** | Tris borate EDTA buffer | Buffer solution for DNA electro-phoresis | 5x | 8,3 ±0,05 | 1000 ml/pouch | **1242.1** | 10 pouches | 169,35 |
| **Roti®fair 10x TBE** | Tris borate EDTA buffer | Buffer solution for DNA electro-phoresis | 10x | 8,3 ±0,05 | 1000 ml/pouch | **1243.1** | 10 pouches | 278,45 |
| **Roti®fair TBS 7.6** | Tris Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 7,6 ±0,05 | 500 ml/tablet | **1244.1** | 10 tablets | 54,75 |
| | | | | | | **1244.2** | 100 tablets | 263,40 |
| **Roti®fair TBS 8.0** | Tris Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 8,0 ±0,05 | 1000 ml/pouch | **1245.1** | 10 pouches | 97,30 |
| **Roti®fair 10x TBS 8.0** | Tris Buffered Saline | General solution for assays in molecular biology and biochemistry | 10x | 8,0 ±0,05 | 1000 ml/pouch | **1247.1** | 10 pouches | 643,95 |
| **Roti®fair TBST 7.6** | Tris Buffered Saline/Tween | General solution for assays in molecular biology and biochemistry | 1x | 7,6 ±0,05 | 500 ml/tablet | **1248.1** | 10 tablets | 65,05 |
| | | | | | | **1248.2** | 100 tablets | 306,40 |
| **Roti®fair 10x TE** | Tris EDTA buffer | Buffer solution for solubilisation and dilution of nucleic acids | 10x | 7,4 ±0,05 | 1000 ml/pouch | **1268.1** | 10 pouches | 213,95 |
| **Roti®fair TG-Western** | Tris-glycine buffer | Buffer for protein electrophoresis and transfer | 1x | 8,3 ±0,05 | 1000 ml/pouch | **1269.1** | 10 pouches | 81,20 |
| | | | | | 5000 ml/pouch | **1276.1** | 10 pouches | 170,95 |
| **Roti®fair 1M Tris 7.4** | Tris solution | General solution for assays in molecular biology and biochemistry | 1 M | 7,4 ±0,05 | 1000 ml/pouch | **1251.1** | 10 pouches | 375,20 |
| **Roti®fair 1M Tris 8.0** | Tris solution | General solution for assays in molecular biology and biochemistry | 1 M | 8,0 ±0,05 | 1000 ml/pouch | **1260.1** | 10 pouches | 375,20 |
| **Roti®fair 1M Tris 8.3** | Tris solution | General solution for assays in molecular biology and biochemistry | 1 M | 8,3 ±0,05 | 1000 ml/pouch | **1261.1** | 10 pouches | 375,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Biological Buffer Reagents

## PUFFERAN® - for biochemistry, bioinorganic chemistry and molecular genetics
## CELLPURE® - especially for cell culture

- Very high purity
- Dissolve easily in water and aqueous media
- No penetration or dissolution of membranes
- Low UV absorption
- No or only very weak complexing with cations
- Chemically stable
- No inhibition or activation of biological or biochemical reactions
- Minimal alteration of pH-value by temperature changes





## Application Range of Biological Buffer Reagents

| Buffer reagents (alphabetical) | pH range | $pK_a$ (25 °C) |
|---|---|---|
| ACES | 6.1-7.5 | 6.78 |
| ADA | 6.0-7.2 | 6.59 |
| AMP | 8.7-10.4 | 6.69 |
| AMPSO | 8.3-9.7 | 9.00 |
| BES | 6.4-7.8 | 7.09 |
| BICINE | 7.6-9.0 | 8.26 |
| BIS-TRIS | 5.8-7.2 | 6.46 |
| BIS-TRIS-Propane | 6.3-9.5 | 6.80 |
| Cacodylic acid | 5.0-7.4 | 6.27 |
| CAPS | 9.7-11.1 | 10.40 |
| CAPSO | 8.9-10.3 | 9.60 |
| Carbonate buffers | 6.0-8.0 | 6.35 |
| CHES | 8.6-10.0 | 9.50 |
| Citrate | 2.2-6.5 | 3.13 |
| DIPSO | 7.0-8.2 | 7.52 |
| Glycine | 2.2-3.6 | 2.35 |
| Glycyl-glycine | 2.5-3.8 | 3.14 |
| HEPES | 6.8-8.2 | 7.48 |
| HEPES, EPPS | 7.6-8.6 | 8.00 |
| HEPPSO | 7.1-8.5 | 7.85 |
| Imidazole | 6.2-7.8 | 6.95 |
| MES | 5.5-6.7 | 6.10 |
| MOPS | 6.5-7.9 | 7.14 |
| MOPSO | 6.2-7.6 | 6.87 |
| Phosphate buffers | 1.7-2.9 | 2.15 |
| PIPES | 6.1-7.5 | 6.76 |
| POPSO | 7.2-8.5 | 7.78 |
| Potassium acetate | 3.6-5.6 | 4.76 |
| Pyridine | 4.9-5.9 | 5.23 |
| Sodium acetate | 3.6-5.6 | 4.76 |
| Sodium formiate | 3.0-4.5 | 3.75 |
| Succinate | 3.2-5.2 | 4.21 |
| TAPS | 7.7-9.1 | 8.40 |
| TAPSO | 7.0-8.2 | 7.61 |
| Taurine | 8.4-9.6 | 9.06 |
| TES | 6.8-8.2 | 7.40 |
| TRICINE | 7.4-8.8 | 8.05 |
| Triethanolamine | 7.0-8.3 | 7.76 |
| TRIS | 7.5-9.0 | 8.06 |

| Buffer reagents (buffered pH range) | pH range | $pK_a$ (25 °C) |
|---|---|---|
| Phosphate buffers | 1.7-2.9 | 2.15 |
| Glycine | 2.2-3.6 | 2.35 |
| Citrate | 2.2-6.5 | 3.13 |
| Glycyl-glycine | 2.5-3.8 | 3.14 |
| Sodium formiate | 3.0-4.5 | 3.75 |
| Succinate | 3.2-5.2 | 4.21 |
| Potassium acetate | 3.6-5.6 | 4.76 |
| Sodium acetate | 3.6-5.6 | 4.76 |
| Pyridine | 4.9-5.9 | 5.23 |
| Cacodylic acid | 5.0-7.4 | 6.27 |
| MES | 5.5-6.7 | 6.10 |
| BIS-TRIS | 5.8-7.2 | 6.46 |
| ADA | 6.0-7.2 | 6.59 |
| Carbonate buffers | 6.0-8.0 | 6.35 |
| ACES | 6.1-7.5 | 6.78 |
| PIPES | 6.1-7.5 | 6.76 |
| MOPSO | 6.2-7.6 | 6.87 |
| Imidazole | 6.2-7.8 | 6.95 |
| BIS-TRIS-Propane | 6.3-9.5 | 6.80 |
| BES | 6.4-7.8 | 7.09 |
| MOPS | 6.5-7.9 | 7.14 |
| HEPES | 6.8-8.2 | 7.48 |
| TES | 6.8-8.2 | 7.40 |
| DIPSO | 7.0-8.2 | 7.52 |
| TAPSO | 7.0-8.2 | 7.61 |
| Triethanolamine | 7.0-8.3 | 7.76 |
| HEPPSO | 7.1-8.5 | 7.85 |
| POPSO | 7.2-8.5 | 7.78 |
| TRICINE | 7.4-8.8 | 8.05 |
| TRIS | 7.5-9.0 | 8.06 |
| HEPES, EPPS | 7.6-8.6 | 8.00 |
| BICINE | 7.6-9.0 | 8.26 |
| TAPS | 7.7-9.1 | 8.40 |
| AMPSO | 8.3-9.7 | 9.00 |
| Taurine | 8.4-9.6 | 9.06 |
| CHES | 8.6-10.0 | 9.50 |
| AMP | 8.7-10.4 | 6.69 |
| CAPSO | 8.9-10.3 | 9.60 |
| CAPS | 9.7-11.1 | 10.40 |

A full summary of our Biological Buffer Reagents may be found on the following pages.
For safety information and additional data, see chapter Chemicals A-Z.

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **ACES** | PUFFERAN® ≥99 % | **9138.1** | 10 g | plastic | 21,00 |
| | | **9138.2** | 100 g | plastic | 154,30 |
| **ADA** | PUFFERAN® ≥99 % | **0250.1** | 50 g | plastic | 22,05 |
| | | **0250.2** | 100 g | plastic | 36,45 |
| | | **0250.3** | 500 g | plastic | 127,95 |
| **AMP** | PUFFERAN® ≥90 % | **3121.1** | 250 ml | glass | 36,45 |
| **AMPSO** | PUFFERAN® ≥98 % | **7159.1** | 25 g | plastic | 47,20 |
| | | **7159.2** | 100 g | plastic | 149,45 |
| **AMPSO sodium salt** | PUFFERAN® ≥98 % | **7014.1** | 25 g | plastic | 52,15 |
| | | **7014.2** | 100 g | plastic | 166,65 |
| **BES** | PUFFERAN® ≥99 % | **9134.1** | 25 g | plastic | 23,15 |
| | | **9134.2** | 100 g | plastic | 63,35 |
| | | **9134.3** | 250 g | plastic | 138,15 |
| | | **9134.4** | 500 g | plastic | 220,40 |
| **BES sodium salt** | PUFFERAN® ≥99 % | **6998.1** | 25 g | plastic | 36,05 |
| | | **6998.2** | 100 g | plastic | 95,60 |
| **BICINE** | PUFFERAN® ≥99 % | **9162.1** | 50 g | plastic | 38,60 |
| | | **9162.2** | 250 g | plastic | 125,25 |
| | | **9162.3** | 500 g | plastic | 179,00 |
| **BIS-TRIS** | PUFFERAN® ≥99 % | **9140.1** | 50 g | plastic | 52,60 |
| | | **9140.2** | 250 g | plastic | 209,65 |
| | | **9140.3** | 500 g | plastic | 352,10 |
| **BIS-TRIS-Propane** | PUFFERAN® ≥98 % | **6999.1** | 25 g | plastic | 58,60 |
| | | **6999.2** | 100 g | plastic | 209,65 |
| **Cacodylic acid sodium salt trihydrate** | PUFFERAN® ≥98 % | **5169.3** | 10 g | plastic | 22,05 |
| | | **5169.1** | 50 g | plastic | 62,25 |
| | | **5169.2** | 250 g | plastic | 203,20 |
| **CAPS** | PUFFERAN® ≥99 % | **9168.1** | 25 g | plastic | 18,85 |
| | | **9168.3** | 100 g | plastic | 48,95 |
| | | **9168.2** | 250 g | plastic | 111,70 |
| **CAPSO** | PUFFERAN® ≥98 % | **5584.3** | 25 g | plastic | 28,95 |
| | | **5584.1** | 100 g | plastic | 87,00 |
| | | **5584.2** | 500 g | plastic | 321,45 |
| **CAPSO sodium salt** | PUFFERAN® ≥95 % | **6861.1** | 25 g | plastic | 27,85 |
| **CHES** | PUFFERAN®≥99 % | **9166.1** | 10 g | plastic | 13,90 |
| | | **9166.3** | 25 g | plastic | 22,50 |
| | | **9166.2** | 100 g | plastic | 62,25 |
| **Citric acid** | ≥99,5 %, p.a., ACS, anhydrous | **X863.1** | 500 g | plastic | 19,60 |
| | | **X863.2** | 1 kg | plastic | 30,00 |
| | | **X863.3** | 2,5 kg | plastic | 60,10 |
| | | **X863.5** | 25 kg | plastic | 364,45 |
| **DIPSO** | PUFFERAN®≥98 % | **7151.1** | 25 g | plastic | 70,85 |
| **Glycine** | ≥99 %, Blotting-Grade | **0079.1** | 250 g | plastic | 25,30 |
| | | **0079.2** | 500 g | plastic | 47,20 |
| | | **0079.3** | 1 kg | plastic | 75,15 |
| | | **0079.4** | 2,5 kg | plastic | 149,45 |
| **Glycine** | PUFFERAN® ≥99 %, p.a. | **3908.1** | 250 g | plastic | 22,05 |
| | | **3908.2** | 1 kg | plastic | 71,95 |
| | | **3908.3** | 5 kg | plastic | 200,50 |
| | | **3908.5** | 25 kg | plastic | 708,45 |
| **Glycine** | CELLPURE® ≥99 % | **HN07.1** | 100 g | plastic | 16,70 |
| | | **HN07.2** | 500 g | plastic | 45,70 |
| | | **HN07.3** | 1 kg | plastic | 83,35 |
| **Glycine** | ≥99 %, for biochemistry | **3187.1** | 250 g | plastic | 19,25 |
| | | **3187.2** | 500 g | plastic | 25,30 |
| | | **3187.3** | 1 kg | plastic | 38,60 |
| | | **3187.4** | 5 kg | plastic | 161,25 |
| **Glycylglycine** | PUFFERAN® ≥99 %, ultra quality | **3794.1** | 10 g | plastic | 16,70 |
| | | **3794.2** | 100 g | plastic | 83,75 |
| | | **3794.3** | 250 g | plastic | 180,10 |
| | | **3794.4** | 500 g | plastic | 327,90 |
| **Glycylglycine** | PUFFERAN® ≥98,5 %, Buffer Grade | **HN74.1** | 50 g | plastic | 33,25 |
| | | **HN74.2** | 100 g | plastic | 53,25 |
| | | **HN74.3** | 250 g | plastic | 115,60 |
| | | **HN74.4** | 500 g | plastic | 206,95 |

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **HEPES** | PUFFERAN® CELLPURE® ≥99,5 % | **HN77.1** | 50 g | plastic | 28,95 |
| | | **HN77.2** | 100 g | plastic | 41,85 |
| | | **HN77.3** | 250 g | plastic | 80,10 |
| | | **HN77.4** | 500 g | plastic | 141,80 |
| | | **HN77.5** | 1 kg | plastic | 244,60 |
| **HEPES** | ≥99,5 %, BioScience-Grade | **6763.1** | 100 g | plastic | 35,40 |
| | | **6763.2** | 500 g | plastic | 137,10 |
| | | **6763.3** | 1 kg | plastic | 227,40 |
| **HEPES** | PUFFERAN® ≥99,5 %, p.a. | **9105.2** | 100 g | plastic | 33,25 |
| | | **9105.4** | 500 g | plastic | 136,00 |
| | | **9105.3** | 1 kg | plastic | 224,70 |
| | | **9105.6** | 2,5 kg | plastic | 450,45 |
| | | **9105.5** | 5 kg | plastic | 858,95 |
| **HEPES** | PUFFERAN® ≥99,5 %, Buffer Grade | **HN78.1** | 100 g | plastic | 27,45 |
| | | **HN78.2** | 500 g | plastic | 93,00 |
| | | **HN78.3** | 1 kg | plastic | 169,35 |
| | | **HN78.4** | 5 kg | plastic | 751,45 |
| **HEPES 0,5 Na** | PUFFERAN® ≥96 % | **5582.1** | 50 g | plastic | 56,90 |
| **HEPES sodium salt** | PUFFERAN® ≥99 % | **7020.1** | 25 g | plastic | 33,25 |
| | | **7020.2** | 100 g | plastic | 104,20 |
| **HEPPS, EPPS** | PUFFERAN® ≥98 % | **9164.1** | 10 g | plastic | 19,60 |
| | | **9164.2** | 100 g | plastic | 110,65 |
| **Imidazole** | PUFFERAN® ≥99 %, p.a., ultra quality | **X998.1** | 10 g | plastic | 17,10 |
| | | **X998.2** | 50 g | plastic | 45,05 |
| | | **X998.3** | 100 g | plastic | 77,30 |
| | | **X998.4** | 250 g | plastic | 174,70 |
| **MES** | PUFFERAN® ≥99 % | **4256.2** | 100 g | plastic | 63,35 |
| | | **4256.5** | 250 g | plastic | 137,10 |
| | | **4256.3** | 500 g | plastic | 260,70 |
| | | **4256.4** | 1 kg | plastic | 456,90 |
| **MES** | ≥99 %, for biochemistry | **4259.1** | 50 g | plastic | 32,80 |
| | | **4259.2** | 100 g | plastic | 48,95 |
| | | **4259.3** | 250 g | plastic | 97,75 |
| | | **4259.4** | 500 g | plastic | 170,95 |
| | | **4259.5** | 1 kg | plastic | 306,40 |
| **MES monohydrate** | PUFFERAN® ≥99,5 % | **6066.1** | 50 g | plastic | 26,35 |
| | | **6066.2** | 100 g | plastic | 43,55 |
| | | **6066.3** | 500 g | plastic | 169,35 |
| | | **6066.4** | 1 kg | plastic | 289,20 |
| **MES potassium salt** | PUFFERAN® ≥99 % | **7033.1** | 25 g | plastic | 31,10 |
| | | **7033.2** | 100 g | plastic | 107,40 |
| **MES sodium salt** | PUFFERAN® ≥99 % | **6922.1** | 25 g | plastic | 22,50 |
| | | **6922.2** | 100 g | plastic | 83,75 |
| **MOPS** | PUFFERAN® ≥99,5 % | **6979.2** | 250 g | plastic | 74,10 |
| | | **6979.4** | 500 g | plastic | 127,40 |
| | | **6979.3** | 1 kg | plastic | 244,60 |
| | | **6979.5** | 2,5 kg | plastic | 521,40 |
| **MOPS sodium salt** | PUFFERAN® ≥99 % | **6927.1** | 25 g | plastic | 27,85 |
| | | **6927.2** | 100 g | plastic | 84,85 |
| **MOPSO** | PUFFERAN® ≥99 % | **7117.1** | 25 g | plastic | 31,10 |
| | | **7117.2** | 100 g | plastic | 94,50 |
| | | **7117.3** | 1 kg | plastic | 697,70 |
| **MOPSO sodium salt** | PUFFERAN® ≥98 % | **7101.1** | 25 g | plastic | 37,55 |
| | | **7101.2** | 100 g | plastic | 120,30 |
| **PIPES** | PUFFERAN® ≥99 % | **9156.1** | 25 g | plastic | 19,25 |
| | | **9156.2** | 100 g | plastic | 55,40 |
| | | **9156.3** | 250 g | plastic | 120,95 |
| | | **9156.4** | 500 g | plastic | 205,90 |
| **PIPES monosodium salt** | PUFFERAN® ≥97 % | **9153.1** | 25 g | plastic | 35,40 |
| **PIPES 1,5 Na** | PUFFERAN® ≥96 % | **5583.1** | 50 g | plastic | 67,65 |
| | | **5583.2** | 250 g | plastic | 278,45 |
| **PIPES disodium salt** | PUFFERAN® ≥99 % | **7109.2** | 100 g | plastic | 123,65 |
| **POPSO** | PUFFERAN® ≥99 % | **6632.1** | 25 g | plastic | 38,60 |
| | | **6632.2** | 100 g | plastic | 122,05 |
| **POPSO 1,5 Na** | PUFFERAN® ≥99 % | **6965.1** | 25 g | plastic | 59,70 |
| | | **6965.2** | 100 g | plastic | 181,70 |

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Potassium acetate** | ≥99 %, p.a. | **T874.1** | 500 g | plastic | 34,30 |
| | | **T874.2** | 1 kg | plastic | 52,60 |
| | | **T874.3** | 2,5 kg | plastic | 101,60 |
| | | **T874.5** | 25 kg | plastic | 686,95 |
| **Potassium dihydrogen phosphate** | ≥99 %, p.a., ACS | **3904.2** | 250 g | plastic | 18,20 |
| | | **3904.1** | 1 kg | plastic | 52,60 |
| | | **3904.3** | 5 kg | plastic | 209,65 |
| | | **3904.5** | 25 kg | plastic | 912,70 |
| **di-Potassium hydrogen phosphate** | ≥99 %, p.a., anhydrous | **P749.1** | 500 g | plastic | 27,85 |
| | | **P749.2** | 1 kg | plastic | 50,45 |
| | | **P749.3** | 2,5 kg | plastic | 101,60 |
| | | **P749.5** | 25 kg | plastic | 815,95 |
| **Pyridine** | ROTIPURAN®≥99,5 %, p.a., ACS | **9729.3** | 500 ml | glass | 63,35 |
| | | **9729.1** | 1 l | glass | 117,20 |
| | | **9729.2** | 2,5 l | glass | 252,65 |
| **Roti®fair Glycine 3.0** | for 1000 ml/pouch, for biochemistry | **1032.1** | 10 pouches | box | 97,75 |
| **Roti®fair Na-Acetate 5.2** | for 1000 ml/pouch, for molecular biology | **1195.1** | 5 pouches | box | 284,90 |
| **Roti®fair 0.02M Na-Phosphate 7.0** | for 1000 ml/pouch, for biochemistry and molecular biology | **1090.1** | 10 pouches | box | 89,15 |
| **Roti®fair 0.02M Na-Phosphate 7.0** | for 5000 ml/pouch, for biochemistry and molecular biology | **1094.1** | 10 pouches | box | 256,95 |
| **Roti®fair 1M Na-Phosphate 6.5** | for 1000 ml/pouch, for biochemistry and molecular biology | **1095.1** | 10 pouches | box | 241,90 |
| **Roti®fair 1M Na-Phosphate 7.2** | for 1000 ml/pouch, for biochemistry and molecular biology | **1097.1** | 10 pouches | box | 241,90 |
| **Roti®fair 1M Tris 7.4** | for 1000 ml/pouch, for biochemistry and molecular biology | **1251.1** | 10 pouches | box | 375,20 |
| **Roti®fair 1M Tris 8.0** | for 1000 ml/pouch, for biochemistry and molecular biology | **1260.1** | 10 pouches | box | 375,20 |
| **Roti®fair 1M Tris 8.3** | for 1000 ml/pouch, for biochemistry and molecular biology | **1261.1** | 10 pouches | box | 375,20 |
| **Sodium acetate** | ≥99 %, p.a., ACS, anhydrous | **6773.1** | 250 g | plastic | 24,65 |
| | | **6773.2** | 1 kg | plastic | 64,40 |
| | | **6773.3** | 2,5 kg | plastic | 134,95 |
| | | **6773.5** | 25 kg | plastic | 891,20 |
| **Sodium carbonate** | ≥99,5 %, p.a., ACS, anhydrous | **A135.1** | 500 g | plastic | 19,90 |
| | | **A135.2** | 1 kg | plastic | 34,30 |
| | | **A135.3** | 5 kg | plastic | 133,85 |
| **Mono sodium citrate** | ≥99 %, extra pure, anhydrous | **HN13.1** | 100 g | plastic | 14,55 |
| | | **HN13.2** | 500 g | plastic | 37,10 |
| | | **HN13.3** | 1 kg | plastic | 56,90 |
| **Sodium dihydrogen phosphate dihydrate** | ≥99 %, p.a. | **T879.1** | 500 g | plastic | 23,15 |
| | | **T879.2** | 1 kg | plastic | 34,30 |
| | | **T879.3** | 2,5 kg | plastic | 72,60 |
| | | **T879.5** | 25 kg | plastic | 600,95 |
| **Sodium formate** | ≥99 %, p.a., ACS | **4404.1** | 250 g | plastic | 26,35 |
| | | **4404.2** | 500 g | plastic | 45,70 |
| | | **4404.3** | 1 kg | plastic | 79,05 |
| **Sodium hydrogen carbonate** | ≥99,5 %, p.a., ACS, ISO | **6885.2** | 500 g | plastic | 15,60 |
| | | **6885.1** | 1 kg | plastic | 23,55 |
| | | **6885.3** | 5 kg | plastic | 83,75 |
| | | **6885.5** | 25 kg | plastic | 342,95 |
| **di-Sodium hydrogen phosphate** | ≥99 %, p.a., ACS, anhydrous | **P030.1** | 500 g | plastic | 31,10 |
| | | **P030.2** | 1 kg | plastic | 50,00 |
| | | **P030.3** | 2,5 kg | plastic | 94,10 |
| **Succinic acid disodium salt hexahydrate** | ≥99 %, for biochemistry | **3195.1** | 100 g | plastic | 37,55 |
| **TAPS** | PUFFERAN®≥99 % | **6982.1** | 10 g | plastic | 13,45 |
| | | **6982.2** | 100 g | plastic | 42,90 |
| | | **6982.3** | 250 g | plastic | 85,90 |
| | | **6982.4** | 500 g | plastic | 152,15 |
| **TAPSO** | PUFFERAN®≥99 % | **6628.1** | 25 g | plastic | 30,00 |
| | | **6628.2** | 100 g | plastic | 85,90 |

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **TAPSO sodium salt** | PUFFERAN® ≥99 % | **6974.1** | 25 g | plastic | 30,65 |
| | | **6974.2** | 100 g | plastic | 93,00 |
| **Taurine** | ≥99 %, for biochemistry | **4721.1** | 100 g | plastic | 19,25 |
| | | **4721.2** | 500 g | plastic | 52,15 |
| **TES** | PUFFERAN® ≥99 % | **9137.1** | 10 g | plastic | 26,35 |
| | | **9137.2** | 100 g | plastic | 138,70 |
| | | **9137.3** | 500 g | plastic | 278,45 |
| **TRICINE** | PUFFERAN® ≥99 % | **6977.1** | 50 g | plastic | 26,80 |
| | | **6977.4** | 250 g | plastic | 106,35 |
| | | **6977.2** | 500 g | plastic | 203,20 |
| | | **6977.3** | 1 kg | plastic | 306,40 |
| | | **6977.5** | 2,5 kg | plastic | 617,05 |
| **Triethanolamine** | ≥99 %, for synthesis | **6300.1** | 1 l | plastic | 25,30 |
| | | **6300.3** | 2,5 l | plastic | 41,85 |
| | | **6300.2** | 10 l | tinplate | 132,80 |
| **Triethanolamine hydrochloride** | ≥99 %, for biochemistry | **4804.1** | 100 g | plastic | 57,95 |
| **TRIS** | PUFFERAN® ≥99,9 %, p.a. | **4855.1** | 500 g | plastic | 50,45 |
| | | **4855.2** | 1 kg | plastic | 89,15 |
| | | **4855.5** | 2,5 kg | plastic | 185,45 |
| | | **4855.3** | 5 kg | plastic | 370,90 |
| | | **4855.4** | 10 kg | plastic | 704,15 |
| **TRIS** | ≥99,9 %, Blotting-Grade | **0188.1** | 250 g | plastic | 35,40 |
| | | **0188.2** | 500 g | plastic | 60,75 |
| | | **0188.3** | 1 kg | plastic | 98,80 |
| | | **0188.4** | 2,5 kg | plastic | 188,15 |
| **TRIS** | CELLPURE® ≥99,9 % | **3170.1** | 100 g | plastic | 25,30 |
| | | **3170.2** | 500 g | plastic | 77,30 |
| **TRIS** | PUFFERAN® ≥99,9 %, Ultra quality | **5429.1** | 500 g | plastic | 44,00 |
| | | **5429.3** | 1 kg | plastic | 81,20 |
| | | **5429.5** | 2,5 kg | plastic | 175,80 |
| | | **5429.2** | 5 kg | plastic | 332,20 |
| | | **5429.4** | 10 kg | plastic | 643,95 |
| **TRIS** | ≥99 %, Ph.Eur., USP | **A411.1** | 500 g | plastic | 40,75 |
| | | **A411.2** | 1 kg | plastic | 71,95 |
| | | **A411.3** | 5 kg | plastic | 321,45 |
| **TRIS** | PUFFERAN® ≥99,3 %, Buffer Grade | **AE15.1** | 500 g | plastic | 30,65 |
| | | **AE15.2** | 1 kg | plastic | 54,75 |
| | | **AE15.3** | 5 kg | plastic | 235,45 |
| | | **AE15.4** | 10 kg | plastic | 411,20 |
| | | **AE15.5** | 25 kg | plastic | 940,65 |
| **TRIS** | ≥99 %, cryst. | **2449.1** | 500 g | plastic | 28,95 |
| | | **2449.2** | 1 kg | plastic | 45,70 |
| | | **2449.3** | 5 kg | plastic | 204,25 |
| | | **2449.4** | 10 kg | plastic | 385,95 |
| | | **2449.5** | 25 kg | plastic | 848,20 |
| **TRIS acetate** | PUFFERAN® ≥98 % | **7125.1** | 25 g | plastic | 30,00 |
| | | **7125.2** | 100 g | plastic | 104,85 |
| **TRIS carbonate** | PUFFERAN® | **9158.1** | 50 g | plastic | 34,30 |
| | | **9158.2** | 500 g | plastic | 113,45 |
| **TRIS hemisulphate** | PUFFERAN® ≥98 % | **6986.1** | 25 g | plastic | 20,35 |
| | | **6986.2** | 100 g | plastic | 47,85 |
| **TRIS hydrochloride** | PUFFERAN® ≥99 %, p.a. | **9090.1** | 50 g | plastic | 13,90 |
| | | **9090.2** | 500 g | plastic | 87,65 |
| | | **9090.3** | 1 kg | plastic | 129,55 |
| | | **9090.5** | 2,5 kg | plastic | 274,15 |
| | | **9090.4** | 5 kg | plastic | 525,70 |
| **TRIS maleate** | PUFFERAN® ≥98 % | **6991.1** | 100 g | plastic | 96,25 |

For additional product data and safety information, see chapter Chemicals A-Z.

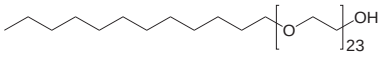
Please note our **Technical Information Brochure** on the Internet next to the products:

**Biological Buffers**

# Detergents

The dissolving power of detergents is utilised to deal with a number of molecular-biological and biochemical problems.
For additional data see chapter Chemicals A-Z.

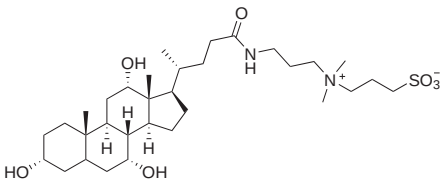





## Brij® 35

**for biochemisty**
Non-ionic detergent.
Polyoxyethylene lauryl ether, Polyethylene glycol lauryl ether
$C_{58}H_{118}O_{24}$
M 1198,57 g/mol
Copolymer and non-ionoic detergent with polyoxyethylen goup. Highly resistant against acids and bases. Particularly suited for emulgation of fats at high or low pH values. Also well suited for protein analysis, since Brij® 35 does neither denature nor dissociate proteins.
**Application:**
0.5 % solution: Solubilize 0.5 g Brij® 35 in 100 ml hot water.
Tip: In case some detergent precipitates during cooling, dilute to 150 ml (0.34 % solution) and use 1.5 vol. in the assay.

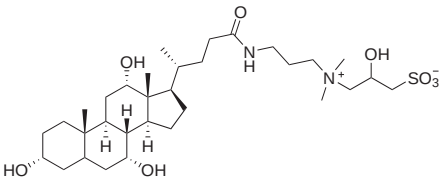
| | | | |
|---|---|---|---|
| **CN21.1** | 250 g | plastic | 17,10 € |
| **CN21.2** | 500 g | plastic | 26,80 € |
| Original pack 6 x 500 g | | | 25,46/500 g |
| **CN21.3** | 1 kg | plastic | 40,35 € |
| Original pack 6 x 1 kg | | | 38,33/1 kg |




## CHAPS

**PUFFERAN® ≥98 %, for biochemistry**
Buffer substance, zwitterionic detergent
3-[(3-Cholamidopropyl)dimethyl ammonio]-1-propane sulphonate
$C_{32}H_{58}N_2SO_7$
M 614,9 g/mol
Storage temp.: +4 °C
**Warning** H315-H319-H335

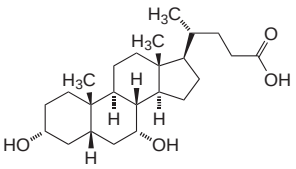
| | | | |
|---|---|---|---|
| **1479.1** | 5 g | plastic | 60,10 € |
| **1479.3** | 10 g | plastic | 100,55 € |
| **1479.2** | 25 g | plastic | 207,40 € |
| **1479.4** | 100 g | plastic | 439,70 € |




## CHAPSO

**PUFFERAN® ≥99 %, for biochemistry**
Buffer substance, zwitterionic detergent
3-[(3-Cholamidopropyl)-dimethylamino]-2-hydroxy-1-propanesulphonate
$C_{32}H_{58}N_2O_8S$
M 630,88 g/mol
Storage temp.: +4 °C
**Warning** H315-H319-H335

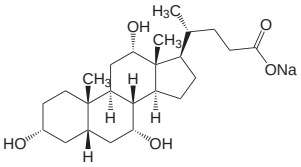
| | | | |
|---|---|---|---|
| **HN73.1** | 1 g | plastic | 59,05 € |
| **HN73.2** | 5 g | plastic | 192,45 € |
| **HN73.3** | 10 g | plastic | 342,95 € |




## Chenodeoxycholic acid

**≥98 %, for biochemistry**
Anionic detergent
3α,7α-Dihydroxy-5β-cholanic acid
$C_{24}H_{40}O_4$
M 392,58 g/mol
**Warning** H361d

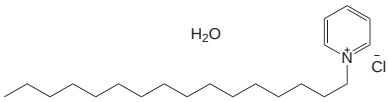
| | | | |
|---|---|---|---|
| **4128.1** | 5 g | glass | 34,30 € |
| **4128.2** | 10 g | glass | 65,05 € |
| **4128.3** | 25 g | glass | 127,40 € |




## Cholic acid sodium salt

**≥99 %, for biochemistry**
Anionic detergent
Sodium cholate
$C_{24}H_{39}NaO_5$
M 430,57 g/mol

| | | | |
|---|---|---|---|
| **3407.1** | 50 g | plastic | 59,05 € |



## CPC

**≥98 %, for biochemistry**

Cationic detergent

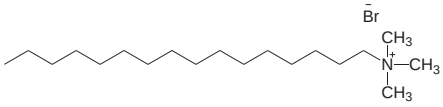
Hexadecylpyridinium chloride monohydrate, Cetylpyridinium chloride monohydrateCPC

$C_{21}H_{38}ClN \cdot H_2O$

M 358,01 g/mol

**Danger** H301-H330-H400-H410-H315-H319-H335

| | | | |
|---|---|---|---|
| **CN27.1** | 100 g | plastic | 28,50 € |
| **CN27.2** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |



## CTAB

**≥99 %, for biochemistry**

Cationic detergent

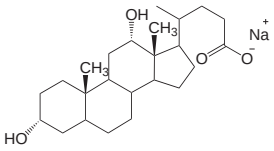
Hexadecyl-trimethylammonium bromide, Cetyltrimethylammonium bromide

$C_{19}H_{42}BrN$

M 364,46 g/mol

**Danger** H302-H315-H318-H335-H373-H410

| | | | |
|---|---|---|---|
| **9161.1** | 100 g | plastic | 19,90 € |
| **9161.3** | 500 g | plastic | 67,20 € |
| Original pack 6 x 500 g | | | 63,84/500 g |
| **9161.2** | 1 kg | plastic | 118,15 € |
| Original pack 6 x 1 kg | | | 112,24/1 kg |



## Deoxycholic acid sodium salt (DOC)

**≥98 %, for biochemistry**

Anionic detergent

Sodium deoxycholate, DOC

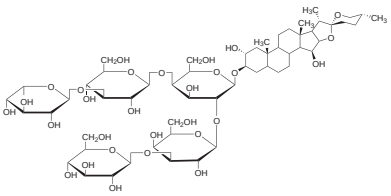
$C_{24}H_{39}NaO_4$

M 414,64 g/mol

Storage temp.: +4 °C

**Warning** H302-H335-H315-H319

| | | | |
|---|---|---|---|
| **3484.1** | 10 g | plastic | 18,20 € |
| **3484.2** | 50 g | plastic | 56,90 € |
| **3484.3** | 100 g | plastic | 99,90 € |



## Digitonin

**Ultra Quality**

Water soluble quality, for biochemistry. Non-ionic detergent.

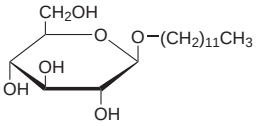
$C_{56}H_{92}O_{29}$

M 1229,32 g/mol

**Danger** H301+H311+H331

Steroid glycoside and non-ionic detergent with high binding capacity for cholesterol. Digitonin is used for permeabilisation of plasma membranes as well as for mild solubilisation of membrane-bound proteins.
Application: Use 10 -100 µg/ml for selective permeabilisation of plasma membranes via binding of cholesterol (Mooney, R.A. (1988). *Methods Enzymol.* 159:193-2).

| | | | |
|---|---|---|---|
| **HN76.3** | 100 mg | glass | 70,85 € |
| **HN76.1** | 250 mg | glass | 160,20 € |
| **HN76.2** | 1 g | glass | 461,20 € |



## n-Dodecyl-β-D-glucopyranoside

**for biochemistry**

Non-ionic detergent.

n-Dodecyl-β-D-Glc

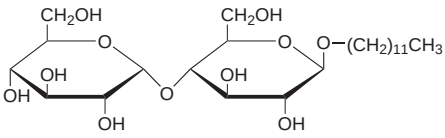
$C_{18}H_{36}O_6$

M 348,48 g/mol

Storage temp.: +4 °C

**Warning** H315-H319-H335

| | | | |
|---|---|---|---|
| **4129.1** | 500 mg | glass | 111,70 € |



## Dodecyl-β-D-maltoside (DDM)

**≥99 %, for biochemistry**

Non-ionic detergent.

DDM, Lauryl-β-D-maltoside

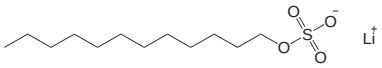
$C_{24}H_{46}O_{11}$

M 510,63 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Mainly used for isolation and solubilisation of membrane proteins. Isolated proteins frequently remain folded in native complexes with stabile conformation and high activity.

| | | | |
|---|---|---|---|
| **CN26.1** | 500 mg | glass | 41,40 € |
| **CN26.2** | 1 g | glass | 67,20 € |
| **CN26.3** | 2,5 g | glass | 145,15 € |
| **CN26.4** | 10 g | glass | 478,40 € |



## Lithiumdodecyl sulphate (LDS)

**≥99 %, for biochemistry**

Anionic detergent

LDS, Lithium lauryl sulphate

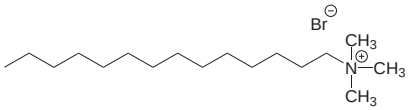
$C_{12}H_{25}LiO_4S$

M 272,33 g/mol

**Danger** H228-H318-H315-H335

For special applications in molecular biology, and for release of peptides from protein complexes. Compared with SDS, LDS has higher solubility and, under certain conditions, may be used to replace SDS in PAGE.

| | | | |
|---|---|---|---|
| **CN25.1** | 10 g | plastic | 27,45 € |
| **CN25.2** | 25 g | plastic | 53,65 € |
| **CN25.3** | 50 g | plastic | 96,65 € |



## MTAB

**≥96 %, extra pure**

Cationic detergent

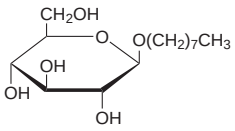
N,N,N-Trimethyl-1-tetradecanammonium bromide,Myristyltrimethyl-ammonium bromide, Tetradecyltrimethylammonium bromide

$C_{17}H_{38}BrN$

M 336,42 g/mol

**Danger** H315-H318-H335-H373-H400

| | | | |
|---|---|---|---|
| **7452.1** | 100 g | plastic | 38,60 € |
| **7452.2** | 500 g | plastic | 149,45 € |
| Original pack 6 x 500 g | | | 141,98/500 g |
| **7452.3** | 1 kg | plastic | 289,20 € |
| Original pack 6 x 1 kg | | | 274,74/1 kg |
| **7452.4** | 2,5 kg BIG PACK | plastic | 643,95 € |



## n-Octyl-β-D-glucopyranoside (OGP)

**≥99 %, for biochemistry**

Non-ionic detergent.

OGP, Octylglucoside

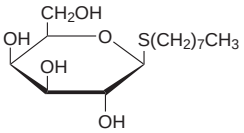
$C_{14}H_{28}O_6$

M 292,38 g/mol

Storage temp.: +4 °C

Non-ionic, non-denaturing, water-soluble detergent, mainly used for isolation of membrane proteins. Easily removable by dialysis.
No photometric absorption at 280 nm.
Recommended working solution: 30 mM
Always prepare working solutions freshly.

| | | | |
|---|---|---|---|
| **CN23.1** | 1 g | glass | 26,80 € |
| **CN23.2** | 5 g | glass | 96,65 € |
| **CN23.3** | 10 g | glass | 160,20 € |



## n-Octyl-β-D-thiogalactopyranoside

**≥98 %, for biochemistry**

Non-ionic detergent.

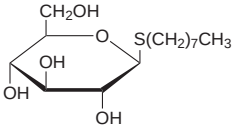
Octyl-β-D-thiogalactoside, n-Octyl-1-thio-β-D-Gal

$C_{14}H_{28}O_5S$

M 308,44 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

| | | | |
|---|---|---|---|
| **4133.1** | 500 mg | glass | 52,15 € |
| **4133.2** | 1 g | glass | 89,15 € |



## n-Octyl-β-D-thioglucopyranoside

**≥95 %, for biochemistry**

Non-ionic detergent.

Octyl-β-D-thioglucoside, n-Octyl-1-thio-β-D-Glc

$C_{14}H_{28}O_5S$

M 308,44 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Octyl-β-D-thioglucopyranoside excels by its stability in aqueous solutions. It is also easily removed by dialysis. Hence, it is highly useful for isolation of native membrane proteins.

| | | | |
|---|---|---|---|
| **4139.3** | 500 mg | glass | 35,40 € |
| **4139.1** | 1 g | glass | 54,75 € |
| **4139.2** | 5 g | glass | 203,20 € |




## Roti®-Stock 20 % SDS

**BioScience-Grade, ready-to-use, 0,2 µm filtered**

For molecular biology and electrophoresis.

SDS 20 % ready-to-use solution

**Danger** H318-H315-H335

20 % stock solution sodium dodecyl sulphate. Store the solution away from light in a dry place. SDS-stock solution and other solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.
With original seal.

| | | | |
|---|---|---|---|
| **1057.1** | 1 l | glass | 138,70 € |
| Original pack 6 x 1 l | | | 131,77/1 l |





## Roti®fair SDS 0.5g

**0,5 g/tablet, for biochemistry, molecular biology and electrophoresis**

Anionic detergent for preparation of bioanalytical solutions.

SDS (tablet), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

**Danger** H228-H302+H332-H315-H318-H335-H412

Exactly pre-weighed tablets for convenient and rapid preparation of SDS solution.
Roti®fair SDS 0.5g may also be used for preparation of SDS containing solutions, by adding the favoured number of SDS tablets directly during preparation of the solution.
Prepared solution may be sterilized by filtration (0,22 µm). The solution should be stored at room temperature. SDS-stock solution and solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.

10 % SDS solution is prepared by dissolution of 1 tablet in 5 ml highly pure water. Concentrations of 0,05-20 % may be prepared.

| | | | |
|---|---|---|---|
| **1156.1** | 50 tablets | plastic | 46,80 € |

## Roti®fair 10% SDS

**for 1000 ml/pouch, for biochemistry, molecular biology and electrophoresis**

Anionic detergent for preparation of bioanalytical solutions.

SDS powder (pouch), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

**Danger** H228-H302+H332-H315-H318-H335-H412

Exactly pre-weighed pouches for convenient and rapid preparation of SDS solution.
Prepared solution may be sterilized by filtration (0,22 µm). The solution should be stored at room temperature. SDS-stock solution and solutions containing SDS should not be cooled below 24 °C otherwise the SDS may precipitate. The crystals can be easily resolubilised by heating them between 30 to 50 °C.

10 % SDS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

| | | | |
|---|---|---|---|
| **1157.1** | 5 pouches | box | 596,65 € |

## SDS

**≥99,5 %, Blotting-Grade**

For Western- and Southern blotting

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

$C_{12}H_{25}NaO_4S$

M 288,38 g/mol

**Danger** H228-H302+H332-H315-H318-H335-H412

SDS of particularly high purity, tested for absence of heavy metals and for UV-absorption qualities. Particularly suitable for Western- and Southern blotting, as well as for immunodetection and assays in molecular biology.

| | | | |
|---|---|---|---|
| **0183.1** | 100 g | plastic | 48,30 € |
| **0183.2** | 250 g | plastic | 101,60 € |
| **0183.3** | 500 g | plastic | 165,45 € |
| Original pack 6 x 500 g | | | 157,18/500 g |

## SDS ultra pure

**≥99,5 %, for electrophoresis, biochemistry and molecular biology**

Anionic detergent.

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

$C_{12}H_{25}NaO_4S$

M 288,38 g/mol

**Danger** H228-H302+H332-H315-H318-H335-H412

| | | | | |
|---|---|---|---|---|
| **2326.1** | 100 g | plastic | | 39,25 € |
| **2326.4** | 250 g | plastic | | 82,70 € |
| **2326.2** | 500 g | plastic | | 150,40 € |
| Original pack 6 x 500 g | | | | 142,88/500 g |
| **2326.3** | 500 g (in 2,5 l glass bottle for prep. of a 20 % sol.) | glass | TIP | 156,45 € |
| **2326.5** | 1 kg | plastic | | 257,90 € |
| Original pack 6 x 1 kg | | | | 245,01/1 kg |

## SDS Pellets

**≥99,5 %, Rotiphorese®-Grade, for electrophoresis**

Anionic detergent

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

$C_{12}H_{25}NaO_4S$

M 288,38 g/mol

**Danger** H302-H315-H318-H412

Ultrapure, dust-free SDS in special quality for electrophoresis.
Each batch is tested for its functionality in electrophoresis.

| | | | |
|---|---|---|---|
| **8029.1** | 100 g | plastic | 26,35 € |
| **8029.2** | 250 g | plastic | 52,60 € |
| **8029.3** | 500 g | plastic | 91,30 € |
| Original pack 6 x 500 g | | | 86,74/500 g |
| **8029.4** | 1 kg | plastic | 170,95 € |
| Original pack 6 x 1 kg | | | 162,40/1 kg |



## SDS Pellets

**≥99 %, for biochemistry**

Anionic detergent.

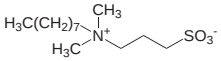
Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

$C_{12}H_{25}NaO_4S$

M 288,38 g/mol

**Danger** H302-H315-H318-H412

| | | | |
|---|---|---|---|
| **CN30.1** | 250 g | plastic | 26,35 € |
| **CN30.2** | 500 g | plastic | 41,85 € |
| Original pack 6 x 500 g | | | 39,76/500 g |
| **CN30.3** | 1 kg | plastic | 67,20 € |
| Original pack 6 x 1 kg | | | 63,84/1 kg |
| **CN30.4** | 2,5 kg BIG PACK | plastic | 121,40 € |



## Sulfobetaine-8

**≥98 %, for biochemistry**

Zwitterionic detergent

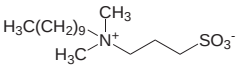
N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate, SB-8

$C_{13}H_{29}NO_3S$

M 279,4 g/mol

**Warning** H315-H319-H335

| | | | |
|---|---|---|---|
| **1800.1** | 5 g | glass | 51,10 € |
| **1800.2** | 25 g | glass | 137,10 € |



## Sulfobetaine-10

**≥98 %, for biochemistry**

Zwitterionic detergent

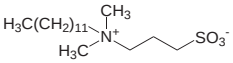
N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate, SB-10

$C_{15}H_{33}NO_3S$

M 307,5 g/mol

**Warning** H315-H319-H335

| | | | |
|---|---|---|---|
| **1816.1** | 5 g | glass | 53,25 € |
| **1816.2** | 25 g | glass | 138,70 € |



## Sulfobetaine-12

**≥98 %, for biochemistry**

Zwitterionic detergent

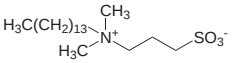
N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate, SB-12

$C_{17}H_{37}NO_3S$

M 335,5 g/mol

**Warning** H315-H319-H335

| | | | |
|---|---|---|---|
| **1821.1** | 5 g | glass | 22,05 € |
| **1821.2** | 25 g | glass | 54,30 € |
| **1821.3** | 100 g | glass | 185,45 € |



## Sulfobetaine-14

**≥98 %, for biochemistry**

Zwitterionic detergent

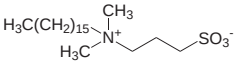
N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate, SB-14

$C_{19}H_{41}NO_3S$

M 363,6 g/mol

**Warning** H315-H319-H335

| | | | |
|---|---|---|---|
| **1822.1** | 5 g | glass | 28,50 € |
| **1822.2** | 25 g | glass | 76,90 € |
| **1822.3** | 100 g | glass | 256,95 € |



## Sulfobetaine-16

**≥98 %, for biochemistry**

Zwitterionic detergent

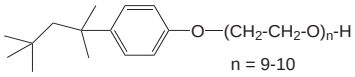
N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate, SB-16

$C_{21}H_{45}NO_3S$

M 391,7 g/mol

**Warning** H315-H319-H335

| | | | |
|---|---|---|---|
| **1823.1** | 5 g | glass | 55,80 € |
| **1823.2** | 25 g | glass | 153,65 € |



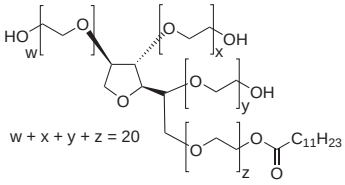

## Triton® X 100

**extra pure**

Non-ionic detergent. For biochemistry and molecular biology.
Polyethylene glycol alkylphenyl ether
$C_{33}H_{60}O_{10}$
M 624 g/mol

**Danger** H302-H318

| | | | |
|---|---|---|---|
| **3051.3** | 250 ml | plastic | 17,10 € |
| **3051.4** | 500 ml | plastic | 22,05 € |
| **3051.2** | 1 l | plastic | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |
| **3051.1** | 10 l BIG PACK | plastic | 192,45 € |

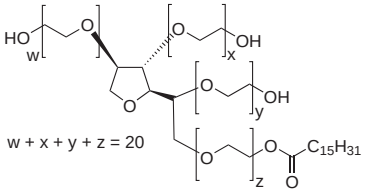



## Tween® 20

**Ph.Eur.**

Non-ionic detergent.
Polyoxyethylene-20-sorbitan monolaurate, Polysorbate 20

| | | | |
|---|---|---|---|
| **9127.1** | 250 g | plastic | 20,35 € |
| **9127.2** | 1 kg | plastic | 51,50 € |
| Original pack 6 x 1 kg | | | 48,93/1 kg |
| **9127.3** | 2,5 kg BIG PACK | plastic | 89,15 € |

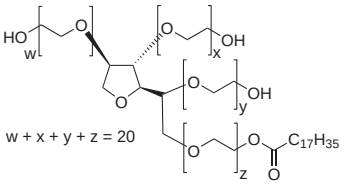



## Tween® 40

**Ph.Eur.**

Non-ionic detergent.
Polyoxyethylene-40-sorbitan monopalmitate, Polysorbate 40

| | | | |
|---|---|---|---|
| **8240.1** | 250 g | plastic | 21,40 € |
| **8240.2** | 500 g | plastic | 37,55 € |
| Original pack 6 x 500 g | | | 35,67/500 g |
| **8240.3** | 1 kg | plastic | 56,90 € |
| Original pack 6 x 1 kg | | | 54,06/1 kg |

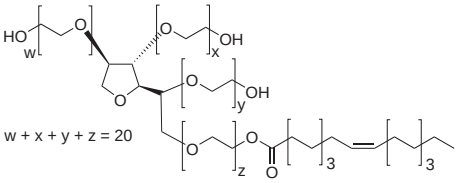



## Tween® 60

**Ph.Eur.**

Non-ionic detergent.
Polyoxyethylene-60-sorbitan monostearate, Polysorbate 60

| | | | |
|---|---|---|---|
| **9694.1** | 250 g | plastic | 21,40 € |
| **9694.2** | 500 g | plastic | 37,55 € |
| Original pack 6 x 500 g | | | 35,67/500 g |
| **9694.3** | 1 kg | plastic | 56,90 € |
| Original pack 6 x 1 kg | | | 54,06/1 kg |




## Tween® 80

**Ph.Eur.**

Non-ionic detergent.
Polyoxyethylene-80-sorbitan monooleate, Polysorbate 80
Tween 80 (polysorbat 80) is recommended by the European Pharmacopeia as surface-active additive for solubilisation of heavily wettable reagents (1 g/l).

| | | | |
|---|---|---|---|
| **9139.1** | 250 g | plastic | 22,05 € |
| **9139.3** | 500 g | plastic | 37,55 € |
| Original pack 6 x 500 g | | | 35,67/500 g |
| **9139.2** | 1 kg | plastic | 61,85 € |
| Original pack 6 x 1 kg | | | 58,76/1 kg |

**Safety data sheets**
can be found on the Internet next to the product description.

# Enzymes



## Alkaline phosphatase

**≥2000 Glycine U/mg protein (approx. 6000 DEA U/mg protein)**

From bovine intestinal mucosa. Solution in 50 % glycerol, 5 mM Tris/HCl, 5 mM $MgCl_2$ and 0,1 mM $ZnCl_2$, pH approx. 7,0.

Phosphatase, alkaline; ALP; AP

M ~120 000 g/mol

Storage temp.: +4 °C

One glycine unit (U) is defined as the amount of enzyme that catalyzes the hydrolysis of one µmole of p-nitrophenyl phosphate per min at pH 9.6 and 25 °C (glycine buffer).

| | | | |
|---|---|---|---|
| **6024.1** | 10 KU | plastic | 364,45 € |

## β-Amylase

**16-24 U/mg, lyophil.**

Made from barley malt.

Storage temp.: +4 °C

**Danger** H334

1 Unit enzyme acc. to Zulkowsky releases 1 µmol maltose per minute at 25 °C (pH 4.8).

| | | | |
|---|---|---|---|
| **8717.1** | 100 mg | glass | 51,50 € |

## Bromelain

**~1200 GDU/g, for biochemistry**

Made from stems of young pineapple *(Bromeliaceae)*.

Bromelin

Storage temp.: +4 °C

**Danger** H334-H335-H315-H319

Highly active thiol proteinase (non-specific cystein protease), glycoprotein. Enzyme from *Bromeliaceae*, used in biochemistry and for meat tenderising. Preferable digestion at lysin, alanin, tyrosin and glycin. Degrades hemoglobin, gluten, collagen, globulin, casein and gelatin at pH 4-9. Cream-coloured, hygroscopic powder. Bromelain is activated by cystein, bisufite salts, NaCN, $Na_2S$, $H_2S$ and benzoate. The definite pH optimum depends on substrate and reaction parameters. pH stability of bromelain increases drastically after binding to the substrate.
One GDU (gelatin digestion unit) will hydrolyse 1.0 mg of amino nitrogen from gelatin in 20 minutes at pH 4.5 at 45 °C. One bromelain tyrosine unit (BTU) corresponds to 1.1 GDU. 1200 GDU/g correspond to approx. 2.4 FIP-units/mg.

**Applications:**
pH working range: 4.0-8.0
pH optimum: 5-6. Stabile at pH 3.0-6.5
Temperature optimum: 50-65 °C
Inhibitors: $Hg^{++}$, $Ag^{++}$, $Cu^{++}$, antitrypsin, estatin, iodacetate, TLCK, TPCK, and temperatures of over 70 °C
Stock solution: 10 mg/ml in $H_2O$
Unsoluble in organic solvents (acetone, ethanol, methanol etc.)
Working concentration: substrate dependent

| | | | |
|---|---|---|---|
| **5950.1** | 10 g | plastic | 21,00 € |
| **5950.2** | 100 g | plastic | 93,45 € |

## Catalase

**≥11 700 U/mg material (approx. 40 000 U/mg protein)**

From bovine liver, freeze-dried

Storage temp.: -20 °C • Transport temp.: room temp.

One unit (U) is defined as the amount of enzyme that catalyzes the decomposition of one µmole of hydrogen peroxide per min at pH 7.0 and 25 °C.

| | | | |
|---|---|---|---|
| **6025.1** | 5 MU | plastic | 149,45 € |

## Chymotrypsin

**≥1000 USP-U/mg, for biochemistry**

Made from bovine pancreas.

α-Chymotrypsin

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H334-H335-H315-H319

Trypsin content <1 %.

| | | | |
|---|---|---|---|
| **0238.1** | 100 mg | glass | 25,70 € |
| **0238.2** | 500 mg | glass | 53,65 € |
| **0238.3** | 1 g | glass | 88,70 € |

## Glucose oxidase (GOD)

**~360 U/mg protein (approx. 280 U/mg material)**

From *Aspergillus niger*, freeze-dried.

GOx, GOD

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H334

One unit (U) is defined as the amount of enzyme that catalyzes the oxidation of one µmole of glucose per min at pH 7.0 and 25 °C.

| | | | |
|---|---|---|---|
| **6028.1** | 0,5 MU | plastic | 184,40 € |

## β-Glucosidase

**≥1000 U/mg, from almonds**

ex amygdal

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H334

Yellow lyophilised powder. 1 unit β-Glucosidase causes the liberation of 1 µg glucose per minute from salicin at 35 °C. 1000 U (µg) β-Glucosidase correspond to 5 U (µmol).

| | | | |
|---|---|---|---|
| **7512.1** | 100 mg | glass | 25,30 € |
| **7512.2** | 1 g | glass | 192,45 € |

## Glutamate dehydrogenase (GDH, GLDH)

**≥10 U/mg material (approx. 40 U/mg protein)**

From bovine liver, freeze-dried.

GDH, GLDH; L-Glutamic dehydrogenase

Storage temp.: -20 °C • Transport temp.: room temp.

One unit (U) is defined as the amount of enzyme that catalyzes the reduction of one µmole of 2-oxoglutarate per min at pH 7.3 and 25 °C.

| | | | |
|---|---|---|---|
| **6052.1** | 10 KU | plastic | 150,40 € |

## Hyaluronidase

**~500 U/mg, free from salt, lyophilised**

ex ovine testes

M ~70000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H334

| | | | |
|---|---|---|---|
| **9978.2** | 250 mg | glass | 59,05 € |
| **9978.1** | 1 g | glass | 190,30 € |

## Hyaluronidase

**~300 U/mg, free from salt, lyophilised**

ex ovine testes

M ~70000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H334

Testicular hyaluronidases with hydrolytic and transglycosidic activity. Ideal for decomposition of hyaluronic acid and chondroitin sulphate in extracellular matrix.

**Application:**
pH optimum 7.0-8.0
Stock solution: 1-300 mg/ml in phosphate buffer or water
Working concentration: 0.1-10 mg/ml

| | | | |
|---|---|---|---|
| **9980.1** | 250 mg | glass | 33,25 € |
| **9980.2** | 1 g | glass | 91,30 € |

## Lactate dehydrogenase (LDH)

**≥290 U/mg protein**

From porcine heart, freeze-dried

LDH, LD, Lactic dehydrogenase

Storage temp.: -20 °C • Transport temp.: room temp.

One unit (U) is defined as the amount of enzyme that oxidizes one µmole of NADH per min at pH 7.4 and 25 °C.

| | | | |
|---|---|---|---|
| **6060.1** | 0,05 MU | plastic | 123,55 € |

## Lipoxygenase

**≥100 000 U/mg, for biochemistry**

Made from soybeans. For oxidation of arachidonic acid.

Lipoxidase

M ~108 000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Lipoxygenase stereo-specifically catalyses the oxidation of arachidonic acid, initiating the formation of leukotrienes in eicosanoid metabolism. One unit will cause an increase in absorption (234 nm) of 0.001 per minute at 25 °C and pH 9 by oxidation of linoleic acid.

**Application:**
Well soluble in $H_2O$ or buffer.
Recommended storage of stock solution in aliquots at -20 °C.

| | | | |
|---|---|---|---|
| **CN73.1** | 100 mg | glass | 28,95 € |
| **CN73.2** | 500 mg | glass | 94,50 € |
| **CN73.3** | 1 g | glass | 142,90 € |

**Safety data sheets**
can be found on the Internet next to the product description.



## Lysozyme

**≥35000 FIP U/mg, BioScience-Grade, lyophilised**

From chicken egg white, free from albumin.

M ~14000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Salt and albumin free lyophilised powder. Quality product for molecular biology. Ideal for lysis of bacteria for preparing DNA.
1 FIP-Unit equals the amount of enzyme which reduces the absorbance by 0.001 per min. at 450 nm, 25 °C, pH 7.00 using a suspension of FIP *Micrococcus luteus* as substrate (acc. to *Pharmaceutical Enzymes* 1997). 1 FIP-Unit resembles approximately 1 Shugar-Unit.

**Application:**
pH optimum: 6.0-7.0
Inhibitors: imidazole, indole, N-acetyl glucosamine
Working solution: 5-10 mg/ml (bacteria), 1-2 mg/ml (euk. cells)
Buffer: salt solution without detegents (0.1 M potassium phosphate buffer, 50 mM Tris buffer, 1x PBS etc.)
Temperature optimum: 37 °C
Isoelectric point: approx. 11
Lysozyme solution should be frozen only once.

| | | | |
|---|---|---|---|
| **8259.1** | 1 g | glass | 26,80 € |
| **8259.3** | 25 g | glass | 310,70 € |
| **8259.2** | 10 g | glass | 165,05 € |

## Malate dehydrogenase (MDH)

**≥1250 U/mg protein**

From porcine heart, freeze-dried

MDH

Storage temp.: -20 °C • Transport temp.: room temp.

One unit (U) is defined as the amount of enzyme that oxidizes one µmole of NADH per min at pH 7.4 and 25 °C.

| | | | |
|---|---|---|---|
| **6062.1** | 0,05 MU | glass | 142,45 € |

## Papain

**>30 000 USP-U/mg, for biochemistry**

Made from *Carica papaya.*

Storage temp.: +4 °C

**Danger** H334-H335-H315-H319

A non-specific endopeptidase from Papaya latex. Has a very wide substrate range and cleaves proteins more efficiently than trypsin, for example. Is capable of not only hydrolysing peptide bonds, but also acts effectively as an esterase and thiol-esterase.
30.000 USP (Casein) Units is approx. 2 FIP-Units (BAEE-Units). One USP Unit of Papain activity releases the equivalent of 1 µg tyrosine form a specified casein substrate under assay conditions specified by the USP. DTT can be used to increase the activity.

| | | | |
|---|---|---|---|
| **8933.1** | 25 g | plastic | 50,00 € |
| **8933.2** | 100 g | plastic | 138,70 € |

## Pepsin

**≥2000 FIP-U/g, for biochemistry**

From porcine gastric mucosa. For detection of trichina in meat.
M 35000 g/mol • Storage temp.: +4 °C

**Danger** H334-H335-H315-H319

Acidic endopeptidase, the inactive precursor of which, pepsinogen, is produced in the stomach mucosa. Pepsin cleaves proteins preferentially at carboxylic groups of aromatic amino acids such as phenylalanine and tyrosine. Highly active pepsine is preferably used for detection of trichina in pre-digested muscle meat of animals.
1 FIP unit (≈Ph. Eur. unit) of Pepsin activity will, during incubation at 25±0.1 °C for one minute, cause decomposition of haemoglobin to an extent comparable with the colour caused by reaction of 1 micromole of tyrosine with the same dye. 2 000 FIP-Units correspond to 1: 10 000 NF-U and 1: 12 500 BP-U.

**Application:**
Well soluble in water, stable in aqueous solutions of pH up to 5.5, unstable above pH 6.0. Irreversible inactivated in alkaline medium. Solution is stable in temperatures of up to 60 °C, and also in higher concentrations of urea and guanidine.
pH optimum: 1-2
Isoelectric point: 1.0

| | | | |
|---|---|---|---|
| **KK38.1** | 50 g | plastic | 56,90 € |
| **KK38.2** | 100 g | plastic | 91,30 € |
| **KK38.3** | 250 g | plastic | 188,15 € |
| **KK38.4** | 1 kg BIG PACK | plastic | 665,45 € |
| Original pack 6 x 1 kg | | | 632,18/1 kg |

## Pepsin

**≥0,5 Ph.Eur.-U/mg, for biochemistry**

Isolated from pigs stomach.
M 35000 g/mol • Storage temp.: +4 °C

**Danger** H334-H335-H315-H319

0.5 Ph.Eur.-U/mg correspond to approx. 500 FIP-U./g.

| | | | |
|---|---|---|---|
| **0230.1** | 25 g | glass | 25,30 € |
| **0230.2** | 50 g | glass | 40,75 € |

## Peroxidase

**≥250 U/mg material**

From horseradish, freeze-dried
HRP, Horseradish peroxidase
Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H317-H334

One unit (U) is defined as the amount of enzyme that catalyzes the production of 1 mg of purpurogallin from pyrogallol in 20 seconds at pH 6.0 and 20 °C.

| | | | |
|---|---|---|---|
| **6055.1** | 0,05 g | plastic | 117,20 € |

**Enzyme:** a neoclassical, Greek artificial word ενζυμου, *énzymon*, derived from εν-, *en-* (in-) and ζυμη, *zýmé* (yeast, sourdough, archaic)
**Ferments:** comes from the Latin *fermentum* (ferments, sourdough)

There are six **classes** in which all enzymes are classified according to the particular reaction they catalyse:

- *Oxidoreductases* (catalyse redox reactions)
- *Transferases* (transfer functional groups among substrates)
- *Hydrolases* (cleave bonds via addition of water)
- *Lyases/Synthases* (cleave or synthesise complex products out of basic substrates without cleavage of ATP)
- *Isomerases* (transform chemical isomers)
- *Ligases/Synthetases* (cleave or synthesise complex products out of basic substrates via cleavage of ATP)



## Proteinase K

DNAse-free RNAse-free

**lyophil., ≥30 mAnson U/mg**

Isolated from fungi (*Tritirachium album*).
Storage temp.: +4 °C

**Danger** H315-H319-H334-H317-H335

A non-specific protease with strong proteolytic activity for degrading proteins in biological samples. A quality product for molecular biology with a broad scope of application.

**Suitable for:**
- Preparing chromosomal DNA for PFGE
- Degrading nucleases during preparation of nucleic acids (includes preparation of native RNA)

**Activity:** (Haemoglobin, pH 7.5; 25 °C) 30 mAnson-U/mg
**Foreign activity:** RNase and DNase not detectable
**Optimum temperature:** +65 °C.
Activity at +65 °C is ca. 12 x higher than at +25 °C.
Over +65 °C, inactivation due to denaturation.
**Stability:** pH 4.0-12.5.
Also stable even when denaturing agents, e.g. SDS and urea are present.
**Activators:** Denaturating agents (SDS, urea).
**Inhibitors:** Inhibition with $Hg^{2+}$-ions, DFP, PMSF and phenol.
Not inhibited by EDTA, sulfhydryl reagents and trypsin or chymotryps ininhibitors.
**Stabilisers:** $Ca^{2+}$-ions (1-5 mM) prevent autolysis.

**Application:**
Reaction buffer: 50 mM Tris-HCl; pH 7.5; 5 mM $CaCl_2$; 0.5 % SDS
Stock solution: 20 mg/ml in water
Storage temperature (stock solution): -20 °C
Working solution: 50 µg/ml
**Art. No. 7528.3:** A stock solution with a concentration of 20 mg/ml can be prepared directly by adding 25 ml buffer or water.

| | | | |
|---|---|---|---|
| **7528.1** | 100 mg | glass | 90,20 € |
| **7528.5** | 250 mg | glass | 172,00 € |
| **7528.2** | 500 mg | glass | 306,40 € |
| **7528.3** | 500 mg (in a 30 ml glass bottle) TIP | | 342,95 € |
| **7528.4** | 1 g | glass | 514,95 € |
| **7528.6** | 5 g | glass | 2031,75 € |

## Rennin

**for biochemistry**

Chymosin, rennase, lab
M ~31000 g/mol
Storage temp.: +4 °C

**Danger** H334-H335-H315-H319

| | | | |
|---|---|---|---|
| **8178.1** | 50 g | plastic | 58,60 € |

**Safety data sheets**
can be found on the Internet next to the product description.

## Trypsin

**5000 USP-U/mg, free from salt**

TSE-/BSE-free

Isolated from porcine pancreas, lyophilised.

M ~24000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H334-H335-H315-H319

A pancreatic serine protease with a specificity for peptide bonds between basic amino acids arginine or lysine and another non-specific amino acid. Trypsin is frequently used to suspend cells which grow as monolayers on surfaces. Longer exposure to trypsin can damage cells, so that an inhibitor (serum or trypsin inhibitor from soya beans) should be added upon completion.
One USP Unit will cause an increase in absorption (253 nm) per minute of 0,003 at 25 °C and pH 7,6 using BAEE as substrate.
One (international) Unit (U, 255 nm, BAEE, pH 8) is approx. 90 USP U.
One TAME Unit is approx. 20 USP Units. One NF Unit is one USP Unit.
Ten „BAEE Units" are approx. 3,3 USP Units.

**Application:** pH optimum 7,2-8,5.

| | | | |
|---|---|---|---|
| **2193.1** | 100 mg | glass | 28,95 € |
| **2193.2** | 500 mg | glass | 89,15 € |

## Trypsin

**≥2500 USP-U/mg, cryst.**

Isolated from porcine pancreas, lyophilised.

M ~24000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H334-H335-H315-H319

One USP Unit will cause an increase in absorption (253 nm) per minute of 0,003 at 25 °C and pH 7,6 using BAEE as substrate.
One (international) Unit (U, 255 nm, BAEE, pH 8) is approx. 90 USP U.
One TAME Unit is approx. 20 USP Units. One NF Unit is one USP Unit.
Ten „BAEE Units" are approx. 3,3 USP Units.

| | | | |
|---|---|---|---|
| **5455.1** | 100 mg | glass | 24,65 € |
| **5455.2** | 1 g | glass | 103,10 € |

## Urease

**≥220 Nessler U/mg material**

From jack bean, freeze-dried

M ~480000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

One unit (U) is defined as the amount of enzyme that catalyzes the liberation of 1 µmole of $NH_3$ per min at pH 7.0 and 25 °C.

| | | | |
|---|---|---|---|
| **6065.1** | 0,25 MU | plastic | 161,25 € |

## Urease

**~1 U/mg, for biochemistry**

From jack beans *Canavalia ensiformis*.

M ~480000 • Storage temp.: -20 °C • Transport temp.: room temp.

Hydrolase belonging to the Amidases. Metallo-enzyme. Urease hydrolasis urea, resulting in ammonia and carbon dioxide, or in ammonia- and carbonate ions, respectively. The molecule isolated from Jack beans is composed of 6 subunits of approx. 91 kD each with an overall size of approx. 544 kD. Nickel is the cofactor. Using high amounts of urea as substrate (200 mM), urease is applied for visualisation of the connection between reaction rate and time. Detection is carried out via measurement of conductivity, or, photometrically, via colour change of bromothymol blue. Furthermore, model system for catalytic activation of carbon dioxide in metallo-organic chemistry.
1 Unit enzyme hydrolyses 1 µmol urea per minute at 25 °C (pH 8.0).

**Application:**
pH optimum: 7.4.
Recommended reaction buffer system is 40 mM potassium phosphate buffer, pH 7.4. Heavy metals (e.g. lead) are inhibitory.

| | | | |
|---|---|---|---|
| **7537.1** | 5 g | plastic | 127,95 € |



## Zymolyase® 100T

**≥100 U/mg, for biochemistry and molecular biology**

For lysis of yeast cells. Isolated from *Arthrobacter luteus*.

Lyticase, β-1,3-glucan laminaripentaohydrolase

Storage temp.: +4 °C • Transport temp.: cooled

Zymolyase® 100T, produced by a submerged culture of *Arthrobacter luteus*, has strong lytic activity against living cell walls of various strains of yeast cells. Hence, it is frequently used in order to produce protoplast or spheroplast.
The essential enzyme for the lytic activity of Zymolyase® 100T is β-1,3-glucan laminaripentaohydrolase. It hydrolyzes linear glucose polymers with β-1,3-linkages and releases specifically laminaripentaose as the main and minimum product unit. Zymolyase® 100T is prepared by ammonium sulphate precipitatation, and is further purified by affinity chromatography.
One unit of lytic activity is defined as the enzyme amount causing a decrease of 30 % in absorbance at 800 nm using 6 mg Brewer's yeast as substrate in Phosphate buffer (pH 7,5) at 25 °C. Lytic activity varies depending on the particular yeast strain, the growth stage of the yeast, and cultural conditions.

**Application:**
As stock solution, a 2 to 10 % (20 or 100 mg/ml) Zymolyase® solution may be prepared, solubilizing the enzyme in water, 10 mM sodiumphosphate buffer (pH 7,4) or 50 mM Tris-Cl (pH 7,5), respectively, according to the buffer system to be used downstream and containing 5 % glucose and 50 % glycerol each. The Zymolyase® tends to not dissolve completely. Do not heat for solubilization, but rather use the Zymolyase® as suspension. The suspension may be stored in aliquots at -20 °C. For use in the respective buffer system, dilute the stock solution to the working concentration of 2-5 mg/ml and optionally sterilize by filtration (0,2 µm).
In most cases, however, Zymolyase® is solubilized in freshly prepared working buffer (for instance rescue buffer 50 mM Tris-Cl, pH 7,5, 10 mM EDTA, 0,3 % β-Mercaptoethanol) in the required working concentration directly prior to use.
Avoid using nitrocellulose filters when sterilizing - Zymolyase® may be adsorbed to nitrocellulose membranes.

**Other enzymatic activities contained:** β-1,3-glucanase, protease, mannanase. Trace amounts of amylase, xylanase, phosphatase.
**Stability:** at 30 °C 70 % of the lytic activity is lost after 3 months.
**Optimum temperature and pH:** at pH 7,5 - 35 °C for lysis of viable yeast cells, at pH 6,5 - 45 °C for hydrolysis of yeast glucan
**Specificity (lytic spectrum):** *Ashbya, Candida, Debaryomyces, Eremothecium, Endomyces, Hansenula, Hanseniaspora, Kloeckera, Kluyveromyces, Lipomyces, Metschnikowia, Pichia, Pullularia, Torulopsis, Saccharomyces, Saccharomycopsis, Saccharomycodes, Schwanniomyces,* etc.

| | | | |
|---|---|---|---|
| **9329.1** | 100 mg | glass | 278,45 € |
| **9329.2** | 500 mg | glass | 880,45 € |

## Zymolyase® 20T

**≥20 U/mg, for biochemistry and molecular biology**

For lysis of yeast cells. Isolated from *Arthrobacter luteus*.

Lyticase, β-1,3-glucan laminaripentaohydrolase

Storage temp.: +4 °C • Transport temp.: cooled

Zymolyase® 20T is prepared by ammonium sulfate precipitatation.

For further general information on Zymolyase® 20T see Zymolyase® 100T.

| | | | |
|---|---|---|---|
| **9324.1** | 100 mg | glass | 77,30 € |
| **9324.2** | 500 mg | glass | 220,40 € |
| **9324.3** | 1 g | glass | 385,95 € |

# Coenzymes



## Adenosin-5'-triphosphate disodium salt (ATP)

**≥98 %, for biochemistry**

Coenzyme of kinases.

ATP disodium salt

$C_{10}H_{14}N_5Na_2O_{13}P_3$ • M 551,10 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Discovered in 1929 by Karl Lohmann. Main molecular currency of energy in all cells and highly important regulator of energy providing processes. During hydrolysis of phospho-anhydride bonds, energy of 30.5 kJ/mol (ADP) or 45.6 kJ/Mol (AMP), respectively, is released. Ligand of purinergic receptors and intercellular signalling molecule. Additionally, ATP is coenzyme of phosphate-transferring kinases like proteine kinases A, proteine kinases C, calmodulin-dependent kinases, and substrate of adenylate cyclases, which synthesize the second-messenger molecule cAMP.

| | | | |
|---|---|---|---|
| **HN35.1** | 5 g | glass | 23,15 € |
| **HN35.2** | 10 g | glass | 32,80 € |
| **HN35.3** | 25 g | glass | 61,20 € |
| **HN35.4** | 100 g | glass | 203,20 € |

## Coenzyme Q 10

**≥98 %, for biochemistry**

Ubiquinone 50

$C_{59}H_{90}O_4$ • M 863,37 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Ubiquinones represent a vital component in electron transport of the mitochondrial respiratory chain (hydrogen/electron and oxygen carriers). They, therefore, are almost ubiquitously distributed through the species, with the only exclusion of gram positive bacteria and cyanobacteria. Coenzyme Q functions as electron carrier between flavoproteins and cytochrome molecules of the respiratory chain.
Well soluble in organic solvents (e. g. acetone, diethyl ether, chloroform) and fats. Virtually insoluble in water.

| | | | |
|---|---|---|---|
| **4047.1** | 25 mg | glass | 21,00 € |
| **4047.2** | 1 g | glass | 36,45 € |
| **4047.3** | 5 g | glass | 91,30 € |
| **4047.4** | 10 g | glass | 149,45 € |
| **4047.5** | 25 g | glass | 321,45 € |

## Flavine-adenine-dinucleotide disodium salt (FAD)

**CELLPURE® ≥95 %**

FAD disodium salt, Riboflavin-5'-adenosine diphosphate disodium salt

$C_{27}H_{31}O_{15}N_9Na_2P_2$ • M 865,55 g/mol • Storage temp.: +4 °C

**Endotoxins: ≤100 E.U./g**

| | | | |
|---|---|---|---|
| **6833.1** | 10 mg | glass | 25,30 € |
| **6833.2** | 50 mg | glass | 37,55 € |
| **6833.3** | 100 mg | glass | 50,45 € |

## Flavine-adenine-dinucleotide disodium salt (FAD)

**≥95 %, for biochemisty**

FAD disodium salt, Riboflavin-5'-adenosine diphosphate disodium salt

$C_{27}H_{31}O_{15}N_9Na_2P_2$

M 865,55 g/mol

Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **5581.2** | 10 mg | glass | 18,20 € |
| **5581.3** | 25 mg | glass | 23,15 € |
| **5581.1** | 100 mg | glass | 46,15 € |
| **5581.4** | 500 mg | glass | 57,95 € |
| **5581.5** | 1 g | glass | 93,45 € |

## NAD

**≥97,5 %, for biochemistry**

NAD free acid, β-Nicotinamide adenine dinucleotide, DPN, Coenzyme I, β-NAD.

$C_{21}H_{27}N_7O_{14}P_2$

M 663,4 g/mol

Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **AE11.1** | 1 g | glass | 29,60 € |
| **AE11.2** | 5 g | glass | 117,75 € |
| **AE11.3** | 10 g | glass | 205,90 € |

## NADH disodium salt

**≥98 %, for biochemistry**

NADH-$Na_2$, β-Nicotinamide adenine dinucleotide disodium salt, DPN$H_2$-$Na_2$

$C_{21}H_{27}N_7O_{14}P_2Na_2$

M 709,4 g/mol

Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **AE12.1** | 1 g | glass | 44,00 € |
| **AE12.2** | 5 g | glass | 195,15 € |
| **AE12.3** | 10 g | glass | 353,70 € |

## NADP disodium salt

**≥97 %, for biochemistry**

NADP-$Na_2$, β-Nicotinamide adenine dinucleotide phosphate disodium salt.

$C_{21}H_{26}N_7O_{17}P_3Na_2$

M 787,4 g/mol

Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **AE13.1** | 250 mg | glass | 35,40 € |
| **AE13.2** | 500 mg | glass | 64,00 € |
| **AE13.3** | 1 g | glass | 120,95 € |

## NADPH tetrasodium salt

**≥97 %, for biochemistry**

NADPH-$Na_4$, β-Nicotinamide adenine dinucleotide phosphate tetrasodium salt.

$C_{21}H_{26}N_7O_{17}P_3Na_4$

M 833,4 g/mol

Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **AE14.1** | 100 mg | glass | 80,55 € |
| **AE14.2** | 250 mg | glass | 180,10 € |
| **AE14.3** | 500 mg | glass | 317,15 € |

# Inhibitors

Enzyme inhibitors are molecules that bind to enzymes and decrease their activity. The classification of inhibitors, which can stem from various substance classes, results from the type of inhibition (reversible with subclasses, or irreversible) or the target molecule (e.g. serine protease inhibitors).
Generally, for inhibition of specific proteins in biochemical assays single specific inhibitors are used, while a suitable inhibitor cocktail is recommended for work on protein mixtures such as cellular or tissue extracts.
At Roth you will find both inhibitor cocktails for all common extracts, as well as the most important individual inhibitors.

## Inhibitor Cocktails

| Inhibitor Cocktail | Standard | BroadRange | Plus | Tissue | Bacteria | His-tag |
|---|---|---|---|---|---|---|
| Art. No. | 3743 | 3749 | 3751 | 3755 | 3758 | 3760 |
| Shipment | lyophilised (uncooled) | lyophilised (uncooled) | in 1 ml DMSO (uncooled) | lyophilised (uncooled) | lyophilised (uncooled) | in 1 ml DMSO (cooled) |
| Dilution/stock sol. | 100 ml 1x sol. | 1 ml 100x stock sol. | for 20 g tissue | 1 ml 100x stock sol. | 5 ml 40x stock sol. | 1 ml 100x stock sol. |
| AEBSF | 1,67 mM | 50 mM | 100 mM | 50 mM | 20 mM | 100 mM |
| Aprotinin | - | 15 µM | 80 µM | 15 µM | - | - |
| Bestatin | - | - | 5 mM | - | 1,7 mM | 5 mM |
| E-64 | - | 100 µM | 1,5 mM | 100 µM | 200 µM | 1,5 mM |
| EDTA | 13,44 mM | 50 mM | - | - | 85 mM | - |
| Leupeptin | 2,0 µM | 100 µM | 2 mM | 100 µM | - | 0,2 mM |
| Pepstatin A | 1,46 µM | - | 1 mM | - | 2 mM | - |
| Phosphoramidon | - | - | - | - | - | 2 mM |
| Recommended for | Extracts without special proteases, basic sol. for own inhibitors | Broad band effects. Extracts from eukaryotic tissue | Broad band effects. Extracts from mammalian cells and tissue | Extracts from mammalian cells and tissue | Bacterial extracts | Extractions of His-tagged proteins |



Please note our **Technical Information Brochure** on the Internet next to the products:

**Protease Inhibitor Cocktails**
Overview and recommendations for application

### Inhibitor Cocktail Standard

**for biochemistry**

General cocktail of protease inhibitors.
Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H314-H332-H373

Inhibitor cocktail for inhibition of standard proteases. Inhibits serine proteases, metalloproteases, cysteine proteases, trypsin-like proteases, and aspartic proteases.
Recommended as cocktail for protease inhibition during standard extraction without presence of special proteases, or as basic solution for supplementation with own inhibitors.

Well water-soluble. The premixed powder may easily be reconstituted in 100 ml distilled water or extraction buffer to form a 1x inhibitor solution.
End concentrations in 1x solution are:
AEBSF: 1.67 mM
EDTA: 13.44 mM
Leupeptin: 2.1 µM
Pepstatin A: 1.46 µM
Storage of inhibitor solution: 4 °C max. 90 days
Do not freeze the solution!

| | | | |
|---|---|---|---|
| **3743.1** | 1 vial | plastic | 125,25 € |

### Inhibitor Cocktail BroadRange

**for biochemistry**

Broad range cocktail of protease inhibitors.
Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H314-H332-H373

Inhibitor cocktail for inhibition of a broad range of proteases. Inhibits serine proteases, esterases, metalloproteases, cysteine proteases, and trypsin-like proteases.
Recommended as cocktail for protease inhibition during tissue extraction.
1 vial is prepared for the inhibition of proteases from 1-2 g material.

Well water-soluble. The premixed powder may easily be reconstituted in 1 ml distilled water to form a approx. 100x inhibitor stock-solution.
Concentrations in stock-solution are:
AEBSF: 50 mM
Aprotinin: 15 µM
E-64: 100 µM
EDTA: 50 mM
Leupeptin: 100 µM
Storage of aliquoted inhibitor solution: -20 °C max. 1 month

| | | | |
|---|---|---|---|
| **3749.1** | 1 vial | plastic | 53,65 € |

## Inhibitor Cocktail Plus

**ready-to-use, for biochemistry**

Broad range cocktail of protease inhibitors for extracts of mammalian cells or tissue.

Storage temp.: -20 °C • Transport temp.: cooled

**Warning** H315-H319

Inhibitor cocktail for inhibition of a broad range of proteases. Inhibits serine proteases, esterases, aminopeptidase B, leucine-aminopeptidases, cysteine proteases, trypsin-like proteases, and aspartic proteases.
Recommended as cocktail for protease inhibition particularly in extracts from mammalian cells or tissue. 1 ml is prepared for the inhibition of proteases from 20 g cells or tissue.

Provided as stock-solution in DMSO.
Concentrations per vial are:
AEBSF: 100 mM
Aprotinin: 80 µM
Bestatin: 5 mM
E-64: 1.5 mM
Leupeptin: 2 mM
Pepstatin A: 1 mM
Storage of inhibitor solution: -20 °C max. 6 months

| | | | |
|---|---|---|---|
| **3751.1** | 1 ml | plastic | 85,90 € |

## Inhibitor Cocktail His-tag

**ready-to-use, for biochemistry**

Broad range cocktail of protease inhibitors for extraction of His-tagged proteins.

Storage temp.: -20 °C • Transport temp.: cooled

**Danger** H318-H315

Inhibitor cocktail for inhibition of a broad range of proteases. Inhibits serine proteases, aminopeptidase B, leucine-aminopeptidases, cysteine proteases, aspartic proteases, and metalloendopeptidases.
Recommended as cocktail for protease inhibition particularly for extraction of His-tagged proteins from bacterial extracts. 1 ml is prepared for the inhibition of proteases in extracts from 10 g bacterial cells. Recommended dilution approx. 1:100.

Provided as stock-solution in DMSO.
Concentrations per vial are:
AEBSF: 100 mM
Bestatin: 5 mM
E-64: 1.5 mM
Pepstatin A: 0.2 mM
Phosphoamidon: 2 mM
Storage of inhibitor solution: -20 °C max. 6 months

| | | | |
|---|---|---|---|
| **3760.1** | 1 ml | plastic | 94,50 € |

## Inhibitor Cocktail Tissue

**for biochemistry**

Cocktail of protease inhibitors for extracts of mammalian cells or tissue.

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H314

Inhibitor cocktail. Inhibits serine proteases, esterases, cysteine proteases, and trypsin-like proteases.
Recommended as cocktail for protease inhibition particularly in extracts from mammalian cells or tissue.

Well water-soluble and hygroscopic. The premixed powder may easily be reconstituted in 1 ml distilled water to form an inhibitor stock-solution. 1 vial is prepared for the inhibition of proteases from approx. 2 g cells or tissue. Recommended dilution is 1:100. End concentration for the respective extract has to be optimized.
Concentrations in stock-solution are:
AEBSF: 50 mM
Aprotinin: 15 µM
E-64: 100 µM
Leupeptin: 100 µM
Storage of aliquoted inhibitor solution: -20 °C max. 6 months

| | | | |
|---|---|---|---|
| **3755.1** | 1 vial | plastic | 46,15 € |

## Inhibitor Cocktail Bacteria

**for biochemistry**

Broad range cocktail of protease inhibitors for extracts from bacteria.

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H314

Inhibitor cocktail for inhibition of standard proteases. Inhibits serine proteases, aminopeptidase B, leucine-aminopeptidases, metalloproteases, cysteine proteases, and aspartic proteases.
Recommended as cocktail for protease inhibition in extracts from bacteria.

Well soluble in DMSO and hygroscopic. The premixed powder (Art. No. 3947) may easily be reconstituted in 1 ml DMSO and may then be diluted with 4 ml distilled water to form a slightly opaque inhibitor stock-solution. 1 vial is prepared for the inhibition of proteases from approx. 20 g *E. coli*. Recommended dilution approx. 1:40.
Concentrations in stock-solution are:
AEBSF: 20 mM
Bestatin: 1.7 mM
E-64: 200 µM
EDTA: 85 mM
Pepstatin A: 2 mM
DMSO (1 ml) for reconstitution of the lyophilized inhibitor mix is included (Art. No. 3949).
Storage of aliquoted inhibitor solution: -20 °C max. 6 months.
Contents of this Kit may not be bought separately.

| | | | |
|---|---|---|---|
| **3758.1** | 1 set | plastic | 95,60 € |

# Individual Inhibitors



## AEBSF hydrochloride

**≥98 %, for biochemistry**

Inhibitor of serine proteases
4-(2-Aminoethyl)benzenesulfonyl fluoride hydrochloride
$C_8H_{10}FNO_2S \cdot HCl$
M 239,69 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H314

Serine protease inhibitor. Irreversible inhibition of trypsin, chymotrypsin, plasmin, kallikrein, thrombin by sulphurizing a functional group in the active centre of an enzyme. Due to its low toxicity, AEBSF is a good alternative to PMSF.

**Application:**
Easily water-soluble, resulting in an acidic pH-value. Optimal at pH 6.5, alkali-labile. Avoid pH-value 7 and do not exceed pH-value 9.
Stock solution: 5-50 mg/ml (20-200 mM) in $H_2O$
Storage of stock solution: at -20 °C max. 6 months
Working concentration: 0.1-5 mM

| | | | |
|---|---|---|---|
| **2931.1** | 25 mg | plastic | 19,25 € |
| **2931.2** | 100 mg | plastic | 38,20 € |
| **2931.3** | 500 mg | plastic | 141,40 € |

## 4-Aminobenzamidine dihydrochloride

**≥98 %, for biochemistry**

Potent inhibitor of serine proteases.

p-Aminobenzamidine dihydrochloride

$C_7H_9N_3 \cdot 2\ HCl$

M 208,09 g/mol

Storage temp.: +4 °C

**Warning** H315-H319-H335

Competitive inhibitor of trypsin and trypsin-like enzymes, thrombin and plasmin.

**Application:**
Stock solution: 100-200 mg/ml (0.5-1 M) in $H_2O$ and alcohol
Storage of stock solution at -20 °C
Working concentration: 100-400 µg/ml (0.5-2 mM)
Aminobenzamidine is sensitive to oxidation. It is recommended to prepare fresh solutions each time for use. Stock solutions should only be stored for a short time.

| | | | |
|---|---|---|---|
| **CN71.1** | 1 g | glass | 14,95 € |
| **CN71.2** | 5 g | plastic | 59,05 € |
| **CN71.3** | 10 g | plastic | 107,40 € |

## Antipain dihydrochloride

**≥30 U/mg, for biochemistry**

Inhibitor of serine/cysteine proteases and trypsin-like serine proteases.

N-(Nα-Carbonyl-Arg-Val-Arg-al)-Phe dihydrochloride

$C_{27}H_{44}N_{10}O_6 \cdot 2\ HCl$

M 677,6 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Serine/cysteine protease inhibitor and in general of proteases similar to trypsin. Antipain was isolated from streptomycin (actinomycetes). Reversible inhibition of papain (derivation of the name: anti-papain), trypsin, cathepsin A, B, D, plasmin, chymotrypsin, pepsin and calpain I. Antipain has a similar spectrum of activity to leupeptin.

**Application:**
Stock solution: 50 mg/ml (75 mM in $H_2O$, DMSO or ethanol
Storage of stock solution: at -20 °C max. 1 month
Working concentration: 10-50 µg/ml (15-75 µM)

| | | | |
|---|---|---|---|
| **2933.1** | 5 mg | plastic | 53,25 € |
| **2933.2** | 25 mg | plastic | 193,00 € |

## Aprotinin

**≥3,0 PEU/mg, for biochemistry**

Inhibitor of serine proteases.

M 6500 g/mol

Storage temp.: +4 °C

Inhibitor for inhibition of serine proteases, lyophilized and made of beef lung. Aprotinin inhibits trypsin, chymotrypsin, plasmin and kallikrein with high activity.
Dissolves easily in water; pH-optimum: 7.0-8.0.
Specific Activity: ≥3.0 PEU/mg corresponding to ≥5400 KIU/mg
Activity: Kininogenase Inhibitor Units (KIU) = PEU x 1800
Kininogenase Inhibitor Units (KIU) correspond to Kallikrein Inhibitor Units.

**Application:**
Stock solution: 1.54 mM (10 mg/ml) in $H_2O$ or buffer
Storage of stock solution: in aliquots at -20 °C
Recommended end concentration: 1.54 µM (10 µg/ml)

| | | | |
|---|---|---|---|
| **A162.1** | 10 mg | glass | 36,45 € |
| **A162.2** | 50 mg | glass | 107,40 € |
| **A162.3** | 100 mg | glass | 195,15 € |
| **A162.4** | 500 mg | glass | 736,40 € |

## Bacitracin

**≥60 IU/mg, Ph.Eur., for biochemistry**

Peptide antibiotic and protease inhibitor.

$C_{66}H_{103}N_{17}O_{16}S$

M 1422,72 g/mol

Storage temp.: +4 °C

Inhibits cell wall biosynthesis in gram-positive bacteria and *Neisseria* by interaction with murein biosynthesis.
Also used as protease-inhibitor for inhibition of the gluthatione-insuline-transhydrogenase or some endopeptidases.

**Application:**
Stock solution: 100-1000 mg/ml in $H_2O$ or ethanol
Storage of stock solution at -20 °C
Working concentration: 0.1-1 mg/ml (0.07-0.7 mM)
Bacitracin is very stable in a pH range of 4-5, but is rapidly inactivated in pH of over 5 at room temperature.
Do not use at a pH of over 8.

| | | | |
|---|---|---|---|
| **5655.1** | 5 g | glass | 53,25 € |
| **5655.2** | 25 g | plastic | 220,40 € |

## Benzamidine hydrochloride monohydrate

**≥98 %, for biochemistry**

Inhibitor of serine proteases.

$C_7H_8N_2 \cdot HCl \cdot H_2O$

M 174,63 g/mol

Storage temp.: +4 °C

**Warning** H315-H319-H335

Competitive inhibitor of trypsin and trypsin-like enzymes, acrosin, thrombin and plasmin.

**Application:**
Stock solution: 100-150 mg/ml (0.65-1 M) in $H_2O$ and alcohol
Storage of stock solution at -20 °C
Working concentration: 150-750 µg/ml (1-5 mM)
Benzamidine is sensitive to oxidation. It is recommended to prepare fresh solutions each time for use. Stock solutions should only be stored for a short time.

| | | | |
|---|---|---|---|
| **CN38.1** | 5 g | plastic | 17,75 € |
| **CN38.2** | 10 g | plastic | 25,30 € |
| **CN38.3** | 25 g | plastic | 48,95 € |

## Bestatin hydrochloride

**≥98 %, for biochemistry**

Inhibitor of aminopeptidases

N-[(2S,3R)-3-Amino-2-hydroxy-4-phenyl-buturyl]-L-leucin hydrochloride

$C_{16}H_{24}N_2O_4 \cdot HCl$

M 344,84 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Aminopeptidase inhibitor. Competitive and specific inhibition of aminopeptidase B, leucin-aminipeptidase and triaminopeptidase. Does not inhibit aminopeptidase A, trypsin, chymotripyin, elastase, papain, pepsin, thermolysin. Bestatin does not have an antibacterial effect and is non-fungicidal, its low toxicity making it easy to use.

**Application:**
Stock solution: 1-15 mM (0.35-5mg/ml) in methanol
Storage of stock solution: at -20 °C max. 1 month
Working concentration: 10-100 µM

| | | | |
|---|---|---|---|
| **2937.1** | 5 mg | plastic | 76,25 € |
| **2937.2** | 25 mg | plastic | 273,60 € |

**Safety data sheets**
can be found on the Internet next to the product description.

## E-64

**≥99 %, for biochemistry**

Inhibitor of cysteine proteases.

N-[N-(L-3-trans-Carboxyoxirane-2-carbonyl)-leucyl]-agmatine,

N-(trans-Epoxysuccinyl)-L-leucine-4-guanidinobutylamide

$C_{15}H_{27}N_5O_5 \cdot 0{,}5\ H_2O$

M 357,41 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Irreversible, strong and highly selective inhibition of cysteine protease (e.g. papain, bromelain, ficin, cathepsin B, H and L, tumor-cathepsin, calpain etc.). Does not inhibit serine proteases except trypsin. Low toxicity, high cell permeability and stability against reducing reagents makes E-64 an excellent alternative to leupeptin or antipain.

**Application:**
Stock solution: 1 mM (360 µg/ml) in $H_2O$, DMSO or ethanol
Storage of stock solution: at -20 °C max. 3 months
Working concentration: 1-10 µM

| | | | |
|---|---|---|---|
| **2935.1** | 5 mg | plastic | 88,05 € |
| **2935.2** | 25 mg | plastic | 314,45 € |

## EDTA disodium salt dihydrate

**≥99 %, p.a., ACS**

For molecular biology and biochemistry.

Ethylenediamine tetraacetic acid disodium salt dihydrate,

Titration complex III

$C_{10}H_{14}N_2Na_2O_8 \cdot 2\ H_2O$

M 372,24 g/mol

**Warning** H332-H373

EDTA forms chelate complexes with $Mg^{2+}$-ions and other bivalent metal cations. It can therefore be applied as a general inhibitor for all enzymes which require such metal cations to function (e.g. DNases and metal proteases).

**Application:**
Stock solution: 0.5 M in water, pH 8.5.
Recommended final concentration for enzyme inhibition 1-10 mM.
The disodium salt of EDTA only dissolves when the pH-value is around 8.0.

| | | | |
|---|---|---|---|
| **8043.3** | 100 g | plastic | 21,40 € |
| **8043.1** | 250 g | plastic | 34,30 € |
| **8043.2** | 1 kg | plastic | 100,55 € |
| Original pack 6 x 1 kg | | | 95,52/1 kg |
| **8043.4** | 5 kg | plastic | 364,45 € |
| **8043.5** | 25 kg BIG PACK | plastic | 826,70 € |

## EGTA

**≥99 %, p.a.**

For molecular biology and biochemistry.

Ethylene glycol bis(β-aminoethyl)-ether) N,N,N',N' tetraacetic acid

$C_{14}H_{24}N_2O_{10}$

M 380,35 g/mol

Unspecific protease inhibitor highly similar to EDTA. Inhibition results from chelating of calcium- and magnesium ions leading to their removal from the surrounding medium. However, affinity to $calcium^{2+}$ is much higher than that to $magnesium^{2+}$. The inhibitory effect can be compensated by an excess of $calcium^{2+}$ or $magnesium^{2+}$.

$pK_a$ calcium (pH 7): approx. 6.9

| | | | |
|---|---|---|---|
| **3054.1** | 10 g | plastic | 34,30 € |
| **3054.2** | 50 g | plastic | 134,40 € |
| **3054.3** | 100 g | plastic | 233,85 € |

▶ Geldanamycine see page 1261

## Genistein

**≥98 %, for biochemistry**

Inhibitor of tyrosine specific protein kinases.

Prunetol, Genisteol, 4',5,7-Trihydroxyisoflavone

$C_{15}H_{10}O_5$

M 270,24 g/mol

Storage temp.: +4 °C

Competitive inhibitor of ATP binding to the catalytic domain of tyrosin kinases. Exceptional are the insulin receptor tyrosin kinase and the serin-/threonin specific proteases, which will not be inhibited by genistein. An additional, tyrosin kinase independent, effect of genistein is the inhibition of topoisomerases I and II.

**Application:**
Stock solution: 100 mg/ml (370 mM) in DMSO
Storage of stock solution: +4 °C oder -20 °C
Working concentration: 10-100 µM

| | | | |
|---|---|---|---|
| **0716.1** | 25 mg | plastic | 64,40 € |
| **0716.2** | 50 mg | plastic | 90,20 € |
| **0716.3** | 100 mg | plastic | 154,70 € |

### The Mechanisms of Enzyme Inhibition

Depending on the binding of the inhibitor, you may find both *reversible* and *irreversible inhibition*.

In **reversible enzyme inhibition** the inhibitor doesn't bind closely to the enzyme and can be separated or displaced in succession. It lowers its activity and/or the speed constant of the reaction of the substrate to the product. It also establishes a balance between the enzyme-inhibitor complexes with or without substrate. Metabolic processes are typical examples of this, which, depending on the physiological state of the cells, either are enhanced or inhibited.

*Competitive inhibitors* are reagents which compete with substrate (A) for the binding site in the enzyme's active center and increase the Michaelis Menten constant of the enzyme. They are either extremely similar to the substrate (but are not converted and can be displaced again by the substrate) or even represent a second substrate and thereby competitively inhibit the conversion of substrate A.

In *non-competitive inhibition* the inhibitor does not bind in the active center but through binding, it changes the enzyme's tertiary structure to such an extent that a product can no longer be produced/set free.

*Uncompetitive inhibition* is a special case where the inhibitor can only interact with the enzyme-substrate complex and it changes both the MM-constant as well as the maximum reaction speed.

In *partial-competitive inhibition*, binding of the inhibitor lowers the affinity of the enzyme to the substrate without influencing the speed constants.

In **irreversible inhibition**, the inhibitor binds so closely that it can no longer be separated from the enzyme and thus the activity of the enzyme is permanently reduced or destroyed. Typical examples of this are protein-synthesis inhibitive antibiotics or "suicide substrates" which bind covalently to the active center.

## β-Glycerophosphate disodium salt pentahydrate

**≥97 %, for biochemistry**

Phosphatase inhibitor

$C_3H_7Na_2O_6P \cdot 5\ H_2O$

M 306,12 g/mol

Simple organic phosphate donor and substrate for phosphatase.
As additive for cell culture media and lysis buffer.

**Application:**
Stock solution: 1 M (306 mg/ml) in $H_2O$, aliquot in 1 ml reaction vials after 0.2 µm filtration
Storage of stock solution: at -20 °C
Working concentration: 10-50 mM

| | | | |
|---|---|---|---|
| **6847.1** | 50 g | glass | 48,30 € |
| **6847.2** | 100 g | glass | 88,70 € |
| **6847.3** | 250 g | glass | 203,20 € |
| **6847.4** | 500 g | glass | 385,95 € |
| Original pack 6 x 500 g | | | 366,65/500 g |

## Geldanamycin

**≥98 %, for biochemistry**

HSP90 inhibitor, tyrosine kinase inhibitor. Benzoquinone ansamycin antibiotic. Binds specifically to the heat shock protein HSP90.

$C_{29}H_{40}N_2O_9$
M 560,64 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.

The specific binding of geldanamycin to heat shock protein 90 (HSP90) and its ER homologue GP96 leads to inhibition of the chaperone, results in degradation of Hsp90 substrates and, subsequently, to deregulation of central cell mechanisms - cell cycle, cell proliferation, apoptosis/cell vitality. Geldanamycin arrests cells in $G_2$ phase, thus interfering with angiogenesis and oncogenesis. Due to its antitumor potential it may be used as antibiotic against several eucaryotic carcinogenic cell lines. Additionally, geldanamycin is used as inhibitor of tyrosin-kinase and during analysis of several other physiological regulatory mechanisms.

**Application:**
Stock solution: 1000x in DMSO or methanol
Storage of stock solution at -20 °C, max. 2 weeks at 4 °C
Working concentration: 1-10 µg/ml
Photo sensitive! Store protected from light.

| | | | |
|---|---|---|---|
| **HN71.1** | 1 mg | glass | 67,20 € |
| **HN71.2** | 5 mg | glass | 166,10 € |
| **HN71.3** | 10 mg | glass | 238,15 € |

## Leupeptin hemisulphate

**≥96,5 %, for biochemistry**

Reversible inhibitor of serine- and cysteine proteases.

Acetyl-Leu-Leu-argininal
$C_{20}H_{38}N_6O_4 \cdot 0{,}5\ H_2SO_4$
M 475,99 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.

Leupeptin competitively inhibits calpain, cathepsin B, kallikrein, papain, plasmin and trypsin. Inhibition of thrombin is controversely discussed. Little or non-inhibiting for pepsin, cathepsin A and D and chymotrypsin.

**Application:**
Stock solution: 5 mg/ml (10 mM) in $H_2O$, ethanol, acetic acid and DMF.
Stock solution is stabile at +4 °C for approx. 7 days.
Recommended storage of stock solution at -20 °C (6 months).
Working concentration: 0.5-50 µg/ml (1-100 µM)
Working solutions are stabile only for few hours. Due to its aldehyde groups, leupeptin may interfere with protein detection assays (e. g. Bradford).

| | | | |
|---|---|---|---|
| **CN33.1** | 10 mg | glass | 45,70 € |
| **CN33.2** | 25 mg | glass | 95,60 € |
| **CN33.3** | 50 mg | glass | 169,35 € |
| **CN33.4** | 100 mg | glass | 310,70 € |

▶ HSP90 Inhibitor Novobiocin see page 1431

Please note our **Technical Information Brochure** on the Internet next to the products:

**Protease Inhibitors**
Overview and recommendations for application

## Pefabloc® SC-Protease Inhibitor

**≥95 %, for biochemistry**

Irreversible inhibitor of serine proteases.
4-(2-Aminoethyl)-benzylsulphonyl fluoride hydrochloride
$C_8H_{10}NSO_2F \cdot HCl$
M 239,7 g/mol
Storage temp.: +4 °C

**Danger** H314

Broadband inhibitor for serine proteases. Reacts covalently with the serin of the active center. Alternative to PMSF and DFP with a great number of advantages to standard inhibitors:

- Extremely low toxicity ($LD_{50}$ >2.800 mg/kg)
- Stability in neutral range
- High solubility in aqueous buffers
- Wide spectrum of specifity for serin protease
- Minimal reaction to cell growth

**Application:**
Stock solution 5-50 mg/ml in water; stable with neutral pH.
Working concentration: 1-5 mM.
Pefabloc® reacts with thiols. DTT and β-mercaptoethanol reduce the inhibitory effect.

®Registered trademark of Pentapharm AG, Basel.

| | | | |
|---|---|---|---|
| **A154.1** | 100 mg | glass | 68,30 € |
| **A154.2** | 500 mg | glass | 284,90 € |
| **A154.3** | 1 g | glass | 499,90 € |

### Proteinase Inhibitor Cocktail - General Recommendation

We recommend using the following mixture as a standard cocktail for inhibiting proteases in protein solutions. Please note, however, that it may be necessary to adapt the concentration of individual inhibitors in your experiments if the inhibitory efficiency is not adequate.

**Simple inhibitor cocktail for low-protease extracts**

| Inhibitor | Art. No. | Conc. | Amount | Inhibition of |
|---|---|---|---|---|
| Aprotinin | A162 | 1.54 µM | 10 µg/ml | Serine proteases, esterases |
| EDTA* | 8043 | 10 mM | 3.7 mg/ml | Metalloproteases |
| PMSF | 6367 | 1 mM | 147 µg/ml | Serine- and cysteine proteases |
| Trypsin-Inhibitor | 5279 | - | 10 µg/ml | Trypsin and trypsin-like proteases |

**Broadband inhibitor cocktail for tissue extracts**

| Inhibitor | Art. No. | Conc. | Amount | Inhibition of |
|---|---|---|---|---|
| AEBSF | 2931 | 1 mM | 0.25 mg/ml | Serine proteases |
| Aprotinin | A162 | 1.54 µM | 10 µg/ml | Serine proteases, esterases |
| Bestatin | 2937 | 50 µM | 17.5 µg/ml | Amino peptidases |
| E-64 | 2935 | 5 µM | 1.8 µg/ml | Cysteine proteases |
| EDTA* | 8043 | 10 mM | 3.7 mg/ml | Metalloproteases |
| Leupeptin | CN33 | 50 µM | 25 µg/ml | Serine- and cysteine proteases, trypsin-like proteases |
| Pepstatin A | 2936 | 1 µM | 0.7 µg/ml | Acidic proteases, aspartat proteases |

*EDTA-concentration can be reduced to 0.2 mM because of downstream assays.

The inhibitors may be prepared in each case as a 100x or 1000x stock solution (see individual products for further information). Aprotinin, DTT, EDTA and the trypsin inhibitor may be mixed to a ready-to-use cocktail and aliquoted frozen at -80 °C. PMSF is not water-soluble and should be added separately to the protein solution.

## Pepstatin A

**≥98 %, for biochemistry**

Inhibitor of acidic/aspartic proteases

Iva-Val-Val-Sta-Ala-Sta

$C_{34}H_{63}N_5O_9$

M 685,91 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Inhibits acidic proteases (aspartat proteases). Isolated from streptomycin and other actinomycetes. Strong, highly selective inhibition of pepsin, renin, cathepsin D, chymosin, protease B and also of retroviral proteases. No inhibitive effect on thiolproteases, neutral proteases and serine proteases. Hardly toxic.

**Application:**
Stock solution: 1 mM (685 µg/ml) in DMSO or methanol
Storage of stock solution: at -20 °C max. 1 month, at +4 °C max. 1 week
Working concentration: 0.5-1 µM
It may be necessary to add 10-50 % acetic acid to completely dissolve pepstatin A.

| | | | |
|---|---|---|---|
| **2936.1** | 5 mg | plastic | 30,00 € |
| **2936.2** | 25 mg | plastic | 88,05 € |
| **2936.3** | 100 mg | plastic | 276,85 € |

## Phenylmethyl sulphonyl fluoride (PMSF)

**≥99 %, for biochemistry**

Irreversible inhibitor of serine- and cysteine proteases.

α-Toluene sulphonyl fluoride, PMSF

$C_7H_7FO_2S$

M 174,2 g/mol

**Danger** H301-H314

General, irreversible inhibitor of serin proteases (chymotrypsin, trypsin and thrombin) and for the dystin-protease papain. Inhibiton by sulphonation of the serine localised in the enzymatic active site.
Reversible inhibitor of cysteine-proteases. $K_i$ = 0.91 ±0.01 mM

**Application:**
Dissolves easily in isopropanol, ethanol and methanol. Not stable in aqueous solution.
Stock solution: 17.4 mg/ml (100 mM) in isopropanol, ethanol or methanol.
For stock solutions of 200-250 mM heat shortly (approx. 30 mins) to 30 °C.
Stock solutions should be stored at -20 °C. Short term storage of few weeks may be done at +4 °C in the dark.
Working concentration: 17-174 µg/ml (0.1-1 mM). Not stable in aqueous solutions (half-life value of 1 h at pH 7.5/RT).

At every stage of isolating or purifying the proteins, PMSF should be added fresh from the stock solution. PMSF is often not sufficient as the only protease inhibitor in the preparation to protect against decomposition processes, as for example high salt concentration (3.0 M) impairs the inhibitory effect of PMSF.
PMSF reacts with thiols. DTT and β-mercaptoethanol reduce the inhibitory effect.

For your convenience, Art. No. 6367.4 comes packed in a 30 ml brown glass bottle. Addition of 20 ml 2-propanol results in a 100 mM stock solution.

| | | | |
|---|---|---|---|
| **6367.1** | 5 g | plastic | 30,00 € |
| **6367.2** | 25 g | plastic | 99,90 € |
| **6367.3** | 100 g | plastic | 284,35 € |
| **6367.4** | 348 mg, in 30 ml glass bottle | TIP | 14,20 € |

**Safety data sheets**
can be found on the Internet next to the product description.

## Radicicol

**≥98 %, for biochemistry**

Strong HSP90 inhibitor, macrolactone antibiotic. Binds specifically to the heat shock protein HSP90.

$C_{18}H_{17}ClO_6$

M 364,79 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H301-H315-H319-H335

The strong specific binding of radicicol to heat shock protein 90 (HSP90) leads to deregulation of its target mechanisms: cell cycle, cell proliferation, apoptosis/cell vitality. Also binds to yeast HSP90, *E.coli* HtpG and TRAP-1. Antifungal effects are probably caused by inactivation of chitin synthase in fungal cells.

**Application:**
Stock solution: 10 mg/ml (27 mM) in ethanol or DMSO
Storage of stock solution at -20 °C, max. 2 weeks at 4 °C
Working concentration: 5-300 µM
Photo sensitive! Store protected from light.

| | | | |
|---|---|---|---|
| **HN72.1** | 1 mg | glass | 94,50 € |
| **HN72.2** | 5 mg | glass | 381,65 € |
| **HN72.3** | 10 mg | glass | 600,95 € |

## Trypsin inhibitor

**≥10000 BAEE U/mg**

Made from soybeans. High-activity inhibitor of trypsin, chymotrypsin, and other proteolytic enzymes.

Storage temp.: +4 °C

Trypsin inhibitor inhibits Trypsin with high effiency, and, to a lesser extent, chymotrypsin. Additionally, there is a light inhibiting effect on plasmin, kallikrein, thrombin and a few other proteolytic enzymes.
1 mg of lyophilisate inhibits at minimum 10.000 BAEE Units of trypsin.
Application in cell culture (stock solution 1 mg/ml): Following trypsination, add the same volume inhibitor solution as was used for trypsin. Zentrifuge cells (5 mins, 1000 rpm), and remove supernatant. Resuspend cells in medium and cultivate further.

**Application:**
Stock solution: 1-10 mg/ml in $H_2O$, PBS or other phosphate-buffers.
Solutions of higher concentration may be hazy and slightly yellow-coloured.
Storage of stock solution: in aliquots at -20 °C.
Recommended end concentration: 1-100 µg/ml.
pH optimum: pH 7.6 - 8.0.

| | | | |
|---|---|---|---|
| **2949.1** | 25 mg | plastic | 30,65 € |
| **2949.2** | 100 mg | plastic | 77,95 € |
| **2949.3** | 250 mg | plastic | 160,20 € |
| **2949.4** | 500 mg | plastic | 274,15 € |
| **2949.5** | 1 g | plastic | 461,20 € |

## Trypsin inhibitor

**≥7000 BAEE U/mg, salt free**

Made from soybeans. Inhibition of trypsin, chymotrypsin, plasmin, kallikrein, thrombin and other proteolytic enzymes; free from salt.

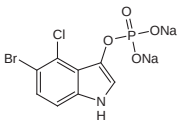
Storage temp.: -20 °C • Transport temp.: room temp.

**Application:**
Stock solution: 10 mg/ml in $H_2O$ or PBS.
Storage of stock solution: in aliquots at -20 °C.
Recommended end concentration: 2-100 µg/ml.

| | | | |
|---|---|---|---|
| **5279.1** | 100 mg | glass | 18,85 € |
| **5279.4** | 250 mg | glass | 36,45 € |
| **5279.5** | 500 mg | glass | 63,35 € |
| **5279.2** | 1 g | glass | 110,65 € |
| **5279.3** | 5 g | glass | 461,20 € |

# Substrates



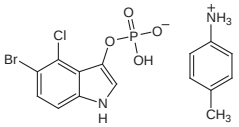


## BCIP-$Na_2$

**≥99 %**

Substrate for alkaline phosphatase, in particular in immunoblot procedures.
5-Bromo-4-chloro-3-indolyl phosphate disodium salt, X-phosphate disodium salt
$C_8H_4BrClNO_4PNa_2 \cdot 1,5\ H_2O$
M 397,46 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
In combination with NBT ideal for colorimetric detection of alkaline phosphatase activity, in particular in immunoblot procedures.
**Dissolves easily in water (20 mg/ml). Bad solubility in DMF.**
Protect from light and humidity.

| | | | |
|---|---|---|---|
| **A155.1** | 100 mg | glass | 27,45 € |
| **A155.2** | 500 mg | glass | 115,60 € |
| **A155.3** | 1 g | glass | 198,90 € |
| **A155.4** | 5 g | glass | 665,45 € |



## BCIP-p-toluidine salt / X-Phos

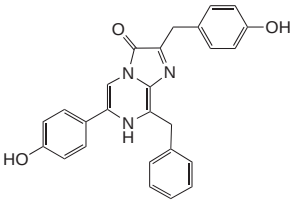
**≥99 %, BioScience-Grade**

Histochemical substrate for phosphatase.
5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt, X-Phos
$C_{15}H_{15}N_2O_4BrClP$
M 433,63 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.

**Warning** H371

In combination with NBT ideal for colorimetric detection of alkaline phosphatase activity, in immunohistochemical procedures.
By enzymatic dephosphorylation BCIP is converted to indoxyl which subsequently tautomerizes to the ketone. In basic pH values, this ketone dimerizes and, in doing so, releases $H^+$ ions. The dye precipitates in the direct vicinity of the phosphatase, hence staining this site in a weak blue colour. Enhencement and darkening of this colour is achieved by adding NBT (Art. No. 4421).
**Dissolves easily in dimethylformamide (20 mg/ml), hardly soluble in water.**
Protect from light and humidity.

| | | | |
|---|---|---|---|
| **6368.1** | 500 mg | glass | 35,40 € |
| **6368.2** | 1 g | glass | 68,30 € |
| **6368.3** | 5 g | glass | 261,80 € |

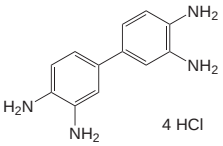


## Coelenterazine

**≥95 %, for biochemistry**

Luciferase substrate
$C_{26}H_{21}N_3O_3$
M 423,48 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
Substrate of the Renilla luciferase used for monitoring of the mitochondrial Calcium flux and of reportergenes. Coelenterazine is applied in bioluminescence resonance energy transfer (BRET) assays, ELISAs, HTS and in chemiluminescent detection of superoxide anion and peroxynitrite in cells or tissues.

| | | | |
|---|---|---|---|
| **4094.3** | 1 mg | glass | 56,45 € |
| **4094.4** | 2,5 mg | glass | 107,40 € |



## DAB

**≥98 %, p.a.**

Substrate of horseradish peroxidase. For detection of endogenous peroxidase and for immunohistochemical stainings.
3,3',4,4'-Tetra-aminobiphenyl tetrahydrochloride,3,3'-Diaminobenzidine tetrahydrochloride
$C_{12}H_{14}N_4 \cdot 4\ HCl$
M 360,10 g/mol
Storage temp.: +4 °C

**Warning** H315-H319-H341-H351-H335

Popular substrate of peroxidases. DAB is used for biochemical and histological detection of endogenous peroxidases like catalase and cytochome oxidase. Additionally, it is the most common substrate for horseradish peroxidase (HRP) in histochemical and cytological assays. DAB is oxidised by HRP, forming a brown precipitate, which is unsoluble in aqueous and organic solvents. This precipitate can be detected in visible light and does not bleach during long-term storage.

**Application:**
Stock solution: 1-2 % (10-20 mg/ml) in 50 mM Tris buffer, pH 7.3
Storage of stock solution in aliquots at -20 °C
Working concentration: 0.05-0.1 % (0.5-1 mg/ml) DAB in buffer (PBS, TBS, pH 7.0-7.6) containing 0.01 % hydrogen peroxide
Always use freshly prepared working solution. For oxidation high concentrations of fresh hydrogen peroxide are needed.

| | | | |
|---|---|---|---|
| **CN75.1** | 1 g | glass | 23,15 € |
| **CN75.2** | 5 g | plastic | 73,65 € |
| **CN75.3** | 10 g | plastic | 126,35 € |

## Roti®-DAB Kit

**for immunochemistry**

Substrate kit for detection of
HRP activity on blot membranes and slides.

DAB substrate kit, HRP substrate kit

Storage temp.: +4 °C • Transport temp.: cooled

**Danger** H302-H341-H351-H360D-H373

DAB substrate kit for detection of peroxidase (HRP) activity on immunoblots, immunohisto- and cytochemical slides and during *in situ* hybridization.
Roti®-DAB Kit contains substrate, buffer solution and activation reagent, therefore including all three solutions necessary for HRP detection reaction. Application is very simple - all three kit solutions are diluted equally in water, and the blotting filter membrane, or the slides, are then incubated in this substrate solution. Since the solutions are delivered in drop dispensers, dosing is most convenient.
DAB is oxidized by HRP, forming a brown precipitate, which is insoluble in aqueous and organic solvents. This precipitate can be detected in visible light and does not bleach during long-term storage. Addition of the DAB Metal Enhancer (Art. No. 9204) doubles the signal strength. Slides may be permanently mounted in hydrophilic, or, after dehydration, in hydrophobic mounting medium.

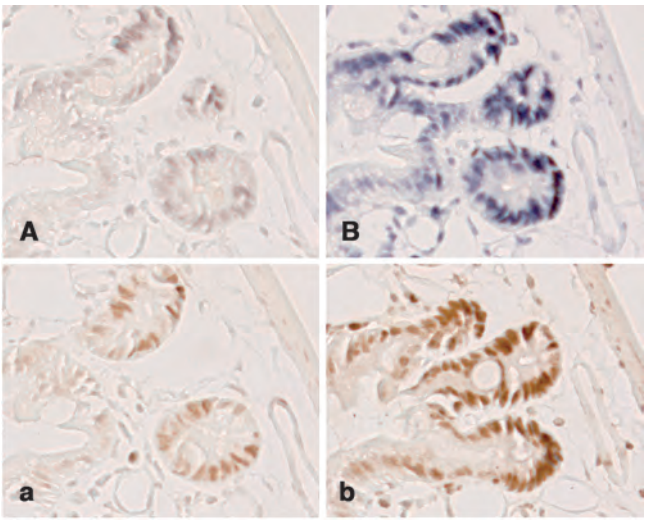



**Figure 1:**
Immunohistochemical staining of mouse small intestines with an anti-PCNA antibody. Minuscules: pure DAB substrate, capitals: detection supplemented by DAB enhancer (A: $NiCl_2$, B: DAB Metal Enhancer,Art. No. 9204).
A/a: Basic method using 0.6 mg/ml DAB in Tris-buffer
B/b: Detection performed with the Roti®-DAB Kit

**The kit contains:**
DAB solution (Art. No. 9869), DAB buffer (Art. No. 9870), and Activation reagent (Art. No. 9871) in dropper bottles. Contents of this Kit may not be bought separately.

One kit is sufficient for staining of approx. 44 minigel blot membranes or 500 slides.

**Type analysis:**

| | |
|---|---|
| Application test (Blotting) | complies |
| RNAse | ≤1 ppb |
| DNAse | ≤1 ppm |

| | | | |
|---|---|---|---|
| **9202.1** | 1 kit | cardboard | 181,70 € |

▶ DAB metal enhancer see page 1318

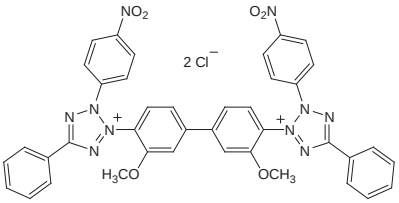
▶ Streptavidin/HRP kit see page 1318

## MUG

**≥99 %, p.a.**

Substrate for β-glucuronidase. For detection of *E. coli*.
4-Methylumbelliferyl-β-D-glucuronide dihydrate
$C_{16}H_{16}O_9 \cdot 2\ H_2O$
M 388,33 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.
Ideal for fluorometric detection of β-glucoronidase hydrolysed by MUG to 4-methylumbelliferone. Detection occurs via long wave UV light (366 nm).

| | | | |
|---|---|---|---|
| **6394.1** | 50 mg | glass | 23,15 € |
| **6394.2** | 250 mg | glass | 63,35 € |
| **6394.3** | 1 g | glass | 196,20 € |




## NBT

**≥98 %, p.a.**

Nitro-BT, Nitroblue tetrazolium chloride
$C_{40}H_{30}Cl_2N_{10}O_6$
M 817,65 g/mol
Storage temp.: +4 °C

Used in combination with BCIP-toluidine salt (X-phosphate) for detection of alkaline phosphatase activity by producing an indigo dye precipitate. Colour enhancer for staining with alkalic phosphatase. During dimerisation of ketonized X-Phos, $H^+$ ions are set free which reduce NBT to purple-coloured diformazan. Both dyes precipitate in the direct vicinity of the phosphatase, hence staining this site in a dark violet.
Store at +4 °C. Please also see assay protocol for use of BCIP/NBT in immunoblot procedures.

**Application:**
Stock solution: 0.5 g NBT in 10 ml 70 % dimethylformamide.
Protect from light and humidity.

| | | | |
|---|---|---|---|
| **4421.1** | 100 mg | glass | 17,10 € |
| **4421.2** | 500 mg | glass | 42,90 € |
| **4421.3** | 1 g | glass | 81,60 € |
| **4421.4** | 5 g | glass | 295,65 € |

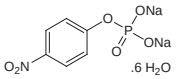
**Assay protocol for use of BCIP/NBT in immunoblot procedures:**

**Stock solutions** (All solutions are stable for at least 1 year at 4 °C):
0.5 g NBT in 10 ml 70 % dimethylformamide;
0.5 g BCIP (p-toluidine salt) in 10 ml 100 % dimethylformamide.
Incubation buffer for alkaline phosphatase:
100 mM NaCl, 5 mM $MgCl_2$,100 mM Tris (pH 9.5).

**Fresh substrate solution:**
66 µl NBT stock solution + 10 ml incubation buffer, mix well, add 33 µl BCIP stock solution. Use within 1 hour.

**Blot development:**
Approx. 10 ml substrate solution per 15 x 15 $cm^2$ membrane surface. Develop at room temperature until bands become visible (approx. 30 mins).

**Reaction stop:** Rinse with PBS/20 mM EDTA.




## pNPP

**≥99 %, p.a.**

Substrate for alkaline phosphatase, particularly for ELISA.

p-Nitrophenyl phosphate, 4-Nitrophenyl phosphate disodium salt hexahydrate

$C_6H_4NNa_2O_6P \cdot 6\ H_2O$

M 371,12 g/mol

Storage temp.: +4 °C

Substrate of the alkaline phosphatase for use in ELISAs. Durin reaction of the substrate, a soluble, yellow product is formed that is detected photometrically at 405 nm wave length.

**Application:**
Working solution: 1 mg/ml in diethanolamine substrate buffer (10 mM diethanolamine, 0.5 mM $MgCl_2$, pH 9.5).
For endpoint analysis the reaction may be stopped via addition of 2-3 M NaOH.

| | | | |
|---|---|---|---|
| **4165.1** | 2,5 g | glass | 15,60 € |




## Roti®fair pNPP 5mg

**5 mg/tablet, for biochemistry**

For preparation of pNPP substrate solution for alkaline phosphatase.

pNPP (tablet), p-Nitrophenyl phosphate

Exactly pre-weighed tablets for convenient and rapid preparation of pNPP solution.
Prepared solution may be sterilized by filtration (0,22 µm).
The solution has to be stored at -20 °C in aliquots.
0,1 % pNPP solution (1 mg/ml) is prepared by dissolution of 1 tablet in 5 ml substrate buffer.

| | | | |
|---|---|---|---|
| **1117.1** | 24 tablets | blister | 90,85 € |
| **1117.2** | 100 tablets | plastic | 134,40 € |

## Roti®fair pNPP 20mg

**20 mg/tablet, for biochemistry**

For preparation of pNPP substrate solution for alkaline phosphatase.

pNPP (tablet), p-Nitrophenyl phosphate

Exactly pre-weighed tablets for convenient and rapid preparation of pNPP solution.
Prepared solution may be sterilized by filtration (0,22 µm).
The solution has to be stored at -20 °C in aliquots.
0,1 % pNPP solution (1 mg/ml) is prepared by dissolution of 1 tablet in 20 ml substrate buffer.

| | | | |
|---|---|---|---|
| **1128.1** | 24 tablets | blister | 97,30 € |
| **1128.2** | 100 tablets | plastic | 349,40 € |



ready-to-use

## Roti®-Lumin ultra

**ready-to-use, spray**

Superior chemoluminescence substrate for HRP-mediated Western-Blot detection systems.

Storage temp.: +4 °C • Transport temp.: cooled

- Very easy to use
- Spray-and-go or mix by pipetting
- Superior performance for detections in lower femtogram range
- Perfectly suited for all exposition times
- Suitable for NC membranes, optimised for PVDF membranes

Significantly enhanced Western-Blot substrate based on luminol, for chemoluminescent detection of horseradish peroxidase (HRP) on membranes. Through a special, optimised composition, a particularly high signal strength is achieved for over 30 mins. with a second increase at 10 to 15 mins. after application. Roti®-Lumin ultra is, therefore, one of the most sensitive HRP-Chemoluminescence substrate available.

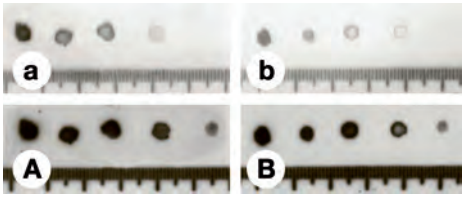



**Figure**:
Superior sensitivity of Roti®-Lumin ultra even with a very short exposition of 10 seconds. Detection of 2 µl each of a HRP complex in dilution series 1:1 to 1:10.
a/A: Roti®-Lumin ultra; b/B: Product of a competitor, recommended for femtogram range.
a/b: 10 sec. exposition, A/B: 5 mins. exposition.

By using pump spray bottles no time-consuming pre-mixing of solutions is required - substrate solution 1 and enhancer solution 2 are simply sprayed onto the membranes. Hereby, the spray technique guarantees a very smooth and regular distribution of the substrate on the membrane surface, hence avoiding artefacts caused by uneven distribution of pipetted substrate. The superior signal strength allows detection of proteins in single femtograms, as well as significant reduction of concentrations of expensive antibodies.

**Application notes:**
For a mini blot of 7 x 8 cm size 3-4 pump strokes are necessary.
- Spray the membrane with solution 1
- Afterwards spray membrane with solution 2
- Incubate approx. 1 min (wrap membrane in saran foil etc.)
- Exposition

In case passed down protocols are to be used the spray-bottles may easily be unscrewed, mixing and applying the solutions by pipetting.

**A kit consists of:**
20 ml (100 ml) solution 1 (Art. No. 3990) and 20 ml (100 ml) solution 2 (Art. No. 3991) in pump spray bottles. 2 x 100 ml is sufficient for approx. 10.000 $cm^2$ membrane (approx. 150 minigel blots).
Contents of this Kit may not be bought separately.

| | | |
|---|---|---|
| **3734.1** | 1 mini kit (spray) | 231,15 € |
| **3734.2** | 1 kit (spray) | 934,20 € |



## Roti®-Lumin plus

**ready-to-use, spray**

Highly efficient chemoluminescence substrate for HRP-mediated Western-Blot detection systems.

Storage temp.: +4 °C • Transport temp.: cooled

- Very easy to use
- Spray-and-go or mix by pipetting
- Optimised signal strength for detections in upper femtogram range
- Well suited for medium- and long-term exposition
- Suitable for NC membranes, optimised for PVDF membranes

Efficient Western-Blot substrate based on luminol, for chemoluminescent detection of horseradish peroxidase (HRP) on membranes. Through an optimised composition, high signal strength is achieved over a very stable plateau of over 30 mins.

By using pump spray bottles no time-consuming pre-mixing of solutions is required - substrate solution 1 and enhancer solution 2 are simply sprayed onto the membranes. Hereby, the spray technique guarantees a very smooth and regular distribution of the substrate on the membrane surface, hence avoiding artefacts caused by uneven distribution of pipetted substrate. Through the high signal strength, proteins in the upper femtogram range may be detected, while concentrations of the antibodies used may be reduced.

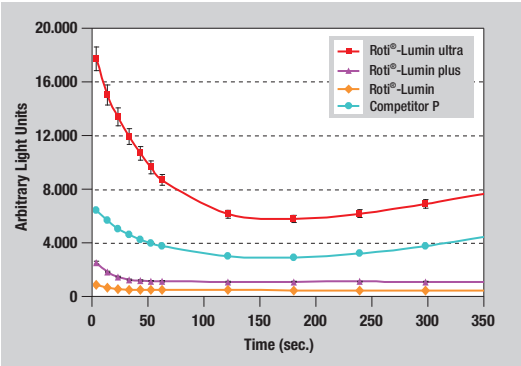



**Figure:**
Typical course of light emission of the Roti®-Lumins 0-5 mins. post mixing/spraying. Competitor P: Product of a competitor, recommended for femtogram range. For medium or long-term exposure we recommend use of Roti®-Lumin plus.

**Application notes:** see Roti®-Lumin ultra (Art. No. 3734.1).

**A kit consists of:**
20 ml (100 ml) solution 1 (Art. No. 3936) and 20 ml (100 ml) solution 2 (Art. No. 3937) in pump spray bottles, or of 250 ml solution 1 (Art. No. 3936) and 250 ml solution 2 (Art. No. 3937) in refill-bottles. 2 x 100 ml is sufficient for approx. 10.000 cm² membrane (approx. 150 minigel blots).
Contents of this Kit may not be bought separately.

| | | |
|---|---|---|
| **3692.1** | 1 mini kit (spray) | 130,65 € |
| **3692.2** | 1 kit (spray) | 267,70 € |
| **3692.3** | 1 kit (bottles) | 435,40 € |



## Roti®-Lumin

**ready-to-use**

Chemoluminescence substrate for peroxidase mediated detection systems.HRP substrate

Storage temp.: +4 °C

- Sensitive and reliable
- For all standard membrane types
- Low background
- No cumbersome preparation of peroxidase buffers
- Suitable for multiple stripping and reprobing

Roti®-Lumin is a kit for chemoluminescent detection of peroxidase-linked reporters (e.g. HRP-antibodies), as can be found in Western-Blot assays. In comparison to chromogen substrates, Roti®-Lumin displays increased sensitivity and reduced background reaction.

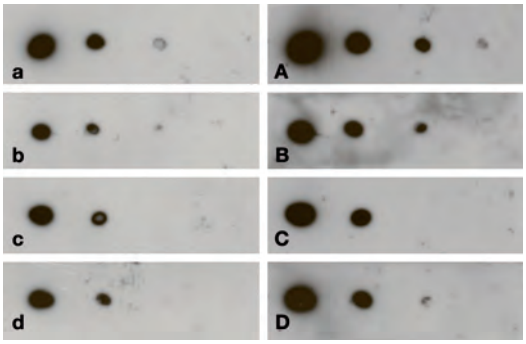


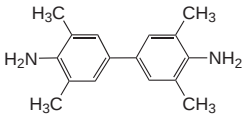

**Figure:**
Sensitivity of Roti®-Lumins. Detection of a polyclonal antibody (left to right 4 pg, 400 fg, 40 fg, 4 fg) on Roti®-PVDF (Art. No. T830.1). Staining in PBST via a HRP-conjugated anti-rabbit antibody (1:2000).
a/A: Roti®-Lumin ultra; b/B: Roti®-Lumin plus; c/C: Roti®-Lumin;
d/D: Product of a competitor, recommended for femtogram range.
a/b/c/d: 10 sec. exposition, A/B/C/D: 1 min. exposition.

**Mechanism:**
Roti®-Lumin is transformed by the HRP into an excited dianion in the presence of hydrogen peroxide. When the dianion is reversed back to its normal state, light is emitted. The light emission of Roti®-Lumin reaches its maximum within 5 minutes and remains at the maximum level for approx. 1-2 hours.

**Applications notes:**
Roti®-Lumin consists of two solutions, which should be mixed at a 1:1 ratio before use. It can be used with nitrocellulose, nylon and PVDF membranes. Optimal results can be achieved with Immobilon-P® or Roti®-PVDF. Can be used for Western-Blotting, ELISA, Southern- Blotting, Dot-Blotting and colony hybridisation. Membranes may be stripped from bound probes using Roti®-Free stripping buffer, and may thus undergo multiple reprobing.

**A kit consists of:**
120 ml (25 ml) Roti®-Lumin 1 (Art. No. P079) and 120 ml (25 ml) Roti®-Lumin 2 (Art. No. P080).
Sufficient for approx. 2400 cm² (500 cm²) membrane.
Contents of this Kit may not be bought separately.

| | | | |
|---|---|---|---|
| **P078.2** | 1 mini kit | plastic | 70,45 € |
| **P078.1** | 1 kit | plastic | 252,65 € |



## TMB

**≥98 %, p.a.**

3,3',5,5'-Tetramethylbenzidine

$C_{16}H_{20}N_2$

M 240,35 g/mol

Storage temp.: +4 °C

Used as a highly sensitive substrate for peroxidases, particularly in ELISA procedures. Can replace carcinogenic benzidine.
**Dissolves easily in acetone, chloroform and ethanol.**

**Application:**
Working solution: 1 mg TMB in 0.1 ml dimethyl sulfoxide, add 9.9 ml 0.1 M sodium acetate (pH 6). Filter and add $H_2O_2$ ad 0.01 %. Always prepare freshly!
Application: approx. 50 µl per 96well, incubate for 10-30 mins. at room temperature. Add 50 µl 1 M $H_2SO_4$ and quantitate photometrically at 450 nm (acc. to: Bos *et. al.* (1981) *J. Immunoassay* 2:187).
Protect from light.

| | | | | |
|---|---|---|---|---|
| **6350.1** | 1 g | | glass | 52,60 € |
| **6350.2** | 5 g | | plastic | 160,20 € |
| **6350.3** | 25 g | BIG PACK | plastic | 736,40 € |

**Detection of peroxidase activity (Immunoassay):**

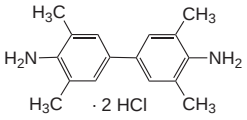
Dissolve 1 mg TMB in 0.1 ml dimethylsulfoxide (Art. No. 4720); add 9.9 ml of a 0.1 M sodium acetate solution (pH 6.0) (Powder: Art. No. 6779), filter and add $H_2O_2$ (Art. No. 8070) (final concentration 0.01 %).

**Always prepare freshly!**

Incubation 10-30 mins at room temperature (approx. 50 µl per microtitre well; finally add 50 µl 1 M $H_2SO_4$, Art. No. X873, per well).

Photometric quantitation at 450 nm.

Reference: Bos, E.S. *et al.*, (1981) *J. Immunoassay* 2, (3/4), 187.



## TMB dihydrochloride

**≥99 %, for biochemistry**

Water-soluble peroxidase substrate

3,3',5,5'-Tetramethylbenzidine dihydrochloride, TMB · 2 HCl

$C_{16}H_{20}N_2 \cdot 2\ HCl$

M 313,27 g/mol

Storage temp.: +4 °C

Tetramethylbenzidine dihydrochloride is used as highly sensitive substrate for detection of horseradish peroxidase labelled probes, particularly in solution-based assays like ELISA techniques. It produces a soluble, blue-coloured end product, which can be read spectrophotometrically.
**The dihydrochloride form is well water-soluble**, making it a versatile tool in laborartory science.

**Application:**
Stock solution: 0.1 mg/ml in 50 % acetic acid or phosphate citrate buffer (50 mM $NaH_2PO_4$, 25 mM citric acid, pH 5.0). For solubilisation, heat to 45 °C and sonicate. Colourless.
Storage of stock sol.: At +4 °C if tightly sealed. Oxidation can be seen by colour-shift to a faint blue.
Working solution: Immediately prior to use add 2 µl / 10 ml of 30 % hydrogen peroxide. (Liem *et al.* (1979) *Anal Biochem*, 98:388-93)

| | | | | |
|---|---|---|---|---|
| **4107.1** | 500 mg | | glass | 38,60 € |
| **4107.2** | 1 g | | glass | 62,90 € |

## X-α-Gal

**≥98 %, for biochemistry**

Colorimetric substrate of α-galactosidase.

5-Bromo-4-chloro-3-indolyl-α-D-galactopyranoside

$C_{14}H_{15}BrClNO_6$

M 405,63 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Chromogenic substrate of α-galactosidase (melibiase, α-D-galactoside galactohydrolase), an enzyme that is necessary for metabolization of the disaccharide melibiose as a carbon source.
Used for selection of positive clones in yeast two-hybrid screens.

**Application:**
Stock solution: 2-20 mg/ml in DMF
Working concentration: 20-50 µg/ml in agar plates

| | | | | |
|---|---|---|---|---|
| **HN36.1** | 25 mg | | glass | 71,95 € |
| **HN36.2** | 100 mg | | glass | 217,70 € |
| **HN36.3** | 250 mg | | glass | 504,20 € |

## X-β-Gal

DNAse-free Protease-free RNAse-free

**≥99 %, BioScience-Grade**

Colorimetric substrate of β-galactosidase.
For biochemistry and molecular biology.

5-Bromo-4-chloro-3-indoxyl-β-D-galactoside

$C_{14}H_{15}BrClNO_6$

M 408,6 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Ideal for colorimetric detection of β-galactosidase activity, for instance during blue-/white selection.

**Application:**
Stock solution: 100 mg/ml (240 mM) in DMF, store at -20 °C in the dark.
Working solution: For blue/white selection of recombinant clones on agar plates use 0,3 µl stock solution per ml broth/agar.

| | | | | |
|---|---|---|---|---|
| **2315.1** | 100 mg | | glass | 20,45 € |
| **2315.2** | 500 mg | | glass | 58,60 € |
| **2315.3** | 1 g | | glass | 109,55 € |
| **2315.4** | 5 g | | glass | 370,90 € |

▶ IPTG see page 1244

## X-Gluc

**≥99 %, for microbiology**

Glucuronidase substrate

5-Bromo-4-chloro-3-indolyl-β-D-glucuronide cyclohexyl ammonium salt monohydrate, X-GlcA

$C_{20}H_{26}N_2O_7ClBr \cdot H_2O$

M 539,81 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

For colorimetric detection of glucuronidase activity. During hydrolysis of X-gluc two molecules are formed, glucuronic acid and 5-bromo-4-chloro-indoxyle, which is then being oxidized to a deep-blue indigo-dye.
X-Gluc is used for detection of contaminations by *E. coli* bacteria in food, waters and feeds. In molecular genetics, it is widely used as marker for expression analysis of target genes.

| | | | | |
|---|---|---|---|---|
| **0018.1** | 100 mg | | glass | 99,90 € |
| **0018.2** | 500 mg | | glass | 375,20 € |
| **0018.3** | 1 g | | glass | 633,20 € |

## Summary of Substrates

| Product | Enzyme | Detection | Signalling product (example) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **Acetylthiocholine iodide** | Acetylcholine esterase | colour (yellow) | soluble (neurohistology) | **4001.1** | 1 g | 24,20 |
| | | | | **4001.2** | 5 g | 72,60 |
| | | | | **4001.3** | 10 g | 128,50 |
| **BCIP-disodium salt** | Alkaline Phosphatase | colour (brown-violet) | precipitate (blotting) | **A155.1** | 100 mg | 27,45 |
| | | | | **A155.2** | 500 mg | 115,60 |
| | | | | **A155.3** | 1 g | 198,90 |
| | | | | **A155.4** | 5 g | 665,45 |
| **BCIP-p-toluidin salt, X-Phos** | Alkaline Phosphatase | colour (brown) | precipitate (blotting) | **6368.1** | 500 mg | 35,40 |
| | | | | **6368.2** | 1 g | 68,30 |
| | | | | **6368.3** | 5 g | 261,80 |
| **2-Butyrylthiocholine iodide** | Cholinesterases | colour (yellow) | soluble (activity assay) | **8452.1** | 1 g | 19,25 |
| | | | | **8452.2** | 5 g | 64,40 |
| | | | | **8452.3** | 10 g | 117,20 |
| **L-Carnosine** | Carnosinase | fluorometry | soluble (activity assay) | **4148.1** | 1 g | 26,35 |
| | | | | **4148.2** | 5 g | 85,90 |
| **6-Chloro-3-indoxyl-β-D-galactopyranoside (Rose gal, Salmon gal)** | β-D-Galactosidase | colour (salmon) | precipitate (microbiology) | **4251.1** | 25 mg | 33,25 |
| | | | | **4251.2** | 50 mg | 43,55 |
| | | | | **4251.3** | 100 mg | 63,45 |
| **6-Chloro-3-indoxyl-β-D-glucuronic acid CHA-salt (Rose glucuronide CHA-salt, Salmon glucuronide CHA-salt)** | β-Glucuronidase | colour (salmon) | precipitate (microbiology) | **4057.1** | 10 mg | 31,10 |
| | | | | **4057.2** | 50 mg | 46,15 |
| | | | | **4057.3** | 100 mg | 78,40 |
| **6-Chloro-3-indoxyl-phosphate-p-toluidin salt** | Alkaline Phosphatase | colour (pink) | precipitate (blotting, *in situ*, histochemistry) | **4247.1** | 50 mg | 46,80 |
| | | | | **4247.2** | 100 mg | 84,85 |
| **Chloronaphthol** | Horse raddish peroxidase | colour (blue) | precipitate (blotting) | **4104.1** | 5 g | 28,50 |
| | | | | **4104.2** | 10 g | 47,20 |
| | | | | **4104.3** | 25 g | 92,35 |
| **Coelenterazine** | Luciferase | chemoluminescence | soluble (ELISA, BRET) | **4094.3** | 1 mg | 56,45 |
| | | | | **4094.4** | 2,5 mg | 107,40 |
| **Creatine phosphate disodium salt tetrahydrate** | Creatine kinase | fluorometry | soluble (activity assay) | **8459.1** | 1 g | 19,25 |
| | | | | **8459.2** | 5 g | 54,75 |
| | | | | **8459.3** | 10 g | 88,70 |
| **Diaminobenzidine (DAB)** | Horse raddish peroxidase | colour (brown) | precipitate (blotting) | **CN75.1** | 1 g | 23,15 |
| | | | | **CN75.2** | 5 g | 73,65 |
| | | | | **CN75.3** | 10 g | 126,35 |
| **Roti®-DAB Kit** | Horse raddish peroxidase | colour (brown) | precipitate (blotting) | **9202.1** | 1 kit | 181,70 |
| **8-Hydroxyquinoline-β-D-glucuronic acid, sodium salt** | β-D-Glucuronidase | colour (brown) | precipitate (microbiology) | **8432.1** | 100 mg | 48,95 |
| | | | | **8432.2** | 250 mg | 82,70 |
| | | | | **8432.3** | 500 mg | 138,70 |
| **Indoxylglucopyranoside** | β-D-Glucosidase | colour (blue) | precipitate (activity assay) | **4243.1** | 250 mg | 55,80 |
| | | | | **4243.2** | 500 mg | 99,90 |
| | | | | **4243.3** | 1 g | 177,40 |
| **D-Luciferin (free acid)** | Luciferase | fluorometry | soluble (transfection) | **CN24.1** | 10 mg | 53,65 |
| | | | | **CN24.2** | 25 mg | 110,65 |
| | | | | **CN24.3** | 50 mg | 198,90 |
| **D-Luciferin sodium salt** | Luciferase | fluorometry | soluble (transfection) | **4096.1** | 10 mg | 32,15 |
| | | | | **4096.2** | 25 mg | 57,55 |
| **4-MU-β-D galactopyranoside** | β-D-Galactosidase | fluorometry | soluble (activity assay) | **4084.1** | 500 mg | 30,00 |
| | | | | **4084.2** | 1 g | 46,15 |
| | | | | **4084.3** | 5 g | 181,70 |
| **4-MU-β-D galactosaminide** | β-D-Galactosaminidase | fluorometry | soluble (microbiology) | **4083.1** | 100 mg | 41,85 |
| | | | | **4083.2** | 250 mg | 74,10 |
| | | | | **4083.3** | 500 mg | 122,05 |
| **4-MU-α-D glucopyranoside** | α-D-Glucosidase | fluorometry | soluble (activity assay) | **4086.1** | 100 mg | 42,90 |
| | | | | **4086.2** | 250 mg | 81,60 |
| **4-MU-β-D glucopyranoside** | β-D-Glucosidase | fluorometry | soluble (activity assay) | **4093.1** | 500 mg | 42,90 |
| | | | | **4093.2** | 1 g | 73,00 |
| | | | | **4093.3** | 2,5 g | 143,55 |
| **4-MU-β-D glucuronide (MUG)** | β-D-Glucuronidase | fluorometry | soluble (activity assay) | **6394.1** | 50 mg | 23,15 |
| | | | | **6394.2** | 250 mg | 63,35 |
| | | | | **6394.3** | 1 g | 196,20 |
| **4-MUP phos (methylum belliferyl phoshate)** | Phosphatases | fluorometry, UV-spectrometry | soluble (activity assay) | **4103.1** | 250 mg | 33,90 |
| | | | | **4103.2** | 1 g | 99,90 |
| **4-Nitrophenyl-α-L fucopyranoside** | α-L-Fucosidase | colour (yellow) | soluble (serum analysis) | **4018.1** | 100 mg | 57,55 |
| | | | | **4018.2** | 250 mg | 113,45 |

| Product | Enzyme | Detection | Signalling product (example) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **Nitrotetrazolium blue chloride (NBT)** | Alkaline Phosphatase | colour (brown-violet) | precipitate (blotting) | **4421.1** | 100 mg | 17,10 |
| | | | | **4421.2** | 500 mg | 42,90 |
| | | | | **4421.3** | 1 g | 81,60 |
| | | | | **4421.4** | 5 g | 295,65 |
| **ONP-β-D galactopyranoside (ONPG)** | β-D Galactosidase | colour (yellow) | soluble (microbiology) | **CN22.1** | 5 g | 31,75 |
| | | | | **CN22.2** | 10 g | 54,30 |
| **ONP-β-D glucopyranoside** | β-D-Glucosidase | colour (yellow) | soluble (activity assay) | **4077.1** | 500 mg | 39,70 |
| | | | | **4077.2** | 1 g | 66,55 |
| **PNP-N-acetyl-β-D glucosaminide (PNAG)** | β-D-Glucosaminidase | colour (yellow) | soluble (activity assay) | **4062.1** | 100 mg | 26,35 |
| | | | | **4062.2** | 500 mg | 74,75 |
| | | | | **4062.3** | 1 g | 143,55 |
| **PNP-α-D galactopyranoside (PNPG)** | α-D-Galactosidase | colour (yellow) | soluble (membrane biochemistry) | **4063.1** | 100 mg | 20,35 |
| | | | | **4063.2** | 500 mg | 46,80 |
| | | | | **4063.3** | 1 g | 74,75 |
| **PNP-β-D galactopyranoside** | β-D-Galactosidase | colour (yellow) | soluble (microbiology, activity assay) | **4081.1** | 1 g | 31,75 |
| | | | | **4081.2** | 2,5 g | 74,75 |
| | | | | **4081.3** | 5 g | 134,30 |
| **PNP-β-D galactosaminide** | N-Acetyl-β-D-Galactosaminase | colour (yellow) | soluble (ELISA, activity assay) | **4058.1** | 250 mg | 70,85 |
| | | | | **4058.2** | 500 mg | 121,40 |
| **PNP-β-D glucopyranoside** | β-D-Glucosidase | colour (yellow) | soluble (ELISA, activity assay) | **4082.1** | 500 mg | 36,45 |
| | | | | **4082.2** | 1 g | 61,85 |
| | | | | **4082.3** | 5 g | 246,20 |
| **PNP-β-D xyloside** | β-D-Xylosidase | colour (yellow) | soluble (activity assay) | **4079.1** | 100 mg | 25,70 |
| | | | | **4079.2** | 500 mg | 78,40 |
| | | | | **4079.3** | 1 g | 142,45 |
| **pNPP** | Alkaline Phosphatase | colour (yellow) | soluble (ELISA, activity assay) | **4165.1** | 2,5 g | 15,60 |
| **Roti®fair pNPP 5mg** | Alkaline Phosphatase | colour (yellow) | soluble (ELISA, activity assay) | **1117.1** | 24 tablets | 90,85 |
| | | | | **1117.2** | 100 tablets | 134,40 |
| **Roti®fair pNPP 20mg** | Alkaline Phosphatase | colour (yellow) | soluble (ELISA, activity assay) | **1128.1** | 24 tablets | 97,30 |
| | | | | **1128.2** | 100 tablets | 349,40 |
| **Roti®-Lumin** | Horse raddish peroxidase | chemoluminescence | precipitate (blotting) | **P078.2** | 1 mini kit | 70,45 |
| | | | | **P078.1** | 1 kit | 252,65 |
| **Roti®-Lumin plus** | Horse raddish peroxidase | chemoluminescence | precipitate (blotting) | **3692.1** | 1 mini kit (spray) | 130,65 |
| | | | | **3692.2** | 1 kit (spray) | 267,70 |
| | | | | **3692.3** | 1 kit (bottles) | 435,40 |
| **Roti®-Lumin ultra** | Horse raddish peroxidase | chemoluminescence | precipitate (blotting) | **3734.1** | 1 mini kit (spray) | 231,15 |
| | | | | **3734.2** | 1 kit (spray) | 934,20 |
| **Tetramethylbenzidine (TMB)** | Horse raddish peroxidase | colour (blue) | soluble (ELISA) | **6350.1** | 1 g | 52,60 |
| | | | | **6350.2** | 5 g | 160,20 |
| | | | | **6350.3** | 25 g | 736,40 |
| **Tetramethylbenzidine dihydrochloride (TMB)** | Horse raddish peroxidase | colour (blue) | soluble (ELISA) | **4107.1** | 500 mg | 38,60 |
| | | | | **4107.2** | 1 g | 62,90 |
| **X-β-D-cellobioside** | β-D-Cellobiosidase | colour (blue) | precipitate (histochemistry) | **4152.1** | 50 mg | 28,95 |
| **X-α-gal** | α-D-Galactosidase | colour (blue) | precipitate (Yeast-Two-Hybrid) | **HN36.1** | 25 mg | 71,95 |
| | | | | **HN36.2** | 100 mg | 217,70 |
| | | | | **HN36.3** | 250 mg | 504,20 |
| **X-β-gal** | β-D-Galactosidase | colour (blue) | precipitate (blue/white selection) | **2315.1** | 100 mg | 20,45 |
| | | | | **2315.2** | 500 mg | 58,60 |
| | | | | **2315.3** | 1 g | 109,55 |
| | | | | **2315.4** | 5 g | 370,90 |
| **X-β-D-glucosaminide** | N-Acetyl-β-D-Glucosaminidase | colour (blue) | precipitate (histochemistry) | **4149.1** | 25 mg | 22,05 |
| | | | | **4149.2** | 100 mg | 44,00 |
| **X-α-D-glucoside (X-glc)** | α-D-Glucosidase | colour (blue) | precipitate (microbiology) | **8434.1** | 100 mg | 80,10 |
| | | | | **8434.2** | 250 mg | 166,65 |
| | | | | **8434.3** | 500 mg | 310,70 |
| **X-β-D-glucoside (X-glu)** | β-D-Glucosidase | colour (blue) | precipitate (microbiology) | **4041.1** | 50 mg | 38,60 |
| | | | | **4041.2** | 100 mg | 64,40 |
| **X-β-D-glucuronic acid (X-gluc)** | β-D Glucuronidase | colour (blue) | precipitate (detection of living cells) | **0018.1** | 100 mg | 99,90 |
| | | | | **0018.2** | 500 mg | 375,20 |
| | | | | **0018.3** | 1 g | 633,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Albumins / BSA (Bovine Serum Albumin)

BSA are proteins yielded from blood, which function as binding and transport proteins in blood circulation. Depending on the preparation process, the albumins contain different quality and quantities of metabolic products, enzymes, peptides, fatty acids, vitamines, etc. and are suitable for different applications.



TSE-/BSE-free

## Albumin Fraction V

**≥98 %, powdered, for molecular biology**

Wide range of applications, e.g. as protein standard or blocking reagent.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

BSA made of fresh bovine plasma by fractionation (Cohn method) and subsequent crystallisation from alcohol solution at a low temperature.

| | | | |
|---|---|---|---|
| **8076.1** | 10 g | plastic | 26,80 € |
| **8076.2** | 50 g | plastic | 84,40 € |
| **8076.4** | 200 g | plastic | 289,20 € |
| **8076.3** | 500 g | plastic | 643,95 € |
| Original pack 6 x 500 g | | | 611,75/500 g |
| **8076.5** | 1 kg | plastic | 1095,45 € |
| Original pack 6 x 1 kg | | | 1040,68/1 kg |

Molar extinction coefficient: 44.020 · $M^{-1}$ · $cm^{-1}$
(acc. to 0.667 x $cm^{-1}$ for a 0.1 % solution).

▶ Detailed specifications see chapter Chemicals A-Z!

## Albumin Fraction V, US-Origin

**≥98 %, powdered, for molecular biology and biochemistry**

Suitable as blocking or stabilising reagent in all general assays. Recommended if BSA with US-Origin is required.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Highly pure albumin of Cohn's Fraction, prepared from blood of cattle certified for US-origin. Albumin Fraction V, US-Origin may well be used for all standard assays where blocking with BSA is necessary, as well as for stabilisation of antibodies or enzymes. Many lots show exceedingly low content of protease and IgGs. BSA, US-Origin is particularly recommended if the use of albumin with certified US-Origin is dictated by process regulations. Available in large bulk format on request.
BSA made of fresh bovine plasma by fractionation (Cohn method) and subsequent crystallisation from alcohol solution at a low temperature.

**Origin** ..... **USA**

| | | | |
|---|---|---|---|
| **3854.1** | 10 g | plastic | 30,00 € |
| **3854.2** | 50 g | plastic | 90,85 € |
| **3854.3** | 200 g | plastic | 310,70 € |
| **3854.4** | 500 g | plastic | 671,90 € |
| Original pack 6 x 500 g | | | 638,31/500 g |
| **3854.5** | 1 kg | plastic | 1116,95 € |
| Original pack 6 x 1 kg | | | 1061,10/1 kg |

## Albumin, nuclease-free

**>99 %, nuclease-free, for molecular biology**

DNAse-free
RNAse-free

Especially suitable for incubation methods with restriction-endonucleases and nucleic acid modifying enzymes.

BSALyophilised, acetylated

M ~66 000 g/mol

Storage temp.: +4 °C

Manufactured from heat-treated, unfractionised Albumin. Product has been acetylated to inactivate nucleases and proteases. In molecular biology, bovine serum albumin (BSA) is one of the most frequently used stabilisers in incubation and storage buffers.
Albumin, nuclease-free, has been acetylated and may thus hinder polymerases used in PCR.
Product has undergone extensive quality and performance controls.

**Nicking activity.** ..... **none detected**
**Ribonucleases activity.** ..... **none detected**
**Exonucleases activity.** ..... **none detected**
**Phosphatases activity.** ..... **none detected**

| | | | |
|---|---|---|---|
| **8895.1** | 10 mg | glass | 31,75 € |
| **8895.2** | 100 mg | glass | 169,75 € |

## Albumin Fraction V, protease-free

**≥98 %, protease-free, for molecular biology**

Protease-free

For all sensitive enzymatic assays.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Excellent in sensitive immuno assays, as a stabilising reagent for proteins, enzymes and antibodies and also suitable as a blocking reagent in hybridisation techniques.
BSA produced from fresh beef plasma by fractionating in acc. with Cohn and subsequent crystallisation at low temperatures from the alcoholic solution.

**Protease (hemoglobine hydrolysis).** ..... **none detected**

| | | | |
|---|---|---|---|
| **T844.1** | 10 g | plastic | 53,65 € |
| **T844.2** | 50 g | plastic | 123,65 € |
| **T844.4** | 200 g | plastic | 407,45 € |
| **T844.3** | 500 g | plastic | 843,90 € |
| Original pack 6 x 500 g | | | 801,71/500 g |

## Albumin Fraction V, pH 5,2

**>97 %, powdered, for protein analysis**

Non-neutralized albumin. Suitable as protein standard or hapten carrier, recommmended for use in ELISA and Western-Blotting.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Albumin Fraction V, pH 5.2 is basically suitable for all applications using albumin of Cohn-fraction V, e.g. for stabilisation of enzymes and antibodies, or as hapten carrier in immunoassays. The pH value of albumin pH 5.2 is close to its pI and the protein is only weakly charged. It is, therefore, particularly recommended for use in ELISA and Western blotting, since it may help in further reducing background signals.
Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcoholic solution.

**pH value (10 % solution)** ..... **5,2 ±0,4**

| | | | |
|---|---|---|---|
| **2834.1** | 10 g | plastic | 39,70 € |
| **2834.2** | 50 g | plastic | 126,35 € |
| **2834.3** | 200 g | plastic | 396,70 € |
| **2834.4** | 500 g | plastic | 805,20 € |
| Original pack 6 x 500 g | | | 764,94/500 g |

## Albumin Fraction V, biotin-free

**≥98 %, biotin-free, for molecular biology**

Excellent as blocking and stabilising reagent in all biotin/streptavidin-mediated detection systems.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Tried and tested albumin preparation, suitable for all immunoassays, for stabilising proteins, enzymes and antibodies and as a blocking-reagent in hybridisation. Tested for its absence of biotin. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

**Biotin.** ..... **none detected**

| | | | |
|---|---|---|---|
| **0163.1** | 10 g | plastic | 33,25 € |
| **0163.2** | 50 g | plastic | 103,10 € |
| **0163.4** | 200 g | plastic | 360,15 € |
| **0163.3** | 500 g | plastic | 772,95 € |
| Original pack 6 x 500 g | | | 734,30/500 g |

## Albumin Fraction V, fatty acid-free

**≥98 %, fatty acid-free, for molecular biology**

Excellent when working with membrane-associated proteins.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Suitable for all immunoassays, for stabilising proteins, enzymes and antibodies and as a blocking-reagent during hybridisation. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

**Total fatty acids.** ..... **<0,01 %**

| | | | |
|---|---|---|---|
| **0052.1** | 1 g | glass | 18,20 € |
| **0052.2** | 10 g | plastic | 95,15 € |
| **0052.3** | 50 g | plastic | 375,20 € |

## Albumin, fatty acid-free, US-Origin

**≥98 %, fatty acid-free, for molecular biology**

Suitable as blocking or stabilising reagent in all fatty acid-sensitive assays. Recommended if BSA with US-Origin is required.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Highly pure albumin, prepared from blood of cattle certified for US-origin. Albumin, fatty acid-free, US-Origin, may well be used for blocking of all assays regarding membrane proteins, or other approaches aiming for fatty acid-associated proteins. It is also well suited for stabilisation of antibodies, enzymes or fatty acids. Albumin, fatty acid-free, US-Origin, shows exceedingly low content of endotoxins and IgGs, making it a useful reagent for cell biology also.
BSA, fatty acid-free, US-Origin is particularly recommended if the use of albumin with certified US-Origin is dictated by process regulations. Available in large bulk format on request.

For purification of Albumin, fatty acid-free, US-Origin, an extensive heat-shock/diafiltration method is used, which has been shown to bring more highly purified products than the standard process acc. to Cohn. The process is taking place in a closed system.

**Origin.** ..... **USA**
**IgG (COBAS).** ..... **none detected**
**Endotoxin content.** ..... **≤5 E.U./mg**
**Total fatty acids.** ..... **<0,01 %**

| | | | |
|---|---|---|---|
| **9638.1** | 1 g | plastic | 18,85 € |
| **9638.2** | 10 g | plastic | 96,25 € |
| **9638.3** | 50 g | plastic | 375,20 € |
| **9638.4** | 100 g | plastic | 591,25 € |




## Albumin, IgG free

**>98 %, IgG-free, for biochemistry and molecular biology**

Recommended as blocking and stabilising reagent in all antibody-mediated detection systems.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Albumin, highly purified and tested for presence of immunoglobulins (IgGs), proteases, RNAse, and DNAse. Albumin, IgG-free is particularly recommended for use as stabilising reagent in antibody solutions, and as blocking reagent in all assays using detection systems via antibodies. Also very well suited for stabilising of hot-start-PCRs mediated by antibodies, or as blocking reagent in antibody-detected hybridisations.

For purification of Albumin, IgG-free, an extensive heat-shock/diafiltration method is used, which has been shown to bring more highly purified products than the standard process acc. to Cohn. The process is taking place in a closed system.

**IgG (HPLC).** ..... **none detected**
**Protease.** ..... **none detected**
**DNAse.** ..... **none detected**
**RNAse.** ..... **none detected**

| | | | |
|---|---|---|---|
| **3737.1** | 10 g | plastic | 54,75 € |
| **3737.2** | 50 g | plastic | 152,15 € |
| **3737.3** | 200 g | plastic | 456,90 € |
| **3737.4** | 500 g | plastic | 938,50 € |
| Original pack 6 x 500 g | | | 891,58/500 g |

## Albumin Fraction V, endotoxin-tested

**CELLPURE® >98 %, low endotoxin**

With low endotoxin content. Recommended for culturing of cell lines.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Albumin Fraction V, low endotoxin is recommended for use during culturing of eukaryotic cells.
Bovine serum albumin is basically suitable for stabilisation of all enzymes and antibodies, as well as for blocking of hybridisations and immunoassays. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

**Endotoxin content..... <15 E.U./mg**

| | | | |
|---|---|---|---|
| **CP84.1** | 10 g | plastic | 34,30 € |
| **CP84.2** | 50 g | plastic | 105,90 € |
| **CP84.3** | 500 g | plastic | 837,45 € |
| Original pack 6 x 500 g | | | 795,58/500 g |

## Albumin Fraction V, very low endotoxin

**CELLPURE® >98 %, very low endotoxin**

With extremely low endotoxin content. Recommended for the culture of primary cells and cell lines, as well as for sensitive cell culture assays.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Albumin Fraction V, very low endotoxin is particularly recommended for use during culturing of eukaryotic cells and in cell culture assays. This albumin of superior quality is thoroughly tested for its very low endotoxin content, therefore providing trouble-free cell culture assays and reliable results even when handling primary cells or stem cells.
Bovine serum albumin is basically suitable for stabilisation of all enzymes and antibodies, as well as for blocking of hybridisations and immunoassays. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

**Endotoxin content..... <2.0 E.U./mg**

| | | | |
|---|---|---|---|
| **CP77.1** | 10 g | plastic | 138,70 € |
| **CP77.2** | 50 g | plastic | 536,45 € |



## Lactalbumin

**for microbiology**

Storage temp.: +20 °C

Lactalbumin is produced by enzymatic hydrolysis of milk whey. It consists of peptides, amino acids and carbohydrates, simple and complex.
It is used in media for culturing of bacterial cells (e.g. *lactobacilli*), for tissue culture, production of vaccines and in fermentation procedures.

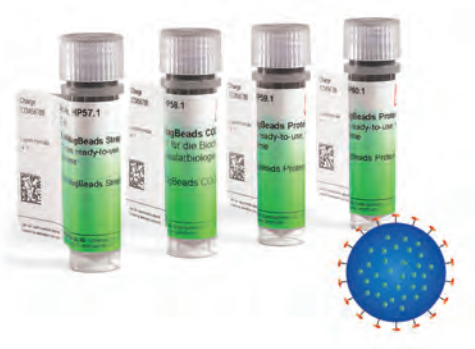
| | | | |
|---|---|---|---|
| **7597.1** | 250 g | plastic | 72,60 € |
| **7597.2** | 500 g | plastic | 129,55 € |
| Original pack 6 x 500 g | | | 123,07/500 g |

**Recommended Application of Albumins**

| Albumin | Art. No. | Recommended Application |
|---|---|---|
| Fraction V | 8076 | Stabilisation of proteins and blocking reagent in protein biochemical detection systems. Basically suitable for all assays unless specific requirements apply (see below-listed albumins). |
| Fraction V, US-Origin | 3854 | Stabilisation of proteins and blocking reagent in all standard biochemical detection systems. Recommended if albumin with certified origin USA has to be used. |
| Fraction V, pH 5.2 | 2834 | Stabilisation of proteins and blocking reagent. Particularly recommended for Western-Blotting and ELISAs |
| Fraction V, protease-free | T844 | Stabilisation of proteins and blocking reagent in sensitive enzymatic detection systems, activity tests or protein/protein-interaction assays. Also recommended for stabilisation of antibodies. |
| Fraction V, biotin-free | 0163 | Stabilisation of proteins and blocking reagent in all biotin / streptavidin-mediated detection systems (membrane-bound- or coating-plate-assays, as well as soluble assays). |
| Fraction V, fatty acid-free | 0052 | Stabilisation of proteins and blocking reagent in detection systems. Particularly recommended for experiments on metabolism proteins, membrane-associated proteins and cell surface proteins. |
| Albumin, fatty acid-free, US-Origin | 9638 | Stabilisation of proteins and blocking reagent, particularly for experiments on metabolism proteins, membrane-associated proteins and cell surface proteins. Also well suited for cell biology and all antibody-mediated detection systems. Recommended if albumin with certified origin USA has to be used. |
| Albumin, nuclease-free | 8895 | Stabilisation of nucleic acids and proteins for nucleic acid modification or nucleic acid/protein-interaction, e.g. endonucleases, RNPs, transcription factors and so on. Also recommended as blocking reagent in nucleic acid/protein-interaction assays. |
| Albumin, IgG-free | 3737 | Stabilisation of antibodies. Blocking reagent in all antibody-mediated detection systems and Radio-Immuno Assays (RIAs). Reduces false-positive signals. |
| Fraction V, endotoxin-tested | CP84 | Cell culture, standard cell lineages, cell sorting, short-term assays. |
| Fraction V, very low endotoxin | CP77 | Cell culture. Superior quality and purity, suitable for sensitive cells like primary cells, stem cells, cloning and 3D-cultures. Also recommended for cell stressing assays like transfections, in vitro infections, or cell fusion. |
| Lactalbumin | 7597 | Cell culture, fermentation procedures, tissue culture. |

# Protein Isolation
## Magnetic Beads

ready-to-use



- Easy and standardized handling
- Handling is identical to standardized protocols for beads of other suppliers, own established protocols may be used
- Applicable for a wide variety of buffers and media
- Well suited for manual and automated applications

Matrix for simple and efficient binding and isolation of biotinylated compounds (proteins, peptides, nucleic acids, antibodies etc) and for cell sorting.

The magnetic properties enable easy and quick washing steps, allowing one preparation to take place in approx. 10 mins. Handling is easy and identical to standardized protocols for beads of other suppliers, providing easy establishment of the assays. Results are well reproducible with high recovery rates.

The Matrix of Roti®-MagBeads Streptavidin consists of uniform, superpara-magnetic silica beads. The small bead size of 1 µm in average provides a large surface with excellent binding capacities.

In those beads, nano-meter-sized particles of magnetic iron(II/III)oxide are embedded in silicium oxide, resulting in high magnetic mobility. The surface is made from pure streptavidin-silicium oxide, coated with streptavidin, COOH groups, protein A or protein G.

**Type analysis:**
Concentration. ..... 10 ±0,5 mg/ml
Size distribution. ..... 0,7-1,4 µm
Mean particle sizing (CI90 %). ..... 1,0 ±0,05 µm
Bead number. ..... 6-12 x $10^9$ Beads/ml
Magnetic iron content. ..... ≥50 %

## Roti®-MagBeads Streptavidin
**10 mg/ml, ready-to-use, for biochemistry**
Magnetic silica gel beads for isolation of biotin-coupled biomolecules.
Storage temp.: +4 °C

- Easy and standardized handling
- Superior binding capacity of up to 3-7 nMol/mg
- Applicable for a wide variety of buffers and media
- For cell sorting, purification of proteins/nucleic acids and immunoassays

Roti®-MagBeads Streptavidin is a matrix for simple and efficient binding followed by subsequent isolation of biotinylated compounds such as proteins and peptides, nucleic acids, antibodies and other biomolecules. Also useful for positive or negative cell sorting. The magnetic properties enable easy and quick washing steps, allowing one preparation to take place in approx. 10 mins.

The small bead size of 1 µm in average provides a large surface with excellent binding capacities. Handling is easy and identical to standardized protocols for beads of other suppliers, providing easy establishment of the assays. The absence of excess streptavidin ensures specific binding to the beads and low loss of samples. Results are well reproducible with high recovery rates. Beads are compatible with down-stream applications like sequencing and *in vitro* transcription.

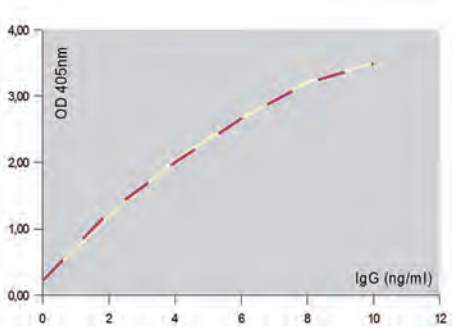
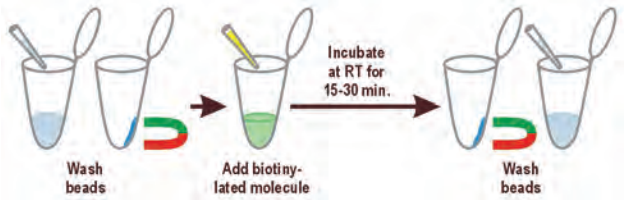



**Figure:** ELISA in micro plates. Assays were performed with Roti®-MagBeads Streptavidin (striped red line) and reference beads (yellow line). Binding of a biotinylated primary antibody to target protein and immobilisation by Roti®-MagBeads Streptavidin. Detection of target protein by binding of a secondary, protein specific antibody (peroxidase-labelled) measured in a micro plate-reader.

The Matrix of Roti®-MagBeads Streptavidin consists of uniform, superpara-magnetic silica beads coated with covalently coupled streptavidin. In those beads, nanometer-sized particles of magnetic iron(II/III)oxide are embedded in silicium oxide, resulting in high magnetic mobility. The surface is made from pure streptavidin-silicium oxide.




Well suited for automated and manual applications.
Biotin binding capacity. ..... 3-7 nMol/mg.
Suspension in PBS (pH 7,4); 0,05 % Tween® 20; 0,05 % sodium azide.

| | | | |
|---|---|---|---|
| **HP57.2** | 50 µl | plastic | 19,90 € |
| **HP57.3** | 1 ml | plastic | 213,95 € |
| **HP57.1** | 2 ml | plastic | 370,90 € |

**Instructions for use**
can be found on the Internet next to the product description.

## Roti®-MagBeads COOH

**10 mg/ml, for biochemistry and molecular biology**

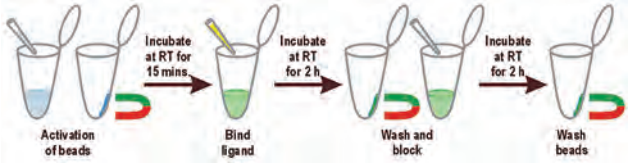
Activated magnetic silica gel beads for covalent coupling of chosen ligands.
Storage temp.: +4 °C

- Easy and standardized handling
- Fast and easy batch format without columns
- Allows harsh pH values and high ionic strength
- For ligand coupling prior to purification of biomolecules, immunoassays, and cell sorting

Roti®-MagBeads COOH is a matrix for simple and efficient coupling of any chosen ligand that can be coupled to carboxylic groups, such as antibo-dies, proteins and oligonucleotides. Subsequently, the coated beads can be used for isolation of proteins and peptides, nucleic acids and other bio-molecules, and for positive or negative cell sorting. In case antibodies are coupled to the beads, immunoassays can be carried out.

The high ligand coupling capacity combined with low non-specific binding minimizes the signal-to-noise ratio. Subsequent assays are well reproducible with high recovery rates.

The Matrix of Roti®-MagBeads COOH consists of uniform, superpara-magnetic silica beads coated with activated surface (-COOH).
The surface is made from pure activated silicium oxide and allows application of harsh pH values as well as of media with high ionic strength.




Well suited for automated and manual applications.
Suspension in PBS (pH 7,4); 0,05 % sodium azide

| | | | |
|---|---|---|---|
| **HP58.2** | 50 µl | plastic | 12,80 € |
| **HP58.1** | 2 ml | plastic | 89,15 € |

## Roti®-MagBeads Protein A

**10 mg/ml, ready-to-use, for biochemistry**

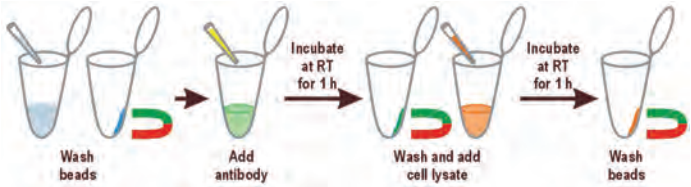
Magnetic silica gel beads for binding and isolation of immunoglobulins.
Storage temp.: +4 °C

- Easy and standardized handling
- High affinity for Fc domains of a variety of species
- Well suited for isolation from small samples
- For purification of immunoglobulins and for immunoassays

Roti®-MagBeads Protein A is a matrix for simple and efficient isolation of immunoglobulins as well as a carrier for all sorts of immunoassays like immunoprecipitation, ELISA, protein-protein interaction assays. Protein A forms reversible complexes with several immunoglobulin subclasses from the following species: human (except IgG1), mouse (except IgG1), guinea pig, rabbit, hamster, pig.

The absence of excess protein A ensures specific binding to the beads and low loss of probes. Results are well reproducible with high recovery rates.

The Matrix of Roti®-MagBeads Protein A consists of uniform, super-para-magnetic silica beads coated with covalently coupled protein A (42 kDa) isolated from *Staphylococcus aureus*. The surface is made from pure protein A coated silicium oxide.




Well suited for automated and manual applications.
Suspension in PBS (pH 7,4); 0,05 % sodium azide

| | | | |
|---|---|---|---|
| **HP59.2** | 50 µl | plastic | 17,75 € |
| **HP59.1** | 1 ml | plastic | 181,70 € |

## Roti®-MagBeads Protein G

**10 mg/ml, ready-to-use, for biochemistry**

Magnetic silica gel beads for binding and isolation of immunoglobulins.
Storage temp.: +4 °C

- Easy and standardized handling
- Recombinant protein G with enhanced binding specificity for Fc domains
- Well suited for isolation from small samples
- For purification of immunoglobulins and for immunoassays

Roti®-MagBeads Protein G is a matrix for simple and efficient isolation of immunoglobulins as well as a carrier for all sorts of immunoassays like immunoprecipitation, ELISA, protein-protein interaction assays. Protein G forms reversible complexes with several immunoglobulin subclasses from the following species: human, mouse, rat (except IgG 1+2 B), goat, rabbit, hamster, cow, horse.

The absence of excess protein G ensures specific binding to the beads and low loss of probes. Results are well reproducible with high recovery rates.

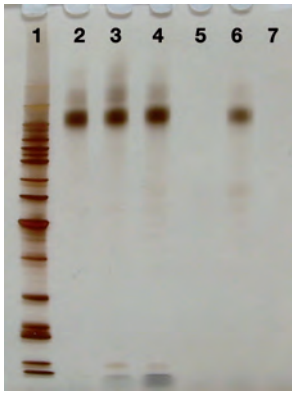
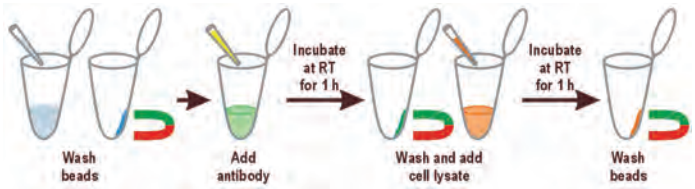



**Figure:** Specific absortion of bovine IgG by Roti®-MagBeads Protein G. Roti®-MagBeads Protein G, Roti®-MagBeads Protein A, and Roti®-MagBeads Stretavidin were incubated with a solution containing bovine IgG and BSA, Fraction V. Protein bound to Roti®-MagBeads was detected by SDS PAGE and identified as IgG. No unspecific binding of BSA could be detected.
Lane 1: Marker
Lanes 2, 3, 4, 6: **Roti®-MagBeads Protein G** (different incubation conditions)
Lane 5: **Roti®-MagBeads Protein A** (Protein A has very low affinity for bovine IgG)
Lane 7: **Roti®-MagBeads Streptavidin**

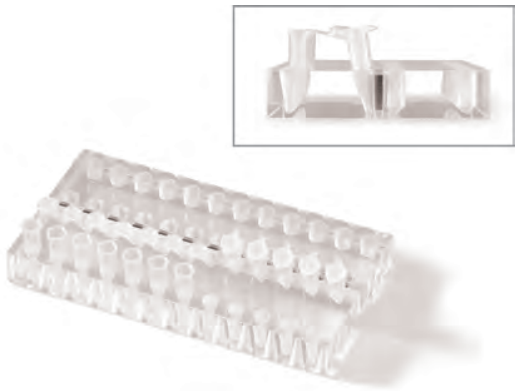
The Matrix of Roti®-MagBeads Protein G consists of uniform, superpara-magnetic silica beads coated with covalently coupled protein G (26 kDa). In those beads, nanometer-sized particles of magnetic iron (II/III)oxide are embedded in silicium oxide, resulting in high magnetic mobility. The surface is made from pure protein G coated silicium oxide. In order to enhance the binding specificity in the recombinant protein G used here, the albumin, cell wall and cell membrane binding domains present on the wild type form have been removed.




Well suited for automated and manual applications.
Suspension in PBS (pH 7,4); 0,05 % sodium azide

| | | | |
|---|---|---|---|
| **HP60.2** | 50 µl | plastic | 17,75 € |
| **HP60.1** | 1 ml | plastic | 181,70 € |

# Separators



## Roti®-Mag Tube-Separator

For collection of magnetic beads in reaction tubes.

The Roti®-Mag Tube Separator has been designed for fast and efficient collection of Roti®-Mag Beads magnetic particles during elution of biological molecules in reaction tubes. The separator has been equipped with 12 particularly strong permanent magnets, providing magnetic force for separation in 1 to 24 tubes in parallel. It, therefore, enables for single tube preparation as well as high-throughput applications.

Short separation times (under 2 mins.) are allowed by the close proximity of magnets and tubes. The use of transparent acrylic glass ensures permanent visual control of the separation process without the need to remove the tubes from the block. 24 non-magnetic sockets for reaction tubes have been included to provide a whole working station for both, magnetic separation and resuspension.

Usable with 2 x 12 tubes of 1,5 and 2,0 ml volumes.

| Usable for | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2 x 12 tubes á 1.5 and 2 ml | **2807.1** | 1 | 394,55 |



## Roti®-Mag 96well-Separator

For collection of magnetic beads in 96well plates.

The Roti®-Mag Tube Separator has been designed for fast and efficient high-throughput collection of Roti®-Mag Beads magnetic particles during elution of biological molecules in 96well plates. Each separator is made from acrylic glass and is equipped with 24 particularly strong permanent magnets of 7,5 mm diameter.

The close proximity of the magnets strongly pulls the beads of four adjacent wells, collecting the beads very efficiently and in short time (under 2 mins.) and, hence, enabling high speed and quantitative buffer exchange. For resuspension of the beads, plates are removed from the magnet stand.

Usable with 96well plates of 300 µl up to 2 ml well volume.

| Usable for | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 96well plates (300 µl - 2 ml) | **2808.1** | 1 | 394,55 |

# Ultra filtration



## Roti®-Spin Centrifugal Devices

For purification and concentration of biomolecules and for purification of solutions.

- Applicable for nucleic acids, proteins/peptides, other biomolecules >6 kD and very small bioparticles
- Can be used to replace standard techniques like precipitation, dialysis, gel filtration, gel purification, column chromatography, gradient centrifugation etc.
- Gentle: No shearing of DNA of up to 100 kb, proteins remain native and enzymatically active
- Applicable for purification of all labelled probes (isotope-, fluorescent-, chromogenic labelling)
- Very high recovery rates of >90 % (when using devices of appropriate MWCO)

Centrifugal devices for ultrafiltration of biomolecules. The membranes made of highly chemical-resistant polyethersulfone have been tightly sealed to prevent leakage and loss of samples. Furthermore, the membranes underwent special treatment minimising the binding of biomolecules, in order to optimise sample recovery rates.

Roti®-Spin Centrifugal Devices can be applied to a variety of applications and can be used to replace tedious and labour-intensive methods like gel filtration, gel purification or precipitation. Application is time-saving and very simple - only few centrifugal steps are necessary to concentrate and recover your sample. During this, the sample remains untouched in the upper reservoir, and cross-contamination is efficiently prevented even when large numbers of samples are handled. Centrifugation can easily be performed in the cold room or at specially designated benches like isotope laboratories or in laminar flow hoods.

**MWCO:**
For convenient and successful application, centrifugal devices with membranes in 4 colour-coded molecular weight cut-offs (MWCO) are available. In order to choose the appropriate MWCO please use the following thumb-rule:
Centrifugation of proteins/peptides:
MWCO ≤1/3 of sample molecule size.
Centrifugation of nucleic acids:
MWCO ≤ ½ sample molecule size.

**Overview for selecting the right pore size**

| MWCO | Molec. size | DNA size |
|---|---|---|
| 3 kD | 10 - 20 kD | <50 bp |
| 10 kD | 30 - 90 kD | 50 - 200 bp |
| 30 kD | 90 - 180 kD | 200 bp - 1 kb |
| 100 kD | >300 kD | >1 kb |

**Sample volumes:**
Maximum sample volume: Roti®-Spin MINI 50-500 µl
Final concentrate volume: Roti®-Spin MINI 15-20 µl

**Applications (examples):**
Desalting or buffer exchange following restriction digest, PCR or such; separation of free nucleotides and polymerised DNA; removal of contaminating compounds (like DNA) from stock solutions (e.g. PCR-buffers); concentration of DNA or proteins; separation of proteins of different size; sample preparation prior to HPLC.

**Roti®-Spin MINI**

| Type | MWCO (kD) | Colour | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Roti®-Spin MINI-3 | 3 | grey | **CL12.1** | 25 | 110,75 |
| Roti®-Spin MINI-10 | 10 | blue | **CL13.1** | 25 | 110,75 |
| Roti®-Spin MINI-30 | 30 | red | **CL14.1** | 25 | 110,75 |
| Roti®-Spin MINI-100 | 100 | clear | **CL15.1** | 25 | 110,75 |

# Affinity Chromatography

## Roti®garose Beads and Columns for Isolation of His-tag Proteins

Ion charged IDA-agarose beads for low pressure affinity chromatography. IMAC matrix.

Immobilized metal ion affinity chromatography (IMAC) still is the most widely used method to obtain high yield of very pure proteins with reasonable effort. Roti®garose His Beads offer the perfect solution for your specific application of low flow column chromatography or protein isolation in batch mode.
The matrix of Roti®garose His Beads consists of crosslinked and beaded 6 % agarose, IDA-conjugated and charged with divalent ions. Roti®garose His beads result in eluates with considerably low metal contamination.
The tridentate IDA cross-linker provides easy elution with low amounts of imidazole.
Additionally, Roti®garose Beads may repeatedly be regenerated, making them very cost-effective.
The matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT).

- Simple and rapid one-step purification of His-tagged proteins from total lysates
- High recovery rate of very pure proteins
- Superior binding capacity
- Easy elution and regeneration
- Very low ion leaching
- Compatible with denaturing and reducing reagents



## Nickel Charged IMAC Beads and Columns




### Roti®garose-His/Ni Cartridges

**for biochemistry**

For isolation of His-tagged proteins by high pressure affinity chromatography.
Affinity chromatography colums/nickel charged, IMAC columns
Storage temp.: +4 °C

**Danger** H225

Prepacked cartridges with Nickel charged IDA-agarose bead matrix for medium pressure affinity chromatography (MPLC).
Optimal for automated liquid chromatography, or if proteins shall be isolated under pressure.
**Suitable for ÄKTA™FPLC™** and for sample application via peristaltic pump or syringe.

- Very fast and simple purification of His-tagged proteins from total lysates
- Superior recovery rate of pure His-tagged proteins
- Binding capacity (purified 6xHis protein) of 110 mg per ml matrix
- Recommended flow rate 5 ml/min.
- Recommended pressure 5 bar [0,5 MPa] (70 psi)
- Standard ports (10-32)
- Very versatile. Applicable with ÄKTA™FPLC™, pump and syringe.
- Easy elution and regeneration
- Very low Nickel leaching
- Compatible with denaturing and reducing reagents
- For medium pressure flow chromatography

Roti®garose His/Ni Cartridges are prepacked and may be used directly. The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT). Slurry in 20 % ethanol.

Column material made from polypropylene and polyethylene (frit).
Matrix volume 5 ml, whole volume 10 ml.
For approx. 500 mg His labelled protein.

| | | |
|---|---|---|
| **1318.1** | 1x5 ml | 155,90 € |
| **1318.2** | 5x5 ml | 762,20 € |

**Instructions for use**
can be found on the Internet next to the product description.

**Nickel chelates** recognize two exposed histidine tags with good specificity and very high affinity, making the $Ni^{2+}$ charged matrix the first choice for all **standard applications**. Roti®garose His/Ni beads give **very high yields of pure proteins** with considerably low metal contamination.

**Type analysis:**

| | |
|---|---|
| Particle size (beads, columns) | 50-150 µm |
| Particle size (cartridges) | 20-50 µm |
| Beads (cross-linked agarose) | 6 % |
| Ligand | IDA |
| Metal ion | nickel |
| Binding capacity (DHAK-6xHis) (beads, columns) | 117 mg/ml |
| Binding capacity (DHAK-6xHis) (cartridges) | 110 mg/ml |
| Activating agent | Epichlorohydrin |
| Stabilizer | 20 % ethanol |

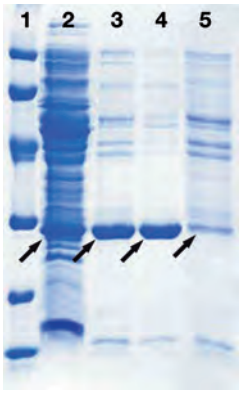



**Figure:** SDS-PAGE of 6xHis-fuculose aldolase, 28 kDa (arrows).
Very high yield of well purified proteins.
1: Marker, 2: Protein raw extract, 3,4: 6xHis target protein purified with Roti®garose His/Ni Beads or Column, respectively, 5: 6xHis target protein purified by competitor product.






## Roti®garose-His/Ni Beads

**for biochemistry**

For isolation of His-tagged proteins by affinity chromatography.
Agarose beads for affinity chromatography, IMAC matrix/nickel charged
Storage temp.: +4 °C

**Danger** H225

Nickel charged IDA-agarose beads for low pressure affinity chromatography. Slurry in 20 % ethanol.
Suitable for all general applications, or if proteins of very small amount shall be isolated without loss.

- One-Step purification of His-tagged proteins from total lysates
- Superior recovery rate of pure His-tagged proteins
- Binding capacity (purified 6xHis protein) of 117 mg per ml matrix
- Easy elution and regeneration
- Very low Nickel leaching
- Compatible with denaturing and reducing reagents
- For batch mode and gravity flow column chromatography

The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT).
May be autoclaved at 121 °C for 30 mins.

| | | | |
|---|---|---|---|
| **1308.1** | 25 ml | plastic | 274,15 € |
| **1308.2** | 100 ml | plastic | 736,40 € |




## Roti®garose-His/Ni Columns

**for biochemistry**

For isolation of His-tagged proteins by affinity chromatography.
Affinity chromatography colums/nickel charged, IMAC columns
Storage temp.: +4 °C

**Danger** H225

Prepacked columns with Nickel charged IDA-agarose bead matrix for low pressure affinity chromatography.
Suitable for all general applications, or if proteins of very small amount shall be isolated without loss.

Matrix volume 1 or 5 ml, whole volume 12 or 35 ml, respectively. For approx. 100 and 500 mg His labelled protein.

- Fast and simple purification of His-tagged proteins from total lysates
- Superior recovery rate of pure His-tagged proteins
- Binding capacity (purified 6xHis protein) of 117 mg per ml matrix
- Easy elution and regeneration
- Very low Nickel leaching
- Compatible with denaturing and reducing reagents
- For gravity flow chromatography

Roti®garose His/Ni Columns are prepacked and may be used directly.
The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT). Slurry in 20 % ethanol.
Column material made from polypropylene and polyethylene (frit).
May be autoclaved at 121 °C for 30 mins.

| | | |
|---|---|---|
| **1314.1** | 8x1 ml | 235,45 € |
| **1314.2** | 5x5 ml | 611,70 € |

## Cobalt Charged IMAC Beads and Columns

**Cobalt chelates** recognize two exposed, vicinal histidins with superior specificity and good affinity, resulting in acceptable to **good recovery rates, yielding proteins of superior purity**. This matrix is, therefore, the perfect choice if extremely pure proteins are required, or if hard-to-separate proteins shall be isolated.

**Type analysis:**

| | |
|---|---|
| Particle size | 50-150 µm |
| Beads (cross-linked agarose) | 6 % |
| Ligand | IDA |
| Metal ion | Cobalt |
| Binding capacity (DHAK-6xHis) | 135 mg/ml |
| Activating agent | Epichlorohydrin |
| Stabilizer | 20 % ethanol |

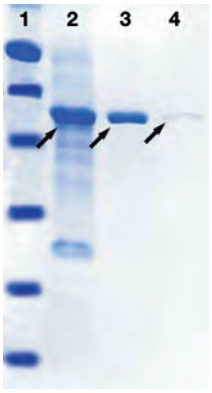



**Figure:** SDS-PAGE of highly expressed 6xHis-glutaryl acylase, 58 kDa (arrows). Good yield of extremely pure proteins.
1: Marker, 2: Protein raw extract, 3: 6xHis target protein purified with Roti®garose His/Co Beads, 4: 6xHis target protein purified by competitor product.




### Roti®garose-His/Co Beads

**for biochemistry**

For isolation of His-tagged proteins by affinity chromatography.
Agarose beads for affinity chromatography, IMAC matrix/cobalt charged
Storage temp.: +4 °C

**Danger** H225

Cobalt charged IDA-agarose beads for low pressure affinity chromatography. Slurry in 20 % ethanol.
Perfect choice if extremely pure proteins are required, or if hard-to-separate proteins shall be isolated.

- One-Step purification of His-tagged proteins from total lysates
- Good recovery rate of extremely pure His-tagged proteins
- Binding capacity (purified 6xHis protein) of 135 mg per ml matrix
- Easy elution and regeneration
- Very low Cobalt leaching
- Compatible with denaturing and reducing reagents
- For batch mode and gravity flow column chromatogrphy

The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT).
May be autoclaved at 121 °C for 30 mins.

| | | | |
|---|---|---|---|
| **1235.1** | 25 ml | plastic | 274,15 € |
| **1235.2** | 100 ml | plastic | 736,40 € |




### Roti®garose-His/Co Columns

**for biochemistry**

For isolation of His-tagged proteins by affinity chromatography.
Affinity chromatography colums/cobalt charged, IMAC columns
Storage temp.: +4 °C

**Danger** H225

Prepacked columns with Cobalt charged IDA-agarose bead matrix for low pressure affinity chromatography.
Perfect choice if extremely pure proteins are required, or if hard-to-separate proteins shall be isolated.

Matrix volume 1 or 5 ml, whole volume 12 or 35 ml, respectively.
For approx. 120 and 600 mg His labelled protein.

- Fast and simple purification of His-tagged proteins from total lysates
- Good recovery rate of extremely pure His-tagged proteins
- Binding capacity (purified 6xHis protein) of 135 mg per ml matrix
- Easy elution and regeneration
- Very low Cobalt leaching
- Compatible with denaturing and reducing reagents
- For gravity flow chromatography

Roti®garose His/Co Columns are prepacked and may be used directly.
The Matrix is stable in all commonly used reagents including denaturing and reducing reagents (like 8 M urea, 6 M guanidinium hydrochloride, 5 mM DTT). Column material made from polypropylene and polyethylene (frit). Slurry in 20 % ethanol.
May be autoclaved at 121 °C for 30 mins.

| | | | |
|---|---|---|---|
| **1267.1** | 8x1 ml | | 235,45 € |
| **1267.2** | 5x5 ml | | 611,70 € |

# Protein A Coated Agarose Beads for Antibody Purification via Low Pressure Affinity Chromatography

For rapid and simple purification of antibodies with reasonable effort, affinity chromatography still is the first choice in most cases. Roti®garose Protein A Beads offer the perfect solution for isolation of your specific antibodies, either in low flow column chromatography or in batch mode.
The matrix of Roti®garose Protein A Beads consists of cross-linked and beaded 4 % agarose, coated and covalently coupled with protein A from *Staphylococcus aureus*. The recombinant protein A has high affinity for IgG from a variety of different mammalian species, also binding some populations of IgA and IgM. *rec*Protein A shares IgG binding properties with natural protein A of *S. aureus* Cowan strain I. Most immunoglobulins may be eluted in 100 mM glycin or citric acid buffer (pH 3,0).

- One-Step purification of immunoglobulins from cell lysates and biological solutions
- Binding capacity (human IgG) of approx. 25 mg per ml matrix
- Superior affinity for IgG from various mammalian species
- High yield of very pure immunoglobulins
- Covalent binding of protein A in high ligand density
- For batch mode and gravity flow

**Type analysis:**

| | |
|---|---|
| Particle size | 50-150 µm |
| Beads (cross-linked agarose) | 4 % |
| Ligand | recombinant protein A |
| Chemical bonding | covalent |
| Ligand density (Protein A) | ca. 3 mg/ml |
| Binding capacity (humane IgG) | ca. 25 mg/ml |
| Stabilizer. | 20 % ethanol |







## Roti®garose-Protein A Beads

**for biochemistry**

For purification of immunoglobulins by affinity chromatography.
Agarose beads for affinity chromatography, IMAC matrix/Protein A conjugated
Storage temp.: +4 °C

**Danger** H225

Protein A coated agarose beads for low pressure affinity chromatography. High-performance affinity resin for antibody purification.
Slurry in 20 % ethanol.

| | | | |
|---|---|---|---|
| **1278.1** | 5 ml | plastic | 557,95 € |
| **1278.2** | 25 ml | plastic | 1890,95 € |

**Instructions for use**
can be found on the Internet next to the product description.

## Roti®garose-Protein A MINI columns

**for biochemistry**

For purification of immunoglobulins by affinity chromatography.
Affinity chromatography columns/protein A conjugated
Storage temp.: +4 °C

**Danger** H225

Prepacked columns with Protein A coated agarose beads for low pressure affinity chromatography. High-performance affinity resin for antibody purification.
Matrix volume 100 µl, whole volume 1 ml. For approx. 2,5 mg IgG.
Slurry in 20 % ethanol.

| | | | |
|---|---|---|---|
| **4065.1** | 5x100 µl | | 299,95 € |

▶ MIDI and MAXI columns see next page



ready-to-use

## Roti®garose-Protein A MIDI columns

**for biochemistry**

For purification of immunoglobulins by affinity chromatography.
Affinity chromatography columns/protein A conjugated
Storage temp.: +4 °C

**Danger** H225

Prepacked columns with Protein A coated agarose beads for low pressure affinity chromatography. High-performance affinity resin for antibody purification.
Matrix volume 1 ml, whole volume 12 ml. For approx. 25 mg IgG.
Slurry in 20 % ethanol.

| | | |
|---|---|---|
| **4066.1** | 1x1 ml | 274,15 € |



ready-to-use

## Roti®garose-Protein A MAXI columns

**for biochemistry**

For purification of immunoglobulins by affinity chromatography.
Affinity chromatography columns/protein A conjugated
Storage temp.: +4 °C

**Danger** H225

Prepacked columns with Protein A coated agarose beads for low pressure affinity chromatography. High-performance affinity resin for antibody purification.
Matrix volume 5 ml, whole volume 35 ml. For approx. 125 mg IgG.
Slurry in 20 % ethanol.

| | | |
|---|---|---|
| **4070.1** | 1x5 ml | 676,20 € |

| Type | Matrix volume | Total volume | Frit pore size | Binding capacity (human IgG) |
|---|---|---|---|---|
| MINI | 100 µl | 1 ml | 20 µm | 2,5 mg |
| MIDI | 1 ml | 12 ml | 20 µm | 25 mg |
| MAXI | 5 ml | 35 ml | 20 µm | 125 mg |

## Columns and Accessories




## Empty columns for protein isolation

Empty columns for protein isolation by chromatography.
Chemically stabile and versatile.
Column material: Polypropylene, Material column frit: Polyethylene.
Delivery includes end caps for Columns Grav S, M and L.
Delivery includes top caps with Luer lock and screw lock plus end caps for columns Luer.
Delivery includes plugs and end caps for columns Inject. Luer-connection w/o screw thread.

**Technical specifications:**

| Type | Figure | Matrix volume | Total volume | Frit pore size | Chromatography by |
|---|---|---|---|---|---|
| Spin | ① | 100-250 µl | 1,5 ml | 20 µm | Centrifugation |
| Grav S | ② | 100-200 µl | 1 ml | 20 µm | Gravity |
| Grav M | ③ | 0,5-2 ml | 12 ml | 20 µm | Gravity |
| Grav L | ③ | 2-6 ml | 35 ml | 20 µm | Gravity |
| Luer | ④ | 50-100 µl | 0,8 ml | 35 µm | Pressure |
| Inject | ⑤ | 0,8 ml | 0,8 ml | 10 µm | Pressure |

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Spin | **1541.1** | 25 | 60,00 |
| Spin | **1541.2** | 100 | 194,60 |
| Grav S | **1515.1** | 20 | 102,90 |
| Grav M | **1516.1** | 50 | 189,20 |
| Grav L | **1518.1** | 50 | 231,15 |
| Luer | **1527.1** | 25 | 137,60 |
| Inject | **1532.1** | 5 | 67,55 |

# Reagents




## Empty cartridges for protein isolation

Empty columns for protein isolation by pressure chromatography.

Chemically stabile and versatile. In case longer column beds are needed, 2 or 3 cartridges may be interconnected using the Luer adapter (0198.1, 10-32, male/female luer connector), resulting in a matrix of up to 10 cm. Compatible with common chromatography instruments like ÄKTA™FPLC™.

Column material: Polypropylene, Material column frit: Polyethylene.

Delivery includes empty cartridges plus end plugs. For storage of packed cartridges, column plugs (0197.1) have to be used. Please order separately.

**Technical specifications:**

| Product | Figure | Volume* | Inner ∅ | Frit pore size | Chromatography by |
|---|---|---|---|---|---|
| Empty cartridges | ① | 1 ml | 6,2 mm | 12 µm | Pressure |

* The actual filling volume depends on the respective resin used, varying between approx. 1 and 1.3 ml.

| Product | Image | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Empty cartridges | ① | **1345.1** | 5 | 145,15 |
| Column plugs | ② | **0197.1** | 10 | 74,75 |
| Luer adapter | ③ | **0198.1** | 1 | 24,20 |

**Instructions for use**
can be found on the Internet next to the product description.




## Spectra/Gel™ Absorbent

For concentration of dialysed proteins and microparticles.

**Warning** H319

- Most easy to handle
- Compatible with all types of dialysis membranes and -systems (MWCO: 100 up to 300 000 D)
- Suitable for concentration of very small molecules
- Contamination of samples excluded
- Cost efficient

Easy and cost efficient concentration of proteins, microparticles and other macromolecules.

**Application:**
After dialysis, the dialysis tubing containing the sample is simply coated with Spectra/Gel™ Absorbent. Made of polyacrylate-polyalcohol, Spectra/Gel™ removes water and small molecules like salt ions from the sample by absorption through the membrane without affecting or contaminating the biomolecules. Grain size 100-850 µm.
The duration of the process depends on the desired final concentration, the MWCO of the dialysis membrane, and the surface to volume ratio of the tubing. E.g. concentration of 5 ml sample through a MWCO of 15 kD results in a final volume of 0.5 ml in approx. 60 min. The wet granulate may be easily wiped off and the concentrated sample be removed from the opened dialysis tubing.
One package (500 g) suffices for up to 50 applications.

| | | | |
|---|---|---|---|
| **0115.1** | 500 g | plastic | 112,90 € |
| Original pack 6 x 500 g | | | 107,26/500 g |

## Summary of Reagents for Protein Isolation and Stabilisation

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **1,4-Dithioerythritol (DTE)** | ≥99 %, p.a. | **8814.1** | 5 g | 63,35 |
| | | **8814.3** | 10 g | 106,45 |
| | | **8814.2** | 25 g | 235,45 |
| **1,4-Dithiothreitol (DTT)** | ≥99 %, p.a. | **6908.1** | 5 g | 57,55 |
| | | **6908.3** | 10 g | 85,90 |
| | | **6908.2** | 25 g | 204,15 |
| | | **6908.4** | 100 g | 600,95 |
| **Glycerol** | ≥99,5 %, p.a., anhydrous | **3783.3** | 1 l | 56,45 |
| | | **3783.1** | 1 l | 52,15 |
| | | **3783.4** | 2,5 l | 99,90 |
| | | **3783.2** | 2,5 l | 94,10 |
| **Guanidine hydrochloride** | ≥99,7 %, p.a., Protein Grade | **0035.1** | 100 g | 55,80 |
| | | **0035.2** | 500 g | 201,60 |
| | | **0035.3** | 1 kg | 289,20 |
| **Guanidine hydrochloride solution** | 55 % in water (5,75 M) | **9465.1** | 1 l | 83,75 |
| **HEPES** | ≥99,5 %, p.a. | **9105.2** | 100 g | 33,25 |
| | | **9105.4** | 500 g | 136,00 |
| | | **9105.3** | 1 kg | 224,70 |
| | | **9105.6** | 2,5 kg | 450,45 |
| | | **9105.5** | 5 kg | 858,95 |
| **Lysozyme** | ≥35000 FIP U/mg, BioScience-Grade, lyophilised | **8259.1** | 1 g | 26,80 |
| | | **8259.2** | 10 g | 165,05 |
| | | **8259.3** | 25 g | 310,70 |
| **2-Mercaptoethanol** | ≥99 %, p.a. | **4227.3** | 100 ml | 14,55 |
| | | **4227.1** | 250 ml | 20,35 |
| | | **4227.2** | 1 l | 46,15 |
| **PIPES** | ≥99 % | **9156.1** | 25 g | 19,25 |
| | | **9156.2** | 100 g | 55,40 |
| | | **9156.3** | 250 g | 120,95 |
| | | **9156.4** | 500 g | 205,90 |
| **Roti®fair Glycine 3.0** | for 1000 ml/pouch, for biochemistry | **1032.1** | 10 pouches | 97,75 |
| **Roti®fair PBS 7.2** | for 1000 ml/tablet, for biochemistry and molecular biology | **1106.1** | 10 tablets | 74,10 |
| | | **1106.2** | 100 tablets | 353,70 |
| **Roti®fair PBS 7.4** | for 10 l/pouch, for biochemistry and molecular biology | **1101.1** | 1 pouch | 39,25 |
| **Roti®fair PBS 7.4** | for 100 ml/tablet, for biochemistry and molecular biology | **1107.1** | 100 tablets | 56,90 |
| **Roti®fair PBS 7.4** | for 200 ml/tablet, for biochemistry and molecular biology | **1108.1** | 100 tablets | 93,45 |
| **Roti®fair PBS 7.4** | for 500 ml/tablet, for biochemistry and molecular biology | **1111.1** | 12 tablets | 50,00 |
| | | **1111.2** | 100 tablets | 198,90 |
| **Roti®fair PBS 7.4** | for 1000 ml/tablet, for biochemistry and molecular biology | **1112.1** | 10 tablets | 73,65 |
| | | **1112.2** | 100 tablets | 353,70 |
| **Roti®fair 10x PBS 7.4** | for 1000 ml/pouch, for biochemistry and molecular biology | **1105.1** | 5 pouches | 96,65 |
| **Roti®fair PBS potassium-free 7.4** | for 1000 ml/tablet, for biochemistry and molecular biology | **1113.1** | 10 tablets | 73,65 |
| | | **1113.2** | 100 tablets | 353,70 |
| **Roti®fair PBST 7.4** | for 1000 ml/tablet, for biochemistry and molecular biology | **1116.1** | 10 tablets | 82,25 |
| | | **1116.2** | 100 tablets | 396,70 |
| **Roti®fair SDS 0.5g** | 0,5 g/tablet, for biochemistry, molecular biology and electrophoresis | **1156.1** | 50 tablets | 46,80 |
| **Roti®fair 10% SDS** | for 1000 ml/pouch, for biochemistry, molecular biology and electrophoresis | **1157.1** | 5 pouches | 596,65 |
| **Roti®fair TBS 7.6** | for 500 ml/tablet, for biochemistry and molecular biology | **1244.1** | 10 tablets | 54,75 |
| | | **1244.2** | 100 tablets | 263,40 |

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Roti®fair 10x TBS 8.0** | for 1000 ml/pouch, for biochemistry and molecular biology | **1247.1** | 10 pouches | 643,95 |
| **Roti®fair 1M Tris 7.4** | for 1000 ml/pouch, for biochemistry and molecular biology | **1251.1** | 10 pouches | 375,20 |
| **Roti®-PreMix PBS** NEW | for biochemistry and molecular biology | **0890.1** | 250 g | 74,20 |
| | | **0890.2** | 1,25 kg | 204,25 |
| **Roti®-PreMix PBST** NEW | for biochemistry and molecular biology | **0987.1** | 250 g | 74,20 |
| | | **0987.2** | 1,25 kg | 204,25 |
| **Roti®-Stock 10x PBS** | BioScience-Grade, ready-to-use, filtered and steam sterilised | **1058.1** | 1 l | 115,60 |
| **Roti®-Stock 10x PBST** | BioScience-Grade, ready-to-use, filtered and steam sterilised | **1059.1** | 1 l | 120,95 |
| **Roti®-Stock 10x TBS** | BioScience-Grade, ready-to-use, filtered and steam sterilised | **1060.1** | 1 l | 120,95 |
| **Roti®-Stock 10x TBST** | BioScience-Grade, ready-to-use, filtered and steam sterilised | **1061.1** | 1 l | 120,95 |
| **D(+)-Saccharose** | ≥99,5 %, p.a. | **4621.1** | 1 kg | 19,90 |
| | | **4621.2** | 5 kg | 83,75 |
| | | **4621.5** | 25 kg | 192,45 |
| **SDS ultra pure** | ≥99,5 %, for electrophoresis, biochemistry and molecular biology | **2326.1** | 100 g | 39,25 |
| | | **2326.4** | 250 g | 82,70 |
| | | **2326.2** | 500 g | 150,40 |
| | | **2326.3** | 500 g (in 2,5 l glass bottle for prep. of a 20 % sol.) | 156,45 |
| | | **2326.5** | 1 kg | 257,90 |
| **Sodium ethylmercurithiosalicylate** | ≥97 % | **6389.1** | 10 g | 68,70 |
| | | **6389.2** | 50 g | 260,70 |
| **Trichloroacetic acid** | ≥99 %, p.a. | **8789.2** | 500 g | 53,25 |
| | | **8789.1** | 1 kg | 91,95 |
| **Tris-(2-carboxyethyl)-phosphine hydrochloride** | ≥98 %, for biochemistry | **HN95.1** | 1 g | 51,50 |
| | | **HN95.2** | 5 g | 166,55 |
| **TRIS hydrochloride** | ≥99 %, p.a. | **9090.1** | 50 g | 13,90 |
| | | **9090.2** | 500 g | 87,65 |
| | | **9090.3** | 1 kg | 129,55 |
| | | **9090.5** | 2,5 kg | 274,15 |
| | | **9090.4** | 5 kg | 525,70 |
| **Triton® X 100** | extra pure | **3051.3** | 250 ml | 17,10 |
| | | **3051.4** | 500 ml | 22,05 |
| | | **3051.2** | 1 l | 30,65 |
| | | **3051.1** | 10 l | 192,45 |
| **Urea** | ≥99,5 %, p.a. | **3941.3** | 500 g | 14,55 |
| | | **3941.1** | 1 kg | 25,30 |
| | | **3941.2** | 5 kg | 103,10 |

For additional product data and safety information, see chapter Chemicals A-Z.



▶ Many reagents in tablets or pouches, see first pages of this chapter Biochemistry!

# Scintillation Cocktail



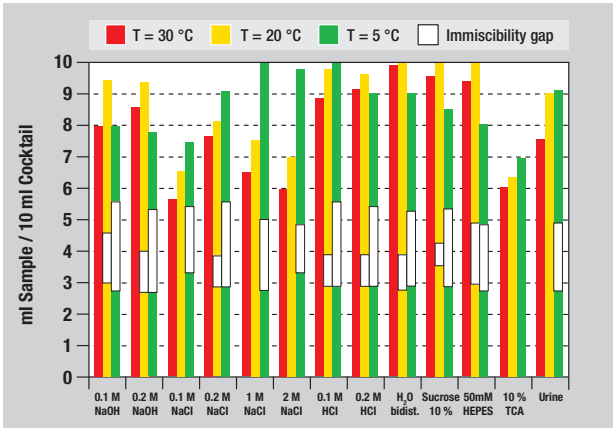




**Fig.: Typical sample acceptance capacity**
The immiscibility gap is characterized by two phases and may not be used for measurement. By increasing or reducing sample amount in relation to scintillation cocktail, the immiscibility gap may be avoided. Sample acceptance capacities of PBS, TBS etc. equal this of 0.1 M NaCl. Sample acceptance capacities of BSA solutions, cell culture supernatants etc. equal this of HEPES.

## Rotiszint® eco plus

**LSC-universal cocktail**

For hydrophilic and lipophilic samples.

**Danger** H318-H315-H412-H302

- Very high sample acceptance capacity
- High counting efficiency
- Low photo- and chemoluminescence
- Very good colour- and chemical quench resistance
- Environmentally safe and non-carcinogenic
- Virtually odor- and colourless
- High flash point
- No permeation through plastic vials

Multi-purpose, ready-to-use scintillation cocktail for Liquid Scintillation Counting (LSC) of β radiators (e.g. $^{3}H$, $^{14}C$, $^{32}P$). Excellent sample acceptance capacity for all aqueous and organic samples, optimally suited for solutions with high ionic strength. Rotiszint®-eco plus may be used in general in all biological, biochemical and chemical areas, contemporary typical applications are e.g. measurement of cell culture supernatants, routine analyses, and enzymatic assays. Also well suitable for filter plates.

In Rotiszint®-eco plus, di-isopropyl naphthalene is the base reagent of primary scintillators. The cocktail is free of carcinogenic or environmentally dangerous reagents.

Rotiszint®-eco plus is perfectly suited for measurement of solutions, showing a counting efficiency of 47 % ($^{3}H$). Through its emulsifying character, Rotiszint®-eco plus elutes samples from filter plates, thus making it also suitable for counting of filter samples. For reliable quantitative elution we recommend addition of a sample specific elution buffer. Note: Use of alkylating elution buffers may cause chemoluminescence.

We recommend the use of Rotilabo®-dispensers (Art. No. HAC6.1-HAC9.1, HAE0.1 or HAE1.1) and telescopic suction pipe (Art. No. AA92.1).

| | | | |
|---|---|---|---|
| **0016.4** | 100 ml | glass | 18,20 € |
| **0016.3** | 5 l | plastic | 261,80 € |
| Original pack 2 x 5 l | | | 248,71/5 l |

▶ Scintillation vials see page 75

▶ Dispensers see page 393

### Application and quench of Rotiszint® eco plus

Rotiszint® eco plus: Efficiency in solution ($^{3}H$) 47 %, ($^{14}C$) 90 %

Ideal for measuring **solutions**.

Please note when measuring **filter discs**:
Rotiszint® eco plus contains emulsifying components and elutes the samples from the discs. This increases measuring efficiency, however involves the risk of nonquantitative elution, so that the measurements may not be reproduced as reliably in some cases. The rate of yield when eluting from filter discs can be increased by adding tissue solutizers, whereby the chemical and color quench are also increased. It must be determined for each individual experiment which mixture is suitable.

### Advantages of Rotiszint® eco plus

Rotiszint® eco plus is based on the solvent di-isopropyl naphthaline (DIN), which due to its environmental friendliness is easy to handle, store and ship. It also fulfills all the measuring demands required of efficient scintillation cocktails.

Rotiszint® eco plus is produced without benzene, toluene, xylene and pseudocumene. The solvent has low vapour pressure, therefore there is no irritation caused by a bad odour. The solution is hardly flammable and economical in use. It is also biodegradable. Rotiszint® eco plus has high counting efficiency, excellent quench resistance, good sample stability, no chemoluminescence and no diffusion through plastic vials.

Rotiszint® eco plus comes in black 5 l plastic bottles, which can be used as storage containers. They enable easy, safe and place-saving storage.

A practical dispenser helps to remove the required amount of cocktail easily and safely. We recommend the Rotilabo®-dispenser (Art. No. Y837.1 - Y842.1). In order to completely remove all the liquid, the inner withdrawal tube may be replaced with a longer Teflon® or polyethylene tube (6 mm inner Ø), or by the telescope suction tube (Art. No. AA92.1).

# Protein Quantitation




## Roti®-Quant

**5x conc.**

For protein quantitation acc. to Bradford.
Storage temp.: +4 °C

**Danger** H226-H290-H314

- Reproducible
- Fast
- Low price

**Further characteristics:**
- 1 measurement per sample ($OD_{595}$)
- Linearity of measuring results to a great extent
- Sensitivity to 2 µg
- Functional range: 2-100 µg

50 ml Roti®-Quant is sufficient for more than 200 macroassays (1 ml-cuvette) or more than 900 assays when using microtiter plates.

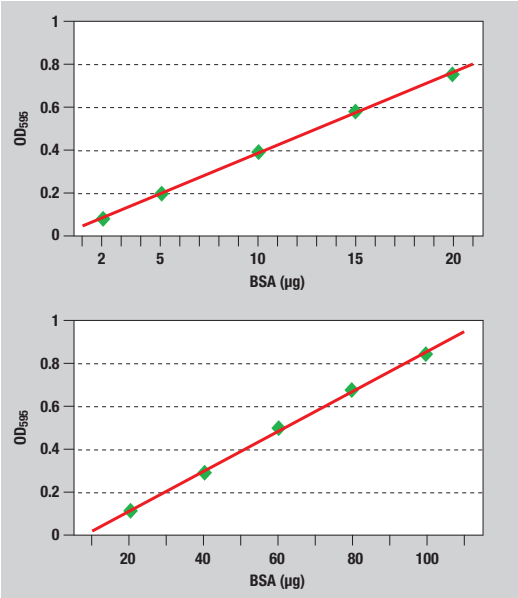



**Fig.:** Typical standard curve with Roti®-Quant and BSA (Art. No. 8076.1) as calibrating protein.

| | | | |
|---|---|---|---|
| **K015.2** | 50 ml | plastic | 14,55 € |
| **K015.3** | 200 ml | plastic | 46,80 € |
| **K015.1** | 500 ml | plastic | 93,00 € |




## Roti®-Nanoquant

**5x conc.**

For protein quantitation acc. to Bradford, for extremely small protein amounts.
Storage temp.: +4 °C

**Danger** H226-H290-H314

- Reproducible
- Low-priced
- For very low protein amounts

**Further characteristics:**
- Double measurement per sample ($OD_{450}/OD_{590}$)
- Perfect linearity of measuring results
- Sensitivity: up to 200 ng
- Broad functional range of 200 ng to 25 µg

50 ml Roti®-Nanoquant is sufficient for more than 200 macroassays (1 ml-cuvette) or more than 900 assays when using micro-titer plates.

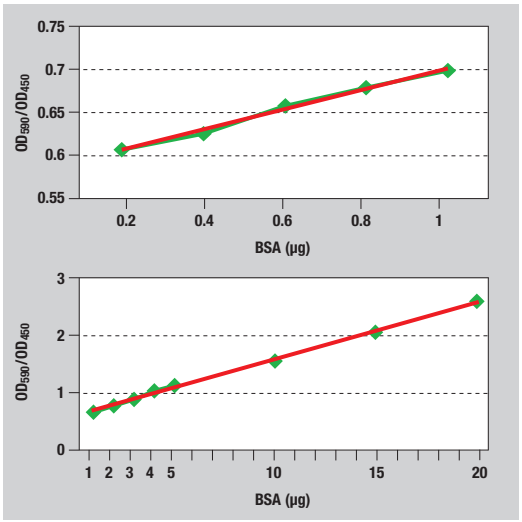
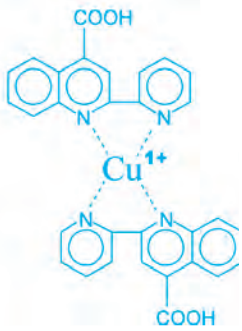



**Fig.:** Typical calibration line with Roti®-Nanoquant and BSA (Art. No. 8076.1) as calibrating protein.

| | | | |
|---|---|---|---|
| **K880.2** | 50 ml | plastic | 14,95 € |
| **K880.3** | 200 ml | plastic | 45,05 € |
| **K880.1** | 500 ml | plastic | 89,80 € |

▶ Further details and figures on these products at www.carlroth.com / Life Science / Biochemistry/ protein quantitation






## Roti®-Quant universal

For protein quantitation (PCA enhanced Biuret reaction). High tolerance against detergents, salts and alcohols.

Storage temp.: +20 °C

**Danger** H315-H318-H411

- **Equals the well-known BCA assay**
- Very easy to handle
- Highly sensitive measurement up to 0.5 µg protein
- Linear measuring range from 0.5 to 200 µg protein
- Can be used in 1-ml-scales and in microtiter plates (can be automated)
- Measurement with standard filters (492 nm wave length) or at 503 nm wave length
- Accelerated reaction and increased sensitivity in mild heat

Colorimetric test for detecting and quantifying soluble proteins. The special reagent formula effects a high tolerance against interfering factors such as detergents, alcohol and buffer salts, thus making the kit a universal tool for measuring proteins in almost every solution.
The basic mechanism, a PCA enhanced Biuret reaction, is identical with the one used for the well known BCA protein assay. Its result, however, is a bright blue colour which may be measured with standard filters of approx. 500 nm wave length.

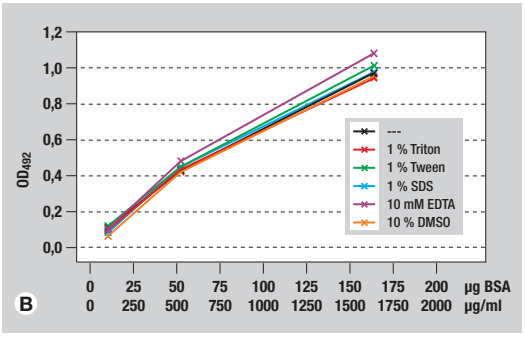



**Fig. B:** Independence of Roti®-Quant-universal-assay of detergents and other additives, examples. Blank-value corrected. Measurement of 100 µl each protein solution.

(With kind permission of Dr. Angelika Böttger, Zoological Institute, Ludwig-Maximilians-University Munich)

**The kit contains:**
500/200 ml Roti®-Quant universal reagent 1 (Art. No. 0118) and 40/16 ml Roti®-Quant universal reagent 2 (Art. No. 0119), adequate for 500/200 preparations in photometer cuvettes or 5000/2000 preparations in microtiter plates.

Contents of this Kit may not be bought separately.

| | | |
|---|---|---|
| **0120.2** | 1 kit (200 assays) | 86,55 € |
| **0120.1** | 1 kit (500 assays) | 181,70 € |

**Instructions for use**
can be found on the Internet next to the product description.




## Rotilabo®-single-use cuvettes

Made of **PS**, **PPMA** or special plastic.
- Two optical windows
- Extremely low deviation in absorbance values
- Outstanding optical transmission values
- Cavity-sorted production

Layer thickness 10 mm. Dimensions: L 12.5 x W 12.5 x H 45 mm.

**Polystyrene (PS)**
Range of application: 340 to 900 nm.

| Type | Volume (ml) | Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| ① Semi-micro | 1,6 | 10 x 100 | **XK20.1** | 1000 | 73,05 |
| ② Macro | 4,0 | 10 x 100 | **XK21.1** | 1000 | 74,15 |



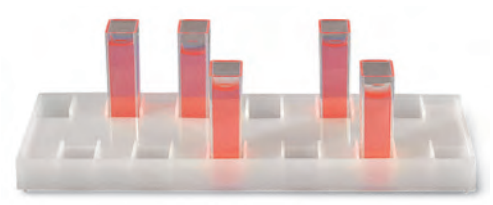
## Disposable cuvettes

By Brand. Made of **PS** or **PMMA**.
- Two optical windows
- Optically perfect transparency
- Sorted according to nest numbers to minimize extinction deviation
- Recessed windows to protect against scratching
- Arrow marks direction of irradiation

Standard-layer thickness 10 mm. Dimensions: 12.5 x 12.5 x 45 mm.
**Passband: PS: 340-900 nm.**
Standard deviation:
- PS at 360 nm ≤0.005 extinction units.

**Polystyrol (PS)**

| Type | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Macro | 2,5-4,5 | **Y194.1** | 100 | 11,80 |
| Semi-micro | 1,5-3,0 | **Y195.1** | 100 | 12,40 |



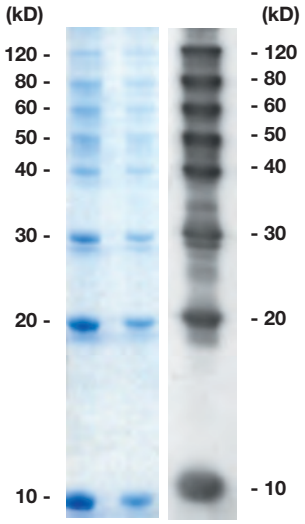
## Rotilabo®-cuvette stand

Made of **PE**. For 12 cuvettes 10 mm thick. With staggered arrangement of holders. Low stand-depth for better observation of cuvette contents. Dimensions: L 170 x W 50 x H 15 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **9663.2** | 5 | 24,55 |

# Western-Blot & ELISA

## Western-Blot Marker




### Roti®-Mark WESTERN Set

**Set of protein marker and antibody for gel and Western-Blot**

**Size range: 10-120 kD**
**Number of protein bands: 8**
**Number of lanes: approx. 100 or 10 (mini gels)**
Storage temp.: -20 °C • Transport temp.: room temp.

**Warning** H319

Finely graded protein marker for medium size range and for detection in gel and on the Western-Blot membrane. The marker itself consists of unstained proteins and therefore enables correct size evaluation in gel (left figure). The marker-specific antibody Roti®-Mark WESTERN HRP- conjugate (rabbit) enables the marker to be detected directly in Western- Blot and stained through chemoluminescence or colour reaction. Antibody incubation is performed in parallel with the incubation of your protein-specific antibodies and therefore saves any additional work and expense. The marker bands are also automatically stained (right figure) during subsequent detection by horseradish-peroxidase.

Consequently you will obtain the correct ladder size directly on your printout, X-ray film or membrane, ruling out the possibility of any errors through inaccurate transfer of the bands.
Marker proteins are solubilised in a non-reducing buffer acc. to Laemmli.
Roti®-Mark WESTERN Marker can be bought seperately under Art. No. 0948.1 and Roti®-Mark WESTERN HRP conjugate under Art. No. 0949.1.

**Left hand fig.:** 12 % minigel, 10 µl and 5 µl marker solution, respectively.
**Right hand fig.:** Chemoluminescence detection via Roti-Lumin, Art. No. P078.1. Proteins were run in a 12 % minigel and transferred onto a Roti®-PVDF-Membran. 5 µl Roti®-Mark WESTERN Marker and Roti®-Mark WESTERN HRP conjugate diluted by 1:2.500.

| | | | |
|---|---|---|---|
| **0947.2** | 1 mini kit | plastic | 40,75 € |
| **0947.1** | 1 kit | plastic | 321,45 € |

▶ Roti®-Mark WESTERN Marker see page 1173

### Roti®-Mark WESTERN HRP Conjugate

**0,2 mg/ml**

For HRP mediated detection of Roti®-Mark WESTERN Marker.
Storage temp.: -20 °C • Transport temp.: room temp.

Anti-Roti®-Mark WESTERN marker protein/HRP conjugate made from rabbit serum. The antibody is aimed specifically at the marker proteins of the Roti®-Mark WESTERN marker (Art. No. 0948.1) and is used mixed together with your protein-specific antibody. The marker bands are then also automatically stained during subsequent detection by horseradish-peroxidase.
The figure shows chemoluminescence detection of the Roti®-Mark WESTERN marker (5 µl) with Roti®-Mark WESTERN HRP-conjugate (diluted 1:2.500) using Roti®-Lumin (Art. No. P078.1) after separation on a 12 % minigel and transfer onto a Roti®-PVDF-membrane. The solution has been stabilised with PBS and BSA. The antibody can be used in dilutions of 1:500 to 1:5.000 and is adequate at a volume of 5 ml buffer for up to 250 assays. Short-term storage for a few weeks is possible at +4 °C. We recommend you aliquot and preserve the antibody at -20 °C or -80 °C for longer-term storage.

| | | | |
|---|---|---|---|
| **0949.1** | 500 µl | glass | 196,20 € |

# Blocking Reagents

### Sodium-Casein

**≥89 % lactoprotein**

Casein-sodium

Blocking reagent from milk protein, suitable for Western and ELISA. High blocking efficiency based on the amount of small protein and peptide species (<10 kD). Can be used with PBS/PBST and TBS/TBST as well as all standard colorimetric and fluorescent detection systems. Not suitable for PVDF-membranes, biotin/streptavidin mediated labelling (milk contains biotin), and detection of phospho-proteins.
**Tip:** Prepare stock solution in 0.3 M NaOH (37 °C), titrate to pH 7.4 (HCl).

| | | | |
|---|---|---|---|
| **8569.2** | 500 g | plastic | 27,45 € |
| Original pack 6 x 500 g | | | 26,08/500 g |
| **8569.1** | 1 kg | plastic | 41,85 € |
| Original pack 6 x 1 kg | | | 39,76/1 kg |
| **8569.3** | 2,5 kg | plastic | 92,35 € |

### Powdered milk

**blotting grade, powdered, low fat**

BLOTTO reagent

Lowfat powdered milk, especially suited for use as blocking reagent in immunological assays like Western-Blot analyses or ELISA. Fine powdered for easy application.
**Not suitable for biotin/streptavidine mediated detection systems. Milk contains biotin.**

| | | | |
|---|---|---|---|
| **T145.1** | 250 g | plastic | 14,20 € |
| **T145.2** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **T145.3** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **T145.5** | 2,5 kg | plastic | 75,15 € |
| **T145.4** | 5 kg | plastic | 139,65 € |

▶ BSA/Albumins see page 1294

▶ Ready-made solutions, pre-mixes, tablets and pouches of PBS/PBST and TBS/TBST see page 1314




## Roti®-Block

**ready-to-use, 10x conc.**

Protein free blocking solution. Contains Tween® 20.

Storage temp.: +20 °C

**Suitable for**

- Western- and Far Western Analysis
- Southern- and Northern-Blots
- Dot-Blots
- ELISA- and Sandwich-Assays
- Precoating of ELISA-plates (incl. drying)
- *in situ* hybridisation
- Microarray hybridisation

In order to obtain high signal intensity, nonspecific antibody binding sites must be blocked. Whilst detergents are not effective as blocking agents, the addition of proteins such as BSA may mask specific binding sites. Roti®-Block is an innovative, polymer-based blocking reagent which solves such problems. With Roti®-Block, the specific binding sites remain accessible while nonspecific reactions are suppressed, thus leading to an increase in signal intensity.

Included you will find a detailed instruction manual with protocols, e.g. for stripping PVDF-membranes from bound probes without destabilising the blocking, which enables fast rescreening of the filter.
Roti®-Block also enables the blot to be Ponceau stained even after blocking.
For detection systems using antibodies specifically directed against protein-phosphorylations we recommend to test and optimise the blocking efficiency prior to assaying your samples.

| | | | |
|---|---|---|---|
| **A151.1** | 250 ml | glass | 48,95 € |
| **A151.4** | 500 ml | glass | 82,25 € |
| **A151.2** | 1 l | glass | 149,45 € |
| Original pack 6 x 1 l | | | 141,98/1 l |
| **A151.3** | 2,5 l | glass | 278,45 € |
| Original pack 4 x 2,5 l | | | 264,53/2,5 l |

▶ Membrans, papers and reagents for blotting/transfer see Chapter Electrophoresis

**Instructions for use**
can be found on the Internet next to the product description.

## Roti®-ImmunoBlock

**ready-to-use, 10x conc.**

Protein free blocking reagent for immunocytological assays.
Without detergent.

Storage temp.: +20 °C

**Suitable for**

- Immunocytological assays
- Immunohistological assays
- Paraffin- and cryosections
- *in situ* hybridisation
- Cell culture samples
- Whole mount samples

Roti®-ImmunoBlock is an innovative blocking reagent on a polymer base without detergents and proteins.

No contamination of your detection system through foreign proteins, reducing background and false-positive signals. Specific binding signals are preserved whilst non-specific interaction is impeded, increasing the signal-to-noise ratio. Ready-to-use solution for fast and easy applications.

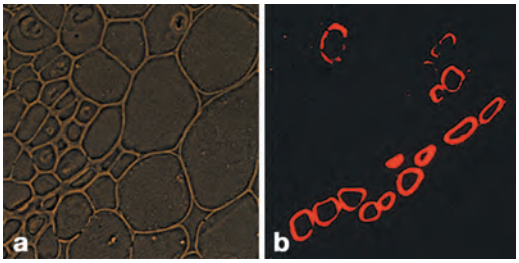



**Figure:**
*Scilla siberica:* Cross section of a conducting bundle from the leaf.
Immunofluorescent detection of a protein in sieve cells:
a: Phase contrast
b: Immunofluorescence, blocking with Roti®-ImmunoBlock

With kind permission of Dr. Deumling, MPI for Culture Research, Cologne.

| | | | |
|---|---|---|---|
| **T144.1** | 250 ml | glass | 45,05 € |

## Roti®fair BBS

**for 500 ml/tablet, for biochemistry and molecular biology**

Coating of ELISA plates and blocking supplement.

Borate Buffered Saline (tablets)

**Danger** H360FD

Exactly pre-weighed tablets for convenient and rapid preparation of Borate Buffered Saline solution (BBS).
BBS is commonly used for coating of ELISA plates and for blocking-enhancement of Western- or Southern blot membranes.
The buffer can also be used as a sample diluent in biological studies and for various applications within biology and biochemistry in order to stabilize the pH value.
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.
Buffer solution has to be stored at +4 °C.

1x BBS solution is prepared by solubilization of 1 tablet in 500 ml highly pure water.

**Composition:**

Prepared 1x BBS solution contains: 0,15 M NaCl, 10 mM borate buffer, pH-value 8,2 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1005.1** | 100 tablets | plastic | 255,35 € |

▶ Mounting media and further immuno-histological products, see chapters Histology and Cell biology!

# Antibodies

## Primary Antibodies

ready-to-use



Polyclonal sera and pABs for detection and isolation of labelled proteins

**Raised in:** Rabbit
**Conjugation:** None or Horse Radish Peroxidase (HRP)
**Application:** Immuno blotting (Western-, dot blotting), ELISA, protein isolation and -purification

**Purification and specificity sera:** None.
Tested for Western Blot and ELISA.
**Purification and specificity pAB and Anti His-HRP:** Purified from monospecific antiserum by affinity chromatography on immobilised tag/anchor sequence. Tested for Western Blot and ELISA.

Storage temperature: -20 °C
Transport temperature: cooled (freezer packs)

| Primary antibody | Concentration and purification | Target | Storage buffer | Recommended dilution | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| **Anti DYKDDDDK pAB** | 1 mg/ml, polyclonal, affinity purified | DYKDDDDK**-anchor sequence | 1x PBS, pH 7,4 | 1:1000 | **4665.1** | 100 µl | 244,60 |
| **Anti DYKDDDDK Serum** | polyclonal | DYKDDDDK**-anchor sequence | x | 1:1000 | **4664.1** | 100 µl | 200,50 |
| **Anti GST pAB** | 1 mg/ml, polyclonal, affinity purified | GST-fusion-tag | 1x PBS, pH 7,4 | 1:1000 | **3998.1** | 100 µl | 244,60 |
| **Anti GST Serum** | polyclonal | GST-fusion-tag | x | 1:2000 | **3994.1** | 100 µl | 200,50 |
| **Anti His-HRP*** | 1 mg/ml, polyclonal, affinity purified | His-tag*** | 0,15 M NaCl, 0,1 M Na/ K-phosphate buffer, pH 6,5 | 1:1000 - 1:10000 | **3894.1** | 100 µl | 295,65 |
| **Anti His pAB** | 1 mg/ml, polyclonal, affinity purified | His-tag*** | 1x PBS, pH 7,4 | 1:1000 - 1:10000 | **3742.1** | 100 µl | 244,60 |
| **Anti His Serum** | polyclonal | His-tag*** | x | 1:1000 | **3735.1** | 100 µl | 200,50 |
| **Anti Myc pAB** | 1 mg/ml, polyclonal, affinity purified | Myc-anchor sequence | 1x PBS, pH 7,4 | 1:1000 | **4667.1** | 100 µl | 244,60 |
| **Anti Myc Serum** | polyclonal | Myc-anchor sequence | x | 1:1000 | **4666.1** | 100 µl | 200,50 |

For additional product data and safety information, see chapter Chemicals A-Z.

* HRP-labelled and stabilised with 27 % glycerol, 4,5 % BSA, 0,09 % thimerosal
** Sequence identical with FLAG® sequence by Sigma-Aldrich
*** C-terminal or N-terminal

▶ Antibody Diluents see page 1318

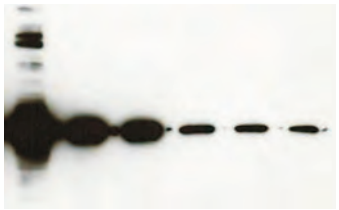


**Figure:** Western blotting of decreasing amounts (50 ng - 17 pg) of a bacterial extract including a 40 kDa protein. Probed by Anti His Serum (1:1.000) and Roth Anti Rabbit-HRP. Detection via chemoluminescence.

**Instructions for use**
can be found on the Internet next to the product description.

### MultiTag-Protein

ready-to-use

**0,1 mg/ml, affinity purified**
Recombinant protein with His-tag, GST-tag, Myc- and DYKDDDDK anchor sequence.
M 31,6 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
**Labelling:** His-tag, GST-tag, DYKDDDDK anchor sequence*, Myc anchor sequence
**Application:** Immuno blotting (Western-, dot blotting), ELISA, protein isolation
**Purification and specificity:** Affinity purified, recombinant protein. Tested for affinity chromatography, Western blot and ELISA.
**Storage Buffer:** 1x PBS, pH 7.4
**Stabiliser:** 0.1 % SDS
**Recommended application:** 100 ng / lane (Western blotting), dilution 1:100 (ELISA)

| | | | |
|---|---|---|---|
| **3999.1** | 100 µl | plastic | 241,90 € |

# Secondary Antibodies

ready-to-use



Polyclonal antibodies for detection of primary IgG in immuno assays

**Concentration:** 1 mg / ml
**Raised in:** Goat
**Conjugation:** Horse Radish Peroxidase (HRP), Alkaline Phosphatase (AP) or Fluorescein isothiocyanate, Isomer I (FITC)
**Application:** Immuno blotting (Western-, dot blotting), ELISA, immunohistochemistry and -cytology, immonofluorescence, FACS analysis

**Purification and specificity:** Purified from monospecific antiserum by affinity chromatography on immobilised, species specific IgG. Tested for Western Blot and ELISA.

Storage temperature: -20 °C
Transport temperature: cooled (freezer packs)

| Secondary antibody | Labelling | Target | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Anti Human-AP** | Alkaline Phosphatase (AP) | Human IgG | **4754.1** | 1 ml | 189,75 |
| **Anti Human-HRP** | Horse Raddish Peroxidase (HRP) | Human IgG | **4753.1** | 2 ml | 155,90 |
| **Anti Human-FITC** | Fluorescein isothiocyanate (FITC) | Human IgG | **4755.1** | 2 ml | 139,25 |
| **Anti Mouse-AP** | Alkaline Phosphatase (AP) | Mouse-IgG | **4760.1** | 1 ml | 189,75 |
| **Anti Mouse-HRP** | Horse Raddish Peroxidase (HRP) | Mouse-IgG | **4759.1** | 2 ml | 155,90 |
| **Anti Mouse-FITC** | Fluorescein isothiocyanate (FITC) | Mouse-IgG | **4761.1** | 2 ml | 139,25 |
| **Anti Rabbit-AP** | Alkaline Phosphatase (AP) | Rabbit-IgG | **4751.1** | 1 ml | 189,75 |
| **Anti Rabbit-HRP** | Horse Raddish Peroxidase (HRP) | Rabbit-IgG | **4750.1** | 2 ml | 155,90 |
| **Anti Rabbit-FITC** | Fluorescein isothiocyanate (FITC) | Rabbit-IgG | **4752.1** | 2 ml | 139,25 |
| **Anti Rat-AP** | Alkaline Phosphatase (AP) | Rat-IgG | **4763.1** | 1 ml | 189,75 |
| **Anti Rat-HRP** | Horse Raddish Peroxidase (HRP) | Rat-IgG | **4762.1** | 2 ml | 155,90 |
| **Anti Rat-FITC** | Fluorescein isothiocyanate (FITC) | Rat-IgG | **4764.1** | 2 ml | 139,25 |

For additional product data and safety information, see chapter Chemicals A-Z.

**Storage buffer:**
*AP-conjugated* antibodies: 1x PBS, pH 7,4 (stabilisation: 40 % glycerol, 0,8 mM $MgCl_2$, 0,8 mM $ZnCl_2$)
*HRP-conjugated* antibodies: 150 mM NaCl, 100 mM sodium-/potassium phosphate buffer, pH 6,5 (stabilisation: 27 % glycerol, 4,5 % BSA, 0,09 % thimerosal)
*FITC-conjugated* antibodies: 1x PBS, pH 7,4 (stabilisation: none)

**Recommended Dilution:**
*AP-conjugated* antibodies: 1:1000 - 1:10000 (Western), 1:1000 - 1:20000 (ELISA)
*HRP-conjugated* antibodies: 1:1000 - 1:10000 (Western), 1:1000 - 1:20000 (ELISA)
*FITC-conjugated* antibodies: 1:1000 - 1:20000 (immuno fluorescence and FACS)

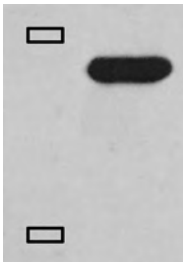


**Figure:** Western blotting of a HEK293 cell extrakt. Probing of Actin (42 kDa) by protein-specific primary antibody (mouse) and Anti Mouse-HRP (1:5.000). Detection via chemoluminescence.
Blank box: Protein marker in the gel.

## Important information on refrigerated transports

All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
**Additional costs** resulting from such, **will be invoiced** (further information on request).

**Please note:**
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.

# Ready-Made Solutions, Pre-Mixes, Tablets and Pouches



## Roti®-PreMix PBS

NEW

**for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

PBS powder, Phosphate buffered saline

1x PBS solution is prepared by dissolution of 9.55 g/l in highly pure water.

**Formulation:**

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,2, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **0890.1** | 250 g | plastic | 74,20 € |
| **0890.2** | 1,25 kg | plastic | 204,25 € |

## Roti®-PreMix PBST

NEW

**for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 10.05 g/l in highly pure water.

**Formulation:**

Prepared 1x PBST solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, 0,05 % Tween® 20, pH-value 7,4 ±0,2, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **0987.1** | 250 g | plastic | 74,20 € |
| **0987.2** | 1,25 kg | plastic | 204,25 € |

## Roti®-Stock 10x PBS

**BioScience-Grade, ready-to-use, filtered and steam sterilised**

For protein biochemistry, cytology, and molecular biology.

PBS 10x ready-to-use solution

10fold stock solution phosphate buffered saline. Very versatile standard solution for detection systems in protein biochemistry, cytological stainings and molecular biological assays. Thus, 1 x PBS is used as basic solution for Western-Blot analyses, ELISAs and other enzymatic assays, for solving and dilution of proteins, for immunocytological and immunohistological assays, as well as for *in situ* hybridisations, apoptosis detection systems and staining of nuclei.
**Recommended for HRP-mediated detection systems.**
With original seal.

**Composition:**

1.37 M NaCl, 27 mM KCl, 100 mM $Na_2HPO_4$, 20 mM $KH_2PO_4$ in deionised water, pH-value 7.4, 0.2 µm filtered and steam sterilised

| | | | |
|---|---|---|---|
| **1058.1** | 1 l | glass | 115,60 € |
| Original pack 6 x 1 l | | | 109,82/1 l |

▶ Complete range of Roti®-Stock solutions see Chapter Chemicals A-Z!




## Roti®-Stock 10x PBST

**BioScience-Grade, ready-to-use, filtered and steam sterilised**

For protein biochemistry, cytology, and molecular biology.

PBST 10x ready-to-use solution

10fold stock solution phosphate buffered saline with Tween 20. Extremely versatile standard solution for protein biochemical detection systems, cytological staining and molecular-biological assays with similar fields of application as Roti®-Stock PBS. Roti®-Stock PBST can be used directly instead of PBS when the presence of Tween 20 is required in the detection system.
**Recommended for HRP-mediated detection systems.**
With original seal.

**Composition:**

1,37 M NaCl, 27 mM KCl, 100 mM $Na_2HPO_4$, 20 mM $KH_2PO_4$, 0,5 % Tween® 20 in deionised water, pH value 7,4, 0,2 µm filtered and steam sterilised

| | | | |
|---|---|---|---|
| **1059.1** | 1 l | glass | 120,95 € |
| Original pack 6 x 1 l | | | 114,90/1 l |

## Roti®-Stock 10x TBS

**BioScience-Grade, ready-to-use, filtered and steam sterilised**

For protein biochemistry, cytology, and molecular biology.

TBS 10x ready-to-use solution

10fold stock solution tris buffered saline. Very versatile standard solution for detection systems in protein biochemistry, cytological stainings and molecular biological assays. Thus, 1 x TBS is used as basic solution for protein detection systems like Western-Blot analyses and Far-Western assays, for immunocytological and immunohistological assays, as well as for whole mount *in situ* hybridisations, apoptosis detection systems and staining of nuclei.
**Recommended for AP-mediated detection systems.**
With original seal.

**Composition:**

1.5 M NaCl, 30 mM KCl, 250 mM Tris in deionised water, pH value 7.4, 0.2 µm filtered and steam sterilised

| | | | |
|---|---|---|---|
| **1060.1** | 1 l | glass | 120,95 € |
| Original pack 6 x 1 l | | | 114,90/1 l |

## Roti®-Stock 10x TBST

**BioScience-Grade, ready-to-use, filtered and steam sterilised**

For protein biochemistry, cytology, and molecular biology.

TBST 10x ready-to-use solution

10fold stock solution tris buffered saline with Tween 20. Extremely versatile standard solution for protein biochemical detection systems, cytological staining and molecular-biological assays with similar fields of application as Roti®-Stock TBS. Roti®-Stock TBST can be used directly instead of TBS when the presence of Tween 20 is required in the detection system.
**Recommended for AP-mediated detection systems.**
With original seal.

**Composition:**

1.5 M NaCl, 30 mM KCl, 250 mM Tris, 0.5 % Tween® 20 in deionised water, pH value 7.4, 0.2 µm filtered and steam sterilised

| | | | |
|---|---|---|---|
| **1061.1** | 1 l | glass | 120,95 € |
| Original pack 6 x 1 l | | | 114,90/1 l |

## Roti®fair-PBS/PBST and -TBS/TBST

**High-pure reagents and buffer mixes in pouches or as tablets.**

One tablet or the content of one pouch is simply dissolved in the respective amount of water - the desired solution is ready for use. Simply adapt the amount of water in order to vary the concentration, for instance for preparation of a higher concentrated stock solution.

- **Easy-to-use** - simply dissolve contents of one pouch or one tablet in water
- **Timesaving** - no need for weighing of several reagents or adjustment of pH
- **Convenient** - dry reagents for direct use spare preparation of long-term stored stock solutions
- **Reliable** - stringent quality control ensures high lot-to-lot consistency



| Product | Buffer/solution | Use | Final conc. | pH value | Preparation scale | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|
| **Roti®fair PBS 7.2** | Phosphate Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 7,2 ±0,05 | 1000 ml/tablet | **1106.1** | 10 tablets | 74,10 |
| | | | | | | **1106.2** | 100 tablets | 353,70 |
| **Roti®fair PBS 7.4** | Phosphate Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 7,4 ±0,05 | 10 l/pouch | **1101.1** | 1 pouch | 39,25 |
| | | | | | 25 l/pouch | **1102.1** | 1 pouch | 79,05 |
| | | | | | 50 l/pouch | **1103.1** | 1 pouch | 121,40 |
| | | | | | 100 l/pouch | **1104.1** | 1 pouch | 196,20 |
| **Roti®fair PBS 7.4** | Phosphate Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 7,4 ±0,05 | 100 ml/tablet | **1107.1** | 100 tablets | 56,90 |
| | | | | | 200 ml/tablet | **1108.1** | 100 tablets | 93,45 |
| | | | | | 500 ml/tablet | **1111.1** | 12 tablets | 50,00 |
| | | | | | | **1111.2** | 100 tablets | 198,90 |
| | | | | | 1000 ml/tablet | **1112.1** | 10 tablets | 73,65 |
| | | | | | | **1112.2** | 100 tablets | 353,70 |
| **Roti®fair 10x PBS 7.4** | Phosphate Buffered Saline | General solution for assays in molecular biology and biochemistry | 10x | 7,4 ±0,05 | 1000 ml/pouch | **1105.1** | 5 pouches | 96,65 |
| **Roti®fair PBS potassium-free 7.4** | Phosphate Buffered Saline, potassium-free | Potassium-free, general solution for assays in molecular biology and biochemistry | 1x | 7,4 ±0,05 | 1000 ml/tablet | **1113.1** | 10 tablets | 73,65 |
| | | | | | | **1113.2** | 100 tablets | 353,70 |
| **Roti®fair PBS potassium-free 7.4** | Phosphate Buffered Saline, potassium-free, **high-phosphate** | Potassium-free, high-phosphate general solution for assays in molecular biology and biochemistry | 1x | 7,4 ±0,05 | 1000 ml/tablet | **1114.1** | 100 tablets | 403,15 |
| **Roti®fair PBST 7.4** | Phosphate Buffered Saline/ Tween | General solution for assays in molecular biology and biochemistry | 1x | 7,4 ±0,05 | 500 ml/tablet | **1115.1** | 12 tablets | 63,35 |
| | | | | | | **1115.2** | 100 tablets | 256,95 |
| | | | | | 1000 ml/tablet | **1116.1** | 10 tablets | 82,25 |
| | | | | | | **1116.2** | 100 tablets | 396,70 |
| **Roti®fair TBS 7.6** | Tris Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 7,6 ±0,05 | 500 ml/tablet | **1244.1** | 10 tablets | 54,75 |
| | | | | | | **1244.2** | 100 tablets | 263,40 |
| **Roti®fair TBS 8.0** | Tris Buffered Saline | General solution for assays in molecular biology and biochemistry | 1x | 8,0 ±0,05 | 1000 ml/pouch | **1245.1** | 10 pouches | 97,30 |
| **Roti®fair 10x TBS 8.0** | Tris Buffered Saline | General solution for assays in molecular biology and biochemistry | 10x | 8,0 ±0,05 | 1000 ml/pouch | **1247.1** | 10 pouches | 643,95 |
| **Roti®fair TBST 7.6** | Tris Buffered Saline/Tween | General solution for assays in molecular biology and biochemistry | 1x | 7,6 ±0,05 | 500 ml/tablet | **1248.1** | 10 tablets | 65,05 |
| | | | | | | **1248.2** | 100 tablets | 306,40 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Many further Roti®fair tablets and pouches at the beginning of chapter Biochemistry!

## Roti®fair BBS

**for 500 ml/tablet, for biochemistry and molecular biology**

Coating of ELISA plates and blocking supplement.

Borate Buffered Saline (tablets)

**Danger** H360FD

Exactly pre-weighed tablets for convenient and rapid preparation of Borate Buffered Saline solution (BBS).
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.
Buffer solution has to be stored at +4 °C.

**Composition:**

Prepared 1x BBS solution contains: 0,15 M NaCl, 10 mM borate buffer, pH-value 8,2 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1005.1** | 100 tablets | plastic | 255,35 € |

## Roti®fair CBB

**for 100 ml/tablet, for biochemistry and molecular biology**

Coating of microtiter plates and tubes for immunoassays.

Carbonate bicarbonate buffer (tablets)

**Warning** H319

Exactly pre-weighed tablets for convenient and rapid preparation of a Carbonate bicarbonate buffer (CCB).
Due to its high efficiency to mediate protein binding to surfaces, carbonate bicarbonate buffer (CBB) is used as coating buffer on plates and tubes. CBB, therfore, is the optimum base solution to prepare microtiter plates or reaction tube prior to ELISA, RIA or EIA.
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, buffer solution should be kept at +4 °C.

**Formulation:**

Prepared 1x CBB solution contains: 50 mM sodium carbonate bicarbonate buffer, pH-value 9,6 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1027.1** | 8 tablets | blister | 37,55 € |
| **1027.2** | 24 tablets | blister | 69,35 € |
| **1027.3** | 100 tablets | plastic | 110,20 € |

## Roti®-Free Stripping Buffer

ready-to-use

**ready-to-use**

Premixed buffer for stripping of Western-Blot membranes.

Storage temp.: +20 °C

**Warning** H317-H319-H412

- Efficient
- Well-tried formulation
- With β-mercaptoethanol
- For stripping under heating
- Low-priced

The buffer offers a simple tool for removing antibodies and chemo-luminescence staining from Western blot membranes, allowing the valuable membranes to be analysed several times. Excellent when several proteins are to be detected in the same extract, or e.g. when in addition to a specific analysis, proteins in the respective lanes have to be semi-quantified (Kaufmann *et. al.* (1987) *Anal. Biochem.* 161:89-95).
Suitable for nitrocellulose and PVDF-membranes.

| | | | |
|---|---|---|---|
| **0083.2** | 250 ml | glass | 19,25 € |
| **0083.1** | 1 l | glass | 57,55 € |
| Original pack 6 x 1 l | | | 54,67/1 l |
| **0083.3** | 2,5 l | glass | 102,70 € |
| Original pack 4 x 2,5 l | | | 97,57/2,5 l |

**Safety data sheets**
can be found on the Internet next to the product description.



ready-to-use

## Roti®-Free Stripping Buffer 2.2 plus

**ready-to-use**

Premixed buffer for efficient stripping of Western-Blot membranes after Chemoluminescence detection, even with hard-to-remove antibodies.

Storage temp.: +20 °C

- Very effective
- Gentle
- Odour-free
- Simple application
- Also suitable for high-affinity antibodies

Stripping buffer for removal of high-affinity antibodies, as well as chemo-luminescence staining, from Western blot membranes. Due to the low pH of the buffer, the antibody conformation is altered, therefore gently removing all molecules bound to the epitopes (Legocki *et. al.* (1981) *Analyt. Biochem.* 111:385-92). Specially designed additives enhance the efficiency in removing those antibodies requiring long stripping times or high incubation temperatures with standard stripping buffer systems. Advanced formulation without β-mercapto ethanol or DTT for use at room temperature or heated. Suitable for nitrocellulose and PVDF membranes.

**Applications:** Following rinsing steps in PBST- or TBST buffer, the membrane is incubated in Roti®-Free Stripping-Puffer 2.2 plus for 30-60 mins. at room temperature. In case of very persistent antibodies incubation in heated buffer is allowed. After washing it again, the membrane may be blocked and probed anew. The particular time needed for complete stripping depends on the respective antibody/epitope pairing.

| | | | |
|---|---|---|---|
| **3337.1** | 250 ml | glass | 46,80 € |
| **3337.2** | 1 l | glass | 117,20 € |
| Original pack 6 x 1 l | | | 111,34/1 l |

## Roti®-Free Stripping Buffer 2.0

ready-to-use

**ready-to-use**

Premixed buffer for gentle stripping of Western-Blot membranes after Chemoluminescence detection.

Storage temp.: +20 °C

**Warning** H319

- Effective
- Gentle
- Odour-free
- Simple application w/o heating
- Cost-efficient

Stripping buffer for efficient removal of primary and secondary antibodies, as well as chemoluminescence staining, from Western blot membranes. Due to the low pH of the buffer, the antibody conformation is altered, therefore gently removing all molecules bound to the epitopes (Legocki *et. al.* (1981) *Analyt. Biochem.* 111:385-92). Robust formulation without β-mercapto ethanol or DTT for use at room temperature. Suitable for nitrocellulose and PVDF membranes.

**Applications:** Following rinsing steps in PBST- or TBST buffer, the membrane is incubated in Roti®-Free Stripping-Puffer 2.0 for 15-60 mins. at room temperature. After washing it again, the membrane may be blocked and probed anew. The particular time needed for complete stripping depends on the respective antibody/epitope pairing.

| | | | |
|---|---|---|---|
| **3319.1** | 250 ml | glass | 40,75 € |
| **3319.2** | 1 l | glass | 105,90 € |
| Original pack 6 x 1 l | | | 100,61/1 l |

# Substrates

Carl Roth offers you a wide range of substrates for biochemistry, cellular biology and microbiology. The key substrates for Western Blot and ELISA are summarised here.

For detailed information regarding usage, chemical details, safety instructions and further package sizes for these and many other substrates, refer to **"Substrates"** earlier in this chapter on biochemistry or to Chemicals A-Z.

▶ Enhancer see next page!

## For Alkaline Phosphatase (AP)

| Substrate | Application | Detection | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **BCIP-sodium salt** | western, *in situ*, histochemistry | colour (brown-violet) | **A155.1** | 100 mg | 27,45 |
| | | | **A155.2** | 500 mg | 115,60 |
| | | | **A155.3** | 1 g | 198,90 |
| | | | **A155.4** | 5 g | 665,45 |
| **BCIP-toluidine salt*** | western, *in situ*, histochemistry | colour (brown) | **6368.1** | 500 mg | 35,40 |
| | | | **6368.2** | 1 g | 68,30 |
| | | | **6368.3** | 5 g | 261,80 |
| **NBT*** | western, *in situ*, histochemistry | colour (brown-violet) | **4421.1** | 100 mg | 17,10 |
| | | | **4421.2** | 500 mg | 42,90 |
| | | | **4421.3** | 1 g | 81,60 |
| | | | **4421.4** | 5 g | 295,65 |
| **pNPP** | ELISA | colour (yellow) | **4165.1** | 2,5 g | 15,60 |
| **Roti®fair pNPP 5mg** | ELISA | colour (yellow) | **1117.1** | 24 tablets | 90,85 |
| | | | **1117.2** | 100 tablets | 134,40 |
| **Roti®fair pNPP 20mg** | ELISA | colour (yellow) | **1128.1** | 24 tablets | 97,30 |
| | | | **1128.2** | 100 tablets | 349,40 |
| **Rose-phos-toluidine salt** | western, *in situ*, histochemistry | colour (pink) | **4247.1** | 50 mg | 46,80 |
| | | | **4247.2** | 100 mg | 84,85 |

For additional product data and safety information, see chapter Chemicals A-Z.
***combined**

## For Horse Raddish Peroxidase (HRP)

| Substrate | Application | Detection | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Chloronaphtol** | western | colour (blue) | **4104.1** | 5 g | 28,50 |
| | | | **4104.2** | 10 g | 47,20 |
| | | | **4104.3** | 25 g | 92,35 |
| **DAB** | western, *in situ*, histochemistry | colour (brown) | **CN75.1** | 1 g | 23,15 |
| | | | **CN75.2** | 5 g | 73,65 |
| | | | **CN75.3** | 10 g | 126,35 |
| **Roti®-DAB Kit** | western, *in situ*, histochemistry | colour (brown) | **9202.1** | 1 kit | 181,70 |
| **Roti®-Lumin ultra** | western | chemo-luminescence | **3734.1** | 1 mini kit (spray) | 231,15 |
| | | | **3734.2** | 1 kit (spray) | 934,20 |
| **Roti®-Lumin plus** | western | chemo-luminescence | **3692.1** | 1 mini kit (spray) | 130,65 |
| | | | **3692.2** | 1 kit (spray) | 267,70 |
| | | | **3692.3** | 1 kit (bottles) | 435,40 |
| **Roti®-Lumin** | western | chemo-luminescence | **P078.2** | 1 mini kit | 70,45 |
| | | | **P078.1** | 1 kit | 252,65 |
| **TMB** | ELISA | colour (blue) | **6350.1** | 1 g | 52,60 |
| | | | **6350.2** | 5 g | 160,20 |
| | | | **6350.3** | 25 g | 736,40 |
| **TMB dihydro-chloride** | ELISA | colour (blue) | **4107.1** | 500 mg | 38,60 |
| | | | **4107.2** | 1 g | 62,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Roti®-DAB Kit

**for immunochemistry**

DNAse-free RNAse-free

Substrate kit for detection of HRP activity on blot membranes and slides.
DAB substrate kit, HRP substrate kit
Storage temp.: +4 °C • Transport temp.: cooled

**Danger** H302-H341-H351-H360D-H373

DAB substrate kit for detection of peroxidase (HRP) activity on immunoblots, immunohisto- and cytochemical slides and during *in situ* hybridization.
Roti®-DAB Kit contains substrate, buffer solution and activation reagent, therefore including all three solutions necessary for HRP detection reaction. Application is very simple - all three kit solutions are diluted equally in water, and the blotting filter membrane, or the slides, are then incubated in this substrate solution. Since the solutions are delivered in drop dispensers, dosing is most convenient.

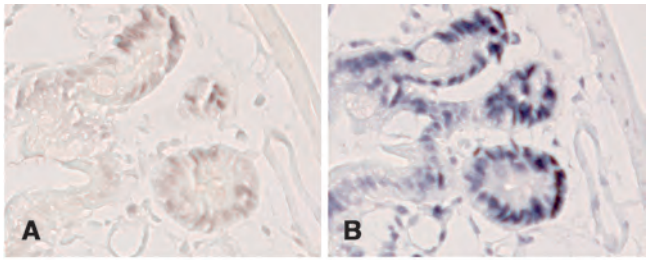



**Figure 1:**
Immunohistochemical staining of mouse small intestines with an anti-PCNA antibody. Minuscules: pure DAB substrate, capitals: detection supplemented by DAB enhancer (A: $NiCl_2$, B: DAB Metal Enhancer, Art. No. 9204).
A: Basic method using 0.6 mg/ml DAB in Tris-buffer
B: Detection performed with the Roti®-DAB Kit

**The kit contains:**
DAB solution (Art. No. 9869), DAB buffer (Art. No. 9870), and Activation reagent (Art. No. 9871) in dropper bottles. Contents of this Kit may not be bought separately.

One kit is sufficient for staining of approx. 44 minigel blot membranes or 500 slides.

| | | | |
|---|---|---|---|
| **9202.1** | 1 kit | cardboard | 181,70 € |

## Roti®fair pNPP

**for biochemistry**

For preparation of pNPP substrate solution for alkaline phosphatase.
pNPP (tablet), p-Nitrophenyl phosphate
Storage temp.: -20 °C • Transport temp.: room temp.
Exactly pre-weighed tablets for convenient and rapid preparation of pNPP solution.
Prepared solution may be sterilized by filtration.
The solution has to be stored at -20 °C in aliquots.

## Roti®fair pNPP 5mg

**5 mg/tablet**

**Formulation:**
Prepared solution contains 1 mg/ml pNPP, when 1 tablet is dissolved in 5 ml substrate buffer or deionized, or distilled, water.

| | | | |
|---|---|---|---|
| **1117.1** | 24 tablets | blister | 90,85 € |
| **1117.2** | 100 tablets | plastic | 134,40 € |

## Roti®fair pNPP 20mg

**20 mg/tablet**

**Formulation:**
Prepared solution contains 1 mg/ml pNPP, when 1 tablet is dissolved in 20 ml substrate buffer or deionized, or distilled, water.

| | | | |
|---|---|---|---|
| **1128.1** | 24 tablets | blister | 97,30 € |
| **1128.2** | 100 tablets | plastic | 349,40 € |

# Enhancers



NEW

ready-to-use

## Antibody Diluents

**ready-to-use, for immunohistochemistry**

For optimisation of immunohistochemical detection signals.

Enhancer solution

Storage temp.: +4 °C • Transport temp.: cooled

- Enhances signal strength
- Reduces background
- Very easy application
- Compatible with paraffin- and cryo sections

Due to the particularly designed formulation, antigen/antibody binding is enhanced, while reducing background signals in parallel (Grube (2004) *Arch Histol Cytol.* 67:115-34 and Buchwalow *et al.* (2011) *Sci Rep.* 1:28). Stability of the antibodies is significantly enhanced. The buffer solution is suitable for dilution of all primary and secondary antibodies, all mono- and polyclonals, as well as for all labelled as well as non-labelled antibodies.

Application is most simple: The antibodies are just diluted in the ready-to-use diluent and applied to the slides after blocking. For reduction of the amount needed and for optimised use of high-priced antibodies we recommend to use the Roti®-Liquid Barrier Marker (red, Art. No. AN92, or colourless, Art. No. AN91), in order to prepare tiny incubation chambers on top of the slides.
One bottle for 125 ml is sufficient for enhancement of approx. 125 slides.

## Antibody Diluent green

Buffer solution for preparation of antibody incubation solutions.
With green dye for easy handling.

| | | | |
|---|---|---|---|
| **0070.1** | 125 ml | plastic | 65,60 € |
| **0070.2** | 4 x 125 ml | plastic | 189,20 € |

## Antibody Diluent clear

Buffer solution for preparation of antibody incubation solutions and stabile antibody dilutions for storage.

| | | | |
|---|---|---|---|
| **0509.1** | 125 ml | plastic | 65,60 € |
| **0509.2** | 4 x 125 ml | plastic | 189,20 € |

**Instructions for use**
can be found on the Internet next to the product description.

## DAB Metal Enhancer

**for immunochemistry**

ready-to-use

DNAse-free RNAse-free

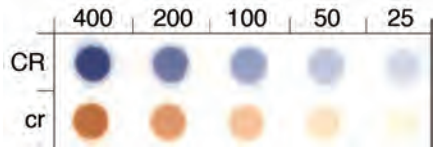
For enhancement of HRP signals on blot membranes and slides.

Enhancer solution

Storage temp.: +20 °C

**Danger** H317-H334-H341-H350i-H360D-H372-H412

DAB metal enhancer is used to enhance the signal strength in peroxidase (HRP) detections and to modify the signal colour from brown to purplish gray. Applications include all immunochemical assays like immunohisto-chemistry and -cytochemistry as well as Western blotting, but DAB metal enhancer may also well be used during *in situ* hybridization.
When the DAB metal enhancer is applied, the sensitivity of DAB staining is about two times higher than with DAB alone. For application, the DAB substrate components and buffer reagents (for instance Roti®-DAB-Kit, Art. No. 9202) are simply diluted in DAB metal enhancer instead of water. The purplish gray precipitate resulting from the staining reaction can be detected in visible light and does not bleach during long-term storage. Since it is insoluble in aqueous and organic solvents, slides may be permanently mounted in hydrophilic, or, after dehydration, in hydrophobic mounting medium.




One bottle for 100 ml is sufficient for enhancement of approx. 10 minigel blots or 100 slides.

| | | | |
|---|---|---|---|
| **9204.1** | 100 ml | plastic | 94,50 € |

## Roti®-Strept/HRP-Kit

**for immunochemistry**

HRP-kit for highly sensitive detection of biotinylated molecules on slides.

HRP detection kit with biotin and streptavidine

Storage temp.: +4 °C • Transport temp.: cooled

EUH208

Roti®- Strept/HRP kit is a peroxidase kit for very sensitive detection of biotinylated molecules on slides, for instance in immunohistochemical or -cytochemical assays. Sensitivity of colour staining is hence increased to the level known from chemoluminescence.
Roti®- Strept/HRP kit contains streptavidine and a biotin-coupled peroxidase, which are combined in order to increase the sensitivity of the detection method significantly. Application is very simple - both kit solutions are diluted equally in PBS, and the slides are incubated in this substrate solution after second antibody. Since the solutions are delivered in drop dispensers, dosing is most convenient. The HRP is then stained by common substrates like DAB (Roti®-DAB kit Art. No. 9202).
Following staining, the slides may be permanently mounted in hydrophilic, or, after dehydration, in hydrophobic mounting medium.

**This Kit contains:**
Streptavidin solution (Art. No. 0941), biotin peroxidase solution (Art. No. 0946) and an empty bottle for mixture. Contents of this Kit may not be bought separately.

One kit is sufficient for incubation of approx. 200 slides.

| | | | |
|---|---|---|---|
| **9206.1** | 1 kit | cardboard | 321,45 € |

▶ DAB substrate kit see page 1288

## Signal Enhancer Western/ELISA Set

**for immunochemistry**

For enhancement of immunochemical detection signals on blot membranes and in ELISA.

Enhancer solution

Storage temp.: +4 °C • Transport temp.: cooled

- Strong enhancement of signal strength
- Most easy application
- Compatible with
  Western and ELISA
  HRP and AP
  all common membranes
  all common substrates

The Signal Enhancer Western/ELISA enhances antigen-antibody reactions in a variety of immunoassays such as Western blotting, dot blotting and ELISA. It can significantly enhance detection of weak immunoreactive and low abundance target proteins and is well compatible with all common assay versions, membranes and ELISA plates.
Signal enhancement is dependent on several parameters such as the particular antigen/antibody pair, the particular detection enzyme, the substrate chosen and so on. In most cases, however, the signal strength is about 5 to 10fold higher than with the substrate alone. For application, the two solutions Signal Enhancer Western/ELISA-1 and -2 are simply used as buffer solutions for preparation of the primary- and secondary antibody incubation solutions. Following incubation and washing, all common detection procedures may be applied, for instance colour staining with Roti®-DAB-Kit (Art. No. 9202) or chemoluminescent staining with Roti®-Lumin plus (Art. No. 3692).

**This Kit contains:**
Signal Enhancer Western/ELISA-1 (Art. No. 9213) and Signal Enhancer Western/ELISA-2 (Art. No. 9214). 1 Mini-Set: 2 x 50 ml, 1 Set: 2 x 250 ml.

One set with 250 ml each is sufficient for optimization of approx. 25 minigel blots.

| | | | |
|---|---|---|---|
| **9211.2** | 1 Mini-Set | plastic | 137,10 € |
| **9211.1** | 1 Set | plastic | 403,15 € |

## Signal Enhancer Western/ELISA-1

**for immunochemistry**

For optimisation of primary antibody binding in immunochemical assays.

Storage temp.: +4 °C • Transport temp.: cooled

The solution Signal Enhancer Western/ELISA-1 enhances reaction between antigens and their corresponding **primary** antibodies in a variety of immunoassays such as Western blotting, dot blotting and ELISA.

One bottle with 250 ml is sufficient for approx. 25 assays.

| | | | |
|---|---|---|---|
| **9213.1** | 250 ml | plastic | 231,15 € |

## Signal Enhancer Western/ELISA-2

**for immunochemistry**

For optimisation of binding of primary and labelled antibodies in immunochemical assays.

Storage temp.: +4 °C • Transport temp.: cooled

The solution Signal Enhancer Western/ELISA-2 enhances binding of **secondary** antibodies in a variety of immunoassays such as Western blotting, dot blotting and ELISA. The solution is well compatible with all common assay versions, membranes and ELISA plates.

Recommended for performance of assays using one antibody only, which is labelled.

One bottle with 250 ml is sufficient for approx. 25 assays.

| | | | |
|---|---|---|---|
| **9214.1** | 250 ml | plastic | 231,15 € |

## Roti®-Free Slide Enhancer

DNAse-free
RNAse-free

**10x conc., BioScience-Grade**

Concentrated buffer for enhancement of detection signals in immunohistochemistry and *in situ* hybridization.

Storage temp.: +20 °C

- Very effective
- Gentle
- Odour-free
- Simple application
- Suitable for formaline- and paraffin fixed samples and cryo sections

Efficient stripping buffer for removal of antibodies, probes, and corresponding stains from immunohisto- and -cytochemical samples, as well as from *in situ* hybridizations.
Due to the particularly adjusted formulation of the Roti®-Free Slide Stripping Buffer, antigens and hybridization partners are retrieved very gently, but quantitatively, enabling the samples to be assayed repeatedly. Suitable for all common samples like formaline- and paraffin fixed tissue and cells, or cryo sections.

**Applications:** The slides are incubated in Roti®-Free Slide Stripping Buffer for 20-40 min at 70-95 °C. After repeated washing steps, the samples may be assayed again with antibodies or probes. The particular parameters necessary for complete stripping depend on the respective samples, fixing-, and detection systems.

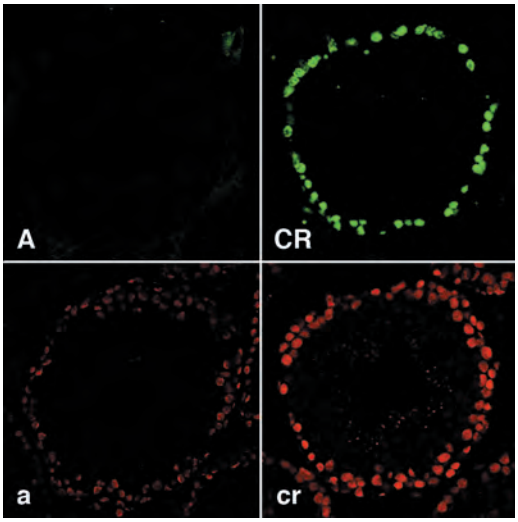



**Figure 2:**
Detection of proliferation by fluorescent immunohistochemical assay on tissue cryo-sections.
Capitals: Detection of integrated BrdU, minuscules: Immunohistochemical PCNA detection with red flourescence dye.
CR/cr: Detection after pretreatment with Roti®-Free Slide Enhancer.
A/a: Standard detection in 1 % triton-PBS buffer, w/o pretreatment.

With kind permission of the RIKEN Brain Science Institute (BSI), Development Research Group, Hirosawa Wako City, Saitama, Japan

| | | | |
|---|---|---|---|
| **9330.1** | 500 ml | plastic | 198,90 € |

Please note our **Technical Information Brochure** on the Internet next to the products:

**Immunostaining by HRP and AP**
Protocols

# Accessories



Wiederverwendbar
Reusable

## Western Incubation Trays

**Compatible with all standard Western-staining methods.**

Western incubation trays have been specially developed for staining Western-blots. The sizes adapted to suit typical Western-blots, reduce the required quantity of antibodies and staining reagents. The trays are compatible with all standard staining methods and can easily be stacked. The airtight lids effectively prevent the solution from evaporating even during longer incubation periods.

| Type | Dimensions L x W (mm) | Typical incubation vol. (ml) | Material | Max. Temp. (°C) |
|---|---|---|---|---|
| MINI | 91 x 66 | 5 - 10 | PS | 80 |
| MIDI | 117 x 89 | 10 - 20 | PS | 80 |
| MIDI-XL | 120 x 120 | 20 - 30 | Acrylic glass | 60 |
| MAXI | 200 x 165 | 30 - 60 | Acrylic glass | 60 |

Four different sizes for perfect fit to your respective blot membrane. Stabile and frequently reusable.

| Type | Dimensions L x W (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| MINI | 91 x 66 | **8862.1** | 10 pieces | 147,30 |
| MIDI | 117 x 89 | **8870.1** | 10 pieces | 163,40 |
| MIDI-XL | 120 x 120 | **8874.1** | 1 pieces | 184,90 |
| MAXI | 200 x 165 | **8876.1** | 1 pieces | 235,45 |



S

## Rotilabo®-liquid reservoirs

**Sterile** (individually wrapped) or unsterile. With special design for 4, 8 and 12 channel pipettors. The bevelled sides and V-shaped base enable almost total withdrawal of liquid. Sterile vessels are individually wrapped.
**Sterile designs are DNAse/RNase-free and non-pyrogenic.**

| Volume (ml) | Material | Type | Dimensions L x W x H (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| 55 | PVC | unsterile | 143 x 70 x 25 | **E830.2** | 100 | 92,45 |
| 55 | PS | **sterile** | 143 x 70 x 25 | **E831.2** | 80 | 165,55 |

## Accessories for Rotilabo®-liquid reservoirs

Lid made of PET. **Sterile** (individually wrapped).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **EL53.1** | 20 | 40,75 |



121°C

Wiederverwendbar
Reusable

## Blot incubation trays

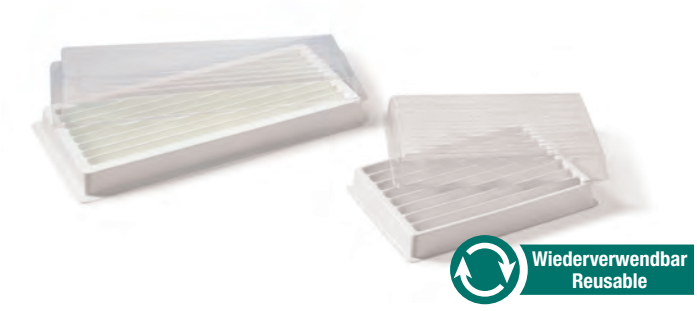
**Compatible with Western- and Southern blotting methods**

Developed for incubation of filter membranes during signal detection after Western- and Southern blotting. The incubation trays can safely be stacked, and, due to the tightly sealing lids, evaporation of solution is prevented even during long incubation periods. The size, adapted to typical membrane sheets, reduces the amount of buffer needed during incubation. In case of version MINI, the 5 trays may be used separately as well as in uniform. Stabile, autoclavable, and reusable.

Made from polypropylene.

| Model | Material | Dimensions W x L (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| MINI | PP | 16 x 115 | **4810.1** | 5 | 56,55 |
| MIDI | PP | 90 x 90 | **4811.1** | 5 | 83,75 |
| MAXI | PP | 165 x 165 | **4812.1** | 5 | 182,75 |


- Transfer membranen and blotting accessories see Chapter Electrophoresis!
- Rotilabo®-exposition cassettes see Chapter Optical Instruments & Lamps!

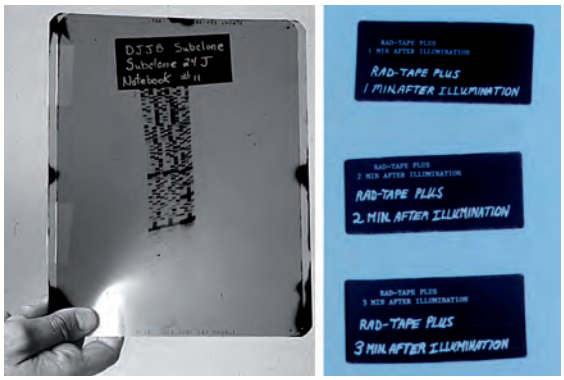



Wiederverwendbar
Reusable

## Western-blot immuno trays

Immuno trays are ideal for incubating membrane strips after blotting or for preparing incubation solutions, e.g. during Western-Blot or Immuno-Assay. Trays made of white **PP**, autoclavable. Lids made of PS, not autoclavable.

| Type | Length (mm) | Width (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| Western-blot immuno tray for 10 cm strips | 128 | 85 | **X990.1** | 10 | 31,45 |
| Lid for immuno tray, 10 cm | 128 | 85 | **X991.1** | 10 | s27,95 |
| Western-blot immuno tray for 17 cm strips | 200 | 110 | **X992.1** | 10 | 31,50 |
| Lid for immuno tray, 17 cm | 200 | 110 | **X993.1** | 10 | 27,90 |



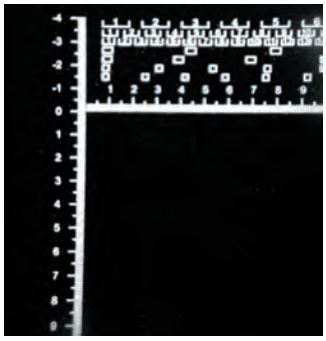

## Radtape®

Phosphorescent labels for permanent labelling of autorads through exposure.

Radtape® are rectangular adhesive sheets made from phosphorescent material. The sheets may be cut easily to labels of needed size and shape and may be marked with an ordinary pen. The custom label may be peeled from its backing and affixed to membrane or gel, or directly to the cassette foil. Before exposure of an x-ray film, the label has to be activated with bright light for 10 seconds. The markings on the label appear as negative image on the autorad. Suitable for use with enhancer foils.

- No overexposure, even after long exposure times
- Sharp and clear images, cannot be smeared

| Type | Dimensions L x W (cm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Radtape® | 10 x 15 | **3900.1** | 10 | 75,05 |



Wiederverwendbar
Reusable

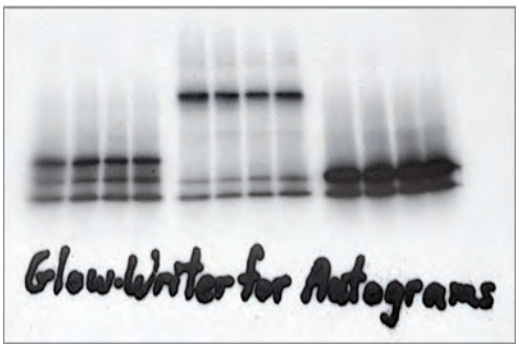
## Luminous stencil

Orienting and measuring aid for detection of blot membranes.

Stencil with phosphorescent ordinate system and a pattern of different sized electrophoresis comb wells. When activated, stencils fluoresce for approx. 15 minutes. Are ideal for controlling and measuring during chemoluminescence detection of blots. Stencil can be activated by exposure to daylight or to artificial light.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X981.1** | 1 | 26,55 |






## Autoradiography Pen

For marking of chemoluminescent or isotope labelled sheets prior to autoradiographic detection.

**Danger** H225-H304-H372-EUH031

Pen with phosphorous ink for easy marking of those membranes ready for exposure. The fine tip of the pen also allows individual bands and gel tracks to be marked simply and easily. The marking is activated by the light in the room prior to exposure. The ink illuminates the X-ray film during exposure and the letters are visible in black ink. The letters are easy to read even after short exposure time. In the event of long exposure, the short half-life value of 2-3 minutes effectively prevents overexposure. The writing is therefore easy to make out after virtually all exposure times. Through the replacement nibs the pen can be reused even after a number of months or after drying out.

Suitable for chemoluminescence and isotope-radiography.
Ideal for marking paper, plastic foil and dried polyacrylamide gels.

**Delivery incl.** 1 pen + 4 replacement nibs

| | | |
|---|---|---|
| **CL10.1** | 1 piece | 122,45 € |

## Replacement nibs for Autoradiography Pen

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Replacement nibs for Autoradiography Pen CL10.1 | **CL11.1** | 4 pieces | 21,30 |

# Cell Biology


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# Roti®-CELL - Media and Solutions for Cell Culture

**The new product line for your cell culture.
Media and solutions of highest purity, the perfect base line for all standard cell culture applications.**

- Sterile
- Ready-to-use
- CELLPURE® - with particularly low endotoxin content
- Storage at 2-8 °C
- Shipped at ambient temperature
- Expiry 12-24 months



| Medium | Art. No. | Glucose g/l | Glutamine (mM) | HEPES (mM) | Sodium Pyruvate (mM) | $NaHCO_3$ (mM) | Phenol Red | Salts | Note | Page |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dulbeccos Minimum Essential Media** | | | | | | | | | | |
| Roti®-CELL DMEM High Glucose | 9005.1 | 4,5 | 4 | X | 1 | 44 | yes | X | | 1324 |
| Roti®-CELL DMEM High Glucose | 9006.1 | 4,5 | 4 | X | X | 44 | yes | X | | 1324 |
| Roti®-CELL DMEM High Glucose | 9007.1 | 4,5 | 4 stab. | X | 1 | 44 | yes | X | With temperature stabile glutamine. | 1324 |
| Roti®-CELL DMEM High Glucose | 9010.1 | 4,5 | X | X | 1 | 44 | yes | X | | 1324 |
| Roti®-CELL DMEM High Glucose | 9011.1 | 4,5 | X | 25 | 1 | 44 | yes | X | | 1324 |
| Roti®-CELL DMEM High Glucose | 9019.1 | 4,5 | X | X | X | 44 | yes | X | | 1324 |
| Roti®-CELL DMEM High Glucose | 9023.1 | 4,5 | X | X | 1 | 44 | X | X | | 1324 |
| Roti®-CELL DMEM Low Glucose | 9027.1 | 1,0 | X | X | 1 | 44 | yes | X | | 1324 |
| Roti®-CELL DMEM Low Glucose | 9030.1 | 1,0 | X | 25 | 1 | 44 | yes | X | | 1324 |
| **DMEM : F12** | | | | | | | | | | |
| Roti®-CELL DMEM : F12 | 9031.1 | 3,151 | 2,5 | 15 | 1 | 14,3 | yes | X | | 1324 |
| **Iscove's Modfied Dulbecco Media** | | | | | | | | | | |
| Roti®-CELL Iscove's MDM | 9033.1 | 4,5 | 4 | 25 | 1 | 36 | yes | X | Additional Amino Acids and selene. | 1324 |
| Roti®-CELL Iscove's MDM | 9035.1 | 4,5 | X | 25 | 1 | 36 | yes | X | Additional Amino Acids and selene. | 1324 |
| **Minimum Essential Media** | | | | | | | | | | |
| Roti®-CELL Eagle's MEM / Earle's | 9044.1 | 1 | 2 | X | X | 26,2 | yes | Earle's | | 1325 |
| Roti®-CELL Eagle's MEM / Earle's | 9047.1 | 1 | X | X | X | 26,2 | yes | Earle's | | 1325 |
| Roti®-CELL Eagle's MEM / Earle's | 9048.1 | 1 | X | 25 | X | 26,2 | yes | Earle's | | 1325 |
| Roti®-CELL Eagle's MEM / Earle's | 9049.1 | 1 | X | X | 1 | 26,2 | yes | Earle's | Plus NEEA* | 1325 |
| Roti®-CELL Eagle's MEM / Hanks' | 9056.1 | 1 | X | X | X | 4,2 | yes | Hanks' | | 1325 |
| Roti®-CELL Eagle's MEM-Alpha | 9058.1 | 1 | X | X | 1 | 26,2 | yes | Earle's | Plus cobalamine, ascorbic acid, NEAA*, lipoic acid, biotine. | 1325 |
| Roti®-CELL Eagle's MEM-Alpha | 9082.1 | 5,5 | 2 stab. | X | 1 | 26,2 | yes | Earle's | Plus cobalamine, ascorbic acid, NEAA*, lipoic acid, biotine. Plus ribonucleosides and desoxyribonucleosides. With temperature stabile glutamine. | 1325 |
| **RPMI Media** | | | | | | | | | | |
| Roti®-CELL RPMI 1640 | 9085.1 | 2 | 2 | X | X | 23,8 | yes | X | | 1325 |
| Roti®-CELL RPMI 1640 | 9086.1 | 2 | 2 | 25 | X | 23,8 | yes | X | | 1325 |
| Roti®-CELL RPMI 1640 | 9091.1 | 2 | 2 stab. | X | X | 23,8 | yes | X | With temperature stabile glutamine. | 1325 |
| Roti®-CELL RPMI 1640 | 9093.1 | 2 | 2 stab. | 25 | X | 23,8 | yes | X | With temperature stabile glutamine. | 1325 |
| Roti®-CELL RPMI 1640 | 9094.1 | X | 2 | X | X | 23,8 | yes | X | | 1325 |
| Roti®-CELL RPMI 1640 | 9099.1 | 2 | X | X | X | 23,8 | yes | X | | 1325 |
| Roti®-CELL RPMI 1640 | 9104.1 | 2 | X | X | X | 23,8 | X | X | | 1325 |
| **Special Media** | | | | | | | | | | |
| Roti®-CELL Ham's F12 | 9108.1 | 1,8 | 1 | X | 1 | 14 | yes | X | Mammalian & hybridoma cells, mainly CHO | 1326 |
| Roti®-CELL Leibovitz's L15 | 9109.1 | 0,9 galact. | X | X | 5 | 14 | yes | X | Cultivation w/o $CO_2$ | 1326 |
| Roti®-CELL McCoy's 5A | 9111.1 | 3 | 1,5 | X | X | 26,2 | yes | X | Primary cells | 1326 |
| Roti®-CELL Medium 199 / Earle's | 9112.1 | 1 | 0,7 | 25 | X | 26,2 | yes | Earle's | Virology & vaccine production | 1326 |
| Roti®-CELL TC100 | 9114.1 | 0,6 | 4,1 | X | X | 4,16 | X | X | Sf9 cells/baculovirus. Based on Grace's medium | 1326 |
| Roti®-CELL William's E | 9116.1 | 2 | X | X | 0,23 | 262 | yes | X | Primary epithelial liver cells | 1326 |

* NEAA: Non-essential amino acids

Media with stabile glutamine may be stored at room temperature!

# DMEM



## Roti®-CELL DMEM High Glucose

**CELLPURE® ready-to-use, sterile**

Medium for a wide range of mammalian cell culture applications.

Dulbecco's Modified Eagle Medium

Storage temp.: +4 °C

Dulbecco's Modified Eagle Medium is the most commonly used modification of the Basal Medium acc. to Eagle. DMEM contains higher concentration of amino acids and vitamins, and additionally iron (ferric nitrate). The formulation with high glucose content is well suited for culturing of a wide range of mammalian cell lines and primary cells.

**with glutamine, with pyruvate**

| | | | |
|---|---|---|---|
| **9005.1** | 500 ml | plastic | 12,80 € |

**with glutamine, w/o pyruvate**

| | | | |
|---|---|---|---|
| **9006.1** | 500 ml | plastic | 12,80 € |

**with stable glutamine, with pyruvate**

| | | | |
|---|---|---|---|
| **9007.1** | 500 ml | plastic | 13,90 € |

**w/o glutamine, with pyruvate**

| | | | |
|---|---|---|---|
| **9010.1** | 500 ml | plastic | 12,80 € |

**w/o glutamine, with pyruvate, with HEPES**

| | | | |
|---|---|---|---|
| **9011.1** | 500 ml | plastic | 16,70 € |

**w/o glutamine, w/o pyruvate**

| | | | |
|---|---|---|---|
| **9019.1** | 500 ml | plastic | 12,80 € |

**w/o glutamine, with pyruvate, w/o phenol red**

| | | | |
|---|---|---|---|
| **9023.1** | 500 ml | plastic | 19,25 € |

**Detailed composition**
can be found on the Internet next to the product description.

## Roti®-CELL DMEM Low Glucose

**CELLPURE® ready-to-use, sterilee**

Medium for culturing of adherent mammalian cell lines.

Dulbecco's Modified Eagle Medium

Storage temp.: +4 °C

Dulbecco's Modified Eagle Medium is the most commonly used modification of the Basal Medium acc. to Eagle. DMEM contains higher concentration of amino acids and vitamins, and additionally iron (ferric nitrate). The formulation with low glucose content is well suited for culturing of a variety of mammalian adherent cell lines.

**w/o glutamine, with pyruvate**

| | | | |
|---|---|---|---|
| **9027.1** | 500 ml | plastic | 12,80 € |

**w/o glutamine, with pyruvate, with HEPES**

| | | | |
|---|---|---|---|
| **9030.1** | 500 ml | plastic | 16,05 € |

## Roti®-CELL DMEM : F12

**CELLPURE® ready-to-use, sterile**

Medium for analysis of hormones and growth factors in cell culture.

Dulbecco's Modified Eagle Medium + Ham's F12 medium (1:1)

Storage temp.: +4 °C

Dulbecco's Modified Eagle Medium is the most commonly used modification of the Basal Medium acc. to Eagle. This mixture of DMEM High Glucose with Ham's F12 medium combines the high nutritional value of Ham's F12 medium with the high concentration of amino acids, vitamins, and glucose of DMEM.

**with glutamine, with pyruvate, with HEPES**

| | | | |
|---|---|---|---|
| **9031.1** | 500 ml | plastic | 15,60 € |

## Roti®-CELL Iscove's MDM

**CELLPURE® ready-to-use, sterile**

Medium for a wide range of mammalian cell culture applications.

Iscove's Modified Dulbecco's Medium

Storage temp.: +4 °C

Iscove's Modified Dulbecco's Medium is based on DMEM High Glucose, containing selenium, HEPES, and, instead of iron, potassium (as potassium nitrate) besides additional amino acids and vitamins. It is well suited for culturing of a wide range of mammalian cell lines and primary cells, including B- and T lymphocytes as well as hybridoma cells.

**with glutamine, with pyruvate, with HEPES**

| | | | |
|---|---|---|---|
| **9033.1** | 500 ml | plastic | 16,70 € |

**w/o glutamine, with pyruvate, with HEPES**

| | | | |
|---|---|---|---|
| **9035.1** | 500 ml | plastic | 16,70 € |

# EMEM

## Roti®-CELL Eagle's MEM / Earle's

**CELLPURE® ready-to-use, sterile**

Medium for a wide range of mammalian cell culture applications.

Minimum Essential Medium acc. to Eagle with Earle's salts

Storage temp.: +4 °C

Minimum Essential Medium is a commonly used modification of the Basal Medium acc. to Eagle, having been developed in 1959 for culturing of HeLa cells. EMEM contains high concentration of amino acids, which conform closely to the protein composition of human cells. Concentration of vitamins, and other essential nutrients, is enhanced, allowing longer cultivation periods between feedings. EMEM is well suited for culturing of a wide range of mammalian cell lines and primary cells, also including transfected cells.

**with glutamine**

| | | | |
|---|---|---|---|
| **9044.1** | 500 ml | plastic | 13,90 € |

**w/o glutamine**

| | | | |
|---|---|---|---|
| **9047.1** | 500 ml | plastic | 12,80 € |

**w/o glutamine, with HEPES**

| | | | |
|---|---|---|---|
| **9048.1** | 500 ml | plastic | 14,95 € |

**w/o glutamine, with pyruvate, with NEAA**

| | | | |
|---|---|---|---|
| **9049.1** | 500 ml | plastic | 14,95 € |

## Roti®-CELL Eagle's MEM / Hanks'

**CELLPURE® ready-to-use, sterile**

Medium for a wide range of mammalian cell culture applications.

Minimum Essential Medium acc. to Eagle with Hanks' salts

Storage temp.: +4 °C

EMEM is well suited for culturing of a wide range of mammalian cell lines and primary cells, also including transfected cells. Due to supplementation with Hanks' salts, cell cultivation in EMEM-Hanks' does not require $CO_2$ enriched atmosphere.

**w/o glutamine**

| | | | |
|---|---|---|---|
| **9056.1** | 500 ml | plastic | 16,05 € |

## Roti®-CELL Eagle's MEM-Alpha

**CELLPURE® ready-to-use, sterile**

Medium for culturing of bone marrow and amniotic cells.

Minimum Essential Medium acc. to Eagle, Alpha modification

Storage temp.: +4 °C

Alpha-Eagle's Minimum Essential Medium is based on EMEM, containing the following unique components: Vitamin $B_{12}$, ascorbic acid, non-essential amino acids, sodium pyruvate, lipoic acid, and D-biotin. It has been optimised for culturing of bone marrow cells and amniotic cells for chromosome analysis.

**w/o glutamine, w/o nucleosides**

| | | | |
|---|---|---|---|
| **9058.1** | 500 ml | plastic | 14,95 € |

**with stable glutamine, with nucleosides**

| | | | |
|---|---|---|---|
| **9082.1** | 500 ml | plastic | 27,85 € |

# RPMI




## Roti®-CELL RPMI-1640

**CELLPURE® ready-to-use, sterile, with glutamine**

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

RPMI cell culture medium

Storage temp.: +4 °C

RPMI-1640 has been developed for culturing of normal and neoplastic human leucocytes. It is based on a bicarbonate buffering system with modified amounts of amino acids and vitamins. RPMI-1640 Medium is very well suited for culturing of a wide range of mammalian suspension cell lines and primary lymphocytes, all leucocytes, B- and T-lymphocytes, as well as myeloma- and hybridoma cells.

**with glutamine**

| | | | |
|---|---|---|---|
| **9085.1** | 500 ml | plastic | 12,80 € |

**with glutamine, with HEPES**

| | | | |
|---|---|---|---|
| **9086.1** | 500 ml | plastic | 14,55 € |

**with stable glutamine**

| | | | |
|---|---|---|---|
| **9091.1** | 500 ml | plastic | 13,90 € |

**with stable glutamine, with HEPES**

| | | | |
|---|---|---|---|
| **9093.1** | 500 ml | plastic | 16,05 € |

**with glutamine, w/o glucose**

| | | | |
|---|---|---|---|
| **9094.1** | 500 ml | plastic | 52,60 € |

**w/o glutamine**

| | | | |
|---|---|---|---|
| **9099.1** | 500 ml | plastic | 12,40 € |

**w/o glutamine, w/o phenol red**

| | | | |
|---|---|---|---|
| **9104.1** | 500 ml | plastic | 16,05 € |

# Special Media




## Roti®-CELL Ham's F12

**CELLPURE® ready-to-use, sterile**

Medium for culturing of a variety of mammalian- and hybridoma cells, especially CHO cells.

Ham's F12 cell culture medium

Storage temp.: +4 °C

Ham's F12 Medium was originally optimized for serum-free, clonal culturing of CHO cells (Chinese Hamster Ovary). Ham's F12 Medium is the medium of choice for culturing cells of rodent orgin, particularly from rabbit and rat. Additionally, it is increasingly used as general purpose medium for culturing mammalian and hybridoma cells, particularly when supplemented with sera, hormones, and transferrin.

**with glutamine, with pyruvate**

| | | | |
|---|---|---|---|
| **9108.1** | 500 ml | plastic | 14,55 € |

## Roti®-CELL Leibovitz's L15

**CELLPURE® ready-to-use, sterile**

Medium for culture of mammalian cells without $CO_2$ atmosphere.

Leibovitz's cell culture medium

Storage temp.: +4 °C

Leibovitz's L15 Medium was developed for culturing of eukaryotic cells without $CO_2$ enriched atmosphere. Its unique components include the use of galactose instead of glucose, omittance of bicarbonate, addition of free base forms of arginine, cysteine, and histidine, as well as elevated levels of tyrosine. Leibovitz's L15 Medium is still used to grow cell lines in the absence of $CO_2$.

**w/o glutamine, with galactose**

| | | | |
|---|---|---|---|
| **9109.1** | 500 ml | plastic | 23,15 € |

## Roti®-CELL McCoy's 5A

**CELLPURE® ready-to-use, sterile**

Medium for culturing of a variety of mammalian cell lines and primary cells.

McCoys 5A cell culture medium

Storage temp.: +4 °C

McCoy's 5A Medium was optimized for culturing of Walker 256 carcinoma cells. Its unique components include asparagine, amino acids (all L-isomers), and elevated levels of glucose and folic acid. Due to its richness, McCoy's 5A Medium is increasingly used as general purpose medium for primary cells and established cell lines.

**with glutamine**

| | | | |
|---|---|---|---|
| **9111.1** | 500 ml | plastic | 21,40 € |

## Roti®-CELL Medium 199 / Earle's

**CELLPURE® ready-to-use, sterile**

Medium for cell culture in virology and vaccine production.

Medium 199 with Earle's salts

Storage temp.: +4 °C

Medium 199 was developed for nutritional studies on cultured chick embryo muscle fibroblasts. Its unique components include purines, pyrimidines, and fat soluble components. Medium 199 requires a $CO_2$ enriched atmosphere and is mainly used for virological studies and vaccine production.

**with glutamine, with HEPES**

| | | | |
|---|---|---|---|
| **9112.1** | 500 ml | plastic | 18,85 € |

## Roti®-CELL TC100

**CELLPURE® ready-to-use, sterile**

Medium for culture of Sf9 cells.

TC100 cell culture medium; BML-TC/100

Storage temp.: +4 °C

TC100 is based on the Grace's Insect Medium, optimizing the expression of baculovirus grown in cultured cells derived from ovaries of the fall army worm, *Spodoptera frugiperda*.

**with glutamine**

| | | | |
|---|---|---|---|
| **9114.1** | 500 ml | plastic | 26,35 € |

## Roti®-CELL William's E

**CELLPURE® ready-to-use, sterile**

Medium for long-term culturing of adult, primary liver epithelial cells.

William's E cell culture medium

Storage temp.: +4 °C

William's E Medium is based on the Minimal Essential Medium (MEM), containing besides pyruvate higher concentrations of glucose, amino acids and sodium bicarbonate. William's E Medium has been optimized for long-term culturing of polygonal, epithelia cells from adult liver of mammals.

**w/o glutamine, with pyruvate**

| | | | |
|---|---|---|---|
| **9116.1** | 500 ml | plastic | 21,40 € |



# Cell Culture Media Additives



## Roti®-CELL Bicarbonate solution

**CELLPURE® sterile, 7,5 %**

For cell culture

Sodium bicarbonate solution in water

Due to it being the main physiological buffer system, sodium bicarbonate still is the most commonly used buffer in cell culture media. For media with Hanks' Salts (HBSS) add a low concentration of Roti®-CELL Bicarbonate solution (350 mg/l = 0,035 % end concentration) and incubate in closed culture vessels. For media with Earle's Salts (EBSS) add a higher concentration of Roti®-CELL Bicarbonate solution (2.200 mg/l = 0,22 % end concentration) and incubate in an open vessel, in an atmosphere supplied with 5 % $CO_2$ in air.

| | | | |
|---|---|---|---|
| **9165.1** | 100 ml | plastic | 12,80 € |

## Roti®-CELL Glucose solution

**CELLPURE® sterile, 100 mg/ml**

For cell culture

Glucose solution in water

In cell culture, glucose is used in order to provide an optimised amount of nutritional energy for the cells. Only in exceptional cases glucose is replaced by galactose, or is provided by dosing pumps. Generally, content of glucose in cell culture media is 1 to 6 mg/l.

| | | | |
|---|---|---|---|
| **9155.1** | 100 ml | plastic | 28,50 € |

## Roti®-CELL Glutamine solution

**CELLPURE® sterile, 200 mM**

Temperature-stable. For cell culture

Alanyl-L-glutamine solution in 145 mM NaCl

L-glutamine is an essential amino acid required for cell culture growth and is normally present in media in a concentration of 29 mg/l or 2 mM. While standard L-glutamine is temperature-sensitive and thus not stable for longer periods, the L-Glutamine form used for this Roti®-CELL Glutamine solution extends by temperature stability and may be stored at room temperature for years, making it a highly valuable tool for cell culture media. Stable L-glutamine is used in the same concentration as standard, temperature-sensitive L-glutamine.

| | | | |
|---|---|---|---|
| **9183.1** | 100 ml | plastic | 16,70 € |

▶ Antibiotics for Cell Culture
see some pages below

## Roti®-CELL HEPES solution

**CELLPURE® sterile, 1 M**

For cell culture

HEPES solution in 145 mM NaCl

Roti®-CELL HEPES solution has been designed for use in open vessels incubated under atmospheric conditions. The sodium chloride concentration of Roti®-CELL HEPES solution has been adapted to the Osmolality found in standard cell culture media formulations, in order to maintain physiological Osmolality in culture.

| | | | |
|---|---|---|---|
| **9157.1** | 100 ml | plastic | 22,50 € |

## Roti®-CELL MEM-NEAA solution

**CELLPURE® sterile, 100x conc., 10 mM each**

For cell culture

Non essential amino acids, solution in water

Storage temp.: +4 °C

Roti®-CELL MEM-NEAA solution consists of a mixture of 7 non-essential amino acids in water. Enrichment of Roti®-CELL Eagle's MEM Medium (with Earle's or Hanks' salts) with non-essential amino acids enables culturing of fastidious cells and cell lines, hereby broadening the utility of this medium. Dilution by 1:100 of Roti®-CELL MEM-NEAA solution yields a final concentration 0.1 mM of each component.

**Type analysis:**

L-Alanine. ..... 0,89 g/l
L-Asparagine. ..... 1,321 g/l
L-Aspartic acid. ..... 1,33 g/l
L-Glutamic acid. ..... 1,47 g/l
Glycine. ..... 0,75 g/l
L-Proline. ..... 1,15 g/l
L-Serine. ..... 1,05 g/l

| | | | |
|---|---|---|---|
| **9185.1** | 100 ml | plastic | 16,70 € |

## Roti®-CELL Pyruvate solution

**CELLPURE® sterile, 100 mM**

For cell culture

Sodium pyruvate solution in water

Storage temp.: +4 °C

Sodium Pyruvate is a key intermediate in the ATP production within the cell and is sometimes added to cell culture media as an additional source of energy. Additional pyruvate may help cells deficient in one of the enzymes involved in glucose metabolism, and may kick-start cells in the citric acid cycle, thus supporting growth of low density cells.
Concentration in standard media is 1 mM; special media like Leibovitz's medium are supplemented with up to 5 mM pyruvate.

| | | | |
|---|---|---|---|
| **9182.1** | 100 ml | plastic | 10,25 € |

## Roti®-CELL Water

**CELLPURE® sterile, USP**

For cell culture

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9186.1** | 500 ml | plastic | 9,60 € |
| **9186.2** | 1 l | plastic | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |

Endotoxins. .....<1,0 EU/ml.
Sterility. ..... complies.

# Balanced Salt Solutions




## Roti®-CELL Hanks' BSS

ready-to-use S

**CELLPURE® ready-to-use, sterile**

Balanced salt solution for cell culture

Hanks' salt solution, HBSS

Roti®-CELL Hanks' BSS is a balanced salt solution to be used in a wide variety of cell- and tissue culture applications; for instance stabilizing of a physiological pH for cell maintenance in $CO_2$-free atmosphere, diluting cell suspensions prior to counting, washing cells prior to dissociation or passaging, and transporting cells or tissues.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

**w/o Ca/Mg, w/o phenol red**

| | | | |
|---|---|---|---|
| **9117.1** | 500 ml | plastic | 11,30 € |

**w/o Ca/Mg, with phenol red**

| | | | |
|---|---|---|---|
| **9118.1** | 500 ml | plastic | 11,75 € |

**with Ca/Mg, w/o phenol red**

| | | | |
|---|---|---|---|
| **9119.1** | 500 ml | plastic | 11,30 € |

**with Ca/Mg, with phenol red**

| | | | |
|---|---|---|---|
| **9122.1** | 500 ml | plastic | 15,60 € |




## Roti®-CELL DPBS

ready-to-use S

**CELLPURE® ready-to-use, sterile**

Balanced salt solution for cell culture

Phosphate buffered saline acc. to Dulbecco, DPBS

Roti®-CELL Dulbecco's PBS is a balanced salt solution based on PBS to be used in a wide variety of cell- and tissue culture applications; for instance stabilizing of a physiological pH in cell culture media, washing cells prior to dissociation, transfection or passaging, and maintaining cell tonicity and viability during transport of cells or tissues.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

**w/o Ca/Mg**

| | | | |
|---|---|---|---|
| **9124.1** | 500 ml | plastic | 13,15 € |
| **9124.2** | 1 l | plastic | 19,90 € |
| Original pack 6 x 1 l | | | 18,91/1 l |

**10x conc., w/o Ca/Mg**

| | | | |
|---|---|---|---|
| **9130.1** | 500 ml | plastic | 17,75 € |
| **9130.2** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |

**with Ca/Mg**

| | | | |
|---|---|---|---|
| **9131.1** | 500 ml | plastic | 13,15 € |
| **9131.2** | 1 l | plastic | 19,90 € |
| Original pack 6 x 1 l | | | 18,91/1 l |

▶ Roti®-CELL PBS solutions see page 1330



# Reagents for Cell Culture

## General Reagents

### Albumin Fraction V, endotoxin-tested

**>98 %, low endotoxin, CELLPURE®**

With low endotoxin content. Recommended for culturing of cell lines.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Albumin Fraction V, low endotoxin is recommended for use during culturing of eukaryotic cells.
Bovine serum albumin is basically suitable for stabilisation of all enzymes and antibodies, as well as for blocking of hybridisations and immunoassays.
Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.
Molar extinction coefficient: 44.020 · $M^{-1}$ · $cm^{-1}$
(acc. to 0.667 x $cm^{-1}$ for a 0.1 % solution).

**Endotoxin content: <15 E.U./mg**

| | | | |
|---|---|---|---|
| **CP84.1** | 10 g | plastic | 34,30 € |
| **CP84.2** | 50 g | plastic | 105,90 € |
| **CP84.3** | 500 g | plastic | 837,45 € |
| Original pack 6 x 500 g | | | 795,58/500 g |

### Albumin Fraction V, very low endotoxin

**>98 %, very low endotoxin, CELLPURE®**

With extremely low endotoxin content. Recommended for the culture of primary cells and cell lines, as well as for sensitive cell culture assays.

BSA

M ~66 000 g/mol

Storage temp.: +4 °C

Albumin Fraction V, very low endotoxin is particularly recommended for use during culturing of eukaryotic cells and in cell culture assays. This albumin of superior quality is thoroughly tested for its very low endotoxin content, therefore providing trouble-free cell culture assays and reliable results even when handling primary cells or stem cells.
Bovine serum albumin is basically suitable for stabilisation of all enzymes and antibodies, as well as for blocking of hybridisations and immunoassays.
Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

**Endotoxin content: < 2,0 E.U./mg**

| | | | |
|---|---|---|---|
| **CP77.1** | 10 g | plastic | 138,70 € |
| **CP77.2** | 50 g | plastic | 536,45 € |

### Dimethyl sulphoxide (DMSO)

**≥99,5 %, BioScience-Grade, for molecular biology**

Recommended for PCR, sequencing, hybridisation and cell culture.

DMSO

$C_2H_6OS$

M 78,13 g/mol

| | | | |
|---|---|---|---|
| **A994.1** | 100 ml | glass | 22,05 € |
| **A994.2** | 250 ml | glass | 34,30 € |

### Flavine-adenine-dinucleotide disodium salt (FAD)

**≥95 %, CELLPURE®**

FAD disodium salt, Riboflavin-5'-adenosine diphosphate disodium salt

$C_{27}H_{31}O_{15}N_9Na_2P_2$ • M 865,55 g/mol • Storage temp.: +4 °C

**Endotoxine: ≤100 E.U./g**

| | | | |
|---|---|---|---|
| **6833.1** | 10 mg | glass | 25,30 € |
| **6833.2** | 50 mg | glass | 37,55 € |
| **6833.3** | 100 mg | glass | 50,45 € |

### HEPES

DNAse-free Protease-free RNAse-free

**PUFFERAN® CELLPURE® ≥99,5 %**

For cell culture, tissue culture and biotechnology.

N-2-Hydroxyethyl piperazine-N'-2-ethane sulphonic acid, Good's buffer

$C_8H_{18}N_2O_4S$ • M 238,31 g/mol

Extremely versatile buffer. Excellent for cell and tissue cultures and for analysis of biological systems.

**Endotoxins: approx. 0.025 E.U./mg**

**Applications:**

- Combined with bicarbonate, HEPES is an excellent medium for human lymphocytoidal cell lines
- HEPES is more effective than $NaHCO_3$ when controlling the pH value in tissue and organ culture
- HEPES-buffered media for chicken and human lung fibroblasts
- Can be used to replace a bicarbonate buffered medium containing serum with a serum-free HEPES-buffered medium for mouse fibroblasts

| | | | |
|---|---|---|---|
| **HN77.1** | 50 g | plastic | 28,95 € |
| **HN77.2** | 100 g | plastic | 41,85 € |
| **HN77.3** | 250 g | plastic | 80,10 € |
| **HN77.4** | 500 g | plastic | 141,80 € |
| Original pack 6 x 500 g | | | 134,71/500 g |
| **HN77.5** | 1 kg | plastic | 244,60 € |
| Original pack 6 x 1 kg | | | 232,37/1 kg |

### Lactalbumin

**for microbiology**



Storage temp.: +20 °C

Lactalbumin is produced by enzymatic hydrolysis of milk whey. It consists of peptides, amino acids and carbohydrates, simple and complex.
It is used in media for culturing of bacterial cells (e.g. *lactobacilli*), for tissue culture, production of vaccines and in fermentation procedures.

| | | | |
|---|---|---|---|
| **7597.1** | 250 g | plastic | 72,60 € |
| **7597.2** | 500 g | plastic | 129,55 € |
| Original pack 6 x 500 g | | | 123,07/500 g |

**Recommended Application of Albumins**

| Albumin | Art. No. | Recommended Application |
|---|---|---|
| **Fraction V, endotoxin-tested** | CP84 | Cell culture, standard cell lineages, cell sorting, short-term assays. |
| **Fraction V, very low endotoxin** | CP77 | Cell culture. Superior quality and purity, suitable for sensitive cells like primary cells, stem cells, cloning and 3D-cultures. Also recommended for cell stressing assays like transfections, *in vitro* infections, or cell fusion. |
| **Lactalbumin** | 7597 | Cell culture, fermentation procedures, tissue culture. |




## Roti®-CELL 10x PBS

**CELLPURE® sterile**

Balanced salt solution for cell culture

Phosphate buffered saline, PBS w/o Ca/Mg

Roti®-CELL PBS is a balanced salt solution to be used in a wide variety of cell- and tissue culture applications; for instance diluting cell suspensions prior to counting, washing cells prior to dissociation, transfection or passaging, and transporting cells or tissues.

10x ready-made solution

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9150.1** | 1 l | plastic | 18,85 € |
| Original pack 6 x 1 l | | | 17,91/1 l |

## Roti®-CELL PBS

ready-to-use

**CELLPURE® ready-to-use, sterile**

Balanced salt solution for cell culture

Phosphate buffered saline, PBS w/o Ca/Mg

Roti®-CELL PBS is a balanced salt solution to be used in a wide variety of cell- and tissue culture applications; for instance diluting cell suspensions prior to counting, washing cells prior to dissociation, transfection or passaging, and transporting cells or tissues.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9143.1** | 500 ml | plastic | 12,40 € |
| **9143.2** | 1 l | plastic | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |

## TRIS

DNAse-free Protease-free RNAse-free

**CELLPURE® ≥99,9 %**

For cell culture, tissue culture and biotechnology.

Tris(hydroxymethyl)-aminomethane

$C_4H_{11}NO_3$

M 121,14 g/mol

**Warning** H315-H319-H335

Buffer with low endotoxin content and especially designed for life science applications.

**Endotoxins: ≤0.03 E.U./mg**

| | | | |
|---|---|---|---|
| **3170.1** | 100 g | plastic | 25,30 € |
| **3170.2** | 500 g | plastic | 77,30 € |
| Original pack 6 x 500 g | | | 73,44/500 g |

## Roti®fair 0.9 % NaCl

**for biochemistry and molecular biology**

For preparation of salt solutions and buffer concoctions.

Sodium chloride (tablet)

Exactly pre-weighed tablets for convenient and rapid preparation of sodium chloride solution.

Sodium chloride solution is generally used in many routine processes in Life Science laboratories, for instance preparation of salt solutions or composing of special buffer concoctions. In order to alleviate the effort involved, preparation of salt solutions using the Roti®fair salt tablets is most convenient.

Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.

For long-term storage, salt solution should be kept at +4 °C.

0,9 % NaCl solution is prepared by dissolution of 1 tablet in 1000 ml or 100 ml highly pure water, respectively.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

**for 1000 ml/tablet**

| | | | |
|---|---|---|---|
| **1067.1** | 10 tablets | blister | 49,35 € |
| **1067.2** | 100 tablets | plastic | 114,50 € |

**for 100 ml/tablet**

| | | | |
|---|---|---|---|
| **1053.1** | 100 tablets | plastic | 54,75 € |

## Sodium chloride solution 0,9 %

NEW

**CELLPURE®**

**Type analysis:**

pH value. ..... 4,5-7,0

Endotoxins..... ≤0,5 I.U./ml

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **8607.1** | 500 ml | plastic | 16,05 € |
| **8607.2** | 1 l | plastic | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |

## Roti®-CELL Water

**CELLPURE® sterile, USP**

For cell culture

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

**Endotoxins: <0,25 E.U./ml**

| | | | |
|---|---|---|---|
| **9186.1** | 500 ml | plastic | 9,60 € |
| **9186.2** | 1 l | plastic | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |

## Water

ready-to-use

**hypotonic, sterile, free from pyrogen**

$H_2O$ • M 18,02 g/mol

Sterile and pyrogen-free - the best choice for preparation of reaction buffers.

**Pyrogenity (endotoxins): <0.25 E.U./ml**

**Guarantee analysis:**

Pyrogenity (LAL-Test)..... complies

pH value. ..... 4,0-7,0

Heavy metals..... ≤0,1 ppm

Evaporation residue..... ≤0,001 %

| | | | |
|---|---|---|---|
| **3255.1** | 1 l | plastic | 9,15 € |
| Original pack 6 x 1 l | | | 8,69/1 l |

# Antibiotics for Cell Culture

Contamination of a cell culture by bacteria or yeasts almost always results in loss of the cell lines and assays, which means that the use of antibiotics has an important role to play in addition to working in sterile conditions. Antibiotics which are predominantly used for prophylactic purposes are ampicillin, streptomycin and penicillin, while ciprofloxacin and nystatin are used for the eradication of mycoplasma and mould/yeasts.
In molecular biology, antibiotics – particularly G418, hygromycin and neomycin – were established in combination with appropriate resistance genes as selection markers for successfully transfected cells.
Reaction mechanisms of antibiotics used in cell culture mainly involve interference with membrane biosynthesis, membrane integrity or the ribosomal processes in protein biosynthesis.

| Antibiotic | Purity | Endotoxin content | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **Ampicillin sodium salt** | ≥91 %, CELLPURE® | ≤0.15 I.E./mg | **HP62.1** | 10 g | 45,70 |
| | | | **HP62.2** | 50 g | 168,70 |
| **Geneticin disulphate (G418)-solution** | 50 mg/ml, steril, CELLPURE® | <10 E.U./ml | **CP11.1** | 10 ml | 68,30 |
| | | | **CP11.2** | 20 ml | 89,15 |
| | | | **CP11.3** | 100 ml | 321,45 |
| **Geneticin disulphate (G418)-solution, sterile** | 50 mg/ml, BioScience-Grade, sterile | n.d. | **2039.1** | 10 ml | 62,25 |
| | | | **2039.2** | 20 ml | 81,60 |
| | | | **2039.3** | 100 ml | 306,40 |
| **Gentamycin sulphate solution** | 50 mg/ml, CELLPURE®, sterile | <10 E.U./ml | **HN09.1** | 20 ml | 96,25 |
| | | | **HN09.2** | 100 ml | 310,70 |
| **Gentamycin sulphate solution, sterile** | 50 mg/ml, BioScience-Grade, sterile | n.d. | **2475.1** | 20 ml | 95,70 |
| | | | **2475.2** | 100 ml | 303,15 |
| **Hygromycin B solution** | 50 mg/ml, , CELLPURE®, sterile | <10 E.U./ml | **CP12.1** | 10 ml | 114,50 |
| | | | **CP12.2** | 20 ml | 197,30 |
| **Hygromycin B solution, sterile** | 50 mg/ml, BioScience-Grade, sterile | n.d. | **1287.1** | 10 ml | 99,45 |
| | | | **1287.2** | 20 ml | 150,40 |
| **Pen/Strep-PreMix** | CELLPURE® | ≤4.2 I.U./ml | **HP10.1** | powder mix for 100 ml | 60,75 |
| **Penicillin G potassium salt** | ≥1550 U/mg, CELLPURE® | <0.25 I.U./mg | **HP49.1** | 1 g | 19,60 |
| | | | **HP49.2** | 10 g | 37,10 |
| | | | **HP49.3** | 25 g | 73,00 |
| **Penicillin G sodium salt** | ≥1550 U/mg, CELLPURE® | <0.25 I.U./mg | **HP48.1** | 1 g | 16,05 |
| | | | **HP48.2** | 10 g | 33,25 |
| | | | **HP48.3** | 25 g | 65,50 |
| **Streptomycin sulphate** | ≥720 I.U./mg, CELLPURE® | ≤0.25 I.E./mg | **HP66.1** | 10 g | 27,85 |
| | | | **HP66.2** | 25 g | 40,75 |
| | | | **HP66.3** | 50 g | 65,50 |
| **Tetracyclin hydrochloride** | ≥900 µg/mg, CELLPURE® | ≤0.5 I.E./mg | **HP63.1** | 10 g | 24,20 |
| | | | **HP63.2** | 50 g | 84,85 |
| **Vancomycin hydrochloride** | ≥900 U./mg, CELLPURE® | ≤0.33 E.U./mg | **0242.1** | 250 mg | 33,25 |
| | | | **0242.2** | 500 mg | 53,65 |
| | | | **0242.3** | 1 g | 96,65 |

For additional product data and safety information, see chapter Chemicals A-Z.



ready-to-use

## Roti®-CELL Myco-Free

**CELLPURE® 50x conc., ready-to-use, sterile**

For elimination of mycoplasm contamination in cell culture.
Mycoplasm eradication solution
Storage temp.: -20 °C • Transport temp.: cooled

**Application:** Culture media are supplemented by the Roti®-CELL Myco-Free stock solution diluted by 1:50. Mycoplasms and bacteria are reliably and efficiently eliminated.

- Simple Application
- Reliable eradication
- Effective against all mycoplasms and bacteria
- Not cytotoxic

Roti®-CELL Myco-Free is a reliable, rapidly effective reagent for eradication of contaminations by mycoplasms and other bacteria in cell culture.
The sterile solution Roti®-CELL Myco-Free is composed of a mixture of specially selected antibiotics in PBS, which are known to be highly potent, even in very low concentrations. The effect is due to a specific interaction with prokaryotic protein biosynthesis by inhibition of translation and of the transcription complex located gyrase. Eukaryotic cells are not affected.

One bottle of 100 ml is sufficient for approx. 300 applications.

| | | | |
|---|---|---|---|
| **9830.1** | 100 ml | plastic | 220,40 € |

▶ Detailed information on these antibiotics and their application, see page 1426

## Amino Acids for Cell Culture

In addition to containing a defined amount of L-glutamine and other essential amino acids, cells in culture media require a series of other amino acids, such as additives to Iscove's Modified Dulbecco Media or nonessential amino acid mixtures to Minimum Essential Media (MEM). Only highly pure reagents tested for the absence of pyrogens/endotoxins can be used for the cell culture.
ROTH offers CELLPURE® grade amino acids with high purity and a guaranteed low endotoxin content.

| Product | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **L-Alanyl-L-glutamine** | ≥99 %, CELLPURE® | **6831.1** | 5 g | 31,75 |
| | | **6831.2** | 10 g | 44,00 |
| | | **6831.3** | 25 g | 88,05 |
| | | **6831.4** | 100 g | 299,95 |
| **L-Arginine** | ≥99 %, CELLPURE® | **1655.1** | 25 g | 10,25 |
| | | **1655.2** | 100 g | 25,70 |
| | | **1655.3** | 500 g | 83,75 |
| **L-Arginine monohydrochloride** | ≥98,5 %, CELLPURE® | **1689.1** | 25 g | 14,95 |
| | | **1689.2** | 100 g | 26,35 |
| | | **1689.3** | 500 g | 87,00 |
| **L-Asparagine monohydrate** | ≥99 %, CELLPURE® | **KK37.1** | 50 g | 26,35 |
| | | **KK37.2** | 250 g | 90,85 |
| | | **KK37.3** | 500 g | 167,60 |
| **L-Aspartic acid** | ≥99 %, CELLPURE® | **1690.1** | 25 g | 14,55 |
| | | **1690.2** | 100 g | 25,70 |
| | | **1690.3** | 500 g | 84,85 |
| **L-Cysteine** | ≥99 %, CELLPURE® | **1693.1** | 25 g | 26,35 |
| | | **1693.2** | 100 g | 65,05 |
| | | **1693.3** | 500 g | 277,90 |
| **L-Cysteine hydrochloride monohydrate** | ≥99 %, CELLPURE® | **1694.1** | 25 g | 18,85 |
| | | **1694.2** | 100 g | 42,50 |
| | | **1694.3** | 500 g | 175,80 |
| **L-Cystine** | ≥98,5 %, CELLPURE® | **1695.1** | 25 g | 24,65 |
| | | **1695.2** | 100 g | 60,75 |
| | | **1695.3** | 500 g | 252,65 |
| **L-Glutamine** | ≥99 %, CELLPURE® | **HN08.1** | 25 g | 19,25 |
| | | **HN08.2** | 100 g | 36,45 |
| | | **HN08.3** | 500 g | 126,35 |
| **L-Glutamic acid** | ≥99 %, CELLPURE® | **1743.1** | 25 g | 14,55 |
| | | **1743.2** | 100 g | 22,50 |
| | | **1743.3** | 500 g | 71,95 |
| **L-Glutathione reduced** | ≥99 %, CELLPURE® | **6832.2** | 5 g | 35,40 |
| | | **6832.1** | 2,5 g | 25,30 |
| | | **6832.3** | 10 g | 54,75 |
| | | **6832.4** | 25 g | 110,65 |
| **Glycine** | ≥99 %, CELLPURE® | **HN07.1** | 100 g | 16,70 |
| | | **HN07.2** | 500 g | 45,70 |
| | | **HN07.3** | 1 kg | 83,35 |
| **L-Histidine** | ≥99 %, CELLPURE® | **1696.1** | 25 g | 26,35 |
| | | **1696.2** | 100 g | 56,90 |
| | | **1696.3** | 500 g | 233,85 |
| **L-Histidine hydrochloride monohydrate** | ≥99 %, CELLPURE® | **1697.1** | 25 g | 22,50 |
| | | **1697.2** | 100 g | 53,65 |
| | | **1697.3** | 500 g | 214,90 |
| **L-Isoleucine** | ≥99 %, CELLPURE® | **1698.1** | 25 g | 23,15 |
| | | **1698.2** | 100 g | 56,90 |
| | | **1698.3** | 500 g | 228,45 |
| **L-Leucine** | ≥98 %, CELLPURE® | **1699.1** | 25 g | 19,25 |
| | | **1699.2** | 100 g | 42,90 |
| | | **1699.3** | 500 g | 147,85 |
| **L-Lysine hydrochloride** | ≥99 %, CELLPURE® | **1700.1** | 25 g | 15,60 |
| | | **1700.2** | 100 g | 28,50 |
| | | **1700.3** | 500 g | 95,60 |
| **L-Lysine monohydrate** | ≥98,5 %, CELLPURE® | **6829.1** | 25 g | 48,30 |
| | | **6829.2** | 100 g | 88,05 |
| | | **6829.3** | 250 g | 321,45 |
| **L-Methionine** | ≥99 %, CELLPURE® | **1702.1** | 25 g | 17,10 |
| | | **1702.2** | 100 g | 35,40 |
| | | **1702.3** | 500 g | 138,70 |
| **L-Ornithine monohydrochloride** | ≥99 %, CELLPURE® | **1703.1** | 25 g | 23,15 |
| | | **1703.2** | 100 g | 53,65 |
| | | **1703.3** | 500 g | 209,65 |
| **L-Phenylalanine** | ≥99 %, CELLPURE® | **1709.1** | 25 g | 19,60 |
| | | **1709.2** | 100 g | 44,00 |
| | | **1709.3** | 500 g | 170,95 |
| **L-Proline** | ≥98,5 %, CELLPURE® | **1713.1** | 25 g | 20,65 |
| | | **1713.2** | 100 g | 44,00 |
| | | **1713.3** | 500 g | 165,05 |
| **Roti®-CELL Glutamine solution** | sterile, 200 mM, CELLPURE® | **9183.1** | 100 ml | 16,70 |
| **Roti®-CELL MEM-NEAA solution** | sterile, 100x conc., 10 mM each, CELLPURE® | **9185.1** | 100 ml | 16,70 |
| **L-Serine** | ≥99 %, CELLPURE® | **1714.1** | 25 g | 25,30 |
| | | **1714.2** | 100 g | 61,20 |
| | | **1714.3** | 500 g | 246,20 |
| **L-Threonine** | ≥99 %, CELLPURE® | **1738.1** | 25 g | 19,25 |
| | | **1738.2** | 100 g | 38,60 |
| | | **1738.3** | 500 g | 155,90 |
| **L-Tryptophan** | ≥99 %, CELLPURE® | **1739.1** | 25 g | 28,95 |
| | | **1739.2** | 100 g | 85,50 |
| | | **1739.3** | 500 g | 353,70 |
| **L-Tyrosine** | ≥99 %, CELLPURE® | **1741.1** | 25 g | 23,15 |
| | | **1741.2** | 100 g | 61,20 |
| | | **1741.3** | 500 g | 241,90 |
| **L-Valine** | ≥99 %, CELLPURE® | **1742.1** | 25 g | 20,35 |
| | | **1742.2** | 100 g | 40,35 |
| | | **1742.3** | 500 g | 149,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

**Endotoxins** (greek ἐndo [endo]=inner, within; τοξίνη [toxin]=poison, toxic substance).
Largest subgroup of **pyrogens** (greek πψροσ [pyros]=fire; γενναν [gennan]=to produce).

The terms **endotoxin** and **pyrogen** are often used synonymously.

Lipopoly saccharides from the outer cell membrane of gram-negative bacteria or blue-green algae. The pathological effects of **endotoxins** are microbial poisoning, septicaemia and lung disease. The lipid A contained in endotoxins is toxic to eukaryotic cells since it interacts with the cell membrane and affects the transcription of many proteins (e.g. tumour necrosis factor). It is, therefore, important to use reagents that are to a large degree free of endotoxins / pyrogens in the **cell culture.**

This can be verified by older test methods such as induction of fever in rabbits, the LAL test (the haemolymph of the horseshoe crab *limulus polyphemus* coagulates in the presence of endotoxins) or by using modern and animal-friendly methods such as monocyte activation or ELISA.

1 E.U. (Endotoxin Unit) = 1 I.U. (International Unit) = 1 USP.U. (United States Pharmocopeia Unit)

**1 E.U. = approx. 0,1 ng endotoxin**

## Carbohydrates for Cell Culture

| Product | Purity | Endotoxin content | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **D(+)-Galactose** | ≥99 %, CELLPURE® | ≤10 E.U./g | **8878.1** | 10 g | 28,95 |
| | | | **8878.2** | 25 g | 55,80 |
| | | | **8878.3** | 50 g | 100,95 |
| | | | **8878.4** | 100 g | 189,10 |
| **D(+)-Glucose** | ≥99,5 %, CELLPURE® anhydrous | ≤1,25 I.U./g | **HN06.1** | 250 g | 13,45 |
| | | | **HN06.2** | 500 g | 22,05 |
| | | | **HN06.3** | 1 kg | 32,15 |
| | | | **HN06.4** | 5 kg | 104,20 |
| **D(+)-Maltose monohydrate** | ≥97 %, CELLPURE® | ≤1,0 E.U./g | **8882.1** | 25 g | 23,15 |
| | | | **8882.2** | 100 g | 52,15 |
| | | | **8882.3** | 250 g | 88,05 |
| | | | **8882.4** | 500 g | 155,90 |
| **D(-)-Mannitol** | ≥97 %, CELLPURE® | ≤2,5 E.U./g | **8883.1** | 100 g | 23,15 |
| | | | **8883.3** | 250 g | 46,15 |
| | | | **8883.2** | 500 g | 81,60 |
| **D(+)-Mannose** | ≥98 %, CELLPURE® | ≤10 E.U./g | **8887.1** | 10 g | 27,85 |
| | | | **8887.2** | 25 g | 53,65 |
| | | | **8887.3** | 50 g | 92,35 |
| | | | **8887.4** | 100 g | 161,25 |
| **Roti®-CELL Glucose solution** | sterile, 100 mg/ml, CELLPURE® | getestet | **9155.1** | 100 ml | 28,50 |
| **D(+)-Saccharose** | CELLPURE® | ≤1,5 E.U./g | **8890.1** | 50 g | 17,10 |
| | | | **8890.2** | 100 g | 25,70 |
| | | | **8890.3** | 250 g | 46,15 |
| | | | **8890.4** | 500 g | 87,00 |
| **D(+)-Trehalose dihydrate** | ≥98 %, CELLPURE® | ≤2,4 E.U./g | **8897.1** | 10 g | 28,95 |
| | | | **8897.2** | 25 g | 48,95 |
| | | | **8897.3** | 50 g | 78,40 |
| | | | **8897.4** | 100 g | 138,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Salts for Cell Culture

| Product | Purity | Endotoxin content | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **Calcium chloride dihydrate** | ≥99 %, CELLPURE® | ≤5,0 I.U./g | **HN04.1** | 250 g | 16,05 |
| | | | **HN04.2** | 500 g | 26,35 |
| | | | **HN04.3** | 1 kg | 39,70 |
| **Magnesium acetate tetrahydrate** | ≥99 %, CELLPURE® | ≤6,0 E.U./g | **HN11.1** | 100 g | 17,10 |
| | | | **HN11.2** | 500 g | 46,15 |
| | | | **HN11.3** | 1 kg | 74,10 |
| **Magnesium chloride hexahydrate** | ≥99 %, CELLPURE® | ≤3,0 I.U./g | **HN03.1** | 250 g | 19,90 |
| | | | **HN03.2** | 500 g | 28,95 |
| | | | **HN03.3** | 1 kg | 44,65 |
| | | | **HN03.4** | 2,5 kg | 83,35 |
| | | | **HN03.5** | 5 kg | 144,95 |
| **Potassium acetate** | ≥99 %, CELLPURE® | ≤6,0 E.U./g | **HN10.1** | 250 g | 22,80 |
| | | | **HN10.2** | 500 g | 36,05 |
| | | | **HN10.3** | 1 kg | 55,80 |
| | | | **HN10.4** | 2,5 kg | 121,40 |
| **Potassium chloride** | ≥99 %, CELLPURE® | ≤3,0 I.U./g | **HN02.1** | 250 g | 16,05 |
| | | | **HN02.2** | 500 g | 21,40 |
| | | | **HN02.3** | 1 kg | 33,90 |
| | | | **HN02.4** | 2,5 kg | 63,35 |
| **Sodium acetate trihydrate** | ≥99,5 %, CELLPURE® | ≤3,0 I.U./g | **HN05.1** | 500 g | 22,05 |
| | | | **HN05.2** | 1 kg | 35,40 |
| | | | **HN05.3** | 2,5 kg | 67,20 |
| **Sodium chloride** | ≥99,8 %, CELLPURE® | ≤5,0 I.U./g | **HN00.1** | 500 g | 19,25 |
| | | | **HN00.2** | 1 kg | 25,30 |
| | | | **HN00.3** | 5 kg | 84,95 |
| **tri-Sodium citrate dihydrate** | ≥99 %, CELLPURE® | ≤6,0 E.U./g | **HN12.1** | 250 g | 21,40 |
| | | | **HN12.2** | 500 g | 38,60 |
| | | | **HN12.3** | 1 kg | 61,20 |
| | | | **HN12.4** | 2,5 kg | 119,90 |
| **Sodium hydrogen carbonate** | ≥99,5 %, CELLPURE® | ≤6,0 I.U./g | **HN01.1** | 500 g | 14,95 |
| | | | **HN01.2** | 1 kg | 22,80 |
| | | | **HN01.3** | 5 kg | 71,95 |
| **Roti®-CELL Bicarbonate solution** | sterile, 7,5 %, CELLPURE® | <1,0 E.U./ml | **9165.1** | 100 ml | 12,80 |

For additional product data and safety information, see chapter Chemicals A-Z.



▶ Extensive labware for cell culture, see “Laboratory Requirements“ in the front part of this catalogue.

# Cell Passage

## Roti®-CELL DPBS/EDTA

**CELLPURE® sterile, 0,02 % EDTA (Versene®), w/o Ca/Mg**

Balanced salt solution with EDTA for cell culture.

EDTA solution in DPBS

EDTA, a chelator of divalent cations, is used combined with trypsin prior to passaging in order to solubilize adherent cells from the culture vessel surface into suspension. EDTA binds calcium and magnesium which aid in cell-cell adhesion, additionally allowing trypsin to more efficiently hydrolyze specific peptide bonds.
Roti®-CELL DPBS/EDTA may also be used directly without addition of trypsine for very gentle cell dissociation. Versene® is a trade-marked name of EDTA.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9135.1** | 100 ml | plastic | 15,60 € |

## Roti®-CELL PBS/EDTA

**CELLPURE® sterile, 0,046 % EDTA**

Balanced salt solution with EDTA for cell culture.

EDTA solution in PBS

EDTA, a chelator of divalent cations, is used combined with trypsin prior to passaging in order to solubilize adherent cells from the culture vessel surface into suspension. EDTA binds calcium and magnesium which aid in cell-cell adhesion, additionally allowing trypsin to more efficiently hydrolyze specific peptide bonds.
Roti®-CELL PBS/EDTA may also be used directly without addition of trypsine for very gentle cell dissociation.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9152.1** | 500 ml | plastic | 11,75 € |

## Trypsin

**5000 USP-U/mg, free from salt**

TSE-/BSE-free

Isolated from porcine pancreas, lyophilised.

M ~24,000 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H334-H335-H315-H319

A pancreatic serine protease with a specificity for peptide bonds between basic amino acids arginine or lysine and another non-specific amino acid. Trypsin is frequently used to suspend cells which grow as monolayers on surfaces. Longer exposure to trypsin can damage cells, so that an inhibitor (serum or trypsin inhibitor from soya beans) should be added upon completion.
One USP Unit will cause an increase in absorption (253 nm) per minute of 0,003 at 25 °C and pH 7,6 using BAEE as substrate.
One (international) Unit (U, 255 nm, BAEE, pH 8) is approx. 90 USP U.
One TAME Unit is approx. 20 USP Units. One NF Unit is one USP Unit.
Ten „BAEE Units“ are approx. 3,3 USP Units.

**Application:** pH optimum 7,2-8,5.

| | | | |
|---|---|---|---|
| **2193.1** | 100 mg | glass | 28,95 € |
| **2193.2** | 500 mg | glass | 89,15 € |

Please note our **Technical Information Brochure** on the Internet next to the products:

**Cell Passage and Use of Trypsin**
Background and recommendations for cell passages plus protocol for trypsination

## Trypsin

**≥2500 USP-U/mg, cryst.**

Isolated from porcine pancreas, lyophilised.

M ~24,000 g/mol

Storage temp.: -20 °C

**Danger** H334-H335-H315-H319

One USP Unit will cause an increase in absorption (253 nm) per minute of 0,003 at 25 °C and pH 7,6 using BAEE as substrate.
One (international) Unit (U, 255 nm, BAEE, pH 8) is approx. 90 USP U.
One TAME Unit is approx. 20 USP Units. One NF Unit is one USP Unit.
Ten „BAEE Units“ are approx. 3,3 USP Units.

| | | | |
|---|---|---|---|
| **5455.1** | 100 mg | glass | 24,65 € |
| **5455.2** | 1 g | glass | 103,10 € |

## Trypsin inhibitor

**≥10000 BAEE U/mg**

Made from soybeans. High-activity inhibitor of trypsin, chymotrypsin, and other proteolytic enzymes.

Storage temp.: +4 °C

Trypsin inhibitor inhibits Trypsin with high effiency, and, to a lesser extent, chymotrypsin. Additionally, there is a light inhibiting effect on plasmin, kallikrein, thrombin and a few other proteolytic enzymes.
1 mg of lyophilisate inhibits at minimum 10.000 BAEE Units of trypsin.
Application in cell culture (stock solution 1 mg/ml): Following trypsination, add the same volume inhibitor solution as was used for trypsin. Zentrifuge cells (5 mins, 1000 rpm), and remove supernatant. Resuspend cells in medium and cultivate further.

**Application:**
Stock solution: 1-10 mg/ml in $H_2O$, PBS or other phosphate-buffers.
Solutions of higher concentration may be hazy and slightly yellow-coloured.
Storage of stock solution: in aliquots at -20 °C.
Recommended end concentration: 1-100 µg/ml.
pH optimum: pH 7.6 - 8.0.

| | | | |
|---|---|---|---|
| **2949.1** | 25 mg | plastic | 30,65 € |
| **2949.2** | 100 mg | plastic | 77,95 € |
| **2949.3** | 250 mg | plastic | 160,20 € |
| **2949.4** | 500 mg | plastic | 274,15 € |
| **2949.5** | 1 g | plastic | 461,20 € |

## Trypsin inhibitor

**salt free ≥7000 BAEE U/mg**

Made from soybeans. Inhibition of trypsin, chymotrypsin, plasmin, kallikrein, thrombin and other proteolytic enzymes; free from salt.

Storage temp.: -20 °C • Transport temp.: room temp.

**Application:**
Stock solution: 10 mg/ml in $H_2O$ or PBS.
Storage of stock solution: in aliquots at -20 °C.
Recommended end concentration: 2-100 µg/ml.

| | | | |
|---|---|---|---|
| **5279.1** | 100 mg | glass | 18,85 € |
| **5279.4** | 250 mg | glass | 36,45 € |
| **5279.5** | 500 mg | glass | 63,35 € |
| **5279.2** | 1 g | glass | 110,65 € |
| **5279.3** | 5 g BIG PACK | glass | 461,20 € |

# Cell Isolation

## Ficoll® 400

**for molecular biology and biochemistry**

For density gradient centrifugation; ingredient of gel loading buffers.
Non-ionic polymer of saccharose.

M ~400 000 g/mol

Ficoll® 400 is a hydrophilic copolymer of saccharose and epichlorohydrin, that readily solubilises in water and aqueous solutions. It may be solubilised at concentrations of up to 50 %, and is mainly used in the following applications:
A) In hybridisation buffer acc. to Denhardt, Ficoll® 400 reduces non specific binding of labelled DNA to the filter membrane.
B) In gel loading buffer it supports DNA application to agarose gels by increasing the density of the sample.
C) In continuous or discontinuous density gradients, Ficoll® 400 is used as matrix for fractioning of cells (e.g. lymphocytes) or sub-cellular particles, also taking advantage of its ability to stabilise membrane-coupled components and the functional as well as the morphological integrity of cells.
Autoclavable at neutral pH.

| | | | |
|---|---|---|---|
| **CN90.1** | 10 g | plastic | 39,70 € |
| **CN90.2** | 25 g | plastic | 83,75 € |
| **CN90.3** | 100 g | plastic | 267,70 € |

## Polysucrose 400

**BioScience-Grade, for molecular biology and biochemistry**

For density gradient centrifugation during cell separation and isolation of cell organelles.

Sucrose polymer, Sucrose-epichlorhydrin copolymer

$(C_{12}H_{22}O_{11})_n$ x $(C_3H_5ClO)_n$

M 450000 ±100000 g/mol

Storage temp.: +20 °C

Nonionic, synthetic copolymer from sucrose and epichlorohydrin. Ficoll® derivative. Solution of polysucrose 400 is used for separation of blood cells (mono nuclear cells, granulocytes, erythrocytes) via density gradient centrifugation, and for isolation of mononuclear cells from whole blood. Also well applicable for isolation of islets of Langerhans from pancreatic issue.
May be used as direct replacement for Ficoll® in common protocols.

| | | | |
|---|---|---|---|
| **4668.1** | 10 g | plastic | 27,85 € |
| **4668.2** | 25 g | plastic | 64,40 € |
| **4668.3** | 100 g | plastic | 213,95 € |

## Roti®fair BSC

**for cell biology**

Buffer solution for isolation of blood cells.

BSC buffer powder (pouch), Buffered Sodium Citrate

Exactly pre-weighed pouches for convenient and rapid preparation of BSC solution.
Prepared solution may be sterilized by filtration (0,22 µm).
For long-term storage, buffer solution should be kept at +4 °C.
0,109 M BSC solution is prepared by dissolution of 1 pouch in 100 ml or 1000 ml highly pure water, respectively.

**Formulation:**

Prepared BSC solution contains: 0,109 M (3,2 %) buffered Na-citrate, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

**for 100 ml pouch**

| | | | |
|---|---|---|---|
| **1011.1** | 10 pouches | box | 88,70 € |

**for 1000 ml pouch**

| | | | |
|---|---|---|---|
| **1026.1** | 5 pouches | box | 136,00 € |

## Roti®fair 0.5 M EDTA

**for 500 ml/pouch, for applications in Life Science in general**

For preparation of bioanalytical solutions, anticoagulant.

EDTA powder (pouch), Ethylenediamine tetraacetic acid

**Warning** H332-H373

Exactly pre-weighed pouches for convenient and rapid preparation of EDTA solution.
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, solution may be kept at +4 °C or room temperature.
0,5 M EDTA solution is prepared by dissolution of 1 pouch in 500 ml highly pure water.

**Formulation:**

Prepared solution contains: 0,5 M EDTA, pH value 8,0 ±0,05, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **1031.1** | 5 pouches | box | 252,65 € |

## Roti®-Sep 1077

**CELLPURE® for density gradient centrifugation**

Polysucrose based medium for separation of lymphocytes from whole blood.

Polysucrose solution, lymphocyte separation medium

M ~400000 g/mol

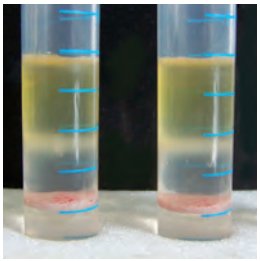
Storage temp.: +4 °C

**Danger** H317-H334

Ready-to-use and sterile. Separation medium based on polysucrose 400, for efficient isolation of lymphocytes by density gradient centrifugation. Density 1.077 g/ml. Best alternative to Ficoll®.

- Produces distinct, compact layers
- Results in high recovery rates of viable cells
- Maintains the representative ratio of B- to T lymphocytes
- May be directly applied to all protocols using Ficoll®

Roti®-Sep 1077 excels due to the superior separation power, forming very distinct, easy to pipet, lymphocyte layers during centrifugation. The ready to use solution is very easy in handling, resulting in high cell recovery rates, while cell viability and the representative ration of B- to T lymphocytes are maintained. Osmolality as well as pH value are strictly kept in the physiological range.
Suitable for application with human peripheral blood. In all respective protocols originally using Ficoll® this reagent may be replaced by Roti®-Sep 1077 without any adjustment.



The **figure** depicts two specimens prepared with heparinic blood obtained from venous puncture. Density gradient centrifugation of 6 ml diluted whole blood (dilution in PBS 1:1.5), with 3 ml of Roti®-Sep 1077, 10 mins., 1000 g, no break. Recommended long-term storage at approx. 4 °C. Short-term storage at ambient temperature possible. Store protected from light.

| | | | |
|---|---|---|---|
| **0642.1** | 100 ml | plastic | 42,50 € |
| **0642.2** | 500 ml | plastic | 115,60 € |

**Instructions for use**
can be found on the Internet next to the product description.

# Transfection




ready-to-use

## DOTAP

**for transfection, CELLPURE®**

$C_{43}H_{83}NO_8S$

M 774,21 g/mol

Storage temp.: +4 °C

**Puritiy, QC:** Controlled by TLC, NMR, standard transfection test with HeLa-, CV-1-cells. At least 99 %.
**Stability:** Minimum shelf-life 6 month at +4 °C.
**Culture media:** Suitable for whole and serum-free media.
**Formulation:** Transfection reagent DOTAP is an aqueous liposome formulation of N-[1-(2,3-**Dio**leoyloxy)]-N,N,N-**t**rimethyl**a**mmonium **p**ropane methyl sulphate with a concentration of 1 mg/ml.

**Successfully tested with the following cell types:**
A375-C6, A549, B6.NOS, Balb/3T3, BalbSV, BHK, BNL CL.2, C2, C6, CaShi, CCRF-CEM/VLB, CHO, COS-1, COS-7, CV-1, D-17, DTM, EL-4, Fibroblasts, GSM06, H225, HEL, HeLa, Hepa 1-6, HepG2, HMEC-1, Hippocampal neurons, Huh7, I-3, I10, JEG-3, Jurkat, LH, Ltk, Lymphocytes, PBL, M17, MC57, MCF-7, MDA-MB-435, MEC-J, MH1C1, mhAT3F, mhAT3F, NG 108-15, NIH/3T3, PXF 1118, RASM, REF-1, Ret-1, ROS 17/2.8, SCC-13, SK-BR-3, Smooth muscle cells, ST33c, T2-Kb, U87, Vero, WI-38, Y1, *et al.*

Approx. 200 assays per ml in 24wells.

| | | | |
|---|---|---|---|
| **L787.1** | 0,5 ml | plastic | 78,40 € |
| **L787.2** | 1 ml | plastic | 126,35 € |
| **L787.3** | 5 x 1 ml | plastic | 460,10 € |

## DEAE Dextran

**for biochemistry**

Transfection reagent

Diethylaminoethyldextran

M ~500000 g/mol

DEAE is the oldest transfection reagent known. The method of complexation of plasmid DNA with diethylaminoethyldextran has been published in 1968 by McCutchan. Positively charged DEAE binds negatively charged DNA to aggregates, which then bind to negtively charged surface structures of cell membranes. Uptake is done via endocytosis. This DEAE method needs only little amounts of DNA, while resulting in high transfection efficiency of up to 30 %. However, the cytotoxic effects caused by DEAE allow only transient transfections. The following cell lines are well transfectable: CV-1, BSC-1 and COS cells, and other stabile, insensitive cell lines.
Stock solution: 50 mg/ml in $H_2O$. Autoclave.
End concentration: 1 mg/ml (transfection for 30-90 min.) or 250 µg/ml (transfection for up to 8 h)

| | | | |
|---|---|---|---|
| **4198.1** | 25 g | plastic | 55,80 € |
| **4198.2** | 100 g | plastic | 177,40 € |



ready-to-use

## Roti®-Fect RNAi Kit

**for transfection, CELLPURE®**

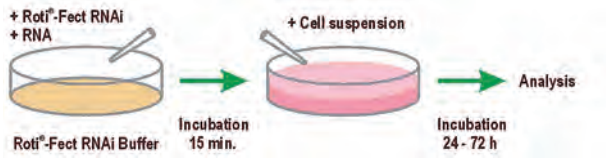
Reagent for transfection of mammalian cells with siRNA and miRNA, for efficient gene silencing.

Storage temp.: -20 °C • Transport temp.: room temp.

- Optimised RNA release into the cytosol
- High levels of gene silencing with low RNA concentration
- Efficient knockdown after 48 hours already
- No elaborate optimisation necessary
- Very low cell toxicity
- Suitable for cell lines and primary cells
- Straightforward, efficient protocol for whole medium included

New, powerful transfection reagent for liposoma mediated siRNA and miRNA transfection of all mammalian cells in culture. Liposoma formulation and enclosed buffer were specially established and designed for core parameters of RNAi: Most efficient quantitative endocytosis plus release of nucleic acids into the cytosol, without subsequent transport to the nucleus. Roti®-Fect RNAi provides you with superior knockdown results, even using low amounts of RNA.
Hereby, the Roti®-Fect technology guarantees minimisation of toxic effects during transfection, thus making these reagents suitable for very sensitive cell lines of primary cells. The detailed instruction-for-use contains a standardised transfection protocol working via a definite RNA/liposoma ratio and providing good results starting with the very first assay - making elaborate optimisations of transfection obsolete. Evaluation of results is often possible after 48 hours, enabling two sequential assays per week.

**Successfully tested with the following cell types:**
**Primary cells:** MCS, M1
**Cell lines:** A549, 3T3-L1, B16F10, CHO-K1, H441, HT1080, HeLa, HeLa-KB, HepG2




**The set contains:**
0.2 and 1 ml, respectively, Roti®-Fect RNAi liposoma formulation (Art. No. 2911, may not be bought separately), and 0.4 and 2 ml, respectively, Roti®-Fect RNAi buffer (Art. No. 2913). Roti®-Fect RNAi buffer may be bought separately.

Approx. 250 assays per ml in 24wells. Dependend on the cell line used.

| | | | |
|---|---|---|---|
| **3129.1** | 1 mini set | plastic | 103,75 € |
| **3129.2** | 1 set | plastic | 364,45 € |

▶ Further details and figures on the Roti®-Fect transfection reagents online at www.carlroth.com / Life Science / Cell Biology / Transfection!




ready-to-use

## Roti®-Fect Plus

**for transfection, CELLPURE®**

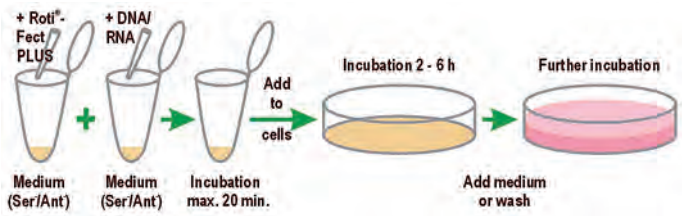
Reagent for transfection of all eukaryotic cells in culture, particularly suited for hard-to-transfect cell lines.

Storage temp.: +4 °C

- Particularly low cell toxicity
- Superior transfection efficiency with all cell lines
- Especially recommended for hard-to-transfect cell lines
- Particularly suited for use with primary cells
- Excellent reproducibility
- No serum inhibition

Highly sophisticated transfection reagent for liposoma mediated transfection of eukaryotic cell lines and primary cells in culture. Roti®-Fect PLUS further reduces the toxic effects of transfection, making it a versatile tool for transfection of sensitive cell lines or primary cells.
Based on this, Roti®-Fect PLUS is also especially recommended for transfection prior to *in vivo* analyses (siRNA-Assays, *in vivo* life microscopy, etc.), since the transfection stress is minimized, reducing stress-dependent effects like the rate of apoptosis-induced cells. Additionally, the stability of nucleic acid/lipid complexes is diminished in comparison with Roti®-Fect, therefore improving the release of nucleic acids in the cell.
Thus, the newly established liposoma formulation of Roti®-Fect PLUS guarantees gentle and highly efficient transfections, even when hard-to-transfect or particularly sensitive cell lines are handled.

**Successfully tested with the following cell types:**
**siRNA:** 1BR3, HEK293, HeLa, LN-308, T98G. U87MG, UACC-257
**Primary cells:** 1BR3, 8VM, CGN, HMEC, HUVEC, PBMC, S15VM
**Cell lines:** 1BRneo, 143B, 293T, NSCLC, alphaTC1, B16-F10, BHK-21, C2C12, C6, CHO, CHO-K1, Colo205, COS-7, EVLC2, HaCaT, HAEC, HCT116, HEK293, HeLa, HepG2, Hep 3B, IMR32, Jurkat, Kelly, KG1, La1-5S, LN-308, M2-10B4, MDCK, MEF, MG-63, MIN6, MLEC32, mPAC, mpkCCD, N18TG2, N2a, N-Tera2, NG NIH-3T3, Panc-1, PC 12, Phi-NX, Raji, RAW264.7, RD, RF24, RGE, S2, S91, SMA-560, SK-N-BE, SW480, T98G, U-2 OS, Vero, *et al.*




Approx. 500 assays per ml in 24wells. Dependent on the cell line used.

| | | | |
|---|---|---|---|
| CL21.1 | 0,2 ml | plastic | 92,35 € |
| CL21.2 | 1 ml | plastic | 342,95 € |




ready-to-use

## Roti®-Fect

**for transfection, CELLPURE®**

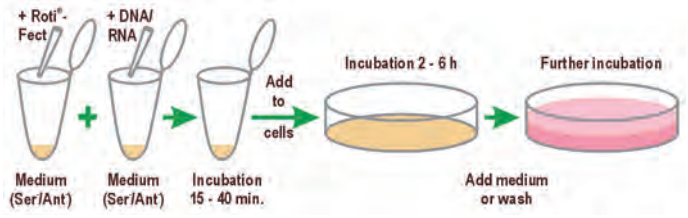
Reagent for liposoma-mediated transfection of eukaryotic cells.

Storage temp.: +4 °C

- Highly efficient reproduction of DNA in mammal cells
- Excellent reproducibility
- High and wide operating plateau
- No inhibition through serum
- Low cell toxicity
- Successful with different cell lines
- Excellent transfection results

**Roti®-Fect** is a liposome formulation of a polycationic lipid in combination with a neutral colipid. Compared to monocationic lipid formulations, Roti®-Fect has a higher efficiency with lower levels being required.
Its excellent reproducibility in combination with its high level of efficiency reduced optimisation work to a minimum. Because of its low toxicity, a wide range of cell lines can be transfected efficiently. An efficient triple-cotransfection using Roti®-Fect is described in Ufartes, Schlüter, Kaulfuss and Seipp (2005) *Biospektrum* 4: 464-5.

**Successfully tested with the following cell types:**
**siRNA:** CEM, COS-7, ES-D3,HeLa, HL60, LNCaP, OVCAR3, PC3, SW620
**Primary cells:** pAML, pHDF, pMEF, pRHC, pSMC
**Cell lines:** 143B, 293-T, A-293, A-431, AM-C6SC8, BHK, BV-2, C2C12, C6, CHO, CHO-DHFR, COS-1, COS-7, CRFK, Colo-205, DU-145, ECV-304, EMC, F98 (glioma), GD25-ß1, HBL 100, HCT-116, HCT-15, HEK293, HeLa, HeLa-S3, Hep-3B, Hep-G2, HOSE, HSG, HT-22, HT-29, HUVEC, JURKAT, LLC-PK1, LS174T, LoVo, MCF-7, MDCK, MeWo, MV3, NIH-3T3, NS20Y, OK, P815, PC3, PT-11, Rcho-1, SAOS, SH-SY5Y, SK-MEL-28, SKOV-3, SM10, SW-480, THP-1, tsA201, U87 (glioma), Vero 76, *et al.*




Approx. 400 assays per ml in 24wells. Dependent on the cell line used.

| | | | |
|---|---|---|---|
| P001.1 | 0,2 ml | plastic | 69,80 € |
| P001.2 | 0,5 ml | plastic | 155,90 € |
| P001.3 | 1 ml | plastic | 244,60 € |
| P001.4 | 5 x 1 ml | plastic | 1063,20 € |

**Instructions for use**
can be found on the Internet next to the product description.




ready-to-use

## Roti®-Insectofect

**for transfection, CELLPURE®**

For transfection of insect cells in culture.

Storage temp.: +4 °C

- No serum inhibition
- Superior transfection efficiency
- High and wide operating plateau
- Excellent reproducibility
- Very low cell toxicity
- Quick and easy handling

Recombinant proteins at a large scale can be manufactured under simple conditions in insect cell cultures with the non-human pathogenic baculovirus system and a simple scale-up procedure. Roti®-Insectofect enables best transfection results with a wide spectrum of activity and very low toxicity.
Roti®-Insectofect consists of an aqueous solution of polycationic lipids and was specially developed for liposome-mediated transfection of insect cells. Because of its special formulation, it has a much higher efficiency than standard transfectants, such as calcium-phosphate or DEAE.

**Successfully tested with the following cell types:**
Ag55, Anso, As43, Bm5, Cpp512, IPLB-SF21, LD652, Mos-20, S2, SF9, SL2.

Approx. 1000 assays per ml in 24wells.

| | | | |
|---|---|---|---|
| **AE29.1** | 0,5 ml | plastic | 134,40 € |
| **AE29.2** | 1 ml | plastic | 203,20 € |




## Roti®fair HBS

**for 500 ml/tablet, for biochemistry and cell biology**

General buffer base and for calcium phosphate mediated transfection.

HEPES Buffered Saline (tablets)

Exactly pre-weighed tablets for convenient and rapid preparation of HEPES Buffered Saline solution (HBS).
Prepared solution may be sterilized by filtration (0,22 µm).
For storage, buffer solution has to be kept at -20 °C.
1x HBS solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

**Composition:**
Prepared 1x HBS solution contains: 10 mM HEPES, 0,15 M NaCl, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1033.1** | 12 tablets | blister | 62,25 € |
| **1033.2** | 100 tablets | plastic | 260,70 € |

# Cell Analysis

## Vitality Assay & Cell Counting

### Neutral red (C.I. 50040)

**p.a.**
Indicator pH 6,8-8,0
Toluylene red
$C_{15}H_{17}ClN_4$
M 288,78 g/mol
Water-soluble vital staining dye.

| | | | |
|---|---|---|---|
| **T122.2** | 1 g | glass | 21,40 € |
| **T122.1** | 10 g | glass | 54,75 € |
| **T122.3** | 25 g | glass | 107,40 € |

### LOEFFLER's methylene blue solution

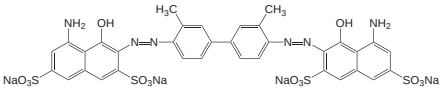
**for microscopy and cell counting**

Methylene blue solution 0,5 %

**Warning** H371

LÖFFLER'S methylene blue solution is used for staining bacteria, fungi and blood parasites in blood smears, e.g. together with carbolic fuchsine solution (Art. No. A130) for Ziehl-Neelsen staining (detection of TB bacteria). Furthermore, it is used as a vital staining agent for selective staining of nuclei during counting of eukaryotic cells.

| | | | |
|---|---|---|---|
| **AE64.1** | 500 ml | glass | 24,65 € |
| **AE64.2** | 1 l | glass | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |
| **AE64.3** | 2,5 l | plastic | 64,00 € |
| Original pack 4 x 2,5 l | | | 60,80/2,5 l |




### Trypan blue (C.I. 23850)

**for microscopy and cell staining**

For vital and histological staining.

Benzamine blue, Tolidin-diazo-bis-8-amino-1-naphthol-3,6-disulphonic acid tetrasodium salt
$C_{34}H_{24}N_6Na_4O_{14}S_4$
M 960,82 g/mol

**Danger** H350

Trypan blue is a protein staining azo dye used for vital staining (vitality test of cells), based on its selective ability to pass membranes of damaged cells. Used for polychromatic staining, e.g. to visualise collagen fibres in connective tissue.

**Application:**
Stock solution: 0.5 % in PBS or in NaCl solution (0.9 %).
Stabile for several months when sterile filtrated and stored at room temperature.
Working concentration: 0.1-0.2 % in PBS
**Note:**
Always keep bottles tightly closed.

| | | | |
|---|---|---|---|
| **CN76.1** | 10 g | glass | 23,15 € |
| **CN76.2** | 25 g | glass | 41,85 € |
| **CN76.3** | 50 g | glass | 75,15 € |



ready-to-use

S

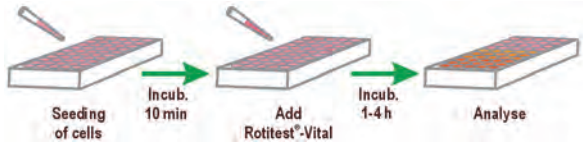
## Rotitest® Vital

**Rotitest® Bio Analysis**

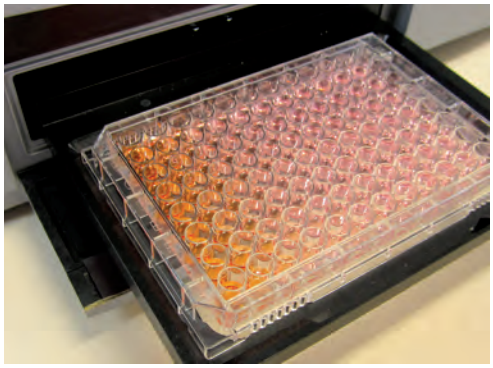
Colorimetric test solution for evaluation of cell proliferation and -viability.
Non-cytotoxic cell proliferation test solution.
Storage temp.: +4 °C

- **Perfectly supersedes MTT**
- Cells keep on being vital
- Most simple handling
- One-component-system without radioactivity
- For adherent and suspension cells
- Photometric result in 1 to 4 hours
- Strong correlation between absorbance and cell number
- Suitable for every culture media

Rapid and simple test system for non-radioactive quantitation of proliferating cells. Also well suitable for cytotoxicity assays.
In all living cells, NADH and NADPH are formed by the respiratory chain. Roti®-Test vital is based on the (colourless) WST-8, which functions as acceptor for the NADH/NADPH dehydrogenase while being reduced to (coloured) formazane during the process.
The test solution is added directly to the cultivated cells in 96wells. During incubation for few hours, a water-soluble formazan dye is produced by viable cells, and is released into the surrounding medium. The resulting orange colour is measured photometrically (approx. 450 nm). Also suitable for culture media containing phenol red.




Sensitivity of the tetrazolium salt used is higher than that known for standard reagents such as MTT, XTT, MTS, or WST-1. Results were shown to be of highly stringent correlation with [$^3$H]-thymidine incorporation assays, therefore representing viability as well as proliferation status of the cells (Tominaga *et al.*, *Anal. Commun.* 1999 (36) 47-50).



Example of use.

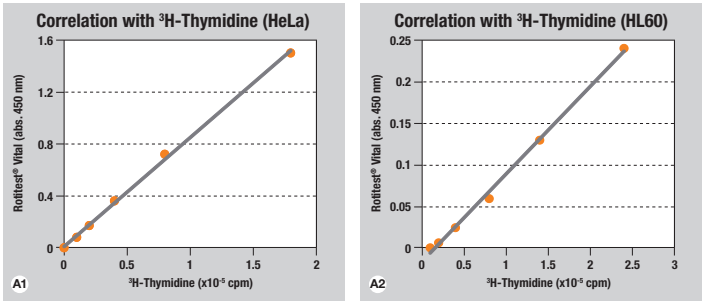



**Fig. A:** Correlation of cell counting results achieved with Rotitest® Vital (10 µl/well) and $^3$H-Thymidine (37 KBq/well). HeLa (1, in DMEM) and HL60 cells (2, in MEM).

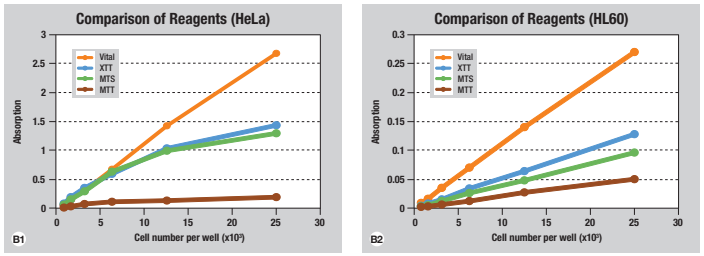



**Fig. B:** Comparison of cell counting results using Rotitest® Vital (10 µl/well) and other cell counting reagents. Photometrical measurement at 450 nm (Rotitest® Vital, XTT), 490 nm (MTS), and 570 nm (MTT).
HeLa (1, in DMEM) and HL60 cells (2, in MEM).

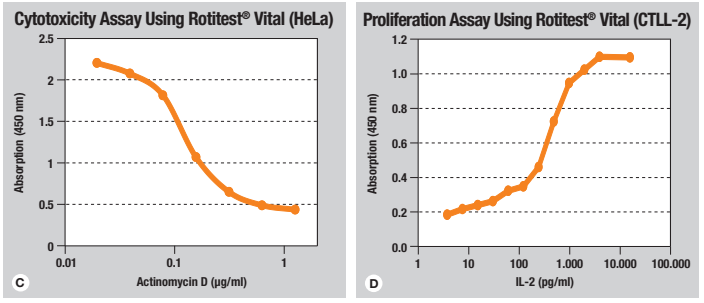



**Fig. C:** Measurement of cytotoxic effects of actinomycin D (exposition 24 h) on HeLa cells (in DMEM), assayed with Rotitest® Vital (10 µl/well).

**Fig. D:** Proliferation assay on CTLL-2 cells (in RPMI) under influence of humane IL-2 (exposition 72 h), using Rotitest® Vital (10 µl/well).

Each package contains simple-to-follow instructions-for-use.
Stabile at ambient temperature. Very stabile when being cooled.
Store at +4 °C protected from light. Do not freeze.

1 ml is sufficient for enumeration of 100 cell samples.

| | | | |
|---|---|---|---|
| **0069.3** | 1 ml | plastic | 60,75 € |
| **0069.1** | 5 ml | plastic | 170,95 € |
| **0069.2** | 4 x 5 ml | plastic | 521,40 € |

**Instructions for use**
can be found on the Internet next to the product description.

# Proliferation Assays




Our ROTI®Kits for EdU mediated detection of cell proliferation provide a superior alternative to time-consuming and less sensitive bromodeoxyuridine (BrdU) assays. Similar to BrdU assays, our assays utilise a uracil derivative (in this case ethynyldeoxyuridine, EdU) which is incorporated into the replicating DNA. EdU is not detected via antibodies; instead fluorescent dyes are coupled directly via click reaction. This fast and elegant approach allows for direct labelling of replicating DNA with the desired fluorescent dye. Thus, the assay is perfectly adaptable to the present facilities and to the assay situation (e.g. for double or triple detection). Furthermore, the click reaction is highly selective and therefore prevents any unspecific labelling. The protocol includes only few steps and decreases the total amount of time.

- Highly reliable
- Easy to perform
- Fast detection procedure (only 30 min)
- Mild conditions (no DNA denaturation required)
- Modular system due to click chemistry
- Compatible with various dyes and readouts
- Compatible with multiplexing
- No cytotoxicity up to 1 mM EdU

## ROTI®kits for Imaging

ready-to-use

For fast and simple detection of cell proliferation through fluorescence microscopy.

Storage temp.: see below, -20 °C/+4 °C • Transport temp.: cooled

**Warning** H315-H319-H400-H410

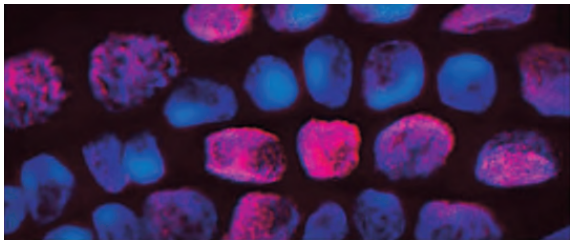


**Figure:** Proliferating tissue of barley meristem labelled via EdU Click-555 kit (Art. No. 7775.1). Dividing cells incorporated EdU and were labelled via click reaction with TAMRA (pink stained cells). Nuclei were counterstained with DAPI (blue). Magnification: 100x; Filterset: Sp. Aqua HC mFISH; Sp. Green HC mFISH.

The number at the end of the product name specifies the wavelength at which the included fluorescent marker is optimally excited.

For 100 Assays.

**Components:**

EdU. ..... 5 mg
Azide (10 mM in DMSO). ..... 130 µl
Buffer Additive. ..... 4 x 200 mg
DMSO. ..... 2 x 2 ml
Catalyst Solution. ..... 2 x 2 ml
Reaction Buffer. ..... 4 x 2 ml

*Store at -20 °C (EdU, Azide, Buffer Additive); +4 °C (DMSO, Catalyst Solution, Reaction Buffer)*

| Product | Marker | λ (nm) | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **EdU Click-488** | 6-FAM | 488 | **7773.1** | 1 kit | 364,45 |
| **EdU Click-555** | 5-TAMRA | 555 | **7775.1** | 1 kit | 364,45 |
| **EdU Click-594** | 5/6 Sulforhodamine | 594 | **7776.1** | 1 kit | 364,45 |
| **EdU Click-647** | Eterneon Red | 647 | **7777.1** | 1 kit | 364,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

## ROTI®kits for Flow Cytometry

ready-to-use

Kit for detection of cell proliferation through Flow Cytometry.

Storage temp.: +4 °C • Transport temp.: cooled

H411-EUH208

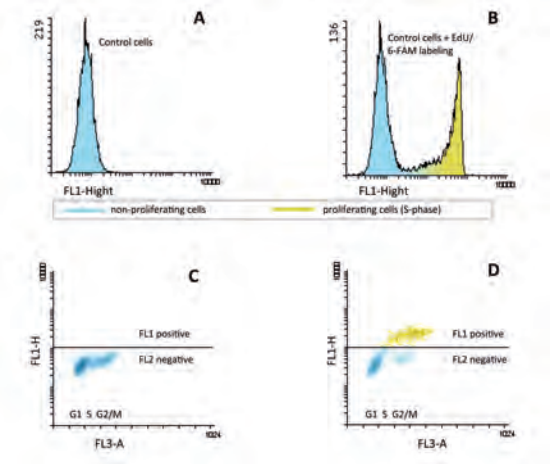



**Figure:** HeLa cells, treated without (A) and with (B) 10µM EdU for 2 h. Click reaction was performed using 6-FAM-Azide. A: negative control, cells without EdU incorporation. B: non-proliferating cells without EdU incorporation (blue coloured left peak) and proliferating cells (S-phase) having incorporated EdU and are labeled with 6-FAM Azide (green coloured right peak). Density blots of PI stained samples without (C) and with (D) EdU incubation and followed click reaction. The y-axis presents the FL1-Fluorescence intensity and the x-axis the content of DNA measured with FL3-area. Cell cycle phases are indicated as G1, S and G2/M phase.

The number at the end of the product name specifies the wavelength at which the included fluorescent marker is optimally excited.

For 50 assays.

**Components:**

EdU. ..... 10 mg
Azide (10 mM in DMSO). ..... 130 µl
DMSO. ..... 5 ml
Fixative Solution. ..... 5 ml
Saponin Reagent. ..... 50 ml
Catalyst Solution. ..... 2 ml
Buffer Additive. ..... 400 mg

| Product | Marker | λ (nm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **EdU Click FC-488** | 6-FAM | 488 | **7779.1** | 1 kit | 375,20 |
| **EdU Click FC-555** | 5-TAMRA | 555 | **7780.1** | 1 kit | 375,20 |
| **EdU Click FC-594** | 5/6 Sulforhodamine | 594 | **7781.1** | 1 kit | 375,20 |
| **EdU Click FC-647** | Eterneon Red | 647 | **7783.1** | 1 kit | 375,20 |

For additional product data and safety information, see chapter Chemicals A-Z.



## ROTI®kits for High Throughput Screening

For fast and specific detection of cell proliferation in High Throughput Screening.

Storage temp.: see below, room temp./+4 °C • Transport temp.: cooled

**Warning** H315-H319-H411-EUH031

ready-to-use

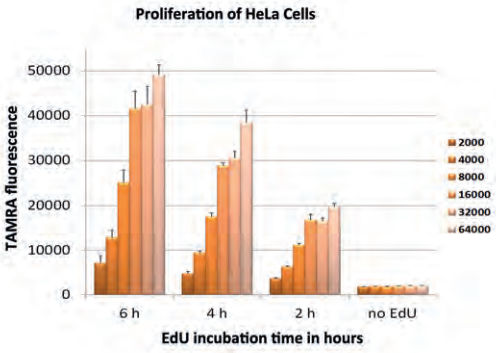



**Figure:** HeLa cells incubated without and with 10 µM EdU for 2, 4 or 6 h in 96 well plate. EdU incorporation was detected over time and for different cell numbers using a fluorescence plate reader.
Control: Without EdU no fluorescence was detected after 6 h incubation time.

The number at the end of the product name specifies the wavelength at which the included fluorescent marker is optimally excited.

**Components:**

20x EdU. ..... 2 ml
Azide (10 mM in DMSO). ..... 130 µl
Reaction Buffer. ..... 10 ml
Catalyst Solution. ..... 1 ml
Buffer Additive..... 200 mg
Rinse Buffer. ..... 6 ml
*Store at +4 °C (20x EdU, Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)*

| Product | Marker | λ (nm) | Application | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **EdU Click HTS 2-488** | 6-FAM | 488 | For 200 reactions or 2 x 96 well plates. | **7786.1** | 1 kit | 209,65 |
| **EdU Click HTS 4-488** | 6-FAM | 488 | For 400 reactions or 4 x 96 well plates. | **7787.1** | 1 kit | 321,45 |
| **EdU Click HTS 20-488** | 6-FAM | 488 | For 2000 reactions or 20 x 96 well plates. | **7788.1** | 1 kit | 1063,20 |
| **EdU Click HTS 2-555** | 5-TAMRA | 555 | For 200 reactions or 2 x 96 well plates. | **7789.1** | 1 kit | 208,45 |
| **EdU Click HTS 4-555** | 5-TAMRA | 555 | For 400 reactions or 4 x 96 well plates. | **7791.1** | 1 kit | 321,45 |
| **EdU Click HTS 20-555** | 5-TAMRA | 555 | For 2000 reactions or 20 x 96 well plates. | **7792.1** | 1 kit | 1063,20 |

**Instructions for use**
can be found on the Internet next to the product description.






## Roti®fair PBS 7.4

**for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.
PBS (tablet), Phosphate buffered saline
Exactly pre-weighed tablets for convenient and rapid preparation of PBS solution.
Among biological buffers, PBS is the one most commonly used. Due to its isotonic and non-toxic nature, PBS is suitable for applications in cell culture as well as in biochemistry and molecular biology. PBS is frequently used for sample dilution and as base solution in immunochemical processes.
Prepared solution may be sterilized by filtration (0,22 µm) or autoclaving.
For long-term storage, buffer solution should be kept at +4 °C.
1x PBS solution is prepared by dissolution of 1 tablet in highly pure water.

**Formulation:**
Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

**For 100 ml/tablet**

| | | | |
|---|---|---|---|
| **1107.1** | 100 tablets | plastic | 56,90 € |

**For 200 ml/tablet**

| | | | |
|---|---|---|---|
| **1108.1** | 100 tablets | plastic | 93,45 € |

**For 500 ml/tablet**

| | | | |
|---|---|---|---|
| **1111.1** | 12 tablets | blister | 50,00 € |
| **1111.2** | 100 tablets | plastic | 198,90 € |

**For 1000 ml/tablet**

| | | | |
|---|---|---|---|
| **1112.1** | 10 tablets | blister | 73,65 € |
| **1112.2** | 100 tablets | plastic | 353,70 € |

## Roti®fair PBS 7.2

**for 1000 ml/tablet, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.
PBS (tablet), Phosphate buffered saline
Exactly pre-weighed tablets for convenient and rapid preparation of PBS solution.
1x PBS solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

**Formulation:**
Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,2 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1106.1** | 10 tablets | blister | 74,10 € |
| **1106.2** | 100 tablets | plastic | 353,70 € |

# BrdU

## 5-Bromo-2'-deoxyuridine

**≥99 %, for biochemistry**

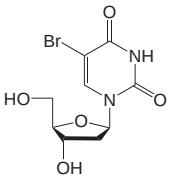
BrdU

$C_9H_{11}BrN_2O_5$

M 307,11 g/mol

Storage temp.: +4 °C

**Warning** H341-H351




| | | | |
|---|---|---|---|
| **3243.1** | 250 mg | glass | 33,25 € |

## Roti®-Histofix 4 %

**acid free (pH 7),**
**phosphate-buffered formaldehyde solution 4 %**

Fixative for histology, stabilized with methanol.

Storage temp.: +15-25 °C

**Danger** H350-H341-H302-H317

For better sampling of liquid we offer suitable draincocks for the 10 l and 30 l standard canisters (Art. No. 5666.2).

| | | | |
|---|---|---|---|
| **P087.4** | 500 ml | plastic | 9,90 € |
| **P087.5** | 2,5 l | plastic | 16,70 € |
| Original pack 4 x 2,5 l | | | 15,87/2,5 l |
| **P087.3** | 5 l | plastic | 26,35 € |
| Original pack 2 x 5 l | | | 25,03/5 l |
| **P087.1** | 10 l | plastic | 48,30 € |
| **P087.2** | 30 l | plastic | 126,35 € |



## Roti®-Mount FluorCare DAPI

**for fluorescence microscopy**

Aqueous mounting medium with antifading effect.
Contains DAPI for counterstaining.

Storage temp.: +4 °C

Roti®-Mount FluorCare DAPI is an aqueous mounting medium with anti-fading effect. Additional it contains ready-to-use DAPI allowing counter-staining of nuclei and mounting at the same time. DAPI has an excitation maximum at 359 nm and an emission maximum at 461 nm.
Roti®-Mount FluorCare is also available with the dye propidiumiodide (HP21.1) and without dye (HP19.1).

**Storage:**
The solution should be stored at +4 °C in the dark.
Shelf life: minimum 1 year.

| | | | |
|---|---|---|---|
| **HP20.1** | 15 ml | dropp. bottle | 67,65 € |



## Roti®fair PBST 7.4

**for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

PBST (tablet), Phosphate buffered saline with Tween

Exactly pre-weighed tablets for convenient and rapid preparation of PBST solution.
Buffer solution composed of PBS with the addition of the non-ionic detergent Tween® 20. Since detergents are known to reduce non-specific protein-protein interactions, PBST is preferably used as basic solution during Western blotting, ELISA or other immunochemical assays.
Prepared solution may be sterilized by filtration (0,22 µm). For long-term storage, buffer solution should be kept at +4 °C.
1x PBST solution is prepared by dissolution of 1 tablet in 500 ml or 1000 ml highly pure water respectively.

**Formulation:**

Prepared 1x PBST solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, 0,05 % Tween® 20, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

**for 500 ml/tablet**

| | | | |
|---|---|---|---|
| **1115.1** | 12 tablets | blister | 63,35 € |
| **1115.2** | 100 tablets | plastic | 256,95 € |

**for 1000 ml/tablet**

| | | | |
|---|---|---|---|
| **1116.1** | 10 tablets | blister | 82,25 € |
| **1116.2** | 100 tablets | plastic | 396,70 € |



## Roti®-Stock 10x PBST

**BioScience-Grade, ready-to-use, filtered and steam sterilised**

For protein biochemistry, cytology, and molecular biology.

PBST 10x ready-to-use solution

10fold stock solution phosphate buffered saline with Tween 20.
Extremely versatile standard solution for protein biochemical detection systems, cytological staining and molecular-biological assays with similar fields of application as Roti®-Stock PBS. Roti®-Stock PBST can be used directly instead of PBS when the presence of Tween 20 is required in the detection system.
With original seal.

**Composition:**

1,37 M NaCl, 27 mM KCl, 100 mM $Na_2HPO_4$, 20 mM $KH_2PO_4$, 0,5 % Tween® 20 in deionised water, pH value 7,4, 0,2 µm filtered and steam sterilised

| | | | |
|---|---|---|---|
| **1059.1** | 1 l | glass | 120,95 € |
| Original pack 6 x 1 l | | | 114,90/1 l |

# Apoptosis Assay




ready-to-use

## Rotitest®-Annexin V

**Rotitest® Bio Analysis**

For detection and enumeration of apoptotic cells and simultaneous differentiation from necrosis.

Annexin-FITC conjugate, Apoptosis detection Kit

Storage temp.: +4 °C

- Simple, rapid application
- For cultured and primary cells (also for yeast cells)
- Discriminating between apoptotic and necrotic cells
- Result in approx. 30 minutes

Rapid and simple detection system of apoptotic cells, with simultaneous differentiation of necrotic cells.
During the first stages of apoptosis, phosphatidylserine (PS) is translocated from the inner membran layer to the outer surface of the cell.
The Rotitest®-Annexin V Kit uses the $Ca^{2+}$ dependent binding efficiency of Annexin V to PS in order to label cells with damaged cell membranes.
Additionally, propidium iodide is used to counter stain nuclei of cells with opened membranes, hence those which undergo necrotic degradation.
Thus, cells with yellow-green membrane staining only can be identified as apoptotic, while double stained cells (with yellow-green membranes plus orange-red nuclei) are classified as necrotic.
Analysis is performed via flow cytometry or fluorescence microscopy.
Each package contains simple-to-follow instructions-for-use.

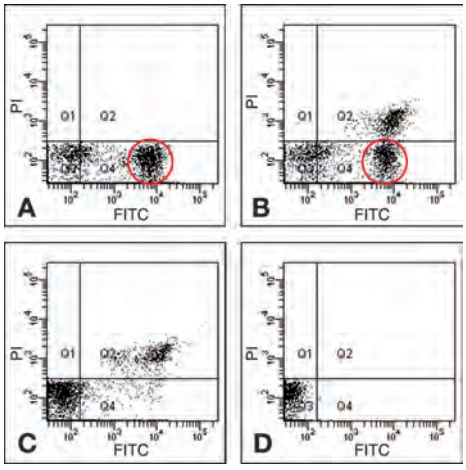



**Figure 1:**
Flow cytometry analysis of Jurkat cells. Assayed using 5x$10^5$ cells in 500 µl Annexin binding buffer, 25 µl Annexin V-FITC conjugate and 25 µl propidium iodide solution, 15 min. RT.
FITC-A: FITC staining (binding of Annexin-FITC conjugate),
PE-A: Propidium iodide staining
A,B) Cells after induction of apoptosis by Staurosporin, under pure annexin-FITC staining (A) or under annexin-FITC / PI staining (B), respectively. C,D) Uninduced control cells under annexin-FITC / PI staining (C) and without staining (D), respectively.
Due to the binding of Annexin V to PS on the outer membrane surface, apoptotic cells are Annexin-FITC positive, but PI negative (Q4, circle).
Q3 displays healthy cells (neg/neg), Q2 necrotic cells (Annexin-FITC pos and PI pos). Cells in Q1 (PI pos/ Annexin-FITC neg) are dead, non-apoptotic cells.

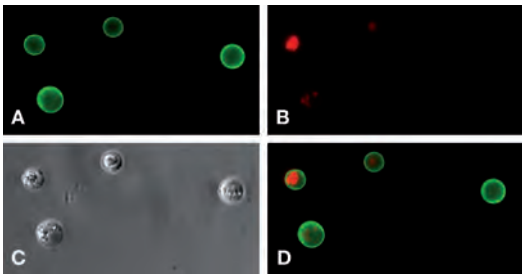



**Figure 2:**
Fluorescence microscopic analysis of Jurkat cells following induction of apoptosis by staurosporine. Assayed using $10^5$ cells in 100 µl Annexin binding buffer, 5 µl Annexin V-FITC conjugate and 5 µl propidium iodide solution, 15 min. RT.
A) FITC fluorescence (green), B) propidium iodide fluorescence (red), C) bright field image, D) composite image. Apoptotic cells are FITC positive, PI negative. FITC pos/PI pos cells may be classified as being necrotic. Healthy cells are FITC/PI neg.

**The kit contains:**
Annexin V-FITC conjugate, propidium iodide solution, Annexin V binding buffer, detailed instructions-for-use.
Excluding the columns, contents of this Kit may not be bought separately.
Store at +4 °C protected from light. Do not freeze.

1 set is sufficient for analysis of 50 samples of $10^5$ cells each

**Type analysis:**

| | |
|---|---|
| Appearance (test solution) | colourless to yellowish |
| Appearance PI solution | orange to red |
| Dye content | complies |
| Appearance Binding Buffer | colourless |
| pH value Binding Buffer | 7,3-7,5 |

| | | | |
|---|---|---|---|
| **7735.1** | 50 Assays | | 209,65 € |

▶ Specially coated sample slides see page 1475

## Roti®-Stock 10x PBS

ready-to-use S

**BioScience-Grade, ready-to-use, filtered and steam sterilised**

For protein biochemistry, cytology, and molecular biology.

PBS 10x ready-to-use solution

10fold stock solution phosphate buffered saline. Very versatile standard solution for detection systems in protein biochemistry, cytological stainings and molecular biological assays. Thus, 1 x PBS is used as basic solution for Western-Blot analyses, ELISAs and other enzymatic assays, for solving and dilution of proteins, for immunocytological and immunohistological assays, as well as for *in situ* hybridisations, apoptosis detection systems and staining of nuclei.
Recommended for HRP-mediated detection systems.
With original seal.

**Composition:**
1.37 M NaCl, 27 mM KCl, 100 mM $Na_2HPO_4$, 20 mM $KH_2PO_4$ in deionised water, pH-value 7.4, 0.2 µm filtered and steam sterilised

| | | | |
|---|---|---|---|
| **1058.1** | 1 l | glass | 115,60 € |
| Original pack 6 x 1 l | | | 109,82/1 l |

▶ Roti®fair PBS in tablets or pouches see page 1317

**Instructions for use**
can be found on the Internet next to the product description.

# Fixation

Fixation is used to stabilise cell shape and intracellular structures. The existing state at a defined time is thus preserved and can be proven in later analysis assays.

In cell biology, a buffered formaldehyde solution with a 4% or 4.5% concentration is mainly used for this purpose.Formaldehyde as an aqueous solution usually occurs as a diol (OH-HCH-OH), but polymerises readily ($OH-(H_2CO)_nH$) resulting in the formation of solids, which in turn are called 'paraformaldehyde'. For the **fixation** of tissue and cells, however, the formalin must be a monomer; in order to prevent polymerisation, the solution is therefore stabilised with methanol. To further prevent oxidation into formic acid, as occurs under atmospheric oxygen, formaldehyde solution is buffered with calcium carbonate or phosphate. On our high-quality **Roti®-Histofix solutions,** you will therefore find the entry **'acid-free, phosphate-buffered, stabilised with methanol'.**

According to GHS, concentrated formaldehyde solution is rated highly as poisonous, corrosive and hazardous to health, with the result that many users search for non-hazardous alternatives. This can be remedied by the use of bottled formalin solutions such as our **Roti®-Histofix in sample containers** or the new generation of **formalin-free fixation solutions,** such as our **Roti®-Histofix ECO plus.**

| Product | Purity | Application | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **Roti®-Histofix 4 %, prefilled containers** | acid free (pH 7), phosphate-buffered formaldehyde solution 4 % | Fixative for histology, prefilled in screw cap containers.Fixative for histology, prefilled in screw cap containers. | **3105.1** | 100 x 10 ml (in 20 ml-container) | 81,20 |
| | | | **3105.2** | 54 x 50 ml (in 100 ml-container) | 55,40 |
| **Roti®-Histofix 4 %** | acid free (pH 7), phosphate-buffered formaldehyde solution 4 % | Fixative for histology, stabilized with methanol. | **P087.4** | 500 ml | 9,90 |
| | | | **P087.6** | 1 l | 12,05 |
| | | | **P087.5** | 2,5 l | 16,70 |
| | | | **P087.3** | 5 l | 26,35 |
| | | | **P087.1** | 10 l | 48,30 |
| | | | **P087.2** | 30 l | 126,35 |
| **Roti®-Histofix 4,5 %, prefilled containers** | acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 % | Fixative for histology, prefilled in screw cap containers. Stabilised with methanol. | **8244.1** | 100 x 10 ml (in 20 ml container) | 79,45 |
| | | | **8244.2** | 54 x 50 ml (in 100 ml container) | 55,80 |
| | | | **8244.3** | 32 x 100 ml (in 180 ml container) | 52,15 |
| **Roti®-Histofix 4,5 %** | acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 % | Fixative for histology, stabilized with methanol. | **2213.4** | 500 ml | 10,65 |
| | | | **2213.6** | 1 l | 12,05 |
| | | | **2213.5** | 2,5 l | 18,85 |
| | | | **2213.3** | 5 l | 27,85 |
| | | | **2213.1** | 10 l | 50,00 |
| | | | **2213.2** | 30 l | 124,20 |
| **Roti®-Histofix 10 %** | acid free (pH 7), phosphate-buffered formaldehyde solution 10 % | Fixative for histology, stabilized with methanol. | **A146.4** | 500 ml | 12,05 |
| | | | **A146.6** | 1 l | 14,55 |
| | | | **A146.5** | 2,5 l | 25,30 |
| | | | **A146.3** | 5 l | 42,50 |
| | | | **A146.1** | 10 l | 67,65 |
| | | | **A146.2** | 30 l | 166,65 |
| **Formaldehyde solution 35 %** | ≥35 % DAB, for histology | Stabilized with methanol. | **4980.1** | 1 l | 16,05 |
| | | | **4980.2** | 5 l | 37,55 |
| | | | **4980.4** | 10 l | 59,70 |
| | | | **4980.3** | 30 l | 118,15 |
| **Formaldehyde solution 30 %, methanol-free** | 30 % | Concentrated fixative for histology, methanol-free. | **4235.1** | 1 l | 12,40 |
| | | | **4235.2** | 5 l | 30,00 |
| | | | **4235.3** | 10 l | 41,85 |
| | | | **4235.4** | 30 l | 99,90 |
| **Formaldehyde solution, non-acidic** | ≥37 %, for histology | Stabilized with methanol and calcium carbonate. | **P733.1** | 1 l | 17,75 |
| | | | **P733.2** | 2,5 l | 32,15 |
| | | | **P733.3** | 30 l | 120,95 |
| **Paraformaldehyde** | extra pure, DAC | Fixative | **0335.1** | 250 g | 14,55 |
| | | | **0335.2** | 500 g | 18,20 |
| | | | **0335.3** | 1 kg | 23,15 |
| | | | **0335.4** | 5 kg | 87,65 |

For additional product data and safety information, see chapter Chemicals A-Z.




## Roti®-Histofix ECO Plus

**Fixing agent without formalin**

For fixing of histological and immunochemical specimens.
Formalin substitute.

Storage temp.: +20 °C

- Formaldehyde-free, non-toxic fixative
- Good fixation properties
- pH 4,5 -5,0
- No denaturing effect, e.g. shrinkage or crosslinking
- Adequate substitute for formaldehyde

Roti®-Histofix ECO Plus is a ready-to-use, aqueous solution on base of hexamethylene tetramine. The solution has as similar good fixation properties as formaldehyde, but is, unlike formaldehyde, classified as non-toxic. The original morphology of the tissue is preserved during the fixation process. The protein molecules are cross-linked in a reversible way, their structures are preserved. That is especially important for antigen-antibody reactions. Samples are - in contrary to other fixative media - free of artefacts such as shrinkage of tissue or irreversible protein crosslinking. The solution is therefore ideal for immunohistochemistry. All conventional staining processes can be carried out following fixation.
Roti®-Histofix ECO Plus has an indicator dye and is scented for better identification (< 1ppm).

| | | | |
|---|---|---|---|
| **8907.1** | 500 ml | plastic | 14,95 € |
| **8907.2** | 2,5 l | plastic | 45,70 € |
| Original pack 4 x 2,5 l | | | 43,42/2,5 l |
| **8907.3** | 5 l | plastic | 85,50 € |
| Original pack 2 x 5 l | | | 81,23/5 l |

▶ Drain cocks see chapter Labware - Pumps, Pipettors and Sampling.

Formaldehyde, chem. methanal (methane-aldehyde).
Derived from the Latin **formica** = ant, as formic acid occurs during oxidation of the methanal.
Formaldehyde in itself is gaseous at room temperature and is called formalin when it occurs as an aqueous solution.

According to current knowledge, **fixation** occurs through the formation of methylene bridges and bridges through Schiff bases and, since it is non-denaturing, is at least partly reversible through heating and/or alkalisation. The penetration velocity of formalin into tissue is approximately 1 mm/h.




## Roti®-Free Slide Enhancer

**10x conc., BioScience-Grade**

Concentrated buffer for enhancement
of detection signals in immunohistochemistry and *in situ* hybridization.

Storage temp.: +20 °C

- Very effective
- Gentle
- Odour-free
- Simple application
- Suitable for formaline- and paraffin fixed samples and cryo sections

Efficient stripping buffer for removal of antibodies, probes, and corresponding stains from immunohisto- and -cytochemical samples, as well as from *in situ* hybridizations. Due to the particularly adjusted formulation of the Roti®-Free Slide Stripping Buffer, antigens and hybridization partners are retrieved very gently, but quantitatively, enabling the samples to be assayed repeatedly. Suitable for all common samples like formaline- and paraffin fixed tissue and cells, or cryo sections.

**Applications:** The slides are incubated in Roti®-Free Slide Stripping Buffer for 20-40 min at 70-95 °C. After repeated washing steps, the samples may be assayed again with antibodies or probes. The particular parameters necessary for complete stripping depend on the respective samples, fixing-, and detection systems.

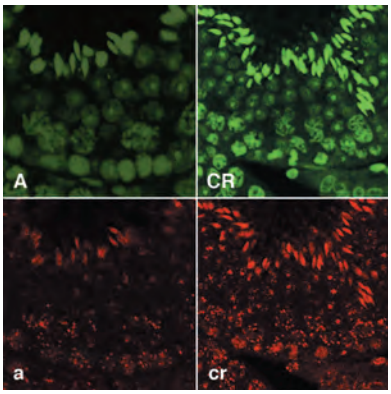



**Figure 1:**
Fluorescence *in situ* hybridisation (FISH) on sections of formaline fixated, paraffin embedded tissue.
Capitals: Nuclear counter staining (Cytogreen), minuscules: Telomere-DNA FISH with red flourescence dye.
CR/cr: Detection after pretreatment with Roti®-Free Slide Enhancer.
A/a: Standard detection in 1 % triton-PBS buffer, w/o pretreatment.

With kind permission of the RIKEN Brain Science Institute (BSI), Development Research Group, Hirosawa Wako City, Saitama, Japan

One bottle of 500 ml is sufficient for approx. 500 sample slides.

**Type analysis:**

pH value (1x sol.).....6,9-7,1
RNAse.....≤2 ppb
DNAse.....≤0,2 ppm

| | | | |
|---|---|---|---|
| **9330.1** | 500 ml | plastic | 198,90 € |

# Blocking




ready-to-use

## Roti®-ImmunoBlock

**ready-to-use, 10x conc.**

Protein free blocking reagent for immunocytological assays.
Without detergent.
Storage temp.: +20 °C

**Suitable for**

- Immunocytological assays
- Immunohistological assays
- Paraffin- and cryosections
- *in situ* hybridisation
- Cell culture samples
- Whole mount samples

Roti®-ImmunoBlock is an innovative blocking reagent on a polymer base without detergents and proteins.

No contamination of your detection system through foreign proteins, reducing background and false-positive signals. Specific binding signals are preserved whilst non-specific interaction is impeded, increasing the signal-to-noise ratio. Ready-to-use solution for fast and easy applications.

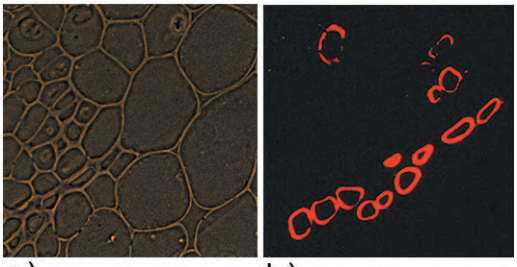



**Figure:**
*Scilla siberica:* Cross section of a conducting bundle from the leaf. Immunofluorescent detection of a protein in sieve cells:
a) Phase contrast
b) Immunofluorescence, blocking with Roti®-ImmunoBlock

With kind permission of Dr. Deumling, MPI for Culture Research, Cologne.

| | | | |
|---|---|---|---|
| **T144.1** | 250 ml | glass | 45,05 € |

▶ Many further products for immunochemical detection see chapter Biochemistry/Western and ELISA and Histology.

Please note our **Technical Information Brochure** on the Internet next to the products:

**Immunostaining by HRP and AP**
Protocols

## Albumin, IgG free



**>98 %, IgG-free, for biochemistry and molecular biology**

Recommended as blocking and stabilisingreagent in all antibody-mediated detection systems.
BSA
M ~66 000 g/mol
Storage temp.: +4 °C

DNAse-free RNAse-free

Protease-free

Albumin, highly purified and tested for presence of immunoglobulins (IgGs), proteases, RNAse, and DNAse. Albumin, IgG-free is particularly recommended for use as stabilising reagent in antibody solutions, and as blocking reagent in all assays using detection systems via antibodies. Also very well suited for stabilising of hot-start-PCRs mediated by antibodies, or as blocking reagent in antibody-detected hybridisations.

| | | | |
|---|---|---|---|
| **3737.1** | 10 g | plastic | 54,75 € |
| **3737.2** | 50 g | plastic | 152,15 € |
| **3737.3** | 200 g | plastic | 456,90 € |
| **3737.4** | 500 g | plastic | 938,50 € |
| Original pack 6 x 500 g | | | 891,58/500 g |

▶ Further albumins, powdered milk etc. see chapter Biochemistry/Western and ELISA.

# Substrates for Immunodetection

Carl Roth offers you a wide range of substrates for biochemistry, cellular biology and microbiology. The key substrates for cytochemical applications are summarised here.

For detailed information regarding usage, chemical details, safety instructions and further package sizes for these and many other substrates, refer to **"Substrates"** in the chapter **Biochemistry** or to Chemicals A-Z.

## For Alkaline Phosphatase (AP)

| Substrate | Application | Detection | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **BCIP-sodium salt** | western, *in situ*, histochemistry | colour (brown-violet) | **A155.1** | 100 mg | 27,45 |
| | | | **A155.2** | 500 mg | 115,60 |
| | | | **A155.3** | 1 g | 198,90 |
| | | | **A155.4** | 5 g | 665,45 |
| **BCIP-toluidine salt*** | western, *in situ*, histochemistry | colour (brown) | **6368.1** | 500 mg | 35,40 |
| | | | **6368.2** | 1 g | 68,30 |
| | | | **6368.3** | 5 g | 261,80 |
| **NBT*** | western, *in situ*, histochemistry | colour (brown-violet) | **4421.1** | 100 mg | 17,10 |
| | | | **4421.2** | 500 mg | 42,90 |
| | | | **4421.3** | 1 g | 81,60 |
| | | | **4421.4** | 5 g | 295,65 |
| **Rose-phos-toluidine salt** | western, *in situ*, histochemistry | colour (pink) | **4247.1** | 50 mg | 46,80 |
| | | | **4247.2** | 100 mg | 84,85 |

For additional product data and safety information, see chapter Chemicals A-Z.
***combined**

## For Horse Raddish Peroxidase (HRP)

| Substrate | Application | Detection | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **DAB** | western, *in situ*, histochemistry | colour (brown) | **CN75.1** | 1 g | 23,15 |
| | | | **CN75.2** | 5 g | 73,65 |
| | | | **CN75.3** | 10 g | 126,35 |
| **Roti®-DAB Kit** | western, *in situ*, histochemistry | colour (brown) | **9202.1** | 1 kit | 181,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Reference Sample for Fluorescent Microscopy



Ideal for testing or calibration of confocal laser scanning microscopes and other fluorescent microscopes. Excellent signal output and good photo stability. Ready to use for microscopy.

- Stained with 4 fluorochromes
- Planar and 3D cell structures
- Excellent signal output
- Good photo stability

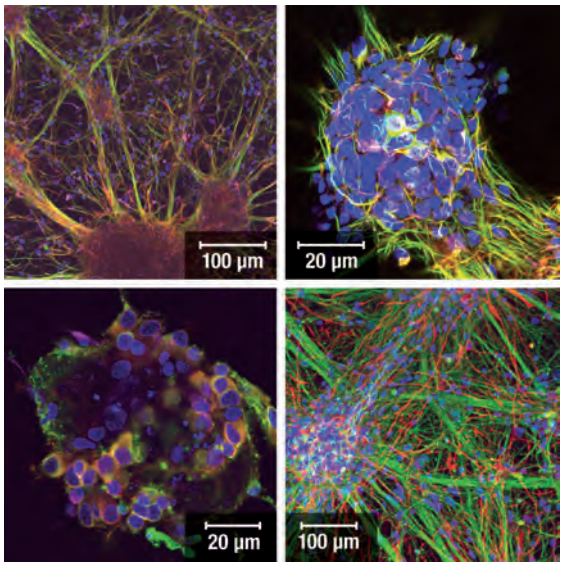
ready-to-use

## Demoslides Fluoro-4C

**Reference sample for fluorescent microscopy**

Glass slide with ready-to-use cell specimen.
For fine tuning of fluorescent microscopes.
Fluorescent preparation Fluoro-4C
Storage temp.: +4 °C

Durable test preparation of neuronal cells of a murine cell culture. Contains the markers Tubulin-Cy2, Nestin-Cy3 and DCX-Cy5 and in addition DAPI-stained nuclei. The specimens show 3D-structuresin form of cell aggregates (spherules) and a network of planar cells. There is an intracellular co-localization between Tubulin-Cy2 and DCX-Cy5.




Demoslide Fluoro-4C scanned by a 20x objective lens (100 µm) and a 63x objective lens (20 µm) of a laser scanning microscope (marker: Tubulin-Cy2-green; Nestin-Cy3-red; DCX-Cy5-magenta; DAPI-blue).

**3 fluorescent channels and DAPI**

The specimen contains stained cell structures in three different spectra: green (Cy2), red (Cy3) and infrared (Cy5). All three channels can be illustrated isolated or superposed. DAPI staining of nuclei allows identification of single cells as well as apoptotic or mitotic nuclei (fig. C). If Cy5-signals of DCX are displayed in red co-localization with Tubulin (Cy2-green) becomes visible as yellow signal (fig. A).

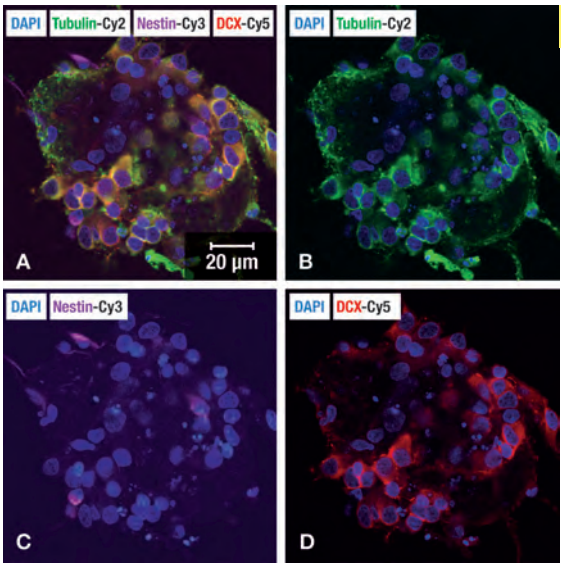



Illustration of the 3 fluorescent channels of Tubulin-Cy2 (B), Nestin-Cy3 (C) and DCX-Cy5 (D), each in combination with DAPI. Figure A shows the combination of all 3 channels. Objective lens: 63x; bar: 20µm

**Packaging and Storage**

Every Fluoro-4C preparation is mounted on a slide and covered with a cover slip for long-term storing. It is delivered in a preparation board. Please store the slides in the dark. Storage at room temperature is sufficient. However, for longer periods without usage we recommend usual slide boxes stored in the refrigerator. Allow the boxes to achieve room temperature before opening and removing the slides and avoid frequent temperature changes.

**Avoid too long and too intensive exposure to UV light!**

| | | |
|---|---|---|
| **8987.1** | 1 piece | 274,15 € |
| **8987.2** | 2 pieces | 521,40 € |

# Microbiology


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# Media acc. to European Pharmacopoeia

| Medium | Art. No. | acc. to Ph. Eur. 6.0 (2008) | acc to Ph. Eur. 6.0 (2008, Harmonized Method), 6.3 (2009), 7.0 (2011), 8.0 (2014) or 9.0 (2017) |
|---|---|---|---|
| Antibiotic Medium No. 1 | CL53 | *not listed in this norm* | Antibiotic Agar No. 1 (Seed Agar) *(not list. in 8.0 and 9.0)* |
| Baird Parker Agar (Base) | X913 | Agar Medium O | *not listed in this norm* |
| Brilliant Green Lactose Sucrose Agar | AE43 | Agar Medium L | *not listed in this norm* |
| Brilliant Green Tetrathionate Bile Broth | AE42 | Broth Medium I | *not listed in this norm* |
| CASO Agar | X937 | Agar Medium B | Casein Soya Bean Digest Agar |
| CASO Broth | X938 | Broth Medium A | Casein Soya Bean Digest Broth |
| CASO Broth, granulated | 6678 | Broth Medium A | Casein Soya Bean Digest Broth |
| Cetrimide Agar (Base) | X918 | Agar Medium N | Cetrimide Agar |
| Columbia Agar (Base) | X919 | Medium Q | Columbia Agar |
| Desoxycholate Citrate Agar | AE44 | Agar Medium J | *not listed in this norm* |
| Lactose-Broth | X921 | Broth Medium D | *not listed in this norm* |
| Lactose Sulphite Broth (Base) | AE46 | Medium R | *not listed in this norm* |
| MacConkey Agar | X922 | Agar Medium H | MacConkey Agar |
| MacConkey Broth | AE47 | Broth Medium G | MacConkey Broth |
| Mannitol Salt Agar | CL81 | *not listed in this norm* | Mannitol Salt Agar |
| Mossel EE Broth | AE65 | Enriched Broth Medium E | Enterobacteria enrichment broth-Mossel |
| Peptone Water, buffered | AE67 | Buffered Sodium Chloride-Peptone Solution pH 7.0 | Buffered Sodium Chloride-Peptone Solution pH 7.0 |
| Potato Extract Glucose Agar | X931 | *not listed in this norm* | Potato Dextrose Agar |
| R2A Agar | CL01 | Agar Medium S | *not listed in this norm* |
| Rappaport Vassiliadis Broth | CL03 | *not listed in this norm* | Rappaport Vassiliadis *Salmonella* Enrichment Broth |
| Reinforced Clostridial Medium | AE66 | Medium P | Reinforced Medium for *Clostridia* |
| Sabouraud 2 % Glucose Broth | AE23 | Sabouraud Dextrose Broth | Sabouraud Dextrose Broth |
| Sabouraud 4% Glucose Agar | X932 | Agar Medium C | Sabouraud Dextrose Agar |
| Sabouraud 4% Glucose Agar (with chloroamphenicol) | AE48 | Agar Medium C | *not listed in this norm* |
| Triple Sugar Iron Agar | AE49 | Agar Medium M | *not listed in this norm* |
| Violet Red Bile Agar with Glucose and Lactose | AE45 | Agar Medium F | *not listed in this norm* |
| Violet Red Bile Agar with Glucose | X939 | *not listed in this norm* | Violet Red Bile Glucose Agar |
| XLD Agar | X941 | Agar Medium K | Xylose, Lysine, Desoxycholate Agar |

# Standard Code Designations

| Abbreviation | Broth/Agar | Art. No. |
|---|---|---|
| BCYE Agar | Legionella Agar | CL48 |
| BHI | Brain Heart Infusion Broth | X916 |
| BP | Baird Parker Agar | X913 |
| BPLS | Brilliant Green Lactose Sucrose Agar | AE43 |
| CASO | CASO Agar or Broth | X924, X925 |
| CCDA | Campylobacter Agar | 5756 |
| CIN | Yersinia Selective Agar | 5780 |
| CLED | CLED Agar | 2835 |
| CN | Pseudomonas Selective Agar | CP67 |
| CPLP | TAT Broth | 3935 |
| DG18 | Dichlorane Glycerol Agar | AE26 |
| DRBC | Dichlorane Bengal Red Agar | AE25 |
| DRCM | Differential-Reinforced Clostridia Medium | CL78 |
| GVCP Agar | Legionella Agar | CL48 |
| mCP | m-CP Agar | CL55 |
| MRS | MRS Agar or Broth | X924, X925 |
| MYP | Mannitol Egg Yolk Polymyxin Agar | 5765 |
| PC | Plate Count Agar | X930 |
| PCM | Plate Count Agar with milk | HP08 |
| R2A | R2A Agar | CL01 |
| RBC | Bengal Red Agar | AE24 |
| RCM | Reinforced Clostridial Medium | AE66 |

| Abbreviation | Broth/Agar | Art. No. |
|---|---|---|
| RVS | Rappaport Vassiliadis Broth | CL03 |
| SMAC | Sorbitol MacConkey Agar | 5778 |
| TAT | TAT Broth | 3935 |
| TBA | Tryptone Bile Salts Agar | CP69 |
| TBX | TBX chromogenic Agar | CL47 |
| TSA | Trypton Soy Agar | CP70 |
| TSB | CASO Broth | X938 |
| TSB Agar | CASO Agar | X937 |
| TSC | TSC Agar | CL51 |
| VRBD | Violet Red Bile Agar with Glucose | X939 |
| VRB | Violet Red Bile Agar with Lactose | X940 |
| WPCA | Yeast Extract (Water Plate Count) Agar | CP63 |
| XLD | XLD Agar | X941 |
| YGC | Yeast Glucose Agar | CL00 |
| YNB | Yeast Nitrogen Base | HP26 |

▶ Media for water analysis see page 1353

# Review of Anhydrous Nutrient Media

| | | Media Specialised for... | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Art. No. | Medium | Pharm. Eur. | Water | Whole Germ | Coli | Clo & Bruc & Camp | Entero | Yeast & Mould | Lacto & Bac | Pseudo & Leg & Lis | Sal & Shig | Staph & Strep | Chromo | Special | Mol Biol |
| X967 | 2x YT Agar | | | | | | | | | | | | | | |
| X966 | 2x YT Broth | | | | | | | | | | | | | | |
| 6676 | 2x YT Broth, granulated | | | | | | | | | | | | | | |
| CP61 | Acetamide Broth (Solution A) | | | | | | | | | Pseu | | | | | |
| CL53 | Antibiotic Medium No. 1 | | | | | | | | | | | | | | |
| CL54 | Antibiotic Medium No. 23 | | | | | | | | | | | | | | |
| CL79 | Azide Dextrose Broth | | | | | | | | | | | | | | |
| X913 | Baird Parker Agar (Base) | | | | | | | | | | | Staph | | | |
| AE24 | Bengal Red Agar (with chloroamph.) (RBC) | | | | | | | | | | | | | | |
| CP62 | Bile Esculine Azide Agar | | | | | | | | | | | | | | |
| X914 | Blood Agar (Base) | | | | | | | | | | | Strep | | | |
| 8281 | Blood Agar No.2 (Base) | | | | | | | | Bac | Lis | | Strep | | | |
| X915 | Brain-Heart-Infusion Agar | | | | | | | | | | | | | | |
| X916 | Brain-Heart-Infusion Broth | | | | | | | | | | | | | | |
| CL06 | Brilliant Green Bile Broth | | | | | | | | | | | | | | |
| AE43 | Brilliant Green Lactose Sucrose Agar | | | | | | | | | | Sal | | | | |
| AE42 | Brilliant Green Tetrathionate Bile Broth | | | | | | | | | | Sal | | | | |
| 5752 | Brucella Agar | | | | | Bru | | | | | | | | | |
| 5754 | Brucella Broth | | | | | Bru | | | | | | | | | |
| 5756 | Campylobacter Agar, blood-free (Base) | | | | | Camp | | | | | | | | | |
| 8847 | Campylobacter Selective Agar (Base) | | | | | Camp | | | | | | | | | |
| 2922 | Candida chromogenic Agar | | | | | | | | | | | | | | |
| X937 | CASO Agar (Soy Broth, TSB Agar) | | | | | | | | | | | | | | |
| 1506 | CASO Agar, granulated NEW | | | | | | | | | | | | | | |
| 8848 | CASO Agar with Lecithin/Polysorbate 80 | | | | | | | | | | | | | | |
| X938 | CASO Broth (Soy Broth, TSB) | | | | | | | | | | | | | | |
| 6678 | CASO Broth, granulated (Soy Broth, TSB) | | | | | | | | | | | | | | |
| 0139 | CASO Broth vegetal (Soy Broth, TSB) | | | | | | | | | | | | | | |
| X918 | Cetrimide Agar (Base) | | | | | | | | | Pseu | | | | | |
| 2835 | CLED Agar | | | | | | | | | | | | | | |
| 2836 | CLED Agar plus | | | | | | | | | | | | | | |
| 2923 | Coli Fluoro Broth | | | | | | | | | | | | | | |
| 8849 | Coliforms chromogenic Agar (ISO) | | | | | | | | | | | | | | |
| CL45 | Coliforms chromogenic Agar | | | | | | | | | | | | | | |
| X919 | Columbia Agar (Base) | | | | | | | | | | | | | | |
| 1507 | Columbia Agar (Base), granulated NEW | | | | | | | | | | | | | | |
| 2997 | Cronobacter chromogenic Agar | | | | | | | | | | | | | | |
| 8850 | D/E Neutralizing Agar | | | | | | | | | | | | | | |
| AE44 | Desoxycholate Citrate Agar | | | | | | | | | | Sal, Shi | | | | |
| AE25 | Dichlorane Bengal Red Agar (with chloroamph.) (DRBC) | | | | | | | | | | | | | | |
| AE26 | Dichlorane Glycerol Agar (DG18) (Base) | | | | | | | | | | | | | | |
| CL78 | Differential Reinforced Clostridial Medium (DRMC) | | | | | Clo | | | | | | | | | |
| 8295 | DNase Test Agar | | | | | | | | | | | Staph | | | |
| 8310 | EC Broth | | | | | | | | | | | | | | |
| X920 | Endo Agar (Base) | | | | | | | | | | | | | | |
| HP17 | Fraser Broth (Base) | | | | | | | | | Lis | | | | | |
| HP18 | Fraser Half Broth (Base) | | | | | | | | | Lis | | | | | |
| HP07 | Gelatin Agar (DEV) | | | | | | | | | | | | | | |
| CP64 | King's B Medium (Base) | | | | | | | | | Pseu | | | | | |
| 5758 | Kligler Iron Agar | | | | | | | | | | | | | | |
| X921 | Lactose Broth | | | | | | | | | | Sal | | | | |
| CL76 | Lactose Broth (DEV) | | | | | | | | | | | | | | |
| CL77 | Lactose Peptone Broth (DEV) | | | | | | | | | | | | | | |
| AE46 | Lactose Sulphite Broth (Base) | | | | | Clo | | | | | | | | | |
| CL80 | Lauryl Sulphate Broth | | | | | | | | | | | | | | |
| X965 | LB Agar (Lennox) | | | | | | | | | | | | | | |

| Art. No. | Medium | Pharm. Eur. | Water | Whole Germ | Coli | Clo & Bruc & Camp | Entero | Yeast & Mould | Lacto & Bac | Pseudo & Leg & Lis | Sal & Shig | Staph & Strep | Chromo | Special | Mol Biol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Media Specialised for... | | | | | | | | | | | | | |
| 6671 | LB Agar (Lennox), granulated | | | | | | | | | | | | | | |
| 0159 | LB Agar (Lennox) vegetal | | | | | | | | | | | | | | |
| X969 | LB Agar (Luria/Miller) | | | | | | | | | | | | | | |
| 6675 | LB Agar (Luria/Miller), granulated | | | | | | | | | | | | | | |
| 8852 | LB Agar (Lennox) / Amp100 | | | | | | | | | | | | | | |
| 8853 | LB Agar (Lennox) / Kana50 | | | | | | | | | | | | | | |
| 8860 | LB Agar (Luria/Miller) / Kana50 | | | | | | | | | | | | | | |
| 8858 | LB Agar (Luria/Miller) / Amp50 | | | | | | | | | | | | | | |
| 8855 | LB Agar (Luria/Miller) / Amp100 | | | | | | | | | | | | | | |
| 8861 | LB Agar (Luria/Miller) / Chloramph34 | | | | | | | | | | | | | | |
| X964 | LB Broth (Lennox) | | | | | | | | | | | | | | |
| 6669 | LB Broth (Lennox), granulated | | | | | | | | | | | | | | |
| 0155 | LB Broth (Lennox) vegetal | | | | | | | | | | | | | | |
| X968 | LB Broth (Luria/Miller) | | | | | | | | | | | | | | |
| 6673 | LB Broth (Luria/Miller), granulated | | | | | | | | | | | | | | |
| CL48 | Legionella Agar (Base) | | | | | | | | | Leg | | | | | |
| 5759 | Letheen Agar modified | | | | | | | | | | | | | | |
| 5761 | Letheen Broth modified | | | | | | | | | | | | | | |
| 3008 | Listeria chromogenic Agar (Base) | | | | | | | | | Lis | | | | | |
| 8322 | Lysin Iron Agar | | | | | | | | | | Sal, Shi | | | | |
| X922 | MacConkey Agar | | | | | | | | | | Shi | | | | |
| 1514 | MacConkey Agar, granulated NEW | | | | | | | | | | Shi | | | | |
| AE47 | MacConkey Broth | | | | | | | | | | | | | | |
| X923 | Malt Extract Agar | | | | | | | | | | | | | | |
| CP75 | Malt Extract Broth | | | | | | | | | | | | | | |
| CL81 | Mannitol Salt Agar | | | | | | | | | | | Staph | | | |
| 5765 | Mannitol Egg Yolk Polymyxin Agar (Base) | | | | | | | | Bac | | | | | | |
| CP73 | Marine Broth | | | | | | | | | | | | | | |
| 5766 | Maximum Recovery Solution | | | | | | | | | | | | | | |
| CL55 | m-CP Agar | | | | | Clo | | | | | | | | | |
| 3014 | m-EI-chromogenic Agar (Base) | | | | | | | | | | | | | | |
| AE65 | Mossel EE Broth | | | | | | | | | | Sal | | | | |
| X924 | MRS Agar | | | | | | | | Lac | | | | | | |
| HP65 | MRS Agar pH 5.7 | | | | | | | | Lac | | | | | | |
| X925 | MRS Broth | | | | | | | | Lac | | | | | | |
| HP64 | MRS Broth pH 5.7 | | | | | | | | Lac | | | | | | |
| 3026 | MRSA chromogenic Agar (Base) | | | | | | | | | | | Staph | | | |
| X926 | Mueller Hinton Agar | | | | | | | | | | | Staph | | | |
| X927 | Mueller Hinton Broth | | | | | | | | | | | | | | |
| 8323 | Mueller Kauffmann Broth (Base) | | | | | | | | | | Sal | | | | |
| X928 | Nutrient Agar | | | | | | | | | | | | | | |
| CL02 | Nutrient Agar (DEV) | | | | | | | | | | | | | | |
| CP66 | Nutrient Agar (DEV/ISO) | | | | | | | | | Pseu | | | | | |
| X929 | Nutrient Broth | | | | | | | | | | | | | | |
| X974 | NZCYM Broth | | | | | | | | | | | | | | |
| X973 | NZYM Broth | | | | | | | | | | | | | | |
| HP09 | Orange Serum Agar | | | | | | | | | | | | | | |
| 1520 | Orange Serum Agar, granulated NEW | | | | | | | | | | | | | | |
| 5767 | Oxford Listeria Agar (Base) | | | | | | | | | Lis | | | | | |
| 5768 | Palcalm Listeria Agar (Base) | | | | | | | | | Lis | | | | | |
| X917 | Peptone Water, buffered | | | | | | | | | | | | | | |
| 6680 | Peptone Water, buffered, granulated | | | | | | | | | | | | | | |
| AE67 | Peptone Water, buffered (Ph. Eur.) | | | | | | | | | | | | | | |
| X930 | Plate Count Agar | | | | | | | | | | | | | | |
| 1521 | Plate Count Agar, granulated NEW | | | | | | | | | | | | | | |
| HP08 | Plate Count Agar with Powdered Milk | | | | | | | | | | | | | | |
| X931 | Potato Extract Glucose Agar | | | | | | | | | | | | | | |

| | | Media Specialised for... | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Art. No. | Medium | Pharm. Eur. | Water | Whole Germ | Coli | Clo & Bruc & Camp | Entero | Yeast & Mould | Lacto & Bac | Pseudo & Leg & Lis | Sal & Shig | Staph & Strep | Chromo | Special | Mol Biol |
| CP74 | Potato Extract Glucose Broth | | | | | | | | | | | | | | |
| 3075 | Pseudomonas chromogenic Agar | | | | | | | | | Pseu | | | | | |
| CP67 | Pseudomonas Selective Agar (CN Agar) (Base) | | | | | | | | | Pseu | | | | | |
| CL01 | R2A Agar | | | | | | | | | | | | | | |
| 1523 | R2A Agar, granulated NEW | | | | | | | | | | | | | | |
| CL03 | Rappaport Vassiliadis Broth (RVS) | | | | | | | | | | Sal | | | | |
| 8329 | Rogosa Agar | | | | | | | | Lac | | | | | | |
| AE66 | Reinforced Clostridial Medium (RCM) | | | | | Clo | | | | | | | | | |
| AE22 | Sabouraud 2% Glucose Agar | | | | | | | | | | | | | | |
| AE23 | Sabouraud 2% Glucose Broth | | | | | | | | | | | | | | |
| 1508 | Sabouraud-2%-Glucose-Bouillon, granulated NEW | | | | | | | | | | | | | | |
| X932 | Sabouraud 4% Glucose Agar | | | | | | | | | | | | | | |
| X933 | Sabouraud 4% Glucose Agar (with chloroamph.) | | | | | | | | | | | | | | |
| AE48 | Sabouraud 4% Glucose Agar (with chloroamph.) (Ph.Eur.) | | | | | | | | | | | | | | |
| CL46 | Salmonella chromogenic Agar | | | | | | | | | | Sal | | | | |
| X934 | Salmonella Shigella Agar | | | | | | | | | | Sal | | | | |
| 5771 | Schaedler Agar | | | | | | | | | | | | | | |
| 5772 | Schaedler Broth | | | | | | | | | | | | | | |
| 5774 | Simmons Citrate Agar | | | | | | | | | | | | | | |
| X935 | Slanetz Bartley Agar | | | | | | | | | | | Strep | | | |
| CP68 | Slanetz Bartley Medium (with tetrazolium chloride) | | | | | | | | | | | | | | |
| AE27 | SOB Broth | | | | | | | | | | | | | | |
| 5778 | Sorbitol MacConkey Agar | | | | | | | | | | | | | | |
| AE91 | Standard Count Agar | | | | | | | | | | | | | | |
| AE93 | Standard Nutrient Agar I | | | | | | | | | | | | | | |
| 1524 | Standard Nutrient Agar I, granulated NEW | | | | | | | | | | | | | | |
| AE92 | Standard Nutrient Broth I | | | | | | | | | | | | | | |
| 1533 | Standard Nutrient Broth I, granulated NEW | | | | | | | | | | | | | | |
| 3935 | TAT Broth (Base) | | | | | | | | | | | | | | |
| CL47 | TBX chromogenic Agar | | | | | | | | | | | | | | |
| 8333 | TCBS-Agar | | | | | | | | | | | | | | |
| X972 | Terrific Broth | | | | | | | | | | | | | | |
| 0161 | Terrific Broth vegetal | | | | | | | | | | | | | | |
| HP61 | Terrific Broth modified | | | | | | | | | | | | | | |
| X936 | Todd Hewitt Broth | | | | | | | | | | | Strep | | | |
| AE49 | Triple Sugar Iron Agar (Base) | | | | | | | | | | Sal | | | | |
| CP69 | Tryptone Bile Salts Agar (TBA) | | | | | | | | | | | | | | |
| CP70 | Tryptone Soy Agar (TSA) | | | | | | | | | | | | | | |
| CP71 | Tryptophane Broth | | | | | | | | | | | | | | |
| CL51 | TSC Agar (Base) | | | | | Clo | | | | | | | | | |
| CP65 | TTC Chapman Agar (with sod. heptadecylsulph.) (Base) | | | | | | | | | | | | | | |
| 8337 | Universal Beer Agar (Base) | | | | | | | | Lac | | | | | | |
| 8320 | Urea Agar acc. to Christensen (Base) | | | | | | | | | | Sal, Shi | | | | |
| 3089 | UTI chromogenic Agar | | | | | | | | | | | Staph | | | |
| X939 | Violet Red Bile Agar with Glucose (VRBD) | | | | | | | | | | | | | | |
| 1525 | Violet Red Bile Agar with Glucose, granulated NEW | | | | | | | | | | | | | | |
| AE45 | Violet Red Bile Agar with Dextrose and Lactose | | | | | | | | | | | | | | |
| X940 | Violet Red Bile Agar with Lactose (VRB) | | | | | | | | | | | | | | |
| CL04 | Wort Agar (Base) | | | | | | | | | | | | | | |
| 5779 | Wort Broth | | | | | | | | | | | | | | |
| X941 | XLD Agar | | | | | | | | | | Sal, Shi | | | | |
| CP63 | Yeast Extract Agar | | | | | | | | | | | | | | |
| CL00 | Yeast Glucose Agar (with chloroamph.) (YGC) | | | | | | | | | | | | | | |
| 1526 | Yeast Glucose Agar (with chloroamph.), granulated NEW | | | | | | | | | | | | | | |
| HP26 | Yeast Nitrogen Base (without Amino Acids) | | | | | | | | | | | | | | |
| 5780 | Yersinia Selective Agar (Base) | | | | | | | | | | | | | | |
| X971 | YPD Agar | | | | | | | | | | | | | | |
| X970 | YPD Broth | | | | | | | | | | | | | | |

## Legend:

| | |
|---|---|
| Ph. Eur. | Media acc. to European Pharmacopeia |
| Water | Media for drinking water analysis |
| Whole Germ | Detection of whole germs or unspecific microorganisms |
| Coli | Detection of coliforms and *E. coli* |
| Clo & Bruc & Camp | Detection of *Clostridia*, *Brucella* or *Campylobacter* |
| Entero | Detection of enterobacteria |
| Yeast & Mould | Detection of yeasts or moulds |
| Lacto & Bac | Detection of lactobacilli or bacilli |
| Pseudo & Leg & Lis | Detection of pseudomonads, legionells or listeriae |
| Sal & Shig | Detection of salmonellae or shigellae |
| Staph & Strep | Detection of staphylococci or streptococci |
| Chromo | Chromo- and fluorogenic media |
| Special | Media for special applications |
| Mol Biol | Media for applications in molecular biology |

# Nutrient Media for Water Analysis acc. to European Drinking Water Directives

| Medium | Art. No. | Norms |
|---|---|---|
| Acetamide Broth (Solution A) | CP61 | DEV, TWVO 2001, EN ISO 16266 |
| Bile Esculin Azide Agar | CP62 | DEV, TWVO 2001, ISO 7899-2 |
| Brilliant Green Bile Broth | CL06 | DIN 10172 |
| Coliforms chromogenic Agar | CL45 | - |
| Coliforms chromogenic Agar (ISO) | 8849 | EN ISO 9308-1 |
| EC Broth | 8310 | ISO 7251 |
| Gelatin Agar (DEV) | HP07 | DEV |
| King's B Medium (Base) | CP64 | DEV, TWVO 2001, EN ISO 16266 |
| Lactose Broth (DEV) | CL76 | DEV |
| Lactose Peptone Broth (DEV) | CL77 | DEV |
| Lauryl Sulphate Broth | CL80 | APHA |
| Legionella Agar (Base) | CL48 | EN ISO 11731-2 |
| m-CP Agar | CL55 | TWVO 2001 |
| m-EI-chromogenic Agar (Base) | 3014 | - |
| Nutrient Agar (DEV/ISO) | CP66 | DEV, TWVO 2001, EN ISO 16266 |
| Nutrient Agar (DEV) | CL02 | DEV, DIN 38 411 |
| Pseudomonas Selektive Agar (CN Agar) (Base) | CP67 | DEV, TWVO 2001, EN ISO 16266 |
| R2A-Agar | CL01 | Ph. Eur. |
| Rappaport Vassiliadis Broth (RVS) | CL03 | Ph. Eur. |
| Salmonella chromogenic Agar | CL46 | - |
| Slanetz Bartley Medium (with tetrazolium chloride) | CP68 | DEV, TWVO 2001, ISO 7899-2 |
| Standard Count Agar | AE91 | - |
| Tryptone Bile Salts Agar (TBA) | CP69 | DEV, TWVO 2001, EN ISO 9308-1 |
| Tryptone Soy Agar (TSA) | CP70 | DEV, TWVO 2001, EN ISO 9308-1 |
| Tryptophane Culture Broth | CP71 | DEV, TWVO 2001, EN ISO 9308-1 |
| TSC Agar (Base) | CL51 | DEV, EN ISO 7937 |
| TTC Chapman Agar (with sodium heptadecylsulphate) (Base) | CP65 | DEV, TWVO 2001, EN ISO 9308-1 |
| Yeast Extract Agar | CP63 | DEV, TWVO 2001, EN ISO 6222 |

**Acc. to** EN ISO 16266:2008 (replaces EN ISO 12780:2002), EN ISO 6222:1999, ISO 7899-2:2000, EN ISO 9308-1:2000, EN ISO 7937:2004

# Hygiene Monitoring

In recent years, the prevention of infection, environmental-, residential- and communal hygiene have become very important even in day-to-day life. Today, hygiene monitoring equipment is installed, required and, in some cases, already prescribed by law in institutions, facilities and a variety of other areas. These include hospitals, rehabilitation clinics, ambulance services, blood donor services, drinking water supply systems, public swimming baths, sports facilities, schools, public offices, companies, hotels, gastronomy and canteens, food retailing, food-producing companies and ports.

The main emphasis of hygiene monitoring is on checking the results of cleaning and decontamination processes, e.g. in-house monitoring of food production and processing, determining the hygiene status of kitchens, sports facilities and sanitary facilities, checking the contamination status of air conditioning systems for the protection of employees and customers, and raising awareness of hygiene problems during training.



Roth offers a wide range of hygiene monitoring products which are quick and easy to use even for novices.

- Easy and safe handling - also for laymen
- Simple interpretation
- Storage and transport at room temperature
- Suitable for hygiene monitoring and contamination survey wherever needed, for schooling and student's courses

## Rotitest® Protein

**Rotitest® Bio Analysis**

Protein detection system for rapid control of surfaces after the cleaning process.
Protein quick test
Storage temp.: +20 °C

**Warning** H226

- Most simple handling
- Result in 2 mins. maximum
- Definite interpretation through colour shift
- Well suitable for laymen

Rapid and simple test system for detection of protein contamination on surfaces. Optimal for hygiene control and testing of cleaning efficiency of table tops, sales counters, handles etc.
This Rotitest® Protein is very easy to apply: Using the integrated swab the respective surface is probed; pressing of the lid automatically drips the detection solution onto the swab head. Interpretation is simple due to the distinct colour shift from yellow-orange to dark green-blue. Results are available in 2 mins. maximum.

Each package contains simple-to-follow instructions-for-use.

Store at 15-25 °C protected from light. Do not freeze.
Suitable for testing of any surface.



**Figure:**
Colour shift to dark green-blue caused by presence of proteins.

| | | |
|---|---|---|
| **4803.1** | 20 swabs | 90,20 € |

# Swab Tests

**Please note:**
The Rotitest® systems provide **non-quantitative data only**, and aren't equipped to measure any contamination magnitude.



ready-to-use S

## Rotitest® Listeria

**Rotitest® Bio Analysis**

Detection system for exclusion, or affirmation, of contamination by listeriae.

Storage temp.: +20 °C

- Most simple handling
- Definite interpretation through colour shift
- Well suitable for laymen

Simple test system for detection, or exclusion, of listeriae contamination on surfaces. Optimal for control and minimisation of the contamination risk caused by *Listeria ssp.*, particularly *L. monocytogenes*.
This Rotitest® Listeria is very easy to apply: Using the integrated swab the respective surface is probed and the swab is firmly pressed into the sterile nutrient medium. After incubation for 24-48 hours (37 °C) a distinct blackening of the medium indicates the presence of listeriae, hence the contamination of the respective surface.
Each package contains simple-to-follow instructions-for-use.
Note: This test system only allows exclusion, or affirmation, of a listeriae contamination per se. Quantitation is not possible.




**Figure:**
Colour shift to black caused by presence of listeria.
Store at 5-25 °C. Do not freeze.
Suitable for testing of any surface.

**Type analysis:**

| | |
|---|---|
| Appearance (nutrient medium) | brown |
| Sterility test | complies |
| Growth of bacterial test strains | complies |

**4805.1** 25 swabs 126,35 €



ready-to-use S

## Rotitest® Coliform

**Rotitest® Bio Analysis**

Detection system for exclusion, or affirmation, of contamination by coliforms.

Storage temp.: +20 °C

- Most simple handling
- Definite interpretation through colour shift
- Well suitable for laymen

Simple test system for detection, or exclusion, of coliform contamination on surfaces. Optimal for hygiene monitoring and for minimisation of the contamination risk caused by coliforms in general., particularly *E. coli*.
This Rotitest® Coliform is very easy to apply: Using the integrated swab the respective surface is probed and the swab is firmly pressed into the sterile nutrient medium. After incubation for 18-24 hours (37 °C) a distinct colour shift of the medium from purple to yellow indicates the presence of coliforms, hence the contamination of the respective surface.
Each package contains simple-to-follow instructions-for-use.
Note: This test system only allows exclusion, or affirmation, of a coliform contamination per se. Quantitation is not possible.




**Figure:**
Colour shift to yellow-orange caused by presence of coliforms.
Gas formation hints to presence of *E. coli*.
Store at 16-26 °C. Do not freeze.
Suitable for testing of any surface.

**Type analysis:**

| | |
|---|---|
| Appearance (nutrient medium) | red-brown |
| Sterility test | complies |
| Growth of bacterial test strains | complies |

**4806.1** 25 swabs 126,35 €

▶ Small incubator Heratherm IMC18 see p. 970
▶ Cultura® M mini incubator see page 969

# ATP Measurement with a System: Lumitester plus LuciPac®




## Lumitester PD30

Made by Kikkoman
Easy-to-use, lightweight luminometer for ATP measurement. For reliable monitoring of liquids, dry and wet surfaces as part of hygiene control in the manufacturing sector, in the foodstuffs and animal feed sector, in patients- and health care, in gastronomy and trade, in training and in many other areas.

- Lightweight and easy-to-use
- Fast and easy handling
- Highly sensitive, precise measurement of ATP and AMP
- Ready for use after 8 seconds
- Auto-calibration
- Definition of own limit values is possible
- Data transfer via USB to computer
- Documentation and analysis software (Excel-based) included

NEW with Lumitester PD30:
- 8 language display options
- Data analysis software allows to match the testing mode to the particular measurement situation
- Stand-up soft case included as accessory

**Technical specifications:**

| | |
|---|---|
| Measurement duration | 10 seconds |
| Display | LCD |
| Calibration | Auto-calibration |
| Port | USB |
| Temperature range | 5 to 40 °C |
| Measurement date | Internal date and time |
| Data output | RLU (Relative Light Units) |
| Data memory | 2000 analyses |
| Power supply | 2 x AA alkaline cells or 2 x nickel-metal hybrid batteries |
| Outer dimensions (W x H x L) | 65 x 32 x 175 mm |
| Weight | 235 g (excluding batteries) |

**Mechanism:** Both ATP (adenosine triphosphate) and the more stable form AMP (adenosine monophosphate) are found in all living cells and, therefore, provide an exact and quantitative marker for the presence of bacteria, fungi or food residue. An enzyme/substrate complex in the LuciPac® Pen sampling tube reacts with both ATP *and* AMP to release bioluminescence whose intensity correlates directly with the quantity of ATP/AMP present. The Lumitester PD30 fully converts this bioluminescence into a measurement result and is, therefore, the most sensitive measuring system available today.

Thus, liquids and surfaces can be quickly and easily tested for contamination by foodstuffs and microorganisms using the Lumitester PD30 and the LuciPac® Pen sampling pen. Within approximately 30 seconds, the Lumitester PD30 can provide information on hygiene status or the efficiency of cleaning and disinfection procedures. The system is easy and safe to operate, even by non-professionals. Simply insert the sampling tube and close the unit. Then press the *Enter* button, and the measurement result will be displayed within 10 seconds.






Suitable for use with LuciPac® Pen Aqua (Art. No. NC58) for monitoring liquids and with LuciPac® Pen (Art. No. NC59) for the analysis of surfaces.

| Art. No. | Pack Qty | € |
|---|---|---|
| **NC57.1** | 1 | 1601,75 |

Suitable for monitoring of circulating water in **evaporative cooling systems** by measuring ATP (**VDI 2047**).

**Hygiene** (greek ύγιεινή τέχνη [hygieiné téchne] = conducive to health [art])
The word "hygiene" is a collective term applied to all measures for the prevention of infectious diseases and the spread thereof as well as for the preservation of health.
Hygiene is often used incorrectly as a synonym for cleanliness, which, however, represents only a small part of hygiene. On the contrary, hygiene is the science of applying measures for the protection of health.

**Instructions for use**
can be found on the Internet next to the product description.



## LuciPac® Pen

**Kikkoman for hygiene control**

For testing for the contamination of surfaces by ATP/AMP measurement using Lumitester PD20 and PD30.

Storage temp.: +4 °C

For reliable monitoring of dry and wet surfaces in the manufacturing sector, in the foodstuffs and animal feed sector, in patients- and health care, in gastronomy and trade, in training and in many other areas.

- Quick and easy sampling
- Easy and quick measurement within seconds
- Sensitive and reproducible measurement

Using the LuciPac® Pen sampling pen, surfaces can be tested easily and quickly for contamination by bacteria, fungi and food residue. Organic contamination is indicated by the presence of ATP or AMP on these surfaces. An enzyme/substrate complex in the LuciPac® Pen sampling tube reacts with ATP and AMP to produce bioluminescence whose intensity correlates directly with the amount of ATP/AMP present. The Lumitester PD20 or PD30 then determines the bioluminescence as a direct measure of original contamination.
The unit is easy to operate, even by non-professionals. Just moisten the swab and swipe it across the surface. Then put the swab back into the tube and push it down into the reaction chamber. Shake the tube until the reagents are released and measure the bioluminescence in the Lumitester PD20 or PD30.







20 LuciPac® Pens each are packed in a resealable aluminium bag.
Store in a dark place.

| | | | |
|---|---|---|---|
| **NC59.1** | 20 pieces | Aluminium bag | 96,65 € |
| **NC59.2** | 100 pieces | Aluminium bag | 413,90 € |



## LuciPac® Pen Aqua

**Kikkoman for hygiene control**

For testing for the contamination of liquids by ATP/AMP measurement using Lumitester PD20 and PD30.

Storage temp.: +4 °C

For reliable monitoring of liquids, e.g. contamination control of water and wastewater.

- Quick and easy sampling
- Exact sample volumes of 150 µl
- Easy and quick measurement within seconds
- Sensitive and reproducible measurement

Using the LuciPac® Pen Aqua sampling pen, liquids can be tested quickly and easily for organic contamination. The organic contamination of liquids, e.g. by bacteria, is indicated by the presence of ATP or AMP in these samples. An enzyme/substrate complex in the LuciPac® Pen Aqua sampling tube reacts with ATP and AMP to produce bioluminescence whose intensity correlates directly with the amount of ATP/AMP present. The Lumitester PD20 or PD30 then determines the bioluminescence as a direct measure of original contamination. The sampling comb ensures precise sampling of 150 µl with a deviation of ≤2 %. Test results are, therefore, highly reproducible and comparable.
The unit is easy to operate, even by non-professionals. Just immerse the sampling comb into the liquid. Then put the comb back into the tube and push it down into the reaction chamber. Shake the tube until the reagents are released and measure the bioluminescence in the Lumitester PD20 or PD30.
20 LuciPac® Pens Aqua each are packed in a resealable aluminium bag.
Store in a dark place.

| | | | |
|---|---|---|---|
| **NC58.1** | 20 pieces | Aluminium bag | 96,65 € |
| **NC58.2** | 100 pieces | Aluminium bag | 413,90 € |

Please note our **Technical Information Brochure** on the Internet next to the products:

**Lumitester PD30**
Function and use (EN)

▶ Dip- and contact agar for detection of Legionells in water see page 1362



## Lumitester LED Control Swab

Made by Kikkoman
The Lumitester LED control swab, once charged, produces a stable, exactly defined and calibrate light signal that can be used check the functioning of the Lumitester PD20 or PD30. The product illustration shows the LED control swab (back) in comparison with a LuciPac® Pen sampling tube.

Immediately before checking the Lumitester, connect the LED control swab to the power supply using the supplied charging cable and charge for 30 to 60 seconds. Then disconnect the LED control swab from the power supply and insert the LuciPac® Pen sampling tube into the cleaned measuring chamber of the Lumitester. The luminous energy emission is measured by pressing the *Enter* button.



Comparing the measurement result with the printed information indicates the condition of the unit. If the nominal value of 80 to 120 % is achieved, the Lumitester is in perfect working order. If not, please contact us to have the Lumitester and control swab recalibrated.



| Art. No. | Pack Qty | € |
|---|---|---|
| **NC60.1** | 1 | 1052,45 |

# Monitoring of Pasteurised Milk




## Rotitest® Phosphatase paper

ready-to-use

**Rotitest® Bio Analysis**

For detection of phosphatase in Milk.

Storage temp.: +4 °C

Test paper for efficiency monitoring of milk pasteurisation.
The test paper, impregnated with detection reagent, is cut at one end and allowed to soak by dipping it into a sample of the milk to be analysed. During incubation at 37 °C for 2 hours in maximum, a yellow colouring shows presence of Alkalic Phosphatase, hence the non-efficient pasteurisation of the milk.



Sensitivity of the phosphatase test system is 0.5 % raw milk in pasteurised milk. This test system does not provide quantitative data.
One package contains 10 single welded test papers, impregnated with detection reagent.

**Type analysis:**

Paper colour. ..... white
Colour shift to yellow. ..... complies
Sensitivity. ..... complies

| | | |
|---|---|---|
| **8470.1** | 10 pieces | 20,35 € |

# EC Blue System

## For qualitative and quantitative detection of Coliforms, and *E. coli* in particular, in water.

- Fast - results in just 24 hours
- Simple - easy to handle, even by non-professionals
- Safe - easy-to-interpret colour reaction
- Sensitive - 1 cfu/100 ml detection limit
- Efficient - simultaneous analysis of coliforms and *E. coli*
- Also suitable for chlorinated and turbid water

Quick and safe process for the analysis of coliform bacteria in general, and *E. coli* specifically in water. The test is also suitable for analysis of turbid water samples and water samples containing suspended matter. Bacteria stressed by chlorinated water can generally also be verified.
The formation of a blue to blue-green colour after incubation at 35 °C indicates the presence of coliform bacteria in the water. This colour change is due to an enzymatic colour reaction of the coliform-specific galactosidase with the chromogenic substrate X-Gal.



The presence of *E. coli* can easily be detected by the occurrence of fluorescence under UV light (see EC-Blue Mini UV lamp Art. No. KK49.1). Approximately 95 % of all *E. coli* strains produce the enzyme ß-glucuronidase, which reacts with an enzyme substrate contained in EC Blue to release a fluorescent dye.



Quantification is possible using EC Blue Quant/MPN (Art. No. 0199.1).



### EC Blue 100P

**NISSUI for water analysis**
Pour 100 ml of the test water into a sterile container and dissolve the contents of a single-dose sachet of EC Blue 100P powder in it.
The EC Blue Comparator for 100 ml (Art. No. 0349.1) is available for the comparison of own samples with a slightly positive control.
EC Blue 100P saves space and cost thanks to its practical packaging in a blister pack. Store protected from light.
Dissolve a single-dose sachet of analysis reagent in 100 ml of test water.

| | | | |
|---|---|---|---|
| **0202.1** | 100 pieces | plastic | 428,95 € |



### EC Blue 100

**NISSUI for water analysis**
Add 100 ml of the test water to one bottle of EC Blue 100 and dissolve the powdered contents in the test water.
The EC Blue Comparator for 100 ml (Art. No. 0349.1) is available for the comparison of own samples with a slightly positive control.
EC Blue 100 saves time and preliminary work because the reagent mixture is provided in sterile test bottles for direct use. Store protected from light.
Add 100 ml sample water.

| | | | |
|---|---|---|---|
| **0209.1** | 80 pieces | plastic | 618,15 € |



### EC Blue 10

**NISSUI for water analysis**
Add 10 ml of the test water to one bottle of EC Blue 10 and dissolve the powdered contents in the test water.
The EC Blue Comparator for 10 ml (Art. No. 0349.2) is available for the comparison of own samples with a slightly positive control.
EC Blue 10 saves time and preliminary work because the reagent mixture is provided in sterile test bottles for direct use. Store protected from light.
Add 10 ml sample water.

| | | | |
|---|---|---|---|
| **7754.1** | 150 pieces | plastic | 536,45 € |




## EC Blue Comparator

**NISSUI for water analysis**

1 bottle of *E. coli* positive control for EC Blue system, colour intensity "1 cfu".

Storage temp.: +4 °C

Positive control for the EC Blue System, colouration of 1 cfu (colony forming unit). The product illustration shows the comparator for 100 ml in comparison with 5 negative samples.
The presence of *E. coli* can easily be detected by the occurrence of fluorescence under UV light (see EC-Blue Mini UV lamp Art. No. KK49.1). Approximately 95 % of all *E. coli* strains produce the enzyme ß-glucuronidase. This enzyme hydrolyses the enzyme substrate MUG and thus releases a fluorescent dye that can be detected with UV light.



Store protected from light.

| | | | |
|---|---|---|---|
| **0349.2** | 10 ml | plastic | 138,70 € |
| **0349.1** | 100 ml | plastic | 160,20 € |




## EC Blue Mini UV lamp

By Fujitsu
Small, handy UV lamp for quick and simple detection of *E. coli* bacteria in EC Blue assays.

**Technical specifications:**

| | |
|---|---|
| Wave length | 365 nm |
| Temperature range | 0 to 40 °C |
| Outer dimensions (W x H x L) | 52 x 21 x 160 mm |
| Demand | 4 watt |
| Power supply | 4 x AA alkaline cells |
| Weight | 100 g (excluding batteries) |

The presence of *E. coli* can easily be detected by the occurrence of fluorescence under UV light. Approximately 95 % of all *E. coli* strains produce the enzyme ß-glucuronidase, which reacts with an enzyme substrate contained in EC Blue to release a fluorescent dye.

| Art. No. | Pack Qty | € |
|---|---|---|
| **KK49.1** | 1 | 128,90 |



## EC Blue Quant/MPN

By NISSUI
For fast and easy quantification of coliform bacteria according to MPN (Most Probable Number Method), e.g. according to DIN EN ISO 9308-2:2014-06. Optimised for use with EC Blue 100 and 100P.

- Reproducible, precise results
- Detection limit 1 cfu/100 ml
- No pre-dilution required
- Test result after 24 hours
- Simultaneous quantitation of coliforms and *E. coli*
- Also suitable for chlorinated and turbid water

The unique, innovative design of the EC BlueQuant/MPN allows rapid and reliable processing of MPN tests – simple to operate and without any additional equipment, except an incubator. The method is based on the standardised MPN method that uses at least three different dilution levels in increments of 10 and 5 compartments per dilution. Testing with the EC BlueQuant/MPN does not require a series of dilutions. When pouring the mixture, due to the special layout, the compartments are filled in such a way as to ensure correct serial dilution. After incubating the sample for 24 hours at about 35 °C, the result can be read off the device and converted to cfu/ml using ISO standard tables (e.g. DIN EN ISO 9308-2:2014-06).



Presence of *E. coli* can easily be detected by the occurrence of fluorescence under UV light (see EC-Blue Mini UV lamp Art. No. KK49.1). Approximately 95 % of all *E. coli* strains produce the enzyme ß-glucuronidase, which reacts with an enzyme substrate contained in EC Blue to release a fluorescent dye.



Detection limit: 1 cfu/100 ml for coliforms and *E. coli*.
The set consists of 18 EC Blue Quant/MPN chambers including lids.

| Size (L x W x H) | Art. No. | Pack Qty | € |
|---|---|---|---|
| 11 x 9 x 5 cm | **0199.1** | 18 | 349,40 |

# Roti®-DipSlides

## Sterile dip slides with solid, ready-made culture medium for easy microbiological analysis of solutions and surfaces.

- **2 in 1:** DipSlide and contact agar
- Very easy application
- Reliable assay and easy interpretation
- Suitable for determination of the microbiological status and for hygiene control in a variety of domains
- Detailed Instructions-for-use included

### Examples of use:



Dipping into liquid



Probing of surface

Roti®-DipSlides are made of a flexible plastic tongue which is coated with solid culture medium on both sides. Following dipping into the solution to be tested or inoculation by pressing to a surface, the slide is placed back into the sterile tube and incubated. Total area for analysis is 8 $cm^2$ per side. Ø tube 2,5 cm.
Please note: Larger quantities are produced freshly. Hence, longer delivery times may occur.

| Detection of | Agar 1 | Agar 2 | Art. No. |
|---|---|---|---|
| whole germs + legionells | Plate Count Agar (PC) | Legionella Agar | 2493 |
| whole germs + enterobacteria | Plate Count Agar (PC) | Violet Red Bile Agar with Glucose (VRBD) | 2924 |
| whole germs + coliforms | Plate Count Agar (PC) | Violet Red Bile Agar with Lactose (VRB) | 2925 |
| whole germs + yeast/moulds | Plate Count Agar (PC) | Bengal Red Agar* (RBC) | 2926 |
| whole germs + yeast/moulds | Caso Agar with TTC | Bengal Red Agar (RBC) with antibiotics | 3934 |
| whole germs | Plate Count Agar (PC) | Plate Count Agar (PC) | 2927 |
| whole germs after disinfection | D/E Neutralizing Agar | D/E Neutralizing Agar | 8023 |
| whole germs + whole germs after disinfection | Plate Count Agar (PC) | Caso Agar with Lecithin/ Polysorbate 80 | 8715 |
| whole germs | Nutrient Agar | Nutrient Agar with TTC | 2837 |
| enterobacteria | Violet Red Bile Agar with Glucose (VRBD) | Violet Red Bile Agar with Glucose (VRBD) | 2954 |
| yeast/moulds | Sabouraud 4 % Glucose Agar* | Sabouraud 4 % Glucose Agar* | 2956 |
| urinary tract bacteria + enterobacteria/coliforms | CLED Agar | MacConkey Agar | 2957 |
| enterobacteria + pseudomonads | MacConkey Agar | Cetrimide Agar | 8045 |

*with chloroamphenicol



ready-to-use

S

### Roti®-DipSlide D/Eneutral

**ready-to-use, sterile, for microbiology**

For total germ count on surface after disinfection.
Contains 5 neutralizers.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Sodium bisulfite, Sodium thioglycolate, Sodium thiosulphate, Lecithin and Polysorbate 80 (Tween® 80) neutralise the growth-inhibiting impact of disinfectants and preservatives.
**Both sides (D/Eneutral):** D/E Neutralizing Agar (Art. No. 8850) for total germ count after disinfection. For hygiene monitoring.

Expiration time on request.
Do NOT freeze!

**Formulation:**
Agar both sides (D/Eneutral):

| | |
|---|---|
| Dextrose | 10 g/l |
| Lecithin | 7 g/l |
| Sodium thiosulphate | 6 g/l |
| Casein peptone | 5 g/l |
| Polysorbate 80 | 5 g/l |
| Yeast extract | 2,5 g/l |
| Sodium bisulfite | 2,5 g/l |
| Sodium thioglycolate | 1 g/l |
| Bromocresol purple | 0,02 g/l |
| Agar | 15 g/l |
| pH value | 7,6 ±0,2 |
| Colour | purple |
| Growth of test strains | complies |

| | | | |
|---|---|---|---|
| **8023.1** | 20 slides | box | 61,85 € |





- ▶ DipSlide Incubator EM4 see page 1366
- ▶ Other incubators see page 95269
- ▶ Convenient for Disposal: Benchtop autoclave see page 905



## Roti®-DipSlide PCA/TSA-Letheen

**ready-to-use, sterile, for microbiology**

For total germ count in liquids or on surfaces. Suitable for analysis of cosmetics and of preservative containing products or after disinfection. Contains two neutralizers.

Storage temp.: +4-15 °C • Transport temp.: cooled

**Warning** H319

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Lecithin and Polysorbate 80 (Tween® 80) neutralise the growth-inhibiting impact of disinfectants and preservatives.
**Side 1 (PCA):** Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.
**Side 2 (TSA-Letheen):** CASO Agar with Lecithin/Polysorbate 80 (Art. No. 8848) for detection of microorganisms from cosmetics and disinfected surfaces.

Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar side 1 (PCA):

| | |
|---|---|
| Casein peptone | 5,0 g/l |
| Glucose | 1,0 g/l |
| Yeast extract | 2,5 g/l |
| Agar | 15,0 g/l |
| pH value | 7,0 ± 0,2 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |

Agar side 2 (TSA-Letheen):

| | |
|---|---|
| Pancreatic digest of casein | 15,0 g/l |
| Soy peptone (papain hydrolysate) | 5,0 g/l |
| Sodium chloride (NaCl) | 5,0 g/l |
| Triton® X-100 | 1,0 g/l |
| Lecithin | 1,0 g/l |
| Polysorbate 80 | 5 g/l |
| Agar | 15,0 |
| pH-value | 7,2 ±0,2 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |

| | | | |
|---|---|---|---|
| **8715.1** | 20 slides | box | 61,85 € |

Roti®-DipSlide PCA/TSA-Letheen is suitable for 14-day controls of **evaporative cooling systems**, **cooling towers** and **wet separators** (**42. Federal Emission Control Act (BImschV), VDI guideline 2047**).

| Neutraliser | Active substance |
|---|---|
| Polysorbate 80 + Lecithin | Amphotensides, benzamidine, chlorhexidine (guanidine), quaternary ammonium compounds, substituted phenols |
| Sodium bisulphite | Aldehydes, glutaraldehyde |
| Natrium thioglycolate | Isothiazoline (Kathon CG), mercury compounds |
| Sodium thiosulfate | Iodine and iodophore, chlorine |

Sources: Walhäuser (1988), APHA (2001), AAMI (1984)



## Roti®-DipSlide PCA/Legionella

**ready-to-use, sterile, for microbiology**

For total germ count and for detection of legionells in solution or on surface.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Roti®-DipSlide PCA/Legionella is suitable for supervision of units for heating of drinking water (Drinking Water Regulations), for surveillance of ventilation and air conditioning, as well as for monitoring of the micro-biological status of evaporative cooling systems.
**Side 1 (PCA):** Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.
**Side 2 (Legionella):** Legionella Agar (acc. to ISO 11731-2) (Art. No. CL48) for selective detection of legionells.

Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar side 1 (PCA):

| | |
|---|---|
| Casein peptone | 5 g/l |
| Yeast extract | 2,5 g/l |
| Glucose | 1 g/l |
| Agar | 15 g/l |
| pH value | 7,0 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |

Agar side 2 (Legionella):

| | |
|---|---|
| Yeast extract | 10 g/l |
| Charcoal activated | 2 g/l |
| GVPC selective additive | complies |
| Growth additive | complies |
| Agar | 13 g/l |
| pH-value | 6,9 |
| Colour | black |
| Growth of test strains | complies |

| | | | |
|---|---|---|---|
| **2493.1** | 20 pieces | box | 61,85 € |

Roti®-DipSlide PCA/Legionella is suitable for supervision of units for **heating of drinking water** (**Drinking Water Regulations**), for surveillance of **ventilation and air conditioning**, as well as for monitoring of the microbiological status of **evaporative cooling systems**.

**Inactivation of anti-microbiological products:**

Disinfectants and preservatives have the task of preventing the growth of, or killing bacteria. However, there are particularly resistant bacteria that can survive anti-microbe agents, or even survive in the active substance.
To determine the bacterial count, the bactericide or fungicide effect is neutralized by so-called uninhibitors. Thus, media containing uninhibitors can be used to check the effectiveness of the disinfectants and preservatives.



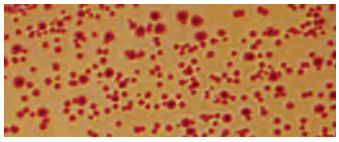
## Roti®-DipSlide CASO-TTC/RBCenr

**ready-to-use, sterile, for microbiology**

For total germ count and for detection of yeasts and moulds in solution or on surface. Suitable for analysis of water-mixable cooling lubricants, air conditions, water-soluble paint, and cosmetics.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
**Side 1 (CASO-TTC):** Tryptic Soy Agar (CASO) (Ph. Eur.) (Art. No. X937) for reliable total germ count.
**Side 2 (RBCenr):** enriched Bengal Red Agar (with antibiotics) for detection of yeasts and moulds.



*E. coli* (wild type) on agar supplemented with TTC (example).

Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar side 1 (CASO-TTC):

| | |
|---|---|
| Caseine peptone | 15 g/l |
| Soja peptone | 5 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| TTC | 0,02 g/l |
| Agar | 15 g/l |
| pH value | 7,3 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |

Agar side 2 (RBCenr):

| | |
|---|---|
| Meat peptone | 5 g/l |
| Casein peptone | 5 g/l |
| Glucose | 40 g/l |
| Bengal red | 0,05 g/l |
| Trimethoprim | 0,03 g/l |
| Gentamycin | 0,03 g/l |
| Agar | 15 g/l |
| pH-value | 7,2 |
| Colour | intense pink |
| Growth of test strains | complies |

| | | | |
|---|---|---|---|
| **3934.1** | 20 pieces | box | 61,85 € |

Roti®-DipSlide CASO-TTC/RBCenr is suitable for analysis of **water-mixable cooling lubricants**, **air conditions**, **water-soluble paint**, and **cosmetics**.



## Roti®-DipSlide PCA/RBCplus

**ready-to-use, sterile, for microbiology**

For total germ count and for detection of yeasts and moulds in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
**Side 1 (PCA):** Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.
**Side 2 (RBCplus):** Bengal Red Agar (with chloroamphenicol) (Art. No. AE24) for detection of yeasts and moulds.

Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar side 1 (PCA):

| | |
|---|---|
| Casein peptone | 5 g/l |
| Yeast extract | 2,5 g/l |
| Glucose | 1 g/l |
| Agar | 15 g/l |
| pH value | 7,0 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |

Agar side 2 (RBCplus):

| | |
|---|---|
| Peptone | 5 g/l |
| Glucose | 10 g/l |
| Potassium phosphate | 1 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,5 g/l |
| Chloroamphenicol | 0,1 g/l |
| Bengal red | 0,05 g/l |
| Agar | 15 g/l |
| pH-value | 7,2 |
| Colour | intense pink |
| Growth of test strains | complies |

| | | | |
|---|---|---|---|
| **2926.1** | 20 slides | box | 61,85 € |

**Application:**

- Remove carrier from sterile vial. Screw-cap serves automatically as holder.
- Press agar gently onto surface or immerse in liquid
- Replace carrier into vial and close cap
- Incubate vial with carrier at a temperature suitable for the bacteria

**Instructions for use**
can be found on the Internet next to the product description.



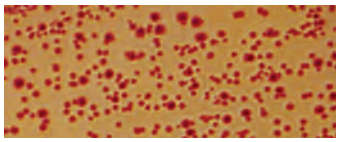
## Roti®-DipSlide Nutrient-TTC

**ready-to-use, sterile, for microbiology**

For total germ count in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
**Side 1 (Nutrient):** Nutrient agar for total germ count
**Side 2 (Nutrient-TTC):** Nutrient agar with TTC for reliable detection of all living micro-organisms by formazan caused staining (red) of all colonies.



*E. coli* (wild type) on agar supplemented with TTC (example).

Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar side 1 (Nutrient):

| | |
|---|---|
| Meat peptone | 5 g/l |
| Meat extract | 3 g/l |
| Agar | 12 g/l |
| pH value | 7,0 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |

Agar side 2 (Nutrient-TTC):

| | |
|---|---|
| Meat peptone | 5 g/l |
| Meat extract | 3 g/l |
| TTC | 0,05 g/l |
| Agar | 12 g/l |
| pH-value | 7,0 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |

| | | | |
|---|---|---|---|
| **2837.1** | 20 pieces | box | 61,85 € |



## Roti®-DipSlide PCA

**ready-to-use, sterile, for microbiology**

For total germ count in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
**Both sides (PCA):** Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.

Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar both sides (PCA):

| | |
|---|---|
| Casein peptone | 5 g/l |
| Yeast extract | 2,5 g/l |
| Glucose | 1 g/l |
| Agar | 15 g/l |
| pH value | 7,0 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |

| | | | |
|---|---|---|---|
| **2927.1** | 20 slides | box | 61,85 € |



## Roti®-DipSlide Sab4plus

**ready-to-use, sterile, for microbiology**

For detection of yeasts and moulds in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
**Both sides (Sab4plus):** Sabouraud 4 % Glucose Agar (with chloro-amphenicol) (Art. No. X933) for detection of yeasts and moulds.
Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar both sides (Sab4plus):

| | |
|---|---|
| Meat and casein peptone | 10 g/l |
| Glucose | 40 g/l |
| Chloroamphenicol | 0,5 g/l |
| Agar | 15 g/l |
| pH value | 5,6 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |

| | | | |
|---|---|---|---|
| **2956.1** | 20 slides | box | 61,85 € |

## Important information on refrigerated transports

All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
**Additional costs** resulting from such, **will be invoiced** (further information on request).

**Please note:**
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.



## Roti®-DipSlide MacCon/Cetr

**ready-to-use, sterile, for microbiology**

For detection of enterobacteria like salmonellae or shigellae and pseudomonads in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
Roti®-DipSlide MacCon/Cetr is suitable for the supervision of cooling and process water as well as of pool water (DIN EN ISO 16266) and for monitoring of the microbiological status of evaporative cooling systems and cooling towers (VDI guideline 2047, Federal Environment Ministry (BImSchG)).
**Side 1 (MacCon):** MacConkey Agar (Art. No. X922) for detection of enterobacteria/coliforms like salmonellae or shigellae.
**Side 2 (Cetr):** Cetrimide Agar (Art. No. X918) for detection of pseudomonads.

Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar side 1 (MacCon):

| | |
|---|---|
| Gelatine peptone. | 17,0 g/l |
| Meat and casein peptone. | 3,0 g/l |
| Lactose monohydrate. | 10,0 g/l |
| Sodium chloride (NaCl). | 5,0 g/l |
| Bile salt (Cholate). | 1,5 g/l |
| Neutral red. | 0,03 g/l |
| Crystal Violet. | 0,001 g/l |
| Agar. | 13,5 g/l |
| pH value. | 7,1 ± 0,2 |
| Colour. | violet-red |
| Growth of test strains. | complies |

Agar side 2 (Cetr):

| | |
|---|---|
| Pancreas hydrolysate made from gelatin. | 20,0 g/l |
| Magnesium chloride. | 1,4 g/l |
| Potassium sulphate. | 10,0 g/l |
| Cetrimide. | 0,3 g/l |
| Agar. | 13,6 g/l |
| pH-value. | 7,2 ±0,2 |
| Colour. | opaque white |
| Growth of test strains. | complies |

| | | | |
|---|---|---|---|
| **8045.1** | 20 slides | box | 61,85 € |



## Roti®-DipSlide CLED/MacCon

**ready-to-use, sterile, for microbiology**

For detection of bacteria of the urinary tract and of enterobacteria/Coliforms in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
**Side 1 (CLED):** CLED Agar (Art. No. 2835) for detection of bacteria of the urinary tract.
**Side 2 (MacCon):** MacConkey-Agar (Ph. Eur.) (Art. No. X922) for detection of enterobacteria/Coliforms.

Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar side 1 (CLED):

| | |
|---|---|
| Casein peptone. | 4 g/l |
| Gelatine peptone. | 4 g/l |
| Beef extract. | 3 g/l |
| Lactose. | 10 g/l |
| L-Cystine. | 0,128 g/l |
| Bromothymol blue. | 0,02 g/l |
| Agar. | 15 g/l |
| pH value. | 7,3 |
| Colour. | green |
| Growth of test strains. | complies |

Agar side 2 (MacCon):

| | |
|---|---|
| Gelatin peptone (Pancreas hydrolysate). | 17 g/l |
| Meat and casein peptone. | 3 g/l |
| Lactose monohydrate. | 10 g/l |
| Bile salt (Cholate). | 1,5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Neutral red. | 0,03 g/l |
| Crystal Violet. | 0,001 g/l |
| Agar. | 13,5 g/l |
| pH-value. | 7,1 |
| Colour. | violet-red |
| Growth of test strains. | complies |

| | | | |
|---|---|---|---|
| **2957.1** | 20 slides | box | 61,85 € |

▶ DipSlide incubator EM4 see page 1366

**For easy interpretation of results, use the following table:**

| No. of colonies | Result | Interpretation |
|---|---|---|
| 0 | Negative | No contamination |
| 1-10 | Weakly positive | Weak contamination |
| 11-20 | Positive | Low contamination |
| 21-100 | Strongly positive | High contamination |
| >100 | Highly positive | Very high contamination |

**Detection limit is $10^2$ cfu/ml solution assayed.**
For detailed instructions on interpretation see instruction-for-use.

## Roti®-DipSlide PCA/VRB

**ready-to-use, sterile, for microbiology**

For total germ count and for detection of Coliforms in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
**Side 1 (PCA):** Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.
**Side 2 (VRB):** Violet Red Bile Agar with Lactose (Art. No. X940) for detection of Coliforms.

Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar side 1 (PCA):

| | |
|---|---|
| Casein peptone | 5 g/l |
| Yeast extract | 2,5 g/l |
| Glucose | 1 g/l |
| Agar | 15 g/l |
| pH value | 7,0 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |

Agar side 2 (VRB):

| | |
|---|---|
| Yeast extract | 3 g/l |
| Pancreas hydrolysate made from gelatin | 7 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Bile salts | 1,5 g/l |
| Lactose | 10 g/l |
| Neutral red | 0,03 g/l |
| Crystal Violet | 0,002 g/l |
| Agar | 15 g/l |
| pH-value | 7,4 |
| Colour | purple-red |
| Growth of test strains | complies |

| | | | |
|---|---|---|---|
| **2925.1** | 20 slides | box | 61,85 € |

## Roti®-DipSlide PCA/VRBD

**ready-to-use, sterile, for microbiology**

For total germ count and for detection of enterobacteria in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
**Side 1 (PCA):** Plate Count Agar (acc. to APHA, ISO 4833:2003) (Art. No. X930) for total germ count.
**Side 2 (VRBD):** Violet Red Bile Agar with Glucose (Ph. Eur.) (Art. No. X939) for detection of enterobacteria.

Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar side 1 (PCA):

| | |
|---|---|
| Casein peptone | 5 g/l |
| Yeast extract | 2,5 g/l |
| Glucose | 1 g/l |
| Agar | 15 g/l |
| pH value | 7,0 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |

Agar side 2 (VRBD):

| | |
|---|---|
| Yeast extract | 3 g/l |
| Pancreas hydrolysate made from gelatin | 7 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Bile salts | 1,5 g/l |
| Glucose monohydrate | 10 g/l |
| Neutral red | 0,03 g/l |
| Crystal Violet | 0,002 g/l |
| Agar | 15 g/l |
| pH-value | 7,4 |
| Colour | purple-red |
| Growth of test strains | complies |

| | | | |
|---|---|---|---|
| **2924.1** | 20 slides | box | 61,85 € |




## DipSlide incubator EM4

Lightweight, small incubator specially designed for DipSlides. With transparent, easily removable cover for quick insertion and removal of DipSlides. Easy to operate, even for inexperienced users. A stand insert and a thermometer are also supplied. Also usable without a stand for incubation of Petri dishes and contact plates.

**Technical specifications:**

| | |
|---|---|
| Capacity | 23 DipSlides |
| Temperature range | Room temperature to 44 °C |
| Capacity | 4 l |
| Inner dimensions (W x H x D) | 180 x 125 x 180 mm |
| Outer dimensions (W x H x D) | 230 x 180 x 230 mm |
| Weight | 1.5 kg |
| Power supply | 220 V, 25 W |

| Art. No. | Pack Qty. | € |
|---|---|---|
| **KK43.1** | 1 | 461,20 |

## Roti®-DipSlide VRBD

**ready-to-use, sterile, for microbiology**

For detection of enterobacteria in liquids or on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile dip slides with solid culture medium for easy microbiological analysis of solutions and surfaces.
**Both sides (VRBD):** Violet Red Bile Agar with Glucose (Ph. Eur.) (Art. No. X939) for detection of enterobacteria.

Expiration time on request.
Do NOT freeze!

**Formulation:**

Agar both sides (VRBD):

| | |
|---|---|
| Yeast extract | 3 g/l |
| Pancreas hydrolysate made from gelatin | 7 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Bile salts | 1,5 g/l |
| Glucose monohydrate | 10 g/l |
| Neutral red | 0,03 g/l |
| Crystal Violet | 0,002 g/l |
| Agar | 15 g/l |
| pH value | 7,4 |
| Colour | purple-red |
| Growth of test strains | complies |

| | | | |
|---|---|---|---|
| **2954.1** | 20 slides | box | 61,85 € |

# Roti®-ContiPlates

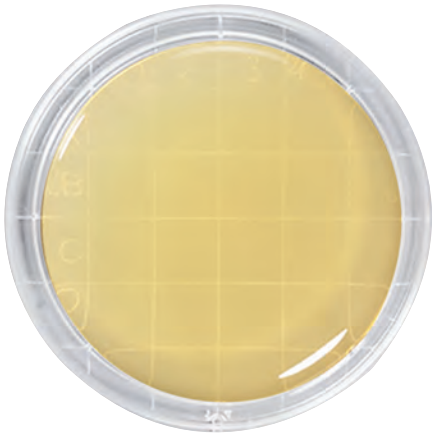
## Sterile culture medium contact plates for the microbiological analysis of surfaces.

### Example of use:



The plate is gently pressed onto the surface for some seconds. Afterwards the plate is closed with the lid and incubated.
Please note: Larger quantities are produced freshly. Hence, longer delivery times may occur.

- Diameter 60 mm
- Very easy application
- Domed agar surface especially suitable for testing specimen surfaces
- Prepared with our tried and tested dehydrated media mixtures
- Grid on the bottom of the plate for easy interpretation
- Each plate can be obtained individually without contaminating the other plates
- Detailed Instructions-for-use included



### Summary Roti®-ContiPlates

| Art. No. | Abbreviation | Agar | Application |
|---|---|---|---|
| 9630 | PCA | Plate-Count-Agar | Whole germs |
| 9631 | VRBD | Violet Red Bile Agar with Glucose | Enterobacteria |
| 9632 | RBC | Bengal Red Agar (with chloroamphenicol) | Yeasts and moulds |
| 9633 | Sab4plus | Sabouraud 4 % Glucose Agar (with chloroamphenicol) | Yeasts and fungi |
| 9634 | TSA-Letheen | CASO Agar with Lecithin/Polysorbate 80 | Whole germs after disinfection |








### Roti®-ContiPlate VRBD

**ready-to-use, sterile, for microbiology**

For detection of enterobacteria on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

Sterile culture medium contact plates for the microbiological analysis of surfaces.
The Violet Red Bile Agar with Glucose (Art. No. X939) is recommended by Pharm. Eur. and ISO 21528 for enumeration of enterobacteria.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Glucose monohydrate. | 10 g/l |
| Gelatine peptone. | 7 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Yeast extract. | 3 g/l |
| Bile salts. | 1,5 g/l |
| Neutral red. | 0,03 g/l |
| Crystal Violet. | 0,002 g/l |
| Agar. | 13 g/l |
| pH value. | 7,4 ±0,2 |
| Colour. | purple-red |
| Growth of test strains. | complies |
| Diameter. | 60 mm |

| | | | |
|---|---|---|---|
| **9631.1** | 30 pieces | box | 61,30 € |



## Roti®-ContiPlate RBC

**ready-to-use, sterile, for microbiology**

For counting yeasts and moulds on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

**Danger** H318

The Bengal Red Agar (with chloroamphenicol) (Art. No. AE24) is recommended for enumeration of yeasts and moulds.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Glucose. | 10 g/l |
| Peptone. | 5 g/l |
| Potassium phosphate. | 1 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,5 g/l |
| Chloroamphenicol. | 0,1 g/l |
| Bengal red. | 0,05 g/l |
| Agar. | 15 g/l |
| pH value. | 7,2 ±0,2 |
| Colour. | intense pink |
| Growth of test strains. | complies |
| Diameter. | 60 mm |

| | | | |
|---|---|---|---|
| **9632.1** | 30 pieces | box | 61,30 € |



## Roti®-ContiPlate PCA

**ready-to-use, sterile, for microbiology**

For total germ count on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Plate Count Agar (Art. No. X930) is recommended by APHA and ISO 4833 for total germ count.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Casein peptone | 5 g/l |
| Yeast extract. | 2,5 g/l |
| Glucose. | 1 g/l |
| Agar. | 15 g/l |
| pH value. | 7,0 ±0,2 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |
| Diameter. | 60 mm |

| | | | |
|---|---|---|---|
| **9630.1** | 30 pieces | box | 61,30 € |



## Roti®-ContiPlate Sab4plus

**ready-to-use, sterile, for microbiology**

For selective detection of yeasts and pathogenic fungi on surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Sabouraud 4 % Glucose Agar (with chloroamphenicol) (Art. No. X933) is recommended for selective isolation of yeasts and pathogenic fungi.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Glucose. | 40 g/l |
| Meat and casein peptone. | 10 g/l |
| Chloroamphenicol. | 0,5 g/l |
| Agar. | 15 g/l |
| pH value. | 5,6 ±0,2 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |
| Diameter. | 60 mm |

| | | | |
|---|---|---|---|
| **9633.1** | 30 pieces | box | 61,30 € |



## Roti®-ContiPlate TSA-Letheen

**ready-to-use, sterile, for microbiology**

For detection of microorganisms on disinfected surfaces.

Storage temp.: +4-15 °C • Transport temp.: cooled

**Warning** H319

The TSA-Letheen Agar (Art. No. 8848) is recommended for detection of microorganisms in presence of preservatives or after disinfection.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Pancreatic digest of casein. | 15 g/l |
| Soy peptone (papain hydrolysate). | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Lecithin. | 1,0 g/l |
| Polysorbate 80. | 5 g/l |
| Triton® X-100. | 1,0 g/l |
| Agar. | 15 g/l |
| pH value. | 7,2 ±0,2 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |
| Diameter. | 60 mm |

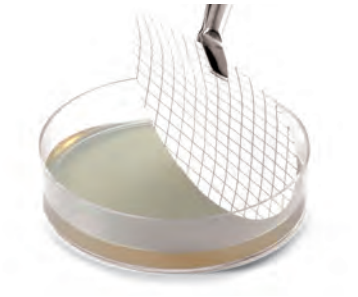
| | | | |
|---|---|---|---|
| **9634.1** | 30 pieces | box | 61,30 € |

# Roti®-Aquatest Plates

## Sterile culture medium plates for the microbiological analysis of liquid samples.

- Diameter 55 mm
- Easy application
- Optimal for membrane filtration method
- Also applicable for the microbiological analysis of samples in general
- Prepared with our tried and tested dehydrated media mixtures
- Detailed instructions-for-use included

The germs of expected low-germ liquid samples are concentrated by membrane filtration. Afterwards, the membrane is placed on top of the medium and incubated.
Using a membrane with a grid helps counting the resulting colonies.



Samples which are expected to have a higher microbiological burden are prepared in a serial dilution. Afterwards, every dilution step is plated and incubated. The number of grown colonies is noted as result.
Please note: Larger quantities are produced freshly. Hence, longer delivery times may occur.

### Summary Roti®-Aquatest Plates

| Art. No. | Abbreviation | Agar | Application |
|---|---|---|---|
| 9640 | PCA | Plate-Count-Agar | Whole germs |
| 9641 | Colichrom | *E. coli* and Coliforms chromogenic Agar | *E. coli* and Coliforms |
| 9642 | YE | Yeast extract Agar | Bacteria, Yeast, Moulds and moulds |
| 9643 | Sab4 | Sabouraud 4 % Glucose-Agar | Yeast and fungi |
| 9644 | R2A | Reasoner's 2A Agar | Heterotrophic bacteria |
| 9646 | Cetr | Cetrimide Agar | *Pseudomonas aeruginosa* |
| 9648 | Strep | Slanetz-Bartley Agar | Faecal streptococci |
| 9649 | mCP | m-CP Agar | *Clostridium perfringens* |
| 9650 | Staph | Mannitol Salt Agar/ Chapman Agar | Pathogenic staphylococci |




### Roti®-Aquatest Plate PCA

**APHA, ISO 4833, ready-to-use, sterile, for microbiology**

For enumeration of the aerobic microbial flora.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Plate Count Agar (Art. No. X930) is recommended by APHA and ISO 4833 for total germ count.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Casein peptone | 5 g/l |
| Yeast extract | 2,5 g/l |
| Glucose | 1 g/l |
| Agar | 14 g/l |
| pH value | 7,0 ±0,2 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9640.1** | 30 pieces | box | 47,85 € |




### Roti®-Aquatest Plate Colichrom

**ready-to-use, sterile, for microbiology**

For detection and enumeration of *E. coli* and other coliforms.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Coliforms chromogenic Agar (Art. No. CL45) is recommended for detection of *E. coli* and other Coliforms.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Sodium chloride (NaCl) | 5 g/l |
| Casein, enzymatically digested | 3 g/l |
| di-Sodium hydrogen phosphate | 2,7 g/l |
| Sodium dihydrogen phosphate | 2,2 g/l |
| Sodium pyruvate | 1 g/l |
| Tryptophane | 1 g/l |
| Sorbitol | 1 g/l |
| Chromogene Mixture | 0,4 g/l |
| Sodium heptadecyl sulphate (Tergitol-7) | 0,15 g/l |
| Vancomycin | 0,005 g/l |
| Cefsulodin | 0,005 g/l |
| Agar | 13 g/l |
| pH value | 6,8 ±0,2 |
| Colour | amber |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9641.1** | 30 pieces | box | 115,60 € |



## Roti®-Aquatest Plate YE

**DEV, ISO 6222, ready-to-use, sterile, for microbiology**

For enumeration of microorganisms in general, e.g. bacteria, moulds or yeast.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Yeast Extract Agar (Art. No. CP63) is recommended for enumeration of microorganisms in general.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Tryptone | 6 g/l |
| Yeast extract | 3 g/l |
| Agar | 15 g/l |
| pH value | 7,2 ±0,2 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9642.1** | 30 pieces | box | 47,85 € |



## Roti®-Aquatest Plate R2A

**Ph.Eur., ready-to-use, sterile, for microbiology**

For enumeration of heterotrophic bacteria.

Storage temp.: +4-15 °C • Transport temp.: cooled

The R2A Agar (Art. No. CL01) is recommended by the Ph. Eur. for enumeration of heterotrophic bacteria.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Yeast extract | 0,5 g/l |
| Peptone | 0,5 g/l |
| Casein hydrolysed | 0,5 g/l |
| Glucose | 0,5 g/l |
| Starch | 0,5 g/l |
| di-Potassium hydrogen phosphate | 0,3 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,024 g/l |
| Sodium pyruvate | 0,3 g/l |
| Agar | 15 g/l |
| pH value | 7,2 ±0,2 |
| Colour | amber |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9644.1** | 30 pieces | box | 47,85 € |



## Roti®-Aquatest Plate Cetr

**Ph.Eur., ready-to-use, sterile, for microbiology**

For isolation of *Pseudomonas aeruginosa*.

Storage temp.: +4-15 °C • Transport temp.: cooled

**Warning** H400

The Cetrimide Agar (Art. No. X918) is recommended by the Ph. Eur. for isolation of *Pseudomonas aeruginosa*.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Gelatin peptone (Pancreas hydrolysate) | 20 g/l |
| Magnesium chloride | 1,4 g/l |
| Potassium sulphate | 10 g/l |
| Cetrimide | 0,3 g/l |
| Glycerol | 10 ml/l |
| Agar | 13,6 g/l |
| pH value | 7,2 ±0,2 |
| Colour | opaque white |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9646.1** | 30 pieces | box | 47,85 € |



## Roti®-Aquatest Plate Sab4

**Ph.Eur., ready-to-use, sterile, for microbiology**

For cultivation of yeasts and fungi.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Sabouraud 4% Glucose Agar (Art. No. X932) is recommended by the Ph. Eur. for cultivation of yeasts like *Candida albicans* and moulds.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Glucose | 40 g/l |
| Meat and casein peptone | 10 g/l |
| Agar | 15 g/l |
| pH value | 5,6 ±0,2 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9643.1** | 30 pieces | box | 47,85 € |



## Roti®-Aquatest Plate m-CP

**TWVO 2001, ready-to-use, sterile, for microbiology**

For enumeration of *Clostridium perfringens.*

Storage temp.: +4-15 °C • Transport temp.: cooled

The m-CP Agar (Art. No. CL55) is recommended by the TWVO 2001 for enumeration of *Clostridium perfringens*.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Saccharose | 5 g/l |
| L-Cysteine hydrochloride | 1 g/l |
| Magnesium sulphate heptahydrate | 0,1 g/l |
| Iron(III)-chloride solution 4,5 % | 2 ml |
| Bromocresol purple | 0,04 g/l |
| Chromogene Mixture | 0,16 g/l |
| D-Cycloserine | 0,4 g/l |
| Polymyxin B sulphate | 0,025 g/l |
| Tryptose | 30 g/l |
| Yeast extract | 20 g/l |
| Agar | 15 g/l |
| pH value | 7,6 ±0,2 |
| Colour | purple |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9649.1** | 30 pieces | box | 54,75 € |



## Roti®-Aquatest Plate Staph

**Ph.Eur., ready-to-use, sterile, for microbiology**

For isolation of pathogenic staphylococci.

Storage temp.: +4-15 °C • Transport temp.: cooled

The Mannitol Salt Agar (Chapman Agar) (Art. No. CL81) is recommended by the Ph.Eur. for isolation of pathogenic staphylococci.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| Pancreatic digest of casein | 5 g/l |
| Peptone (peptic digest of animal tissue) | 5 g/l |
| Beef extract | 1 g/l |
| Sodium chloride (NaCl) | 75 g/l |
| D-Mannitol | 10 g/l |
| Phenol red | 0,025 g/l |
| Agar | 15 g/l |
| pH value | 7,4 ±0,2 |
| Colour | red |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9650.1** | 30 pieces | box | 47,85 € |



## Roti®-Aquatest Plate Strep

**DEV, ISO 7899-2, ready-to-use, sterile, for microbiology**

For enumeration of intestinal streptococci.

Storage temp.: +4-15 °C • Transport temp.: cooled

**Warning** H312-H412-EUH032

The Slanetz-Bartley Agar (Art. No. X935) is recommended by the ISO 7899-2 for enumeration of intestinal streptococci.
Expiration time on request. Do NOT freeze!

**Formulation:**

| | |
|---|---|
| di-Potassium hydrogen phosphate | 4 g/l |
| Sodium azide | 0,4 g/l |
| Tetrazolium chloride (TTC) | 0,1 g/l |
| Tryptose | 20 g/l |
| Yeast extract | 5 g/l |
| Glucose | 2 g/l |
| Agar | 12 g/l |
| pH value | 7,2 ±0,1 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9648.1** | 30 pieces | box | 54,75 € |

Our tip for most simple **filtration and microbiological analysis of liquids:**

Bottle-top filter holders **KA90.1**
+ Cellulose mixed ester (CME) membrane filters **NH80.1** (non-sterile)
+ Screw neck bottles DURAN - pressure plus (e.g. 1 Litre, **H995.1**)

- Apply membrane to filter holder
- Screw filter holder onto bottle
- *Optional:* Wrap whole construct in aluminum foil
- Steam sterilize
- Ready-for-use (or ready-for-store)

▶ Membrane filters see page 505

# Compact Dry Ready-Made Plates



## Dry ready-made plates for easy microbiological analysis of solutions and compact samples.

made by NISSUI

- Storage and transport at room temperature
- Simple and safe use
- Safely stackable
- Easy interpretation through chromogenic additives and 1 x 1 cm grid
- Detailed instructions-for-use included
- Suitable for control of foods and feeds, cosmetics and pharmaceutical samples, for hygiene monitoring and contamination survey, for schooling and student's courses

Compact Dry plates made by NISSUI are suitable for detection and enumeration of microorganisms from foods and feeds, cosmetics and pharmaceutical samples, as well as for hygiene monitoring and contamination control in food-producing areas. Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret.
Compact Dry plates are easy and safe to handle. Due to storage at room temperature, they may be used even on site. One millilitre of the sample to be analysed is applied onto the sterile plate surface, spreading itself evenly over the plate during rehydration of the medium. Dry sample matter is homogenised and solubilised using the Compact Dry Dilution Rack (Art. No. 4823.1) prior to plate inoculation.

Growth area is 20 $cm^2$. Inner Ø 47 mm.

### Compact Dry CF

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of coliforms.

Ready-made agar plate coliforms

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry CF plates is related to the Coliform chromogenic Agar and resembles a modified version of the Compact dry EC plates. The Chromogenic mixture has been replaced by X-Gal, causing all coliform bacteria to grow in colonies of a bright blue colour.



AOAC-, MicroVal-, and NordVal- certified.

| | | | |
|---|---|---|---|
| **4827.1** | 40 plates | blister | 76,90 € |
| **4827.2** | 240 plates | blister | 396,70 € |

### Compact Dry EC

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of coliforms in general, particularly *E. coli*.

Ready-made agar plate *E. coli*

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry EC plates is related to the Coliform chromogenic Agar. Colonies of *E. coli* show a bright blue colour, while other coliforms grow in red to pink coloured colonies. Addition of red and blue colonies results in total count of coliforms.



AOAC-, MicroVal-, and NordVal- certified.

| | | | |
|---|---|---|---|
| **4826.1** | 40 plates | blister | 76,90 € |
| **4826.2** | 240 plates | blister | 396,70 € |

## Compact Dry ETB

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of enterobacteriaceae.

Ready-made agar plate enterobacteria

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry ETB plates is deduced from the Violet Red Bile Agar with Dextrose (VRBD). Enterobacteriaceae grow in red colonies.



MicroVal- and NordVal-certified.

| | | | |
|---|---|---|---|
| **4828.1** | 40 plates | blister | 84,85 € |
| **4828.2** | 240 plates | blister | 443,45 € |

## Compact Dry TC

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for total germ count.

Ready-made agar plate total count

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. Compact Dry TC are based on a standard total-germ-count agar under addition of TTC which, being a redox-indicator, stains all living bacterial colonies red.



AOAC- MicroVal-, and Nordval certified.

| | | | |
|---|---|---|---|
| **4816.1** | 40 plates | blister | 73,00 € |
| **4816.2** | 240 plates | blister | 364,45 € |

## Compact Dry SL

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of salmonellae.

Ready-made agar plate salmonells

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry SL plates is deduced from the formulation of Triple Sugar Iron Agar. Salmonellae may easily be identified by the green colouring of the colonies, accompanied by colour shift of the plate to yellow due to alcalization of the medium. Salmonellae producing hydrogen sulphide grow in black colonies on yellow medium.



| | | | |
|---|---|---|---|
| **4817.1** | 40 plates | blister | 99,45 € |
| **4817.2** | 240 plates | blister | 493,45 € |

## Compact Dry X-BC

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of *Bacillus cereus.*

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry X-BC plates is based on a nutritious formulation, using mannitol as selective agent. Colonies of *Bacillus cereus* grow in a light blue or blue colour.



MicroVal certified.

| | | | |
|---|---|---|---|
| **1070.1** | 40 plates | blister | 103,75 € |
| **1070.2** | 240 plates | blister | 547,20 € |

| Art. No. | Compact Dry | Detection of | Certificate |
|---|---|---|---|
| 4816 | TC | whole germs | AOAC, MicroVal, NordVal |
| 1070 | X-BC | *Bacillus cereus* | MicroVal |
| 1087 | X-SA | *Staphylococcus aureus* | AOAC, MicroVal, NordVal |
| 4817 | SL | salmonells | - |
| 4818 | YM | yeast/moulds | AOAC, MicroVal, NordVal |
| 4826 | EC | coliforms /*E. coli* | AOAC, MicroVal, NordVal |
| 4827 | CF | coliforms | AOAC, MicroVal, NordVal |
| 4828 | ETB | enterobacteria | MicroVal, NordVal |

## Compact Dry X-SA

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of *Staphylococcus aureus.*

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry X-SA plates is based on a mannitol agar, using lithium as additional selective agent. *Staphylococci* grow in a light to bright cyan-blue colour.



AOAC-, MicroVal-, and NordVal certified.

| | | | |
|---|---|---|---|
| **1087.1** | 40 plates | blister | 103,75 € |
| **1087.2** | 240 plates | blister | 547,20 € |



## Compact Dry Swab

**NISSUI for microbiology**

All-in-one set of swab and nutrient broth for microbiological sampling of surfaces.

Storage temp.: +20 °C

Sterile all-in-one system for sampling in the microbiological field of work. Suitable for analysis of foods and feeds, in pharmaceutical areas, as well as for hygiene monitoring, and for exclusion of contaminations.
Compact Dry Swabs made by NISSUI are particularly easy to apply, and may also be used by laymen. In order to test a surface, the respective area is wiped with the sterile cotton swab. After returning the swab into the tube, the germs are released into the nutrient broth by agitation. The amount of 1 ml medium has been optimised for inoculation of nutrient agar plates in general, also making this swab most compatible with Compact Dry plates.



Compact Dry Swabs are particularly suitable for sampling at difficult-to-access areas or when working on site. The sample taken may be transported inside the swab.
Storage at room temperature as well as easy application makes them a very versatile tool in microbiology.

Contains 1 ml **Peptone Water, buffered**

**Type analysis:**

Appearance nutrient broth. ..... light yellow
Turbidity..... clear
Sterility.....complies
pH value. .....6,8-7,2

| | | | |
|---|---|---|---|
| **4809.1** | 40 swabs | box | 99,45 € |
| **4809.2** | 240 swabs | box | 493,45 € |

## Compact Dry YM

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of yeasts and moulds.

Ready-made agar plate yeasts and moulds

Storage temp.: +20 °C

Due to the chromogenic additives, bacterial colonies depict specific colouring, making them easy to interpret. The nutrient medium used for Compact Dry YM plates is deduced from an enriched version of the Potato Extract Glucose Agar. While accompanying bacteria are inhibited by inherent antibiotics, yeast colonies show a bright blue colour. Due to the net quality of the plate matrix, moulds are able to form their natural, three-dimensional growth structure accompanied by their respective characteristic colouring.




**Figure:**
**A:** *Candida albicans* ATCC 10231
**B:** *Aspergillus niger* ATCC 16404

AOAC-, MicroVal-, and Nordval-certified.

| | | | |
|---|---|---|---|
| **4818.1** | 40 plates | blister | 77,30 € |
| **4818.2** | 240 plates | blister | 416,05 € |

▶ Membrane filters see page 505

Our tip for most simple **filtration and microbiological analysis of liquids:**

Bottle-top filter holders **KA90.1**
+ Cellulose mixed ester (CME) membrane filters **NH80.1** (non-sterile)
+ Screw neck bottles DURAN - pressure plus (e.g. 1 Litre, **H995.1**)

- Apply membrane to filter holder
- Screw filter holder onto bottle
- *Optional:* Wrap whole construct in aluminum foil
- Steam sterilize
- Ready-for-use (or ready-for-store)



## Compact Dry Dilution Rack MRD

**ELMEX for microbiology**

For preparation of dilution series of microbiological samples.
Sterile nutrient broth.

**Maximum Recovery Solution** in racks

Storage temp.: +20 °C

Ready-made nutrient broth in racks for easy preparation of dilution series for microbiological assays.
Each rack consist of 4 wells with 9 mls of Maximum Recovery Solution each (Art. No. 5766). By transferring 1 ml, 10-fold dilution series are very easily prepared.
Each well is sealed by an aluminium foil, and may be separated from the others at a perforation line. Using the Compact Dry Opener (Art. No. 4825.1, please order separately) a hole may be pierced into the lid, providing access for pipetting.

128 wells in 32 racks of 4 separable wells each.

**Type analysis:**

Appearance of solution. ..... light beige
Turbidity ..... clear
Peptone. ..... 1,0 g/l
NaCl. ..... 8,5 ±0,5 g/l
Sterility ..... complies
pH value. ..... 7,1 ±0,5

| | | | |
|---|---|---|---|
| **1096.1** | 128 wells | box | 181,70 € |



## Compact Dry Opener

Made by NISSUI. Metal pen for easy penetration of the aluminium foil sealing the Compact Dry Dilution Racks.

| Art. No. | Pack Qty | € |
|---|---|---|
| **4825.1** | 1 | 32,15 |



## Compact Dry Dilution Rack

**ELMEX for microbiology**

For preparation of dilution series of microbiological samples.
**Sterile PBS.**

Storage temp.: +20 °C

Sterile buffer solution in racks for easy preparation of dilution series for microbiological assays.



Each rack consist of 4 wells with 9 mls phosphate buffered saline each. By transferring 1 ml, 10-fold dilution series are very easily prepared. Each well is sealed by an aluminium foil, and may be separated from the others at a perforation line. Using the Compact Dry Opener (Art. No. 4825.1) a hole may be pierced into the lid, providing access for pipetting.

128 wells in 32 racks of 4 separable wells each.

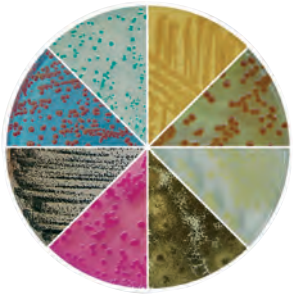
**Type analysis:**

Appearance of solution. ..... limpid to light yellow
Turbidity ..... clear
Content NaCl. ..... 0,85 ±0,1 %
Sterility ..... complies
pH value. ..... 7,1±0,5

| | | | |
|---|---|---|---|
| **4823.1** | 128 wells | box | 155,90 € |

# Nutrient Media

## Microbiological Nutrient Media



ROTH provides the most important microbiological nutrient media as ready-made mixtures. Our anhydrous media fulfil the highest purity and quality requirements, several media are formulated according to the specifications of the European Pharmakopoeia (Ph.Eur.), European and German drinking water regulations, APHA, and other ISO standards.
Our microbiological nutrient media are suitable for analysis of food, cosmetics, pharmaceutics, and research, as well as for service and waste water analysis.





- **Optimised formulation**
- **Superior quality and purity**
- **Tried and tested ready-made mixtures**
- **Big packs on request**

### Acetamide Broth (Solution A)

**DEV, EN ISO 16266:2008, for microbiology**

For confirmation of *Pseudomonas aeruginosa* in water samples.

Storage temp.: +20 °C

**Warning** H351

Application: Use 3,4 g for 1 l broth. Solubilise in 900 ml, add freshly prepared solution B (sodium molybdate, Art. No. 0274.1, and iron sulfat, Art. No. P015.1) and adjust with water to 1 l.

**Guarantee analysis:**

| | |
|---|---|
| Potassium dihydrogen phosphate. | 1 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,2 g/l |
| Acetamide. | 2 g/l |
| Sodium chloride (NaCl). | 0,2 g/l |
| pH value. | 7,0 ±0,5 |

| | | | |
|---|---|---|---|
| **CP61.1** | 500 g | plastic | 177,95 € |
| Original pack 6 x 500 g | | | 169,05/500 g |

### Antibiotic Medium No. 1

**Ph.Eur., for microbiology**

Standard agar medium for detection and for assaying the potency of antibiotics.

Antibiotic Agar No. 1 (Ph.Eur. 7,0), Penassay Seed Agar

Storage temp.: +20 °C

Application: Use 30,5 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Peptone. | 6,0 g/l |
| Casein peptone (Pancreas hydrolysate). | 4,0 g/l |
| Yeast extract. | 3,0 g/l |
| Beef extract. | 1,5 g/l |
| Glucose monohydrate. | 1,0 g/l |
| Agar. | 15,0 g/l |
| pH value | 6,6 ±0,1 |

| | | | |
|---|---|---|---|
| **CL53.1** | 500 g | plastic | 116,65 € |
| Original pack 6 x 500 g | | | 110,82/500 g |

### Antibiotic Medium No. 23

**for microbiology**

Agar medium for detection and for assaying the potency of antibiotics.

Storage temp.: +20 °C

Application: Use 27,1 g for 1 l agar. Directly prior to pouring add 14,3 g ammonium chloride in 10 ml sterile water.

**Guarantee analysis:**

| | |
|---|---|
| Glucose. | 10,0 g/l |
| Yeast extract. | 2,5 g/l |
| di-Potassium hydrogen phosphate. | 0,69 g/l |
| Potassium dihydrogen phosphate. | 0,45 g/l |
| Agar. | 13,5 g/l |
| pH value . | 5,6 ±0,1 |

| | | | |
|---|---|---|---|
| **CL54.1** | 500 g | plastic | 104,20 € |
| Original pack 6 x 500 g | | | 98,99/500 g |

### Azide Dextrose Broth

**for microbiology**

For enrichment and detection of enterococci.

Storage temp.: +20 °C

**Warning** H302-H412

Application: Use 34,7 g (1x) or 69,4 g (2x) for 1 l broth.

**Formulation:**

| | |
|---|---|
| Casein peptone. | 15 g/l |
| Meat extract. | 4,5 g/l |
| Glucose. | 7,5 g/l |
| Sodium chloride (NaCl). | 7,5 g/l |
| Sodium azide. | 0,2 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **CL79.1** | 500 g | plastic | 94,10 € |
| Original pack 6 x 500 g | | | 89,40/500 g |

## Baird Parker Agar (Base)

**Ph.Eur., for microbiology**

For isolation and enumeration of staphylococci.
Agar medium O (Ph.Eur. 6.0)
Storage temp.: +20 °C

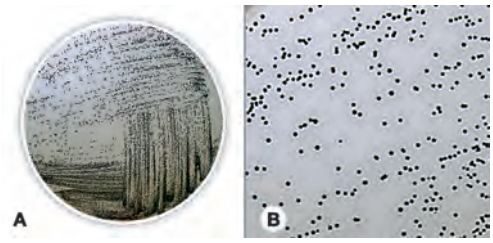



**Figure:**
**A**: *Staphylococcus aureus*
**B**: Enlargement of A, showing clear zones round the colonies (Lecithinase break-down of egg yolk).

Application: Use 63 g for 1 l agar. Add egg yolk emulsion tellurit (Art. No. 0339.1) to 5 % final concentration.

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone (pancreas hydrolysate) | 10 g/l |
| Beef extract | 5 g/l |
| Yeast extract | 1 g/l |
| Lithium chloride | 5 g/l |
| Glycine | 12 g/l |
| Sodium pyruvate | 10 g/l |
| Agar | 20 g/l |
| pH value | 6,8 ±0,2 |

| | | | |
|---|---|---|---|
| X913.1 | 500 g | plastic | 110,65 € |
| Original pack 6 x 500 g | | | 105,12/500 g |

▶ RPF Supplement see page 1409
▶ Egg Yolk Tellurite Emulsion see page 1407

## Bengal Red Agar (with chloroamphenicol)

**for microbiology**

Standard-selective agar for counting yeast and food mould fungi.

**RBC Agar**

Storage temp.: +20 °C

The addition of chloroamphenicol inhibits bacterial growth.
Bengal red limits the size and the spreading of fungal colonies, so that slow-growing species are not overgrown by fast-growing ones.

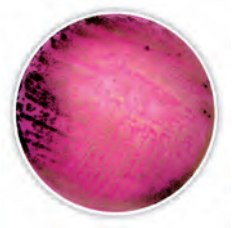


**Figure:**
*Aspergillus niger*
Application: Use 31,6 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Peptone | 5 g/l |
| Glucose | 10 g/l |
| Potassium phosphate | 1 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,5 g/l |
| Chloroamphenicol | 0,1 g/l |
| Bengal red | 0,05 g/l |
| Agar | 15 g/l |
| pH value | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| AE24.1 | 500 g | plastic | 112,90 € |
| Original pack 6 x 500 g | | | 107,26/500 g |

## Bile Esculin Azide Agar

**DEV, ISO 7899-2:2000, for microbiology**

For isolation and identification of intestinal enterococci from water samples.
Storage temp.: +20 °C

**Warning** H412-H302

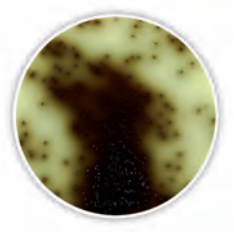


**Figure:**
Esculin hydrolysis and reaction with ferric citrate caused by *Enterococcus faecalis*. Medium surrounding the brown to black coloured *E. faecalis* colonies is also stained brown.
Application: Use 56,6 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Tryptone | 17 g/l |
| Peptone | 3 g/l |
| Yeast extract | 5 g/l |
| Ox bile dehydrated | 10 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Esculin | 1 g/l |
| Ammonium iron(III) citrate | 0,5 g/l |
| Sodium azide | 0,15 g/l |
| Agar | 15 g/l |
| pH value | 7,1 ±0,1 |

| | | | |
|---|---|---|---|
| CP62.1 | 500 g | plastic | 198,90 € |
| Original pack 6 x 500 g | | | 188,96/500 g |

## Blood Agar (Base)

**for microbiology**

For isolation, cultivation and detection of haemolytic reaction of fastidious microorganisms.
Storage temp.: +20 °C

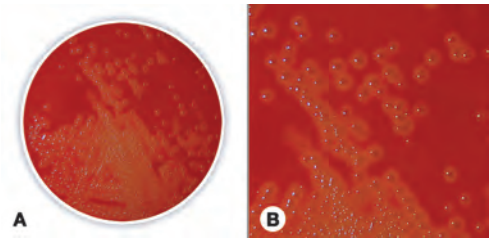



**Figure:**
**A:** *Streptococcus pyogenes*
**B:** Enlargement of A, showing β-haemolysis caused by *S. pyogenes*
Application: Use 40 g for 1 l agar. If required, add 50-110 ml defibr. blood.

**Formulation:**

| | |
|---|---|
| Meat peptone | 10 g/l |
| Heart infusion | 10 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Agar | 15 g/l |
| pH value | 7,3 ±0,2 |

| | | | |
|---|---|---|---|
| X914.1 | 500 g | plastic | 154,30 € |
| Original pack 6 x 500 g | | | 146,59/500 g |

**Instructions for use**
can be found on the Internet next to the product description.

## Blood Agar No. 2 (Base)

**ISO 7932, ISO 11290-1, for microbiology**

For cultivation and detection of haemolytic reaction of fastidious microorganisms.

Storage temp.: +20 °C

Particularly recommended for confirmation of *Bacillus cereus* and *Listeria monocytogenes*.

Application: Use 39,5 g for 1 l agar, add 50-70 ml defibr. blood.

**Guarantee analysis:**

| | |
|---|---|
| Proteose peptone. | 15 g/l |
| Yeast extract. | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Liver extract. | 2,5 g/l |
| Agar. | 12 g/l |
| pH value. | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **8281.1** | 500 g | plastic | 113,85 € |
| Original pack 6 x 500 g | | | 108,16/500 g |

## Brain-Heart-Infusion Broth

**for microbiology**

For cultivation of fastidious microorganisms.

**BHI Broth**

Storage temp.: +20 °C

Application: Use 37 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Pig brain infusion. | 7,5 g/l |
| Pig heart infusion. | 10 g/l |
| Peptone. | 10 g/l |
| Glucose. | 2 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Disodium phosphate. | 2,5 g/l |
| pH value. | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **X916.1** | 500 g | plastic | 89,80 € |
| Original pack 6 x 500 g | | | 85,31/500 g |
| **X916.2** | 1 kg | plastic | 154,30 € |
| Original pack 6 x 1 kg | | | 146,59/1 kg |

## Brain-Heart-Infusion Agar

**for microbiology**

For cultivation of fastidious microorganisms.

**BHI Agar**

Storage temp.: +20 °C

Application: Use 52 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Calf Brain Infusion. | 7,5 g/l |
| Beef Heart Infusion. | 10 g/l |
| Peptone. | 10 g/l |
| Glucose. | 2 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Disodium phosphate. | 2,5 g/l |
| Agar. | 15 g/l |
| pH value. | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **X915.1** | 500 g | plastic | 97,30 € |
| Original pack 6 x 500 g | | | 92,44/500 g |

**„Infusion“**

In the early days of bacteriology, so-called "infusions" (tissue extraction) were used in microbiological media. During the development of the dry media, these extracts were dried and used in a powdery form to produce purified and standardised extracts. Today, extracts or special, highly purified peptones are commonly used in modern media.

As simply manufactured and non-standardised natural products, "infusion" have a relatively low batch-to-batch constancy and vary both in composition and in nutrient content. However, they are still commonly used in several classic media.

## Brilliant Green Bile Broth

**DIN 10172, for microbiology**

For selective enrichment and enumeration of coli bacteria in milk, water samples, faeces and other material.

Storage temp.: +20 °C

Adding 40 mg/l Novobiocin (Art. No. 0247.1) during selective detection of coliform bacteria further reduces the growth of attendant flora (Alcaide *et al.*, 1982, *J. Appl. Bact.* 53:143-6).




**Figure:**
① *Escherichia coli* (turbidity and gas formation (arrow))
② *Enterobacter aerogenes* (turbidity)
③ Uninoculated broth

Application: Use 40 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Gelatine peptone. | 10 g/l |
| Lactose. | 10 g/l |
| Bile salts. | 20 g/l |
| Brilliant green. | 0,0133 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **CL06.1** | 500 g | plastic | 143,55 € |
| Original pack 6 x 500 g | | | 136,37/500 g |

## Brilliant Green Lactose Sucrose Agar

**Ph.Eur., for microbiology**

Highly selective medium for the isolation of *Salmonellae* from pathological specimens and food.

Agar medium L (Ph.Eur. 6.0), **BPLS**

Storage temp.: +20 °C

Application: Use 58,1 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Meat and casein peptone. | 10 g/l |
| Yeast extract. | 3 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Lactose monohydrate. | 10 g/l |
| Saccharose. | 10 g/l |
| Phenol red. | 0,08 g/l |
| Brilliant green. | 0,0125 g/l |
| Agar. | 20 g/l |
| pH value. | 6,9 ±0,2 |

| | | | |
|---|---|---|---|
| **AE43.1** | 500 g | plastic | 97,30 € |
| Original pack 6 x 500 g | | | 92,44/500 g |

## Brilliant Green Tetrathionate Bile Broth

**Ph.Eur., for microbiology**

For selective enrichment of *Salmonellae* in food and faeces.
Broth medium I (Ph.Eur. 6.0)
Storage temp.: +20 °C

Application: Use 63 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Peptone | 8,6 g/l |
| Dried beef bile | 8 g/l |
| Sodium chloride (NaCl) | 6,4 g/l |
| Calcium carbonate | 20 g/l |
| Potassium tetrathionate | 20 g/l |
| Brilliant green | 0,07 g/l |
| pH value | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **AE42.2** | 100 g | plastic | 114,50 € |
| **AE42.1** | 500 g | plastic | 450,45 € |
| Original pack 6 x 500 g | | | 427,93/500 g |

## Brucella Broth

**for microbiology**

For cultivation of *Brucella* and other fastidious microorganisms.
Storage temp.: +20 °C
Also suitable for enrichment of fastidious microorganisms like, e.g. *Campylobacter*.

Application: Use 28,1 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Meat peptone | 10 g/l |
| Casein peptone | 10 g/l |
| Sodium chloride | 5 g/l |
| Yeast extract | 2 g/l |
| Glucose | 1 g/l |
| Sodium bisulfite | 0,1 g/l |
| pH value | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **5754.1** | 500 g | plastic | 83,35 € |
| Original pack 6 x 500 g | | | 79,18/500 g |

## Brucella Agar

**for microbiology**

For cultivation of *Brucella* and other fastidious microorganisms in foods and other specimens.
Storage temp.: +20 °C
In order to gain a selective medium, supplement with Nystatin, Bacitracin, Polymyxin B, Cycloheximide, Vancomycin and Nalidixic acid.

Application: Use 43,1 g for 1 l agar, add 50 ml defibr. sheep blood.

**Formulation:**

| | |
|---|---|
| Meat peptone | 10 g/l |
| Casein peptone | 10 g/l |
| Sodium chloride | 5 g/l |
| Yeast extract | 2 g/l |
| Glucose | 1 g/l |
| Sodium bisulfite | 0,1 g/l |
| Agar | 15 g/l |
| pH value | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **5752.1** | 500 g | plastic | 95,60 € |
| Original pack 6 x 500 g | | | 90,82/500 g |

## Campylobacter Agar, blood-free (Base)

**for microbiology**

For isolation of *Campylobacter jejuni*, *Campylobacter coli*, and *Campylobacter laridis* in foods, and other samples.
Campy-Selective-Bloodfree-Medium, Bolton-Agar, Blood-free **CCDA**, Modified **CCDA**
Storage temp.: +20 °C
Modified formulation acc. to Bolton (Bolton *et al.*, (1984) *Clin. Microbiol.* 19:169-171), replacing blood with charcoal, sodium pyruvate and iron sulphate.

Application: Use 45,5 g for 1 l agar. After cooling add 2 vials (2x5 ml) reconstituted Campylobacter Supplement (Art. No. 4857.1).

**Formulation:**

| | |
|---|---|
| Casein peptone | 10 g/l |
| Beef extract | 10 g/l |
| Sodium chloride | 5 g/l |
| Casein hydrolysed | 3 g/l |
| Bacteriological charcoal | 4 g/l |
| Sodium deoxycholate | 1 g/l |
| Iron sulphate | 0,25 g/l |
| Sodium pyruvate | 0,25 g/l |
| Agar | 12 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **5756.1** | 500 g | plastic | 155,90 € |
| Original pack 6 x 500 g | | | 148,11/500 g |

▶ Campylobacter Supplement see page 1406

Please note our **Technical Information Brochure** on the Internet next to the products:

**Microbiological Media**
Manual for preparation and storage

## Campylobacter Selective Agar (Base)

**for microbiology**

For isolation of *Campylobacter coli* and *C. jejuni*.
Preston Agar, Campy Agar
Storage temp.: +20 °C
The Campylobacter Selective Agar is based on the formulation of Bolton and Robertson (Bolton and Robertson (1982) *J. Clin. Path.* 35:462-7). Trough addition of the Campylobacter Preston Supplement (Art. No. 8851), the Agar is highly selective for *Campylobacter coli* and *C. jejuni.*

Application: Use 18,5 g for 475 ml agar. After cooling add 5-7 % lysed blood and 1 vial of Campylobacter Preston Supplement (Art. No. 8851).

**Formulation:**

| | |
|---|---|
| Casein peptone | 10 g/l |
| Beef extract | 10 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Agar | 12 g/l |
| pH value | 7,5 ±0,2 |

| | | | |
|---|---|---|---|
| **8847.1** | 500 g | plastic | 138,70 € |
| Original pack 6 x 500 g | | | 131,77/500 g |

▶ Campylobacter Preston Supplement see page 1406

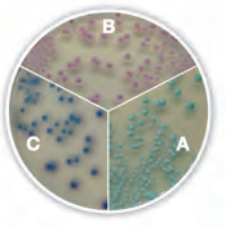
## Candida chromogenic Agar

**for microbiology**

Selective medium for isolation and quick identification of pathogeneous Candida species.

Storage temp.: +4 °C

**Warning** H351




**Staining of species:**
**A:** *Candida albicans* turquoise-green (glucuronidase)
**B:** *Candida krusei* purple-pink (galactosidase)
**C:** *Candida tropicalis* blue (glucosidase)
*Candida parasilosis* and *C. glabrata* light-purple to light white

Application: Use 45,9 g for 1 l agar.

**Formulation:**

Peptone. ..... 10 g/l
Glucose. ..... 20 g/l
Chloroamphenicol. ..... 0,5 g/l
Chromogene Mixture. ..... 0,4 g/l
Agar. ..... 15 g/l
pH value. ..... 6,1 ±0,2

| | | | |
|---|---|---|---|
| **2922.2** | 100 g | plastic | 145,15 € |
| **2922.1** | 500 g | plastic | 536,45 € |
| Original pack 6 x 500 g | | | 509,63/500 g |



## CASO Broth

**Ph.Eur., for microbiology**

For cultivation of fastidious and non-fastidious microorganisms.
Broth medium A (Ph.Eur. 6.0), Casein Soya Bean Digest Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth
Storage temp.: +20 °C

Application: Use 30 g for 1 l broth.

**Guarantee analysis:**

Casein peptone (pancreas hydrolysate) . ..... 17 g/l
Soy peptone (papain hydrolysate). ..... 3 g/l
di-Potassium hydrogen phosphate. ..... 2,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Glucose monohydrate. ..... 2,5 g/l
pH value. ..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **X938.1** | 500 g | plastic | 68,30 € |
| Original pack 6 x 500 g | | | 64,89/500 g |
| **X938.2** | 1 kg | plastic | 112,90 € |
| Original pack 6 x 1 kg | | | 107,26/1 kg |
| **X938.3** | 2,5 kg | plastic | 239,75 € |

▶ CASO Broth, **granulated** see page 1404

## CASO Broth vegetal

animal-free

**for microbiology, animal-free**

For cultivation of fastidious and non-fastidious microorganisms.
Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth
Storage temp.: +20 °C
Application: Use 30 g for 1 l broth.

**Formulation:**

Vegetable peptone . ..... 20 g/l
di-Potassium hydrogen phosphate. ..... 2,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Glucose. ..... 2,5 g/l
pH value. ..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **0139.1** | 500 g | plastic | 82,70 € |
| Original pack 6 x 500 g | | | 78,57/500 g |

## CASO Agar

**Ph.Eur., for microbiology**

For isolation and cultivation of non-fastidious organisms.
Agar medium B (Ph.Eur. 6.0), Casein Soya Bean Digest Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Agar, **TSB Agar**, Trypticasein Soy Agar
Storage temp.: +20 °C



Application: Use 40 g for 1 l agar.

**Guarantee analysis:**

Casein peptone (pancreas hydrolysate) . ..... 15 g/l
Soy peptone (papain hydrolysate). ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **X937.1** | 500 g | plastic | 81,60 € |
| Original pack 6 x 500 g | | | 77,52/500 g |
| **X937.2** | 1 kg | plastic | 145,15 € |
| Original pack 6 x 1 kg | | | 137,89/1 kg |
| **X937.3** | 2,5 kg | plastic | 310,70 € |

▶ CASO Agar, **granulated** see page 1404

## CASO Agar with Lecithin/Polysorbate 80

**for microbiology**

For detection of microorganisms from cosmetics and disinfected surfaces.
TSA Letheen, Tryptone Soy Agar Letheen, TSA with Tween® 80 and Lecithin
Storage temp.: +20 °C
Lecithin and Tween® 80 enable growth and colony counting of bacteria through inactivating disinfectants and preservatives like quaternary ammonium compounds.

Application: Use 45,7 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Pancreatic digest of casein. | 15 g/l |
| Soy peptone. | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Lecithin. | 0,7 g/l |
| Polysorbate 80. | 5 g/l |
| Agar. | 15 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **8848.1** | 500 g | plastic | 112,90 € |
| Original pack 6 x 500 g | | | 107,26/500 g |

## Cetrimide Agar (Base)

**Ph.Eur., for microbiology**

For isolation and identification of *Pseudomonas aeruginosa*.
Agar medium N (Ph.Eur. 6.0), Cetrimide Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
**CTM**
Storage temp.: +20 °C

**Warning** H400

Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth of *Pseudomonas aeruginosa*.



**Figure:**
Production of pyoverdin by *Pseudomonas aeruginosa*. Being water soluble, pyoverdin diffuses through the agar, staining the originally opaque-white medium fluorescent greenish-yellow where *P. aeruginosa* colonies are located.

Application: Use 45,3 g for 1 l agar, add 10 ml glycerol.

**Guarantee analysis:**

| | |
|---|---|
| Gelatin peptone (Pancreas hydrolysate) | 20 g/l |
| Magnesium chloride. | 1,4 g/l |
| Potassium sulphate. | 10 g/l |
| Cetrimide. | 0,3 g/l |
| Agar. | 13,6 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **X918.1** | 500 g | plastic | 95,15 € |
| Original pack 6 x 500 g | | | 90,39/500 g |

**Safety data sheets**
can be found on the Internet next to the product description.

## CLED Agar

**for microbiology**

For cultivation, differentiation and enumeration of gram-positive and gram-negative bacteria from the urinary tract.
Storage temp.: +20 °C
Inhibits swarming of *Proteus*.

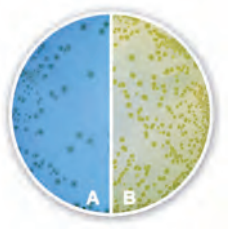



**Figure:**
**A:** *Proteus vulgaris* (blue colour due to pH-shift to >7.6)
**B:** *Escherichia coli* (colour greenish-yellow due to acid production caused by lactose fermentation)

Application: Use 36 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Casein peptone. | 4 g/l |
| Gelatine peptone. | 4 g/l |
| Beef extract. | 3 g/l |
| Lactose. | 10 g/l |
| L-Cystine. | 0,128 g/l |
| Bromothymol blue. | 0,02 g/l |
| Agar. | 15 g/l |
| pH value. | 7,3 ±0,2 |

| | | | |
|---|---|---|---|
| **2835.1** | 500 g | plastic | 93,00 € |
| Original pack 6 x 500 g | | | 88,35/500 g |
| **2835.2** | 1 kg | plastic | 155,90 € |
| Original pack 6 x 1 kg | | | 148,11/1 kg |

## CLED Agar plus

**for microbiology**

For cultivation, easy differentiation by colour, and enumeration of gram-positive and gram-negative bacteria from the urinary tract.
Storage temp.: +20 °C
Inhibits swarming of *Proteus*. **With Andrade´s indicator**.

Application: Use 36,2 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Casein peptone. | 4 g/l |
| Gelatine peptone. | 4 g/l |
| Beef extract. | 3 g/l |
| Lactose. | 10 g/l |
| L-Cystine. | 0,128 g/l |
| Bromothymol blue. | 0,02 g/l |
| Andrade's indicator. | 0,1 g/l |
| Agar. | 15 g/l |
| pH value. | 7,5 ±0,2 |

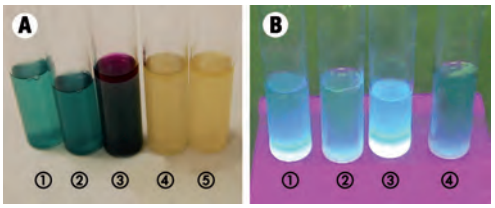
| | | | |
|---|---|---|---|
| **2836.1** | 500 g | plastic | 104,20 € |
| Original pack 6 x 500 g | | | 98,99/500 g |

## Coli Fluoro Broth

**for microbiology**

Enrichment medium for the simultaneous and easy detection of total Coliforms and *E. coli* in water, foods and dairy products.

Storage temp.: +4 °C




**A) Staining of species:**
*E. coli* greenish-blue (1,2), black-red after Indole reaction (3)
*Enterobacter, Klebsiella, Citrobacter* greenish-blue (1,2)
*Shigella, Salmonella* no colour change (4,5)
**B) Fluorescence detection (365 nm):**
*E. coli* fluorescence-positive (1,3)
*Enterobacter, Klebsiella, Citrobacter, Shigella, Salmonella* no fluorescence (2,4)
Application: Use 17 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Tryptose | 5 g/l |
| Sodium chloride | 5 g/l |
| Dipotassium phosphate | 2,7 g/l |
| Potassium phosphate | 2 g/l |
| Sorbitol | 1 g/l |
| Tryptophane | 1 g/l |
| Sodium lauryl sulphate | 0,1 g/l |
| Chromogenic-fluorogenic mixture | 0,23 g/l |
| pH value | 6,8 ±0,2 |

| | | | |
|---|---|---|---|
| **2923.2** | 100 g | plastic | 88,05 € |
| **2923.1** | 500 g | plastic | 353,70 € |
| Original pack 6 x 500 g | | | 336,02/500 g |

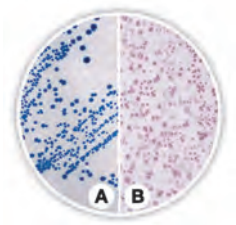
## Coliforms chromogenic Agar (ISO)

**ISO 9308-1, for microbiology**

For detection and enumeration of *E. coli* and other coliforms in water.

CCA

Storage temp.: +4 °C




**Staining of species:**
*E. coli* ATCC 25922 blue -dark violet (by reaction of the ß-D-Glucuronidase). *Enterobacter aerogenes* ATCC 13048 red rose (by reaction of the ß-D-galactosidase).
The addition of tryptophane enables an indole test for *E. coli*.
Application: Use 26,45 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Sodium chloride (NaCl) | 5,0 g/l |
| di-Sodium hydrogen phosphate | 2,7 g/l |
| Sodium dihydrogen phosphate | 2,2 g/l |
| Yeast extract | 2,0 g/l |
| Casein, enzymatically digested | 1,0 g/l |
| Sodium pyruvate | 1,0 g/l |
| Tryptophane | 1,0 g/l |
| Sorbitol | 1,0 g/l |
| Chromogene Mixture | 0,4 g/l |
| Sodium heptadecyl sulphate (Tergitol-7) | 0,15 g/l |
| Agar | 10 g/l |
| pH value | 6,8 ±0,2 |

| | | | |
|---|---|---|---|
| **8849.1** | 500 g | plastic | 461,20 € |
| Original pack 6 x 500 g | | | 438,14/500 g |

## Coliforms chromogenic Agar

**for microbiology**

For selective enrichment and simultaneous detection of *E. coli* and other Coliforms in water and food samples.

Storage temp.: +20 °C



**Staining of species:**
**A:** *E. coli* blue (by reaction of the ß-D-Glucuronidase)
**B:** Other Coliforms salmon (by reaction of the ß-D-galactosidase)
*E. coli* (blue) and *Citrobacter* (salmon).

Application: Use 26,4 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Sodium chloride (NaCl) | 5 g/l |
| Phosphate buffer | 4,9 g/l |
| Peptone | 3 g/l |
| Sodium pyruvate | 1 g/l |
| Tryptophane | 1 g/l |
| Sorbitol | 1 g/l |
| Chromogene Mixture | 0,36 g/l |
| Sodium heptadecyl sulphate (Tergitol-7) | 0,1 g/l |
| Agar | 10 g/l |
| pH value | 6,8 ±0,2 |

| | | | |
|---|---|---|---|
| **CL45.2** | 100 g | plastic | 124,20 € |
| **CL45.1** | 525 g | plastic | 456,90 € |

## Columbia Agar (Base)

**Ph.Eur., for microbiology**

For cultivation of fastidious and non-fastidious microorganisms, also for Mycoplasms.

Medium Q (Ph.Eur. 6.0), Columbia Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Columbia Blood Agar (Base)

Storage temp.: +20 °C

Application: Use 42,5 g for 1 l agar. If required, add 50-110 ml defibr. blood.

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone (Pancreas hydrolysate) | 10 g/l |
| Meat peptone (Pepsin hydrolysate) | 5 g/l |
| Heart peptone (Pancreas hydrolysate) | 3 g/l |
| Yeast extract | 5 g/l |
| Corn starch | 1 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Agar | 13,5 g/l |
| pH value | 7,3 ±0,2 |

| | | | |
|---|---|---|---|
| **X919.1** | 500 g | plastic | 75,80 € |
| Original pack 6 x 500 g | | | 72,01/500 g |
| **X919.2** | 1 kg | plastic | 137,10 € |
| Original pack 6 x 1 kg | | | 130,25/1 kg |

▶ Columbia Agar (Base), **granulated**
see page 1404

## Cronobacter chromogenic Agar

**ISO 22964:2006, for microbiology**

Selective medium for detection of *Cronobacter* (formerly *Enterobacter*) *sakazakii* in milk powder and powdered infant formulae.

Storage temp.: +4 °C



**Staining of species:**
*Cronobacter* (*Enterobacter) sakazakii* green to turquois
(by reaction of the α-D-glucosidase)
*E. coli* transparent to red/violet
*Staphylococcus* inhibited

Application: Use 30,7 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone (Pancreas hydrolysate) | 7 g/l |
| Sodium chloride | 5 g/l |
| Yeast extract | 3 g/l |
| Sodium deoxycholate | 0,6 g/l |
| Chromogene Mixture | 0,15 g/l |
| Crystal Violet | 0,002 g/l |
| Agar | 15 g/l |
| pH value | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **2997.1** | 100 g | plastic | 227,40 € |

## Deoxycholate Citrate Agar

**Ph.Eur., for microbiology**

For highly selective isolation of enteric pathogenes, particularly *Salmonella* and *Shigella*.

Agar medium J (Ph.Eur. 6.0)

Storage temp.: +20 °C



**Figure:**
*Salmonella typhimurium* grows well-developed, colourless colonies with a distinct black center.

Application: Use 70 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Beef extract | 10 g/l |
| Meat peptone | 10 g/l |
| Lactose monohydrate | 10 g/l |
| Sodium citrate | 20 g/l |
| Iron(III) citrate | 1 g/l |
| Sodium deoxycholate | 5 g/l |
| Neutral red | 0,02 g/l |
| Agar | 13,5 g/l |
| pH value | 7,5 ±0,2 |

| | | | |
|---|---|---|---|
| **AE44.1** | 500 g | plastic | 104,20 € |
| Original pack 6 x 500 g | | | 98,99/500 g |
| **AE44.2** | 1 kg | plastic | 181,70 € |
| Original pack 6 x 1 kg | | | 172,62/1 kg |

## D/E Neutralizing Agar

**for microbiology**

For detection and enumeration of microorganisms from a sanitized environment.

Dey-Engley Agar

Storage temp.: +20 °C

⚠ **Warning** H317-EUH031

Particularly recommended for testing areas or samples that have been treated with disinfectants or preservatives.

Application: Use 54 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Dextrose | 10 g/l |
| Lecithin | 7 g/l |
| Sodium thiosulphate | 6 g/l |
| Casein peptone | 5 g/l |
| Polysorbate 80 | 5 g/l |
| Yeast extract | 2,5 g/l |
| Sodium bisulfite | 2,5 g/l |
| Sodium thioglycolate | 1 g/l |
| Bromocresol purple | 0,02 g/l |
| Agar | 15 g/l |
| pH value | 7,6 ±0,2 |

| | | | |
|---|---|---|---|
| **8850.1** | 500 g | plastic | 96,65 € |
| Original pack 6 x 500 g | | | 91,82/500 g |

## Dichlorane Bengal Red Agar (with chloroamphenicol)

**ISO 21527-1, for microbiology**

Selective agar for enumeration of yeast and food mould fungi, especially for strongly hyphen-forming fungi.

**DRBC Agar**

Storage temp.: +20 °C

The addition of dichlorane inhibits hyphae-forming fungi from spreading and improves counting. Chloroamphenicol and a low pH-value inhibit the growth of bacteria.



**Figure:**
*Aspergillus brasiliensis*
Application: Use 31,6 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Peptone | 5 g/l |
| Glucose | 10 g/l |
| Potassium phosphate | 1 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,5 g/l |
| Chloroamphenicol | 0,1 g/l |
| Dichlorane | 0,002 g/l |
| Bengal red | 0,025 g/l |
| Agar | 15 g/l |
| pH value | 5,6 ±0,2 |

| | | | |
|---|---|---|---|
| **AE25.1** | 500 g | plastic | 149,45 € |
| Original pack 6 x 500 g | | | 141,98/500 g |

## Dichlorane Glycerol Agar (Base)

**ISO 21527-2, for microbiology**

Selective agar for enumeration of yeast and food mould fungi, especially in half-dry and dry food.

**DG18 Agar**

Storage temp.: +20 °C

The addition of dichlorane, the reduction of the water content by adding glycerol, and the low pH-value inhibit bacterial growth.



**Figure:**
*Saccharomyces cerevisiae*
Application: Use 31,6 g for 1 l agar, add 18 vol.-% glycerol.

**Formulation:**

| | |
|---|---|
| Peptone. | 5 g/l |
| Glucose. | 10 g/l |
| Potassium phosphate. | 1 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,5 g/l |
| Chloroamphenicol. | 0,1 g/l |
| Dichlorane. | 0,002 g/l |
| Agar. | 15 g/l |
| pH value. | 5,6 ±0,2 |

| | | | |
|---|---|---|---|
| **AE26.1** | 500 g | plastic | 126,35 € |
| Original pack 6 x 500 g | | | 120,03/500 g |

## Differential Reinforced Clostridial Medium

**for microbiology**

For enrichment and enumeration of clostridia in foods and other samples.

**DRCM**

Storage temp.: +20 °C

Application: Use 27,5 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Casein peptone. | 5 g/l |
| Meat peptone | 5 g/l |
| Beef extract. | 8 g/l |
| Yeast extract. | 1 g/l |
| Soluble starch. | 1 g/l |
| Glucose monohydrate. | 1 g/l |
| Cystein hydrochloride. | 0,5 g/l |
| Sodium acetate. | 5 g/l |
| Sodium bisulfite. | 0,5 g/l |
| Ammonium iron(III) citrate. | 0,5 g/l |
| Sodium resazurin. | 0,002 g/l |
| pH value. | 7,1 ±0,2 |

| | | | |
|---|---|---|---|
| **CL78.1** | 500 g | plastic | 112,90 € |
| Original pack 6 x 500 g | | | 107,26/500 g |

## DNase Test Agar

**for microbiology**

For detection of DNase activity for identification of pathogenic bacteria.

Storage temp.: +20 °C

Particularly recommended for identification of pathogenic *Staphylococci*.



**Figure:**
Clear, DNA-free zone around a streak of *Staphylococcus aureus* ATCC 25923 (DNase positive).
Application: Use 42 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Casein peptone. | 15 g/l |
| Soy peptone. | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Deoxyribonucleic acid. | 2 g/l |
| Agar. | 15 g/l |
| pH value. | 7,3 ±0,2 |

| | | | |
|---|---|---|---|
| **8295.1** | 500 g | plastic | 235,45 € |
| Original pack 6 x 500 g | | | 223,68/500 g |

## EC Broth

**ISO 7251, for microbiology**

For detection and enumeration of coliform bacteria in water.

*E. coli* Bouillon

Storage temp.: +20 °C

Application: Use 37,4 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Tryptose. | 20 g/l |
| Lactose. | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Dipotassium phosphate. | 4 g/l |
| Potassium phosphate. | 1,5 g/l |
| Bile salts No. 3. | 1,5 g/l |
| pH value. | 6,9 ±0,2 |

| | | | |
|---|---|---|---|
| **8310.1** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |

### Microbiological Quality Control

Microbiological quality control of Roth molecular biological and microbiological culture media and agar is carried out according to following guidelines:

- Plating relevant bacterial strains from standardized stock solution (as a rule in dilutions of $10^{-1}$ to $10^{-10}$) on agar plates of culture medium to be tested. The preparation of the media and agar must be carried out strictly according to the instructions, which are included.
- Plates from a checked batch of culture media are used as a reference
- The developed colonies are counted and rated after adequate incubation. Counting is always carried out using the plate with colony number 30-300.
- Standardization and validation of test: reference plates are compared with the number of bacteria expected
- Reference and test plate colonies are analysed for size, colour, appearance and possible reaction to certain chemicals
- Growth count on the test plates:

| | |
|---|---|
| „good“ or „satisfactory“ | colony number = 50 % - 99 % of expected growth |
| „moderate“ | colony number = 30 % - 50 % of expected growth |
| „inhibited“ | colony number ≤ 30 % of expected growth |
| „zero“ | no growth |

## Endo Agar (Base)

**for microbiology**

For isolation of enteric gram-negative bacteria, especially coliforms, from water, dairy products and foods.

Storage temp.: +20 °C

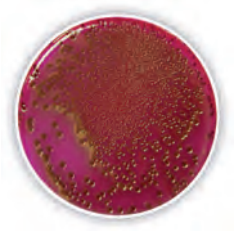


**Figure:**
*Escherichia coli* grows red colonies accompanied by red staining of the surrounding medium (sodium sulphite/fuchsin reaction). Application: Use 36 g for 1 l agar, add 5 ml basic fuchsin solution.

**Formulation:**

Peptone. ..... 10 g/l
Lactose. ..... 10 g/l
di-Potassium phosphate. ..... 3,5 g/l
Sodium sulphite. ..... 2,5 g/l
Agar. ..... 10 g/l
pH value. ..... 7,5 ±0,2

| | | | |
|---|---|---|---|
| **X920.1** | 500 g | plastic | 79,45 € |
| Original pack 6 x 500 g | | | 75,48/500 g |

## Fraser Broth (Base)

**ISO 11290-1, for microbiology**

Enrichment medium for detection and isolation of *Listeria* in foods and environmental samples.

Storage temp.: +20 °C

Full Fraser Broth including esculin, acriflavine and nalidixic acid. Application: Use 57,3 g for 1 l broth. A slight precipitate may appear after autoclaving. Prior to use add sterile filtered ferric(III) ammonium citrate solution ad 0,5 g/l broth (Art. No. 3130.1).

**Guarantee analysis:**

Pancreatic digest of casein. ..... 5 g/l
Meat peptone. ..... 5 g/l
Beef extract. ..... 5 g/l
Yeast extract. ..... 5 g/l
Sodium chloride. ..... 20 g/l
Disodium phosphate. ..... 12 g/l
Potassium phosphate. ..... 1,35 g/l
Lithium chloride. ..... 3 g/l
Esculin. ..... 1 g/l
Acriflavine. ..... 0,025 g/l
Nalidixic acid. ..... 0,02 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **HP17.1** | 500 g | plastic | 125,25 € |
| Original pack 6 x 500 g | | | 118,99/500 g |

▶ Ammonium iron(III)citrate solution
see page 1406

**Light-coloured precipitates in nutrient media**

In media containing potassium or sodium phosphate, large amounts of yeast extract,or non-fat milk, light-coloured precipitates may form during autoclaving, appearing as opaqueness, light-coloured clouding or white precipitate. In the majority of cases this is insoluble calcium- or magnesium phosphates, which originate in exceeding of the solubility product during heating, and which don't resolubilise during cooling. Typical media showing these phosphate crystals are, for instance, Terrific Broth (TB), Plate Count Agar with non-fat milk, or **Fraser media**.

The amount of phosphates present is only slightly reduced by that, so the medium may be used without any problems. In case the cloudiness hinders analyses, the bouillon may be cleared from precipitates by sterile filtration. Agar media may generally be used directly.

In cases of recurrence we recommend to thoroughly check the desalting plant, or to desalt the water used repeatedly, in order to remove residual calcium carbonate (chalk).

## Fraser Half Broth (Base)

**ISO 11290-1, for microbiology**

Enrichment medium for detection and isolation of *Listeria* in foods and environmental samples.

Storage temp.: +20 °C

Fraser Broth including esculin. With reduced amounts of acriflavine and nalidixic acid.
Application: Use 57,3 g for 1 l broth. A slight precipitate may appear after autoclaving. Prior to use add sterile filtered iron(III) ammonium citrate solution ad 0,5 g/l broth (Art. No. 3130.1).

**Guarantee analysis:**

Pancreatic digest of casein. ..... 5 g/l
Meat peptone. ..... 5 g/l
Beef extract. ..... 5 g/l
Yeast extract. ..... 5 g/l
Sodium chloride. ..... 20 g/l
Disodium phosphate. ..... 12 g/l
Potassium phosphate. ..... 1,3 g/l
Lithium chloride. ..... 3 g/l
Esculin. ..... 1 g/l
Acriflavine. ..... 0,0125 g/l
Nalidixic acid. ..... 0,01 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **HP18.1** | 500 g | plastic | 97,75 € |
| Original pack 6 x 500 g | | | 92,86/500 g |
| **HP18.2** | 1 kg | plastic | 174,70 € |
| Original pack 6 x 1 kg | | | 165,97/1 kg |

## Gelatin Agar (DEV)

**DEV, for microbiology**

For enumeration of the total microbial population and detection of gelatin-liquefying microorganisms in water samples.

Storage temp.: +20 °C

Application: Use 50 g for 1 l agar.

**Guarantee analysis:**

Meat peptone. ..... 10 g/l
Meat extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Gelatine. ..... 10 g/l
Agar. ..... 15 g/l
pH value. ..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **HP07.1** | 500 g | plastic | 145,05 € |
| Original pack 6 x 500 g | | | 137,80/500 g |

## King's B Medium (Base)

**DEV, EN ISO 16266:2008, for microbiology**

For confirmation of *Pseudomonas aeruginosa* in water samples.

Storage temp.: +20 °C

Application: Use 38 g for 990 ml agar. Add 10 ml glycerol.

**Guarantee analysis:**

Peptone. ..... 20 g/l
di-Potassium hydrogen phosphate. ..... 1,5 g/l
Magnesium sulphate heptahydrate. ..... 1,5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **CP64.1** | 500 g | plastic | 160,20 € |
| Original pack 6 x 500 g | | | 152,19/500 g |

**Instructions for use**
can be found on the Internet next to the product description.

## Kligler Iron Agar

**for microbiology**

For differentiation of gram-negative enterobacteria.
Double Sugar Iron Agar, **KIA**
Storage temp.: +20 °C




**Figure:**
① *Salmonella enteritidis*
② Uninoculated agar
Application: Use 52 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Peptone mixture | 20 g/l |
| Lactose | 10 g/l |
| Sodium chloride | 5 g/l |
| Glucose | 1 g/l |
| Ammonium iron(III) citrate | 0,5 g/l |
| Sodium thiosulphate | 0,5 g/l |
| Phenol red | 0,025 g/l |
| Agar | 15 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **5758.1** | 500 g | plastic | 85,90 € |
| Original pack 6 x 500 g | | | 81,61/500 g |

## Lactose Broth

**Ph.Eur., for microbiology**

For detection and enumeration of coliform bacteria and for enrichment of *Salmonellae*.
Broth medium D (Ph.Eur. 6.0)
Storage temp.: +20 °C




**Figure:**
① *Escherichia coli* (gas formation (arrow))
② Uninoculated broth
Application: Use 13 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Gelatin peptone (Pancreas hydrolysate) | 5 g/l |
| Lactose monohydrate | 5 g/l |
| Beef extract | 3 g/l |
| pH value | 6,9 ±0,2 |

| | | | |
|---|---|---|---|
| **X921.1** | 500 g | plastic | 68,70 € |
| Original pack 6 x 500 g | | | 65,27/500 g |

## Lactose-Broth (DEV)

**DEV, for microbiology**

For confirmation of *Escherichia coli* in water samples by lactose fermentation.
Storage temp.: +20 °C
Application: Use 28 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Meat peptone | 10 g/l |
| Meat extract | 3 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Lactose | 10 g/l |
| Bromcresol purple | 0,02 g/l |
| pH value | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **CL76.1** | 500 g | plastic | 90,85 € |
| Original pack 6 x 500 g | | | 86,31/500 g |

## Lactose Peptone Broth (DEV)

**DEV, for microbiology**

For enrichment and enumeration of coliform bacteria in water samples.
Storage temp.: +20 °C
Application: Use 35 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Meat peptone | 17 g/l |
| Soy peptone | 3 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Lactose | 10 g/l |
| Bromcresol purple | 0,02 g/l |
| pH value | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **CL77.1** | 500 g | plastic | 109,15 € |
| Original pack 6 x 500 g | | | 103,69/500 g |
| **CL77.2** | 1 kg | plastic | 187,60 € |
| Original pack 6 x 1 kg | | | 178,22/1 kg |

## Lactose Sulphite Broth (Base)

**Ph.Eur., for microbiology**

For selective detection and enumeration of *C. perfringens*.
Medium R (Ph.Eur. 6.0)
Storage temp.: +20 °C
Application: Use 20,3 g for 1 l broth. Prior to use add sodium bisulphite solution and iron(III) ammonium citrate solution (Art. No. 3130.1).

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone (Pancreas hydrolysate) | 5 g/l |
| Yeast extract | 2,5 g/l |
| Sodium chloride (NaCl) | 2,5 g/l |
| Lactose monohydrate | 10 g/l |
| Cystein hydrochloride | 0,3 g/l |
| pH value | 7,1 ±0,2 |

| | | | |
|---|---|---|---|
| **AE46.1** | 500 g | plastic | 80,10 € |
| Original pack 6 x 500 g | | | 76,10/500 g |

▶ Ammonium iron(III)citrate solution
see page 1406

**Instructions for use**
can be found on the Internet next to the product description.

## Lauryl Sulphate Broth

**ISO 4831:2006, for microbiology**

For enrichment and detection of coliform bacteria in waters.

**Flu Broth** • Storage temp.: +20 °C

Application: Use 35,6 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Tryptose. | 20 g/l |
| Lactose. | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Potassium phosphate. | 2,75 g/l |
| di-Potassium phosphate. | 2,75 g/l |
| Sodium lauryl sulphate. | 0,1 g/l |
| pH value. | 6,8 ±0,2 |

| | | | |
|---|---|---|---|
| **CL80.1** | 500 g | plastic | 107,00 € |
| Original pack 6 x 500 g | | | 101,65/500 g |

## Legionella Agar (Base)

**EN ISO 11731-2, for microbiology**

For selective cultivation of *Legionella*.

**BCYE Agar** (Base), **GVCP Agar** (Base) • Storage temp.: +20 °C



**Figure:** *Legionella pneumophila*

Application: Use 2,5 g for 90 ml agar. After autoclaving add 1 vial (10 ml) reconstituted *Legionella* Growth Supplement (Art. No. CL49.1). If required also add reconstituted *Legionella* GVCP Supplement (Art. No. CL50.1).

**Guarantee analysis:**

| | |
|---|---|
| Yeast extract. | 10,0 g/l |
| Charcoal activated. | 2,0 g/l |
| Agar. | 13,0 g/l |
| pH value. | 6,9 ±0,2 |

| | | | |
|---|---|---|---|
| **CL48.1** | 500 g | plastic | 122,05 € |
| Original pack 6 x 500 g | | | 115,95/500 g |

▶ Legionella Supplements see page 1407

▶ Legionella Acid Buffer see page 1411 NEW

## Letheen Broth modified

**for microbiology**

For microbiological analyses of cosmetics, and samples containing disinfectants or preservatives. • Storage temp.: +20 °C

Based on the formulation acc. to FDA (Food and Drug Administration, USA), Bacteriological Analytical Manual (1995), Microbiological Methods for Cosmetics.

Application: Use 43,8 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Meat peptone. | 20 g/l |
| Casein peptone. | 5 g/l |
| Polysorbate 80. | 5 g/l |
| Sodium chloride. | 5 g/l |
| Beef extract. | 5 g/l |
| Yeast extract. | 2 g/l |
| Glucose. | 1 g/l |
| Lecithin. | 0,7 g/l |
| Sodium bisulfite. | 0,1 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **5761.1** | 500 g | plastic | 102,70 € |
| Original pack 6 x 500 g | | | 97,57/500 g |

## Letheen Agar modified

**for microbiology**

For microbiological analyses of cosmetics, and samples containing disinfectants or preservatives.

Storage temp.: +20 °C

Based on the formulation acc. to FDA (Food and Drug Administration, USA), Bacteriological Analytical Manual (1995), Microbiological Methods for Cosmetics.

Application: Use 59,1 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Meat peptone. | 10 g/l |
| Casein peptone. | 10 g/l |
| Polysorbate 80. | 7 g/l |
| Sodium chloride. | 5 g/l |
| Beef extract. | 3 g/l |
| Yeast extract. | 2 g/l |
| Glucose. | 1 g/l |
| Lecithin. | 1 g/l |
| Sodium bisulfite. | 0,1 g/l |
| Agar. | 20 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **5759.1** | 500 g | plastic | 113,45 € |
| Original pack 6 x 500 g | | | 107,78/500 g |

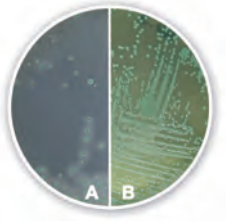
## Listeria chromogenic Agar (Base)

**ISO 11290:2004, for microbiology**

Selective medium for detection and enumeration of *Listeria monocytogenes*.

Storage temp.: +4 °C

**Warning** H315-H319




**Staining of species:**
**A:** *Listeria monocytogenes* cyan-blue to turquois (by reaction of the β-D-glucosidase) with halo
**B:** *Listeria innocua* green to light greenish-blue
*Enterococcus* and *E. coli* inhibited

Application: Use 70,55 g for 1 l agar. After cooling add 2 vials (10 ml reconstituted) Listeria Chromo Selective Supplement (Art. No. 2947.1) and 2 vials (10 ml each) Listeria Chromo Lipase C Supplement (Art. No. 2948.1).

**Guarantee analysis:**

| | |
|---|---|
| Meat peptone. | 18 g/l |
| Lithium chloride. | 10 g/l |
| Yeast extract. | 10 g/l |
| Tryptone. | 6 g/l |
| Sodium chloride. | 5 g/l |
| di-Sodium hydrogen phosphate. | 2,5 g/l |
| Glucose. | 2 g/l |
| Sodium pyruvate. | 2 g/l |
| Magnesium glycerophosphate. | 1 g/l |
| Magnesium sulphate. | 0,5 g/l |
| Chromogene Mixture. | 0,05 g/l |
| Agar. | 13,5 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **3008.1** | 100 g | plastic | 64,40 € |

▶ Listeria Supplements see page 1408

## Lysine Iron Agar

**for microbiology**

For rapid differentiation of *Enterobacteriaceae,* particularly *Salmonella arizonae.*

Storage temp.: +20 °C

Differentiation of *Enterobacteriaceae* on the basis of Lysine decarboxylation and -deamination, as well as of $H_2S$ production.
Application: Use 33 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| L-Lysin | 10 g/l |
| Gelatine peptone | 5 g/l |
| Yeast extract | 3 g/l |
| Dextrose | 1 g/l |
| Ammonium iron(III) citrate | 0,5 g/l |
| Sodium thiosulphate | 0,04 g/l |
| Bromocresol purple | 0,02 g/l |
| Agar | 13,5 g/l |
| pH value | 6,7 ±0,2 |

| | | | |
|---|---|---|---|
| **8322.1** | 500 g | plastic | 171,50 € |
| Original pack 6 x 500 g | | | 162,93/500 g |

## MacConkey Broth

**Ph.Eur., for microbiology**

For detection of coliform bacteria in water, milk and other liquids.

Broth medium G (Ph.Eur. 6.0), MacConkey Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

Application: Use 35 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Gelatin peptone (Pancreas hydrolysate) | 20 g/l |
| Lactose monohydrate | 10 g/l |
| Dehydrated ox bile | 5 g/l |
| Bromocresol purple | 0,01 g/l |
| pH value | 7,3 ±0,2 |

| | | | |
|---|---|---|---|
| **AE47.1** | 500 g | plastic | 80,55 € |
| Original pack 6 x 500 g | | | 76,52/500 g |

## MacConkey Agar

**Ph.Eur., EN ISO 21567, for microbiology**

For selective isolation and identification of enterobacteria from waste water, foods and other samples.

Agar medium H (Ph.Eur. 6.0), MacConkey Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0) • Storage temp.: +20 °C




**Figure: A**: *Enterobacter aerogenes,* **B**: *Shigella dysenteriae*
Application: Use 50 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Gelatin peptone (Pancreas hydrolysate) | 17 g/l |
| Meat and casein peptone | 3 g/l |
| Lactose monohydrate | 10 g/l |
| Bile salt (Cholate) | 1,5 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Neutral red | 0,03 g/l |
| Crystal Violet | 0,001 g/l |
| Agar | 13,5 g/l |
| pH value | 7,1 ±0,2 |

| | | | |
|---|---|---|---|
| **X922.1** | 500 g | plastic | 81,20 € |
| Original pack 6 x 500 g | | | 77,14/500 g |
| **X922.2** | 1 kg | plastic | 146,10 € |
| Original pack 6 x 1 kg | | | 138,80/1 kg |

▶ MacConkey Agar, **granulated**, see page 1404

## Malt Extract Broth

**for microbiology**

For isolation and enumeration of yeasts and moulds, as well as for sterility testing.

Storage temp.: +20 °C

Application: Use 19 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Malt extract | 13,0 g/l |
| Gelatine peptone | 5,5 g/l |
| Yeast extract | 0,5 g/l |
| pH value | 4,7 ±0,2 |

| | | | |
|---|---|---|---|
| **CP75.1** | 500 g | plastic | 87,65 € |
| Original pack 6 x 500 g | | | 83,27/500 g |

**Sterilisation of media containing sugar**

Media containing sugar or **malt extract**, particularly those with a low pH, must be sterilised with care. We recommend autoclaving at up to 118 °C for a maximum of 15 min. Please observe the guidelines given in the instructions for use.

The reasons are as follows:

a) Heating sugar in combination with amino acids (from peptone, meat extract, yeast extract, or similar) can result in **toxic Maillard reaction products** which may interfere with proliferation of micro-organisms.

b) Inclusion of different sugar molecules and sugar degradation products will cause premature chain termination and inhibit chain cross-linking. The **gelability of agars containing sugar** will thereby be reduced.



## Malt Extract Agar

**for microbiology**

For cultivation of fungi and yeasts.

Storage temp.: +20 °C

Application: Use 33,6 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Malt extract | 12,75 g/l |
| Gelatine peptone | 0,78 g/l |
| Glycerol | 2,35 g/l |
| Dextrine | 2,75 g/l |
| Agar | 15 g/l |
| pH value | 4,7 ±0,2 |

| | | | |
|---|---|---|---|
| **X923.1** | 500 g | plastic | 81,20 € |
| Original pack 6 x 500 g | | | 77,14/500 g |
| **X923.2** | 1 kg | plastic | 146,10 € |
| Original pack 6 x 1 kg | | | 138,80/1 kg |

Please note our **Technical Information Brochure** on the Internet next to the products:

**Why Doesn't My Agar Gel?**
Basics, tips & tricks

## Mannitol Egg Yolk Polymyxin Agar (Base)

**for microbiology**

For enumeration and isolation of *Bacillus cereus* in food, acc. to Mossel.
Bacillus cereus Selective Agar, **MYP Agar**
Storage temp.: +20 °C



**Figure:**
*Bacillus cereus*
Application: Use 43 g for 1 l agar. After cooling add 100 ml Egg Yolk Emulsion (Art. No. 0402.1) and 2 vials (2x5 ml) reconstituted Bacillus cereus Supplement (Art. No. 4856.1).

**Formulation:**

| | |
|---|---|
| Meat peptone | 10 g/l |
| Sodium chloride | 10 g/l |
| D-Mannitol | 10 g/l |
| Beef extract | 1 g/l |
| Phenol red | 0,025 g/l |
| Agar | 12 g/l |
| pH value | 7,1 ±0,2 |

| | | | |
|---|---|---|---|
| **5765.1** | 500 g | plastic | 97,30 € |
| Original pack 6 x 500 g | | | 92,44/500 g |

▶ Bacillus cereus Supplement see page 1406

## Mannitol Salt Agar

**Ph.Eur., for microbiology**

For isolation of pathogenic *Staphylococci*.
Chapman Agar, Mannitol Salt Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C
Recommended by the Harmonized Method (Ph. Eur. 6.0, 2.6.13.B) for proliferation and identification of *Staphylococcus aureus*.

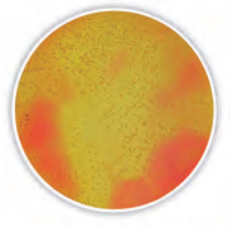


**Figure:**
*Staphylococcus aureus*
Application: Use 111 g for 1 l agar. Optional: Add egg yolk emulsion (Art. No. 0402.1) to 5 % final concentration.

**Guarantee analysis:**

| | |
|---|---|
| Pancreatic digest of casein | 5 g/l |
| Peptone (peptic digest of animal tissue) | 5 g/l |
| Beef extract | 1 g/l |
| Sodium chloride | 75 g/l |
| D-Mannitol | 10 g/l |
| Phenol red | 0,025 g/l |
| Agar | 15 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **CL81.1** | 500 g | plastic | 62,90 € |
| Original pack 6 x 500 g | | | 59,76/500 g |

▶ Egg Yolk Emulsion see page 1407

## Marine Broth

**for microbiology**

For enumeration and isolation of heterotropic marine bacteria.
Storage temp.: +20 °C
Application: Use 40,1 g for 1 l broth. May be slightly opalescent and may present a light precipitation.

**Formulation:**

| | |
|---|---|
| Sodium chloride (NaCl) | 19,4 g/l |
| Magnesium chloride | 8,8 g/l |
| Peptone | 5 g/l |
| Sodium sulphate ($Na_2SO_4$) | 3,24 g/l |
| Calcium chloride | 1,8 g/l |
| Yeast extract | 1 g/l |
| Potassium chloride (KCl) | 0,55 g/l |
| Sodium bicarbonate | 0,16 g/l |
| Ferric citrate | 0,1 g/l |
| Potassium bromide | 0,08 g/l |
| Strontium chloride | 0,034 g/l |
| Boric acid | 0,022 g/l |
| Sodium silicate | 0,004 g/l |
| Sodium fluoride | 0,0024 g/l |
| Ammonium nitrate | 0,0016 g/l |
| Disodium phosphate | 0,008 g/l |
| pH value | 7,6 ±0,2 |

| | | | |
|---|---|---|---|
| **CP73.1** | 500 g | plastic | 90,85 € |
| Original pack 6 x 500 g | | | 86,31/500 g |

## Maximum Recovery Solution

**DIN 10162, LMBG, DIN EN ISO 6887-1, for microbiology**

For homogenization and dilution of microbiological samples.
Storage temp.: +20 °C
Application: Use 9,5 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Sodium chloride | 8,5 g/l |
| Casein peptone | 1 g/l |
| pH value | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **5766.1** | 500 g | plastic | 53,65 € |
| Original pack 6 x 500 g | | | 50,97/500 g |



Please note our **Technical Information Brochure** on the Internet next to the products:

**Guidelines for the production and storage of media and agars**
Basics, tips & tricks

## m-CP Agar

**acc. to TWVO 2001, for microbiology**

For isolation and enumeration of *Clostridium perfringens.*

Storage temp.: +20 °C

Application: Use 71,1 g for 1 l agar. After autoclaving add 2 vials (4 ml) reconstituted Clostridium perfringens Supplement (Art. No. CL52.1) and other supplements.

**Guarantee analysis:**

| | |
|---|---|
| Tryptose. | 30 g/l |
| Yeast extract. | 20 g/l |
| Saccharose. | 5 g/l |
| L-Cysteine hydrochloride. | 1 g/l |
| Magnesium sulphate heptahydrate. | 0,1 g/l |
| Bromocresol purple. | 0,04 g/l |
| Agar. | 15 g/l |
| pH value | 7,6 ±0,2 |

| | | | |
|---|---|---|---|
| **CL55.1** | 500 g | plastic | 188,70 € |
| Original pack 6 x 500 g | | | 179,27/500 g |

▶ Clostridium perfringens Supplement 1406

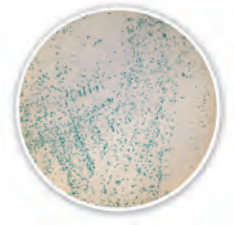
## m-EI-chromogenic Agar (Base)

**for microbiology**

For detection and enumeration of *Enterococcus* in water via single step membrane filtration.

Storage temp.: +4 °C

⚠ **Warning** H302



**Staining of species:**
*Enterococcus* blue (by reaction of the β-D-glucosidase)
*E. coli* inhibited
Application: Use 71,95 g for 1 l agar. After autoclaving add 0,24 g nalidixic acid (Art. No. CN32.1) solubilised in water.

**Formulation:**

| | |
|---|---|
| Yeast extract. | 30 g/l |
| Sodium chloride. | 15 g/l |
| Peptone. | 10 g/l |
| Esculin. | 1 g/l |
| Chromogene Mixture. | 0,75 g/l |
| Sodium azide. | 0,15 g/l |
| Cycloheximide. | 0,05 g/l |
| Agar. | 15 g/l |
| pH value. | 7,1 ±0,2 |

| | | | |
|---|---|---|---|
| **3014.1** | 100 g | plastic | 87,00 € |

## Mossel EE Broth

**Ph.Eur., for microbiology**

For selective enrichment of enterobacteria in foods, particularly *Salmonella* and Coliforms.

Enriched broth medium E (Ph.Eur. 6.0), Enterobacteria enrichment broth-Mossel (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C




**Figure:**
① Enterobacteria (here: *E. coli*), indicated by colour yellow caused by pH-shift
② Uninoculated broth
Application: Use 45 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Pancreas hydrolysate made from gelatin. | 10 g/l |
| Glucose monohydrate. | 5 g/l |
| Dehydrated ox bile. | 20 g/l |
| Potassium dihydrogen phosphate. | 2 g/l |
| di-Sodium hydrogenphosphate dihydrate. | 8 g/l |
| Brilliant green. | 0,015 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **AE65.1** | 500 g | plastic | 174,70 € |
| Original pack 6 x 500 g | | | 165,97/500 g |

## MRSA chromogenic Agar (Base)

**for microbiology**

For detection of methicillin resistant staphylococci.

Storage temp.: +4 °C



**Staining of species:**
*Staphylococcus aureus* ATCC 43300 blue
(by reaction of the α-D-glucosidase)
*Staphylococcus aureus* ATCC 25923 and *E. coli* inhibited
Application: Use 103,4 g for 1 l agar. Do not overheat! After cooling add 2 vials (10 ml) reconstituted MRSA Cefoxitin Supplement (Art. No. 2975.1).

**Formulation:**

| | |
|---|---|
| Nutrients. | 78 g/l |
| Peptone. | 11 g/l |
| Chromogene Mixture. | 1,9 g/l |
| Agar. | 12,5 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **3026.1** | 100 g | plastic | 75,15 € |

▶ MRSA Cefoxitin Supplement see page 1409



## MRS Broth
**for microbiology**

For cultivation of lactobacilli. According to deMan, Rogosa and Sharpe.
Storage temp.: +4 °C
Application: Use 52 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Peptone. | 10 g/l |
| Yeast extract. | 4 g/l |
| Beef extract. | 8 g/l |
| Glucose. | 20 g/l |
| Dipotassium phosphate. | 2 g/l |
| Sodium acetate. | 5 g/l |
| Ammonium citrate. | 2 g/l |
| Magnesium sulphate ($MgSO_4$). | 0,2 g/l |
| Manganese sulphate. | 0,05 g/l |
| Polysorbate 80. | 1 g/l |
| pH value. | 6,2 ±0,2 |

| | | | |
|---|---|---|---|
| **X925.1** | 500 g | plastic | 72,60 € |
| Original pack 6 x 500 g | | | 68,97/500 g |
| **X925.2** | 1 kg | plastic | 122,05 € |
| Original pack 6 x 1 kg | | | 115,95/1 kg |
| **X925.3** | 2,5 kg | plastic | 260,70 € |

## MRS Broth pH 5.7
**ISO 15214, for microbiology**

For cultivation of pH sensitive lactobacilli from foods and feeding stuff. According to deMan, Rogosa and Sharpe.
Storage temp.: +4 °C
MRS Broth with low pH value. For cultivation of special strains of lactobacilli, which show reduced growth under higher pH-values. Also for efficient protein expression of many proteins of *Lactobacillus*. 0.1 g/l Magnesium sulphate (anhydrous) is equivalent to 0.2 g/l Magnesium sulphate heptahydrate. 0.003 g/l Manganese sulphate (anhydrous) is equivalent to
0.05 g/l Manganese sulphate tetrahydrate.
Application: Use 54 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone. | 10 g/l |
| Yeast extract. | 4 g/l |
| Beef extract. | 10 g/l |
| Glucose. | 20 g/l |
| Dipotassium phosphate. | 2 g/l |
| Sodium acetate. | 5 g/l |
| Triammonium citrate. | 2 g/l |
| Magnesium sulphate heptahydrate. | 0,20 g/l |
| Mangansulphate tetrahydrate. | 0,05 g/l |
| Polysorbate 80. | 1,08 g/l |
| pH value. | 5,7 ±0,1 |

| | | | |
|---|---|---|---|
| **HP64.1** | 500 g | plastic | 76,90 € |
| Original pack 6 x 500 g | | | 73,06/500 g |

## MRS Agar
**for microbiology**

For cultivation of lactobacilli. According to deMan, Rogosa and Sharpe.
Storage temp.: +4 °C
Application: Use 62 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Peptone. | 10 g/l |
| Yeast extract. | 4 g/l |
| Beef extract. | 8 g/l |
| Glucose. | 20 g/l |
| Dipotassium phosphate. | 2 g/l |
| Sodium acetate. | 5 g/l |
| Ammonium citrate. | 2 g/l |
| Magnesium sulphate ($MgSO_4$). | 0,2 g/l |
| Manganese sulphate. | 0,05 g/l |
| Polysorbate 80. | 1 g/l |
| Agar. | 10 g/l |
| pH value. | 6,2 ±0,2 |

| | | | |
|---|---|---|---|
| **X924.1** | 500 g | plastic | 76,25 € |
| Original pack 6 x 500 g | | | 72,44/500 g |
| **X924.2** | 1 kg | plastic | 132,80 € |
| Original pack 6 x 1 kg | | | 126,16/1 kg |

## MRS Agar pH 5.7
**ISO 15214, for microbiology**

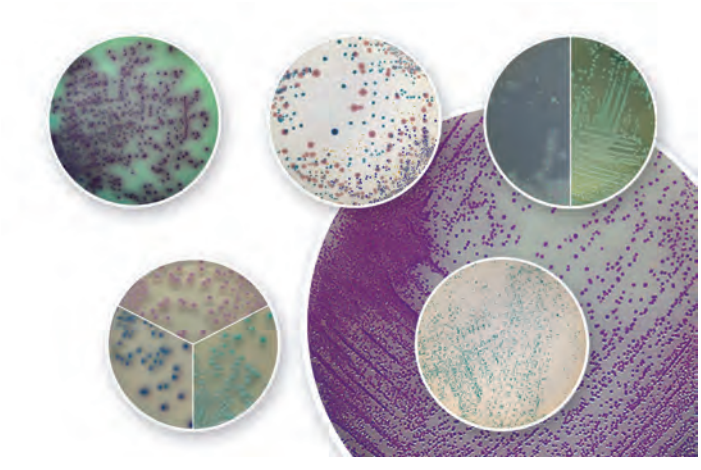
For cultivation of pH sensitive lactobacilli from foods and feeding stuff. According to deMan, Rogosa and Sharpe.
Storage temp.: +4 °C
MRS Agar with low pH value. For cultivation of special strains of lactobacilli, which show reduced growth under higher pH-values. Also for efficient protein expression of many proteins of *Lactobacillus*.
0.1 g/l Magnesium sulphate (anhydrous) is equivalent to 0.2 g/l Magnesium sulphate heptahydrate. 0.003 g/l Manganese sulphate (anhydrous) is equivalent to 0.05 g/l Manganese sulphate tetrahydrate.
Application: Use 64 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone. | 10 g/l |
| Yeast extract. | 4 g/l |
| Beef extract. | 10 g/l |
| Glucose. | 20 g/l |
| Dipotassium phosphate. | 2 g/l |
| Sodium acetate. | 5 g/l |
| Triammonium citrate. | 2 g/l |
| Magnesium sulphate heptahydrate. | 0,20 g/l |
| Mangansulphate tetrahydrate. | 0,05 g/l |
| Polysorbate 80. | 1,08 g/l |
| Agar. | 10 g/l |
| pH value. | 5,7 ±0,1 |

| | | | |
|---|---|---|---|
| **HP65.1** | 500 g | plastic | 83,35 € |
| Original pack 6 x 500 g | | | 79,18/500 g |

## Chromogenic Agars made by Roth



## Mueller Hinton Broth

**for microbiology**

For cultivation of microorganisms and for antibiotic-sensitivity testing.
Storage temp.: +20 °C

Application: Use 21 g for 1 l broth. Slightly opalescent.

**Formulation:**

| | |
|---|---|
| Beef Infusion | 2 g/l |
| Casein peptone (acidic hydrolysate) | 17,5 g/l |
| Corn starch | 1,5 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **X927.1** | 500 g | plastic | 120,95 € |
| Original pack 6 x 500 g | | | 114,90/500 g |

## Mueller Hinton Agar

**for microbiology**

For testing of organism susceptibility to antimicrobial agents by disk diffusion method. Also for cultivation of *Neisseria*.
Storage temp.: +20 °C
Application: Use 38 g for 1 l agar. Slightly opalescent.

**Formulation:**

| | |
|---|---|
| Beef Infusion | 2 g/l |
| Casein peptone (acidic hydrolysate) | 17,5 g/l |
| Corn starch | 1,5 g/l |
| Agar | 17 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **X926.1** | 500 g | plastic | 92,35 € |
| Original pack 6 x 500 g | | | 87,73/500 g |

▶ McFarland Turbidity standards see page 1436

## Mueller Kauffmann Broth (Base)

**for microbiology**

For selective enrichment of *Salmonella* from meat and other foods.
Tetrathionate Broth, Tetrathionate Enrichment Broth
Storage temp.: +20 °C

Application: Use 82 g for 1 l broth. Add iodine and brilliant green.

**Formulation:**

| | |
|---|---|
| Sodium thiosulphate | 40,7 g/l |
| Calcium carbonate | 25 g/l |
| Dehydrated ox bile | 4,75 g/l |
| Sodium chloride (NaCl) | 4,5 g/l |
| Meat peptone | 4,5 g/l |
| Yeast extract | 1,8 g/l |
| Meat extract | 0,9 g/l |
| pH value | 7,6 ±0,2 |

| | | | |
|---|---|---|---|
| **8323.1** | 500 g | plastic | 82,70 € |
| Original pack 6 x 500 g | | | 78,57/500 g |

## Nutrient Broth

**for microbiology**

For cultivation of non-fastidious microorganisms.
Storage temp.: +20 °C

Application: Use 8 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Beef extract | 3 g/l |
| Gelatine peptone | 5 g/l |
| pH value | 6,8 ±0,2 |

| | | | |
|---|---|---|---|
| **X929.1** | 500 g | plastic | 76,25 € |
| Original pack 6 x 500 g | | | 72,44/500 g |
| **X929.2** | 1 kg | plastic | 134,40 € |
| Original pack 6 x 1 kg | | | 127,68/1 kg |

## Nutrient Agar

**EN ISO 6579, ISO 10273, for microbiology**

For cultivation of non-fastidious microorganisms.
Storage temp.: +20 °C

Application: Use 23 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Gelatine peptone | 5 g/l |
| Beef extract | 3 g/l |
| Agar | 15 g/l |
| pH value | 6,8 ±0,2 |

| | | | |
|---|---|---|---|
| **X928.1** | 500 g | plastic | 88,70 € |
| Original pack 6 x 500 g | | | 84,27/500 g |
| **X928.2** | 1 kg | plastic | 155,90 € |
| Original pack 6 x 1 kg | | | 148,11/1 kg |



## Nutrient Agar (DEV)

**DEV, DIN 38 411, for microbiology**

For biochemical analysis of *E.coli* and Coliforms in water samples and other sample material.
Storage temp.: +20 °C
Application: Use 43 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Meat peptone | 10 g/l |
| Meat extract | 10 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Agar | 18 g/l |
| pH value | 7,3 ±0,2 |

| | | | |
|---|---|---|---|
| **CL02.1** | 500 g | plastic | 102,15 € |
| Original pack 6 x 500 g | | | 97,04/500 g |
| **CL02.2** | 1 kg | plastic | 182,75 € |
| Original pack 6 x 1 kg | | | 173,61/1 kg |

## Nutrient Agar (DEV/ISO)

**DEV, EN ISO 16266:2008, for microbiology**

For confirmation of *Pseudomonas aeruginosa* in water samples.
Storage temp.: +20 °C
Application: Use 28 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Peptone | 5 g/l |
| Meat extract | 1 g/l |
| Yeast extract | 2 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Agar | 15 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **CP66.1** | 500 g | plastic | 111,30 € |
| Original pack 6 x 500 g | | | 105,74/500 g |

**Instructions for use**
can be found on the Internet next to the product description.

## Orange Serum Agar

**for microbiology**

For isolation, detection and enumeration of acid-tolerant pathogens in fruit juices and fruit juice concentrates, particularly citrus products.

Storage temp.: +20 °C

**Warning** H315-H317-H411-EUH208

Application: Use 40 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Casein peptone. | 10 g/l |
| Orange extract. | 5 g/l |
| Glucose. | 4 g/l |
| Potassium phosphate. | 3 g/l |
| Yeast extract. | 3 g/l |
| Agar. | 15 g/l |
| pH value. | 5,5 ±0,2 |

| | | | |
|---|---|---|---|
| **HP09.1** | 500 g | plastic | 165,05 € |
| Original pack 6 x 500 g | | | 156,80/500 g |

▶ Orange Serum Agar, **granulated**, see page 1404

## Oxford Listeria Agar (Base)

**ISO 11290-1, for microbiology**

Selective medium for detection of *Listeria monocytogenes.*

Oxford Agar

Storage temp.: +20 °C

**Warning** H302-H315-H319

Based on Columbia Agar (Base) (Art. No. X919).



**Figure:**
*Listeria monocytogenes*
Application: Use 55,5 g for 1 l agar. After cooling add 2 vials (2x2 ml) reconstituted Listeria Oxford Supplement (Art. No. 5801.1).

**Guarantee analysis:**

| | |
|---|---|
| Peptone mixture. | 23 g/l |
| Sodium chloride. | 5 g/l |
| Starch. | 1 g/l |
| Lithium chloride. | 15 g/l |
| Esculin. | 1 g/l |
| Ammonium iron(III) citrate. | 0,5 g/l |
| Agar. | 10 g/l |
| pH value. | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **5767.1** | 500 g | plastic | 154,30 € |
| Original pack 6 x 500 g | | | 146,59/500 g |

▶ Listeria Oxford Supplement see page 1408

## Palcam Listeria Agar (Base)

**ISO 11290-1, for microbiology**

Differential medium for detection of *Listeria ssp.*, particularly *L. monocytogenes.*

**Palcam Agar**

Storage temp.: +20 °C

**Warning** H315-H319

Based on Columbia Agar (Base) (Art. No. X919).

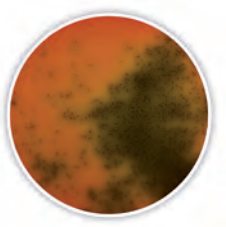


**Figure:**
*Listeria monocytogenes*
Application: Use 68,8 g for 1 l agar. After cooling add 2 vials (2x2 ml) reconstituted Listeria Palcam Supplement (Art. No. 5803.1).

**Guarantee analysis:**

| | |
|---|---|
| Peptone mixture. | 23 g/l |
| Sodium chloride. | 5 g/l |
| Starch. | 1 g/l |
| Lithium chloride. | 15 g/l |
| D-Mannitol. | 10 g/l |
| Yeast extract. | 3 g/l |
| Esculin. | 0,8 g/l |
| Glucose. | 0,5 g/l |
| Phenol red. | 0,08 g/l |
| Ammonium iron(III) citrate. | 0,5 g/l |
| Agar. | 10 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **5768.1** | 500 g | plastic | 142,45 € |
| Original pack 6 x 500 g | | | 135,33/500 g |

▶ Listeria Palcam Supplement see page 1408

## Ready-Made Media by Roth

see the front part of this chapter



## Peptone Water, buffered

**Ph.Eur., for microbiology**

For dilution and homogenisation of samples during microbiological analysis of food.
Sodium peptone buffer solution (Ph.Eur. 6.0), Buffered Sodium Chloride-Peptone Solution (Ph.Eur. 6.3, 7.0, 8.0 and 9.0) .
Storage temp.: +20 °C
Application: Use 16,1 g for 1 l broth.

**Guarantee analysis:**

Potassium hydrogen phosphate*..... 3,6 g/l
di-Sodium hydrogen phosphate dihydrate*..... 7,2 g/l
Sodium chloride (NaCl). ..... 4,3 g/l
Casein peptone (Pancreas hydrolysate)..... 1,0 g/l
pH value. ..... 7,0 ±0,2
*equivalent to 0,067 M phosphate

| | | | |
|---|---|---|---|
| **AE67.1** | 500 g | plastic | 64,00 € |
| Original pack 6 x 500 g | | | 60,80/500 g |
| **AE67.2** | 1 kg | plastic | 109,15 € |
| Original pack 6 x 1 kg | | | 103,69/1 kg |

Please note our **Technical Information Brochure** on the Internet next to the products:

**Clouding of Microbiological Nutrient Media**
Basics, tips and tricks

## Peptone Water, buffered

**EN ISO 6887, EN ISO 6579, ISO 22964, EN ISO 19250, for microbiology**

Diluent for homogenisation of food samples and for sample preparation for microbiological analysis.
Storage temp.: +20 °C
Application: Use 20 g for 1 l broth.

**Guarantee analysis:**

Pancreatic digest of casein..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Disodium phosphate..... 3,5 g/l
Potassium phosphate. ..... 1,5 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X917.1** | 500 g | plastic | 54,75 € |
| Original pack 6 x 500 g | | | 52,01/500 g |
| **X917.2** | 1 kg | plastic | 98,40 € |
| Original pack 6 x 1 kg | | | 93,48/1 kg |
| **X917.3** | 2,5 kg | plastic | 201,60 € |

▶ Peptone water, buffered, **granulated**, see page 1404

## Plate Count Agar

**APHA, ISO 4833:2003, for microbiology**

For enumeration of the aerobic microbial flora in milk, foods and other material.
Storage temp.: +20 °C
Application: Use 23,5 g for 1 l agar.

**Guarantee analysis:**

Casein peptone . ..... 5 g/l
Yeast extract..... 2,5 g/l
Glucose. ..... 1 g/l
Agar..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X930.1** | 500 g | plastic | 84,40 € |
| Original pack 6 x 500 g | | | 80,18/500 g |
| **X930.2** | 1 kg | plastic | 157,50 € |
| Original pack 6 x 1 kg | | | 149,63/1 kg |
| **X930.3** | 2,5 kg | plastic | 321,45 € |

▶ Plate Count Agar, **granulated**, see page 1405

## Plate Count Agar with Powdered Milk

**APHA, DIN 10192, LMBG, IDF, for microbiology**

For enumeration of microorganisms in milk and dairy derivatives.
Storage temp.: +20 °C
Application: Use 24.5 g for 1 l agar.

**Guarantee analysis:**

Tryptone (Peptone from Casein)..... 5 g/l
Yeast extract..... 2,5 g/l
Glucose. ..... 1 g/l
Skimmed Milk Powder. ..... 1 g/l
Agar..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **HP08.1** | 500 g | plastic | 95,15 € |
| Original pack 6 x 500 g | | | 90,39/500 g |

## Potato Extract Glucose Broth

**for microbiology**

For identification, cultivation and enumeration of yeasts and moulds.
Storage temp.: +20 °C
Application: Use 26,5 g for 1 l broth. Slightly opalescent.

**Formulation:**

Potato infusion. ..... 6,5 g/l
Glucose. ..... 20 g/l
pH value. ..... 5,6 ±0,2

| | | | |
|---|---|---|---|
| **CP74.1** | 500 g | plastic | 66,55 € |
| Original pack 6 x 500 g | | | 63,22/500 g |
| **CP74.2** | 1 kg | plastic | 121,40 € |
| Original pack 6 x 1 kg | | | 115,33/1 kg |

## Potato Extract Glucose Agar

**Ph.Eur., for microbiology**

For cultivation and identification of yeasts and moulds.
Potato Dextrose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C
Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.12.B) for preperation of strains of *Aspergillus brasiliensis*.

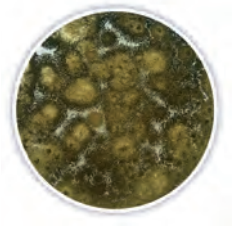


**Figure:**
*Aspergillus brasiliensis*
Application: Use 39 g for 1 l agar. Slightly opalescent.

**Guarantee analysis:**

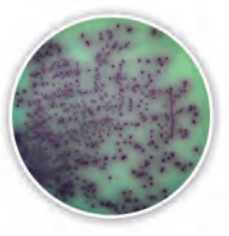
Potato infusion. ..... 4 g/l
Glucose. ..... 20 g/l
Agar. ..... 15 g/l
pH value. ..... 5,6 ±0,2

| | | | |
|---|---|---|---|
| **X931.1** | 500 g | plastic | 96,25 € |
| Original pack 6 x 500 g | | | 91,44/500 g |
| **X931.2** | 1 kg | plastic | 170,95 € |
| Original pack 6 x 1 kg | | | 162,40/1 kg |
| **X931.3** | 2,5 kg | plastic | 396,70 € |

## Pseudomonas chromogenic Agar

**for microbiology**

For detection and isolation of *Pseudomonas*.
Storage temp.: +4 °C



**Staining of species:**
*Pseudomonas aeruginosa* magenta on green-blue coloured agar
*E. coli*, *Enterococcus*, *Salmonella* and *Staphylococcus* inhibited or colourless
Application: Use 37 g for 1 l agar. Do not overheat!

**Formulation:**

Nutrients. ..... 14 g/l
Peptone. ..... 10 g/l
Chromogene Mixture. ..... 1 g/l
Bromothymol blue. ..... 0,02 g/l
Agar. ..... 12 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **3075.1** | 100 g | plastic | 114,50 € |

## Pseudomonas Selective Agar (Base)

**DEV, EN ISO 16266:2008, for microbiology**

For determination and enumeration of *Pseudomonas aeruginosa* from water samples by membrane filtration method.

**CN Agar**

Storage temp.: +20 °C

**Warning** H400

Application: Use 50,6 g for 990 ml agar. Add 10 ml glycerol.

**Guarantee analysis:**

Gelatine peptone. ..... 16 g/l
Casein hydrolysed. ..... 10 g/l
Anhydrous potassium sulphate. ..... 10 g/l
Anhydrous magnesium chloride. ..... 1,4 g/l
Cetrimide. ..... 0,2 g/l
Nalidixic acid. ..... 0,015 g/l
Agar. ..... 13 g/l
pH value. ..... 7,1 ±0,2

| | | | |
|---|---|---|---|
| **CP67.1** | 500 g | plastic | 138,70 € |
| Original pack 6 x 500 g | | | 131,77/500 g |

## R2A-Agar

**Ph.Eur., for microbiology**

For enumeration of heterotrophic bacteria from water samples.

Agar medium S (Ph.Eur. 6.0), Reasoner's 2A Agar

Storage temp.: +20 °C

Nutritionally reduced medium. Incubation of water samples on R2A Agar often leads to higher colony numbers of micro organisms than found for rich media, particularly when incubation is performed at lower temperatures. The medium was originally developed by Reasoner and Geldreich to determine the total germ number in drinking water (Reasoner and Geldreich, 1985, *Appl. Environ. Microbiol.* 49:1).
Application: Use 18,1 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Yeast extract | 0,5 g/l |
| Peptone | 0,5 g/l |
| Casein hydrolysed | 0,5 g/l |
| Glucose | 0,5 g/l |
| Starch | 0,5 g/l |
| di-Potassium hydrogen phosphate | 0,3 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,024 g/l |
| Sodium pyruvate | 0,3 g/l |
| Agar | 15 g/l |
| pH value | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **CL01.1** | 500 g | plastic | 136,00 € |
| Original pack 6 x 500 g | | | 129,20/500 g |

▶ R2A-Agar, **granulated** see page 1405

## Rappaport Vassiliadis Broth

**Ph.Eur., for microbiology**

For selective enrichment of *Salmonellae* in foods, water- and other samples.

R10 Broth, Rappaport Vassiliadis *Salmonella* Enrichment Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), RVS Broth

Storage temp.: +20 °C

Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for proliferation of *Salmonella*.
This particular formulation is a slight modification of the original medium developed by Rappaport (Rappaport *et al.*, 1956, *J. Clin. Pathol.* 9: 261-1).
Application: Use 27,1 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Anhydrous magnesium chloride | 13,58 g/l |
| Sodium chloride (NaCl) | 8,0 g/l |
| Soy peptone | 4,5 g/l |
| Potassium dihydrogen phosphate | 0,6 g/l |
| di-Potassium hydrogen phosphate | 0,4 g/l |
| Malachite green | 0,036 g/l |
| pH value | 5,2 ±0,2 |

| | | | |
|---|---|---|---|
| **CL03.1** | 500 g | plastic | 94,10 € |
| Original pack 6 x 500 g | | | 89,40/500 g |

## Reinforced Clostridial Medium

**Ph.Eur., for microbiology**

For enrichment and enumeration of *Clostridiae* and other anaerobes from foods and other specimens.

Medium P (Ph.Eur. 6.0), Reinforced Medium for *Clostridia* (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), **RCM**

Storage temp.: +20 °C

Application: Use 38 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Beef extract | 10 g/l |
| Peptone | 10 g/l |
| Yeast extract | 3 g/l |
| Soluble starch | 1 g/l |
| Glucose monohydrate | 5 g/l |
| Cystein hydrochloride | 0,5 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Sodium acetate | 3 g/l |
| Agar | 0,5 g/l |
| pH value | 6,8 ±0,2 |

| | | | |
|---|---|---|---|
| **AE66.1** | 500 g | plastic | 103,75 € |
| Original pack 6 x 500 g | | | 98,56/500 g |

## Rogosa Agar

**for microbiology**

For selective cultivation of lactobacilli.

Lactobacillus Selective Agar acc. to Rogosa

Storage temp.: +20 °C

Application: Use 75 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Sodium acetate | 15 g/l |
| Tryptone | 10 g/l |
| Dextrose | 10 g/l |
| Potassium phosphate | 6 g/l |
| Yeast extract | 5 g/l |
| Sucrose | 5 g/l |
| Arabinose | 5 g/l |
| Ammonium citrate | 2 g/l |
| Polysorbate 80 | 1 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,57 g/l |
| Manganese sulphate | 0,12 g/l |
| Iron sulphate | 0,03 g/l |
| Agar | 15 g/l |
| pH value | 5,4 ±0,2 |

| | | | |
|---|---|---|---|
| **8329.1** | 500 g | plastic | 138,70 € |
| Original pack 6 x 500 g | | | 131,77/500 g |

## Sabouraud 2 % Glucose Broth

**Ph.Eur., for microbiology**

Selective media for taxonomic analysis of pathogenic fungi.

Sabouraud Dextrose Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth of *Candida albicans*.
The low amount of glucose supports the activation of the secondary metabolism and, subsequently, pigment formation.

Application: Use 30 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Meat and casein peptone | 10 g/l |
| Glucose | 20 g/l |
| pH value | 5,6 ±0,2 |

| | | | |
|---|---|---|---|
| **AE23.1** | 500 g | plastic | 65,50 € |
| Original pack 6 x 500 g | | | 62,23/500 g |

▶ Sabouraud 2 % Glucose Broth, **granulated** see page 1405

## Sabouraud 2 % Glucose Agar

**for microbiology**

Selective agar for taxonomic analysis of pathogenic fungi.

Storage temp.: +20 °C

The low amount of glucose supports the activation of the secondary metabolism and, subsequently, pigment formation.

Application: Use 47 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Meat and casein peptone | 10 g/l |
| Glucose | 20 g/l |
| Agar | 17 g/l |
| pH value | 5,6 ±0,2 |

| | | | |
|---|---|---|---|
| **AE22.1** | 500 g | plastic | 77,30 € |
| Original pack 6 x 500 g | | | 73,44/500 g |

## Sabouraud 4 % Glucose Agar

**Ph.Eur., for microbiology**

For isolation, differentiation and cultivation of yeasts and fungi.
Agar medium C (Ph.Eur. 6.0), Sabouraud Dextrose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)
Storage temp.: +20 °C
Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth and identification of *Candida albicans*.

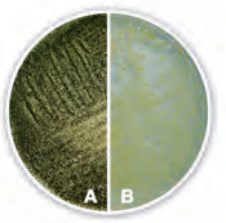



**Figure:**
**A**: *Aspergillus brasiliensis*
**B**: *Candida albicans*

Application: Use 65 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Meat and casein peptone. | 10 g/l |
| Glucose monohydrate. | 40 g/l |
| Agar. | 15 g/l |
| pH value. | 5,6 ±0,2 |

| | | | |
|---|---|---|---|
| **X932.1** | 500 g | plastic | 66,15 € |
| Original pack 6 x 500 g | | | 62,84/500 g |
| **X932.2** | 1 kg | plastic | 118,80 € |
| Original pack 6 x 1 kg | | | 112,86/1 kg |

## Sabouraud 4 % Glucose Agar (with chloroamphenicol)

**Ph.Eur., for microbiology**

Selective agar for cultivation and isolation of yeasts and pathogenic fungi.
Agar medium C with chloroamphenicol (Ph.Eur. 6.0)
Storage temp.: +20 °C

Application: Use 65 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Meat and casein peptone. | 10 g/l |
| Glucose monohydrate. | 40 g/l |
| Chloroamphenicol. | 0,05 g/l |
| Agar. | 15 g/l |
| pH value. | 5,6 ±0,2 |

| | | | |
|---|---|---|---|
| **AE48.1** | 500 g | plastic | 83,75 € |
| Original pack 6 x 500 g | | | 79,56/500 g |

## Sabouraud 4 % Glucose Agar (with chloroamphenicol)

**for microbiology**

For selective isolation of yeasts and pathogenic fungi.
Storage temp.: +20 °C

Application: Use 65,5 g for 1 l agar.

**Formulation:**

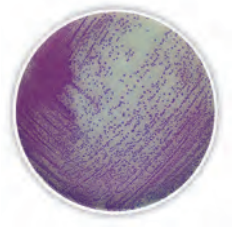
| | |
|---|---|
| Meat and casein peptone. | 10 g/l |
| Glucose. | 40 g/l |
| Chloroamphenicol. | 0,5 g/l |
| Agar. | 15 g/l |
| pH value. | 5,6 ±0,2 |

| | | | |
|---|---|---|---|
| **X933.1** | 500 g | plastic | 74,75 € |
| Original pack 6 x 500 g | | | 71,01/500 g |

## Salmonella chromogenic Agar

**for microbiology**

For isolation of *Salmonella* from foods, waters and other samples.
Storage temp.: +4 °C



**Staining of species:**
*Salmonella* magenta (by reaction of the ß-D-galactosidase)
*E. coli* turquoise (by reaction of the ß-D-glucuronidase)
other *Enterobacteriaceae* clear or inhibited

Application: Use 37,1 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Sodium citrate | 8,5 g/l |
| Casein peptone. | 5 g/l |
| Beef extract. | 5 g/l |
| Chromogene Mixture. | 5,81 g/l |
| Agar. | 12,8 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **CL46.2** | 100 g | plastic | 142,90 € |
| **CL46.1** | 575 g | plastic | 473,00 € |

## Salmonella-Shigella Agar

**for microbiology**

For isolation of pathogenic enterobacteria, especially *Salmonella* and *Shigella*.
Storage temp.: +20 °C

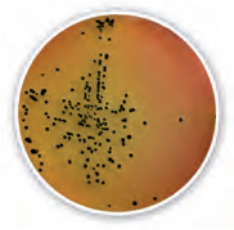


**Figure:**
*Salmonella typhimurium*

Application: Use 60 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Beef extract. | 5 g/l |
| Peptone mixture. | 5 g/l |
| Lactose. | 10 g/l |
| Ferric citrate. | 1 g/l |
| Bile salts. | 8,5 g/l |
| Sodium citrate. | 8,5 g/l |
| Sodium thiosulphate. | 8,5 g/l |
| Brilliant green. | 0,0003 g/l |
| Neutral red. | 0,025 g/l |
| Agar. | 13,5 g/l |
| pH value. | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **X934.1** | 500 g | plastic | 59,70 € |
| Original pack 6 x 500 g | | | 56,72/500 g |

## Schaedler Broth

**for microbiology**

For enrichment and cultivation of anaerobic microorganisms.
Storage temp.: +20 °C

**Warning** H315-H319

Based on CASO Broth / Trypticasein Soy Broth (Art. No. X938).

Application: Use 28,4 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Casein peptone. | 5,66 g/l |
| Soy peptone. | 1 g/l |
| Sodium chloride. | 1,66 g/l |
| Dipotassium hydrogen phosphate. | 0,83 g/l |
| Peptone mixture. | 5 g/l |
| Yeast extract. | 5 g/l |
| Glucose. | 5,83 g/l |
| Tris (hydroxymethyl aminomethane). | 3 g/l |
| L-Cystine. | 0,4 g/l |
| Hemin. | 0,01 g/l |
| pH value. | 7,6 ±0,2 |

| | | | |
|---|---|---|---|
| **5772.1** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |

## Schaedler Agar

**for microbiology**

For recovery and cultivation of anaerobic microorganisms.
Storage temp.: +20 °C
Based on CASO Broth / Trypticasein Soy Broth (Art. No. X938).

Application: Use 41,9 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Casein peptone. | 5,66 g/l |
| Soy peptone. | 1 g/l |
| Sodium chloride. | 1,66 g/l |
| Dipotassium hydrogen phosphate. | 0,83 g/l |
| Peptone mixture. | 5 g/l |
| Yeast extract. | 5 g/l |
| Glucose. | 5,83 g/l |
| Tris (hydroxymethyl aminomethane). | 3 g/l |
| L-Cystine. | 0,4 g/l |
| Hemin. | 0,01 g/l |
| Agar. | 13,5 g/l |
| pH value. | 7,6 ±0,2 |

| | | | |
|---|---|---|---|
| **5771.1** | 500 g | plastic | 123,10 € |
| Original pack 6 x 500 g | | | 116,95/500 g |

## Simmons Citrate Agar

**ISO 10273, for microbiology**

For differentiation of microorganisms on the basis of citrate utilization.
Koser Citrate Agar (modified)
Storage temp.: +20 °C

Application: Use 24,3 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Sodium chloride. | 5 g/l |
| Sodium citrate. | 2 g/l |
| Ammonium dihydrogen phosphate. | 1 g/l |
| di-Potassium hydrogen phosphate. | 1 g/l |
| Magnesium sulphate. | 0,2 g/l |
| Bromothymol blue. | 0,08 g/l |
| Agar. | 15 g/l |
| pH value. | 6,9 ±0,2 |

| | | | |
|---|---|---|---|
| **5774.1** | 500 g | plastic | 134,40 € |
| Original pack 6 x 500 g | | | 127,68/500 g |

## Slanetz-Bartley Agar

**for microbiology**

For detection and enumeration of faecal *streptococci* by membrane filtration method or by direct plating.
Storage temp.: +20 °C

**Warning** H302-H412

Application: Use 41,5 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Tryptose. | 20 g/l |
| Yeast extract. | 5 g/l |
| Glucose. | 2 g/l |
| Dipotassium phosphate. | 4 g/l |
| Sodium azide. | 0,4 g/l |
| Tetrazolium chloride (TTC). | 0,1 g/l |
| Agar. | 10 g/l |
| pH value. | 7,2 ±0,1 |

| | | | |
|---|---|---|---|
| **X935.1** | 500 g | plastic | 149,45 € |
| Original pack 6 x 500 g | | | 141,98/500 g |

## Slanetz-Bartley Medium (with tetrazolium chloride)

**DEV, ISO 7899-2:2000, for microbiology**

For detection and enumeration of intestinal enterococci from water samples.
Storage temp.: +20 °C

**Warning** H302-H412

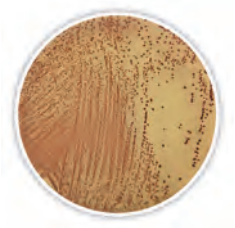


**Figure:**
*Enterococcus faecalis*

Application: Use 41,5 g for 1 l agar.
Sterilise by sterile filtration, do not autoclave.

**Guarantee analysis:**

| | |
|---|---|
| Tryptose. | 20 g/l |
| Yeast extract. | 5 g/l |
| Glucose. | 2 g/l |
| di-Potassium hydrogen phosphate. | 4 g/l |
| Sodium azide. | 0,4 g/l |
| Tetrazolium chloride (TTC). | 0,1 g/l |
| Agar. | 10 g/l |
| pH value. | 7,2 ±0,1 |

| | | | |
|---|---|---|---|
| **CP68.1** | 500 g | plastic | 163,95 € |
| Original pack 6 x 500 g | | | 155,75/500 g |

**Instructions for use**
can be found on the Internet next to the product description.

## Sorbitol MacConkey Agar

**for microbiology**

Selective and differential medium for detection of sorbitol-fermenting *E. coli* O157:H7.

MacConkey Agar with sorbitol, **SMAC Agar**

Storage temp.: +20 °C




**Figure:**
**A:** *Escherichia coli* ATCC 25922
**B:** *Escherichia coli* O157:H7

Application: Use 51,5 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Gelatine peptone. | 20 g/l |
| Sorbitol. | 10 g/l |
| Sodium chloride. | 5 g/l |
| Bile salts No. 3. | 1,5 g/l |
| Neutral red. | 0,03 g/l |
| Crystal Violet. | 0,001 g/l |
| Agar. | 15 g/l |
| pH value. | 7,1 ±0,2 |

| | | | |
|---|---|---|---|
| **5778.1** | 500 g | plastic | 102,05 € |
| Original pack 6 x 500 g | | | 96,95/500 g |

## Standard Count Agar

**for microbiology**

For enumeration of aerobic bacteria in milk, water and wastewaters.

Storage temp.: +20 °C

Application: Use 25 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Meat extract. | 3 g/l |
| Casein peptone. | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Agar. | 12 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **AE91.1** | 500 g | plastic | 98,80 € |
| Original pack 6 x 500 g | | | 93,86/500 g |

## Standard Nutrient Broth I

**for microbiology**

For cultivation and enumeration of fastidious bacteria. Also high-base for preparing special culture media.

Storage temp.: +20 °C

Application: Use 25 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Peptone. | 15 g/l |
| Yeast extract. | 3 g/l |
| Sodium chloride (NaCl). | 6 g/l |
| Glucose. | 1 g/l |
| pH value. | 7,5 ±0,2 |

| | | | |
|---|---|---|---|
| **AE92.1** | 500 g | plastic | 77,30 € |
| Original pack 6 x 500 g | | | 73,44/500 g |
| **AE92.2** | 1 kg | plastic | 138,70 € |
| Original pack 6 x 1 kg | | | 131,77/1 kg |

▶ Standard Nutrient Broth I, **granulated** see page 1405

## Standard Nutrient Agar I

**for microbiology**

For cultivation and enumeration of fastidious bacteria. Also high-base for preparing special culture agars.

Storage temp.: +20 °C

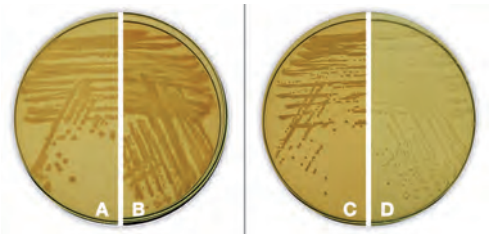



**Figure:**
**A:** *Escherichia coli*
**B:** *Pseudomonas aeruginosa*
**C:** *Staphylococcus aureus*
**D:** *Streptococcus agalactiae*

With kind permission of Nils Niederstebruch, GLOBOLAB e.V., Assling

Application: Use 37 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Peptone. | 15 g/l |
| Yeast extract. | 3 g/l |
| Sodium chloride (NaCl). | 6 g/l |
| Glucose. | 1 g/l |
| Agar. | 12 g/l |
| pH value. | 7,5 ±0,2 |

| | | | |
|---|---|---|---|
| **AE93.1** | 500 g | plastic | 80,55 € |
| Original pack 6 x 500 g | | | 76,52/500 g |
| **AE93.2** | 1 kg | plastic | 139,75 € |
| Original pack 6 x 1 kg | | | 132,76/1 kg |

▶ Standard Nurtrient Agar I, **granulated** see page 1405

## TAT Broth (Base)

**for microbiology**

For proliferation and regeneration of microorganisms from a variety of matters, e.g. from cosmetics, and matters contaminated with antimicrobial reagents.

Casein peptone Lecithin Polysorbate Broth, **CPLP Broth**

Storage temp.: +20 °C

Application: Use 25 g for 1 l broth. Before autoclaving add 40 ml Tween® 20 (polysorbate).

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone. | 20 g/l |
| Soya lecithin. | 5 g/l |
| pH value. | 7,1 ±0,2 |

| | | | |
|---|---|---|---|
| **3935.1** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |
| **3935.2** | 1 kg | plastic | 190,85 € |
| Original pack 6 x 1 kg | | | 181,31/1 kg |

## TBX chromogenic Agar

**ISO 16649-2 and -3, for microbiology**

Selective agar for detection of *E.coli* in food samples.
Storage temp.: +20 °C



**Staining of species:**
*E. coli* turquoise (by reaction of the ß-D-glucuronidase)
other Enterobacteriaceae (*Salmonella, Streptococcus, Klebsiella*)
clear or inhibited
Application: Use 36,6 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone. | 20,0 g/l |
| Bile salts. | 1,5 g/l |
| x-ß-D-Glucuronide. | 0,075 g/l |
| Agar. | 15,0 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **CL47.2** | 100 g | plastic | 94,10 € |
| **CL47.1** | 500 g | plastic | 338,65 € |
| Original pack 6 x 500 g | | | 321,72/500 g |

## TCBS Agar

**for microbiology**

For selective isolation of *Vibrio.*
Thiosulphate Citrate Bile Sucrose Agar, Cholera Medium TCBS, Cholera Agar
Storage temp.: +20 °C
Application: Use 88 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Sucrose. | 20 g/l |
| Sodium chloride (NaCl). | 10 g/l |
| Sodium thiosulphate. | 10 g/l |
| Sodium citrate. | 10 g/l |
| Meat peptone. | 5 g/l |
| Casein peptone. | 5 g/l |
| Yeast extract. | 5 g/l |
| Dehydrated ox bile. | 5 g/l |
| Sodium cholate. | 3 g/l |
| Ammonium iron(III) citrate. | 1 g/l |
| Thymol blue. | 0,04 g/l |
| Bromothymol blue. | 0,04 g/l |
| Agar. | 14 g/l |
| pH value. | 8,6 ±0,2 |

| | | | |
|---|---|---|---|
| **8333.1** | 500 g | plastic | 114,50 € |
| Original pack 6 x 500 g | | | 108,78/500 g |

## Todd-Hewitt-Broth

**for microbiology**

For cultivation of β-hemolytic streptococci for serological typing.
Storage temp.: +20 °C
Application: Use 30 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Heart infusion. | 3,1 g/l |
| Peptone. | 20 g/l |
| Glucose. | 2 g/l |
| Sodium carbonate. | 2,5 g/l |
| Sodium chloride (NaCl). | 2 g/l |
| Disodium phosphate. | 0,4 g/l |
| pH value. | 7,8 ±0,2 |

| | | | |
|---|---|---|---|
| **X936.1** | 500 g | plastic | 88,05 € |
| Original pack 6 x 500 g | | | 83,65/500 g |

## Triple Sugar Iron Agar

**Ph.Eur., for microbiology**

For identification and differentiation of enterobacteria and for determination of *Salmonellae*.
Agar medium M (Ph.Eur. 6.0), **TSI agar**
Storage temp.: +20 °C
Application: Use 64.6 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Beef extract. | 3 g/l |
| Yeast extract. | 3 g/l |
| Beef- and casein peptone. | 20 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Lactose monohydrate. | 10 g/l |
| Saccharose. | 10 g/l |
| Glucose monohydrate. | 1 g/l |
| Ammonium iron(III) citrate. | 0,3 g/l |
| Sodium thiosulphate. | 0,3 g/l |
| Phenol red. | 0,025 g/l |
| Agar. | 12 g/l |
| pH value. | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **AE49.1** | 500 g | plastic | 79,45 € |
| Original pack 6 x 500 g | | | 75,48/500 g |

## Tryptone Bile Salts Agar

**DEV, EN ISO 9308-1:2000, for microbiology**

For detection and enumeration of *E. coli* in foods and water samples.
**TBA**
Storage temp.: +20 °C
Application: Use 36,5 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Tryptone. | 20 g/l |
| Bile salts. | 1,5 g/l |
| Agar. | 15 g/l |
| pH value. | 7,2 ±0,1 |

| | | | |
|---|---|---|---|
| **CP69.1** | 500 g | plastic | 118,80 € |
| Original pack 6 x 500 g | | | 112,86/500 g |

## Tryptone Soy Agar

**DEV, EN ISO 9308-1:2000, for microbiology**

For the detection and enumeration of *E. coli* and other coliform bacteria in foods and water samples.
**TSA**, Trypticase-Soya-Agar
Storage temp.: +20 °C
Application: Use 40 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Casein, tryptic digest. | 15 g/l |
| Soy peptone. | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Agar. | 15 g/l |
| pH value. | 7,2 ±0,1 |

| | | | |
|---|---|---|---|
| **CP70.1** | 500 g | plastic | 80,55 € |
| Original pack 6 x 500 g | | | 76,52/500 g |

## Tryptophane Culture Broth

**DEV, EN ISO 9308-1:2000, for microbiology**

For the detection of *E. coli* in foods and water samples by indole production.
Storage temp.: +20 °C
Escherichia transform lactose under acid production via β-galactosidase, and are negative in oxidase test and positive in indole production test. Kovac Reagent (Art. No. 2950.1) is added to 24-48 h old cultures in a concentration of 0.2 to 0.5 ml per 5 ml broth. A colour shift to dark red shows presence of indole.
Application: Use 16 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Casein, tryptic digest. | 10 g/l |
| L-Tryptophan. | 1 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| pH value. | 7,5 ±0,1 |

| | | | |
|---|---|---|---|
| **CP71.1** | 500 g | plastic | 163,95 € |
| Original pack 6 x 500 g | | | 155,75/500 g |

▶ Kovacs' Reagent see page 1411

## TSC Agar (Base)

**DEV, EN ISO 7937:2004, for microbiology**

For detection and enumeration of *Clostridium perfringens* in foods and animal feed.

Tryptose Soy Citrate Agar, Perfringens Agar, Clostridium perfringens Agar,

**SFP Agar**

Storage temp.: +20 °C

**Warning** H319

Application: Use 42 g for 1 l agar. After autoclaving add 2 vials (4 ml) reconstituted Clostridium perfringens Supplement (Art. No. CL52.1). Add 50 ml egg yolk emulsion (Art. No. 0402.1).

**Guarantee analysis:**

| | |
|---|---|
| Tryptose. | 15 g/l |
| Soy peptone. | 5 g/l |
| Yeast extract. | 5 g/l |
| Sodium bisulfite. | 1 g/l |
| Ammonium iron(III) citrate. | 1 g/l |
| Agar. | 15,0 g/l |
| pH value. | 7,6 ±0,2 |

| | | | |
|---|---|---|---|
| **CL51.1** | 500 g | plastic | 115,60 € |
| Original pack 6 x 500 g | | | 109,82/500 g |

▶ Clostridium perfringens Supplement see page 1406

▶ Egg Yolk Emulsion see page 1407

## TTC Chapman Agar (with sodium heptadecylsulphate) (Base)

**DEV, EN ISO 9308-1:2000, for microbiology**

For isolation and enumeration of coliform bacteria from water samples.

**Chapman TTC Agar**, Chapman Lactose Agar, TTC Tergitol 7 Agar

Storage temp.: +20 °C

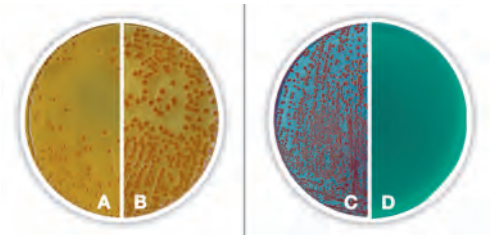



**Figure:**
**A:** *E. coli* ATCC 25922 (yellow colonies with orange centre)
**B:** *Klebsiella spp.* (orange colonies)
**C:** non-lactose fermenting species
**D:** non-induced agar

Application: Use 56,2 g for 1 l agar. Contains Tergitol. After autoclaving add TTC solution (Art. No. CP72.1) to 0.0025 %.

**Guarantee analysis:**

| | |
|---|---|
| Lactose. | 20 g/l |
| Peptone. | 10 g/l |
| Yeast extract. | 6 g/l |
| Meat extract. | 5 g/l |
| Bromothymol blue. | 0,05 g/l |
| Sodium heptadecyl sulphate (Tergitol 7). | 0,1 g/l |
| Agar. | 15 g/l |
| pH value. | 7,2 ±0,1 |

| | | | |
|---|---|---|---|
| **CP65.1** | 500 g | plastic | 81,60 € |
| Original pack 6 x 500 g | | | 77,52/500 g |

▶ TTC Supplement see page 1409

## Universal Beer Agar (Base)

**for microbiology**

For cultivation of beer spoiling microorganisms.

**UBA**

Storage temp.: +20 °C

Application: Use 55 g for 1 l agar. Add 250 ml beer.

**Formulation:**

| | |
|---|---|
| Peptonised milk. | 15 g/l |
| Yeast extract. | 10 g/l |
| Dextrose. | 10 g/l |
| Tomato juice. | 7 g/l |
| Potassium phosphate. | 0,5 g/l |
| Dipotassium phosphate. | 0,5 g/l |
| Sodium chloride (NaCl). | 0,01 g/l |
| Magnesium sulphate ($MgSO_4$). | 0,01 g/l |
| Manganese sulphate. | 0,01 g/l |
| Iron sulphate. | 0,01 g/l |
| Agar. | 12 g/l |
| pH value. | 6,3 ±0,2 |

| | | | |
|---|---|---|---|
| **8337.1** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |

## Urea Agar acc. to Christensen (Base)

**ISO 6579, ISO 19250, for microbiology**

For differentiation of enterobacteria on the basis of urease production.

Christensen Agar

Storage temp.: +20 °C

Particularly recommended for differentiation between members of the *genera Proteus* and *Salmonella/Shigella*.

Application: Use 29 g for 1 l medium. Add 15 g Agar.

**Guarantee analysis:**

| | |
|---|---|
| Urea. | 20 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Potassium phosphate. | 2 g/l |
| Gelatine peptone. | 1 g/l |
| Dextrose. | 1 g/l |
| Phenol red. | 0,012 g/l |
| pH value. | 6,8 ±0,2 |

| | | | |
|---|---|---|---|
| **8320.1** | 500 g | plastic | 120,95 € |
| Original pack 6 x 500 g | | | 114,90/500 g |

## UTI chromogenic Agar

**for microbiology**

For detection and differentiation of microorganisms causing urinary tract infections.

Urinary Tract Infection chromogenic Agar

Storage temp.: +4 °C



**Staining of species:**
*E. coli* pink (by reaction of the β-D-galactosidase)
*Enterobacter, Klebsiella* dark blue to violet (by reaction of the β-D-galactosidase and β-D-glucosidase)
*Proteus* light brown (by reaction of the tryptophan deaminase)
*Enterococcus* light to medium blue (by reaction of the β-D-glucosidase)
*Staphylococcus* light beige (natural colony colour)
Application: Use 47,5 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Nutrients. | 13 g/l |
| Peptone. | 16 g/l |
| Tryptophane. | 2 g/l |
| Chromogene Mixture. | 0,5 g/l |
| Agar. | 16 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **3089.1** | 100 g | plastic | 143,95 € |

## Violet Red Bile Agar with Dextrose and Lactose

**Ph.Eur., for microbiology**

For detection and enumeration of enterobacteria.
Agar Medium F (Ph.Eur. 6.0)
Storage temp.: +20 °C
Application: Use 51,5 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Yeast extract | 3 g/l |
| Pancreas hydrolysate made from gelatin | 7 g/l |
| Cholate | 1,5 g/l |
| Lactose monohydrate | 10 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Glucose monohydrate | 10 g/l |
| Neutral red | 0,03 g/l |
| Crystal Violet | 0,002 g/l |
| Agar | 15 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **AE45.1** | 500 g | plastic | 79,45 € |
| Original pack 6 x 500 g | | | 75,48/500 g |



## Violet Red Bile Agar with Glucose

**ISO 21528, Ph.Eur., for microbiology**

For cultivation and enumeration of enterobacteria in water, foods and other materials.
Violet Red Bile Glucose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0),
**VRBD Agar**
Storage temp.: +20 °C
Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth and identification of *Escherichia coli* and *Pseudomonas aeruginosa* durin testing for bile-tolerant gram-negative bacteria.
Application: Use 41,5 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Yeast extract | 3 g/l |
| Pancreas hydrolysate made from gelatin | 7 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Bile salts | 1,5 g/l |
| Glucose monohydrate | 10 g/l |
| Neutral red | 0,03 g/l |
| Crystal Violet | 0,002 g/l |
| Agar | 15 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **X939.1** | 500 g | plastic | 76,25 € |
| Original pack 6 x 500 g | | | 72,44/500 g |
| **X939.2** | 1 kg | plastic | 132,80 € |
| Original pack 6 x 1 kg | | | 126,16/1 kg |
| **X939.3** | 2,5 kg | plastic | 263,40 € |

▶ Violet Red Bile Agar with Glucose, **granulated** see page 1405

## Violet Red Bile Agar with Lactose

**ISO 4832, for microbiology**

For detection and enumeration of coliforms in milk, foods and other materials.
**VRB Agar**
Storage temp.: +20 °C

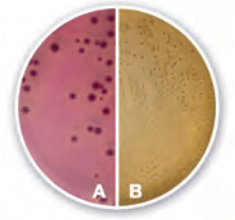



**Figure:**
**A:** *Escherichia coli*
**B:** *Salmonella gallinarium*
Application: Use 41,5 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Yeast extract | 3 g/l |
| Gelatine peptone | 7 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Bile salts | 1,5 g/l |
| Lactose | 10 g/l |
| Neutral red | 0,03 g/l |
| Crystal Violet | 0,002 g/l |
| Agar | 15 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **X940.1** | 500 g | plastic | 73,65 € |
| Original pack 6 x 500 g | | | 69,97/500 g |

## Wort Broth

**for microbiology**

For cultivation and enumeration of fungi, particularly of yeast.
Storage temp.: +20 °C

Application: Use 33 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Malt extract | 15 g/l |
| D-Maltose | 12,5 g/l |
| Dextrine | 2,5 g/l |
| Casein peptone | 1 g/l |
| Dipotassium hydrogen phosphate | 1 g/l |
| Ammonium chloride | 1 g/l |
| pH value | 4,8 ±0,2 |

| | | | |
|---|---|---|---|
| **5779.1** | 500 g | plastic | 133,85 € |
| Original pack 6 x 500 g | | | 127,16/500 g |

## Wort Agar (Base)

**for microbiology**

For cultivation and enumeration of yeasts.
Storage temp.: +20 °C

Application: Use 48,25 g for 1 l agar. Add 2,35 g (1,9 ml) glycerol.

**Formulation:**

| | |
|---|---|
| Malt extract | 15 g/l |
| Maltose | 12,75 g/l |
| Dextrine | 2,75 g/l |
| di-Potassium hydrogen phosphate | 1 g/l |
| Ammonium chloride | 1 g/l |
| Peptone | 0,75 g/l |
| Agar | 15 g/l |
| pH value | 4,8 ±0,2 |

| | | | |
|---|---|---|---|
| **CL04.1** | 500 g | plastic | 154,30 € |
| Original pack 6 x 500 g | | | 146,59/500 g |

## XLD-Agar

**Ph.Eur., for microbiology**

For isolation of enteropathogenic bacteria, especially from the genera *Shigella* and *Salmonella*.

Agar medium K (Ph.Eur. 6.0), Xylose Lysine Desoxycholate Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0) • Storage temp.: +20 °C



**Figure:** *Salmonella typhimurium*
Application: Use 55,2 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Xylose | 3,5 g/l |
| Lactose monohydrate | 7,5 g/l |
| L-Lysin | 5 g/l |
| Saccharose | 7,5 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Yeast extract | 3 g/l |
| Phenol red | 0,08 g/l |
| Ammonium iron(III) citrate | 0,8 g/l |
| Sodium deoxycholate | 2,5 g/l |
| Sodium thiosulphate | 6,8 g/l |
| Agar | 13,5 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **X941.1** | 500 g | plastic | 112,35 € |
| Original pack 6 x 500 g | | | 106,73/500 g |
| **X941.2** | 1 kg | plastic | 196,20 € |
| Original pack 6 x 1 kg | | | 186,39/1 kg |

## Yeast Extract Agar

**DEV, EN ISO 6222, for microbiology**

For the isolation and enumeration of microorganisms in general, e.g. bacteria, moulds, or yeast.
Particularly for count of microorganisms isolated from water samples.

Water Plate Count Agar, **WPCA**

Storage temp.: +20 °C

Application: Use 24 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Tryptone | 6 g/l |
| Yeast extract | 3 g/l |
| Agar | 15 g/l |
| pH value | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **CP63.1** | 500 g | plastic | 88,70 € |
| Original pack 6 x 500 g | | | 84,27/500 g |

## Yeast Glucose Agar (with chloroamphenicol)

**for microbiology**

Selective medium for enumeration of yeasts and mould in milk and dairy products. **YGC Agar**

Storage temp.: +20 °C

Application: Use 40,2 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Yeast extract | 5 g/l |
| Glucose | 20 g/l |
| Chloroamphenicol | 0,2 g/l |
| Agar | 15 g/l |
| pH value | 6,6 ±0,2 |

| | | | |
|---|---|---|---|
| **CL00.1** | 500 g | plastic | 88,70 € |
| Original pack 6 x 500 g | | | 84,27/500 g |
| **CL00.2** | 1 kg | plastic | 152,15 € |
| Original pack 6 x 1 kg | | | 144,54/1 kg |

▶ Yeast Glucose Agar (with chloroamphenicol), **granulated**, see page 1405

## Yersinia Selective Agar (Base)

**ISO 10273, for microbiology**

Selective medium for isolation of *Yersinia*, particularly *Y. enterocolitica.*

**CIN Agar**, Yersinia Agar acc. to Schiemann

Storage temp.: +20 °C

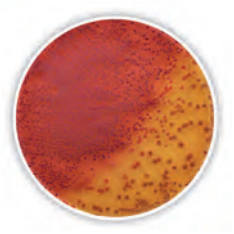


**Figure:**
*Yersinia enterocolitica*
Application: Use 58 g for 1 l agar. After cooling add 2 vials (2x5 ml) reconstituted Yersinia Supplement (Art. No. 4880.1).

**Guarantee analysis:**

| | |
|---|---|
| D-Mannitol | 20 g/l |
| Gelatine peptone | 17 g/l |
| Peptone mixture | 3 g/l |
| Yeast extract | 2 g/l |
| Sodium pyruvate | 2 g/l |
| Sodium chloride | 1 g/l |
| Sodium deoxycholate | 0,5 g/l |
| Neutral red | 0,03 g/l |
| Magnesium sulphate anhydrous | 0,01 g/l |
| Crystal Violet | 0,001 g/l |
| Agar | 12,5 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **5780.1** | 500 g | plastic | 110,65 € |
| Original pack 6 x 500 g | | | 105,12/500 g |

▶ Yersinia Supplement see page 1409

### Microbiological Quality Control

Microbiological quality control of Roth molecular biological and microbiological culture media and agar is carried out according to following guidelines:

- Plating relevant bacterial strains from standardized stock solution (as a rule in dilutions of $10^{-1}$ to $10^{-10}$) on agar plates of culture medium to be tested. The preparation of the media and agar must be carried out strictly according to the instructions, which are included.
- Plates from a checked batch of culture media are used as a reference
- The developed colonies are counted and rated after adequate incubation. Counting is always carried out using the plate with colony number 30-300.
- Standardization and validation of test: reference plates are compared with the number of bacteria expected
- Reference and test plate colonies are analysed for size, colour, appearance and possible reaction to certain chemicals
- Growth count on the test plates:

| | |
|---|---|
| „good“ or „satisfactory“ | colony number = 50 % - 99 % of expected growth |
| „moderate“ | colony number = 30 % - 50 % of expected growth |
| „inhibited“ | colony number ≤ 30 % of expected growth |
| „zero“ | no growth |

# Granulated Media for Microbiology



- **Easy:** high solubility
- **Safe:** dust minimised granules reduce health risk
- **Clean:** minimised contamination of workplace
- **Homogeneous:** reduced formation of lumps or separation of the cor
- **Fast:** improved flowability for faster processing
- **Tried and tested:** formulation equals our powder media, without any
- **All-round:** suitable for enviromental analysis, cosmetic-, food- and water-industry, and many more
- **Storage temp.:**+20 °C

## CASO Broth, granulated

**granulated, Ph.Eur., for microbiology**

For cultivation of fastidious and non-fastidious microorganisms.

Broth medium A (Ph.Eur. 6.0), Casein Soya Bean Digest Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth

Application: Use 30 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone (pancreas hydrolysate) | 17 g/l |
| Soy peptone (papain hydrolysate) | 3 g/l |
| di-Potassium hydrogen phosphate | 2,5 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Glucose monohydrate | 2,5 g/l |
| pH value | 7,3 ±0,2 |
| Granulation | complies |

| | | | |
|---|---|---|---|
| **6678.1** | 500 g | plastic | 102,05 € |
| Original pack 6 x 500 g | | | 96,95/500 g |
| **6678.2** | 1 kg | plastic | 164,40 € |
| Original pack 6 x 1 kg | | | 156,18/1 kg |

## CASO Agar, granulated

NEW

**granulated, Ph.Eur., for microbiology**

For isolation and cultivation of non-fastidious organisms.

Agar medium B (Ph.Eur. 6.0), Agar medium with Casein- and Soy Peptone (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Pepton Agar, **TSB Agar**, Trypticasein Soy Agar

Application: Use 40 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone (pancreas hydrolysate) | 15 g/l |
| Soy peptone (papain hydrolysate) | 5 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Agar | 15 g/l |
| pH value | 7,3 ±0,2 |

| | | | |
|---|---|---|---|
| **1506.1** | 500 g | plastic | 110,20 € |
| Original pack 6 x 500 g | | | 104,69/500 g |

## Columbia Agar (Base), granulated

NEW

**granulated, Ph.Eur., for microbiology**

For cultivation of fastidious and non-fastidious micro-organisms, also for Mycoplasms.

Medium Q (Ph.Eur. 6.0), Columbia Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Columbia Blood Agar (Base)

Application: Use 44 g for 1 l agar. If required, add 50-110 ml defibr. blood.

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone (Pancreas hydrolysate) | 10 g/l |
| Meat peptone (Pepsin hydrolysate) | 5 g/l |
| Heart peptone (Pancreas hydrolysate) | 3 g/l |
| Yeast extract | 5 g/l |
| Corn starch | 1 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Agar | 15 g/l |
| pH value | 7,3 ±0,2 |

| | | | |
|---|---|---|---|
| **1507.1** | 500 g | plastic | 99,45 € |
| Original pack 6 x 500 g | | | 94,48/500 g |

## MacConkey Agar, granulated

NEW

**granulated, Ph.Eur., for microbiology**

For selective isolation and identification of enterobacteria from waste water, foods and other samples.

Agar medium H (Ph.Eur. 6.0), MacConkey Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Application: Use 49,53 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Gelatin peptone (Pancreas hydrolysate) | 17 g/l |
| Meat and casein peptone | 3 g/l |
| Lactose monohydrate | 10 g/l |
| Bile salt (Cholate) | 1,5 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Neutral red | 0,03 g/l |
| Crystal Violet | 0,001 g/l |
| Agar | 13,5 g/l |
| pH value | 7,1 ±0,2 |

| | | | |
|---|---|---|---|
| **1514.1** | 500 g | plastic | 102,15 € |
| Original pack 6 x 500 g | | | 97,04/500 g |

## Orange Serum Agar, granulated

NEW

**granulated, for microbiology**

For isolation, detection and enumeration of acid-tolerant pathogens in fruit juices and fruit juice concentrates, particularly citrus products.

**Warning** H315-H317-H411-EUH208

Application: Use 45,5 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Casein peptone | 10 g/l |
| Orange extract | 9 g/l |
| Glucose | 4 g/l |
| Potassium phosphate | 2,5 g/l |
| Yeast extract | 3 g/l |
| Agar | 17 g/l |
| pH value | 5,5 ±0,2 |

| | | | |
|---|---|---|---|
| **1520.1** | 500 g | plastic | 193,50 € |
| Original pack 6 x 500 g | | | 183,83/500 g |

## Peptone water, buffered, granulated

**granulated, EN ISO 6887, EN ISO 6579, ISO 22964, EN ISO 19250, for microbiology**

Diluent for homogenisation of food samples and for sample preparation for microbiological analysis.

Application: Use 20 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Pancreatic digest of casein | 10 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Disodium phosphate | 3,5 g/l |
| Potassium phosphate | 1,5 g/l |
| pH value | 7,0 ±0,2 |
| Granulation | complies |

| | | | |
|---|---|---|---|
| **6680.1** | 500 g | plastic | 81,60 € |
| Original pack 6 x 500 g | | | 77,52/500 g |
| **6680.2** | 1 kg | plastic | 145,15 € |
| Original pack 6 x 1 kg | | | 137,89/1 kg |

## Plate Count Agar, granulated

NEW

**granulated, for microbiology**

For enumeration of the aerobic microbial flora in milk, foods and other material. **PCA**

Application: Use 23,5 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Casein peptone | 5 g/l |
| Yeast extract | 2,5 g/l |
| Glucose | 1 g/l |
| Agar | 15 g/l |
| pH value | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **1521.1** | 500 g | plastic | 111,80 € |
| Original pack 6 x 500 g | | | 106,21/500 g |

## R2A-Agar, granulated

NEW

**granulated, Ph.Eur., for microbiology**

For enumeration of heterotrophic bacteria from water samples.

Nutritionally reduced medium. Incubation of water samples on R2A Agar often leads to higher colony numbers of micro organisms than found for rich media, particularly when incubation is performed at lower temperatures.
Application: Use 18,1 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Yeast extract | 0,5 g/l |
| Peptone | 0,5 g/l |
| Casein hydrolysed | 0,5 g/l |
| Glucose | 0,5 g/l |
| Starch | 0,5 g/l |
| di-Potassium hydrogen phosphate | 0,3 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,024 g/l |
| Sodium pyruvate | 0,3 g/l |
| Agar | 15 g/l |
| pH value | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **1523.1** | 500 g | plastic | 172,00 € |
| Original pack 6 x 500 g | | | 163,40/500 g |

## Sabouraud 2 % Glucose Broth, granulated

NEW

**granulated, Ph.Eur., for microbiology**

Selective media for taxonomic analysis of pathogenic fungi.

Sabouraud Dextrose Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth of *Candida albicans*.
The low amount of glucose supports the activation of the secondary metabolism and, subsequently, pigment formation.
Application: Use 30 g for 1 l broth.

**Guarantee analysis:**

| | |
|---|---|
| Meat and casein peptone | 10 g/l |
| Glucose | 20 g/l |
| pH value | 5,7 ±0,2 |

| | | | |
|---|---|---|---|
| **1508.1** | 500 g | plastic | 82,80 € |
| Original pack 6 x 500 g | | | 78,66/500 g |

▶ Granulated media for molecular biology see page 1415



## Standard Nutrient Broth I, granulated

NEW

**granulated, for microbiology**

For cultivation and enumeration of fastidious bacteria. Also base for preparing special culture media.

Application: Use 25 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Peptone | 15 g/l |
| Yeast extract | 3 g/l |
| Sodium chloride (NaCl) | 6 g/l |
| Glucose | 1 g/l |
| pH value | 7,5 ±0,2 |

| | | | |
|---|---|---|---|
| **1533.1** | 500 g | plastic | 104,30 € |
| Original pack 6 x 500 g | | | 99,09/500 g |

## Standard Nutrient Agar I, granulated

NEW

**granulated, for microbiology**

For cultivation and enumeration of fastidious bacteria. Also base for preparing special culture agars.

Application: Use 37 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Peptone | 15 g/l |
| Yeast extract | 3 g/l |
| Sodium chloride (NaCl) | 6 g/l |
| Glucose | 1 g/l |
| Agar | 12 g/l |
| pH value | 7,5 ±0,2 |

| | | | |
|---|---|---|---|
| **1524.1** | 500 g | plastic | 107,50 € |
| Original pack 6 x 500 g | | | 102,13/500 g |

## Violet Red Bile Agar with Glucose, granulated

NEW

**granulated, Ph.Eur., for microbiology**

For cultivation and enumeration of enterobacteria in water, foods and other materials. **VRBD agar**

Recommended by the Harmonized Method (Ph.Eur. 6.0, 2.6.13.B) for growth and identification of *Escherichia coli* and *Pseudomonas aeruginosa* durin testing for bile-tolerant gram-negative bacteria.
Application: Use 38,53 g for 1 l agar.

**Guarantee analysis:**

| | |
|---|---|
| Yeast extract | 3 g/l |
| Pepton | |
| Sodium chloride (NaCl) | 5 g/l |
| Bile salts | 1,5 g/l |
| Glucose monohydrate | 10 g/l |
| Neutral red | 0,03 g/l |
| Crystal Violet | 0,002 g/l |
| Agar | 12 g/l |
| pH value | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **1525.1** | 500 g | plastic | 106,45 € |
| Original pack 6 x 500 g | | | 101,13/500 g |

## Yeast Glucose Agar (with chloroamphenicol), granulated

NEW

**granulated, for microbiology**

Selective medium for enumeration of yeasts and mould in milk and dairy products. **YGC agar**

Application: Use 40,1 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Yeast extract | 5 g/l |
| Glucose | 20 g/l |
| Chloroamphenicol | 0,1 g/l |
| Agar | 15 g/l |
| pH value | 6,6 ±0,2 |

| | | | |
|---|---|---|---|
| **1526.1** | 500 g | plastic | 126,35 € |
| Original pack 6 x 500 g | | | 120,03/500 g |

# Additives




## Ammonium iron(III) citrate solution

**12,5 %, sterile, ready-to-use**

Media supplement for detection of *Listeria monocytogenes*.

Storage temp.: +20 °C

Ammonium iron (III) citrate (ferric ammonium (III) citrate) is used as additive in nutrient media for detection of Listeria species. Hydrolysis of esculin by *Listeria* species results in 6,7-dihydroxycoumarin which reacts with ferric ions producing blackening of the medium. Additionally, ferric ammonium citrate has been shown to improve the growth of *Listeria monocytogenes* (Cowart and Foster (1985) *J. Infect. Dis.* 151:721).

**Application:** One vial ferric ammonium (III) citrate solution (0.25 g in 2 ml) is added to 500 ml autoclaved Fraser Broth (Art. No. HP17) or Fraser Half Broth (Art. No. HP18). Mix carefully and store cooled for 2 weeks in maximum. Fraser Broth is used in the rapid detection of Listeria from food and environmental samples (Fraser and Sperber (1988) *J. Food Protect.* 51:762).
One box of 10 vials Ammonium iron(III) citrate solution is sufficient for 10 x 500 ml Fraser Broth.

**Formulation per vial:**

Ammonium iron(III) citrate..... 0,25 g

| | | | |
|---|---|---|---|
| **3130.1** | 10 x 2 ml | plastic | 40,35 € |
| **3130.2** | 30 x 2 ml | plastic | 100,95 € |

▶ Fraser media see page 1385

## Bacillus cereus Supplement

**lyophilised**

Media supplement for selective isolation of *Bacillus cereus.*

Storage temp.: +4 °C

**Application:** One vial Bacillus cereus Supplement is reconstituted in 5 ml sterile distilled water, and is subsequently added to 450 ml autoclaved Mannitol Egg Yolk Polymyxin Agar (Base) (Art. No. 5765.1) plus 50 ml Egg Yolk Emulsion (Art. No. 0402.1).
One box of 10 vials Bacillus cereus Supplement is sufficient for 10 x 500 ml Mannitol Egg Yolk Polymyxin Agar.

**Formulation per vial:**

Polymyxin B..... 50 000 I.U.

| | | | |
|---|---|---|---|
| **4856.1** | 10 vials | glass | 107,40 € |

▶ Mannitol Egg Yolk Polymyxin Agar (Base) see page 1389

## Campylobacter Preston Supplement

**lyophilised**

For selective isolation of *Campylobacter spp.*

Preston Supplement

Storage temp.: +4 °C

**Danger** H300-H341-H360D-H411

**Application:** One vial Campylobacter Preston Supplement is reconstituted in 5 ml sterile 1:1 mixture of acetone and demineralized water and is subsequently added to 500 ml autoclaved Campylobacter Selective Agar (Art. No. 8847.1) and 5-10 % defibrinated blood.
One box of 10 vials Campylobacter Preston Supplement is sufficient for 10 x 500 ml Campylobacter Selective Agar.

**Formulation per vial:**

Polymyxin B sulphate..... 2500 IU
Cycloheximide..... 50 mg
Rifampicin..... 5 mg
Trimetoprim..... 5 mg

| | | | |
|---|---|---|---|
| **8851.1** | 10 vials | glass | 181,70 € |

▶ Campylobacter Selective Agar (Base) see page 1379

## Campylobacter Supplement

**lyophilised**

Media supplement for selective isolation of *Campylobacter jejuni, C. coli,* and *C. laridis.*

**CCDA Supplement**

Storage temp.: +4 °C

**Danger** H334-H317

Amphotericin reduces growth of yeasts and moulds, while Cefoperazone inhibits Enterobacteriaceae.
**Application:** One vial Campylobacter Supplement is reconstituted in 5 ml sterile distilled water, and is subsequently added to 500 ml autoclaved Campylobacter Agar, blood-free (Base) (Art. No. 5756.1).
One box of 10 vials Campylobacter Supplement is sufficient for 10 x 500 ml Campylobacter Agar, blood-free.

**Formulation per vial:**

Cefoperazone..... 16 mg
Amphotericin B..... 5 mg

| | | | |
|---|---|---|---|
| **4857.1** | 10 vials | glass | 154,30 € |

▶ Campylobacter Agar, blood-free (Base) see page 1379

## Clostridium perfringens Supplement

**lyophilised**

Media supplement for selective isolation of *Clostridium perfringens.*

Storage temp.: +4 °C

D-cycloserine largely inhibits the accompanying bacterial flora, hence providing selective growth of small and distinct colonies of *Clostridium perfringens.*
**Application:** One vial Clostridium perfringens Supplement (0.2 g) is reconstituted in 2 ml sterile, demineralized water and is subsequently added to 500 ml autoclaved TSC Agar (Base) (Art. No. CL51.1) or to 500 ml autoclaved m-CP Agar (Art. No. CL55.1).
One box of 10 vials Clostridium perfringens Supplement is sufficient for 10 x 500 ml TSC Agar or for 10 x 500 ml m-CP Agar.

**Formulation per vial:**

D-Cycloserine..... 0,2 g

| | | | |
|---|---|---|---|
| **CL52.1** | 10 vials | glass | 220,40 € |

▶ TSC Agar (Base) see page 1401
▶ m-CP Agar (Base) see page 1390





## Egg Yolk Emulsion (20 %)

NEW S

**ISO 7932, sterile, stabilised, for microbiology**

Media supplement for preparation of egg yolk agar for detection of microbial lecithinase activity.

Storage temp.: +4 °C • Transport temp.: room temp.

Egg Yolk Emulsion is used as supplement in nutrient agars for detection of lecithinase activity in microbial colonies. Herewith, bacterial species like *Bacillus cereus* and *Clostridium perfringens*, or *Staphylococcus aureus* may be identified. The lecithinase activity can be noted by formation of light, sometimes whitish halos surrounding the colonies.

**Application:** The ISO 7932 recommends a final concentration of 10 % emulsion in the prepared medium in general, e.g. in Mannitol Egg Yolk Polymyxin Agar (Base) (Art. No. 5765.1) for examining the lecithinase activity of *Bacillus cereus*.

We recommend using TSC Agar (Base) (Art. No. CL51.1), Mannitol Salt Agar (Art. No. CL81.1) or Palcam Listeria Agar (Base) (Art. No. 5768.1) for base agar with the addition of 5 % emulsion.
Add after autoclaving.

100 ml Egg Yolk Emulsion are sufficient for 1 l agar medium.

**Guarantee analysis:**

| | |
|---|---|
| Colour | yellow |
| Egg yolk | 20 % |
| Sterility | complies |

| | | | |
|---|---|---|---|
| **0402.1** | 100 ml | glass | 42,90 € |

▶ Mannitol Salt Agar see page 1389
▶ TSC Agar (Base) see page 1401
▶ Palcam Listeria Agar (Base) see page 1393

## Egg Yolk Tellurite Emulsion (20 %)

NEW S

**ISO 6888, sterile, stabilised, for microbiology**

Media supplement for preparation of egg yolk tellurite agar, for detection of *Staphylococcus aureus*.

Storage temp.: +4 °C • Transport temp.: room temp.

Egg Yolk Tellurite Emulsion is used as supplement in nutrient agars for detection of lecithinase activity and concurrent tellurite reduction in microbial colonies. Hence, *Staphylococcus aureus* may be identified by the dark grey to black staining of the colonies due to tellurite reduction, accompanied by lecithinase-caused formation of light, sometimes whitish halos surrounding the colonies.

We recommend using Baird Parker Agar (Base) (Art. No. X913.1) for base agar.
**Application:** The ISO 6888 recommends a final concentration of 5 % emulsion in the prepared medium.
Add after autoclaving.

100 ml Egg Yolk Tellurite Emulsion is sufficient for 2 l agar medium.

**Guarantee analysis:**

| | |
|---|---|
| Colour | yellow |
| Egg yolk | 20 % |
| Sterile saline sol. | 80 % |
| Potassium tellurite | 0,21 % |
| Sterility | complies |

| | | | |
|---|---|---|---|
| **0339.1** | 100 ml | glass | 46,80 € |

▶ Baird Parker Agar (Base) see page 1377



## Legionella GVPC Supplement

**lyophilised**

Media supplement for selective isolation of *Legionella.*

Storage temp.: +4 °C

**Danger** H301-H360D-H341-H412-EUH208

The mixture of glycine and antibiotics largely inhibits the accompanying bacterial flora, hence providing selective growth of legionella.
**Application:** One vial Legionella GVPC Supplement is reconstituted in 10 ml sterile, warm, demineralized water and is subsequently added to 500 ml autoclaved Legionella Agar (Art. No. CL48.1).

One box of 10 vials Legionella GVPC Supplement is sufficient for 10 x 500 ml Legionella Agar.

**Formulation per vial:**

| | |
|---|---|
| Glycine | 1,5 g |
| Polymyxin B | ~39 600 IU |
| Cycloheximide | 0,04 g |
| Vancomycin | 0,5 mg |

| | | | |
|---|---|---|---|
| **CL50.1** | 10 vials | glass | 181,70 € |

## Legionella Growth Supplement

**lyophilised**

Growth supplement for isolation of *Legionella.*

**BCYE additive**

Storage temp.: +4 °C

**Danger** H314-H302

**Application:** One vial Legionella Growth Supplement is reconstituted in 10 ml sterile, demineralized water and is subsequently added to 90 ml autoclaved Legionella Agar (Art. No. CL48.1). For selective isolation of legionella we recommend additional supplementation with Legionella GVPC Supplement (Art. No. CL50.1).

One box of 10 vials Legionella Growth Supplement is sufficient for 10 x 100 ml Legionella Agar.

**Formulation per vial:**

| | |
|---|---|
| ACES Buffer | 1,0 g |
| Potassium hydroxide (KOH) | 0,2 g |
| alpha-Ketoglutarate | 0,1 g |
| L-Cysteine | 0,04 g |
| Ferric pyrophosphate | 0,025 g |

| | | | |
|---|---|---|---|
| **CL49.1** | 10 vials | glass | 188,15 € |

▶ Legionella Agar (Base) see page 1387
▶ Legionella Acid Buffer see page 1411 NEW



## Listeria Chromo Lipase C Supplement

**0,1 g/ml, sterile, ready-to-use**

Media supplement for selective isolation of *Listeria*.

Storage temp.: +4 °C

**Application:** One vial Listeria Chromo Lipase C Supplement is added to 500 ml autoclaved Listeria chromogenic Agar (Art. No. 3008.1). For selective isolation of *Listeriae* we recommend additional supplementation with Listeria Chromo Selective Supplement (Art. No. 2947.1).

One box of 10 vials Listeria Chromo Lipase C Supplement is sufficient for 10 x 500 ml Listeria chromogenic Agar.

**Formulation per vial:**

Phospholipase C substrate..... 1 g

| | | | |
|---|---|---|---|
| **2948.1** | 10 x 10 ml | glass | 104,20 € |

## Listeria Chromo Selective Supplement

**lyophilised**

Media supplement for selective isolation of *Listeria*.

Storage temp.: +4 °C

**Danger** H300-H334-H317-H341-H360D-H411

**Application:** One vial Listeria Chromo Selective Supplement is reconstituted in 5 ml sterile distilled water and is subsequently added to 500 ml autoclaved Listeria chromogenic Agar (Art. No. 3008.1). For activation of the listerial phospholipase C we recommend additional supplementation with Listeria Chromo Lipase C Supplement (Art. No. 2948.1).

One box of 10 vials Listeria Chromo Selective Supplement is sufficient for 10 x 500 ml Listeria chromogenic Agar.

**Formulation per vial:**

Cycloheximide..... 0,025 g
Polymyxin B sulphate..... 38500 I.E.
Nalidixic acid sodium salt..... 0,01 g
Ceftazidime (Fortam)..... 0,01 g

| | | | |
|---|---|---|---|
| **2947.1** | 10 vials | glass | 104,20 € |

▶ Listeria chromogenic Agar (Base) see page 1387



▶ Kovacs' Reagent see page 1411



## Listeria Oxford Supplement

**lyophilised**

Media supplement for selective isolation of *Listeria monocytogenes.*

Oxford Supplement

Storage temp.: +4 °C

**Danger** H300-H341-H360D-H411

**Application:** One vial Listeria-Oxford Supplement is reconstituted in 5 ml of a sterile 1:1 mixture of acetone and distilled water, and is subsequently added to 500 ml autoclaved Oxford Listeria Agar (Base) (Art. No. 5767.1).

One box of 10 vials Listeria Oxford Supplement is sufficient for 10 x 500 ml Oxford Listeria Agar.

**Formulation per vial:**

Cycloheximide..... 200 mg
Colistinsulphate..... 10 mg
Fosfomycin..... 5 mg
Acryflavine..... 2,5 mg
Cefotetan..... 1 mg
Acriflavinium hydrochloride..... 2,5 mg

| | | | |
|---|---|---|---|
| **5801.1** | 10 vials | glass | 136,00 € |

▶ Oxford Listeria Agar (Base) see page 1393

## Listeria Palcam Supplement

**lyophilised**

Media supplement for selective isolation of *Listeria monocytogenes.*

Palcam Supplement

Storage temp.: +4 °C

**Danger** H334-H317

**Application:** One vial Listeria-Palcam Supplement is reconstituted in 2 ml sterile distilled water, and is subsequently added to 500 ml autoclaved Palcam Listeria Agar (Base) (Art. No. 5768.1).

One box of 10 vials Listeria Palcam Supplement is sufficient for 10 x 500 ml Palcam Listeria Agar.

**Formulation per vial:**

Ceftazidime (Fortam)..... 10 mg
Polymyxin B..... 5 mg
Acryflavine..... 2,5 mg

| | | | |
|---|---|---|---|
| **5803.1** | 10 vials | glass | 99,90 € |

▶ Palcam Listeria Agar (Base) see page 1393



## MRSA Cefoxitin Supplement

**lyophilised**

Media supplement for selective detection of methicillin resistent *Staphylococcus aureus*.

Storage temp.: +4 °C

Cefoxitin inhibits growth of methicillin sensitive *Staphylococcus aureus* strains.

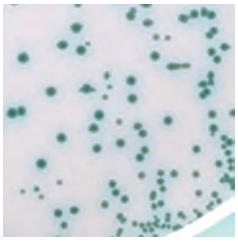


**Figure:** Detection of *Staphylococcus aureus* ATCC 43300 by MRSA chromogenic Agar (Art. No. 3026.1) plus MRSA Cefoxitin Supplement.

**Application:** One vial MRSA Cefoxitin Supplement is reconstituted in 5 ml sterile, distilled water, and is subsequently added to 500 ml solubilised MRSA chromogenic Agar (Base) (Art. No. 3026.1).
One box of 10 vials MRSA Cefoxitin Supplement is sufficient for 10 x 500 ml MRSA chromogenic Agar.

**Formulation per vial:**

Cefoxitin. ..... 0,002 g

| | | | |
|---|---|---|---|
| **2975.1** | 10 vials | glass | 72,60 € |

▶ MRSA chromogenic Agar (Base) see page 1390

## RPF Supplement

**lyophilised**

Media supplement for identification and enumeration of *Staphylococcus aureus.*

Rabbit Plasma Fibrinogen Supplement

Storage temp.: +4 °C

**Warning** H302+H312+H332

**Application:** One vial RPF Supplement is reconstituted in 10 ml sterile distilled water, and is incubated for 10 mins. at room temperature until completely dissolved.
Subsequently add to 90 ml autoclaved Baird Parker Agar (e.g. Art. No. X913.1).
One box of 10 vials RPF Supplement is sufficient for 10x 100 ml Baird Parker Agar.

**Formulation per vial:**

Rabbit plasma..... 2,5 ml
Bovine fibrinogen..... 380 mg
Trypsin inhibitor. ..... 2,5 mg
Potassium tellurite. ..... 2,5 mg

| | | | |
|---|---|---|---|
| **6064.1** | 10 vials | glass | 407,45 € |

▶ Baird Parker Agar (Base) see page 1377



## TTC-Supplement

**lyophilised**

Media supplement for identification of coliform enterobacteria.

2,3,5-Triphenyl-tetrazolium chloride, Red tetrazolium

Storage temp.: +4 °C

**Warning** H315-H319-H335

TTC is used as additive for microbiological nutrient media, in order to accelerate the identification of coliform enterobacteria, e.g. TTC Chapman Agar acc. to EN ISO 9308-1:2000 (Art. No. CP65.1).

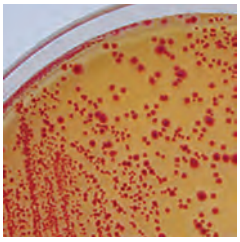


**Figure:** Detection of *E. coli* (wild type) by TTC Chapman Agar (Art. No. CP65.1) plus TTC supplement.

**Application:** One vial TTC-Supplement (50 mg) is reconstituted in 5 ml sterile, distilled water. Store solution at 4 °C for one week in maximum. Long-term storage in aliquots at -20 °C.
One box of 10 x 50 mg TTC-Supplement is sufficient for 20 l TTC Chapman Agar.

**Guarantee analysis:**

Triphenyltetrazolium chloride (per vial). ..... 50 mg

| | | | |
|---|---|---|---|
| **CP72.1** | 10 vials | glass | 74,10 € |

▶ TTC Chapman Agar (Base) see page 1401

## Yersinia Supplement

**lyophilised**

Media supplement for selective isolation of *Yersinia enterocolitica*

**CIN Supplement**

Storage temp.: +4 °C

**Danger** H315-H317-H319-H334-H400-H410

**Application:** One vial Yersinia Supplement is reconstituted in 5 ml sterile distilled water, and is subsequently added to 500 ml autoclaved Yersinia Selective Agar (Base) (Art. No. 5780.1).
One box of 10 vials Yersinia Supplement is sufficient for 10 x 500 ml Yersinia Selective Agar.

**Formulation per vial:**

Cefsulodin. ..... 7,5 mg
Novobiocin. ..... 1,25 mg
Irgasan..... 2 mg

| | | | |
|---|---|---|---|
| **4880.1** | 10 vials | glass | 107,00 € |

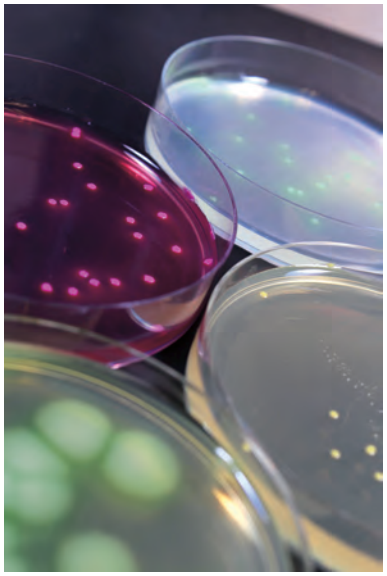
▶ Yersinia Selective Agar (Base) see page 1403

## Further Additives

| Product | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **Brilliant green (C.I. 42040)** | for microscopy | **0324.1** | 25 g | 17,75 |
| | | **0324.2** | 100 g | 39,70 |
| **5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide** | ≥99,5 %, for biochemistry | **4149.1** | 25 mg | 22,05 |
| | | **4149.2** | 100 mg | 44,00 |
| **Bromocresol green** | ACS | **T115.1** | 1 g | 16,70 |
| **Bromocresol green sodium salt** | ACS | **KK18.1** | 1 g | 12,80 |
| | | **KK18.2** | 5 g | 33,25 |
| **Bromocresol purple** | p.a., ACS | **0317.1** | 5 g | 20,65 |
| | | **0317.2** | 25 g | 65,05 |
| **Bromothymol blue** | p.a., ACS | **T117.1** | 5 g | 24,20 |
| **Bromothymol blue sodium salt** | p.a. | **KK19.1** | 5 g | 20,35 |
| | | **KK19.2** | 10 g | 31,75 |
| **Cholic acid sodium salt** | ≥99 %, for biochemistry | **3407.1** | 50 g | 59,05 |
| **o-Cresol red** | p.a. | **KK15.1** | 5 g | 18,85 |
| | | **KK15.2** | 10 g | 30,00 |
| | | **KK15.3** | 25 g | 60,10 |
| **Crystal violet (C.I. 42555)** | p.a., ACS | **T123.1** | 25 g | 26,80 |
| **Dextrin** | for microbiology | **3488.2** | 100 g | 21,40 |
| | | **3488.1** | 250 g | 34,30 |
| **Esculin sesquihydrate** | ≥97,5 %, DAB, for biochemistry | **8704.1** | 5 g | 21,00 |
| **Fuchsine basic (C.I. 42510)** | for microscopy | **3256.1** | 50 g | 60,10 |
| **Gelatine** | platinum, extra pure, 240 Bloom | **4582.3** | 500 g | 31,10 |
| | | **4582.1** | 1 kg | 50,00 |
| | | **4582.2** | 5 kg | 180,10 |
| **D(+)-Glucose monohydrate** | for microbiology | **6887.1** | 1 kg | 18,85 |
| | | **6887.2** | 2,5 kg | 39,25 |
| | | **6887.5** | 25 kg | 170,95 |
| **Roti®fair 20% Glucose** | for 1000 ml/pouch, for microbiology and biochemistry | **1030.1** | 5 pouches | 162,90 |
| **Glycerol** | ≥99,5 %, p.a., anhydrous | **3783.1** | 1 l | 52,15 |
| | | **3783.3** | 1 l | 56,45 |
| | | **3783.2** | 2,5 l | 94,10 |
| | | **3783.4** | 2,5 l | 99,90 |
| **Iron(II) sulphate heptahydrate** | ≥99 %, p.a., ACS | **P015.1** | 500 g | 24,20 |
| | | **P015.2** | 1 kg | 35,40 |
| | | **P015.3** | 2,5 kg | 76,25 |
| | | **P015.5** | 25 kg | 493,45 |
| **IPTG** | ≥99 %, BioScience-Grade, dioxane free, animal free | **2316.1** | 250 mg | 20,35 |
| | | **2316.2** | 1 g | 43,55 |
| | | **2316.3** | 5 g | 123,65 |
| | | **2316.4** | 25 g | 418,20 |
| | | **2316.5** | 100 g | 951,40 |
| **Lactose monohydrate** | for microbiology | **6868.1** | 1 kg | 25,30 |
| | | **6868.2** | 5 kg | 84,85 |
| | | **6868.3** | 50 kg | 536,45 |
| **Lecithin** | ≥97 %, made from soybeans, for biochemistry | **9812.1** | 250 g | 20,65 |
| | | **9812.3** | 1 kg | 51,50 |
| | | **9812.2** | 2,5 kg | 115,60 |
| **Methyl red (C.I. 13020)** | p.a., ACS | **T120.1** | 10 g | 14,95 |
| | | **T120.2** | 25 g | 24,65 |
| **4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide** | ≥98 %, for biochemistry | **4083.1** | 100 mg | 41,85 |
| | | **4083.2** | 250 mg | 74,10 |
| | | **4083.3** | 500 mg | 122,05 |
| **4-Methylumbelliferyl-α-D-glucopyranoside** | ≥99 %, for biochemistry | **4086.1** | 100 mg | 42,90 |
| | | **4086.2** | 250 mg | 81,60 |
| **4-Methylumbelliferyl-β-D-glucopyranoside** | ≥99 %, for biochemistry | **4093.1** | 500 mg | 42,90 |
| | | **4093.2** | 1 g | 73,00 |
| | | **4093.3** | 2,5 g | 143,55 |
| **4-Methylumbelliferyl phosphate** | ≥99 %, for biochemistry | **4103.1** | 250 mg | 33,90 |
| | | **4103.2** | 1 g | 99,90 |

| Product | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **MUG** | ≥99 %, p.a. | **6394.1** | 50 mg | 23,15 |
| | | **6394.2** | 250 mg | 63,35 |
| | | **6394.3** | 1 g | 196,20 |
| **Neutral red (C.I. 50040)** | p.a. | **T122.1** | 10 g | 54,75 |
| **4-Nitrophenyl-N-acetyl-β-D-glucosaminide** | ≥99 %, for biochemistry | **4062.1** | 100 mg | 26,35 |
| | | **4062.2** | 500 mg | 74,75 |
| | | **4062.3** | 1 g | 143,55 |
| **4-Nitrophenyl-α-D-galactopyranoside** | for biochemistry | **4063.1** | 100 mg | 20,35 |
| | | **4063.2** | 500 mg | 46,80 |
| | | **4063.3** | 1 g | 74,75 |
| **4-Nitrophenyl-β-D-galactopyranoside** | ≥98 %, for biochemistry | **4081.1** | 1 g | 31,75 |
| | | **4081.2** | 2,5 g | 74,75 |
| | | **4081.3** | 5 g | 134,30 |
| **Phenol red** | p.a., ACS | **T127.1** | 5 g | 14,95 |
| **Rose Bengale B (C.I. 45440)** | for microscopy | **3162.1** | 50 g | 93,00 |
| **Sodium metabisulphite** | ≥97 %, p.a., ACS | **P755.1** | 500 g | 19,60 |
| | | **P755.2** | 1 kg | 30,00 |
| | | **P755.5** | 25 kg | 317,15 |
| **Sodium molybdate dihydrate** | ≥99,5 %, p.a. | **0274.1** | 50 g | 18,20 |
| | | **0274.2** | 100 g | 26,35 |
| | | **0274.3** | 250 g | 47,20 |
| | | **0274.4** | 1 kg | 170,95 |
| **D(+)-Saccharose** | ≥99,5 %, p.a. | **4621.1** | 1 kg | 19,90 |
| | | **4621.2** | 5 kg | 83,75 |
| | | **4621.5** | 25 kg | 192,45 |
| **Tetrazolium blue chloride** | ≥95 %, for biochemistry | **4176.1** | 1 g | 55,40 |
| | | **4176.2** | 5 g | 209,65 |
| **2,3,5-Triphenyltetrazolium chloride** | ≥98,5 %, p.a. | **KK13.1** | 10 g | 51,50 |
| | | **KK13.2** | 50 g | 212,85 |
| **Tween® 80** | for bacteriology | **4859.1** | 25 g | 18,85 |
| **X-β-Gal** | ≥99 %, BioScience-Grade | **2315.1** | 100 mg | 20,45 |
| | | **2315.2** | 500 mg | 58,60 |
| | | **2315.3** | 1 g | 109,55 |
| | | **2315.4** | 5 g | 370,90 |
| **X-Glc** | ≥98 %, for biochemistry | **8434.2** | 250 mg | 166,65 |
| | | **8434.3** | 500 mg | 310,70 |
| | | **8434.1** | 100 mg | 80,10 |
| **X-Glu** | ≥98 %, for biochemistry | **4041.1** | 50 mg | 38,60 |
| | | **4041.2** | 100 mg | 64,40 |

For additional product data and safety information, see chapter Chemicals A-Z.



# Identification of Microorganisms

## Testing Reagents



### Kovacs' Reagent

**for microbiology**

Media supplement for detection of microbial indole.

Indole Reagent

Storage temp.: +4 °C

**Danger** H226-H290-H302-H315-H318-H335-H336

Tryptophanase-positive microorganisms (e.g. *E. coli, S. faecalis, Proteus sp.*) that cleave tryptophane hereby release indole, which may be detected by reaction with dimethylaminobenzaldehyde by forming a dark red dye. Microorganisms must be incubated in a glucose-free broth with high concentrations of tryptophane present.
Kovacs' Reagent is added to 24-48 h old cultures in a concentration of 0.2 to 0.5 ml per 5 ml broth. A colour shift to dark red shows presence of indole, thus confirming the inoculating colony as being indole-/tryptophanase-positive.

**Application:** Customary concentration in medium: 4-10 %
100 ml Kovacs' Reagent is sufficient for approx. 2 l medium.

**Type analysis:**

| | |
|---|---|
| Appearance | yellowish, clear liquid |
| 4-(Dimethylamino)benzaldehyde | 50 g/l |
| 1-Butanol | 75 % |
| Hydrochloric acid (37 %) | 25 % |
| pH value | >1 |

| | | | |
|---|---|---|---|
| **2950.1** | 100 ml | glass | 45,05 € |

▶ Tryptophane Culture Broth see page 1400

### Reagents for Kovacs´s Indolreaction

| Reagent | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **n-Butanol** | ≥99.5 %, p.a., ACS, ISO | **7171.2** | 1 l | 48,95 |
| | | **7171.1** | 2,5 l | 99,90 |
| **4-(Dimethylamino)-benzaldehyde** | ≥99 %, p.a. | **X867.1** | 25 g | 43,55 |
| | | **X867.2** | 100 g | 109,55 |
| **Hydrochloric, acid fuming** | p.a., ACS, ISO | **4625.1** | 1 l | 20,35 |
| | | **4625.2** | 2,5 l | 32,15 |
| **Isoamyl alcohol** | ≥98.5 %, p.a., ACS | **T870.1** | 500 ml | 40,75 |
| | | **T870.2** | 1 l | 76,90 |
| | | **T870.3** | 2,5 l | 169,35 |

For additional product data and safety information, see chapter Chemicals A-Z.




### Rotitest® Oxidase strips

**Rotitest® Bio Analysis**

Rapid test system for detection of cytochrome oxidase in microorganisms.

Storage temp.: +4 °C

Rapid test system for detection of oxidase-positive microorganisms.
A green coloured area indicates the reaction zone, impregnated with detection reagent, at one end of the paper strip. The colony to be analysed is smeared onto this reaction zone. Within 15 seconds, a dark-blue to violet colouring indicates presence of oxidase-positive microorganisms.

The following microorganisms are typically oxidase-positive: *Helicobacter pylori, Vibrio cholerae, Campylobacter jejuni, Legionella pneumophila, Neisseria, Moraxella*, many *Pseudomonaceae* and *Diplococci*.
Many *Enterobacteriaceae* are typically oxidase-negative.

| | | | |
|---|---|---|---|
| **8469.1** | 100 pieces | tube | 35,40 € |




NEW ready-to-use S

### Legionella Acid Buffer

**EN ISO 11731-2, sterile, ready-to-use for microbiology**

Sterile acid buffer solution for detection of legionella.

0.2 M HCl/KCl Solution, pH 2.2, Acid buffer pH 2.2, HCl/KCl-Puffer

Storage temp.: +20 °C • Transport temp.: +20 °C

To minimize the accompanying bacterial flora, 30 ±5 ml of Legionella Acid Buffer are applied to the membrane after membrane filtration. After an exposure time of approx. 5 minutes, the buffer is vacuumed off and the membrane rinsed with sterile distilled water.
The filter is transferred sterile to a legionella selective agar, e.g. Legionella Agar (Base) (Art. No. CL48.1) and incubated.
Bottle with 50 ml graduation. With original seal.
The buffer should be used within 4 weeks after opening.

| | | | |
|---|---|---|---|
| **9979.1** | 1 l | plastic | 37,65 € |
| Original pack 6 x 1 l | | | 35,77/1 l |

▶ Legionella Agar (Base) see page 1387

# RiboFlow® Kits for biomolecular detection of germs



By SY-LAB
- Specificity comparable to PCR
- Short assay time (<30 min)
- Simple protocol
- No expensive instrumentation necessary
- Particularly convenient for testing foods, toiletries and cosmetics
- Storage temp.: room temp.

SY-LAB´s RiboFlow® Test Kits were especially developed for detection of relevant bacterial contamination on-site, based on molecular flow technology - quickly and highly specific, without the need for sophisticated sampling , complex amplification techniques and expensive equipment.
Replicating cells are reliably detected by their ribosomal RNA in less than 30 minutes.
RiboFlow® Salmonella and RiboFlow® Listeria Twin are validated according to ISO 16140-2:2016.

The test is easily performed with usual cultures in enrichment media or with single colonies from agar plates. The sample is just mixed with the included solutions and pipetted on the test cassette. As result, a distinctive and easy to read line occurs only in the presence of the target organism.
Every kit includes a detailed manual with Standard- and Quick reference protocols.




We recommend the usage of a small laboratory centrifuge with at least 2000 x g (e.g. Art. No. CX73.1), a mini incubator, optimally with window (e.g. Art. No. YC53.1) and a tray (e.g. Art. No. YH58.1, Measures: 26 x 20 x 2 cm) as accessories for the application of the kits.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

**Fig.: Example result of the RiboFlow® test cassettes**

**A: RiboFlow®-Listeria Twin** (Art. No. 9884.1):
**Line topmost:** Control line
**Line in the middle:** positive result for *Listeria monocytogenes*
**Bottom line:** positive result for *Listeria* spp.

**B: RiboFlow®-Salmonella** (Art. No. 9881.1)
**Line topmost:** Control line
**No other line:** negative result, the organism has not been detected

| Product | Use | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **RiboFlow® Salmonella** | For detection of *Salmonella* spp. | **9881.1** | 24 tests | 267,70 |
| **RiboFlow® Cronobacter** | For detection of *Cronobacter* spp. | **9882.1** | 24 tests | 214,90 |
| **RiboFlow® Listeria Twin*** | For detection and differentiation of *Listeria* spp. and *Listeria monocytogenes* | **9884.1** | 24 tests | 364,45 |
| **RiboFlow® Campylobacter** | For detection of thermophilic *Campylobacter* spp. | **9885.1** | 24 tests | 274,15 |
| **RiboFlow® Vibrio parahaemolyticus** | For detection of *Vibrio parahaemolyticus* | **9888.1** | 24 tests | 289,20 |
| **RiboFlow® Staphylococcus aureus** | For detection of *Staphylococcus aureus* | **9889.1** | 24 tests | 255,85 |
| **RiboFlow® Enterobacteriaceae** | For detection of enterobacteria | **9890.1** | 24 tests | 255,85 |
| **RiboFlow® E. coli** | For detection of *Escherichia coli* | **9891.1** | 24 tests | 255,85 |
| **RiboFlow® Pseudomonas aeruginosa** | For detection of *Pseudomonas aeruginosa* | **9892.1** | 24 tests | 255,85 |
| **RiboFlow® Candida albicans** | For detection of *Candida albicans* | **9893.1** | 24 tests | 255,85 |
| **RiboFlow® Cosmetics**** | For detection and differentiation of *E. coli, Ps. aeruginosa, S. aureus, C. albicans* | **9894.1** | 6 x 4 tests | 197,30 |
| **RiboFlow® P/En***** | For detection and differentiation of *Pseudomonas* spp. and *Enterobacteriaceae* | **9895.1** | 24 tests | 255,85 |

* Within the RiboFlow® Listeria Twin Kit, one test cassette detects simultaneously the presence of *Listeria monocytogenes* and/or of other *Listeria spp*.

** The RiboFlow® Cosmetics Combi test Kit consists of 6 sets with 4 test cassettes each with whom the target organisms *Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus* and *Candida albicans* can be tested parallely.

*** Within the RiboFlow® P/En Kit, one test cassette detects simultaneously the presence of *Pseudomonas aeruginosa* and/or of enterobacteria.

# Microbiological Staining

Microbiological staining is mostly applied for identification of microorganisms during microscopic analysis. Due to their affinity to certain cell structures, acidic dyes or salts of basic aniline dyes are used frequently for contrastation of cells, differential staining, or accentuation of specific structures (flagella, spores, or capsules).

For detailed information on the products please see chapters Histology/Staining and Chemicals A-Z.

## Solutions for Gram Staining

Classic Staining acc. to Gram for differentiation of microorganisms.

| Product | Art. No. | Pack Qty | € |
|---|---|---|---|
| **Ethanol 96 %** | **P075.1** | 1 l | 70,85 |
| | **P075.3** | 1 l | 69,80 |
| | **P075.2** | 2,5 l | 149,45 |
| | **P075.4** | 2,5 l | 147,20 |
| | **P075.5** | 5 l | 276,30 |
| **Ethanol 96 % denatured** | **T171.1** | 2,5 l | 23,90 |
| | **T171.3** | 2,5 l | 21,75 |
| | **T171.4** | 5 l | 40,75 |
| | **T171.2** | 25 l | 120,95 |
| **Carbolic fuchsine solution** | **A130.2** | 500 ml | 22,05 |
| | **A130.1** | 1 l | 34,30 |
| **Gram staining kit** | **HP02.1** | 1 kit | 90,20 |
| **Gram's decolourising solution** | **CN02.1** | 500 ml | 22,50 |
| **Iodine-potassium iodide solution acc. to Lugol** | **N052.1** | 250 ml | 17,10 |
| | **N052.3** | 500 ml | 24,20 |
| | **N052.2** | 1 l | 29,60 |
| **Safranin solution** | **CN01.1** | 500 ml | 32,15 |
| **Carbol gentian violet solution** | **CN00.1** | 500 ml | 23,15 |
| | **CN00.2** | 1 l | 33,25 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Solutions for Neisser Staining

Routine staining method, mainly used for identification of Coryne bacteria causing Diphtheria.

| Dye | Art. No. | Pack Qty | € |
|---|---|---|---|
| **Neisser's solution I** | **3463.1** | 100 ml | 19,25 |
| | **3463.2** | 500 ml | 36,45 |
| **Neisser's solution II** | **3464.1** | 100 ml | 19,25 |
| | **3464.2** | 500 ml | 36,45 |
| **Neisser's solution III** | **3466.1** | 100 ml | 19,25 |
| | **3466.2** | 500 ml | 36,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Dyes for Spore Staining

Stains spores green and bacteria red or rose.

| Product | Art. No. | Pack Qty | € |
|---|---|---|---|
| **Eosin Y (C.I. 45380)** | **7089.1** | 50 g | 32,80 |
| | **7089.2** | 100 g | 55,40 |
| **Safranin O (C.I. 50240)** | **T129.1** | 10 g | 40,75 |
| **Malachite green oxalate (C.I. 42000)** | **5895.2** | 25 g | 16,05 |
| | **5895.1** | 100 g | 32,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Dyes for Staining of Bacteria

| Product | Art. No. | Pack Qty | € |
|---|---|---|---|
| **Lactophenol blue solution** | **3097.1** | 100 ml | 25,70 |
| **LOEFFLER's methylene blue solution** | **AE64.1** | 500 ml | 24,65 |
| | **AE64.2** | 1 l | 30,65 |
| | **AE64.3** | 2,5 l | 64,00 |
| **Carbolic fuchsine solution** | **A130.2** | 500 ml | 22,05 |
| | **A130.1** | 1 l | 34,30 |
| **Sudan black B (C.I. 26150)** | **0292.1** | 10 g | 22,50 |
| **Rose Bengale B (C.I. 45440)** | **3162.1** | 50 g | 93,00 |
| **Alizarin red S (C.I. 58005)** | **0348.1** | 10 g | 19,25 |
| | **0348.2** | 25 g | 30,00 |
| **Crystal violet (C.I. 42555)** | **T123.1** | 25 g | 26,80 |

For additional product data and safety information, see chapter Chemicals A-Z.



# Nutrient Media for Molecular Biology

## Selective Media with Antibiotics

**Nutrient media for selection and selective cultivation of recombinant *E.coli*.**

- Tried and tested Standard media for molecular biology complemented with antibiotics
- Easy and uncomplicated storage of the powder at 20 °C
- With low or high salt content according to Luria/Miller or Lennox
- With antibiotics in different end concentrations
- Instruction for use: 35 g (according to the Lennox method) or 40 g (according to the Luria/Miller method) of the powder are weighed out per 1 litre of agar.






| Product | Properties | Art. No. | Pack Qty | Packaging | € |
|---|---|---|---|---|---|
| **LB-Agar (Lennox) / Amp100** | Low salt content acc. to Lennox.<br>With ampicillin: end concentration of 100 µg/ml. | **8852.1** | 500 g | plastic | 85,90 |
| | | **8852.2** | 1 kg | plastic | 161,25 |
| | | **8852.3** | 2,5 kg | plastic | 376,25 |
| **LB-Agar (Lennox) / Kana50** | Low salt content acc. to Lennox.<br>With kanamycin: end concentration of 50 µg/ml.<br>Autoclavable. | **8853.1** | 500 g | plastic | 136,00 |
| | | **8853.2** | 1 kg | plastic | 255,35 |
| **LB-Agar (Luria/Miller) / Kana50** | High salt content acc. to Luria/Miller.<br>With kanamycin: end concentration of 50 µg/ml.<br>Autoclavable. | **8860.1** | 500 g | plastic | 122,05 |
| | | **8860.2** | 1 kg | plastic | 224,70 |
| **LB-Agar (Luria/Miller) / Amp50** | High salt content acc. to Luria/Miller.<br>With ampicillin: end concentration of 50 µg/ml. | **8858.1** | 500 g | plastic | 77,30 |
| | | **8858.2** | 1 kg | plastic | 144,60 |
| | | **8858.3** | 2,5 kg | plastic | 332,20 |
| **LB-Agar (Luria/Miller) / Amp100** | High salt content acc. to Luria/Miller.<br>With ampicillin: end concentration of 100 µg/ml. | **8855.1** | 500 g | plastic | 73,65 |
| | | **8855.2** | 1 kg | plastic | 137,10 |
| | | **8855.3** | 2,5 kg | plastic | 317,15 |
| **LB-Agar (Luria/Miller) / Chloramph34** | High salt content acc. to Luria/Miller.<br>With chloroamphenicol: end concentration of 34 µg/ml.<br>Autoclavable. | **8861.1** | 500 g | plastic | 71,95 |
| | | **8861.2** | 1 kg | plastic | 132,80 |
| | | **8861.3** | 2,5 kg | plastic | 306,40 |

**Instructions for use**
can be found on the Internet next to the product description.

# Granulated Media



Storage temp.: +20 °C

**Benefits of granulated Media:**
- Dust minimized
- High solubility
- Without additives

## LB Broth (Lennox), granulated

**granulated, for molecular biology**

Standard formulation used for propagation and culturing of *E. coli*. Low salt content for high-copy plasmid proliferation and preparation, as well as for phage propagation under supplementation with magnesium chloride.
Granulated, dust-minimized version with high solubility and superior homogeneity.
Application: Use 20 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Tryptone | 10 g/l |
| Yeast extract | 5 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| pH value | 7,0 ±0,2 |
| Granulation | complies |

| | | | | |
|---|---|---|---|---|
| **6669.1** | 500 g | | plastic | 86,55 € |
| Original pack 6 x 500 g | | | | 82,22/500 g |
| **6669.2** | 1 kg | | plastic | 153,20 € |
| Original pack 6 x 1 kg | | | | 145,54/1 kg |
| **6669.3** | 2,5 kg | | plastic | 342,95 € |
| **6669.4** | 5 kg | BIG PACK | plastic | 618,15 € |

## LB-Agar (Lennox), granulated

**granulated, for molecular biology**

Granulated, dust-minimized version of the Luria-Bertani Agar formulated acc. to Lennox; With high solubility and superior homogeneity.
Application: Use 35 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Tryptone | 10 g/l |
| Yeast extract | 5 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Agar-Agar | 15 g/l |
| pH value | 7,0 ±0,2 |
| Granulation | complies |

| | | | | |
|---|---|---|---|---|
| **6671.1** | 500 g | | plastic | 95,70 € |
| Original pack 6 x 500 g | | | | 90,92/500 g |
| **6671.2** | 1 kg | | plastic | 179,55 € |
| Original pack 6 x 1 kg | | | | 170,57/1 kg |
| **6671.3** | 2,5 kg | | plastic | 388,10 € |

## LB Broth (Luria/Miller), granulated

**granulated, for molecular biology**

Standard formulation used for propagation and culturing of *E. coli*. Due to the high salt content particularly suited for bacterial proliferation prior to plasmid preparation.
Granulated, dust-minimized version with high solubility and superior homogeneity.
Application: Use 25 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Tryptone | 10 g/l |
| Yeast extract | 5 g/l |
| Sodium chloride (NaCl) | 10 g/l |
| pH value | 7,0 ±0,2 |
| Granulation | complies |

| | | | | |
|---|---|---|---|---|
| **6673.1** | 500 g | | plastic | 78,40 € |
| Original pack 6 x 500 g | | | | 74,48/500 g |
| **6673.2** | 1 kg | | plastic | 147,30 € |
| Original pack 6 x 1 kg | | | | 139,94/1 kg |
| **6673.3** | 2,5 kg | | plastic | 319,30 € |
| **6673.4** | 5 kg | BIG PACK | plastic | 581,60 € |

## LB Agar (Luria/Miller), granulated

**granulated, for molecular biology**

Granulated, dust-minimized version of the Luria-Bertani Agar formulated acc. to Luria and Miller; With high solubility and superior homogeneity.
Application: Use 40 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Tryptone | 10 g/l |
| Yeast extract | 5 g/l |
| Sodium chloride (NaCl) | 10 g/l |
| Agar-Agar | 15 g/l |
| pH value | 7,0 ±0,2 |
| Granulation | complies |

| | | | | |
|---|---|---|---|---|
| **6675.1** | 500 g | | plastic | 83,85 € |
| Original pack 6 x 500 g | | | | 79,66/500 g |
| **6675.2** | 1 kg | | plastic | 152,65 € |
| Original pack 6 x 1 kg | | | | 145,02/1 kg |
| **6675.3** | 2,5 kg | | plastic | 335,40 € |



## 2x YT Broth, granulated

**granulated, for molecular biology**

Nutritious medium for proliferation of *E. coli*, formulated in order to increase replication and yield of filamentous ssDNA bacteriophages (such as the M13 phage).
Granulated, dust-minimized version with high solubility and superior homogeneity.
Application: Use 31 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Tryptone | 16 g/l |
| Yeast extract | 10 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| pH value | 7,0 ±0,2 |
| Granulation | complies |

| | | | | |
|---|---|---|---|---|
| **6676.1** | 500 g | | plastic | 98,80 € |
| Original pack 6 x 500 g | | | | 93,86/500 g |
| **6676.2** | 1 kg | | plastic | 166,65 € |
| Original pack 6 x 1 kg | | | | 158,32/1 kg |
| **6676.3** | 2,5 kg | | plastic | 381,65 € |

# Standard Media

Storage temp.: +20 °C

All nutrient media for molecular biology are according to the data given in Sambrook and Russell, *Cold Spring Harbour Laboratory Press*, Cold Spring Harbour, New York, 2001.

## Yeast-Nitrogen-Base (without Amino Acids)

**for molecular biology**

For yeast classification based on amino acid and carbohydrate requirements. **YNB Medium**

Yeast Nitrogen Base (without amino acids) contains ammonium sulphate, all vitamins and all organic salts needed to cultivate yeasts, **except for the amino acids and carbohydrate sources**. By selective addition of single amino acids and sugars the yeast cells are tested for sugar assimilation and for their dependency on specific amino acids, hereby revealing parameters for their classification.
Application: Add 6,7 g for 100 ml broth for 10x stock solution.
Use selected sugar/amino acid.
Do not boil, do not autoclave! Sterilise by sterile filtration!

**Formulation:**

| | |
|---|---|
| Ammonium sulphate. | 5,0 g/l |
| Potassium phosphate. | 1,0 g/l |
| Magnesium sulphate. | 0,5 g/l |
| Calcium chloride. | 0,1 g/l |
| Sodium chloride (NaCl). | 0,1 g/l |
| Inositol. | 2,0 mg/l |
| Boric acid. | 0,5 mg/l |
| Niacin. | 0,4 mg/l |
| Thiamine hydrochloride. | 0,4 mg/l |
| Pyridoxin hydrochloride. | 0,4 mg/l |
| Calcium pantothenate. | 0,4 mg/l |
| Manganese sulphate. | 0,4 mg/l |
| Zinc sulphate. | 0,4 mg/l |
| P-Aminobenzoic acid. | 0,2 mg/l |
| Iron chloride. | 0,2 mg/l |
| Riboflavine. | 0,2 mg/l |
| Sodium molybdate. | 0,2 mg/l |
| Potassium iodide. | 0,1 mg/l |
| Copper sulphate. | 0,04 mg/l |
| Biotin. | 0,002 mg/l |
| Folic acid. | 0,002 mg/l |
| pH value. | 5,4 ±0,2 |

| | | | |
|---|---|---|---|
| **HP26.1** | 500 g | plastic | 142,45 € |
| Original pack 6 x 500 g | | | 135,33/500 g |

▶ Amino Acids for drop-out mixtures see chapter Chemicals A-Z.

## LB Broth (Lennox)

**for molecular biology**



Standard formulation used for propagation and culturing of *E. coli*. The salt content was adjusted to enable high-copy plasmid proliferation and preparation. Additionally, LB medium may be supplemented with magnesium chloride in order to gain an enriched broth for phage propagation.
Application: Use 20 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Tryptone. | 10 g/l |
| Yeast extract. | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| pH value. | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **X964.1** | 500 g | plastic | 58,60 € |
| Original pack 6 x 500 g | | | 55,67/500 g |
| **X964.2** | 1 kg | plastic | 103,75 € |
| Original pack 6 x 1 kg | | | 98,56/1 kg |
| **X964.3** | 2,5 kg | plastic | 239,20 € |
| **X964.4** | 5 kg BIG PACK | plastic | 428,95 € |

## LB Agar (Lennox)

**for molecular biology**



Application: Use 35 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Tryptone. | 10 g/l |
| Yeast extract. | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Agar-Agar. | 15 g/l |
| pH value. | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **X965.1** | 500 g | plastic | 72,60 € |
| Original pack 6 x 500 g | | | 68,97/500 g |
| **X965.2** | 1 kg | plastic | 138,70 € |
| Original pack 6 x 1 kg | | | 131,77/1 kg |
| **X965.3** | 2,5 kg | plastic | 317,15 € |

## LB Broth (Luria/Miller)

**for molecular biology**

Standard medium for propagation of *E. coli*. Due to the high salt content, this classical formulation acc. to Luria and Bertani is superior when culturing cells for plasmid preparation.
Application: Use 25 g for 1 l broth.

**Formulation:**

| | |
|---|---|
| Tryptone. | 10 g/l |
| Yeast extract. | 5 g/l |
| Sodium chloride (NaCl). | 10 g/l |
| pH value. | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **X968.1** | 500 g | plastic | 52,15 € |
| Original pack 6 x 500 g | | | 49,54/500 g |
| **X968.2** | 1 kg | plastic | 97,30 € |
| Original pack 6 x 1 kg | | | 92,44/1 kg |
| **X968.3** | 2,5 kg | plastic | 209,65 € |
| **X968.4** | 5 kg BIG PACK | plastic | 378,40 € |

## LB Agar (Luria/Miller)

**for molecular biology**

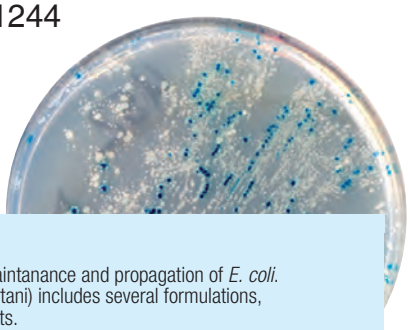
Application: Use 40 g for 1 l agar.

**Formulation:**

| | |
|---|---|
| Tryptone. | 10 g/l |
| Yeast extract. | 5 g/l |
| Sodium chloride (NaCl). | 10 g/l |
| Agar-Agar. | 15 g/l |
| pH value. | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **X969.1** | 500 g | plastic | 63,35 € |
| Original pack 6 x 500 g | | | 60,18/500 g |
| **X969.2** | 1 kg | plastic | 116,00 € |
| Original pack 6 x 1 kg | | | 110,20/1 kg |
| **X969.3** | 2,5 kg | plastic | 258,00 € |

▶ IPTG see page 1244
▶ X-ß-Gal see page 1244



**LB-Broth**

LB-Broth is a standard medium for maintanance and propagation of *E. coli*. The LB-series of media (**L**uria and **B**ertani) includes several formulations, which differ mainly in their salt contents.

Typical LB-Broth formulations are: Luria, Luria-Bertani, LennoxL, LennoxLB, Luria/Miller. For plasmid propagation, salt concentrations between 5 and 10 g/l are recommended.

## NZCYM Broth

**for molecular biology**

A superior medium for increased yields of phage Lambda.
Application: Use 22 g for 1 l broth.

**Formulation:**

Casein, enzymatically digested. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Casamino Acids. ..... 1 g/l
Magnesium sulphate ($MgSO_4$), anhydrous. ..... 0,98 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X974.1** | 500 g | plastic | 59,05 € |
| Original pack 6 x 500 g | | | 56,10/500 g |

## NZYM Broth

**for molecular biology**

Designed for increased replication of phage Lambda.
Application: Use 21 g for 1 l broth.

**Formulation:**

Casein, enzymatically digested. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Magnesium sulphate ($MgSO_4$), anhydrous. ..... 0,98 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X973.1** | 500 g | plastic | 59,05 € |
| Original pack 6 x 500 g | | | 56,10/500 g |

**NZYM- and NZCYM Broth**

These media were designed for the propagation of **bacteriophage Lambda**.
In order to encourage multi phage insertion into the host cell, supplementation with 0.2 % maltose is recommended (prepare a 20 % solution and add 1 ml per 100 ml of medium), which promotes expression of LamB (lambda receptor).

If maltose is added, the medium should not be used to create phage stocks, as binding of phage particles to membrane fragments will occur because of increased LamB density.

## SOB Broth

**for molecular biology**

Enriched broth for propagation of *E. coli*, particularly suited for proliferation of competent cells after transformation.
May be enriched to SOC-medium with 20 mM glucose.
Application: Use 26,64 g for 1 l broth.



**Formulation:**

Tryptone. ..... 20 g/l
Yeast extract. ..... 5 g/l
Magnesium chloride. ..... 0,96 g/l
Sodium chloride (NaCl). ..... 0,5 g/l
Potassium chloride (KCl). ..... 0,186 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **AE27.1** | 500 g | plastic | 65,50 € |
| Original pack 6 x 500 g | | | 62,23/500 g |

**SOB**

**S**uper **O**ptimal **B**roth (SOB) is a complex, nutritious nutrient medium which is used prior to and after transformation of *E. coli* bacteria. By adding 20 mM glucose it is enriched to SOC (**S**uper **O**ptimal Broth with **C**atabolite repression) which is optimal for coddling up of freshly transformed bacteria. Through this, SOC increases transformation efficiency.
In order to avoid caramelisation, glucose may only be added after autoclaving.
Acc. to D. Hanahan (1983) *J. Mol. Biol.* 166/4:557-580

## Terrific Broth

**for molecular biology**

Terrific Broth is a nutricious medium for the culture and proliferation of *E. coli*. Compared to LB medium Terrific Broth supports higher cellular density, therefore increasing the yield during plasmid and protein preparations.
Application: Use 50,8 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

**Formulation:**

Casein, enzymatically digested. ..... 12 g/l
Yeast extract. ..... 24 g/l
$K_2HPO_4$. ..... 12,54 g/l
$KH_2PO_4$. ..... 2,31 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **X972.1** | 500 g | plastic | 65,50 € |
| Original pack 6 x 500 g | | | 62,23/500 g |
| **X972.2** | 1 kg | plastic | 115,60 € |
| Original pack 6 x 1 kg | | | 109,82/1 kg |
| **X972.3** | 2,5 kg | plastic | 241,90 € |

## Terrific Broth modified

**for molecular biology**

Nutricious medium for the culture and proliferation of *E. coli*. Terrific Broth supports high cellular density and is recommended for use during cultivation of bacteria for plasmid isolation or *in vitro* protein expression.
**In the formulation of Terrific Broth modified, the phosphate content has been reduced, in order to prevent precipitation of insoluble salts during autoclaving.**
Application: Use 47,6 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

**Formulation:**

Casein, enzymatically digested. ..... 12 g/l
Yeast extract. ..... 24 g/l
$K_2HPO_4$. ..... 9,4 g/l
$KH_2PO_4$. ..... 2,2 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **HP61.1** | 500 g | plastic | 61,20 € |
| Original pack 6 x 500 g | | | 58,14/500 g |
| **HP61.2** | 1 kg | plastic | 109,15 € |
| Original pack 6 x 1 kg | | | 103,69/1 kg |

**Terrific Broth**

Terrific Broth is a phosphate buffered, highly nutritious medium that is particularly used prior to plasmid isolation, in order to increase the yield. Compared with LB Broth, TB contains a nearly 5x elevated concentration of yeast extract, providing the required growth factors, vitamis and nucleotides. The phosphate buffer stabilises pH values. Hence, bacteria proliferate to high cell density, while lysation is slowed down.

The high phosphate concentration may lead to precipitation of insoluble magnesium- or calcium phosphates. After autoclaving, antibiotics, glycerine, dextrose etc. may be added for further enrichment of the broth.

## YPD Broth

**for molecular biology**

For maintenance and propagation of *S. cerevisiae*.
Application: Use 50 g for 1 l broth.

**Formulation:**

Peptone. ..... 20 g/l
Yeast extract. ..... 10 g/l
Glucose. ..... 20 g/l
pH value. ..... 6,5 ±0,2

| | | | |
|---|---|---|---|
| **X970.1** | 500 g | plastic | 60,10 € |
| Original pack 6 x 500 g | | | 57,10/500 g |
| **X970.2** | 1 kg | plastic | 104,85 € |
| Original pack 6 x 1 kg | | | 99,61/1 kg |
| **X970.3** | 2,5 kg | plastic | 233,85 € |

## YPD Agar

**for molecular biology**

Application: Use 65 g for 1 l agar.

**Formulation:**

Peptone. ..... 20 g/l
Yeast extract. ..... 10 g/l
Glucose. ..... 20 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 6,5 ±0,2

| | | | |
|---|---|---|---|
| **X971.1** | 500 g | plastic | 76,90 € |
| Original pack 6 x 500 g | | | 73,06/500 g |
| **X971.2** | 1 kg | plastic | 132,80 € |
| Original pack 6 x 1 kg | | | 126,16/1 kg |
| **X971.3** | 2,5 kg | plastic | 303,70 € |

**YPD Medium**

YPD is a rich medium for the maintenance and propagation of *S. cerevisiae*.
It is suitable if selections for auxotrophies are not intended.

Glucose is included as a carbon source.

Wild type strains of *S. cerevisiae* show a doubling time of approx. 90 min in YPD.

## 2xYT Broth

**for molecular biology**

A nutritious liquid medium formulated to promote the growth of host cells *(E. coli)*, thereby encouraging increased replication and yield from filamentous ssDNA bacteriophages (such as the M13 phage).
Application: Use 31 g for 1 l broth.

**Formulation:**

Tryptone. ..... 16 g/l
Yeast extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X966.1** | 500 g | plastic | 65,05 € |
| Original pack 6 x 500 g | | | 61,80/500 g |
| **X966.2** | 1 kg | plastic | 112,90 € |
| Original pack 6 x 1 kg | | | 107,26/1 kg |
| **X966.3** | 2,5 kg | plastic | 263,40 € |

## 2xYT Agar

**for molecular biology**

Application: Use 46 g for 1 l agar.

**Formulation:**

Tryptone. ..... 16 g/l
Yeast extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X967.1** | 500 g | plastic | 78,40 € |
| Original pack 6 x 500 g | | | 74,48/500 g |

**2x YT Media**

Very nutricious medium for proliferation of M13 and other filamentous phages in *E. coli*.
2x YT Medium (**Y**east extract / **T**ryptone) contains big amounts of vitamins, amino acids, nucleic acids and other base components, allowing phages to propagate without weakening the host bacterium.

This medium may also be used for proliferation of recombinant *E. coli*.

▶ Granulated Nutrient Media see page 1415

# Nutrient Media of vegetable origin

Storage temp.: +20 °C

animal-free

- Free from animal components
- Product origin statement available on request
- Free from TSE/BSE

## LB Broth (Lennox) vegetal

**for molecular biology, animal-free**

Standard formulation made from compounds of pure vegetable origin, used for propagation and culturing of *E. coli*. Low salt content for plasmid isolation. Supplemented with magnesium chloride also suitable for phage propagation.
Application: Use 20 g for 1 l broth.

**Formulation:**

Vegetable peptone . ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **0155.1** | 500 g | plastic | 68,70 € |
| Original pack 6 x 500 g | | | 65,27/500 g |
| **0155.2** | 1 kg | plastic | 122,05 € |
| Original pack 6 x 1 kg | | | 115,95/1 kg |

## LB Agar (Lennox) vegetal

**for molecular biology, animal-free**

Standard formulation made from compounds of pure vegetable origin, used for propagation and culturing of *E. coli*.
Application: Use 35 g for 1 l agar.

**Formulation:**

Vegetable peptone . ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **0159.1** | 500 g | plastic | 83,75 € |
| Original pack 6 x 500 g | | | 79,56/500 g |
| **0159.2** | 1 kg | plastic | 155,35 € |
| Original pack 6 x 1 kg | | | 147,58/1 kg |

## Terrific Broth vegetal

**for molecular biology, animal-free**

Nutritious medium made from compounds of pure vegetable origin for culture and proliferation of *E. coli*. Terrific Broth supports very high cellular density, therefore increasing the yield during plasmid and protein preparations.
Application: Use 50,8 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

**Formulation:**

Vegetable peptone . ..... 12 g/l
Yeast extract. ..... 24 g/l
$K_2HPO_4$. ..... 12,5 g/l
$KH_2PO_4$. ..... 2,3 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **0161.1** | 500 g | plastic | 77,30 € |
| Original pack 6 x 500 g | | | 73,44/500 g |

# Basic Reagents for Nutrient Media

High-quality compounds are vital for rapid growth and efficient selection of microorganisms. Peptones in particular are an easily accessible source of carbohydrates as well as nitrogen and amino acids. Yeast extracts additionally are very rich in vitamins, growth factors, and nucleic acids. The most common basic reagents for nutrient media have been assembled here.





## Casein hydrolysate, bacteriological

**for biochemistry, acidic hydrolysate**

Casamino acids

Storage temp.: +20 °C

Manufactured by hydrolysation of casein by hydrochloric acid. Tryptophane-free. High-grade casein hydrolysate **with superior amino-nitrogen/total nitrogen ratio (AN/TN)**. Particularly suitable for sensitive assays and applications requiring high yields, like production of bacterial toxins or vaccines.

**Type analysis:**

Total nitrogen. ..... 7,0-8,5 %
pH value . ..... 4,5-6,0
Loss on drying. ..... <6 %
Ratio AN/TN. ..... 56-93 %

| | | | |
|---|---|---|---|
| **A157.3** | 250 g | plastic | 91,30 € |
| **A157.1** | 500 g | plastic | 139,25 € |
| Original pack 6 x 500 g | | | 132,29/500 g |
| **A157.2** | 1 kg | plastic | 249,95 € |
| Original pack 6 x 1 kg | | | 237,45/1 kg |

## Casein hydrolysate, standard

**for molecular biology, acidic hydrolysate**

Ingredient of molecular and microbiological nutrient media, vitamin-free.

Casamino acids

Storage temp.: +20 °C

Acidic hydrolysate of casein with low cystein and tryptophane content, free of vitamins. Excellent for the production of bacterial toxins and vaccins. **With standard amino-nitrogen/total nitrogen ratio (AN/TN).**

**Type analysis:**

Total nitrogen. ..... ≥5,0 %
Amino nitrogen. ..... ≥3,5 %
Ratio AN/TN. ..... ≥46 %
Ash content. ..... ≤45 %
pH value (2 % solution). ..... 6,5-7,5

| | | | |
|---|---|---|---|
| **AE41.1** | 500 g | plastic | 70,45 € |
| Original pack 6 x 500 g | | | 66,93/500 g |
| **AE41.2** | 1 kg | plastic | 124,60 € |
| Original pack 6 x 1 kg | | | 118,37/1 kg |

## Meat extract

**powder, for nutrient media**

Equates Lab-Lemco™

Storage temp.: +20 °C

High-grade nutrient media additive also ideal for supplementation of media for fermentation studies.

**Guarantee analysis:**

Total nitrogen (as N). ..... ≥10 %
Loss on drying. ..... ≤6 %
Ash. ..... ≤16 %
pH (2 % solution). ..... 7,0 ±0,5

| | | | |
|---|---|---|---|
| **X975.1** | 500 g | plastic | 123,65 € |
| Original pack 6 x 500 g | | | 117,47/500 g |
| **X975.2** | 1 kg | plastic | 225,65 € |
| Original pack 6 x 1 kg | | | 214,37/1 kg |

## Meat extract paste

**paste, for nutrient media**

Storage temp.: +20 °C

High-grade paste made of slightly proteolytic meat.

**Guarantee analysis:**

Dry substance. ..... ≥78 %
Ash (dry substance). ..... ≤30 %
Creatinine content. ..... 6,5-6,9 %
In $H_2O$ insoluble matter. ..... ≤1,5 %
NaCl. ..... ≤7 %
Copper (Cu). ..... ≤0,0006 %
Zinc (Zn). ..... ≤0,0001 %
Microbiological assay. ..... complies

| | | | |
|---|---|---|---|
| **5770.1** | 250 g | plastic | 65,50 € |
| **5770.2** | 1 kg | plastic | 209,65 € |
| Original pack 6 x 1 kg | | | 199,17/1 kg |



## Yeast Extract

**powdered, for bacteriology**

Storage temp.: +20 °C

Water-soluble. Produced through aqueous extraction of autolysed brewer´s yeast. High content of vitamins. Ideal, therefore, in many standard nutrient media, e.g. LB-medium as for vitamins, carbohydrates, and amino acids.

**Guarantee analysis:**

Total nitrogen. ..... ≥8 %
Amino nitrogen. ..... 4,8-6,3 %
Ratio AN/TN. ..... 41-60
Loss on drying. ..... ≤6 %
Ash. ..... ≤18 %
pH value (5 % in $H_2O$). ..... 6,4-7,4
Solubility (5 % solution). ..... clear

| | | | |
|---|---|---|---|
| **2363.1** | 250 g | plastic | 42,90 € |
| **2363.3** | 500 g | plastic | 78,40 € |
| Original pack 6 x 500 g | | | 74,48/500 g |
| **2363.2** | 1 kg | plastic | 150,40 € |
| Original pack 6 x 1 kg | | | 142,88/1 kg |
| **2363.4** | 2,5 kg | plastic | 278,45 € |
| **2363.5** | 5 kg BIG PACK | plastic | 499,90 € |

## Yeast Extract, micro-granulated

**micro-granulated, for bacteriology**

Storage temp.: +20 °C

Micro-granulated, water soluble extract of selected autolysed yeast cells. Easy to handle and dust-reduced.



**Fig.:** Close-up

Yeast extract is used as a rich source for vitamins, carbon and amino acids in many microbiological culture media formulations. Rich in B-vitamines and growth factors.

**Type analysis:**

Total nitrogen.....≥10 %
Amino nitrogen. .....≥4,5 %
Dry substance.....≥94 %
Ash. .....≤16 %
pH (2 % solution). .....6,8-7,2

| | | | | |
|---|---|---|---|---|
| **2904.1** | 250 g | | plastic | 48,30 € |
| **2904.2** | 500 g | | plastic | 87,00 € |
| Original pack 6 x 500 g | | | | 82,65/500 g |
| **2904.3** | 1 kg | | plastic | 170,95 € |
| Original pack 6 x 1 kg | | | | 162,40/1 kg |
| **2904.4** | 2,5 kg | | plastic | 317,15 € |
| **2904.5** | 5 kg | BIG PACK | plastic | 564,40 € |

## Heart infusion

**for microbiology**

Storage temp.: +20 °C

Heart Infusion is an especially formulated preparation of dried infusion from bovine hearts retaining all the nutritive and growth stimulating properties of fresh tissues. It is a typical ingredient of Blood Agar, Brain-Heart-Infus Media etc.

**Type analysis:**

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH (2 % solution). .....6,5-7,5

| | | | | |
|---|---|---|---|---|
| **7596.1** | 250 g | | plastic | 57,55 € |
| **7596.2** | 500 g | | plastic | 98,80 € |
| Original pack 6 x 500 g | | | | 93,86/500 g |

In the early days of bacteriology, so-called **"infusions"** (tissue extraction) were used in microbiological media. As simply manufactured and non-standardised natural products, "infusion" have a relatively low batch-to-batch constancy and vary both in composition and in nutrient content. However, they are still commonly used in several classic media (Art. No. 7596).

## Starch, soluble

**soluble**

Oxidized corn starch

Important compound of many nutrient media for cultivation of fastidious microorganisms in general, and *Clostridia* in particular. Please solubilise the starch in very few cold water prior to addition to the medium.

| | | | | |
|---|---|---|---|---|
| **4701.1** | 1 kg | | plastic | 23,15 € |
| Original pack 6 x 1 kg | | | | 21,99/1 kg |
| **4701.2** | 5 kg | BIG PACK | plastic | 78,40 € |

## Lactalbumin

**for microbiology**

Storage temp.: +20 °C

Lactalbumin is produced by enzymatic hydrolysis of milk whey. It consists of peptides, amino acids and carbohydrates, simple and complex.
It is used in media for culturing of bacterial cells (e.g. *lactobacilli*), for tissue culture, production of vaccines and in fermentation procedures.

**Type analysis:**

Total nitrogen.....≥10 %
Amino nitrogen. .....≥4,8 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH (2 % solution). .....6,5-7,5

| | | | | |
|---|---|---|---|---|
| **7597.1** | 250 g | | plastic | 72,60 € |
| **7597.2** | 500 g | | plastic | 129,55 € |
| Original pack 6 x 500 g | | | | 123,07/500 g |

## Malt extract, bacteriological

**powdered, for microbiology**

Additive to malt containing culture media and agars.

Storage temp.: +20 °C

High quality additive for nutrient media requiring a superior malt content. Optimally suited for bacteriological applications due to low pH value. Free of nitrite. Do not overheat!

**Type analysis:**

Colour. ..... beige
Loss on drying. .....≤6 %
Maltose. .....~70 %
Total nitrogen (TN).....~1,3 %
Amino nitrogen. .....~0,4 %
Sulphated ash. .....≤3 %
pH value (1,5 % sol.).....4,5-5,5

| | | | | |
|---|---|---|---|---|
| **AE68.1** | 500 g | | plastic | 57,95 € |
| Original pack 6 x 500 g | | | | 55,05/500 g |

## Malt extract, standard

**powdered, for culture media**

Storage temp.: +20 °C

Powdered malt extract for standard applications.
Malt extract possesses a very large amount of carbohydrates. The medium, therefore, turns dark brown very quickly when overheated.

**Type analysis:**

Colour. ..... beige
Loss on drying. .....≤6,0 %
Reducing sugar. .....≥60,0 %
Ash. .....≤4,5 %
pH value (3 % aqueous solution). .....4,8-5,8

| | | | | |
|---|---|---|---|---|
| **X976.1** | 500 g | | plastic | 34,95 € |
| Original pack 6 x 500 g | | | | 33,20/500 g |
| **X976.2** | 1 kg | | plastic | 60,75 € |
| Original pack 6 x 1 kg | | | | 57,71/1 kg |

**Sterilisation of media containing sugar**

Media containing sugar or **malt extract**, particularly those with a low pH, must be sterilised with care. We recommend autoclaving at up to 118 °C for a maximum of 15 min. Please observe the guidelines given in the instructions for use.

The reasons are as follows:

a) Heating sugar in combination with amino acids (from peptone, meat extract, yeast extract, or similar) can result in **toxic Maillard reaction products** which may interfere with proliferation of micro-organisms.

b) Inclusion of different sugar molecules and sugar degradation products will cause premature chain termination and inhibit chain cross-linking. The **gelability of agars containing sugar** will thereby be reduced.

The term **peptone** is used for all proteins digested by acid or enzymes. In addition, the source (e. g. 8986.1: Peptone ex Casein) and the digesting compound should be given (e. g. "tryptic"). Source of nitrogen and amino acids.

**Tryptone** is manufactured by digestion of casein with pancreas extract (pancreatic digest). Tryptone is rich in tryptophane, and an ideal source of nitrogen and amino acids used in a number of microbiological nutrient media (Art. No. 8952 and 6681).

**NZamine** also is manufactured by pancreatic digestion of casein. Being similar to tryptone it is often used as source of nitrogen and amino acids in nutrient media for bacterial growth in molecular biology (Art. No. CP76).

**Proteose peptone** is formed by hydrolytic cleavage of proteins from animal tissue, more complete that which occurs for peptones in general, but not strong enough to form single amino acids. Proteose peptone is rich for peptides with high molecular weight, beeing a high-grade component of microbiological nutrient media (Art. No. HP32).

**Casamino acids** originate from hydolysis of casein by acid. This compound is used as source of nitrogen and amino acids when completely hydrolysed protein is required, e. g. in proliferation assays or during production of vaccines and toxins (Art. No. AE41 and A157).

## NZamine

**for molecular biology**

Component of nutrition media for molecular biological assays, particularly LB Broth.

Storage temp.: +20 °C

Highly nutritive peptone, produced by pancreatic digest of Casein under distinct conditions. Best source of nitrogen and amino acids in nutrient media for molecular biological assays, particularly broth acc. to Luria/Bertani (LB).

**Guarantee analysis:**

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,9 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH value (2 % solution).....7,0 ±0,5

| | | | |
|---|---|---|---|
| **CP76.2** | 250 g | plastic | 45,70 € |
| **CP76.1** | 500 g | plastic | 72,60 € |
| Original pack 6 x 500 g | | | 68,97/500 g |

## Ox Bile, bacteriological

**for microbiology**

Storage temp.: +20 °C

Ox Bile is produced by a low dehydration process of bovine liver. It is a mixture of free and conjugated bile salts. It works as a selective agent for bile-tolerant microorganisms in culture media; gram positive bacteria are inhibited.

**Type analysis:**

Cholic acid.....≥45 %
Loss on drying. .....≤6 %
pH (2 % solution). .....6,0-8,5
Solubility (2 % solution).....clear

| | | | |
|---|---|---|---|
| **7595.1** | 250 g | plastic | 120,95 € |
| **7595.2** | 500 g | plastic | 213,95 € |
| Original pack 6 x 500 g | | | 203,25/500 g |

## Peptone ex gelatin

**pancreatic digest, for microbiology**

Storage temp.: +20 °C

Peptone produced from porcine skin by digestion with pancreatic extract. Gelatin pepton is low in fermentable carbohydrates, and is used in culture media especially for non-fastidious microorganisms and for fermentation studies.

**Type analysis:**

Total nitrogen.....≥10 %
Amino nitrogen. .....≥2,7 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH value (2 % solution).....7,0 ±0,5

| | | | |
|---|---|---|---|
| **HP99.1** | 500 g | plastic | 69,35 € |
| Original pack 6 x 500 g | | | 65,88/500 g |

## Peptone ex casein

**tryptic digest, for microbiology**

Storage temp.: +20 °C

Produced by proteolytic digestion of casein with trypsin-rich pancreas extract. Low-cost peptone that is used as an additive to nutrient media in the production of toxins, vaccins, enzymes and further biological products.

**Type analysis:**

Total nitrogen.....≥12,5 %
Amino nitrogen. .....≥3,0 %
Loss on drying. .....≤6 %
Ash. .....≤16 %
pH value . .....6,5-7,5

| | | | |
|---|---|---|---|
| **8986.1** | 500 g | plastic | 76,90 € |
| Original pack 6 x 500 g | | | 73,06/500 g |
| **8986.2** | 1 kg | plastic | 137,10 € |
| Original pack 6 x 1 kg | | | 130,25/1 kg |
| **8986.3** | 2,5 kg | plastic | 304,80 € |
| **8986.4** | 5 kg BIG PACK | plastic | 536,45 € |

## Peptone ex meat

**peptic digest, for microbiology**

Storage temp.: +20 °C

Extremely high-grade peptone, particularly nutritive. Peptone from meat is gained from animal tissue by peptic digestion. It is used as a biological nutrient for tissue cultures, fermentations and for the production of vaccines.

**Type analysis:**

Total nitrogen.....≥12,0 %
Amino nitrogen. .....2,0-3,1 %
Loss on drying. .....≤5 %
Ash. .....≤20 %
pH value . .....6,5-7,5
Solubility (2 % solution). .....clear

| | | | |
|---|---|---|---|
| **2366.1** | 250 g | plastic | 55,40 € |
| **2366.3** | 500 g | plastic | 103,10 € |
| Original pack 6 x 500 g | | | 97,95/500 g |
| **2366.2** | 1 kg | plastic | 193,50 € |
| Original pack 6 x 1 kg | | | 183,83/1 kg |
| **2366.4** | 2,5 kg | plastic | 381,65 € |



## Peptone ex soya

**papainic digest, for microbiology**

Storage temp.: +20 °C

Particularly broad nutrient spectrum and high content of carbohydrates and vitamins. Peptone from soya beans is gained from papainic digestion of soya bean flour and used for culture media, for fermentation and for the production of vaccines.

**Type analysis:**

Total nitrogen.....≥9,0 %
Amino nitrogen. .....≥2,5 %
Loss on drying. .....≤6 %
Ash. .....≤21,0 %
pH value (5 % solution).....6,5-7,5

| | | | |
|---|---|---|---|
| **2365.1** | 250 g | plastic | 38,60 € |
| **2365.3** | 500 g | plastic | 64,40 € |
| Original pack 6 x 500 g | | | 61,18/500 g |
| **2365.2** | 1 kg | plastic | 124,60 € |
| Original pack 6 x 1 kg | | | 118,37/1 kg |
| **2365.4** | 2,5 kg | plastic | 231,70 € |

## Peptone ex soya (animal-free/GMO-free)

**animal-free and GMO-free, papainic digest, for microbiology**

Storage temp.: +20 °C

Soya peptone (animal-free/GMO-free) is extracted by papainic digestion from soybean flour from non-genetically modified plants. Moreover, strict production guidelines guarantee that it is free from all animal substances, even TSE/BSE. Peptone ex soja (animal-free/GVO-free) complies with EG regulations 1829/2003 and 1830/2003. The corresponding certificates are available upon request.
Peptone ex soya is particularly characterized by its broad nutrient spectrum and high vitamin content. It is suitable for application in microbiology, tissue culture and fermentation.

**Type analysis:**

Total nitrogen.....≥7 %
Amino nitrogen. .....≥2,2 %
Loss on drying. .....≤6 %
Animal-free. .....complies
GMO-free. .....complies
pH value (5 % solution).....6,5-7,5

| | | | |
|---|---|---|---|
| **2832.1** | 250 g | plastic | 55,40 € |
| **2832.2** | 500 g | plastic | 90,85 € |
| Original pack 6 x 500 g | | | 86,31/500 g |
| **2832.3** | 1 kg | plastic | 166,65 € |
| Original pack 6 x 1 kg | | | 158,32/1 kg |

## Polypeptone

**for microbiology**

Storage temp.: +20 °C

Specially designed mixture of casein peptone and meat peptone. Polypeptone may be used as a rich source for vitamins, carbon and amino acids in many microbiological culture media formulations. For several microorganisms it is known to stimulate proliferation better than the individual petones.

**Type analysis:**

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,7 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH (2 % solution). .....6,5-7,5

| | | | |
|---|---|---|---|
| **2903.1** | 250 g | plastic | 50,45 € |
| **2903.2** | 500 g | plastic | 95,60 € |
| Original pack 6 x 500 g | | | 90,82/500 g |
| **2903.3** | 1 kg | plastic | 174,70 € |
| Original pack 6 x 1 kg | | | 165,97/1 kg |

## Proteose Peptone

**for microbiology**

Rich component of microbiological nutrition media, particularly used for production of toxins and vaccines. From enzymatic digestion of animal tissue.

Storage temp.: +20 °C

Highly nutritious source for the growth of a wide range of fastidious micro-organisms or when bacteria have to be well fed. Best suited for the production of vaccines, antibiotics, and other substances like enzymes, ideal for starter cultures and well usable for bacterial stocks. Proteose peptone has been used for, e.g., the production of Diphteria toxin, *Pneumococcus* toxin and the toxins from *Clostridium botulinum* and *Cl. perfringens*, as well as for culture of *Neisseria, Haemophilus, Salmonella, Corynebacterium* and *Staphylococcus*.

**Guarantee analysis:**

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,4 %
Loss on drying. .....≤6 %
Ash. .....≤10 %
pH value (2 % solution).....7,0 ±0,5

| | | | |
|---|---|---|---|
| **HP32.1** | 500 g | plastic | 90,85 € |
| Original pack 6 x 500 g | | | 86,31/500 g |

## Peptone ex pea

**for microbiology**

NEW

Storage temp.: +20 °C

The nitrogen-rich peptone from peas is produced by the enzymatic hydrolysis from non-genetically modified plants. As an alternative to soy peptone, it is used in media for fastidious microorganisms in industry, in cell culture or in microbiological analysis.

**Type analysis:**

Total nitrogen.....≥12 %
Amino nitrogen. .....≥3,8 %
Loss on drying. .....≤6 %
Ash. .....≤16 %
pH value (5 % solution).....6,7-7,7

| | | | |
|---|---|---|---|
| **2122.1** | 250 g | plastic | 63,45 € |
| **2122.2** | 500 g | plastic | 117,20 € |

## Tryptone/Peptone ex casein

**pancreatic digest, for microbiology**

Similar to NZamine • Storage temp.: +20 °C

Rich in short-chained peptides and amino acids, including trytophane. Essential ingredient of many nutrient media like LB, 2YT. Produced by pancreatic digestion of casein. It is used as an additive to nutrient media in the production of toxins, vaccins, enzymes and further biological products.

**Type analysis:**

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,9 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH (2 % solution). .....6,5-7,5

| | | | |
|---|---|---|---|
| **8952.1** | 250 g | plastic | 51,10 € |
| **8952.3** | 500 g | plastic | 89,80 € |
| Original pack 6 x 500 g | | | 85,31/500 g |
| **8952.2** | 1 kg | plastic | 154,30 € |
| Original pack 6 x 1 kg | | | 146,59/1 kg |
| **8952.4** | 2,5 kg | plastic | 338,65 € |
| **8952.5** | 5 kg BIG PACK | plastic | 585,90 € |



## Tryptone/Peptone ex casein, granulated

**granulated, pancreatic digest, for microbiology**

Similar to NZamine • Storage temp.: +20 °C

Granulated, dust-minimized casein peptone made by pancreatic digestion. Rich in short-chained peptides and amino acids, including tryptophane. Essential ingredient of many nutrient media like, for instance, LB, 2YT and others.

**Type analysis:**

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,9 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH (2 % solution). .....6,5-7,5
Granulation. .....complies

| | | | |
|---|---|---|---|
| **6681.1** | 250 g | plastic | 64,40 € |
| **6681.2** | 500 g | plastic | 110,65 € |
| Original pack 6 x 500 g | | | 105,12/500 g |
| **6681.3** | 1 kg | plastic | 193,40 € |
| Original pack 6 x 1 kg | | | 183,73/1 kg |
| **6681.4** | 2,5 kg | plastic | 387,00 € |
| **6681.5** | 5 kg BIG PACK | plastic | 729,95 € |

# Agar





## Agar-Agar, Kobe I

**Kobe I, powdered, for microbiology**

Standard-Agar for application in culture media for molecular biology (e.g. LB medium) and microbiology.
Storage temp.: +20 °C

**Type analysis:**

Gel strength (1,5 % gel). ..... ≥1000 g/cm²
Gelling temperature. ..... 35-42 °C
Moisture. ..... ≤22 %
pH value ..... 5,0-8,0
Ash. ..... ≤1,5 %

| | | | | |
|---|---|---|---|---|
| **5210.1** | 250 g | | plastic | 37,55 € |
| **5210.3** | 500 g | | plastic | 64,00 € |
| Original pack 6 x 500 g | | | | 60,80/500 g |
| **5210.2** | 1 kg | | plastic | 120,95 € |
| Original pack 6 x 1 kg | | | | 114,90/1 kg |
| **5210.4** | 2,5 kg | | plastic | 252,65 € |
| **5210.5** | 5 kg | BIG PACK | plastic | 450,45 € |

**Agar types**

The designation Agar **Kobe I** derives from the geographical origin of the agar, which is the Japanese city of Kobe on the main island of Honshu. In former times, when agar was still traded in strips, threads or squares, agar was graded into three main quality groups:

**Kobe I** - top quality, pure white
**Korea I** - slightly inferior quality, slightly yellowish to light beige
**China** - inferior quality, yellow-beige

These terms and the associated differences in quality are now obsolete - for some time now, agar of consistent quality has been available from all parts of Asia. However, for reasons unknown, the designation Kobe I is used today to describe ground agar of very high quality which is used as a microbiological standard agar.

**BioScience Agar** forms clear gels and is of high purity without any residues that could hinder growth of transformed - and therefore stressed - GMOs. Hence, it is particularly recommended for production of agar plates for bioengeneering. **BioScience Agar** is used as gelating agent in our *Anhydrous Nutrient Media for Molecular Biology*.

In addition, the designation **bacteriological agar** has become an established definition for ultra-pure agar, which represents a preliminary stage of purified agarose and is manufactured for special microbiological applications.

**Danish agar**, also known as Furcelleran, is a saccharide-enriched **carrageenan** extracted from the red algae *Furcellaria fastgiata*.

▶ Self-adhesive labels for Petri dishes, see page 1437

Please note our **Technical Information Brochure** on the Internet next to the products:

**Why Doesn't My Agar Gel?**
Basics, tips & tricks



## Agar-Agar, BioScience

**BioScience-Grade, powdered**

Agar of high purity for all culture media used in molecular- and microbiology. Recommended for plating in genetic engineering (GMOs).
Storage temp.: +20 °C
Highly pure Agar-Agar, essentially free of impurities that could hinder bacterial growth. Forms very clear gels.
Particularly recommended for preparation of culture plates used for plating of recombinant bacteria (GMOs) during genetic engineering.

**Guarantee analysis:**

Water content. ..... ≤10 %
Ash. ..... ≤4,5 %
Gel strength (1,5 % Nikan). ..... 800-1100 g/cm²
Gelling temperature (1,5 % gel). ..... 35 ±3 °C
Melting temperature (1,5 % gel). ..... 85 ±5 °C
Turbidity (1,5 % solution). ..... ≤12 NTU
Absorption (450 nm). ..... ≤0,200
pH (1,5 % gel) before autoclaving. ..... 7,0 ±0,4

| | | | | |
|---|---|---|---|---|
| **6494.1** | 250 g | | plastic | 56,90 € |
| **6494.2** | 500 g | | plastic | 96,65 € |
| Original pack 6 x 500 g | | | | 91,82/500 g |
| **6494.3** | 1 kg | | plastic | 172,00 € |
| Original pack 6 x 1 kg | | | | 163,40/1 kg |
| **6494.4** | 2,5 kg | | plastic | 381,65 € |

## Agar-Agar, BioScience, granulated

**BioScience-Grade, granulated**



Agar of high purity for all culture media used in molecular- and microbiology. Recommended for plating in genetic engineering (GMOs).
Storage temp.: +20 °C
Granulated, dust-minimized Agar-Agar.
Essentially free of impurities that could hinder bacterial growth.
Forming very clear gels.
Particularly recommended for preparation of culture plates used for plating of recombinant bacteria (GMOs) during genetic engineering.

**Guarantee analysis:**

Water content. ..... ≤10 %
Ash. ..... ≤5,0%
Gel strength (1,5 % Nikan). ..... 800-1100 g/cm²
Gelling temperature (1,5 % gel). ..... 35 ±3 °C
Melting temperature (1,5 % gel). ..... 85 ±5 °C
Turbidity (1,5 % solution). ..... ≤12 NTU
Absorption (450 nm). ..... ≤0,200
pH (1,5 % gel) before autoclaving. ..... 7,2 ±0,4
Granulation. ..... complies

| | | | | |
|---|---|---|---|---|
| **1347.1** | 250 g | | plastic | 67,65 € |
| **1347.2** | 500 g | | plastic | 120,30 € |
| Original pack 6 x 500 g | | | | 114,29/500 g |
| **1347.3** | 1 kg | | plastic | 220,40 € |
| Original pack 6 x 1 kg | | | | 209,38/1 kg |
| **1347.4** | 2,5 kg | | plastic | 489,15 € |

## Agar-Agar, bacteriological

**for bacteriology, extremely pure quality**

Ideal for immunodiffusion and electrophoresis and as a medium for tissue and cell cultures, bacteriology and mycology.

Storage temp.: +20 °C

Qualitatively high-grade Agar which is clearly superior to bacteriological Agar in its purity. Forms very clear gels.
Essentially free of impurities that could interfere with other products in culture media formulation. Free of bacterial inhibitors.
Recommended in media to be used for the determination of susceptibility of microorganisms to antibiotics or drugs.

**Guarantee analysis:**

| | |
|---|---|
| Electroendosmosis (EEO) | ≤0,450 |
| Water content | ≤12 % |
| Ash | ≤1,6 % |
| Gel strength (1,5 % Nikan) | 500-1200 g/cm² |
| Gelling temperature (1,5 % gel) | 34-38 °C |
| Melting temperature (1,5 % gel) | 85-90 °C |
| Turbidity (1,5 % solution) | ≤10 NTU |
| Absorption (450 nm) | ≤0,100 |
| pH (1,5 % gel) before autoclaving | 5,0-7,0 |
| Resistance (1 % suspension) | ≥20000 Ohm |

| | | | |
|---|---|---|---|
| **2266.1** | 250 g | plastic | 107,00 € |
| **2266.3** | 500 g | plastic | 181,70 € |
| Original pack 6 x 500 g | | | 172,62/500 g |
| **2266.2** | 1 kg | plastic | 332,20 € |
| Original pack 6 x 1 kg | | | 315,59/1 kg |
| **2266.4** | 2,5 kg | plastic | 697,70 € |

## Agar-Agar, plant

**Genetic engineering quality, for plants**

For plant propagation and plant cell culture.

Storage temp.: +20 °C

High-pure agar recommended for propagation of ornamental and economic plant species, as for *in vitro* genetic engineering in plant research and commercial applications. The high gel strength of the agar allows usage at low concentrations of about 0.5 %. Forms very clear and transparent gels.

**Guarantee analysis:**

| | |
|---|---|
| Water content | <18 % |
| Ash | 3,0 ±0,5 % |
| Gel strength (1,5 % Nikan) | ≥1000 g/cm² |
| pH (1,5 % gel) before autoclaving | 7,2 ±0,4 |
| pH (1,5 % gel) after autoclaving | 7,0 ±0,4 |
| Gelling temperature | 34 ±2 °C |
| Melting temperature | 92 ±2 °C |
| Turbidity (1,5 % gel) | ≤25 NTU |

| | | | |
|---|---|---|---|
| **4807.1** | 250 g | plastic | 80,65 € |
| **4807.2** | 500 g | plastic | 134,40 € |
| Original pack 6 x 500 g | | | 127,68/500 g |
| **4807.3** | 1 kg | plastic | 231,15 € |
| Original pack 6 x 1 kg | | | 219,59/1 kg |
| **4807.4** | 2,5 kg | plastic | 493,45 € |

**Instructions:**

**Culture-Plates:** 15 g/l medium;

approx. 30-35 ml medium is required for a 90 mm culture plate.

**Top-Agar:** 7 g/l medium.

The solution should be autoclaved for 20 min and the preparation carefully swayed to distribute the agar evenly. Cool the agar down to 50 °C before adding the antibiotic. Sway the agar solution again before casting the plates.

Any air bubbles on the surface of the culture plates can be removed with a bunsen burner flame. Once the agar has hardened, the plates should be stored top-down at 4 °C.

# Carrageenans

Carrageenans are agar-related hydrocolloids consisting of esters of galactose and anhydro-galactose polysaccarides and forming particularly clear gels. In order to polymerise, carrageenans require cations, while gel strength may be altered by addition of $MgCl_2$ or KCl.



## Agar-Agar, danish

**Standardised Carrageenan mixture, sugar-containing, powdered**

Mixture of highly pured Carrageen extracts. For gelling of watery liquids like, e.g. media for cultivation of plants, and for special microbiological applications. Saccharated.

Storage temp.: +20 °C

Each lot of this Carrageenan mixture is standardised with sugars and KCl to the gel strength noted in the type analysis. Being extracts from natural products, the properties (e.g. gelling behaviour, salt content) may vary from lot to lot. Further information on analysis data see Chemicals A-Z.

**Type analysis:**

| | |
|---|---|
| Appearance | cream-coloured powder |
| Moisture | <12 % |
| Sulphate (as $SO_4$, dry substance) | 15-40 % |
| Gel strength (1,5 % sol.) | ~400-500 g/cm² |
| Viscosity (1,5 % sol., 75 °C) | ≥0,005 Pas |
| pH value (1,5 % sol.) | 7,0-10,5 |
| Arsenic (As) | ≤0,0003 % |
| Lead (Pb) | ≤0,0005 % |
| Cadmium (Cd) | ≤0,0002 % |
| Mercury (Hg) | ≤0,0001 % |
| Methanol, ethanol, isopropanol | ≤1 % |
| Ash insoluble in 1 % $H_2SO_4$ (dry substance) | ≤2 % |

Standardized by mono- or disaccharides and KCl

| | | | |
|---|---|---|---|
| **4508.1** | 1 kg | plastic | 73,65 € |
| Original pack 6 x 1 kg | | | 69,97/1 kg |
| **4508.2** | 5 kg BIG PACK | plastic | 317,15 € |

**Please Note:**

Being extracts from natural products, the properties (e.g. gelling behaviour, salt content) may vary from lot to lot. Further information on analysis data see Chemicals A-Z.

## Carrageenan, kappa

**acc. to FAO/WHO, EEC, FCC, highly pure**



Strongly gelling Carrageenan of kappa type. Forms gels of high gel strength. For gelling of watery liquids like e.g. culture media for plants or animals. Manufactured from cultured and controlled sea weeds.

Carrageenan E407

Carrageenans are agar-related hydrocolloids consisting of esters of galactose and anhydro-galactose polysaccarides. Kappa Carrageenan is obtained by alkaline extraction from red algae (*Rhodophyceae*) of the order *Gigartinales*, purified by filtration and recovered by KCl precipitation. In ionic solutions, heat-solubilized kappa Carrageenan self-assembles into helical structures and gels during cooling, the gel parameters depending on the ions present: Potassium ions form rigid gels, calcium gels are strong but more flexibel. Being an extract from natural products, the properties (e.g. gelling behaviour, salt content) may vary from lot to lot.

**Guarantee analysis:**

| | |
|---|---|
| Appearance | white-pale tan |
| Gel strength (1,5 %, aqueous) | 1200-1800 g/cm² |
| Particle size (99 %) | <0,25 mm |
| Loss on drying | <12 % |
| Arsenic (As) | <3 ppm |
| Lead (Pb) | <5 ppm |
| Cadmium (Cd) | <2 ppm |
| Mercury (Hg) | <1 ppm |
| Heavy metals | <20 ppm |
| pH value | 7,0-11,0 |
| Microbiological Analysis | complies |

Contains KCl

| | | | |
|---|---|---|---|
| **3059.1** | 25 g | plastic | 22,50 € |
| **3059.2** | 100 g | plastic | 57,95 € |
| **3059.3** | 500 g | plastic | 198,90 € |
| Original pack 6 x 500 g | | | 188,96/500 g |

## Carrageenan, iota

**acc. to FAO/WHO, EEC, FCC, highly pure**

Weakly gelating Carrageenan of iota type. Forms soft gels. For gelling of watery liquids like culture media for plants or animals in general, and for gelling of dairy products in particular. Manufactured from cultured and controlled sea weeds.

Carrageenan E407

Carrageenans are agar-related hydrocolloids consisting of esters of galactose and anhydrogalactose polysaccarides. Iota Carrageenan is obtained by alkaline extraction from red algae (*Rhodophyceae*) of the order *Gigartinales*, purified by filtration and recovered by alcoholic precipitation. In solutions containing calcium ions, heat-solubilised iota Carrageenan self-assembles into helical structures and gels during cooling.
Being an extract from natural products, the properties (e.g. gelling behaviour, salt content) may vary from lot to lot.

**Guarantee analysis:**

| | |
|---|---|
| Appearance | white-pale tan |
| Viscosity (in milk) | 2000-3500 mPa s |
| Particle size (98 %) | <0,149 mm |
| Loss on drying | <12 % |
| Arsenic (As) | <3 ppm |
| Lead (Pb) | <5 ppm |
| Cadmium (Cd) | <2 ppm |
| Mercury (Hg) | <1 ppm |
| Heavy metals | <20 ppm |
| pH value | 7,0-11,0 |
| Microbiological Analysis | complies |

| | | | |
|---|---|---|---|
| **3675.1** | 25 g | plastic | 22,50 € |
| **3675.2** | 100 g | plastic | 57,95 € |
| **3675.3** | 500 g | plastic | 198,90 € |
| Original pack 6 x 500 g | | | 188,96/500 g |



## GELRITE®

**Gelling agent for microbiological culture media**

Alternative to Agar

Storage temp.: +20 °C

GELRITE® is a highly-purified, natural heteropolysaccharide which forms stable, agar-like gels when exposed to soluble salts. Compared to agar however, only about half the amount is required.
GELRITE® has been specially developed as a gelling agent for microbiological culture media. It can however, replace agar in other applications, too. Polymerisation of GELRITE® is enhanced in the presence of (bivalent) kations. It is therefore supplemented by $MgCl_2$ if a solid gel structure is required. Elevated salt concentrations increase gelling temperature (e.g. 500 mM $Na^+$ to approx. 68 °C with 1 % GELRITE®). When using very high salt concentrations like e.g. seawater, gelling capacity may be significantly reduced.

**Chemical composition:**
Linear polysaccharide comprising of O-acetylate glycuronic acid, glucose and rhamnose units.

**Advantages of GELRITE® compared to Agar:**

- consistent product quality, almost 100 % batch-to-batch conformity
- forms remarkably clear gels
- reduces preparation time as gels form faster
- remains stable even at high temperatures and is therefore also ideal for thermophilic microorganisms; gels can withstand repeated autoclaving without any changes to gel strength
- indicates no toxic contaminations (e.g. through phenols, as found in agar)
- is chemically inert against most media additives
- is resistant to enzymatic degradation
- is non-toxic (no signs of toxicity in rats exposed to a dose of 5.000 mg/kg)
- is very economical to use

**Type analysis:**

| | |
|---|---|
| Gel strength | 400-700 g/cm² |
| Loss on drying | ≤15,0 % |

| | | | |
|---|---|---|---|
| **0039.1** | 500 g | plastic | 256,95 € |
| Original pack 6 x 500 g | | | 244,10/500 g |
| **0039.2** | 1 kg | plastic | 418,20 € |
| Original pack 6 x 1 kg | | | 397,29/1 kg |

**Media preparation with GELRITE®**

Dissolve the corresponding amounts of media additive, GELRITE® and $MgCl_2 \cdot 6\ H_2O$ in 1 litre of distilled water.
Autoclave mixture for 15 min at +120 °C.
Cool to 60 °C and pour the medium into Petri dishes.

**Examples:**

| Medium | GELRITE® | $MgCl_2 \cdot 6\ H_2O$ |
|---|---|---|
| Bismuth sulphite | 10.0 g/l | 0.75 g/l |
| Brillant green | 9.0 g/l | 0.75 g/l |
| Eosin methylene blue | 7.5 g/l | 0.75 g/l |
| Triple Iron Sugar | 6.0 g/l | 0.75 g/l |
| MacConkey | 7.0 g/l | 0.75 g/l |
| Nutrient broth | 8.0 g/l | 0.75 g/l |
| Plant agar | 2.0 g/l | - |
| Salmonella Shigella | 5.5 g/l | - |
| Seawater (High Salt solution) | not recommended | - |

# Antibiotics/Antimycotics

Reliable quality for microbiology, molecular biology and cell culture.

Denoted concentrations of working solutions are guiding values and have to be established for each application and cell type.

## Actinomycin D

**≥95 %, for biochemistry**

Peptide antibiotic. Pure actinomycin $C_1$.

Actinomycin IV, Actinomycin $C_1$, Dactinomycin

$C_{62}H_{86}N_{12}O_{16}$ • M 1255,5 g/mol • Storage temp.: +4 °C

**Danger** H300

Specific inhibitor of DNA-dependent RNA-synthesis. Inhibition is caused byintercalation in dsDNA and, therefore, is not specific for procaryotic cells. Standard application is the preparation of cDNA. Actinomycin D is cytostatic, toxic and sensitive to light. Stock solution should be kept in a bottle covered with foil.
**Stock solution** 10 mg/ml in DMSO or methanol.
Storage of stock solution: -20 °C
Working concentration: 50 µg/ml

| | | | |
|---|---|---|---|
| **8969.1** | 5 mg | glass | 77,95 € |

## Amphotericin B

**≥850 I.U./mg, for biochemistry**

Broad-range fungicide, polyene.

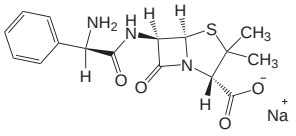
Fungizon

$C_{47}H_{73}NO_{17}$ • M 924,10 g/mol • Storage temp.: +4 °C

**Warning** H315-H319-H335

Alteration of cell membrane permeability by attachment to sterols. High concentration causes pore formation in cell membranes in general.
Amphotericin A: ≤0,4 %
**Stock solution:** 40 mg/ml in DMSO
Storage of stock solution: -20 °C
Working concentration: ≥3 µg/ml

| | | | |
|---|---|---|---|
| **0246.1** | 50 mg | glass | 21,40 € |
| **0246.2** | 250 mg | glass | 68,30 € |
| **0246.3** | 500 mg | glass | 123,65 € |



## Ampicillin

**CELLPURE® ≥91 %**

β-lactam antibiotic. Semi synthetic penicillin.
For cell culture and biochemistry.

D-α-Aminobenzylpenicillin sodium salt

$C_{16}H_{18}N_3NaO_4S$ • M 371,39 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

Inhibits cell wall biosynthesis in growing bacteria.
**Endotoxins: <0.15 E.U./mg**
**Stock solution:** 50 mg/ml in $H_2O$
Storage of stock solution: -20 °C, aliquoted
Working concentration in LB-plates or media: 50-100 µg/ml.
**Important:**
Solubilised ampicillin loses approx. 65 % activity after 7 days at +4 °C

| | | | |
|---|---|---|---|
| **HP62.1** | 10 g | plastic | 45,70 € |
| **HP62.2** | 50 g | plastic | 168,70 € |



## Ampicillin

**≥97 %, BioScience-Grade, for molecular biology and biochemistry**

β-lactam antibiotic. Semi synthetic penicillin.

D-α-Aminobenzylpenicillin sodium salt

$C_{16}H_{18}N_3NaO_4S$ • M 371,39 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

Inhibits cell wall biosynthesis in growing bacteria.
**Stock solution:** 50 mg/ml in $H_2O$
Storage of stock solution: -20 °C, aliquoted
Working concentration in LB-plates or media: 50-100 µg/ml.
**Important:**
Solubilised ampicillin loses approx. 65 % activity after 7 days at +4 °C

| | | | |
|---|---|---|---|
| **K029.1** | 10 g | plastic | 22,50 € |
| **K029.4** | 25 g | plastic | 42,50 € |
| **K029.5** | 50 g | plastic | 73,00 € |
| **K029.2** | 100 g | plastic | 124,60 € |
| **K029.3** | 250 g BIG PACK | plastic | 267,70 € |

▶ IPTG and X-ß-Gal see chapter Life Science - Molecular Biology page 1244

## Bacitracin

**≥60 IU/mg, Ph.Eur., for biochemistry**

Peptide antibiotic and protease inhibitor.

$C_{66}H_{103}N_{17}O_{16}S$ • M 1422,72 g/mol • Storage temp.: +4 °C

Inhibits cell wall biosynthesis in gram-positive bacteria and *Neisseria* by interaction with murein biosynthesis.
Also used as protease-inhibitor for inhibition of the gluthatione-insuline-transhydrogenase or some endopeptidases.

**Application:**
Stock solution: 100-1000 mg/ml in $H_2O$ or ethanol
Storage of stock solution at -20 °C
Working concentration: 0.1-1 mg/ml (0.07-0.7 mM)
Bacitracin is very stable in a pH range of 4-5, but is rapidly inactivated in pH of over 5 at room temperature.
Do not use at a pH of over 8.

| | | | |
|---|---|---|---|
| **5655.1** | 5 g | glass | 53,25 € |
| **5655.2** | 25 g | plastic | 220,40 € |

## Blasticidin

**≥98 %, for biochemistry**

Nucleoside antibiotic, Blasticidin S hydrochloride

$C_{17}H_{26}N_8O_5 \cdot HCl$ • M 458,90 g/mol • Storage temp.: +4 °C

**Danger** H300

Inhibits protein biosynthesis in pro- and eukaryotes by blocking of formation of peptide bonds. Selection marker for cells transfected with *brs* or *BSD* resistance genes.
**Stock solution:** 50 mg/ml in $H_2O$, PBS or HEPES
Storage of stock solution at -20 °C.
Working concentration: 3-100 µg/ml

| | | | |
|---|---|---|---|
| **CP14.1** | 10 mg | plastic | 69,35 € |
| **CP14.2** | 25 mg | plastic | 138,70 € |

## Carbenicillin

**≥88 %, for biochemistry**

β-lactam antibiotic, semi synthetic penicillin

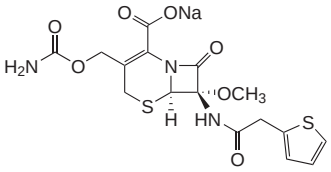
α-Carboxybenzyl penicillin disodium salt

$C_{17}H_{16}N_2O_6SNa_2 \cdot HCl$ • M 422,4 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

Carbenicillin inhibits cell wall biosynthesis in bacteria. Compared to ampicilline, carbenicillin is more resistant to hydrolysis by β-lactamase.
**Stock solution:** 50 mg/ml in 50 % ethanol / 50 % water
Working concentration: 20-60 µg/ml

| | | | |
|---|---|---|---|
| **6344.1** | 1 g | glass | 28,50 € |
| **6344.2** | 5 g | plastic | 65,05 € |
| **6344.3** | 25 g | plastic | 295,65 € |



## Cefoxitin

**≥98 %, for biochemistry**

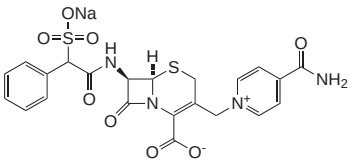
Cephalosporin-antibiotic, Cefoxitin sodium salt

$C_{16}H_{16}N_3NaO_7S_2 \cdot HCl$ • M 449,43 g/mol • Storage temp.: +4 °C

**Danger** H334-H335-H315-H319-H317

Semi-synthetic second generation cephalosporin derivate. Cefoxitin interferes with peptidoglycan layer composition during cell wall synthesis and is effective against a broad spectrum of gram-positive bacteria. Its effectivity against gram-negative bacteria is lower. Also active against anaerobic bacteria. Zone of inhibition analysis with Cefoxitin is used to detect methicilin resistance. Stable against cleavage by β-lactamase. Sensitive to light and temperature!
**Stock solution:** 100 mg/ml in water
Store stock solution in the dark at -20 °C (durability 30 weeks)
Working concentration: 2-100 µg/ml

| | | | |
|---|---|---|---|
| **4156.1** | 250 mg | glass | 52,15 € |
| **4156.2** | 500 mg | glass | 84,40 € |



## Cefsulodin

**≥97 %, for biochemistry**

Cephalosporin-antibiotic, Cefsulodin sodium salt

Cefomonil, Pseudocef

$C_{22}H_{19}N_4O_8S_2Na$ • M 554,53 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H334-H335-H315-H319-H317

Semi-synthetic third generation cephalosporin derivate. Cefsulodin interferes with peptidoglycan layer composition during cell wall synthesis and is effective against a broad spectrum of gram-positive and gram-negative bacteria. Also active against anaerobes. Stable against cleavage by β-lactamase. Sensitive to light and temperature!
**Stock solution:** 20 mg/ml in water
Store stock solution in the dark at -20 °C
Working concentration: 2-20 µg/ml

| | | | |
|---|---|---|---|
| **4014.1** | 100 mg | glass | 52,15 € |
| **4014.2** | 250 mg | glass | 91,30 € |

## Chloroamphenicol

**≥98,5 %, Ph.Eur., for biochemistry**

Bacteriostatic antibiotic

Chloromycetin

$C_{11}H_{12}Cl_2N_2O_5$ • M 323,15 g/mol • Storage temp.: +20 °C

**Warning** H351-H361d

Broad application range against gram-negative and gram-positive bacteria. Bacteriostatic effect by inhibiting bacterial protein biosynthesis. Light-sensitive. Store in the dark!
**Stock solution:** 34 mg/ml in ethanol
Storage of stock solution at -20 °C in the dark
Working concentration:
For plasmid amplification: 170 µg/ml
For selection of resistant bacteria: 10-30 µg/ml
For culture plates: 10-30 µg/ml (storage at +4 °C for 1-5 days)

| | | | | |
|---|---|---|---|---|
| **3886.2** | 25 g | | plastic | 19,25 € |
| **3886.1** | 50 g | | plastic | 32,15 € |
| **3886.3** | 100 g | BIG PACK | plastic | 52,60 € |

## Colistin

**≥19000 IU/mg, for biochemistry**

Bacteriostatic antibiotic, peptide antibiotic

Polymyxin $E_1$-disulphate, Colinsulphate

$C_{45}H_{85}N_{13}O_{10} \cdot H_2SO_4$ • M 1066,32 g/mol • Storage temp.: +4 °C

**Danger** H301

Effectual against proliferating and non-proliferating gram-negative bacteria. Coupling to bacterial lipopolysaccharides results in permeabilisation of cell membranes.
**Stock solution:** 1-10 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: 2-200 µg/ml

| | | | |
|---|---|---|---|
| **CN31.1** | 100 mg | glass | 25,30 € |
| **CN31.2** | 250 mg | glass | 50,45 € |
| **CN31.3** | 1 g | glass | 77,95 € |

## Cycloheximide

**≥98 %, for biochemistry**

Glutarimid antibiotiotic, fungicidal

Naramycin A, Actidione

$C_{15}H_{23}NO_4$ • M 281,36 g/mol • Storage temp.: +4°C

**Danger** H300-H360D-H341-H411

Antibiotic isolated from *Streptomyces griseus*. Its main biological activity is translation inhibition in eukaryotes by binding to the 60S subunit of the ribosomes. Cycloheximide inhibits binding of Aminoacyl-tRNA to the ribosomes, Peptidyltransferase, detachment of deacylated tRNA, and translocation of Aminoacyl-tRNA, resulting in cell growth arrest and apoptotic cell death. Not effective against bacteria.
Cycloheximide is widely used for selection of cycloheximide-resistant strains of yeast and fungi, for inhibition of eukaryotic contaminants in bacterial microbiology, for controlled inhibition of protein synthesis in cell culture and for detection of short-lived proteins, and for apoptosis induction or facilitation of apoptosis induction by death receptors.
**Stock solution:** 10 mg/ml in $H_2O$ or acetone
Storage of stock solution at -20 °C
Working concentration: 1-10 µg/ml
**Note:** Inactivated at basic pH values. Heat- and acid stabile.
No inactivation after 15 mins. 95 °C in pH 7.0.

| | | | |
|---|---|---|---|
| **8682.1** | 1 g | glass | 38,20 € |
| **8682.3** | 5 g | glass | 149,45 € |
| **8682.4** | 10 g | glass | 256,95 € |

▶ More physical and chemical details on antibiotics see chapter Chemicals A-Z.

## D-Cycloserine

**≥90 %, for biochemistry**

Bacteriostatic antibiotic

Oxamycin, D-4-Amino-3-isoxazolidinone

$C_3H_6N_2O_2$ • M 102,09 g/mol • Storage temp.: +4 °C

Bacteriostatic against gram negative and gram positive bacteria and some protozoans by inhibition of synthesis of the cell wall.
**Stock solution:** 10-100 mg/ml in $H_2O$ and 96 % ethanol
Stability of stock solution: Neutral or acidic solutions are unstable. Sodium carbonate buffered solutions (pH 10) may be stored at +4 °C for approx. 7 days without loosing activity.
Recommended storage of stock solution at -20 °C (6 months).
Working concentration: 20-100 µg/ml
**Note:** Optimum of activity at pH 6.4-7.4.
It is recommended to prepare fresh solutions each time for use.

| | | | |
|---|---|---|---|
| **CN37.1** | 1 g | glass | 24,65 € |
| **CN37.2** | 5 g | plastic | 53,65 € |
| **CN37.3** | 10 g | plastic | 100,55 € |

## Erythromycin

**≥93 %, for biochemistry**

Macrolide antibiotic

$C_{37}H_{67}NO_{13}$ • M 733,95 g/mol • Storage temp.: +4 °C

Erythromycin is a macrolide antibiotic (macrocyclic lactone antibiotic) which is produced from an actinomycete strain (*Saccharopolyspora erythraea*, formerly known as *Streptomyces erythraeus*). Its spectrum of activity is similar to but broader than that of penicillin, which means that erythromycin is also very effective against bacteria such as legionella or mycoplasma. Erythromycin binds to the bacterial 70s rRNA, interferes with the aminoacyl translocation and consequently inhibits biosynthesis. It is used in microbiological fungal culture to prevent bacterial growth and as a selection marker for selection on bacteria with an erythromycin resistance-mediating gene cassette (*erm*).
**Stock solution:** 10 mg/ml in ethanol
Store stock solution at -20 °C (2 months)
Working concentration: 0.1-5 µg/ml
pH-optimum at 8.5. Only stable for approx. 24 hours at pH-range 7 to 7.5. Extremely unstable below pH 6.0

| | | | |
|---|---|---|---|
| **4166.1** | 5 g | glass | 28,95 € |
| **4166.2** | 10 g | glass | 47,20 € |

## Geldanamycin

**≥98 %, for biochemistry**

HSP90 inhibitor, tyrosin kinase inhibitor. Benzoquinone ansamycin antibiotic. Binds specifically to the heat shock protein HSP90.

$C_{29}H_{40}N_2O_9$ • M 560,64 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

The specific binding of geldanamycin to heat shock protein 90 (HSP90) and its ER homologue GP96 leads to inhibition of the chaperone, results in degradation of Hsp90 substrates and, subsequently, to deregulation of central cell mechanisms - cell cycle, cell proliferation, apoptosis/cell vitality. Geldanamycin arrests cells in $G_2$ phase, thus interfering with angiogenesis and oncogenesis. Due to its antitumor potential it may be used as antibiotic against several eucaryotic carcinogenic cell lines. Additionally, geldanamycin is used as inhibitor of tyrosin-kinase and during analysis of several other physiological regulatory mechanisms.

**Application:**
Stock solution: 1000x in DMSO or methanol
Storage of stock solution at -20 °C, max. 2 weeks at 4 °C
Working concentration: 1-10 µg/ml
Photo sensitive! Store protected from light.

| | | | |
|---|---|---|---|
| **HN71.1** | 1 mg | glass | 67,20 € |
| **HN71.2** | 5 mg | glass | 166,10 € |
| **HN71.3** | 10 mg | glass | 238,15 € |

## Geneticin (G418 Sulphate)

**≥650 U/mg, for biochemistry**

Aminoglycoside antibiotic

Antibiotic G418, Geneticin disulphate, G418 sulphate

$C_{20}H_{40}N_4O_{10} \cdot 2\ H_2SO_4$ • M 692,70 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

Inhibits protein biosynthesis by binding to ribosomes, particularly to eukaryotic 80S ribosomes. Through interference with the tRNA docking process, sequence errors appear and the elongating peptide chain is truncated. Geneticin disulphate unspecifically effects all cells, and is highly toxic for eukaryotic cells. Resistance is mediated by the bacterial enzyme aminoglycoside-3-phosphotransferase.
Application: Selection of transfected eukaryotic cells
Resistance gene: *Neomycin*
**Stock solution:** 10-50 mg/ml in $H_2O$ or culture medium
Storage of stock solution: -20 °C
Working concentration: 50-1000 µg/ml, has to be established for each cell type

| | | | |
|---|---|---|---|
| **0239.1** | 250 mg | glass | 35,40 € |
| **0239.2** | 500 mg | glass | 46,15 € |
| **0239.3** | 1 g | glass | 85,50 € |
| **0239.4** | 10 g | glass | 596,65 € |

## Geneticin (G418)-solution

ready-to-use S

**CELLPURE® 50 mg/ml, steril**

Aminoglycoside antibiotic. For cell culture, biochemistry and molecular biology.

Aqueous G418 sulphate solution, G418 solution

$C_{20}H_{40}N_4O_{10} \cdot 2\ H_2SO_4$ • M 692,70 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

Inhibits protein biosynthesis by binding to ribosomes, particularly to eukaryotic 80S ribosomes. Through interference with the tRNA docking process, sequence errors appear and the elongating peptide chain is truncated. Geneticin disulphate unspecifically effects all cells, and is highly toxic for eukaryotic cells. Resistance is mediated by the bacterial enzyme aminoglycoside-3-phosphotransferase.
Application: Selection of transfected eukaryotic cells
Resistance gene: *Neomycin*
**Endotoxins: <10 E.U./ml**
Stock solution, specifically suitable for cell culturing
Working concentration: 50-1000 µg/ml, has to be determined for each cell type.

| | | | |
|---|---|---|---|
| **CP11.1** | 10 ml | plastic | 68,30 € |
| **CP11.2** | 20 ml | plastic | 89,15 € |
| **CP11.3** | 100 ml | plastic | 321,45 € |

▶ Roti®-CELL media for cell culture
see new chapter Cell Biology!





## Geneticin (G418)-solution

**50 mg/ml, BioScience-Grade, sterile**

Aminoglycoside antibiotic. For cell culture, biochemistry and molecular biology.

Aqueous G418 sulphate solution, G418 solution, Geneticin disulphate (G418)-solution

$C_{20}H_{40}N_4O_{10} \cdot 2\ H_2SO_4$ • M 692,70 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

Inhibits protein biosynthesis by binding to ribosomes, particularly to eukaryotic 80S ribosomes. Through interference with the tRNA docking process, sequence errors appear and the elongating peptide chain is truncated. Geneticin disulphate unspecifically effects all cells, and is highly toxic for eukaryotic cells. Resistance is mediated by the bacterial enzyme aminoglycoside-3-phosphotransferase.
Application: Selection of transfected eukaryotic cells
Resistance gene: *neomycin*.
**Sterile stock solution,** suitable for cell culturing, as well as for biochemical and biomolecular assays.
Extracted from *Micromonospora rhodorangea*.
Working concentration: 50-1000 µg/ml, has to be determined for each cell type.

| | | | |
|---|---|---|---|
| **2039.1** | 10 ml | plastic | 62,25 € |
| **2039.2** | 20 ml | plastic | 81,60 € |
| **2039.3** | 100 ml | plastic | 306,40 € |

## Gentamycin

**≥590 I.U./mg, for biochemistry**

Aminoglycoside antibiotic

Gentamicin sulphate

$C_{19\text{-}21}H_{39\text{-}43}N_5O_7 \cdot 2{,}5\ H_2SO_4$ • M 694,75-723,75 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

Inhibits protein biosynthesis through binding to ribosomal 50S subunits. Effectual against gram-positive and -negative bacteria.
**Stock solution:** 10-20 mg/ml in $H_2O$ or formamide.
Storage of stock solution: -20 °C.
Working concentration: 15-50 µg/ml.
Extracted from *Micromonospora purpurea*.

| | | | |
|---|---|---|---|
| **0233.1** | 1 g | glass | 11,00 € |
| **0233.2** | 5 g | glass | 21,00 € |
| **0233.3** | 10 g | glass | 32,15 € |
| **0233.4** | 25 g | glass | 62,25 € |

## Gentamycin solution

**CELLPURE® 50 mg/ml, sterile**

Aminoglycoside antibiotic. For cell culture and biochemistry.

Aqueous gentamycin sulphate solution

$C_{19\text{-}21}H_{39\text{-}43}N_5O_7 \cdot 2{,}5\ H_2SO_4$ • M 694,75-723,75 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

Inhibits protein biosynthesis through binding to ribosomal 50S subunits. Effectual against gram-positive and -negative bacteria.
**Endotoxins: ≤10 E.U./ml**
**Stock solution,** specifically suitable for cell culturing.
Working concentration: 15-50 µg/ml
Extracted from *Micromonospora purpurea*.

| | | | |
|---|---|---|---|
| **HN09.1** | 20 ml | plastic | 96,25 € |
| **HN09.2** | 100 ml | plastic | 310,70 € |



## Gentamycin solution

**50 mg/ml, BioScience-Grade, sterile**

Aminoglycoside antibiotic. For cell culture and biochemistry.

Aqueous gentamycin sulphate solution

$C_{19\text{-}21}H_{39\text{-}43}N_5O_7 \cdot 2{,}5\ H_2SO_4$ • M 694,75-723,75 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

Inhibits protein biosynthesis through binding to ribosomal 50S subunits. Effectual against gram-positive and -negative bacteria.
**Sterile stock solution,** suitable for cell culturing and biochemical assays.
Working concentration: 15-50 µg/ml

| | | | |
|---|---|---|---|
| **2475.1** | 20 ml | plastic | 95,70 € |
| **2475.2** | 100 ml | plastic | 303,15 € |

Please note our **Technical Information Brochure** on the Internet next to the products:

**Antibiotics**
Overview and recommendations for application

## Hygromycin B

**>950 µg/mg, for biochemistry**

Aminoglycoside antibiotic.

$C_{20}H_{37}N_3O_{13}$ • M 527,53 g/mol • Storage temp.: +4 °C

**Danger** H300+H310+H330-H318-H334-H317

Inhibits protein biosynthesis in pro- and eukaryotes by altering translocation during ribosomal chain elongation, therefore resulting in frame reading errors and abortion of chain elongation. Selection marker for *hph* transfected cells.
**Stock solution:** 50-400 mg/ml in $H_2O$ or PBS.
Storage of stock solution at -20 °C.
Working concentration: 20-1000 µg/ml.

| | | | |
|---|---|---|---|
| **CP13.1** | 250 mg | glass | 58,60 € |
| **CP13.2** | 500 mg | glass | 100,95 € |
| **CP13.3** | 1 g | glass | 177,40 € |
| **CP13.4** | 5 g | glass | 607,40 € |




## Hygromycin B solution

ready-to-use S

**50 mg/ml, BioScience-Grade, sterile**

Aminoglycoside antibiotic. For cell culture, biochemistry, molecular biology and microbiology. **In a septum bottle.**

Hygromycin B solution **in PBS**

$C_{20}H_{37}N_3O_{13}$ • M 527,53 g/mol • Storage temp.: +4 °C

**Danger** H301-H310+H330-H318-H334-H317

Inhibits protein biosynthesis in pro- and eukaryotes by blocking translocation, therefore resulting in frame reading errors and abortion of chain elongation. Selection marker for *hph* transfected cells.
**Sterile stock solution,** suitable for cell culturing and microbiology, as well as for biochemical and biomolecular assays.
Extracted from *Streptomyces hygroscopicus*.
Working concentration: 20-1000 µg/ml

| | | | |
|---|---|---|---|
| **1287.1** | 10 ml | glass | 99,45 € |
| **1287.2** | 20 ml | glass | 150,40 € |

**Safety data sheets**
can be found on the Internet next to the product description.

## Hygromycin B solution

ready-to-use S

**CELLPURE® 50 mg/ml, sterile**

Aminoglycoside antibiotic. For cell culture, biochemistry, molecular biology and microbiology.

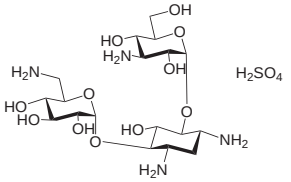
Aqueous hygromycin B solution

$C_{20}H_{37}N_3O_{13}$ • M 527,53 g/mol • Storage temp.: +4 °C

**Danger** H301-H310+H330-H318-H334-H317

Inhibits protein biosynthesis in pro- and eukaryotes by blocking translocation, therefore resulting in frame reading errors and abortion of chain elongation. Selection marker for *hph* transfected cells.
**Endotoxins: <10 E.U./ml**
Stock solution, specifically suitable for cell culturing.
Working concentration: 20-1000 µg/ml

| | | | |
|---|---|---|---|
| **CP12.1** | 10 ml | plastic | 114,50 € |
| **CP12.2** | 20 ml | plastic | 197,30 € |




## Kanamycin

**≥750 I.U./mg, for biochemistry**

Bacteriostatic antibiotic

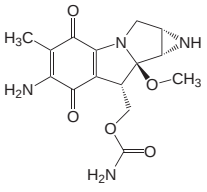
Kanamycin sulphate

$C_{18}H_{36}N_4O_{11} \cdot H_2SO_4$ • M 582,58 g/mol • Storage temp.: +20 °C

**Danger** H360D

Kanamycin inhibits protein biosynthesis and is effective against gram-negative and gram-positive bacteria.
Easily water-soluble, stable powder.
Main component: Kanamycin A
**Stock solution:** 10 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: 100 µg/ml

| | | | | |
|---|---|---|---|---|
| **T832.1** | 5 g | | plastic | 21,40 € |
| **T832.2** | 25 g | | plastic | 59,05 € |
| **T832.3** | 50 g | | plastic | 97,75 € |
| **T832.4** | 100 g | BIG PACK | plastic | 162,90 € |




## Mitomycin C

**≥98 %, for biochemistry**

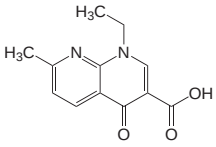
Mitosis inhibitor

$C_{15}H_{18}N_4O_5$ • M 334,30 g/mol • Storage temp.: +4 °C

**Danger** H300-H351

Covalent linkage to DNA. Causes cross-linking of complementary DNA-strands and strand breakage. Mitomycin C is unstable at low pH-value. Mitomycin C should always be stored away from light.
**Stock solution:** 1 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: variable (1 µg/ml up to 100 µg/ml)

| | | | |
|---|---|---|---|
| **4150.1** | 2 mg | glass | 78,40 € |



## Nalidixic acid

**≥99 %, for biochemistry**

Quinolon antibiotiotic

1,4-Dihydro-1-ethyl-7-methyl-1,8-naphthyridin-4-on-3-carbolic acid

$C_{12}H_{12}N_2O_3$ • M 232,23 g/mol • Storage temp.: +20 °C

**Danger** H334-H317

Inhibits proliferation of gram-negative bacteria and coccae by inhibition of topoisomerase II (gyrase) and, therefore, of DNA replication.
Also effective against mycoplasms.
**Stock solution:** 10 mg/ml in chloroform or toluol
Storage of stock solution: -20 °C
Working concentration: 2-200 µg/ml

| | | | | |
|---|---|---|---|---|
| **CN32.1** | 10 g | | plastic | 17,10 € |
| **CN32.2** | 25 g | | plastic | 32,80 € |
| **CN32.3** | 100 g | BIG PACK | plastic | 99,90 € |

## Neomycin

**≥600 I.U./mg, for biochemistry**

Inhibitor for protein biosynthesis, aminoglycoside antibiotic, Neomycin sulphate

$C_{23}H_{46}N_6O_{13} \cdot 3\ H_2SO_4$

Storage temp.: +4 °C

**Danger** H317-H334

Antibiotic from *Streptomyces fradiae* which inhibits bacterial protein synthesis in a broad range of procaryotes (even in dormant germs).
Inhibition of protein biosynthesis through binding to ribosomal 30S subunits.
Resistance: Neomycin resistance
Main component: Neomycin B
**Stock solution:** e.g. 100 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: variable

| | | | | |
|---|---|---|---|---|
| **8668.1** | 10 g | | plastic | 14,20 € |
| **8668.2** | 100 g | BIG PACK | plastic | 64,40 € |

## Nourseothricin

**≥85 %, for biochemistry and microbiology**

Broad-band antibiotic and antimycotic of viruses, bacteria and fungi.

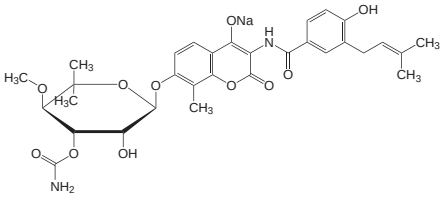
Streptothricine, Nourseothricin dihydrogen sulphate

Storage temp.: +4 °C

**Warning** H302-H315-H319-H335

Antibiotic of the streptothricine family, effective against a broad spectrum of viruses, bacteria and fungi. Used as selection antibiotic for genetically modified bacteria, yeasts, filamentous fungi, protozoa and plants.
Nourseothricin inhibits biosynthesis and induces miscoding. Resistance is mediated by the *sat1* encoded N-acetyltransferase, which inactivates nourseothricin by acetylation of the β-amino group of the β-lysin.
Streptothricine F: n=1 (MW 599.59), Streptothricine D: n=3 (MW 857.95)
**Stock solution:** 100 mg/ml in water
Storage of stock solution at -20 °C
Working concentration: ca. 100 µg/ml
**Recommendation:** One package Nourseothricin should be solubilized in whole and the stock solution should be frozen in aliquots. By removing the overlaying argon during weighing, the stability of the lyophilsate is reduced.

| | | | | |
|---|---|---|---|---|
| **3011.1** | 25 mg | | plastic | 41,85 € |
| **3011.2** | 100 mg | | plastic | 97,30 € |
| **3011.3** | 1 g | | plastic | 499,90 € |



## Novobiocin

**≥850 µg/mg, for biochemistry**

Bacteriostatic antibiotic, HSP90 inhibitor, Novobiocin sodium salt

$C_{31}H_{35}N_2NaO_{11}$ • M 634,62 g/mol • Storage temp.: +4 °C

**Warning** H319-H317

Reduces growth of gram-positive bacteria by inhibition of initiation of DNA-synthesis via binding to ATP-binding sites of gyrase and topoisomerase. Novobiocin also interacts with the C-terminal ATP-binding site of HSP90, hence inhibiting its Chaperon quality.
Also well suited as additive to microbiological nutrient media. Adding 40 mg/l Novobiocin during selective detection of coliform bacteria on Brilliant Green Bile broth (Art. No. CL06.1) efficiently reduces the growth of attendant flora (Alcaide et al., 1982, *J. Appl. Bact.* 53:143-6).

**Application:**
Stock solution: 100 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: variable

| | | | | |
|---|---|---|---|---|
| **0247.1** | 1 g | | glass | 28,95 € |
| **0247.2** | 5 g | | glass | 115,60 € |
| **0247.3** | 10 g | | glass | 160,20 € |

## Nystatin

**≥4400 I.U./mg, for biochemistry**

Broad-range fungizide, polyene, Nystatin dihydrate

Mycostatin, Fungicidin

$C_{47}H_{75}NO_{17} \cdot 2\ H_2O$ • M 962,14 g/mol • Storage temp.: +4 °C

Alteration of cell membrane permeability by attachment to sterols.
High concentration causes pore formation in cell membranes in general.
**Stock solution:** 5 mg/ml in DMSO or DMF
Storage of stock solution: -20 °C
Working concentration: 2-50 µg/ml

| | | | | |
|---|---|---|---|---|
| **0241.1** | 5 g | | glass | 35,40 € |
| **0241.2** | 10 g | | glass | 60,10 € |

**Safety data sheets**
can be found on the Internet next to the product description.



## Pen/Strep-PreMix

**CELLPURE®**

For elimination and prevention of bacterial contamination in cell culture.

**Danger** H302-H317-H334-H361d

Antibiotic compound of penicillin, streptomycin and stabilising sodium chloride for application in cell culture. The premixed powder is extremely stable during storage at room temperature and, due to the excellent solubility of the reagents in pyrogen-free water (e.g. Art. No. 3255.1), it can be mixed quickly to a 100x stock solution.

Penicillin inhibits cell wall biosynthesis in Gram-positive bacteria.
Streptomycin produces the antibiotic effect in Gram-negative bacteria through inhibition of the translation.
The dissolved antibiotics are stable for approx. 3 days at 37 °C.
The final concentration of the 100x stock solution is:
Penicillin: 10.000 I.U. / ml
Streptomycin: 10 mg / ml
Sodium chloride: 0.9 %

**Endotoxin content per vial: ≤210 I.U. complies ≤4.2 I.U. / ml**

**Application:** The pack contains 2 vials with premixed powder for 2 times 50 ml 100x stock solution. 50 ml of the 100x stock solution can be obtained directly by adding 49.2 ml pyrogen-free water (Art. No. 3255).
We recommend application in a 1:100 dilution.
The stock solution mix (100 ml) is sufficient for 10 l medium.
Storage of stock solution: in 1-10 ml aliquots at -20 °C.
Comes with original seal.

| | | | |
|---|---|---|---|
| **HP10.1** | powder mix for 100 ml | plastic | 60,75 € |

## Penicillin G potassium salt

**CELLPURE® ≥1550 U/mg**

β-Lactam antibiotic. For cell culture and biochemistry.
Benzylpenicillin potassium salt
$C_{16}H_{17}KN_2O_4S$ • M 372,48 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

**Endotoxins: ≤0.25 E.U./mg**
Inhibits cell wall biosynthesis in gram-positive bacteria by irreversible interaction with transpeptidase.
Application equivalent to Penicillin G sodium salt.
**Preferable when addition of sodium is to be avoided.**
Stock solution: 10-100 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: 20-100 µg/ml

| | | | |
|---|---|---|---|
| **HP49.1** | 1 g | plastic | 19,60 € |
| **HP49.2** | 10 g | plastic | 37,10 € |
| **HP49.3** | 25 g | plastic | 73,00 € |

## Penicillin G potassium salt

**~1600 U/mg, for biochemistry**

β-Lactam antibiotic
Benzylpenicillin potassium salt
$C_{16}H_{17}KN_2O_4S$ • M 372,48 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

Inhibits cell wall biosynthesis in gram-positive bacteria by irreversible interaction with transpeptidase.
Application equivalent to Penicillin G sodium salt.
**Preferable when addition of sodium is to be avoided.**
Stock solution: 10-100 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: 20-100 µg/ml

| | | | | |
|---|---|---|---|---|
| **CN29.1** | 10 g | | plastic | 19,60 € |
| **CN29.2** | 25 g | | plastic | 30,00 € |
| **CN29.3** | 100 g | BIG PACK | plastic | 80,10 € |

## Penicillin G sodium salt

**CELLPURE® ≥1550 U/mg**

β-Lactam antibiotic. For cell culture and biochemistry.
Benzylpenicillin sodium salt
$C_{16}H_{17}N_2NaO_4S$ • M 356,37 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

**Endotoxins: ≤0.25 E.U./mg**
Inhibits cell wall biosynthesis in gram-positive bacteria by irreversible interaction with transpeptidase.
Application equivalent to Penicillin G potassium salt.
**Preferable when addition of potassium is to be avoided.**
Stock solution: 10-100 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: 20-100 µg/ml

| | | | |
|---|---|---|---|
| **HP48.1** | 1 g | plastic | 16,05 € |
| **HP48.2** | 10 g | plastic | 33,25 € |
| **HP48.3** | 25 g | plastic | 65,50 € |

## Penicillin G sodium salt

**≥96 %, for biochemistry**

β-Lactam antibiotic
Benzylpenicillin sodium salt
$C_{16}H_{17}N_2NaO_4S$ • M 356,37 g/mol • Storage temp.: +4 °C

**Danger** H334-H317

Inhibits cell wall biosynthesis in gram-positive bacteria by irreversible interaction with transpeptidase.
Application equivalent to Penicillin G potassium salt.
**Preferable when addition of potassium is to be avoided.**
Stock solution: 10-100 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: 20-100 µg/ml

| | | | | |
|---|---|---|---|---|
| **CN28.1** | 10 g | | plastic | 17,75 € |
| **CN28.2** | 25 g | | plastic | 29,60 € |
| **CN28.3** | 100 g | BIG PACK | plastic | 83,35 € |

## Polymyxin B

**≥80 %, for biochemistry**

Bacteriostatic antibiotic, peptide antibiotic

Aerosporin, Polymyxin B sulphate

$C_{55}H_{96}N_{16}O_{13} \cdot 2\ H_2SO_4$ • M 1385,63 g/mol • Storage temp.: +4 °C

**Warning** H302

Effectual against proliferating and non-proliferating gram-negative bacteria. Coupling to bacterial lipopolysaccharides results in permeabilisation of cell membranes.
**Stock solution:** 10-20 mg/ml in $H_2O$ or methanol
Storage of stock solution: -20 °C
Working concentration: 5-500 ng/ml
Extracted from strains of *Bacillus polymyxa*.

| | | | |
|---|---|---|---|
| **0235.1** | 1 g | glass | 47,20 € |
| **0235.2** | 5 g | glass | 192,45 € |
| **0235.3** | 10 g | glass | 342,95 € |

## Puromycin

**≥99 %, for biochemistry**

Inhibitor of proteine biosynthesis, aminonucleoside antibiotic.

Purimycin, Puromycin dihydrochloride

$C_{22}H_{29}N_7O_5 \cdot 2$ HCl • M 544,44 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

**Warning** H302

Inhibits protein biosynthesis by premature release of the nascent polypeptide chain. Functions as analogon to amino acyl-tRNA molecules.
**Stock solution:** 10-100 mg/ml in $H_2O$ or HEPES
Storage of stock solution: -20 °C
Working solution: 1-50 µg/ml

| | | | |
|---|---|---|---|
| **0240.1** | 5 mg | glass | 19,25 € |
| **0240.2** | 10 mg | glass | 30,65 € |
| **0240.3** | 25 mg | glass | 67,65 € |
| **0240.4** | 50 mg | glass | 123,65 € |

## Radicicol

**≥98 %, for biochemistry**

Strong HSP90 inhibitor, macrolactone antibiotic. Binds specifically to the heat shock protein HSP90.

$C_{18}H_{17}ClO_6$ • M 364,79 g/mol

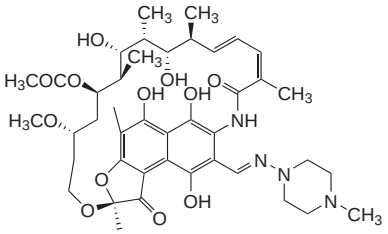
Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H301-H315-H319-H335

The strong specific binding of radicicol to heat shock protein 90 (HSP90) leads to deregulation of its target mechanisms: cell cycle, cell proliferation, apoptosis/cell vitality. Also binds to yeast HSP90, *E.coli* HtpG and TRAP-1. Antifungal effects are probably caused by inactivation of chitin synthase in fungal cells.

**Application:**
Stock solution: 10 mg/ml (27 mM) in ethanol or DMSO
Storage of stock solution at -20 °C, max. 2 weeks at 4 °C
Working concentration: 5-300 µM
Photo sensitive! Store protected from light.

| | | | |
|---|---|---|---|
| **HN72.1** | 1 mg | glass | 94,50 € |
| **HN72.2** | 5 mg | glass | 381,65 € |
| **HN72.3** | 10 mg | glass | 600,95 € |



## Rifampicin

**≥90 %, for biochemistry**

Bacteriostatic antibiotic

3-(4-Methylpiperazinyliminomethyl)rifamycin SV

$C_{43}H_{58}N_4O_{12}$ • M 822,94 g/mol • Storage temp.: +4 °C

**Warning** H302-H315-H319-H335

Rifampicin inhibits bacterial DNA-dependent RNA-polymerase and consequently prevents transcription. Its spectrum of activity is strictly bacterial (the eukaryotic DNA-dependent RNA-polymerase can only be inhibited at extremely high concentrations) and rifampicin is particularly very effective against mycobacteria. Enterbacteria, acinetobacteria and pseudomonades are resistant against rifampicin. The resistance-mediating genes can be applied as selection markers in molecular biology. Light-sensitive. Store in the dark!
**Stock solution:** 100 mg/ml in chloroform or DMSO, 15 mg/ml in methanol, 1 mg/ml in water (pH 7,3)
Store stock solution at -20 °C, is stable for approx. 2 weeks in DMSO when stored in the dark at 4 °C
Working concentration: 20-200 µg/ml
**Art. No. 4163.3:** A stock solution with a concentration of 100 mg/ml can be prepared directly by adding 5 ml chloroform or DMSO.

| | | | |
|---|---|---|---|
| **4163.1** | 500 mg | glass | 31,10 € |
| **4163.3** | 500 mg (in a 10 ml glass bottle) | | 38,60 € |
| **4163.2** | 1 g | glass | 53,65 € |

## Streptomycin

**CELLPURE® ≥720 I.U./mg**

Bacteriostatic antibiotic. For cell culture and biochemistry,
Streptomycin sulphate

$C_{42}H_{84}N_{14}O_{36}S_3$ • M 1457,38 g/mol • Storage temp.: +20 °C

**Warning** H302-H361d

Effectual against mycobacteria, many gram-negative cocci and gram-negative bacteria in general. Results in translation errors by interaction with ribosomal 30S subunits.
Streptomycin B: ≤3,0 %
**Endotoxins: ≤0.25 E.U./mg**
Stock solution: 10-50 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: 10-100 µg/ml

| | | | |
|---|---|---|---|
| **HP66.1** | 10 g | glass | 27,85 € |
| **HP66.2** | 25 g | glass | 40,75 € |
| **HP66.3** | 50 g | glass | 65,50 € |

## Streptomycin

**>720 I.U./mg, for biochemistry**

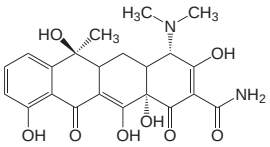
Bacteriostatic antibiotic, Streptomycin sulphate

$C_{42}H_{84}N_{14}O_{36}S_3$ • M 1457,38 g/mol • Storage temp.: +20 °C

**Warning** H302-H361d

Effectual against mycobacteria, many gram-negative cocci and gram-negative bacteria in general. Results in translation errors by interaction with ribosomal 30S subunits.
**Stock solution:** 10-50 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: 10-100 µg/ml

| | | | |
|---|---|---|---|
| **0236.1** | 10 g | glass | 20,35 € |
| **0236.2** | 25 g | glass | 30,65 € |
| **0236.3** | 50 g | glass | 48,30 € |




HCl

## Tetracycline

**CELLPURE® ≥900 µg/mg**

Bacteriostatic antibiotic. For cell culture, molecular biology and biochemistry.

Achromycin hydrochloride, Tetracycline hydrochloride

$C_{22}H_{25}Cl\ N_2O_8$ • M 480,90 g/mol • Storage temp.: -20 °C

**Warning** H319-H361d

Effectual against gram-positive and -negative bacteria. Inhibits bacterial protein biosynthesis by coupling to amino acyl-tRNA. Modern application: Activation or inhibition of gene expression through tetracyclin-regulated promotor systems *in vitro* and *in vivo*. Light-sensitive.
**Endotoxins: ≤0.5 E.U./mg**
Stock solution: 10-20 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: 10-50 µg/ml

| | | | |
|---|---|---|---|
| **HP63.1** | 10 g | glass | 24,20 € |
| **HP63.2** | 50 g | glass | 84,85 € |

## Tetracycline

**≥900 µg/mg, for biochemistry and molecular biology**

Bacteriostatic antibiotic

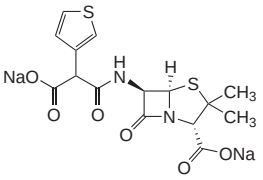
Achromycin hydrochloride, Tetracycline hydrochloride

$C_{22}H_{25}Cl\ N_2O_8$ • M 480,90 g/mol • Storage temp.: -20 °C

**Warning** H319-H361d

Effectual against gram-positive and -negative bacteria. Inhibits bacterial protein biosynthesis by coupling to amino acyl-tRNA. Modern application: Activation or inhibition of gene expression through tetracyclin-regulated promotor systems *in vitro* and *in vivo*. Light-sensitive.
**Stock solution:** 10-20 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: 10-50 µg/ml

| | | | | |
|---|---|---|---|---|
| **0237.1** | 25 g | | glass | 29,60 € |
| **0237.2** | 50 g | | glass | 51,10 € |
| **0237.3** | 100 g | BIG PACK | glass | 89,80 € |




## Ticarcillin

**≥90 %, for biochemistry**

β-Lactam antibiotic

α-Carboxy-α-3-thienylmethylpenicillin disodium salt, Ticarcillin · 2 Na

$C_{15}H_{14}N_2Na_2O_6S_2$ • M 428,4 g/mol • Storage temp.: +4 °C

**Danger** H334-H335-H315-H319-H317

Ticarcillin belongs to the carboxy penicillin family, the only difference to carbenicillin being a group of a side chain. It is inactivated through β-lactamase. Ticarcillin inhibits bacterial cell wall synthesis by inhibiting the transpeptidase.
**Stock solution:** 100 mg/ml in water
Store stock solution at -20 °C
Working concentration: 25-250 µg/ml
The stock solution should be cooled immediately as its activity decreases quickly and ticarcillin may precipitate.

| | | | |
|---|---|---|---|
| **4161.1** | 500 mg | glass | 38,60 € |
| **4161.2** | 1 g | glass | 62,90 € |

## Vancomycin

**CELLPURE® ≥900 U./mg**

Bacteriostatic antibiotic. For cell culture and biochemistry.

Glycopeptide antibiotic, Vancomycin hydrochloride

$C_{66}H_{75}Cl_2N_9O_{24} \cdot HCl$

M 1485,73 g/mol

Storage temp.: +4 °C

**Warning** H317

Inhibits bacterial cell cleavage through binding to cell membrane pre-stages.
**Endotoxins: ≤0.33 E.U./mg**
Stock solution: e.g. 100 mg/ml in $H_2O$
Storage of stock solution: -20 °C
Working concentration: variable

| | | | |
|---|---|---|---|
| **0242.1** | 250 mg | glass | 33,25 € |
| **0242.2** | 500 mg | glass | 53,65 € |
| **0242.3** | 1 g | glass | 96,65 € |

### The History of Antibiotics

In the history of mankind there have always been highly developed cultures who have possessed remarkable knowledge. For example, surgeons in the ancient world and Middle Ages placed mouldy rags on wounds to prevent infection.

First observations of antibiotic effects in modern times were made by the French chemist Louis Pasteur in the 19th century, who discovered that certain bacteria could kill anthrax germs. The German bacteriologist Rudolf von Emmerich isolated the antibiotic medium pyocyan (cholera and diptheria) around 1900 and in 1910 experiments carried out by the German doctor and chemist Paul Ehrlich led to the development of salvarsan (syphillis and tropical diseases).

Penicillin was discovered by accident in 1928 by Alexander Fleming in *Penicillium notatum* mould fungus cultures when he observed that in laboratory cultures *P. notatum* inhibited the growth of vicinal bacteria colonies. Streptomycin followed in 1943.

The first antibiotics were isolates from bacteria cultures. The preparations used nowadays, however, are almost exclusively of chemical origin, which has enabled specialisation and optimisation.

# Cryo-Conservation





## Roti®-Store cryo vials

Sterile. Suitable for freezing all types of microorganisms, including recombinant bacteria.
Storage temp.: +4 °C

- Preparation of cryogenic cultures
- Safe storage
- Simple recultivation

**Roti®-Store cryo vials** are ideal for preparing freezing stocks from different microorganisms, even DMSO-sensitive organisms. The stocks are protected by a special cryo medium during freezing.
Optimally suited for cryopreservation of recombinant bacteria in genetic engineering.
Store at -80 °C or in liquid nitrogen.
Short-term storage for a few days at -20 °C is possible.
Also suitable for conservation of marine microorganisms, even during field work (Siebert *et al.*, *Appl. Environ. Microbiol.* 2004 (70) 5912-5).
∅ 11 mm, length 47 mm.

**Instructions:**
To freeze, pipette and mix 0.5 ml fresh culture solution into a Roti®-Store cryo vial. Remove the supernatant and freeze the vial. To recultivate, take one of the glass pellets and inoculate the desired culture medium.




One cryo vial contains 25 glass pellets suitable for 25 recultivations per cryogenic culture.

| | | |
|---|---|---|
| **P730.3** | 5 vials, with 25 glass globules each | 12,90 € |
| **P730.1** | 50 vials, with 25 glass globules each | 106,45 € |
| **P730.2** | 250 vials, with 25 glass globules each | 499,90 € |

**Instructions for use**
can be found on the Internet next to the product description.

## Roti®-Store yeast cryo vials

Sterile. Ideal for freezing yeast and monocellular moulds.
Storage temp.: +4 °C
**Roti®-Store yeast cryo vials** contain a special yeast cryo medium, developed for safe storage of yeasts such as *Saccaromyces cerevisiae* or *Candida albicans*.
Cryo-conversation has been succesfully tested for *S. cerevisiae*, *C. albicans*, *C. sake*, *C. tropicals*, *Zygosaccharomyces rouxii*, *Dekkera bruxellensis* and *Malesezzia furfur*.




The yeast is protected by a special yeast cryo medium during freezing.
Long-term storage at -80 °C or in liquid nitrogen, short-term storage for a few days at -20 °C is possible.
Suitable for preparing 50 different cryo-cultures and for up to 25 recultivations per cryogenic culture.
∅ 11 mm, length 47 mm.

| | | |
|---|---|---|
| **X983.1** | 50 cryo vials, with 25 glass globules each | 132,15 € |

## Glycerol

**ROTIPURAN® ≥99,5 %, p.a., anhydrous**
1,2,3-Propanetriol
$C_3H_8O_3$
M 92,09 g/mol
This anhydrous glycerol is used for the storage and concentration of enzymes and other samples at low temperatures. It is also used for the purification of bacteriophages and other biological molecules by a glycerol step gradient.
Due to its high density it is often a component of electrophoresis loading buffers.

| | | | |
|---|---|---|---|
| **3783.1** | 1 l | plastic | 52,15 € |
| Original pack 6 x 1 l | | | 49,54/1 l |
| **3783.3** | 1 l | glass | 56,45 € |
| Original pack 6 x 1 l | | | 53,63/1 l |
| **3783.2** | 2,5 l | plastic | 94,10 € |
| Original pack 4 x 2,5 l | | | 89,40/2,5 l |
| **3783.4** | 2,5 l | glass | 99,90 € |
| Original pack 4 x 2,5 l | | | 94,91/2,5 l |
| **3783.5** | 5 l | plastic | 143,55 € |
| Original pack 2 x 5 l | | | 136,37/5 l |
| **3783.6** | 10 l | plastic | 220,40 € |

# Accessories

## Turbidity standards




ready-to-use

### McFarland BSS 0,5

**for microbiology**

Turbidity Standard for adjusting the density of a bacterial suspension.

Turbidity Standard, Barium sulphate suspension

Storage temp.: +20 °C • Transport temp.: room temp.

The McFarland BSS Standards are used as turbidity standards since 1907 to produce an expected reproducible cell density of a bacterial suspension. The cell density is adjusted in the simple comparison to the standard. This can be directly performed visually or by measuring with a spectrophotometer.

The turbidity value of the standard of 0,5 MFU (McFarland Units) corresponds to approximately a culture density of 1,5 x $10^8$ cells/ml. This cell density is specially needed as bacterial inoculum for the antibiotic susceptibility test.

**Guarantee analysis:**

Turbidity (625 nm, 1 cm cuvette)..... 0,5 MFU

| | | |
|---|---|---|
| **1307.1** | 1 vial | 26,90 € |

▶ Mueller Hinton Agar see page 1392

### McFarland PMS 0,5

ready-to-use

**for microbiology**

Turbidity Standard for adjusting the density of a bacterial suspension.

Turbidity Standard, Polymer Microparticle Suspension

Storage temp.: +20 °C • Transport temp.: room temp.

The McFarland PMS Standards are equivalent turbidity standards to the original barium sulfate standards. The optimised Polymer Microparticle Suspension (PMS) separates slower than the barium sulfate version. The cell density is adjusted in the simple comparison to the standard. This can be directly performed visually or by measuring with a spectrophotometer.
The turbidity value of the standard of 0,5 MFU (McFarland Units) corresponds to approximately a culture density of 1,5 x $10^8$ cells/ml. This cell density is specially needed as bacterial inoculum for the antibiotic susceptibility test.

**Guarantee analysis:**

Turbidity (625 nm, 1 cm cuvette)..... 0,5 MFU

| | | |
|---|---|---|
| **1440.1** | 1 vial | 26,90 € |

# Kit for preparation of competent cells




S

ready-to-use

### Roti®-Transform

Sterile. For preparation of competent *E. coli*.

Storage temp.: -20 °C • Transport temp.: room temp.

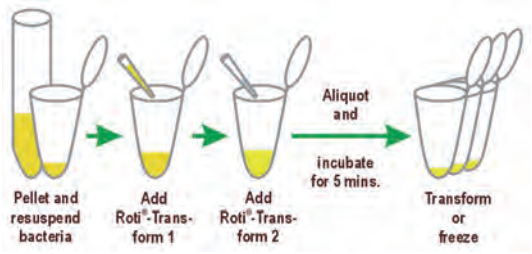
- Flexible selection of strains
- Effective, simple and fast
- Adequate for 500 transformations

**Roti®-Transform**

Roti®-Transform is a simple, effective and fast method of producing competent *E. coli* in three steps. The competent cells may be used directly for transformation or may be frozen for later transformations. Transformation efficiency is 5 x $10^5$ to 1 x $10^6$ colonies per µg DNA.

**Protocol:**

1. Resuspend cells in fresh, cold LB-medium
2. Add Roti®-Transform 1
3. Add Roti®-Transform 2 and incubate for 5 minutes on ice




**Long-term Storage** of the Kit at -20 °C.

**Storage for use:**

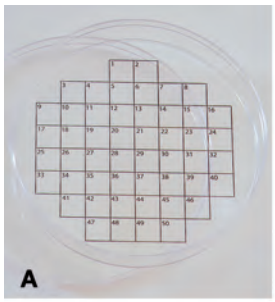
Reagent 1: Short-term storage may be done at 4 °C. For long-term storage of over 14 days we recommend a storage temperature of -20 °C.
Reagent 2: Storage at 4 °C.

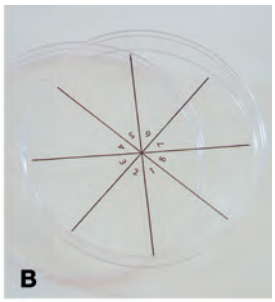
Roti®-Transform consists of 45 ml Roti®-Transform 1 (Art. No. P041) and 5 ml Roti®-Transform 2 (Art. No. P042). One kit is sufficient for producing competent *E. coli* for 500 transformations.
Contents of this Kit may not be bought separately.

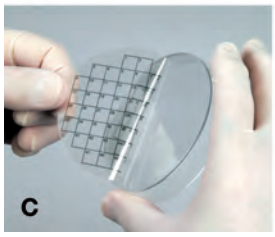
| | | |
|---|---|---|
| **P043.1** | 1 kit | 61,20 € |

**Instructions for use**

can be found on the Internet next to the product description.




## PetriSticker™

Pre-cut circular self-adhesive foils for easy and accurate labelling of 90 mm agar plates. With well legible numbers and partitions designed in two layouts and many variants. The foil is simply fixed to the bottom outside of an agar plate and the labelling is legible from the top.

### Area of Sqare Grids

| Art. No. | No. of arrays | Size of each array (mm x mm) | Area of each arrays ($cm^2$) |
|---|---|---|---|
| AE87 | 32 | 12 x 12 | 1,44 |
| AE88 | 50 | 8,5 x 8,5 | 0,72 |
| AE89 | 70 | 7 x 7 | 0,49 |
| AE90 | 100 | 6 x 6 | 0,36 |

The following products are depicted in figure
**A**: Art. No. AE88.1 (square grid)
**B**: Art. No. AE96.1 (pie cut)

| Type | No. of arrays | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Square grid | 32 | **AE87.1** | 36 | 28,95 |
| Square grid | 50 | **AE88.1** | 36 | 28,90 |
| Square grid | 70 | **AE89.1** | 36 | 28,95 |
| Square grid | 100 | **AE90.1** | 36 | 28,90 |
| Pie cut | 6 | **AE95.1** | 36 | 28,95 |
| Pie cut | 8 | **AE96.1** | 36 | 28,90 |
| Pie cut | 12 | **AE97.1** | 36 | 28,90 |
| Pie cut | 16 | **AE98.1** | 36 | 28,95 |



▶ A wide range of accessories for microbiology is available from page 253



## Replicator stamp

Replicator stamp for transfer of bacterial or yeast colonies from one culture medium plate to another. Stamp with fixationring in yellow coloured. 12 autoclavable transfer tissues are included. Transfer tissues may also be bought separately in colours blue, red, and beige (for brightly coloured colonies).

In order to duplicate the colony plates, fix one of the sterile tissues on the stamp with the aluminium ring (see figure). Then press the top side of the original colony plate gently onto the stamp. For cloning press a fresh plate onto the inoculated tissue surface.

Applicable for petri dishes of 90 to 100 mm diameter. The replicator stamp is made of PVC. Height: 72 mm, diameter: 81 mm. Fixation rings are made from coated aluminium. Transfer tissues are made from an autoclavable cotton-polyester mix. Size of one tissue: 15 x 15 cm. The stamps can be disinfected with ethanol (sanitisation).

| Art. No. | Pack Qty. | € |
|---|---|---|
| **4708.1** | Stamp + aluminium ring (yellow) + 12 autoclavable tissues (blue) | 117,20 |

## Transfer tissues for replicator stamps

| Art. No. | Pack Qty. | € |
|---|---|---|
| **4670.1** | 36 autoclavable transfer tissues (blue) | 124,70 |
| **4688.1** | 36 autoclavable transfer tissues (red) | 124,70 |
| **4698.1** | 36 autoclavable transfer tissues (beige) | 124,70 |



## Replicator stamp

The replicator stamp enables the transfer of bacterial or yeast colonies from one culture medium plate to another. To duplicate the colony plates, fix one of the sterile tissues on the stamp with the aluminium ring. Then press the top side of the colony plate gently onto velvety surface of the stamp. Use a new plate to produce the duplication.

The replicator stamp is made of PVC. Height: 69 mm, ∅: 81 mm.
Size of one tissue: 15 x 15 cm. It is suitable for max. 100 mm ∅ petri dishes.

The stamps can be disinfected with ethanol.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **X994.1** | Stamp + aluminium ring + 12 autoclavable tissues | 170,95 |
| **X995.1** | 36 autoclavable tissues | 170,95 |

# Histology/ Microscopy


| | | |
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# Xylene Alternatives

- Adequate replacement for xylene
- Miscible with IPA, butanol, ethanol
- Application as clearing agent and dewaxing medium

## Roti®-Histol on base of limonene

The alternative solvent for histology and cytology. Excellent for all histological hand work. Replaces clearing agents like xylene or toluol without the need for changing working procedures.




### Roti®-Histol
**for histology**

Clearing agent on base of limonene.
For dewaxing of histological sections. Alternative product for xylene.

**Danger** H304-H226-H400-H410-H315-H317

Roti®-Histol is a natural product, manufactured from untreated orange peel. It consists of 96-98 % limonene, a terpene with a characteristic odour of lemon or orange.
Roti®-Histol replaces current clearing agents without the need for changing working procedures. **No harmful vapours!** It can be mixed with IPA, butanol, ethanol and all standard embedding media.

Clearing with Roti®-Histol prevents tissue samples from hardening and brittleness. It is particularly suitable for manual work which usually exposes the user to solvent vapours in high concentrations.

Roti®-Histol produces excellent results with **Roti®-Histokitt** mounting medium **(Art. No. 6638)** and special paraffins such as Roti®-Plast (Art. No. 6642).

**Please contact us for your free sample!**

| | | | |
|---|---|---|---|
| **6640.1** | 1 l | glass | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |
| **6640.4** | 2,5 l | glass | 55,80 € |
| Original pack 4 x 2,5 l | | | 53,01/2,5 l |
| **6640.2** | 10 l | tinplate | 165,05 € |
| **6640.5** | 5 l | aluminium | 93,00 € |
| Original pack 2 x 5 l | | | 88,35/5 l |
| **6640.3** | 22 kg BIG PACK | tinplate | 392,40 € |

## Xylene Alternatives - Summary

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Acetic acid n-butyl ester** | ROTIPURAN® ≥99 %, p.a. | **P036.1** | 1 l | glass | 44,65 |
| | | **P036.2** | 2,5 l | glass | 98,40 |
| **Acetic acid ethyl ester** | ≥99,5 %, p.a., ACS, ISO | **6784.1** | 1 l | glass | 32,80 |
| | | **6784.3** | 1 l | plastic | 31,75 |
| | | **6784.2** | 2,5 l | glass | 60,10 |
| | | **6784.4** | 2,5 l | plastic | 58,60 |
| | | **6784.5** | 5 l | plastic | 96,65 |
| **Acetone** | ≥99,7 %, Ph.Eur., extra pure | **CP40.1** | 1 l | glass | 21,40 |
| | | **CP40.2** | 2,5 l | glass | 47,20 |
| | | **CP40.3** | 2,5 l | plastic | 42,90 |
| | | **CP40.4** | 5 l | plastic | 57,95 |
| | | **CP40.5** | 10 l | tinplate | 102,70 |
| | | **CP40.6** | 25 l | tinplate | 206,95 |
| **Ammonia solution 25 %** | ≥25 %, p.a. | **6774.1** | 1 l | glass | 21,40 |
| | | **6774.2** | 2,5 l | glass | 33,25 |
| | | **6774.3** | 5 l | plastic | 48,95 |
| **Benzoic acid methyl ester** | ≥99 %, for histology and microscopy | **6944.5** | 500 ml | glass | 32,15 |
| | | **6944.1** | 1 l | glass | 57,95 |
| | | **6944.2** | 2,5 l | glass | 117,20 |
| | | **6944.4** | 25 kg | tinplate | 547,20 |
| **1-Butanol** | ≥99,5 %, p.a. | **7171.2** | 1 l | glass | 48,95 |
| | | **7171.1** | 2,5 l | glass | 99,90 |
| **Decahydro-naphthalene** | ≥98 %, for synthesis new size | **4438.1** | 1 l | glass | 32,15 |
| | | **4438.3** | 2,5 l | glass | 59,05 |
| | | **4438.4** | 5 l | aluminium | 106,45 |
| | | **4438.2** | 10 l | tinplate | 192,45 |
| **N,N-Dimethyl-formamide (DMF)** | ≥99,8 %, p.a., ACS, ISO | **T921.3** | 250 ml | glass | 18,50 |
| | | **T921.1** | 1 l | glass | 35,80 |
| | | **T921.2** | 2,5 l | glass | 65,05 |
| **1,4-Dioxane** | ≥99,5 %, p.a., ACS, ISO new size | **4626.4** | 100 ml | glass | 12,80 |
| | | **4626.3** | 500 ml | glass | 36,45 |
| | | **4626.1** | 1 l | glass | 64,00 |
| | | **4626.2** | 2,5 l | glass | 133,85 |
| | | **4626.5** | 5 l | aluminium | 234,25 |
| | | **4626.6** | 25 l | tinplate | 1073,95 |
| **Oil of cedar wood** | for microscopy | **5308.1** | 100 ml | glass | 15,60 |
| | | **5308.2** | 250 ml | glass | 23,15 |
| | | **5308.3** | 500 ml | glass | 40,75 |
| **Petroleum ether 40-60 °C** | p.a., ACS, ISO | **T173.1** | 1 l | glass | 33,25 |
| | | **T173.2** | 2,5 l | glass | 62,90 |
| | | **T173.3** | 5 l | aluminium | 104,85 |
| | | **T173.5** | 25 l | tinplate | 330,60 |
| **Roticlear®** | for histology | **A538.1** | 1 l | glass | 16,05 |
| | | **A538.5** | 2,5 l | glass | 30,00 |
| | | **A538.2** | 10 l | tinplate | 88,70 |
| | | **A538.3** | 25 l | tinplate | 177,40 |
| | | **A538.4** | 200 l | barrel | 751,45 |
| **Roti®-Histol** | for histology | **6640.1** | 1 l | glass | 28,95 |
| | | **6640.4** | 2,5 l | glass | 55,80 |
| | | **6640.2** | 10 l | tinplate | 165,05 |
| | | **6640.5** | 5 l | aluminium | 93,00 |
| | | **6640.3** | 22 kg | tinplate | 392,40 |
| **Tetrahydrofuran** | ≥99,9 % (≤50 ppm $H_2O$) | **AE07.1** | 1 l | glass | 47,85 |
| **Toluene** | ≥99,5 %, p.a., ACS, ISO | **7115.1** | 1 l | glass | 36,45 |
| | | **7115.2** | 2,5 l | glass | 71,95 |
| | | **7115.3** | 5 l | aluminium | 101,60 |
| | | **7115.4** | 25 l | tinplate | 289,20 |
| **Trichloromethane/ Chloroform** | ≥99 %, p.a. | **3313.4** | 100 ml | glass | 16,05 |
| | | **3313.1** | 1 l | glass | 40,35 |
| | | **3313.2** | 2,5 l | glass | 84,85 |
| | | **3313.5** | 25 l | tinplate | 439,70 |
| **Water** | hypotonic, sterile, free from pyrogen | **3255.1** | 1 l | plastic | 9,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Roticlear® on base of aliphatic hydrocarbons

The alternative product for use in histology and cytology. Roticlear® is a special formulation to replace toluene, xylene and trichloromethane. Excellent for dewaxing histological sections.

### Roticlear®

**for histology**

ready-to-use

Clearing agent of aliphatic hydrocarbons, practically free from aromatic compounds. For dewaxing of histological sections. Alternative product for xylene.

**Danger** H226-H304-H336-H412-EUH066

Roticlear® consists of different aliphatic hydrocarbons with only little own odour. It is **practically free from aromatic compounds** (≤0,005 %) and can be mixed with IPA, butanol, ethanol and acetone.

Roticlear® can be used like xylene. The absorption capacity for paraffin is even better than that known from xylene. Therefore, water baths for removing the paraffin need not to be changed so frequently. Due to a short evaporation period, Roticlear® enables fast and effective working.

Roticlear® produces excellent results with **Roti®-Mount (Art. No. HP68)**. After clearing with Roticlear® the sample can be embedded in Roti®-Mount immediately.

Roticlear® can be used in automates without any difficulty.

**Please contact us for your free sample!**

**Type analysis:**

Density (15 °C). ..... 0,7460-0,7638
Colour (Hazen). ..... <10
Flash point. ..... >23 °C
Boiling range. ..... 130-170 °C
Aromatic compounds. ..... ≤0,005 %

| | | | | |
|---|---|---|---|---|
| **A538.1** | 1 l | | glass | 16,05 € |
| Original pack 6 x 1 l | | | | 15,25/1 l |
| **A538.5** | 2,5 l | | glass | 30,00 € |
| Original pack 4 x 2,5 l | | | | 28,50/2,5 l |
| **A538.2** | 10 l | | tinplate | 88,70 € |
| **A538.3** | 25 l | | tinplate | 177,40 € |
| **A538.4** | 200 l | BIG PACK | barrel | 751,45 € |



▶ Compatible mounting media for xylene and xylene alternatives see page 1470

Please note our **Technical Information Brochure** on the Internet next to the products:

**Xylene Alternatives**
Roti®-Histol and Roticlear®

## Xylene Alternatives compared to Xylene

| | Roti®-Histol | Roticlear® | Xylene |
|---|---|---|---|
| **Composition** | natural product from limonene | mixture of different hydrocarbons, aromatic compounds ≤0.005 % | aromatic hydrocarbon |
| **Classification as hazardous substance** | yes | yes | yes |
| **Odour** | like oranges | slightly like benzine | characteristic |
| **Vapours** | not harmful | not harmful, may cause drowsiness | harmful |
| **Flash point (°C)** | 50 °C - flammable | 25 °C - flammable | 25 °C - flammable |
| **Boiling Range** | 177 °C | 139 °C - 164 °C | 137 °C - 143 °C |
| **Effects to skin** | irritating, may cause sensitisation | may cause skin dryness or cracking | irritating, harmful |
| **Storage** | in well-sealed glass bottles, **no plastic bottles** | in well-sealed glass bottles | in well-sealed glass bottles |
| **Shelf life** | minimum 1 years | minimum 3 years | minimum 3 years |
| **Use** | particulary suitable for manual applications | manual and automatical applications | manual and automatical applications |
| **Immunhistochemical applications** | suitable | suitable | suitable |
| **Paraffin embedding** | suitable | suitable | suitable |
| **Dewaxing** | suitable | suitable - better absorption capacity for paraffin than xylene | suitable |
| **Mounting** | suitable | suitable - short evaporation period | suitable |
| **Mounting medium (compatibility tested)** | **Roti®-Histokitt (Art. No. 6638)** | **Roti®-Mount (Art. No. HP68)** | **Roti®-Histokitt II (Art. No. T160)** |
| **Further possible mounting media** | Entellan, Eukitt, DePex | Entellan | Entellan *et al.* |

# Xylene

Xylene is the typical solvent in histology. ROTH xylenes have been used very successfully in histology for dewaxing histological sections and as clearing agent.

Xylene can be used together with **Roti®-Histokitt II mounting medium (Art. No. T160)** and ROTH paraffins such as Roti®-Plast special paraffin (Art. No. 6642).

### Xylene - Summary

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Xylene (isomers)** | ≥99 %, p.a., ACS, ISO | **4436.1** | 1 l | 37,55 |
| | | **4436.2** | 2,5 l | 82,70 |
| | | **4436.3** | 5 l | 117,20 |
| **Xylene (isomers)** | ≥98,5 %, Ph.Helv., extra pure | **CN80.1** | 1 l | 26,80 |
| | | **CN80.2** | 2,5 l | 47,85 |
| | | **CN80.5** | 5 l | 74,10 |
| | | **CN80.3** | 10 l | 129,55 |
| | | **CN80.4** | 25 l | 252,65 |
| **Xylene (isomers)** | >98 %, pure, for histology | **9713.1** | 1 l | 25,30 |
| | | **9713.3** | 2,5 l | 46,80 |
| | | **9713.5** | 5 l | 70,45 |
| | | **9713.2** | 10 l | 119,90 |
| | | **9713.4** | 25 l | 223,10 |
| **Xylene (isomers)** | ≥97 %, for synthesis | **2662.1** | 1 l | 20,35 |
| | | **2662.2** | 2,5 l | 31,10 |
| | | **2662.5** | 5 l | 54,30 |
| | | **2662.3** | 10 l | 85,90 |
| | | **2662.4** | 25 l | 177,40 |

For additional product data and safety information, see chapter Chemicals A-Z.

**Please note:**
**Xylene** can only dissolve a limited amount of paraffin, it should therefore be changed frequently. Please also note that the solubilizing process is often very slow at low temperatures. We recommend working in a warming cupboard at 25 to 30 °C.

**Our Tip:**
You can use a pipe wrench to open the solvent canister 10 l and 25 l. However, it's much easier and simpler with our **barrel and keg key** (Art. No. 0398).

**Safety data sheets**
can be found on the Internet next to the product description.

# Alcohols

Variously usable in histology: for hydration and dehydration (series of alcohol), for fixation, as an ingredient of staining solution etc.

### Alcohols - Summary

| Product | Purity | Art. No. | Pack Qty | Packa-ging | € |
|---|---|---|---|---|---|
| **Ethanol** | ≥99,8 %, p.a. | **9065.1** | 1 l | glass | 81,20 |
| | | **9065.3** | 1 l | plastic | 80,10 |
| | | **9065.2** | 2,5 l | glass | 163,95 |
| | | **9065.4** | 2,5 l | plastic | 161,80 |
| | | **9065.5** | 5 l | plastic | 291,90 |
| | | **9065.6** | 25 l | tinplate | 1015,90 |
| **Ethanol** | ≥99,5 %, Ph.Eur., extra pure | **5054.1** | 1 l | glass | 72,60 |
| | | **5054.3** | 1 l | plastic | 71,50 |
| | | **5054.2** | 2,5 l | glass | 150,00 |
| | | **5054.4** | 2,5 l | plastic | 147,85 |
| | | **5054.5** | 5 l | plastic | 282,20 |
| | | **5054.6** | 25 l | tinplate | 966,45 |
| **Ethanol denatured** | ≥99,8 %, with ~1 % MEK | **K928.5** | 1 l | plastic | 13,45 |
| | | **K928.1** | 2,5 l | glass | 28,70 |
| | | **K928.3** | 2,5 l | plastic | 27,10 |
| | | **K928.4** | 5 l | plastic | 48,40 |
| | | **K928.6** | 10 l | tinplate | 83,35 |
| | | **K928.2** | 25 l | tinplate | 160,20 |
| **Ethanol 96 %** | 96 %, Ph.Eur., extra pure | **P075.1** | 1 l | glass | 70,85 |
| | | **P075.3** | 1 l | plastic | 69,80 |
| | | **P075.2** | 2,5 l | glass | 149,45 |
| | | **P075.4** | 2,5 l | plastic | 147,20 |
| | | **P075.5** | 5 l | plastic | 276,30 |
| | | **P075.6** | 10 l | tinplate | 439,70 |
| **Ethanol 96 % denatured** | ≥96 %, with 1 % MEK | **T171.5** | 1 l | plastic | 12,40 |
| | | **T171.1** | 2,5 l | glass | 23,90 |
| | | **T171.3** | 2,5 l | plastic | 21,75 |
| | | **T171.4** | 5 l | plastic | 40,75 |
| | | **T171.6** | 10 l | tinplate | 71,50 |
| | | **T171.2** | 25 l | tinplate | 120,95 |
| **Ethanol 70 %** | ≥70 %, p.a. | **T868.1** | 1 l | plastic | 54,75 |
| | | **T868.2** | 2,5 l | plastic | 120,95 |
| | | **T868.3** | 5 l | plastic | 231,15 |
| | | **T868.4** | 10 l | glass | 418,20 |
| | | **T868.5** | 25 l | glass | 837,45 |
| **Ethanol 70 % denatured** | ≥70 %, with approx. 1 % MEK | **T913.1** | 1 l | plastic | 11,75 |
| | | **T913.2** | 2,5 l | plastic | 20,65 |
| | | **T913.3** | 5 l | plastic | 34,30 |
| | | **T913.4** | 10 l | plastic | 55,40 |
| | | **T913.5** | 25 l | plastic | 110,20 |
| **2-Propanol** | ≥99,8 %, p.a., ACS, ISO | **6752.1** | 1 l | glass | 24,20 |
| | | **6752.3** | 1 l | plastic | 23,15 |
| | | **6752.2** | 2,5 l | glass | 54,75 |
| | | **6752.4** | 2,5 l | plastic | 52,60 |
| | | **6752.5** | 5 l | plastic | 81,60 |
| | | **6752.6** | 25 l | tinplate | 238,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

**Isopropanol as clearing agent**
Isopropanol is well suited as clearing agent for paraffin-embedding, because it is compatible to melted paraffin: After dehydrating with isopropanol the sample is incubated in a mixture of isopropanol abs. and paraffin (1:1) at approx. 60 °C. After a further incubation step with pure paraffin, the sample is embedded as usual. This method is particularly suitable to smooth organs. Since embedding can start immediately after alcohol step, the working process is shortened significantly.

# General Reagents

Essential helpers for routine histological work such as fixing, embedding, staining and so on.

## APES

**≥98 %, for GC**
Silylation reagent
γ-Aminopropyltriethoxysilane, 3-Aminopropyltriethoxysilane, APTES
$C_9H_{23}NO_3Si$
M 221,37 g/mol

**Danger** H314-H302

APES is used for silanising microscope slides causing better adherence of cut to slide.

| | | | |
|---|---|---|---|
| **2328.1** | 25 g | glass | 21,00 € |
| **2328.2** | 100 g | glass | 60,10 € |

## Chloral hydrate

**≥99,5 %, Ph.Eur., BP, USP**
Trichloroacetaldehyde monohydrate
$C_2H_3Cl_3O_2$
M 165,40 g/mol

**Danger** H301-H315-H319

In botany chloralhydrate is used as clearing agent and for removing cell content of plant samples.

| | | | |
|---|---|---|---|
| **K318.3** | 100 g | plastic | 26,35 € |
| **K318.1** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |
| **K318.2** | 2,5 kg | plastic | 450,45 € |

## HCl-ethanol solutions

**for histology**
Differentiating solution for histological staining.
Hydrochloric acid in ethanol
After staining tissues are rinsed with HCl-ethanol solution to remove excessive stain. This decolourisation is selective for certain tissue structures retain the stain better than others (differentiation). HCl-ethanol solution is used for regressive hemalum staining, but also for detection of mycobacteria.

### HCl-ethanol solution 0,75 %

ready-to-use

**Danger** H225-H290-H319

Solution of 0,75 % hydrochloric acid in ethanol 70 %.

| | | | |
|---|---|---|---|
| **9969.1** | 500 ml | plastic | 14,95 € |
| **9969.2** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **9969.3** | 5 l | plastic | 83,75 € |
| Original pack 2 x 5 l | | | 79,56/5 l |

### HCl-ethanol solution 3 %

ready-to-use

**Danger** H225

Solution of 3 % hydrochloric acid in ethanol 70 %.

| | | | |
|---|---|---|---|
| **6477.1** | 500 ml | plastic | 17,10 € |
| **6477.2** | 1 l | plastic | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |
| **6477.3** | 5 l | plastic | 103,10 € |
| Original pack 2 x 5 l | | | 97,95/5 l |

## Other General Reagents

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Ammonium iron(III) sulphate dodecahydrate** | ≥98,5 %, p.a., ACS, ISO | **P734.1** | 500 g | 30,00 |
| | | **P734.2** | 1 kg | 51,50 |
| | | **P734.3** | 2,5 kg | 107,40 |
| **Ammonium iron(II) sulphate hexahydrate** | ≥99 %, p.a., ISO | **P728.1** | 500 g | 27,45 |
| | | **P728.2** | 1 kg | 46,15 |
| | | **P728.3** | 2,5 kg | 103,75 |
| **Dimethyl sulphoxide (DMSO)** | ≥99,8 %, p.a. | **4720.4** | 100 ml | 16,35 |
| | | **4720.2** | 500 ml | 28,95 |
| | | **4720.1** | 1 l | 48,95 |
| | | **4720.3** | 2,5 l | 100,95 |
| **Hydrogen peroxide 30 %** | p.a., ISO, stabilized | **8070.2** | 250 ml | 20,65 |
| | | **8070.4** | 500 ml | 26,80 |
| | | **8070.1** | 1 l | 38,60 |
| | | **8070.3** | 2,5 l | 66,55 |
| **Hydroquinone** | ≥99,5 %, p.a. | **3586.1** | 100 g | 13,15 |
| | | **3586.2** | 250 g | 19,60 |
| | | **3586.3** | 1 kg | 57,95 |
| **Lithium carbonate** | ≥99 %, p.a., ACS | **3995.1** | 250 g | 66,15 |
| | | **3995.2** | 500 g | 117,20 |
| **Phloroglucinol dihydrate** | ≥98 % | **7662.1** | 50 g | 64,40 |
| **Potassium aluminium sulphate dodecahydrate** | ≥98 %, p.a., ACS | **P724.2** | 500 g | 25,70 |
| | | **P724.1** | 1 kg | 45,70 |
| | | **P724.3** | 2,5 kg | 96,25 |
| **Potassium hexacyano-ferrate(II) trihydrate** | ≥99 %, p.a., ACS, ISO | **P745.1** | 500 g | 90,20 |
| | | **P745.2** | 1 kg | 160,20 |
| | | **P745.3** | 2,5 kg | 342,95 |
| **Potassium hexacyano-ferrate(III)** | ≥99 %, p.a., ACS | **P746.3** | 100 g | 21,75 |
| | | **P746.1** | 500 g | 69,80 |
| | | **P746.2** | 1 kg | 126,35 |
| **Potassium hydroxide** | ≥85 %, p.a., pellets | **6751.3** | 250 g | 16,05 |
| | | **6751.1** | 1 kg | 26,35 |
| | | **6751.2** | 5 kg | 91,30 |
| | | **6751.5** | 25 kg | 278,45 |
| **Sodium chloride** | ≥99 %, Ph.Eur., USP | **P029.1** | 500 g | 11,30 |
| | | **P029.2** | 1 kg | 13,45 |
| | | **P029.3** | 5 kg | 41,40 |
| | | **P029.4** | 10 kg | 69,80 |
| | | **P029.5** | 25 kg | 130,65 |
| **Sodium metabisulphite** | ≥97 %, p.a., ACS | **P755.1** | 500 g | 19,60 |
| | | **P755.2** | 1 kg | 30,00 |
| | | **P755.3** | 2,5 kg | 55,40 |
| | | **P755.4** | 5 kg | 97,30 |
| | | **P755.5** | 25 kg | 317,15 |
| **Sodium hydroxide** | ≥98 %, Ph.Eur., USP, BP, in pellets | **P031.1** | 500 g | 17,45 |
| | | **P031.2** | 1 kg | 26,35 |
| | | **P031.3** | 5 kg | 94,50 |
| **Silver nitrate** | ≥99 %, Ph.Eur., extra pure | **9370.4** | 10 g | 27,45 |
| | | **9370.1** | 50 g | 96,65 |
| | | **9370.2** | 250 g | 396,70 |
| | | **9370.3** | 1 kg | 1483,50 |
| **Tetrachloroauric(III) acid trihydrate** | ≥99,5 %, p.a. | **3867.1** | 1 g | 134,40 |
| | | **3867.2** | 5 g | 536,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Reagents for Decalcification

Tissues containing solid material such as bones or keratin are to be decalcified before paraffin embedding. Usually the specimens are treated with acids of different concentrations and mixtures.

An especially gentle method is decalcification with EDTA solution.



## Decalcifier soft

**for histology**

ready-to-use

Decalcifier solution on base of EDTA.
Used for gentle decalcification of bones and other calcified tissues.
The solution is also suitable for immunological applications.

**Danger** H290-H314-H373

The solution contains 25 % EDTA. The process of decalcification takes more time than acid decalcification (see Decalcifier standard, Art. No. 6483), e.g. bone biopsies need approx. 3-4 days. The procedure can be accelerated by using a magnetic stirrer. The decalcification takes place in a weakly basic milieu. Nucleic acids and enzymes are not affected; therefore, the solution is also suitable for immunological applications.

**Type analysis:**

Appearance. ..... clear, colourless
pH (20 °C) ..... 7-9

| | | | | |
|---|---|---|---|---|
| **6484.1** | 500 ml | | glass | 23,15 € |
| **6484.2** | 1 l | | glass | 35,40 € |
| Original pack 6 x 1 l | | | | 33,63/1 l |
| **6484.3** | 2,5 l | new size | plastic | 53,65 € |
| Original pack 4 x 2,5 l | | | | 50,97/2,5 l |
| **6484.4** | 5 l | new size | plastic | 92,35 € |
| Original pack 2 x 5 l | | | | 87,73/5 l |

## Decalcifier standard

**for histology**

ready-to-use

Acid-based decalcifier. Contains trichloracetic acid and formalin.
Used for acid decalcification of bones and other calcified tissues.

**Danger** H314-H335-H350-H411-EUH208

The solution contains trichloroacetic acid and formalin and, therefore, has also fixing qualities. Nevertheless, we recommend sufficient fixing of specimens before decalcifying for trichloroacetic acid may cause morphological changes in unfixed tissue. The length of the decalcification process depends on the specimen's size and type. Little bones (diameter a few mm) need 1-2 days for complete decalcification.
The decalcifier standard is not suitable for immunological applications. We recommend our Decalcifier soft (Art. No. 6484) on base of EDTA.

**Type analysis:**

Appearance. ..... clear, colourless
pH (20 °C) ..... 0,9 ±0,3

| | | | | |
|---|---|---|---|---|
| **6483.1** | 500 ml | | glass | 23,15 € |
| **6483.2** | 1 l | | glass | 35,40 € |
| Original pack 6 x 1 l | | | | 33,63/1 l |
| **6483.3** | 2,5 l | new size | plastic | 53,65 € |
| Original pack 4 x 2,5 l | | | | 50,97/2,5 l |
| **6483.4** | 5 l | new size | plastic | 92,35 € |
| Original pack 2 x 5 l | | | | 87,73/5 l |

## Reagents for Decalcification - Summary

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Acetic acid 100 %** | 100 %, p.a. | **3738.1** | 1 l | 24,65 |
| | | **3738.4** | 1 l | 22,50 |
| | | **3738.2** | 2,5 l | 52,60 |
| | | **3738.5** | 2,5 l | 50,00 |
| | | **3738.6** | 5 l | 74,10 |
| | | **3738.3** | 10 l | 125,25 |
| **Decalcifier soft** | for histology new size new size | **6484.1** | 500 ml | 23,15 |
| | | **6484.2** | 1 l | 35,40 |
| | | **6484.3** | 2,5 l | 53,65 |
| | | **6484.4** | 5 l | 92,35 |
| **Decalcifier standard** | for histology new size new size | **6483.1** | 500 ml | 23,15 |
| | | **6483.2** | 1 l | 35,40 |
| | | **6483.3** | 2,5 l | 53,65 |
| | | **6483.4** | 5 l | 92,35 |
| **Ethylenediamine tetraacetic acid disodium salt dihydrate** | ≥99 %, p.a., ACS new size | **8043.3** | 100 g | 21,40 |
| | | **8043.1** | 250 g | 34,30 |
| | | **8043.2** | 1 kg | 100,55 |
| | | **8043.6** | 2,5 kg | 192,45 |
| | | **8043.4** | 5 kg | 364,45 |
| | | **8043.5** | 25 kg | 826,70 |
| **Formic acid 98 %** | ≥98 %, p.a., ACS | **4724.3** | 500 ml | 19,90 |
| | | **4724.1** | 1 l | 33,90 |
| | | **4724.2** | 2,5 l | 71,95 |
| **Hydrochloric acid fuming 37 %** | 37 %, p.a., ACS, ISO | **4625.1** | 1 l | 20,35 |
| | | **4625.2** | 2,5 l | 32,15 |
| | | **4625.3** | 10 l | 79,45 |
| **Nitric acid 65 %** | ≥65 %, p.a., ISO | **4989.3** | 250 ml | 18,85 |
| | | **4989.1** | 1 l | 29,60 |
| | | **4989.2** | 2,5 l | 57,95 |
| **Trichloroacetic acid** | ≥99 %, p.a. | **8789.2** | 500 g | 53,25 |
| | | **8789.1** | 1 kg | 91,95 |
| **Trichloroacetic acid** | ≥99 %, Ph.Eur, extra pure | **3744.2** | 500 g | 52,15 |
| | | **3744.1** | 1 kg | 88,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

**Instructions for use**
can be found on the Internet next to the product description.

# Blocking Reagents

In immunohistological assays it is necessary to block non-specific antibody binding sites or other unspecific protein-protein-interactions.
For that purpose ROTH offers protein-containing and protein free blocking reagents.

## Albumins/BSA

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Albumin, IgG free** | >98 %, IgG-free, for biochemistry and molecular biology | **3737.1** | 10 g | 54,75 |
| | | **3737.2** | 50 g | 152,15 |
| | | **3737.3** | 200 g | 456,90 |
| | | **3737.4** | 500 g | 938,50 |
| **Albumin, nuclease-free** | >99 %, nuclease-free, for molecular biology | **8895.1** | 10 mg | 31,75 |
| | | **8895.2** | 100 mg | 169,75 |
| **Albumin Fraction V** | ≥98 %, powdered, for molecular biology | **8076.1** | 10 g | 26,80 |
| | | **8076.2** | 50 g | 84,40 |
| | | **8076.4** | 200 g | 289,20 |
| | | **8076.3** | 500 g | 643,95 |
| | | **8076.5** | 1 kg | 1095,45 |
| **Albumin Fraction V, biotin-free** | ≥98 %, biotin-free, for molecular biology | **0163.1** | 10 g | 33,25 |
| | | **0163.2** | 50 g | 103,10 |
| | | **0163.4** | 200 g | 360,15 |
| | | **0163.3** | 500 g | 772,95 |
| **Albumin Fraction V, very low endotoxin** | >98 %, very low endotoxin | **CP77.1** | 10 g | 138,70 |
| | | **CP77.2** | 50 g | 536,45 |
| **Albumin Fraction V, endotoxin-tested** | >98 %, low endotoxin | **CP84.1** | 10 g | 34,30 |
| | | **CP84.2** | 50 g | 105,90 |
| | | **CP84.3** | 500 g | 837,45 |
| **Albumin Fraction V, fatty acid-free** | ≥95 %, fatty acid-free, for molecular biology | **0052.1** | 1 g | 18,20 |
| | | **0052.2** | 10 g | 95,15 |
| | | **0052.3** | 50 g | 375,20 |
| **Albumin Fraction V, pH 5,2** | >97 %, powdered, for protein analysis | **2834.1** | 10 g | 39,70 |
| | | **2834.2** | 50 g | 126,35 |
| | | **2834.3** | 200 g | 396,70 |
| | | **2834.4** | 500 g | 805,20 |
| **Albumin Fraction V, protease-free** | ≥98 %, protease-free, for molecular biology | **T844.1** | 10 g | 53,65 |
| | | **T844.2** | 50 g | 123,65 |
| | | **T844.4** | 200 g | 407,45 |
| | | **T844.3** | 500 g | 843,90 |
| **Albumin Fraction V, US-Origin** | ≥98 %, powdered, for molecular biology and biochemistry | **3854.1** | 10 g | 30,00 |
| | | **3854.2** | 50 g | 90,85 |
| | | **3854.3** | 200 g | 310,70 |
| | | **3854.4** | 500 g | 671,90 |
| | | **3854.5** | 1 kg | 1116,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Roti®-ImmunoBlock




**ready-to-use, 10x conc.**

Protein free blocking reagent for immunocytological assays.
Roti®-ImmunoBlock is an innovative blocking reagent on a polymer base without detergents and proteins.

**Suitable for**
- Immunocytological assays
- Immunohistological assays
- Paraffin- and cryosections
- *in situ* hybridisation
- Cell culture samples
- Whole mount samples

| | | | |
|---|---|---|---|
| **T144.1** | 250 ml | glass | 45,05 € |

▶ For detailed information on albumins see page 1294

▶ Additional blocking reagents see page 1310

# Buffer Salts

## Buffer Salts - Summary

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Cacodylic acid sodium salt trihydrate** | ≥98 % | **5169.3** | 10 g | 22,05 |
| | | **5169.1** | 50 g | 62,25 |
| | | **5169.2** | 250 g | 203,20 |
| **Citric acid monohydrate** | ≥99,5 %, p.a., ACS, ISO new size | **3958.2** | 500 g | 18,85 |
| | | **3958.1** | 1 kg | 30,00 |
| | | **3958.3** | 2,5 kg | 55,40 |
| | | **3958.4** | 5 kg | 102,15 |
| | | **3958.6** | 10 kg | 170,95 |
| | | **3958.5** | 25 kg | 360,15 |
| **Ethylenediamine tetraacetic acid disodium salt dihydrate** | ≥99 %, p.a., ACS new size | **8043.3** | 100 g | 21,40 |
| | | **8043.1** | 250 g | 34,30 |
| | | **8043.2** | 1 kg | 100,55 |
| | | **8043.6** | 2,5 kg | 192,45 |
| | | **8043.4** | 5 kg | 364,45 |
| | | **8043.5** | 25 kg | 826,70 |
| **HEPES** | ≥99,5 %, p.a. | **9105.2** | 100 g | 33,25 |
| | | **9105.4** | 500 g | 136,00 |
| | | **9105.3** | 1 kg | 224,70 |
| | | **9105.6** | 2,5 kg | 450,45 |
| | | **9105.5** | 5 kg | 858,95 |
| **PIPES** | ≥99 % | **9156.1** | 25 g | 19,25 |
| | | **9156.2** | 100 g | 55,40 |
| | | **9156.3** | 250 g | 120,95 |
| | | **9156.4** | 500 g | 205,90 |
| **Potassium chloride** | ≥99,5 %, p.a., ACS, ISO | **6781.3** | 500 g | 18,20 |
| | | **6781.1** | 1 kg | 25,30 |
| | | **6781.2** | 5 kg | 100,95 |
| | | **6781.5** | 25 kg | 385,95 |
| **Potassium dihydrogen phosphate** | ≥99 %, p.a., ACS | **3904.2** | 250 g | 18,20 |
| | | **3904.1*** | 1 kg | 52,60 |
| | | **3904.3** | 5 kg | 209,65 |
| | | **3904.5** | 25 kg | 912,70 |
| **di-Potassium hydrogen phosphate trihydrate** | ≥99 %, p.a. | **6878.2** | 250 g | 19,90 |
| | | **6878.1** | 1 kg | 46,80 |
| | | **6878.3** | 2,5 kg | 94,50 |
| **tri-Sodium citrate dihydrate** | ≥99 %, p.a., ACS | **3580.4** | 250 g | 20,35 |
| | | **3580.3** | 500 g | 26,80 |
| | | **3580.1** | 1 kg | 42,90 |
| | | **3580.2** | 5 kg | 181,70 |
| | | **3580.5** | 25 kg | 428,95 |
| **Sodium dihydrogen phosphate dihydrate** | ≥99 %, p.a. | **T879.1** | 500 g | 23,15 |
| | | **T879.2** | 1 kg | 34,30 |
| | | **T879.3** | 2,5 kg | 72,60 |
| | | **T879.5** | 25 kg | 600,95 |
| **di-Sodium hydrogen phosphate dihydrate** | ≥99,5 %, p.a. new size | **4984.2** | 500 g | 26,35 |
| | | **4984.1** | 1 kg | 44,00 |
| | | **4984.3** | 2,5 kg | 95,15 |
| | | **4984.4** | 5 kg | 131,70 |
| | | **4984.5** | 10 kg | 220,40 |
| **TRIS** | ≥99,9 %, p.a. | **4855.1** | 500 g | 50,45 |
| | | **4855.2** | 1 kg | 89,15 |
| | | **4855.5** | 2,5 kg | 185,45 |
| | | **4855.3** | 5 kg | 370,90 |
| | | **4855.4** | 10 kg | 704,15 |
| **TRIS hydrochloride** | ≥99 %, p.a. | **9090.1** | 50 g | 13,90 |
| | | **9090.2** | 500 g | 87,65 |
| | | **9090.3** | 1 kg | 129,55 |
| | | **9090.5** | 2,5 kg | 274,15 |
| | | **9090.4** | 5 kg | 525,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Ready-to-use solutions PBS and TBS see page 1314

# Formalin-free Fixing Solution

ready-to-use

An adequate substitute for formalin on base of hexamethylene tetramine. Roti®-Histofix ECO Plus is classified as non-hazardous.



## Roti®-Histofix ECO Plus

**Fixing agent without formalin**

For fixing of histological and immunochemical specimens.
Formalin substitute.
Storage temp.: +20 °C

- Formaldehyde-free, non-toxic fixative
- Good fixation properties
- pH 4,5 -5,0
- No denaturing effect, e.g. shrinkage or crosslinking
- Adequate substitute for formaldehyde

Roti®-Histofix ECO Plus is a ready-to-use, aqueous solution on base of hexamethylene tetramine. The solution has as similar good fixation properties as formaldehyde, but is, unlike formaldehyde, classified as non-toxic. The original morphology of the tissue is preserved during the fixation process. The protein molecules are cross-linked in a reversible way, their structures are preserved. That is especially important for antigen-antibody reactions. Samples are - in contrary to other fixative media - free of artefacts such as shrinkage of tissue or irreversible protein crosslinking. The solution is therefore ideal for immunohistochemistry. All conventional staining processes can be carried out following fixation.
Roti®-Histofix ECO Plus has an indicator dye and is scented for better identification (< 1ppm).

Formalin-free, non-toxic reddish solution. For fixing of histological specimens. Pleasantly aromatic odour. Forrmalin substitute.

| | | | |
|---|---|---|---|
| **8907.1** | 500 ml | plastic | 14,95 € |
| **8907.2** | 2,5 l | plastic | 45,70 € |
| Original pack 4 x 2,5 l | | | 43,42/2,5 l |
| **8907.3** | 5 l | plastic | 85,50 € |
| Original pack 2 x 5 l | | | 81,23/5 l |

▶ Drain cocks see chapter Labware - Sampling, Pumps & Dispenser.

**Do not store formaldehyde solutions below +15 °C!**

Experience shows that low temperatures support polymerisation to paraformaldehyde. Small amounts of solids (fine precipitation) can be filtered off, the formaldehyde solution is still fully functional. In case of major amounts of solids, however, the solution should be discarded, for the concentration of formaldehyde is too much reduced.

# Ready-to-use Formaldehyde Solutions

ready-to-use

Roti®-Histofix solutions are **stabilised formaldehyde solutions**. The added phosphate buffer (pH 7) neutralises formic acid formed by oxidation of formaldehyde during storage. Furthermore, a small amount of methanol is added to protect against polymerisation.



## Roti®-Histofix in prefilled containers

Fixative for histology, prefilled in screw cap containers.
Stabilised with methanol.
Storage temp.: +15-25 °C

**Danger** H302-H317-H341-H350

Neutral buffered formaldehyde solution (pH 7), prefilled in screw cap containers, packaged in a cardboard shipping box. The containers are labelled, specimen data can be added.

- Specimen can be added directly
- Sample is securely packaged and ready for shipment within a short time
- Reduced health risk for user because no diluting and decanting of concentrated formaldehyde solution is necessary
- Time saving, containers are ready-to-use

**Technical specifications:**

| Dimension containers | 20 ml | 100 ml | 180 ml |
|---|---|---|---|
| Diameter bottom (mm) | 27 | 43 | 52 |
| Diameter cap (mm) | 31 | 48 | 57 |
| Height with cap (mm) | 48 | 88 | 104 |

## Roti®-Histofix 4 %, prefilled containers

**acid free (pH 7), phosphate-buffered formaldehyde solution 4 %**

**Type analysis:**

Appearance. ..... clear, colourless liquid
Assay (formaldehyde) ..... 4,0 %
pH value. ..... 7,0 ±0,5
Stabilised with methanol

| | | | |
|---|---|---|---|
| **3105.1** | 100 x 10 ml (in 20 ml-container) | carton | 81,20 € |
| **3105.2** | 54 x 50 ml (in 100 ml-container) | carton | 55,40 € |

## Roti®-Histofix 4,5 %, prefilled containers

**acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 %**

**Type analysis:**

Appearance. ..... clear, colourless liquid
Assay (formaldehyde) ..... 4,0-5,0 %
pH value. ..... 7,2 ±0,2
Stabilised with methanol

| | | | |
|---|---|---|---|
| **8244.1** | 100 x 10 ml (in 20 ml container) | carton | 79,45 € |
| **8244.2** | 54 x 50 ml (in 100 ml container) | carton | 55,80 € |
| **8244.3** | 32 x 100 ml (in 180 ml container) | carton | 52,15 € |

## Roti®-Histofix 4 %

**acid free (pH 7), phosphate-buffered formaldehyde solution 4 %**

Fixative for histology, stabilized with methanol.

Storage temp.: +15-25 °C

**Danger** H350-H341-H302-H317

For better sampling of liquid we offer suitable draincocks for the 10 l and 30 l standard canisters (Art. No. 5666.2).

| | | | | |
|---|---|---|---|---|
| **P087.4** | 500 ml | | plastic | 9,90 € |
| **P087.6** | 1 l | | plastic | 12,05 € |
| Original pack 6 x 1 l | | | | 11,45/1 l |
| **P087.5** | 2,5 l | | plastic | 16,70 € |
| Original pack 4 x 2,5 l | | | | 15,87/2,5 l |
| **P087.3** | 5 l | | plastic | 26,35 € |
| Original pack 2 x 5 l | | | | 25,03/5 l |
| **P087.1** | 10 l | | plastic | 48,30 € |
| **P087.2** | 30 l | BIG PACK | plastic | 126,35 € |

## Roti®-Histofix 4,5 %

**acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 %**

Fixative for histology, stabilized with methanol.

Storage temp.: +15-25 °C

**Danger** H302-H317-H341-H350

For better sampling of liquid we offer suitable draincocks for the 10 l and 30 l standard canisters (Art. No. 5666.2).

| | | | | |
|---|---|---|---|---|
| **2213.4** | 500 ml | | plastic | 10,65 € |
| **2213.6** | 1 l | | plastic | 12,05 € |
| Original pack 6 x 1 l | | | | 11,45/1 l |
| **2213.5** | 2,5 l | | plastic | 18,85 € |
| Original pack 4 x 2,5 l | | | | 17,91/2,5 l |
| **2213.3** | 5 l | | plastic | 27,85 € |
| Original pack 2 x 5 l | | | | 26,46/5 l |
| **2213.1** | 10 l | | plastic | 50,00 € |
| **2213.2** | 30 l | BIG PACK | plastic | 124,20 € |

## Roti®-Histofix 10 %

**acid free (pH 7), phosphate-buffered formaldehyde solution 10 %**

Fixative for histology, stabilized with methanol.

Storage temp.: +15-25 °C

**Danger** H302+H312-H315-H317-H319-H335-H341-H350-H371

For better sampling of liquid we offer suitable draincocks for the 10 l and 30 l standard canisters (Art. No. 5666.2).

| | | | | |
|---|---|---|---|---|
| **A146.4** | 500 ml | | plastic | 12,05 € |
| **A146.6** | 1 l | | plastic | 14,55 € |
| Original pack 6 x 1 l | | | | 13,82/1 l |
| **A146.5** | 2,5 l | | plastic | 25,30 € |
| Original pack 4 x 2,5 l | | | | 24,04/2,5 l |
| **A146.3** | 5 l | | plastic | 42,50 € |
| Original pack 2 x 5 l | | | | 40,38/5 l |
| **A146.1** | 10 l | | plastic | 67,65 € |
| **A146.2** | 30 l | BIG PACK | plastic | 166,65 € |

▶ Formaldehyde solution 23,5 %, methanol-free, see chapter Chemicals A-Z.

# Concentrated Formaldehyde Solutions/Formol/Formalin

## Standard Solutions

The formaldehyde solutions are stabilised with approx. 10 % methanol.

| Product | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **Formaldehyde solution 37 %** | 37 %, p.a., ACS | **4979.1** | 1 l | 26,55 |
| | | **4979.2** | 2,5 l | 49,35 |
| | | **4979.3** | 5 l | 65,25 |
| **Formaldehyde solution 37 %** | ≥37 %, Ph.Eur., BP, USP | **CP10.1** | 1 l | 17,75 |
| | | **CP10.2** | 2,5 l | 31,10 |
| | | **CP10.3** | 5 l | 44,65 |
| | | **CP10.4** | 10 l | 66,55 |
| **Formaldehyde solution 37 %** | ≥37 %, for synthesis | **7398.1** | 1 l | 13,90 |
| | | **7398.4** | 2,5 l | 22,50 |
| | | **7398.2** | 10 l | 47,20 |
| | | **7398.3** | 30 l | 109,15 |
| **Formaldehyde solution 35 %** | ≥35 % DAB, for histology | **4980.1** | 1 l | 16,05 |
| | | **4980.2** | 5 l | 37,55 |
| | | **4980.4** | 10 l | 59,70 |
| | | **4980.3** | 30 l | 118,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Special Solutions

### Formaldehyde solution 30 %, methanol-free

**30 %**

Formol, Formalin

$CH_2O$

M 30,03 g/mol

Storage temp.: >+15 °C

**Danger** H302-H311+H331-H314-H317-H341-H350-H335

The solution is nearly free from methanol (≤1,5 %). It is used for sensitive assays e.g. enzyme histochemical assays. Do not store solution below 15 °C.

| | | | | |
|---|---|---|---|---|
| **4235.1** | 1 l | | plastic | 12,40 € |
| Original pack 6 x 1 l | | | | 11,78/1 l |
| **4235.2** | 5 l | | plastic | 30,00 € |
| Original pack 2 x 5 l | | | | 28,50/5 l |
| **4235.3** | 10 l | | plastic | 41,85 € |
| **4235.4** | 30 l | BIG PACK | plastic | 99,90 € |

### Formaldehyde solution, non-acidic

**≥37 %, for histology**

Stabilized with methanol and calcium carbonate.

Formol, Formalin

Storage temp.: >+15 °C

**Danger** H301+H311+H331-H341-H350-H314-H317-H370-H335

Stabilised with calcium carbonate (acid-binding solids) and methanol (8-12 %). If required, filter before use. Do not store solution below 15 °C.

| | | | | |
|---|---|---|---|---|
| **P733.1** | 1 l | | plastic | 17,75 € |
| Original pack 6 x 1 l | | | | 16,86/1 l |
| **P733.2** | 2,5 l | | plastic | 32,15 € |
| Original pack 4 x 2,5 l | | | | 30,54/2,5 l |
| **P733.3** | 30 l | BIG PACK | plastic | 120,95 € |

# Paraformaldehyde

Paraformaldehyde is a formaldehyde polymer.
It is used for applications requiring a formaldehyde solution without stabilising additives.

### Paraformaldehyde

**extra pure, DAC**
Fixative
Polyoxymethylene
$(CH_2O)_n$
Storage temp.: +4-15 °C

**Warning** H228-H351-H302+H332-H315-H319-H317-H335

Paraformaldehyde is a formaldehyde polymer. It is used for applications requiring a formaldehyde solution without stabilising additives.
Store product below 15 °C.

| | | | |
|---|---|---|---|
| **0335.1** | 250 g | plastic | 14,55 € |
| **0335.2** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **0335.3** | 1 kg | plastic | 23,15 € |
| Original pack 6 x 1 kg | | | 21,99/1 kg |
| **0335.4** | 5 kg | plastic | 87,65 € |

**To prepare a 4 % paraformaldhyde solution:**

Mix 4 g of paraformaldehyde into 60 ml distilled water (milky liquid), heat with frequent agitation to 60 °C. Add drop wise 1N NaOH, at pH 7 the solution becomes clear. Add distilled water until the volume reaches 100 ml then let it cool down. The solution is to be used immediately, because it is not stable at room temperature. Store in aliquots at -20 °C, is stable for approx. 6 months.

# Fixing Agents for Cytology




### Roti®-Fix spray fixative

**for cytology**
For fixation of samples from cytological material.

**Danger** H225

Cytological smears must be fixed immediately in order to avoid artefacts. Therefore, the still moist specimens are sprayed about 3 times from a distance of 15-20 cm. After rehydration by descending alcohol series the samples can be stained as usual, e.g. by Papanicolaou staining.

**Type analysis:**
Alcoholic solution of ethanol and 2-propanol

| | | | |
|---|---|---|---|
| **CL85.1** | 100 ml | spray bottle | 16,05 € |

# Other Fixing Agents

Here other important fixative chemicals can be found particularly used in fixative mixtures.

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Acetic acid 100 %** | 100 %, p.a. | **3738.1** | 1 l | 24,65 |
| | | **3738.4** | 1 l | 22,50 |
| | | **3738.2** | 2,5 l | 52,60 |
| | | **3738.5** | 2,5 l | 50,00 |
| | | **3738.6** | 5 l | 74,10 |
| | | **3738.3** | 10 l | 125,25 |
| **Mercury(II) chloride** | ≥99,5 %, pure | **7904.1** | 100 g | 80,10 |
| | | **7904.3** | 500 g | 321,45 |
| | | **7904.2** | 1 kg | 590,20 |
| **Potassium dichromate** | ≥99,5 %, p.a., ACS, ISO | **P744.3** | 100 g | 26,35 |
| | | **P744.1** | 500 g | 95,15 |
| | | **P744.2** | 1 kg | 160,75 |
| **Propionic acid** | ≥99,5 %, for synthesis | **6026.2** | 500 ml | 14,95 |
| | | **6026.1** | 1 l | 22,05 |
| | | **6026.3** | 2,5 l | 40,35 |
| **5-Sulphosalicylic acid dihydrate** | ≥99 %, for biochemistry | **4119.1** | 100 g | 18,20 |
| | | **4119.2** | 500 g | 50,45 |
| **Trichloroacetic acid solution 20 %** | p.a., 20 % aqueous solution | **7437.1** | 1 l | 31,75 |
| **Trichloroacetic acid solution 10 %** | p.a., 10 % aqueous solution | **9383.2** | 1 l | 25,70 |
| | | **9383.1** | 10 l | 144,60 |

For additional product data and safety information, see chapter Chemicals A-Z.

**Fixation**

*Fixing agents:* In order to stop their natural degradation process, specimens must be fixed as quickly as possible after extraction. This is usually done with pure fixing agents such as formalin or alcohol. The solutions are easy to use and lead to good results. Formalin, despite its smell and harmful properties, is still the universal fixing agent, whereas alcohol has proved to be best when fixing smears. To get fixing agents with special properties, mixtures from different fixing agents should be used. This also will compensate for the distinct handicaps of many fixing agents, e.g. shrinkage caused by high-percentage alcohol is greatly reduced when glacial acetic acid is added.

*Fixing process:* Alcohols, various salts and acids denature the protein molecules. The structurally altered molecules form cross-links between each other. In contrast, formalin does not denature. It binds directly to proteins and cross-links the molecules actively with each other.

Fixation of pure lipids or carbohydrates is extremely difficult. When using conventional fixing agents, they are only trapped in the tissue and often washed out in subsequent rinsing steps. Better results are achieved with frozen sections. In electron microscopy lipids can be fixed with osmium tetraoxide.

**Our Tip:**

Our **10-l and 30-l standard canisters** with **drain cocks** (Art. No. 5666.2) enable easy and simple withdrawal.

**Safety data sheets**

can be found on the Internet next to the product description.

# Glutaraldehyde for Electron Microscopy



Fixation with glutaraldehyde is similar to the fixation process with formalin. Optimal results can be achieved with a concentration of 1 to 6 %.

## Glutaraldehyde 50 %

**for electron microscopy**
50 % solution in water.
1,5-Pentanedial, Glutaric dialdehyde, Glutaral
$C_5H_8O_2$
M 100,12 g/mol

**Danger**
H301-H314-H317-H330-H334-H335-H410-EUH071

| | | | |
|---|---|---|---|
| **4995.1** | 500 ml | plastic | 70,45 € |
| **4995.2** | 2,5 l | plastic | 278,45 € |
| Original pack 4 x 2,5 l | | | 264,53/2,5 l |

## Glutaraldehyde 25 %

**for electron microscopy**
25 % solution in water.
1,5-Pentanedial, Glutaric dialdehyde, Glutaral
$C_5H_8O_2$
M 100,12 g/mol

**Danger** H302-H314-H317-H331-H334-H335-H410

| | | | |
|---|---|---|---|
| **3778.1** | 1 l | plastic | 54,75 € |
| Original pack 6 x 1 l | | | 52,01/1 l |
| **3778.2** | 5 l | plastic | 213,95 € |
| Original pack 2 x 5 l | | | 203,25/5 l |

## Glutaraldehyde 25 % Mini Pack

**for electron microscopy**
25 % solution in water.
1,5-Pentanedial, Glutaric dialdehyde, Glutaral
$C_5H_8O_2$
M 100,12 g/mol

**Danger** H314-H317-H331-H334-H335-H410

| | | | |
|---|---|---|---|
| **4157.1** | 25 ml | glass | 18,20 € |
| **4157.2** | 10 x 1 ml (with septum) | card board box | 65,05 € |

**Storage of Glutaraldehyde**
Ideally at 2-8 °C under protective gas (argon or nitrogen). Do not freeze!

# Osmium tetraoxide for Electron Microscopy



Osmium tetraoxide is suitable for fixing lipides and proteins. Because of the low penetration power, application is primarily limited to ultra thin techniques with small tissue samples.

## Osmium tetraoxide

**≥99,95 %, p.a., for electron microscopy**
In sealed off glass ampoules.
Osmium(VIII) oxide, Osmic acid
$OsO_4$M 254,20 g/molStorage temp.: +4 °C

**Danger** H300+H310+H330-H314

| | | | |
|---|---|---|---|
| **8371.1** | 100 mg | glass | 40,75 € |
| **8371.2** | 500 mg | glass | 98,80 € |
| **8371.3** | 1 g | glass | 152,55 € |

## Osmium tetraoxide solution 2 %

**for electron microscopy**
In sealed off glass ampoules.
$OsO_4$Storage temp.: +4 °C

**Danger** H301+H331-H310-H315-H318

| | | | |
|---|---|---|---|
| **7436.1** | 5 ml | glass | 37,55 € |

## Osmium tetraoxide solution 4 %

**for electron microscopy**
In sealed off glass ampoules.
$OsO_4$Storage temp.: +4 °C

**Danger** H301+H331-H310-H315-H318

| | | | |
|---|---|---|---|
| **8088.1** | 5 ml | glass | 56,45 € |

**To prepare a 1-4 % solution of osmium tetraoxide, Art. No. 8371:**

- Score the glass ampoule in centre (e.g. with glass cutter Art. No. 8209.1)
- Open it carefully at the section
- Draw the crystals into a sealable glass jar
- Add the needed amount of distilled water
- Place the sealed jar into an ultrasonic bath, the dissolution process requires 1-2 h
- Store the solution in aliquots at -20 °C in a well-sealed container

**Please note:** $OsO_4$ vapours damage the cornea and the mucous membranes of the mouth and the nose. Therefore, working with protective equipment in a fume cupboard is required!

# Paraffins

In order to meet the different requirements of paraffin embedding, we provide a large selection of paraffins.

## Special paraffin Roti®-Plast




- High-purity paraffin
- Top-quality for routine applications
- Available with or without DMSO
- Defined melting range
- Excellent embedding and cutting properties
- Guaranteed tested quality

### Roti®-Plast

**100 % paraffin, for histology**
**Melting range: 54-56 °C**

Roti®-Plast is a special paraffin of highest quality without any additives. It penetrates the tissue quickly, completely and gives it its plasticity.

**Type analysis:**

Appearance. ..... white pastilles
Solidification point. ..... 54-56 °C

| | | | |
|---|---|---|---|
| **6642.1** | 1 kg | plastic | 17,10 € |
| Original pack 6 x 1 kg | | | 16,25/1 kg |
| **6642.5** | 2,5 kg | plastic | 31,10 € |
| **6642.2** | 10 kg | plastic | 105,90 € |
| **6642.6** | 20 kg BIG PACK | plastic | 175,80 € |

### Roti®-Plast with DMSO

**paraffin, for histology**
**Melting range: 56-58 °C**

Special paraffin, treated with DMSO, enriched with polymers. Makes it easier to penetrate the tissue.

**Type analysis:**

Appearance. ..... white droplets
Solidification point. ..... 56-58 °C

| | | | |
|---|---|---|---|
| **6643.1** | 1 kg | carton | 22,05 € |
| Original pack 6 x 1 kg | | | 20,95/1 kg |
| **6643.3** | 20 x 1 kg | carton | 327,90 € |
| **6643.2** | 2 kg | plastic | 37,10 € |

**Please note:**
Protein glycerol (Art. No. P049) contains egg albumin, colloidally dissolved in glycerol. At room temperature it may flocculate. But it will redissolve by gentle warming.

## Low Melting Paraffins

These paraffins allow embedding already at temperatures below 55 °C.

If high solid tissue blocks are required, we recommend a final embedding step at standard temperature (56-58 °C).

### Paraffin 50-52 °C

**extra pure, for histology**

**Type analysis:**

Appearance. ..... pastilles
Solidification point. ..... 50-52 °C

| | | | |
|---|---|---|---|
| **CN48.1** | 500 g | plastic | 20,65 € |
| Original pack 6 x 500 g | | | 19,62/500 g |
| **CN48.2** | 1 kg | plastic | 31,75 € |
| Original pack 6 x 1 kg | | | 30,16/1 kg |

### Paraffin 52-54 °C

**extra pure, for histology**

**Type analysis:**

Appearance. ..... pastilles
Solidification point. ..... 52-54 °C

| | | | |
|---|---|---|---|
| **CN49.1** | 500 g | plastic | 20,35 € |
| Original pack 6 x 500 g | | | 19,33/500 g |
| **CN49.2** | 1 kg | plastic | 31,75 € |
| Original pack 6 x 1 kg | | | 30,16/1 kg |

### Granopent® "P"

**Paraffin, in pellets, for histology**
**Melting range: 52-54 °C**

**Type analysis:**

Appearance. ..... white, wax-like pellets
Solidification point. ..... 52-54 °C
Needle penetration (25 °C, 1/10 mm). ..... 14-20

| | | | |
|---|---|---|---|
| **9279.1** | 1 kg | plastic | 19,25 € |
| Original pack 6 x 1 kg | | | 18,29/1 kg |
| **9279.2** | 2,5 kg | plastic | 38,60 € |




ready-to-use

### Protein glycerol

**for microscopy**

For fixing and stretching of the cuts.

**Type analysis:**

Appearance. ..... turbic, colourless to light yellow solution

| | | | |
|---|---|---|---|
| **P049.1** | 100 ml | glass | 17,10 € |

## Paraplast®-Paraffins




Published on the authority of Leica Biosystems.

Paraplast® is recommended for general tissue embedding. It is composed of a refined mixture of highly purified paraffin containing plastic polymers of regulated molecular weights. This provides improved tissue infiltration and superior quality sections with minimal compression. Paraplast® gives brittle, difficult-to-section tissue an innate elasticity, producing excellent, wrinkle-free sections.

### Paraplast®
**for histology, in pellets**

Tissue embedding medium composed of highly purified paraffin containing complex elastomers with regulated molecular weights.
**Melting point: 56 °C**

| | | | |
|---|---|---|---|
| **X880.1** | 1 kg | paper bag | 16,70 € |
| Original pack 6 x 1 kg | | | 15,87/1 kg |
| **X880.3** | 3 x 1 kg | paper bag | 45,70 € |
| **X880.2** | 8 x 1 kg | paper bag | 110,65 € |

### Paraplast PLUS®
**for histology, in pellets**

Tissue embedding medium composed of highly purified paraffin containing complex elastomers with regulated molecular weights and an addition of DMSO for large and difficult-to-infiltrate tissue samples.
**Melting point: 56 °C**

| | | | |
|---|---|---|---|
| **X881.1** | 1 kg | paper bag | 19,25 € |
| **X881.3** | 3 x 1 kg | paper bag | 54,75 € |
| **X881.2** | 8 x 1 kg | paper bag | 117,20 € |

### Paraplast X-TRA®
**for histology, in pellets**

Tissue embedding medium composed of polymers with low molecular weights and highly purified paraffin for large and difficult-to-infiltrate tissue samples at low temperatures.
**Melting point: 52 °C**

| | | | |
|---|---|---|---|
| **X882.1** | 1 kg | paper bag | 20,35 € |
| **X882.2** | 8 x 1 kg | paper bag | 138,70 € |

**Our Tip:**
**Heat Paraplast paraffin to maximum 62 °C.**
Higher temperatures may damage the synthetic additives.

## Cryo-Embedding

For preparation of cryo-sections.



ready-to-use

### Solidofix®-Cryo spray
**for histology**

Freezing of histological specimens. Cooling of paraffin blocks. Cooling to -45 °C.

**Danger** H222-H229

**Application:**
The tissue is sprayed for a few seconds with Solidofix®-Cryo spray. Then it can be cut.

**Properties:**
- Solidofix®-Cryo spray cools quickly and gently down to -45 °C
- Contents: Propane/butane gas
- For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **T200.1** | 300 ml | spray bottle | 8,50 € |
| **T200.2** | 5 x 300 ml | spray bottle | 33,25 € |




NEW

ready-to-use

### OCT Embedding Matrix
**for histology**

Embedding medium for frozen tissue sections.

OCT is a cryo embedding matrix designed for cryostat sectioning of tissue specimens at temperatures of -10 °C and below. OCT is designed as a supportive and protective aid. The resulting frozen sections are used to rapidly perform examination in laboratory.

**Type analysis:**

| | |
|---|---|
| Appearance | viscous, colourless liquid |
| Spec. gravity | 1,032-1,040 |
| Micro examination | free of undissolved matter |
| Film | hazy |

| | | | |
|---|---|---|---|
| **6478.1** | 125 ml | plastic | 24,65 € |
| **6478.2** | 3 x 125 ml | plastic | 67,20 € |

# Embedding Media for Electron Microscopy

## Glycidether 100

**for electron microscopy**

Formerly known as Epon 812, Epoxipropyl ether of glycerol.
Epon 812

**Warning** H319-H335

| | | | |
|---|---|---|---|
| **8619.1** | 500 g | glass | 36,45 € |
| Original pack 6 x 500 g | | | 34,63/500 g |
| **8619.2** | 2,5 kg | glass | 130,65 € |

## Glycidether Hardener DBA

**for glycidether 100**

DDSA, 2-Dodecenylsuccinic acid anhydride

**Warning** H315-H319-H335

| | | | |
|---|---|---|---|
| **8623.1** | 100 g | glass | 26,35 € |
| **8623.2** | 1 kg | glass | 155,90 € |
| Original pack 6 x 1 kg | | | 148,11/1 kg |

## Glycidether Hardener MNA

**for glycidether 100**

1-Methyl-5-norbornene-2,3-dicarboxylic acid anhydride, Methylnadic anhydride
$C_{10}H_{10}O_3$
M 178,15 g/mol

**Danger** H334-H302-H335-H315-H319

| | | | |
|---|---|---|---|
| **8639.1** | 100 g | glass | 32,15 € |
| **8639.2** | 1 kg | glass | 213,95 € |
| Original pack 6 x 1 kg | | | 203,25/1 kg |

## Glycidether Accelerator DMP-30

**for glycidether 100**

2,4,6-Tris(dimethylaminomethyl)-phenol

**Warning** H302-H315-H319

| | | | |
|---|---|---|---|
| **8621.1** | 100 g | glass | 24,65 € |

## Methacrylic acid methyl ester

**≥99 %, extra pure**

For electron microscopy.
Methyl methacrylate
$C_5H_8O_2$
M 100,12 g/mol

**Danger** H225-H315-H317-H335

| | | | |
|---|---|---|---|
| **4233.1** | 1 l | glass | 27,45 € |
| Original pack 6 x 1 l | | | 26,08/1 l |
| **4233.2** | 2,5 l | glass | 53,65 € |
| Original pack 4 x 2,5 l | | | 50,97/2,5 l |

## Gelatine Capsules

**for electron microscopy**

No. 0, length 22 mm, diameter 7 mm, volume 0,68 ml.
Capsules are made of hard gelatine, usually 200-260 Bloom.
Appearance: clear, colourless.

| | | | |
|---|---|---|---|
| **8641.1** | 100 pieces | plastic | 18,85 € |

# Hydrophilic Carbowax-Embedding

This method is particularly suitable for histochemical specimens. It is based on the ability of polyethylene glycol (PEG, carbowax) to polymerise and, therefore, to build hardened blocks.

## Polyethylene glycol 400

**ROTIPURAN® Ph.Eur.**

Type 400 (liquid), PEG 400, Polyglycol, Polyoxyethylene
M 380-420 g/mol

| | | | |
|---|---|---|---|
| **0144.1** | 1 l | plastic | 25,70 € |
| Original pack 6 x 1 l | | | 24,42/1 l |
| **0144.2** | 5 l | plastic | 90,20 € |
| Original pack 2 x 5 l | | | 85,69/5 l |
| **0144.3** | 25 kg BIG PACK | plastic | 304,80 € |

## Polyethylene glycol 1000

**ROTIPURAN® Ph.Eur.**

Type 1000 (solid), PEG 1000, Polyglycol, Polyoxyethylene
M 950-1050 g/mol

| | | | |
|---|---|---|---|
| **0150.3** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **0150.1** | 1 kg | plastic | 31,10 € |
| Original pack 6 x 1 kg | | | 29,55/1 kg |
| **0150.2** | 5 kg | plastic | 109,55 € |

## Polyethylene glycol 1500

**ROTIPURAN® Ph.Eur.**

Type 1500 (solid), PEG 1500, Polyglycol, Polyoxyethylene
M 1400-1600 g/mol

| | | | |
|---|---|---|---|
| **0152.3** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **0152.1** | 1 kg | plastic | 31,10 € |
| Original pack 6 x 1 kg | | | 29,55/1 kg |
| **0152.2** | 5 kg | plastic | 109,55 € |

## Polyethylene glycol 2000

**ROTIPURAN® Ph.Eur.**

Type 2000 (solid), PEG 2000, Polyglycol, Polyoxyethylene
M 1800-2200 g/mol

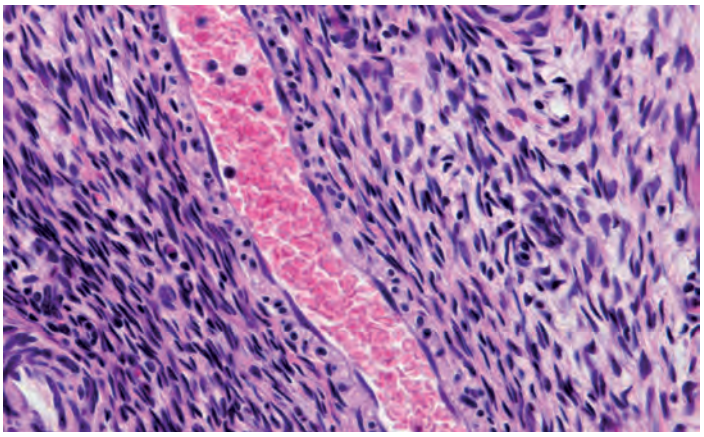
| | | | |
|---|---|---|---|
| **0154.3** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **0154.1** | 1 kg | plastic | 31,10 € |
| Original pack 6 x 1 kg | | | 29,55/1 kg |
| **0154.2** | 5 kg | plastic | 109,55 € |

▶ Our complete range of polyethylene glycol see chapter Chemicals A-Z.

▶ Accessories for Embedding see chapter Labware - Laboratory Glass, Vessels & Consumables / Microbiology, Histology & Instruments.

# Staining Solutions & Kits

for histology, microscopy and cytology.



ROTH staining solutions have been developed, tested and optimised for scientific routine applications.

**Ready-to-use staining solutions:**
- Simple, quick and solid application
- Excellent quality
- Specially selected starting material
- Good reproducibility

## Staining Methods for Blood Smears

ready-to-use

We offer staining solutions for classic preparing of blood elements and for other standard assays, e.g. detection of blood parasites or bacteria.

### LOEFFLER's methylene blue solution

**for microscopy and cell counting**

For visualising nuclei.

Methylene blue solution 0,5 %

**Warning** H371

LÖFFLER'S methylene blue solution is used for staining bacteria, fungi and blood parasites in blood smears, e.g. together with carbolic fuchsine solution (Art. No. A130) for Ziehl-Neelsen staining (detection of TB bacteria). Furthermore, it is used as a vital staining agent for selective staining of nuclei during counting of eukaryotic cells.

| | | | |
|---|---|---|---|
| **AE64.1** | 500 ml | glass | 24,65 € |
| **AE64.2** | 1 l | glass | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |
| **AE64.3** | 2,5 l | plastic | 64,00 € |
| Original pack 4 x 2,5 l | | | 60,80/2,5 l |

### Wright's eosin methylene blue solution

**for microscopy**

For differential staining of blood and bone marrow smears.

Wrights staining solution, eosin methylene blue solution acc. to Wright.

**Danger** H225-H370-H301+H311+H331

Wrights eosin methylene blue solution is used especially for staining blood and bone marrow smears. Additionally, there are various applicabilities in staining of cytological material such as urine, sputum etc.

| | | | |
|---|---|---|---|
| **CN05.1** | 500 ml | glass | 25,70 € |
| **CN05.2** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |

**Application range:**
Giemsa- and May-Grünwald-solution can be combined and then used to obtain particularly high-contrast staining ("Panoptic staining according to Pappenheim").

### May-Gruenwald's solution

**for microscopy**

For differential staining of blood smears and cytological specimens.

Eosine methylene blue solution

**Danger** H225-H370-H301+H311+H331

May-Gruenwald's solution is a methanolic solution of eosin methylene blue. Due to the high concentration of methanol, the specimens are fixed at the same time (recommended residence time: 3 min).
May-Gruenwald's solution is used for differential staining of blood smears and cytological specimens.

| | | | |
|---|---|---|---|
| **T863.1** | 500 ml | plastic | 23,55 € |
| **T863.2** | 1 l | glass | 27,45 € |
| Original pack 6 x 1 l | | | 26,08/1 l |
| **T863.3** | 2,5 l | plastic | 59,05 € |
| Original pack 4 x 2,5 l | | | 56,10/2,5 l |

### Giemsa stock solution

**for microscopy**

For differential staining of blood and bone marrow smears.

Azure eosin solution

**Danger** H225-H301+H311+H331-H370

Giemsa solution contains azure, eosine, methanol and glycerin. Before staining a fixing step with methanol for about 10 min is recommended. Giemsa solution is appropriate for use in all current assays of blood and bone marrow smears.
**Working solution:** Dilute stock solution at a ratio of 1:20 (e.g. 0.5 ml with 9.5 ml dist. water).

| | | | |
|---|---|---|---|
| **T862.1** | 500 ml | plastic | 26,35 € |
| **T862.2** | 1 l | glass | 38,60 € |
| Original pack 6 x 1 l | | | 36,67/1 l |
| **T862.3** | 2,5 l | plastic | 83,75 € |
| Original pack 4 x 2,5 l | | | 79,56/2,5 l |

### Panoptical fast staining kit

**for microscopy**

Staining kit for fast oversight staining of blood smears and other cytological preparations (modified method acc. to Pappenheim), incl. instructions for use.

Pappenheim fast stainingStorage temp.: +20 °C

**Danger** H225-H301+H311+H331-H370

**Formulation:**

Panoptical fast staining solution 1 (Art. No. 8934)
Panoptical fast staining solution 2 (Art. No. 8935)
Panoptical fast staining solution, fixatif (Art. No. 8939)

Contents of this kit may not be bought separately.

| | | | |
|---|---|---|---|
| **6487.1** | 1 kit (3 x 250 ml) | plastic | 76,90 € |
| **6487.2** | 1 kit (3 x 500 ml) | plastic | 138,70 € |

# Elastica Staining

ready-to-use

ROTH staining solutions for preparing elastic fibres in tissue sections.



## Nuclear fast red aluminium sulphate solution

**for microscopy**

For visualising nuclei e.g. during Elastica Staining.

**Danger** H318

| | | | |
|---|---|---|---|
| **N069.1** | 500 ml | glass | 32,15 € |

## Resorcinol-Fuchsine-solution acc. to Weigert

**for microscopy**

For visualising elastic fibres.
WEIGERT'S Resorcinol-Fuchsine-solution

**Danger** H225-H302+H312+H332-H319-H317-H370-H336

| | | | |
|---|---|---|---|
| **X877.1** | 500 ml | glass | 33,25 € |
| **X877.2** | 1 l | glass | 56,45 € |
| Original pack 6 x 1 l | | | 53,63/1 l |
| **X877.3** | 2,5 l | plastic | 115,60 € |
| Original pack 4 x 2,5 l | | | 109,82/2,5 l |

## Elastica van Gieson staining kit

**for microscopy**

Staining kit for visualising connective tissue with elastic fibres, incl. instructions for use. Isolated solutions at the following pages.
Storage temp.: +20 °C

**Danger** H224-H302-H312-H332-H318-H336-H370-EUH001

**Formulation:**

Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml
Van Gieson's Solution (Art.-No. 3925)..... 500 ml
Resorcinol-Fuchsine-solution acc. to Weigert (Art. No. X877)..... 500 ml

| | | | |
|---|---|---|---|
| **8275.1** | 1 kit | glass | 129,55 € |

**Our Tip:**
The ready-to-use staining solutions should be filtrated before use.

**Staining protocols**
can be found on the internet next to the product description.

# Hematoxylin-Eosin Staining (H&E Staining)

ready-to-use

Simple and quick staining method for visualising nuclei and cytoplasm.



## Hemalum solution acid acc. to Mayer

**for microscopy**

For visualising nuclei..

**Warning** H302-H315-H319

| | | | |
|---|---|---|---|
| **T865.1** | 500 ml | glass | 26,35 € |
| **T865.2** | 1 l | glass | 42,90 € |
| Original pack 6 x 1 l | | | 40,76/1 l |
| **T865.3** | 2,5 l | plastic | 77,95 € |
| Original pack 4 x 2,5 l | | | 74,05/2,5 l |

## Eosin Y solutions

For visualising cell structures during standard staining methods.

| Product | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **Eosin Y solution 0,5 % in water** | for microscopy | **X883.1** | 500 ml | 20,35 |
| | | **X883.2** | 1 l | 28,95 |
| **Eosin Y solution 1 % in water** | | **3137.1** | 500 ml | 22,50 |
| | | **3137.2** | 1 l | 32,15 |
| **Eosin Y solution 1 % in methanol** | | **3139.1** | 500 ml | 26,35 |
| | | **3139.2** | 1 l | 39,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

## H&E fast staining kit

**for microscopy**

Staining kit for fast oversight staining of tissue sections. Hematoxylin-eosin staining, incl. instructions for use.
Storage temp.: +20 °C

**Danger** H225-H301+H311+H331-H370-H318

**Formulation:**

Fast staining H&E, solution 1 (Art. No. 8947)
Fast staining H&E, solution 2 (Art. No. 8950)
Contents of this kit may not be bought separately.

| | | | |
|---|---|---|---|
| **9194.1** | 2 x 250 ml | plastic | 52,60 € |
| **9194.2** | 2 x 500 ml | plastic | 76,90 € |

# Trichrome Staining

ready-to-use

A standard staining method for analysis of connective tissue, allowing a differentiated visualisation of various fibres of connective tissue against epithelial and muscle tissue.

We offer the necessary solutions for staining acc. to Masson-Goldner and van Gieson and in addition hematoxylin solutions for acid resistant staining of nuclei acc. to Weigert.



## Hematoxylin solutions acc. to Weigert

For visualising nuclei.

**Working solution:**
Mix WEIGERT'S solution A and WEIGERT'S solution B at a ratio of 1:1 prior to use (iron hematoxylin solution). This working solution is stable for 8 days in maximum at room temperature.

| Product | Synonym | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| Hematoxylin solution A acc. to Weigert | Solution A acc. to Weigert | for microscopy | **X906.1** | 500 ml | 55,40 |
| Hematoxylin solution B acc. to Weigert | Solution B acc. to Weigert | | **X907.1** | 500 ml | 21,00 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Weigert's iron hematoxylin staining kit

**for microscopy**

Staining kit for acid resistant staining of nuclei, incl. instructions for use.
Storage temp.: +20 °C

**Danger** H225-H318-H336

**Formulation:**
Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml

| | | | |
|---|---|---|---|
| **9192.1** | 1 kit | glass | 72,60 € |

**Application range:**
WEIGERT'S iron hematoxylin solution results in very acidoresistant staining of nuclei. Therefore, the method is particularly suitable for staining delimed tissues and for sections intended to be counter-stained with acid dyes.

## Masson-Goldner's trichrome staining kit

**for microscopy**

Staining kit for visualising connective tissue (Masson-Goldner trichrome staining), incl. instructions for use.
Storage temp.: +20 °C

**Danger** H225-H315-H318-H336

**Application:** Firstly the nuclei are stained with Weigert's iron hematoxylin solution, an acidoresistant staining. Subsequently the trichrome staining is carried out with the acid stains acc. to Goldner. Every staining step is followed by a rinsing step with acetic acid 1%. This reagent is not included to the kit.
**Result:** Visualisation of nuclei, cytoplasm, muscle, erythrocytes, connective tissue.

**Formulation:**
Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml
Goldner's stain I (Art. No. 3469)..... 500 ml
Goldner's stain II (Art. No. 3470)..... 500 ml
Goldner's stain III (Art. No. 3473)..... 500 ml

| | | | |
|---|---|---|---|
| **3459.1** | 1 kit | glass | 155,90 € |

## Van Gieson's Solution

**for microscopy**

For visualising connective tissue during van Gieson trichrome staining and Elastica van Gieson staining.
Van Gieson's picrofuchsin

EUH001

**Application:** First the nuclei are stained with Weigert's iron hematoxylin solution (Art. No. X906.1 Hematoxylin solution A and Art. No. X907.1 Hematoxylin solution B at a ratio of 1:1). Subsequently the trichrome staining is carried out with van Gieson's picrofuchsin solution.
**Result:** Visualisation of nuclei, connective tissue, cytoplasm, muscle and other tissue components.

| | | | |
|---|---|---|---|
| **3925.1** | 500 ml | glass | 25,30 € |
| **3925.2** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |

## Van Gieson trichrome staining kit

**for microscopy**

Staining kit for visualising connective tissue, incl. instructions for use.
Storage temp.: +20 °C

**Danger** H225-H318-H336-EUH001

**Formulation:**
Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml
Van Gieson's Solution (Art.-No. 3925)..... 500 ml

| | | | |
|---|---|---|---|
| **9193.1** | 1 kit | glass | 94,10 € |

## Goldner's staining solutions

For visualising connective tissue (Masson-Goldner trichrome staining).

| Product | Synonym | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **Goldner's staining I** | Ponceau-Fuchsin solution | for microscopy | **3469.1** | 500 ml | 28,50 |
| | | | **3469.2** | 1 l | 39,70 |
| **Goldner's staining II** | Phosphotungstic acid-Orange G solution | | **3470.1** | 500 ml | 50,45 |
| | | | **3470.2** | 1 l | 85,90 |
| **Goldner's staining III** | Light green SF yellowish solution | | **3473.1** | 500 ml | 29,60 |
| | | | **3473.2** | 1 l | 38,60 |

For additional product data and safety information, see chapter Chemicals A-Z.

**Staining protocols**
can be found on the internet next to the product description.

# PAS-Staining

A classical method mainly used for visualising carbohydrates in tissue.

ready-to-use

## PAS staining kit
**for microscopy**

Staining kit for Periodic Acid Schiff (PAS) staining, incl. instructions for use.
Storage temp.: +4 °C

**Danger** H302-H315-H319-H350

Periodic Acid Schiff staining is generally used for detecting carbohydrates in tissue.
**Application:**
Staining is carried out in 3 steps: Periodic acid transforms 1.2 glycol groups to aldehyde groups, which are stained with Schiff´s reagent. Hemalum solution performs counter staining of nuclei.
**Result:**
Carbohydrates red, nuclei blue.

**Formulation:**
Periodic acid solution 1 % (Art. No. HP00)..... 500 ml
Schiff´s reagent (Art. No. X900)..... 500 ml
Hemalum solution acid acc. to Mayer (Art. No. T865)..... 500 ml

| | | | |
|---|---|---|---|
| **HP01.1** | 1 kit | glass | 84,85 € |

## Periodic acid solution 1 %
**for microscopy**

For hydrolysis of carbohydrates, e.g. in PAS reaction (Periodic Acid Schiff reaction).
$H_5IO_6 + H_2O$

**Warning** H315-H319

| | | | |
|---|---|---|---|
| **HP00.1** | 500 ml | glass | 39,70 € |

## Schiff's reagent
**for microscopy**

Staining reagent for detection of carbohydrates in tissue (PAS reaction).
Fuchsine sulphurous acid

**Danger** H350

Schiff´s reagent has a wide spectrum of application in PAS reaction (Periodic Acid Schiff reaction), in combined alcian blue PAS staining and as a reagent for detecting aldehydes.
Storage: At room temperature in the dark. After the bottle has been opened well-sealed at 4-8 °C. Discard the solution if it turns reddish.

| | | | |
|---|---|---|---|
| **X900.1** | 500 ml | glass | 22,50 € |
| **X900.2** | 1 l | glass | 30,00 € |
| Original pack 6 x 1 l | | | 28,50/1 l |

## Alcian blue 1 % in acetic acid 3 %
NEW ready-to-use
**for microscopy**

For selective staining of acidic mucins.
Alcian Blue solution 1 %
The solution stains acidic mucopolysaccharides in tissue blue. Often the staining is combined with the PAS reaction.

| | | | |
|---|---|---|---|
| **1431.1** | 500 ml | glass | 150,00 € |
| **1431.2** | 1 l | glass | 226,85 € |
| Original pack 6 x 1 l | | | 215,51/1 l |

# Cytological Routine Staining

Ready-made solutions for routine applications, like, e.g., staining acc. to Papanicolaou, which is mainly used for visualisation of cancer cells.

ready-to-use

## Hematoxylin solution acc. to Delafield
**20x conc., for microscopy**

Delafield's hematoxylin solution

**Danger** H225-H370-H332+H312+H302

Dilution for use: 1:20 in distilled water (staining 30 min).

**Type analysis:**
Suitability for microscopy..... complies

| | | | |
|---|---|---|---|
| **CN03.1** | 500 ml | glass | 38,60 € |

## Hematoxylin solution acid acc. to Ehrlich
**for microscopy**

Ehrlich's acid hematoxylin solution

**Danger** H225-H319-H336

**Type analysis:**
Suitability for microscopy..... complies

| | | | |
|---|---|---|---|
| **CN04.1** | 500 ml | glass | 38,60 € |

## Hematoxylin solution acc. to Gill II
**for microscopy**

**Danger** H302-H318-H373-EUH208

**Type analysis:**
Suitability for microscopy (tissue section)..... complies

| | | | |
|---|---|---|---|
| **T864.1** | 500 ml | glass | 38,60 € |
| **T864.2** | 1 l | glass | 55,80 € |
| Original pack 6 x 1 l | | | 53,01/1 l |
| **T864.3** | 2,5 l | plastic | 107,40 € |
| Original pack 4 x 2,5 l | | | 102,03/2,5 l |

## Hematoxylin solution acc. to Harris
**for microscopy**

Harris Hematoxylin solution, Papanicolaou solution 1a

**Type analysis:**
Suitability for microscopy (tissue section)..... complies

| | | | |
|---|---|---|---|
| **X903.1** | 500 ml | glass | 33,25 € |
| **X903.2** | 1 l | glass | 52,15 € |
| Original pack 6 x 1 l | | | 49,54/1 l |
| **X903.3** | 2,5 l | plastic | 109,55 € |
| Original pack 4 x 2,5 l | | | 104,07/2,5 l |

## Papanicolaou-orange solution 2a (OG 6)
**for microscopy**

**Danger** H225

**Type analysis:**
Suitability for microscopy..... complies

| | | | |
|---|---|---|---|
| **T867.1** | 500 ml | glass | 23,55 € |
| **T867.2** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **T867.3** | 2,5 l | plastic | 74,10 € |
| Original pack 4 x 2,5 l | | | 70,40/2,5 l |

### Papanicolaou solution 2b Orange II solution
**for microscopy**

**Danger** H225-H301+H311+H331-H370-H319

**Type analysis:**
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **AE62.1** | 500 ml | glass | 32,15 € |
| **AE62.2** | 1 l | glass | 40,75 € |
| Original pack 6 x 1 l | | | 38,71/1 l |
| **AE62.3** | 2,5 l | plastic | 76,25 € |
| Original pack 4 x 2,5 l | | | 72,44/2,5 l |

### Papanicolaou polychrome solution 3a (EA31)
**for microscopy**

**Danger** H225-H301+H311+H331-H370-H319

**Type analysis:**
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **AE63.1** | 500 ml | glass | 26,35 € |
| **AE63.2** | 1 l | glass | 39,25 € |
| Original pack 6 x 1 l | | | 37,29/1 l |
| **AE63.3** | 2,5 l | plastic | 84,85 € |
| Original pack 4 x 2,5 l | | | 80,61/2,5 l |

### Papanicolaou polychrome solution 3b (EA 50)
**for microscopy**

**Danger** H225-H301+H311+H331-H370-H319

**Type analysis:**
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **T866.1** | 500 ml | glass | 27,85 € |
| **T866.2** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **T866.3** | 2,5 l | plastic | 79,05 € |
| Original pack 4 x 2,5 l | | | 75,10/2,5 l |

### PAP fast staining kit
**for microscopy**

Staining kit for fast staining of cytological smears (fast staining acc. to Papanicolaou), incl. instructions for use.
Storage temp.: +20 °C

**Danger**
H225-H302+H312+H332-H319-H370-H373-EUH208

**Formulation:**
PAP fast staining, solution 1 (Art. No. 9197)
PAP fast staining, solution 2 (Art. No. 9199)
Contents of this kit may not be bought separately.

| | | | |
|---|---|---|---|
| **9195.1** | 2 x 250 ml | plastic | 59,05 € |
| **9195.2** | 2 x 500 ml | plastic | 90,85 € |

▶ Accessories for staining see chapter Labware - Laboratory Glass, Vessels & Consumables / Microbiology, Histology & Instruments.

**Staining protocols**
can be found on the internet next to the product description.

# Bacteriological Staining

## Staining of acid-fast bacteria

ready-to-use

Acid-fast bacteria (e.g. Mycobacteria) cannot or only difficult be stained by usual staining methods due to the high proportion of lipids in their cell walls.

The most popular method for staining of acid-fast bacteria is the hot staining method acc. to Franz Ziehl and Friedrich Neelsen (Ziehl-Neelsen staining), in which the cell walls are "melted" by heating.

Furthermore cold staining methods have been developed like Kinyoun, Gabett or Ziehl-Neelsen (cold) to avoid harmful vapours resulting in the hot staining method.

### Ziehl-Neelsen staining kit
**for microscopy**

Staining kit for visualising acid-fast bacteria (e.g. pathogen of TB *Mycobacterium tuberculosis*), incl. instructions for use.
Isolated solutions see p. 1452 and 1457
Storage temp.: +20 °C

**Danger** H314-H341-H371

**Formulation:**
Löffler's methylene blue solution (Art. No. AE64) ..... 500 ml
Carbol fuchsine solution (Art. No. A130) ..... 500 ml

| | | | |
|---|---|---|---|
| **8276.1** | 1 kit | glass | 44,65 € |

### Methylene blue solution 0.1 %, aqueous

NEW

**for microscopy**

For staining of nuclei.
Gabett solution
Aqueous methylene blue solution without further additives for staining of nuclei. It is used for cold staining of acid-fast bacteria (e. g. Mycobacteria). Methods are Kinyoun or Gabett's staining.

| | | | |
|---|---|---|---|
| **1433.1** | 250 ml | glass | 17,75 € |
| **1433.2** | 500 ml | glass | 24,65 € |
| **1433.3** | 1 l | glass | 31,75 € |
| Original pack 6 x 1 l | | | 30,16/1 l |

## Neisser Staining

ready-to-use

Standard staining method in bacteriology, especially used for visualising diphtheria bacteria.

| Product | Synonym | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Neisser's solution I** | Methylene blue solution 0,1 % acid | for microscopy | **3463.1** | 100 ml | 19,25 |
| | | | **3463.2** | 500 ml | 36,45 |
| **Neisser's solution II** | Crystal violet solution | | **3464.1** | 100 ml | 19,25 |
| | | | **3464.2** | 500 ml | 36,45 |
| **Neisser's solution III** | Chrysoidine solution 0,3 % | | **3466.1** | 100 ml | 19,25 |
| | | | **3466.2** | 500 ml | 36,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Gram Staining

ready-to-use

Gram staining is the most important technique for differentiation and identification of bacteria. It was developed by the Danish bacteriologist Hans Christian Gram (1853-1938).

Due to the structure of their cell walls nearly all bacterial species can be differentiated in gram-positive and gram-negative bacteria.



### Gram staining kit

**for microscopy**

Kit for differentiation of gram-positive and gram-negative bacteria, incl. instructions for use.

Storage temp.: +20 °C

**Danger** H225-H314-H302+H312+H332-H336-H341

This classical staining method allows a quick differentiation of gram-positive and gram-negative bacteria. Subsequently a specific treatment with antibiotics is possible.

**Application:**
In the first step bacteria are stained by Carbol gentianaviolet and Lugol solution. Afterwards gram-negative bacteria are decolourised by Gram's decolourising solution. In the last step these bacteria are counterstained by Carbol fuchsine solution.

**Result:**
Gram-positive bacteria appear blue, gram-negative bacteria red.

**Formulation:**

Carbol gentianaviolet solution (Art. No. CN00). ..... 500 ml
Iodine-potassium iodide solution acc. to Lugol (Art. No. N052). ..... 500 ml
Gram's decolourising solution (Art. No. CN02). ..... 500 ml
Carbol fuchsine solution (Art. No. A130). ..... 500 ml

| | | | |
|---|---|---|---|
| **HP02.1** | 1 kit | glass | 90,20 € |

### Gram's decolourising solution

**for Gram staining**

Ethanolic solution containing 25 % acetone. It is used for differentiation of bacteria during Gram staining.

**Danger** H225-H319-H336

Ethanolic solution containing 25 % acetone. It is used for differentiation of bacteria during Gram staining.

| | | | |
|---|---|---|---|
| **CN02.1** | 500 ml | glass | 22,50 € |

### Iodine-potassium iodide solution acc. to Lugol

**for microscopy**

For Gram staining.

Lugol solution

**Warning** H373

1 % aqueous iodine solution. Contains ~3,3 g/l iodine and ~6,7 g/l potassium iodide.

| | | | |
|---|---|---|---|
| **N052.1** | 250 ml | glass | 17,10 € |
| **N052.3** | 500 ml | glass | 24,20 € |
| **N052.2** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |

**Our Tip:**
The ready-to-use staining solutions should be filtrated before use.

### Carbolic fuchsine solution

**for microscopy**

For bacterial staining (Gram staining and staining of acid-fast bacteria, e.g. TB bacteria acc. to Ziehl-Neelsen).

**Danger** H314-H341

| | | | |
|---|---|---|---|
| **A130.2** | 500 ml | glass | 22,05 € |
| **A130.1** | 1 l | glass | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |

### Carbol gentian violet solution

**for microscopy**

For Gram staining.

**Warning** H226

The solution is used for the first step of Gram staining. It can be applied like crystal violet solution acc. to Gram. Gentian violet and crystal violet are two different names for the same dye.

**Type analysis:**
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **CN00.1** | 500 ml | glass | 23,15 € |
| **CN00.2** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |

### Safranin solution

**for Gram staining**

1 % safranine solution in water. Replaces Carbolic fuchsine solution during staining procedure of gram-negative bacteria.

| | | | |
|---|---|---|---|
| **CN01.1** | 500 ml | glass | 32,15 € |

**Preparation of an oxalate gentian violet solution**

Dissolve 0.8 g ammonium oxalate (Art. No. P737.1) in 80 ml dist. water. Then dissolve 2 g gentian violet (crystal violet, Art. No. T123.1) in 20 ml 96 % ethanol (Art. No. T171.1). Mix both solutions well. Filter solution before using.

# Lactophenol Blue Staining

Staining method for identification and visualisation of fungi cells during microbiological assays.

ready-to-use

### Lactophenol blue solution
**for microscopy**

Fungal stain for microbiological material.

**Danger** H302+H312+H332-H314-H341-H373

Lactophenol blue solution is used to visualise fungi cells in air-dried, heat-fixed smears of various cytological materials. After staining the fungi cells appear dark blue.

| | | | |
|---|---|---|---|
| **3097.1** | 100 ml | glass | 25,70 € |

# Staining of Cellulose According to Behrens

ready-to-use

With zinc iodine chloride solution from ROTH.

### Zinc iodine chloride solution
**acc. to Behrens, for microscopy**

Reagent for cellulose.

**Danger** H302-H314-H373-H410

**Type analysis:**

Appearance. ..... yellowish-brown solution

| | | | |
|---|---|---|---|
| **6395.1** | 100 ml | glass | 25,30 € |

**Performing detection of cellulose:**

Add one drop of the solution to the section applied to a slide. After 30 min in maximum cellulose fibres are stained blue; wood, cork and cutin are stained yellow. The cellulose staining is a dichroitic staining. Depending on the polarisation direction of light different wavelengths of light are absorbed. Thus the dye changes from dark blue to colourless.

Acc. to Dieter Gerlach: Bot. Mikrotechnik, 2. Edition, Thieme (1977)

**Safety data sheets**

can be found on the Internet next to the product description.

# Dyes

ROTH offers a wide range of staining agents in a tried and tested quality for use in botany, bacteriology, histology and cell culture.



# Chromogenic Dyes

### Alcian blue 8 GS (C.I. 74240)
**for microscopy**

Bacteriology and histology.

Alcian Blue 8 GX, Ingrain Blue 1

Basic dye, soluble in diluted acetic acid solution (0.1 % - 3 %) in concentrations of 0.05 % to 1 %. Used e.g. for staining of glycoproteins as an alternative to PAS-Staining.

| | | | |
|---|---|---|---|
| **3082.2** | 5 g | glass | 35,40 € |
| **3082.1** | 10 g | glass | 60,10 € |
| **3082.3** | 25 g | glass | 132,15 € |
| **3082.4** | 100 g | glass | 403,15 € |

### Acid blue 93 (C.I. 42780)
**p.a., water soluble**

For staining of histological sections and for cytology.

Aniline blue water soluble, Methyl blue

$C_{37}H_{27}N_3O_9S_3Na_2$

M 799,81 g/mol

Acid blue 93 is a plasma stain. It is often used in trichome stains to visualise connective tissue. Solution 1 % in water.

| | | | |
|---|---|---|---|
| **4002.1** | 10 g | glass | 74,75 € |
| **4002.2** | 25 g | glass | 161,80 € |

### Astra blue FM (C.I. 48048)
**for microscopy**

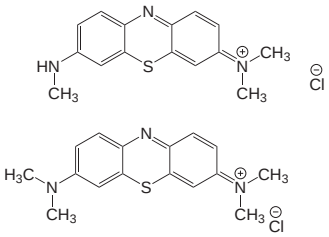
$C_{47}H_{52}CuN_{14}O_6S_3$

M 1068,75 g/mol

**Warning** H315-H319-H335

Soluble in water (0.5 %), staining reagent for cellulose.

| | | | |
|---|---|---|---|
| **5165.1** | 10 g | glass | 13,45 € |
| **5165.2** | 50 g | glass | 27,85 € |



## Azure II

**for microscopy**

1:1 mixture of Azure B and Methylen blue

$C_{16}H_{18}ClN_3S \cdot C_{15}H_{16}ClN_3S$

M 625,68 g/mol

**Warning** H302-H412

Azure II is a mixture of equal parts of the basic coal tar dyes methylene blue and Azure B. These dyes are mainly used for staining of blood elements (e.g. in Giemsa staining solution, Art. No. T862). In watery solution they form special salts with the acid eosin, the eosinates.

| | | | |
|---|---|---|---|
| **7640.1** | 1 g | glass | 11,75 € |
| **7640.2** | 10 g | glass | 19,60 € |
| **7640.3** | 50 g | glass | 47,20 € |

## Azure II eosinat

**for microscopy**

1:1:1 mixture of Azure B, Methylen blue and Eosine Y

$C_{16}H_{18}ClN_3S \cdot C_{15}H_{16}ClN_3S \cdot C_{20}H_6Br_4Na_2O_5$

M 1317,92 g/mol

**Danger** H318

Azure II is a mixture of equal parts of the basic coal tar dyes methylene blue, Azure B and eosin. It is mainly used for staining of blood elements (e.g. in Giemsa staining solution, Art. No. T862). In watery solution it forms Azure B eosinates which cause the so called "Romanowsky-Giemsa effect", a polychromatic, pH-dependent staining of chromatin.

| | | | |
|---|---|---|---|
| **7642.1** | 5 g | glass | 18,85 € |
| **7642.2** | 25 g | glass | 35,40 € |
| **7642.3** | 100 g | glass | 103,10 € |

## Azure B (C.I. 52010)

**for microscopy**

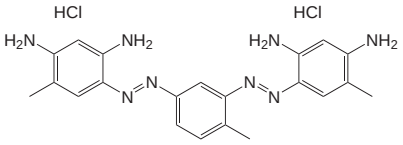
N,N,N'-Trimethylthionin, Azure I

$C_{15}H_{16}ClN_3S$

M 305,83 g/mol

Azure B belongs to the basic coal tar dyes (methylene blue and its derivatives). These dyes are mainly used for staining of blood elements. In watery solution they form special salts with the acid eosin, the eosinates. Besides eosin and methylene blue Azure B is the main component of Giemsa staining solution (Art. No. T862). The Azure B eosinates in the solution cause the so called "Romanowsky-Giemsa effect", a polychromatic, pH-dependent staining of chromatin.

| | | | |
|---|---|---|---|
| **7637.1** | 5 g | glass | 14,20 € |
| **7637.2** | 25 g | glass | 24,20 € |
| **7637.3** | 100 g | glass | 60,10 € |



## Bismarck brown R (C.I. 21010)

**for microscopy**

For modified Coomassie Blue-staining.

Basic brown 4, Vesuvin R

$C_{21}H_{24}N_8 \cdot 2\ HCl$

M 461,40 g/mol

Basic azo dye, soluble in ethanol or methanol (1 - 3 %), low-soluble in water (0.5 %). Used for staining of brown alga, for mucus and vital staining. Ingredient of staining solutions according to Papanicolaou.

| | | | |
|---|---|---|---|
| **0316.1** | 25 g | plastic | 19,90 € |

## Bismarck brown Y (C.I. 21000)

**for microscopy**

Basic Brown 1, Bismarck brown G

$C_{18}H_{18}N_8 \cdot 2\ HCl$

M 418,33 g/mol

| | | | |
|---|---|---|---|
| **0313.1** | 10 g | glass | 19,25 € |
| **0313.2** | 25 g | glass | 33,90 € |

## Brilliant cresyl blue (C.I. 51010)

**p.a.**

Brilliant blue C

$(C_{17}H_{20}N_3O)_2 \cdot ZnCl_4$

M 385,96 g/mol

**Warning** H315-H319-H335

Basic vital dye, soluble in water (3 %) and ethanol (2 %).

| | | | |
|---|---|---|---|
| **5162.1** | 5 g | glass | 23,15 € |
| **5162.2** | 10 g | glass | 33,90 € |

## Brilliant green (C.I. 42040)

**for microscopy**

Indicator pH 0,0-2,6

Basic green 1, Malachite green G, Diamond green G, Ethyl green

$C_{27}H_{34}N_2O_4S$

M 482,64 g/mol

**Warning** H302-H319

Basic dye, soluble in water and alcohol (1-5 %). Used e.g. for spore staining according to Rakette (substitute for malachite green).

| | | | |
|---|---|---|---|
| **0324.1** | 25 g | glass | 17,75 € |
| **0324.2** | 100 g | plastic | 39,70 € |

## Bromophenol blue

**ACS, for microscopy**

Indicator pH 3,0-4,6

3,3',5,5'-Tetrabromophenolsulphonphthalein, BPB

$C_{19}H_{10}Br_4O_5S$

M 669,99 g/mol

Well-soluble in ethanol, used for vital staining of spermatozoa.

| | | | |
|---|---|---|---|
| **T116.1** | 5 g | glass | 22,05 € |
| **T116.2** | 10 g | glass | 28,95 € |
| **T116.3** | 25 g | glass | 46,15 € |

## Carmine (C.I. 75470)

**for microscopy**

Karmin

$C_{22}H_{20}O_{13}$

M 492,38 g/mol

Water-insoluble natural dye, obtained from dried female scale insects (Cochenille). Main ingredient is carminic acid. For use as a dye in microscopy it is applied in conjunction with a mordant, usually based on aluminium, producing a well-staining calcium aluminium lake of carminic acid.

| | | | |
|---|---|---|---|
| **6859.1** | 10 g | glass | 44,65 € |
| **6859.2** | 25 g | glass | 93,45 € |

## Celestine blue (C.I. 51050)

**for microscopy**

$C_{17}H_{18}ClN_3O_4$

M 363,80 g/mol

A watery solution of Celestine blue Hemalum is used for acid resistant staining of nuclei. It replaces Weigert's iron hematoxylin solution e.g. during trichrome staining.

| | | | |
|---|---|---|---|
| **7646.1** | 5 g | glass | 24,65 € |
| **7646.2** | 25 g | glass | 89,15 € |
| **7646.3** | 100 g | glass | 299,95 € |

## Chromotrope® 2R (C.I. 16570)

**for microscopy**

Indicator for complexometry.

$C_{16}H_{10}N_2Na_2O_8S_2$

M 468,39 g/mol

**Warning** H315-H319-H335

Water soluble azo dye, stains cytoplasm red. Commonly used in concentrations of 0.5-1.0 %.

| | | | |
|---|---|---|---|
| **4937.2** | 10 g | glass | 28,95 € |
| **4937.1** | 50 g | glass | 107,40 € |

## Congo red (C.I. 22120)

**for microscopy**

Bacteriology, indicator pH 3,0-5,0

Direct Red 28, Disodium-3,3'[[1,1-biphenyl]-4,4'-diylbis(azo)]bis(4-amino-naphthalin-1-sulphonate)

$C_{32}H_{22}N_6Na_2O_6S_2$

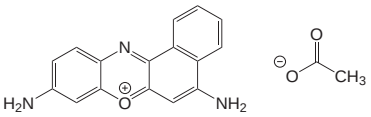
M 696,66 g/mol

**Danger** H350-H361d

Azo dye, soluble in water (colloidal solution) and ethanol. A 1% solution in ethanol is used for detection of amyloid proteins (= abnormally mutated proteins).

| | | | |
|---|---|---|---|
| **0322.1** | 5 g | glass | 15,60 € |
| **0322.2** | 25 g | glass | 28,50 € |
| **0322.3** | 100 g | glass | 56,90 € |

▶ Ready-made staining solutions see from page 1452



## Cresyl violet acetate

**p.a.**

Cresyl echt violet, Cresyl fast violet

$C_{18}H_{15}N_3O_3$

M 321,34 g/mol

Cresyl violet acetate is a nuclear stain. It is used for visualising nerve tissue during Nissl staining. Usually, a 1% solution in water is applied.

| | | | |
|---|---|---|---|
| **7651.1** | 5 g | glass | 53,25 € |
| **7651.2** | 10 g | glass | 90,20 € |
| **7651.3** | 25 g | glass | 209,65 € |

## Crystal violet (C.I. 42555)

**p.a., ACS**

Indicator pH 0,0-2,0

Hexamethylpararosaniline chloride, Methyl violet 10B, Gentian violet

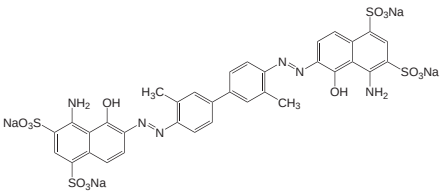
$C_{25}H_{30}ClN_3$

M 407,99 g/mol

**Danger** H318-H351-H400-H410-H302

Crystal violet, also called gentian violet, is soluble in water and alcohol and is used for multiple histological stains, e.g. Gram staining.

| | | | |
|---|---|---|---|
| **T123.2** | 5 g | glass | 17,10 € |
| **T123.1** | 25 g | glass | 26,80 € |
| **T123.3** | 100 g | glass | 69,35 € |



## Evan's blue (C.I. 23860)

**for microscopy**

Direct Blue 53

$C_{34}H_{24}N_6Na_4O_{14}S_4$

M 960,82 g/mol

**Danger** H350-H361d

Diazo dye for intravital staining.

| | | | |
|---|---|---|---|
| **7684.1** | 5 g | glass | 26,80 € |
| **7684.2** | 25 g | glass | 54,75 € |
| **7684.3** | 100 g | glass | 181,70 € |

## Fast Green FCF

**for microscopy**

For staining proteins.

Food Green 3

$C_{37}H_{34}N_2Na_2O_{10}S_3$

M 808,84 g/mol

**Warning** H341

Soluble in ethanol and water, replaces light green in Masson Goldner Staining or in Papanicolaou solutions.

| | | | |
|---|---|---|---|
| **0301.1** | 25 g | glass | 92,35 € |

## Fuchsine basic (C.I. 42510)

**for microscopy**

Indicator pH 1,0-3,1

Basic violet, Magenta

$C_{20}H_{20}N_3Cl$

M 337,85 g/mol

**Warning** H351

Soluble in ethanol and water. Multiple use in histology, e.g. carbolic fuchsine solution in Gram staining oder resorcinol fuchsine solution in elastica staining.

| | | | |
|---|---|---|---|
| **3256.2** | 25 g | glass | 33,25 € |
| **3256.1** | 50 g | glass | 60,10 € |
| **3256.3** | 100 g | glass | 80,10 € |

## Giemsa stain

**for microscopy**

**Warning** H319

Mixture of Azure and Eosin for preparing Giemsa solution. It is used for staining blood and bone marrow smears. Ingredient of the Giemsa stock solution (Art. No. T862).

| | | | |
|---|---|---|---|
| **7691.1** | 5 g | glass | 13,90 € |
| **7691.2** | 25 g | glass | 24,20 € |
| **7691.3** | 100 g | glass | 62,25 € |



## Hematoxylin (C.I. 75290)

**for microscopy**

Hydroxybrasilin

$C_{16}H_{14}O_6$

M 302,29 g/mol

A beige natural dye which achieves its active form, the hemalum, by oxidation (e.g. with sodium iodate) and treating with a metallic mordant (e.g. alum). Hemalum lakes stain cell nuclei blue.

| | | | |
|---|---|---|---|
| **3816.1** | 10 g | glass | 40,75 € |
| **3816.3** | 50 g | glass | 161,15 € |
| **3816.2** | 100 g | glass | 284,90 € |

## Indigo carmine (C.I. 73015)

**for microscopy**

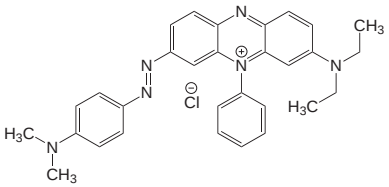
Indicator pH 11,5-13,0

$C_{16}H_8N_2Na_2O_8S_2$

M 466,36 g/mol

**Warning** H302

| | | | |
|---|---|---|---|
| **5156.1** | 10 g | glass | 14,55 € |
| **5156.2** | 25 g | glass | 21,40 € |
| **5156.3** | 100 g | glass | 62,25 € |



## Janus green B (C.I. 11050)

**for microscopy**

Diazin Green S

$C_{30}H_{31}ClN_6$

M 511,07 g/mol

Vital dye for staining of leucocytes and for visualising mitochondria. Besides Janus green is used as counter stain during the modified Ziehl-Neelsen staining.

Oxidized indicator blue, reduced indicator pink

| | | | |
|---|---|---|---|
| **7697.1** | 5 g | glass | 24,65 € |
| **7697.2** | 25 g | glass | 60,10 € |
| **7697.3** | 100 g | glass | 198,90 € |

## Jenner Stain

**for microscopy**

Mixture of eosin, methylene blue, Azure A, B and C

Methylene blue eosinate (Romanowsky dye mixture) for staining blood smears, bone marrow smears et al. acc. to Jenner. Usually 1 g dye is dissolved in 400 ml methanol (stock solution). For use the solution is diluted 1:1 with aqua dest.

| | | | |
|---|---|---|---|
| **7698.1** | 5 g | glass | 13,90 € |
| **7698.2** | 25 g | glass | 24,65 € |
| **7698.3** | 100 g | glass | 60,10 € |

## Leishman stain

**for microscopy**

Mixture of methylen blue, Azure A, B and C

Eosin methylene blue acc. to Leishman

Eosin methylene blue mixture (Romanowsky dye) for staining blood smears, bone marrow smears et al. acc. to Leishman.

| | | | |
|---|---|---|---|
| **7702.1** | 5 g | glass | 14,20 € |
| **7702.2** | 25 g | glass | 24,20 € |
| **7702.3** | 100 g | glass | 60,10 € |

## Light green SF (C.I. 42095)

**for microscopy**

Acid green 5

$C_{37}H_{34}N_2Na_2O_9S_3$

M 792,86 g/mol

Water-soluble dye for visualising connective tissue during Masson-Goldner trichrome staining (ingredient of Goldner's stain III).

| | | | |
|---|---|---|---|
| **7706.1** | 5 g | glass | 19,25 € |
| **7706.2** | 25 g | glass | 43,55 € |
| **7706.3** | 100 g | glass | 134,95 € |

## Malachite green oxalate (C.I. 42000)

**for microscopy**

Indicator pH 0,0-2,0, for protein analysis.
Basic green 4
$C_{52}H_{54}N_4O_{12}$
M 927,02 g/mol

**Danger** H318-H361d-H400-H410-H301

Water soluble dye; in botany used for staining bacteria and fungal infected tissues and for detection of spores.

| | | | |
|---|---|---|---|
| **5895.2** | 25 g | glass | 16,05 € |
| **5895.1** | 100 g | glass | 32,15 € |
| **5895.3** | 250 g | glass | 46,15 € |

**Spore staining acc. to Wirtz**

Boil the heat fixed smear with malachite green, Art. No. 5895, (5 % solution in water) for 20 sec and allow to act for at least 30 sec. Rinse in running tap water, counterstain with safranin O, Art. No. T129, (0.5 % solution in water) for 30 sec, rinse again and dry.

**Result:** Spores green, other bacteria parts red

## Methylene blue (C.I. 52015)

For microscopy and staining of nucleic acids in polyacrylamide gels.
Basic blue 9
$C_{16}H_{18}ClN_3S$
M 319,9 g/mol

**Warning** H302-H412

Water-soluble nuclear dye, does not intercalate between base pair stacks of DNA. Especially used for staining of blood cells.

**Application note:**
**Staining of nucleic acids in PAA**

- Use a 0.2 % solution of methylene blue for staining
- Stain for 20 min.
- Wash for 15 min. in distilled water

Nucleic acids are visible as blue bands.
Detection limit: 20 ng/band.

| | | | |
|---|---|---|---|
| **A514.1** | 10 g | glass | 19,60 € |
| **A514.2** | 50 g | glass | 46,15 € |
| **A514.3** | 100 g | glass | 75,15 € |

## Methyl green (C.I. 42590)

**for microscopy**

Indicator pH 0,1-2,3
Methyl green zinc chloride double salt, Ethyl green zinc chloride double salt
$C_{27}H_{35}Cl_2N_3 \cdot ZnCl_2$
M 608,78 g/mol

**Danger** H314-H351-H411

Acid nitroso dye, staining reagent for visualising nuclei, water soluble (1 %).

| | | | |
|---|---|---|---|
| **5159.1** | 5 g | glass | 21,40 € |
| **5159.2** | 10 g | glass | 34,30 € |
| **5159.3** | 25 g | glass | 67,65 € |

## Methyl orange (C.I. 13025)

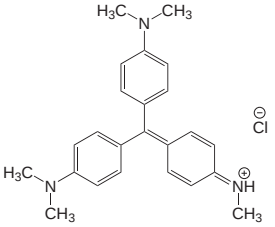
**ACS, for microscopy**

Indicator pH 3,2-4,4
4-(Dimethylamino)-azobenzene -4'-sulphonic acid sodium salt, Orange III
$C_{14}H_{14}N_3NaO_3S$
M 327,4 g/mol

**Danger** H301

Azo dye, low soluble in water (5 g/l).
Ingredient of trichrom stains used for detection of connective tissue.

| | | | |
|---|---|---|---|
| **T118.1** | 50 g | glass | 25,70 € |
| **T118.2** | 100 g | glass | 39,25 € |
| **T118.3** | 250 g | glass | 57,95 € |



## Methyl violet 2B (C.I. 42535)

**for microscopy**

Basic violet
$C_{24}H_{28}N_3Cl$
M 393,96 g/mol

**Warning** H302-H410

Water-soluble dye (30 g/l), closely related to crystal violet, used e.g. for fibrin staining acc. to Weigert.

| | | | |
|---|---|---|---|
| **7715.1** | 5 g | glass | 14,20 € |
| **7715.2** | 25 g | glass | 24,65 € |
| **7715.3** | 100 g | glass | 47,85 € |

## Naphthol green B (C.I. 10020)

**for microscopy**

Acid green 1
$(C_{10}H_5NNaO_5S)_3Fe$
M 878,47 g/mol
Acid nitroso dye, soluble in water (1 %).

| | | | |
|---|---|---|---|
| **5161.1** | 25 g | glass | 19,25 € |
| **5161.2** | 100 g | glass | 46,15 € |

## Neutral red (C.I. 50040)

**p.a.**

Indicator pH 6,8-8,0
Toluylene red
$C_{15}H_{17}ClN_4$
M 288,78 g/mol
Water-soluble vital staining dye.

| | | | |
|---|---|---|---|
| **T122.2** | 1 g | glass | 21,40 € |
| **T122.1** | 10 g | glass | 54,75 € |
| **T122.3** | 25 g | glass | 107,40 € |

▶ Ready-made staining solutions
see from page 1452

## Nigrosin, water soluble (C.I. 50420)

**for microscopy**

Acid black 2

Water-soluble dye (10 g/l), is used in bacteriology.

| | | | |
|---|---|---|---|
| **7718.1** | 25 g | glass | 13,90 € |
| **7718.2** | 100 g | glass | 35,40 € |

## Nile blue A (C.I. 51180)

**~80 %**

Nile blue sulphate

$C_{40}H_{40}N_6O_6S$

M 732,84 g/mol

Lipid staining dye, soluble in water (acidulated with $H_2SO_4$). It stains neutral lipids pink and acid lipids blue.

| | | | |
|---|---|---|---|
| **4377.2** | 5 g | glass | 17,10 € |
| **4377.1** | 10 g | glass | 28,95 € |
| **4377.3** | 25 g | glass | 46,15 € |

## Nuclear fast red (C.I. 60760)

**for microscopy**

$C_{14}H_8NNaO_7S$

M 357,28 g/mol

Nucleic acid dye, ingredient of the nuclear fast red aluminium sulphate solution (Art. No. N069).

| | | | |
|---|---|---|---|
| **7728.1** | 1 g | glass | 24,20 € |
| **7728.2** | 5 g | glass | 71,50 € |
| **7728.3** | 10 g | glass | 118,15 € |

## Orange II sodium salt (C.I. 15510)

**for microscopy**

Indicator pH 7,4-8,6 and pH 10,2-11,8

Acid orange 7

$C_{16}H_{11}N_2NaO_4S$

M 350,33 g/mol

Water-soluble dye, is used in cytology, e.g. as ingredient of Papanicolaou solution 2b.

| | | | |
|---|---|---|---|
| **7729.1** | 5 g | glass | 14,20 € |
| **7729.2** | 25 g | glass | 24,65 € |
| **7729.3** | 100 g | glass | 59,05 € |

## Orange IV sodium salt (C.I. 13080)

**for microscopy**

Indicator pH 1,2-2,7

Tropaeolin OO

$C_{18}H_{14}N_3NaO_3S$

M 375,39 g/mol

Water-soluble dye.

| | | | |
|---|---|---|---|
| **7731.1** | 5 g | glass | 14,20 € |
| **7731.2** | 25 g | glass | 24,65 € |
| **7731.3** | 100 g | glass | 59,05 € |



## Orange G (C.I. 16230)

**for microscopy and electrophoresis**

Acid orange 10

$C_{16}H_{10}N_2Na_2O_7S_2$

M 452,37 g/mol

Azo dye, soluble in ethanol. Ingredient of Papanicolaou solutions used for staining of cytological material.

| | | | |
|---|---|---|---|
| **0318.1** | 10 g | glass | 13,45 € |
| **0318.2** | 25 g | glass | 19,25 € |
| **0318.3** | 100 g | glass | 45,70 € |

## Orcein

**for microscopy**

Natural red 28

Organic plant pigment, extracted from lichen. Soluble in alcohol (red) or diluted alkaline solutions (blue). Used for detection of elastic fibres.

| | | | |
|---|---|---|---|
| **0320.1** | 25 g | plastic | 353,70 € |

## Ponceau S (C.I. 27195)

**for histology and electrophoresis**

For reversible protein staining on membranes and for microscopy.

Scarlet red

$C_{22}H_{12}N_4Na_4O_{13}S_4$

M 760,56 g/mol

**Warning** H315-H319-H335

| | | | |
|---|---|---|---|
| **5938.2** | 10 g | glass | 25,70 € |
| **5938.1** | 25 g | glass | 52,15 € |

## Safranin O (C.I. 50240)

**for microscopy**

Safranin T

$C_{20}H_{19}ClN_4$

M 350,85 g/mol

**Warning** H315-H319

Basic azin dye, soluble in water and ethanol, well adapted to visualise chromosomes. Safranin is used for bacteria staining, e.g. during Gram-staining or spore staining acc. to Wirtz.

| | | | |
|---|---|---|---|
| **T129.1** | 10 g | glass | 40,75 € |

▶ Papanicolaou solutions see from page 1455

## Silver nitrate

**≥99 %, Ph.Eur., extra pure**

$AgNO_3$

M 169,88 g/mol

**Danger** H272-H314-H400-H410

In histology silver nitrate is used for silver impregnation. It results a fine precipitation of silver visualising different structures in specimens, e.g. reticular fibres of connective tissue, fine neurocytes.

| | | | |
|---|---|---|---|
| **9370.4** | 10 g | plastic | 27,45 € |
| **9370.1** | 50 g | plastic | 96,65 € |
| **9370.2** | 250 g | plastic | 396,70 € |
| **9370.3** | 1 kg | plastic | 1483,50 € |
| Original pack 6 x 1 kg | | | 1409,33/1 kg |

## Sudan II (C.I. 12140)

**for microscopy**

Solvent Orange 7

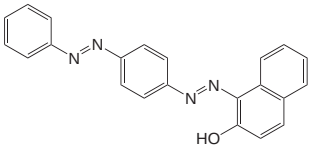
$C_{18}H_{16}N_2O$

M 276,34 g/mol

**Warning** H315-H319-H335

Orange, lipo-soluble azo dye, used for detection of lipids in tissue sections.

| | | | |
|---|---|---|---|
| **7732.1** | 5 g | glass | 11,75 € |
| **7732.2** | 25 g | glass | 24,65 € |
| **7732.3** | 100 g | glass | 57,95 € |



## Sudan III (C.I. 26100)

**for microscopy**

Sudan Red B

$C_{22}H_{16}N_4O$

M 352,39 g/mol

Fat-soluble dye used for staining of lipoids and lipids.

| | | | |
|---|---|---|---|
| **4711.2** | 50 g | glass | 23,15 € |
| **4711.1** | 100 g | plastic | 44,00 € |

## Sudan IV (C.I. 26105)

**for microscopy**

Scarlet red, Fatty ponceau

$C_{24}H_{20}N_4O$

M 380,45 g/mol

**Warning** H315-H319-H341

Fat-soluble azo dye, used for staining of neutral triglycerides and lipids.

| | | | |
|---|---|---|---|
| **0327.1** | 25 g | glass | 22,50 € |
| **0327.2** | 50 g | glass | 32,15 € |

▶ For more details on specifications, see chapter Chemicals A-Z.

## Sudan black B (C.I. 26150)

**for microscopy**

Neptune black, Rich black

$C_{29}H_{24}N_6$

M 456,55 g/mol

Fat-soluble azo dye, used for detection of neutral triglycerides and lipids.

| | | | |
|---|---|---|---|
| **0292.1** | 10 g | glass | 22,50 € |
| **0292.2** | 25 g | glass | 32,15 € |
| **0292.3** | 50 g | glass | 50,45 € |

## Sudan orange G (C.I. 11920)

**for microscopy**

Solvent Orange 1

$C_{12}H_{10}N_2O_2$

M 214,22 g/mol

Lipo-soluble azo dye for staining of triglycerides in tissue sections.

| | | | |
|---|---|---|---|
| **7733.1** | 5 g | glass | 11,75 € |
| **7733.2** | 25 g | glass | 24,65 € |
| **7733.3** | 100 g | glass | 57,95 € |

## Sulfobromophthalein disodium salt

**≥95 %, for biochemistry**

Organic dye for microscopy.

Bromosulfalein, Phenoltetrabromophthalein disulfonic acid disodium salt

$C_{20}H_8Br_4O_{10}S_2Na_2$

M 838 g/mol

**Danger** H334-H317

| | | | |
|---|---|---|---|
| **4033.1** | 1 g | glass | 38,60 € |
| **4033.2** | 5 g | glass | 145,15 € |

## Tetrazolium blue chloride

**≥95 %, for biochemistry**

For vital staining of cells.

Blue tetrazolium chloride, BTC, 3,3'-Dianisole-4,4'-bis(3,5-diphenyltetrazolium chloride), 3,3'-(3,3'-Dimethoxy[1,1'biphenyl]-4,4'diyl)-bis(2,5-diphenyl-2H-tetrazolium) dichloride

$C_{40}H_{32}Cl_2N_8O_2$

M 727,64 g/mol

**Danger** H350

Application of tetrazolium blue chloride: histochemical detection of succinate dehydrogenase and NAD-linked enzymes, vital staining for detection of living cells through the reduction of tetrazolium to formazan, biochemical assays of glucose oxidase, analysis of various corticosteroids.

| | | | |
|---|---|---|---|
| **4176.1** | 1 g | glass | 55,40 € |
| **4176.2** | 5 g | glass | 209,65 € |

## Tetrazolium violet

**for microscopy**

$C_{23}H_{17}ClN_4$

M 384,86 g/mol

Redox indicator for detection of living cells.

| | | | |
|---|---|---|---|
| **7736.1** | 1 g | glass | 40,35 € |
| **7736.2** | 5 g | glass | 154,30 € |
| **7736.3** | 10 g | glass | 289,20 € |

## Thiazolyl blue

**≥98 %, for biochemistry**

3-(4,5-Dimethylthiazole-2-yl)-2,5-diphenyl-2H-tetrazolium bromide, MTT

$C_{18}H_{16}BrN_5S$

M 414,33 g/mol

**Danger** H315-H319-H335-H341

MTT-reagent, used for detection of apoptosis.
Stock solution: 5 mg/ml in PBS buffer solution, sterile filtrated (pH <5)
Stability of stock solution: approx. 1 month at +4 °C, protected from light
Working concentration: 1 mg/ml

| | | | |
|---|---|---|---|
| **4022.1** | 1 g | glass | 30,00 € |
| **4022.3** | 5 g | glass | 126,35 € |
| **4022.2** | 10 g | glass | 198,90 € |
| **4022.4** | 25 g | glass | 403,15 € |

## Thionine (acetate) (C.I. 52000)

**for microscopy**

Nuclear dye

3,7-Diaminophenothiazin-5-ium acetate, Lauth's violet

$C_{14}H_{13}N_3O_2S$

M 287,34 g/mol

Blue nuclear dye, used e.g. for Nissl staining for detection of neutrocytes.

| | | | |
|---|---|---|---|
| **9937.1** | 5 g | plastic | 84,95 € |
| **9937.2** | 10 g | plastic | 149,45 € |

## Toluidine blue O (C.I. 52040)

**for microscopy**

Basic blue 17

$C_{15}H_{16}Cl\,N_3S$

M 305,83 g/mol

Basic water-soluble nuclear dye, used in solutions of 0.03 % - 0.1 %.
In histology e.g. used for staining of neurohistological specimens,
in botany for detection of plant cells (solutions of 0.03 % - 0.1 %).

| | | | |
|---|---|---|---|
| **0300.1** | 5 g | glass | 18,20 € |
| **0300.2** | 10 g | glass | 27,85 € |
| **0300.3** | 25 g | glass | 52,60 € |
| **0300.4** | 100 g | glass | 149,45 € |

## 2,3,5-Triphenyltetrazolium chloride

**≥98,5 %, p.a.**

For microbiology and histochemistry.
For vital staining of cells.

Tetrazolium red, TTC, TTZ, TPTZ

$C_{19}H_{15}ClN_4$

M 334,79 g/mol

Storage temp.: +4 °C

**Warning** H315-H319-H335

Used in biochemistry to measure the activity of dehydrogenases and in vital staining to detect living cells through the reduction of tetrazolium to formazan via the dehydrogenases of the respiratory chain. Triphenyltetrazolium chloride can be used to measure the bacterial content of liquids in food analysis and/or to determine seed vitality. In microbiology it is used to distinguish between coliform and noncoliform bacteria, whereas in thin layer chromatography it is ideal as a spray reagent on reducing sugar, corticosteroids and other reducing agents.

| | | | |
|---|---|---|---|
| **KK13.1** | 10 g | glass | 51,50 € |
| **KK13.2** | 50 g | glass | 212,85 € |

## Trypan blue (C.I. 23850)

**for microscopy and cell staining**

For vital and histological staining.

Benzamine blue, Tolidin-diazo-bis-8-amino-1-naphthol-3,6-disulphonic acid tetrasodium salt

$C_{34}H_{24}N_6Na_4O_{14}S_4$

M 960,82 g/mol

**Danger** H350

Trypan blue is a protein staining azo dye used for vital staining (vitality test of cells), based on its selective ability to pass membranes of damaged cells. Used for polychromatic staining, e.g. to visualise collagen fibres in connective tissue.

**Application:**
Stock solution: 0.5 % in PBS or in NaCl solution (0.9 %).
Stabile for several months when sterile filtrated and stored at room temperature.
Working concentration: 0.1-0.2 % in PBS
**Note:**
Always keep bottles tightly closed.

| | | | |
|---|---|---|---|
| **CN76.1** | 10 g | glass | 23,15 € |
| **CN76.2** | 25 g | glass | 41,85 € |
| **CN76.3** | 50 g | glass | 75,15 € |

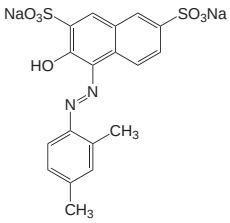
## Wright's stain

**for microscopy**

Eosin methylene blue

Eosin methylene blue mixture (Romanowsky dye) for staining blood smears, bone marrow smears et al. acc. to Wright. Ingredient of Wright's eosin methylene blue solution (Art. No. CN05).

| | | | |
|---|---|---|---|
| **7744.1** | 5 g | glass | 13,90 € |
| **7744.2** | 25 g | glass | 24,65 € |
| **7744.3** | 100 g | glass | 60,10 € |




## Xylidine Ponceau 2R (C.I. 16150)

**for microscopy**

Xylidine red, Ponceau de Xylidine

$C_{18}H_{14}N_2Na_2O_7S_2$

M 480,40 g/mol

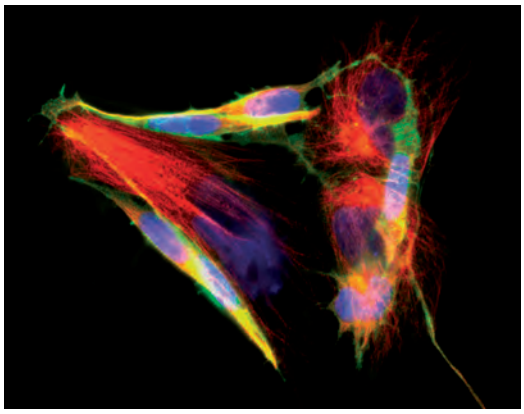
**Warning** H351

Water-soluble dye, used e.g. for Masson-Goldner trichrome staining (ingredient of Goldner's stain I, Art. No. 3469).

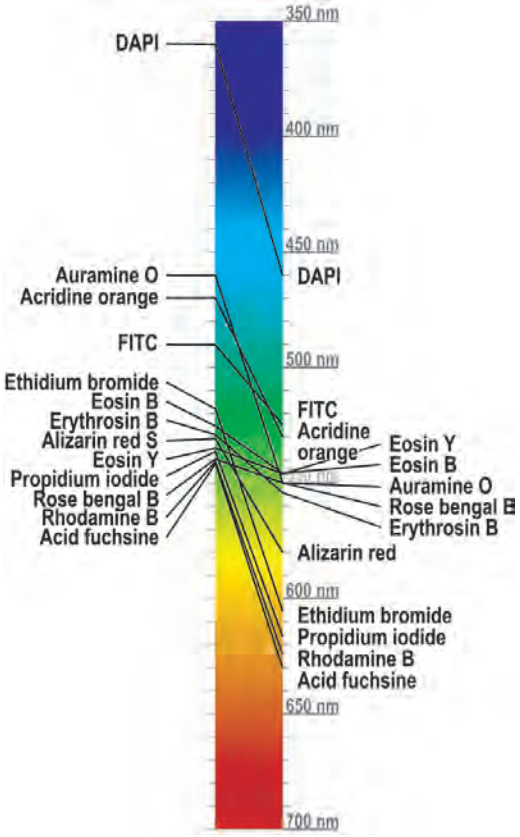
| | | | |
|---|---|---|---|
| **7747.1** | 5 g | glass | 14,55 € |
| **7747.2** | 25 g | glass | 24,20 € |
| **7747.3** | 100 g | glass | 60,10 € |

**Safety data sheets**
can be found on the Internet next to the product description.

# Fluorescent Dyes



With kind permission of M. Köster, H. Kleinholz, G. E. Pollenberg, University of Heidelberg.




Fluorescent dyes are suitable for various applications in microscopy, e.g. in order to tag antibodies used in immunohistochemical assays or for counter-staining of nuclei.
Fluorescent dyes are sensitive to light, therefore they are to be **stored in the dark**.

## Acid fuchsin (C.I. 42685)

**for microscopy**

Fuchsine acidic

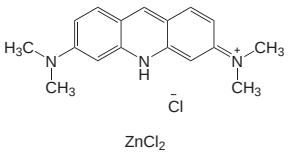
$C_{20}H_{17}N_3Na_2O_9S_3$

M 585,54 g/mol

Used as plasma stain in 0.5-1.0 % watery solution.

Excitation maximum: 540 nm
Emission maximum: 630 nm

| | | | |
|---|---|---|---|
| **T128.1** | 10 g | glass | 57,95 € |



$ZnCl_2$

## Acridine orange (C.I. 46005)

**for microscopy**

Fluorescence indicator

Acridine orange zinc chloride double salt, Basic orange 14

$C_{17}H_{20}Cl_3N_3Zn$ • M 438,09 g/mol

**Warning** H341

Fluorescent dye with DNA intercalating properties. Application range: Differentiation of dsDNA (green fluorescence) and ssDNA/RNA (red fluorescence), vitality test for determination of living cells. Soluble in water and ethanol.

Excitation maximum: 470 nm
Emission maximum: 526 nm (green)
Emission maximum: 650 nm (red)

| | | | |
|---|---|---|---|
| **0249.1** | 10 g | glass | 22,05 € |
| **0249.2** | 25 g | glass | 41,85 € |

## Alizarin red S (C.I. 58005)

Indicator pH 4,3-6,3 and pH 9,4-12,0

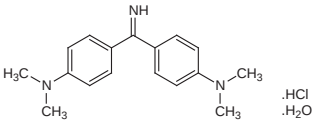
Alizarin sulphonic acid sodium salt, Alizarin carmine

$C_{14}H_7NaO_7S$ • M 342,26 g/mol

Dye for vital staining, e.g. staining of mineralized sites in bone tissue. Soluble in water and ethanol (0.1-1.0 %).

Excitation maximum: 530-560 nm
Emission maximum: 580 nm

| | | | |
|---|---|---|---|
| **0348.1** | 10 g | glass | 19,25 € |
| **0348.2** | 25 g | glass | 30,00 € |
| **0348.3** | 100 g | glass | 92,35 € |



## Auramine O (C.I. 41000)

**for microscopy**

4,4'-Bis-(dimethylamino)-benzophenonimide-hydrochloride, Basic yellow 2

$C_{17}H_{22}ClN_3$

M 303,84 g/mol

**Warning** H351-H302-H319-H411

Used for detection of acid-fast bacteria (e.g. Mycobacteria) in histological sections, 1 % in ethanol 95 %.
Excitation maximum: 460 nm
Emission maximum: 550 nm

| | | | |
|---|---|---|---|
| **0319.1** | 25 g | glass | 16,05 € |
| **0319.2** | 50 g | glass | 26,80 € |




## DAPI

**≥98 %, p.a.**

For DNA-staining.

4',6-Diamidino-2-phenylindole dihydrochloride

$C_{16}H_{17}Cl_2N_5$

M 350,3 g/mol

Storage temp.: -20 °C • Transport temp.: room temp.

Fluorescent dye with specific DNA-binding capacity. For detection of mycoplasms in cell culture, for quantitative DNA measurement, and for chromosome counter staining. Store in the dark! Stabile for one year when solubilised, stored at -20 °C, and protected from light
Stock solution: 1 to 10 mg/ml in sterile water

**Working concentration:**
Nucleus staining in living cells: approx. 1 µg/ml in medium
Nucleus staining in fixed cells or fixed tissue sections: approx. 0.2 µg/ml in PBS, TBS or another incubation buffer
Detection of mycoplasms: 1 µg/ml in methanol
Excitation maximum: 359 nm
Emission maximum: 461 nm

| | | | |
|---|---|---|---|
| **6335.1** | 25 mg | glass | 90,20 € |
| **6335.2** | 100 mg | glass | 252,65 € |

## Eosin B (C.I. 45400)

**for microscopy**

Eosin scarlet, Eosin bluish, 4',5'-Dibromo-2',7'-dinitrofluoroesceine disodium salt.

$C_{20}H_6Br_2N_2Na_2O_9$

M 624,09 g/mol

Like eosin Y used as a plasma stain, e.g. for hematoxylin-eosin (H&E) staining. Soluble in water and ethanol, usual concentration 0.5 - 2.0 %.

Excitation maximum: 525 nm
Emission maximum: 545 nm

| | | | |
|---|---|---|---|
| **0306.1** | 10 g | glass | 17,10 € |
| **0306.2** | 25 g | glass | 27,45 € |
| **0306.3** | 50 g | glass | 42,90 € |

▶ Accessories for staining see chapter Labware - Laboratory Glass, Vessels & Consumables / Microbiology, Histology & Instruments.

## Eosin Y (C.I. 45380)

**for microscopy**

Eosin yellowish

$C_{20}H_6Br_4Na_2O_5$

M 691,86 g/mol

**Warning** H319

Eosin Y is a slightly acid fluorescent dye, which stains cytoplasm red. It is soluble in alcohol and water (usual concentrations: 0.5 - 2.0 %). Manifold use, e.g. for hematoxylin-eosin (H&E) staining, spore staining etc.

Excitation maximum: 534 nm
Emission maximum: 544 nm

| | | | |
|---|---|---|---|
| **7089.1** | 50 g | glass | 32,80 € |
| **7089.2** | 100 g | glass | 55,40 € |
| **7089.3** | 500 g | glass | 177,40 € |
| Original pack 6 x 500 g | | | 168,53/500 g |

**Spore staining acc. to Rakette**

Boil the heat fixed smear with malachite green, Art. No. 5895, (5 % solution in water) for 20 sec and allow to act for at least 30 sec. Rinse in running tap water, counterstain with Eosin Y, Art. No. 7089, (2.5 % solution in water) for 1 min, rinse again and dry.

**Result:** Spores green, other bacteria parts red.

Acc. to Dieter Gerlach: Bot. Mikrotechnik, 2. Auflage, Thieme (1977)

## Erythrosine B (C.I. 45430)

**for microscopy**

Tetraiodine fluorescein disodium salt, Iodine eosin, Erythrosine bluish, Acid red 51

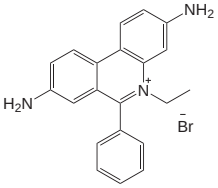
$C_{20}H_6I_4Na_2O_5$

M 879,84 g/mol

**Warning** H302

Water-soluble plasma stain (0.5-2.0 %), used like eosin Y, e.g. for hematoxylin-eosin (H&E) staining.
Excitation maximum: 529 nm
Emission maximum: 554 nm

| | | | |
|---|---|---|---|
| **0331.1** | 25 g | plastic | 45,05 € |




## Ethidium bromide

**≥98 %**

For DNA-staining.

Homidium bromide, 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide

$C_{21}H_{20}BrN_3$

M 394,33 g/mol

Storage temp.: +20 °C

**Danger** H330-H341-H302

Fluorescent dye with specific DNA binding capacity. Intercalates between base pair stacks of dsDNA, causing weaker staining of ssDNA or RNA. For staining of DNA/RNA in gels and for counterstaining of nuclei in histological and cytological analyses. Store in the dark!

Excitation maximum: 518 nm
Emission maximum: 605 nm

| | | | |
|---|---|---|---|
| **7870.1** | 1 g | glass | 23,15 € |
| **7870.2** | 5 g | glass | 90,85 € |




## Ethidium bromide solution 0,5 % in dropper bottle

**aqueous solution (5 mg/ml)**

For counterstaining of nuclei in histology and cytology.
For staining of DNA/RNA after electrophoresis.

**Warning** H332

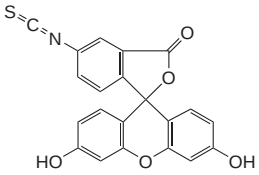
In spite of newly developed fluorescent staining reagents ethidium bromide remains the standard staining technic for nucleic acid in electrophoresis. Ethidium bromide is a carcinogenic substance which shouldn't come in contact with skin. In order to minimise this danger we offer ready-to-use ethidium bromide solution in dropper bottles for easy handling and maximum safety.
**Application:**
In order to prepare a staining solution add 5 drops of ethidium bromide solution to 500 ml water, buffer, or electrophoresis running buffer, respectively.
Nuclei / nucleic acids are stained red.

Excitation maxima (unbound): 210 nm, 285 nm, 470 nm
Excitation maxima (bound to DNA): 330 nm, 500 nm
Excitation possible via DNA at 254 nm

Emission maximum: 605 nm.

**Please store in the dark!**

| | | | |
|---|---|---|---|
| **HP46.1** | 15 ml | plastic | 29,60 € |
| **HP46.2** | 5 x 15 ml | plastic | 104,20 € |




## Fluorescein isothiocyanate Isomer I

**≥90 %, p.a.**

For the study of antigen and antibody reactions.
FITC
$C_{21}H_{11}NO_5S$
M 389,39 g/mol
Storage temp.: -20 °C • Transport temp.: room temp.

**Danger** H334-H317

Used for labeling of different biomolecules in immunohistology and immunocytology.

Excitation maximum: 490 nm
Emission maximum: 525 nm

| | | | |
|---|---|---|---|
| **3745.2** | 100 mg | glass | 36,45 € |
| **3745.1** | 250 mg | glass | 69,80 € |

## Propidiumiodide

**≥95 %, p.a.**

For fluorescence staining of DNA.
3,8-Diamino-5-(3-diethylaminopropyl)-6-phenyl-phenanthridinium iodide methiodide
$C_{27}H_{34}I_2N_4$
M 668,4 g/mol
Storage temp.: +4 °C

**Warning** H315-H319-H335-H341

Fluorescent dye with specific DNA-binding capacity. Like ethidium bromide it intercalates between base pair stacks of DNA.
Used for detection of mycoplasms in cell cultures, for quantitative DNA measurement and for chromosome counter staining. In Annexin staining it is used for counter staining of the nuclei (detection of apoptotic cells).
**Application:**
Living cells: approx. 1-5 mg/ml in medium
Fixed cells: approx. 1-50 µg/ml in PBS

Excitation maximum: 535 nm
Emission maximum: 617 nm

**Note:**
Store solution and powder at +4 °C protected from light
(stabile for approx. 6 months)

| | | | |
|---|---|---|---|
| **CN74.1** | 25 mg | glass | 67,20 € |
| **CN74.2** | 50 mg | glass | 117,20 € |
| **CN74.3** | 100 mg | glass | 209,65 € |

## Rhodamine B (C.I. 45170)

**for microscopy**

Oil-soluble red A, Safraniline, Rosaceine
$C_{28}H_{31}ClN_2O_3$
M 479,02 g/mol

**Danger** H318-H412

Water-soluble fluorescent dye for detection of acid-fast bacteria (e.g. Mycobacteria) in histological sections, usually in combination with auramine O.

Excitation maximum: 540 nm
Emission maximum: 625 nm

| | | | |
|---|---|---|---|
| **T130.1** | 25 g | glass | 32,80 € |

## Rose Bengale B (C.I. 45440)

**for microscopy**

4,5,6,7-Tetrachloro-2',4',5',7'-tetraiodofluorescein-dipotassium salt
$C_{20}H_2Cl_4I_4Na_2O_5$ • M 1017,65 g/mol
Water-soluble fluorescent dye, e.g. for use in bacteriological assays.
Excitation maximum: 540 nm
Emission maximum: 550-600 nm

| | | | |
|---|---|---|---|
| **3162.1** | 50 g | plastic | 93,00 € |

## Lipid Staining Dyes

| Product | Solution | Staining | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **Nile blue A (C.I. 51180)** | saturated aqueous solution (acidulated with $H_2SO_4$) | neutral lipids pink, acid lipids blue | **4377.2** | 5 g | 17,10 |
| | | | **4377.1** | 10 g | 28,95 |
| | | | **4377.3** | 25 g | 46,15 |
| **Sudan III (C.I. 26100)** | ethanolic solution 0,2-1,0 % | neutral triglycerides red | **4711.2** | 50 g | 23,15 |
| | | | **4711.1** | 100 g | 44,00 |
| **Sudan IV (C.I. 26105)** | saturated ethanolic solution | neutral triglycerides red | **0327.1** | 25 g | 22,50 |
| | | | **0327.2** | 50 g | 32,15 |
| **Sudan black B (C.I. 26150)** | ethanolic solution 1% | neutral triglycerides dark brown | **0292.1** | 10 g | 22,50 |
| | | | **0292.2** | 25 g | 32,15 |
| | | | **0292.3** | 50 g | 50,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Dyes for Vital Staining

Usual stock solution: 1 % dye in distilled water.
Dilute solution as required prior to use.

| Product | Application | Staining | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Acridine orange (C.I. 46005)** | vitality test | living cells green fluorescence | **0249.1** | 10 g | 22,05 |
| | | | **0249.2** | 25 g | 41,85 |
| **Alizarin red S (C.I. 58005)** | detection of mineralized sites in bone tissue | red fluorescence | **0348.1** | 10 g | 19,25 |
| | | | **0348.2** | 25 g | 30,00 |
| | | | **0348.3** | 100 g | 92,35 |
| **Bismarck brown R (C.I. 21010)** | vitality test | living cells brownish | **0316.1** | 25 g | 19,90 |
| **Brilliant cresyl blue (C.I. 51010)** | supravital staining | reticulocystes dark blue | **5162.1** | 5 g | 23,15 |
| | | | **5162.2** | 10 g | 33,90 |
| **Bromophenol blue** | vitality test of spermatozoa | dead cells blue | **T116.1** | 5 g | 22,05 |
| | | | **T116.2** | 10 g | 28,95 |
| | | | **T116.3** | 25 g | 46,15 |
| **Eosin Y (C.I. 45380)** | vitality test of spermatozoa | dead cells red | **7089.1** | 50 g | 32,80 |
| | | | **7089.2** | 100 g | 55,40 |
| | | | **7089.3** | 500 g | 177,40 |
| **Erythrosine B (C.I. 45430)** | vitality test | dead cells red | **0331.1** | 25 g | 45,05 |
| **Ethidium bromide** | vitality test | dead cells red fluorescence | **7870.1** | 1 g | 23,15 |
| | | | **7870.2** | 5 g | 90,85 |
| **Evan's blue (C.I. 23860)** | intravital staining | dead cells blue | **7684.1** | 5 g | 26,80 |
| | | | **7684.2** | 25 g | 54,75 |
| | | | **7684.3** | 100 g | 181,70 |
| **Janus green B (C.I. 11050)** | supravital staining | mitochondria in living cells blue | **7697.1** | 5 g | 24,65 |
| | | | **7697.2** | 25 g | 60,10 |
| | | | **7697.3** | 100 g | 198,90 |
| **Methylene blue (C.I. 52015)** | vitality test | dead cells blue | **A514.1** | 10 g | 19,60 |
| | | | **A514.2** | 50 g | 46,15 |
| | | | **A514.3** | 100 g | 75,15 |
| **Neutral red (C.I. 50040)** | vitality test | dead cells red | **T122.2** | 1 g | 21,40 |
| | | | **T122.1** | 10 g | 54,75 |
| | | | **T122.3** | 25 g | 107,40 |
| **Nile blue A (C.I. 51180)** | vitality test | dead cells blue | **4377.2** | 5 g | 17,10 |
| | | | **4377.1** | 10 g | 28,95 |
| | | | **4377.3** | 25 g | 46,15 |
| **Propidiumiodide** | vitality test | dead cells red fluorescence | **CN74.1** | 25 mg | 67,20 |
| | | | **CN74.2** | 50 mg | 117,20 |
| | | | **CN74.3** | 100 mg | 209,65 |
| **Tetrazolium blue chloride** | vitality test | living cells red | **4176.1** | 1 g | 55,40 |
| | | | **4176.2** | 5 g | 209,65 |
| **Thiazolyl blue** | vitality test | living cells blue-violet | **4022.1** | 1 g | 30,00 |
| | | | **4022.3** | 5 g | 126,35 |
| | | | **4022.2** | 10 g | 198,90 |
| | | | **4022.4** | 25 g | 403,15 |
| **Toluidine blue O (C.I. 52040)** | intravital staining | abnormal cells blue | **0300.1** | 5 g | 18,20 |
| | | | **0300.2** | 10 g | 27,85 |
| | | | **0300.3** | 25 g | 52,60 |
| | | | **0300.4** | 100 g | 149,45 |
| **2,3,5-Triphenyl-tetrazolium chloride** | vitality test | living cells red | **KK13.1** | 10 g | 51,50 |
| | | | **KK13.2** | 50 g | 212,85 |
| **Trypan blue (C.I. 23850)** | vitality test | dead cells blue | **CN76.1** | 10 g | 23,15 |
| | | | **CN76.2** | 25 g | 41,85 |
| | | | **CN76.3** | 50 g | 75,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Substrates

Carl Roth offers you a wide range of substrates for biochemistry, cellular biology and microbiology. The key substrates for Western Blot and *in situ*-hybridisation are summarised here.

For detailed information regarding usage, chemical details, safety instructions and further package sizes for these and many other substrates, refer to chapter **"Substrates"** in chapter Biochemistry or to Chemicals A-Z.

### For Alkaline Phosphatase (AP)

| Substrate | Application | Detection | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **BCIP-Natrium salt** | western, *in situ*, histochemistry | colour (brown-violet) | **A155.1** | 100 mg | 27,45 |
| | | | **A155.2** | 500 mg | 115,60 |
| | | | **A155.3** | 1 g | 198,90 |
| | | | **A155.4** | 5 g | 665,45 |
| **BCIP-Toluidin salt*** | western, *in situ*, histochemistry | colour (brown) | **6368.1** | 500 mg | 35,40 |
| | | | **6368.2** | 1 g | 68,30 |
| | | | **6368.3** | 5 g | 261,80 |
| **NBT*** | western, *in situ*, histochemistry | colour (brown-violet) | **4421.1** | 100 mg | 17,10 |
| | | | **4421.2** | 500 mg | 42,90 |
| | | | **4421.3** | 1 g | 81,60 |
| | | | **4421.4** | 5 g | 295,65 |
| **Rose-phos-Toluidin salt** | western, *in situ*, histochemistry | colour (pink) | **4247.1** | 50 mg | 46,80 |
| | | | **4247.2** | 100 mg | 84,85 |

For additional product data and safety information, see chapter Chemicals A-Z.
***combined**

### For Horse Raddish Peroxidase (HRP)

| Substrate | Application | Detection | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **DAB** | western, *in situ*, histochemistry | colour (brown) | **CN75.1** | 1 g | 23,15 |
| | | | **CN75.2** | 5 g | 73,65 |
| | | | **CN75.3** | 10 g | 126,35 |
| **Roti®-DAB Kit** | western, *in situ*, histochemistry | colour (brown) | **9202.1** | 1 kit | 181,70 |
| **Roti®-Lumin** | western | chemolumine-scence | **P078.2** | 1 mini kit | 70,45 |
| | | | **P078.1** | 1 kit | 252,65 |

For additional product data and safety information, see chapter Chemicals A-Z.

Please note our **Technical Information Brochure** on the Internet next to the products:

**Immunostaining by HRP and AP**
Protocols

# Hydrophobic Mounting Media

The classical mounting media for producing durable sections in microscopy.

ready-to-use

ROTH offers **synthetic mounting media** like the proved Roti®-Histokitt and **natural balsams** like the classic Canada balsam.



## Roti®-Histokitt

**mounting medium, for histology**
**Compatible with Roti®-Histol (Art. No. 6640).**

**Danger** H225-H304-H361d-H373-H315-H336

**Synthetic, quick-drying mountant for producing durable sections.**
- Results in permanent specimens with neutral pH
- Protects against bleaching
- Not suitable for aqueous samples!

**Type analysis:**

| | |
|---|---|
| Appearance. | clear, viscous liquid |
| Identity. | complies |
| Refractive index $n_D^{20}$. | 1,4930-1,4960 |

| | | | |
|---|---|---|---|
| **6638.1** | 100 ml | glass | 12,80 € |
| **6638.2** | 500 ml | glass | 35,40 € |

## Roti®-Histokitt II

**mounting medium, for histology**
**Compatible with xylene (e.g. Art. No. 9713).**

**Danger** H226-H302+H332-H304-H315-H319-H335-H373-EUH208

**Synthetic, xylene-soluble mountant for producing durable sections.**
- Results in permanent specimens with neutral pH
- Protects against bleaching
- Not suitable for aqueous samples!
- Adapted for embedding machines!
- Typical refractive index: 1.4930-1.4960

**Type analysis:**

| | |
|---|---|
| Appearance. | clear, viscous liquid |
| Density (d 20 °C/4 °C). | 0,95 |
| Viscosity (20 °C). | 250-450 mPa s |

| | | | |
|---|---|---|---|
| **T160.1** | 100 ml | glass | 13,15 € |
| **T160.2** | 500 ml | glass | 36,05 € |

▶ Immersion oil & Oil of cedar wood
see page 1474

**Safety data sheets**
can be found on the Internet next to the product description.



## Roti®-Mount

**Mountant for microscopy, free from xylene and toluene.**
**Compatible with Roticlear® (Art. No. A538) and n-Butyl acetate (Art. No. P036).**

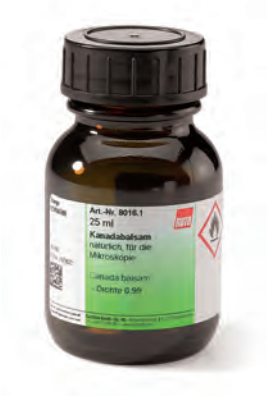
**Danger** H225-H304-H372-H411-EUH066

Synthetic mountant for producing durable specimens in histology and cytology, free from xylene and toluene. Not suitable for aqueous samples!
**Storage:**
For long-term storage we recommend a storage temperature of 4 °C in the dark. For use the product should have room temperature to ensure an ideal consistence.

**Type analysis:**

| | |
|---|---|
| Appearance. | colourless to light yellowish, viscous liquid |
| Viscosity (20 °C). | 1000-1200 mPas |
| Refractive index (20 °C). | 1,43-1,46 |
| Density (20 °C). | 0,850-900 |

| | | | |
|---|---|---|---|
| **HP68.1** | 100 ml | glass | 20,35 € |
| **HP68.2** | 500 ml | glass | 61,85 € |



## Canada balsam

**natural, for microscopy**
Balsamum Canadense

**Warning** H226

**Type analysis:**

| | |
|---|---|
| Appearance. | yellowish translucent, highly viscous |
| Odour. | characteristic (like conifers) |
| Density (20 °C). | 0,980-0,998 |
| Refractive index $n_D^{20}$. | 1,520-1,530 |
| Flash point. | 43 °C |
| Solubility in: | |
| Ether. | 1:1 |
| Toluene. | 1:1 |
| Chloroform. | 1:1 |

| | | | |
|---|---|---|---|
| **8016.1** | 25 ml | glass | 19,60 € |
| **8016.2** | 100 ml | glass | 48,30 € |

# Mounting with Euparal



## Euparal
**for microscopy**
Mounting agent

**Warning** H226-H315-H319

**Euparal is an alternative to Canada balsam for mounting microscopic specimens and is used in the same way.** Unlike Canada balsam, which is very sensitive to water and can only be used after specimens have been dehydrated with high-percentage alcohol and xylene, mounting in Euparal with 80 % alcohol is possible without any cloudiness occuring. Euparal solidifies slower than balsam.

Refractive index for liquid Euparal: 1.483
Refractive index for completely solidified Euparal: 1.535

**The duration of the solidifying process depends on the mounted object and temperature. Euparal solidifies faster when warm.**

**Euparal-essence (Art. No. A145) serves as a diluent and solvent for euparal. Euparal and Euparal essence are not compatible with organic solvents.**

As it is a natural resin and there is no polymerisation, permanent Euparal preparations can be dissolved later under gentle heating with Euparal essence.
Euparal contains Sandarac resin, camphor and salol. Paraldehyde and eucalyptol serve as a solvent.

**Type analysis:**

| | |
|---|---|
| Appearance | yellowish solution |
| Solubility (EtOH) | soluble |
| Refractive index (20 °C) | 1,480-1,510 |

| | | | |
|---|---|---|---|
| **7356.1** | 100 g | glass | 50,45 € |
| **7356.2** | 5 x 100 g | glass | 206,95 € |

## Euparal essence
**for microscopy**
Diluent and solvent for Euparal (Art. No. 7356).

**Warning** H226-H315-H319-H335

**Type analysis:**

| | |
|---|---|
| Appearance | yellowish solution |
| Refractive index (20 °C) | 1,450-1,500 |

| | | | |
|---|---|---|---|
| **A145.1** | 100 ml | glass | 43,55 € |

# Hydrophilic Mounting Media

These mounting media allow embedding without previous dehydration. Thus shrinking of specimens caused by organic solvents can be avoided. Additionally the hydrophilic milieu prevents washing out of cell ingredients like lipids, an important requirement for use in histochemistry.



## Roti®-Mount Aqua
**for microscopy**
Aqueous mounting medium
Storage temp.: +4 °C

Roti®-Mount Aqua is an aqueous solution of polyacrylate resin used for mounting of paraffin sections and cryostat sections directly after staining. The solution is ready to use. Colours and tissue structures are preserved in an optimal way. For long-term preserving of fluorescent dyes we recommend Roti®-Mount FluorCare (Art. No. HP19).
**Application:**
Residues of staining solution are removed by rinsing with buffer or destilled water. Afterwards the specimens are mounted with Roti®-Mount Aqua.
**Storage:**
Store at +4 °C in the dark, shelf life minimum 2 years.

**Type analysis:**

| | |
|---|---|
| Appearance | colourless, viscous liquid |
| Viscosity (20 °C) | 170-220 mPas |
| Refractive index (20 °C) | 1,440-1,465 |
| Density (20 °C) | 1,05-1,18 g/cm³ |

| | | | |
|---|---|---|---|
| **2848.1** | 15 ml | dropp. bottle | 21,40 € |
| **2848.2** | 50 ml | glass | 39,25 € |

## Roti®-Mount FluorCare
**for fluorescence microscopy**
Aqueous mounting medium with antifading effect.
Storage temp.: +4 °C

Roti®-Mount FluorCare has been developed especially for fluorescene microscopy and is compatible with all current fluorescent dyes. It is an aqueous mountant with an additional antifading reagent which reduces photobleaching drastically. Fluorescence will remain for many weeks. In contrast to other mounting media Roti®-Mount FluorCare does not show autofluorescence at any common wavelength.
Roti®-Mount FluorCare is also available with the dyes DAPI (HP20.1) and propidiumiodide (HP21.1) for simultaneous counter staining of nuclei.
**Storage:**
The solution should be stored at +4 °C in the dark.
Shelf life: minimum 1 year.

**Type analysis:**

| | |
|---|---|
| Appearance | clear, viscous liquid |
| Viscosity (20 °C) | 170-220 mPas |
| Refractive index (20 °C) | 1,44-1,465 |
| Density (20 °C) | 1,05-1,18 |

| | | | |
|---|---|---|---|
| **HP19.1** | 15 ml | dropp. bottle | 55,40 € |

## Roti®-Mount FluorCare DAPI

ready-to-use

**for fluorescence microscopy**

Aqueous mounting medium with antifading effect.
Contains DAPI for counterstaining.

Storage temp.: +4 °C

Roti®-Mount FluorCare DAPI is an aqueous mounting medium with antifading effect. Additional it contains ready-to-use DAPI allowing counterstaining of nuclei and mounting at the same time. DAPI has an excitation maximum at 359 nm and an emission maximum at 461 nm. Roti®-Mount FluorCare is also available with the dye propidiumiodide (HP21.1) and without dye (HP19.1).

**Storage:**
The solution should be stored at +4 °C in the dark. Shelf life: minimum 1 year.

**Type analysis:**

| | |
|---|---|
| Appearance | clear, viscous liquid |
| Viscosity (20 °C) | 170-220 mPas |
| Refractive index (20 °C) | 1,44-1,465 |
| Density (20 °C) | 1,05-1,18 |

| | | | |
|---|---|---|---|
| **HP20.1** | 15 ml | dropp. bottle | 67,65 € |

## Roti®-Mount FluorCare PI

ready-to-use

**for fluorescence microscopy**

Aqueous mounting medium with antifading effect.
Contains propidiumiodide (PI) for counterstaining.

Storage temp.: +4 °C

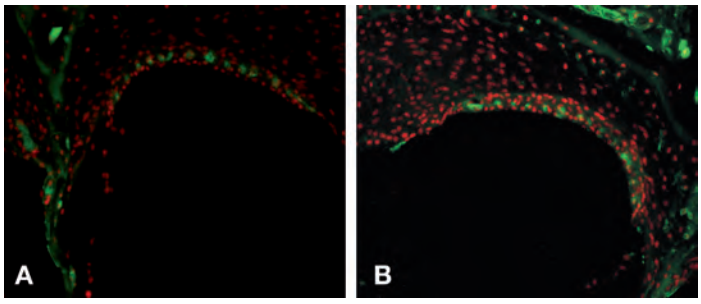
Roti®-Mount FluorCare PI is an aqueous mounting medium with antifading effect. Additional it contains ready-to-use propidiumiodide allowing counterstaining of nuclei and mounting at the same time. Propidiumiodide has an emission maximum of 535 nm and an emission maximum of 617 nm.
Roti®-Mount FluorCare is also available with the dye DAPI (Art. No. HP20.1) and without dye (Art. No. HP19.1).

**Storage:**
The solution should be stored at +4 °C in the dark. Shelf life: minimum 1 year.

**Type analysis:**

| | |
|---|---|
| Appearance | viscous, slightly reddish liquid |
| Viscosity (20 °C) | 170-220 mPas |
| Refractive index (20 °C) | 1,44-1,465 |
| Density (20 °C) | 1,05-1,18 |

| | | | |
|---|---|---|---|
| **HP21.1** | 15 ml | dropp. bottle | 67,65 € |




## Example of Use

**Figure:**
Immunostaining of DNA adducts (red) and CNPase (green) in cryosections of the inner ear (stria vascularis) from mice
a) mounted in glycerol
b) mounted in Roti®-Mount FluorCare

With kind assistance of laboratory Dr. J. Thomale, DNA-Repair Group, Institute of Cell Biology, West German Cancer Centre Essen



## Mowiol®4-88

**granulated**

Aqueous mounting medium in histology.
Polyvinyl alcohol
$(-CH_2CHOH-)_n$
M ~31,000 g/mol

**For durable preparations.**
Mowiol 4-88 is used as hydrophilic mounting medium, particularly for immune histochemical applications. Usually it is applied in combination with the antibleaching reagent DABCO (1.4-Diazabicyclo-(2.2.2)octan), Art. No. 0718, which conserves the colours and the fluorescence of durable samples.

**Type analysis:**

| | |
|---|---|
| Appearance | colourless to light yellow granules |
| Viscosity (4 %, $H_2O$, 20 °C) | 3,0-5,0 mPas |
| Degree of hydrolysis, Mol.- % | 86,7-88,7 |
| Ester value (mg KOH/g) | 130-150 |
| Residual acetate | 10,0-11,6 % |
| Ash content (as $Na_2O$) | ≤0,5 % |

| | | | |
|---|---|---|---|
| **0713.1** | 50 g | plastic | 11,75 € |
| **0713.2** | 100 g | plastic | 17,10 € |

## DABCO®

**≥99 %**

Anti-bleaching reagent in histology.
Triethylendiamine, 1,4-Diazabicyclo[2.2.2]octane
$C_6H_{12}N_2$
M 112,18 g/mol

**Danger** H228-H302-H315-H318-H335

DABCO is an anti-bleaching reagent. It is combined with hydrophilic mounting media as Mowiol 4-88, Art. No. 0713, or glycerol in order to conserve the colours and the fluorescence of durable samples. Solubility may change depending on the batch. If required stir solution constantly overnight at a temperature of 40-60 °C.

**Type analysis:**

| | |
|---|---|
| Appearance | white to off-white crystals |
| Assay | ≥99,0 % |
| Water | ≤0,5 % |

| | | | |
|---|---|---|---|
| **0718.1** | 25 g | glass | 19,90 € |
| **0718.2** | 50 g | glass | 35,40 € |

## Alginic acid sodium salt

**for biochemistry**

From brown algae.
Sodium alginate

| | | | |
|---|---|---|---|
| **9180.1** | 250 g | plastic | 28,95 € |
| **9180.2** | 1 kg | plastic | 78,40 € |
| Original pack 6 x 1 kg | | | 74,48/1 kg |

**Instructions for use**
can be found on the Internet next to the product description.



## Kaiser's glycerol gelatine phenol-free

**for microscopy**

Aqueous mounting medium

- Non-hazardous ingredients
- Neutral pH (6-7)
- Convenient also for sensitive stainings

It is an aqueous mounting medium which is solid at room temperature. Composition and application are according to the classical Kaiser's glycerol gelatine; however, it does not contain phenol. The added preserving agent is classified as non-hazardous. The pH value of the product is 6-7. Therefore, it is suitable also for stainings which are sensitive against acids (e.g. hematoxylin). Prior to use the glycerol gelatine is melted on a water bath (max. 50-55 °C) and then dropped onto the slide by using a pipette or a glass rod.

**Type analysis:**

Appearance. ..... light yellowish coloured, solid medium
Glycerol. ..... ~40 %
Gelatine. ..... 7-12 %
Refractive index (20 °C) ..... 1,44-1,47
Density (20 °C). ..... 1,02

| | | | |
|---|---|---|---|
| **6474.1** | 50 ml | glass | 17,75 € |

**Glycerol-gelatine (acc. to Kaiser)**

**Preparation:**

Dissolve 10 g gelatine gold in 60 ml water and add 70 ml glycerol.

Add 0.1 g phenol to 100 g mixture, heat 10-25 minutes in the water bath while stirring until purification, then filter hot over glass wool or paper.

**Avoid heating much beyond 60 °C, because overheated gelatine loses its ability to solidify.**

## Glycerols - Summary

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Glycerol** | ≥99,5 %, p.a., anhydrous | **3783.1** | 1 l | 52,15 |
| | | **3783.3** | 1 l | 56,45 |
| | | **3783.2** | 2,5 l | 94,10 |
| | | **3783.4** | 2,5 l | 99,90 |
| | | **3783.5** | 5 l | 143,55 |
| | | **3783.6** | 10 l | 220,40 |
| **Glycerol** | ≥98 %, Ph.Eur., anhydrous | **7530.1** | 1 l | 36,45 |
| | | **7530.4** | 2,5 l | 59,70 |
| | | **7530.5** | 5 l | 107,40 |
| | | **7530.2** | 10 l | 198,90 |
| | | **7530.3** | 35 kg | 385,95 |
| **Glycerol 86 %** | ≥86 %, p.a. | **4043.1** | 1 l | 46,80 |
| | | **4043.3** | 2,5 l | 69,80 |
| | | **4043.2** | 5 l | 127,40 |
| **Glycerol 86 %** | ~86 %, Ph.Eur., extra pure | **7533.1** | 1 l | 33,25 |
| | | **7533.3** | 2,5 l | 60,10 |
| | | **7533.4** | 5 l | 102,05 |
| | | **7533.2** | 10 l | 180,10 |
| | | **7533.5** | 25 l | 349,40 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Gelatine

**platinum, extra pure, 240 Bloom**

Storage temp.: +20 °C

**Type analysis:**

Gel strength. ..... 240 Bloom
Particle size. ..... ≤30 mesh
Water ..... <15 %
Ash. ..... <2 %
Peroxides (as $H_2O_2$). ..... <0,001 %
Sulphur dioxide ($SO_2$). ..... <0,005 %
Gelatine is produced from porcine skin.

| | | | |
|---|---|---|---|
| **4582.3** | 500 g | plastic | 31,10 € |
| Original pack 6 x 500 g | | | 29,55/500 g |
| **4582.1** | 1 kg | plastic | 50,00 € |
| Original pack 6 x 1 kg | | | 47,50/1 kg |
| **4582.2** | 5 kg | plastic | 180,10 € |

**Our tip:**

The Bloom grade declares the strength of the gelatine film. The higher the bloom grade the more rigid the gelatine film. Usually, a Bloom grade of 180 is sufficient for histological applications.

## Gelatine

**gold, extra pure, 180 Bloom**

Storage temp.: +20 °C

**Type analysis:**

Gel strength. ..... approx. 180 Bloom
Particle size. ..... ≤30 mesh
Water ..... <15 %
Ash. ..... <2 %
Peroxides (as $H_2O_2$). ..... <0,001 %
Sulphur dioxide ($SO_2$). ..... <0,005 %
Gelatine is produced from porcine skin.

| | | | |
|---|---|---|---|
| **4274.3** | 500 g | plastic | 29,60 € |
| Original pack 6 x 500 g | | | 28,12/500 g |
| **4274.1** | 1 kg | plastic | 42,50 € |
| Original pack 6 x 1 kg | | | 40,38/1 kg |
| **4274.2** | 5 kg | plastic | 174,70 € |

## Phytohistol® plus

ready-to-use

**for microscopy**

Botanical mounting medium based on sugar

- New compound
- High stability
- No hazardous ingredients
- Neutral pH 6-7

Phytohistol® plus is an aqueous mounting medium based on sugar with the consistency of liquid honey. It is especially suitable for plant materials. After evaporation of the water a rubber-like film remains. For producing durable specimens we recommend to seal the edges of the cover slip with our Roti®-Seal cover slip sealant (Art. No. 6473).
**Shelf life:** The solution contains a preserving agent and is stable for minimum 4 years after manufacture.
**Application:** Drop on slide, add specimen. When free from air bubbles place cover slip.

**Type analysis:**

Appearance. ..... yellow to brownish, viscous liquid
Refractive index (20 °C) ..... 1,51-1,53

| | | | |
|---|---|---|---|
| **6471.1** | 15 ml | dropp. bottle | 21,00 € |
| **6471.2** | 50 ml | plastic | 55,40 € |

# Immersion Oils

ready-to-use



## Immersion oil
**for microscopy, fluorescence tested**

**Warning** H41 0

An immersion oil with low viscosity and low background fluorescence, especially suitable for fluorescence microscopy.

**Guarantee analysis:**

Density (d 20 °C/4 °C). ..... 1,0245-1,0265
Refractive index (20 °C)..... 1,5150-1,5170
Viscosity (20 °C). ..... 100-120 mPas
UV-transmission
450 nm..... ≥90 %
400 nm..... ≥78 %
380 nm..... ≥65 %
Fluorescence (as quinine):
365 nm..... ≤1,5 ppm

| | | | |
|---|---|---|---|
| **X899.4** | 15 ml | dropp. bottle | 8,75 € |
| **X899.1** | 50 ml | glass | 14,55 € |
| **X899.2** | 100 ml | glass | 22,05 € |
| **X899.3** | 500 ml | glass | 77,30 € |

## Immersion oil
**for microscopy**

A viscous solution of natural oils based on oil of cedar wood.

**Danger** H304-H411

**Type analysis:**

Appearance. ..... clear, yellow-brownish, viscous oil
Density (20 °C). ..... 0,981-0,998
Refractive index (20 °C)..... 1,508-1,525

| | | | |
|---|---|---|---|
| **5789.1** | 50 ml | glass | 10,65 € |
| **5789.3** | 100 ml | glass | 13,90 € |
| **5789.2** | 500 ml | glass | 35,40 € |

## Oil of cedar wood
**for microscopy**

Oleum Ligni cedri

**Danger** H304-H410

**The classic medium for immersion microscopy**

**Type analysis:**

Appearance. ..... yellow to brownish, translucent, viscous
Odour. ..... characteristic
Refractive index $n_D^{20}$. ..... 1,51-1,525

| | | | |
|---|---|---|---|
| **5308.1** | 100 ml | glass | 15,60 € |
| **5308.2** | 250 ml | glass | 23,15 € |
| **5308.3** | 500 ml | glass | 40,75 € |

# Barrier Marker

ready-to-use




## Roti®-Liquid Barrier Marker, colourless

For immunology, histology and molecular biology. Glass bottle with brush.

**Danger** H225-H304-H315-H336-H411

The solution is applied to slides or other glass surfaces. After drying, a resistant hydrophobic film remains providing a barrier to aqueous liquids. Circles drawn with Roti®-Liquid Barrier Marker prevent aqueous solutions from spreading by increasing the surface tension of the water. Therefore expensive antibody solutions for example, can be used more effectively. The barrier film can be wiped off the glass surface with a dry cloth or a cloth impregnated with xylene.
**Areas of applications:** Ideal for immunological, histological and molecularbiological assays.

## Roti®-Liquid Barrier Marker, colourless

**For use** with aqueous liquids and solvents as ethanol or acetone.

| | | | |
|---|---|---|---|
| **AN91.1** | 10 ml | glass | 32,80 € |
| **AN91.2** | 5 x 10 ml | glass | 127,95 € |

## Roti®-Liquid Barrier Marker, red

**For use** with aqueous liquids only. The red dye is not solvent resistant.

| | | | |
|---|---|---|---|
| **AN92.1** | 10 ml | glass | 32,80 € |
| **AN92.2** | 5 x 10 ml | glass | 127,95 € |

▶ More slides and slide magazines see chapter Labware - Laboratory Glass, Vessels & Consumables / Microbiology, Histology & Instruments.

**Instructions for use**
can be found on the Internet next to the product description.

# Specimen Sealing



## Roti®-Seal

**for microscopy**

Aqueous cover slip sealant.

- Non-hazardous ingredients
- Solvent-free
- Solidification by light

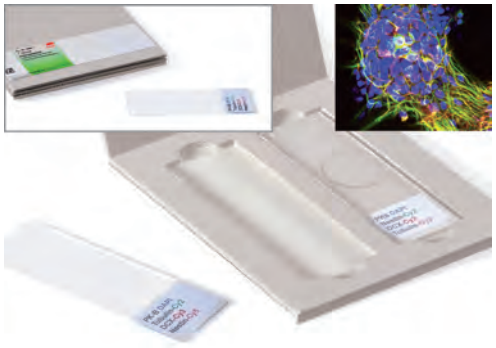
Roti®-Seal is used to seal the edges of the coverslip. Therefore, it protects the mounted specimen reliably against damages caused by air humidity. Roti®-Seal is solid at room temperature. Prior to use it is melted on a water bath (max. 50-55 °C), then it is applied around the edges of the coverslip by using a pipette or a glass rod. Exposure to light (day-light is sufficient) allows the sealant to harden within a short time.
Melt on a water bath (50-55 °C) prior to use.

**Type analysis:**

Appearance. ..... light yellowish coloured, solid medium

| | | | |
|---|---|---|---|
| **6473.1** | 20 ml | glass | 11,75 € |

# Demoslides






## Demoslides Fluoro-4C

**Reference sample for fluorescent microscopy**

Glass slide with ready-to-use cell specimen.
For fine tuning of fluorescent microscopes.
Storage temp.: +4 °C

- Stained with 4 fluorochromes
- Planar and 3D cell structures
- Excellent signal output
- Good photo stability

**For detailed information see chapter Cell Biology / Cell Analysis.**

| | | |
|---|---|---|
| **8987.1** | 1 piece | 274,15 € |
| **8987.2** | 2 pieces | 521,40 € |

# Adhesion Slides

For sophisticated immunohistochemical assays.






## Roti®-Bond Adhesion Slides

**Fast and highly efficient immobilisation of cellular material with optimal structure conservation.**

The new adhesive coating of the Roti®-Bond adhesion slides reacts to natural surface structures of cells and tissues, anchoring them securely to the glass surface. Due to this procedure, based on different binding principles, the cells do not lose their antigenicity, their cell functionality and their three-dimensional structure.

- Assays using only several hundred cells possible
- No cell loss even during harsh incubation procedures
- Excellent recovery rate
- Compatible with all standard and modern assay systems and all fluorescent dyes
- Particularly adapted to assays using stem cells

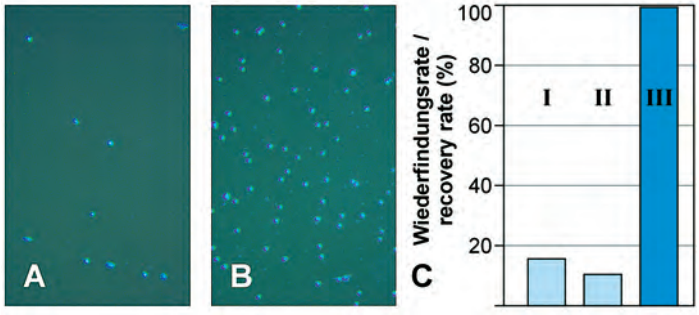



**Figure:**

Brand comparison of efficient cell immobilisation.
1800 murine myeloma cells in 30 µl PBS were applied to each slide. Cells were counted after full immunohistochemical assay including alkali treatment (70 mM NaOH, 150 mM NaCl, 40 % ethanol, 5 min, RT) and DAPI-counterstaining of the remaining nuclei.

**A:** Other adhesion slide,

**B:** Roti®-Bond Adhesion Slide,

**C:** Recovery rate in percent (I and II: other adhesion slides, III: Roti®-Bond)

**Application:**

Immobilisation of cells or tissue sections occurs immediately after contact to the glass surface. Drying of the samples is therefore not necessary. The cellular material can then be fixed with all common fixatives. Cell cultivation can be continued in appropriate culture medium after cell adhesion, allowing *in-vivo* live assays, e.g. with a multiphoton or laserscan microscope.

At present, there is no evidence of any preferential cell type binding in heterogenous cellular material.

Dimensions: L 75 mm x W 25 mm, thickness 1 mm

**Roti®-Bond adhesion slides 50 and 100 are delivered in Rotilabo®-slide boxes.**

| Art. No. | Pack Qty | € |
|---|---|---|
| **CL20.1** | 5 | 11,75 |
| **CL20.2** | 50 | 84,85 |
| **CL20.3** | 100 | 118,25 |

# Chemicals

## Organic & bioorganic chemicals


| | | | |
|---|---|---|---|
| Click Chemistry | 1478 | Building blocks | 1507 |
| DNA synthesis | 1490 | Synthesis reagents | 1523 |
| Amino acids/-derivatives | 1495 | Solvents | 1529 |
| Peptide synthesis | 1500 | | |


## Natural & Reference Materials


| | | | |
|---|---|---|---|
| Phytochemicals | 1538 | Essential Oils | 1552 |
| Fatty Acid References | 1548 | Carbohydrates | 1555 |
| Oils and Greases | 1550 | Vitamins | 1559 |


## Chromatography

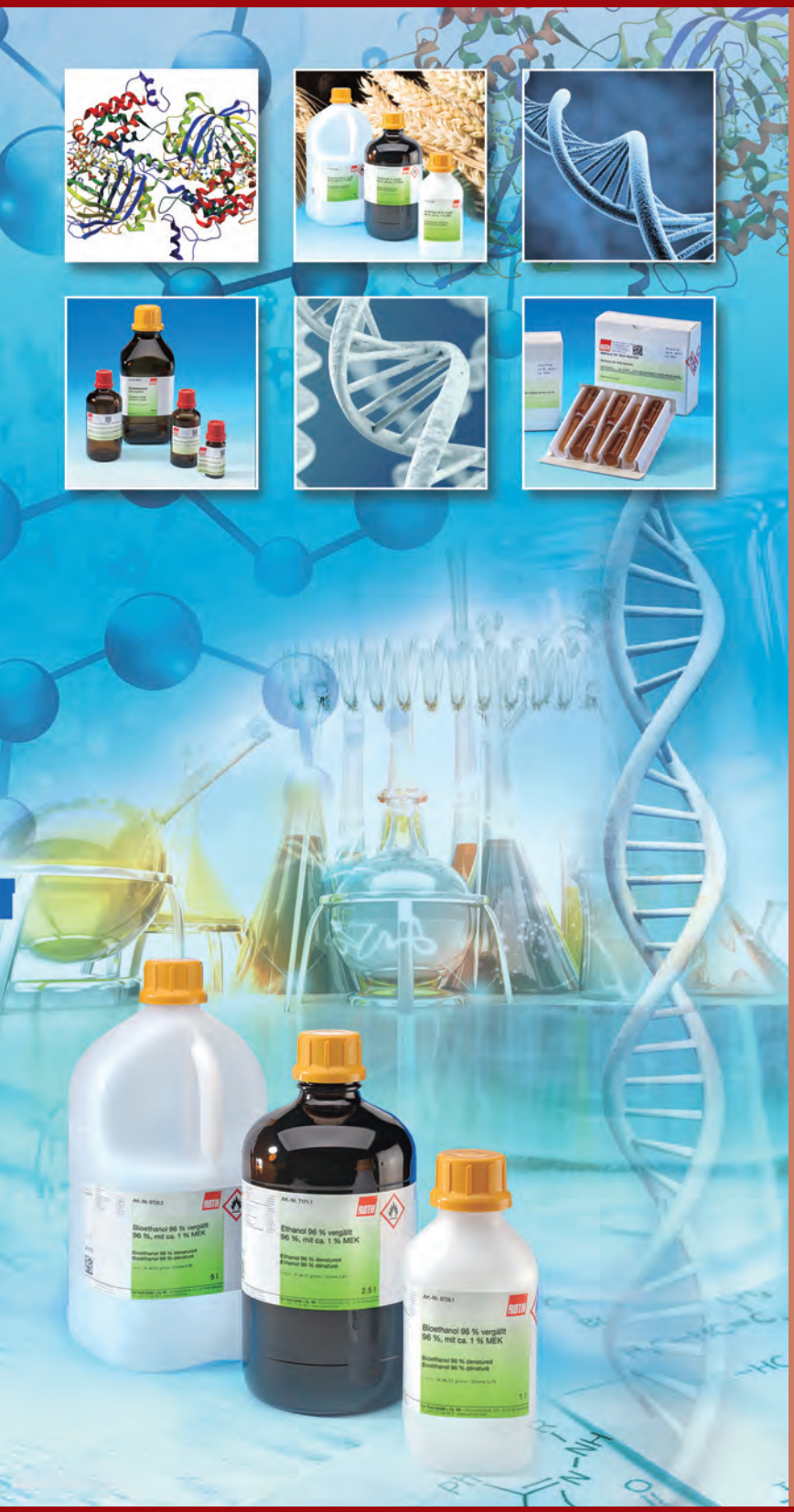

| | | | |
|---|---|---|---|
| Gas Chromatography | 1562 | Ion Chromatography | 1584 |
| Thin Layer Chromatography | 1573 | Liquid Chromatography | 1586 |
| Paper Chromatography | 1583 | Sample Preparation | 1594 |


## Inorganic & analytical reagents


| | | | |
|---|---|---|---|
| Classics | 1612 | High purity | 1667 |
| Instrumental | 1654 | Auxiliary reagents | 1672 |


## Chemicals & reagents A-Z

see page 1689



# Organic & bioorganic chemicals


**Click Chemistry**

| | | |
|---|---|---|
| | Reagents for Click Chemistry | 1478 |
| | Azides and Alkynes | 1479 |
| | Applications, ROTI®kits | |
| | for DNA Labelling | 1485 |
| | for Cell Proliferation Assays | 1486 |

**DNA Synthesis**

| | | |
|---|---|---|
| | Nucleobases & Derivatives | 1490 |
| | Nucleosides and Nucleotides | 1491 |
| | CPG Supports | 1492 |
| | BCE-Phosphoramidites | 1492 |
| | Reagents for DNA Synthesis | 1492 |
| | Solvents for DNA Synthesis | 1494 |

**Amino Acids/-Derivatives** 1495

**Peptide Synthesis**

| | | |
|---|---|---|
| | Protected Amino Acids | 1500 |
| | Coupling Reagents | 1504 |
| | Reactors and Frits | 1505 |
| | Resins and Protecting Groups | 1506 |
| | Reagents | 1506 |

**Building Blocks**

| | | |
|---|---|---|
| | Adamantanes and Derivatives | 1507 |
| | Phosphine Ligands | 1508 |
| | Chiral Building Blocks and Auxiliaries | 1509 |
| | Aromatic Building Blocks | 1510 |
| | Aliphatic Building Blocks | 1518 |

**Synthesis Reagents**

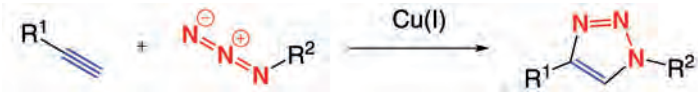
| | | |
|---|---|---|
| | Protecting Groups | 1523 |
| | Oxidising Agents | 1524 |
| | Reducing Agents | 1525 |
| | (Lewis) Acids | 1526 |
| | Bases | 1527 |
| | Quaternary Ammonium Compounds | 1528 |

**Solvents**

| | | |
|---|---|---|
| | Dried Solvents | 1529 |
| | Solvents for Synthesis | 1530 |
| | Ionic Liquids | 1531 |
| | Green Solvents | 1532 |
| | Deuterated Compounds | 1533 |
| | Reagent for NMR Calibration | 1535 |

# Click Chemistry

The copper(I)-catalysed azide-alkyne cycloaddition (CuAAC) is the most prominent example of a group of reactions named click reactions. According to Sharpless' definition, these reactions are characterised by high yields, mild reaction conditions, and by their tolerance of a broad range of functional groups.[1-3] Typically, the reactions require simple or no workup or purification of the product. The most important characteristic of the CuAAC reaction is its unique bioorthogonality as neither azide nor terminal alkyne functional groups are generally present in natural systems.




Schematic illustration of the copper(I)-catalysed azide-alkyne cycloaddition (CuAAC)

**References:**
1 H. C. Kolb, M.G. Finn, K. B. Sharpless, *Angew. Chem. Int. Ed.* **2001**, *40*, 2004-2021.
2 C.W. Tornoe, C. Christensen, M. Meldal, *J. Org. Chem.* **2002**, *67*, 3057-3064.
3 V. V. Rostovtsev, L. G. Green, V. V. Fokin, K. B. Sharpless, *Angew. Chem.* **2002**, *114*, 2708-2711; *Angew. Chem. Int. Ed.* **2002**, *41*, 2596-2599.

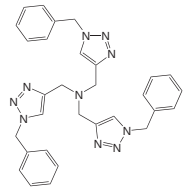
# Reagents for Click Chemistry

Starting from diverse copper catalyst sources, over Cu(I) stabilising ligands to buffer additives and solvents, you will find all necessary reagents in the special ROTI®click quality to perform your click reactions here.

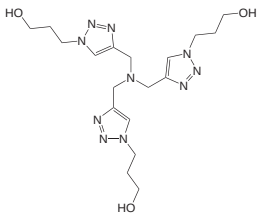
## Catalysts, Ligands, Additives and Solvents

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **L(+)-Ascorbic acid sodium salt** | ≥99 %, ROTI®click Grade | **7819.1** | 10 mg | 13,15 |
| | | **7819.2** | 5 x 10 mg | 39,25 |
| **Copper(I) bromide** | ≥99,999 %, ROTI®click Grade | **7813.1** | 5 mg | 13,90 |
| | | **7813.2** | 10 x 5 mg | 73,00 |
| **Copper(II) sulphate** | ≥98 %, anhydrous, ROTI®click Grade | **7816.1** | 10 mg | 14,55 |
| | | **7816.2** | 5 x 10 mg | 41,40 |
| **DMSO/t-Butanol Solvent** | ROTI®click Grade | **7815.1** | 1 ml | 14,55 |
| | | **7815.2** | 10 x 1 ml | 65,50 |
| **Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA)** | ≥97 %, ROTI®click Grade | **7814.1** | 5 mg | 33,25 |
| | | **7814.2** | 10 mg | 47,85 |
| | | **7814.3** | 50 mg | 82,70 |
| | | **7814.4** | 100 mg | 138,15 |
| **Tris(3-hydroxypropyltriazolylmethyl)amine (THPTA)** | ≥95 %, ROTI®click Grade | **7822.1** | 5 mg | 33,25 |
| | | **7822.2** | 10 mg | 47,85 |
| | | **7822.3** | 50 mg | 82,70 |
| | | **7822.4** | 100 mg | 138,15 |

For additional product data and safety information, see chapter Chemicals A-Z.



Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA)




Tris(3-hydroxypropyltriazolyl-methyl)amine (THPTA)

**Tip:**
**TBTA (Art.No. 7814)** is suitable as copper-stabilising ligand for reactions in organic solvents. **THPTA (Art.No. 7822)** on the other hand is an optimal ligand for reactions in aqueous media.

# Azides & Alkynes

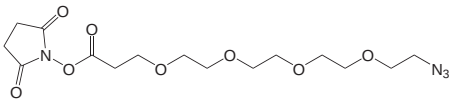
## PEGylation and Linker

Click chemistry opens the door to introduce polyethylene glycols (PEGs) or other linkers in very sophisticated manner into your sample, which are still active for following reaction by the means of amine, carboxyl, malemide or NHS-functional terminal groups. You can choose between alkyne and azide structured PEGs and linkers which you find in the table below.

### PEG and Linker Azides

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **4-Azidobenzoic acid** | ≥97 % | **7835.1** | 10 mg | 38,60 |
| **5-Azidopentanoic acid** | ≥99 % | **7836.1** | 5 mg | 35,40 |
| | | **7836.2** | 10 mg | 46,80 |
| **HO-PEG2-Azide** | ≥90 % | **7828.1** | 5 mg | 41,85 |
| | | **7828.2** | 10 mg | 66,55 |
| **Aminooxy-PEG3-Azide** | ≥90 % | **7832.1** | 5 mg | 93,00 |
| | | **7832.2** | 10 mg | 140,30 |
| **$H_2N$-PEG3-Azide** | ≥90 % | **7830.1** | 5 mg | 41,85 |
| | | **7830.2** | 10 mg | 66,55 |
| **NHS-PEG4-Azide** | ≥90 % | **7823.1** | 5 mg | 64,00 |
| | | **7823.2** | 10 mg | 93,00 |
| | | **7823.3** | 50 mg | 321,45 |
| | | **7823.4** | 100 mg | 611,70 |
| **PEG8-Azide** | ≥95 % | **7826.1** | 5 mg | 61,85 |
| | | **7826.2** | 10 mg | 91,30 |
| **$H_2N$-PEG8-Azide** | ≥90 % | **7829.1** | 5 mg | 41,85 |
| | | **7829.2** | 10 mg | 66,55 |
| **PEG24-Azide** | ≥90 % | **7825.1** | 5 mg | 61,85 |
| | | **7825.2** | 10 mg | 91,30 |

For additional product data and safety information, see chapter Chemicals A-Z.

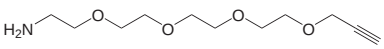


NHS-PEG4-Azide

### PEG and Linker Alkynes

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **NHS-PEG5-Alkyne** | ≥90 % | **7838.1** | 5 mg | 65,50 |
| | | **7838.2** | 10 mg | 116,65 |
| **$H_2N$-PEG4-Alkyne** | ≥90 % | **7840.1** | 5 mg | 67,20 |
| | | **7840.2** | 10 mg | 117,20 |

For additional product data and safety information, see chapter Chemicals A-Z.



$H_2N$-PEG4-Alkyne

**Important information on refrigerated transports**

All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
**Additional costs** resulting from such, **will be invoiced** (further information on request).

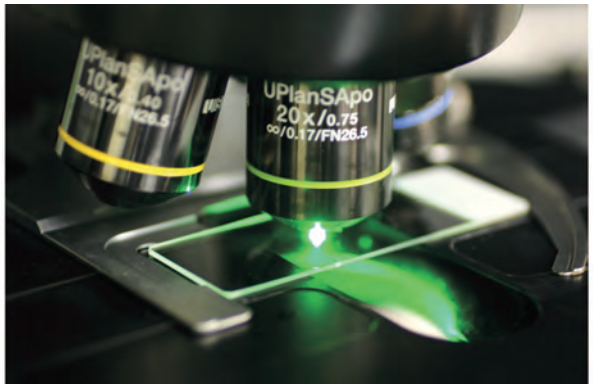
**Please note:**
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.

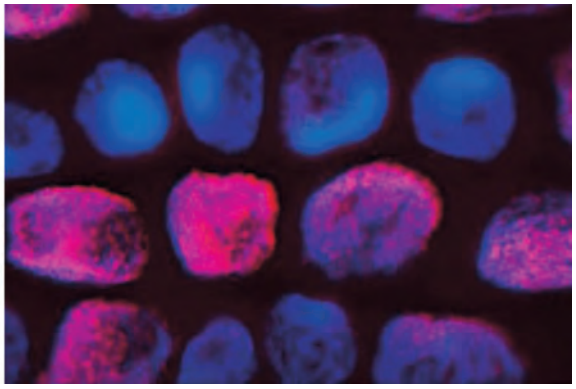
# Tags

## Fluorescent Tags

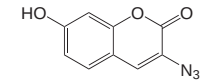
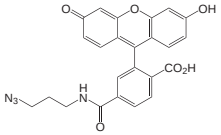
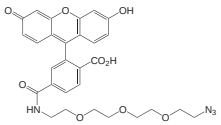
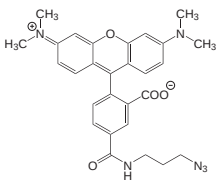
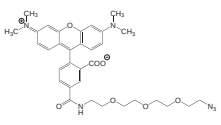
ROTH offers a selection of fluorescent tags for labelling of (bio-)molecules via click chemistry. All available tags are suitable for fluorescence spectroscopy applications due to their excellent absorption properties and good solubility. Tags with PEG-spacer are beneficial for applications with as little interaction between the analyte and the tag as possible. The coumarine derivative (Art No. **7811**) offers a unique feature: fluorescence is only detected after the coupling via click reaction.





### Fluorescent Tags with azide funtion

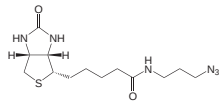
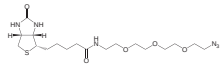
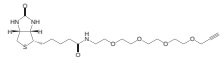
| Product | Structural formula | Purity | Absorption max. | Emission max. | Molar extinction coefficient ε | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|
| **3-Azido-7-hydroxycoumarin** |  | ≥98 % | 404 nm (after click reaction) | 480 nm (after click reaction) | n. d. | **7811.1** | 1 mg | 87,65 |
| | | | | | | **7811.2** | 5 mg | 292,95 |
| **6-Carboxyfluorescein Azide (6-FAM-Azide)** |  | ≥95 % | 496 nm | 516 nm | 83 000 $cm^{-1}M^{-1}$ | **7806.1** | 1 mg | 45,70 |
| | | | | | | **7806.2** | 5 mg | 78,40 |
| | | | | | | **7806.3** | 10 mg | 117,20 |
| | | | | | | **7806.4** | 100 mg | 461,20 |
| **6-Carboxyfluorescein-PEG3-Azide (6-FAM-PEG3-Azide)** |  | ≥96 % | 496 nm | 516 nm | 83 000 $cm^{-1}M^{-1}$ | **7812.1** | 1 mg | 133,20 |
| | | | | | | **7812.2** | 5 mg | 504,20 |
| **5-Carboxytetramethylrhodamine Azide (5-TAMRA-Azide)** |  | ≥95 % | 546 nm | 579 nm | 91 000 $cm^{-1}M^{-1}$ | **7807.1** | 1 mg | 45,70 |
| | | | | | | **7807.2** | 5 mg | 78,40 |
| | | | | | | **7807.3** | 10 mg | 117,20 |
| | | | | | | **7807.4** | 100 mg | 461,20 |
| **5-Carboxytetramethylrhodamine-PEG3-Azide (5-TAMRA-PEG3-Azide)** |  | ≥93 % | 546 nm | 579 nm | 91 000 $cm^{-1}M^{-1}$ | **7808.1** | 1 mg | 44,00 |
| | | | | | | **7808.2** | 5 mg | 76,90 |
| | | | | | | **7808.3** | 10 mg | 115,60 |
| | | | | | | **7808.4** | 100 mg | 456,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Further Fluorescent Tags see chapter Histology/Microscopy

## Non-Fluorescent Tags

Besides fluorescent tags other non-fluorescent labels play an important role in biochemistry and microbiology. Incorporation of such functional groups into your sample with high yields and selectivity is easily possible by click chemistry. Further, the click reaction is compatible with or rather orthogonal to various other labelling methodologies. In order to enlarge the scope for your personalised application we offer these tags in azide and alkyne functional form.

| Product | Structural formula | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Biotin-Azide** |  | ≥95 % | **7803.1** | 1 mg | 45,70 |
| | | | **7803.2** | 5 mg | 78,40 |
| | | | **7803.3** | 10 mg | 117,20 |
| | | | **7803.4** | 100 mg | 461,20 |
| **Biotin-PEG3-Azide** |  | ≥95 % | **7804.1** | 1 mg | 105,25 |
| | | | **7804.2** | 5 mg | 177,40 |
| **Biotin-PEG4-Alkyne** |  | ≥95 % | **7805.1** | 1 mg | 110,20 |
| | | | **7805.2** | 5 mg | 396,70 |



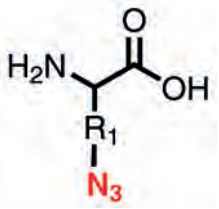
▶ Solvents see chapter Chemicals A-Z

### Important information on refrigerated transports

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**Additional costs** resulting from such, **will be invoiced** (further information on request).

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Slight delays in delivery are therefore possible.

# Azido Amino Acids




With the emergence of click chemistry the use of azide- and alkyne-derivatised α-amino acids has found high interest e.g. in the area of peptide synthesis as a powerful tool in the development of new therapeutics and biological chemistry fundamental research.
Peptide labelling mostly requires reactions which are running close to physiological conditions (neutral pH, aqueous solution, ambient temperature).
Cu(I)-catalysed alkyne-azide cycloaddition (CuAAC) is optimal for such biological compounds, here the advantages of click chemistry once again show their potential.
The low reactant concentrations, low background labelling, the quantitative and rapid labelling, plus the mild reaction conditions fit the necessary reactivity, selectivity and biocompatibility criteria for the peptide labelling and thus ensure the preservation of biological function.
ROTH provides high quality azido amino acids. In this form they can easily undergo click reaction when an alkyne functional reporter molecule is present.

| Product | Synonym | Purity | CAS-Nr. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **D-β-Azidoalanine hydrochloride** | H-D-Aza-OH · HCl | ≥99 % | 1379690-01-3 | **7856.1** | 5 mg | 41,85 |
| | | | | **7856.2** | 10 mg | 66,55 |
| | | | | **7856.3** | 100 mg | 213,95 |
| | | | | **7856.4** | 500 mg | 547,20 |
| **L-β-Azidoalanine hydrochloride** | H-L-Aza-OH · HCl | ≥99 % | 105661-40-3 | **7854.1** | 5 mg | 41,85 |
| | | | | **7854.2** | 10 mg | 66,55 |
| | | | | **7854.3** | 100 mg | 213,95 |
| | | | | **7854.4** | 500 mg | 547,20 |
| **D-γ-Azidohomoalanine hydrochloride** | H-D-Aha-OH · HCl | ≥99 % | 120042-14-0 | **7858.1** | 5 mg | 41,85 |
| | | | | **7858.2** | 10 mg | 66,55 |
| | | | | **7858.3** | 100 mg | 213,95 |
| | | | | **7858.4** | 500 mg | 547,20 |
| **L-γ-Azidohomoalanine hydrochloride** | H-L-Aha-OH · HCl | ≥99 % | 942518-29-8 | **7857.1** | 5 mg | 41,85 |
| | | | | **7857.2** | 10 mg | 66,55 |
| | | | | **7857.3** | 100 mg | 213,95 |
| | | | | **7857.4** | 500 mg | 547,20 |
| **D-Azidolysine hydrochloride** | H-D-Lys($N_3$)-OH · HCl | ≥99 % | 1159610-92-1 | **7862.1** | 5 mg | 41,85 |
| | | | | **7862.2** | 10 mg | 66,55 |
| | | | | **7862.3** | 100 mg | 213,95 |
| | | | | **7862.4** * | 500 mg | 547,20 |
| **L-Azidolysine hydrochloride** | H-L-Lys($N_3$)-OH · HCl | ≥98 % | 159610-92-1 | **7861.1** | 5 mg | 41,85 |
| | | | | **7861.2** | 10 mg | 66,55 |
| | | | | **7861.3** | 100 mg | 213,95 |
| | | | | **7861.4** | 500 mg | 547,20 |
| **D-4-Azidophenylalanine** | H-D-Phe(4-$N_3$)-OH | ≥98 % | 1241681-80-0 | **7853.1** | 5 mg | 41,85 |
| | | | | **7853.2** | 10 mg | 66,55 |
| | | | | **7853.3** | 100 mg | 213,95 |
| | | | | **7853.4** | 500 mg | 547,20 |
| **L-4-Azidophenylalanine** | H-L-Phe(4-$N_3$)-OH | ≥98 % | 33173-53-4 | **7850.1** | 5 mg | 41,85 |
| | | | | **7850.2** | 10 mg | 66,55 |
| | | | | **7850.3** | 100 mg | 213,95 |
| | | | | **7850.4** | 500 mg | 547,20 |
| **D-Azidoornithine hydrochloride** | H-D-Orn($N_3$)-OH · HCl | ≥99 % | – | **7860.1** | 5 mg | 41,85 |
| | | | | **7860.2** | 10 mg | 66,55 |
| | | | | **7860.3** | 100 mg | 213,95 |
| | | | | **7860.4** | 500 mg | 547,20 |
| **L-Azidoornithine hydrochloride** | H-L-Orn($N_3$)-OH · HCl | ≥99 % | 156463-09-1 | **7859.1** | 5 mg | 41,85 |
| | | | | **7859.2** | 10 mg | 66,55 |
| | | | | **7859.3** | 100 mg | 213,95 |
| | | | | **7859.4** | 500 mg | 547,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Fmoc Protected Azido Amino Acids

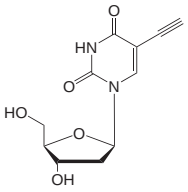



| Product | Synonym | Purity | CAS-Nr. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **Fmoc-L-β-Azidoalanine** | Fmoc-L-Aza-OH | ≥98 %, for biochemistry | 684270-46-0 | **7369.1** | 250 mg | 106,45 |
| | | | | **7369.2** | 1 g | 353,70 |
| **Fmoc-L-γ-Azidohomoalanine** | Fmoc-L-Aha-OH | ≥99 %, for biochemistry | 942518-20-9 | **7363.1** | 250 mg | 85,90 |
| | | | | **7363.2** | 1 g | 295,65 |
| **Fmoc-L-Azidolysine** | Fmoc-L-Lys($N_3$)-OH | ≥98 %, for biochemistry | 159610-89-6 | **7357.1** | 250 mg | 102,05 |
| | | | | **7357.2** | 1 g | 332,20 |
| **Fmoc-L-Azidoornithine** | Fmoc-L-Orn($N_3$)-OH | ≥98 %, for biochemistry | 1097192-04-5 | **7362.1** | 250 mg | 107,40 |
| | | | | **7362.2** | 1 g | 353,70 |
| **Fmoc-L-4-Azidophenylalanine** | Fmoc-L-Phe(4-$N_3$)-OH | ≥98 %, for biochemistry | 163217-43-4 | **7485.1** | 100 mg | 52,70 |
| | | | | **7485.2** | 250 mg | 112,35 |
| **Fmoc-L-4-Azidoproline (2S,4R)** | Fmoc-L-Pro(4-$N_3$)-OH | ≥98 %, for biochemistry | 702679-55-8 | **7367.1** | 100 mg | 96,65 |
| | | | | **7367.2** | 250 mg | 192,45 |
| | | | | **7367.3** | 1 g | 633,20 |

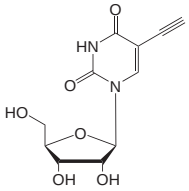
# Nucleosides and Nucleotides

## Nucleosides

The detection of cell proliferation is of utmost importance for monitoring cell vitality, determining genotoxicity or evaluating anticancer drugs. The feeding of cells with EdU (5-ethynyl-2'-deoxyuridine) or EU (5-ethynyl uridine) can be used in cell proliferation studies.




5-Ethinyl-2'-desoxyuridine (EdU)




5-Ethinyl uridine (EU)

| Product | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **5-Ethynyl-2'-deoxyuridine (EdU)** | ≥99 % | **7845.1** | 5 mg | 27,45 |
| | | **7845.2** | 10 mg | 41,85 |
| | | **7845.3** | 50 mg | 96,65 |
| | | **7845.4** | 100 mg | 155,90 |
| | | **7845.5** | 500 mg | 536,45 |
| | | **7845.6** | 1 g | 987,95 |
| **5-Ethynyl uridine (EU)** | ≥97 % | **7848.1** | 5 mg | 55,80 |
| | | **7848.2** | 10 mg | 95,60 |

▶ Further nucleosides and nucleotides see page 1491

## Nucleotides

Our modified nucleotides for click chemistry complement our range of unmodified standard nucleotides. You can use our alkyne-triphosphates in your nucleotide mixture to incorporate alkyne groups into your PCR fragment. These alkyne groups can be used to label the PCR fragment in a subsequent click reaction.

| Product | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **C8-Alkyne-dCTP** | ≥99 %, 100 mM in water | **7801.1** | 0,5 µmol | 78,40 |
| | | **7801.2** | 2,5 µmol | 111,70 |
| | | **7801.3** | 5,0 µmol | 207,40 |
| **C8-Alkyne-dUTP** | ≥99 %, 100 mM in water | **7799.1** | 0,5 µmol | 78,40 |
| | | **7799.2** | 2,5 µmol | 111,70 |
| | | **7799.3** | 5,0 µmol | 207,40 |
| **5-Ethynyl-dUTP** | ≥98 %, 100 mM in water | **7802.1** | 0,5 µmol | 91,30 |
| | | **7802.2** | 2,5 µmol | 349,40 |
| | | **7802.3** | 5,0 µmol | 532,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ dNTP solutions see page 1259

### Important information on refrigerated transports

All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
**Additional costs** resulting from such, **will be invoiced** (further information on request).

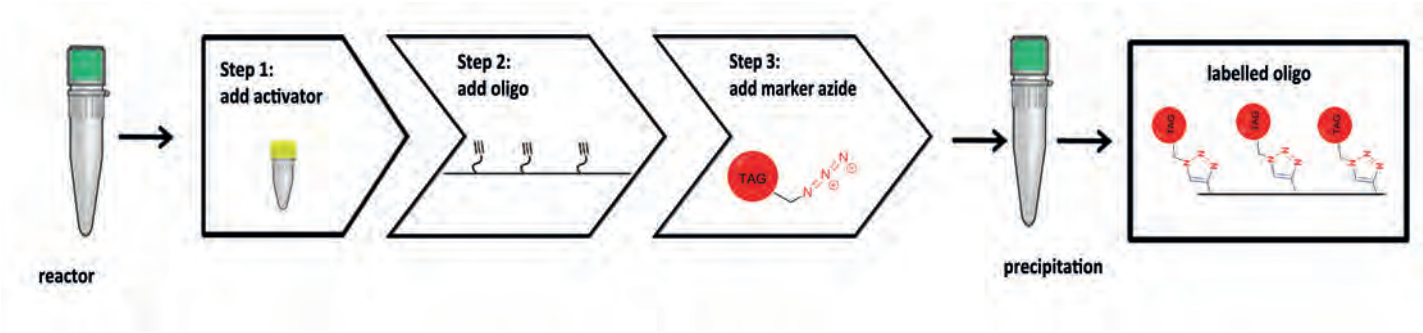
**Please note:**
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.

# Applications

## Labelling of Oligos with Roti®kits for DNA Labelling

The ROTI®kits for DNA Labelling are optimized for the labelling of up to 100 nmol of a single or double alkyne-modified oligonucleotide via copper(I)-catalyzed azide-alkyne cycloaddition (CuAAC; click chemistry). These kits provide all reagents needed to perform your click reaction on alkyne bearing oligonucleotides using a fast, simple and straight forward protocol.

The Oligo Click kits are based on a new solid heterogeneous catalyst. This air-stable, insoluble Cu(I) source provided in a ready-to-use vial (reactor) along with an activator allows efficient click reactions in both aqueous and organic solvents. Both catalyst and activator result in a much easier and faster handling including only three steps:




More than 100 azides are compatible with these kits.

### ROTI®kits for DNA Labelling

| Product | Marker | λ (nm) | Activator | Reactor S | Reactor M | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|---|---|---|
| **Oligo Click S-488** | 6-FAM | 488 | 10 µl | 7 x 2,5 mg | - | **7766.1** | 1 kit | 134,30 |
| **Oligo Click M-488** | 6-FAM | 488 | 20 µl | - | 7 x 5 mg | **7767.1** | 1 kit | 138,70 |
| **Oligo Click S-555** | 5-TAMRA | 555 | 10 µl | 7 x 2,5 mg | - | **7769.1** | 1 kit | 149,45 |
| **Oligo Click M-555** | 5-TAMRA | 555 | 20 µl | - | 7 x 5 mg | **7770.1** | 1 kit | 155,90 |
| **Oligo Click S-Biotin** | Biotin Azide | - | 10 µl | 7 x 2,5 mg | - | **7771.1** | 1 kit | 111,30 |
| **Oligo Click M-Biotin** | Biotin Azide | - | 20 µl | - | 7 x 5 mg | **7772.1** | 1 kit | 116,00 |
| **Oligo Click S Reload** | - | - | 35 µl | 9 x 2,5 mg | - | **7764.1** | 1 kit | 61,85 |
| **Oligo Click M Reload** | - | - | 50 µl | - | 9 x 5 mg | **7765.1** | 1 kit | 76,90 |

For additional product data and safety information, see chapter Chemicals A-Z.




**Tip:**
The ending of the product name specifies the included marker:

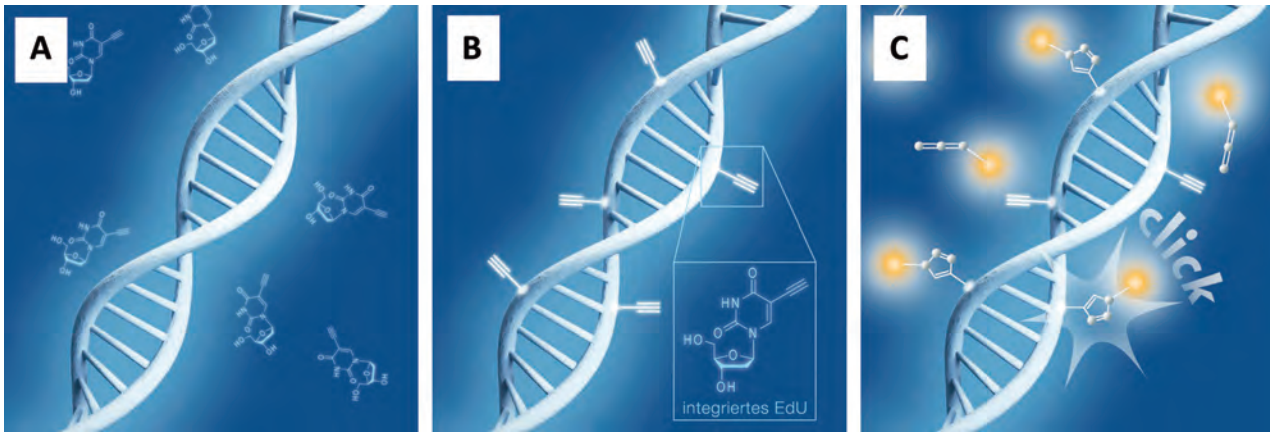
- 488: 6-FAM-Azide
- 555: 5-TAMRA-Azide
- Biotin: Biotin Azide
- Reload: no marker included

**Instructions for use**
can be found on the Internet next to the product description.

# Cell Proliferation Assays

Our ROTI®Kits for EdU mediated detection of cell proliferation provide a superior alternative to time-consuming and less sensitive bromodeoxyuridine (BrdU) assays. Similar to BrdU assays, our assays utilise a uracil derivative (in this case ethynyldeoxyuridine, EdU) which is incorporated into the replicating DNA. EdU is not detected via antibodies; instead fluorescent dyes are coupled directly via click reaction.
This fast and elegant approach allows direct labelling of replicating DNA with the desired fluorescent dye. Thus, the assay is perfectly adaptable to the present facilities and to the assay situation (e.g. for double or triple detection). Furthermore, the click reaction is highly selective and therefore prevents any unspecific labelling. The protocol includes only few steps and decreases the total amount of time.

Advantages of the click chemistry based approach:




Schematic illustration of the click chemistry based EdU cell proliferation assay. A) Incubation of cells with EdU. EdU is a thymidine analogue and is incorporated in DNA during active DNA synthesis. B) After DNA synthesis, EdU was incorporated in the DNA strands. C) Detection of proliferating cells via click chemistry. This reaction is finished within 30 minutes, whereby a variety of different fluorescent dye azides can be used.

## Benefits of the Click Assay:

- Highly reliable
- Easy handling
- Fast detection procedure (only 30 min)
- Mild conditions, no DNA denaturation required
- Compatible with various dyes
- Modular system in click chemistry
- Compatible with multiplexing

## Kits available for:

- **Fluorescence microscopy (ROTI®kits for Imaging)**
- **Flow Cytometry (ROTI®kits for Flow Cytometry)**
- **High Throughput Screening (ROTI®kits for High Throughput Screening)**

| Code in product name | Markers | Absorption (nm) | Emission (nm) | Filter configuration |
|---|---|---|---|---|
| -488 | **6-FAM azide** | 496 | 516 | FITC |
| -555 | **5-TAMRA azide** | 546 | 579 | Cy3™ |
| -594 | **5/6 Sulforhodamine** | 584 | 603 | Texas Red® |
| -647 | **Eterneon red** | 643 | 662 | Cy5™ |

**Tip:**
The number at the end of the product name specifies the excitation wavelength of the included fluorescent marker. Suitable excitation source are:

- 488 nm (blue-green argon laser 488 nm, blue diode laser 473 nm)
- 555 nm (green Nd:YAG laser 532 nm, green helium-neon-laser 543 nm)
- 594 nm (yellow helium-neon-laser 594 nm, yellow diode laser 594 nm)
- 647 nm (red krypton laser 647 nm, red helium-neon-laser 633 nm, red diode laser 635 or 650 nm)

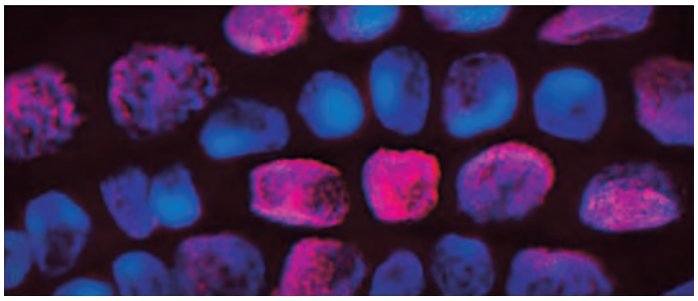
### Important information on refrigerated transports

All products identified as being particularly temperature-sensitive are shipped in **special ice boxes with freezer packs or in dry ice.**
**Additional costs** resulting from such, **will be invoiced** (further information on request).

**Please note:**
In order to guarantee optimum product quality, the dispatch of refrigerated transport products will be carried out **on Mon and Tue only outside Germany!**
Slight delays in delivery are therefore possible.

# ROTI®kits for Imaging

The detection of cell proliferation is of utmost importance for monitoring of cell vitality, determining genotoxicity or evaluating anticancer drugs. ROTH's cell proliferation assays based on EdU (5-ethynyl-2'-deoxyuridine) provide a superior alternative to BrdU (bromodeoxyuridine) assays. ROTH's EdU Click assays are not antibody based and therefore do not require DNA denaturation for detection of the incorporated nucleoside. Instead, the EdU Click assay utilizes click chemistry for detection in a variety of dye fluorescent readouts. Furthermore, the streamlined detection protocol both reduces the total number of steps and significantly decreases the total amount of time.



Proliferating tissue of barley meristem labeled via EdU Click-555 kit (Art. Nr. 7775.1). Dividing cells incorporated EdU and were labeled via click reaction with TAMRA (pink stained cells). Nuclei were counterstained with DAPI (blue). Magnification: 100x; Filterset: Sp. Aqua HC mFISH; Sp. Green HC mFISH

## ROTI®kits for Imaging

ready-to-use

**Warning** H315-H319-H400-H410

| Product | Marker | λ (nm) | Application | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|---|
| **EdU Click-488** | 6-FAM | 488 | For 100 Assays. | **7773.1** | 1 kit | 364,45 |
| **EdU Click-555** | 5-TAMRA | 555 | For 100 Assays. | **7775.1** | 1 kit | 364,45 |
| **EdU Click-594** | 5/6 Sulforhodamine | 594 | For 100 Assays. | **7776.1** | 1 kit | 364,45 |
| **EdU Click-647** | Eterneon Red | 647 | For 100 Assays. | **7777.1** | 1 kit | 364,45 |

For additional product data and safety information, see chapter Chemicals A-Z.


**References:**

1 S. Vidak *et al.*, Proliferation of progeria cells is enhanced by lamina-associated polypeptide 2α (LAP2α) through expression of extracellular matrix proteins. *Genes & Development* **2015,** 29, 2022-2036.

**EdU Click-488:**

2 V. Fock *et al.*, Trophoblast subtype-specific EGFR/ ERBB4 expression correlates with cell cycle progression and hyperplasia in complete hydatidiform moles. *Human Reproduction* **2015,** 30, 4, 789-799.

3 K. Plessl *et al.*, Expression pattern and function of Notch2 in different subtypes of first trimester cytotrophoblast. *Placenta* **2015**, 36, 365-371.

4 G. Meinhardt, *et al.*, Wingless ligand 5a is a critical regulator of placental growth and survival. *Scientific reports* **2016,** 6, 28127.

5 V. Ziegler, A. Albers, G. Fritz, Lovastatin protects keratinocytes from DNA damage-related pro-apoptotic stress responses stimulated by anticancer therapeutics. *Biochimica et Biophysica Acta* **2016,** 1863, 1082-1092.

**EdU Click-555:**

6 S. Barberán, S. Fraguas and F. Cebrià, The EGFR signaling pathway controls gut progenitor differentiation during planarian regeneration and homeostasis. *Development* **2016,** 143, 2089-2102.

7 M. Hennenberg *et al.*, Cooperative effects of EGF, FGF, and FGF-ß1 in prostate stromal cells are different from responses to single growth factors. *Life Sciences* **2015,** 123, 18-24.

8 D. Herrmann *et al.*, Honokiol, a constituent of Magnolia species, inhibits adrenergic contraction of human prostate strips and induces stromal cell death. *Prostate Int* **2014,** 2, 3, 140-146.





**Instructions for use**
can be found on the Internet next to the product description.

▶ Cell culture media and further reagents for cell culture see chapter Cell biology

# ROTI®kits for Flow Cytometry (FC)

The ROTI®kits for Flow Cytometry by ROTH use click chemistry to detect cell proliferation by means of a large number of fluorescent stain read-outs. In the detection procedure both, the total number of steps and the processing time are significantly reduced. The simple click chemistry detection procedure is complete within 30 minutes.




## ROTI®kits for Flow Cytometry (FC)

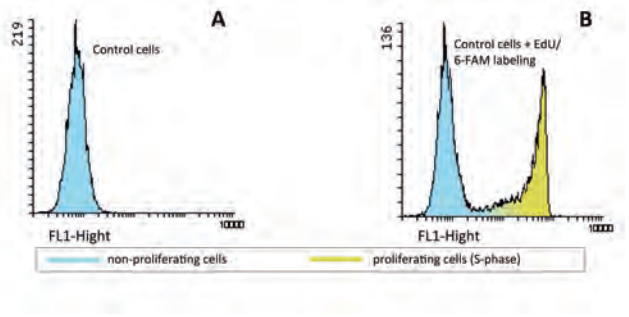
ready-to-use

| Product | Marker | λ (nm) | Application | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|---|
| **EdU Click FC-488** | 6-FAM | 488 | For 50 assays. | **7779.1** | 1 kit | 375,20 |
| **EdU Click FC-555** | 5-TAMRA | 555 | For 50 assays. | **7780.1** | 1 kit | 375,20 |
| **EdU Click FC-594** | 5/6 Sulforhodamine | 594 | For 50 assays. | **7781.1** | 1 kit | 375,20 |
| **EdU Click FC-647** | Eterneon Red | 647 | For 50 assays. | **7783.1** | 1 kit | 375,20 |

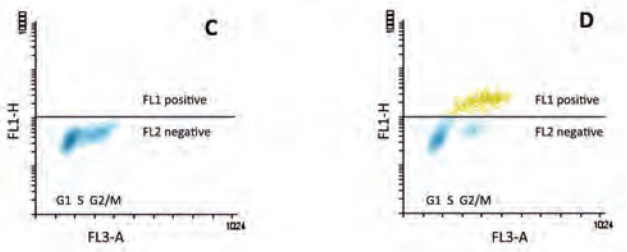
For additional product data and safety information, see chapter Chemicals A-Z.

**References:**

1 N. Dinh Van *et al.*, Modulation of HCV reinfection after orthotopic liver transplantation by fibroblast growth factor-2 and other non-interferon mediators. *Gut* **2016**, 65, 1015-1023.
2 L. Pisarsky *et al.*, Targeting Metabolic Symbiosis to Overcome Resistance to Anti-angiogenic Therapy. *Cell Reports* **2016**, 15, 1-14.




HeLa cells treated without (A) and with (B) 10µM EdU for 2 h. Click reaction was performed using 6-FAM-Azide.
A: negative control, cells without EdU incorporation.
B: non-proliferating cells without EdU incorporation (blue coloured left peak) and proliferating cells (S-phase) having incorporated EdU and are labeled with 6-FAM Azide (green coloured right peak).




Density blots of PI (propidium iodide) stained samples without (C) and with (D) EdU incubation and followed click reaction. The y-axis presents the FL1-Fluorescence intensity and the x-axis the content of DNA measured with FL3-area. Cell cycle phases are indicated as G1, S and G2/M phase.

### Important information on refrigerated transports

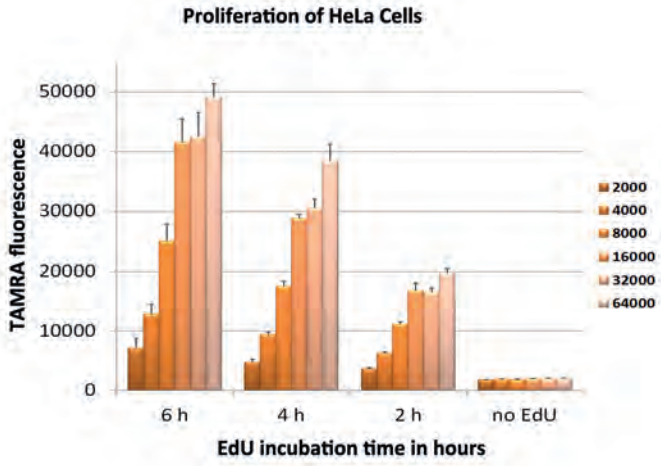
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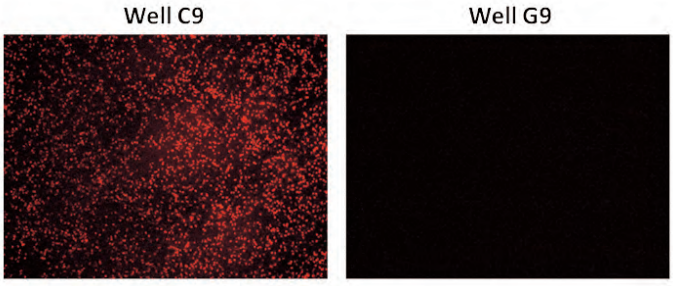
# ROTI®kits for High Throughput Screening (HTS)

The ROTI®kits for High Troughput Screening measures DNA synthesis of adherent cells in 96 well plates. By utilizing click chemistry, detection of a variety of fluorescent dyes is highly specific and very fast. The kits are available in different sizes. The size (2, 4 or 20) refers to the number of 96 well plates for which the kit is designed.




HeLa cells incubated without and with 10 µM EdU for 2, 4 or 6 h in 96 well plate. EdU incorporation was detected over time and for different cell numbers using a fluorescence plate reader. Control: Without EdU no fluorescence was detected after 6 h incubation time.




Fluorescence imaging of 2 wells:
Well C9: incubated for 6 h with EdU;
Well G9: incubation without EdU.

## ROTI®kits for High Throughput Screening (HTS)

| Product | Marker | λ (nm) | Application | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|---|
| **EdU Click HTS 2-488** | 6-FAM | 488 | For 200 reactions or 2 x 96 well plates. | **7786.1** | 1 kit | 209,65 |
| **EdU Click HTS 4-488** | 6-FAM | 488 | For 400 reactions or 4 x 96 well plates. | **7787.1** | 1 kit | 321,45 |
| **EdU Click HTS 20-488** | 6-FAM | 488 | For 2000 reactions or 20 x 96 well plates. | **7788.1** | 1 kit | 1063,20 |
| **EdU Click HTS 2-555** | 5-TAMRA | 555 | For 200 reactions or 2 x 96 well plates. | **7789.1** | 1 kit | 208,45 |
| **EdU Click HTS 4-555** | 5-TAMRA | 555 | For 400 reactions or 4 x 96 well plates. | **7791.1** | 1 kit | 321,45 |
| **EdU Click HTS 20-555** | 5-TAMRA | 555 | For 2000 reactions or 20 x 96 well plates. | **7792.1** | 1 kit | 1063,20 |

▶ 96-well plates (microplates) see page 463

# DNA Synthesis



## Nucleobases & Derivatives

| Product | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **Adenine** | ≥98 %, for biochemistry | **3025.1** | 5 g | 16,70 |
| | | **3025.2** | 25 g | 41,40 |
| **6-Azauracil** | ≥98 %, for biochemistry | **5488.1** | 5 g | 64,40 |
| | | **5488.2** | 10 g | 107,40 |
| **6-Benzylaminopurine** | ≥98 %, for biochemistry | **5552.1** | 1 g | 17,75 |
| | | **5552.2** | 5 g | 41,40 |
| | | **5552.3** | 25 g | 163,95 |
| **Cytosine** | ≥99 %, for biochemistry | **7295.1** | 5 g | 30,65 |
| | | **7295.2** | 25 g | 71,95 |
| | | **7295.3** | 100 g | 192,45 |
| **Guanine** | ≥97 %, for biochemistry | **7505.1** | 10 g | 25,30 |
| | | **7505.2** | 25 g | 51,50 |
| **Guanine hydrochloride** | ≥98 %, for biochemistry | **3814.2** | 5 g | 14,55 |
| | | **3814.1** | 10 g | 21,40 |
| | | **3814.3** | 50 g | 73,00 |
| **Hypoxanthine** | ≥98 %, for biochemistry | **6416.1** | 5 g | 74,10 |
| **Kinetin** | ≥98 %, for biochemistry | **4142.1** | 1 g | 20,35 |
| | | **4142.2** | 5 g | 51,50 |
| **Orotic acid** | ≥99 %, anhydrous | **6820.2** | 25 g | 33,25 |
| | | **6820.1** | 100 g | 71,95 |
| **Theobromine** | ≥99 %, Ph.Eur., for biochemistry | **8963.1** | 10 g | 18,85 |
| | | **8963.2** | 100 g | 75,15 |
| **2-Thiouracil** | ≥98 %, for biochemistry | **5245.1** | 50 g | 43,55 |
| | | **5245.2** | 100 g | 74,10 |
| **Thymine** | ≥99 %, for biochemistry | **7289.1** | 5 g | 24,20 |
| | | **7289.2** | 25 g | 38,20 |
| | | **7289.3** | 100 g | 83,75 |
| **Uracil** | ≥99 %, for biochemistry | **7288.1** | 5 g | 14,95 |
| | | **7288.2** | 25 g | 26,35 |
| | | **7288.3** | 100 g | 64,40 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Nucleosides

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Adenosine** | ≥99 %, p.a. | **6122.1** | 5 g | 16,05 |
| | | **6122.2** | 10 g | 24,65 |
| | | **6122.3** | 25 g | 49,35 |
| **5-Bromo-2'-deoxyuridine** | ≥99 %, for biochemistry | **3243.1** | 250 mg | 33,25 |
| **Cytidine** | ≥99 %, for biochemistry | **0717.1** | 10 g | 37,55 |
| | | **0717.2** | 25 g | 74,10 |
| **5-Ethynyl-2'-deoxyuridine (EdU)** | ≥99 % | **7845.1** | 5 mg | 27,45 |
| | | **7845.2** | 10 mg | 41,85 |
| | | **7845.3** | 50 mg | 96,65 |
| | | **7845.4** | 100 mg | 155,90 |
| | | **7845.5** | 500 mg | 536,45 |
| | | **7845.6** | 1 g | 987,95 |
| **5-Ethynyl uridine (EU)** | ≥98 % | **7848.1** | 5 mg | 55,80 |
| | | **7848.2** | 10 mg | 95,60 |
| **Guanosine** | ≥98 %, for biochemistry | **0715.1** | 10 g | 22,05 |
| | | **0715.2** | 25 g | 38,60 |
| **Inosine** | ≥98 %, for biochemistry | **6770.1** | 5 g | 20,65 |
| **Thymidine** | ≥99 %, p.a. | **3005.2** | 500 mg | 19,25 |
| | | **3005.1** | 1 g | 22,50 |
| | | **3005.3** | 5 g | 48,30 |
| | | **3005.4** | 25 g | 145,15 |
| **Uridine** | ≥99 %, for biochemistry | **0714.1** | 5 g | 20,35 |
| | | **0714.2** | 10 g | 28,95 |
| | | **0714.3** | 25 g | 54,75 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Nucleotides

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Adenosin-5'-triphosphate disodium salt (ATP)** | ≥98 %, for biochemistry | **HN35.1** | 5 g | 23,15 |
| | | **HN35.2** | 10 g | 32,80 |
| | | **HN35.3** | 25 g | 61,20 |
| | | **HN35.4** | 100 g | 203,20 |
| **ATP** | ≥98 %, lyophilised | **K054.1** | 1 g | 28,85 |
| | | **K054.2** | 5 g | 40,35 |
| | | **K054.3** | 10 g | 115,60 |
| | | **K054.4** | 25 g | 140,30 |
| | | **K054.5** | 50 g | 256,95 |
| **CTP** | ≥98 %, lyophilised | **K057.1** | 100 mg | 57,55 |
| | | **K057.2** | 250 mg | 55,80 |
| | | **K057.3** | 500 mg | 107,00 |
| | | **K057.4** | 1 g | 230,60 |
| **GTP** | ≥90 %, lyophilised | **K056.1** | 100 mg | 57,55 |
| | | **K056.2** | 250 mg | 99,45 |
| | | **K056.3** | 500 mg | 192,45 |
| | | **K056.4** | 1 g | 230,60 |
| **UTP** | ≥90 %, lyophilised | **K055.1** | 100 mg | 57,65 |
| | | **K055.2** | 500 mg | 139,25 |

For additional product data and safety information, see chapter Chemicals A-Z.

# CPG/Supports

## Support material for DNA-Synthesis

Derivated Controlled Pore Glass (CPG) is used as support material for DNA-synthesis. The 500 Å supports are ideal for virtually all applications. In order to avoid steric hindrance between the growing oligonucleotide chains and to gain a maximum yield of full-length chains, a long-chained alkylamine "spacer arm" is used.

**500 Å supports are loaded with 30-40 µmol/g**

### Adenosine-CPG-Support
**500 Å pore size**
Support material for DNA-synthesis.
dA-lcaa-CPG
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC).....≥98,0 %
CPG loading. .....30-40 µmol/g
Coupling efficiency. .....≥99 %

| | | | |
|---|---|---|---|
| **2318.3** | 1 g | plastic | 56,90 € |

### Cytidine-CPG-Support
**500 Å pore size**
Support material for DNA-synthesis.
dC-lcaa-CPG
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC).....≥95,0 %
CPG loading. .....30-40 µmol/g
Coupling efficiency. .....≥99 %

| | | | |
|---|---|---|---|
| **2319.3** | 1 g | plastic | 56,90 € |

### Guanosine-CPG-Support
**500 Å pore size**
Support material for DNA-synthesis.
dG-lcaa-CPG
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC).....≥98,0 %
CPG loading. .....30-40 µmol/g
Coupling efficiency. .....≥99 %

| | | | |
|---|---|---|---|
| **2320.3** | 1 g | plastic | 56,45 € |

### Thymidine-CPG-Support
**500 Å pore size**
Support material for DNA-synthesis.
dT-lcaa-CPG
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC).....≥98,0 %
CPG loading. .....30-40 µmol/g
Coupling efficiency. .....≥99 %

| | | | |
|---|---|---|---|
| **2321.3** | 1 g | plastic | 56,45 € |

# BCE-Phosphoramidites

## for PerSeptive Expedite™ and PolyGen® Synthesizer

### Adenosine-BCE-phosphoramidite
**for DNA synthesis**
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-dA(N-Bz)P-($OCH_2CH_2CN$)-N($iPr)_2$
$C_{47}H_{52}N_7O_7P$
M 857,7 g/mol
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **K921.1** | 1 g | glass | 34,30 € |

### Cytidine-BCE-phosphoramidite
**for DNA synthesis**
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-dC(N-Bz)P-($OCH_2CH_2CN$)-N($iPr)_2$
$C_{46}H_{52}N_5O_8P$
M 833,7 g/mol
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **K922.1** | 1 g | glass | 34,30 € |

### Guanosine-BCE-phosphoramidite
**for DNA synthesis**
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-dG(N-Bu)P-($OCH_2CH_2CN$)-N($iPr)_2$
$C_{44}H_{54}N_7O_8P$
M 839,7 g/mol
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **K923.1** | 1 g | glass | 34,30 € |

### Thymidine-BCE-phosphoramidite
**for DNA synthesis**
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-T-P($OCH_2CH_2CN$)-N($iPr)_2$
$C_{40}H_{49}N_4O_8P$
M 744,6 g/mol
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **K924.1** | 1 g | glass | 33,25 € |

# Reagents

ready-to-use

## for ABI™- and PolyGen® Synthesizer



### Molecular sieve 3 Å
**activated, under argon**
Suitable for PolyGen® Synthesizer, 3 Å.
Storage temp.: +20 °C

| | | | |
|---|---|---|---|
| **N893.1** | 100 ml | glass | 12,40 € |

## Activation reagent

**for DNA synthesis with ABI™ and PolyGen® Synthesizer**

Tetrazole/Acetonitrile

**Danger** H225-H302+H312+H332-H319

| | | | |
|---|---|---|---|
| **2253.1** | 200 ml | glass | 104,85 € |
| **2253.2** | 450 ml | glass | 203,20 € |

## Capping reagent I

**for DNA synthesis with ABI™ and PolyGen® Synthesizer**

Mixture of acetic anhydride, pyridine and tetrahydrofuran

Storage temp.: +4 °C

**Danger**

H225-H318-H302+H332-H335-H351-H315-EUH019

| | | | |
|---|---|---|---|
| **2255.1** | 200 ml | glass | 36,45 € |
| **2255.2** | 450 ml | glass | 77,30 € |
| **2255.3** | 2,5 l | glass | 212,85 € |
| Original pack 4 x 2,5 l | | | 202,21/2,5 l |

## Capping reagent II

**for DNA synthesis with ABI™ and PolyGen® Synthesizer**

Mixture of 1-Methylimidazole and tetrahydrofuran

Storage temp.: +4 °C

**Danger** H225-H314-H302-H335-H351-EUH019

| | | | |
|---|---|---|---|
| **2256.1** | 200 ml | glass | 35,40 € |
| **2256.2** | 450 ml | glass | 74,10 € |
| **2256.3** | 2,5 l | glass | 196,65 € |
| Original pack 4 x 2,5 l | | | 186,82/2,5 l |

## DMT removal DCE

**for DNA-synthesis with PolyGen® Synthesizer**

3 % Trichloro acetic acid in 1,2-dichloroethane

**Danger** H225-H302-H315-H318-H335-H350-H411

| | | | |
|---|---|---|---|
| **K060.1** | 450 ml | glass | 36,45 € |
| **K060.2** | 2,5 l | glass | 117,20 € |
| Original pack 4 x 2,5 l | | | 111,34/2,5 l |

## DMT removal reagent

**for DNA synthesis with ABI™ Synthesizer**

3 % Trichloro acetic acid in dichloromethane

**Danger** H315-H318-H335-H336-H351-H373-H411

| | | | |
|---|---|---|---|
| **2257.1** | 450 ml | glass | 36,45 € |
| **2257.2** | 2,5 l | glass | 117,75 € |
| Original pack 4 x 2,5 l | | | 111,86/2,5 l |

## Oxidation reagent

**for DNA-Synthesis with ABI™ and PolyGen® Synthesizer**

Iodine/water/pyridine/tetrahydrofuran-mixture. 0,05 M iodine.

**Danger** H225-H315-H319-H335-H351-H373-EUH019

| | | | |
|---|---|---|---|
| **2254.1** | 200 ml | glass | 27,45 € |
| **2254.2** | 450 ml | glass | 50,45 € |
| **2254.3** | 2,5 l | glass | 213,95 € |
| Original pack 4 x 2,5 l | | | 203,25/2,5 l |

## Fast Oxidation reagent

**for DNA-Synthesis with ABI™ and PolyGen® Synthesizer**

For quick separating phosphoramidites.

Iodine/water/pyridine/tetrahydrofuran-mixture. 0,02 M iodine.

Storage temp.: +20 °C

**Danger** H225-H315-H319-H335-H351-H373-EUH019

| | | | |
|---|---|---|---|
| **A133.2** | 450 ml | glass | 50,00 € |

## 4,4'-Dimethoxytrityl chloride (DMT-Cl)

**≥98 %, for synthesis**

Protective group reagent

| | | | |
|---|---|---|---|
| **9671.1** | 5 g | glass | 23,15 € |
| **9671.2** | 25 g | glass | 69,80 € |
| **9671.3** | 50 g | glass | 115,60 € |
| **9671.4** | 100 g | glass | 181,70 € |

## Starter Kit DNA Synthesis for approx. 100 x 30mers

| Product | Art. No. | Pack Qty. | € | Recommended order amount |
|---|---|---|---|---|
| Adenosine-CPG-support (500 Å) | **2318.3** | 1 g | 56,90 | 1 |
| Cytidine-CPG-support (500 Å) | **2319.3** | 1 g | 56,90 | 1 |
| Guanosine-CPG-supports (500 Å) | **2320.3** | 1 g | 56,45 | 1 |
| Thymidine-CPG-support (500 Å) | **2321.3** | 1 g | 56,45 | 1 |
| Adenosine-BCE-phosphoramidite | **K921.1** | 1 g | 34,30 | 5 |
| Cytidine-BCE-phosphoramidite | **K922.1** | 1 g | 34,30 | 5 |
| Guanosine-BCE-phosphoramidite | **K923.1** | 1 g | 34,30 | 5 |
| Thymidine-BCE-phosphoramidite | **K924.1** | 1 g | 33,25 | 5 |
| Activation reagent | **2253.2** | 450 ml | 203,20 | 1 |
| Oxidation reagent | **2254.2** | 450 ml | 50,45 | 1 |
| Capping reagent I | **2255.2** | 450 ml | 77,30 | 2 |
| Capping reagent II | **2256.2** | 450 ml | 74,10 | 1 |
| DMT removal DCE | **K060.1** | 450 ml | 36,45 | 1 |
| Acetonitrile (water content ≤10 ppm) | **8824.2** | 2,5 l | 103,10 | 2 |
| Molecular sieve 3 Å | **N893.1** | 100 ml | 12,40 | 5 |
| Ammonia solution 32 % | **A990.1** | 200 ml | 17,10 | 1 |
| Acetonitrile (water content ≤30 ppm) | **3620.1** | 100 ml | 26,80 | 5 |
| Disposable syringes, Luer-fitting | **0059.1** | 100 pieces | 20,10 | 1 |
| Disposable needles Sterican®, long edge | **C721.1** | 100 pieces | 6,85 | 1 |
| PCR-reaction vials (0,2 ml) | **XT87.1** | 1000 pieces | 50,50 | 1 |

For additional product data and safety information, see chapter Chemicals A-Z.



# Solvents for DNA Synthesis

- Each reagent is specially purified for DNA synthesis
- Each batch is tested on a synthesizer to determine maximum yield
- Extremely careful manufacturing, testing and packing guarantee a new standard of quality - the DNA Synthesis Grade

## Acetonitrile

**ROTISOLV® ≥99,9 %, for DNA synthesis**

Water content ≤10 ppm

**Danger** H225-H302+H312+H332-H319

For solubilisation of phosphoamidites during synthesis of oligonucleotides >20mer.

**Guarantee analysis:**

Assay (GC).....≥99,9 %
Water (KF).....≤0,001 %
Non volatile matter.....≤0,0001 %

| | | | |
|---|---|---|---|
| **8824.2** | 2,5 l | glass | 103,10 € |
| Original pack 4 x 2,5 l | | | 97,95/2,5 l |

## Acetonitrile

**ROTISOLV® ≥99,9 %, for DNA synthesis**

Water content ≤30 ppm

**Danger** H225-H302+H312+H332-H319

For solubilisation of phosphoamidites during synthesis of oligonucleotides ≤20mer.

**Guarantee analysis:**

Assay (GC).....≥99,9 %
Water (KF).....≤0,003 %
Free acid.....≤0,002 %
Non volatile matter.....≤0,0003 %

| | | | |
|---|---|---|---|
| **2216.2** | 2,5 l | glass | 81,60 € |
| Original pack 4 x 2,5 l | | | 77,52/2,5 l |

## Acetonitrile

**ROTISOLV® ≥99,9 %, for DNA synthesis**

Water content ≤30 ppm

**Danger** H225-H302+H312+H332-H319

For solubilisation of phosphoamidites during synthesis of oligonucleotides ≤20mer. Sealed with septum cap.

**Guarantee analysis:**

Assay (GC).....≥99,9 %
Water (KF).....≤0,003 %
Packed for Applied Biosystems and Biosearch DNA-Synthesizer.

| | | | |
|---|---|---|---|
| **3620.1** | 100 ml | septum bottle | 26,80 € |

## Ammonia solution 32 %

**30-33 %, for DNA synthesis.**

Storage temp.: +4 °C

**Danger** H290-H314-H400-H335

For oligo separation from supports and for neutralising protective groups. Comes in bottle to fit ABI 391/392/394.

**Type analysis:**

Assay ($NH_3$).....≥30 %

| | | | |
|---|---|---|---|
| **A990.1** | 200 ml | glass | 17,10 € |



## Acetonitrile

**ROTIDRY® ≥99,9 % (≤10 ppm $H_2O$)**

Dried; for DNA synthesis and analysis.

**Danger** H225-H302+H312+H332-H319

**Guarantee analysis:**

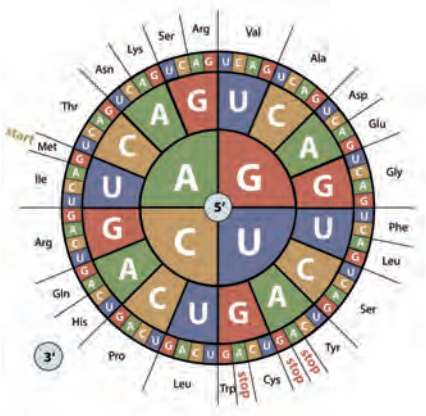
Assay (GC).....≥99,9 %
Colour (Hazen).....≤10
Water (KF).....≤0,001 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
Filtered through a membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE00.1** | 1 l | glass | 35,40 € |
| Original pack 6 x 1 l | | | 33,63/1 l |
| **AE00.2** | 2,5 l | glass | 72,60 € |
| Original pack 4 x 2,5 l | | | 68,97/2,5 l |
| **AE00.3** | 4 l | glass | 107,40 € |

▶ Further dried solvents see page 1529

# Amino acids

Our amino acids are of the highest purity and suitable for a broad range of applications in biochemistry. Besides the natural occurring L-amino acids, we offer a selection of unnatural D-amino acids and DL-amino acids.




Ala

## Alanine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Alanine** | ≥99 %, for biochemistry | **7866.1** | 5 g | plastic | 21,00 |
| | | **7866.2** | 25 g | plastic | 64,00 |
| | | **7866.3** | 100 g | plastic | 192,45 |
| **DL-Alanine** | ≥99 %, for biochemistry | **9798.2** | 25 g | plastic | 11,00 |
| | | **9798.1** | 100 g | plastic | 22,05 |
| | | **9798.3** | 250 g | plastic | 42,50 |
| **L-Alanine** | ≥99 %, for biochemistry | **3076.1** | 25 g | plastic | 19,90 |
| | | **3076.2** | 250 g | plastic | 100,55 |

Arg

## Arginine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **DL-Arginine** | ≥98,5 %, for biochemistry | **8592.1** | 5 g | plastic | 20,35 |
| | | **8592.2** | 25 g | plastic | 60,10 |
| | | **8592.3** | 100 g | plastic | 198,90 |
| **L-Arginine** | ≥99 % CELLPURE® | **1655.1** | 25 g | plastic | 10,25 |
| | | **1655.2** | 100 g | plastic | 25,70 |
| | | **1655.3** | 500 g | plastic | 83,75 |
| | ≥98,5 %, USP, for biochemistry | **3144.1** | 50 g | plastic | 17,10 |
| | | **3144.3** | 250 g | plastic | 41,85 |
| | | **3144.2** | 1 kg | plastic | 135,35 |
| **D-Arginine monohydrochloride** | ≥99 %, for biochemistry | **7868.1** | 5 g | plastic | 24,20 |
| | | **7868.2** | 25 g | plastic | 72,60 |
| | | **7868.3** | 100 g | plastic | 213,95 |
| **DL-Arginine monohydrochloride** | ≥98 %, for biochemistry | **4925.1** | 5 g | plastic | 79,45 |
| **L-Arginine monohydrochloride** | ≥98,5 % CELLPURE® | **1689.1** | 25 g | plastic | 14,95 |
| | | **1689.2** | 100 g | plastic | 26,35 |
| | | **1689.3** | 500 g | plastic | 87,00 |
| | ≥98,5 %, Ph.Eur., USP | **3145.1** | 50 g | plastic | 17,10 |
| | | **3145.2** | 250 g | plastic | 45,70 |

Asn

## Asparagine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Asparagine monohydrate** | ≥98 %, for biochemistry | **7872.1** | 5 g | plastic | 24,20 |
| | | **7872.2** | 25 g | plastic | 72,60 |
| **DL-Asparagine monohydrate** | ≥98 %, for biochemistry | **5495.1** | 100 g | plastic | 39,70 |
| | | **5495.2** | 250 g | plastic | 85,90 |
| **L-Asparagine monohydrate** | ≥99 % CELLPURE® | **KK37.1** | 50 g | plastic | 26,35 |
| | | **KK37.2** | 250 g | plastic | 90,85 |
| | | **KK37.3** | 500 g | plastic | 167,60 |
| | ≥99 %, Ph.Eur., for biochemistry | **HN23.1** | 100 g | plastic | 36,45 |
| | | **HN23.2** | 500 g | plastic | 156,45 |
| | | **HN23.3** | 1 kg | plastic | 256,95 |

Asp

## Aspartic acid

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Aspartic acid** | ≥98 %, for biochemistry | **7873.1** | 5 g | plastic | 20,35 |
| | | **7873.2** | 25 g | plastic | 60,10 |
| | | **7873.3** | 100 g | plastic | 149,45 |
| **DL-Aspartic acid** | ≥98 %, for biochemistry | **8593.1** | 100 g | plastic | 31,10 |
| | | **8593.2** | 500 g | plastic | 133,20 |
| **L-Aspartic acid** | ≥99 % CELLPURE® | **1690.1** | 25 g | plasitc | 14,55 |
| | | **1690.2** | 100 g | plasitc | 25,70 |
| | | **1690.3** | 500 g | plasitc | 84,85 |
| | ≥98,5 %, Ph.Eur., for biochemistry | **T202.1** | 100 g | plastic | 16,70 |
| | | **T202.2** | 500 g | plastic | 71,50 |
| | | **T202.3** | 1 kg | plastic | 119,25 |

Cys

## Cysteine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **DL-Cysteine** | ≥98 %, for biochemistry | **8594.1** | 5 g | plastic | 48,30 |
| | | **8594.2** | 25 g | plastic | 117,20 |
| | | **8594.3** | 100 g | plastic | 342,95 |
| **L-Cysteine** | ≥99 % CELLPURE® | **1693.1** | 25 g | plastic | 26,35 |
| | | **1693.2** | 100 g | plastic | 65,05 |
| | | **1693.3** | 500 g | plastic | 277,90 |
| | ≥98 %, DAB, for biochemistry | **3467.1** | 10 g | glass | 14,95 |
| | | **3467.2** | 50 g | glass | 29,60 |
| | | **3467.3** | 250 g | plastic | 110,65 |
| **L-Cysteine hydrochloride** | ≥99 %, p.a., anhydrous | **3468.1** | 10 g | plastic | 14,95 |
| | | **3468.2** | 50 g | plastic | 26,80 |
| | | **3468.3** | 250 g | plastic | 76,90 |
| **D-Cysteine hydrochloride monohydrate** | ≥98,5 %, for biochemistry | **7874.1** | 1 g | glass | 24,65 |
| | | **7874.2** | 5 g | plastic | 73,00 |
| **L-Cysteine hydrochloride monohydrate** | ≥99 % CELLPURE® | **1694.1** | 25 g | plastic | 18,85 |
| | | **1694.2** | 100 g | plastic | 42,50 |
| | | **1694.3** | 500 g | plastic | 175,80 |
| | ≥98,5 %, for biochemistry | **T203.1** | 50 g | plastic | 26,35 |
| | | **T203.2** | 100 g | plastic | 40,75 |
| | | **T203.3** | 500 g | plastic | 166,65 |

## Cystine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **DL-Cystine** | ≥98,5 % | **5565.1** | 1 g | glass | 47,85 |
| **L-Cystine** | ≥98,5 % CELLPURE® | **1695.1** | 25 g | plastic | 24,65 |
| | | **1695.2** | 100 g | plastic | 60,75 |
| | | **1695.3** | 500 g | plastic | 252,65 |
| | ≥98,5 %, for biochemistry | **3471.1** | 100 g | plastic | 56,90 |
| | | **3471.2** | 500 g | plastic | 246,20 |




## Glutamine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Glutamine** | ≥98,5 %, for biochemistry | **7876.1** | 1 g | glass | 24,65 |
| | | **7876.2** | 5 g | plastic | 73,00 |
| | | **7876.3** | 25 g | plastic | 213,95 |
| **DL-Glutamine** | ≥98,5 %, for biochemistry | **8595.1** | 1 g | glass | 46,80 |
| | | **8595.2** | 5 g | plastic | 88,05 |
| | | **8595.3** | 25 g | plastic | 284,90 |
| **L-Glutamine** | ≥99 % CELLPURE® | **HN08.1** | 25 g | plastic | 19,25 |
| | | **HN08.2** | 100 g | plastic | 36,45 |
| | | **HN08.3** | 500 g | plastic | 126,35 |
| | ≥99 %, USP, for biochemistry | **3772.1** | 100 g | plastic | 31,10 |
| | | **3772.2** | 500 g | plastic | 99,90 |




## Glutamic acid

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Glutamic acid** | ≥99 %, for biochemistry | **7879.1** | 5 g | plastic | 24,65 |
| | | **7879.2** | 25 g | plastic | 73,00 |
| | | **7879.3** | 100 g | plastic | 177,40 |
| **DL-Glutamic acid** | ≥98,5 %, for biochemistry | **8596.1** | 25 g | plastic | 60,10 |
| | | **8596.2** | 100 g | plastic | 192,45 |
| **L-Glutamic acid** | ≥99 % CELLPURE® | **1743.1** | 25 g | plastic | 14,55 |
| | | **1743.2** | 100 g | plastic | 22,50 |
| | | **1743.3** | 500 g | plastic | 71,95 |
| | ≥98,5 %, Ph.Eur., for biochemistry | **3774.1** | 250 g | plastic | 31,75 |
| | | **3774.2** | 1 kg | plastic | 88,70 |




## Glycine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Glycine** | ≥99 %, Blotting-Grade | **0079.1** | 250 g | plastic | 25,30 |
| | | **0079.2** | 500 g | plastic | 47,20 |
| | | **0079.3** | 1 kg | plastic | 75,15 |
| | | **0079.4** | 2,5 kg | plastic | 149,45 |
| | ≥99 %, p.a. PUFFERAN® | **3908.1** | 250 g | plastic | 22,05 |
| | | **3908.2** | 1 kg | plastic | 71,95 |
| | | **3908.3** | 5 kg | plastic | 200,50 |
| | | **3908.5** | 25 kg | plastic | 708,45 |
| | ≥99 % CELLPURE® | **HN07.1** | 100 g | plastic | 16,70 |
| | | **HN07.2** | 500 g | plastic | 45,70 |
| | | **HN07.3** | 1 kg | plastic | 83,35 |
| | ≥98,5 %, Ph.Eur., USP, JP | **T873.1** | 250 g | plastic | 25,30 |
| | | **T873.3** | 500 g | plastic | 46,15 |
| | | **T873.2** | 1 kg | plastic | 79,05 |
| | | **T873.4** | 2,5 kg | plastic | 170,95 |
| | ≥99 %, for biochemistry | **3187.1** | 250 g | plastic | 19,25 |
| | | **3187.2** | 500 g | plastic | 25,30 |
| | | **3187.3** | 1 kg | plastic | 38,60 |
| | | **3187.4** | 5 kg | plastic | 161,25 |
| | ≥99 %, for synthesis | **3790.1** | 250 g | plastic | 17,75 |
| | | **3790.2** | 1 kg | plastic | 35,40 |
| | | **3790.3** | 5 kg | plastic | 126,35 |




## Histidine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Histidine** | ≥98 %, for biochemistry | **7880.1** | 5 g | plastic | 46,15 |
| | | **7880.2** | 25 g | plastic | 138,70 |
| **DL-Histidine** | ≥98,5 %, for biochemistry | **8597.1** | 5 g | plastic | 31,10 |
| | | **8597.2** | 25 g | plastic | 91,30 |
| | | **8597.3** | 100 g | plastic | 295,65 |
| **L-Histidine** | ≥99 % CELLPURE® | **1696.1** | 25 g | plastic | 26,35 |
| | | **1696.2** | 100 g | plastic | 56,90 |
| | | **1696.3** | 500 g | plastic | 233,85 |
| | ≥98,5 %, Ph.Eur., for biochemistry | **3852.1** | 25 g | plastic | 17,10 |
| | | **3852.3** | 100 g | plastic | 46,80 |
| | | **3852.2** | 1 kg | plastic | 352,10 |
| **L-Histidine hydrochloride monohydrate** | ≥99 % CELLPURE® | **1697.1** | 25 g | plastic | 22,50 |
| | | **1697.2** | 100 g | plastic | 53,65 |
| | | **1697.3** | 500 g | plastic | 214,90 |
| | ≥98,5 %, Ph.Eur., for biochemistry | **9455.1** | 100 g | plastic | 42,90 |
| | | **9455.3** | 250 g | plastic | 90,20 |
| | | **9455.2** | 500 g | plastic | 165,05 |

For additional product data and safety information, see chapter Chemicals A-Z.




## Isoleucine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **DL-Isoleucine** | ≥98,5 %, for biochemistry | **8598.1** | 10 g | plastic | 24,65 |
| | | **8598.2** | 50 g | plastic | 91,30 |
| | | **8598.3** | 100 g | plastic | 163,95 |
| **L-Isoleucine** | ≥99 % CELLPURE® | **1698.1** | 25 g | plastic | 23,15 |
| | | **1698.2** | 100 g | plastic | 56,90 |
| | | **1698.3** | 500 g | plastic | 228,45 |
| | ≥98,5 %, USP, for biochemistry | **3922.1** | 10 g | glass | 13,90 |
| | | **3922.2** | 100 g | plastic | 44,00 |
| | | **3922.3** | 1 kg | plastic | 349,40 |




## Leucine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Leucine** | ≥99 %, for biochemistry | **7882.1** | 5 g | plastic | 30,00 |
| | | **7882.2** | 25 g | plastic | 90,20 |
| | | **7882.3** | 100 g | plastic | 271,45 |
| **DL-Leucine** | ≥98,5 %, for biochemistry | **8599.1** | 25 g | plastic | 22,50 |
| | | **8599.2** | 50 g | plastic | 38,60 |
| | | **8599.3** | 250 g | plastic | 154,30 |
| **L-Leucine** | ≥99 % CELLPURE® | **1699.1** | 25 g | plastic | 19,25 |
| | | **1699.2** | 100 g | plastic | 42,90 |
| | | **1699.3** | 500 g | plastic | 147,85 |
| | ≥98,5 %, Ph.Eur., USP, for biochemistry | **3984.1** | 100 g | plastic | 34,30 |
| | | **3984.3** | 250 g | plastic | 63,35 |
| | | **3984.4** | 500 g | plastic | 110,65 |
| | | **3984.2** | 1 kg | plastic | 209,10 |




## Lysine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **L-Lysine monohydrate** | ≥98,5 % CELLPURE® | **6829.1** | 25 g | plastic | 48,30 |
| | | **6829.2** | 100 g | plastic | 88,05 |
| | | **6829.3** | 500 g | plastic | 321,45 |
| | ≥98,5 %, for biochemistry | **4207.1** | 25 g | plastic | 45,05 |
| | | **4207.2** | 100 g | plastic | 84,85 |
| **D-Lysine hydrochloride** | ≥99 %, for biochemistry | **7883.1** | 1 g | glass | 24,65 |
| | | **7883.2** | 5 g | plastic | 54,75 |
| | | **7883.3** | 25 g | plastic | 133,20 |
| **DL-Lysine hydrochloride** | ≥98 %, for biochemistry | **8600.1** | 500 mg | glass | 20,35 |
| | | **8600.2** | 1 g | glass | 31,75 |
| | | **8600.3** | 5 g | plastic | 55,80 |
| **L-Lysine hydrochloride** | ≥99 % CELLPURE® | **1700.1** | 25 g | plastic | 15,60 |
| | | **1700.2** | 100 g | plastic | 28,50 |
| | | **1700.3** | 500 g | plastic | 95,60 |
| | ≥98,5 %, Ph.Eur., USP, JP, for biochemistry | **9357.1** | 100 g | plastic | 17,75 |
| | | **9357.3** | 250 g | plastic | 36,45 |
| | | **9357.4** | 500 g | plastic | 63,35 |
| | | **9357.2** | 1 kg | plastic | 111,70 |




## Methionine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Methionine** | ≥98 %, for biochemistry | **7885.1** | 5 g | plastic | 19,25 |
| | | **7885.2** | 25 g | plastic | 57,95 |
| | | **7885.3** | 100 g | plastic | 145,15 |
| **DL-Methionine** | ≥98 %, for biochemistry | **8602.1** | 100 g | plastic | 28,95 |
| | | **8602.2** | 500 g | plastic | 116,00 |
| **L-Methionine** | ≥99 % CELLPURE® | **1702.1** | 25 g | plastic | 17,10 |
| | | **1702.2** | 100 g | plastic | 35,40 |
| | | **1702.3** | 500 g | plastic | 138,70 |
| | ≥99 %, for biochemistry | **9359.1** | 100 g | plastic | 28,95 |
| | | **9359.3** | 250 g | plastic | 59,05 |
| | | **9359.4** | 500 g | plastic | 107,40 |
| | | **9359.2** | 1 kg | plastic | 203,20 |




## Ornithine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **L-Ornithine monohydrochloride** | ≥99 % CELLPURE® | **1703.1** | 25 g | plastic | 23,15 |
| | | **1703.2** | 100 g | plastic | 53,65 |
| | | **1703.3** | 500 g | plastic | 209,65 |
| | ≥99 %, for biochemistry | **T204.1** | 25 g | plastic | 14,55 |
| | | **T204.2** | 100 g | plastic | 37,55 |
| | | **T204.3** | 500 g | plastic | 134,40 |




## Phenylalanine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Phenylalanine** | ≥98,5 %, for biochemistry | **7886.1** | 5 g | plastic | 21,40 |
| | | **7886.2** | 25 g | plastic | 65,05 |
| | | **7886.3** | 100 g | plastic | 160,20 |
| **DL-Phenylalanine** | ≥98,5 %, for biochemistry | **8603.1** | 25 g | plastic | 21,40 |
| | | **8603.2** | 100 g | plastic | 59,05 |
| | | **8603.3** | 250 g | plastic | 123,65 |
| **L-Phenylalanine** | ≥99 % CELLPURE® | **1709.1** | 25 g | plastic | 19,60 |
| | | **1709.2** | 100 g | plastic | 44,00 |
| | | **1709.3** | 500 g | plastic | 170,95 |
| | ≥98,5 %, Ph.Eur., for biochemistry | **4491.3** | 25 g | plastic | 13,90 |
| | | **4491.1** | 100 g | plastic | 38,60 |
| | | **4491.4** | 250 g | plastic | 77,30 |
| | | **4491.2** | 1 kg | plastic | 274,15 |

For additional product data and safety information, see chapter Chemicals A-Z.




## Proline

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Proline** | ≥98,5 %, for biochemistry | **7888.1** | 1 g | glass | 24,65 |
| | | **7888.2** | 5 g | plastic | 72,60 |
| | | **7888.3** | 25 g | plastic | 192,45 |
| **DL-Proline** | ≥99 %, for biochemistry | **5267.1** | 5 g | plastic | 25,30 |
| | | **5267.2** | 10 g | plastic | 45,05 |
| | | **5267.3** | 25 g | plastic | 88,05 |
| **L-Proline** | ≥98,5 % CELLPURE® | **1713.1** | 25 g | plastic | 20,65 |
| | | **1713.2** | 100 g | plastic | 44,00 |
| | | **1713.3** | 500 g | plastic | 165,05 |
| | ≥98,5 %, Ph.Eur., for biochemistry | **T205.1** * | 25 g | plastic | 16,05 |
| | | **T205.2** | 100 g | plastic | 31,75 |
| | | **T205.3** | 500 g | plastic | 122,05 |




## Serine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Serine** | ≥99 %, for biochemistry | **7531.2** | 1 g | glass | 17,75 |
| | | **7531.1** | 5 g | plastic | 24,65 |
| | | **7531.3** | 25 g | plastic | 95,60 |
| **DL-Serine** | ≥99 %, for biochemistry | **8606.1** | 100 g | plastic | 45,05 |
| | | **8606.2** | 500 g | plastic | 192,45 |
| **L-Serine** | ≥99 % CELLPURE® | **1714.1** | 25 g | plastic | 25,30 |
| | | **1714.2** | 100 g | plastic | 61,20 |
| | | **1714.3** | 500 g | plastic | 246,20 |
| | ≥98,5 %, Ph.Eur. | **4682.1** | 100 g | plastic | 45,05 |
| | | **4682.3** | 250 g | plastic | 85,90 |
| | | **4682.4** | 500 g | plastic | 160,20 |
| | | **4682.2** | 1 kg | plastic | 278,45 |




## Threonine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Threonine** | ≥98,5 % for biochemistry | **7889.1** | 5 g | plastic | 24,65 |
| | | **7889.2** | 25 g | plastic | 72,60 |
| | | **7889.3** | 100 g | plastic | 231,15 |
| **DL-Threonine** | ≥98 %, for biochemistry | **7532.1** | 10 g | plastic | 21,40 |
| | | **7532.4** | 50 g | plastic | 47,85 |
| | | **7532.2** | 100 g | plastic | 75,15 |
| | | **7532.3** | 500 g | plastic | 321,45 |
| **L-Threonine** | ≥99 % CELLPURE® | **1738.1** | 25 g | plastic | 19,25 |
| | | **1738.2** | 100 g | plastic | 38,60 |
| | | **1738.3** | 500 g | plastic | 155,90 |
| | ≥99 %, Ph.Eur., for biochemistry | **T206.1** | 25 g | plastic | 15,60 |
| | | **T206.2** | 100 g | plastic | 31,10 |
| | | **T206.4** | 250 g | plastic | 59,70 |
| | | **T206.3** | 500 g | plastic | 110,65 |




## Tryptophan

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Tryptophan** | ≥98,5 %, for biochemistry | **7700.1** | 5 g | plastic | 47,85 |
| | | **7700.2** | 25 g | plastic | 138,70 |
| **DL-Tryptophan** | ≥98 %, for biochemistry | **5236.1** | 10 g | plastic | 14,95 |
| | | **5236.2** | 25 g | plastic | 28,95 |
| | | **5236.3** | 100 g | plastic | 93,00 |
| **L-Tryptophan** | ≥99 % CELLPURE® | **1739.1** | 25 g | plastic | 28,95 |
| | | **1739.2** | 100 g | plastic | 85,50 |
| | | **1739.3** | 500 g | plastic | 353,70 |
| | ≥98,5 %, Ph.Eur., for biochemistry | **4858.1** | 10 g | glass | 14,55 |
| | | **4858.2** | 100 g | plastic | 70,45 |
| | | **4858.4** | 250 g | plastic | 147,85 |
| | | **4858.3** | 1 kg | plastic | 525,70 |




## Tyrosine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Tyrosine** | ≥98 %, for biochemistry | **7890.1** | 1 g | glass | 21,40 |
| | | **7890.2** | 5 g | plastic | 64,40 |
| | | **7890.3** | 25 g | plastic | 192,45 |
| **DL-Tyrosine** | ≥98,5 %, for biochemistry | **8608.1** | 10 g | plastic | 24,20 |
| | | **8608.2** | 50 g | plastic | 70,45 |
| | | **8608.3** | 250 g | plastic | 267,70 |
| **L-Tyrosine** | ≥99 % CELLPURE® | **1741.1** | 25 g | plastic | 23,15 |
| | | **1741.2** | 100 g | plastic | 61,20 |
| | | **1741.3** | 500 g | plastic | 241,90 |
| | ≥99 %, Ph.Eur., for biochemistry | **T207.1** | 25 g | plastic | 15,60 |
| | | **T207.2** | 100 g | plastic | 38,60 |
| | | **T207.3** | 500 g | plastic | 153,20 |




## Valine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **D-Valine** | ≥98,5 %, for biochemistry | **7891.1** | 5 g | plastic | 24,65 |
| | | **7891.2** | 25 g | plastic | 73,00 |
| | | **7891.3** | 100 g | plastic | 231,15 |
| **DL-Valine** | ≥99 %, for biochemistry | **7540.1** | 50 g | plastic | 28,50 |
| | | **7540.2** | 100 g | plastic | 49,35 |
| | | **7540.3** | 250 g | plastic | 96,65 |
| **L-Valine** | ≥99 % CELLPURE® | **1742.1** | 25 g | plastic | 20,35 |
| | | **1742.2** | 100 g | plastic | 40,35 |
| | | **1742.3** | 500 g | plastic | 149,45 |
| | ≥98,5 %, USP, for biochemistry | **4879.1** | 25 g | plastic | 16,70 |
| | | **4879.3** | 100 g | plastic | 38,60 |
| | | **4879.4** | 250 g | plastic | 73,00 |
| | | **4879.5** * | 500 g | plastic | 117,20 |
| | | **4879.2** | 1 kg | plastic | 213,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Amino Acid Derivatives

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **N-Acetyl-L-cysteine** | ≥98 %, for biochemistry | **4126.1** | 25 g | 23,55 |
| | | **4126.2** | 100 g | 75,15 |
| **N-Acetylglycine** | ≥99 %, for biochemistry | **5526.1** | 25 g | 16,70 |
| | | **5526.2** | 100 g | 30,00 |
| | | **5526.3** | 500 g | 111,70 |
| **β-Alanine** | ≥99 %, for biochemistry | **3078.2** | 50 g | 24,65 |
| | | **3078.1** | 250 g | 70,85 |
| **L-Alaninol** | ≥98 %, for biochemistry | **5521.1** | 1 g | 24,65 |
| | | **5521.2** | 5 g | 91,30 |
| | | **5521.3** | 10 g | 145,70 |
| **L-Alanyl-L-glutamine** | ≥99 %, CELLPURE® | **6831.1** | 5 g | 31,75 |
| | | **6831.2** | 10 g | 44,00 |
| | | **6831.3** | 25 g | 88,05 |
| | | **6831.4** | 100 g | 299,95 |
| | ≥98 %, for biochemistry | **6830.1** | 10 g | 37,55 |
| | | **6830.2** | 50 g | 132,15 |
| **Alliin** | ROTICHROM® HPLC | **K031.1** | 10 mg | 274,15 |
| **2-Amino-5-bromobenzoic acid** | ≥95 %, for biochemistry | **5519.1** | 5 g | 23,45 |
| | | **5519.2** | 25 g | 77,30 |
| **DL-2-Aminobutyric acid** | ≥98 %, for biochemistry | **5518.1** | 25 g | 45,70 |
| | | **5518.2** | 100 g | 134,40 |
| **2-Amino-4-chlorobenzoic acid** | ≥98 %, for biochemistry | **5516.1** | 10 g | 18,20 |
| | | **5516.2** | 25 g | 29,60 |
| | | **5516.3** | 100 g | 89,15 |
| **6-Aminohexanoic acid** | ≥99 %, for biochemistry | **3113.1** | 100 g | 25,70 |
| | | **3113.3** | 250 g | 51,50 |
| | | **3113.2** | 500 g | 92,35 |
| **4-Aminohippuric acid** | ≥98 %, for biochemistry | **6187.1** | 10 g | 35,40 |
| | | **6187.2** | 100 g | 256,95 |
| **2-Aminoisobutyric acid** | ≥97 %, for biochemistry | **5514.1** | 50 g | 38,60 |
| | | **5514.2** | 100 g | 65,05 |
| **5-Aminolevulinic acid hydrochloride** | ≥98 %, for biochemistry | **8451.1** | 500 mg | 24,65 |
| | | **8451.2** | 1 g | 36,45 |
| | | **8451.3** | 5 g | 107,40 |
| **DL-Carnitinchloride** | ≥98 %, for biochemistry | **7212.1** | 25 g | 59,05 |
| **L-Carnosine** | ≥98 %, for biochemistry | **4148.1** | 1 g | 26,35 |
| | | **4148.2** | 5 g | 85,90 |
| **Cysteamine hydrochloride** | ≥99 %, for biochemistry | **7625.1** | 25 g | 27,85 |
| | | **7625.2** | 100 g | 73,00 |
| | | **7625.3** | 250 g | 127,95 |
| **DL-2,3-Diaminopropionic acid hydrochloride** | ≥99 %, for biochemistry | **5431.1** | 1 g | 23,55 |
| | | **5431.2** | 5 g | 82,70 |

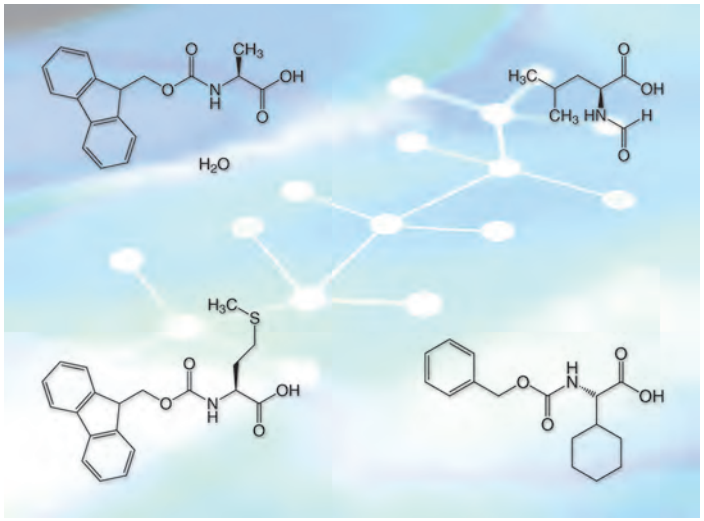
| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Glutathione oxidized** | ≥98 %, for biochemistry | **6378.1** | 1 g | 34,95 |
| | | **6378.2** | 5 g | 145,15 |
| **L-Glutathione reduced** | >98 %, for biochemistry | **6382.1** | 5 g | 27,45 |
| | | **6382.2** | 25 g | 91,30 |
| **Glycinamide hydrochloride** | ≥95 %, for biochemistry | **5543.1** | 10 g | 23,15 |
| | | **5543.2** | 25 g | 42,50 |
| | | **5543.3** | 50 g | 67,65 |
| **Glycine anhydride** | extra pure | **5542.1** | 25 g | 42,90 |
| **Glycylglycine** | ≥99 %, ultra quality PUFFERAN® | **3794.1** | 10 g | 16,70 |
| | | **3794.2** | 100 g | 83,75 |
| | | **3794.3** | 250 g | 180,10 |
| | | **3794.4** | 500 g | 327,90 |
| | ≥98,5 %, Buffer Grade PUFFERAN® | **HN74.1** | 50 g | 33,25 |
| | | **HN74.2** | 100 g | 53,25 |
| | | **HN74.3** | 250 g | 115,60 |
| | | **HN74.4** | 500 g | 206,95 |
| **Hippuric acid sodium salt hydrate** | ≥99 %, cryst. | **7507.1** | 25 g | 93,00 |
| **o-Hydroxyhippuric acid** | ≥95 %, for biochemistry | **7511.1** | 1 g | 57,95 |
| **L-4-Hydroxyproline** | ≥98 %, for biochemistry | **3893.1** | 5 g | 42,90 |
| **L-Kynurenine** | ≥98 %, for biochemistry | **8456.1** | 100 mg | 57,55 |
| | | **8456.2** | 250 mg | 107,40 |
| | | **8456.3** | 500 mg | 192,45 |
| **3-Nitro-L-tyrosine** | ≥98 %, for biochemistry | **5275.1** | 5 g | 57,95 |
| | | **5275.2** | 10 g | 103,10 |
| **L-Norvalinol** | ≥98 %, for biochemistry | **6663.1** | 500 mg | 32,15 |
| | | **6663.2** | 1 g | 49,35 |
| **N-Phenylglycine** | ≥97 %, for biochemistry | **5939.1** | 10 g | 57,95 |
| **Serotonin creatinine sulphate monohydrate** | ≥99 %, for biochemistry | **8385.1** | 1 g | 121,40 |
| **Serotonin hydrochloride** | ≥98 %, for biochemistry | **8367.1** | 100 mg | 19,25 |
| | | **8367.2** | 1 g | 35,40 |
| | | **8367.3** | 5 g | 138,70 |
| **Taurine** | ≥99 %, for biochemistry | **4721.1** | 100 g | 19,25 |
| | | **4721.2** | 500 g | 52,15 |
| **Tyramine** | ≥98 %, for biochemistry | **4862.2** | 1 g | 14,95 |
| | | **4862.1** | 5 g | 23,15 |
| | | **4862.3** | 25 g | 57,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Peptide Synthesis

## Protected Amino Acids

We supply protected amino acids of the highest quality and purity for standard applications in biochemistry and specifically for peptide synthesis.



Ala

### Alanine

| Product | Purity | Synonym | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **Boc-L-Alanine** | ≥98,5 %, for biochemistry | Boc-L-Ala-OH | **6907.1** | 5 g | 15,60 |
| | | | **6907.2** | 25 g | 38,60 |
| | | | **6907.3** | 100 g | 113,45 |
| **Fmoc-L-Alanine monohydrate** | ≥98 %, for biochemistry | Fmoc-L-Ala-OH | **6646.1** | 10 g | 15,60 |
| | | | **6646.2** | 50 g | 36,05 |
| | | | **6646.3** | 250 g | 137,10 |
| | | | **6646.4** | 500 g | 246,20 |
| | | | **6646.5** | 1 kg | 461,20 |
| **Fmoc-L-β-Azido-alanine** | ≥98 %, for biochemistry | Fmoc-L-Aza-OH | **7369.1** | 250 mg | 106,45 |
| | | | **7369.2** | 1 g | 353,70 |
| **Fmoc-L-γ-Azido-homoalanine** | ≥99 %, for biochemistry | Fmoc-L-Aha-OH | **7363.1** | 250 mg | 85,90 |
| | | | **7363.2** | 1 g | 295,65 |

Arg

### Arginine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Arginine hydrochloride monohydrate** | ≥98 %, for biochemistry | Boc-L-Arg-OH | **6914.1** | 5 g | 28,95 |
| | | | **6914.2** | 25 g | 76,25 |
| | | | **6914.3** | 100 g | 224,70 |
| **Fmoc-L-Arginine** | ≥98 %, for biochemistry | Fmoc-L-Arg-OH | **6896.1** | 5 g | 31,75 |
| | | | **6896.2** | 25 g | 122,45 |
| **Fmoc-L-Arginine-(Pbf)** | ≥85 %, for biochemistry | Fmoc-L-Arg(Pbf)-OH | **8833.1** | 5 g | 38,60 |
| | | | **8833.2** | 25 g | 141,40 |
| | | | **8833.3** | 100 g | 456,90 |
| **Z-L-Arginine** NEW | ≥98,5 %, for biochemistry | Cbz-L-Arginine | **1914.1** | 5 g | 16,05 |
| | | | **1914.2** | 25 g | 42,90 |
| | | | **1914.3** | 100 g | 107,40 |

Asn

### Asparagine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Asparagine** | ≥98 %, for biochemistry | Boc-L-Asn-OH | **6915.1** | 5 g | 11,75 |
| | | | **6915.2** | 25 g | 31,10 |
| | | | **6915.3** | 100 g | 96,65 |
| **Fmoc-L-Asparagine** | ≥98,5 %, for biochemistry | Fmoc-L-Asn-OH | **6897.1** | 5 g | 18,20 |
| | | | **6897.2** | 25 g | 51,50 |
| | | | **6897.3** | 100 g | 162,90 |
| **Fmoc-L-Asparagine-(Trityl)** | ≥98 %, for biochemistry | Fmoc-L-Asn(Trt)-OH | **9652.1** | 5 g | 20,65 |
| | | | **9652.2** | 25 g | 62,90 |
| | | | **9652.3** | 100 g | 209,65 |

Asp

### Aspartic acid

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Aspartic acid-(OBenzyl)** | ≥98,5 %, for biochemistry | Boc-L-Asp (OBzl)-OH | **8846.1** | 5 g | 18,85 |
| | | | **8846.2** | 25 g | 55,80 |
| | | | **8846.3** | 100 g | 177,40 |
| **Fmoc-L-Aspartic acid-(OAllyl)** | ≥98,5 %, for biochemistry | Fmoc-L-Asp(OAll)-OH | **6641.1** | 500 mg | 18,85 |
| | | | **6641.2** | 1 g | 28,95 |
| | | | **6641.3** | 5 g | 111,30 |
| **Fmoc-L-Aspartic acid-(OtBu)** | ≥99 %, for biochemistry | Fmoc-L-Asp (OtBu)-OH | **9654.1** | 5 g | 23,15 |
| | | | **9654.2** | 25 g | 69,80 |
| | | | **9654.3** | 100 g | 228,45 |
| **Z-L-Aspartic acid** NEW | ≥98,5 %, for biochemistry | Z-L-Asp-OH | **1894.1** | 5 g | 18,20 |
| | | | **1894.2** | 25 g | 52,60 |
| | | | **1894.3** | 100 g | 138,70 |

For additional product data and safety information, see chapter Chemicals A-Z.




## Cysteine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Cysteine-(4-Mbzl)** NEW | ≥98,5 %, for biochemistry | Boc-Cys (4-Mbzl)-OH | **2042.1** | 5 g | 21,40 |
| | | | **2042.2** | 10 g | 37,55 |
| | | | **2042.3** | 25 g | 69,80 |
| **Fmoc-L-Cysteine-(Acetamido-methyl)** | ≥99 %, for biochemistry | Fmoc-L-Cys(Acm)-OH | **8842.1** | 5 g | 34,30 |
| | | | **8842.2** | 25 g | 100,55 |
| | | | **8842.3** | 100 g | 310,70 |
| **Fmoc-L-Cysteine-(Trityl)** | ≥98,5 %, for biochemistry | Fmoc-L-Cys(Trt)-OH | **8841.1** | 5 g | 19,25 |
| | | | **8841.2** | 25 g | 57,95 |
| | | | **8841.3** | 100 g | 175,80 |




## Glutamine

| Product | Purity | Synonym | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| **Boc-L-Glutamine** | ≥99 %, for biochemistry | Boc-L-Gln-OH | **6916.1** | 5 g | 11,75 |
| | | | **6916.2** | 25 g | 31,10 |
| | | | **6916.3** | 100 g | 96,65 |
| **Fmoc-L-Glutamine** | ≥98 %, for biochemistry | Fmoc-L-Gln-OH | **6898.1** | 5 g | 18,20 |
| | | | **6898.2** | 25 g | 51,50 |
| | | | **6898.3** | 100 g | 162,90 |
| **Fmoc-L-Glutamine-(Trityl)** | ≥98 %, for biochemistry | Fmoc-L-Gln (Trt)-OH | **9653.1** | 5 g | 24,65 |
| | | | **9653.2** | 25 g | 80,55 |
| | | | **9653.3** | 100 g | 267,70 |




## Glutamic acid

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Glutamic acid** | ≥99 %, for biochemistry | Boc-L-Glu-OH | **6917.1** | 5 g | 19,25 |
| | | | **6917.2** | 25 g | 60,75 |
| | | | **6917.3** | 100 g | 209,65 |
| **Fmoc-L-Glutamic acid-(OtBu) monohydrate** | ≥99 %, for biochemistry | Fmoc-L-Glu (OtBu)-OH | **9655.1** | 5 g | 22,05 |
| | | | **9655.2** | 25 g | 67,65 |
| | | | **9655.3** | 100 g | 220,40 |
| **Z-L-Glutamic acid** NEW | ≥98,5 %, for biochemistry | Z-L-Glu-OH | **1885.1** | 5 g | 16,05 |
| | | | **1885.2** | 25 g | 42,90 |
| | | | **1885.3** | 100 g | 127,95 |




## Glycine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-Glycine** | ≥98 %, for biochemistry | Boc-Gly-OH | **6918.1** | 5 g | 11,75 |
| | | | **6918.2** | 25 g | 31,10 |
| | | | **6918.3** | 100 g | 96,65 |
| **Fmoc-Glycine** | ≥99 %, for biochemistry | Fmoc-Gly-OH | **6899.1** | 5 g | 11,75 |
| | | | **6899.2** | 25 g | 34,30 |
| | | | **6899.3** | 100 g | 117,20 |
| **Cbz-Cyclohexyl-L-Glycine** | ≥98 %, for biochemistry | Cbz-L-Chg-OH | **6636.1** | 500 mg | 21,00 |
| | | | **6636.2** | 1 g | 33,25 |
| | | | **6636.3** | 5 g | 139,75 |




## Histidine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Histidine** | ≥98 %, for biochemistry | Boc-L-His-OH | **6920.1** | 5 g | 26,80 |
| | | | **6920.2** | 25 g | 103,75 |
| **Boc-L-Histidine-(Dnp)** | ≥97,5 %, for biochemistry | Boc-L-His(Dnp)-OH | **1994.1** | 1 g | 21,40 |
| | | | **1994.2** | 5 g | 48,30 |
| | | | **1994.3** | 10 g | 85,90 |
| **Fmoc-L-Histidine-(Trityl)** | ≥97 %, for biochemistry | Fmoc-L-His(Trt)-OH | **8843.1** | 5 g | 22,05 |
| | | | **8843.2** | 25 g | 67,65 |
| | | | **8843.3** | 100 g | 203,20 |




## Hydroxyproline

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Hydroxyproline** | ≥98 %, for biochemistry | Boc-L-Hyp-OH | **6921.1** | 5 g | 48,30 |
| | | | **6921.2** | 25 g | 166,65 |
| **L-Hydroxyproline methylester hydrochloride** | ≥98 %, for biochemistry | H-Hyp-OMe · HCl | **6662.1** | 500 mg | 12,80 |
| | | | **6662.2** | 1 g | 18,20 |
| | | | **6662.3** | 5 g | 38,60 |




## Isoleucine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Isoleucine hemihydrate** | ≥98 %, for biochemistry | Boc-L-Ile-OH | **6923.1** | 5 g | 11,75 |
| | | | **6923.2** | 25 g | 31,10 |
| | | | **6923.3** | 100 g | 96,65 |
| **Fmoc-L-Isoleucine** | ≥98,5 %, for biochemistry | Fmoc-L-Ile-OH | **6647.1** | 10 g | 15,60 |
| | | | **6647.2** | 50 g | 36,05 |
| | | | **6647.3** | 250 g | 137,10 |

For additional product data and safety information, see chapter Chemicals A-Z.




## Leucine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Leucine monohydrate** | ≥98 %, for biochemistry | Boc-L-Leu-OH | **6924.1** | 5 g | 11,75 |
| | | | **6924.2** | 25 g | 31,10 |
| | | | **6924.3** | 100 g | 96,65 |
| **Fmoc-L-Leucine** | ≥95 %, for biochemistry | Fmoc-L-Leu-OH | **6654.1** | 10 g | 15,60 |
| | | | **6654.2** | 50 g | 36,05 |
| | | | **6654.3** | 250 g | 137,10 |
| | | | **6654.4** | 500 g | 246,20 |
| **N-Formyl-L-Leucine** | ≥98 %, for biochemistry | N-Formyl-L-Leu | **6665.1** | 500 mg | 26,35 |
| | | | **6665.2** | 1 g | 42,50 |
| | | | **6665.3** | 5 g | 177,40 |
| **Boc-L-tert-Leucine** | ≥98,5 %, for biochemistry | Boc-L-Tle-OH | **6942.1** | 1 g | 24,65 |
| | | | **6942.2** | 5 g | 97,75 |
| | | | **6942.3** | 10 g | 170,95 |
| **L-tert-Leucine methylester hydrochloride** | ≥98 %, for biochemistry | H-L-Tle-OMe · HCl | **6664.1** | 500 mg | 32,15 |
| | | | **6664.2** | 1 g | 48,95 |
| **Z-L-Leucine** NEW | ≥94 %, for biochemistry | Z-L-Leu-OH | **1859.1** | 5 g | 16,05 |
| | | | **1859.2** | 25 g | 38,60 |
| | | | **1859.3** | 100 g | 107,40 |




## Lysine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Lysine** | ≥98 %, for biochemistry | Boc-L-Lys-OH | **6926.1** | 1 g | 19,25 |
| | | | **6926.2** | 5 g | 60,10 |
| | | | **6926.3** | 10 g | 109,15 |
| **Fmoc-L-Lysine** | ≥98 %, for biochemistry | Fmoc-L-Lys-OH | **6900.1** | 1 g | 17,10 |
| | | | **6900.2** | 5 g | 52,60 |
| | | | **6900.3** | 10 g | 93,45 |
| **Fmoc-L-Lysine-(Boc)** | ≥98,5 %, for biochemistry | Fmoc-L-Lys(Boc)-OH | **8840.1** | 5 g | 19,25 |
| | | | **8840.2** | 25 g | 57,95 |
| | | | **8840.3** | 100 g | 175,80 |
| **Fmoc-L-Azidolysine** | ≥98 %, for biochemistry | Fmoc-L-Lys($N_3$)-OH | **7357.1** | 250 mg | 102,05 |
| | | | **7357.2** | 1 g | 332,20 |
| **Z-L-Lysine** NEW | ≥98 %, for biochemistry | Z-L-Lys-OH | **1907.1** | 1 g | 21,40 |
| | | | **1907.2** | 5 g | 64,40 |
| | | | **1907.3** | 10 g | 107,40 |




## Methionine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Methionine** | ≥99 %, for biochemistry | Boc-L-Met-OH | **6928.1** | 5 g | 15,60 |
| | | | **6928.2** | 25 g | 38,20 |
| | | | **6928.3** | 100 g | 113,85 |
| **Fmoc-L-Methionine** | ≥98,5 %, for biochemistry | Fmoc-L-Met-OH | **6656.1** | 10 g | 15,60 |
| | | | **6656.2** | 50 g | 36,05 |
| | | | **6656.3** | 250 g | 137,10 |




## Ornithine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Fmoc-L-Ornithine-(Boc)** NEW | ≥98 %, for biochemistry | Fmoc-L-Orn(Boc)-OH | **1932.1** | 1 g | 21,40 |
| | | | **1932.2** | 5 g | 53,65 |
| | | | **1932.3** | 10 g | 96,65 |
| **Fmoc-L-Azidoornithine** | ≥98 %, for biochemistry | Fmoc-L-Orn($N_3$)-OH | **7362.1** | 250 mg | 107,40 |
| | | | **7362.2** | 1 g | 353,70 |




## Dioxaoctanioc acid

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Fmoc-8-Amino-3,6-dioxa-octanoic acid** | ≥99 %, for biochemistry | Fmoc-$O_2$Oc-OH | **7400.1** | 500 mg | 72,60 |
| | | | **7400.2** | 1 g | 117,20 |




## Phenylalanine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Phenylalanine** | ≥99 %, for biochemistry | Boc-L-Phe-OH | **6931.1** | 5 g | 11,75 |
| | | | **6931.2** | 25 g | 31,10 |
| | | | **6931.3** | 100 g | 96,65 |
| **Fmoc-L-Phenylalanine** | ≥99 %, for biochemistry | Fmoc-L-Phe-OH | **6658.1** | 10 g | 17,10 |
| | | | **6658.2** | 50 g | 42,90 |
| | | | **6658.3** | 250 g | 162,90 |
| **Fmoc-L-4-Azido-phenylalanine** | ≥98 %, for biochemistry | Fmoc-L-Phe (4-$N_3$)-OH | **7485.1** | 100 mg | 52,70 |
| | | | **7485.2** | 250 mg | 112,35 |
| **Z-L-Phenylalanine** NEW | ≥98 %, for biochemistry | Z-L-Phe-OH | **1865.1** | 5 g | 21,40 |
| | | | **1865.2** | 25 g | 53,65 |
| | | | **1865.3** | 100 g | 138,70 |




## Proline

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Proline** | ≥99 %, for biochemistry | Boc-L-Pro-OH | **6932.1** | 5 g | 11,75 |
| | | | **6932.2** | 25 g | 31,10 |
| | | | **6932.3** | 100 g | 96,65 |
| **Fmoc-L-Proline** | ≥99 %, for biochemistry | Fmoc-L-Pro-OH | **6659.1** | 10 g | 17,10 |
| | | | **6659.2** | 50 g | 42,90 |
| | | | **6659.3** | 250 g | 162,90 |
| **Fmoc-L-4-Azido-proline (2S,4R)** | ≥98 %, for biochemistry | Fmoc-L-Pro (4-N3)-OH | **7367.1** | 100 mg | 96,65 |
| | | | **7367.2** | 250 mg | 192,45 |
| | | | **7367.3** | 1 g | 633,20 |




## Propargylglycine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Fmoc-L-Propargyl-glycine** | ≥99 %, for biochemistry | Fmoc-L-Pra-OH | **7491.1** | 100 mg | 48,95 |
| | | | **7491.2** | 250 mg | 90,20 |




## Serine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Serine** | ≥99 %, for biochemistry | Boc-L-Ser-OH | **6933.1** | 5 g | 18,85 |
| | | | **6933.2** | 25 g | 55,80 |
| | | | **6933.3** | 100 g | 177,40 |
| **Fmoc-L-Serine monohydrate** | ≥98 %, for biochemistry | Fmoc-L-Ser-OH | **6901.1** | 5 g | 51,50 |
| | | | **6901.2** | 25 g | 162,90 |
| **Fmoc-L-Serine-(tBu)** | ≥99 %, for biochemistry | Fmoc-L-Ser(tBu)-OH | **9666.1** | 5 g | 23,15 |
| | | | **9666.2** | 25 g | 69,80 |
| | | | **9666.3** | 100 g | 228,45 |




## Threonine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Threonine** | ≥98 %, for biochemistry | Boc-L-Thr-OH | **6935.1** | 5 g | 26,80 |
| | | | **6935.2** | 25 g | 100,95 |
| **Fmoc-L-Threonine-(tBu)** | ≥99 %, for biochemistry | Fmoc-L-Thr(tBu)-OH | **9659.1** | 5 g | 23,15 |
| | | | **9659.2** | 25 g | 69,80 |
| | | | **9659.3** | 100 g | 228,45 |




## Tryptophan

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Tryptophan** | ≥95 %, for biochemistry | Boc-L-Trp-OH | **6945.1** | 5 g | 11,75 |
| | | | **6945.2** | 25 g | 31,10 |
| | | | **6945.3** | 100 g | 96,65 |
| **Fmoc-L-Tryptophan** | ≥98 %, for biochemistry | Fmoc-L-Trp-OH | **6903.1** | 5 g | 11,75 |
| | | | **6903.2** | 25 g | 34,30 |
| | | | **6903.3** | 100 g | 117,20 |
| **Fmoc-L-Tryptophan-(Boc)** | ≥97 %, for biochemistry | Fmoc-L-Trp(Boc)-OH | **9668.1** | 5 g | 28,95 |
| | | | **9668.2** | 25 g | 96,65 |
| | | | **9668.3** | 100 g | 303,70 |




## Tyrosine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Tyrosine** | ≥98 %, for biochemistry | Boc-L-Tyr-OH | **6949.1** | 5 g | 25,70 |
| | | | **6949.2** | 25 g | 72,60 |
| **Fmoc-L-Tyrosine** | ≥98 %, for biochemistry | Fmoc-L-Tyr-OH | **6906.1** | 1 g | 34,30 |
| | | | **6906.2** | 5 g | 81,60 |
| | | | **6906.3** | 10 g | 138,70 |
| **Fmoc-L-Tyrosine-(tBu)** | ≥99 %, for biochemistry | Fmoc-L-Tyr(tBu)-OH | **9669.1** | 5 g | 23,15 |
| | | | **9669.2** | 25 g | 69,80 |
| | | | **9669.3** | 100 g | 228,45 |




## Valine

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Boc-L-Valine** | ≥98 %, for biochemistry | Boc-L-Val-OH | **6950.1** | 5 g | 11,75 |
| | | | **6950.2** | 25 g | 31,10 |
| | | | **6950.3** | 100 g | 96,65 |
| **Fmoc-L-Valine** | ≥98,5 %, for biochemistry | Fmoc-L-Val-OH | **6660.1** | 10 g | 15,60 |
| | | | **6660.2** | 50 g | 36,05 |
| | | | **6660.3** | 250 g | 137,10 |
| | | | **6660.4** | 500 g | 246,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Coupling reagents

Our range of traditional and innovative coupling reagents is suited for standard coupling reactions.
We offer premium quality products and excellent value for money.

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **BOP** | ≥99 % | **2168.1** | 5 g | 20,35 |
| | | **2168.2** | 25 g | 52,15 |
| | | **2168.3** | 100 g | 155,90 |
| **CDI** | ≥98 % | **6992.1** | 10 g | 26,80 |
| | | **6992.2** | 25 g | 49,35 |
| | | **6992.3** | 100 g | 113,85 |
| | | **6992.4** | 500 g | 439,70 |
| **COMU®** | ≥99 % | **2100.1** | 5 g | 36,45 |
| | | **2100.2** | 25 g | 131,70 |
| | | **2100.3** | 100 g | 450,45 |
| **DCC** | ≥98 % | **4193.1** | 100 g | 19,90 |
| | | **4193.2** | 250 g | 38,20 |
| | | **4193.3** | 500 g | 68,30 |
| | | **4193.4** | 1 kg | 126,35 |
| | | **4193.5** | 2,5 kg | 289,20 |
| **DEPBT** | ≥98,5 % | **2103.1** | 5 g | 47,85 |
| | | **2103.2** | 25 g | 198,90 |
| **DIC** | ≥99 % | **6981.1** | 5 ml | 19,90 |
| | | **6981.2** | 25 ml | 53,65 |
| | | **6981.3** | 100 ml | 149,45 |
| | | **6981.4** | 500 ml | 525,70 |
| **DMAP** | ≥99 % | **6988.1** | 5 g | 13,15 |
| | | **6988.2** | 25 g | 27,45 |
| | | **6988.3** | 100 g | 82,70 |
| | | **6988.4** | 500 g | 289,20 |
| **DSC** | ≥99 % | **2110.1** | 5 g | 23,15 |
| | | **2110.2** | 25 g | 60,10 |
| | | **2110.3** | 100 g | 166,65 |
| **EDC-HCl** | ≥99 % | **2156.1** | 5 g | 20,35 |
| | | **2156.2** | 25 g | 54,30 |
| | | **2156.3** | 100 g | 155,90 |
| **HATU** | ≥99 % | **2131.1** | 5 g | 52,60 |
| | | **2131.2** | 25 g | 198,90 |
| **HBTU** | ≥99 % | **2132.1** | 5 g | 17,75 |
| | | **2132.2** | 25 g | 39,70 |
| | | **2132.3** | 100 g | 104,85 |
| | | **2132.5** | 1 kg | 536,45 |
| **HCTU** | ≥99 % | **2112.1** | 5 g | 20,35 |
| | | **2112.2** | 25 g | 33,25 |
| | | **2112.3** | 100 g | 96,65 |
| | | **2112.5** | 1 kg | 579,45 |
| **HDMA** | ≥98 % | **6888.1** | 5 g | 41,85 |
| | | **6888.2** | 25 g | 134,40 |
| | | **6888.3** | 100 g | 439,70 |
| **HDMC** | ≥99 % | **6893.1** | 5 g | 40,75 |
| | | **6893.2** | 25 g | 160,20 |
| | | **6893.3** | 100 g | 536,45 |
| **K-Oxyma** | ≥99 % | **6891.1** | 25 g | 28,95 |
| | | **6891.2** | 50 g | 47,85 |
| | | **6891.3** | 250 g | 188,15 |
| **Oxyma Pure** | ≥99,5 % | **2118.1** | 25 g | 27,45 |
| | | **2118.2** | 100 g | 79,45 |
| **PyBOP®** | ≥98,5 % | **2178.1** | 5 g | 25,30 |
| | | **2178.2** | 25 g | 74,10 |
| | | **2178.3** | 100 g | 220,40 |
| | | **2178.5** | 1 kg | 1428,70 |
| **PyBrOP®** | ≥98,5 % | **2200.1** | 5 g | 39,70 |
| | | **2200.2** | 25 g | 145,15 |
| | | **2200.3** | 100 g | 521,40 |
| | | **2200.5** | 1 kg | 2750,95 |

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **PyClock®** | ≥98,5 % | **2123.1** | 5 g | 27,45 |
| | | **2123.2** | 25 g | 87,00 |
| | | **2123.3** | 100 g | 295,65 |
| | | **2123.5** | 1 kg | 1924,25 |
| **PyOxim** | ≥99 % | **2120.1** | 5 g | 26,80 |
| | | **2120.2** | 25 g | 85,50 |
| | | **2120.3** | 100 g | 295,65 |
| | | **2120.5** | 1 kg | 1880,20 |
| **TATU** | ≥99 % | **2148.1** | 5 g | 42,90 |
| | | **2148.2** | 25 g | 149,45 |
| **TBTU** | ≥99 % | **2140.1** | 5 g | 16,70 |
| | | **2140.2** | 25 g | 37,55 |
| | | **2140.3** | 100 g | 103,75 |
| | | **2140.5** | 1 kg | 532,15 |
| **TCTU** | ≥98 % | **6890.1** | 5 g | 26,80 |
| | | **6890.2** | 25 g | 85,90 |
| | | **6890.3** | 100 g | 213,95 |
| **TOTU** | ≥99 % | **2125.1** | 5 g | 30,00 |
| | | **2125.2** | 25 g | 95,15 |
| | | **2125.3** | 100 g | 338,65 |
| **TSTU** | ≥99 % | **2130.1** | 5 g | 50,00 |
| | | **2130.2** | 25 g | 195,15 |

For additional product data and safety information, see chapter Chemicals A-Z.



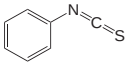

**Tip:**

- There is no single coupling reagent that is suitable for every coupling reaction. Therefore, ROTH offers a broad range of established and reactive coupling reagents.
- Besides the "gold standard" **HATU (Art. No. 2131),** we also offer the greener alternative **COMU® (Art. No. 2100),** which is known to mediate the coupling in most cases at least as efficient as HATU.
- **Oxyma Pure (Art. No. 2118)** and **K-Oxyma (Art. No. 6891)** were developed as less hazardous alternatives for HOBt and HOAt, thus being a perfect one-to-one replacement in most syntheses.




## Resins for Peptide Synthesis

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **2-Chlorotrityl chloride resin** | 100-200 mesh, 1 % DVB | **7405.1** | 5 g | 77,30 |
| | | **7405.2** | 25 g | 299,95 |
| **Rink amide resin** | 100-200 mesh, 1 % DVB | **7515.1** | 1 g | 34,30 |
| | | **7515.2** | 5 g | 142,45 |
| **Sieber amide resin** | 100-200 mesh | **7408.1** | 1 g | 89,15 |
| | | **7408.2** | 5 g | 360,15 |
| **Wang resin** | 100-200 mesh, 1 % DVB | **7506.1** | 1 g | 14,95 |
| | | **7506.2** | 5 g | 33,25 |
| | | **7506.3** | 25 g | 117,20 |




## Phenyl isothiocyanate

**≥99 %, for biochemistry**

$C_7H_5NS$

M 135,17 g/mol

**Danger** H301+H311+H331-H314

**Type analysis:**

Appearance. ..... colourless to pale yellow liquid
Assay (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7296.1** | 25 ml | glass | 21,40 € |
| **7296.2** | 100 ml | glass | 46,80 € |
| **7296.3** | 500 ml | glass | 192,45 € |

**Tip:**
A well-known method for protein sequencing is the Edman degradation. Herein, the peptide is degraded using **phenylisothiocyanate (Art.No. 7296)** starting from the N-terminus. Phenylisothiocyanate reacts with the N-terminal amino acid resulting in cleavage from the peptide and formation of a phenylthiohydantoin derivative. Subsequently, the phenylthiohydantoin derivative is identified by chromatographic methods through comparison with standards and the next amino acid can be addressed. Through repetition of this procedure stepwise degradation of the peptide is achieved, thus enabling sequencing of peptides with up to 50 residues.



## Reactors for Peptide Synthesis

Made of **PP**, with plunger and frit.
Frit made of **PE**, pore size 25 µm, temperature resistant until +90 °C.
Column outlet: luer (male).

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 2 ml | **7926.1** | 100 | 77,30 |
| 5 ml | **7927.1** | 100 | 91,95 |
| 10 ml | **7944.1** | 100 | 104,20 |
| 20 ml | **9261.1** | 100 | 127,95 |
| 50 ml | **9636.1** | 25 | 61,85 |

## Frits for Reactors

Material **PTFE**.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| ∅ 9.1 mm, for 2 ml reactors | **7946.1** | 100 | 68,30 |
| ∅ 12.3 mm, for 5 ml reactors | **7960.1** | 100 | 77,30 |
| ∅ 14.6 mm, for 10 ml reactors | **7962.1** | 100 | 88,05 |

## Accessories: Luer caps

Made of **PP**. To fit standard Luer (male) outlets, and for all column and cartridge sizes.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PX15.1** | 100 | 17,10 |

# Protecting Groups for Peptide Synthesis

| Product | Purity | Protecting group (short name) | Removal | Possible removal reagents | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| **Di-*tert*-butyl dicarbonate ($Boc_2O$)** | ≥98 % | *tert*-Butyl (Boc) | **acidic** | - Trifluoroacetic acid **(P088)**, pure or as a solution in dichloromethane **(P089)**<br>- Hydrochloric acid in ethyl acetate **(6784)** | **6985.1** | 100 g | 144,60 |
| | | | | | **6985.2** | 500 g | 456,90 |
| **9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl)** | ≥98% | Fluorenylmethyl (Fmoc) | **alkaline** | - Piperidine **(A122)** in dimethylformamide **(A529)**<br>- Morpholine **(9691)** in diethylformamide **(A529)** | **2201.1** | 5 g | 19,25 |
| | | | | | **2201.2** | 25 g | 42,90 |
| | | | | | **2201.3** | 100 g | 126,35 |
| **Trimethylchlorosilane (TMCS)** | ≥99 % | Trimethylsilyl (TMS) | **acidic, alkaline or using fluoride ions** | - Acetic acid **(4340 or 4341)**<br>- Potassium carbonate **(P743)** in methanol **(8388)**<br>- Potassium fluoride **(CN83)** | **2338.1** | 25 g | 47,20 |

# Reagents for Peptide Synthesis

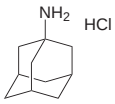
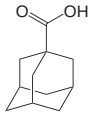
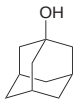
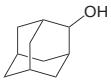
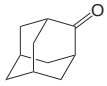
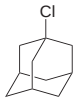
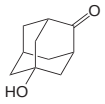
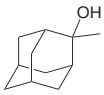
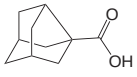
## for Washing/Deprotection/Splitting

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Acetic acid anhydride** | ≥99 %, for synthesis | **4483.1** | 1 l | glass | 32,15 |
| | | **4483.2** | 2,5 l | glass | 51,50 |
| | | **4483.3** | 5 l | plastic | 69,80 |
| | | **4483.4** | 10 l | plastic | 118,15 |
| | | **4483.5** | 25 l | plastic | 246,20 |
| **Acetonitrile** | ≥99,5 %, for synthesis | **4380.1** | 1 l | glass | 28,95 |
| | | **4380.2** | 2,5 l | glass | 61,20 |
| | | **4380.3** | 10 l | tinplate | 195,65 |
| | | **4380.4** | 25 l | tinplate | 428,95 |
| **Dichloromethane** | ≥99,9 %, for peptide synthesis | **P089.1** | 2,5 l | glass | 61,85 |
| **N,N-Diisopropylethylamine (DIPEA)** | ≥99,5 %, for (peptide) synthesis | **2474.1** | 100 ml | glass | 23,15 |
| | | **2474.2** | 250 ml | glass | 41,85 |
| | | **2474.3** | 1 l | glass | 139,65 |
| | | **2474.4** | 2,5 l | glass | 284,90 |
| **N,N-Dimethylacetamide (DMA)** | ≥99 %, for synthesis | **3617.1** | 250 ml | glass | 12,40 |
| | | **3617.2** | 1 l | glass | 36,45 |
| | | **3617.3** | 2,5 l | glass | 50,00 |
| | | **3617.4** | 10 l | plastic | 119,90 |
| | | **3617.5** | 25 l | plastic | 252,65 |
| **N,N-Dimethylformamide (DMF)** | ≥99,8 %, for peptide synthesis | **A529.3** | 500 ml | glass | 37,55 |
| | | **A529.1** | 2,5 l | glass | 102,15 |
| | | **A529.2** | 25 l | plastic | 321,45 |
| **1,1,1,3,3,3-Hexafluoro-2-propanol** | ≥99 %, for (peptide) synthesis | **2473.1** | 10 ml | glass | 38,60 |
| | | **2473.2** | 25 ml | glass | 81,20 |
| | | **2473.3** | 100 ml | glass | 292,95 |
| **N-Methyl-2-pyrrolidone (NMP)** | ≥99,8 %, for peptide synthesis | **P052.1** | 2,5 l | glass | 116,00 |
| **Morpholine** | ≥99 %, for synthesis | **9691.1** | 100 ml | glass | 13,45 |
| | | **9691.2** | 500 ml | glass | 19,25 |
| | | **9691.3** | 1 l | glass | 28,95 |
| | | **9691.4** | 2,5 l | glass | 45,05 |
| | | **9691.5** | 10 l | PE/steel | 149,45 |
| **Piperidine** | ≥99,5 %, for peptide synthesis | **A122.1** | 200 ml | glass | 32,15 |
| | | **A122.2** | 500 ml | glass | 57,95 |
| | | **A122.3** | 1 l | glass | 95,60 |
| **Trifluoroacetic acid (TFA)** | ≥99,9 %, for (peptide) synthesis | **P088.1** | 100 ml | glass | 61,85 |
| | | **P088.2** | 500 ml | glass | 177,40 |
| | | **P088.3** | 1 l | glass | 310,70 |
| **Water** | redistilled | **3478.1** | 1 l | plastic | 6,80 |
| | | **3478.4** | 5 l | plastic | 19,60 |
| | | **3478.2** | 10 l | plastic | 31,10 |
| | | **3478.3** | 30 l | plastic | 80,10 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Building Blocks for Synthesis

## Adamantanes and Derivatives

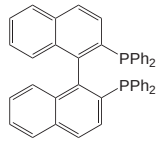
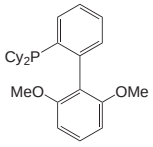
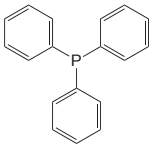
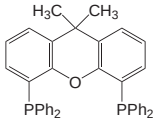
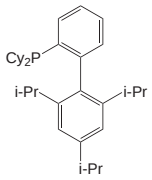
| Product | Structural formula | Purity | Empirical formula | CAS-Nr. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| **1-Adamantanamine hydrochloride** |  | ≥99 %, for synthesis | $C_{10}H_{17}N \cdot HCl$ | 665-66-7 | **7621.1** | 25 g | 21,40 |
| | | | | | **7621.2** | 100 g | 51,50 |
| **Adamantane** |  | ≥99 %, for synthesis | $C_{10}H_{16}$ | 281-23-2 | **7620.1** | 25 g | 16,70 |
| | | | | | **7620.2** | 100 g | 32,15 |
| **1-Adamantanecarboxylic acid** |  | ≥99 %, for synthesis | $C_{11}H_{16}O_2$ | 828-51-3 | **7622.1** | 25 g | 22,05 |
| | | | | | **7622.2** | 100 g | 53,65 |
| **1-Adamantanol** |  | ≥98,5 %, for synthesis | $C_{10}H_{16}O$ | 768-95-6 | **7745.1** | 10 g | 15,60 |
| | | | | | **7745.2** | 50 g | 31,10 |
| | | | | | **7745.3** | 250 g | 100,95 |
| **2-Adamantanol** |  | ≥98 %, for synthesis | $C_{10}H_{16}O$ | 700-57-2 | **7863.1** | 5 g | 24,20 |
| | | | | | **7863.2** | 25 g | 66,55 |
| | | | | | **7863.3** | 50 g | 107,40 |
| **2-Adamantanone** |  | ≥99 %, for synthesis | $C_{10}H_{14}O$ | 700-58-3 | **8406.1** | 25 g | 24,20 |
| | | | | | **8406.2** | 100 g | 75,15 |
| **1-Chloroadamantane** |  | ≥98 %, for synthesis | $C_{10}H_{15}Cl$ | 935-56-8 | **7627.1** | 5 g | 13,90 |
| | | | | | **7627.2** | 25 g | 23,15 |
| | | | | | **7627.3** | 100 g | 57,95 |
| **5-Hydroxy-2-adamantanone** |  | ≥98 %, for synthesis | $C_{10}H_{14}O_2$ | 20098-14-0 | **7628.1** | 1 g | 20,35 |
| | | | | | **7628.2** | 5 g | 64,40 |
| **2-Methyl-2-adamantanol** |  | ≥98 %, for synthesis | $C_{11}H_{18}O$ | 702-98-7 | **7630.1** | 1 g | 14,95 |
| | | | | | **7630.2** | 5 g | 35,40 |
| **3-Noradamantanecarboxylic acid** |  | ≥99 %, for synthesis | $C_{10}H_{14}O_2$ | 16200-53-6 | **7631.1** | 1 g | 21,40 |
| | | | | | **7631.2** | 5 g | 64,40 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Phosphine Ligands

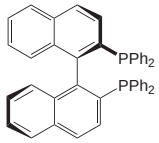
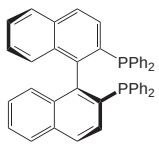
NEW at Roth

Transition metal-catalysed cross-couping reactions are an efficient method for building new C-C, C-N and C-O bonds in the organic synthesis. Ligands, particularly phosphine ligands, play a key role in the stabilisation and activation of metal ions in the transition metal complexes. By selection of the correct phosphine ligands important factors can be influenced: for example the reactivity and lifetime of the catalyst, the electron density at the metal atom and sterical properties of the catalyst. When using chiral phosphine ligands, it is also possible to achieve enantioselectivity of a reaction.

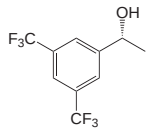
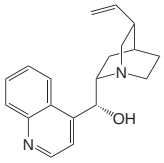
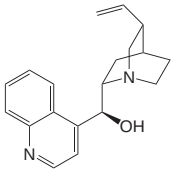
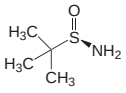
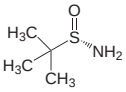
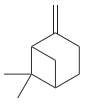
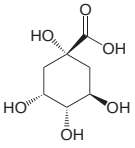
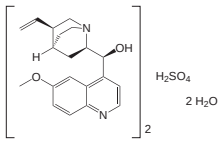
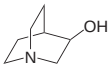
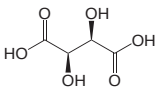
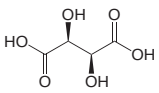
| Structural formula | Product | Purity | Empirical formula | CAS-Nr. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
|  | **(rac)-BINAP** NEW | ≥97 % | $C_{44}H_{32}P_2$ | 98327-87-8 | **1845.1** | 1 g | 32,15 |
| | | | | | **1845.2** | 5 g | 85,90 |
| | | | | | **1845.3** | 10 g | 138,70 |
|  | **SPhos** NEW | ≥98 % | $C_{26}H_{35}O_2P$ | 657408-07-6 | **1911.1** | 1 g | 25,70 |
| | | | | | **1911.2** | 5 g | 96,65 |
|  | **Triphenylphosphine** | ≥99,5 %, for synthesis | $P(C_6H_5)_3$ | 603-35-0 | **4110.1** | 10 g | 12,40 |
| | | | | | **4110.2** | 100 g | 19,25 |
| | | | | | **4110.3** | 250 g | 34,30 |
| | | | | | **4110.4** | 1 kg | 102,15 |
|  | **Xantphos** NEW | ≥98 % | $C_{39}H_{32}OP_2$ | 161265-03-8 | **2058.1** | 1 g | 32,15 |
| | | | | | **2058.2** | 5 g | 107,40 |
|  | **XPhos** NEW | ≥97 % | $C_{33}H_{49}P$ | 564483-18-7 | **1445.1** | 1 g | 26,80 |
| | | | | | **1445.2** | 5 g | 96,65 |
| | | | | | **1445.3** | 10 g | 160,20 |

## Chiral Phosphine Ligands

NEW at Roth

| Structural formula | Product | Purity | Empirical formula | CAS-Nr. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
|  | **(R)-BINAP** NEW | ≥98 % | $C_{44}H_{32}P_2$ | 76189-55-4 | **2040.1** | 250 mg | 19,25 |
| | | | | | **2040.2** | 1 g | 42,90 |
| | | | | | **2040.3** | 5 g | 117,20 |
|  | **(S)-BINAP** NEW | ≥98 % | $C_{44}H_{32}P_2$ | 76189-56-5 | **1950.1** | 250 mg | 18,20 |
| | | | | | **1950.2** | 1 g | 37,55 |
| | | | | | **1950.3** | 5 g | 106,45 |

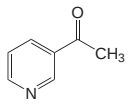
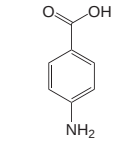
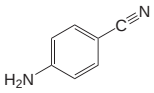
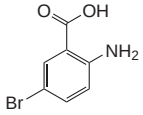
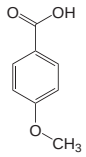
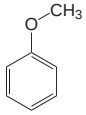
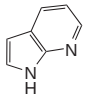
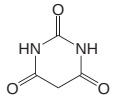
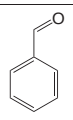
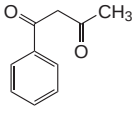
## Chiral Building Blocks and Auxiliares

| Product | Structural formula | Purity | Empirical formula | CAS-Nr. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| (R)-1-[3,5-Bis(trifluoromethyl)-phenyl]ethanol |  | ≥99 % | $C_{10}H_8F_6O$ | 127852-28-2 | **7481.1** | 1 g | 27,45 |
| | | | | | **7481.2** | 5 g | 65,50 |
| | | | | | **7481.3** | 25 g | 228,45 |
| Cinchonidine |  | ~96 % | $C_{19}H_{22}N_2O$ | 485-71-2 | **8872.1** | 25 g | 107,40 |
| Cinchonine |  | ≥99 % | $C_{19}H_{22}N_2O$ | 118-10-5 | **8875.1** | 50 g | 224,70 |
| (R)-(+)-2-Methyl-2-propanesulfinamide NEW |  | ≥97 % | $C_4H_{11}NOS$ | 196929-78-9 | **0610.1** | 1 g | 19,25 |
| | | | | | **0610.2** | 5 g | 53,65 |
| | | | | | **0610.3** | 25 g | 170,95 |
| (S)-(-)-2-Methyl-2-propanesulfinamide NEW |  | ≥98 % | $C_4H_{11}NOS$ | 343338-28-3 | **1442.1** | 1 g | 21,40 |
| | | | | | **1442.2** | 5 g | 64,40 |
| | | | | | **1442.3** | 25 g | 192,45 |
| α-Pinene |  | ≥98 %, for synthesis | $C_{10}H_{16}$ | 7785-26-4 | **5647.1** | 100 ml | 31,10 |
| β-Pinene |  | pure | $C_{10}H_{16}$ | 127-91-3 | **7106.1** | 250 ml | 23,15 |
| (-)-Quinic acid |  | ≥98 % | $C_7H_{12}O_6$ | 77-95-2 | **8835.1** | 25 g | 90,20 |
| | | | | | **8835.2** | 100 g | 289,20 |
| Quinidine sulphate dihydrate |  | ≥99 % | $(C_{20}H_{24}N_2O_2)_2 \cdot H_2SO_4 \cdot 2\,H_2O$ | 6591-63-5 | **3348.1** | 10 g | 32,15 |
| (R)-3-Quinuclidinol |  | ≥99 % | $C_7H_{13}NO$ | 25333-42-0 | **7483.1** | 1 g | 17,10 |
| | | | | | **7483.2** | 5 g | 59,05 |
| | | | | | **7483.3** | 10 g | 107,40 |
| D(-)-Tartaric acid |  | ≥99 %, for biochemistry | $C_4H_6O_6$ | 147-71-7 | **5529.1** | 25 g | 49,35 |
| L(+)-Tartaric acid |  | ≥99,7 %, for biochemistry | $C_4H_6O_6$ | 87-69-4 | **4890.3** | 500 g | 22,50 |
| | | | | | **4890.1** | 1 kg | 39,25 |
| | | | | | **4890.2** | 5 kg | 143,95 |
| | | | | | **4890.5** | 25 kg | 557,95 |

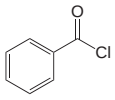
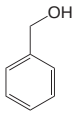
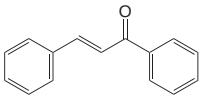
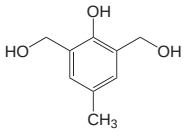
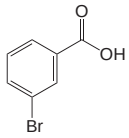
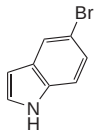
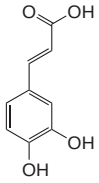
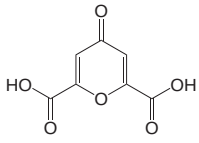
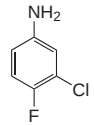
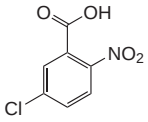
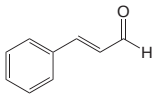
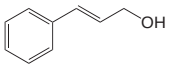
For additional product data and safety information, see chapter Chemicals A-Z.



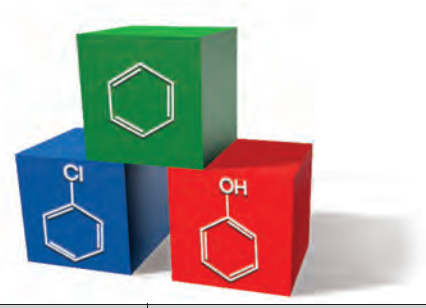

## Aromatic Building Blocks

| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **3-Acetylpyridine** | ≥99 %, for synthesis | $C_7H_7NO$ | **8740.1** | 10 g | 19,90 |
| | | | | **8740.2** | 50 g | 54,75 |
| | | | | **8740.3** | 100 g | 95,70 |
|  | **4-Aminobenzoic acid** NEW | ≥98,5 %, for synthesis | $C_7H_7NO_2$ | **0979.1** | 50 g | 16,70 |
| | | | | **0979.2** | 250 g | 33,25 |
| | | | | **0979.3** | 1 kg | 89,15 |
|  | **4-Aminobenzonitrile** | ≥98 %, for synthesis | $C_7H_6N_2$ | **8721.1** | 10 g | 17,75 |
| | | | | **8721.2** | 50 g | 77,95 |
| | | | | **8721.3** | 100 g | 132,15 |
|  | **2-Amino-5-bromobenzoic acid** | ≥95 %, for biochemistry | $C_7H_6BrNO_2$ | **5519.1** | 5 g | 23,45 |
| | | | | **5519.2** | 25 g | 77,30 |
|  | **Aniline** | ≥99,5 %, p.a. | $C_6H_7N$ | **9846.1** | 100 ml | 18,85 |
| | | | | **9846.2** | 500 ml | 40,35 |
| | | | | **9846.3** | 1 l | 59,05 |
| | | ≥99 %, for synthesis | $C_6H_7N$ | **9931.1** | 250 ml | 13,15 |
| | | | | **9931.2** | 1 l | 30,00 |
| | | | | **9931.3** | 2,5 l | 61,20 |
|  | **4-Anisic acid** | ≥98 % | $C_8H_8O_3$ | **3631.1** | 100 g | 19,25 |
| | | | | **3631.2** | 250 g | 36,05 |
| | | | | **3631.3** | 500 g | 66,55 |
|  | **Anisole** | ≥99 %, for synthesis | $C_7H_8O$ | **4417.1** | 100 ml | 12,80 |
| | | | | **4417.2** | 500 ml | 24,65 |
| | | | | **4417.3** | 1 l | 40,35 |
| | | | | **4417.4** | 2,5 l | 83,75 |
|  | **7-Azaindole** | ≥98 % | $C_7H_6N_2$ | **5490.1** | 1 g | 18,85 |
| | | | | **5490.2** | 5 g | 59,70 |
| | | | | **5490.3** | 10 g | 107,40 |
|  | **Barbituric acid** | ≥99 %, extra pure | $C_4H_4N_2O_3$ | **4927.1** | 100 g | 79,45 |
| | | | | **4927.2** | 500 g | 282,20 |
|  | **Benzaldehyde** | ≥99,5 %, for synthesis | $C_7H_6O$ | **4372.1** | 100 ml | 13,15 |
| | | | | **4372.2** | 500 ml | 22,05 |
| | | | | **4372.3** | 1 l | 28,95 |
| | | | | **4372.4** | 2,5 l | 53,65 |
|  | **Benzoylacetone** | ≥99 % | $C_{10}H_{10}O_2$ | **5484.1** | 25 g | 63,35 |
| | | | | **5484.2** | 100 g | 224,70 |

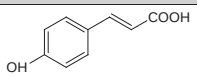
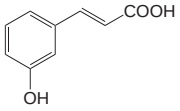
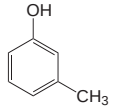
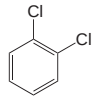
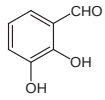
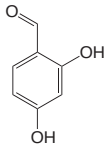
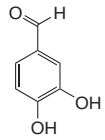
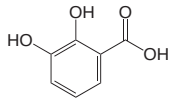
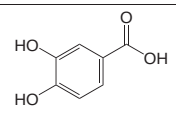
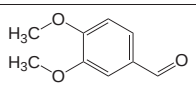
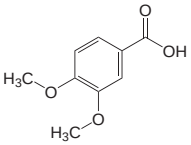
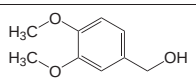
For additional product data and safety information, see chapter Chemicals A-Z.

| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **Benzoyl chloride** | ≥99 %, for synthesis | $C_7H_5ClO$ | **7456.1** | 100 ml | 13,15 |
| | | | | **7456.2** | 500 ml | 28,95 |
| | | | | **7456.3** | 1 l | 42,50 |
| | | | | **7456.4** | 2,5 l | 82,70 |
|  | **Benzyl alcohol** | ≥98 %, for synthesis | $C_7H_8O$ | **4478.1** | 500 ml | 21,40 |
| | | | | **4478.2** | 1 l | 32,15 |
| | | | | **4478.3** | 2,5 l | 69,35 |
|  | **Benzylidene acetophenone** | ≥98 %, for synthesis | $C_{15}H_{12}O$ | **3982.1** | 100 g | 109,55 |
|  | **2,6-Bis(hydroxymethyl)-p-cresol** | ≥97 % | $C_9H_{12}O_3$ | **7299.1** | 25 g | 27,85 |
| | | | | **7299.2** | 100 g | 73,00 |
|  | **3-Brombenzoic acid** | ≥99 %, for synthesis | $C_7H_5BrO_2$ | **4273.1** | 25 g | 32,15 |
| | | | | **4273.2** | 100 g | 81,20 |
|  | **5-Bromoindole** | ≥99,5 % | $C_8H_6BrN$ | **5469.1** | 5 g | 24,65 |
| | | | | **5469.2** | 25 g | 100,55 |
|  | **Caffeic acid** | ≥98 % | $C_9H_8O_4$ | **5869.3** | 5 g | 19,25 |
| | | | | **5869.1** | 10 g | 31,75 |
| | | | | **5869.2** | 50 g | 118,15 |
|  | **Chelidonic acid** | 98 % cryst. | $C_7H_4O_6$ | **6240.1** | 5 g | 214,90 |
|  | **Chlorobenzene** | ≥99,5 %, for synthesis | $C_6H_5Cl$ | **KK01.1** | 100 ml | 13,15 |
| | | | | **KK01.2** | 500 ml | 24,20 |
| | | | | **KK01.3** | 1 l | 35,40 |
|  | **3-Chloro-4-fluoroaniline** | ≥95 % | $C_6H_5ClFN$ | **5461.1** | 25 g | 42,50 |
| | | | | **5461.2** | 100 g | 122,05 |
|  | **5-Chloro-2-nitrobenzoic acid** | ≥98 %, for synthesis | $C_7H_4ClNO_4$ | **5456.1** | 25 g | 24,65 |
| | | | | **5456.2** | 100 g | 67,65 |
|  | **Cinnamaldehyde** | ≥98 %, for synthesis | $C_9H_8O$ | **5549.1** | 250 ml | 25,30 |
|  | **Cinnamyl alcohol** | ≥98 %, for synthesis | $C_9H_{10}O$ | **4905.1** | 100 g | 14,55 |

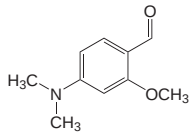
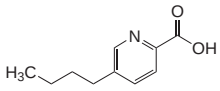
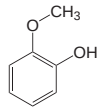
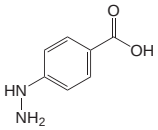
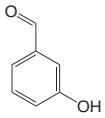
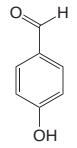
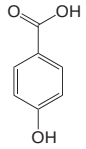
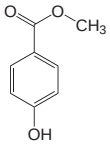
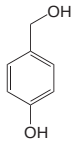
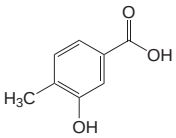
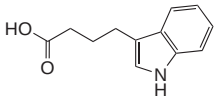
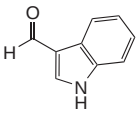
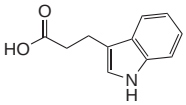
For additional product data and safety information, see chapter Chemicals A-Z.

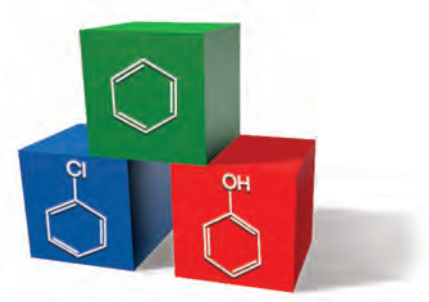



## Aromatic Building Blocks

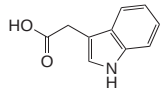
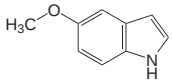
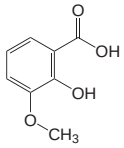
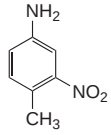
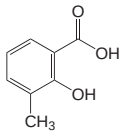
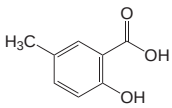
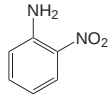
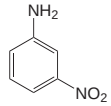
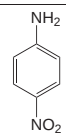
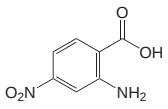
| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **p-Coumaric acid** | ≥98 % | $C_9H_8O_3$ | **9908.1** | 10 g | 35,40 |
| | | | | **9908.2** | 50 g | 73,00 |
|  | **m-Coumaric acid** | ≥98 % | $C_9H_8O_3$ | **9904.1** | 5 g | 60,10 |
|  | **m-Cresol** | ≥99 %, for synthesis | $C_7H_8O$ | **9269.1** | 250 g | 39,70 |
|  | **1,2-Dichlorobenzene** | ≥98 %, for synthesis | $C_6H_4Cl_2$ | **4374.1** | 100 ml | 13,45 |
| | | | | **4374.2** | 500 ml | 26,35 |
| | | | | **4374.3** | 1 l | 40,75 |
|  | **2,3-Dihydroxybenzaldehyde** | ≥98 % | $C_7H_6O_3$ | **7274.1** | 1 g | 15,60 |
| | | | | **7274.2** | 5 g | 28,95 |
| | | | | **7274.3** | 25 g | 93,00 |
|  | **2,4-Dihydroxybenzaldehyde** | ≥98 %, for synthesis | $C_7H_6O_3$ | **4039.1** | 25 g | 37,10 |
| | | | | **4039.2** | 100 g | 110,65 |
| | | | | **4039.3** | 250 g | 223,10 |
|  | **3,4-Dihydroxybenzaldehyde** | ≥98 % | $C_7H_6O_3$ | **5424.1** | 5 g | 16,35 |
| | | | | **5424.2** | 25 g | 38,20 |
| | | | | **5424.3** | 100 g | 104,85 |
|  | **2,3-Dihydroxybenzoic acid** | ≥98 % | $C_7H_6O_4$ | **6057.1** | 5 g | 27,85 |
|  | **3,4-Dihydroxybenzoic acid** | ≥97 % | $C_7H_6O_4$ | **8274.1** | 10 g | 44,65 |
|  | **3,4-Dimethoxybenzaldehyde** | ≥99 %, for synthesis | $C_9H_{10}O_3$ | **9651.1** | 100 g | 45,05 |
| | | | | **9651.2** | 500 g | 192,45 |
|  | **3,4-Dimethoxybenzoic acid** | ≥99 %, for synthesis | $C_9H_{10}O_4$ | **4230.1** | 100 g | 41,85 |
| | | | | **4230.2** | 250 g | 92,35 |
| | | | | **4230.3** | 1 kg | 342,95 |
|  | **3,4-Dimethoxybenzyl alcohol** | ≥95 %, for synthesis | $C_9H_{12}O_3$ | **6170.1** | 50 ml | 44,65 |

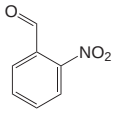
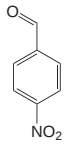
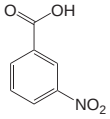
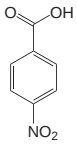
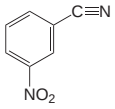
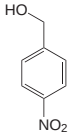
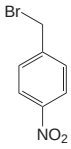
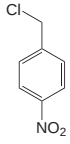
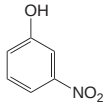
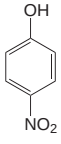
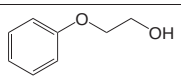
For additional product data and safety information, see chapter Chemicals A-Z.

| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **4-Dimethylamino-2-methoxy-benzaldehyde** | ≥98 %, for biochemistry | $C_{10}H_{13}NO_2$ | **8412.1** | 1 g | 41,85 |
| | | | | **8412.2** | 5 g | 170,95 |
|  | **Fusaric acid** | ≥99 % | $C_{10}H_{13}NO_2$ | **5561.1** | 250 mg | 35,40 |
| | | | | **5561.2** | 1 g | 110,65 |
|  | **Guaiacol** | ≥98 %, extra pure | $C_7H_8O_2$ | **7308.1** | 100 ml | 39,70 |
|  | **4-Hydrazinobenzoic acid** | ≥97 %, for synthesis | $C_7H_8N_2O_2$ | **4539.1** | 10 g | 31,10 |
| | | | | **4539.2** | 50 g | 80,10 |
| | | | | **4539.3** | 100 g | 132,15 |
|  | **3-Hydroxybenzaldehyde** | ≥97 %, for synthesis | $C_7H_6O_2$ | **4493.1** | 50 g | 24,20 |
| | | | | **4493.2** | 100 g | 34,30 |
| | | | | **4493.3** | 250 g | 72,60 |
|  | **4-Hydroxybenzaldehyde** | ≥99 %, for synthesis | $C_7H_6O_2$ | **3870.2** | 50 g | 18,85 |
| | | | | **3870.1** | 250 g | 77,30 |
|  | **4-Hydroxybenzoic acid** | ≥99 %, for synthesis | $C_7H_6O_3$ | **3872.1** | 100 g | 18,20 |
| | | | | **3872.2** | 500 g | 39,70 |
| | | | | **3872.3** | 1 kg | 56,90 |
|  | **4-Hydroxybenzoic acid methyl ester** | ≥99 % | $C_8H_8O_3$ | **3646.1** | 100 g | 16,05 |
| | | | | **3646.2** | 250 g | 22,05 |
| | | | | **3646.3** | 500 g | 36,45 |
| | | | | **3646.4** | 1 kg | 65,05 |
|  | **4-Hydroxybenzyl alcohol** | ≥99,5 % | $C_7H_8O_2$ | **6257.1** | 5 g | 37,55 |
|  | **3-Hydroxy-4-methylbenzoic acid** | ≥98 %, for synthesis | $C_8H_8O_3$ | **4298.1** | 1 g | 31,10 |
| | | | | **4298.2** | 5 g | 50,45 |
| | | | | **4298.3** | 25 g | 142,45 |
|  | **Indole-3-butyric acid** | ≥99 %, for biochemistry | $C_{12}H_{13}NO_2$ | **4143.1** | 5 g | 19,25 |
| | | | | **4143.2** | 25 g | 60,10 |
|  | **Indole-3-carboxaldehyde** | ≥98 % | $C_9H_7NO$ | **5538.1** | 25 g | 50,00 |
| | | | | **5538.2** | 50 g | 88,70 |
|  | **Indole-3-propionic acid** | ≥99 %, for biochemistry | $C_{11}H_{11}NO_2$ | **4144.1** | 10 g | 38,60 |
| | | | | **4144.2** | 50 g | 127,95 |

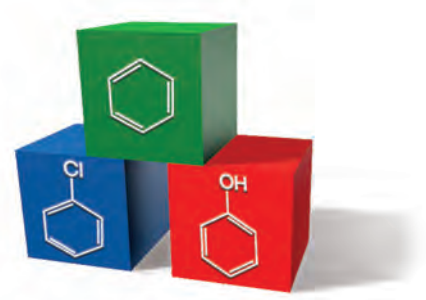



## Aromatic Building Blocks

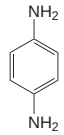
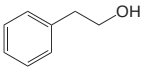
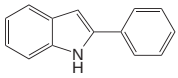
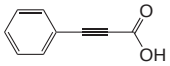
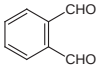
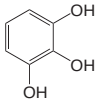
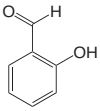
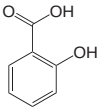
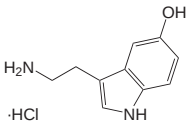
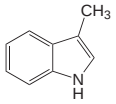
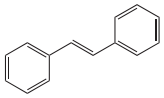
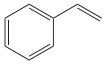
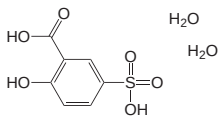
| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **Indolyl 3-acetic acid** | ≥99 %, for biochemistry | $C_{10}H_9NO_2$ | **7280.1** | 5 g | 18,20 |
| | | | | **7280.2** | 25 g | 60,10 |
| | | | | **7280.3** | 50 g | 103,10 |
|  | **5-Methoxyindole** | ≥98 %, for synthesis | $C_9H_9NO$ | **6546.1** | 1 g | 28,95 |
| | | | | **6546.2** | 5 g | 52,60 |
| | | | | **6546.3** | 25 g | 170,95 |
|  | **3-Methoxysalicylic acid** | ≥97 %, for synthesis | $C_8H_8O_4$ | **4504.1** | 5 g | 19,60 |
| | | | | **4504.2** | 25 g | 49,35 |
|  | **1-Methylimidazole** | ≥99 %, for synthesis | $C_4H_6N_2$ | **N353.1** | 100 ml | 19,60 |
| | | | | **N353.2** | 1 l | 99,45 |
|  | **4-Methyl-3-nitroaniline** | ≥99 %, for synthesis | $C_7H_8N_2O_2$ | **5532.1** | 25 g | 30,00 |
| | | | | **5532.2** | 50 g | 50,45 |
|  | **3-Methylsalicylic acid** | ≥98,5 %, for synthesis | $C_8H_8O_3$ | **4525.1** | 100 g | 24,65 |
| | | | | **4525.2** | 500 g | 81,60 |
|  | **5-Methylsalicylic acid** | ≥98 %, for synthesis | $C_8H_8O_3$ | **6547.1** | 1 g | 33,25 |
| | | | | **6547.2** | 5 g | 44,65 |
| | | | | **6547.3** | 25 g | 88,70 |
|  | **2-Nitroaniline** | ≥98 %, for synthesis | $C_6H_6N_2O_2$ | **9878.1** | 100 g | 16,70 |
| | | | | **9878.2** | 500 g | 39,25 |
| | | | | **9878.3** | 1 kg | 61,20 |
|  | **3-Nitroaniline** | ≥99 %, for synthesis | $C_6H_6N_2O_2$ | **9867.1** | 100 g | 18,85 |
| | | | | **9867.2** | 500 g | 50,45 |
| | | | | **9867.3** | 1 kg | 83,35 |
|  | **4-Nitroaniline** | ≥98,5 %, for synthesis | $C_6H_6N_2O_2$ | **9850.1** | 100 g | 22,05 |
| | | | | **9850.2** | 500 g | 44,65 |
| | | | | **9850.3** | 1 kg | 80,55 |
|  | **4-Nitroanthranilic acid** | ≥98 %, for synthesis | $C_7H_6N_2O_4$ | **4543.1** | 1 g | 44,65 |
| | | | | **4543.2** | 5 g | 86,55 |

| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **2-Nitrobenzaldehyde** | ≥98 %, for synthesis | $C_7H_5NO_3$ | **4224.1** | 25 g | 32,15 |
| | | | | **4224.2** | 100 g | 62,90 |
| | | | | **4224.3** | 250 g | 110,65 |
|  | **4-Nitrobenzaldehyde** | ≥98 %, for synthesis | $C_7H_5NO_3$ | **5667.1** | 25 g | 25,30 |
| | | | | **5667.2** | 100 g | 49,35 |
| | | | | **5667.3** | 250 g | 91,95 |
|  | **Nitrobenzene** | ≥99 %, for synthesis | $C_6H_5NO_2$ | **4394.2** | 500 ml | 33,25 |
| | | | | **4394.1** | 1 l | 55,40 |
|  | **3-Nitrobenzoic acid** NEW | ≥99 %, for synthesis | $C_7H_5NO_4$ | **0445.1** | 100 g | 13,90 |
| | | | | **0445.2** | 500 g | 42,90 |
| | | | | **0445.3** | 1 kg | 77,30 |
|  | **4-Nitrobenzoic acid** NEW | ≥99,5 %, for synthesis | $C_7H_5NO_4$ | **0450.1** | 100 g | 13,90 |
| | | | | **0450.2** | 500 g | 32,15 |
| | | | | **0450.3** | 1 kg | 53,65 |
|  | **3-Nitrobenzonitrile** | ≥98 %, for synthesis | $C_7H_4N_2O_2$ | **4530.1** | 25 g | 45,05 |
| | | | | **4530.2** | 100 g | 95,15 |
|  | **4-Nitrobenzylalcohol** | ≥99 %, for synthesis | $C_7H_7NO_3$ | **6522.1** | 25 g | 30,00 |
| | | | | **6522.2** | 100 g | 60,10 |
| | | | | **6522.3** | 250 g | 107,40 |
|  | **4-Nitrobenzyl bromide** | ≥99 %, for synthesis | $C_7H_6NO_2Br$ | **5680.1** | 25 g | 26,35 |
| | | | | **5680.2** | 100 g | 50,45 |
| | | | | **5680.3** | 250 g | 92,35 |
|  | **4-Nitrobenzyl chloride** | ≥98 %, for synthesis | $C_7H_6NO_2Cl$ | **5697.1** | 10 g | 17,10 |
| | | | | **5697.2** | 50 g | 37,55 |
|  | **3-Nitrophenol** | ≥99 %, for synthesis | $C_6H_5NO_3$ | **4533.1** | 25 g | 53,25 |
| | | | | **4533.2** | 100 g | 131,70 |
| | | | | **4533.3** | 250 g | 295,65 |
|  | **4-Nitrophenol** | ≥99 %, for synthesis | $C_6H_5NO_3$ | **6524.1** | 25 g | 12,80 |
| | | | | **6524.2** | 100 g | 20,35 |
| | | | | **6524.3** | 500 g | 47,20 |
|  | **2-Phenoxyethanol** | ≥99 %, for synthesis | $C_8H_{10}O_2$ | **4348.1** | 250 ml | 23,15 |
| | | | | **4348.2** | 1 l | 46,15 |
| | | | | **4348.3** | 10 l | 231,15 |

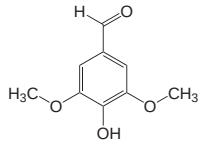
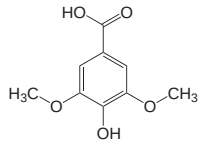
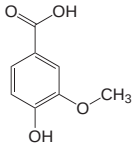
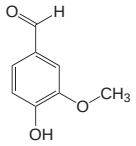
For additional product data and safety information, see chapter Chemicals A-Z.




## Aromatic Building Blocks

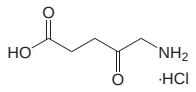
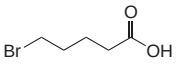
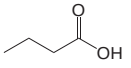
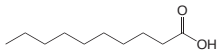
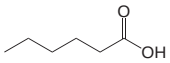
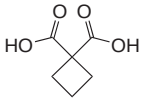
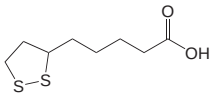
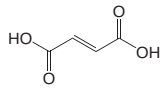
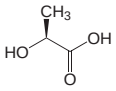
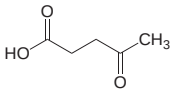
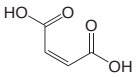
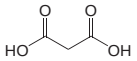
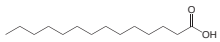
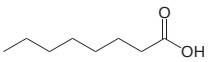
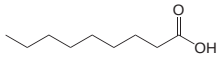
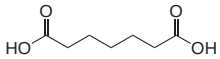
| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **1,4-Phenylenediamine** | ≥99 % | $C_6H_8N_2$ | **4499.2** | 50 g | 23,55 |
| | | | | **4499.1** | 100 g | 35,40 |
| | | | | **4499.3** | 250 g | 53,65 |
|  | **2-Phenylethanol** | ≥99 %, for synthesis | $C_8H_{10}O$ | **4422.1** | 5 ml | 10,65 |
| | | | | **4422.2** | 250 ml | 16,35 |
| | | | | **4422.3** | 1 l | 44,00 |
|  | **2-Phenylindole** | ≥94,5 % | $C_{14}H_{11}N$ | **6279.1** | 50 g | 46,15 |
|  | **Phenylpropiolic acid** | ≥98 % | $C_9H_6O_2$ | **5271.1** | 5 g | 42,90 |
| | | | | **5271.2** | 25 g | 155,90 |
|  | **o-Phthaldialdehyde** | ≥99 %, for synthesis | $C_8H_6O_2$ | **5980.1** | 25 g | 112,35 |
|  | **Pyrogallol** | ≥98 % | $C_6H_6O_3$ | **3963.2** | 50 g | 25,70 |
| | | | | **3963.1** | 100 g | 46,80 |
| | | | | **3963.3** | 250 g | 91,95 |
| | | | | **3963.4** | 1 kg | 332,20 |
|  | **Salicylaldehyde** | ≥99 %, for synthesis | $C_7H_6O_2$ | **4662.1** | 100 ml | 22,05 |
|  | **Salicylic acid** | ≥99 %, for biochemistry | $C_7H_6O_3$ | **9268.2** | 500 g | 32,80 |
| | | | | **9268.1** | 1 kg | 55,80 |
| | | | | **9268.3** | 2,5 kg | 82,25 |
|  | **Serotonin hydrochloride** | ≥98 %, for biochemistry | $C_{10}H_{12}N_2O \cdot HCl$ | **8367.1** | 100 mg | 19,25 |
| | | | | **8367.2** | 1 g | 35,40 |
| | | | | **8367.3** | 5 g | 138,70 |
|  | **Skatole** | >99 % | $C_9H_9N$ | **4696.1** | 10 g | 81,60 |
|  | **trans-Stilbene** | ≥97 % | $C_{14}H_{12}$ | **5246.1** | 50 g | 39,25 |
| | | | | **5246.2** | 100 g | 67,65 |
|  | **Styrene** | ≥99,5 %, for synthesis, stab. | $C_8H_8$ | **2641.1** | 500 ml | 20,35 |
| | | | | **2641.2** | 1 l | 29,60 |
| | | | | **2641.3** | 2,5 l | 53,65 |
|  | **5-Sulphosalicylic acid dihydrate** | ≥99 %, for biochemistry | $C_7H_6O_6S \cdot 2\ H_2O$ | **4119.1** | 100 g | 18,20 |
| | | | | **4119.2** | 500 g | 50,45 |

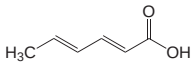
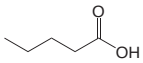
For additional product data and safety information, see chapter Chemicals A-Z.

| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **Syringaldehyde** | ≥98 % | $C_9H_{10}O_4$ | **5359.1** | 5 g | 46,80 |
|  | **Syringic acid** | ≥97 % | $C_9H_{10}O_5$ | **5361.1** | 10 g | 64,40 |
|  | **1,2,4-Triazole** | ≥99 % | $C_2H_3N_3$ | **5242.1** | 25 g | 21,40 |
| | | | | **5242.2** | 100 g | 60,10 |
|  | **Vanillic acid** | ≥98 % | $C_8H_8O_4$ | **3685.1** | 10 g | 37,55 |
|  | **Vanillin** | ≥99 %, for biochemistry | $C_8H_8O_3$ | **7887.1** | 100 g | 17,10 |
| | | | | **7887.2** | 1 kg | 85,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

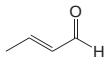
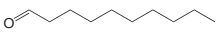
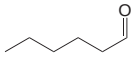
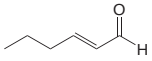
## Aliphatic Carboxylic Acids

| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **5-Aminolevulinic acid hydrochloride** | ≥98 %, for biochemistry | $C_5H_9NO_3 \cdot HCl$ | **8451.1** | 500 mg | 24,65 |
| | | | | **8451.2** | 1 g | 36,45 |
| | | | | **8451.3** | 5 g | 107,40 |
|  | **5-Bromovaleric acid** | ≥96 % | $C_5H_9BrO_2$ | **5466.1** | 10 g | 22,05 |
| | | | | **5466.2** | 50 g | 67,20 |
|  | **Butyric acid** | ≥99 %, for synthesis | $C_4H_8O_2$ | **3277.1** | 100 ml | 16,05 |
| | | | | **3277.2** | 1 l | 62,90 |
|  | **Capric acid** | >99 %, for synthesis | $C_{10}H_{20}O_2$ | **8797.1** | 100 g | 19,90 |
| | | | | **8797.3** | 500 g | 48,30 |
| | | | | **8797.2** | 1 kg | 82,70 |
|  | **Caproic acid** | ≥98 %, for synthesis | $C_6H_{12}O_2$ | **8799.1** | 100 ml | 18,20 |
| | | | | **8799.3** | 500 ml | 31,10 |
| | | | | **8799.2** | 1 l | 52,60 |
| | | | | **8799.4** | 2,5 l | 106,35 |
|  | **Cyclobutane-1,1-dicarboxylic acid** | ≥98 % | $C_6H_8O_4$ | **5451.1** | 5 g | 37,55 |
| | | | | **5451.2** | 25 g | 134,30 |
|  | **DL-6,8-Dithiooctanoic acid** | ≥98 % | $C_8H_{14}O_2S_2$ | **6229.1** | 5 g | 117,20 |
|  | **Fumaric acid** | ≥99,5 %, for biochemistry | $C_4H_4O_4$ | **3748.1** | 500 g | 19,25 |
| | | | | **3748.2** | 2,5 kg | 64,40 |
|  | **L-Lactic acid** | ≥98 %, for biochemistry | $C_3H_6O_3$ | **8360.1** * | 5 g | 35,40 |
| | | | | **8360.2** | 10 g | 53,25 |
| | | | | **8360.3** | 25 g | 107,00 |
|  | **Levulinic acid** | ≥98 %, for synthesis | $C_5H_8O_3$ | **3976.1** | 50 g | 14,55 |
| | | | | **3976.2** | 500 g | 55,80 |
|  | **Maleic acid** | ≥99 %, for synthesis | $C_4H_4O_4$  | **3538.2** | 100 g | 17,10 |
| | | | | **3538.1** | 500 g | 32,15 |
| | | | | **3538.3** | 1 kg | 51,50 |
| | | | | **3538.4** | 2,5 kg | 102,05 |
| | | | | **3538.5** | 5 kg | 160,20 |
|  | **Malonic acid** | ≥99 %, for synthesis | $C_3H_4O_4$ | **9851.1** | 100 g | 15,60 |
| | | | | **9851.2** | 500 g | 55,80 |
| | | | | **9851.3** | 1 kg | 99,90 |
|  | **Myristic acid** | ≥98 %, for biochemistry | $C_{14}H_{28}O_2$ | **6469.2** | 100 g | 12,40 |
| | | | | **6469.3** | 500 g | 32,15 |
| | | | | **6469.1** | 1 kg | 48,30 |
|  | **Octanoic acid** | ≥99,5 %, for synthesis | $C_8H_{16}O_2$ | **2613.1** | 100 ml | 13,90 |
| | | | | **2613.2** | 500 ml | 23,15 |
| | | | | **2613.3** | 1 l | 30,65 |
| | | | | **2613.4** | 2,5 l | 60,10 |
|  | **Pelargonic acid** | ≥97 % | $C_9H_{18}O_2$ | **7015.1** | 50 ml | 34,30 |
|  | **Pimelic acid** | ≥99 % | $C_7H_{12}O_4$ | **5270.1** | 25 g | 30,00 |
| | | | | **5270.2** | 50 g | 44,00 |
|  | **Propionic acid** | ≥99,5 %, for synthesis | $C_3H_6O_2$ | **6026.2** | 500 ml | 14,95 |
| | | | | **6026.1** | 1 l | 22,05 |
| | | | | **6026.3** | 2,5 l | 40,35 |

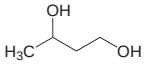
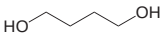
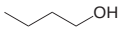
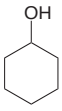
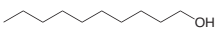
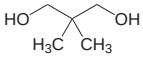
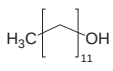
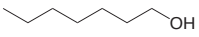
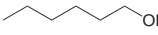
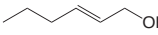
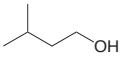
| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **Sorbic acid** | ≥99 %, Ph.Eur., extra pure | $C_6H_8O_2$ | **7158.1** | 250 g | 38,60 |
| | | | | **7158.2** | 500 g | 67,65 |
| | | | | **7158.3** | 1 kg | 124,20 |
|  | **n-Valeric acid** | ≥98 % | $C_5H_{10}O_2$ | **4874.1** | 250 ml | 30,65 |

For additional product data and safety information, see chapter Chemicals A-Z.

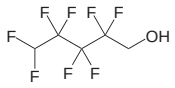
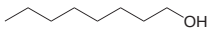
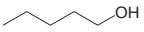
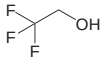
## Aliphatic Aldehydes

| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **2-Butenal** | ≥98 %, for synthesis | $C_4H_6O$ | **3425.1** | 250 ml | 44,00 |
|  | **Capric aldehyde** | ≥97 %, for synthesis | $C_{10}H_{20}O$ | **7547.1** | 100 ml | 112,80 |
|  | **Caproic aldehyde** | ≥98 %, for synthesis | $C_6H_{12}O$ | **3327.1** | 100 ml | 38,60 |
|  | **Dodecyl aldehyde** | ≥98 %, for synthesis | $C_{12}H_{24}O$ | **3754.1** | 50 ml | 48,30 |
|  | **trans-Hexen-2-al** | >96 % | $C_6H_{10}O$ | **3757.1** | 25 ml | 65,05 |

## Aliphatic Alcohols

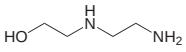
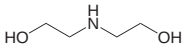
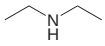
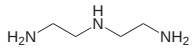
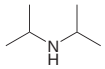
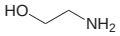
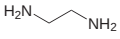
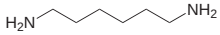
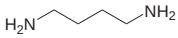
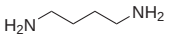
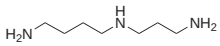
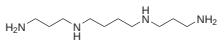
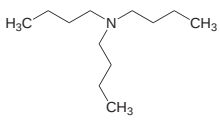
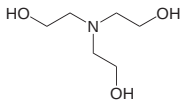
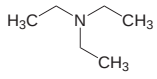
| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **1,3-Butanediol** | ≥99 %, for synthesis | $C_4H_{10}O_2$ | **7473.1** | 250 ml | 24,65 |
| | | | | **7473.2** | 500 ml | 41,40 |
| | | | | **7473.3** | 1 l | 74,10 |
|  | **1,4-Butanediol** | ≥99 %, for synthesis | $C_4H_{10}O_2$ | **4211.1** | 1 l | 36,45 |
| | | | | **4211.2** | 2,5 l | 79,05 |
| | | | | **4211.3** | 10 l | 251,05 |
|  | **1-Butanol** | ≥99,5 %, for synthesis | $C_4H_{10}O$ | **7724.1** | 1 l | 27,85 |
| | | | | **7724.3** | 2,5 l | 42,90 |
| | | | | **7724.2** | 10 l | 117,75 |
|  | **2-Butanol** | ≥98,5 %, for synthesis | $C_4H_{10}O$ | **KK02.1** | 500 ml | 26,35 |
| | | | | **KK02.2** | 1 l | 44,65 |
|  | **tert-Butanol** | ≥99 %, for synthesis | $C_4H_{10}O$ | **4323.1** | 1 l | 24,65 |
| | | | | **4323.3** | 2,5 l | 44,00 |
| | | | | **4323.2** | 10 l | 153,20 |
|  | **Cetyl alcohol** | ≥95 % | $C_{16}H_{34}O$ | **5762.1** | 1 kg | 50,00 |
|  | **Cyclohexanol** | ≥99 %, for synthesis | $C_6H_{12}O$ | **7756.1** | 1 l | 29,60 |
| | | | | **7756.2** | 2,5 l | 55,40 |
|  | **1-Decanol** | ≥99 %, for synthesis | $C_{10}H_{22}O$ | **4151.1** | 1 l | 53,65 |
|  | **2,2-Dimethyl-1,3-propanediol** | ≥99 %, for synthesis | $C_5H_{12}O_2$ | **7349.1** | 100 g | 12,80 |
| | | | | **7349.2** | 500 g | 24,20 |
| | | | | **7349.3** | 1 kg | 36,45 |
| | | | | **7349.4** | 2,5 kg | 78,40 |
|  | **1-Dodecanol** | ≥98 %, for synthesis | $C_{12}H_{26}O$ | **9853.1** | 250 ml | 13,45 |
| | | | | **9853.2** | 1 l | 36,45 |
| | | | | **9853.3** | 2,5 l | 75,15 |
|  | **1,7-Heptanediol** | ≥98 % | $C_7H_{16}O_2$ | **5541.1** | 5 g | 67,65 |
| | | | | **5541.2** | 10 g | 113,85 |
|  | **1-Heptanol** | ≥99 %, for synthesis | $C_7H_{16}O$ | **3827.1** | 500 ml | 70,85 |
|  | **1-Hexanol** | ≥98 %, for synthesis | $C_6H_{14}O$ | **3847.1** | 1 l | 43,55 |
| | | | | **3847.2** | 2,5 l | 95,15 |
|  | **trans-2-Hexen-1-ol** | ≥97 % | $C_6H_{12}O$ | **3756.1** | 5 ml | 28,50 |
|  | **Isoamyl alcohol** | ≥98,5 %, for synthesis | $C_5H_{12}O$ | **8930.1** | 1 l | 47,20 |
| | | | | **8930.2** | 2,5 l | 85,90 |

## Aliphatic Alcohols

| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **2,2,3,3,4,4,5,5-Octafluoro-1-pentanol** | ≥99,5 % | $C_5H_4F_8O$ | **7297.1** | 10 ml | 17,10 |
| | | | | **7297.2** | 100 ml | 88,05 |
|  | **1-Octanol** | ≥99 %, for synthesis | $C_8H_{18}O$ | **4439.1** | 100 ml | 14,55 |
| | | | | **4439.2** | 500 ml | 24,65 |
| | | | | **4439.3** | 1 l | 37,55 |
|  | **Pentaerythritol** | ≥98 %, for synthesis | $C_5H_{12}O_4$ | **7522.2** | 100 g | 17,75 |
| | | | | **7522.1** | 500 g | 53,65 |
|  | **1-Pentanol** | ~98 %, for synthesis | $C_5H_{12}O$ | **8949.2** | 500 ml | 25,30 |
| | | | | **8949.1** | 1 l | 41,85 |
|  | **1,2-Propanediol** | ≥99,5 %, for synthesis | $C_3H_8O_2$ | **0340.1** | 1 l | 23,15 |
| | | | | **0340.2** | 2,5 l | 44,65 |
| | | | | **0340.3** | 5 l | 81,60 |
|  | **1-Propanol** | ≥99,5 %, for synthesis | $C_3H_8O$ | **9169.1** | 1 l | 25,30 |
| | | | | **9169.2** | 2,5 l | 45,05 |
| | | | | **9169.3** | 10 l | 115,60 |
| | | | | **9169.4** | 25 l | 208,05 |
|  | **2-Propanol** | ≥99,5 %, for synthesis | $C_3H_8O$ | **9866.1** | 1 l | 17,10 |
| | | | | **9866.2** | 2,5 l | 41,40 |
| | | | | **9866.5** | 2,5 l | 38,60 |
| | | | | **9866.6** | 5 l | 55,80 |
| | | | | **9866.3** | 10 l | 85,90 |
| | | | | **9866.4** | 25 l | 170,95 |
|  | **2,2,2-Trifluoroethanol** | >99,8 %, for synthesis | $CF_3CH_2OH$ | **CP29.1** | 100 ml | 35,40 |
| | | | | **CP29.2** | 250 ml | 64,40 |
| | | | | **CP29.3** | 1 l | 198,90 |

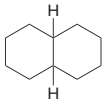
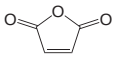
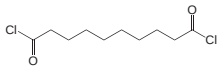
For additional product data and safety information, see chapter Chemicals A-Z.

## Aliphatic Amines

| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **2-(2-Aminoethylamino)ethanol** | ≥98 %, for synthesis | $C_4H_{12}N_2O$ | **6717.1** | 100 ml | 14,95 |
| | | | | **6717.2** | 500 ml | 25,30 |
| | | | | **6717.3** | 1 l | 40,35 |
| | | | | **6717.4** | 2,5 l | 86,55 |
|  | **Diethanolamine** | ≥99 %, for synthesis | $C_4H_{11}NO_2$ | **HN99.1** | 500 ml | 29,60 |
| | | | | **HN99.2** | 1 l | 37,55 |
| | | | | **HN99.3** | 2,5 l | 71,95 |
| | | | | **HN99.4** | 5 l | 107,40 |
| | | | | **HN99.5** | 10 l | 181,70 |
|  | **Diethylamine** | ≥99,5 %, for synthesis | $C_4H_{11}N$ | **KK00.1** | 100 ml | 13,15 |
| | | | | **KK00.2** | 500 ml | 20,65 |
| | | | | **KK00.3** | 1 l | 26,80 |
| | | | | **KK00.4** | 2,5 l | 46,15 |
|  | **Diethylene triamine** | ≥98 %, for synthesis | $C_4H_{13}N_3$ | **6723.1** | 100 ml | 13,45 |
| | | | | **6723.2** | 500 ml | 27,85 |
| | | | | **6723.3** | 1 l | 40,75 |
| | | | | **6723.4** | 2,5 l | 79,05 |
|  | **Diisopropylamine** | ≥99,5 %, for synthesis | $C_6H_{15}N$ | **4369.1** | 100 ml | 13,15 |
| | | | | **4369.2** | 500 ml | 25,70 |
| | | | | **4369.3** | 1 l | 40,75 |
|  | **Ethanolamine** | ≥99 %, for synthesis | $C_2H_7NO$ | **4376.1** | 100 ml | 12,05 |
| | | | | **4376.2** | 500 ml | 19,25 |
| | | | | **4376.3** | 1 l | 28,95 |
|  | **Ethylenediamine** | ≥99,5 %, for synthesis | $C_2H_8N_2$ | **4218.1** | 100 ml | 13,15 |
| | | | | **4218.2** | 500 ml | 17,10 |
| | | | | **4218.3** | 1 l | 26,80 |
| | | | | **4218.4** | 2,5 l | 52,60 |
| | | | | **4218.5** | 10 l | 177,40 |
|  | **Hexamethylene diamine** | ≥99,5 % | $C_6H_{16}N_2$ | **4465.1** | 100 g | 17,10 |
| | | | | **4465.2** | 250 g | 28,95 |
| | | | | **4465.3** | 1 kg | 55,80 |
|  | **Putrescin** | ≥99 %, for biochemistry | $C_4H_{12}N_2$ | **8379.1** * | 25 g | 21,40 |
| | | | | **8379.2** | 100 g | 42,50 |
| | | | | **8379.3** | 500 g | 131,70 |
|  | **Putrescin dihydrochloride** | ≥97 %, for biochemistry | $C_4H_{12}N_2 \cdot 2\ HCl$ | **4141.1** | 10 g | 24,65 |
| | | | | **4141.2** | 25 g | 48,95 |
| | | | | **4141.3** | 50 g | 85,90 |
|  | **Spermidine** | ≥98 %, for biochemistry | $C_7H_{19}N_3$ | **7161.2** | 1 g | 41,85 |
| | | | | **7161.1** | 2,5 g | 79,45 |
| | | | | **7161.3** | 5 g | 137,10 |
|  | **Spermine** | ≥99 %, for biochemistry | $C_{10}H_{26}N_4$ | **7162.2** | 1 g | 36,45 |
| | | | | **7162.1** | 2,5 g | 78,40 |
| | | | | **7162.3** | 5 g | 124,60 |
|  | **Tributylamine** | ≥99 %, for synthesis | $C_{12}H_{27}N$ | **4089.1** | 100 ml | 15,60 |
| | | | | **4089.2** | 500 ml | 27,45 |
| | | | | **4089.3** | 1 l | 36,45 |
| | | | | **4089.4** | 2,5 l | 64,40 |
|  | **Triethanolamine** | ≥99 %, for synthesis | $C_6H_{15}NO_3$ | **6300.1** | 1 l | 25,30 |
| | | | | **6300.3** | 2,5 l | 41,85 |
| | | | | **6300.2** | 10 l | 132,80 |
|  | **Triethylamine (TEA)** | ≥99,5 %, for synthesis | $C_6H_{15}N$ | **X875.1** | 100 ml | 11,75 |
| | | | | **X875.2** | 500 ml | 16,70 |
| | | | | **X875.3** | 1 l | 24,65 |
| | | | | **X875.4** | 2,5 l | 42,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Aliphatic Building Blocks

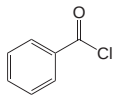
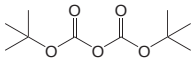
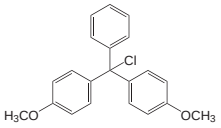
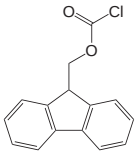
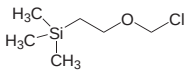
| Structural formula | Product | Purity | Empirical formula | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
|  | **γ-Butyrolactone** | ≥99 %, for synthesis | $C_4H_6O_2$ | **HN98.1** | 100 ml | 16,05 |
| | | | | **HN98.2** | 500 ml | 32,15 |
| | | | | **HN98.3** | 1 l | 59,05 |
|  | **Cyclohexanone** | ≥99,5 %, extra pure | $C_6H_{10}O$ | **CP27.1** | 1 l | 28,50 |
| | | | | **CP27.2** | 2,5 l | 50,00 |
| | | | | **CP27.3** | 10 l | 139,65 |
| | | | | **CP27.4** | 25 l | 255,35 |
|  | **Cyclohexene** | ≥99 %, for synthesis | $C_6H_{10}$ | **3451.1** | 500 ml | 60,75 |
|  | **Decahydronaphthalene** | ≥98 %, for synthesis | $C_{10}H_{18}$ | **4438.1** | 1 l | 32,15 |
| | | | | **4438.3** | 2,5 l | 59,05 |
| | | | | **4438.4** | 5 l | 106,45 |
| | | | | **4438.2** | 10 l | 192,45 |
|  | **Maleic anhydride** NEW | ≥99,5 %, for synthesis | $C_4H_2O_3$ | **0975.1** | 250 g | 13,90 |
| | | | | **0975.2** | 1 kg | 24,65 |
|  | **Nitromethane** | ≥98,5 %, for synthesis | $CH_3NO_2$ | **4406.1** | 500 ml | 28,95 |
|  | **Propyl bromide** | ≥98 % | $C_3H_7Br$ | **4631.1** | 100 ml | 37,10 |
|  | **Sebacic acid dichloride** | ≥98 % | $C_{10}H_{16}Cl_2O_2$ | **4472.2** | 10 ml | 24,65 |
| | | | | **4472.1** | 50 ml | 74,10 |
| | | | | **4472.3** | 250 ml | 232,10 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Synthesis Reagents

## Protecting Groups

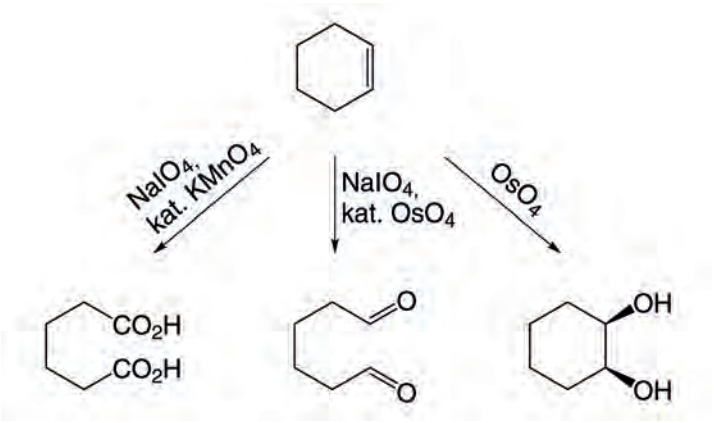
Today, protecting groups have become an important tool in the multistep, organic synthesis of complex compounds. The task of a protecting group is to protect a functional group from undesirable reactions with other functional groups. Then the protecting group should be cleaved under as mild conditions as possible.
Good protecting groups should be specific, highly selective and both introduceable and cleavable in high yields, and stable under as many reaction conditions as possible.

| Structural formula | Product | Protecting group (short name) | Purity | Removal | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
|  | **Benzoyl chloride** | - | ≥99 %, for synthesis | hydrogenolytic | **7456.1** | 100 ml | 13,15 |
| | | | | | **7456.2** | 500 ml | 28,95 |
| | | | | | **7456.3** | 1 l | 42,50 |
| | | | | | **7456.4** | 2,5 l | 82,70 |
|  | **Di-*tert*-butyl dicarbonate ($Boc_2O$)** | Boc | ≥98 % | acidic | **6985.1** | 100 g | 144,60 |
| | | | | | **6985.2** | 500 g | 456,90 |
|  | **4,4'-Dimethoxytrityl chloride (DMT-Cl)** | DMT | ≥98 %, for synthesis | with TFA | **9671.1** | 5 g | 23,15 |
| | | | | | **9671.2** | 25 g | 69,80 |
| | | | | | **9671.3** | 50 g | 115,60 |
| | | | | | **9671.4** | 100 g | 181,70 |
|  | **9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl)** | Fmoc | ≥ 98% | alkaline | **2201.1** | 5 g | 19,25 |
| | | | | | **2201.2** | 25 g | 42,90 |
| | | | | | **2201.3** | 100 g | 126,35 |
|  | **Trimethylchlorosilane (TMCS)** | TMS | ≥99 % | acidic, alkaline or using fluoride ions | **2338.1** | 25 g | 47,20 |
|  | **2-(Trimethylsilyl)ethoxymethyl chloride** | SEM NEW | ≥95 %, for synthesis | acidic, alkaline or using fluoride ions | **1444.1** | 1 ml | 37,55 |
| | | | | | **1444.2** | 5 ml | 96,65 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Oxidising Agents

Oxidation reactions play an important role - not only in inorganic chemistry but also in many organic synthesis processes. Several examples are shown here: Lemieux-von Rudloff oxidation, Lemieux Johnson oxidation and dihydroxylation. ROTH offers a selection of well-known and commonly available oxidants in this area.

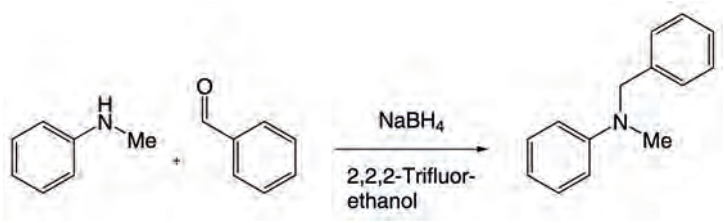



| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Hydrogen peroxide** | 50 %, techn., stabilized NEW | **0034.1** | 500 ml | plastic | 16,70 |
| | | **0034.2** | 1 l | plastic | 22,05 |
| | | **0034.3** | 2,5 l | plastic | 32,80 |
| | | **0034.4** | 5 l | plastic | 55,80 |
| | | **0034.5** | 10 l | plastic | 100,95 |
| | 35 %, pure, stabilized | **9683.4** | 500 ml | plastic | 16,05 |
| | | **9683.1** | 1 l | plastic | 21,00 |
| | | **9683.3** | 2,5 l | plastic | 31,10 |
| | | **9683.2** | 10 l | plastic | 77,95 |
| | 30 %, for synthesis, stabilized | **CP26.5** | 500 ml | plastic | 14,95 |
| | | **CP26.1** | 1 l | plastic | 18,85 |
| | | **CP26.4** | 2,5 l | plastic | 27,45 |
| | | **CP26.2** | 10 l | plastic | 49,35 |
| | | **CP26.3** | 25 l | plastic | 99,90 |
| **Manganese(IV) oxide** | >90 %, precipitated, active | **4486.1** | 250 g | glass | 31,75 |
| **Osmium tetraoxide** | ≥99,95 %, p.a., for electron microscopy | **8371.1** | 100 mg | glass | 40,75 |
| | | **8371.2** | 500 mg | glass | 98,80 |
| | | **8371.3** | 1 g | glass | 152,55 |
| **Potassium chromate** | ≥99 %, p.a., ACS | **HN33.1** | 100 g | plastic | 36,45 |
| | | **HN33.2** | 250 g | plastic | 68,70 |
| | | **HN33.3** | 500 g | plastic | 119,90 |
| | | **HN33.4** | 1 kg | plastic | 206,95 |
| **Potassium dichromate** | ≥99,5 % cryst. | **7953.3** | 100 g | plastic | 17,10 |
| | | **7953.1** | 1 kg | plastic | 90,85 |
| | | **7953.2** | 5 kg | plastic | 353,70 |
| **Potassium permanganate** | ≥99 %, Ph.Eur., BP, USP | **8004.1** | 250 g | plastic | 23,15 |
| | | **8004.2** | 1 kg | plastic | 56,45 |
| | | **8004.3** | 5 kg | plastic | 163,30 |
| **Sodium bismuthate** | ≥85 %, p.a. | **4401.1** | 50 g | plastic | 46,15 |
| | | **4401.2** | 100 g | plastic | 85,50 |
| | | **4401.3** | 250 g | plastic | 185,45 |
| **Sodium hypochlorite solution** | 12 % Cl, techn. | **9062.3** | 1 l | plastic | 17,75 |
| | | **9062.4** | 2,5 l | plastic | 26,35 |
| | | **9062.1** | 10 l | plastic | 35,40 |
| | | **9062.2** | 33 kg | plastic | 85,90 |
| **Sodium hypochlorite solution** | 5-10 % Cl, techn. | **6846.1** | 1 l | plastic | 13,15 |
| | | **6846.2** | 2,5 l | plastic | 18,20 |
| | | **6846.3** | 10 l | plastic | 27,45 |
| | | **6846.4** | 33 kg | plastic | 53,25 |
| **Sodium iodate** | ≥99 %, p.a. | **HN17.1** | 50 g | plastic | 40,35 |
| | | **HN17.2** | 100 g | plastic | 70,85 |
| **TEMPO** | ≥98 %, for synthesis NEW | **6801.1** | 1 g | glass | 13,90 |
| | | **6801.2** | 5 g | glass | 26,80 |
| | | **6801.3** | 25 g | glass | 64,40 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Reducing Agents

As with oxidation reactions, reduction reactions are also widely used in organic synthesis. An example of this reductive amination, which is shown beklow. You can find commonly used reducing agents here.



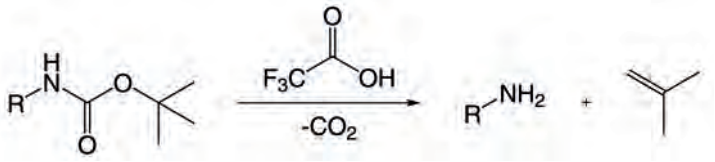

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Formic acid** | ≥98 %, for synthesis | **4742.1** | 1 l | glass | 22,05 |
| | | **4742.2** | 2,5 l | glass | 44,00 |
| | | **4742.3** | 10 l | plastic | 95,60 |
| **Magnesium filings** | ≥99,9 %, acc. to Grignard, for synthesis | **AE61.1** | 250 g | tin | 17,75 |
| | | **AE61.2** | 500 g | tin | 26,80 |
| | | **AE61.3** | 1 kg | tin | 43,55 |
| **Sodium** | ≥99 %, rods, in paraffin oil | **4469.1** | 250 g | plastic | 153,20 |
| **Sodium borohydride** | ≥97 % | **4051.1** | 25 g | tin | 33,25 |
| | | **4051.2** | 100 g | tin | 70,45 |
| **Sodium sulphite** | ≥98 %, anhydrous | **8637.1** | 1 kg | plastic | 21,40 |
| | | **8637.3** | 5 kg | plastic | 54,75 |
| | | **8637.2** | 10 kg | plastic | 99,90 |
| **Triphenylphosphine** | ≥99,5 %, for synthesis | **4110.1** | 10 g | plastic | 12,40 |
| | | **4110.2** | 100 g | plastic | 19,25 |
| | | **4110.3** | 250 g | plastic | 34,30 |
| | | **4110.4** | 1 kg | plastic | 102,15 |
| **Zinc granule** | ≥99,99 %, p.a., particle size: 5-15 mm | **AE99.1** | 250 g | plastic | 31,10 |
| | | **AE99.2** | 500 g | plastic | 50,45 |
| | | **AE99.3** | 1 kg | plastic | 83,75 |
| **Zinc dust** | ≥98 %, particle size <63 µm, stab. | **9524.2** | 500 g | glass | 28,95 |
| | | **9524.3** | 1 kg | glass | 40,75 |
| | | **9524.1** | 2,5 kg | glass | 71,95 |

For additional product data and safety information, see chapter Chemicals A-Z.



# (Lewis) Acids

Acids are commonly used in synthesis protocols for processing reactions. In addition, acids (usually Lewis acids) can also serve as catalysts for various reactions. The removal of the Boc protecting group shown here is formally catalysed by the acids used (in this case, trifluoroacetic acid). In addition to conventional inorganic acids, ROTH can supply other acids and Lewis acids commonly used in organic synthesis.

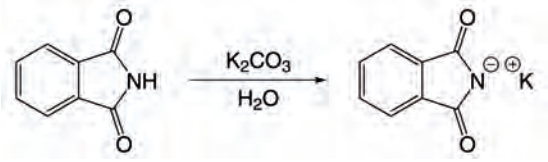



| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Acetic acid** | ≥99 %, for synthesis | **7332.1** | 1 l | plastic | 18,20 |
| | | **7332.4** | 2,5 l | plastic | 36,45 |
| | | **7332.2** | 5 l | plastic | 66,15 |
| | | **7332.3** | 10 l | plastic | 99,45 |
| | | **7332.5** | 25 l | plastic | 177,40 |
| **Aluminium chloride** | ≥98 %, anhydrous, sublimated | **CN86.1** | 100 g | glass | 12,80 |
| | | **CN86.2** | 500 g | glass | 25,30 |
| | | **CN86.3** | 1 kg | glass | 40,35 |
| **Ammonium chloride** | ≥99 %, cryst. | **5470.1** | 1 kg | plastic | 17,10 |
| | | **5470.2** | 5 kg | plastic | 41,40 |
| | | **5470.3** | 10 kg | plastic | 61,20 |
| | | **5470.5** | 25 kg | plastic | 113,85 |
| **Hydrochloric acid** | 37 %, extra pure | **9277.1** | 1 l | glass | 18,85 |
| | | **9277.2** | 2,5 l | glass | 30,65 |
| | | **9277.3** | 10 l | plastic | 68,30 |
| **Iron(III) chloride** | ≥98,5 %, extra pure, anhydrous | **5192.1** | 250 g | glass | 20,35 |
| | | **5192.2** | 500 g | glass | 27,45 |
| | | **5192.3** | 1 kg | glass | 39,70 |
| **Nitric acid** | 68 %, extra pure | **2616.1** | 250 ml | glass | 13,90 |
| | | **2616.2** | 1 l | glass | 24,65 |
| | | **2616.3** | 2,5 l | glass | 39,70 |
| **ortho-Phosphoric acid** | 85 %, extra pure | **9079.1** | 1 l | plastic | 38,60 |
| | | **9079.2** | 2,5 l | plastic | 69,35 |
| | | **9079.3** | 10 l | plastic | 145,15 |
| **Potassium hydrogen sulphate** | ≥99 %, extra pure | **X989.1** | 500 g | plastic | 18,85 |
| | | **X989.2** | 1 kg | plastic | 31,10 |
| | | **X989.3** | 2,5 kg | plastic | 57,95 |
| **Sodium hydrogen sulphate** | ≥93 %, pearls | **2373.1** | 1 kg | plastic | 18,20 |
| | | **2373.2** | 5 kg | plastic | 39,25 |
| **Sulphuric acid** | 96 %, techn. | **0971.1** | 1 l | plastic | 17,75 |
| | | **0971.2** | 2,5 l | plastic | 26,35 |
| | | **0971.3** | 10 l | plastic | 52,60 |
| | | **0971.4** | 25 l | plastic | 110,20 |
| **Trifluoroacetic acid (TFA)** | ≥99,9 % | **6957.1** | 500 ml | glass | 110,20 |
| | | **6957.2** | 1 l | glass | 192,45 |
| | | **6957.3** | 2,5 l | glass | 418,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Bases

Many reaction mechanisms require deprotonation so that the desired reaction can take place. The strength of the required bases depends entirely on the application. ROTH supplies a wide selection of bases which play an important role in organic synthesis.

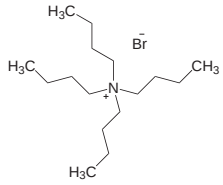
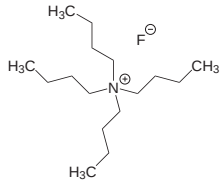
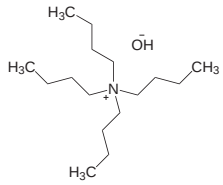
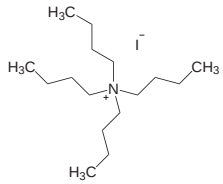
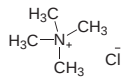



| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Ammonia solution** | ≥25 %, extra pure | **5460.1** | 1 l | plastic | 18,20 |
| | | **5460.2** | 5 l | plastic | 33,25 |
| | | **5460.3** | 10 l | plastic | 43,55 |
| | | **5460.4** | 30 l | plastic | 105,90 |
| **Barium hydroxide octahydrate** | ≥97 %, extra pure | **HN75.1** | 500 g | plastic | 26,80 |
| | | **HN75.2** | 1 kg | plastic | 45,05 |
| | | **HN75.3** | 2,5 kg | plastic | 98,80 |
| **Caesium carbonate** | ≥99,9 %, p.a. | **6873.1** | 5 g | plastic | 16,70 |
| | | **6873.2** | 25 g | plastic | 36,45 |
| | | **6873.3** | 100 g | plastic | 117,20 |
| | | **6873.4** | 500 g | plastic | 347,15 |
| **1,8-Diazabicyclo[5.4.0]undec-7-ene (DBU)** | ≥98 %, for synthesis | **6869.1** | 25 ml | glass | 28,95 |
| | | **6869.2** | 100 ml | glass | 84,95 |
| | | **6869.3** | 250 ml | glass | 155,90 |
| | | **6869.4** | 500 ml | glass | 278,45 |
| **N,N-Diisopropylethylamine (DIPEA)** | ≥99 %, for synthesis | **4105.1** | 100 ml | glass | 16,05 |
| | | **4105.2** | 250 ml | glass | 26,35 |
| | | **4105.3** | 1 l | glass | 74,75 |
| | | **4105.4** | 2,5 l | glass | 149,45 |
| **Imidazole** | ≥99 % | **3899.1** | 50 g | plastic | 17,75 |
| | | **3899.2** | 250 g | plastic | 47,20 |
| | | **3899.3** | 500 g | plastic | 66,15 |
| | | **3899.4** | 1 kg | plastic | 95,15 |
| **Piperidine** | ≥99,5 %, for peptide synthesis | **A122.1** | 200 ml | glass | 32,15 |
| | | **A122.2** | 500 ml | glass | 57,95 |
| | | **A122.3** | 1 l | glass | 95,60 |
| | | **A122.4** | 2,5 l | glass | 166,65 |
| | ≥99 %, for synthesis NEW | **0976.1** | 250 ml | glass | 21,00 |
| | | **0976.2** | 1 l | glass | 53,65 |
| | | **0976.3** | 2,5 l | glass | 107,40 |
| **Potassium carbonate** | ≥98 % | **7956.1** | 1 kg | plastic | 17,75 |
| | | **7956.2** | 5 kg | plastic | 62,25 |
| | | **7956.5** | 25 kg | plastic | 203,20 |
| **Potassium hydrogen carbonate** | ≥99 %, Ph.Eur. | **X887.1** | 500 g | plastic | 17,10 |
| | | **X887.2** | 1 kg | plastic | 24,65 |
| | | **X887.3** | 2,5 kg | plastic | 49,35 |
| **Potassium hydroxide** | ≥85 %, in flakes | **7986.1** | 1 kg | plastic | 24,20 |
| | | **7986.3** | 2,5 kg | plastic | 42,50 |
| | | **7986.2** | 10 kg | plastic | 115,60 |
| | | **7986.5** | 25 kg | plastic | 217,70 |
| **Pyridine** | ≥99 %, for synthesis | **CP07.1** | 500 ml | glass | 33,25 |
| | | **CP07.2** | 1 l | glass | 66,15 |
| | | **CP07.3** | 2,5 l | glass | 134,40 |
| **Sodium carbonate** | ≥99 %, anhydrous | **8563.1** | 1 kg | plastic | 16,05 |
| | | **8563.2** | 10 kg | plastic | 60,10 |
| | | **8563.5** | 25 kg | plastic | 112,90 |
| **Sodium hydrogen carbonate** | ≥99 % | **0965.1** | 500 g | plastic | 11,30 |
| | | **0965.2** | 1 kg | plastic | 15,60 |
| | | **0965.3** | 5 kg | plastic | 39,70 |
| **Sodium hydroxide** | ≥99 % | **9356.1** | 1 kg | plastic | 14,55 |
| | | **9356.3** | 5 kg | plastic | 36,45 |
| | | **9356.2** | 10 kg | plastic | 64,40 |
| | | **9356.5** | 25 kg | plastic | 112,90 |
| **Triethylamine (TEA)** | ≥99,5 %, for synthesis | **X875.1** | 100 ml | glass | 11,75 |
| | | **X875.2** | 500 ml | glass | 16,70 |
| | | **X875.3** | 1 l | glass | 24,65 |
| | | **X875.4** | 2,5 l | glass | 42,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Quaternary Ammonium Compounds

Quaternary ammonium compounds are organic ammonium compounds, for which all four valences of a nitrogen atom are bonded organically. These ammonium compounds are often used as phase-transfer catalysts and ion pair reagents.

| Structural formula | Product | Purity | Empirical formula | CAS-Nr. | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
|  | **Tetrabutylammonium bromide (TBAB)** | ≥99 %, for synthesis | $C_{16}H_{36}BrN$ | 1643-19-2 | **6633.1** | 50 g | 26,80 |
| | | | | | **6633.2** | 250 g | 75,15 |
| | | | | | **6633.3** | 500 g | 127,95 |
|  | NEW **Tetrabutylammoniumfluoride (TBAF)** | 1 mol/l in THF, stab. | $(C_4H_9)_4NF$ | 429-41-4 | **1448.1** | 25 ml | 24,65 |
| | | | | | **1448.2** | 100 ml | 73,00 |
| | | | | | **1448.3** | 250 ml | 127,95 |
|  | **Tetrabutylammonium hydroxide (TBAH)** | 40 % in water | $C_{16}H_{37}NO$ | 2052-49-5 | **5026.1** | 25 ml | 23,15 |
| | | | | | **5026.2** | 100 ml | 46,15 |
| | | | | | **5026.3** | 250 ml | 83,35 |
| | | | | new size | **5026.4** | 1 l | 278,45 |
|  | **Tetrabutylammonium iodide (TBAI)** | ≥99 %, p.a. | $C_{16}H_{36}IN$ | 311-28-4 | **4735.1** | 25 g | 14,95 |
| | | | | | **4735.2** | 100 g | 38,60 |
| | | | | | **4735.3** | 500 g | 160,20 |
|  | **Tetramethylammonium chloride (TMACl)** | ≥98 %, for synthesis | $C_4H_{12}ClN$ | 75-57-0 | **4747.1** | 100 g | 16,05 |
| | | | | | **4747.2** | 500 g | 56,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Solvents

## ROTIDRY® Dried solvents



The ROTIDRY® solvents have a low water content and high product purity. Therefore, these solvents are excellent for use in organic synthesis, DNA synthesis and analysis.

ROTIDRY® dried solvents are applicable where it is necessary to have low water content e.g. chromatographic purification methods.

**Properties:**
- Very low water content
- Extremely high product purity
- Low evaporation residue
- Filled under inert gas
- Particle filtration

## ROTIDRY® Sept Dried solvents in septum bottle



**Advantages of the septum bottle:**
- Additional product quality assurance
- No ingress of water during removal
- Ideal for small quantities
- Removable septum for removal of large quantities
- Special cap permits multiple puncture points

**Example specification:**

### Acetonitrile

**ROTIDRY® ≥99,9 % (≤10 ppm $H_2O$)**

Dried; for DNA synthesis and analysis.

**Danger** H225-H302+H312+H332-H319

**Guarantee analysis:**

Assay (GC).....≥99,9 %
Colour (Hazen).....≤10
Water (KF).....≤0,001 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
Filtered through a membrane and filled under protective gas.

**Example specification:**

### Acetonitrile

**ROTIDRY®Sept ≥99,9 % (≤10 ppm $H_2O$)**

Dried; in a septum bottle

**Danger** H225-H302+H312+H332-H319

**Guarantee analysis:**

Assay (GC).....≥99,9 %
Colour (APHA).....≤10
Water (KF).....≤0,001 %
Acidity (as $CH_3COOH$).....≤0,002 %
Evaporation residue.....≤0,0003 %

| Product | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **Acetonitrile** | ≥99,9 % (≤10 ppm $H_2O$) | **AE00.1** | 1 l | 35,40 |
| | | **AE00.2** | 2,5 l | 72,60 |
| | | **AE00.3** | 4 l | 107,40 |
| **Dichloromethane** | ≥99,8 % (≤50 ppm $H_2O$) | **AE03.1** | 1 l | 31,10 |
| **Diethyl ether** | ≥99,5 % (≤50 ppm $H_2O$), stab. | **AE04.1** | 1 l | 45,05 |
| **Dimethyl sulphoxide (DMSO)** | ≥99,5 % (≤200 ppm $H_2O$) | **AE02.1** | 1 l | 63,35 |
| **1,4-Dioxane** | ≥99,8 % (≤100 ppm $H_2O$) | **4429.1** | 1 l | 68,60 |
| **Acetic acid ethyl ester** | ≥99,8 % (≤100 ppm $H_2O$) | **4424.1** | 1 l | 28,50 |
| **n-Hexane** | ≥99 % (≤50 ppm $H_2O$) | **AE05.1** | 1 l | 66,55 |
| **Methanol** | ≥99,9 % (≤50 ppm $H_2O$) | **AE01.1** | 1 l | 30,00 |
| | | **AE01.2** | 2,5 l | 53,25 |
| **Tetrahydrofuran** | ≥99,9 % (≤50 ppm $H_2O$) | **AE07.1** | 1 l | 47,85 |
| **Toluene** | ≥99,5 % (≤50 ppm $H_2O$) | **AE06.1** | 1 l | 39,25 |
| **Trichloromethane/ Chloroform** | ≥99,8 % (≤50 ppm $H_2O$) | **4423.1** | 1 l | 26,80 |

For additional product data and safety information, see chapter Chemicals A-Z.

| Product | Purity | Art. No. | Pack Qty | € |
|---|---|---|---|---|
| **Acetonitrile** | ≥99,9 % (≤10 ppm $H_2O$) | **5175.1** | 250 ml | 46,15 |
| **Dichloromethane** | ≥99,9 % (≤50 ppm $H_2O$) | **5176.1** | 250 ml | 37,10 |
| **Diethyl ether** | ≥99,5 % (≤50 ppm $H_2O$), stab. | **5177.1** | 250 ml | 55,80 |
| **Dimethyl sulphoxide (DMSO)** | ≥99,8 % (≤100 ppm $H_2O$) | **5179.1** | 250 ml | 61,85 |
| **n-Hexane** | ≥99 % (≤30 ppm $H_2O$) | **5180.1** | 250 ml | 42,50 |
| **Methanol** | ≥99,9 % (≤50 ppm $H_2O$) | **5181.1** | 250 ml | 35,40 |
| **Tetrahydrofuran** | ≥99,8 % (≤10 ppm $H_2O$) | **5182.1** | 250 ml | 50,00 |
| **Toluene** | ≥99,5 % (≤30 ppm $H_2O$) | **5191.1** | 250 ml | 37,55 |

# Solvents for Synthesis

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Acetic acid ethyl ester** | ≥99,5 %, for synthesis | **7338.1** | 1 l | glass | 23,15 |
| | | **7338.3** | 2,5 l | glass | 39,70 |
| | | **7338.5** | 5 l | plastic | 53,65 |
| | | **7338.2** | 10 l | tinplate | 88,05 |
| | | **7338.4** | 25 l | tinplate | 177,40 |
| **Acetone** | ≥99,5 %, for synthesis | **5025.1** | 1 l | glass | 18,20 |
| | | **5025.2** | 2,5 l | glass | 39,70 |
| | | **5025.5** | 2,5 l | plastic | 38,20 |
| | | **5025.6** | 5 l | plastic | 52,15 |
| | | **5025.3** | 10 l | tinplate | 93,00 |
| | | **5025.4** | 25 l | tinplate | 196,20 |
| **Acetonitrile** | ≥99,5 %, for synthesis | **4380.1** | 1 l | glass | 28,95 |
| | | **4380.2** | 2,5 l | glass | 61,20 |
| | | **4380.3** | 10 l | tinplate | 195,65 |
| | | **4380.4** | 25 l | tinplate | 428,95 |
| **Cyclohexane** | ≥99,5 %, for synthesis | **6570.1** | 1 l | glass | 22,05 |
| | | **6570.3** | 2,5 l | glass | 32,05 |
| | | **6570.5** | 5 l | alumin. | 52,60 |
| | | **6570.2** | 10 l | tinplate | 83,75 |
| | | **6570.4** | 25 l | tinplate | 166,65 |
| **Dichloromethane** | >99,5 %, for synthesis | **8424.4** | 100 ml | glass | 10,25 |
| | | **8424.1** | 1 l | glass | 20,35 |
| | | **8424.2** | 2,5 l | glass | 39,70 |
| | | **8424.3** | 10 l | tinplate | 103,75 |
| | | **8424.5** | 25 l | tinplate | 177,40 |
| **Diethyl ether** | ≥99,5 %, for synthesis, stab. | **5920.2** | 1 l | glass | 32,80 |
| | | **5920.3** | 5 l | alumin. | 115,60 |
| | | **5920.4** | 25 l | tinplate | 332,20 |
| **N,N-Dimethylformamide (DMF)** | ≥99,5 %, for synthesis | **6251.1** | 1 l | glass | 26,45 |
| | | **6251.2** | 2,5 l | glass | 49,70 |
| | | **6251.3** | 2,5 l | plastic | 44,85 |
| | | **6251.5** | 10 l | plastic | 109,55 |
| | | **6251.4** | 25 l | plastic | 252,75 |
| **N,N'-Dimethylpropylene urea** | ≥99 %, for synthesis | **0662.1** | 25 ml | glass | 21,40 |
| | | **0662.2** | 100 ml | glass | 48,30 |
| | | **0662.3** | 500 ml | glass | 138,70 |
| **Dimethyl sulphoxide** | ≥99,5 %, for synthesis | **7029.1** | 1 l | glass | 32,80 |
| | | **7029.2** | 2,5 l | glass | 65,50 |
| | | **7029.4** | 5 l | plastic | 106,45 |
| | | **7029.3** | 10 l | plastic | 203,20 |
| | | **7029.5** | 25 l | plastic | 396,70 |
| **1,4-Dioxane** | ≥99,5 %, for synthesis | **4229.1** | 500 ml | glass | 23,15 |
| | | **4229.2** | 1 l | glass | 32,80 |
| | | **4229.3** | 2,5 l | glass | 67,20 |
| | | **4229.4** | 25 l | tinplate | 482,70 |

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **n-Hexane** | ≥99 %, for synthesis | **CP47.1** | 1 l | glass | 45,05 |
| | | **CP47.2** | 2,5 l | glass | 98,80 |
| | | **CP47.4** | 5 l | alumi-nium | 177,40 |
| | | **CP47.3** | 10 l | tinplate | 332,20 |
| | | **CP47.5** | 25 l | tinplate | 665,45 |
| **Methanol** | ≥99 %, for synthesis | **8388.1** | 1 l | glass | 14,95 |
| | | **8388.2** | 2,5 l | glass | 30,65 |
| | | **8388.5** | 2,5 l | plastic | 25,50 |
| | | **8388.6** | 5 l | plastic | 40,35 |
| | | **8388.3** | 10 l | tinplate | 64,40 |
| | | **8388.4** | 25 l | tinplate | 102,70 |
| **n-Pentane** | ≥99 %, for synthesis | **8720.1** | 1 l | glass | 36,05 |
| | | **8720.3** | 2,5 l | glass | 71,50 |
| | | **8720.4** | 5 l | alumi-nium | 126,35 |
| | | **8720.2** | 10 l | tinplate | 241,90 |
| | | **8720.5** | 25 l | tinplate | 536,45 |
| **Piperidine** NEW | ≥99 %, for synthesis | **0976.1** | 250 ml | glass | 21,00 |
| | | **0976.2** | 1 l | glass | 53,65 |
| | | **0976.3** | 2,5 l | glass | 107,40 |
| **Tetrahydrofuran** | ≥99,5 %, for synthesis | **4745.1** | 250 ml | glass | 22,05 |
| | | **4745.2** | 1 l | glass | 34,30 |
| | | **4745.3** | 2,5 l | glass | 73,65 |
| | | **4745.4** | 10 l | tinplate | 233,85 |
| | | **4745.5** | 25 l | tinplate | 353,70 |
| **Toluene** | ≥99,5 %, for synthesis | **9558.1** | 1 l | glass | 25,30 |
| | | **9558.3** | 2,5 l | glass | 40,75 |
| | | **9558.2** | 10 l | tinplate | 90,85 |
| | | **9558.4** | 25 l | tinplate | 169,35 |
| **Trichloromethane/ Chloroform** | ≥99 %, for synthesis | **Y015.1** | 1 l | glass | 24,20 |
| | | **Y015.2** | 2,5 l | glass | 39,70 |
| | | **Y015.3** | 10 l | tinplate | 127,95 |
| | | **Y015.4** | 25 l | tinplate | 241,90 |

- Further solvents see chapter Chemicals A-Z
- Tri-Sure®-barrel and keg key see page 740
- Pliers/wrench see page 739
- For 10 l and 25 l tins, the opening wrench 0398.1 is required. Please order separately.
- **How to open a ROTITAINER®?**
  You can find our technical brochures or our instruction video (only in german) at: https://www.carlroth.com/de/en/Rotitainer



# Ionic Liquids



Ionic liquids are salts which are available in a liquid state over a wide temperature range. They constitute a new generation of solvents with considerable potential for being able to replace classic organic solvents. Ionic liquids are composed of organic cations and organic or anorganic anions. Due to their fully ionized composition they exhibit no vapor pressure over the entire liquid range.

- Low-melting with melting point under 100 °C
- Thermally, mechanically and electrochemically stable
- Neither volatile nor combustible
- Negligible vapor pressure
- High solubility of many different kinds of chemicals

| Synonym | Type | Assay | Art. No. | Pack Qty | € |
|---|---|---|---|---|---|
| BMIM Cl | **1-Butyl-3-methyl-imidazolium-chloride** | ≥99 % | **2010.1** | 25 g | 127,95 |
| | | | **2010.2** | 100 g | 252,65 |
| BMIM $PF_6$ | **1-Butyl-3-methyl-imidazolium-hexafluorophosphate** | ≥99 % | **2012.1** | 25 g | 94,50 |
| | | ≥99 % | **2012.2** | 100 g | 252,65 |
| BMIM $BF_4$ | **1-Butyl-3-methyl-imidazolium-tetrafluoroborate** | >99 % | **2014.1** | 25 g | 81,60 |
| | | >99 % | **2014.2** | 100 g | 203,20 |
| BMPyrr $NTf_2$, BMPyrr BTA | **1-Butyl-1-methyl-pyrrolidinium bis(trifluoromethylsulphonyl)-imide** | ≥99 % | **2021.1** | 25 g | 170,95 |
| | | ≥99 % | **2021.2** | 100 g | 349,40 |
| BMPyrr $N(CN)_2$, BMPyrr DCA | **1-Butyl-1-methyl-pyrrolidinium-dicyanamide** | ≥98 % | **2022.1** | 25 g | 327,90 |
| | | ≥98 % | **2022.2** | 100 g | 697,70 |
| BMIM OTf | **1-Butyl-3-methylimidazolium-trifluoromethanesulphonate** | ≥99 % | **2015.1** | 25 g | 203,20 |
| | | ≥99 % | **2015.2** | 100 g | 471,95 |
| N1114 BTA | **Butyl-trimethyl-ammonium-bis(trifluoromethylsulphonyl)-imide** | ≥99 % | **2025.1** | 25 g | 213,95 |
| | | ≥99 % | **2025.2** | 100 g | 482,70 |
| Choline DHP | **Cholin-dihydrogenphosphate** | ≥98 % | **2028.1** | 25 g | 246,20 |
| | | ≥98 % | **2028.2** | 100 g | 557,95 |
| EAN | **Ethylammonium-nitrate** | ≥97 % | **2035.1** | 25 g | 160,20 |
| | | ≥97 % | **2035.2** | 100 g | 349,40 |
| EMIM Br | **1-Ethyl-3-methyl-imidazolium-bromide** | ≥99 % | **2037.1** | 25 g | 177,40 |
| | | ≥99 % | **2037.2** | 100 g | 295,65 |
| EMIM $N(CN)_2$, EMIM DCA | **1-Ethyl-3-methyl-imidazolium-dicyanamide** | ≥98 % | **2053.1** | 25 g | 278,45 |
| | | ≥98 % | **2053.2** | 100 g | 622,45 |
| EMIM $EtOSO_3$ | **1-Ethyl-3-methyl-imidazolium-ethylsulphate** | ≥99 % | **2054.1** | 25 g | 91,40 |
| | | ≥99 % | **2054.2** | 100 g | 198,90 |
| EMIM OMs | **1-Ethyl-3-methyl-imidazolium-methanesulphonate** | ≥99 % | **2056.1** | 25 g | 213,95 |
| | | ≥99 % | **2056.2** | 100 g | 547,20 |
| EMIM SCN | **1-Ethyl-3-methyl-imidazolium-thiocyanate** | ≥98 % | **2059.1** | 25 g | 241,90 |
| | | ≥98 % | **2059.2** | 100 g | 478,40 |
| EMIM OTf | **1-Ethyl-3-methyl-imidazolium-trifluoromethanesulphonate** | ≥99 % | **2062.1** | 25 g | 213,95 |
| | | ≥99 % | **2062.2** | 100 g | 622,45 |
| HMIM Cl | **1-Hexyl-3-methyl-imidazolium-chloride** | ≥98 % | **2064.1** | 25 g | 252,65 |
| | | ≥98 % | **2064.2** | 100 g | 439,70 |
| HMIM $PF_6$ | **1-Hexyl-3-methyl-imidazolium-hexafluorophosphate** | ≥99 % | **2069.1** | 25 g | 145,15 |
| | | ≥99 % | **2069.2** | 100 g | 317,15 |
| HMIM $BF_4$ | **1-Hexyl-3-methyl-imidazolium-tetrafluoroborate** | ≥99 % | **2070.1** | 25 g | 145,15 |
| | | ≥99 % | **2070.2** | 100 g | 295,65 |
| OMIM $PF_6$ | **1-Methyl-3-octyl-imidazolium-hexafluorophosphate** | >99 % | **2076.1** | 25 g | 181,70 |
| | | >99 % | **2076.2** | 100 g | 396,70 |
| OMIM $BF_4$ | **1-Methyl-3-octyl-imidazolium-tetrafluoroborate** | >99 % | **2081.1** | 25 g | 170,95 |
| | | >99 % | **2081.2** | 100 g | 364,45 |
| PMIM I | **1-Methyl-3-propyl-imidazolium-iodide** | ≥98 % | **2091.1** | 25 g | 155,90 |
| | | ≥98 % | **2091.2** | 100 g | 310,70 |
| PMPip BTA | **1-Methyl-1-propyl-piperidinium-bis-(trifluoromethylsulphonyl)-imide** | ≥99 % | **2095.1** | 25 g | 198,90 |
| | | ≥99 % | **2095.2** | 100 g | 407,45 |
| S222 BTA | **Triethylsulphonium-bis-(trifluoromethylsulphonyl)-imide** | ≥99 % | **2096.1** | 25 g | 428,95 |
| | | ≥99 % | **2096.2** | 100 g | 772,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ For information on solubility as well as the chemical and physical properties of the ionic liquids, refer to www.carlroth.com

# Green Solvents

The listed sustainable solvents - Green Solvents - serve as substitutes for environmentally hazardous and harmful reagents and help minimize risk. Sustainability is also achieved through the use of renewable resources or environmentally compatible manufacturing and recycling processes.



| Product | Purity | Art. No. | Pack Qty | Packaging | € |
|---|---|---|---|---|---|
| **Bioethanol** | 96 %, Ph.Eur. | **6724.1** | 1 l | glass | 74,10 |
| | | **6724.2** | 2,5 l | glass | 154,30 |
| | | **6724.3** | 2,5 l | plastic | 149,45 |
| | | **6724.4** | 5 l | plastic | 278,45 |
| | | **6724.5** | 10 l | plastic | 525,70 |
| | | **6724.6** | 25 l | plastic | 1073,95 |
| | 96 %, denaturated, with approx. 1 % MEK | **6726.1** | 1 l | plastic | 13,90 |
| | | **6726.2** | 2,5 l | plastic | 24,20 |
| | | **6726.3** | 5 l | plastic | 42,90 |
| | | **6726.4** | 10 l | plastic | 68,30 |
| | | **6726.5** | 25 l | plastic | 153,20 |
| **Cyclopentyl methyl ether** | ≥99 %, extra pure | **7763.1** | 250 ml | glass | 35,40 |
| | | **7763.2** | 500 ml | glass | 60,10 |
| | | **7763.3** | 1 l | glass | 95,70 |
| | | **7763.4** | 2,5 l | glass | 192,45 |
| **Dibasic ester** | ≥99 %, pure | **7973.1** | 1 l | plastic | 23,15 |
| | | **7973.2** | 2,5 l | plastic | 41,85 |
| | | **7973.3** | 5 l | plastic | 69,80 |
| **Glycerol** | ≥98 %, Ph.Eur., anhydrous | **7533.1** | 1 l | plastic | 33,25 |
| | | **7533.3** | 2,5 l | plastic | 60,10 |
| | | **7533.2** | 10 l | plastic | 180,10 |
| | | **7533.4** | 5 l | plastic | 102,05 |
| | | **7533.5** | 25 l | plastic | 349,40 |
| | ~86 %, Ph.Eur., extra pure | **7530.1** | 1 l | plastic | 36,45 |
| | | **7530.4** | 2,5 l | plastic | 59,70 |
| | | **7530.5** | 5 l | plastic | 107,40 |
| | | **7530.2** | 10 l | plastic | 198,90 |
| | | **7530.3** | 35 kg | plastic | 385,95 |
| **2-Methyltetrahydrofuran** | ≥99 %, extra pure | **6845.1** | 250 ml | glass | 25,30 |
| | | **6845.2** | 500 ml | glass | 41,85 |
| | | **6845.3** | 1 l | glass | 56,90 |
| | | **6845.4** | 2,5 l | glass | 106,45 |
| | | **6845.5** | 10 l | tinplate | 364,45 |

## Bioethanol

Our bioethanol is manufactured by fermentation of organic wheat followed by distillation and rectification.

Advantages:
- Made from wheat grown in a controlled organic environment in accordance with EU organic farming regulation 834/2007
- Non-synthetically manufactured ethanol
- Low toxicity thanks to safe production methods
- Suitable for synthesis and other laboratory applications
- Denaturated using a non-organic denaturant **(Art. No. 6726)**



# NMR-Spectroscopy

# Deuterated Compounds

Deuterated reagents are used primarily in NMR spectroscopy.
Examples of application: Routine tasks such as structure determination and identity verfication in research and development laboratories.

- High degree of deuteration
- Defined water content
- Extremely cost effective

## Deuterated Solvents

**Programme extension!**

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Acetone D6** | 99,8 Atom%D | **AE51.1** | 10 ml | glass | 46,15 |
| | | **AE51.4** | 10 ml | septum bottle | 48,30 |
| | | **AE51.2** | 50 ml | glass | 209,65 |
| | | **AE51.3** | 10 x 0,75 ml | glass ampoule | 52,60 |
| | 99,5 Atom%D | **7909.1** | 10 ml | glass | 38,20 |
| | | **7909.2** | 50 ml | glass | 160,20 |
| **Acetonitrile D3** | 99,8 Atom%D | **7911.1** | 10 ml | glass | 73,00 |
| | | **7911.2** | 10 x 0,75 ml | glass ampoule | 77,30 |
| | 99,5 Atom%D | **AE52.1** | 10 ml | glass | 69,80 |
| | | **AE52.3** | 10 ml | septum bottle | 70,85 |
| | | **AE52.2** | 25 ml | glass | 145,15 |
| **Benzene D6** | 99,8 Atom%D | **7912.1** | 10 ml | glass | 72,60 |
| | | **7912.2** | 25 ml | glass | 163,30 |
| | | **7912.3** | 10 x 0,75 ml | glass ampoule | 78,40 |
| | 99,5 Atom%D | **AE53.1** | 10 ml | glass | 45,70 |
| | | **AE53.3** | 10 ml | septum bottle | 47,20 |
| | | **AE53.2** | 50 ml | glass | 192,45 |
| **Bromobenzene D5** | 99,5 Atom%D | **HN93.1** | 10 ml | glass | 110,65 |
| **Chlorobenzene D5** | 99 Atom%D | **9905.1** | 5 ml | glass | 107,40 |
| **Cyclohexane D12** | 99,5 Atom%D | **5200.1** | 5 ml | glass ampoule | 95,60 |
| **Deuterium oxide** | 100 Atom%D | **HN81.1** | 10 ml | glass | 27,85 |
| | | **HN81.4** | 10 ml | septum bottle | 28,95 |
| | | **HN81.2** | 50 ml | glass | 99,90 |
| | | **HN81.3** | 10 x 0,75 ml | glass ampoule | 33,25 |
| | 99,8 Atom%D | **6672.1** | 10 ml | glass | 25,30 |
| | | **6672.5** | 10 ml | septum bottle | 26,35 |
| | | **6672.2** | 25 ml | glass | 49,35 |
| | | **6672.3** | 100 ml | glass | 160,20 |
| | | **6672.4** | 500 ml | glass | 719,20 |
| | | **6672.6** | 10 x 0,75 ml | glass ampoule | 29,60 |
| **1,2-Dichlorobenzene D4** | 99 Atom%D | **HN82.2** NEW SIZE | 1 ml | glass | 56,90 |
| | | **HN82.1** | 5 ml | glass | 181,70 |
| **Dichloromethane D2** | 99,8 Atom%D | **7913.1** | 10 ml | glass | 96,65 |
| | | **7913.2** | 10 x 0,75 ml | glass ampoule | 99,90 |
| | 99,5 Atom%D | **AE55.3** | 5 ml | glass | 48,30 |
| | | **AE55.1** | 10 ml | glass | 90,20 |
| | | **AE55.2** | 25 ml | glass | 198,90 |
| | | **AE55.4** | 50 ml | glass | 306,40 |
| | | **AE55.5** | 10 x 0,75 ml | glass ampoule | 92,35 |
| **Diethyl ether D10** | 99 Atom%D | **9907.1** | 1 ml | glass ampoule | 118,15 |
| **N,N-Dimethylformamide D7** | 99,5 Atom%D | **CP92.2** NEW SIZE | 1 ml | glass ampoule | 71,50 |
| | | **CP92.1** | 5 ml | glass | 198,90 |
| **Dimethyl sulphoxide D6** | 99,9 Atom%D | **7915.1** | 10 ml | glass | 46,15 |
| | | **7915.2** | 10 ml | septum bottle | 47,20 |
| | | **7915.3** | 10 x 0,75 ml | glass ampoule | 49,35 |
| **Dimethyl sulphoxide D6** | 99,8 Atom%D | **AE56.3** | 10 x 0,75 ml | glass ampoule | 40,75 |
| | | **AE56.1** | 10 ml | glass | 37,10 |
| | | **AE56.4** | 10 ml | septum bottle | 38,60 |
| | | **AE56.6** NEW SIZE | 25 ml | glass | 85,50 |
| | | **AE56.2** | 50 ml | glass | 149,45 |
| | | **AE56.5** | 100 ml | glass | 263,40 |
| **Dimethyl sulphoxide D6 with TMS (0,03 vol.%)** | 99,9 Atom%D | **7916.1** | 10 x 0,75 ml | glass ampoule | 46,15 |
| | 99,8 Atom%D | **AE60.1** | 10 ml | glass | 39,70 |
| | | **AE60.2** | 50 ml | glass | 149,45 |

# Org. & bioorg. Chemicals · Solvents

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Ethanol D1** | 99,5 Atom%D | **HN84.1** | 50 ml | glass | 128,90 |
| **Ethanol D6** | 99 Atom%D | **CP93.2** new size | 1 ml | glass | 52,70 |
| | | **CP93.1** | 5 ml | glass | 188,15 |
| **Methanol D1** | 99,5 Atom%D | **HN86.1** | 25 ml | glass | 52,60 |
| | | **HN86.2** | 100 ml | glass | 188,15 |
| **Methanol D3** | 99,5 Atom%D | **9910.1** | 1 ml | glass ampoule | 28,95 |
| | | **9910.2** | 5 ml | glass | 92,35 |
| **Methanol D4** | 100 Atom%D | **7918.1** | 10 ml | glass | 123,65 |
| | | **7918.2** | 10 x 0,75 ml | glass ampoule | 126,75 |
| | 99,8 Atom%D | **AE57.1** | 10 ml | glass | 65,50 |
| | | **AE57.4** | 10 ml | septum bottle | 67,65 |
| | | **AE57.5** | 25 ml | glass | 149,45 |
| | | **AE57.2** | 50 ml | glass | 284,90 |
| | | **AE57.3** | 10 x 0,75 ml | glass ampoule | 69,35 |
| **Methanol D4 with TMS (0,03 vol.%)** | 99,8 Atom%D | **7919.1** | 10 ml | glass | 61,20 |
| | | **7919.2** | 25 ml | glass | 145,15 |
| | | **7919.3** | 10 x 0,75 ml | glass ampoule | 63,35 |
| **Methylcyclohexane D14** | 99,5 Atom%D | **9913.1** | 5 ml | glass ampoule | 116,00 |
| **Nitrobenzene D5** | 99,5 Atom%D | **9914.1** | 5 ml | glass | 63,45 |
| | | **9914.2** | 10 ml | glass | 106,45 |
| **Nitromethane D3** | 99 Atom%D | **HN91.2** new size | 5 ml | glass | 63,45 |
| | | **HN91.1** | 10 ml | glass | 107,40 |
| **2-Propanol D1** | 98 Atom%D | **9917.1** | 25 ml | glass | 113,85 |
| **2-Propanol D8** | 99,5 Atom%D | **9919.1** | 5 ml | glass | 107,40 |
| **Pyridine D5** | 99,8 Atom%D | **7922.1** | 10 ml | glass | 126,75 |
| | | **7922.2** | 10 x 0,75 ml | glass ampoule | 128,90 |
| | 99,5 Atom%D | **CP94.1** | 10 ml | glass | 96,65 |
| | | **CP94.2** | 10 ml | septum bottle | 99,90 |
| | | **CP94.3** | 10 x 0,75 ml | glass ampoule | 102,05 |
| **Styrene D8** | 99 Atom%D, stab. with 4-tert-Butylcatechol | **9921.1** | 1 g | glass ampoule | 113,85 |
| **1,1,2,2-Tetrachloroethane D2** | 99,6 Atom%D | **CP96.1** | 10 ml | glass | 92,35 |
| | | **CP96.2** | 10 x 0,75 ml | glass ampoule | 93,45 |
| **Tetrahydrofuran D8** | 99,5 Atom%D | **AE58.3** | 5 ml | glass | 103,10 |
| | | **AE58.1** | 10 ml | glass | 192,45 |
| | | **AE58.2** | 10 ml | septum bottle | 194,50 |
| | | **AE58.4** | 25 ml | glass | 418,20 |
| | | **AE58.5** | 10 x 0,75 ml | glass ampoule | 195,55 |
| **Toluene D8** | 99,8 Atom%D | **7924.1** | 10 ml | glass | 120,30 |
| | | **7924.2** | 10 x 0,75 ml | glass ampoule | 121,40 |
| | | **CP95.1** | 10 ml | glass | 85,90 |
| | | **CP95.2** | 10 x 0,75 ml | glass ampoule | 88,70 |
| **Trichloromethane/Chloroform D1** | 100 Atom%D | **CP91.1** | 10 x 0,75 ml | glass ampoule | 28,95 |
| | 99,8 Atom%D | **7903.1** | 10 x 0,75 ml | glass ampoule | 19,25 |
| | 99,8 Atom%D, stab. with Ag | **AE54.4** | 25 ml | glass | 20,35 |
| | | **AE54.1** | 100 ml | glass | 49,35 |
| | | **AE54.3** | 100 ml | septum bottle | 51,50 |
| | | **AE54.2** | 500 ml | glass | 224,70 |
| **Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)** | 99,8 Atom%D | **7905.1** | 10 x 0,75 ml | glass ampoule | 18,85 |
| | 99,8 Atom%D, stab. with Ag | **AE59.1** | 100 ml | glass | 48,30 |

For additional product data and safety information, see chapter Chemicals A-Z.





## Deuterated Acids and Bases

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Acetic acid D1** | 99 Atom%D | **9902.1** | 50 ml | glass | 83,35 |
| **Acetic acid D4** | 99,5 Atom%D | **HN83.1** | 10 ml | glass | 79,05 |
| **Ammonia-D3 solution 25 % in $D_2O$** | 99 Atom%D | **9903.1** | 10 ml | glass | 69,80 |
| **Deuterium chloride 38 % solution in $D_2O$** | 99,5 Atom%D | **HN80.1** | 10 ml | glass | 37,55 |
| **Formic acid D2, 95 % solution in $D_2O$** | 98 Atom%D | **HN92.1** | 5 ml | glass | 95,15 |
| **ortho-Phosphoric acid D3, 85 % solution in $D_2O$** | 99 Atom%D | **9915.1** | 10 ml | glass ampoule | 46,80 |
| | | **9915.2** | 25 ml | glass | 102,05 |
| **Pyridine D5** | 99,8 Atom%D | **7922.1** | 10 ml | glass | 126,75 |
| | | **7922.2** | 10 x 0,75 ml | glass ampoule | 128,90 |
| | 99,5 Atom%D | **CP94.1** | 10 ml | glass | 96,65 |
| | | **CP94.2** | 10 ml | septum bottle | 99,90 |
| | | **CP94.3** | 10 x 0,75 ml | glass ampoule | 102,05 |
| **Sodium deuterium oxide 30 % solution in $D_2O$** | 99,5 Atom%D | **HN90.1** | 10 ml | glass | 60,10 |
| **Sulphuric acid D2, 98 % solution in $D_2O$** | 99,5 Atom%D | **HN87.1** | 10 ml | glass | 36,45 |
| | | **HN87.2** | 50 ml | glass | 149,45 |
| **Trifluoroacetic acid D** | 99,5 Atom%D | **CP97.1** | 10 ml | glass ampoule | 57,95 |

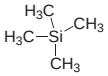
For additional product data and safety information, see chapter Chemicals A-Z.

## Deuterated Special Compounds

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2)** | 99 Atom%D | **9909.1** | 1 ml | glass ampoule | 117,20 |
| **Iodomethane D3** | 99,5 Atom%D, stab. with Cu | **HN88.2** new size | 5 g | glass | 41,95 |
| | | **HN88.1** | 25 g | glass | 148,25 |
| **Sodium borodeuteride** | 98 Atom%D | **HN89.1** | 1 g | glass | 62,25 |
| **3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4)** | 99 Atom%D | **9922.1** | 1 g | plastic | 127,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Reagent for NMR Calibration



### Tetramethylsilane

**≥99,9 %, for NMR-spectroscopy**

For the calibration of NMR spectra; calibration substance.

TMS

Storage temp.: +4 °C

**Danger** H224

**Type analysis:**

Assay (GC).....≥99,9 %

Aptitude for NMR-spectroscopy.....complies

| | | | |
|---|---|---|---|
| **CP18.1** | 25 ml | glass | 28,95 € |
| **CP18.2** | 100 ml | glass | 81,60 € |

▶ NMR-Vials and scintillation tubes see page 72






### Rotilabo®-NMR-vials

Made of borosilicate glass 3.3. With lenticular-shaped based. Ideal for applications with high operational capacity.

**Delivery without** cap, please order separately.

| Type | Art. No. | Pack Qty | € |
|---|---|---|---|
| Rotilabo®-NMR-vials | **HX58.1** | 50 | 78,35 |

**Accessories:**

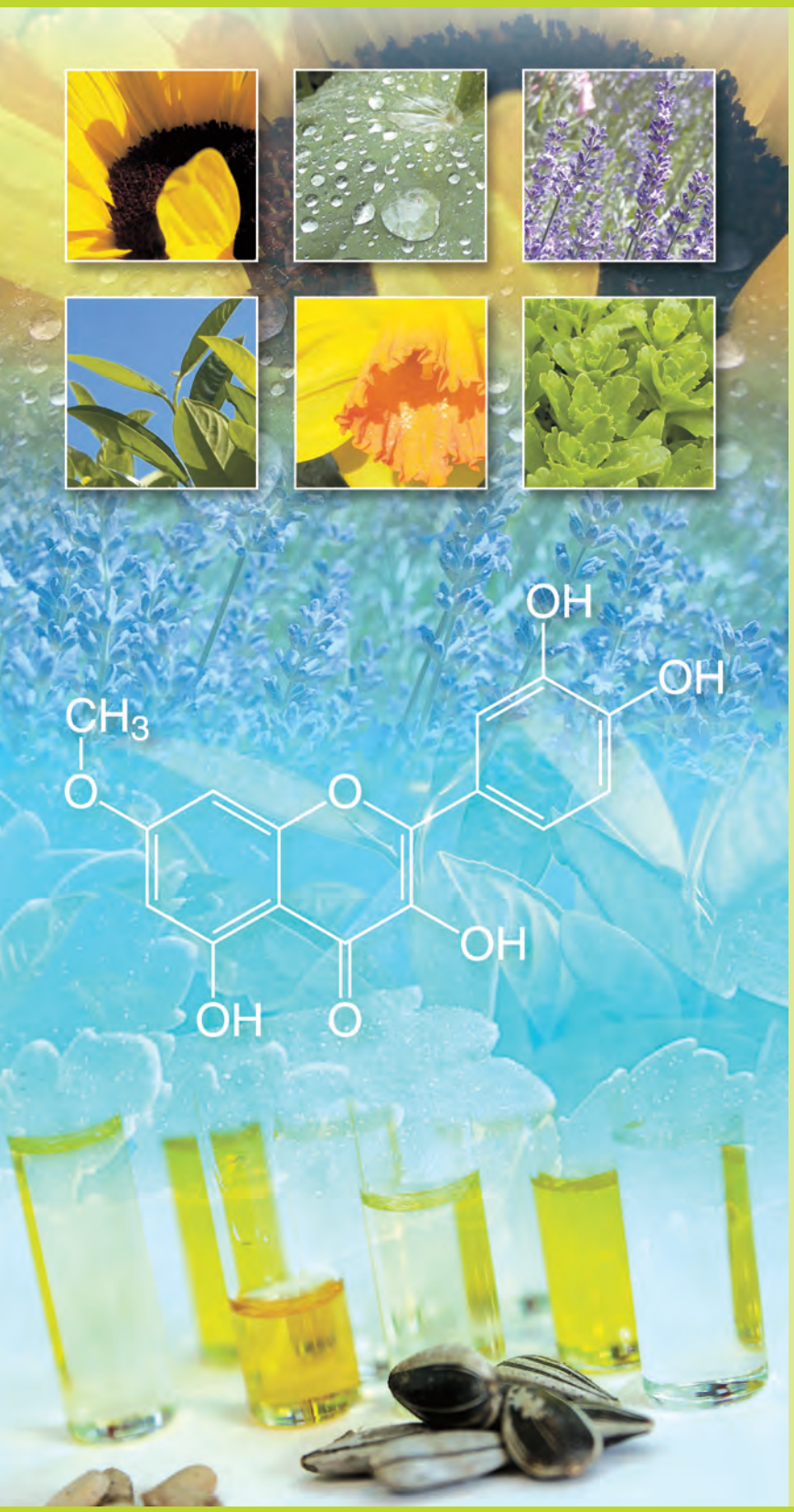
| | | | |
|---|---|---|---|
| Caps made of EVA | **HX59.1** | 1000 | 94,10 |



### Rack for NMR-test tubes

Made of **PP**. With 72 slots and 2 side handles for easy transportation. Stability is provided by hemispherical holes in the lower level. For NMR test tubes L 178 mm, outer ∅ 5 mm. Dimensions: L 210 x W 110 x H 220 mm. Autoclavable.

| Art. No. | Pack Qty | € |
|---|---|---|
| **YA94.1** | 1 | 52,15 |




# Natural & Reference Materials

**Phytochemicals**
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- Reference Substances
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  - for GC 1547
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**Fatty Acid References** 1548

**Oils and Greases**
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# Reference Standards

The reference standards are offered as powders with good flowability and crystallinity to guarantee efficient handling in the laboratory. All products of this product line are filled in brown glass vials with screw caps and are packed in foil bags. This packaging offers safe storage for a long term as well as proctection of the product against external influences. Storage is carried out in a controlled environment.

## Primary Standards

### ROTI®STAR Primary Standards for pharmaceutical and food analysis






**ROTI®STAR Primary Standards** are extensively characterised by the analytical methods listed below. They come with a certificate which contains:

- Proof of identity with spectra, e.g. $^{1}H$ NMR, $^{13}C$ NMR, MS, UV
- Content determined with two independent validated methods, e.g. chromatographic purity and quantitative NMR
- Content of residual solvent determined with two different validated GC methods
- Water determination by Karl Fischer titration

#### Herbal standards

| Product | CAS-Nr. | Assay (HPLC) | Assay (qNMR) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **Acetoxyvalerenic acid** | 81397-67-3 | ≥90,0 % | ≥85 % | **NE36.1*** | 10 mg | 901,95 |
| **Acteoside** | 61276-17-3 | ≥90,0 % | ≥80,0 % | **NE33.1** | 10 mg | 805,20 |
| **Apigenin** | 520-36-5 | ≥95,0 % | ≥90,0 % | **NE37.1** | 10 mg | 805,20 |
| **Apigenin-7-glucoside** | 578-74-5 | ≥95,0 % | ≥85,0 % | **NE19.1** | 25 mg | 1009,45 |
| **p-Arbutin** | 497-76-7 | ≥95,0 % | ≥80,0 % | **NE38.1** | 10 mg | 510,65 |
| **Bilobalid** | 33570-04-6 | ≥95,0 % | ≥95,0 % | **NE20.1*** | 25 mg | 805,20 |
| **Casticin** | 479-91-4 | ≥95,0 % | ≥90,0 % | **NE39.1** | 10 mg | 848,20 |
| **(+)-Dihydroquercetin** | 480-18-2 | ≥90,0 % | ≥85,0 % | **NE55.1*** | 10 mg | 848,20 |
| **3,4-Dihydroxybenzoic acid** | 99-50-3 | ≥95,0 % | ≥90,0 % | **NE52.1** | 50 mg | 568,70 |
| **Echinacoside** | 82854-37-3 | ≥90,0 % | ≥80,0 % | **NE40.1** | 10 mg | 521,40 |
| **(-)-Epicatechin** | 490-46-0 | ≥93,0 % | ≥90,0 % | **NE41.1*** | 10 mg | 521,40 |
| **Eriocitrin** | 13463-28-0 | ≥95,0 % | ≥85,0 % | **NE42.1** | 10 mg | 521,40 |
| **Ginkgolide A** | 15291-75-5 | ≥95,0 % | ≥90,0 % | **NE43.1*** | 10 mg | 901,95 |
| **Ginsenoside Rb1** | 41753-43-9 | ≥90,0 % | ≥80,0 % | **NE44.1** | 10 mg | 772,95 |
| **Ginsenoside Re** | 52286-59-6 | ≥90,0 % | ≥80,0 % | **NE45.1** | 10 mg | 772,95 |
| **Ginsenoside Rg1** | 22427-39-0 | ≥90,0 % | ≥80,0 % | **NE62.1*** | 10 mg | 772,95 |
| **Harpagoside** | 19210-12-9 | ≥95,0 % | ≥80,0 % | **NE21.1** | 25 mg | 772,95 |
| **Hederacoside C** | 27013-76-9 | ≥95,0 % | ≥84,0 % | **NE46.1** | 10 mg | 568,70 |

| Product | CAS-Nr. | Assay (HPLC) | Assay (qNMR) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **Herniarin** | 531-59-9 | ≥95,0 % | ≥93,0 % | **NE47.1** | 10 mg | 510,65 |
| **Hydroxyvalerenic acid** | 1619-16-5 | ≥90,0 % | ≥80,0 % | **NE48.1*** | 10 mg | 510,65 |
| **Hypericin** | 548-04-9 | ≥95,0 % | ≥75,0 % | **NE22.1** | 10 mg | 848,20 |
| **Hyperoside** | 482-36-0 | ≥95,0 % | ≥85,0 % | **NE23.1** | 25 mg | 633,20 |
| **Isoquercitrin** | 482-35-9 | ≥95,0 % | ≥85,0 % | **NE24.1** | 10 mg | 869,70 |
| **Isovitexin** | 38953-85-4 | ≥95,0 % | ≥85,0 % | **NE25.1** | 10 mg | 848,20 |
| **Kaempferol** | 520-18-3 | ≥95,0 % | ≥80,0 % | **NE26.1** | 25 mg | 848,20 |
| **Luteolin** | 491-70-3 | ≥90,0 % | ≥80,0 % | **NE49.1** | 25 mg | 848,20 |
| **Oleanolic acid** | 508-02-1 | ≥95,0 % | ≥90,0 % | **NE50.1** | 10 mg | 568,70 |
| **Osthol** | 484-12-8 | ≥95,0 % | ≥95,0 % | **NE51.1** | 10 mg | 848,20 |
| **Quercetin dihydrate** | 6151-25-3 | ≥95,0 % | ≥85,0 % | **NE27.1** | 50 mg | 729,95 |
| **Quercetin-3-O-ß-Glucuronide** | 22688-79-5 | ≥90,0 % | ≥85,0 % | **NE28.1** | 25 mg | 1073,95 |
| **Quercitrin** | 522-12-3 | ≥95,0 % | ≥80,0 % | **NE29.1** | 25 mg | 848,20 |
| **Rosmarinic acid** | 20283-92-5 | ≥85,0 % | ≥80,0 % | **NE30.1*** | 50 mg | 966,45 |
| **Sennoside A** | 81-27-6 | ≥80,0 % | ≥75,0 % | **NE53.1** | 50 mg | 1009,45 |
| **Sennoside B** | 128-57-4 | ≥85,0 % | ≥80,0 % | **NE54.1** | 50 mg | 1009,45 |
| **Silybin** | 22888-70-6 | ≥95,0 % | ≥85,0 % | **NE31.1** | 50 mg | 510,65 |
| **Valerenic acid** | 3569-10-6 | ≥95,0 % | ≥90,0 % | **NE32.1** | 25 mg | 869,70 |
| **Vitexin** | 3681-93-4 | ≥95,0 % | ≥85,0 % | **NE56.1** | 10 mg | 693,40 |
| **Vitexin-2''-O-rhamnoside** | 64820-99-1 | ≥95,0 % | ≥85,0 % | **NE34.1** | 10 mg | 729,95 |
| **Xanthohumol** | 6754-58-1 | ≥95,0 % | ≥95,0 % | **NE35.1** | 10 mg | 772,95 |

## Preservatives, antioxidants and vitamins

| Product | CAS-Nr. | Assay (HPLC) | Assay (qNMR) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **L(+)-Ascorbic acid** | 50-81-7 | ≥90,0 % | ≥90,0 % | **NE00.1** | 100 mg | 729,95 |
| **Benzaldehyde** | 100-52-7 | ≥95,0 % (GC) | ≥90,0 % | **NE01.1*** | 100 mg | 729,95 |
| **Benzoic acid** | 65-85-0 | ≥95,0 % | ≥90,0 % | **NE03.1** | 100 mg | 729,95 |
| **Benzoic acid sodium salt** | 532-32-1 | ≥95,0 % | ≥95,0 % | **NE11.1** | 100 mg | 729,95 |
| **Benzyl alcohol** | 100-51-6 | ≥95,0 % (GC) | ≥95,0 % | **NE02.1*** | 100 mg | 729,95 |
| **Butylated hydroxyanisole** | 25013-16-5 | ≥95,0 % | ≥90,0 % | **NE04.1** | 100 mg | 729,95 |
| **Butylated hydroxytoluene** | 128-37-0 | ≥95,0 % | ≥90,0 % | **NE05.1** | 100 mg | 729,95 |
| **Caffeic acid** | 331-39-5 | ≥90,0 % | ≥90,0 % | **NE08.1** | 25 mg | 568,70 |
| **Chlorogenic acid** | 327-97-9 | ≥95,0 % | ≥90,0 % | **NE06.1** | 25 mg | 510,65 |
| **4-Hydroxybenzoic acid ethyl ester** | 120-47-8 | ≥95,0 % | ≥90,0 % | **NE07.1** | 100 mg | 729,95 |
| **4-Hydroxybenzoic acid methyl ester** | 99-76-3 | ≥98,0 % | ≥95,0 % | **NE10.1** | 100 mg | 729,95 |
| **4-Hydroxybenzoic acid propyl ester** | 94-13-3 | ≥97,0 % | ≥95,0 % | **NE13.1** | 100 mg | 729,95 |
| **Potassium sorbate** | 24634-61-5 | ≥95,0 % | ≥95,0 % | **NE09.1** | 100 mg | 729,95 |
| **2-Phenoxyethanol** | 122-99-6 | ≥95,0 % (GC) | ≥95,0 % | **NE12.1** | 250 mg | 805,20 |
| **Rutin trihydrate** | 250249-75-3 | ≥90,0 % | ≥90,0 % | **NE14.1** | 50 mg | 510,65 |
| **Sorbic acid** | 110-44-1 | ≥95,0 % | ≥95,0 % (titr.) | **NE15.1** | 100 mg | 729,95 |
| **DL-α-Tocopherol** | 10191-41-0 | ≥92,0 % | ≥90,0 % | **NE16.1*** | 250 mg | 729,95 |
| **RRR-α-Tocopherol** | 59-02-9 | ≥92,0 % | ≥85,0 % | **NE18.1*** | 250 mg | 729,95 |
| **DL-α-Tocopherol acetate** | 7695-91-2 | ≥95,0 % (GC) | ≥93,0 % | **NE17.1** | 250 mg | 729,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

***User information:**
These products are shipped cooled.
**Please note:**
to ensure optimal product quality, these products are shipped only from Monday until Wednesday inside Germany and only on Mondays and Tuesdays outside Germany.
This may lead to minor delays in delivery.
The delivery time of the primary standards is approx. 2-4 weeks.

# Working Standards

## ROTICHROM® Working Standards for Analysis

The **ROTICHROM® Working Standards** are traceable to established primary standards which are characterised extensively concerning identity and content.
Therefore they can be used in all areas of analytics and they are a cost-saving alternative to primary standards.
The standard comes with a certificate of analysis which includes proof of identity and defined assay.
The substances are protected optimally against external influences with a high-quality glass and foil bag packaging.






### Herbal standards

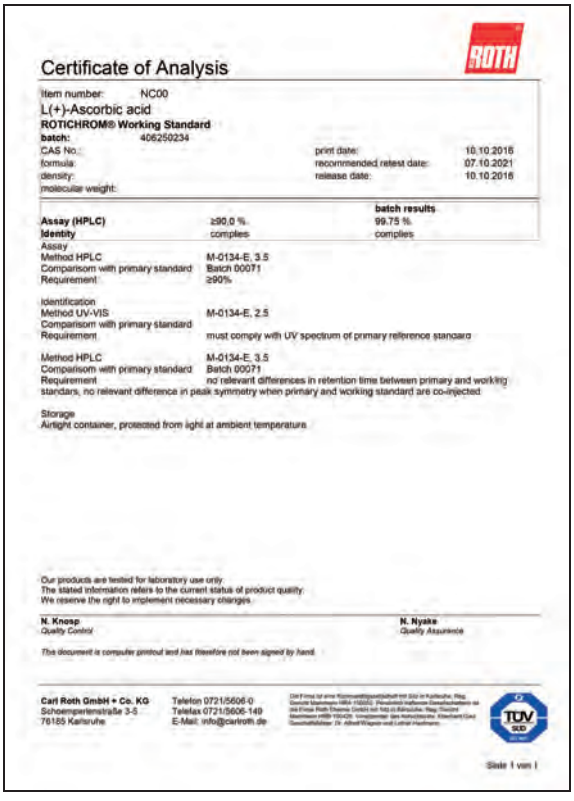
| Product | CAS-Nr. | Assay (HPLC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Acetoxyvalerenic acid** | 81397-67-3 | ≥90,0 % | **NC36.1*** | 10 mg | 327,90 |
| **Acteoside** | 61276-17-3 | ≥80,0 % | **NC33.2** | 25 mg | 392,40 |
| **Apigenin** | 520-36-5 | ≥85,0 % | **NC37.1** | 25 mg | 224,70 |
| **Apigenin-7-glucoside** | 578-74-5 | ≥90,0 % | **NC19.1** | 25 mg | 306,40 |
| **p-Arbutin** | 497-76-7 | ≥85,0 % | **NC38.2** | 100 mg | 185,45 |
| **Bilobalid** | 33570-04-6 | ≥85,0 % | **NC20.2** | 25 mg | 310,70 |
| **Casticin** | 479-91-4 | ≥85,0 % | **NC39.1** | 25 mg | 547,20 |
| **(+)-Dihydroquercetin** | 480-18-2 | ≥85,0 % | **NC55.1*** | 50 mg | 392,40 |
| **3,4-Dihydroxybenzoic acid** | 99-50-3 | ≥90,0 % | **NC52.1** | 100 mg | 132,15 |
| **Echinacoside** | 82854-37-3 | ≥80,0 % | **NC40.1** | 25 mg | 332,20 |
| **(-)-Epicatechin** | 490-46-0 | ≥90,0 % | **NC41.1*** | 50 mg | 241,90 |
| **Eriocitrin** | 13463-28-0 | ≥85,0 % | **NC42.1** | 25 mg | 256,95 |
| **Ginkgolide A** | 15291-75-5 | ≥85,0 % | **NC43.1*** | 25 mg | 299,95 |
| **Ginsenoside Rb1** | 41753-43-9 | ≥85,0 % | **NC44.1** | 25 mg | 396,70 |
| **Ginsenoside Re** | 52286-59-6 | ≥80,0 % | **NC45.1** | 25 mg | 246,20 |
| **Ginsenoside Rg1** | 22427-39-0 | ≥85,0 % | **NC62.1*** | 25 mg | 407,45 |
| **Harpagoside** | 19210-12-9 | ≥80,0 % | **NC21.1** | 50 mg | 439,70 |
| **Hederacoside C** | 27013-76-9 | ≥85,0 % | **NC46.1** | 25 mg | 321,45 |
| **Herniarin** | 531-59-9 | ≥95,0 % | **NC47.1** | 50 mg | 224,70 |
| **Hydroxyvalerenic acid** | 1619-16-5 | ≥80,0 % | **NC48.1*** | 25 mg | 364,45 |
| **Hypericin** | 548-04-9 | ≥75,0 % | **NC22.1** | 10 mg | 299,95 |
| **Hyperoside** | 482-36-0 | ≥85,0 % | **NC23.1** | 50 mg | 364,45 |
| **Isoquercitrin** | 482-35-9 | ≥80,0 % | **NC24.1** | 25 mg | 338,65 |
| **Isovitexin** | 38953-85-4 | ≥80,0 % | **NC25.1** | 25 mg | 364,45 |
| **Kaempferol** | 520-18-3 | ≥80,0 % | **NC26.1** | 25 mg | 170,95 |
| **Luteolin** | 491-70-3 | ≥80,0 % | **NC49.2** | 25 mg | 209,65 |
| **Oleanolic acid** | 508-02-1 | ≥85,0 % | **NC50.1** | 50 mg | 267,70 |
| **Osthol** | 484-12-8 | ≥90,0 % | **NC51.1** | 50 mg | 224,70 |
| **Quercetin dihydrate** | 6151-25-3 | ≥80,0 % | **NC27.1** | 100 mg | 236,50 |
| **Quercetin-3-O-ß-Glucuronide** | 22688-79-5 | ≥80,0 % | **NC28.1** | 50 mg | 289,20 |
| **Quercitrin** | 522-12-3 | ≥70,0 % | **NC29.2** | 50 mg | 353,70 |
| **Rosmarinic acid** | 20283-92-5 | ≥85,0 % | **NC30.1*** | 100 mg | 295,65 |
| **Sennoside A** | 81-27-6 | ≥75,0 % | **NC53.1** | 50 mg | 349,40 |
| **Sennoside B** | 128-57-4 | ≥80,0 % | **NC54.1** | 50 mg | 392,40 |
| **Silybin** | 22888-70-6 | ≥85,0 % | **NC31.1** | 100 mg | 181,70 |
| **Valerenic acid** | 3569-10-6 | ≥90,0 % | **NC32.1** | 50 mg | 289,20 |
| **Vitexin** | 3681-93-4 | ≥85,0 % | **NC56.1** | 25 mg | 600,95 |
| **Vitexin-2''-O-rhamnoside** | 64820-99-1 | ≥80,0 % | **NC34.1** | 25 mg | 418,20 |
| **Xanthohumol** | 6754-58-1 | ≥95,0 % | **NC35.1** | 25 mg | 256,95 |

## Preservatives, antioxidants and vitamins

| Product | CAS-Nr. | Assay (HPLC) | Assay (GC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **L(+)-Ascorbic acid** | 50-81-7 | ≥90,0 % | - | **NC00.1** | 100 mg | 116,00 |
| **Benzaldehyde** | 100-52-7 | - | ≥80,0 % | **NC01.1** | 100 mg | 116,00 |
| **Benzoic acid** | 65-85-0 | ≥95,0 % | - | **NC03.1** | 100 mg | 116,00 |
| **Benzoic acid sodium salt** | 532-32-1 | ≥90,0 % | - | **NC11.1** | 100 mg | 116,00 |
| **Benzyl alcohol** | 100-51-6 | ≥90,0 % | - | **NC02.1** | 100 mg | 116,00 |
| **Butylated hydroxyanisole** | 25013-16-5 | - | ≥95,0 % | **NC04.1** | 100 mg | 116,00 |
| **Butylated hydroxytoluene** | 128-37-0 | - | ≥95,0 % | **NC05.1** | 100 mg | 116,00 |
| **Caffeic acid** | 331-39-5 | ≥90,0 % | - | **NC08.1** | 100 mg | 116,00 |
| **Chlorogenic acid** | 327-97-9 | ≥90,0 % | - | **NC06.1** | 100 mg | 116,00 |
| **4-Hydroxybenzoic acid ethyl ester** | 120-47-8 | ≥90,0 % | - | **NC07.1** | 100 mg | 116,00 |
| **4-Hydroxybenzoic acid methyl ester** | 99-76-3 | ≥91,0 % | - | **NC10.1** | 100 mg | 116,00 |
| **4-Hydroxybenzoic acid propyl ester** | 94-13-3 | ≥90,0 % | - | **NC13.1** | 100 mg | 116,00 |
| **Potassium sorbate** | 24634-61-5 | ≥85,0 % | - | **NC09.1** | 100 mg | 116,00 |
| **2-Phenoxyethanol** | 122-99-6 | ≥90,0 % | ≥90,0 % | **NC12.1** | 250 µl | 116,00 |
| **Rutin trihydrate** | 250249-75-3 | ≥85,0 % | - | **NC14.1** | 100 mg | 116,00 |
| **Sorbic acid** | 110-44-1 | ≥95,0 % | - | **NC15.1** | 100 mg | 116,00 |
| **DL-α-Tocopherol** | 10191-41-0 | ≥90,0 % | - | **NC16.1*** | 250 µl | 116,00 |
| **DL-α-Tocopherol acetate** | 7695-91-2 | ≥90,0 % | - | **NC17.1** | 250 µl | 116,00 |
| **RRR-α-Tocopherol** | 59-02-9 | - | ≥85,0 % | **NC18.1*** | 250 µl | 116,00 |

For additional product data and safety information, see chapter Chemicals A-Z.

***User information:**
These products are shipped cooled.
**Please note:**
to ensure optimal product quality, these products are shipped only from Monday until Wednesday inside Germany and only on Mondays and Tuesdays outside Germany. This may lead to minor delays in delivery.



Certificate of Analysis

Item number: NC00
L(+)-Ascorbic acid
ROTICHROM® Working Standard
batch: 406250234
CAS No.:
formula:
density:
molecular weight:
print date: 10.10.2016
recommended retest date: 07.10.2021
release date: 10.10.2016

| | | batch results |
|---|---|---|
| **Assay (HPLC)** | ≥90,0 % | 99.75 % |
| **Identity** | complies | complies |

Assay
Method HPLC M-0134-E, 3.5
Comparisom with primary standard Batch 00071
Requirement ≥90%

Identification
Method UV-VIS M-0134-E, 2.5
Comparisom with primary standard
Requirement must comply with UV spectrum of primary reference standard

Method HPLC M-0134-E, 3.5
Comparisom with primary standard Batch 00071
Requirement no relevant differences in retention time between primary and working standars, no relevant difference in peak symmetry when primary and working standard are co-injected

Storage
Airtight container, protected from light at ambient temperature

Our products are tested for laboratory use only.
The stated information refers to the current status of product quality.
We reserve the right to implement necessary changes.

N. Knosp
Quality Control

N. Nyaka
Quality Assurance

This document is computer printout and has therefore not been signed by hand.

Carl Roth GmbH + Co. KG
Schoemperlenstraße 3-5
76185 Karlsruhe
Telefon 0721/5606-0
Telefax 0721/5606-149
E-Mail: info@carlroth.de

Seite 1 von 1

# Reference substances ROTICHROM® HPLC/TLC/GC

## for Chromatography







Pure reference substances are essential for precise analysis. They are used for identifying compounds by retention time, for calibrating detectors, and for eliminating errors in quantification of the sample compounds.

Peak areas are proportional to sample quantity in all chromatographic methods. For precise quantitative analysis, however, it is necessary to calibrate the detector as the signal may significantly vary with different substances.

To avoid errors during sample preparation and injection, an internal standard should be used in any case. The standard must not be present in the sample, however, its chemical and physical properties ought to be the closest possible to the analytical targets. It must be well resolved in the chromatogram within the same range of retention time as the sample. Before sample analysis, a given volume of standard is added, and all clean-up procedures are made with the sample containing the standard. Quantitative errors may be compensated by comparing the peak-areas of the sample with that of the internal standard.

Attention:

Reference substances

- ROTICHROM® HPLC
- ROTICHROM® TLC
- ROTICHROM® GC

are supplied with an HPLC-chromatogram, TLC-chromatogram and GC-chromatogram respectively, which is enclosed in the covering box.



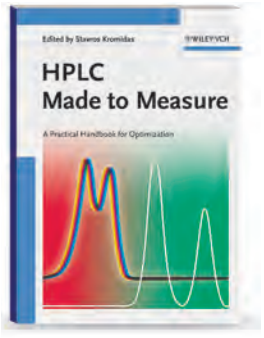
### Reference substances with analytical documentation

**TLC, HPLC, $^{1}$H NMR, $^{13}$C NMR, UV, IR, MS**

The high-purity substances from this product line are supplied with extensive analytical documentation. This documentation extends to approx. 20 pages and contains all key data on the analytical methods used. Our results are generally confirmed using at least one additional method. This ensures maximum reliability in assay and identity testing.

| Product | Purity (HPLC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Acetoxyvalerenic acid** | ≥99,0 % | **T890.1** | 25 mg | 618,15 |
| **Acteoside** | >98 % | **T891.1** | 20 mg | 510,65 |
| **Cynarin** | >99 % | **T892.1** | 10 mg | 446,15 |
| **(+)-Dihydroquercetin** | >99 % | **T893.1** | 20 mg | 370,90 |
| **Hydroxyvalerenic acid** | >99 % | **4710.2** | 50 mg | 370,90 |
| | | **4710.1** | 100 mg | 654,70 |
| **Primin** | >99 % | **T898.1** | 20 mg | 482,70 |
| **Quercetin** | >99 % | **1210.1** | 50 mg | 471,95 |
| **Seneciphylline** | >99 % | **1214.1** | 20 mg | 489,15 |
| **Valerenic acid** | ≥99,0 % | **4712.2** | 50 mg | 557,95 |
| | | **4712.1** | 100 mg | 1030,95 |

For additional product data and safety information, see chapter Chemicals A-Z.




### HPLC Made to Messure

A Practical Handbook for Optimization.
Kromidas, Stavros (Ed.)
1st Edition - May 2006, 753 pages, hard cover
ISBN 978-3-527-31377-8

**Short description:**
The only topical book to focus on optimization, this volume addresses the needs of users wishing to improve their methods in particular in terms of throughput, accuracy and cost-effectiveness. Written by bestseller authors and scientists working for major international companies.

| Titel | Art. No. | Pack Qty. | Price incl. VAT. € |
|---|---|---|---|
| **HPLC Made to Measure** | **HX93.1** | 1 | 179,00 |




## Reference substances for HPLC

### ROTICHROM® HPLC

ROTH offers a broad range of reference substances for HPLC. These highly pure substances predominantly have a HPLC purity level of >98 %, which is sufficient for meaningful analysis. You will find the certificate of analysis with HPLC chromatogram in the outer packaging.

**ROTICHROM® HPLC** - first choice for refence substances for chromtaography.

### Anthocyanins



| Product | Purity (HPLC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Apigeninidin chloride** | ≥97 % | **3939.2** | 10 mg | 385,95 |
| **Cyanidin 3-arabinoside chloride** | ≥95 % | **0641.1** | 10 mg | 396,70 |
| **Cyanidin chloride** | ≥96 % | **4545.1** | 10 mg | 209,65 |
| **Cyanin chloride** | >98 % | **1133.1** | 20 mg | 233,85 |
| **Delphinidin chloride** | ≥99 % | **4537.1** | 10 mg | 274,15 |
| **Delphinidin 3-galactoside chloride** | ≥95 % | **0643.1** | 10 mg | 413,90 |
| **Delphinidin 3-glucoside chloride** | ≥95 % | **0644.1** | 10 mg | 364,45 |
| **Delphinidin 3-rutinoside chloride** | ≥97 % | **0977.1** | 20 mg | 364,45 |
| **Diosmetinidin chloride** | ≥97 % | **9326.1** | 10 mg | 306,40 |
| **Idaein chloride** | ≥98 % | **3967.1** | 5 mg | 311,75 |
| **Keracyanine chloride** | ≥96,5 % | **6134.2** | 10 mg | 217,70 |
| **Kuromanin chloride** | ≥97 % | **6136.2** | 10 mg | 220,95 |
| **Luteolinidin chloride** | ≥91 % | **9325.1** | 10 mg | 396,70 |
| **Malvidin chloride** | ≥97 % | **6140.1** | 10 mg | 310,70 |
| **Malvin chloride** | ≥95 % | **K013.1** | 10 mg | 249,95 |
| **Oenin chloride** | ≥97 % | **K030.1** | 5 mg | 306,40 |
| **Peonidin chloride** | ≥98,5 % | **4540.1** | 5 mg | 306,40 |
| **Peonidin 3,5-diglucoside chloride** | ≥96 % | **1413.1** | 10 mg | 407,45 |
| **Peonidin 3-glucoside chloride** | ≥97 % | **1619.1** | 5 mg | 289,20 |
| **Pelargonidin chloride** | ≥99 % | **4541.1** | 10 mg | 310,70 |
| **Pelargonidin 3,5-diglucoside chloride** | ≥97 % | **1646.1** | 5 mg | 274,15 |
| **Petunidin 3-glucoside chloride** | ≥97 % | **1469.1** | 5 mg | 278,45 |
| **Primulin chloride** | ≥95 % | **K014.1** | 5 mg | 579,45 |

### Glucosinolates



| Product | Purity (HPLC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Epiprogoitrin** | ≥97 % | **2273.1** | 10 mg | 267,70 |
| **Glucobrassicanapin** | ≥98 % | **2276.1** | 10 mg | 295,65 |
| **Glucobrassicin** | ≥97 % | **2279.1** | 20 mg | 467,65 |
| **Glucoerucin** | ≥97 % | **2280.1** | 10 mg | 310,70 |
| **Glucoiberin** | ≥99 % | **2281.1** | 10 mg | 246,20 |
| **Gluconapin** | ≥97 % | **2282.1** | 10 mg | 256,95 |
| **Gluconasturtiin** | ≥97 % | **2357.1** | 20 mg | 446,15 |
| **Glucoraphanin** | ≥97 % | **2374.1** | 10 mg | 263,40 |
| **Progoitrin** | ≥97 % | **2436.1** | 10 mg | 241,90 |
| **Sinalbin potassium salt** | ≥97 % | **6694.1** | 20 mg | 252,65 |
| **Sinigrin monohydrate** | ≥99 % | **4542.2** | 50 mg | 321,45 |

### Pyrrolizidine Alkaloids



| Product | Purity (HPLC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **7-O-Acetylintermedine** | ≥95 % | **7975.1** | 5 mg | 375,20 |
| **7-O-Acetylintermedine N-oxide** | ≥95 % | **7980.1** | 5 mg | 375,20 |
| **Echimidine** | ≥95 % | **7992.1** | 5 mg | 364,45 |
| **Echimidine N-oxide** | ≥97 % | **8011.1** | 5 mg | 364,45 |
| **(Z)-Erucifoline** | ≥97 % | **1657.1** | 5 mg | 310,70 |
| **(Z)-Erucifoline N-oxide** | ≥97 % | **1664.1** | 5 mg | 327,90 |
| **Europine hydrochloride** | ≥97 % | **1676.1** | 10 mg | 403,15 |
| **Europine-N-oxide** | ≥97 % | **1687.1** | 10 mg | 403,15 |
| **Heliotrine** | ≥98 % | **1929.1** | 20 mg | 317,15 |
| **Heliotrine N-oxide** | ≥97 % | **1944.1** | 10 mg | 274,15 |
| **Indicine hydrochloride** | ≥97 % | **1960.1** | 10 mg | 364,45 |
| **Indicine N-oxide** | ≥96 % | **1961.1** | 10 mg | 396,70 |
| **Intermedine** | ≥95 % | **1962.1** | 5 mg | 349,40 |
| **Intermedine N-oxide** | ≥95 % | **8018.1** | 5 mg | 375,20 |
| **Jacobine** | ≥98 % | **1963.1** | 5 mg | 317,15 |
| **Jacobine N-oxide** | ≥96 % | **1970.1** | 5 mg | 327,90 |
| **Lasiocarpine** | ≥96 % | **2090.1** | 10 mg | 321,45 |
| **Lasiocarpine N-oxide** | ≥96 % | **2202.1** | 10 mg | 321,45 |
| **Lycopsamine** | ≥95 % | **2208.1** | 5 mg | 332,20 |
| **Lycopsamine N-oxide** | ≥95 % | **8022.1** | 5 mg | 375,20 |
| **Monocrotaline N-oxide** | ≥98 % | **2249.1** | 10 mg | 396,70 |
| **Retrorsine** | >98 % | **1213.1** | 20 mg | 267,70 |
| **Retrorsine-N-oxide** | ≥97 % | **6733.1** | 10 mg | 274,15 |
| **Senecionine** | ≥96 % (GC) | **2261.1** | 10 mg | 112,80 |
| **Senecionine N-oxide** | ≥95 % | **6734.1** | 10 mg | 428,95 |
| **Seneciphylline N-oxide** | ≥97 % | **6735.1** | 10 mg | 478,40 |
| **Senecivernine** | ≥95 % | **2209.1** | 5 mg | 289,20 |
| **Senecivernine N-oxide** | ≥95 % | **2215.1** | 5 mg | 310,70 |
| **Senkirkine** | ≥95 % | **4934.1** | 10 mg | 342,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

## More Reference Substances for HPLC

| Product | Purity (HPLC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Acacetin | ≥99 % | 6531.1 | 10 mg | 206,95 |
| Acetoxyvalerenic acid | >99 % | 4446.1 | 25 mg | 482,70 |
| 6-O-Acetylacteoside | >99 % | 1072.1 | 20 mg | 360,15 |
| 3-Acetyl-α-boswellic acid | >99 % | 1073.1 | 10 mg | 439,70 |
| 3-Acetyl-β-boswellic acid | >99 % | 1074.1 | 10 mg | 428,95 |
| 3-O-Acetyl-9-11-dehydro-β-boswellic acid | ≥98 % | 6269.1 | 5 mg | 349,40 |
| 3-Acetyl-11-keto-β-boswellic acid | >99 % | 1075.1 | 10 mg | 385,95 |
| Actein | >99 % | 1080.1 | 5 mg | 396,70 |
| Acteoside | >98 % | 4451.1 | 20 mg | 413,90 |
| Agnuside | >98 % | 1081.1 | 10 mg | 295,65 |
| Alliin | ≥98 % | K031.1 | 10 mg | 274,15 |
| Aloe-emodin | ≥98,5 % | 6004.2 | 20 mg | 237,60 |
| Aloenin A | >99 % | 1082.1 | 20 mg | 467,65 |
| Aloin A | ≥98 % | 4744.1 | 25 mg | 97,30 |
| Amarogentin | ≥99 % | 6488.1 | 10 mg | 299,95 |
| Amentoflavone trihydrate | ≥99 % | 5255.1 | 10 mg | 284,90 |
| α-Amyrin | ≥98,5 % | 7000.1 | 10 mg | 235,45 |
| β-Amyrin | ≥98,5 % | 7001.1 | 10 mg | 403,15 |
| Apigenin-7-glucoside | >99 % | 6348.1 | 10 mg | 150,00 |
| Apiin | >99 % | 1085.1 | 10 mg | 332,20 |
| Aristolochic acid I | >99 % | 1086.1 | 20 mg | 306,40 |
| Aristolochic acid II | >99 % | 1088.1 | 20 mg | 385,95 |
| Asiaticoside | ≥99 % | 3972.1 | 10 mg | 203,20 |
| Aucubin | >98,5 % | 7004.1 | 25 mg | 145,05 |
| Azadirachtin | ≥96 % | 4314.1 | 1 mg | 166,65 |
| | new size | 4314.2 | 5 mg | 364,45 |
| Baicalein | >99 % | 1110.1 | 20 mg | 310,70 |
| Baicalin | >99 % | 1121.1 | 20 mg | 244,60 |
| Bavachinin A | ≥99 % | 8898.1 | 5 mg | 213,95 |
| Bergamottin | ≥99 % | 8889.1 | 25 mg | 181,70 |
| Bergaptene | ≥99 % | 7006.2 | 20 mg | 155,90 |
| Betulinic acid | ≥97 % | 7007.1 | 25 mg | 198,90 |
| Bilobalid | >98 % | 1122.1 | 20 mg | 407,45 |
| α-Boswellic acid | >99 % | 1123.1 | 10 mg | 418,20 |
| β-Boswellic acid | >99 % | 1124.1 | 10 mg | 418,20 |
| 11-keto-β-Boswellic acid | >99 % | 1155.1 | 10 mg | 375,20 |
| Butein | ≥99 % | 7010.1 | 10 mg | 321,45 |
| Caftaric acid | >98 % | 1125.1 | 10 mg | 385,95 |
| Casticin | >98 % | 1126.1 | 20 mg | 439,70 |
| Catalpol | >99 % | 1127.1 | 25 mg | 289,20 |
| Caulophyllogenin | ≥99 % | 7439.1 | 5 mg | 504,20 |
| (-)-α-Chaconine | ≥98 % | 4192.1 | 5 mg | 246,20 |
| Chelidonine | >98 % | 1129.1 | 25 mg | 284,90 |
| Chrysanthellin A | ≥96 % | 5261.1 | 10 mg | 403,15 |
| Chrysoeriol | ≥99 % | 6044.1 | 5 mg | 256,95 |
| Chrysophanic acid | ≥99 % | 7442.1 | 10 mg | 192,45 |
| Cichoric acid | >98 % | 1130.1 | 10 mg | 403,15 |
| Cnicin | ≥98 % | 2823.1 | 10 mg | 252,65 |
| Coptisin chloride | >99 % | 1131.1 | 10 mg | 233,85 |
| Cucurbitacin E | ≥98 % | 9741.1 | 10 mg | 310,70 |
| Cucurbitacin I | ≥95 % | 9032.2 | 5 mg | 306,40 |
| Curcumin | >98 % | 1132.1 | 20 mg | 385,95 |
| Cynarin | >99 % | 4457.1 | 10 mg | 342,95 |
| Daidzein | ≥99 % | 6047.2 | 20 mg | 160,20 |
| Datiscetin | ≥99 % | 7444.1 | 10 mg | 247,25 |
| 27-Deoxyactein | >99 % | 1134.1 | 5 mg | 439,70 |
| Dhurrin | ≥98 % | 3866.1 | 1 mg | 53,65 |
| Didymin | ≥99 % | 7445.1 | 5 mg | 349,40 |
| (+)-Dihydroquercetin | >99 % | 4464.1 | 20 mg | 256,95 |
| | | 4464.2 | 50 mg | 482,70 |
| Diosmetin | ≥99 % | 7446.1 | 10 mg | 203,20 |
| Diosmin | ≥99 % | 7447.1 | 10 mg | 225,25 |
| Echinacoside | >98 % | 1135.1 | 10 mg | 392,40 |
| Echinocystic acid 3-glucoside | ≥92 % | 6995.1 | 25 mg | 1030,95 |
| β-Elemonic acid | ≥98 % | 6491.1 | 10 mg | 482,70 |

| Product | Purity (HPLC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Elenolic acid glucoside | >98 % | 1136.1 | 20 mg | 310,70 |
| Eleutheroside B | >99 % | 1137.1 | 5 mg | 246,20 |
| Eleutheroside E | >96 % | 1138.1 | 5 mg | 246,20 |
| Emodin | ≥99 % | 7451.2 | 20 mg | 181,70 |
| Englerin A | ≥96 % | 6492.1 | 10 mg | 439,70 |
| (-)-Epicatechin | >99 % | 1139.1 | 20 mg | 209,65 |
| (-)-Epicatechin gallate | ≥98 % | 6358.1 | 10 mg | 246,20 |
| (-)-Epigallocatechin | ≥98 % | 6359.1 | 10 mg | 256,95 |
| (-)-Epigallocatechin gallate | ≥98 % | 6361.1 | 10 mg | 170,95 |
| Eriodictyol | ≥99 % | 6990.1 | 10 mg | 185,45 |
| Eriodictyol-7-glucoside | ≥99 % | 6521.1 | 10 mg | 274,15 |
| Erythrodiol | ≥98 % | 7455.1 | 10 mg | 213,95 |
| Eupatorin | ≥99 % | 6493.1 | 20 mg | 278,45 |
| Fisetin | ≥99 % | 7457.1 | 10 mg | 198,90 |
| Flavanomarein | ≥99 % | 7458.1 | 10 mg | 342,95 |
| Formononetin | ≥99 % | 9570.1 | 10 mg | 132,80 |
| Frangulin A | >98 % | 1140.1 | 20 mg | 284,90 |
| Frangulin B | >98 % | 1142.1 | 10 mg | 299,95 |
| Fraxin | ≥99 % | 9364.1 | 10 mg | 335,95 |
| Friedelin | ≥98 % | 7459.1 | 25 mg | 203,20 |
| Galangin | ≥99 % | 7460.2 | 20 mg | 192,45 |
| (-)-Gallocatechin | >99 % | 4480.1 | 10 mg | 241,90 |
| | | 4480.2 | 20 mg | 385,95 |
| Genistin | ≥99 % | 9374.1 | 5 mg | 289,20 |
| Geraldol | ≥99 % | 7461.2 | 5 mg | 299,95 |
| [6]-Gingerol | >98 % | T895.1 | 10 mg | 284,90 |
| [8]-Gingerol | >98 % | 1143.1 | 10 mg | 321,45 |
| Ginkgolide A | >98 % | 1145.1 | 20 mg | 321,45 |
| Ginkgolide B | >99 % | 1146.1 | 20 mg | 364,45 |
| Ginkgolide C | >95 % | 1147.1 | 20 mg | 385,95 |
| Ginkgolic acids RN | >90 % | 1148.1 | 5 mg | 310,70 |
| Ginsenoside Rb1 | ≥98 % | 7462.1 | 5 mg | 170,95 |
| Ginsenoside Rb2 | ≥94 % | 7463.1 | 5 mg | 299,95 |
| Ginsenoside Rc | ≥98 % | 7465.1 | 5 mg | 203,20 |
| Ginsenoside Rd | ≥98 % | 7466.1 | 5 mg | 177,40 |
| Ginsenoside Re | ≥98 % | 7468.1 | 5 mg | 126,35 |
| Ginsenoside Rf | ≥98 % | 4552.1 | 5 mg | 375,20 |
| Ginsenoside Rg1 | ≥98 % | 7467.1 | 5 mg | 170,95 |
| Glucotropaeolin | >99 % | 1149.1 | 50 mg | 446,15 |
| 18-β-Glycyrrhetinic acid | ≥99 % | 7469.2 | 20 mg | 163,95 |
| Hamamelitannin | >99 % | 1151.1 | 20 mg | 256,95 |
| Harpagid | >99 % | 1152.1 | 10 mg | 299,95 |
| Harpagoside | >98 % | 7471.1 | 10 mg | 99,45 |
| Hederacoside C | ≥99 % | 7472.1 | 10 mg | 121,40 |
| α-Hederin | ≥98 % | 7486.1 | 10 mg | 170,95 |
| Hesperetin | ≥99 % | 7570.1 | 10 mg | 154,30 |
| Hesperidin | ≥98 % | 7577.1 | 10 mg | 181,70 |
| Homoeriodictyol | ≥99 % | 7585.1 | 10 mg | 181,70 |
| Homoorientin | ≥99 % | 6002.1 | 5 mg | 235,45 |
| 4-Hydroxybenzoic acid ethyl ester | ≥99 % | 4746.1 | 1 g | 30,00 |
| 4-Hydroxybenzoic acid methyl ester | ≥99 % | 4748.1 | 1 g | 31,10 |
| 4-Hydroxybenzoic acid propyl ester | ≥99 % | 4749.1 | 1 g | 30,00 |
| Hydroxytyrosol | >98 % | 1153.1 | 25 mg | 263,40 |
| Hydroxyvalerenic acid | >99 % | 4481.1 | 25 mg | 332,20 |
| | | 4481.2 | 50 mg | 547,20 |
| | | 4481.3 | 100 mg | 869,70 |
| Hyperforin / Adhyperforin Dicyclohexylammonium salt, Mixture 4:1 | ≥95 % | 6495.1 | 5 mg | 327,90 |
| Hypericin | ≥98 % | L543.1 | 1 mg | 123,65 |
| Hypericin sodium salt | >98 % | 1154.1 | 5 mg | 364,45 |
| Hyperoside | >99 % | 7932.1 | 10 mg | 106,45 |
| Isoacteoside | >99 % | T896.1 | 20 mg | 385,95 |
| Isopimpinellin | ≥99 % | 8854.1 | 10 mg | 181,70 |
| Isoquercitrin | >99 % | 7586.1 | 10 mg | 117,75 |
| Isorhamnetin | ≥98 % | 7589.1 | 10 mg | 228,45 |
| Isorhamnetin-3-rutinoside | ≥99 % | 9388.2 | 10 mg | 246,20 |

| Product | Purity (HPLC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Isorhoifolin | ≥98 % | 6989.1 | 10 mg | 385,95 |
| Isosakuranetin | ≥99 % | 7498.1 | 10 mg | 171,50 |
| Isovitexin | ≥99 % | 6412.1 | 5 mg | 228,45 |
| Isoxanthohumol | ≥99 % | 2824.1 | 10 mg | 228,45 |
| Kaempferide | ≥99 % | 7501.1 | 10 mg | 170,95 |
| Kaempferol | >99 % | 7503.1 | 10 mg | 111,30 |
| Kaempferol-3-glucoside | ≥99 % | 9321.1 | 5 mg | 228,45 |
| Kaempferol-3-rhamnosido-glucoside | ≥98 % | 4526.1 | 10 mg | 450,45 |
| Lanatoside C | >99 % | 7321.1 | 50 mg | 134,40 |
| Leiocarposide | ≥99 % | 2825.1 | 5 mg | 256,95 |
| Loganin | ≥99 % | 4162.1 | 10 mg | 181,70 |
| Loganic acid | ≥99 % | 4158.2 | 20 mg | 235,45 |
| Lupeol | ≥99 % | 8863.2 | 20 mg | 177,40 |
| Luteolin | >99 % | 4546.1 | 10 mg | 134,40 |
| Luteolin-7-glucoside | ≥98 % | 4164.1 | 10 mg | 192,45 |
| Lycopene | >90 % | 1180.1 | 5 mg | 256,95 |
| (-)-Maackiain | ≥98 % | 6496.1 | 10 mg | 274,15 |
| Madecassoside | ≥97 % | 6138.1 | 10 mg | 338,65 |
| Manassantin A | ≥98 % | 6497.1 | 10 mg | 396,70 |
| Manassantin B | ≥98 % | 6684.1 | 10 mg | 349,40 |
| Marein | ≥99 % | 4171.1 | 5 mg | 278,45 |
| Maritimein | ≥98 % | 4172.1 | 5 mg | 397,75 |
| Myricetin | ≥99 % | 4187.1 | 10 mg | 228,45 |
| Myricitrin | ≥99 % | 9391.1 | 10 mg | 192,45 |
| Narciclasine | ≥97 % | 6689.1 | 10 mg | 418,20 |
| Naringenin | >98 % | 1186.1 | 50 mg | 439,70 |
| Naringenin-7-glucoside | ≥99 % | 8865.1 | 10 mg | 170,95 |
| Naringin | ≥99 % | 4200.1 | 10 mg | 149,45 |
| Neoeriocitrin | ≥99 % | 4206.1 | 10 mg | 332,20 |
| Neohesperidin | ≥99 % | 6767.1 | 10 mg | 255,35 |
| Oleanolic acid | ≥99 % | 7402.2 | 20 mg | 155,90 |
| Oleuropein | >98 % | 1191.1 | 20 mg | 274,15 |
| Ononin | ≥99 % | 9411.1 | 5 mg | 284,90 |
| Orientin | ≥99 % | 6151.1 | 5 mg | 256,95 |
| Peltatoside | ≥99 % | 7406.1 | 10 mg | 310,70 |
| Phloretin | ≥99 % | 7051.3 | 20 mg | 132,80 |
| Picrosid II | >98 % | 1197.1 | 20 mg | 241,90 |
| Poncirin | ≥97 % | 7413.1 | 10 mg | 241,90 |
| Primulaverin | >99 % | 1201.1 | 10 mg | 284,90 |
| Primverin | >99 % | 1203.1 | 10 mg | 284,90 |
| Protopine | ≥98 % | 6690.1 | 10 mg | 256,95 |
| Pseudohypericin | ≥97 % | 2846.1 | 5 mg | 521,40 |
| Psoralen | ≥98,5 % | 7415.1 | 10 mg | 166,65 |
| Quercetin dihydrate | >99 % | 7417.1 | 10 mg | 104,20 |
| Quercitrin | ≥99 % | 9417.1 | 10 mg | 198,90 |
| Rhamnetin | ≥99 % | 7418.1 | 10 mg | 224,70 |
| Rhein | ≥99 % | 7419.1 | 10 mg | 192,45 |
| Rhoifolin | ≥99 % | 7420.1 | 25 mg | 428,95 |
| Robinetin | ≥99 % | 7421.1 | 10 mg | 224,70 |
| Rosmarinic acid | ≥99 % | N816.1 | 10 mg | 161,25 |
| Rutin trihydrate | ≥99 % | 7422.2 | 50 mg | 181,70 |
| Saponarin | ≥98 % | 6413.1 | 5 mg | 198,90 |
| Sciadopitysin | ≥99 % | 9410.1 | 5 mg | 213,95 |
| Sennoside A | >98 % | 7423.1 | 10 mg | 126,75 |
| Sennoside A1 | ≥95 % | 6693.1 | 10 mg | 289,20 |
| Sennoside B | ≥98 % | 7424.1 | 10 mg | 198,90 |
| Silybin | >98 % | 1215.1 | 50 mg | 407,45 |
| α-Solanine | ≥98 % | 2826.1 | 10 mg | 252,65 |
| Spiraeoside | >98 % | 1216.1 | 20 mg | 370,90 |
| Sulfuretin | ≥99 % | 7569.1 | 5 mg | 284,90 |
| Sutherlandioside B | ≥97 % | 6695.1 | 10 mg | 310,70 |
| Sutherlandioside D | ≥95 % | 6696.1 | 10 mg | 327,90 |
| Syringetin-3-glucoside | ≥99 % | 9432.1 | 5 mg | 342,95 |
| Tamarixetin | ≥99 % | 7425.1 | 10 mg | 252,65 |
| Tilirosid | ≥98 % | 3268.1 | 10 mg | 353,70 |
| Umckalin | ≥99 % | 2827.1 | 5 mg | 256,95 |
| Ursolic acid | ≥99 % | 7429.1 | 10 mg | 160,20 |
| Ursolic acid methyl ester | ≥99 % | 7430.2 | 10 mg | 192,45 |
| Uvaol | ≥98 % | 7433.1 | 5 mg | 166,65 |
| Valerenic acid | >99 % | 4488.1 | 25 mg | 375,20 |
| | | 4488.2 | 50 mg | 628,90 |
| ε-Viniferin | ≥98 % | 6697.1 | 20 mg | 493,45 |
| Vitexin | ≥99 % | 6418.1 | 5 mg | 206,95 |
| Xanthohumol | ≥99 % | 2828.1 | 10 mg | 203,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ More substances and pack sizes on request. Please don't hesitate to contact us!




## Reference Substances for TLC

### ROTICHROM® TLC

ROTICHROM®TLC comparison substances are supplied with a certificate of analysis and a description of the chromatography method with which they can be used, enclosed in the outer package.

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Aloe-emodin | 3524.1 | 100 mg | 375,20 |
| Aloin | 5555.1 | 50 mg | 59,05 |
| Apigenin | 5611.1 | 25 mg | 42,90 |
| Apigenin-7-glucoside | 5557.1 | 100 mg | 142,45 |
| Bergamottin | 1217.1 | 50 mg | 299,95 |
| Capsanthin | 5674.1 | 1 mg | 278,45 |
| Chelidonine | 6235.1 | 25 mg | 155,90 |
| Chlorogenic acid | 5558.1 | 50 mg | 40,75 |
| β-Cryptoxanthin | 5675.1 | 1 mg | 306,40 |
| Cyanin chloride | 5568.1 | 25 mg | 54,75 |
| Cytisine | 5615.1 | 25 mg | 110,20 |
| (-)-Epicatechin | 5798.1 | 50 mg | 52,70 |
| Harmine | 9968.1 | 500 mg | 42,90 |
| Hesperidin | 5800.1 | 10 mg | 56,90 |
| Hyperoside | 4215.1 | 25 mg | 48,95 |
| Isoquercitrin | 5573.1 | 50 mg | 71,95 |
| Caffeic acid | 5574.1 | 100 mg | 35,40 |
| Lutein | 5671.1 | 5 mg | 321,45 |
| Lycopene | 5670.1 | 5 mg | 375,20 |
| Physalien | 5673.1 | 5 mg | 235,45 |
| Rhaponticin | 5804.1 | 100 mg | 56,90 |
| Silybin | 5578.1 | 100 mg | 61,20 |
| α-Solanine | 4180.1 | 10 mg | 220,40 |
| Taurocholic acid sodium salt | 5817.1 | 100 mg | 53,25 |
| Tomatin | 5676.1 | 25 mg | 46,15 |
| Vitexin | 5579.1 | 10 mg | 39,70 |
| Vitexin-2''-O-rhamnoside | 5819.1 | 10 mg | 84,85 |
| Zeaxanthin | 5672.1 | 1 mg | 220,40 |
| | 5672.2 | 5 mg | 396,70 |

For additional product data and safety information, see chapter Chemicals A-Z.



## More reference substances

The substances are delivered without chromatogram.

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Acacetin | 5010.1 | 25 mg | 118,80 |
| Ajmalicine | 6192.1 | 250 mg | 60,10 |
| Aloin | 4568.1 | 250 mg | 51,50 |
| Amygdalin | 5500.1 | 10 g | 34,30 |
| Anethole | 5131.1 | 25 ml | 21,00 |
| | 5131.2 | 250 ml | 59,05 |
| Apocynin | 7884.1 | 25 g | 99,90 |
| p-Arbutin | 6115.1 | 10 g | 51,50 |
| | 6115.2 | 50 g | 160,75 |
| Aristolochic acid sodium salt (I and II) | 7268.1 | 500 mg | 360,15 |
| Aucubin | 9149.1 | 250 mg | 482,70 |
| Azulen | 3159.1 | 100 mg | 51,10 |
| Berberine chloride hydrate | 3192.1 | 1 g | 13,15 |
| Bergaptene | 8899.1 | 1 g | 332,20 |
| Betulin(ol) | 8763.1 | 1 g | 64,40 |
| Betulinic acid | 6516.1 | 250 mg | 52,60 |
| Boldine | 8900.1 | 100 mg | 127,40 |
| Bromelain | 5950.1 | 10 g | 21,00 |
| | 5950.2 | 100 g | 93,45 |
| Caffeic acid | 5869.1 | 10 g | 31,75 |
| | 5869.2 | 50 g | 118,15 |
| Capsaicin | 8804.1 | 100 mg | 61,85 |
| β-Carotene | 5669.1 | 10 mg | 228,45 |
| Carvacrol | 8808.1 | 10 ml | 33,25 |
| (+)-Catechin | 6200.1 | 1 g | 33,25 |
| DL-Catechin hydrate | 8822.1 | 1 g | 114,50 |
| (-)-α-Chaconine | 4192.1 | 5 mg | 246,20 |
| Chlorophyll A | 6360.1 | 1 mg | 385,95 |
| | 6360.2 | 5 mg | 1589,95 |
| Chlorophyll B | 6365.2 | 5 mg | 1353,45 |
| Chrysin | 6475.1 | 500 mg | 20,35 |
| Cnicin | 4560.1 | 10 mg | 75,15 |
| Corynanthine | 8985.1 | 500 mg | 126,35 |
| Coumarin | 7942.1 | 100 g | 46,15 |
| p-Coumaric acid | 9906.1 | 1 g | 20,35 |
| Daidzin | 9323.1 | 5 mg | 198,90 |
| Daphnetin | 6618.1 | 10 mg | 268,75 |
| Digitonin | 4005.1 | 100 mg | 42,50 |
| | 4005.2 | 500 mg | 142,45 |
| | 4005.3 | 1 g | 256,95 |
| | 4005.4 | 5 g | 987,95 |
| Digitoxin | 7359.1 | 50 mg | 38,20 |
| Digoxin | 7323.1 | 50 mg | 70,45 |
| Dihydroouabain | 7197.1 | 50 mg | 149,45 |
| (+)-Dihydroquercetin | 5797.2 | 100 mg | 213,95 |
| Dihydrorobinetin | 6960.1 | 100 mg | 64,40 |
| 6,7-Dihydroxyflavone | 8066.1 | 10 mg | 332,20 |
| 3,4-Dimethoxy cinnamic acid | 9918.1 | 5 g | 22,50 |
| Emetine dihydrochloride | 4116.1 | 1 g | 156,45 |
| Emodin | 7272.1 | 100 mg | 29,60 |
| (-)-Epicatechin | 7293.1 | 500 mg | 111,70 |
| Esculin sesquihydrate | 8704.1 | 5 g | 21,00 |
| | 8704.2 | 25 g | 85,90 |
| | 8704.3 | 50 g | 139,00 |
| | 8704.4 | 100 g | 256,95 |

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Eucalyptol | 7244.1 | 25 ml | 27,45 |
| Eugenol | 7292.1 | 50 ml | 18,20 |
| trans-Ferulic acid | 9936.1 | 10 g | 34,30 |
| | 9936.2 | 100 g | 192,45 |
| Fisetin | 7383.1 | 250 mg | 73,00 |
| Fipronil | 0925.1 | 100 mg | 106,35 |
| Frangulin (A+B) | 7404.1 | 25 mg | 40,35 |
| Frangulin B | 7655.1 | 10 mg | 241,90 |
| Fraxidin | 9369.1 | 10 mg | 166,65 |
| Gallic acid monohydrate | 7300.1 | 50 g | 30,00 |
| | 7300.2 | 100 g | 42,50 |
| | 7300.3 | 500 g | 121,40 |
| Gibberellic acid | 7464.1 | 250 mg | 15,60 |
| | 7464.2 | 1 g | 27,45 |
| Glycyrrhizic acid ammonium salt hydrate | 6247.1 | 10 g | 42,50 |
| | 6247.2 | 50 g | 162,90 |
| Guaiacol | 7308.1 | 100 ml | 39,70 |
| Hederagenin | 9141.2 | 250 mg | 235,45 |
| Helenien | 4452.2 | 10 mg | 299,95 |
| Herniarin | 7734.1 | 1 g | 28,95 |
| Hesperidin | 7737.1 | 10 g | 40,75 |
| Hydrocotarnine hydrobromide | 4268.1 | 100 mg | 26,80 |
| L-Hyoscyamine | 8914.1 | 1 g | 81,60 |
| Isoquercitrin | 6527.1 | 250 mg | 203,20 |
| Isorhamnetin | 6528.1 | 100 mg | 385,95 |
| Isorhamnetin-3-glucoside | 9386.2 | 10 mg | 313,40 |
| Isoscopoletin | 5883.2 | 10 mg | 174,70 |
| Kaempferol | 5859.1 | 500 mg | 244,60 |
| Kaempferol-7-neohesperidoside | 9467.1 | 10 mg | 149,45 |
| Khellin | 5911.1 | 10 g | 46,15 |
| | 5911.2 | 50 g | 180,10 |
| Menthone | 4226.1 | 50 ml | 35,40 |
| (-)-Menthone | 6930.1 | 25 ml | 85,90 |
| Naringenin | 8524.1 | 2,5 g | 70,45 |
| Naringin | 6481.1 | 10 g | 27,85 |
| | 6481.2 | 50 g | 88,05 |
| | 6481.3 | 100 g | 160,20 |
| Oleuropein | 7018.2 | 1 g | 478,40 |
| Pelargonidin chloride | 6853.1 | 25 mg | 91,95 |
| Phlorizin dihydrate | 4196.1 | 2,5 g | 46,15 |
| | 4196.2 | 10 g | 141,40 |
| | 4196.3 | 100 g | 858,95 |
| Picrotoxin | 7093.1 | 1 g | 117,20 |
| Pilocarpin nitrate | 7523.1 | 1 g | 145,15 |
| Piperine | 7099.1 | 5 g | 85,90 |
| Quercetin dihydrate (C.I. 75670) | 7138.1 | 25 g | 50,00 |
| | 7138.2 | 100 g | 160,20 |
| | 2629.1 | 25 g | 38,60 |
| | 2629.2 | 50 g | 69,80 |
| | 2629.3 | 100 g | 127,95 |
| Quercetin-3-O-glucose-6''-acetate | 9419.1 | 10 mg | 306,40 |
| (-)-Quinic acid | 8835.1 | 25 g | 90,20 |
| | 8835.2 | 100 g | 289,20 |
| Quinidine sulphate dihydrate | 3348.1 | 10 g | 32,15 |
| Quinine hydrochloride dihydrate | 6225.1 | 25 g | 42,90 |
| Rauwolscine hydrochloride | 7144.1 | 100 mg | 17,75 |
| Reserpic acid hydrochloride hemihydrate | 4295.1 | 100 mg | 45,05 |
| Resveratrol | N811.1 | 500 mg | 46,15 |
| | N811.2 | 1 g | 75,15 |
| | N811.3 | 5 g | 160,20 |
| Rhaponticin | 7152.1 | 1 g | 44,00 |
| Rhein | 8868.1 | 50 mg | 55,80 |
| Rosmarinic acid | A558.1 | 100 mg | 241,90 |
| Rutin trihydrate | 5154.1 | 25 g | 27,45 |
| | 5154.2 | 100 g | 83,75 |
| D(-)-Salicin | 7192.1 | 5 g | 28,95 |
| | 7192.2 | 50 g | 177,40 |
| Sanguinarine nitrate | 7200.2 | 10 mg | 278,45 |
| Scoparone | 7494.1 | 500 mg | 217,70 |

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Scopoletin | 7210.1 | 100 mg | 132,80 |
| | 7210.2 | 1 g | 1069,65 |
| Seneciphylline | 6414.1 | 10 mg | 84,40 |
| Sennidine A | 7012.1 | 10 mg | 213,95 |
| Sennidine B | 7016.1 | 10 mg | 267,70 |
| Sennoside A | 9349.1 | 100 mg | 428,95 |
| Shikimic acid | 7305.2 | 250 mg | 23,15 |
| | 7305.1 | 1 g | 79,05 |
| Sinapic acid | 5317.1 | 1 g | 73,00 |
| | 5317.2 | 10 g | 536,45 |
| Sinigrin monohydrate | 5319.1 | 250 mg | 94,10 |
| Spiraeoside | 4564.1 | 10 mg | 96,25 |
| Stachydrine hydrochloride | 9457.1 | 25 mg | 267,70 |
| Stigmasterol | 9468.1 | 1 g | 25,70 |
| K-Strophantoside | 4078.1 | 50 mg | 79,05 |
| Strychnine | 4843.1 | 10 g | 17,10 |
| Strychnine hydrochloride | 4845.1 | 10 g | 20,65 |
| Strychnine N-oxide | 4277.1 | 500 mg | 46,80 |
| Syringic acid | 5361.1 | 10 g | 64,40 |
| 4-Terpinenol | 6309.1 | 1 g | 99,90 |
| Theobromine | 8963.1 | 10 g | 18,85 |
| | 8963.2 | 100 g | 75,15 |
| α+β-Thujone (isomers) | 9540.1 | 5 g | 20,35 |
| | 9540.2 | 50 g | 136,00 |
| Trifolirhizin | 4738.1 | 25 mg | 170,95 |
| Umbelliferone | 5437.1 | 10 g | 36,45 |
| | 5437.2 | 100 g | 213,95 |
| (+)-Usnic acid | 4565.1 | 10 g | 99,45 |
| Verbenalin | 9450.2 | 10 mg | 235,45 |
| Vitexin | 4173.1 | 10 mg | 37,55 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Reference Substances for GC

### ROTICHROM® GC

Roth offers an extensive range of reference substances for gaschromatography from the substance groups of alkanes, alcohols, ketones, esters, aromatic compounds, and much more. Their GC purity is generally between ≥98 %, which allows for accurate analysis.



The **ROTICHROM® GC** substances come with a certificate of analysis and a GC chromatogram enclosed in the outer packaging.

| Product | Purity (GC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| Acetic acid L-bornyl ester | ≥98 % | 9009.2 | 100 mg | 96,65 |
| Acetic acid linalyl ester | ≥95 % | 5199.2 | 100 mg | 83,75 |
| Acetic acid (L)-menthyl ester | ≥98 % | 5189.1 | 1 g | 81,60 |
| Acetic acid methyl ester | ≥99 % | 5187.1 | 1 g | 25,30 |
| β-Asarone | ≥85 % | 9363.1 | 1 g | 81,60 |
| Benzene | ≥99 % | 4898.1 | 1 g | 30,00 |
| (-)-Borneol | ≥96 % | 8495.2 | 100 mg | 82,70 |
| (+)-Borneol | ≥96 % | 8903.1 | 100 mg | 138,70 |
| 1,4-Butanediol | ≥96 % | 5077.1 | 1 g | 81,60 |
| 1-Butanol | ≥99 % | 9098.1 | 1 g | 81,20 |
| 2-Butanone | ≥99 % | 4899.1 | 1 g | 27,45 |
| Butyric acid ethyl ester | ≥98 % | 5572.1 | 1 g | 81,20 |
| Butyric acid methyl ester | ≥96 % | 5186.1 | 1 g | 80,55 |
| Camphene | ≥90 % | 5288.2 | 100 mg | 80,55 |
| (+/-)-Camphor | ≥95 % | 4329.1 | 1 g | 81,60 |
| Capric acid isoamyl ester | ≥93 % | 4420.1 | 1 g | 81,20 |
| (+)-2-Carene | ≥92 % | 4952.1 | 1 g | 81,20 |
| δ-3-Carene | ≥90 % | 3572.1 | 1 g | 39,70 |
| (+)-Carvone | ≥98 % | 6947.2 | 100 mg | 82,70 |
| β-Caryophyllene | ≥95 % | 7232.2 | 100 mg | 123,55 |
| (-)-α-Cedrene | ≥96 % | 8908.1 | 100 mg | 196,20 |
| 1,4-Cineole | ≥98 % | 5833.2 | 100 mg | 123,65 |
| Cinnamaldehyde | ≥97 % | 3618.1 | 1 g | 81,20 |
| Cinnamic acid ethyl ester | ≥98 % | 3211.1 | 1 g | 82,70 |
| Citral | ≥95 % | 5292.1 | 1 g | 117,20 |
| Coumarin | ≥99 % | 5284.2 | 50 mg | 91,30 |
| Cyclohexane | ≥99 % | 4901.1 | 1 g | 31,75 |
| n-Decane | ≥99,0 % | 3474.1 | 1 g | 81,20 |
| Diphenyl | ≥96 % | 9309.1 | 1 g | 81,20 |
| n-Dodecane | ≥98,5 % | 9029.1 | 1 g | 81,20 |
| Eucalyptol | ≥98 % | 6938.2 | 100 mg | 80,55 |
| Eugenol | ≥99,0 % | 6941.1 | 1 g | 81,60 |
| Eugenol methyl ether | ≥95 % | 5073.1 | 1 g | 81,20 |
| Farnesol | ≥85 % | 8707.1 | 1 g | 81,20 |
| (-)-Fenchone | ≥96 % | 9377.2 | 100 mg | 117,20 |
| Geraniol | ≥95,0 % | 5264.1 | 1 g | 81,20 |
| 1-Heptanol | ≥99 % | 3173.1 | 1 g | 23,15 |
| n-Hexadecane | ≥97,0 % | 9003.1 | 1 g | 81,20 |
| 1-Hexanol | ≥94 % | 3174.1 | 1 g | 81,20 |
| α-Humulene | ≥95 % | 9385.1 | 100 mg | 181,70 |
| Isoamyl alcohol | ≥99 % | 4260.1 | 1 g | 81,20 |
| Isomenthone | ≥75 % | 6458.1 | 1 g | 81,20 |
| Isopulegol | ≥89 % | 8030.2 | 100 mg | 83,75 |
| Lauric acid methyl ester | ≥98,5 % | 6787.1 | 1 g | 81,20 |
| D-(+)-Limonene | ≥98 % | 5198.2 | 100 mg | 121,40 |
| Linalool | ≥95 % | 5201.2 | 100 mg | 107,40 |
| Linolenic acid | ≥99 % | 5320.1 | 1 g | 192,45 |
| Linoleic acid | ≥99 % | 5315.1 | 1 g | 61,20 |
| Linoleic acid ethyl ester | ≥98,5 % | 3198.1 | 1 g | 32,15 |
| Linoleic acid methyl ester | ≥99 % | 3199.1 | 1 g | 35,40 |
| Menthofuran | ≥90 % | 5188.1 | 1 g | 82,70 |
| (-)-Menthol | ≥95 % | 9061.1 | 1 g | 81,20 |
| 2-Methyl-1-butanol | ≥99 % | 9074.1 | 1 g | 81,20 |
| Methylchavicol | ≥97 % | 9413.2 | 100 mg | 83,35 |
| trans-Nerolidol | ≥89 % | 6703.1 | 1 g | 81,20 |
| n-Octadecane | ≥98,5 % | 9059.1 | 1 g | 81,20 |
| 1-Octanol | ≥98 % | 3182.1 | 1 g | 81,20 |
| Oleic acid | ≥99 % | 5362.1 | 1 g | 36,45 |
| Oleic acid methyl ester | ≥99 % | 3186.1 | 1 g | 32,80 |
| 1-Pentanol | ≥99 % | 9077.1 | 1 g | 81,20 |
| (-)-α-Pinene | ≥95,0 % | 5170.2 | 100 mg | 82,70 |
| (+)-α-Pinene | ≥95 % | 3857.2 | 100 mg | 84,85 |
| β-Pinene | ≥90 % | 5172.1 | 1 g | 78,40 |
| Piperitone | ≥96 % | 5174.1 | 1 g | 81,20 |
| 1-Propanol | ≥99 % | 4916.1 | 1 g | 24,65 |
| (+)-Pulegone | ≥98 % | 5168.2 | 100 mg | 117,20 |
| Sabinene | ≥98,5 % | 7188.2 | 100 mg | 138,70 |
| Salicylic acid methyl ester | ≥95 % | 3704.1 | 1 g | 81,20 |
| Senecionine | ≥96 % | 2261.1 | 10 mg | 112,80 |
| Squalene | ≥98 % | 3185.1 | 1 g | 25,70 |
| γ-Terpinene | ≥94,0 % | 8039.2 | 100 mg | 112,80 |
| α-Terpinene | ≥80 % | 8038.2 | 100 mg | 94,10 |
| α-Terpineol | ≥96 % | 5152.2 | 100 mg | 82,70 |
| Terpinolene | ≥89 % | 5166.2 | 100 mg | 83,35 |
| n-Tetradecane | ≥98 % | 9024.1 | 1 g | 81,20 |
| Thymol | ≥96 % | 3209.1 | 1 g | 81,20 |
| 1,2,4-Trimethylbenzene | ≥98 % | 4913.1 | 1 g | 24,65 |
| Vanillin | ≥96 % | 5108.1 | 1 g | 81,60 |
| m-Xylene | ≥99 % | 4912.1 | 1 g | 26,35 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Fatty Acid References



In the field of lipid analysis we put an extensive collection of reference substances and reference mixtures at the analyst's disposal.

All reference mixtures are prepared from pure components which are carefully tested for purity by TLC and GC.

Precise weighing and a final check guarantee the precision of the mixture. A certificatecomes with each product.

## Free Fatty Acids

| Product | Purity (GC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Capric acid** | ≥99 % | **3164.1** | 1 g | 26,35 |
| **Caprylic acid** | ≥99 % | **3168.1** | 1 g | 40,35 |
| **Linoleic acid** | ≥99 % | **5315.1** | 1 g | 61,20 |
| **Linolenic acid** | ≥99 % | **5320.1** | 1 g | 192,45 |
| **Oleic acid** | ≥99 % | **5362.1** | 1 g | 36,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Fatty Acid Methyl Ester Mixtures

| Product | Purity (GC) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Acetic acid methyl ester** | ≥99 % | **5187.1** | 1 g | 25,30 |
| **Butyric acid methyl ester** | ≥96 % | **5186.1** | 1 g | 80,55 |
| **Lauric acid methyl ester** | ≥98,5 % | **6787.1** | 1 g | 81,20 |
| **Linoleic acid methyl ester** | ≥99 % | **3199.1** | 1 g | 35,40 |
| **Oleic acid methyl ester** | ≥99 % | **3186.1** | 1 g | 32,80 |

## Fatty Acid Methyl Ester Mixtures

**ROTICHROM®**

**Advantages:**
- High purity
- Content of components >99 %
- Documentation via GC/TLC

| Purity | Mixture | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **ME 11** | saturated | **8632.1** | 100 mg | 160,20 |
| **ME 12** | saturated | **8636.1** | 100 mg | 160,20 |
| **ME 13** | saturated | **8642.1** | 100 mg | 160,20 |
| **ME 14** | saturated | **8644.1** | 100 mg | 160,20 |
| **ME 15** | saturated | **8650.1** | 100 mg | 160,20 |
| **ME 16** | saturated | **8661.1** | 100 mg | 160,20 |
| **ME 17** | saturated | **8666.1** | 100 mg | 160,20 |
| **ME 18** | saturated | **8667.1** | 100 mg | 160,20 |
| **ME 19** | saturated | **8669.1** | 100 mg | 160,20 |
| **ME 21** | saturated | **8676.1** | 100 mg | 160,20 |
| **ME 22** | saturated | **8677.1** | 100 mg | 160,20 |
| **ME 24** | saturated | **8679.1** | 100 mg | 160,20 |
| **ME 26** | saturated/unsaturated | **8685.1** | 100 mg | 160,20 |
| **ME 28** | saturated/unsaturated | **8691.1** | 100 mg | 170,95 |
| **ME 29** | unsaturated | **8692.1** | 100 mg | 170,95 |
| **ME 30** | saturated/unsaturated | **8693.1** | 100 mg | 170,95 |
| **ME 32** | saturated/unsaturated | **8697.1** | 100 mg | 160,20 |
| **ME 35** | saturated/unsaturated | **8701.1** | 100 mg | 192,45 |
| **ME 36** | saturated/unsaturated | **8702.1** | 100 mg | 192,45 |
| **ME 37** | saturated/unsaturated | **8703.1** | 100 mg | 192,45 |
| **ME 38** | saturated/unsaturated | **8705.1** | 100 mg | 192,45 |
| **ME 39** | saturated/unsaturated | **8709.1** | 100 mg | 192,45 |
| **ME 46** | saturated/unsaturated | **8730.1** | 100 mg | 170,95 |
| **ME 51** | saturated/unsaturated | **8737.1** | 100 mg | 213,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Fatty Acid Methyl Ester Mixtures for Special Applications

**ROTICHROM®**

| Purity | For testing of | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **FO 3** | coconut, rape seed and mustard seed oils. | **8756.1** | 100 mg | 160,20 |
| **FO 4** | olive and tea seed oils. | **8758.1** | 100 mg | 160,20 |
| **FO 5** | coconut, palm kernel and babassu oils. | **8759.1** | 100 mg | 160,20 |
| **FO 7** | rape seed oil. | **8761.1** | 100 mg | 170,95 |
| **FO 8** | rape seed oil. | **6330.1** | 100 mg | 192,45 |

## FS-Lipid Mixture

**ROTICHROM®**

| Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **TLC 8** | **8823.1** | 100 mg | 170,95 |
| **TLC 10** | **8827.1** | 100 mg | 192,45 |

## Free acid mixture

**ROTICHROM® FA 1**

Storage temp.: +4 °C

**Danger** H314-H335

| | | | |
|---|---|---|---|
| **8792.1** | 100 mg | plastic | 181,70 € |

▶ For information on the composition of the individual mixtures see chart.

| Narrow-spectrum fatty acid mixtures/Art. No. | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon number/percent by weight | | ME 11 | ME 18 | ME 15 | ME 19 | ME 12 | ME 26 | ME 16 | ME 13 | ME 28 | ME 46 | ME 14 | ME 30 | ME 32 | ME 17 |
| | | **8632.1** | **8667.1** | **8650.1** | **8669.1** | **8685.1** | **8685.1** | **8661.1** | **8642.1** | **8691.1** | **8730.1** | **8644.1** | **8693.1** | **8697.1** | **8666.1** |
| | 6 : 0 | 20 | 20 | | | | | | | | | | | | |
| | 7 : 0 | 20 | | | | | | | | | | | | | |
| | 8 : 0 | 20 | 20 | 20 | 20 | | | | | | | | | | |
| | 9 : 0 | 20 | | 20 | | | | | | | | | | | |
| | 10 : 0 | 20 | 20 | 20 | 20 | | | | | | | | | | |
| | 11 : 0 | | | 20 | | 20 | | | | | | | | | |
| | 12 : 0 | | 20 | 20 | 20 | 20 | 20 | | | | | | | | |
| | 13 : 0 | | | | | 20 | | 20 | | | | | | | |
| | 14 : 0 | | 20 | | 20 | 20 | 20 | 20 | | | | | | | |
| | 14 : 1 | | | | | | 20 | | | | | | | | |
| | 15 : 0 | | | | 20 | 20 | | 20 | | | | | | | |
| | 16 : 0 | | | | | | 20 | 20 | 20 | 20 | 10 | | | | |
| | 16 : 1 | | | | | | 20 | | | | | | | | |
| | 17 : 0 | | | | | | | 20 | 20 | | | | | | |
| | 18 : 0 | | | | | | | | 20 | 20 | 5 | 20 | 20 | | |
| | 18 : 1 | | | | | | | | | 20 | 30 | | 20 | | |
| | 18 : 01T | | | | | | | | | | | | | | |
| | 18 : 2 | | | | | | | | | 20 | 50 | | 20 | | |
| | 18 : 3 | | | | | | | | | 20 | 5 | | 20 | | |
| | 19 : 0 | | | | | | | | 20 | | | 20 | | | |
| | 20 : 0 | | | | | | | | 20 | | | 20 | | 20 | 20 |
| | 20 : 1 | | | | | | | | | | | | | 20 | |
| | 20 : 2 | | | | | | | | | | | | | 20 | |
| | 20 : 3 | | | | | | | | | | | | | 20 | |
| | 20 : 4 | | | | | | | | | | | | 20 | 20 | |
| | 21 : 0 | | | | | | | | | | | 20 | | | 20 |
| | 22 : 0 | | | | | | | | | | | 20 | | | 20 |
| | 22 : 1 | | | | | | | | | | | | | | |
| | 23 : 0 | | | | | | | | | | | | | | 20 |
| | 24 : 0 | | | | | | | | | | | | | | 20 |

| Broad-spectrum fatty acid mixtures/Art. No. | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon number/percent by weight | | ME 35 | ME 36 | ME 37 | ME 38 | ME 39 | ME 22 | ME 24 | ME 21 | ME 51 | ME 29 | FO 5 | FO 3 | FO 7 | FO 4 | FO 8 |
| | | **8701.1** | **8702.1** | **8703.1** | **8705.1** | **8709.1** | **8677.1** | **8679.1** | **8676.1** | **8737.1** | **8692.1** | **8759.1** | **8756.1** | **8761.1** | **8758.1** | **6330.1** |
| | 4 : 0 | 4 | 4 | 6,1 | | | | | | | | | | | | |
| | 5 : 0 | | | | | | | | | | | | | | | |
| | 6 : 0 | 3 | 2 | 9,2 | | | | | | | | | | | | |
| | 7 : 0 | | | | | | | | | | | | | | | |
| | 8 : 0 | 2 | 2 | 7,7 | 2 | | | | | | | 7 | | | | |
| | 9 : 0 | | | | | | | | | | | | | | | |
| | 10 : 0 | 3 | 3 | 7,7 | 3 | | | | | | | 5 | | | | |
| | 11 : 0 | | | | | | | | | | | | | | | |
| | 12 : 0 | 3 | 4 | 7,7 | 4 | 2 | 20 | | | | | 48 | | | | |
| | 13 : 0 | | | | | | | 20 | | | | | | | | |
| | 14 : 0 | 12 | 10 | 7,7 | 8 | 2 | 20 | | | | | 15 | 1 | 1 | | |
| | 14 : 1 | | 2 | | | 1 | | | | | | | | | | |
| | 15 : 0 | | | | | | | 20 | | | | | | | | |
| | 16 : 0 | 30 | 25 | 7,7 | 10 | 22 | 20 | | 20 | 4 | | 7 | 4 | 4 | 11 | 4 |
| | 16 : 1 | | 5 | | | 5 | | | | | 20 | | | | | |
| | 17 : 0 | | | | | 10 | | 20 | | | | | | | | |
| | 18 : 0 | 10 | 10 | 7,7 | 7 | 10 | 20 | | 20 | 1 | | 3 | 3 | 3 | 3 | 1 |
| | 18 : 1 | 30 | 25 | 7,7 | 8 | 32 | | | | 58 | 20 | 12 | 45 | 60 | 80 | 53,8 |
| | 18 : 01T | | | | | | | | | | | | | | | 4 |
| | 18 : 2 | 2 | 3 | 7,7 | 8 | 8 | | | | 20 | | 3 | 15 | 12 | 6 | 20,2 |
| | 18 : 3 | 1 | 4 | 7,7 | 10 | 4 | | | | 10 | | | 3 | 5 | | 10 |
| | 19 : 0 | | | | | | | 20 | | | | | | | | |
| | 20 : 0 | | 2 | 7,7 | 8 | | 20 | | 20 | 1 | | | 3 | 3 | | 1,9 |
| | 20 : 1 | | | | | | | | | 2 | 20 | | | 1 | | 1,9 |
| | 20 : 2 | | | | | | | | | | | | | | | |
| | 20 : 3 | | | | | | | | | | | | | | | |
| | 20 : 4 | | | | | 4 | | | | | | | | | | |
| | 21 : 0 | | | | | | | 20 | | | | | | | | |
| | 22 : 0 | | | 7,7 | 10 | | | | 20 | 1 | | | 3 | 3 | | 1 |
| | 22 : 1 | | | | 10 | | | | | 2 | 20 | | 20 | 5 | | 2,1 |
| | 23 : 0 | | | | | | | | | | | | | | | |
| | 24 : 0 | | | | 12 | | | | 20 | 1 | | | 3 | 3 | | |
| | 24 : 1 | | | | | | | | | | 20 | | | | | |

# Oils and Greases



Roth oils and greases are carefully manufactured from selected raw materials. They are of high purity and extensively specified. Therefore, they are suitable for a broad range of applications.

## Oils and Greases

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Avocado oil** | refined, DAC | Oleum Perseae | **9341.1** | 1 l | 62,90 |
| **Castor oil** | Ph.Eur., nativ, extra pure | Oleum Ricini | **4702.1** | 1 l | 28,95 |
| | | | **4702.3** | 2,5 l | 51,50 |
| | | | **4702.4** | 5 l | 84,85 |
| | | | **4702.2** | 10 l | 160,20 |
| **Colza oil** | crude oil | Oleum Rapae | **6964.1** | 1 l | 34,30 |
| | | | **6964.2** | 2,5 l | 67,20 |
| | | | **6964.3** | 5 l | 115,60 |
| **Jojoba oil** | virgin | - | **7526.1** | 100 ml | 23,15 |
| | | | **7526.2** | 1 l | 142,45 |
| **Lanolin** | Ph.Eur., low in pesticides | Adeps Lanae anhydricum | **5314.2** | 500 g | 31,10 |
| | | | **5314.1** | 1 kg | 49,35 |
| | techn. | Adeps Lanae anhydricum | **5313.2** | 500 g | 19,60 |
| | | | **5313.1** | 1 kg | 31,10 |
| **Linseed oil** | native, cold pressed | - | **9338.2** | 500 ml | 26,80 |
| | | | **9338.1** | 1 l | 40,75 |
| | | | **9338.3** | 2,5 l | 75,15 |
| **Maize oil** | Ph.Eur., refined | Oleum Maydis | **6212.1** | 1 l | 34,95 |
| | | | **6212.2** | 2,5 l | 56,90 |
| | | | **6212.3** | 5 l | 87,00 |
| | | | **6212.4** | 10 l | 146,10 |
| **Oil of sweet almond** | refined | Oleum Amygdalae dulcis | **9342.1** | 1 l | 39,70 |
| | | | **9342.3** | 2,5 l | 81,60 |
| | | | **9342.2** | 10 l | 246,20 |
| **Oil of evening primrose** | refined | Oleum Oenotherae | **3691.1** | 50 ml | 14,95 |
| | | | **3691.2** | 500 ml | 67,20 |
| **Olive oil** | Ph.Eur., virgin | Oleum Olivarum | **8873.1** | 500 ml | 24,65 |
| | | | **8873.2** | 2,5 l | 83,35 |
| **Oil of theobroma** | pure, filtered twice | Oleum Cacao | **3515.2** | 100 g | 17,10 |
| | | | **3515.1** | 500 g | 44,65 |
| **Peanut oil** | refined | - | **9332.2** | 500 ml | 17,10 |
| | | | **9332.1** | 1 l | 25,70 |
| | | | **9332.3** | 2,5 l | 44,00 |
| **Soybean oil** | refined, extra pure | Oleum Sojae | **3686.1** | 1 l | 22,50 |
| | | | **3686.3** | 2,5 l | 38,60 |
| | | | **3686.4** | 5 l | 57,95 |
| | | | **3686.2** | 10 l | 104,85 |
| **Stearic oil** | techn. | - | **9460.1** | 1 l | 29,60 |
| **Vaseline** | Ph.Eur. | - | **5775.2** | 500 g | 17,75 |
| | | | **5775.1** | 1 kg | 24,65 |
| | | | **5775.4** | 10 kg | 122,05 |
| **Vaseline oil** | techn., white | - | **9336.1** | 1 l | 23,15 |
| | | | **9336.2** | 2,5 l | 40,35 |
| | | | **9336.3** | 5 l | 64,40 |
| **Wheat germ oil** | Ph.Eur., refined | - | **4242.1** | 1 l | 59,05 |

For additional product data and safety information, see chapter Chemicals A-Z.

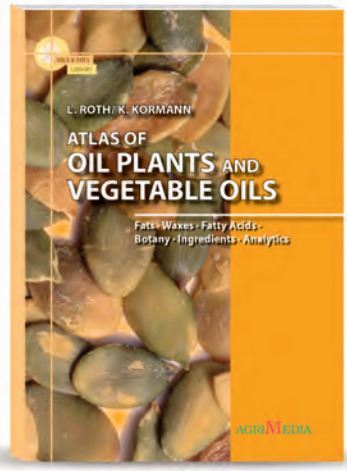
## Fatty Acids and Derivatives

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Arachidonic acid** | >99 % | - | **4717.2** | 10 mg | 48,95 |
| | | | **4717.1** | 100 mg | 110,65 |
| | | | **4717.3** | 1 g | 719,20 |
| **Arachidic acid** | ≥99 %, synth. | n-Eicosanoic acid | **8736.1** | 1 g | 51,50 |
| **Arachidic acid calcium salt** | DAB | Calcium arachinate/ -behenate | **9264.1** | 500 g | 31,10 |
| | | | **9264.2** | 1 kg | 51,10 |
| **Azelaic acid** | ≥80 % | Nonanedioic acid | **5487.1** | 25 g | 21,40 |
| | | | **5487.2** | 100 g | 53,25 |
| **5-Bromo-valeric acid** | ≥96 % | 5-Bromo-pentanoic acid | **5466.1** | 10 g | 22,05 |
| | | | **5466.2** | 50 g | 67,20 |
| **Butyric acid** | ≥99 %, for synthesis | Butanoic acide | **3277.1** | 100 ml | 16,05 |
| | | | **3277.2** | 1 l | 62,90 |
| **Butyric acid ethyl ester** | ROTICHROM® GC | Ethyl butyrate | **5572.1** | 1 g | 81,20 |
| **Butyric acid methyl ester** | ROTICHROM® GC | Methyl butyrate | **5186.1** | 1 g | 80,55 |
| **Capric aldehyde** | ≥97 %, for synthesis | Decanal | **7547.1** | 100 ml | 112,80 |
| **Capric acid** | >99 %, for synthesis | Decanoic acid | **8797.1** | 100 g | 19,90 |
| | | | **8797.3** | 500 g | 48,30 |
| | | | **8797.2** | 1 kg | 82,70 |
| | ROTICHROM® GC | Decanoic acid | **3164.1** | 1 g | 26,35 |
| **Capric acid isoamyl ester** | ROTICHROM® GC | Isoamyl caprate | **4420.1** | 1 g | 81,20 |
| **Capric acid methyl ester** | ≥98 %, for synthesis | Decanoic acid methyl ester, Methyldecanoate | **3325.1** | 100 ml | 64,40 |
| | ROTICHROM® GC | - | **6709.1** | 1 g | 85,90 |
| **Caproic aldehyde** | ≥98 %, for synthesis | Hexanal | **3327.1** | 100 ml | 38,60 |
| **Caproic acid** | ≥98 %, for synthesis | Hexanoic acid | **8799.1** | 100 ml | 18,20 |
| | | | **8799.3** | 500 ml | 31,10 |
| | | | **8799.2** | 1 l | 52,60 |
| | | | **8799.4** | 2,5 l | 106,35 |
| **Caprylic acid** | ROTICHROM® GC | n-Octanoic acid | **3168.1** | 1 g | 40,35 |
| **Caprylic acid methyl ester** | ≥99 %, for synthesis | Methyl caprylate, Octanoic acid methyl ester, Methyloctanoate | **3331.1** | 10 ml | 25,70 |
| **Cetyl alcohol** | ≥95 % | 1-Hexadecanol, Alcohol C 16 | **5762.1** | 1 kg | 50,00 |
| **Cetyl palmitate** | synthetic | Spermaceti, Cetaceum | **9229.2** | 100 g | 17,75 |
| | | | **9229.1** | 1 kg | 116,00 |
| **Cholesterol palmitate** | ≥97 %, pure | - | **3404.1** | 5 g | 47,85 |
| **Cholesterol stearate** | ≥97 %, pure | - | **3405.1** | 5 g | 33,25 |
| **Dodecyl aldehyde** | ≥98 %, for synthesis | Dodecanal, Lauraldehyde | **3754.1** | 50 ml | 48,30 |
| **Erucic acid** | ≥99 % | cis-13-Docosenoic acid | **7065.2** | 250 mg | 78,40 |
| | | | **7065.1** | 1 g | 246,20 |
| **Erucic acid methyl ester** | ≥90 % | cis-13-Docosenoic acid methyl ester | **9431.1** | 10 ml | 66,55 |
| | | | **9431.2** | 50 ml | 256,95 |
| **Glyceryl monostearate** | pure | - | **3787.1** | 500 g | 20,65 |
| **Lanolin alcohols** | Ph.Eur. | Lanae alcoholes | **5085.2** | 500 g | 89,15 |
| | | | **5085.1** | 1 kg | 158,60 |
| **Lauric acid methyl ester** | ROTICHROM® GC | Methyl laurate, Dodecanoic acid methyl ester | **6787.1** | 1 g | 81,20 |

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Lecithin** | ≥97 %, made from soybeans, GMO-free, for biochemistry | Phosphatidyl-choline | **AE81.1** | 100 g | 14,95 |
| | | | **AE81.2** | 250 g | 24,65 |
| | | | **AE81.3** | 1 kg | 64,00 |
| | ≥97 %, made from soybeans, for biochemistry | Phosphatidyl-choline | **9812.1** | 250 g | 20,65 |
| | | | **9812.3** | 1 kg | 51,50 |
| | | | **9812.2** | 2,5 kg | 115,60 |
| | from eggs, for biochemistry | Phosphatidyl-choline | **7514.1** | 25 g | 41,40 |
| | | | **7514.2** | 100 g | 115,60 |
| **Levulinic acid** | ≥98 %, for synthesis | 4-Oxopentanoic acid, 3-Aceto-propionic acid | **3976.1** | 50 g | 14,55 |
| | | | **3976.2** | 500 g | 55,80 |
| **Linolenic acid** | ~94 % | 9,12,15-Octa-decatrienoic acid | **6039.1** | 5 ml | 92,35 |
| | ROTICHROM® GC | 9,12,15-Octa-decatrienoic acid | **5320.1** | 1 g | 192,45 |
| **Linoleic acid** | ROTICHROM® GC | - | **5315.1** | 1 g | 61,20 |
| **Linoleic acid ethyl ester** | ROTICHROM® GC | - | **3198.1** | 1 g | 32,15 |
| **Linoleic acid methyl ester** | ≥99 % | - | **7217.1** | 5 ml | 48,30 |
| | | | **7217.2** | 50 ml | 403,15 |
| | ROTICHROM® GC | - | **3199.1** | 1 g | 35,40 |
| **Myristic acid** | ≥98 %, for biochemistry | Tetradecanoic acid | **6469.2** | 100 g | 12,40 |
| | | | **6469.3** | 500 g | 32,15 |
| | | | **6469.1** | 1 kg | 48,30 |
| **Myristic acid isopropyl ester** | ≥92 %, extra pure | Isopropyl myristate, IPM | **5527.1** | 500 ml | 34,30 |
| **Myristic acid methyl ester** | ≥99 % | Methyl myristate, Methyl tetra-decanoate | **3753.1** | 50 ml | 35,40 |
| **Oleic acid** | ≥99%, natural | cis-9-Octadece-noic acid | **7213.1** | 5 ml | 33,25 |
| | | | **7213.2** | 50 ml | 229,95 |
| | ROTICHROM® GC | cis-9-Octadece-noic acid | **5362.1** | 1 g | 36,45 |
| **Oleic acid methyl ester** | ROTICHROM® GC | Methyl oleate | **3186.1** | 1 g | 32,80 |
| **Oleic acid sodium salt** | ~90 % | Sodium oleate | **8856.1** | 500 g | 35,40 |
| **Palmitic acid** | ≥98 %, extra pure | Hexadecanoic acid | **5907.3** | 500 g | 20,35 |
| | | | **5907.1** | 1 kg | 28,50 |
| | | | **5907.2** | 5 kg | 99,90 |
| **Palmitic acid methyl ester** | ≥97 % | Methyl palmitate | **4459.1** | 25 g | 19,25 |
| | | | **4459.2** | 100 g | 34,30 |
| | | | **4459.3** | 500 g | 94,10 |
| **Pelargonic acid** | ≥97 % | Nonanoic acid | **7015.1** | 50 ml | 34,30 |
| **Pelargonic acid vanillyl-amide** | ≥97 % | Nonylvanyl-amide, Noniv-amide, so called synth. Capsaicin | **4462.1** | 10 g | 33,25 |
| | | | **4462.2** | 50 g | 126,35 |
| **Pimelic acid** | ≥99 % | Heptanedioic acid | **5270.1** | 25 g | 30,00 |
| | | | **5270.2** | 50 g | 44,00 |
| **Stearic acid** | ≥98 % | Octadecanoic acid | **9459.1** | 1 kg | 21,40 |
| | | | **9459.2** | 5 kg | 84,85 |
| **Stearic acid butyl ester** | for synthesis | Butyl stearate, Butyl octa-decanoate | **8150.2** | 100 ml | 13,45 |
| | | | **8150.1** | 1 l | 39,25 |
| | | | **8150.3** | 2,5 l | 75,15 |
| **Stearic acid lithium salt** | pure | Lithium stearate, Lithium octa-decanoate | **8238.1** | 500 g | 23,15 |
| **Stearic acid methyl ester** | for synthesis | Methyl stearate, Methyl octa-decanoate | **4704.1** | 5 g | 35,40 |
| | | | **4704.2** | 25 g | 70,45 |
| | | | **4704.3** | 50 g | 104,20 |
| **Stearic acid sodium salt** | 88-92 % | Sodium stearate, Sodium octa-decanoate | **8628.1** | 1 kg | 35,40 |
| **Stearyl alcohol** | ≥95 % | 1-Octadecanol | **8663.2** | 500 g | 17,75 |
| | | | **8663.1** | 1 kg | 25,70 |
| **Tributyrin** | ≥97,5 %, for biochemistry | Glyceryl tributyrate | **4813.1** | 100 ml | 79,05 |

| Product | Purity | Synonym | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Tricaprin** | ≥98 % | Glyceryl tricaproate | **7252.1** | 10 g | 124,20 |
| **Undecanoic acid methyl ester** | ≥98 % | - | **4866.1** | 10 ml | 64,40 |
| **n-Valeric acid** | ≥98 % | Pentanoic acid | **4874.1** | 250 ml | 30,65 |
| **n-Valeric acid methyl ester** | ≥98 % | Methyl-valerate | **4876.1** | 100 ml | 53,65 |
| **Zinc stearate** | powder | Stearic acid zinc salt | **9295.1** | 1 kg | 40,35 |
| | | | **9295.5** | 25 kg | 385,95 |

For additional product data and safety information, see chapter Chemicals A-Z.




ROTH BUCH

## Atlas of oil plants and vegetable oils

L. Roth, K. Kormann
Edition 2005, 196 pp., hardcover
ISBN-10: 3-86037-290-4

This is a unique source of information on the world's over 50 individual oilseeds including major, minor, unexploited and non-edible oilcrops. Each crop is clearly presented in a portrait of the plant (botany, distribution, cultivation) including colour pictures, tabular data on nutritional composition and oil characteristics. The book discusses the composition, processing technologies and utilization in the processing of oilseeds into oil, protein products and other by-products.

| Art. No. | Pack Qty. | Price incl. VAT. € |
|---|---|---|
| **EP94.1** | 1 | 39,90 |

# Essential oils

Essential oils form in the oil glands of plants and are stored in the plant tissue. They can be found in blossoms, leaves, seeds, husks, roots, resins and bark or in the wood of a plant. Essential oils are generally extracted from plant components by steam distillation.

Our essential oils are carefully manufactured from selected raw materials. Our **Natural oils** are composed of 80 % mother plant extracts. **Artificial oils** are manufactured from synthetic aromatic substances. The origin of the plant is specified via the country code.








## Essential Oils

| Product | Synonym | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Oil of angelica roots** | Oleum Angelicae e seminis | hungarian, natural | **6587.1** | 10 ml | 67,20 |
| **Oil of anise** | Oleum Anisi | natural | **7036.1** | 100 ml | 32,15 |
| | | artificial | **3278.2** | 100 ml | 14,95 |
| | | | **3278.1** | 500 ml | 44,65 |
| **Oil of balm** | Oleum Melissae indicum | natural | **6507.1** | 100 ml | 18,20 |
| **Oil of basil** | Oleum Basilici | natural | **7039.1** | 25 ml | 46,15 |
| **Oil of bergamot** | Oleum Bergamottae | natural | **6501.1** | 50 ml | 33,25 |
| **Oil of bergamot** | Oleum Bergamottae | artificial | **3282.2** | 100 ml | 23,15 |
| | | | **3282.1** | 250 ml | 38,60 |
| **Oil of cajeput** | Oleum Cajeput | natural | **6105.1** | 100 ml | 26,35 |
| | | | **6105.2** | 500 ml | 65,50 |
| **Oil of camphor** | Oleum Camphorae | light | **3357.1** | 1 l | 55,80 |
| **Oil of caraway** | Oleum Carvil | natural | **7050.1** | 25 ml | 20,35 |
| | | artificial | **3307.1** | 250 ml | 36,05 |
| **Oil of cassia** | Oleum Cassiae | natural, chinese | **6593.1** | 100 ml | 39,70 |
| **Oil of cedar leaf** | Oleum Foliorum cedri | pure | **6594.1** | 100 ml | 79,05 |
| | | artificial | **3291.2** | 50 ml | 19,90 |
| | | | **3291.1** | 250 ml | 57,95 |
| **Oil of cedar wood** | Oleum Ligni cedri | for microscopy | **5308.1** | 100 ml | 15,60 |
| | | | **5308.2** | 250 ml | 23,15 |
| | | | **5308.3** | 500 ml | 40,75 |
| **Oil of celery** | Apium graveoleus oil | | **7040.2** | 5 ml | 23,15 |
| | | | **7040.1** | 25 ml | 57,95 |
| **Oil of cembra pine** | Oleum Cembrae | pure | **4208.2** | 25 ml | 17,10 |
| | | | **4208.1** | 100 ml | 44,00 |
| **Oil of chamomile** | Oleum Chamomillae | blue | **6504.1** | 10 ml | 67,20 |
| | Oleum Chamomillae romanae | roman, natural | **3354.1** | 5 ml | 39,25 |
| | Oleum Chamomillae | artificial | **3305.1** | 50 ml | 54,75 |
| **Oil of cinnamon** | Oleum Cinnamomi ceylanici | natural | **A432.2** | 10 ml | 17,10 |
| | | | **A432.1** | 50 ml | 57,55 |
| | | artificial | **6512.1** | 50 ml | 28,95 |
| **Oil of citronella** | Oleum Citronellae | natural | **6502.1** | 250 ml | 39,70 |
| | | artificial | **3292.1** | 500 ml | 33,25 |
| **Oil of clary-sage** | Oleum Salviae sclareae | natural | **3355.1** | 25 ml | 43,55 |
| **Oil of cloves** | Oleum Caryophyllorum | ≥80 %, DAB, natural | **8662.1** | 250 ml | 37,10 |
| | | | **8662.2** | 1 l | 117,20 |
| **Oil of coriander** | Oleum Coriandri | natural | **7052.1** | 25 ml | 22,05 |
| **Oil of cubeb** | Litsea, Oleum Cubebarum | natural | **6608.1** | 100 ml | 26,35 |
| **Oil of cypress** | Oleum Cupressi | french, natural | **6596.1** | 100 ml | 44,65 |
| **Oil of dill herb** | Oleum Anethi e herba | natural purity | **6597.1** | 100 ml | 46,15 |
| **Oil of dill seed** | Oleum Anethi e seminis | extra pure | **3352.1** | 100 ml | 43,55 |
| **Oil of estragon** | Oleum Dracunculi | pure | **6602.1** | 50 ml | 75,15 |

| Product | Synonym | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Oil of eucalyptus** | Oleum Eucalypti | >70 %, Ph.Eur. | **5337.1** | 100 ml | 22,05 |
| | | | **5337.2** | 500 ml | 85,90 |
| | Oleum Eucalypti artificiale | artificial | **3297.2** | 500 ml | 28,95 |
| | | | **3297.1** | 1 l | 44,65 |
| **Oil of fennel** | Oleum Foeniculi | artificial | **3299.2** | 100 ml | 17,10 |
| | | | **3299.1** | 500 ml | 44,65 |
| **Oil of fir needles** | Oleum Pini | artificial | **3301.1** | 500 ml | 32,15 |
| **Oil of gardensage** | Oleum Salviae | natural, Dalmat. | **7075.1** | 50 ml | 26,35 |
| **Oil of garlic** | Oleum Allii sativi | natural | **3540.2** | 50 ml | 64,40 |
| | | | **3540.1** | 100 ml | 117,20 |
| **Oil of geranium** | Oleum Geranii | natural | **7054.1** | 25 ml | 23,15 |
| **Oil of grapefruit** | | natural | **6718.1** | 250 ml | 70,85 |
| **Hypericon oil** | Oleum Hyperici | extra pure | **4501.1** | 250 ml | 30,00 |
| | Hypericum perforatum | pure | **9404.1** | 250 ml | 26,35 |
| **Oil of juniper** | Oleum Juniperi e baccis | pure | **7059.1** | 25 ml | 28,50 |
| | Oleum Juniperi e ligno | natural | **7057.1** | 25 ml | 19,90 |
| **Laurel oil** | Oleum Lauri aetherum | essential, natural | **6609.1** | 100 ml | 64,40 |
| | Oleum Lauri | artificial | **3314.1** | 250 ml | 47,20 |
| **Oil of lavandin** | Lavendula hybrida | french | **6603.1** | 100 ml | 30,00 |
| **Oil of lavender** | Oleum Lavandulae | DAB | **5443.1** | 100 ml | 39,70 |
| | | | **5443.2** | 1 l | 223,50 |
| | | artificial | **3367.1** | 250 ml | 49,35 |
| **Oil of lemon** | Oleum Citri | natural | **5213.1** | 100 ml | 29,60 |
| | | italian | **3797.2** | 50 ml | 52,60 |
| | | | **3797.1** | 100 ml | 96,65 |
| | | low in terpenes | **6625.1** | 50 ml | 60,10 |
| | | artificial | **3346.1** | 500 ml | 43,55 |
| **Oil of lemon-grass** | Cochin, Oleum Lemon-grass | natural purity | **6606.1** | 100 ml | 26,35 |
| **Oil of lime** | Oleum Limettae, Lime oil | natural | **6721.1** | 50 ml | 24,65 |
| **Oil of lovage** | Oleum Levistici | pure | **6607.1** | 10 ml | 103,75 |
| **Oil of mandarin** | Oleum Mandarinae | italian | **3796.1** | 100 ml | 46,15 |
| **Oil of mint** | Oleum Menthae arvensis | China, raw | **6730.2** | 50 ml | 17,10 |
| | | | **6730.1** | 250 ml | 52,15 |
| | | Japan, natural | **6731.2** | 50 ml | 19,90 |
| | | | **6731.1** | 250 ml | 52,15 |
| | | rectified twice | **6732.1** | 50 ml | 23,15 |
| | | | **6732.2** | 250 ml | 55,80 |
| **Musk oil** | - | artificial | **3364.1** | 100 ml | 39,70 |
| **Oil of niaouli** | Melaleuca viridiflora | natural | **6610.1** | 100 ml | 31,10 |
| **Oil of nutmeg** | Oleum Myristicae aethereum | volatile | **7064.1** | 50 ml | 28,95 |
| **Oil of orange** | Oleum Aurantii amari | bitter, italian | **6509.1** | 100 ml | 37,55 |
| | Oleum Aurantii, with analysis | Brazil | **3803.1** | 100 ml | 64,40 |
| | - | Florida | **6728.2** | 250 ml | 23,15 |
| | | | **6728.3** | 500 ml | 38,60 |
| | | | **6728.1** | 1 l | 62,25 |
| | Oleum Aurantii dulcis | sweet, natural | **6611.1** | 100 ml | 45,05 |
| **Oil of orange flowers** | Oleum Neroli | artificial | **3323.1** | 50 ml | 64,40 |
| **Oil of origanum** | Oleum Origani cretici | natural | **6612.2** | 25 ml | 22,05 |
| | | | **6612.1** | 100 ml | 56,90 |
| **Oil of palmarosa** | Oleum Palmae rosae | east indian | **6613.2** | 25 ml | 23,15 |
| | | | **6613.1** | 100 ml | 45,05 |
| **Oil of parsley** | Oleum Petroselini | french | **7072.1** | 10 ml | 23,15 |
| **Oil of patchouli** | Oleum Patchouli | artificial | **6511.2** | 25 ml | 22,05 |
| | | | **6511.1** | 100 ml | 56,45 |
| **Oil of peppermint** | Oleum Menthae piperitae | pure | **9318.1** | 50 ml | 23,15 |
| | | artificial | **3329.2** | 100 ml | 17,10 |
| | | | **3329.1** | 500 ml | 44,00 |
| **Oil of peppermint italian** | Oleum Menthae piperitae | pure | **7063.1** | 25 ml | 28,50 |
| **Oil of peppermint Kennewick, USA** | Oleum Menthae piperitae | natural | **3777.1** | 100 ml | 30,00 |
| **Oil of pepper** | Oleum Piperis | natural | **6616.2** | 25 ml | 32,80 |
| | | | **6616.1** | 100 ml | 90,85 |
| **Oil of petitgrain** | Oleum Petitgrain americ. | south american | **6614.1** | 100 ml | 44,65 |
| **Oil of rose** | Oleum Rosae | bulgarian, natural | **5733.1** | 1 ml | 44,00 |
| | | | **5733.2** | 10 ml | 274,15 |
| | | artificial | **4092.1** | 10 ml | 26,35 |
| **Oil of rose-wood** | Oleum Ligni Rhodii | nature identical | **3275.2** | 50 ml | 34,95 |
| | | | **3275.1** | 100 ml | 64,40 |

| Product | Synonym | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Oil of rosemary** | Oleum Rosmarini | spanish | **6514.1** | 100 ml | 27,85 |
| | | morrocan | **3764.1** | 100 ml | 24,65 |
| | | artificial | **3336.2** | 100 ml | 17,10 |
| | | | **3336.1** | 500 ml | 44,00 |
| **Oil of sandal-wood** | Oleum Santali | west indian | **6620.2** | 25 ml | 17,10 |
| | | | **6620.1** | 100 ml | 44,00 |
| | Oleum Ligni Santali artificiale | artificial | **3341.2** | 50 ml | 19,90 |
| | | | **3341.1** | 250 ml | 52,15 |
| **Oil of Scotch pine needles** | Oleum Pini silvestris | natural | **7073.1** | 100 ml | 30,00 |
| | | artificial | **3306.2** | 250 ml | 23,15 |
| | | | **3306.1** | 500 ml | 42,90 |
| **Oil of silver fir** | Oleum Abietis | artificial | **3295.1** | 250 ml | 30,00 |
| **Oil of silver fir cones** | Oleum Templini | natural | **6598.1** | 100 ml | 51,50 |
| **Oil of silver fir needles** | Oleum Abietis | natural | **3353.1** | 100 ml | 39,70 |
| **Oil of spike** | Oleum Spicae | natural pure | **7079.1** | 50 ml | 27,45 |
| **Oil of tansy** | Oleum Tanaceti | pure | **7081.2** | 5 ml | 17,10 |
| | | | **7081.1** | 25 ml | 44,00 |
| **Oil of tea tree** | Melaleuca alternifolia aetheroleum | australian, natural | **K032.1** | 50 ml | 26,35 |
| **Oil of thyme** | | natural | **K500.1** | 50 ml | 40,35 |
| | Oleum Thymi | natural/nature-identical | **6513.1** | 100 ml | 22,05 |
| **Oil of valerian** | Oleum Valerianae | polish | **6588.2** | 10 ml | 46,15 |
| | | | **6588.3** | 25 ml | 99,90 |
| | | | **6588.1** | 50 ml | 177,40 |
| | Oleum Valerianae artificiale | artificial | **3279.1** | 100 ml | 32,15 |
| **Oil of vetiver** | Oleum Vetiverae | natural | **6622.2** | 10 ml | 17,10 |
| | | | **6622.1** | 50 ml | 44,00 |
| **Oil of wintergreen** | Oleum Gaultheriae | artificial | **7053.1** | 100 ml | 32,15 |
| **Oil of wormwood** | Oleum Absinthii | natural | **6909.1** | 10 ml | 21,00 |
| **Oil of ylang-ylang** | Oleum Anonae | Comoren, natural | **6624.2** | 25 ml | 33,25 |
| | | | **6624.1** | 100 ml | 117,20 |
| | | artificial | **3343.2** | 50 ml | 17,10 |
| | | | **3343.1** | 250 ml | 57,95 |

For additional product data and safety information, see chapter Chemicals A-Z.



# Sugar (Carbohydrates)

**Carbohydrates** or **Saccharides** make up 50 % of the dry biomass of the earth and are therefore the most frequent class of biomolecules. Besides at least two hydroxy groups, they also have an aldehyde or a ketone group and can be subdivided according to the number of monomeric components in mono-, di-, oligo and polysaccharides.

Whereas mono-, di- and oligosaccharides are soluble in water, taste sweet and are therefore called as sugar, polysaccharides are hardly, or not at all, soluble in water and have a neutral taste.

Carbohydrates, together with fats and proteins make up a large percentage of nutrition. In addition to their central role as an energy source, they are also an important structural component especially in plants (e.g. Cellulose). Ribose, a monosaccaride with five carbons ($C_5H_{10}O_5$) is an essential element of coenzymes (such as ATP, FAD and NAD) and a structural component of RNA. Desoxyribose (a ribose derivative) is a structural component of DNA.

## Monosaccharides

Monosaccharides are the simplest carbohydrates that cannot be hydrolysed further. They consist of one sugar unit (monosaccharide). The general formula for unmodified monosaccharides is Cn(H2O)m. The most important representatives of monosaccharides are glucose and fructose.

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **N-Acetyl-D-galactosamine** | ≥99 %, for biochemistry | **4114.1** | 250 mg | 32,15 |
| | | **4114.2** | 1 g | 98,40 |
| **N-Acetyl-D-glucosamine** | ≥99 %, for biochemistry | **8993.3** | 5 g | 15,60 |
| | | **8993.2** | 25 g | 39,70 |
| | | **8993.1** | 50 g | 69,80 |
| | | **8993.4** | 100 g | 110,20 |
| **N-Acetyl-D-mannosamine** | ≥98 % | **5525.1** | 250 mg | 14,95 |
| | | **5525.2** | 1 g | 45,05 |
| | | **5525.3** | 5 g | 145,15 |
| **N-Acetylneuraminic acid** | ≥99 %, for biochemistry | **7480.1** | 100 mg | 24,20 |
| | | **7480.2** | 500 mg | 71,50 |
| | | **7480.3** | 1 g | 117,20 |
| | | **7480.4** | 5 g | 353,70 |
| **D-Allose** | ≥99 % | **6010.2** | 50 mg | 30,00 |
| | | **6010.1** | 100 mg | 41,40 |
| **DL-Arabinose** | ≥99 %, for biochemistry | **8954.1** | 10 g | 31,75 |
| | | **8954.2** | 50 g | 90,20 |
| **L(+)-Arabinose** | ≥99 %, for biochemistry | **5118.1** | 50 g | 40,35 |
| | | **5118.2** | 100 g | 63,35 |
| | | **5118.3** | 250 g | 125,25 |
| | | **5118.4** | 500 g | 192,45 |
| | | **5118.5** | 1 kg | 289,20 |
| **L(-)-Arabitol** | for biochemistry | **7738.1** | 1 g | 22,05 |
| | | **7738.2** | 5 g | 57,95 |
| **D(+)-Arabitol** | ≥99 %, for biochemistry | **5510.3** | 5 g | 37,55 |
| | | **5510.1** | 25 g | 117,20 |
| | | **5510.2** | 50 g | 181,70 |
| **α-Chloralose** | (≤20 % β-Anomer) | **3363.2** | 25 g | 19,25 |
| | | **3363.1** | 100 g | 57,95 |
| | | **3363.3** | 250 g | 120,30 |
| **2-Deoxy-D-galactose** | ≥99 %, for biochemistry | **9916.1** | 250 mg | 24,20 |
| | | **9916.2** | 1 g | 47,20 |
| | | **9916.3** | 5 g | 170,95 |

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **2-Deoxy-D-glucose** | ≥98 %, for biochemistry | **CN96.1** | 50 mg | 17,10 |
| | | **CN96.2** | 1 g | 39,25 |
| | | **CN96.3** | 5 g | 137,10 |
| **2-Deoxy-D-ribose** | ≥99 %, for biochemistry | **CN97.1** | 5 g | 41,40 |
| | | **CN97.2** | 10 g | 69,35 |
| | | **CN97.3** | 25 g | 150,00 |
| **Dulcitol** | ≥99 %, for biochemistry | **4944.2** | 10 g | 17,75 |
| | | **4944.1** | 50 g | 57,95 |
| **Esculin sesquihydrate** | ≥97,5 %, DAB, for biochemistry | **8704.1** | 5 g | 21,00 |
| | | **8704.2** | 25 g | 85,90 |
| | | **8704.3** | 50 g | 149,45 |
| | | **8704.4** | 100 g | 256,95 |
| **D(-)-Fructose** | >99,5%, for biochemistry | **4981.1** | 500 g | 16,05 |
| | | **4981.4** | 1 kg | 24,65 |
| | | **4981.2** | 2,5 kg | 51,50 |
| | | **4981.5** | 5 kg | 68,30 |
| | | **4981.6** | 10 kg | 89,15 |
| | | **4981.3** | 25 kg | 184,40 |
| **D-Fructose-1,6-diphosphate trisodium salt octahydrate** | ≥98 %, for biochemistry | **4982.1** | 1 g | 18,20 |
| | | **4982.2** | 5 g | 33,90 |
| | | **4982.3** | 25 g | 100,55 |
| **L(-)-Fucose** | ≥95 %, for biochemistry | **KK10.1** | 1 g | 30,00 |
| | | **KK10.2** | 5 g | 96,25 |
| | | **KK10.3** | 25 g | 403,15 |
| **D(+)-GalactoseD(+)-Galactose** | CELLPURE® ≥99 % | **8878.1** | 10 g | 28,95 |
| | | **8878.2** | 25 g | 55,80 |
| | | **8878.3** | 50 g | 100,95 |
| | | **8878.4** | 100 g | 189,10 |
| | ≥98 %, for biochemistry | **4987.1** | 100 g | 26,35 |
| | | **4987.2** | 500 g | 90,20 |
| | | **4987.3** | 1 kg | 154,30 |
| **α-D-Galactose-1-phosphate dipotassium salt pentahydrate** | ≥99 %, for biochemistry | **5550.1** | 25 mg | 28,95 |
| | | **5550.2** | 100 mg | 99,45 |
| **D(+)-Glucose** | p.a., ACS, anhydrous | **X997.1** | 250 g | 13,90 |
| | | **X997.2** | 1 kg | 32,80 |
| | | **X997.3** | 2,5 kg | 67,65 |
| | | **X997.4** | 5 kg | 116,00 |
| | | **X997.5** | 25 kg | 536,45 |
| | CELLPURE® ≥99,5 %, anhydrous | **HN06.1** | 250 g | 13,45 |
| | | **HN06.2** | 500 g | 22,05 |
| | | **HN06.3** | 1 kg | 32,15 |
| | | **HN06.4** | 5 kg | 104,20 |

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| L(-)-Glucose | ≥98 %, for biochemistry | 7509.1 | 100 mg | 30,00 |
| | | 7509.2 | 500 mg | 71,95 |
| | | 7509.3 | 1 g | 119,25 |
| D(+)-Glucose monohydrate | ≥99,5 %, Ph.Eur. | 6780.1 | 1 kg | 19,25 |
| | | 6780.2 | 5 kg | 66,15 |
| | | 6780.4 | 10 kg | 109,15 |
| | | 6780.3 | 50 kg | 321,45 |
| | for microbiology | 6887.1 | 1 kg | 18,85 |
| | | 6887.2 | 2,5 kg | 39,25 |
| | | 6887.3 | 5 kg | 63,35 |
| | | 6887.5 | 25 kg | 170,95 |
| α-D-Glucose-1-phosphate disodium salt tetrahydrate | ≥98 %, for biochemistry | 6119.1 | 1 g | 32,15 |
| | | 6119.2 | 10 g | 201,60 |
| D-Glucose-6-phosphate monosodium salt | ≥98 %, for biochemistry | 5544.1 | 1 g | 45,70 |
| | | 5544.2 | 5 g | 162,90 |
| D-Glucose-6-phosphate disodium dihydrate | ≥98 %, for biochemistry | CN72.1 * | 1 g | 30,65 |
| | | CN72.2 | 5 g | 104,85 |
| | | CN72.3 | 10 g | 185,45 |
| D-Glucuronic acid | ≥98 %, for biochemistry | 4124.1 | 1 g | 18,20 |
| | | 4124.2 | 5 g | 39,70 |
| | | 4124.3 | 10 g | 65,50 |
| | | 4124.4 | 25 g | 111,70 |
| D-Glucuronic acid sodium salt monohydrate | ≥99 %, for biochemistry | 4355.1 | 10 g | 42,50 |
| | | 4355.2 | 25 g | 71,50 |
| 3-Indoxyl-β-D-glucopyranoside | ≥99 %, for biochemistry | 4243.1 | 250 mg | 55,80 |
| | | 4243.2 | 500 mg | 99,90 |
| | | 4243.3 | 1 g | 177,40 |
| meso-Inositolmeso-Inositol | ≥99 %, p.a. | 6329.2 | 10 g | 24,65 |
| | | 6329.1 | 100 g | 160,20 |
| | ≥99 %, for biochemistry | 4191.1 | 50 g | 25,30 |
| | | 4191.2 | 100 g | 31,10 |
| | | 4191.3 | 250 g | 82,25 |
| D(-)-Mannitol | CELLPURE® ≥97 % | 8883.1 | 100 g | 23,15 |
| | | 8883.3 | 250 g | 46,15 |
| | | 8883.2 | 500 g | 81,60 |
| | ≥98 %, Ph.Eur., USP, BP, for biochemistry | 4175.1 | 1 kg | 69,35 |
| | | 4175.2 | 5 kg | 271,45 |
| D(+)-Mannose | CELLPURE® ≥98 % | 8887.1 | 10 g | 27,85 |
| | | 8887.2 | 25 g | 53,65 |
| | | 8887.3 | 50 g | 92,35 |
| | | 8887.4 | 100 g | 161,25 |
| | ≥99,5 %, for biochemistry | 4220.1 | 10 g | 20,65 |
| | | 4220.2 | 50 g | 50,00 |
| L(+)-Rhamnose monohydrate | ≥98 %, for biochemistry | 4655.1 | 5 g | 30,65 |
| | | 4655.2 | 25 g | 83,35 |
| D(-)-Ribose | ≥98 %, for biochemistry | 7168.1 | 10 g | 19,90 |
| | | 7168.3 | 25 g | 38,60 |
| | | 7168.2 | 100 g | 99,90 |
| D-Sorbitol | ≥98 %, for biochemistry | 6213.1 | 1 kg | 24,65 |
| | | 6213.2 | 5 kg | 68,70 |
| | | 6213.3 | 10 kg | 124,60 |
| L(-)-Sorbose | ≥98 %, for biochemistry | 4028.2 | 25 g | 45,70 |
| | | 4028.3 | 50 g | 78,40 |
| | | 4028.1 | 100 g | 112,90 |
| D-Tagatose | ≥98,5 %, for biochemistry | 6161.1 | 1 g | 177,40 |
| | | 6161.2 | 5 g | 772,95 |
| Xylitol | ≥98,5 %, Ph.Eur., for biochemistry | 9711.1 | 250 g | 22,05 |
| | | 9711.3 | 500 g | 41,85 |
| | | 9711.2 | 1 kg | 81,20 |
| | | 9711.4 | 2,5 kg | 155,90 |
| D(+)-Xylose | ≥98,5 %, for biochemistry | 5537.1 | 100 g | 22,50 |
| | | 5537.2 | 500 g | 71,95 |
| | | 5537.3 | 1 kg | 111,70 |
| L(-)-Xylose | ≥99 %, for biochemistry | 4061.3 | 1 g | 28,50 |
| | | 4061.1 | 5 g | 107,40 |
| | | 4061.2 | 10 g | 165,05 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Disaccharides

Disaccharides consist of two monosaccharide units. These are interlinked covalently via a glycocide bond. The most familiar representatives are saccharose, lactose and maltose.

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| D(+)-Cellobiose | ≥98 %, for biochemistry | 5840.1 | 5 g | 18,20 |
| | | 5840.3 | 25 g | 55,80 |
| | | 5840.2 | 100 g | 198,90 |
| α-D-Cellobiose octaacetate | ≥98 %, for biochemistry | 5463.1 | 5 g | 28,95 |
| | | 5463.2 | 25 g | 98,80 |
| β-D-Gentiobiose | ≥98 %, for biochemistry | 4123.4 | 100 mg | 38,60 |
| | | 4123.1 | 250 mg | 87,00 |
| | | 4123.2 | 500 mg | 155,90 |
| | | 4123.3 | 1 g | 278,45 |
| Isomaltulose | ≥99 %, for biochemistry | 8400.1 | 25 g | 28,95 |
| | | 8400.2 | 100 g | 81,60 |
| Lactobionic acid | ≥98 % | 9242.1 | 10 g | 35,40 |
| α-Lactose monohydrate | Ph.Eur., for biochemistry | 8921.1 | 1 kg | 22,05 |
| | | 8921.2 | 5 kg | 78,40 |
| | | 8921.3 | 10 kg | 134,40 |
| | | 8921.5 | 25 kg | 310,70 |
| | for microbiology | 6868.1 | 1 kg | 25,30 |
| | | 6868.2 | 5 kg | 84,85 |
| | | 6868.4 | 10 kg | 143,55 |
| | | 6868.3 | 50 kg | 536,45 |
| Lactulose | ≥99 %, for biochemistry | CN98.1 | 10 g | 25,30 |
| | | CN98.2 | 25 g | 50,00 |
| | | CN98.3 | 50 g | 89,15 |
| D(+)-Maltose monohydrate | CELLPURE® ≥97 % | 8882.1 | 25 g | 23,15 |
| | | 8882.2 | 100 g | 52,15 |
| | | 8882.3 | 250 g | 88,05 |
| | | 8882.4 | 500 g | 155,90 |
| | ≥92 %, for biochemistry | 8951.1 | 100 g | 21,40 |
| | | 8951.2 | 250 g | 36,45 |
| | | 8951.3 | 500 g | 65,50 |
| | | 8951.4 | 1 kg | 97,75 |
| D(+)-Melibiose monohydrate | ≥99 %, for biochemistry | 4223.1 | 2,5 g | 29,60 |
| | | 4223.3 | 10 g | 73,65 |
| | | 4223.2 | 50 g | 260,70 |
| D(+)-Saccharose | CELLPURE® | 8890.1 | 50 g | 17,10 |
| | | 8890.2 | 100 g | 25,70 |
| | | 8890.3 | 250 g | 46,15 |
| | | 8890.4 | 500 g | 87,00 |
| | ≥99,5 %, p.a. | 4621.1 | 1 kg | 19,90 |
| | | 4621.2 | 5 kg | 83,75 |
| | | 4621.3 | 10 kg | 106,35 |
| | | 4621.5 | 25 kg | 192,45 |
| | ≥99,5 %, Ph.Eur. | 4661.1 | 1 kg | 19,60 |
| | | 4661.2 | 5 kg | 79,05 |
| | | 4661.4 | 10 kg | 96,65 |
| | | 4661.3 | 50 kg | 310,70 |
| | ≥99,7 %, pulv. | 9286.1 | 1 kg | 18,20 |
| | | 9286.2 | 5 kg | 64,40 |
| | ≥99,5 %, RNase/DNase free | 9097.1 | 1 kg | 36,05 |
| | | 9097.2 | 5 kg | 153,65 |
| D(+)-Trehalose dihydrate | CELLPURE® ≥98 % | 8897.1 | 10 g | 28,95 |
| | | 8897.2 | 25 g | 48,95 |
| | | 8897.3 | 50 g | 78,40 |
| | | 8897.4 | 100 g | 138,70 |
| | ≥99 %, for biochemistry | 5151.1 | 5 g | 13,45 |
| | | 5151.2 | 25 g | 37,10 |
| | | 5151.4 | 50 g | 62,25 |
| | | 5151.3 | 250 g | 289,20 |

## Oligo- and polysaccharides

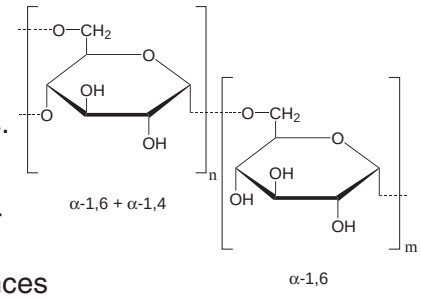
Oligosaccharides consist of three to nine monosaccharide units.
Polysaccharides are macromolecular substances that consist of ≥10 monosaccharide units. A distinction is made between homoglycans, which are made up of only one type of monosaccharides (e.g. starch) and heteroglycans, which consist of at least two different monomeric components (e.g. xanthan).

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Alginic acid** | ≥98 %, for biochemistry | **8696.1** | 250 g | 30,00 |
| | | **8696.3** | 1 kg | 92,35 |
| | | **8696.2** | 2,5 kg | 209,65 |
| **Alginic acid ammonium salt** | for biochemistry | **7317.1** | 250 g | 32,15 |
| | | **7317.2** | 1 kg | 89,15 |
| **Alginic acid sodium salt** | for biochemistry | **9180.1** | 250 g | 28,95 |
| | | **9180.2** | 1 kg | 78,40 |
| **Amylopectin** | for biochemistry | **8545.1** | 500 g | 25,70 |
| | | **8545.2** | 1 kg | 34,30 |
| | | **8545.3** | 2,5 kg | 55,80 |
| **Cellulose** | for column chromatography new size | **5873.3** | 100 g | 14,90 |
| | | **5873.1** | 500 g | 35,50 |
| | | **5873.2** | 1 kg | 58,90 |
| **Cellulose acetate** | pure | **4458.1** | 250 g | 28,95 |
| **Chitin** | from crab shells | **8845.1** | 100 g | 39,25 |
| | | **8845.2** | 1 kg | 289,20 |
| **α-Cyclodextrin** | ≥98 %, for biochemistry | **4122.1** | 5 g | 21,40 |
| | | **4122.2** | 25 g | 69,80 |
| | | **4122.3** | 50 g | 115,60 |
| **Dextrin** | white, extra pure | **6778.3** | 500 g | 17,10 |
| | | **6778.1** | 1 kg | 26,35 |
| | | **6778.4** | 2,5 kg | 53,65 |
| | | **6778.2** | 5 kg | 99,90 |
| | yellow, extra pure | **6777.3** | 500 g | 11,75 |
| | | **6777.1** | 1 kg | 17,10 |
| | | **6777.4** | 2,5 kg | 33,25 |
| | | **6777.2** | 5 kg | 60,10 |
| | for microbiology | **3488.2** | 100 g | 21,40 |
| | | **3488.1** | 250 g | 34,30 |

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Glycogen** | lyophilised, from oysters | **HP51.1** | 1 g | 24,65 |
| | | **HP51.2** | 5 g | 96,65 |
| | | **HP51.3** | 10 g | 166,65 |
| | | **HP51.4** | 25 g | 357,90 |
| **Heparin sodium salt** | ≥180 I.U./mg, Ph.Eur., from porcine intestine mucosa | **7692.1** | 1 g | 71,50 |
| | | **7692.2** | 5 g | 310,15 |
| | | **7692.3** | 25 g | 1392,15 |
| **D(+)-Melezitose monohydrate** | ≥99 %, for biochemistry | **4222.1** | 2,5 g | 22,05 |
| | | **4222.2** | 25 g | 81,60 |
| | | **4222.3** | 50 g | 149,45 |
| **D(+)-Melezitose monohydrate** | ≥99 %, for biochemistry | **4222.4** | 100 g | 278,45 |
| **D(+)-Raffinose pentahydrate** | ≥98 %, for biochemistry | **5241.1** | 10 g | 35,40 |
| | | **5241.4** | 25 g | 55,80 |
| | | **5241.2** | 50 g | 92,35 |
| | | **5241.3** | 100 g | 145,15 |
| **Starch from potatoes, soluble** | p.a., ACS | **2045.1** | 100 g | 21,40 |
| | | **2045.2** | 250 g | 35,40 |
| | | **2045.3** | 1 kg | 117,20 |
| **Starch, soluble** | soluble | **4701.1** | 1 kg | 23,15 |
| | | **4701.2** | 5 kg | 78,40 |
| **Starch from corn** | extra pure | **9444.1** | 1 kg | 19,90 |
| | | **9444.2** | 5 kg | 69,35 |
| **Starch from potatoes** | extra pure | **9441.1** | 1 kg | 17,75 |
| | | **9441.2** | 5 kg | 54,30 |
| **Starch from rice** | extra pure | **9368.1** | 1 kg | 26,35 |
| | | **9368.2** | 5 kg | 96,65 |
| **Starch from wheat** | extra pure | **9447.1** | 1 kg | 23,15 |
| | | **9447.2** | 5 kg | 70,85 |
| **Xanthan** | extra pure | **3557.2** | 100 g | 21,40 |
| | | **3557.1** | 500 g | 64,40 |
| **Xylan** | from beechwood | **4414.2** | 10 g | 26,80 |
| | | **4414.1** | 50 g | 56,90 |
| | | **4414.3** | 100 g | 96,65 |
| | | **4414.4** | 250 g | 203,20 |
| | ≥95 % xylooligosaccharides, from corncob | **8659.2** | 10 g | 14,95 |
| | | **8659.1** | 50 g | 35,40 |
| | | **8659.3** | 250 g | 138,70 |



# Dextrans



α-1,6 + α-1,4

α-1,6

Dextrans are highly branched macromolecular biopolysaccharides.
They consist exclusively of glucose monomers and belong to the homoglycans.
Natural dextrans have molecular masses between 10 and 50000 kg/mol.

Dextrans are soluble in water, whereby the solubility depends on the molecular mass. Here, highly viscous, gel-like liquids are formed. Due to the very broad molecular mass distribution of the various dextrans and the associated differences in terms of solubility in water, dextrans have numerous applications.

Thanks to their special properties, dextrans play an important role in many areas.
For e.g. dextrans are used in chromatography, both as a carrier in affinity chromatography and (in modified form) for Gel Permeation Chromatography (GPC). Furthermore, they are used as a measurement standard in membrane technology and in adhesives as well as coatings, or as an auxiliary material for paper and textile manufacture.

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Dextran 2,5** | for biochemistry | **8718.1** | 10 g | 28,95 |
| | | **8718.2** | 100 g | 111,70 |
| | | **8718.3** | 500 g | 439,70 |
| **Dextran 6** | for biochemistry | **7615.1** | 10 g | 15,60 |
| | | **7615.2** | 100 g | 55,80 |
| | | **7615.3** | 500 g | 231,15 |
| **Dextran 10** | for biochemistry | **7616.1** | 10 g | 15,60 |
| | | **7616.2** | 100 g | 55,80 |
| | | **7616.3** | 500 g | 231,15 |
| **Dextran 20** | for biochemistry | **7617.1** | 10 g | 15,60 |
| | | **7617.2** | 100 g | 55,80 |
| | | **7617.3** | 500 g | 231,15 |
| **Dextran 35** | for biochemistry | **8943.2** | 10 g | 15,60 |
| | | **8943.1** | 50 g | 44,65 |
| | | **8943.3** | 100 g | 72,60 |
| **Dextran 40** | for biochemistry | **7626.1** | 10 g | 11,30 |
| | | **7626.2** | 100 g | 35,40 |
| | | **7626.3** | 250 g | 73,00 |
| | | **7626.4** | 500 g | 127,95 |
| | extra pure | **9227.3** | 10 g | 15,60 |
| | | **9227.1** | 100 g | 41,40 |
| | | **9227.4** | 250 g | 82,70 |
| | | **9227.2** | 500 g | 139,25 |
| **Dextran 70** | extra pure | **9228.3** | 10 g | 17,10 |
| | | **9228.1** | 100 g | 61,20 |
| | | **9228.4** | 250 g | 121,40 |
| | | **9228.2** | 500 g | 224,70 |
| **Dextran 100** | for biochemistry | **7618.1** | 10 g | 15,60 |
| | | **7618.2** | 100 g | 55,80 |
| | | **7618.3** | 500 g | 231,15 |

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Dextran 150** | for biochemistry | **7619.1** | 10 g | 15,60 |
| | | **7619.2** | 100 g | 55,80 |
| | | **7619.3** | 500 g | 231,15 |
| **Dextran 250** | for biochemistry | **9233.3** | 10 g | 34,30 |
| | | **9233.1** | 100 g | 173,00 |
| | | **9233.2** | 500 g | 751,45 |
| **Dextran 500** | for biochemistry | **9219.3** | 10 g | 24,65 |
| | | **9219.1** | 100 g | 81,60 |
| | | **9219.2** | 500 g | 342,95 |
| **Dextran sulphate 8 sodium salt** | for biochemistry | **7610.1** | 10 g | 30,00 |
| | | **7610.2** | 25 g | 55,80 |
| | | **7610.3** | 50 g | 98,80 |
| | | **7610.4** | 100 g | 181,70 |
| **Dextran sulphate 40 sodium salt** | for biochemistry | **7612.1** | 10 g | 30,00 |
| | | **7612.2** | 25 g | 55,80 |
| | | **7612.3** | 50 g | 98,80 |
| | | **7612.4** | 100 g | 181,70 |
| **Dextran sulphate 500 sodium salt** | for biochemistry and molecular biology | **5956.5** | 10 g | 30,00 |
| | | **5956.3** | 25 g | 57,95 |
| | | **5956.4** | 50 g | 99,45 |
| | | **5956.1** | 100 g | 189,10 |
| | | **5956.2** | 500 g | 837,45 |

# Vitamins

Vitamins are involved in many metabolic reactions. We can supply a range of high-purity substances suitable for biochemical applications in research and development.



| Product | Synonym | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **4-Aminobenzoic acid** NEW | PABA, p-Aminobenzoic acid, Vitamin $B_{10}$ | ≥98,5 %, for synthesis | **0979.1** | 50 g | 16,70 |
| | | | **0979.2** | 250 g | 33,25 |
| | | | **0979.3** | 1 kg | 89,15 |
| **L(+)-Ascorbic acid** | Vitamin C | ≥99 %, p.a. | **3525.1** | 100 g | 12,40 |
| | | | **3525.2** | 250 g | 17,75 |
| | | | **3525.3** | 500 g | 27,45 |
| | | ≥99 %, Ph.Eur., USP, BP | **6288.1** | 100 g | 12,80 |
| | | | **6288.2** | 250 g | 20,35 |
| | | | **6288.3** | 1 kg | 61,85 |
| **L(+)-Ascorbic acid sodium salt** | Sodium L(+)-ascorbate | ≥99 %, USP, for biochemistry | **3149.1** | 100 g | 24,20 |
| | | | **3149.2** | 500 g | 72,60 |
| **D(+)-Biotin** | Vitamin H | ≥98,5 %, Ph.Eur., for biochemistry new size | **3822.2** | 500 mg | 31,10 |
| | | | **3822.1** | 1 g | 56,90 |
| | | | **3822.3** | 5 g | 170,95 |
| | | | **3822.4** | 10 g | 289,20 |
| | | | **3822.5** | 25 g | 536,45 |
| **Calcium D(+)-pantothenate** | D(+)-Pantothenic acid calcium salt, Vitamin $B_5$ calcium salt | ≥98 %, Ph.Eur., for biochemistry | **3812.2** | 100 g | 26,80 |
| | | | **3812.1** | 250 g | 47,85 |
| **Folic acid** | Pteroyl glutamic acid | ≥96 %, for biochemistry | **T912.1** | 25 g | 41,95 |
| | | | **T912.2** | 50 g | 74,10 |
| **Nicotinic acid** | 3-Pyridinecarboxylic acid, Niacin, Vitamin $B_3$ | ≥99 %, for biochemistry | **3815.1** | 100 g | 31,75 |
| | | | **3815.2** | 250 g | 64,00 |
| **Pyridoxine hydrochloride** | Vitamin $B_6$-hydrochloride, Adermine hydrochloride | ≥99 %, for biochemistry | **T914.1** | 50 g | 28,95 |
| | | | **T914.2** | 100 g | 49,35 |
| **Riboflavine** | Lactoflavine, Vitamin $B_2$ | ≥97 %, Ph.Eur., for biochemistry | **9607.1** | 25 g | 30,00 |
| **Thiamine hydrochloride** | Thiamine chloride hydrochloride, Vitamin $B_1$ hydrochloride, Aneurine | ≥98,5 %, for biochemistry | **T911.1** | 25 g | 16,05 |
| | | | **T911.2** | 100 g | 41,85 |
| **DL-α-Tocopherol** | Vitamin E | ≥96 %, Ph.Eur., oily | **3806.1** | 100 g | 66,55 |
| **DL-α-Tocopherol acetate** | Vitamin E acetate | ≥96,5 %, Ph.Eur., oily | **3805.1** | 100 g | 42,50 |
| **Vitamin $B_{12}$** | Cyanocobalamin | ≥96 %, for biochemistry | **T915.1** | 500 mg | 42,50 |
| | | | **T915.2** | 1 g | 71,50 |
| **Vitamin $K_1$** | Phytomenadione, Phylloquinone | ≥97 %, for biochemistry | **3804.1** | 1 g | 28,95 |
| | | | **3804.2** | 10 g | 159,00 |

For additional product data and safety information, see chapter Chemicals A-Z.




# Chromatography

**Gas Chromatography**

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**Liquid Chromatography**

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# ROTI®CAP High Performance Capillary Columns

The proved ROTH series of high performance capillary columns for gas chromatography.

**ROTI®CAP** capillary columns set standards:




**Low column bleed**
Modern manufacturing processes offer capillaries with lower bleed levels, which are especially suitable for GC-MS.
Less column bleed yields increased sensitivity and accuracy through a better signal to noise ratio for any kind of detector. Further reduced column bleed improves detectability of solutes in qualitative and quantitative GC-MS analyses.

**High thermal stability**
Due to high temperature stability ROTI®CAP capillary columns can be operated at about 40 °C higher temperatures compared to standard phases. Thanks to these elevated working temperatures, high-boiling components, which exhibit very long retention times and wide peaks on standard phases, elute earlier and with a more well-formed peak.

**High inert columns due to optimised deactivation**
Polar compounds are frequently difficult to analyse, because they often give broad tailing peaks. Advances in deactivation technology for the ROTI®CAP capillaries result in an excellent chromatographic performance yielding improved peak shapes of polar compounds combined with improved efficiency and sensitivity.

In order to guarantee best industry standard capillaries with highest reproducibility from column to column ROTI®CAP capillary columns have to meet high specifications.
Within the **quality control** the following parameters are determined:
- **Separation Efficiency** by measuring the separation number (acc. to Kaiser) in a temperature programme
- **Polarity** by measuring retention indices
- **Bleeding** in a temperature programme with a test mixture including high-boiling hydrocarbons
- **Inertness** by measuring the peak height ratio for decylamine/C-12 (for non-polar to medium polar phases)

## Overview ROTI®CAP capillary columns:

| GC capillary columns by ROTH | Configuration of the column | USP phase | Similar phases | Polarity |
|---|---|---|---|---|
| ROTI®CAP-1 | 100 % dimethylpolysiloxane | G1/G2/G38 | OV-1, DB-1, SE-30, HP-1, SPB™-1, CP-Sil 5 CB, Rtx®-1, 007-1, BP1, MDN-1, AT™-1, ZB 1, OV 101 | lowest |
| ROTI®CAP-1 MS | 100 % dimethylpolysiloxane | G1/G2/G38 | Ultra 1, DB-1 MS, Rtx®-1 MS, HP-1 MS, Equity™-1, AT™-1 MS, VF-1 MS, CP-Sil 5 CBMS | |
| ROTI®CAP-5 | 5 % phenyl - 95 % dimethylpolysiloxane | G27/G36 | SE-54, SE-52, HP-5, SPB™-5, CP-Sil 8, Rtx®-5, 007-5, BP5, MDN-5, AT™-5, ZB-5 | |
| ROTI®CAP-5 MS | 5 % phenyl - 95 % dimethylpolysiloxane | | DB-5,DB-5 MS, HP-5 MS, Ultra-2, Equity™-5, CP-Sil 8CB low bleed/MS, Rtx®-5SIL-MS, Rtx®-5 MS, 007-5 MS, BPXTM5, MDN-5S, AT™-5 MS, VF-5MS | |
| ROTI®CAP-5 MS Ultra | silarylene phase with selectivity similar to 5 % phenyl - 95 % methylpolysiloxane | G27/G36 | | |
| ROTI®CAP-5 HT | silarylene phase with selectivity similar to 5 % phenyl - 95 % methylpolysiloxane | G27/G36 | DB-5 HT, VF-5 HT, HT-5, XTI-5HT, ZB-5HT | |
| ROTI®CAP-624 | 6 % cyanopropyl-phenyl - 94 % dimethylpolysiloxane | G43 | HP-624, HP-VOC, DB-624, DB-VRX, SPB™-624, CP-624, Rtx®-624, Rtx®-Volatiles, 007-624, BP624, VOCOL | |
| ROTI®CAP-1701 | 14 % cyanopropyl-phenyl - 86 % dimethylpolysiloxane | G46 | OV-1701, DB-1701, CP Sil 19 CB, HP-1701, Rtx®-1701, SPB™-1701, 007-1701, BP10, ZB-1701 | |
| ROTI®CAP-1701 MS | silylarylene phase with selectivity similar to 14 % cyanopropyl-phenyl - 86 % dimethylpolysiloxane | G46 | VF-1701ms, TG-1701MS, OV-1701, DB-1701, HP-1701, Rtx®-1701, SPB™-1701, CP-Sil 19 CB, 007-1701, BP10, ZB-1701 | |
| ROTI®CAP-35 MS | silylarylene phase with selectivity similar to 35 % phenyl - 65 % methylpolysiloxane | G42/G28/G32 | DB-35 MS, HP-35, SPB™-35, Rtx-35, 007-35, BPX™-35, MDN-35, AT™-35 MS, ZB-35, OV-11, VF-35 MS | |
| ROTI®CAP-WAX | polyethylene glycol (PEG) 20000 dalton | G16 | DB-Wax, Supelcowax™, HP-Wax, HP-INNOWax, Rtx®-Wax, Stabilwax, CP-Wax 52 CB, 007-CW, BP20, AT™-Wax, ZB-Wax | |
| ROTI®CAP-FFAP | polyethylene glycol-2-nitroterephthalate | G35/G25 | DB-FFAP, HP-FFAP, CP-Wax 58 FFAP CB, 007-FAP, CP-FFAP CB, Nukol, AT 1000, SPB-1000, BP 21, OV-351 | highest |

## GC capillary column ROTI®CAP-1

**100 % Dimethylpolysiloxane**

- **Non-polar**
- Low column bleed
- Solvent rinsing applicable
- **Working temperature limits:**
  **for columns with 0,25 - 0,32 mm inner diameter and films <3 µm:**
  340 °C for isothermal operation
  360 °C for short isotherms in a temperatur programme
  **for columns with 0,53 mm inner diameter and films <3 µm:**
  320 °C for isothermal operation
  340 °C for short isotherms in a temperature programme
  **for thick film columns with films ≥3 µm:**
  300 °C for isothermal operation
  320 °C for short isotherms in a temperature programme
- **Application areas:** Excellent column for routine applications.

- **Similar phases:** OV-1, DB-1, SE-30, HP-1, SPB™-1, CP-SIL 5 CB, Rtx®-1, 007-1, BP1, MDN-1, AT™-1, ZB-1, OV-101
- Equivalent to USP phases G1/G2/G38

| Length (m) | Inside ∅(mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,10 | 0,10 | **6077.1** | 1 | 279,00 |
| 10 | 0,25 | 0,10 | **6079.1** | 1 | 235,00 |
| 10 | 0,25 | 0,25 | **6081.1** | 1 | 235,00 |
| 10 | 0,25 | 0,50 | **6085.1** | 1 | 235,00 |
| 10 | 0,32 | 0,10 | **6086.1** | 1 | 249,00 |
| 10 | 0,32 | 0,25 | **6087.1** | 1 | 249,00 |
| 10 | 0,32 | 0,50 | **6088.1** | 1 | 249,00 |
| 10 | 0,32 | 1,00 | **6095.1** | 1 | 249,00 |
| 10 | 0,32 | 5,00 | **6097.1** | 1 | 249,00 |
| 10 | 0,53 | 1,00 | **6099.1** | 1 | 289,00 |
| 10 | 0,53 | 2,00 | **6100.1** | 1 | 289,00 |
| 10 | 0,53 | 5,00 | **6101.1** | 1 | 289,00 |
| 12 | 0,20 | 0,20 | **6103.1** | 1 | 265,00 |
| 12 | 0,20 | 0,35 | **6106.1** | 1 | 265,00 |
| 15 | 0,32 | 0,25 | **6074.1** | 1 | 319,00 |
| 15 | 0,25 | 0,10 | **6107.1** | 1 | 315,00 |
| 15 | 0,25 | 0,25 | **6112.1** | 1 | 315,00 |
| 15 | 0,32 | 1,00 | **6113.1** | 1 | 315,00 |
| 15 | 0,53 | 1,00 | **2849.1** | 1 | 349,00 |
| 20 | 0,10 | 0,10 | **6125.1** | 1 | 469,00 |
| 20 | 0,10 | 0,40 | **6126.1** | 1 | 469,00 |
| 25 | 0,20 | 0,10 | **6127.1** | 1 | 509,00 |
| 25 | 0,20 | 0,20 | **6129.1** | 1 | 509,00 |
| 25 | 0,20 | 0,35 | **6130.1** | 1 | 509,00 |
| 25 | 0,25 | 0,10 | **6131.1** | 1 | 509,00 |
| 25 | 0,25 | 0,25 | **6135.1** | 1 | 509,00 |
| 25 | 0,25 | 0,50 | **6137.1** | 1 | 509,00 |
| 25 | 0,25 | 1,00 | **6141.1** | 1 | 509,00 |
| 25 | 0,32 | 0,10 | **6143.1** | 1 | 539,00 |
| 25 | 0,32 | 0,25 | **6148.1** | 1 | 539,00 |
| 25 | 0,32 | 0,35 | **6152.1** | 1 | 539,00 |
| 25 | 0,32 | 0,50 | **6154.1** | 1 | 539,00 |
| 25 | 0,32 | 1,00 | **6156.1** | 1 | 539,00 |
| 25 | 0,32 | 3,00 | **6157.1** | 1 | 539,00 |
| 25 | 0,32 | 5,00 | **6158.1** | 1 | 539,00 |
| 25 | 0,53 | 0,50 | **6164.1** | 1 | 629,00 |
| 25 | 0,53 | 1,00 | **6165.1** | 1 | 629,00 |
| 25 | 0,53 | 2,00 | **6168.1** | 1 | 629,00 |
| 25 | 0,53 | 5,00 | **6172.1** | 1 | 629,00 |
| 30 | 0,25 | 0,10 | **1358.1** | 1 | 509,00 |
| 30 | 0,25 | 0,25 | **CN10.1** | 1 | 509,00 |
| 30 | 0,25 | 0,50 | **1362.1** | 1 | 509,00 |
| 30 | 0,25 | 1,00 | **1363.1** | 1 | 509,00 |
| 30 | 0,32 | 0,10 | **1370.1** | 1 | 539,00 |
| 30 | 0,32 | 0,25 | **1220.1** | 1 | 539,00 |
| 30 | 0,32 | 0,35 | **1371.1** | 1 | 539,00 |
| 30 | 0,32 | 0,50 | **1372.1** | 1 | 539,00 |
| 30 | 0,32 | 1,00 | **1373.1** | 1 | 539,00 |
| 30 | 0,32 | 3,00 | **1374.1** | 1 | 539,00 |
| 30 | 0,32 | 5,00 | **1375.1** | 1 | 539,00 |
| 30 | 0,53 | 0,50 | **6180.1** | 1 | 629,00 |
| 30 | 0,53 | 1,00 | **6182.1** | 1 | 629,00 |
| 30 | 0,53 | 2,00 | **1376.1** | 1 | 629,00 |
| 30 | 0,53 | 5,00 | **1377.1** | 1 | 629,00 |
| 50 | 0,20 | 0,20 | **6184.1** | 1 | 839,00 |
| 50 | 0,20 | 0,35 | **6185.1** | 1 | 839,00 |
| 50 | 0,20 | 0,50 | **6199.1** | 1 | 839,00 |
| 50 | 0,25 | 0,25 | **6202.1** | 1 | 839,00 |
| 50 | 0,25 | 0,50 | **6204.1** | 1 | 839,00 |
| 50 | 0,25 | 1,00 | **6206.1** | 1 | 839,00 |
| 50 | 0,32 | 0,10 | **6208.1** | 1 | 899,00 |
| 50 | 0,32 | 0,25 | **6209.1** | 1 | 899,00 |
| 50 | 0,32 | 0,35 | **6211.1** | 1 | 899,00 |
| 50 | 0,32 | 0,50 | **6214.1** | 1 | 899,00 |
| 50 | 0,32 | 1,00 | **6216.1** | 1 | 899,00 |
| 50 | 0,32 | 3,00 | **6218.1** | 1 | 899,00 |
| 50 | 0,32 | 5,00 | **6221.1** | 1 | 899,00 |
| 50 | 0,53 | 5,00 | **6222.1** | 1 | 969,00 |
| 60 | 0,25 | 0,25 | **1378.1** | 1 | 889,00 |
| 60 | 0,25 | 0,10 | **6223.1** | 1 | 875,00 |
| 60 | 0,25 | 0,50 | **6224.1** | 1 | 875,00 |
| 60 | 0,25 | 1,00 | **6226.1** | 1 | 875,00 |
| 60 | 0,32 | 0,10 | **6227.1** | 1 | 969,00 |
| 60 | 0,32 | 0,25 | **1379.1** | 1 | 979,00 |
| 60 | 0,32 | 0,35 | **6228.1** | 1 | 969,00 |
| 60 | 0,32 | 0,50 | **6234.1** | 1 | 969,00 |
| 60 | 0,32 | 1,00 | **6236.1** | 1 | 969,00 |
| 60 | 0,32 | 3,00 | **6237.1** | 1 | 969,00 |

## GC capillary column ROTI®CAP-1 MS

**100 % Dimethylpolysiloxane**

- **Non-polar**
- Very low column bleed
- Selectivity identical to ROTI®CAP 1
- **Working temperature limits:**
  340 °C for isothermic operation
  360 °C for short isothermes in a temperature programme
- **Application areas:** Ideal for GC/MS- and ECD-applications and general analysis at trace level

- **Similar phases:** Ultra 1, DB-1 MS, Rtx®-1 MS, HP-1 MS, Equity™-1, AT™-1 MS, VF-1 MS, CP-Sil 5 CB MS
- Equivalent to USP phases G1/G2/G38

| Length (m) | Inner ∅ (mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 0,20 | 0,35 | **6242.1** | 1 | 299,00 |
| 15 | 0,25 | 0,25 | **6243.1** | 1 | 359,00 |
| 25 | 0,20 | 0,20 | **6244.1** | 1 | 579,00 |
| 30 | 0,25 | 0,25 | **CN14.1** | 1 | 599,00 |
| 30 | 0,32 | 0,25 | **1381.1** | 1 | 619,00 |
| 50 | 0,20 | 0,20 | **6246.1** | 1 | 959,00 |
| 60 | 0,25 | 0,25 | **1382.1** | 1 | 999,00 |
| 60 | 0,32 | 0,25 | **6250.1** | 1 | 1099,00 |

Each column is individually tested and supplied with test certificate and test chromatogramm. Columns have fused ends or are sealed with septa, to protect them from atmospheric oxygen. Ferrules or fittings are not included.

## GC capillary column ROTI®CAP-5

**5 % Phenyl - 95 % Dimethylpolysiloxane**

- **Non-polar**
- Low column bleed
- Solvent rinsing applicable
- **Working temperature limits:**
  **for columns with 0,25 - 0,32 mm inner diameter and films <3 µm:**
  340 °C for isothermal operation
  360 °C for short isotherms in a temperatur programme
  **for columns with 0,53 mm inner diameter and films <3 µm:**
  320 °C for isothermal operation
  340 °C for short isotherms in a temperature programme
  **for thick film columns with films ≥3 µm:**
  300 °C for isothermal operation
  320 °C for short isotherms in a temperature programme
- **Application areas:** standard phase with large range of applications

- **Similar phases:** SE-54, SE-52, HP-5, SPB™-5, CP-SIL 8, Rtx-5, 007-5, BP5, MDN-5, AT™-5, ZB-5
- Equivalent to USP phases G27/G36

| Length (m) | Inner ∅ (mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,10 | 0,10 | **6252.1** | 1 | 285,00 |
| 10 | 0,25 | 0,25 | **6253.1** | 1 | 235,00 |
| 10 | 0,32 | 0,10 | **6254.1** | 1 | 249,00 |
| 10 | 0,53 | 0,50 | **6260.1** | 1 | 289,00 |
| 10 | 0,53 | 1,00 | **6266.1** | 1 | 289,00 |
| 10 | 0,53 | 2,00 | **6267.1** | 1 | 289,00 |
| 10 | 0,53 | 5,00 | **6268.1** | 1 | 289,00 |
| 15 | 0,25 | 0,25 | **6270.1** | 1 | 305,00 |
| 15 | 0,32 | 0,10 | **6271.1** | 1 | 319,00 |
| 15 | 0,32 | 0,25 | **6273.1** | 1 | 319,00 |
| 15 | 0,32 | 1,00 | **6274.1** | 1 | 319,00 |
| 15 | 0,32 | 5,00 | **6275.1** | 1 | 319,00 |
| 15 | 0,53 | 0,50 | **6075.1** | 1 | 359,00 |
| 15 | 0,53 | 1,00 | **1231.1** | 1 | 349,00 |
| 25 | 0,20 | 0,10 | **6277.1** | 1 | 509,00 |
| 25 | 0,20 | 0,20 | **6281.1** | 1 | 509,00 |
| 25 | 0,20 | 0,35 | **6282.1** | 1 | 509,00 |
| 25 | 0,20 | 0,50 | **6283.1** | 1 | 509,00 |
| 25 | 0,25 | 0,10 | **6284.1** | 1 | 489,00 |
| 25 | 0,25 | 0,25 | **6285.1** | 1 | 509,00 |
| 25 | 0,25 | 0,50 | **6291.1** | 1 | 509,00 |
| 25 | 0,25 | 1,00 | **6292.1** | 1 | 509,00 |
| 25 | 0,32 | 0,10 | **6293.1** | 1 | 539,00 |
| 25 | 0,32 | 0,25 | **6295.1** | 1 | 539,00 |
| 25 | 0,32 | 0,35 | **6296.1** | 1 | 539,00 |
| 25 | 0,32 | 0,50 | **6297.1** | 1 | 539,00 |
| 25 | 0,32 | 1,00 | **6298.1** | 1 | 539,00 |
| 25 | 0,32 | 3,00 | **6299.1** | 1 | 539,00 |
| 25 | 0,32 | 5,00 | **6302.1** | 1 | 539,00 |
| 25 | 0,53 | 0,50 | **6289.1** | 1 | 629,00 |
| 25 | 0,53 | 1,00 | **6303.1** | 1 | 629,00 |
| 25 | 0,53 | 2,00 | **6304.1** | 1 | 629,00 |
| 25 | 0,53 | 5,00 | **6305.1** | 1 | 629,00 |
| 30 | 0,25 | 0,10 | **1383.1** | 1 | 519,00 |
| 30 | 0,25 | 0,25 | **CN11.1** | 1 | 509,00 |
| 30 | 0,25 | 0,35 | **1384.1** | 1 | 509,00 |
| 30 | 0,25 | 0,50 | **1385.1** | 1 | 509,00 |
| 30 | 0,25 | 1,00 | **1386.1** | 1 | 509,00 |
| 30 | 0,32 | 0,10 | **1387.1** | 1 | 539,00 |
| 30 | 0,32 | 0,25 | **1227.1** | 1 | 539,00 |
| 30 | 0,32 | 0,35 | **1388.1** | 1 | 539,00 |
| 30 | 0,32 | 0,50 | **1389.1** | 1 | 539,00 |
| 30 | 0,32 | 1,00 | **1390.1** | 1 | 539,00 |
| 30 | 0,32 | 3,00 | **1402.1** | 1 | 539,00 |
| 30 | 0,32 | 5,00 | **1403.1** | 1 | 539,00 |
| 30 | 0,53 | 0,50 | **6306.1** | 1 | 629,00 |
| 30 | 0,53 | 1,00 | **1406.1** | 1 | 629,00 |
| 30 | 0,53 | 2,00 | **1434.1** | 1 | 629,00 |
| 30 | 0,53 | 5,00 | **1435.1** | 1 | 629,00 |
| 50 | 0,20 | 0,20 | **6307.1** | 1 | 839,00 |
| 50 | 0,20 | 0,35 | **6308.1** | 1 | 839,00 |
| 50 | 0,20 | 0,50 | **6312.1** | 1 | 839,00 |
| 50 | 0,25 | 0,10 | **6313.1** | 1 | 839,00 |
| 50 | 0,25 | 0,25 | **6314.1** | 1 | 839,00 |
| 50 | 0,25 | 0,35 | **6316.1** | 1 | 839,00 |
| 50 | 0,25 | 0,50 | **6318.1** | 1 | 839,00 |
| 50 | 0,25 | 1,00 | **6319.1** | 1 | 839,00 |
| 50 | 0,32 | 0,10 | **6320.1** | 1 | 899,00 |
| 50 | 0,32 | 0,25 | **6321.1** | 1 | 899,00 |
| 50 | 0,32 | 0,35 | **6322.1** | 1 | 899,00 |
| 50 | 0,32 | 0,50 | **6323.1** | 1 | 899,00 |
| 50 | 0,32 | 1,00 | **6324.1** | 1 | 899,00 |
| 50 | 0,32 | 3,00 | **6325.1** | 1 | 899,00 |
| 50 | 0,32 | 5,00 | **6326.1** | 1 | 899,00 |
| 50 | 0,53 | 2,00 | **6328.1** | 1 | 969,00 |
| 50 | 0,53 | 5,00 | **6339.1** | 1 | 969,00 |
| 60 | 0,25 | 0,10 | **6341.1** | 1 | 875,00 |
| 60 | 0,25 | 0,25 | **1436.1** | 1 | 875,00 |
| 60 | 0,25 | 0,35 | **6343.1** | 1 | 875,00 |
| 60 | 0,25 | 0,50 | **6345.1** | 1 | 875,00 |
| 60 | 0,25 | 1,00 | **6346.1** | 1 | 875,00 |
| 60 | 0,32 | 0,10 | **6347.1** | 1 | 969,00 |
| 60 | 0,32 | 0,25 | **1437.1** | 1 | 969,00 |
| 60 | 0,32 | 0,35 | **6349.1** | 1 | 969,00 |
| 60 | 0,32 | 0,50 | **6353.1** | 1 | 969,00 |
| 60 | 0,32 | 1,00 | **6354.1** | 1 | 969,00 |
| 60 | 0,32 | 3,00 | **6355.1** | 1 | 969,00 |
| 60 | 0,53 | 2,00 | **6357.1** | 1 | 1065,00 |

## GC capillary column ROTI®CAP-5 MS

**5 % Diphenyl - 95 % Dimethylpolysiloxane**

- **Non-polar**
- Very low column bleed
- Selectivity identical to ROTI®CAP 5
- **Working temperature limits:**
  340 °C for isothermal operation
  360 °C for short isothermes in a temperature programme
- **Application areas:** ideal for GC/MS- and ECD-applications and general analysis at trace level

- **Similar phases:** DB-5, DB-5 MS, HP-5 MS, Ultra-2, Equity™-5, CP-SIL 8 CB low bleed/MS, Rtx®-5SIL-MS, Rtx®-5 MS, Rxi®-5 MS, 007-5 MS, BPX™5, MDN-5S, AT™-5 MS, VF-5 MS
- Equivalent to USP phases G27/G36

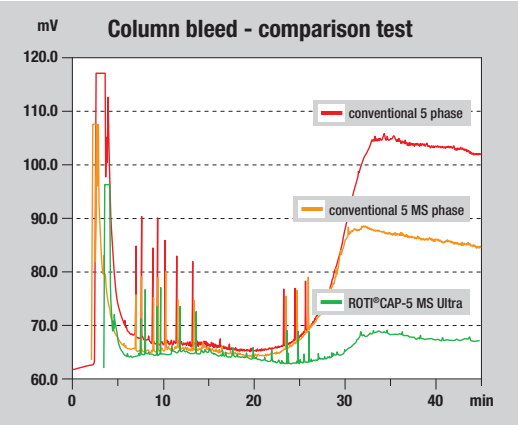
| Length (m) | Inner ∅ (mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 0,20 | 0,20 | **6362.1** | 1 | 299,00 |
| 12 | 0,20 | 0,35 | **6363.1** | 1 | 299,00 |
| 15 | 0,25 | 0,25 | **6364.1** | 1 | 359,00 |
| 25 | 0,20 | 0,20 | **6369.1** | 1 | 579,00 |
| 25 | 0,20 | 0,35 | **6371.1** | 1 | 579,00 |
| 25 | 0,32 | 1,00 | **6372.1** | 1 | 629,00 |
| 30 | 0,25 | 0,25 | **CN15.1** | 1 | 585,00 |
| 30 | 0,25 | 0,50 | **1438.1** | 1 | 585,00 |
| 30 | 0,25 | 1,00 | **1439.1** | 1 | 585,00 |
| 30 | 0,32 | 0,25 | **1478.1** | 1 | 629,00 |
| 30 | 0,32 | 0,50 | **1492.1** | 1 | 629,00 |
| 50 | 0,20 | 0,20 | **6373.1** | 1 | 959,00 |
| 50 | 0,20 | 0,35 | **6380.1** | 1 | 959,00 |
| 50 | 0,32 | 1,00 | **6381.1** | 1 | 1065,00 |
| 60 | 0,25 | 0,25 | **1509.1** | 1 | 1039,00 |
| 60 | 0,25 | 0,50 | **1519.1** | 1 | 1009,00 |
| 60 | 0,25 | 1,00 | **6727.1** | 1 | 1009,00 |
| 60 | 0,32 | 1,00 | **6384.1** | 1 | 1099,00 |

## GC capillary column ROTI®CAP-5 MS Ultra

**Silarylene Phase**

- **Non-polar**
- Polarity similar to a **5 % diphenyl - 95 % dimethylpolypropylene phase**
- **Extremely low column bleed**
- Solvent rinsing applicable
- **Working temperature limits:**
  340 °C for isothermal runs
  360 °C for short isothermal runs in a temperature programm
  **for columns with film thickness >0,5 µm:**
  320 °C for isothermal runs
  340 °C for short isothermal runs in a temerature programm
- **Application areas:** all-round phase for environmental analyses, trace analyses, EPA methods, pesticides, PCBs, food and drug analyses. Ideal for ion-trap and quadrupol MS detectors

- **Similar phases:** DB-5 MS, HP-5 MS, Ultra-2, Equity™-5, CP-SIL 8 CB low bleed/MS, Rtx®-5SIL-MS, Rtx®-5 MS, Rxi®-5 MS, 007-5 MS, BPX™5, MDN-5S, AT™-5 MS, VF-5 MS
- Equivalent to USP phases G27/G36




The bleed comparison test of the **ROTI®CAP-5 MS Ultra** with a conventional 5 phase and 5-MS phase shows the outstanding performance of the silarylene phase.

| Length (m) | Inner ∅ (mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 12 | 0,20 | 0,35 | **6455.1** | 1 | 429,00 |
| 15 | 0,25 | 0,25 | **6456.1** | 1 | 509,00 |
| 25 | 0,20 | 0,20 | **6457.1** | 1 | 759,00 |
| 25 | 0,32 | 1,00 | **6460.1** | 1 | 809,00 |
| 30 | 0,25 | 0,25 | **2959.1** | 1 | 589,00 |
| 30 | 0,25 | 0,50 | **2960.1** | 1 | 749,00 |
| 30 | 0,25 | 1,00 | **2961.1** | 1 | 749,00 |
| 30 | 0,32 | 0,25 | **2962.1** | 1 | 809,00 |
| 30 | 0,32 | 0,50 | **2963.1** | 1 | 809,00 |
| 50 | 0,20 | 0,20 | **6462.1** | 1 | 1269,00 |
| 50 | 0,20 | 0,35 | **6463.1** | 1 | 1269,00 |
| 60 | 0,25 | 0,25 | **2969.1** | 1 | 1349,00 |
| 60 | 0,25 | 0,50 | **6466.1** | 1 | 1349,00 |
| 60 | 0,25 | 1,00 | **6467.1** | 1 | 1349,00 |
| 60 | 0,32 | 0,25 | **6468.1** | 1 | 1489,00 |
| 60 | 0,32 | 1,00 | **6470.1** | 1 | 1489,00 |

▶ ROTISOLV® GC Ultra Grade solvents
see page 1569

## GC capillary column ROTI®CAP-5 HT

**Silarylene Phase**

- **Non-polar**
- Selectivity similar to a **5 % phenyl - 95 % methylpolysiloxane phase**
- Very low column bleed
- Solvent rinsing applicable
- **Working temperature limits:**
  380 °C for isothermal operation
  400 °C for short isothermal operation in a temperature programme
- **Application areas:** simulated distillation; hydrocarbon, fuel, oil analysis; high boiling analytes; ideal for MS detectors

- **Similar phases:** DB-5HT, VF-5HT, HT-5, XTI-5HT, ZB-5HT
- Equivalent to USP phases G27/G36

| Length (m) | Inner ∅ (mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 15 | 0,25 | 0,1 | **3883.1** | 1 | 359,00 |
| 15 | 0,25 | 0,25 | **3885.1** | 1 | 359,00 |
| 15 | 0,32 | 0,1 | **3884.1** | 1 | 369,00 |
| 15 | 0,32 | 0,25 | **3888.1** | 1 | 369,00 |
| 30 | 0,25 | 0,1 | **3889.1** | 1 | 579,00 |
| 30 | 0,25 | 0,25 | **3891.1** | 1 | 579,00 |
| 30 | 0,32 | 0,1 | **3890.1** | 1 | 619,00 |
| 30 | 0,32 | 0,25 | **3892.1** | 1 | 615,00 |

Pre-columns available on request

## GC capillary column ROTI®CAP-624

**6 % Cyanopropyl-phenyl - 94 % Dimethylpolysiloxane**

- **Medium polar**
- **Working temperature limits:**
  280 °C for isothermal operations
  300 °C for short isotherms in a temperature programme
- **Application areas:** recommended for environmental analyses

- **Similar phases:** HP-624, HP-VOC, DB-624, DB-VRX, SBP™-624, CP-624, Rtx®-624, Rtx®-Volatiles, 007-624, BP624, VOCOL
- Equivalent to USP phase G43

| Length (m) | Inner ∅ (mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 0,20 | 1,10 | **6393.1** | 1 | 509,00 |
| 25 | 0,25 | 1,40 | **6398.1** | 1 | 509,00 |
| 25 | 0,32 | 1,80 | **6400.1** | 1 | 539,00 |
| 25 | 0,53 | 3,00 | **6401.1** | 1 | 629,00 |
| 30 | 0,25 | 1,40 | **1872.1** | 1 | 519,00 |
| 30 | 0,32 | 1,80 | **CN16.1** | 1 | 549,00 |
| 30 | 0,53 | 3,00 | **1874.1** | 1 | 629,00 |
| 50 | 0,25 | 1,40 | **6403.1** | 1 | 839,00 |
| 50 | 0,32 | 1,80 | **6404.1** | 1 | 899,00 |
| 60 | 0,25 | 1,40 | **1875.1** | 1 | 879,00 |
| 60 | 0,32 | 1,80 | **1876.1** | 1 | 969,00 |



Each column is individually tested and supplied with test certificate and test chromatogramm. Columns have fused ends or are sealed with septa, to protect them from atmospheric oxygen. Ferrules or fittings are not included.

## GC capillary column ROTI®CAP-1701

**14 % Cyanopropyl-phenyl - 86 % Dimethylpolysiloxane**

- **Medium-polar**
- **Working temperature limits:**
  **for columns with inner diameter <0,53 mm:**
  300 °C for isothermal runs
  320 °C for short isothermal runs in a temperature programme
  **for columns with inner diameter 0,53 mm:**
  280 °C for isothermal runs
  300 °C for short isothermal runs in a temperature programme
- **Application areas:** reference column for structure clarification, e.g. in combination with ROTI®CAP-5; columns with film thickness ≥1 µm are used for solvent analyses

- **Similar phases:** OV-1701, DB-1701, CP Sil 19 CB, HP-1701, Rtx®-1701, SPB™-1701, 007-1701, BP10, ZB-1701
- Equivalent to USP phase G46

| Length (m) | Inner ∅ (mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,25 | 0,25 | **6406.1** | 1 | 235,00 |
| 10 | 0,32 | 0,25 | **6407.1** | 1 | 249,00 |
| 10 | 0,53 | 1,00 | **6408.1** | 1 | 289,00 |
| 15 | 0,25 | 0,25 | **6409.1** | 1 | 315,00 |
| 15 | 0,32 | 0,25 | **6411.1** | 1 | 319,00 |
| 15 | 0,53 | 1,00 | **3698.1** | 1 | 349,00 |
| 15 | 0,53 | 2,00 | **6415.1** | 1 | 349,00 |
| 25 | 0,20 | 0,20 | **6417.1** | 1 | 509,00 |
| 25 | 0,25 | 0,25 | **6419.1** | 1 | 509,00 |
| 25 | 0,32 | 0,25 | **6433.1** | 1 | 539,00 |
| 25 | 0,32 | 0,35 | **6434.1** | 1 | 539,00 |
| 25 | 0,32 | 0,50 | **6435.1** | 1 | 539,00 |
| 25 | 0,32 | 1,00 | **6436.1** | 1 | 549,00 |
| 25 | 0,53 | 1,00 | **6438.1** | 1 | 629,00 |
| 25 | 0,53 | 2,00 | **6440.1** | 1 | 629,00 |
| 30 | 0,25 | 0,25 | **3700.1** | 1 | 509,00 |
| 30 | 0,25 | 0,50 | **3703.1** | 1 | 509,00 |
| 30 | 0,25 | 1,00 | **3706.1** | 1 | 509,00 |
| 30 | 0,32 | 0,25 | **3708.1** | 1 | 539,00 |
| 30 | 0,32 | 0,35 | **3709.1** | 1 | 539,00 |
| 30 | 0,32 | 0,50 | **3714.1** | 1 | 539,00 |
| 30 | 0,32 | 1,00 | **3715.1** | 1 | 539,00 |
| 30 | 0,53 | 1,00 | **3716.1** | 1 | 629,00 |
| 30 | 0,53 | 2,00 | **3717.1** | 1 | 629,00 |
| 50 | 0,20 | 0,20 | **6441.1** | 1 | 839,00 |
| 50 | 0,25 | 0,25 | **6442.1** | 1 | 839,00 |
| 50 | 0,32 | 0,25 | **6443.1** | 1 | 899,00 |
| 50 | 0,32 | 0,35 | **6444.1** | 1 | 899,00 |
| 50 | 0,32 | 0,50 | **6446.1** | 1 | 899,00 |
| 50 | 0,32 | 1,00 | **6447.1** | 1 | 899,00 |
| 50 | 0,53 | 2,00 | **6449.1** | 1 | 969,00 |
| 60 | 0,25 | 0,25 | **3724.1** | 1 | 879,00 |
| 60 | 0,25 | 0,50 | **6450.1** | 1 | 879,00 |
| 60 | 0,32 | 0,25 | **3725.1** | 1 | 969,00 |
| 60 | 0,32 | 0,35 | **6452.1** | 1 | 969,00 |
| 60 | 0,32 | 0,50 | **6453.1** | 1 | 969,00 |
| 60 | 0,32 | 1,00 | **6454.1** | 1 | 969,00 |

## GC capillary column ROTI®CAP-1701 MS

**Silarylene Phase**

- **Medium polar**
- Silarylene phase with selectivity analogue to a **14 % cyanopropyl-phenyl - 86 % dimethyl polysiloxane**
- **Very low column bleed**
- **Working temperature limits:**
  280 °C for isothermal runs
  300 °C for short isothermal runs in a temperature programme
- **Application areas:** Reference column for structure identification, e.g., in combination with ROTI®CAP-5 MS; suitable for environmental analysis (e.g., PAHs, PCBs, pesticides)

- **Similar phases:** VF-1701ms, TG-1701MS, OV-1701, DB-1701, HP-1701, Rtx®-1701, SPB™-1701, CP-Sil 19 CB, 007-1701, BP10, ZB-1701
  Equivalent to USP phase G46

| Length (m) | Inner ∅ (mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 0,25 | 0,25 | **8047.1** | 1 | 589,00 |
| 30 | 0,25 | 0,50 | **8050.1** | 1 | 589,00 |
| 30 | 0,32 | 0,25 | **8052.1** | 1 | 629,00 |
| 30 | 0,32 | 0,50 | **8053.1** | 1 | 629,00 |
| 60 | 0,25 | 0,25 | **8067.1** | 1 | 1029,00 |
| 60 | 0,25 | 0,50 | **8068.1** | 1 | 1029,00 |
| 60 | 0,32 | 0,25 | **8078.1** | 1 | 1129,00 |
| 60 | 0,32 | 0,50 | **8080.1** | 1 | 1129,00 |

## GC capillary column ROTI®CAP-35 MS

**Silarylene Phase**

- **Medium polar**
- Selectivity analogue to **35 % phenyl - 65 % methylpolysiloxane**
- **Very low column bleeding**
- **Working temperature limits:**
  360 °C for isothermal runs
  370 °C for short isothermal runs in a temperature programm
- **Application areas:** Reference column in combination with a 1 MS or 5 MS (e.g. ROTI®CAP-1 MS or ROTI®CAP-5 MS) column; all-round phase for environmental analyses, ultra-trace analyses, EPA methods, pesticides, PCBs, food and drug analyses

- **Similar Phases:** DB-35 MS, HP-35, SPB™-35, Rtx®-35, 007-35, BPX™-35, MDN-35, AT™-35 MS, ZB-35, OV-11, VF-35 MS
- Equivalent to USP phase G42, close equivalent to USP phases G28/G32

| Length (m) | Inner ∅ (mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 30 | 0,25 | 0,25 | **4794.1** | 1 | 589,00 |
| 30 | 0,32 | 0,25 | **4800.1** | 1 | 619,00 |
| 60 | 0,25 | 0,25 | **4801.1** | 1 | 1009,00 |
| 60 | 0,32 | 0,25 | **4802.1** | 1 | 1159,00 |




Each column is individually tested and supplied with test certificate and test chromatogramm. Columns have fused ends or are sealed with septa, to protect them from atmospheric oxygen. Ferrules or fittings are not included.

## GC capillary column ROTI®CAP-WAX

**Polyethylene glycol (PEG) 20000 dalton**

- **Polar**
- Suitable for aqueous solutions, high temperature stability
- **Working temperature limits:**
  **for columns with 0,25 - 0,32 mm inner diameter:**
  250 °C for isothermal operation
  260 °C for short isotherms in a temperatur programme
  **for columns with 0,53 mm inner diameter:**
  220 °C for isothermal operation
  240 °C for short isotherms in a temperature programme
- **Application areas:** recommended for solvent analysis and alcohols suitable for aqueous solutions

- **Similar phases:** DB-Wax, Supelcowax, HP-Wax, HP-INNOWAX, Rtx®-Wax, CP-Wax 52 CB, Stabilwax, 007-CW, BP20, AT-Wax, ZB-Wax
- Equivalent to USP phase G16

| Length (m) | Inner ∅ (mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 25 | 0,25 | 0,25 | **1531.1** | 1 | 509,00 |
| 25 | 0,32 | 0,25 | **1545.1** | 1 | 539,00 |
| 25 | 0,32 | 0,50 | **1546.1** | 1 | 539,00 |
| 25 | 0,53 | 1,00 | **6386.1** | 1 | 629,00 |
| 30 | 0,25 | 0,25 | **CN12.1** | 1 | 525,00 |
| 30 | 0,32 | 0,25 | **1618.1** | 1 | 539,00 |
| 30 | 0,32 | 0,50 | **1228.1** | 1 | 539,00 |
| 30 | 0,53 | 1,00 | **1651.1** | 1 | 629,00 |
| 30 | 0,53 | 2,00 | **1877.1** | 1 | 629,00 |
| 50 | 0,25 | 0,25 | **1882.1** | 1 | 839,00 |
| 50 | 0,32 | 0,25 | **1918.1** | 1 | 899,00 |
| 50 | 0,32 | 0,50 | **6387.1** | 1 | 899,00 |
| 60 | 0,25 | 0,25 | **1925.1** | 1 | 899,00 |
| 60 | 0,32 | 0,25 | **1945.1** | 1 | 979,00 |
| 60 | 0,32 | 0,50 | **6388.1** | 1 | 969,00 |

## GC capillary column ROTI®CAP-FFAP

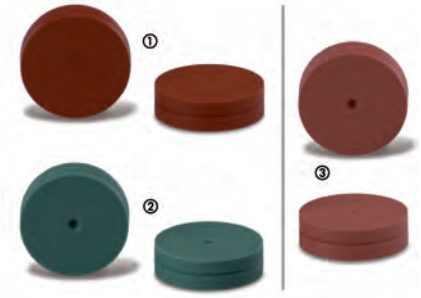
**Polyethylene glycol 2-nitroterephthalate**

- **Polar**
- High temperature stability
- **Working temperature limits:**
  **for columns with 0,25 - 0,32 mm inner diameter:**
  250 °C for isothermal operation
  260 °C for short isotherms in a temperatur programme
  **for columns with 0,53 mm inner diameter:**
  220 °C for isothermal operation
  240 °C for short isotherms in a temperature programme
- **Application areas:** recommended for FAMEs, free carboxylic acids

- **Similar phases:** DB-FFAP, HP-FFAP, CP-Wax 58 FFAP CB, 007-FFAP, CP-FFAP CB, Nukol™,AT 1000, SPB-1000, BP 21, OV-351
- Equivalent to USP phase G35, close equivalent to G25

| Length (m) | Inner ∅ (mm) | Film thickness (µm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| 10 | 0,10 | 0,10 | **6390.1** | 1 | 285,00 |
| 25 | 0,25 | 0,25 | **1828.1** | 1 | 509,00 |
| 25 | 0,32 | 0,25 | **6391.1** | 1 | 539,00 |
| 25 | 0,32 | 0,50 | **1830.1** | 1 | 539,00 |
| 25 | 0,53 | 1,00 | **1836.1** | 1 | 629,00 |
| 30 | 0,25 | 0,25 | **CN13.1** | 1 | 509,00 |
| 30 | 0,32 | 0,25 | **1229.1** | 1 | 559,00 |
| 30 | 0,32 | 0,50 | **1854.1** | 1 | 539,00 |
| 30 | 0,53 | 0,50 | **1856.1** | 1 | 629,00 |
| 50 | 0,25 | 0,25 | **1858.1** | 1 | 839,00 |
| 50 | 0,32 | 0,25 | **1860.1** | 1 | 919,00 |
| 50 | 0,32 | 0,50 | **6392.1** | 1 | 899,00 |
| 60 | 0,25 | 0,25 | **1864.1** | 1 | 875,00 |
| 60 | 0,32 | 0,25 | **1866.1** | 1 | 969,00 |

# Injection Port Septa




Advantages:
- Produced individually using injection moulding procedure
- CenterGuideTM for centred needle guidance and thus perfect fit
- Temperature stability up to 400 °C, Shimadzu plug septa up to 300 °C
- Precision indentations for perfect seat
- Special coating for easy replacement without fixed jaw on the injector
- Septa thickness: 3 mm
- Blister pack for clean and immediately usable septa

### Features

| BTO Septa ① | AG3 Septa ② | Marathon Septa ③ |
|---|---|---|
| for hightest demand in GC and GC-MS | with higher durability than BTO | with extreme durability for >400 injections |
| soft | pierced, hard | pierced |
| CenterGuide™ | CenterGuide™ | CenterGuide™ |

### Selection guide for CenterGuide™ Septa

| Manufacturer | GC instrument | Injector Type | Diameter of Septa |
|---|---|---|---|
| Agilent (HP) | 5850, 5880A, 5890, 6850, 6890, 7890, PTV | | 11 mm |
| Thermo Scientific | TRACE GC Ultra and Focus, 8000 series | Large Volum Splitless Injector | 11 mm |
| | | Purged Packed Column Injector | 11 mm |
| | | Packed Column Onjector | 11 mm |
| Shimadzu | all instruments | | Shimadzu Plug |
| Tracor | 540 | | 11,5 mm |
| Bruker, Varian | 1177 | | 9 mm |
| | 1093, 1075, 1077, SPI, 1078, 1079 | | 11,5 mm |

| Product | ∅ (mm) | Art. No. | VE (Blister pack) | € |
|---|---|---|---|---|
| **BTO Septa N 9, CenterGuide™** | 9 | **9528.1** | 25 pieces | 41,50 |
| **BTO Septa N 11, CenterGuide™** | 11 | **9529.1** | 25 pieces | 41,50 |
| **BTO Septa N 11,5, CenterGuide™** | 11,5 | **9530.1** | 25 pieces | 41,50 |
| **BTO Septa Shimadzu Plug, CenterGuide™** | Shimadzu Plug | **9532.1** | 25 pieces | 41,50 |
| **AG3 Septa N 9, CenterGuide™** | 9 | **9535.1** | 25 pieces | 35,90 |
| **AG3 Septa N 11, CenterGuide™** | 11 | **9537.1** | 25 pieces | 35,90 |
| **AG3 Septa N 11,5, CenterGuide™** | 11,5 | **9539.1** | 25 pieces | 35,90 |
| **AG3 Septa Shimadzu Plug, CenterGuide™** | Shimadzu Plug | **9542.1** | 25 pieces | 35,90 |
| **Marathon Septa N 9, CenterGuide™** | 9 | **9873.1** | 25 pieces | 51,90 |
| **Marathon Septa N 11, CenterGuide™** | 11 | **9876.1** | 25 pieces | 51,90 |
| **Marathon Septa N 11,5, CenterGuide™** | 11,5 | **9877.1** | 25 pieces | 51,90 |
| **Marathon Septa Shimadzu Plug, CenterGuide™** | Shimadzu Plug | **9879.1** | 25 pieces | 51,90 |

# Derivatization Reagents for GC



Derivatization reagents are used mainly in gas chromatography when adequate volatility or stability of the substances to be separated is required. Detection sensitivity can also be increased through derivatization.

Our range of derivatization reagents is ideal for acylation, alkylation and silylation of reagents.

## Reagents for Silylation

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **3-Aminopropyltriethoxysilane / APES** | ≥98 %, for GC | **2328.1** | 25 g | 21,00 |
| | | **2328.2** | 100 g | 60,10 |
| **N,O-Bis(trimethylsilyl) acetamide / BSA** | ≥98 %, for GC | **2330.1** | 25 g | 65,50 |
| **N,O-Bis(trimethylsilyl)-trifluoroacetamide / BSTFA** | ≥98 %, for GC | **2331.1** | 10 g | 37,55 |
| **N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane / Silyl 991** | for GC | **9935.1** | 10 ml (Septum bottle) | 76,90 |
| **1,1,1,3,3,3-Hexamethyldisilazane / HMDS** TIP | ≥98 %, for GC | **3840.3** | 10 ml | 13,45 |
| | | **3840.1** | 50 ml | 17,75 |
| | | **3840.2** | 250 ml | 36,05 |
| | | **3840.5** | 500 ml | 48,95 |
| | | **3840.4** | 1 l | 85,90 |
| **N-Methyl-N-(trimethylsilyl)-trifluoroacetamide / MSTFA** | ≥99 %, for GC | **9933.1** | 10 ml (Septum bottle) | 93,90 |
| | ≥97 %, for GC | **8007.1** | 5 g | 53,65 |
| **Trimethylchlorosilane / TMCS** | ≥99 %, for GC | **2338.1** | 25 g | 47,20 |
| **N-(Trimethylsilyl)-diethylamine / TMSDEA** | ≥98 %, for GC | **0013.1** | 25 g | 131,05 |
| **N-(Trimethylsilyl)-imidazole / TSIM** | ≥97 %, for GC | **0012.1** | 10 g | 41,85 |

## Reagents for Acylation

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Heptafluorobutyric acid anhydride** | ≥98 %, for GC | **0026.1** | 5 g | 89,80 |
| **Trifluoroacetic anhydride** | ≥99 %, for GC | **0027.1** | 100 g | 93,45 |

## Reagents for Alkylation/Methylation

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **N,N-Dimethylformamide dimethyl acetal/DMF-DMA** | ≥98 % | **6870.1** | 5 ml | 24,20 |
| | | **6870.2** | 25 ml | 35,40 |
| | | **6870.3** | 100 ml | 117,20 |
| | | **6870.4** | 500 ml | 439,70 |
| **Trimethylsulfonium hydroxide in methanol** | ~0,2 M, for GC | **9934.1** | 10 ml (Septum bottle) | 119,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

Septum bottle: Aluminium seal with PTFE-lined rubber disc (septum). The pierced septum is no longer absolutely air-tight, therefore we suggest to use up the content as quickly as possible and keep the vial standing upright. Otherwise the reagents come in contact with the rubber which results in their contamination to the point of making them useless.



# ROTISOLV® GC Ultra Grade Solvents

## for gaschromatographic and residue analysis



In order to monitor and analyse environmentally relevant substances such as pesticides, dioxins, furans, PAH, PCB etc. in trace analysis, solvents with exceedingly high purity specifications are required. ROTH's ROTISOLV® GC Ultra Grade solvents have been developed specially for this application area and are produced with the most sophisticated production processes. Extensive quality checks guarantee the same high-grade quality from batch to batch.

### Features:

- Highest purity
- Very low water content
- Non-volatile matter less than 2 ppm
- Quality control by means of ECD and NPD
- PAH-test
- Filtered through 0,2 µm membrane
- Bottled under protective gas

### Acetic acid ethyl ester

**ROTISOLV® ≥99,9 %, GC Ultra Grade**
For gaschromatographic residue analysis.
Ethyl acetate, Acetic ester
$C_4H_8O_2$
M 88,11 g/mol

**Danger** H225-H319-H336-EUH066

| | | | |
|---|---|---|---|
| **KK42.1** | 2,5 l | glass | 68,70 € |
| Original pack 4 x 2,5 l | | | 65,27/2,5 l |

### Acetone

**ROTISOLV® ≥99,9 %, GC Ultra Grade**
For gaschromatographic residue analysis.
2-Propanone, Dimethyl ketone
$C_3H_6O$
M 58,08 g/mol

**Danger** H225-H319-H336-EUH066

| | | | |
|---|---|---|---|
| **KK40.1** | 2,5 l | glass | 60,75 € |
| Original pack 4 x 2,5 l | | | 57,71/2,5 l |

### Cyclohexane

**ROTISOLV® ≥99,9 %, GC Ultra Grade**
For gaschromatographic residue analysis.
Hexahydrobenzene
$C_6H_{12}$
M 84,16 g/mol

**Danger** H225-H304-H400-H410-H315-H336

| | | | |
|---|---|---|---|
| **KK41.1** | 2,5 l | glass | 87,65 € |
| Original pack 4 x 2,5 l | | | 83,27/2,5 l |

### Dichloromethane

**ROTISOLV® ≥99,9 %, GC Ultra Grade**
For gaschromatographic residue analysis.
Methylene chloride, DCM
$CH_2Cl_2$
M 84,93 g/mol

**Warning** H315-H319-H335-H336-H351-H373

| | | | |
|---|---|---|---|
| **KK47.1** | 2,5 l | glass | 67,20 € |
| Original pack 4 x 2,5 l | | | 63,84/2,5 l |

### n-Hexane

**ROTISOLV® ≥95 %, GC Ultra Grade**
For gaschromatographic residue analysis.
1-Methylpentane
$C_6H_{14}$
M 86,18 g/mol

**Danger** H225-H304-H315-H336-H361f-H373-H411

| | | | |
|---|---|---|---|
| **KK48.1** | 2,5 l | glass | 100,55 € |
| Original pack 4 x 2,5 l | | | 95,52/2,5 l |

### Methanol

**ROTISOLV® ≥99,9 %, GC Ultra Grade**
For gaschromatographic residue analysis.
Methyl alcohol, Carbinol
$CH_3OH$
M 32,04 g/mol

**Danger** H225-H301+H311+H331-H370

| | | | |
|---|---|---|---|
| **KK44.1** | 2,5 l | glass | 47,85 € |
| Original pack 4 x 2,5 l | | | 45,46/2,5 l |

### n-Pentane

**ROTISOLV® ≥99 %, GC Ultra Grade**
For gaschromatographic residue analysis.
1,3-Dimethylpropane, Diethylmethane
$C_5H_{12}$
M 72,15 g/mol

**Danger** H225-H304-H336-H411-EUH066

| | | | |
|---|---|---|---|
| **KK45.1** | 2,5 l | glass | 202,65 € |
| Original pack 4 x 2,5 l | | | 192,52/2,5 l |

### Toluene

**ROTISOLV® ≥99,8 %, GC Ultra Grade**
For gaschromatographic residue analysis.
Methylbenzene
$C_7H_8$
M 92,14 g/mol

**Danger** H225-H304-H361d-H373-H315-H336

| | | | |
|---|---|---|---|
| **KK46.1** | 2,5 l | glass | 73,65 € |
| Original pack 4 x 2,5 l | | | 69,97/2,5 l |

▶ Detailed specifications see chapter Chemicals AZ.

# ROTISOLV®
# Pestilyse® plus Solvents

## for determination of dioxines, furanes, PCBs, pesticides, hydrocarbons and further pollutants



ROTH created this product line (ROTISOLV® Pestilyse® plus) especially to address the growing requirements in residue analysis. Several relevant parameters are specified for these solvents which allow the use in various applications. With this product line, ROTH sets the benchmark for residue analysis solvents in terms of purity and quality.

**Features:**
- Highest purity
- Controlled by FID, ECD and NPD
- PAH tested
- Tested for hydrocarbons ($C_{14}$-$C_{40}$)
- Tested for fluorescence
- Volatile impurities: max. 5 ppm
- Non-volatile impurities: max. 5 ppm

**Example specification:**

### 2-Propanol
**ROTISOLV® ≥99,9 %, Pestilyse® plus**
For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.
Isopropanol, Isopropyl alcohol, Dimethyl carbinol, IPA, 2-Hydroxypropane
$C_3H_8O$
M 60,10 g/mol
**Danger** H225-H319-H336

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,9 % |
| Colour (APHA) | ≤10 |
| Water (KF) | ≤0,03 % |
| Free acid (as $CH_3COOH$) | ≤0,001 % |
| Free alkali (as $NH_3$) | ≤0,0001 % |
| Evaporation residue | ≤0,0003 % |
| GC/ECD suitability (as heptachloro epoxide) | ≤10 ng/l |
| GC/ECD dioxins, furans and PCBs (as lindane) | ≤5 ng/l |
| GC/ECD pesticides (as lindane) | ≤5 ng/l |
| GC/NPD pesticides (as parathion) | ≤10 ng/l |
| PAH-test (less than 2 ppb, HPLC) | complies |
| Oil index (any hydrocarbon $C_{10}$-$C_{40}$) | ≤0,1 mg/l |
| Fluorescence (as quinine): | |
| 254 nm | ≤1 ppb |
| 365 nm | ≤1 ppb |
| Transmission: | |
| 220 nm | ≥80 % |

## ROTISOLV® Pestilyse® plus Solvents

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Acetic acid ethyl ester** | ≥99,9 %, Pestilyse® plus | **7565.1** | 2,5 l | glass | 65,50 |
| **Acetone** | ≥99,9 %, Pestilyse® plus | **7535.1** | 2,5 l | glass | 54,75 |
| **Cyclohexane** | ≥99,9 %, Pestilyse® plus | **7542.1** | 2,5 l | glass | 81,20 |
| **Dichloromethane** | ≥99,9 %, Pestilyse® plus | **7562.1** | 2,5 l | glass | 66,55 |
| **n-Heptane** | ≥99 %, Pestilyse® plus | **7566.1** | 2,5 l | glass | 101,60 |
| **n-Hexane** | ≥99 %, Pestilyse® plus | **7573.1** | 2,5 l | glass | 118,15 |
| | ≥96 %, Pestilyse® plus | **7567.1** | 2,5 l | glass | 95,15 |
| **Isohexane** | ≥96 %, Pestilyse® plus | **7576.1** | 2,5 l | glass | 89,80 |
| **Isooctane** | ≥99,7 %, Pestilyse® plus | **7580.1** | 2,5 l | glass | 107,00 |
| **Methanol** | ≥99,9 %, Pestilyse® plus | **7583.1** | 2,5 l | glass | 42,90 |
| **n-Pentane** | ≥99 %, Pestilyse® plus | **7587.1** | 2,5 l | glass | 118,80 |
| **Petroleum ether 40-60 °C** | Pestilyse® plus | **7588.1** | 2,5 l | glass | 69,35 |
| **2-Propanol** | ≥99,9 %, Pestilyse® plus | **7590.1** | 2,5 l | glass | 52,15 |
| **Toluene** | ≥99,8 %, Pestilyse® plus | **7591.1** | 2,5 l | glass | 61,85 |
| **Trichloromethane/ Chloroform** | ≥99,9 %, Pestilyse® plus | **7554.1** | 2,5 l | glass | 72,60 |

For additional product data and safety information, see chapter Chemicals A-Z.

# ROTISOLV®
# Pestilyse® Solvents

## for residue and environmental analysis





Field of application: 'pesticide residue analysis' (via ECD, PND detection) in sectors environment, foodstuffs, water, etc.
ROTISOLV® Pestilyse® solvents are ideal as extraction agents and for sample preparation.

**Advantage:**
- Highest purity
- Quality control via ECD and PND
- Non-volatile parts: 5 ppm or less
- Specially purified for application in pesticide residue analysis

### ROTISOLV® Pestilyse® Solvents

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Acetic acid ethyl ester** | ≥99,8 %, Pestilyse® | **T164.2** | 1 l | glass | 30,00 |
| | | **T164.1** | 2,5 l | glass | 64,40 |
| | | **T164.3** | 4 l | glass | 90,20 |
| **Acetone** | ≥99,8 %, Pestilyse® | **T161.2** | 1 l | glass | 26,70 |
| | | **T161.1** | 2,5 l | glass | 52,15 |
| | | **T161.3** | 4 l | glass | 73,00 |
| **Acetonitrile** | ≥99,9 %, Pestilyse® | **T168.2** | 1 l | glass | 34,65 |
| | | **T168.1** | 2,5 l | glass | 73,65 |
| | | **T168.3** | 4 l | glass | 106,45 |
| **Cyclohexane** | ≥99,5 %, Pestilyse® | **T163.2** | 1 l | glass | 35,40 |
| | | **T163.1** | 2,5 l | glass | 79,05 |
| | | **T163.3** | 4 l | glass | 104,20 |
| **Dichloromethane** | ≥99,8 %, Pestilyse® | **T162.2** | 1 l | glass | 32,15 |
| | | **T162.1** | 2,5 l | glass | 65,05 |
| | | **T162.3** | 4 l | glass | 80,10 |
| **Diethyl ether** | ≥99,8 %, Pestilyse®, stab. | **T900.1** | 2,5 l | glass | 82,25 |
| **n-Heptane** | ≥99 %, Pestilyse® | **X878.1** | 2,5 l | glass | 99,45 |
| **n-Hexane** | ≥99 %, Pestilyse® | **T861.2** | 1 l | glass | 50,00 |
| | | **T861.1** | 2,5 l | glass | 117,10 |
| | ≥97,5 %, Pestilyse® | **T165.2** | 1 l | glass | 42,90 |
| | | **T165.1** | 2,5 l | glass | 98,40 |
| | | **T165.3** | 4 l | glass | 111,70 |
| **Isohexane** | ≥99 %, Pestilyse® | **T904.1** | 2,5 l | glass | 87,00 |
| **Isooctane** | ≥99,5 %, Pestilyse® | **T167.1** | 2,5 l | glass | 102,15 |
| **Methanol** | ≥99,9 %, Pestilyse® | **T169.2** | 1 l | glass | 23,15 |
| | | **T169.1** | 2,5 l | glass | 33,25 |
| | | **T169.3** | 4 l | glass | 47,85 |
| **n-Pentane** | ≥99 %, Pestilyse® | **T903.2** | 1 l | glass | 51,10 |
| | | **T903.1** | 2,5 l | glass | 100,95 |
| **Petroleum ether 40-60 °C** | Pestilyse® | **T170.2** | 1 l | glass | 33,25 |
| | | **T170.1** | 2,5 l | glass | 69,35 |
| | | **T170.3** | 4 l | glass | 95,60 |
| **2-Propanol** | ≥99,8 %, Pestilyse® | **T902.1** | 2,5 l | glass | 51,50 |
| **Toluene** | ≥99,8 %, Pestilyse® | **T166.2** | 1 l | glass | 33,25 |
| | | **T166.1** | 2,5 l | glass | 60,10 |
| | | **T166.3** | 4 l | glass | 96,65 |
| **Trichloromethane/ Chloroform** | ≥99,8 %, Pestilyse® | **T901.1** | 2,5 l | glass | 71,50 |
| **Water** | Pestilyse® | **T905.1** | 2,5 l | glass | 46,80 |

For additional product data and safety information, see chapter Chemicals A-Z.

### Example specification:

**Petroleum ether 40-60 °C**
**ROTISOLV® Pestilyse®**
For residue and environmental analysis.
Petroleum benzine

**Danger** H225-H304-H315-H336-H411

**Guarantee analysis:**

| | |
|---|---|
| Boiling range | 40-60 °C |
| Water (KF) | ≤0,02 % |
| Acidity | ≤0,0005 meq/g |
| Evaporation residue | ≤0,0001 % |
| GC/ECD (individual signal as lindane) | ≤5 ng/l |
| GC/PND (individual signal as ethylparathion) | ≤10 ng/l |

**Safety data sheets**
can be found on the Internet next to the product description.

# ROTISOLV® Headspace Grade Solvents

## for analyses of organic volatile impurities (O.V.I.)



Headspace gas chromatography is a major quality control procedure particularly in the pharmaceutical and food industry. The regulations for this method can be found both in the European as well as the American Pharmacopoeia.
**High-boiling solvents of excellent purity**, which show no background due to organic volatile impurities on the GC-columns, are required for determining solvent residue.

**Advantage:**
- Highest purity (mostly ≥99,99 %)
- High boiling point
- Non volatile matter: ≤0,001 %
- Tested for headspace suitability
- Bottled under protective gas
- Microfiltered

**Example specification:**

### Dimethyl sulphoxide (DMSO)
**ROTISOLV® ≥99,99 %, Headspace Grade**
For determination of solvent residues (O.V.I.)
DMSO
$C_2H_6OS$
M 78,13 g/mol

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,99 % |
| Colour (APHA) | ≤5 |
| Water (KF) | ≤0,03 % |
| Free acid (as $CH_3COOH$) | ≤0,002 % |
| Free alkali (as $NH_3$) | ≤0,0005 % |
| Refractive index (20 °C) | 1,477-1,480 |
| Non volatile matter | ≤0,001 % |
| Melting point | ≥18 °C |
| UV-Cutoff | 190-265 nm |
| Transmission: | |
| 400 nm | ≥98 % |
| 350 nm | ≥95 % |
| 300 nm | ≥85 % |
| 275 nm | ≥60 % |
| 268 nm | ≥30 % |
| Headspace suitability test for O.V.I. | complies |

### N,N-Dimethylacetamide (DMA)
**ROTISOLV® ≥99,99 %, Headspace Grade**
For determination of solvent residues (O.V.I.)
DMA, Acetic acid dimethylamide
$C_4H_9NO$
M 87,12 g/mol

**Danger** H360D-H312+H332-H319

| | | | |
|---|---|---|---|
| **HN45.1** | 1 l | glass | 244,60 € |
| Original pack 6 x 1 l | | | 232,37/1 l |

### N,N-Dimethylformamide (DMF)
**ROTISOLV® ≥99,99 %, Headspace Grade**
For determination of solvent residues (O.V.I.)
DMF
$C_3H_7NO$
M 73,10 g/mol

**Danger** H226-H360D-H312+H332-H319

| | | | |
|---|---|---|---|
| **HN46.1** | 1 l | glass | 225,65 € |
| Original pack 6 x 1 l | | | 214,37/1 l |

### 1,3-Dimethyl-2-imidazolidinone (DMI)
**ROTISOLV® ≥99,5 %, Headspace Grade**
For determination of solvent residues (O.V.I.)
DMEU, N,N'-Dimethylethylene urea, DMI
$C_5H_{10}N_2O$
M 114,15 g/mol

**Danger** H302-H318-H373

| | | | |
|---|---|---|---|
| **HN48.1** | 500 ml | glass | 901,95 € |

### Dimethyl sulphoxide (DMSO)
**ROTISOLV® ≥99,99 %, Headspace Grade**
For determination of solvent residues (O.V.I.)
DMSO
$C_2H_6OS$
M 78,13 g/mol

| | | | |
|---|---|---|---|
| **HN47.1** | 1 l | glass | 234,25 € |
| Original pack 6 x 1 l | | | 222,54/1 l |

▶ Rotilabo®-crimps neck headspace vials see page 68

# Thin Layer Chromatography

Although the principle of thin-layer chromatography (TLC) is more than a century old, it did not make its breakthrough as an analytical method until about 50 years ago.
Thanks to the development of new sorbents and supports, as well as increasing instrumentation and automation, TLC has become a versatile separation method. It is used both in qualitative analysis and in quantitative analysis.
Applications range from simple manual separation processes in classic TLC to automated processes in HPTLC (high performance thin layer chromatography).

**Advantages of thin layer chromatography:**
- Higher sample throughput in less time
- Suitable for screening tests
- The ready-to-use TLC layer functions as a data storage device for separation results
- Pilot process for HPLC
- The separated substances can be used later for further analysis (e.g. IR, MS)
- By switching the mobile and the stationary phases, the separation process can be optimised quickly and cost-efficient

## Ready-to-use layers for TLC at a glance

| Code | Layer |
|---|---|
| **Standard silica** | |
| ADAMANT | silica 60 with improved binder system and optimized particle size distribution |
| SIL G | silica 60, standard grade |
| **Unmodified silica for HPTLC** | |
| Nano-SIL | nano silica 60, particle size 2-10 µm, standard grade |
| **Modified silica for TLC/HPTLC** | |
| Nano-SIL DIOL | diol-modified nano silica |
| Nano-SIL $NH_2$ | amino-modified nano silica |
| Nano-SIL CN | cyano-modified nano silica |
| RP-2 / $UV_{254}$ | silanised silica = dimethyl-modified silica 60 |
| R-18 W/$UV_{254}$ | nano silica with partial octadecyl modification, wetable with water |
| **Aluminium oxide** | |
| ALOX N | aluminium oxide |
| **Cellulose** | |
| CEL 300 | native fibrous cellulose MN 300 |
| CEL 400 | microcrystalline cellulose MN 400 (AVICEL®) |

## Supports for ready-to-use TLC layers:

| Physical/chemical properties | Glass plates | POLYGRAM® Polyester foils | ALUGRAM®/ALUGRAM® XTRA Aluminium foils |
|---|---|---|---|
| Thickness | ~1,3 mm | ~0,2 mm | ~0,15 mm |
| Torsional stability | ideal | low | relatively high |
| Temperature stability | high | max. 185 °C | high |
| Can be cut with scissors | no | yes | yes |
| Resistance to solvents | high | high | high |
| Resistance to mineral acids and concentrated ammonia | high | high | low |
| Suitable for aqueous tracing reagents | depending on phase | ideally suited | ALUGRAM®: limited<br>ALUGRAM®Xtra: ideally suited |

# ADAMANT TLC Plates with Standard Silica Gel




**Silica gel 60**
With improved binder system and optimized grain distribution.

- Spec. surface: approx. 500 $m^2/g$
- Medium pore width: 60 Å
- Spec. pore volume: 0,75 ml/g
- Particle size: 5-17 µm

**Adamant TLC plates are unique for their:**
- Outstanding hardness and abrasion resistance due to an optimized binder system
- Increased separation efficiency due to an optimized particle size distribution
- High suitability for trace analysis resulting from a UV indicator with increased brilliance and a low-noise background of the layer

## TLC-ready-to-use layers, ADAMANT

Glass plate, silica gel 60 layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 10 cm | 0,25 mm | **N086.1** | 50 | 119,50 |
| 10 x 10 cm | 0,25 mm | **N087.1** | 25 | 66,90 |
| 20 x 20 cm | 0,25 mm | **N088.1** | 25 | 155,00 |

## TLC-ready-to-use layers, ADAMANT $UV_{254}$

Glass plate, silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 10 cm | 0,25 mm | **N089.1** | 50 | 119,50 |
| 5 x 10 cm | 0,25 mm BIG PACK | **N089.2** | 200 (4 x 50) | 259,00 |
| 5 x 20 cm | 0,25 mm | **N090.1** | 100 | 199,00 |
| 10 x 10 cm | 0,25 mm | **N091.1** | 25 | 66,90 |
| 10 x 20 cm | 0,25 mm | **N092.1** | 50 | 179,00 |
| 20 x 20 cm | 0,25 mm | **N093.1** | 25 | 155,00 |

# TLC Plates with Standard Silica Gel

- Spec. surface: approx. 500 $m^2/g$
- Medium pore width: 60 Å
- Spec. pore volume: 0,75 ml/g
- Particle size: 5-17 µm



### TLC-ready-to-use layers SIL G-25
Glass plate, silica gel 60 layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 10 cm | 0,25 mm | **K795.1** | 50 | 109,00 |
| 5 x 20 cm | 0,25 mm | **K796.1** | 100 | 199,00 |
| 10 x 20 cm | 0,25 mm | **K797.1** | 50 | 179,00 |
| 20 x 20 cm | 0,25 mm | **K798.1** | 25 | 150,00 |

### TLC-ready-to-use layers SIL G-25 / $UV_{254}$
Glass plate, silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 10 cm | 0,25 mm | **K799.1** | 50 | 119,50 |
| 5 x 20 cm | 0,25 mm | **K800.1** | 100 | 199,00 |
| 10 x 10 cm | 0,25 mm | **K801.1** | 25 | 53,90 |
| 10 x 20 cm | 0,25 mm | **K802.1** | 50 | 179,00 |
| 20 x 20 cm | 0,25 mm | **K803.1** | 25 | 137,50 |

### TLC-ready-to-use foil ALUGRAM® SIL G
Aluminium foil, silica gel 60 layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 10 cm | 0,2 mm | **N726.1** | 50 | 52,90 |
| 5 x 20 cm | 0,2 mm | **N727.1** | 50 | 66,90 |
| 20 x 20 cm | 0,2 mm | **N728.1** | 25 | 117,50 |

### TLC-ready-to-use foil ALUGRAM® SIL G / $UV_{254}$
Aluminium foil, silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 x 8 cm | 0,2 mm | **N729.1** | 50 | 34,90 |
| | BIG PACK | **N729.2** | 200 (4 x 50) | 129,00 |
| 5 x 7,5 cm | 0,2 mm | **1334.1** | 20 | 22,50 |
| 5 x 10 cm | 0,2 mm | **N730.1** | 50 | 52,90 |
| 10 x 20 cm | 0,2 mm | **N731.1** | 20 | 59,90 |
| 20 x 20 cm | 0,2 mm | **N732.1** | 25 | 105,50 |

### TLC-ready-to-use foil POLYGRAM® SIL G
Polyester foil, silica gel 60 layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 x 8 cm | 0,2 mm | **N733.1** | 50 | 34,90 |
| 5 x 20 cm | 0,2 mm | **N734.1** | 50 | 66,90 |
| 20 x 20 cm | 0,2 mm | **N735.1** | 25 | 117,50 |

### TLC-ready-to-use foil POLYGRAM® SIL G / $UV_{254}$
Polyester foil, silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 x 8 cm | 0,2 mm | **0816.1** | 50 | 34,50 |
| 4 x 8 cm | 0,2 mm BIG PACK | **0816.2** | 200 (4 x 50) | 125,50 |
| 5 x 20 cm | 0,2 mm | **N736.1** | 50 | 66,50 |
| 20 x 20 cm | 0,2 mm | **N737.1** | 25 | 105,50 |

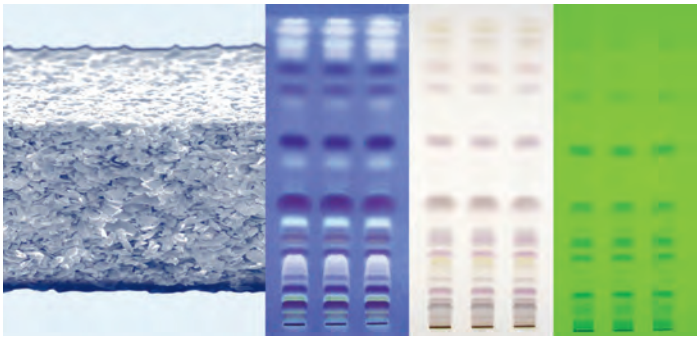
# ALUGRAM® Xtra SIL G TLC ready-to-use Foils with Standard Silica Gels

**Silica gel 60**
Improved binder system for enhanced cutting and wettability.

- Spec. surface: approx. 500 $m^2/g$
- Medium pore width: 60 Å
- Spec. pore volume: 0,75 ml/g
- Particle size: 5-17 µm

The ready-to-use foils are produced with a special, highly polymeric binder, which is resistant towards almost all organic solvents and aggressive visualisation reagents. It is also completely stable in pure aqueous eluents.

**Features:**
- Easy cutting of foils, **no flaking of silica**
- Outstanding wettability, precise colourisation even with 100 % aqueous eluents
- Excellent separation efficiency and reproducibility from lot to lot



### TLC ready-to-use Foil ALUGRAM® Xtra SIL G
Aluminium foil, silica gel 60 layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 7,5 cm | 0,2 mm | **3868.1** | 20 | 22,90 |
| 5 x 10 cm | 0,2 mm | **3869.1** | 50 | 53,90 |
| 5 x 20 cm | 0,2 mm | **3871.1** | 50 | 66,90 |
| 20 x 20 cm | 0,2 mm | **3873.1** | 25 | 117,50 |

### TLC ready-to-use Foil ALUGRAM® Xtra SIL G / $UV_{254}$
Aluminium foil, silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 x 8 cm | 0,2 mm | **3874.1** | 50 | 34,50 |
| 5 x 7,5 cm | 0,2 mm | **3875.1** | 20 | 22,50 |
| 5 x 10 cm | 0,2 mm | **3876.1** | 50 | 53,90 |
| 5 x 20 cm | 0,2 mm | **3877.1** | 50 | 66,90 |
| 10 x 20 cm | 0,2 mm | **3878.1** | 20 | 59,90 |
| 20 x 20 cm | 0,2 mm | **3879.1** | 25 | 105,50 |

# TLC Plates for Preparative Applications

These TLC-plates are particularly suitable for separating larger sample amounts due to the layer thickness of 1 mm and 2 mm respectively.

**Standard Silica Gel:**
- Spec. surface: approx. 500 $m^2/g$
- Medium pore width: 60 Å
- Spec. pore volume: 0,75 ml/g
- Particle size: 5-17 µm



### TLC ready-to-use layers SIL G-100
Glass plates, silica gel layer 60

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 x 20 cm | 1,00 mm | **3375.1** | 15 | 215,00 |

### TLC ready-to-use layers SIL G-100 / $UV_{254}$
Glass plates, silica gel layer 60, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 x 20 cm | 1,00 mm | **3377.1** | 15 | 215,00 |

### TLC ready-to-use layers SIL G-200
Glass plates, silica gel layer 60

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 x 20 cm | 2,00 mm | **CN40.1** | 12 | 225,00 |

### TLC ready-to-use layers SIL G-200 / $UV_{254}$
Glass plates, silica gel layer 60, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 x 20 cm | 2,00 mm | **CN41.1** | 12 | 225,00 |

### HPTLC-ready-to-use layers RP-18 W / $UV_{254}$
Glass plate, modified silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 20 x 20 cm | 1,00 mm | **1886.1** | 15 | 539,00 |

▶ Silica gel-60 - for preparing TLC-plates see page 1579

# HPTLC Plates with Nano Silica Gel

### High Performance Thin Layer Chromatography Plates



**Nano silica gel**
- Spec. surface: approx. 500 $m^2/g$
- Medium pore width: 60 Å
- Spec. pore volume: 0,75 ml/g
- Particle size: 2-10 µm

**Advantages compared to standard plates:**
- Higher separation effect
- Shorter separation times and distances
- Smaller sample amounts of 0,01-0,1 µl (10-100 nanolitre)
- Lower diffusion due to extremely small amounts
- Higher detection sensitivity

### HPTLC-ready-to-use layers Nano-SIL-20
Glass plate, nano silica gel 60 layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 5 cm | 0,2 mm | **N080.1** | 100 | 209,00 |
| 10 x 10 cm | 0,2 mm | **N081.1** | 25 | 159,00 |
| 10 x 20 cm | 0,2 mm | **N082.1** | 50 | 375,00 |

### HPTLC-ready-to-use layers Nano-SIL-20 / $UV_{254}$
Glass plate, nano silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 5 cm | 0,2 mm | **N083.1** | 100 | 209,00 |
| 10 x 10 cm | 0,2 mm | **N084.1** | 25 | 139,00 |
| 10 x 20 cm | 0,2 mm | **N085.1** | 50 | 379,00 |

### HPTLC-ready-to-use foil ALUGRAM® Nano-SIL G
Aluminium foil, nano silica gel 60 layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 20 cm | 0,2 mm | **AE82.1** | 50 | 137,50 |
| 20 x 20 cm | 0,2 mm | **AE83.1** | 25 | 225,00 |

### HPTLC-ready-to-use foil ALUGRAM® Nano-SIL G / $UV_{254}$
Aluminium foil, nano silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 20 cm | 0,2 mm | **AE84.1** | 50 | 137,50 |
| 20 x 20 cm | 0,2 mm | **AE85.1** | 25 | 225,00 |

### HPTLC-ready-to-use foil ALUGRAM® Xtra Nano-SIL G
Aluminium foil, nano silica gel 60 layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 20 cm | 0,2 mm | **3863.1** | 50 | 137,50 |
| 20 x 20 cm | 0,2 mm | **3895.1** | 25 | 225,00 |

### HPTLC-ready-to-use foil ALUGRAM® Xtra Nano-SIL G / $UV_{254}$
Aluminium foil, nano silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 20 cm | 0,2 mm | **3952.1** | 50 | 137,50 |
| 20 x 20 cm | 0,2 mm | **3988.1** | 25 | 225,00 |

# Diol-modified HPTLC Silica Layers

**Diol modification,** carbon content 5,5 %
- pH stability 2-8
- Layer can be equally well wetted by pure water and organic solvents, respectively.

**Order of polarity:**
silica > **DIOL** > $NH_2$ > CN > RP-2 > RP-18 W

**Recommended application:** steroids, pesticides and plant constituents; for critical separations an alternative to silica, since it is less sensitive to the water content of the environment; leads to more reproducible results compared to silica.

### HPTLC-ready-to-use Nano-SIL DIOL / $UV_{254}$
Glass plate, diol modified silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 x 10 cm | 0,20 mm | **4699.1** | 25 | 325,00 |

# Amino-modified HPTLC Silica Layers

**Aminopropyl modification,** carbon content 3,5 %
- pH stability: 2-8
- Layer can be equally well wetted by pure water and organic solvents, respectively.

**Order of polarity:**
silica > DIOL > **$NH_2$** > CN > RP-2 > RP-18 W

**Recommended application:** vitamins, sugars, steroids, purine derivatives, xanthines, phenols, nucleotides and pesticides.

### HPTLC-ready-to-use Nano-SIL $NH_2$
Glass plate, amino modified silica gel 60 layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 x 10 cm | 0,20 mm | **3500.1** | 25 | 325,00 |

### HPTLC-ready-to-use Nano-SIL $NH_2$ / $UV_{254}$
Glass plate, amino modified silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 x 10 cm | 0,20 mm | **3652.1** | 25 | 325,00 |
| 10 x 20 cm | 0,20 mm | **3660.1** | 25 | 479,00 |

### HPTLC-ready-to-use foil ALUGRAM® Nano-SIL $NH_2$ / $UV_{254}$
Aluminium foil, amino modified silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 x 8 cm | 0,15 mm | **3723.1** | 50 | 179,00 |
| 20 x 20 cm | 0,15 mm | **3767.1** | 25 | 489,00 |

# Cyano-modified HPTLC Silica Layers

**Cyanopropyl modification,** carbon content 5,5 %
- pH stability 2-8
- Normal phase or reversed phase separation modes depending on the polarity of the developing solvent

**Order of polarity:**
silica > DIOL > $NH_2$ > **CN** > RP-2 > RP-18 W

**Recommended application:** steroid hormones, phenols, preservatives

### HPTLC-ready-to-use Nano-SIL CN / $UV_{254}$
Glass plate, cyano modified silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 x 10 cm | 0,20 mm | **4554.1** | 25 | 319,00 |
| 10 x 20 cm | 0,20 mm | **4569.1** | 25 | 489,00 |

### HPTLC-ready-to-use foil ALUGRAM® Nano-SIL CN / $UV_{254}$
Aluminium foil, cyano modified silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 x 8 cm | 0,15 mm | **4598.1** | 50 | 179,00 |

# Dimethyl-modified TLC Silica Layers

**Silanized silica 60 with dimethylmodification**, carbon content 4 %

- specific surface (BET): ~500 $m^2/g$
- mean pore size: 60 Å
- specific pore volume: 0,75 ml/g
- particle size 5-17 µm
- pH stability: 2-10

**Order of polarity:**
silica > DIOL > $NH_2$ > CN > **RP-2** > RP-18 W

**Recommended application:**
active plant constituents, steroids

### TLC-ready-to-use layers RP-2 / $UV_{254}$
Glass plate, dimethyl modified silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 x 10 cm | 0,25 mm | **3496.1** | 25 | 155,50 |
| 10 x 20 cm | 0,25 mm | **3498.1** | 50 | 339,00 |
| 20 x 20 cm | 0,25 mm | **3499.1** | 25 | 249,00 |

### TLC-ready-to-use foil ALUGRAM® RP-2 / $UV_{254}$
Aluminium foil, dimethyl modified silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 x 8 cm | 0,15 mm | **3590.1** | 50 | 102,90 |
| 20 x 20 cm | 0,15 mm | **3591.1** | 25 | 239,00 |

# Octadecyl-modified HPTLC Silica Layers

**Reversed Phase (RP) plates**
- carbon content 14 %
- Partial octadecyl ($C_{18}$) modification
- wettable with water

**Order of polarity:**
silica > DIOL > $NH_2$ > CN > RP-2 > **RP-18 W**

**Recommended application:** aminophenols, barbiturates, preservatives, nucleobases, polycyclic aromatic hydrocarbons, steroids, tetracyclines, plasticizers (phthalates)



### HPTLC-ready-to-use layers RP-18 W / $UV_{254}$

Glass plate, modified silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 20 cm | 0,25 mm | **CP23.1** | 50 | 305,00 |
| 10 x 10 cm | 0,25 mm | **3380.1** | 25 | 227,50 |
| 10 x 20 cm | 0,25 mm | **3383.1** | 50 | 519,00 |
| 20 x 20 cm | 0,25 mm | **3399.1** | 25 | 425,00 |
| 20 x 20 cm | 1,00 mm | **1886.1** | 15 | 539,00 |

### HPTLC-ready-to-use foil ALUGRAM® RP-18 W / $UV_{254}$

Aluminium foil, modified silica gel 60 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 x 8 cm | 0,15 mm | **CP24.1** | 50 | 109,00 |
| 5 x 10 cm | 0,15 mm | **3434.1** | 50 | 131,50 |
| 5 x 20 cm | 0,15 mm | **CP25.1** | 50 | 245,00 |
| 10 x 10 cm | 0,15 mm | **3436.1** | 25 | 127,50 |
| 20 x 20 cm | 0,15 mm | **3487.1** | 25 | 329,00 |

# TLC Plates with Aluminium Oxide

**Aluminium oxide**
- Spec. surface: approx. 200 $m^2/g$
- Indicator: manganese-activated zinc silicate
- Mean pore width: 60 Å
- Inert organic binder
- **Tip:** We recommend to activate aluminium oxide layers before use by heating 10 minutes at 120 °C.

**Recommended application:** terpenes, alkaloids, steroids, aliphatic and aromatic compounds




### TLC-ready-to-use foil ALUGRAM® ALOX N / $UV_{254}$

Aluminium foil, aluminium oxide layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 20 cm | 0,2 mm | **N738.1** | 50 | 86,50 |
| 20 x 20 cm | 0,2 mm | **N739.1** | 25 | 127,50 |

### TLC-ready-to-use foil POLYGRAM® ALOX N / $UV_{254}$

Polyester foil, aluminium oxide layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 x 8 cm | 0,2 mm | **0817.1** | 50 | 38,90 |
| 5 x 20 cm | 0,2 mm | **N740.1** | 50 | 86,90 |
| 20 x 20 cm | 0,2 mm | **N741.1** | 25 | 127,50 |

▶ Reference substances for TLC see page 1545

# TLC Plates with Cellulose MN 300

## Native fibrous cellulose

- Fibre length (95 %): 2-20 µm
- Average degree of polymerisation: 400-500
- Specific surface acc. to Blaine: 15000 $cm^2/g$

**Recommended application:** partition chromatography of polar substances such as amino acids, carboxylic acids or carbohydrates



### TLC-ready-to-use layers CEL 300

Glass plate, cellulose MN 300 layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 20 cm | 0,1 mm | **1320.1** | 100 | 275,00 |
| 10 x 20 cm | 0,1 mm | **1321.1** | 50 | 225,00 |
| 20 x 20 cm | 0,1 mm | **1322.1** | 25 | 159,00 |

### TLC-ready-to-use layers CEL 300 / $UV_{254}$

Glass plate, cellulose MN 300 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 20 cm | 0,1 mm | **1323.1** | 100 | 275,00 |
| 10 x 20 cm | 0,1 mm | **1324.1** | 50 | 225,00 |
| 20 x 20 cm | 0,1 mm | **1325.1** | 25 | 159,00 |

### TLC-ready-to-use foil POLYGRAM® CEL 300

Polyester foil, cellulose MN 300 layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 x 8 cm | 0,1 mm | **0818.1** | 50 | 38,50 |

### TLC-ready-to-use foil POLYGRAM® CEL 300 / $UV_{254}$

Polyester foil, cellulose MN 300 layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 20 cm | 0,1 mm | **N742.1** | 50 | 87,90 |
| 20 x 20 cm | 0,1 mm | **N743.1** | 25 | 139,00 |

# TLC Plates with Cellulose MN 400 (AVICEL®)

## Microcrystalline cellulose

- Prepared by hydrolysis of high puritiy cellulose with HCl
- Mean degree of polymerisation: 40-200

**Recommended application:** carboxylic acids, lower alcohols, urea and purine derivates



### TLC-ready-to-use layers CEL 400

Glass plate, cellulose MN 400 (AVICEL®) layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 x 20 cm | 0,1 mm | **1326.1** | 50 | 219,00 |
| 20 x 20 cm | 0,1 mm | **1327.1** | 25 | 159,00 |

### TLC-ready-to-use layers CEL 400 / $UV_{254}$

Glass plate, cellulose MN 400 (AVICEL®) layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 10 x 20 cm | 0,1 mm | **1328.1** | 50 | 225,00 |
| 20 x 20 cm | 0,1 mm | **1329.1** | 25 | 159,00 |

### TLC-ready-to-use foil POLYGRAM® CEL 400

Polyester foil, cellulose MN 400 (AVICEL®) layer

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 20 cm | 0,1 mm | **1330.1** | 50 | 89,50 |
| 20 x 20 cm | 0,1 mm | **1331.1** | 25 | 139,00 |

### TLC-ready-to-use foil POLYGRAM® CEL 400 / $UV_{254}$

Polyester foil, cellulose MN 400 (AVICEL®) layer, with fluorescence indicator

| Plate format | Layer thickness | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 5 x 20 cm | 0,1 mm | **1332.1** | 50 | 89,50 |
| 20 x 20 cm | 0,1 mm | **1333.1** | 25 | 139,00 |

# Silica Gel 60 for TLC



Silica gels are the most important base material for thin layer chromatography. We therefore offer a range of specially selected silica gels 60 for preparing your own TLC-plates. Our program ranges from G-types (with gypsum) to a P-type (for preparative applications).

- Spec. surface: ~400-500 $m^2/g$
- Mean pore diameter: 60 Å
- Pore volume: ~0,8 ml/g
- Particle size: 0-20 µm or 0-40 µm (preparative)
- Loss on drying: <9 %
- pH-value (5 % suspension): ~7

## Silica Gel 60

| Product | Purity | Application | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Silica gel 60 G** | for TLC (with gypsum) | For preparation of TLC plates. | **CN44.3** | 250 g | 29,90 |
| | | | **CN44.1** | 500 g | 52,90 |
| | | | **CN44.2** | 1 kg | 88,90 |
| **Silica gel 60 G/$F_{254}$** | for TLC (with gypsum) | For preparation of TLC plates. | **CN45.3** | 250 g | 31,90 |
| | | | **CN45.1** | 500 g | 59,90 |
| | | | **CN45.2** | 1 kg | 109,50 |
| **Silica gel 60 P/$F_{254}$** | for preparative TLC | For preparation of TLC plates. | **CN47.3** | 250 g | 31,50 |
| | | | **CN47.1** | 500 g | 53,90 |
| | | | **CN47.2** | 1 kg | 90,50 |

For additional product data and safety information, see chapter Chemicals A-Z.

TIP

**Coating of DC-Plates with Silica Gel G:**

Suspend 25 g Silica Gel G in 50 ml of distilled water under frequent agitation. The fluid suspension will harden after a short time, due to the amount of gypsum, and can immediately be applied to a glass plate that is free of grease.
The plates should be rested for about 10 minutes until the surface is completely dim. Afterwards, preferably after predrying the plates exposed to air over night, the plates are dried (activated) for 30 minutes at 105 - 110 °C in a drying cabinet.

Until usage the plates should be stored in a desiccator above a desiccant like Silica Gel Orange (Art. No. P077).

# TLC Spray Solutions




ROTH's ready-to-use spray solutions make thin-layer chromatography operations considerably easier.
In case of these ready-to-use spray solutions the staining/derivative reagent was dissolved in ethanol, 2-propanol or in water.

### Aniline phthalate spray solution
**for TLC**

Ready-to-use spray solution for detection of reducing sugars.
0,9 ml Anilin and 1,66 g Phthalic acid dissolved in 100 ml ethanol / 2-propanol (1/1 v/v).

**Danger** H225-H373-H319-H336-EUH208

| | | | |
|---|---|---|---|
| **CP35.1** | 100 ml | glass | 38,90 € |

### 2',7'-Dichlorofluorescein spray solution
**for TLC**

Ready-to-use spray solution for detection of Lipids (saturated, unsaturated).
0,2 g 2',7'- Dichlorofluorescein dissolved in 100 ml 2-propanol.

**Danger** H225-H319-H336

| | | | |
|---|---|---|---|
| **CP36.1** | 100 ml | glass | 37,50 € |

### 4-(Dimethylamino) benzaldehyde spray solution
**for TLC**

Ready-to-use spray solution for detection of terpenes, sugars and steroids.
0,5 g 4-(Dimethylamino)-benzaldehyde dissolved in 100 ml 2-propanol.

**Danger**H225-H319-H336

| | | | |
|---|---|---|---|
| **CP38.1** | 100 ml | glass | 37,50 € |

### Dragendorff-Munier spray solution
**for TLC**

Ready-to-use spray solution for detection of nitrogen compounds and alkaloids.
1 % basic Bismuth nitrate, 16,5 % tartaric acid,
20 % potassium iodide dissolved in water.

**Warning** H319

| | | | |
|---|---|---|---|
| **CP33.1** | 100 ml | glass | 37,50 € |

## Iron(III) chloride spray solution
**for TLC**
Ready-to-use spray solution for detection of acetylsalicylic acid and paracetamol.
2 g Iron(III) chloride dissolved in 100 ml water.

**Warning** H290-H317-H319

**Type analysis:**
TLC-application. .....complies

| | | | |
|---|---|---|---|
| **CP34.1** | 100 ml | glass | 36,90 € |

## Molybdatophosphoric acid spray solution
**for TLC**
Ready-to-use spray solution for detection of reducing compound lipids, fatty acids and steroids.
4 g Molybdatophosphoric acid dissolved in 100 ml ethanol.

**Danger** H225-H315-H318

| | | | |
|---|---|---|---|
| **CP31.1** | 100 ml | glass | 37,50 € |

## Ninhydrin spray solution
**for TLC**
Ready-to-use spray solution for detection of amino acids, amines and amino sugars.
0,5 g Ninhydrin dissolved in 100 ml ethanol.

**Danger** H225

| | | | |
|---|---|---|---|
| **CP30.1** | 100 ml | glass | 36,90 € |

## Rhodamine B-spray solution
**for TLC**
Ready-to-use spray solution for detection of lipids.
0,1 g Rhodamine B dissolved in 100 ml ethanol.

**Danger** H225-H319

| | | | |
|---|---|---|---|
| **CP37.1** | 100 ml | glass | 36,90 € |

## Rubeanic acid spray solution
**for TLC**
Ready-to-use spray solution for detection of heavy metal ions.
0,2 g Rubeanic acid dissolved in 100 ml ethanol.

**Danger** H225

| | | | |
|---|---|---|---|
| **CP32.1** | 100 ml | glass | 36,90 € |

# Detection Reagents for TLC



Staining and derivatisation reagents for preparing your own spray solutions, e.g. for tracing organic acids, lipids, steroids, terpenes, flavonoids, amino acids, peptides.

## Detection reagents

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Ammonium heptamolybdate tetrahydrate** | ≥99 %, p.a. | **3666.1** | 250 g | 87,00 |
| | | **3666.2** | 500 g | 155,90 |
| | | **3666.3** | 1 kg | 278,45 |
| **Bismuth(III) nitrate** | ≥71 % Bi, p.a., alkaline | **4447.1** | 50 g | 43,55 |
| | | **4447.2** | 100 g | 69,35 |
| **Bromocresol Green** | ACS | **T115.1** | 1 g | 16,70 |
| | | **T115.2** | 5 g | 26,80 |
| | | **T115.3** | 10 g | 45,70 |
| | | **T115.4** | 25 g | 87,00 |
| **2',7'-Dichlorofluorescein** | p.a., ACS | **X866.2** | 1 g | 19,90 |
| | | **X866.1** | 5 g | 33,25 |
| | | **X866.3** | 25 g | 89,15 |
| | | **X866.4** | 50 g | 144,60 |
| **4-(Dimethylamino)-benzaldehyde** | ≥98 %, p.a., ACS | **X867.1** | 25 g | 43,55 |
| | | **X867.2** | 100 g | 109,55 |
| **Molybdatophosphoric acid hydrate** | ≥99,0 %, p.a., ACS | **4440.1** | 25 g | 37,55 |
| | | **4440.2** | 50 g | 57,95 |
| | | **4440.3** | 100 g | 103,10 |
| **Natural product reagent A** | ≥98 %, p.a. | **9920.1** | 5 g | 56,90 |
| | | **9920.2** | 25 g | 154,30 |
| | | **9920.3** | 50 g | 267,70 |
| **Ninhydrin** | ≥99 %, p.a., ACS | **4378.1** | 25 g | 38,60 |
| | | **4378.2** | 100 g | 99,90 |
| | | **4378.3** | 500 g | 364,45 |
| **Rhodamine B (C.I. 45170)** | for microscopy | **T130.1** | 25 g | 32,80 |
| **2,3,5-Triphenyltetrazolium chloride** | ≥98 %, p.a. | **KK13.1** | 10 g | 51,50 |
| | | **KK13.2** | 50 g | 212,85 |

For additional product data and safety information, see chapter Chemicals A-Z.

**Ammonium molybdate spray reagent:**
for detecting hydroxycarboxylic acids. Mix 2 ml **ammonium molybdate solution** 25 % + 2 ml ascorbic acid 10 % + 2 ml sulphuric acid 29,5 % and add 4 ml $H_2O$.

**Dragendorff's spray reagent:**
for detecting tertiary amines and nitrogen heterocycles. Mix 0,85 g **bismuth(III) nitrate basic** + 40 ml $H_2O$ + 10 ml acetic acid with 20 ml KI-solution (40 %).

**Bromcresol green spray reagent:**
for detecting hydroxycarboxylic acids. Dilute 25 mg **bromcresol green** + 0,36 ml 0,1 N NaOH + 10 ml ethanol 96 % to 50 ml with $H_2O$.

**Ehrlich's spray reagent:**
for detecting sulphonamides and primary aromatic amines. Mix 0,5 g **4-(dimethylamino)-benzaldehyde** + 25 ml hydrochloric acid 36 % + 25 ml ethanol 96 %.

**Natural substance reagent A as a spray reagent:**
According to Wagner natural substance A is an excellent reagent for fluorometry in quantitative analysis of thin layer chomatogrammes.
**Application:**
Natural substance-polyethylene glycol reagent (NST/PEG).
Spray a 1 % methanol solution of natural substance reagent A and a 5 % ethanol PEG 4000 solution, one after the other onto the TLC-plate (approx. 10 ml and 8 ml). Intensive fluorescent colours will appear immediately or after 15 min in UV-365 nm. Adding PEG will lead to an increase in detection sensitivity (from 10 µg to 2,5 µg). The fluorescence behaviour depends on the constitution. The reagent must be freshly prepared before use (1 % in methanol). Spray under the fume hood!

**Ninhydrin spray reagent:**
for detecting amino acids and primary aliphatic amines. 0,15 g **ninhydrin** + 47,5 ml 2-propanol + 2,5 ml acetic acid 96 %.

# Solvents for TLC

## ROTISOLV® UV/IR-Grade solvents

### for chromatography and spectroscopy

ROTISOLV® UV/IR-Grade solvents are specially adapted for spectrophotometric processes and other chromatographic applications which require high spectroscopic purity.

- High chemical purity
- Spectroscopically tested for UV and IR
- High UV-permeability
- Low fluorescence

**Example specification:**

**n-Hexane**
**ROTISOLV® ≥99 %, UV/IR-Grade**
For chromatography and spectroscopy.
1-Methylpentane
$C_6H_{14}$
M 86,18 g/mol
**Danger** H225-H304-H315-H336-H361f-H373-H411

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99 % |
| Water (KF) | ≤0,005 % |
| Acidity | ≤0,005 meq/g |
| Evaporation residue | ≤0,005 % |
| Fluorescence (as quinine): | |
| 254 nm | ≤1,0 ppb |
| 365 nm | ≤1,0 ppb |
| Transmission: | |
| 245 nm | ≥98 % |
| 225 nm | ≥90 % |
| 217 nm | ≥80 % |
| 210 nm | ≥50 % |
| 195 nm | ≥10 % |



### Solvents for TLC

| Product | Purity | Max. permeability at | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Acetic acid ethyl ester** | ≥99,8 %, UV/IR-Grade | 280 nm | **4442.1** | 2,5 l | 56,90 |
| **Acetone** | ≥99,9 %, UV/IR-Grade | 350 nm | **T906.1** | 2,5 l | 51,50 |
| **Acetonitrile** | ≥99,9 %, UV/IR-Grade | 230 nm | **T907.1** | 2,5 l | 90,20 |
| **1-Butanol** | ≥99,8 %, UV/IR-Grade | 270 nm | **4431.1** | 2,5 l | 90,20 |
| **Cyclohexane** | ≥99,9 %, UV/IR-Grade | 250 nm | **CP81.1** | 2,5 l | 86,55 |
| **Dichloromethane** | ≥99,8 %, UV/IR-Grade | 260 nm | **4433.1** | 2,5 l | 41,85 |
| **N,N-Dimethylformamide** | ≥99,9 %, UV/IR-Grade | 330 nm | **CP79.1** | 2,5 l | 94,10 |
| **n-Heptane** | ≥99 %, UV/IR-Grade | 245 nm | **CP78.1** | 2,5 l | 107,00 |
| **n-Hexane** | ≥99 %, UV/IR-Grade | 245 nm | **T908.1** | 2,5 l | 105,25 |
| **Isooctane** | ≥99,8 %, UV/IR-Grade | 255 nm | **CP80.1** | 2,5 l | 106,35 |
| **Methanol** | ≥99,9 %, UV/IR-Grade | 260 nm | **T909.1** | 2,5 l | 34,30 |
| **n-Pentane** | ≥99 %, UV/IR-Grade | 240 nm | **4443.1** | 2,5 l | 107,40 |
| **2-Propanol** | ≥99,9 %, UV/IR-Grade | 260 nm | **T910.1** | 2,5 l | 69,80 |
| **Tetrachloroethylene** | ≥99,9 %, UV/IR-Grade | 305 nm | **CP83.1** | 2,5 l | 81,20 |
| **Tetrahydrofuran** | ≥99,9 %, UV/IR-Grade | 310 nm | **CP82.1** | 2,5 l | 93,45 |
| **Toluene** | ≥99,8 %, UV/IR-Grade | 350 nm | **4445.1** | 2,5 l | 57,95 |
| **Trichloromethane/Chloroform** | ≥99,8 %, UV/IR-Grade | 280 nm | **4432.1** | 2,5 l | 62,25 |

# Accessories for TLC




## Spotting guides for TLC plates

For the easy sample application. Size: 4 x 6 cm. Marks for 4 spots with a distance of 8 mm and 3 spots with a distance of 10 mm, respectively.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **3661.1** | 2 | 23,50 |




## TLC sprayer

Versatile sprayer with gas cartridge for spraying reagents and other liquids. Spray pressure: constant 4,4 bar. Eco-friendly propellant mixture of dimethyl ether, propane and isobutane.
Sufficient for approx. 500 ml of liquid.
Easy to clean: unscrew cartridge, immerse uptake into vessel containing cleaning fluid and spray until the spray is free of residues.

Propellants: dimethyl ether, isobutane, propane.

**Delivery incl.** propellant cartridge (94 g), 170 ml glass reservoir bottle, suction tube and screw cap.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YC44.1** | 1 | 14,55 |

**Accessories:**

| | | | |
|---|---|---|---|
| Replacement cartridges with spray nozzle and suction tube | **YC45.1** | 5 | 45,50 |
| Replacement 170 ml glass bottle | **YC46.1** | 1 | 7,35 |



121°C

## TLC separation chamber

Made of borosilicate glass 3.3. For immersing pre-treated TLC ready-to-use 8 x 4 cm foils in solvents. Cylindrical glass beakers with loose glass lid. Inner height 100, ∅ 60 mm.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **0823.1** | 1 | 39,25 |




## Developing chambers for TLC

Simultaneous developing chambers made of glass.

**Type 1:** for 5 plates up to size 20 x 20 cm
**Type 2:** for 2 plates up to size 10 x 10 cm

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 1 | **3133.1** | 1 | 359,00 |
| 2 | **3134.1** | 1 | 165,00 |



Material DURAN®

121°C

## TLC atomizers

Made of DURAN®. NS 19/26, volume 100 ml. Overall height 160 mm. Autoclavable without rubber tube.
**Delivery incl.** Erlenmeyer flasks, wire joint clamps, rubber ball incl. rubber tube 25 cm.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| TLC atomizers complete | **0707.1** | 1 | 63,35 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare spray nozzle | **H451.1** | 1 | 37,55 |
| Spare rubber bulb, incl. tube, length 20 cm | **5914.1** | 1 | 13,55 |

▶ Glass Plate Racks see page 1210

▶ UV lamps see page 771

# Paper Chromatography

Paper chromatography (PC) is the oldest chromatographic technique. Like other chromatographic applications, separation is based upon the partition of the material mixture, which is to be separated, between two immiscible phases.
While the chromatographic paper is, strictly speaking, only the carrier for the liquid mobile phase, the properties of the paper do, in fact, have considerable influence on the quality of the separation.
The most important characteristics of chromatographic papers are the **weight** (g/m²), the **thickness** (mm) and the **migration distance.**
When specifying the migration distance, it is common practice in the paper industry to apply the Klemm method. This method indicates the extent of dampness of a 15 cm wide paper strip (dipped in 20 °C dist. water) after 10 minutes. You will, however, frequently find the migration distance of chromatographic paper specified in mm/30 min.



## Smooth papers

| Model | Thickness (mm) | Weight (g/m²) | Flow rate (mm/min.) | Size (cm) | Art. No. | Pack Qty. (sheets) | € |
|---|---|---|---|---|---|---|---|
| MN 261 | 0,18 | 90 | 90-100/30 | 58 x 60 | **1236.1** | 100 | 175,00 |
| MN 260 | 0,20 | 90 | 120-130/30 | 58 x 60 | **1238.1** | 100 | 175,00 |
| MN 260 | 0,20 | 90 | 120-130/30 | 7,5 x 17 | **2940.1** * | 100 | 29,50 |
| MN 214 | 0,28 | 140 | 90-100/30 | 58 x 60 | **1239.1** | 100 | 259,00 |
| MN 218 | 0,36 | 180 | 90-100/30 | 58 x 60 | **1246.1** | 100 | 329,00 |

* suitable for chamber saturation in thin-layer chromatography

## Defatted paper

**Degreased paper**
This paper is extracted with organic solvents.

| Model | Thickness (mm) | Weight (g/m²) | Flow rate (mm/min.) | Size (cm) | Art. No. | Pack Qty. (sheets) | € |
|---|---|---|---|---|---|---|---|
| MN 214 ff | 0,28 | 140 | 90-100/30 | 56 x 58 | **1254.1** | 100 | 559,00 |

## Soft cartons

| Model | Thickness (mm) | Weight (g/m²) | Flow rate (mm/min.) | Size (cm) | Art. No. | Pack Qty. (sheets) | € |
|---|---|---|---|---|---|---|---|
| MN 827 | 0,70 | 270 | 130-140/10 | 58 x 60 | **1265.1** | 100 | 359,00 |
| MN 866 | 1,70 | 650 | 100-120/10 | 38 x 38 | **1273.1** | 100 | 309,00 |

## Whatman® Chromatography Papers

Whatman® chromatography papers for blotting, chromatography and filtration. Made from specially selected cellulose.

**Thickness 0,18 mm** (Whatman® 1CHR), flow rate 130 mm/30 min.
**Also available in convenient rolls!**

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 100 x 300 mm | **CL37.1** | 100 | 44,50 |
| 200 x 200 mm | **CL38.1** | 100 | 50,80 |
| 250 x 250 mm | **CL39.1** | 100 | 79,00 |
| 460 x 570 mm | **CL40.1** | 100 | 171,00 |
| 580 x 680 mm | **CL41.1** | 100 | 268,00 |
| 20 mm x 100 m (roll) | **7606.1** | 1 | 27,95 |
| 30 mm x 100 m (roll) | **CL42.1** | 1 | 37,80 |
| 40 mm x 100 m (roll) | **CL43.1** | 1 | 42,65 |
| 50 mm x 100 m (roll) | **7607.1** | 1 | 51,00 |
| 100 mm x 100 m (roll) | **CL44.1** | 1 | 96,75 |
| 150 mm x 100 m (roll) | **7608.1** | 1 | 124,00 |

**Thickness 0,36 mm** (Whatman® 3CHR), flow rate 130 mm/30 min.
For general applications with medium/heavy solute loadings.

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 460 x 570 mm | **7604.1** | 100 | 343,00 |

**Thickness 0,92 mm** (Whatman® 17CHR), flow rate 190 mm/30 min.
For the heaviest solute loadings.

| Dimensions | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 70 x 90 mm | **7600.1** | 100 | 66,50 |
| 25 x 220 mm | **7601.1** | 100 | 67,95 |
| 460 x 570 mm | **7602.1** | 25 | 256,00 |
| 460 x 570 mm | **7603.1** | 100 | 952,00 |

**Application instructions:**
Chromatography paper and cardboard must always be handled carefully. Your fingers should not touch the paper as the separation process will be disrupted by skin excretion, such as salt, grease and amino acids. Please avoid folding or creasing the paper as this will impair the capillary action.

# Ion Chromatography




## ROTI®STAR Standards for IC

ROTH has an extensive range of products which meets the highest standards of quality in the field of ion standards.

The solutions and mixtures are made using materials of the highest purity, and therefore meet the requirements for instrumental analysis by IC. All solutions are certified and can be traced to NIST or BAM standard reference solutions. Solutions are produced according to **ISO Guide 34** in an accredited environment. The solutions are tested in a laboratory accredited to **ISO/IEC 17025** and supplied with a detailed, batch-specific certificate of analysis.




## **Ion Standards for IC** (Ion Chromatography)

Each standard solution is made of high-purity starting materials, and its content is determined gravimetrically and by ion chromatography. They come with certificates of analysis and an ion chromatogram.

- Single and multi-element-standards
- Anion and cation multi-element-standards
- Container sizes: 100 ml and 500 ml

### Anionic Standards for IC 1000 mg/l (1 g/l) - ready to use

| Product | Ion | Matrix | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Acetate IC Standard Solution** | $CH_3COO^-$ | $H_2O$ | **1989.1** | 100 ml | 44,00 |
| | | | **1989.2** | 500 ml | 81,20 |
| **Benzoate IC Standard Solution** | $C_6H_5COO^-$ | $H_2O$ | **8168.1** | 100 ml | 39,70 |
| | | | **8168.2** | 500 ml | 82,70 |
| **Bromate IC Standard Solution** | $BrO_3^-$ | $H_2O$ | **8170.1** | 100 ml | 39,70 |
| | | | **8170.2** | 500 ml | 82,70 |
| **Bromide IC Standard Solution** | $Br^-$ | $H_2O$ | **2655.1** | 100 ml | 38,60 |
| | | | **2655.2** | 500 ml | 75,15 |
| **Chlorate IC Standard Solution** | $ClO_3^-$ | $H_2O$ | **8171.1** | 100 ml | 39,70 |
| | | | **8171.2** | 500 ml | 82,70 |
| **Chloride IC Standard Solution** | $Cl^-$ | $H_2O$ | **2656.1** | 100 ml | 38,60 |
| | | | **2656.2** | 500 ml | 75,15 |
| **Chlorite IC Standard Solution** | $ClO_2^-$ | $H_2O$ | **8172.1** | 100 ml | 39,70 |
| **Chromate IC Standard Solution** | $CrO_4^{2-}$ | $H_2O$ | **2657.1** | 100 ml | 38,60 |
| | | | **2657.2** | 500 ml | 75,15 |
| **Citrate IC Standard Solution** | $C_3H_4(OH)(COO)_3^{3-}$ | $H_2O$ | **8173.1** | 100 ml | 39,70 |
| | | | **8173.2** | 500 ml | 82,70 |
| **Cyanide IC Standard Solution** | $CN^-$ | 0,1% KOH | **2658.1** | 100 ml | 38,60 |
| | | | **2658.2** | 500 ml | 75,15 |
| **Fluoride IC Standard Solution** | $F^-$ | $H_2O$ | **2659.1** | 100 ml | 38,60 |
| | | | **2659.2** | 500 ml | 75,15 |
| **Formate IC Standard Solution** | $HCOO^-$ | $H_2O$ | **1999.1** | 100 ml | 44,00 |
| | | | **1999.2** | 500 ml | 81,20 |
| **Iodate IC Standard Solution** | $IO_3^-$ | $H_2O$ | **8174.1** | 100 ml | 38,60 |
| | | | **8174.2** | 500 ml | 75,15 |
| **Iodide IC Standard Solution** | $I^-$ | $H_2O$ | **2660.1** | 100 ml | 38,60 |
| | | | **2660.2** | 500 ml | 75,15 |
| **Lactate IC Standard Solution** | $C_2H_4(OH)COO^-$ | $H_2O$ | **8176.1** | 100 ml | 39,70 |
| | | | **8176.2** | 500 ml | 82,70 |

| Product | Ion | Matrix | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Maleate IC Standard Solution** | $C_2H_2(COO)_2^{2-}$ | $H_2O$ | **8181.1** | 100 ml | 39,70 |
| | | | **8181.2** | 500 ml | 82,70 |
| **Nitrate IC Standard Solution** | $NO_3^-$ | $H_2O$ | **2661.1** | 100 ml | 38,60 |
| | | | **2661.2** | 500 ml | 75,15 |
| **Nitrite IC Standard Solution** | $NO_2^-$ | $H_2O$ | **2664.1** | 100 ml | 38,60 |
| | | | **2664.2** | 500 ml | 75,15 |
| **Oxalate IC Standard Solution** | $C_2O_4^{2-}$ | $H_2O$ | **2008.1** | 100 ml | 44,00 |
| | | | **2008.2** | 500 ml | 81,20 |
| **Perchlorate IC Standard Solution** | $ClO_4^-$ | $H_2O$ | **8186.1** | 100 ml | 39,70 |
| | | | **8186.2** | 500 ml | 82,70 |
| **Phosphate IC Standard Solution** | $PO_4^{3-}$ | $H_2O$ | **2665.1** | 100 ml | 38,60 |
| | | | **2665.2** | 500 ml | 75,15 |
| **Propionate IC Standard Solution** | $C_2H_5COO^-$ | $H_2O$ | **8183.1** | 100 ml | 39,70 |
| | | | **8183.2** | 500 ml | 82,70 |
| **Succinate IC Standard Solution** | $C_2H_4(COO)_2^{2-}$ | $H_2O$ | **8187.1** | 100 ml | 39,70 |
| | | | **8187.2** | 500 ml | 82,70 |
| **Sulphate IC Standard Solution** | $SO_4^{2-}$ | $H_2O$ | **2666.1** | 100 ml | 38,60 |
| | | | **2666.2** | 500 ml | 75,15 |
| **Sulphite IC Standard Solution** | $SO_3^{2-}$ | $H_2O$ | **8192.1** | 100 ml | 39,70 |
| | | | **8192.2** | 500 ml | 82,70 |
| **Tartrate IC Standard Solution** | $C_2H_4O_2(COO)_2^{2-}$ | $H_2O$ | **8201.1** | 100 ml | 39,70 |
| | | | **8201.2** | 500 ml | 82,70 |
| **Thiocyanate IC Standard Solution** | $SCN^-$ | $H_2O$ | **8205.1** | 100 ml | 39,70 |
| | | | **8205.2** | 500 ml | 82,70 |
| **Thiosulphate IC Standard Solution** | $S_2O_3^{2-}$ | 0,1 % Pentanol | **8207.1** | 100 ml | 39,70 |
| | | | **8207.2** | 500 ml | 82,70 |

## Cationic Standards for IC 1000 mg/l (1 g/l) - ready to use

| Product | Ion | Matrix | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Ammonium IC Standard Solution** | $NH_4^+$ | $H_2O$ | **2654.1** | 100 ml | 38,60 |
| | | | **2654.2** | 500 ml | 75,15 |
| **Barium IC Standard Solution** | $Ba^{2+}$ | $H_2O$ | **8167.1** | 100 ml | 38,60 |
| | | | **8167.2** | 500 ml | 75,15 |
| **Caesium IC Standard Solution** | $Cs^+$ | $H_2O$ | **8166.1** | 100 ml | 38,60 |
| **Calcium IC Standard Solution** | $Ca^{2+}$ | $H_2O$ | **1986.1** | 100 ml | 38,60 |
| | | | **1986.2** | 500 ml | 75,15 |
| **Lithium IC Standard Solution** | $Li^+$ | $H_2O$ | **8158.1** | 100 ml | 38,60 |
| | | | **8158.2** | 500 ml | 75,15 |
| **Magnesium IC Standard Solution** | $Mg^{2+}$ | $H_2O$ | **1987.1** | 100 ml | 38,60 |
| | | | **1987.2** | 500 ml | 75,15 |
| **Potassium IC Standard Solution** | $K^+$ | $H_2O$ | **1985.1** | 100 ml | 38,60 |
| | | | **1985.2** | 500 ml | 75,15 |
| **Sodium IC Standard Solution** | $Na^+$ | $H_2O$ | **1984.1** | 100 ml | 38,60 |
| | | | **1984.2** | 500 ml | 75,15 |
| **Strontium IC Standard Solution** | $Sr^{2+}$ | $H_2O$ | **1988.1** | 100 ml | 38,60 |
| | | | **1988.2** | 500 ml | 75,15 |

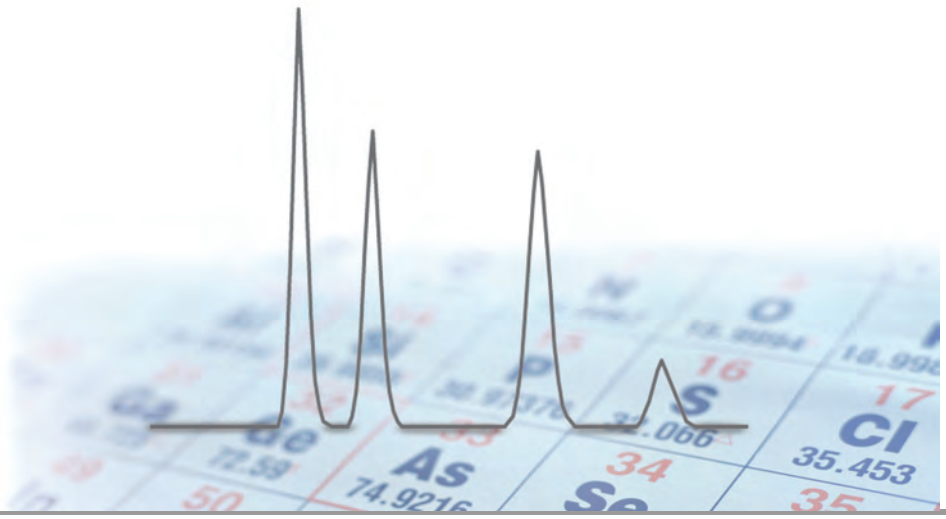
For additional product data and safety information, see chapter Chemicals A-Z.

## Ion Multi-Element Standards for IC - ready to use

| Designation | Elements | Composition | Matrix | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **Anion Multi-Element Standard I, 1000 mg/l** | 3 | $Cl^-$, $NO_3^-$, $SO_4^{2-}$ | $H_2O$ | **2026.1** | 100 ml | 131,70 |
| | | | | **2026.2** | 500 ml | 252,65 |
| **Anion Multi-Element Standard II, 1000 mg/l** | 3 | $F^-$, $Br^-$, $PO_4^{3-}$ | $H_2O$ | **2029.1** | 100 ml | 138,70 |
| | | | | **2029.2** | 500 ml | 263,40 |
| **Anion Multi-Element Standard, 10 mg/l** | 6 | $F^-$, $Cl^-$, $Br^-$, $NO_3^-$, $PO_4^{3-}$, $SO_4^{2-}$ | $H_2O$ | **2030.1** | 100 ml | 89,80 |
| | | | | **2030.2** | 500 ml | 185,45 |
| **Anion Multi-Element Standard (concentration in mg/l)** | 7 | $F^-$ (5), $Cl^-$ (10), $NO_2^-$ (15), $Br^-$ (25), $NO_3^-$ (25), $PO_4^{3-}$ (40), $SO_4^{2-}$ (30) | $H_2O$ | **2668.1** | 100 ml | 77,30 |
| | | | | **2668.2** | 500 ml | 155,90 |
| **Cation Multi-Element Standard, 10 mg/l** | 4 | $Na^+$, $K^+$, $Mg^{2+}$, $Ca^{2+}$ | $H_2O$ | **2032.1** | 100 ml | 84,95 |
| | | | | **2032.2** | 500 ml | 166,65 |
| **Cation Multi-Element Standard (concentration in mg/l)** | 6 | $NH_4^+$ (40), $Ca^{2+}$ (40), $K^+$ (20), $Li^+$ (10), $Mg^{2+}$ (20), $Na^+$ (20) | 0,1 % $HNO_3$ | **2669.1** | 100 ml | 77,30 |
| | | | | **2669.2** | 500 ml | 155,90 |

For additional product data and safety information, see chapter Chemicals A-Z.


- Ultra pure acids, alkaline solutions and water for IC see page 1664
- High-purity salts for preparing eluent mixtures, see page 1612

# NUCLEODUR® Columns for HPLC

NUCLEODUR® as a state-of-the-art silica is the ideal base material for modern HPLC phases.
We offer you two phases **NUCLEODUR® C18 Gravitiy** which is ideal for sophisticated analytical separations and **NUCLEODUR® C18 ec** suitable for routine HPLC analysis.




## NUCLEODUR® $C_{18}$ Gravity

**The ideal phase for overall sophisticated analytical separations**

- Especially suitable for LC/MS applications due to low bleeding properties
- Ideal for method development
- Superior base deactivation

**Properties:**
Octadecyl phase, multi-endcapped
Carbon content: 18,0 %
Pore size: 110 Å
pH stability: 1-11
Eluent on column: acetonitrile/water

**Applications:**
Pharmaceuticals, e.g. analgesics, antiinflammatory drugs, antidepressants, herbicides, immunosuppressants

**Similar phases:**
Zorbax® Extend $C_{18}$, Synergi™ and Max RP, Phenomenex Luna® $C_{18}$ (2), Waters Xterra® $RP_{18}$ / MS $C_{18,}$ Inertsil® ODS III, Purospher® RP-18, Star RP-18, USP L1

**NUCLEODUR® $C_{18}$ Gravity, particle size 3 µm**

| Inner ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 250 | **KK86.1** | 1 | 699,00 |
| 4,6 | 150 | **KK87.1** | 1 | 685,00 |
| 4,6 | 250 | **KK88.1** | 1 | 739,00 |

**NUCLEODUR® $C_{18}$ Gravity, particle size 5 µm**

| Inner ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 250 | **KK89.1** | 1 | 569,00 |
| 4,6 | 150 | **KK90.1** | 1 | 549,00 |
| 4,6 | 250 | **KK91.1** | 1 | 599,00 |

## NUCLEODUR® $C_{18}$ ec

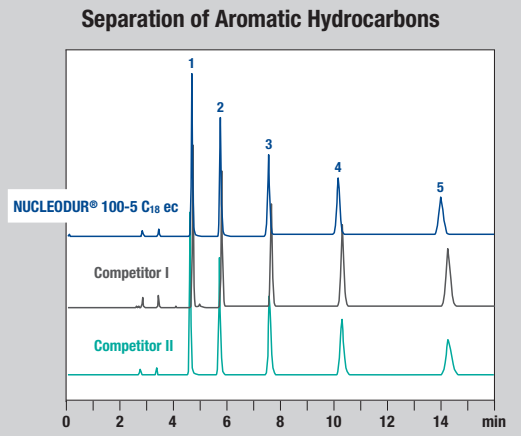
**The ideal standard RP phase for routine HPLC analysis**

- Economic and reliable
- Long-life columns
- For all standard routine applications in modern RP-chromatography

**Properties:**
Octadecyl phase, endcapped
Carbon content: 17,5 %
Pore size: 110 Å
pH stability: 1-9
Eluent on column: acetonitrile/water

**Applications:**
Basic, neutral or acidic pharmaceuticals, derivatized amino acids, pesticides, aldehydes and ketones, fat-soluble vitamins, phenolic compounds, analytics acc. to USP L1

**Similar phases:**
For many applicatons the following phases can be replaced with identical or even better results: NUCLEOSIL® $C_{18}$, Spherisorb® ODS I and II, Hypersil® ODS, Waters Symmetry® $C_{18,}$ Inertsil® ODS II, Kromasil® $C_{18,}$ LiChrospher® $RP_{18}$ and RP $C_{18}$ ec.




**Conditions:**
Eluent: acetonitril/water (75/25, v/v)
Flow: 1,3 ml/min
Temperature: 30 °C
Detection: UV, 254 nm

**Legend:**
1. Toluene, 2. Ethylbenzene, 3. Propylbenzene, 4. Butylbenzene, 5. Pentylbenzene

**NUCLEODUR® 100-3 $C_{18}$ ec, particle size 3 µm**

| Inside ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 250 | **KK80.1** | 1 | 479,00 |
| 4,6 | 150 | **KK81.1** | 1 | 439,00 |
| 4,6 | 250 | **KK82.1** | 1 | 499,00 |

**NUCLEODUR® 100-5 $C_{18}$ ec, particle size 5 µm**

| Inside ∅ (mm) | Length (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 4 | 250 | **KK83.1** | 1 | 355,00 |
| 4,6 | 150 | **KK84.1** | 1 | 309,00 |
| 4,6 | 250 | **KK85.1** | 1 | 379,00 |

▶ Guard columns UNIVERSAL see page 1587

# Guard Columns Systems




## Column Protection System

**Innovative and universal screw-on guard column holder system**
**Suitable for all analytical HPLC columns with 1/16" fittings**

**Features**
- Ideal protection for your analytical main column -> significant increase in column lifetime
- Minimized void volume -> suitable also for ultra fast HPLC
- Special ferrules -> pressure stability up to 1034 bar (15000 psi)
- Visual contamination check -> in-time changing of the guard column
- Guard column length 4 mm, ID 2 mm (for main columns with 2 mm ID) or ID 3 mm (for main columns with 3, 4 and 4,6 mm ID)
- UNIVERSAL RP guard columns suitable for all HPLC columns under RP conditions

**Content of the column protection system**
- Cartridge holder (1 piece)
- Capillaries (2 pieces)
- Ferrules (3 pieces)
- Wrenches (2 pieces)
- Manual

| Art. No. | Pack Qty. | € |
|---|---|---|
| **6041.1** | 1 Kit | 139,90 |



## Guard columns UNIVERSAL

| Designation | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Guard column EC 4/2 UNIVERSAL RP for main columns with 2 mm ID | **6049.1** | 3 | 120,90 |
| Guard column EC 4/3 UNIVERSAL RP for main columns with 3, 4 and 4,6 mm ID | **6050.1** | 3 | 120,90 |

## Replacement parts for Protection System

| Designation | Art. No. | Pack Qty. | € |
|---|---|---|---|
| Replacement ferrules | **6042.1** | 5 | 39,50 |
| Replacement connector including O-ring | **6043.1** | 1 | 24,50 |
| Replacement capillary tubes, nuts and metal ferrules | **6045.1** | 3 | 53,90 |

# Ion Pair Reagents



Ion pair reagents are strongly hydrophobic ions which form neutral ion pairs with oppositely charched sample molecules. In this way, the simultaneous separation of charged and non-charged molecules is possible.

## Advantages:
- High purity
- High UV-permeability
- Broad range of products
- Excellent price/performance ratio

## Ion pair reagents

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Butane-1-sulphonic acid sodium salt** | ≥99 % | **KK50.1** | 10 g | 49,35 |
| | | **KK50.2** | 25 g | 93,45 |
| | | **KK50.3** | 100 g | 284,90 |
| **Decane-1-sulphonic acid sodium salt** | ≥99 % | **KK51.1** | 10 g | 51,10 |
| | | **KK51.2** | 25 g | 99,90 |
| | | **KK51.3** | 100 g | 309,10 |
| **Dodecane-1-sulphonic acid sodium salt** | ≥99 % | **KK52.1** | 10 g | 54,75 |
| | | **KK52.2** | 25 g | 107,40 |
| | | **KK52.3** | 100 g | 353,70 |
| **Heptane-1-sulphonic acid sodium salt** | ≥98 % | **KK53.1** | 10 g | 46,15 |
| | | **KK53.2** | 25 g | 89,15 |
| | | **KK53.3** | 100 g | 267,70 |
| **Hexane-1-sulphonic acid sodium salt** | ≥98 % | **KK54.1** | 10 g | 46,15 |
| | | **KK54.2** | 25 g | 89,15 |
| | | **KK54.3** | 100 g | 267,70 |
| **Octane-1-sulphonic acid sodium salt** | ≥98 % | **KK55.1** | 10 g | 46,15 |
| | | **KK55.2** | 25 g | 89,15 |
| | | **KK55.3** | 100 g | 267,70 |
| **Pentane-1-sulphonic acid sodium salt** | ≥98 % | **KK56.1** | 10 g | 46,15 |
| | | **KK56.2** | 25 g | 89,15 |
| | | **KK56.3** | 100 g | 267,70 |
| **Propane-1-sulphonic acid sodium salt** | ≥98 % | **KK57.1** | 10 g | 53,65 |
| | | **KK57.2** | 25 g | 105,90 |
| | | **KK57.3** | 100 g | 327,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

# ROTISOLV®
# Ultra LC-MS Solvents



Short analysis times in ultrafast HPLC as well as systems coupled to a mass spectrometer require solvents which offer utmost reliability, sensitivity and reproducibility. Our **ROTISOLV® Ultra LC-MS solvents** are specially suited for meeting these demands and have undergone extremely intensive production and quality controls.

- Filtered through **0,1 µm** membrane
- Extra high purity (≥99,98 %)
- Bottled under protective gas
- High UV-permeability
- Low fluorescence
- LC-MS suitability tested
- Solid residue from evaporation max. 1 ppm
- Metal trace impurities max. 100 ppb

## Example specification:

### Acetonitrile
**ROTISOLV® ≥99,98 %, Ultra LC-MS**
Methyl cyanide, Cyanomethane
$C_2H_3N$
M 41,05 g/mol

**Danger** H225-H302+H312+H332-H319

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,98 % |
| Colour (APHA) | ≤5 |
| Water (KF) | ≤0,01 % |
| Free acid (as $CH_3COOH$) | ≤0,001 % |
| Free alkali (as $NH_3$) | ≤0,0001 % |
| Non volatile matter | ≤0,0001 % |
| Transmission: | |
| 230 nm | ≥99 % |
| 215 nm | ≥98 % |
| 200 nm | ≥97 % |
| 195 nm | ≥85 % |
| 191 nm | ≥30 % |
| Gradient test: | |
| UV-absorption of the greatest eluated peak. | |
| 210 nm | ≤0,001 AU |
| 254 nm | ≤0,0003 AU |
| Fluorescence (as quinine): | |
| 254 nm | ≤0,25 ppb |
| 365 nm | ≤0,25 ppb |
| Trace impurities: | |
| Aluminium (Al) | ≤20 ppb |
| Calcium (Ca) | ≤50 ppb |
| Iron (Fe) | ≤20 ppb |
| Potassium (K) | ≤50 ppb |
| Magnesium (Mg) | ≤20 ppb |
| Sodium (Na) | ≤100 ppb |

Filtered through 0,1 µm membrane and filled under protective gas.

### Acetonitrile
**ROTISOLV® ≥99,98 %, Ultra LC-MS**
Methyl cyanide, Cyanomethane
$C_2H_3N$
M 41,05 g/mol

**Danger** H225-H302+H312+H332-H319

| | | | |
|---|---|---|---|
| **HN40.1** | 1 l | glass | 80,55 € |
| Original pack 6 x 1 l | | | 76,52/1 l |
| **HN40.2** | 2,5 l | glass | 150,40 € |
| Original pack 4 x 2,5 l | | | 142,88/2,5 l |

### Methanol
**ROTISOLV® ≥99,98 %, Ultra LC-MS**
Methyl alcohol, Carbinol
$CH_3OH$
M 32,04 g/mol

**Danger** H225-H301+H311+H331-H370

| | | | |
|---|---|---|---|
| **HN41.1** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **HN41.2** | 2,5 l | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |

### 2-Propanol
NEW
**ROTISOLV® ≥99,95 %, Ultra LC-MS**
Isopropanol, Isopropyl alcohol, Dimethyl carbinol, IPA, 2-Hydroxypropane
$C_3H_8O$
M 60,10 g/mol

**Danger** H225-H319-H336

| | | | |
|---|---|---|---|
| **0733.1** | 1 l | glass | 53,65 € |
| Original pack 6 x 1 l | | | 50,97/1 l |
| **0733.2** | 2,5 l | glass | 95,70 € |
| Original pack 4 x 2,5 l | | | 90,92/2,5 l |

### Tetrahydrofuran
NEW
**ROTISOLV® ≥99,9 %, Ultra LC-MS, not stabilized**
THF, Oxolane
$C_4H_8O$
M 72,11 g/mol

**Danger** H225-H319-H335-H351-EUH019

| | | | |
|---|---|---|---|
| **0739.1** | 1 l | glass | 117,20 € |
| Original pack 6 x 1 l | | | 111,34/1 l |

### Water
**ROTISOLV® Ultra LC-MS**
$H_2O$
M 18,02 g/mol

| | | | |
|---|---|---|---|
| **HN43.1** | 1 l | glass | 36,25 € |
| Original pack 6 x 1 l | | | 34,44/1 l |
| **HN43.2** | 2,5 l | glass | 77,30 € |
| Original pack 4 x 2,5 l | | | 73,44/2,5 l |

▶ Vials for automatic samplers and accessories see chapter Labware - Labware & Aids page 62

**Safety data sheets**
can be found on the Internet next to the product description.

# ROTISOLV®
# LC-MS-Grade Solvents




Modern analysis methods such as LC-MS (combination of liquid chromatography and mass spectroscopy) call for a special solvent quality which has the required purity and which has been tested under application-oriented conditions.
Very high purity and very low metal concentrations are features of these products which allow exact interpretations of the mass spectra.

- High chemical purity (≥99,95 %)
- High UV-permeability
- Low fluorescence
- Superior gradient baseline
- Metal trace impurities (≤0,05 ppm)
- Test for LC-MS suitability
- Filtered through 0,2 µm membrane
- Bottled under inert gas

## Example specification:

### Acetonitrile
**ROTISOLV® ≥99,95 %, LC-MS Grade**
Methyl cyanide, Cyanomethane
$C_2H_3N$
M 41,05 g/mol

**Danger** H225-H302+H312+H332-H319

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,95 % |
| Colour (APHA) | ≤5 |
| Water (KF) | ≤0,01 % |
| Free acid (as $CH_3COOH$) | ≤0,001 % |
| Free alkali (as $NH_3$) | ≤0,0001 % |
| Non volatile matter | ≤0,0001 % |
| Transmission: | |
| 240 nm | ≥99 % |
| 220 nm | ≥98 % |
| 200 nm | ≥95 % |
| 195 nm | ≥78 % |
| Gradient test: | |
| UV absorption of the greatest eluated peak | |
| 210 nm | ≤0,005 AU |
| 254 nm | ≤0,002 AU |
| Fluorescence (as quinine): | |
| 254 nm | ≤0,2 ppb |
| 365 nm | ≤0,2 ppb |
| Trace impurities: | |
| Aluminium (Al) | ≤0,05 ppm |
| Calcium (Ca) | ≤0,05 ppm |
| Iron (Fe) | ≤0,05 ppm |
| Potassium (K) | ≤0,05 ppm |
| Magnesium (Mg) | ≤0,05 ppm |
| Sodium (Na) | ≤0,05 ppm |
| LC-MS suitability test | complies |

Filtered through 0,2 µm membrane and filled under protective gas.

### Acetic acid ethyl ester
**ROTISOLV® ≥99,9 %, LC-MS-Grade**
Ethyl acetate, Acetic ester
$C_4H_8O_2$
M 88,11 g/mol

**Danger** H225-H319-H336-EUH066

| | | | | |
|---|---|---|---|---|
| **AE69.1** | 1 l | | glass | 48,30 € |
| Original pack 6 x 1 l | | | | 45,89/1 l |
| **AE69.2** | 2,5 l | | glass | 99,90 € |
| Original pack 4 x 2,5 l | | | | 94,91/2,5 l |

### Acetonitrile
**ROTISOLV® ≥99,95 %, LC-MS Grade**
Methyl cyanide, Cyanomethane
$C_2H_3N$
M 41,05 g/mol

**Danger** H225-H302+H312+H332-H319

| | | | | |
|---|---|---|---|---|
| **AE70.1** | 1 l | | glass | 74,10 € |
| Original pack 6 x 1 l | | | | 70,40/1 l |
| **AE70.2** | 2,5 l | | glass | 121,40 € |
| Original pack 4 x 2,5 l | | | | 115,33/2,5 l |

### Methanol
**ROTISOLV® ≥99,95 %, LC-MS-Grade**
Methyl alcohol, Carbinol
$CH_3OH$
M 32,04 g/mol

**Danger** H225-H301+H311+H331-H370

| | | | | |
|---|---|---|---|---|
| **AE71.1** | 1 l | | glass | 28,50 € |
| Original pack 6 x 1 l | | | | 27,08/1 l |
| **AE71.2** | 2,5 l | | glass | 61,85 € |
| Original pack 4 x 2,5 l | | | | 58,76/2,5 l |

### 2-Propanol
**ROTISOLV® ≥99,95 %, LC-MS Grade**
Isopropanol, Isopropyl alcohol, Dimethyl carbinol, IPA, 2-Hydroxypropane
$C_3H_8O$
M 60,10 g/mol

**Danger** H225-H319-H336

| | | | | |
|---|---|---|---|---|
| **AE73.1** | 1 l | | glass | 38,20 € |
| Original pack 6 x 1 l | | | | 36,29/1 l |
| **AE73.2** | 2,5 l | | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | | 71,39/2,5 l |

### Water
**ROTISOLV® LC-MS Grade**
$H_2O$
M 18,02 g/mol

| | | | | |
|---|---|---|---|---|
| **AE72.1** | 1 l | | plastic | 28,95 € |
| Original pack 6 x 1 l | | | | 27,50/1 l |
| **AE72.3** | 2,5 l | new size | glass | 70,85 € |
| Original pack 4 x 2,5 l | | | | 67,31/2,5 l |
| **AE72.2** | 5 l | | plastic | 131,05 € |
| Original pack 2 x 5 l | | | | 124,50/5 l |

# Assortment ROTISOLV® HPLC Solvents

## for liquid chromatography



**Available in different quality grades:**
- **HPLC Grade**
- **HPLC Gradient Grade**
- **HPLC Ultra Gradient Grade**

ROTISOLV®-HPLC solvents meet all the requirements in high-performance liquid chromatography (HPLC). Their application ranges from routine applications (HPLC Grade) to specific analytic tasks (HPLC Ultra Gradient Grade).

- High chemical purity
- High UV-permeability
- Low fluorescence
- Low residue from evaporation
- Low water and acid content
- Filtered through 0,2 µm membrane
- Bottled under inert gas

### Example specification:

### Acetonitrile

**ROTISOLV® HPLC Gradient Grade**

Methyl cyanide, Cyanomethane

$C_2H_3N$

M 41,05 g/mol

**Danger** H225-H302+H312+H332-H319

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,9 % |
| Water (KF) | ≤0,02 % |
| Free acid | ≤0,001 % |
| Non volatile matter | ≤0,0002 % |
| Transmission: | |
| > 220 nm | ≥99 % |
| 220 nm | ≥98 % |
| 200 nm | ≥96 % |
| 195 nm | ≥85 % |
| 192 nm | ≥50 % |
| 190 nm | ≥10 % |
| Gradient test: | |
| UV absorption of the greatest eluated peak | |
| 210 nm | ≤1,0 mAU |
| 254 nm | ≤0,5 mAU |
| Fluorescence (as quinine): | |
| 254 nm | ≤1,0 ppb |
| 365 nm | ≤0,5 ppb |

Filtered through 0,2 µm membrane and filled under protective gas.

### ROTISOLV® HPLC Solvents

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Acetic acid ethyl ester** | HPLC | **7336.2** | 1 l | glass | 36,45 |
| | | **7336.1** | 2,5 l | glass | 70,85 |
| **Acetone** | HPLC | **7328.1** | 1 l | glass | 28,95 |
| | | **7328.2** | 2,5 l | glass | 51,10 |
| **Acetonitrile** | HPLC Ultra Gradient Grade | **T195.1** | 1 l | glass | 69,35 |
| | | **T195.2** | 2,5 l | glass | 116,65 |
| | HPLC Gradient Grade | **8825.1** | 1 l | glass | 44,65 |
| | | **8825.2** | 2,5 l | glass | 93,00 |
| | HPLC Gradient | **HN44.1** | 1 l | glass | 39,25 |
| | | **HN44.2** | 2,5 l | glass | 75,15 |
| | HPLC | **7330.1** | 1 l | glass | 38,60 |
| | | **7330.2** | 2,5 l | glass | 71,95 |
| | HPLC, isocratic | **CN20.1** | 1 l | glass | 38,60 |
| | | **CN20.2** | 2,5 l | glass | 72,60 |
| | ≥99,8 %, for preparative HPLC | **6827.1** | 2,5 l | glass | 57,55 |
| | | **6827.2** | 25 l | tinplate | 413,90 |
| **1-Butanol** | HPLC | **T178.1** | 2,5 l | glass | 97,75 |
| **tert-Butyl methyl ether** | HPLC | **T175.2** | 1 l | glass | 44,00 |
| | | **T175.1** | 2,5 l | glass | 98,80 |
| **Cyclohexane** | HPLC | **7333.2** | 1 l | glass | 47,20 |
| | | **7333.1** | 2,5 l | glass | 84,85 |
| **Dichloromethane** | HPLC | **7334.2** | 1 l | glass | 37,10 |
| | | **7334.1** | 2,5 l | glass | 57,55 |
| **N,N-Dimethyl-formamide (DMF)** | HPLC NEW | **0702.1** | 2,5 l | glass | 89,80 |
| **Dimethyl sulphoxide (DMSO)** | HPLC NEW | **0728.1** | 2,5 l | glass | 149,45 |
| **1,4-Dioxane** | HPLC, not stabilized | **X949.1** | 1 l | glass | 62,25 |
| | | **X949.2** | 2,5 l | glass | 142,90 |
| **Ethanol** | HPLC Gradient Grade | **P076.1** | 1 l | glass | 93,00 |
| | | **P076.2** | 2,5 l | glass | 189,75 |
| **n-Heptane** | ≥99 %, HPLC | **6828.1** | 2,5 l | glass | 107,40 |
| | ≥95 %, HPLC | **7337.2** | 1 l | glass | 46,80 |
| | | **7337.1** | 2,5 l | glass | 102,05 |
| **n-Hexane** | HPLC | **7339.2** | 1 l | glass | 39,70 |
| | | **7339.1** | 2,5 l | glass | 81,60 |
| **Isohexane** | HPLC | **T176.2** | 1 l | glass | 52,60 |
| | | **T176.1** | 2,5 l | glass | 103,75 |
| **Isooctane** | HPLC | **7340.1** | 2,5 l | glass | 103,75 |
| **Methanol** | HPLC Ultra Gradient Grade | **X948.1** | 1 l | glass | 24,65 |
| | | **X948.2** | 2,5 l | glass | 44,00 |
| | HPLC Gradient | **KK39.2** | 2,5 l | glass | 29,60 |
| | HPLC Gradient Grade | **7342.2** | 1 l | glass | 21,40 |
| | | **7342.1** | 2,5 l | glass | 37,55 |
| | HPLC | **P717.2** | 1 l | glass | 18,50 |
| | | **P717.1** | 2,5 l | glass | 29,60 |
| **n-Pentane** | HPLC | **CN99.1** | 1 l | glass | 63,35 |
| | | **CN99.2** | 2,5 l | glass | 136,45 |
| **Petroleum ether 40-60 °C** | HPLC NEW | **0731.1** | 2,5 l | glass | 64,40 |
| **1-Propanol** | HPLC | **T177.1** | 2,5 l | glass | 117,20 |
| **2-Propanol** | HPLC | **7343.2** | 1 l | glass | 32,15 |
| | | **7343.1** | 2,5 l | glass | 67,65 |
| **Tetrahydrofuran** | HPLC, not stabilized | **7344.1** | 1 l | glass | 50,00 |
| | | **7344.2** | 2,5 l | glass | 104,20 |
| **Toluene** | HPLC | **7346.2** | 1 l | glass | 36,45 |
| | | **7346.1** | 2,5 l | glass | 75,15 |
| **Trichloromethane/ Chloroform** | HPLC | **7331.2** | 1 l | glass | 38,60 |
| | | **7331.1** | 2,5 l | glass | 80,55 |
| **Water** | HPLC Gradient Grade | **A511.1** | 1 l | glass | 17,45 |
| | | **A511.2** | 2,5 l | glass | 31,75 |
| | | **A511.3** | 5 l | plastic | 59,05 |

For additional product data and safety information, see chapter Chemicals A-Z.

# ROTISOLV®Acetonitriles

## Overview of ROTISOLV® acetonitriles

We supply you with the ideal acetonitrile for any LC application, from our proven HPLC grade acetonitriles for simple, routine tasks and preparative separations to our premium grade for efficient and super-fast Ultra LC-MS applications.

| Specification | ROTISOLV® Ultra LC-MS | ROTISOLV® LC-MS Grade | ROTISOLV® HPLC Ultra Gradient Grade | ROTISOLV® HPLC Gradient Grade | ROTISOLV® HPLC Gradient | ROTISOLV® HPLC | ROTISOLV® HPLC, isocratic | ROTISOLV® for preparative HPLC |
|---|---|---|---|---|---|---|---|---|
| Assay | ≥99,98 % | ≥99,95 % | ≥99,95 % | ≥99,9 % | ≥99,9 % | ≥99,9 % | ≥99,9 % | ≥99,8 % |
| Water (KF) | ≤0,01 % | ≤0,01 % | ≤0,01 % | ≤0,02 % | ≤0,02 % | ≤0,03 % | ≤0,015 % | ≤0,05 % |
| free acid (as $CH_3COOH$)/acidity | ≤0,001 % | ≤0,001 % | ≤0,001 % | ≤0,001 % | ≤0,002 % | ≤0,002 % | | ≤0,005 % |
| free alcali (as $NH_3$)/alcality | ≤0,0001 % | ≤0,0001 % | ≤0,0001 % | | ≤0,0002 % | | | ≤0,0005 % |
| Non volatile matter | ≤0,0001 % | ≤0,0001 % | ≤0,0001 % | ≤0,0002 % | ≤0,0002 % | ≤0,0003 % | ≤0,0005 % | |
| UV transmission: | | | | | | | | |
| 254 nm | | | | | ≥99 % | | | |
| ≥240 nm | | | | | | | ≥99 % | |
| 240 nm | | ≥99 % | | | | | | |
| >230 nm | | | | | | ≥99 % | | |
| 230 nm | ≥99 % | | ≥99 % | | | | ≥96 % | ≥96 % |
| ≥220 nm | | | | ≥99 % | | | | |
| 220 nm | | ≥98 % | | ≥98 % | ≥98 % | | | ≥90 % |
| 215 nm | ≥98 % | | ≥98 % | | | ≥95 % | | |
| 200 nm | ≥97 % | ≥95 % | ≥96 % | ≥96 % | ≥95 % | | ≥80 % | |
| 195 nm | ≥85 % | ≥78 % | ≥85 % | ≥85 % | ≥80 % | ≥80 % | | |
| 193 nm | | | | | ≥60 % | | | |
| 192 nm | | | | ≥50 % | | | | |
| 191 nm | ≥30 % | | ≥25 % | | | | | |
| 190 nm | | | | ≥10 % | | | | |
| Gradient test: UV absorption of the greatest eluated peak | | | | | | | | |
| 210 nm | ≤0,001 AU | ≤0,005 AU | ≤1,0 mAU | ≤1,0 mAU | ≤2,0 mAU | | | |
| 254 nm | ≤0,0003 AU | ≤0,002 AU | ≤0,2 mAU | ≤0,5 mAU | | | | |
| Fluorescence (as quinine): | | | | | | | | |
| 254 nm | ≤0,25 ppb | ≤0,2 ppb | ≤0,2 ppb | ≤1,0 ppb | ≤0,5 ppb | | | |
| 365 nm | ≤0,25 ppb | ≤0,2 ppb | ≤0,2 ppb | ≤0,5 ppb | ≤0,5 ppb | | | |
| PAH-test (<2 ppb, HPLC) | | | complies | | | | | |
| Trace elements: | | | | | | | | |
| Aluminium (Al) | ≤20 ppb | ≤0,05 ppm | | | | | | |
| Calcium (Ca) | ≤50 ppb | ≤0,05 ppm | | | | | | |
| Iron (Fe) | ≤20 ppb | ≤0,05 ppm | | | | | | |
| Potassium (K) | ≤50 ppb | ≤0,05 ppm | | | | | | |
| Magnesium (Mg) | ≤20 ppb | ≤0,05 ppm | | | | | | |
| Sodium (Na) | ≤100 ppb | ≤0,05 ppm | | | | | | |
| Particle filtration through membrane | 0,1 µm | 0,2 µm | 0,2 µm | 0,2 µm | 0,2 µm | 0,2 µm | 0,2 µm | 0,2 µm |
| Pack quantities and order numbers: | | | | | | | | |
| 1 l (glass) | HN40.1 | AE70.1 | T195.1 | 8825.1 | HN44.1 | 7330.1 | CN20.1 | – |
| 2,5 l (glass) | HN40.2 | AE70.2 | T195.2 | 8825.2 | HN44.2 | 7330.2 | CN20.2 | 6827.1 |
| 25 l (tinplate) | – | – | – | – | – | – | – | 6827.2 |

## Physical Data of ROTISOLV® HPLC Solvents

### Arranged in order according to the polarity paramter P(1)

| | P | $X_e$ | $X_d$ | $X_n$ | Group |
|---|---|---|---|---|---|
| n-Hexane | 0,1 | | | | |
| Isooctane | 0,1 | | | | |
| n-Heptane | 0,2 | | | | |
| Cyclohexane | 0,2 | | | | |
| Tetrachloromethane | 1,6 | | | | |
| Toluene | 2,4 | 0,25 | 0,28 | 0,47 | VII |
| Benzene | 2,7 | 0,23 | 0,32 | 0,45 | VII |
| Dichloromethane | 3,1 | 0,29 | 0,18 | 0,53 | V |
| Isopropanol | 3,9 | 0,55 | 0,19 | 0,27 | II |
| Tetrahydrofuran | 4,0 | 0,38 | 0,20 | 0,42 | III |
| Trichloromethane | 4,1 | 0,25 | 0,41 | 0,33 | VIII |
| Ethyl acetate | 4,4 | 0,34 | 0,23 | 0,43 | VI |
| Acetone | 5,1 | 0,35 | 0,23 | 0,42 | VI |
| Methanol | 5,1 | 0,48 | 0,22 | 0,31 | II |
| Acetonitrile | 5,8 | 0,31 | 0,27 | 0,42 | VI |

(1) L.R. Snyder J. Chromatogr. Sci 16, 223 (1978)

P = Polarity index acc. to Snyder
X = Selectivity parameter
$X_e$ = Index for proton acceptor effect
$X_d$ = Index for proton donator effect
$X_n$ = Index for dipole-dipole interaction

### Arranged in order according to solvent strength(1)

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| n-Hexane | 0,01 | | 1,88 | 0,30 | 1,3751 | 69 | |
| n-Heptane | 0,01 | | 1,92 | 0,40 | 1,3878 | 98,4 | |
| Isooctane | 0,01 | | 1,94 | 0,47 | 1,3915 | 99,2 | |
| Cyclohexane | 0,04 | | 2,02 | 0,90 | 1,4266 | 80,7 | |
| Tetrachloromethane | 0,18 | | 2,24 | 0,90 | 1,4601 | 76,5 | 0 |
| Toluene | 0,29 | | 0,55 | 0,55 | 1,4961 | 110,6 | 0,36 |
| Benzene | 0,32 | | 2,3 | 0,60 | 1,5011 | 80,1 | 0 |
| Trichloromethane | 0,40 | | 4,8 | 0,53 | 1,4459 | 61,7 | 1,01 |
| Dichloromethane | 0,42 | | 8,9 | 0,41 | 1,4242 | 40 | 1,6 |
| Acetone | 0,56 | 3,4 | 21,4 | 0,30 | 1,3588 | 56,2 | 2,88 |
| Tetrahydrofurane | 0,57 | 4,4 | 7,6 | 0,46 | 1,4050 | 67 | 1,63 |
| Ethyl acetate | 0,58 | | 6,0 | 0,43 | 1,3723 | 77,1 | 1,78 |
| Acetonitrile | 0,65 | 3,1 | 37,5 | 0,34 | 1,3442 | 81,6 | 3,92 |
| 2-Propanol | 0,82 | 4,2 | 20,3 | 1,9 | 1,3776 | 82,4 | 1,66 |
| Methanol | 0,95 | 3,0 | 32,7 | 0,54 | 1,3288 | 65 | 1,7 |
| Water | | 0,0 | 80 | 0,89 | 1,333 | 100 | 1,82 |

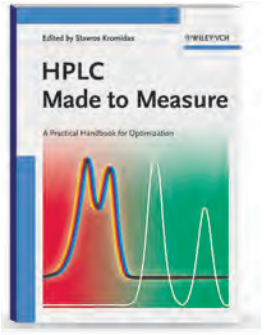
(1) L.R. Snyder and J.J. Kirkland: Introduction to Modern Liquid Chromatography, 2nd Ed. (Wiley-Interscience, New York, 1979)
(2) aluminium oxide as stationary phase
(3) RP-silica gel as stationary phase
(4) L.R. Snyder, J.W. Dolan and J.R. Gant: J. Chromatogr. 165, 3 (1979)
(5) Handbook of Chemistry and Physics 65th 1983 CRC Press, Boca Raton, Florida

A = $\varepsilon_o$(A)(2)
B = $\varepsilon_o$(RP)(3,4)
C = relative permittivity(1) ε(20 °C)
D = viscosity h in cp (25 °C)
E = refractive index(5) $n_D^{20}$
F = boiling point(5) bp in °C
G = dipole moment

## UV Cut-off and miscibility of some HPLC solvents

| UV cut-off (nm) | Solvents | Acetone | Acetonitrile | 1-Butanol | tert.-Butyl methyl ether | Cyclohexane | Dichloromethane | 1,4-Dioxane | Esthyl actetate | Ethanol | n-Heptane | n-Hexane | Isooctane | Methanol | n-Pentane | 2-Propanol | Tetrahydrofuran | Toluene | Trichloromethane | Water |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 330 | Acetone | | | | | | | | | | | | | | | | | | | |
| 190 | Acetonitrile | | | | | ■ | | | | | ■ | ■ | ■ | | ■ | | | | | |
| 215 | 1-Butanol | | | | | | | | | | | | | | | | | | | ■ |
| 210 | tert.-Butyl methyl ether | | | | | | | | | | | | | | | | | | | ■ |
| 200 | Cyclohexane | | ■ | | | | | | | | | | | ■ | | | | | | ■ |
| 233 | Dichloromethane | | | | | | | | | | | | | | | | | | | ■ |
| 215 | 1,4-Dioxane | | | | | | | | | | | | | | | | | | | |
| 256 | Ethyl acetate | | | | | | | | | | | | | | | | | | | ■ |
| 210 | Ethanol | | | | | | | | | | | | | | | | | | | |
| 200 | n-Heptane | | ■ | | | | | | | | | | | ■ | | | | | | ■ |
| 195 | n-Hexane | | ■ | | | | | | | | | | | ■ | | | | | | ■ |
| 215 | Isooctane | | ■ | | | | | | | | | | | ■ | | | | | | ■ |
| 206 | Methanol | | | | | ■ | | | | | ■ | ■ | ■ | | ■ | | | | | |
| 190 | n-Pentane | | ■ | | | | | | | | | | | ■ | | | | | | ■ |
| 205 | 2-Propanol | | | | | | | | | | | | | | | | | | | |
| 212 | Tetrahydrofuran | | | | | | | | | | | | | | | | | | | |
| 284 | Toluene | | | | | | | | | | | | | | | | | | | ■ |
| 245 | Trichloromethane | | | | | | | | | | | | | | | | | | | ■ |
| 190 | Water | | | ■ | ■ | ■ | ■ | | ■ | | ■ | ■ | ■ | | ■ | | | ■ | ■ | |

■ not miscible




## HPLC Made to Messure

A Practical Handbook for Optimization.
Kromidas, Stavros (Ed.)
1st Edition - May 2006, 753 pages, hard cover
ISBN 978-3-527-31377-8

**Short description:**
The only topical book to focus on optimization, this volume addresses the needs of users wishing to improve their methods in particular in terms of throughput, accuracy and cost-effectiveness. Written by bestseller authors and scientists working for major international companies.

| Titel | Art. No. | Pack Qty. | Price incl. VAT. € |
|---|---|---|---|
| **HPLC Made to Measure** | **HX93.1** | 1 | 179,00 |

# ROTISOLV®
# LC-MS-Eluent Mixtures



ready-to-use

## Features:

- Ready-to-use solvent blends for easy handling
- High chemical purity of the used raw material: HPLC solvents (≥99,9 %) and acids (≥99,9 %)
- High accuracy of the ratio of ingredients
- High UV-permeability
- Trace elements: ≤0,05 ppm per element
- LC-MS suitability tested
- Filtered through 0,2 µm membrane
- Bottled under inert gas

### Acetonitrile with 0,1 % acetic acid

**ROTISOLV® ≥99,9 %, LC-MS-Grade**

Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
$C_2H_3N$
M 41,05 g/mol

**Danger** H225-H302+H312+H332-H319

| | | | |
|---|---|---|---|
| **CP01.1** | 1 l | glass | 81,20 € |
| Original pack 6 x 1 l | | | 77,14/1 l |
| **CP01.2** | 2,5 l | glass | 180,50 € |
| Original pack 4 x 2,5 l | | | 171,48/2,5 l |

### Acetonitrile with 0,1 % formic acid

**ROTISOLV® ≥99,9 %, LC-MS-Grade**

Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
$C_2H_3N$
M 41,05 g/mol

**Danger** H225-H302+H312+H332-H319

| | | | |
|---|---|---|---|
| **CP00.1** | 1 l | glass | 81,20 € |
| Original pack 6 x 1 l | | | 77,14/1 l |
| **CP00.2** | 2,5 l | glass | 180,50 € |
| Original pack 4 x 2,5 l | | | 171,48/2,5 l |

### Acetonitrile with 0,1 % trifluoroacetic acid

**ROTISOLV® ≥99,9 %, LC-MS-Grade**

Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
$C_2H_3N$
M 41,05 g/mol

**Danger** H225-H302+H312+H332-H319

| | | | |
|---|---|---|---|
| **CP02.1** | 1 l | glass | 81,20 € |
| Original pack 6 x 1 l | | | 77,14/1 l |
| **CP02.2** | 2,5 l | glass | 180,50 € |
| Original pack 4 x 2,5 l | | | 171,48/2,5 l |

### Methanol with 0,1 % trifluoroacetic acid

**ROTISOLV® ≥99,95 %, LC-MS Grade**

Eluent mixture for high performance liquid chromatography.
Methanol mixture
$CH_3OH$
M 32,04 g/mol

**Danger** H225-H370-H301+H311+H331

| | | | |
|---|---|---|---|
| **CP06.1** | 1 l | glass | 43,55 € |
| Original pack 6 x 1 l | | | 41,37/1 l |

### Water with 0,1 % acetic acid

**ROTISOLV® LC-MS-Grade**

Eluent mixture for high performance liquid chromatography.
Water mixture
$H_2O$
M 18,01 g/mol

| | | | |
|---|---|---|---|
| **CP04.2** | 2,5 l | glass | 87,65 € |
| Original pack 4 x 2,5 l | | | 83,27/2,5 l |

### Water with 0,1 % formic acid

**ROTISOLV® LC-MS Grade**

Eluent mixture for high performance liquid chromatography.
Water mixture
$H_2O$
M 18,01 g/mol

| | | | |
|---|---|---|---|
| **CP03.1** | 1 l | glass | 42,90 € |
| Original pack 6 x 1 l | | | 40,76/1 l |
| **CP03.2** | 2,5 l | glass | 77,95 € |
| Original pack 4 x 2,5 l | | | 74,05/2,5 l |

### Water with 0,1 % trifluoroacetic acid

**ROTISOLV® LC-MS-Grade**

Eluent mixture for high performance liquid chromatography.
Water mixture
$H_2O$
M 18,01 g/mol

| | | | |
|---|---|---|---|
| **CP05.2** | 2,5 l | glass | 84,85 € |
| Original pack 4 x 2,5 l | | | 80,61/2,5 l |

▶ More details on specifications see chapter Chemicals A-Z.

### Starting material for eluent mixtures

TIP

For the preperation of individual eluent mixtures we offer acids and salts of highest purity:

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Acetic acid** | 100 %, p.a. | **3738.1** | 1 l | glass | 24,65 |
| | | **3738.4** | 1 l | plastic | 22,50 |
| | | **3738.2** | 2,5 l | glass | 52,60 |
| | | **3738.5** | 2,5 l | plastic | 50,00 |
| | | **3738.3** | 10 l | plastic | 125,25 |
| **Ammonium acetate** | ≥97 %, p.a., ACS | **7869.2** | 500 g | plastic | 27,85 |
| | | **7869.1** | 1 kg | plastic | 39,70 |
| | | **7869.3** | 2,5 kg | plastic | 67,65 |
| **Formic acid** | ≥98 %, p.a., ACS | **4724.3** | 500 ml | glass | 19,90 |
| | | **4724.1** | 1 l | glass | 33,90 |
| | | **4724.2** | 2,5 l | glass | 71,95 |
| **Trifluoroacetic acid (TFA)** | ≥99,9 %, for (peptide) synthesis | **P088.1** | 100 ml | glass | 61,85 |
| | | **P088.2** | 500 ml | glass | 177,40 |
| | | **P088.3** | 1 l | glass | 310,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Sorbents for Column Chromatography

We offer a wide range of sorbents for conventional column chromatography. A variety of different particle sizes and modifications means that the right filling material is available for all your separation applications.

## Silica Gels

Silica gels are the most important sorbents in the purification and separation processes used in column chromatography. Our extensive range of silica gels with various different pore and particle sizes means that we always have the right material for any separation procedure. In addition to standard **60 Å** silica gel, our range includes silica gels with pore sizes between **150 Å** and **1000 Å,** as well **22 Å** and **35 Å** for separating particularly small molecules. A selection of modified silica gel 60 grades completes the range.

**Advantages:**

- Extensive range
- Stringent quality control of the source materials and the end products
- High purity; optimised to meet the needs of chromatography applications
- Large surface area for a high load-bearing capacity
- Tight particle size distribution for optimal efficiency and low pressure variations






### Applications

| Pore size | 35-150 Å | | | 250-4500 Å |
|---|---|---|---|---|
| **Fields** | Pharmacy | Foods and Cosmetics | Chemistry | Biotechnology |
| **Applications** | Vitamins<br>Antibiotics<br>Vaccines<br>Organic synthesis<br>Lubricants<br>Functional Food | Oils and Fats<br>Natural Products<br>Stripping Agents<br>Chemical Synthesis | Pesticides<br>Lipids | Vaccines<br>DNA<br>Enzymes<br>Carriers<br>Biomolecules |

### 3 Steps to the appropriate silica gel

Step 1: The pore size is selected based on the molar mass of the sample.

| Molar mass (g/mol) | Pore size (Å) |
|---|---|
| <350 | 35 |
| <800 | 60 |
| <15 000 | 150 |
| <100 000 | 250 |
| <250 000 | 500 |
| >250 000 | 1000-4500 |

Step 2: The grain size is selected with respect to the pressure within the system.

| Pressure (bar) | Grain size (mm) |
|---|---|
| 65 | 0,01 |
| 20 | 0,016-0,024 |
| 15 | 0,02-0,045 |
| 5 | 0,04-0,063 |
| 2 | 0,07-0,2 |
| <1 | >0,2 |




Step 3: The surface functionality is adapted to the solubility of the sample and the required degree of separation.
Polarity series: Silica gel > Diol > Amino > Cyano > C18.

| Mobile phase | Stationary phase |
|---|---|
| Nonpolar to medium polar solvents (normal phase) | Silica gel |
| Nonpolar to polar solvents (normal phase, reversed phase) | Diol |
| | Amino |
| | Cyano |
| Polar solvents (reversed phase) | C18 |

## Silica Gel, unmodified

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Silica gel 22** | Grade 12<br>0,07-0,21 mm<br>(200-70 mesh) | **9698.1** | 250 g | 49,35 |
| | | **9698.2** | 500 g | 75,15 |
| | | **9698.3** | 1 kg | 132,15 |
| | | **9698.4** | 2,5 kg | 256,95 |
| **Silica gel 35** | 0,01-0,014 mm NEW | **0380.1** | 250 g | 42,90 |
| | | **0380.2** | 500 g | 70,85 |
| | | **0380.3** | 1 kg | 127,95 |
| | | **0380.4** | 2,5 kg | 267,70 |
| | 0,04-0,063 mm<br>(400-230 mesh) | **5400.1** | 250 g | 40,35 |
| | | **5400.2** | 500 g | 70,85 |
| | | **5400.3** | 1 kg | 113,85 |
| | | **5400.4** | 2,5 kg | 225,65 |
| **Silica gel 60** | 0,006-0,035 mm | **9779.1** | 250 g | 32,15 |
| | | **9779.2** | 500 g | 53,25 |
| | | **9779.3** | 1 kg | 94,50 |
| | | **9779.4** | 2,5 kg | 165,05 |
| | Grade 710 NW<br>0,010-0,014 mm | **9859.1** | 25 g | 44,65 |
| | | **9859.2** | 50 g | 77,95 |
| | | **9859.3** | 100 g | 143,55 |
| | 0,016-0,024 mm | **9817.1** | 250 g | 67,65 |
| | | **9817.2** | 500 g | 123,10 |
| | | **9817.3** | 1 kg | 224,70 |
| | | **9817.4** | 2,5 kg | 504,20 |
| | 0,02-0,045 mm | **0712.1** | 250 g | 27,45 |
| | | **0712.2** | 500 g | 41,85 |
| | | **0712.4** | 1 kg | 70,85 |
| | | **0712.3** | 2,5 kg | 158,60 |
| | 0,03-0,2 mm | **P090.1** | 500 g | 33,25 |
| | | **P090.2** | 1 kg | 57,95 |
| | | **P090.3** | 2,5 kg | 138,70 |
| | | **P090.4** | 5 kg | 209,65 |
| | | **P090.5** | 25 kg | 600,95 |
| | 0,035-0,07 mm<br>(400-220 mesh) | **5401.1** | 250 g | 27,85 |
| | | **5401.2** | 500 g | 44,65 |
| | | **5401.3** | 1 kg | 73,00 |
| | | **5401.4** | 2,5 kg | 165,05 |
| | 0,04-0,063 mm<br>(400-230 mesh) | **P091.1** | 250 g | 29,60 |
| | | **P091.2** | 1 kg | 82,25 |
| | | **P091.3** | 2,5 kg | 188,15 |
| | | **P091.4** | 5 kg | 276,85 |
| | | **P091.5** | 25 kg | 923,45 |
| | 0,07-0,2 mm | **9820.1** | 250 g | 26,80 |
| | | **9820.2** | 500 g | 44,65 |
| | | **9820.3** | 1 kg | 67,20 |
| | | **9820.4** | 2,5 kg | 110,65 |
| | 0,09-0,13 mm NEW | **0399.1** | 250 g | 37,55 |
| | | **0399.2** | 500 g | 64,40 |
| | | **0399.3** | 1 kg | 117,20 |
| | | **0399.4** | 2,5 kg | 235,45 |
| | 0,2-0,5 mm | **CN18.1** | 500 g | 39,25 |
| | | **CN18.2** | 1 kg | 66,15 |
| | | **CN18.3** | 2,5 kg | 149,45 |
| | 0,8-1,2 mm | **9828.1** | 250 g | 28,95 |
| | | **9828.2** | 500 g | 51,50 |
| | | **9828.3** | 1 kg | 78,40 |
| | | **9828.4** | 2,5 kg | 132,80 |
| | 1,0-3,0 mm | **9833.1** | 250 g | 36,45 |
| | | **9833.2** | 500 g | 67,20 |
| | | **9833.3** | 1 kg | 117,20 |
| | | **9833.4** | 2,5 kg | 209,65 |
| **Silica gel 150** | 0,01-0,014 mm NEW | **0405.1** | 100 g | 26,80 |
| | | **0405.2** | 250 g | 48,30 |
| | | **0405.3** | 500 g | 85,90 |
| | | **0405.4** | 1 kg | 149,45 |
| | | **0405.5** | 2,5 kg | 299,95 |

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Silica gel 150** | 0,016-0,024 mm NEW | **0430.1** | 100 g | 32,15 |
| | | **0430.2** | 250 g | 59,05 |
| | | **0430.3** | 500 g | 107,40 |
| | | **0430.4** | 1 kg | 192,45 |
| | 0,03-0,2 mm NEW | **0448.1** | 250 g | 25,70 |
| | | **0448.2** | 500 g | 37,55 |
| | | **0448.3** | 1 kg | 64,40 |
| | | **0448.4** | 2,5 kg | 127,95 |
| | 0,035-0,07 mm<br>(400-220 mesh) | **5402.1** | 250 g | 27,45 |
| | | **5402.2** | 500 g | 41,85 |
| | | **5402.3** | 1 kg | 64,40 |
| | | **5402.4** | 2,5 kg | 142,45 |
| | 0,07-0,2 mm<br>(220-70 mesh) | **5403.1** | 250 g | 27,45 |
| | | **5403.2** | 500 g | 41,85 |
| | | **5403.3** | 1 kg | 64,40 |
| | | **5403.4** | 2,5 kg | 142,45 |
| | 0,1-0,3 mm NEW | **0473.1** | 250 g | 32,15 |
| | | **0473.2** | 500 g | 59,05 |
| | | **0473.3** | 1 kg | 99,45 |
| | | **0473.4** | 2,5 kg | 192,45 |
| | 0,315-0,5 mm NEW | **0485.1** | 250 g | 32,15 |
| | | **0485.2** | 500 g | 56,90 |
| | | **0485.3** | 1 kg | 95,70 |
| | | **0485.4** | 2,5 kg | 192,45 |
| | 0,6-1,4 mm | **9856.1** | 250 g | 28,95 |
| | | **9856.2** | 500 g | 51,50 |
| | | **9856.3** | 1 kg | 83,75 |
| | | **9856.4** | 2,5 kg | 155,90 |
| **Silica gel 250** | 0,04-0,063 mm<br>(400-230 mesh) | **5405.1** | 250 g | 49,35 |
| | | **5405.2** | 500 g | 91,95 |
| | | **5405.3** | 1 kg | 171,90 |
| | | **5405.4** | 2,5 kg | 407,45 |
| | 0,07-0,2 mm NEW | **0493.1** | 100 g | 26,80 |
| | | **0493.2** | 250 g | 48,30 |
| | | **0493.3** | 500 g | 85,90 |
| | | **0493.4** | 1 kg | 160,20 |
| | 0,09-0,13 mm NEW | **0501.1** | 100 g | 32,15 |
| | | **0501.2** | 250 g | 64,40 |
| | | **0501.3** | 500 g | 111,80 |
| | | **0501.4** | 1 kg | 203,20 |
| **Silica gel 500** | 0,035-0,07 mm<br>(400-220 mesh) | **5407.5** | 100 g | 64,40 |
| | | **5407.1** | 250 g | 203,20 |
| | | **5407.2** | 500 g | 375,20 |
| | | **5407.3** | 1 kg | 665,45 |
| | | **5407.4** | 2,5 kg | 1568,45 |
| | 0,09-0,13 mm NEW | **0512.1** | 50 g | 53,65 |
| | | **0512.2** | 100 g | 85,90 |
| | | **0512.3** | 250 g | 181,70 |
| | | **0512.4** | 500 g | 332,20 |
| | 0,1-0,3 mm | **0524.1** | 50 g | 53,65 |
| | | **0524.2** | 100 g | 85,90 |
| | | **0524.3** | 250 g | 181,70 |
| | | **0524.4** | 500 g | 321,45 |
| **Silica gel 1000** | 0,016-0,024 mm NEW | **0533.1** | 10 g | 27,85 |
| | | **0533.2** | 50 g | 70,85 |
| | | **0533.3** | 100 g | 123,55 |
| | | **0533.4** | 250 g | 246,20 |
| | 0,035-0,07 mm<br>(400-220 mesh) | **5409.5** | 100 g | 64,40 |
| | | **5409.1** | 250 g | 189,10 |
| | | **5409.2** | 500 g | 353,70 |
| | | **5409.3** | 1 kg | 643,95 |
| | | **5409.4** | 2,5 kg | 1482,45 |
| | 0,09-0,13 mm NEW | **0153.1** | 10 g | 21,40 |
| | | **0153.2** | 50 g | 53,65 |
| | | **0153.3** | 100 g | 85,90 |
| | | **0153.4** | 250 g | 192,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Silica gel 1500** | 0,016-0,024 mm NEW | **0559.1** | 10 g | 26,80 |
| | | **0559.2** | 50 g | 64,40 |
| | | **0559.3** | 100 g | 117,20 |
| | | **0559.4** | 250 g | 235,45 |
| | 0,09-0,13 mm NEW | **0171.1** | 10 g | 26,80 |
| | | **0171.2** | 50 g | 75,15 |
| | | **0171.3** | 100 g | 127,95 |
| | | **0171.4** | 250 g | 321,45 |
| **Silica gel 2500** | 0,09-0,13 mm NEW | **0177.1** | 10 g | 26,80 |
| | | **0177.2** | 50 g | 75,15 |
| | | **0177.3** | 100 g | 127,95 |
| **Silica gel 4500** | 0,1-0,3 mm NEW | **0186.1** | 10 g | 32,15 |
| | | **0186.2** | 50 g | 96,65 |
| | | **0186.3** | 100 g | 170,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Silica Gel 60, modified

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Silica gel 60 amino** | 0,010-0,014 mm NEW | **0600.1** | 10 g | 42,90 |
| | | **0600.2** | 50 g | 149,45 |
| | | **0600.3** | 100 g | 267,70 |
| | 0,035-0,07 mm (400-220 mesh) | **5475.1** | 50 g | 149,45 |
| | | **5475.2** | 100 g | 267,70 |
| | | **5475.3** | 250 g | 600,95 |
| **Silica gel $C_{18}$** | 0,01-0,014 mm | **5509.1** | 50 g | 138,70 |
| | | **5509.2** | 100 g | 256,95 |
| | | **5509.3** | 250 g | 547,20 |
| | 0,035-0,07 mm (400-220 mesh) | **5504.1** | 50 g | 106,45 |
| | | **5504.2** | 100 g | 203,20 |
| | | **5504.3** | 250 g | 428,95 |
| **Silica gel cyano** | 0,01-0,014 mm | **5531.1** | 50 g | 170,95 |
| | | **5531.2** | 100 g | 299,95 |
| | | **5531.3** | 250 g | 654,70 |
| | 0,035-0,07 mm (400-220 mesh) | **5499.1** | 50 g | 156,85 |
| | | **5499.2** | 100 g | 278,45 |
| | | **5499.3** | 250 g | 622,45 |
| **Silica gel diol** | 0,010-0,014 mm NEW | **0567.1** | 10 g | 42,90 |
| | | **0567.2** | 50 g | 149,45 |
| | | **0567.3** | 100 g | 267,70 |
| | 0,035-0,07 mm (400-220 mesh) | **5458.1** | 50 g | 150,40 |
| | | **5458.2** | 100 g | 278,45 |
| | | **5458.3** | 250 g | 600,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Carl Roth and Grace:
New strategic partnership for an extended silica gel range!
For more information see www.carlroth.com

## Silica Gel 60 for special applications

| Product | Purity | Application | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Silica gel 60 $C_{18}$ ec*** | 0,045 mm | For SPE and QuEChERS method | **6070.1** | 10 g | 56,90 |
| | | | **6070.2** | 25 g | 115,00 |
| **Silica gel 60 diamino*** | 0,045 mm | For the QuEChERS method. | **4878.1** | 10 g | 78,90 |
| | | | **4878.2** | 25 g | 169,00 |
| **Silica gel 60 G*** | for TLC (with gypsum) | For preparation of TLC plates. | **CN44.3** | 250 g | 29,90 |
| | | | **CN44.1** | 500 g | 52,90 |
| | | | **CN44.2** | 1 kg | 88,90 |
| **Silica gel 60 G/$F_{254}$*** | for TLC (with gypsum) | For preparation of TLC plates. | **CN45.3** | 250 g | 31,90 |
| | | | **CN45.1** | 500 g | 59,90 |
| | | | **CN45.2** | 1 kg | 109,50 |
| **Silica gel 60 P/$F_{254}$*** | for preparative TLC | For preparation of TLC plates. | **CN47.3** | 250 g | 31,50 |
| | | | **CN47.1** | 500 g | 53,90 |
| | | | **CN47.2** | 1 kg | 90,50 |

For additional product data and safety information, see chapter Chemicals A-Z.
* No Grace DAVISIL® products

# Aluminium Oxide



Our range of aluminium oxides (neutral - alkaline - acidic) for conventional column chromatography most certainly includes the right one for you!

All aluminium oxides are available in activity grade I. Activity grades II to V can be set up by adding water:

- Activity grade I - 0 % water
- Activity grade II - 3 % water
- Activity grade III - 6 % water
- Activity grade IV - 10 % water
- Activity grade V - 15 % water

## Aluminium Oxide

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **Aluminium oxide 90 neutral** | **P092.1** | 500 g | 63,35 |
| | **P092.2** | 1 kg | 112,90 |
| | **P092.3** | 2,5 kg | 244,60 |
| **Aluminium oxide 90 acidic** | **X909.1** | 500 g | 61,20 |
| | **X909.2** | 1 kg | 110,20 |
| | **X909.3** | 2,5 kg | 235,45 |
| **Aluminium oxide 90 basic** | **X908.1** | 500 g | 63,35 |
| | **X908.2** | 1 kg | 112,90 |
| | **X908.3** | 2,5 kg | 244,60 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Cellulose



Cellulose powders are used mainly for qualitative and preparative separation and purification in column chromatography.

### Cellulose
**for column chromatography**
Fibre length 0,02-0,1 mm

| | | | |
|---|---|---|---|
| **5873.3** | 100 g | plastic | 14,90 € |
| **5873.1** | 500 g | plastic | 35,50 € |
| Original pack 6 x 500 g | | | 33,73/500 g |
| **5873.2** | 1 kg | plastic | 58,90 € |
| Original pack 6 x 1 kg | | | 55,96/1 kg |

new size

▶ Glutathione cellulose for purification of proteins see page 1304

## Celite® - Silicate Basis

Prepared and standardized celite is used as a filtering aid or as adsobent in column chromatography.

**Composition:**
approx. 90 % $SiO_2$, 2-5 % $Al_2O_3$, 1-4 % $Fe_2O_3$ and various other oxides in a low concentration, that is why the Celites® may be slightly tinted.

### The complete Celite® range at a glance

| Product | Permeability (Darcy) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Celite® 503** | 1,27-2,4 | **0007.2** | 1 kg | 25,70 |
| | | **0007.1** | 2,5 kg | 52,60 |
| **Celite® 512** | 0,28-0,76 | **0050.2** | 1 kg | 22,50 |
| | | **0050.1** | 2,5 kg | 41,85 |
| **Celite® 535** | 1,8-3,9 | **0009.2** | 1 kg | 19,90 |
| | | **0009.1** | 2,5 kg | 40,75 |
| **Celite® 545** | 3,5-5,5 | **0011.3** | 250 g | 11,75 |
| | | **0011.2** | 1 kg | 22,50 |
| | | **0011.1** | 2,5 kg | 32,15 |
| | | **0011.4** | 10 kg | 96,65 |
| | | **0011.5** | 25 kg | 181,70 |
| **Celite® Hyflo Super Cel®** | 0,73-1,64 | **0005.2** | 1 kg | 24,20 |
| | | **0005.1** | 2,5 kg | 44,65 |
| **Celite® Standard Super Cel®** | 0,16-0,36 | **0003.2** | 1 kg | 21,40 |
| | | **0003.1** | 2,5 kg | 40,75 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Florisil®



Highly selective magnesium silicate adsorbent for preparative and analytical chromatography. Ideal for sample preparation, for column chromatography, for clean-up methods and for isolating, purifying and separating samples.

### Florisil®

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Florisil®** | for Hydrocarbon Index analysis, 60-100 mesh [according to EN ISO 9377-2 (H53)] | **CN39.1** | 100 g | 40,75 |
| | | **CN39.3** | 500 g | 137,10 |
| | | **CN39.2** | 1 kg | 216,65 |
| | | **CN39.4** | 2,5 kg | 428,40 |
| **Florisil® PR** | for (pesticides) residue analysis 60-100 mesh | **T201.1** | 100 g | 41,95 |
| | | **T201.2** | 500 g | 144,60 |
| | | **T201.3** | 1 kg | 249,95 |
| **Florisil®** | for chromatography 60-100 mesh | **0101.1** | 100 g | 40,75 |
| | | **0101.2** | 500 g | 137,10 |
| | for chromatography 100-200 mesh | **0102.1** | 100 g | 40,75 |
| | | **0102.2** | 500 g | 137,10 |

new size

## Polyamide



Polyamide 6 (ε-aminopolycaprolactam) is used in conventional column chromatography for separating, purifying and isolating samples.

### Polyamide
**for column chromatography**
Particle size 0,05-0,16 mm. Excellent for purification of plant extracts.
Polyamide 6

| | | | |
|---|---|---|---|
| **9620.2** | 100 g | plastic | 59,90 € |
| **9620.1** | 250 g | plastic | 127,50 € |

# Flash Chromatography

Flash chromatography is, on account of its superior properties, replacing column chromatography in many laboratories for chemical synthesis, pharmacokinetics and combinatorial chemistry. Flash chromatography can be used to clean samples inexpensively and quickly on a preparative scale up to approximately 100 g. A key factor here is the automation capacity of flash chromatography and the reduced solvent consumption compared to column chromatography.
Thin-layer chromatography is often used for the development of a selective and reproducible method. In this way, it is possible to determine the optimal combination of various eluents and sorbents within a short space of time. The quality of the Roth product range is reflected in the fact that our TLC plates and foils are coated with the same basic silica gel as that used in CHROMABOND® flash columns. This enables the developed method to be perfectly applied to flash chromatography.

## CHROMABOND® Flash RS Cartridges

Heavy-duty polypropylene cartridges designed for ISCO® Companion® and other Teledyne Isco CombiFlash® systems.

**Increased analytical safety:** Organic solvent restistant, low bleed cartridges, thick column walls, one piece body, sophisticated length-to-diameter ratio for high plate numbers and excellent separation efficiencies. Distribution of eluent stream via highly porous frits.
**High pressure stability:** up to 15 bar (12 bar for cartridges >200 g)
**High quality standard:** All flash cartridges and adsorbents undergo comprehensive during- and after-production quality assurance measures to ensure that the products conform to the specification.
**Adsorbent weights:** 15 g to 330 g.

### Lodability:

| | Average loadability per cartridge (g) | |
|---|---|---|
| SiOH cartridge | Difficult separation | Easy separation |
| RS 15 | 0,15 | 1,5 |
| RS 25 | 0,25 | 2,5 |
| RS 40 | 0,4 | 4 |
| RS 80 | 0,8 | 8 |
| RS 120 | 1,2 | 12 |
| RS 200 | 2 | 20 |
| RS 330 | 3,3 | 33 |



### CHROMABOND® Flash RS cartridges SiOH

for Isco® Flash instruments
- Female Luer lock inlet and male Luer outlet
- Adsorbent: standard silica, unmodified (SiOH)
- Particle size 45 µm, specific surface 500 $m^2/g$
- pH stability 2-8

ready-to-use

| Product | Column length (cm) | Inside ∅ (mm) | Adsorbent weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **CHROMABOND® Flash RS 15 SiOH** | 11,6 | 21,2 | 15 | **8664.1** | 20 pieces | 172,90 |
| **CHROMABOND® Flash RS 25 SiOH** | 16,5 | 21,2 | 25 | **8670.1** | 15 pieces | 172,90 |
| **CHROMABOND® Flash RS 40 SiOH** | 17,1 | 26,4 | 40 | **8674.1** | 15 pieces | 219,00 |
| **CHROMABOND® Flash RS 80 SiOH** | 24,0 | 30,8 | 80 | **8675.1** | 12 pieces | 289,00 |
| **CHROMABOND® Flash RS 120 SiOH** | 25,2 | 36,0 | 120 | **8681.1** | 10 pieces | 289,00 |
| **CHROMABOND® Flash RS 200 SiOH** | 20,0 | 60,0 | 200 | **8708.1** | 6 pieces | 415,00 |
| **CHROMABOND® Flash RS 330 SiOH** | 27,0 | 60,0 | 330 | **8714.1** | 4 pieces | 479,00 |



## CHROMABOND® Flash DL empty cartridges

- Suitable as solid injection system or for self-filling and packaging of flash cartridges
- Female Luer lock inlet and male Luer outlet
- Each cartridge comes with 3 filter elements: one already inserted, two more filters aside

| Product | Column length (cm) | Inner ∅ (mm) | For filling quantity SiOH (g) | For filling quantity kieselguhr (g) | Volume (ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|
| **CHROMABOND® Flash DL 4** | 9,8 | 12,4 | 4 | 3 | 8 | **8909.1** | 50 pieces | 139,00 |
| **CHROMABOND® Flash DL 15** | 11,6 | 21,2 | 15 | 10 | 30 | **8910.1** | 50 pieces | 279,00 |
| **CHROMABOND® Flash DL 25** | 16,5 | 21,2 | 25 | 15 | 45 | **8912.1** | 50 pieces | 409,00 |
| **CHROMABOND® Flash DL 40** | 17,1 | 26,4 | 40 | 30 | 75 | **8917.1** | 20 pieces | 209,00 |
| **CHROMABOND® Flash DL 80** | 24,0 | 30,8 | 80 | 60 | 160 | **8920.1** | 20 pieces | 409,00 |
| **CHROMABOND® Flash DL 120** | 25,2 | 36,0 | 120 | 80 | 220 | **8924.1** | 20 pieces | 539,00 |
| **CHROMABOND® Flash DL 200** | 20,0 | 60,0 | 200 | 150 | 410 | **8928.1** | 10 pieces | 339,00 |
| **CHROMABOND® Flash DL 330** | 27,0 | 60,0 | 330 | 250 | 600 | **8932.1** | 10 pieces | 539,00 |

▶ Sorbents for filling the columns, page 1594
▶ Products for affinity chromatography, page 1300

# SPE (Solid Phase Extraction)

A fast, effective and inexpensive system
for sample preparation.
SPE-columns enable samples to be processed for HPLC, GC, TLC, UV/IR spectroscopy, etc.



**Field of application:**
- Food analysis
- Environmental analysis
- Organic chemistry
- Pharmaceutical analysis
- Biochemical analysis

## Our range of phases for SPE:

| Code | Matrix | Modification / Application | Similar phases ** |
|---|---|---|---|
| **Reversed phases** | | | |
| C18 ec | Silica | Octadecyl, endcapped | Strata™ C18-E, Sep-Pak® tC18, Bond Elut® C18, DSC-18(Lt); ENVI-18, LC-18, CLEAN-UP® C18, Bakerbond® Octadecyl, Isolute® C18(EC), LiChrolut® RP-18 E |
| C18 hydra | Silica | Octadecyl, not endcapped / for polar analytes | - |
| Easy | PS/DVB* | Polar, bifunctional | Strata™-X, Oasis® HLB, Porapak™ RDX, Nexus, Bond Elut® PPL, Focus™, Styre Screen® DVB, Bakerbond™ $H_2O$ philic DVB, Isolute® ENV+ |
| HR-P | PS/DVB* | | Strata™ SDB-L, Bond Elut® ENV, Bond Elut® LMS, DCS-PS/DVB, ENV PS-DVB, Bakerbond™ $H_2O$-phobic DVB, Isolute® 101, LiChrolut® EN |
| HR-X | PS/DVB* | | ENVI-Chrom P, Strata™-X, Oasis® HLB, Nexus |
| **Normal phases** | | | |
| SiOH | Silica | unmodified | Strata™ Si-1, Bond Elut® silica, DSC-Si, LC-Si, CLEAN-UP® silica, Accubond® silica, Bakerbond® slica gel, Isolute® silica, LiChrolut® Si |
| $NH_2$ | Silica | Aminopropyl | Strata™ $NH_2$, Sep-Pak® $NH_2$, Bond Elut® $NH_2$, DSC-$NH_2$, LC-$NH_2$, CLEAN-UP® aminopropyl, Accubond® $NH_2$, Bakerbond® amino, Isolute® $NH_2$, LiChrolut® $NH_2$ |
| Florisil® | Magnesium-silicate | | Strata™ FL-PR, Sep-Pak® Florisil®, Bond Elut® Florisil®, ENVI-Florisil®, LC- Florisil®, CLEAN-UP® Florisil®, Accubond® Florisil®, Bakerbond™ Florisil®, Isolute® FL, LiChrolut® Florisil® |
| **Ion exchangers** | | | |
| SA | Silica | Benzene sulfonic acid cation exchanger (SCX) | Strata™ SCX, Bond Elut® SCX, DSC-SCX, LC-SCX, CLEAN-UP® Benzenesulfonic Acid, Accubond® SCX, Bakerbond™ Aromatic Sulfonic Acid, Isolute® SCX, LiChrolut® SCX |
| SB | Silica | Qauternary ammonium anion exchanger (SAX) | Strata™ SAX, Sep-Pak® SAX, Bond Elut® SAX, DSC-SAX, LC-SAX, CLEAN-UP® Quaternary Amine, Accubond® SAX, Bakerbond™ Quarternary Amine, Isolute® SAX, LiChrolut® SAX |
| HR-XA | PS/DVB* | Strong mixed mode anion exchanger for acidic analytes (MAX) | Oasis® MAX, HyperSep™ Retain™-AX, Styre Screen® QAX, Strata™-XA |
| HR-XAW | PS/DVB* | Weak basic mixed mode anion exchanger | Oasis® WAX, Strata™-X-AW |
| HR-XC | PS/DVB* | Strong mixed mode - cation exchanger for basic analytes (MCX) | Oasis® MCX, Strata® X-C, Styre Screen® DBX, HyperSep™ Retain™-CX |
| HR-XCW | PS/DVB* | Weak acidic mixed mode cation exchanger | Oasis® WCX, Strata™-X-CW |
| **Phasen for special applications** | | | |
| $Na_2SO_4$/Florisil® | - | Combination phase for extraction of hydrocarbons for water (DIN H 53 / ISO DIS 9377-4) | - |
| SA/SiOH | Silica | Combination phase for enrichment of PCB from waste oil | Bakerbond™ PCB-N |
| NAN | Silica / $AgNO_3$ + $Na_2SO_4$ | Special combination phase for SPE analysis of PCB from sludge | - |
| SiOH-$H_2SO_4$/SA | Silica | combination phase used together with SiOH for enrichment of PCB from oil | - |
| CN/SiOH | Silica | Combination phase for enrichment of PAHs from soil | - |
| $C_{18}$ PAH | Silica | Octadecyl silica for SPE analysis of PAH | Bakerbond™ Octadecyl Lightload |
| $NH_2$/$C_{18}$ | Silica | Combination phase for SPE analysis of PAH from water containing humic acid | - |
| HR-P-AOX | PS/DVB* | For extraction of AOX from water (DIN 38409 - H22) | - |
| Drug | Silica | Bifunctional C8/SA, for enrichment of drugs form urine | Strata™ Screen-C, Bond Elut® Certify I, DSC-MCAX, Clean Screen® DAU, Accubond® Evidex, Bakerbond™ Narc-2, Isolute® HCX, LiChrolut® TSC, HyperSep™ Verify CX |
| Drug II | Silica | Bifunctional C8/SB, for extraction of THC and derivatives as well as acidic analytes from biological fluids | Strata™ Screen-A, Bond Elut® Certify II, Clean Screen® THC, Bakerbond™ Narc-1, Isolute® HAX, HyperSep™ Verify AX |
| ABC 18 | Silica | Octydecyl, with ion exchange character, for acrylamide analysis | Isolute® M-M (Multimode) |

* polystyrene/divinylbenzene

** phases which provide a similar selectivity based on chemical or physical properties (list not complete)

## Selection schematic for SPE phases and solvents:

| Matrix / solubility of sample | Polarity of sample | Solubility of analytes | Polarity of sample | For the adsorption recommended phases | For the elution recommended solvents ROTISOLV® Pestilyse®, Pestilyse® plus and GC Ultra Grade |
|---|---|---|---|---|---|
| aqueous | non-ionic | aqueous | non-polar | HR-X, Easy, HR-P, C18 ec, C18 Hydra | Hexane<br>Dichloromethane<br>Acetonitrile<br>Alcohols |
| | | | medium polar | SiOH, $NH_2$ | Ethyl acetate<br>Alcohols |
| | | | polar | $NH_2$ | Ethyl acetate<br>Alcohols |
| | ionic | aqueous | cationic | HR-XC, HR-XCW, SA | Bases, even acuds, saline solutions, buffers |
| | | | anionic | HR-XA, HR-XAW, SB, $NH_2$ | Acids, even bases, saline solutions, buffers |
| organic | | aqueous | non-polar | HR-X, Easy, HR-P, C18 ec, C18 Hydra | Hexane<br>Dichloromethane<br>Acetonitrile<br>Alcohols |
| | | organic | medium polar | SiOH, $NH_2$ | Ethyl acetate<br>Alcohols |
| | | organic | polar | $NH_2$ | Chloroform<br>Dichloromethane<br>Ethyl acetate<br>Alcohols |

## CHROMABOND® HR-X*pert*

The professional concept of innovative SPE phases

The CHROMABOND® HR-X*pert* concept comprises 5 polymer-based RP and mixed-mode ion exchange phases. Depending on the character of the analytes it offers suitable adsorbents and optimal methods for sample preparation, cleaning and concentration.

**State-of-the-art spherical polymer:**
- Particle size: 85 µm
- Broad spectrum of application with special suitability for enrichment of pharmaceuticals from biological matrices
- Ideal flow properties due to low content of particulate matter

**Optimized pore structure and high specific surface:**
- High loadability and outstanding elution properties in RP as well as mixed mode
- Low solvent consumption
- Rapid, economical analyses

**High purity adsorber material**
- Allows high reproducibility with extremely low blind values
- Reliable analyses at ultra trace level
- No method adaptation for new batches necessary

| HR-Xpert phase | Properties | Application areas |
|---|---|---|
| CHROMABOND® HR-X | hydrophobic PS/DVB copolymer | neutral and polar active ingredients and analytes such as pesticides, drugs, phenols, PAHs, PCBs |
| CHROMABOND® HR-XC | strong acidic mixed-mode benzenesulfonic acid cation exchanger | basic active ingredients and analytes such as amines (melamine), . . . bases with pKa 2-10 |
| CHROMABOND® HR-XA | strong basic mixed-mode quaternary ammonium anion exchanger | acidic active ingredients and analytes such as herbicides, . . . acids with pKa 2-8 |
| CHROMABOND® HR-XCW | weak acidic mixed-mode carboxylic acid cation exchanger | strongly basic active ingredients and analytes such as quaternary amines, . . . bases with pKa > 10 |
| CHROMABOND® HR-XAW | weak basic mixed-mode secondary/tertiary ammonium anion exchanger | strongly acidic active ingredients and analytes such as sulfonic acids, perfluorinated surfactants, . . . acids with pKa < 1 |

▶ CHROMABOND® HR-X*pert* columns see next page.

# CHROMABOND® HR-X*pert* phases

## SPE-polypropylene columns CHROMABOND® HR-X

**Spherical, hydrophobic polystyrene-divinylbenzene copolymer**

Pore size: 55-60 Å, particle size: 85 µm
Spec. surface: **1000 m²/g**, pH stability: 1-4
RP-capacity: 390 mg/g (caffeine in water)
**HR:** high-purity material with homogenous surface and optimised pore structure - due to optimised production process - enables lowest blanks, outstanding recovery rates and highest reproducibility. Especially for the enrichment of pharmaceuticals and active ingredients.

**Recommended application:** pharmaceuticals/active ingredients from tablets, creams and water/waste water, drugs and pharmaceuticals from urine, blood, serum and plasma, trace analysis of pesticides, herbicides, phenols, PAHs and PCBs from water

**Similar phases:** ENVI-Chrom P, Strata™-X, Oasis® HLB, Nexus

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 30 | **3079.1** | 30 | 69,90 |
| 3 | 200 | **3081.1** | 30 | 112,90 |
| | | **3081.2** | 250 (5x50) | 625,00 |
| 6 | 200 | **3086.1** | 30 | 145,00 |
| | | **3086.2** | 250 (5x50) | 849,00 |
| | 500 | **3087.1** | 30 | 225,00 |




## SPE-polypropylene columns CHROMABOND® HR-XA

**Quat. ammonium modified spherical polystryrene-divinylbenzene copolymer, strong anion exchanger (mixed mode)**

Pore size: 55-65 Å, Particle size: 85 µm
Spec. surface: **850 m²/g**, pH-stability: 1-14
Pore volume: 1,4 cm³/g
Exchange capacity: approx. 0,25 meq/g
RP-capacity: 350 mg/g (caffeine in water)

**HR:** high-purity material with homogenous surface and optimised pore structure - due to optimised production process - enables lowest blanks, outstanding recovery rates and highest reproducibility. Especially for the enrichment of acidic analytes.

**Recommended application:** acidic active ingredients from strongly matrix-contaminated samples like e.g. urine, plasma, serum, phenolic acids, acidic herbicides

**Similar phases:** Oasis® MAX, HyperSep™, Retain™-AX, StyreScreen® QAX Strate™-X-A

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 60 | **3069.1** | 30 | 102,90 |
| | 200 | **3071.1** | 30 | 116,50 |
| 6 | 500 | **3072.1** | 30 | 245,00 |

## SPE-polypropylene columns CHROMABOND® HR-XC

**Benzenesulphonic acid modified spherical polystyrene-divinylbenzene copolymer, cation exchanger (mixed mode)**

Pore size: 65-75 Å, particle size: 85 µm
Spec. surface: **800 m²/g**, pH-stability: 1-14
Pore volume: 1,4 cm³/g
Exchange capacity: 1,0 meq/g
RP-capacity: 300 mg/g (caffeine in water)
**HR:** high-purity material with homogenous surface and optimised pore structure - due to optimised production process - enables lowest blanks, outstanding recovery rates and highest reproducibility. Especially for the enrichment of basic analytes.

**Recommended application:** Basic active ingredients from strongly matrix-contaminated samples like urine, plasma, serum, fungicides from food, basic analytes like e.g. amines

**Similar phases:** Oasis® MCX, Strata® X-C, Styre Screen® DBX

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 60 | **3090.1** | 30 | 102,90 |
| | 200 | **3092.1** | 30 | 116,50 |
| 6 | 500 | **3095.1** | 30 | 245,00 |

## SPE-polypropylene columns CHROMABOND® HR-XAW

**Sec./tert. ammonium modified spherical polystyrene-divinylbenzene copoloymer, weak basic anion exchanger (mixed mode)**

Pore size: 55-65 Å, particle size: 85 µm
Spec. surface: **850 m²/g**, pH stability: 1-14
Pore volume: 1,2-1,4 cm³/g
Exchange capacity: >0,5 meq/g
RP capacity: 350 mg/g (caffeine in water)
**HR:** high-purity material with homogenous surface and optimised pore structure - due to optimised production process - enables lowest blanks, outstanding recovery rates and highest reproducibility. Especially for the enrichment of strongly acidic analytes.

**Recommended application:** perfluorinated surfactants, acidic compounds like sulfonates, acidic active ingredients from strongly matrix-contaminated samples like e.g. urine, plasma, serum, strong acids with pKa <1

**Similar phases:** Oasis® WAX, Strata™-X-AW

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 60 | **3905.1** | 30 | 102,90 |
| | 200 | **3911.1** | 30 | 116,50 |
| | 500 | **3912.1** | 30 | 169,00 |

## SPE-polypropylene columns CHROMABOND® HR-XCW

**Carboxylic acid modified spherical polystyrene-divinylbenzene copolymer, weak acidic cation exchanger (mixed mode)**

Pore size: 50-60 Å, particle size: 85 µm
Spec. surface: **850 m²/g**, pH stability: 1-14
Pore volume: 1,2-1,4 cm³/g
Exchange capacity: >0,7 meq/g
RP capacity: 350 mg/g (caffeine in water)
**HR:** high-purity material with homogenous surface and optimised pore structure - due to optimised production process - enables lowest blanks, outstanding recovery rates and highest reproducibility. Especially for the enrichment of strongly basic analytes

**Recommended application:** Basic active ingredients from strongly matrix-contaminated samples like e.g. urine, plasma, serum, strong bases with pKa >10

**Similar phases:** Oasis® WCX, Strata™-X-CW

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 60 | **3917.1** | 30 | 102,90 |
| | 200 | **3919.1** | 30 | 116,50 |
| | 500 | **3924.1** | 30 | 169,00 |

## More polymer phases




### SPE-polypropylene columns CHROMABOND® Easy

**Polar modified polystyrene-divinylbenzene copolymer with a week ion exchanger**
Pore size: 50 Å, Particle size: 80 µm
Spec. surface: 650-700 $m^2/g$, pH-stability: 1-14

**Please note:** Due to its bifunctional modification it is much more hydrophilic than conventional polystyrene-divinylbenzene polymers and thus easily wettable with water.

**Recommended application:** Drug analysis from urine, blood, serum, plasma, pharmaceuticals/active ingredients from tablets, creams, polar herbicides/pesticides from water (acidic, neutral, basic), polar phenols from water, polyaromatic compounds, polychlorated biphenyls

**Similar phases:** Strata™-X, Oasis® HLB, Porapak™ RDX, Nexus, Bond Elut® PPL, Focus™, Styre Screen® DVB, Bakerbond™ $H_2O$ philic DVB, Isolute® ENV+

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 60 | **1335.1** | 30 | 99,90 |
| | 200200 BIG PACK | **1336.1** | 30 | 112,90 |
| | | **1336.2** | 250 (5x50) | 689,00 |
| | 500 | **1337.1** | 30 | 149,00 |
| 6 | 200200 BIG PACK | **1338.1** | 30 | 145,00 |
| | | **1338.2** | 250 (5x50) | 859,00 |
| | 500 | **1339.1** | 30 | 225,00 |

### SPE-polypropylene columns CHROMABOND® HR-P

**Highly porous polystyrene-divinylbenezene copolymer**
Particle size: 50-100 µm
Spec. surface: **1200 $m^2/g$**

**Recommended application:** Aromatic compounds, phenols from water, nitroaromatic compounds from water, pesticides from water, PAHs from oil

**Similar phases:** Strata™ SDB-L, Bond Elut® ENV, Bond Elut® LMS, DCS-PS/DVB, ENV PS-DVB, Bakerbond™ $H_2O$-phobic DVB, Isolute® 101, LiChrolut® EN

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 200 BIG PACK | **N760.1** | 30 | 112,90 |
| | | **N760.2** | 250 (5x50) | 709,00 |
| | 500 | **N761.1** | 30 | 127,50 |
| 6 | 500 | **N762.1** | 30 | 155,00 |
| | 1000 | **N763.1** | 30 | 225,00 |

## RP Phases




### SPE-glass columns CHROMABOND® C18 ec Ideal for determining phthalate concentration

**Octadecyl-silica gel, endcapped**
Pore size: 60 Å, particle size: 45 µm
Spec. surface: 500 $m^2/g$, pH stability: 2-8

**Please note:** Extremely non-polar, hydrophobic interaction with many organic compounds.

**Recommended application: non-polar compounds**, preservatives, fatty acids, PAHs, pesticides, PCPs, heavy metals, vitamins, aflatoxins, amphetamines, antibiotics, antiepileptics, barbituates, caffeine, nicotine, drugs, etc. Ideal for the determination of phthalates. Also suitable for desalting samples.

**Similar phases:** Strata™ C18-E, Sep-Pak® tC18, Bond Elut® C18, DSC-18(Lt), ENVI-18, LC-18, CLEAN-UP® C18, Bakerbond® Octadecyl, Isolute® C18(EC), LiChrolut® RP-18 E

### SPE-glass columns

**Ideal for determining phthalate concentration**

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 200 | **9617.1** | 50 | 259,00 |
| | 500 | **9618.1** | 50 | 275,00 |
| 6 | 500 | **9619.1** | 30 | 209,00 |
| | 1000 | **9623.1** | 30 | 229,00 |

### SPE-polypropylene columns

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 100 | **N745.1** | 100 | 189,00 |
| 3 | 200 | **N746.1** | 50 | 145,00 |
| | 500 | **N747.1** | 50 | 159,00 |
| | 500 BIG PACK | **N747.2** | 250 (5x50) | 609,00 |
| 6 | 500 | **N748.1** | 30 | 112,90 |
| | 500 BIG PACK | **N748.2** | 250 (5x50) | 689,00 |
| | 1000 | **N749.1** | 30 | 139,00 |
| | 1000 BIG PACK | **N749.2** | 250 (5x50) | 819,00 |

### SPE-polypropylene columns CHROMABOND® C18 Hydra

**Octadecyl-silica gel, not endcapped**
Pore width: 60 Å, particle size: 45 µm
Spec. surface: 500 $m^2/g$, pH stability: 2-8

**Recommended application: polar compounds**, pesticides and their polar degradation products, phenols, phenoxycarboxylic acids, nitroaromatic compounds, pharmaceuticals

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 100 | **N750.1** | 100 | 189,00 |
| 3 | 200 | **N751.1** | 50 | 145,00 |
| | 500 | **N752.1** | 50 | 159,00 |
| 6 | 500 | **N753.1** | 30 | 112,90 |
| | 1000 | **N754.1** | 30 | 139,00 |

# Normal phases

## SPE-polypropylene columns CHROMABOND® SiOH

**Unmodified, slightly acidic silica gel**

Pore width: 60 Å, particle size: 45 µm
Spec. surface: 500 $m^2$/g, pH stability: 2-8

**Please note: Extremely polar!** Absorbs air humidity. Should be kept well closed and dried if necessary prior to use. Due to its high affinity for polar compounds it should not be conditioned with polar (e.g. methanol) or water containing solvents.

**Application:** aflatoxines, chloramphenicol, pesticides, steroides, vitamines

**Similar phases:** Strata™ Si-1, Bond Elut® silica, DSC-Si, LC-Si, CLEAN-UP® silica, Accubond® silica, Bakerbond® slica gel, Isolute® silica, LiChrolut® Si

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 100 | **N755.1** | 100 | 159,00 |
| 3 | 200 | **N756.1** | 50 | 138,50 |
| | 500 | **N757.1** | 50 | 149,00 |
| | | **N757.2** | 250 (5x50) | 519,00 |
| 6 | 500 | **N758.1** | 30 | 102,90 |
| | 1000 | **N759.1** | 30 | 112,90 |
| | | **N759.2** | 250 (5x50) | 739,00 |

## SPE-polypropylene columns CHROMABOND® $NH_2$

**Aminopropyl modified silica gel**

Pore size: 60 Å, particle size: 45 µm
Spec. surface: 500 $m^2$/g, pH stability: 2-8
Aminopropyl phase, carbon content 3,5 %
Polar weak anion exchanger

**Recommended applications:** Trace elements, lipids

**Similar phases:** Strata™ $NH_2$, Sep-Pak® $NH_2$, Bond Elut® $NH_2$, DSC-$NH_2$, LC-$NH_2$, CLEAN-UP® aminopropyl, Accubond® $NH_2$, Bakerbond® amino, Isolute® $NH_2$, LiChrolut® $NH_2$

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 100 | **1340.1** | 100 | 235,00 |
| 3 | 200 | **1341.1** | 50 | 179,00 |
| | 500 | **1342.1** | 50 | 203,50 |
| | | **1342.2** | 250 (5x50) | 999,00 |
| 6 | 500 | **1343.1** | 30 | 135,00 |
| | 1000 | **1344.1** | 30 | 199,00 |

## SPE-polypropylene columns CHROMABOND® Florisil®

**Magnesium silicate, high-purity**

MgO - SiOH (15:85)
Particle size: 150-250 µm

**Recommended application:** PCBs, PAHs, aliphatic carboxylic acids, organic tin compounds

**Similar phases:** Strata™ FL-PR, Sep-Pak® Florisil®, Bond Elut® Florisil®, ENVI-Florisil®, LC- Florisil®, CLEAN-UP® Florisil®, Accubond® Florisil®, Bakerbond™ Florisil®, Isolute® FL, LiChrolut® Florisil®

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 200 | **N764.1** | 50 | 138,50 |
| | 500 | **N765.1** | 50 | 150,00 |
| 6 | 1000 | **1291.1** | 30 | 115,50 |
| | | **1291.2** | 250 (5x50) | 665,00 |

# Ion exchangers

## SPE-polypropylene columns CHROMABOND® SB (SAX)

**Quat. ammonium modified silica gel, strongly basic anion exchanger**

Pore size: 60 Å, particle size: 45 µm
Spec. surface: 500 $m^2$/g, pH-stability: 2-8
Exchange Capacity: approx. 0,3 meq/g

**Please note:** Not suited for very strong anions such as sulphonic acids, because these are difficult to elute.

**Recommended applications:** Organic acids, caffeine, saccharin

**Similar phases:** Strata™ SAX, Sep-Pak® SAX, Bond Elut® SAX, DSC-SAX, LC-SAX, CLEAN-UP® Quaternary Amine, Accubond® SAX, Bakerbond™ Quarternary Amine, Isolute® SAX, LiChrolut® SAX

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 100 | **1346.1** | 100 | 235,00 |
| 3 | 200 | **1350.1** | 50 | 179,00 |
| | 500 | **1351.1** | 50 | 203,50 |
| | | **1351.2** | 250 (5x50) | 824,50 |
| 6 | 500 | **1352.1** | 30 | 135,00 |
| | 1000 | **1353.1** | 30 | 199,00 |

## SPE-polypropylene columns CHROMABOND® SA (SCX)

**Benzenesulphonic acid modified silica gel, strongly acidic cation exchanger**

Pore size: 60 Å, particle size: 45 µm
Spec. surface: 500 $m^2$/g, pH stability: 2-8
Exchange capacity: approx. 0,5 meq/g

**Please note:** Adsorbent with hydrophobic and π-π-interactions (benzene ring); Ion exchange of organic compounds from aqueous matrix; Elution of interesting compounds with solvent systemes, which compensate the ionic and nonpolar interactions, e.g. methanolic HCl.

**Recommended application:** Amino acids, chlorophyll, Amines, PCBs

**Similar phases:** Strata™ SCX, Bond Elut® SCX, DSC-SCX, LC-SCX, CLEAN-UP® Benzenesulfonic Acid, Accubond® SCX, Bakerbond™ Aromatic Sulfonic Acid, Isolute® SCX, LiChrolut® SCX

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 100 | **1293.1** | 100 | 235,00 |
| 3 | 500 | **1295.1** | 50 | 203,50 |
| | | **1295.2** | 250 (5x50) | 825,00 |
| 6 | 1000 | **1297.1** | 30 | 199,00 |

# Phases for environmental analysis



## SPE-glass column CHROMABOND® $Na_2SO_4$/Florisil®

**Extraction of hydrocarbons from water according to DIN H53 / ISO DIS 9377-4**

Special combination phase of sodium sulphate and Florisil®

**Recommended appllication:**
Hydrocarbons from drinking, surface and waste water

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 2000/2000 | **N744.1** | 30 | 222,00 |
| | | **N744.2** | 250 (5x50) | 1325,00 |

## Recommended chemicals

**for method H53 with SPE-glass columns CHROMABOND® $Na_2SO_4$/Florisil®.**

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Acetone** | ≥99,9 %, Pestilyse® plus | **7535.1** | 2,5 l | glass | 54,75 |
| **n-Hexane** | ≥96 %, Pestilyse® plus | **7567.1** | 2,5 l | glass | 95,15 |
| **Magnesium sulphate heptahydrate** | ≥99 %, p.a., ACS | **P027.1** | 500 g | plastic | 24,20 |
| | | **P027.2** | 1 kg | plastic | 38,60 |
| | | **P027.3** | 2,5 kg | plastic | 71,50 |
| **Petroleum ether 40-60 °C** | Pestilyse® plus | **7588.1** | 2,5 l | glass | 69,35 |
| **Sodium sulphate** | ≥99 %, p.a., ACS, ISO, powdered, anhydrous | **8560.3** | 500 g | plastic | 25,30 |
| | | **8560.1** | 1 kg | plastic | 34,95 |
| | | **8560.2** | 5 kg | plastic | 143,55 |
| | | **8560.5** | 25 kg | plastic | 510,65 |

## SPE Polypropylene column CHROMABOND®HR-P-AOX

**AOX from water containing high salt loads**

Special PS-DVB (polystyrene-divinylbenzene) phase.
**Recommended application:** extraction of AOX from waters containing high salt loads / organic pollutants in accordance with DIN 38409 - H22.

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 500 | **CN43.1** | 30 | 195,00 |

## SPE-polypropylene columns CHROMABOND® $C_{18}$ PAH

**Enrichment of PAHs from water**

Special octadecyl modified silica, not endcapped
Pore size: 60 Å, particle size: 45 µm,
specific surface: 500 $m^2/g$, pH stability: 2-8
carbon content: 14 %

**Recommended application:** PAHs from water

**Similar phases:** Bakerbond™ Octadecyl Lightload

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 2000 | **4713.1** | 30 | 269,00 |

## SPE-polypropylene columns CHROMABOND® $NH_2/C_{18}$

**Enrichment of PAHs from water containing humic acid**

Special combination phase:
**$NH_2$:** aminopropyl phase for removal of interfering humic acids
**$C_{18}$:** octadecyl phase for enrichment of PAHs

**Recommended application:** PAHs from water containing humic acids

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 500/500 | **4783.1** | 30 | 222,00 |
| | 500/1000 | **4785.1** | 30 | 265,00 |



## SPE-polypropylene columns CHROMABOND® CN/SiOH

**Enrichment of PAH from soil**

Special combination phase:
**CN:** Cyanopropyl phase for selective adsorption of polycyclic aromatics via π-π interactions
**SiOH:** Unmodified silica phase for removal of polar components

**Recommended application:** extraction of the 16 PAHs according to EPA from soil samples

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 500/1000 | **2992.1** | 50 | 425,00 |
| 6 | 500/1000 | **2995.1** | 30 | 265,00 |
| | | **2995.2** | 250 (5x50) | 1550,00 |

## Recommended chemicals

**for analysis of PAH from soil samples with SPE-Polypropylen columns CHROMABOND® CN/SiOH.**

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Acetonitrile** | ≥99,9 %, Pestilyse® | **T168.2** | 1 l | glass | 34,65 |
| | | **T168.1** | 2,5 l | glass | 73,65 |
| | | **T168.3** | 4 l | glass | 106,45 |
| **Petroleum ether 40-60 °C** | Pestilyse® plus | **7588.1** | 2,5 l | glass | 69,35 |
| | Pestilyse® | **T170.2** | 1 l | glass | 33,25 |
| | | **T170.1** | 2,5 l | glass | 69,35 |
| | | **T170.3** | 4 l | glass | 95,60 |
| **Sodium sulphate** | ≥99 %, p.a., ACS, ISO, powdered, anhydrous | **8560.3** | 500 g | plastic | 25,30 |
| | | **8560.1** | 1 kg | plastic | 34,95 |
| | | **8560.2** | 5 kg | plastic | 143,55 |
| | | **8560.5** | 25 kg | plastic | 510,65 |
| **Toluene** | ≥99,8 % Pestilyse® plus | **7591.1** | 2,5 l | glass | 61,85 |
| | ≥99,8 %, Pestilyse® | **T166.2** | 1 l | glass | 33,25 |
| | | **T166.1** | 2,5 l | glass | 60,10 |
| | | **T166.3** | 4 l | glass | 96,65 |

For additional product data and safety information, see chapter Chemicals A-Z.



## SPE-polypropylene columns CHROMABOND® SiOH-$H_2SO_4$/SA

**Enrichment of PCBs from oil**

Special combination phase:
**SA:** strongly acidic cation exchanger based on silica with benzenesulphonic acid modification for removal of ionic and sulphur-containing compounds
**SiOH-$H_2SO_4$:** $H_2SO_4$-impregnated silica phase for oxidation of accompanying compounds to ionic and/or polar compounds
**Recommended application:** extraction of PCBs from oil with reference to German industrial standard DIN 51527, part 1. This combination column is used together with a SiOH column.

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 500/500 BIG PACK | **4792.1** | 50 | 309,00 |
| | | **4792.2** | 250 (5x50) | 1150,00 |

## Kombi-Kit

**For Extraction of PCB from oil with reference to DIN 51527, part 1**

| Content | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **CHROMABOND® SiOH-$H_2SO_4$/SA / CHROMABOND® SiOH** | **4793.1** | 25 / 25 | 243,50 |

## SPE Polypropylene column CHROMABOND® SA/SiOH

**Extraction of PCBs from waste oil.**
Special combination phase:
**SA:** strongly acidic cation exchanger based on silica with benzenesulphonic acid modification
**SiOH:** unmodified silica for removal of polar compounds
**Recommended application:** extraction of PCBs from waste oil (hexane extract)
**Similar phases:** Bakerbond™ PCB-N

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 500/500 BIG PACK | **CN42.1** | 50 | 265,00 |
| | | **CN42.2** | 250 (5x50) | 965,00 |

## SPE-polypropylene columns CHROMABOND® NAN

**Enrichment of PCBs from sludge**

Special combination phase:
**N:** sodium sulphate for removal of trace water
**A:** SiOH/$AgNO_3$ phase for removal of sulphur, sulphur-containing and polar compounds
**Recommended application:** extraction of PCBs from sludge

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 400/1400/400 | **4786.1** | 50 | 445,00 |
| 6 | 700/2000/700 BIG PACK | **4789.1** | 30 | 349,00 |
| | | **4789.2** | 250 (5x50) | 1985,00 |

# SPE phases for pharmaceutical applications



## SPE-polypropylene columns CHROMABOND® Drug

**Drug analysis**

Special silica gel phase:
Bifunctional modification - $C_8$ / SA
(strong cation exchanger - benzene sulphonic acid)
Pore size: 60 Å, particel size: 45 µm,
specific surface: 500 $m^2/g$, pH stability: 2-8
**Recommended applications:**
enrichment of acidic, neutral and basic drugs from urine or plasma.
**Similar phases:** Strata™ Screen-C, Bond Elut® Certify I, DSC-MCAX, Clean Screen® DAU, Accubond® Evidex, Bakerbond™ Narc-2, Isolute® HCX, LiChrolut® TSC, HyperSep™ Verify CX

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 100 | **1354.1** | 100 | 225,00 |
| 3 | 200 BIG PACK | **1355.1** | 50 | 175,50 |
| | | **1355.2** | 250 (5x50) | 699,00 |
| 3 | 500 | **1356.1** | 50 | 199,00 |
| | | **1357.1** | 30 | 135,00 |

## SPE-polypropylene columns CHROMABOND® Drug II

**Extraction of THC and derivates, acidic analytes from biological fluid (urine, blood ...)**

Special silica gel phase:
Bifunctional modification - $C_8$ / SB
(strong anion exchanger - quaternary amine)
Pore size: 60 Å, particle size: 45 µm,
specific surface: 500 $m^2/g$, pH stability: 2-8
**Recommended application:**
extraction of THC and derivatives from urine, blood, serum, plasma. Acidic analytes from biological fluids
**Similar phases:** Strata™ Screen-A, Bond Elut® Certify II, Clean Screen® THC, Bakerbond™ Narc-1, Isolute® HAX, HyperSep™ Verify AX

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 3 | 200 | **3063.1** | 50 | 175,50 |
| 6 | 500 | **3064.1** | 30 | 135,00 |

## SPE phase for food analysis



### SPE-polypropylene columns CHROMABOND® ABC18

**Acrylamide in food**

Special phase:

Octadecyl silica phase with ion exchange character for acrylamide analysis

**Recommended application:**

Clean-up of acrylamide from ultra-heated starch-containing food, such as potato chips, french fries, crispbread and cereals

**Important note:**

Minimum concentration of acrylamide should be 70 µg/kg.The procedure includes no concentration step.

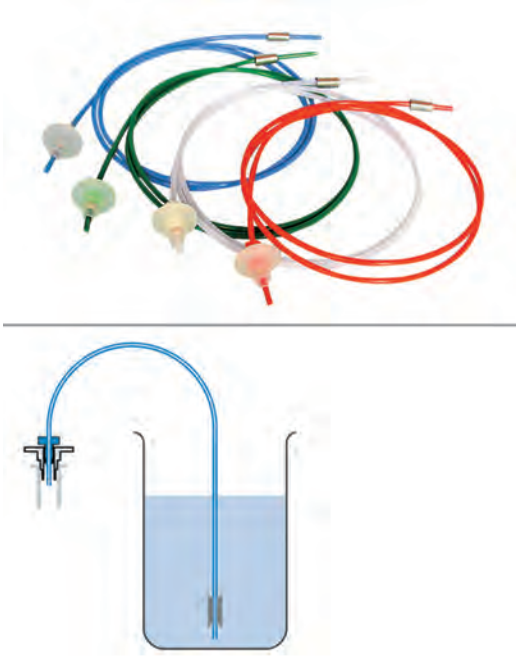
**Similar phases:** Isolute® M-M (Multimode)

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 500 | **2991.1** | 30 | 135,00 |

### Solvents ROTISOLV® GC Ultra Grade, Pestilyse® plus and Pestilyse® for SPE

| Polarity | Solvent | Art. No. | Water miscibility |
|---|---|---|---|
| **nonpolar** | n-Heptane | X878 | no |
| | n-Hexane | T165 | no |
| | n-Pentane | T903 | no |
| | Isooctane | T167 | no |
| | Petroleum ether 40-60 °C | T170 | no |
| | Cyclohexane | T163 | no |
| | Toluene | KK46 | no |
| | Diethyl ether | T900 | no |
| | 2-Propanol | T902 | yes |
| | Tetrahydrofuran | 6788 | yes |
| | Trichloromethane/ Chloroform | T901 | no |
| | Acetic acid ethyl ester | T164 | weak |
| | Methanol | KK44 | yes |
| | Acetone | T161 | yes |
| | Acetic acid | 3738 | yes |
| | Acetonitrile | T168 | yes |
| | Dichloromethane | 6053 | no |
| **polar** | Water | T905 | yes |

## Accessories for SPE



### Tube adapters

For feeding large sample volumes to **1, 3 ml and 6 ml columns**.
Figure: application of the CHROMABOND® tube adapter.

Material: PTFE, tube length: approx. 1 m

**For glass columns**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N866.1** | 4 | 225,00 |

**For polypropylene columns**

| Art. No. | Pack Qty. | € |
|---|---|---|
| **N867.1** | 4 | 145,00 |



### Adapter

For coupling of several CHROMABOND® columns of the same or different sizes or for coupling of dispoable syringes with CHROMABOND® columns.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **2996.1** | 4 | 41,50 |
| **2996.2** | 10 | 94,50 |



## SPE columns

Made of **PP**. Can be used with vacuum block (H676.1ff) and other vacuum systems. Excellent chemical resistance.
Column outlet: Luer (male).
**Delivery without** PE frits (please order separately).

| Volume (ml) | Outside ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 1 | 8 | **PX07.1** | 100 | 44,10 |
| 3 | 11 | **PX08.1** | 100 | 44,10 |

## Frits for SPE columns

Made of **PE**. Pore size 20 µm.

| Type | ∅ (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| For 1 ml PP column | 6 | **PX10.1** | 100 | 17,10 |
| For 3 ml PP column | 9 | **PX11.1** | 100 | 17,10 |

## Accessories: Luer caps

Made of **PP**. To fit standard Luer (male) outlets, and for all column and cartridge sizes.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **PX15.1** | 100 | 17,10 |

▶ Empty columns and cartriges for protein isolation, page 1304

# Liquid-Liquid Extraction



## Polypropylene columns CHROMABOND® XTR

**Kieselguhr phase for liquid-liquid extraction**

**Features:**
- Base material coarse-grained kieselguhr (also known as diatomaceous earth, hydromatrix, celite)
- Large pore size, high pore volume, constantly high batch-to-batch quality
- pH working range 1-13

**Application:**
- Liquid-liquid extraction of highly viscous aqueous solutions such as physiological fluids (blood, plasma, and serum), dyes in textiles, environmental and food analysis without use of a separation funnel
- High water loadability without breakthrough of water during elution with organic solvents
- Also suitable for removing small amounts of water from solvents which are not miscible with water

**Advantages:**
- Fast, reproducible and economical
- Simultaneous preparation of several samples
- No problems with phase separation, no formation of emulsions
- High recovery rates
- Saves of time and solvents
- Organic solutions don't need to be dried after separation

**General column parameters:**

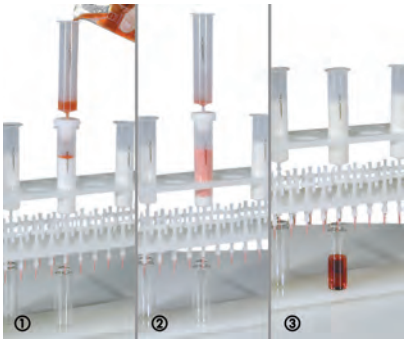
| Volume | Amount of absorbant | Max. volume capacity of aq. solution | Waiting period before elution | Elution volume |
|---|---|---|---|---|
| 6 ml | 1 g | 1 ml | 5-10 min | 8 ml |
| 30 ml | 4,5 g | 5 ml | 5-10 min | 16 ml |
| 70 ml | 14,5 g | 20 ml | 10-15 min | 40 ml |

Depending on the concentration of the analytes eluates can be analysed immediately, or the organic solvent is evaporated. The pH value of the aqueous solution can be altered on the column, which enables elution of different compounds of a sample under optimised conditions. Under certain circumstances, acidic, neutral, and basic compounds can be fractionated in this way.

**Solvents applicable for elution:**
Diethyl ether (T900)
tert-Butyl methyl ether (T175)
Ethyl acetate (T164)
n-Hexane (T165)
Cyclohexane (T163)
Toluene (T166)
Dichloromethane (T901)
Trichloromethane (chloroform) (T901)
Trichloromethane / methanol (90/10, v/v) (T901/T909)
Trichloromethane / methanol (85/15, v/v)
Diethyl ether / ethanol (90/10, v/v)
Diethyl ether / ethanol (80/20, v/v) (T900/9065)
Dichloromethane / 2-propanol (90/10, v/v)
Dichloromethane / 2-propanol (85/15, v/v) (T901/T902)

Eluents with higher alcohol contents cause an increase in volume of the aqueous phase on the CHROMABOND® XTR. In such case, the column might be overloaded which leads to a displacement of the aqueous phase from the column. Therefore a greater capacity column should be used.
**Similar phases:** EXtrelut®, Chem Elut™. Isolute® SLE+, Hydromatrix™

| Volume (ml) | Adsorbent weight (g) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 1 | **3677.1** | 30 | 69,90 |
| 6 | 1 BIG PACK | **3677.2** | 250 (5x50) | 459,00 |
| 30 | 4,5 | **3678.1** | 30 | 87,50 |
| 70 | 14,5 | **3679.1** | 30 | 179,00 |
| 70 | 14,5 BIG PACK | **3679.2** | 100 (5x20) | 469,00 |




① Sample application
② Spreading of the sample
③ Sample elution

TIP

**Extraction of analytes form an aqueous to an organic phase:**

**Column conditioning:** Not required

**Sample application:** Aqueous solutions are applied to the dry CHROMABOND® XTR adsorbent. They are soaked up by the solid within a few minutes and spread over the surface of the kieselguhr material as a thin film.

**Elution:** Lipophilic analytes are eluted with water-immiscible organic solvents; the aqueous phase remains on the CHROMABOND® XTR adsorbent.
Polar, water-soluble analytes, which remain in the aqueous phase on the XTR adsorbent, can be eluted e.g. with saturated NaCl.

**Warning:** Never exceed the volume capacities listed for each columns size!

# QuEChERS Products

## For pesticide residue analysis in food




Within a few years after its development the QuEChERS method has gained a leading position for determination of pesticide residues in food samples by GC-MS or LC-MS, allowing rapid and cheap clean-up of strongly matrix-contaminated samples.
For optimizing the extraction of pH-dependent compounds, for minimizing decomposition of sensitive substances, and for broadening the matrix spectrum,different modifications of the QuEChERS method have been elaborated.
In addition to the required adsorbent Silica gel 60 diamino a number of individually weighed and premixed buffer and extraction mixtures is offered, specially composed for different sample matrices.
For extraction, the European standard EN 15662 recommends a citrate extraction mix (Mix I), while AOAC standard 2007.1 uses an acetate extraction mix (Mix II).
For clean-up, the Diamino phase (PSA) removes, e.g., sugars and organic acids. Magnesium sulfate removes water, $C_{18}$ ec removes nonpolar interferences such as fats and the Carbon phase removes pigments, sterols, and nonpolar interferences.
For selection of the proper clean-up mix see table below.

**Standard clean-up in food samples:**
10 g sample are homogenised with 10 ml acetonitrile. After adding the internal standard the sample is shaken with 4 g magnesium sulphate and 1 g sodium chloride and afterwards centrifuged. 1 ml of the supernatant is spiked with 25 mg CHROMABOND® Diamino and 150 mg magnesium sulphate and shaken again. After centrifugation the supernatant is injected to GC/MS.

For selection of the proper clean-up mix see table below.

| Sample property | Low fat content (e.g., apples, strawberries) | Moderate content of chlorophyll and carotinoids (e.g., carrots, lettuce) | High content of chlorophyll and carotinoids (e.g., bell peppers, spinach | High fat content (e.g., avocado) |
|---|---|---|---|---|
| Extraction | **Mix I or Mix II** Citrate or acetate extraction | **Mix I or Mix II** Citrate or acetate extraction | **Mix I** Citrate extraction | **Mix I** Citrate extraction |
| Clean up | **Mix III** Diamino clean-up | **Mix IV** Diamino/Carbon clean-up | **Mix V** Diamino/Carbon clean-up (higher carbon content) | **Mix VI** Diamino/$C_{18}$ ec clean-up |

### Extraction mixes

| Product | Type | Composition | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **QuEChERS Extraction Mix I** | CHROMABOND® Citrate mix | Magnesium sulphate, anhydrous 4 g / Sodium chloride 1 g / di-Sodium hydrogen citrate1,5-hydrate: 0,5 g / tri-Sodium citrate dihydrate 1 g | **4867.1** | 50 x 15 ml | 150,00 |
| **QuEChERS Extraction Mix II** | CHROMABOND® Acetate mix | Magnesium sulphate, anhydrous 6 g / Sodium acetate 1,5 g | **4868.1** | 50 x 15 ml | 150,00 |

### Clean-up mixes

| Product | Type | Composition | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **QuEChERS Clean-up Mix III** | CHROMABOND® Diamino mix | Magnesium sulphate, anhydrous 0,9 g / CHROMABOND® Diamino 0,15 g | **4870.1** | 50 x 15 ml | 99,90 |
| **QuEChERS Clean-up Mix IV** | CHROMABOND® Diamino/ Carbon mix | Magnesium sulphate, anhydrous 0,9 g / CHROMABOND® Diamino 0,15 g / CHROMABOND® Carbon 0,015 g | **4871.1** | 50 x 15 ml | 99,90 |
| **QuEChERS Clean-up Mix V** | CHROMABOND® Diamino/ Carbon mix | Magnesium sulphate, anhydrous 0,9 g / CHROMABOND® Diamino 0,15 g / CHROMABOND® Carbon 0,045 g | **4875.1** | 50 x 15 ml | 99,90 |
| **QuEChERS Clean-up Mix VI** | CHROMABOND® Diamino/ C18ec mix | Magnesium sulphate, anhydrous 0,9 g / CHROMABOND® Diamino 0,15 g / CHROMABOND® $C_{18}$ ec 0,15 g | **4877.1** | 50 x 15 ml | 99,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Products for preparation of individual QuECHERS mixes see next page.

## Products for preparation of individual QuEChERS mixes:

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Acetonitrile** | ≥99,9 %, Pestilyse® | **T168.2** | 1 l | 34,65 |
| | | **T168.1** | 2,5 l | 73,65 |
| | | **T168.3** | 4 l | 106,45 |
| **Silica gel 60 $C_{18}$ ec** | 0,045 mm | **6070.1** | 10 g | 56,90 |
| | | **6070.2** | 25 g | 115,00 |
| **Silica gel 60 diamino / PSA** | 0,045 mm | **4878.1** | 10 g | 78,90 |
| | | **4878.2** | 25 g | 169,00 |
| **Magnesium sulphate anhydrous** NEW | ≥99 %, p.a., anhydrous | **0682.1** | 100 g | 18,20 |
| | | **0682.2** | 500 g | 40,75 |
| | | **0682.3** | 1 kg | 69,80 |
| **Sodium acetate** | ≥99 %, p.a., ACS, anhydrous | **6773.1** | 250 g | 24,65 |
| | | **6773.2** | 1 kg | 64,40 |
| | | **6773.3** | 2,5 kg | 134,95 |
| | | **6773.5** | 25 kg | 891,20 |
| **Sodium chloride** | ≥99,5 %, p.a., ACS, ISO | **3957.3** | 500 g | 16,05 |
| | | **3957.1** | 1 kg | 17,75 |
| | | **3957.2** | 5 kg | 64,40 |
| | | **3957.4** | 10 kg | 98,80 |
| | | **3957.5** | 25 kg | 192,45 |
| **tri-Sodium citrate dihydrate** | ≥99 %, p.a., ACS | **3580.4** | 250 g | 20,35 |
| | | **3580.3** | 500 g | 26,80 |
| | | **3580.1** | 1 kg | 42,90 |
| | | **3580.2** | 5 kg | 181,70 |
| | | **3580.5** | 25 kg | 428,95 |
| **di-Sodium hydrogen citrate 1,5-hydrate** | ≥99 %, cryst. | **2611.1** | 250 g | 20,35 |
| | | **2611.2** | 500 g | 26,35 |
| | | **2611.3** | 1 kg | 41,85 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Centrifuge tubes see Chapter vessels and glass bottles

**For further information see www.quechers.com**



# Inorganic & analytical reagents


**Classics**

| | |
|---|---|
| Salts for analysis | 1612 |
| Complexometry | 1619 |
| Volumetric standard solutions, ready to use | 1621 |
| ROTI®VOLUM | 1623 |
| Indicators, dyes and detection reagents | 1624 |
| Karl Fischer reagents | 1634 |
| Water analysis | 1637 |
| Analysis of food | 1642 |
| Acids and bases for analysis | 1653 |

**Instrumental**

| | |
|---|---|
| VLSI Products | 1654 |
| Melting point standards | 1655 |
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| Single element standards for AAS | 1658 |
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| Matrix modifier solutions | 1659 |
| Single element standards for ICP | 1660 |
| Multi element standards for ICP | 1662 |
| ROTIPURAN® Ultra/Supra and accessories for trace analysis | 1664 |

**High purity**

| | |
|---|---|
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| ROTI®REMETIC | 1670 |
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**Auxiliary reagents**

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| Preliminary test for qualitative determination | 1686 |

# Salts for Analysis

Our salts for analysis are manufactured under strict production guidelines. Analytical purity and best quality reliably characterize each batch.
Salts in p.a. quality made by Roth meet the high requirements for reproducible results. Most of our salts are additionally specified according to international standards like ACS and ISO.

**Definition:**
**p.a.: pro analysi (for Analysis)**
**ACS: American Chemical Society**
**ISO: International Standard Organisation**



## Aluminium salts, Al

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Aluminium ammonium sulphate dodecahydrate** | ≥99 %, p.a., ACS | **X862.1** | 500 g | plastic | 30,00 |
| | | **X862.2** | 1 kg | plastic | 48,95 |
| | | **X862.3** | 2,5 kg | plastic | 99,90 |
| **Aluminium nitrate nonahydrate** | ≥98 %, p.a. | **CN85.1** | 500 g | plastic | 19,90 |
| | | **CN85.2** | 1 kg | plastic | 30,00 |
| | | **CN85.3** | 2,5 kg | plastic | 59,05 |
| **Aluminium sulphate hexadecahydrate** | ≥98 %, p.a., ACS | **5340.2** | 100 g | plastic | 16,70 |
| | | **5340.1** | 500 g | plastic | 39,25 |
| | | **5340.3** | 1 kg | plastic | 67,20 |
| **Potassium aluminium sulphate dodecahydrate** | ≥98 %, p.a., ACS | **P724.2** | 500 g | plastic | 25,70 |
| | | **P724.1** | 1 kg | plastic | 45,70 |
| | | **P724.3** | 2,5 kg | plastic | 96,25 |

## Ammonium salts, $NH_4^+$

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Ammonium acetate** | ≥97 %, p.a., ACS | **7869.2** | 500 g | plastic | 27,85 |
| | | **7869.1** | 1 kg | plastic | 39,70 |
| | | **7869.3** | 2,5 kg | plastic | 67,65 |
| **Ammonium bromide** | ≥99 %, p.a., ACS | **HN14.1** | 500 g | plastic | 31,10 |
| | | **HN14.2** | 1 kg | plastic | 47,85 |
| | | **HN14.3** | 2,5 kg | plastic | 103,10 |
| **Ammonium carbonate** | ≥30 %, $NH_3$, p.a., ACS | **CP98.1** | 500 g | plastic | 18,85 |
| | | **CP98.2** | 1 kg | plastic | 28,50 |
| | | **CP98.4** | 2,5 kg | plastic | 46,80 |
| | | **CP98.3** | 5 kg | plastic | 83,75 |

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Ammonium cerium(IV) sulphate dihydrate** | ≥99 %, p.a. | **4386.1** | 100 g | plastic | 45,05 |
| | | **4386.2** | 250 g | plastic | 99,90 |
| | | **4386.3** | 500 g | plastic | 157,95 |
| **Ammonium chloride** | ≥99,7 %, p.a., ultra quality | **K298.1** | 500 g | plastic | 22,05 |
| | | **K298.2** | 1 kg | plastic | 37,10 |
| | | **K298.3** | 2,5 kg | plastic | 57,95 |
| | | **K298.4** | 5 kg | plastic | 77,95 |
| | | **K298.6** | 10 kg | plastic | 132,15 |
| | | **K298.5** | 25 kg | plastic | 256,95 |
| **Ammonium dihydrogen phosphate** | ≥99 %, p.a., ACS | **P727.1** | 500 g | plastic | 41,40 |
| | | **P727.2** | 1 kg | plastic | 74,75 |
| | | **P727.3** | 2,5 kg | plastic | 159,65 |
| **Ammonium iron(II) sulphate hexahydrate** | ≥99 %, p.a., ISO | **P728.1** | 500 g | plastic | 27,45 |
| | | **P728.2** | 1 kg | plastic | 46,15 |
| | | **P728.3** | 2,5 kg | plastic | 103,75 |
| **Ammonium iron(III) sulphate dodecahydrate** | ≥98,5 %, p.a., ACS, ISO | **P734.1** | 500 g | plastic | 30,00 |
| | | **P734.2** | 1 kg | plastic | 51,50 |
| | | **P734.3** | 2,5 kg | plastic | 107,40 |
| **Ammonium fluoride** | ≥98 %, p.a., ACS | **6549.1** | 250 g | plastic | 57,95 |
| | | **6549.2** | 500 g | plastic | 99,90 |
| | | **6549.3** | 1 kg | plastic | 177,40 |
| **Ammonium heptamolybdate tetrahydrate** | ≥99 %, p.a. | **3666.1** | 250 g | plastic | 87,00 |
| | | **3666.2** | 500 g | plastic | 155,90 |
| | | **3666.3** | 1 kg | plastic | 278,45 |
| **Ammonium hydrogen carbonate** | ≥99 %, p.a. | **T871.1** | 500 g | plastic | 22,05 |
| | | **T871.2** | 1 kg | plastic | 31,75 |
| | | **T871.3** | 2,5 kg | plastic | 52,15 |
| | | **T871.4** | 5 kg | plastic | 87,65 |
| | | **T871.5** | 25 kg | plastic | 299,95 |
| **di-Ammonium hydrogen citrate** | ≥98 %, p.a., ACS | **P735.1** | 500 g | plastic | 47,85 |
| | | **P735.2** | 1 kg | plastic | 85,50 |
| | | **P735.3** | 2,5 kg | plastic | 172,55 |
| **di-Ammonium hydrogen phosphate** | ≥98 %, p.a., ACS | **P736.1** | 500 g | plastic | 51,50 |
| | | **P736.2** | 1 kg | plastic | 82,70 |
| | | **P736.3** | 2,5 kg | plastic | 188,15 |
| **Ammonium hydrogen sulphate** | ≥98,5 %, p.a. | **5485.2** | 250 g | plastic | 25,70 |
| | | **5485.1** | 500 g | plastic | 42,50 |
| | | **5485.3** | 1 kg | plastic | 76,25 |
| **Ammonium iodide** | ≥99 %, p.a., ACS | **9818.1** | 100 g | glass | 50,45 |
| | | **9818.2** | 250 g | glass | 110,65 |
| | | **9818.3** | 500 g | glass | 209,65 |
| **Ammonium monovanadate** | ≥99,8 %, p.a. | **4232.1** | 50 g | plastic | 24,20 |
| | | **4232.2** | 100 g | plastic | 34,95 |
| | | **4232.3** | 250 g | plastic | 71,95 |
| | | **4232.4** | 1 kg | plastic | 231,15 |
| **Ammonium nitrate** | ≥98 %, p.a., ACS | **K299.1** | 500 g | plastic | 28,95 |
| | | **K299.2** | 1 kg | plastic | 47,20 |
| | | **K299.3** | 2,5 kg | plastic | 102,05 |
| **di-Ammonium oxalate monohydrate** | ≥99,5 %, p.a., ACS | **P737.1** | 500 g | plastic | 50,00 |
| | | **P737.2** | 1 kg | plastic | 81,60 |
| | | **P737.3** | 2,5 kg | plastic | 171,50 |
| **Ammonium peroxydisulphate** | ≥98 %, p.a., ACS | **9592.3** | 50 g | plastic | 9,90 |
| | | **9592.2** | 100 g | plastic | 13,15 |
| | | **9592.1** | 1 kg | plastic | 37,10 |
| | | **9592.4** | 2,5 kg | plastic | 70,45 |
| **Ammonium sulphate** | ≥99,5 %, p.a., ACS, ISO | **3746.2** | 250 g | plastic | 12,80 |
| | | **3746.1** | 1 kg | plastic | 28,95 |
| | | **3746.3** | 2,5 kg | plastic | 52,15 |
| | | **3746.4** | 5 kg | plastic | 91,95 |
| | | **3746.6** | 10 kg | plastic | 147,20 |
| | | **3746.5** | 25 kg | plastic | 321,45 |
| **Ammonium thiocyanate** | ≥99 %, p.a., ACS, ISO | **4477.1** | 100 g | plastic | 16,05 |
| | | **4477.2** | 250 g | plastic | 22,05 |
| | | **4477.3** | 500 g | plastic | 32,80 |
| | | **4477.4** | 1 kg | plastic | 52,60 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Antimony salts, Sb

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Antimony(III) chloride** | ≥99 %, p.a., ACS | **9819.1** | 100 g | plastic | 27,85 |
| | | **9819.2** | 500 g | plastic | 89,15 |
| | | **9819.3** | 1 kg | plastic | 152,55 |
| **Antimony(III) oxide** | ≥99 %, p.a. | **9826.1** | 100 g | plastic | 18,85 |
| | | **9826.2** | 500 g | plastic | 61,85 |
| | | **9826.3** | 1 kg | plastic | 110,65 |

## Barium salts, Ba

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Barium acetate** | ≥99 %, p.a., ACS | **2553.1** | 250 g | plastic | 37,55 |
| | | **2553.2** | 500 g | plastic | 60,10 |
| | | **2553.3** | 1 kg | plastic | 100,55 |
| **Barium carbonate** | ≥99 %, p.a., ACS | **P008.2** | 25 g | plastic | 12,80 |
| | | **P008.3** | 100 g | plastic | 25,30 |
| | | **P008.1** | 500 g | plastic | 92,35 |
| **Barium chloride dihydrate** | ≥99 %, p.a., ACS, ISO | **4453.1** | 250 g | plastic | 15,60 |
| | | **4453.2** | 500 g | plastic | 23,15 |
| | | **4453.3** | 1 kg | plastic | 38,60 |
| | | **4453.4** | 2,5 kg | plastic | 82,25 |
| | | **4453.5** | 25 kg | plastic | 665,45 |
| **Barium hydroxide octahydrate** | ≥98 %, p.a., ISO | **P009.2** | 250 g | plastic | 26,35 |
| | | **P009.1** | 500 g | plastic | 39,70 |
| | | **P009.3** | 1 kg | plastic | 60,75 |
| **Barium nitrate** | ≥99 %, p.a., ACS | **4387.1** | 250 g | plastic | 26,35 |
| | | **4387.2** | 500 g | plastic | 41,85 |

## Bismuth salts, Bi

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Bismuth(III) nitrate** | ≥71 % Bi, p.a., alkaline | **4447.1** | 50 g | plastic | 43,55 |
| | | **4447.2** | 100 g | plastic | 69,35 |
| **Bismuth(III) nitrate pentahydrate** | ≥98 %, p.a., ACS | **2554.1** | 250 g | plastic | 46,80 |
| | | **2554.2** | 500 g | plastic | 84,85 |
| | | **2554.3** | 1 kg | plastic | 149,45 |
| **Bismuth(III) oxide** | ≥99,5 %, p.a. | **6555.1** | 50 g | plastic | 36,45 |
| | | **6555.2** | 100 g | plastic | 50,00 |
| | | **6555.3** | 500 g | plastic | 155,90 |
| **Sodium bismuthate** | ≥85 %, p.a. | **4401.1** | 50 g | plastic | 46,15 |
| | | **4401.2** | 100 g | plastic | 85,50 |
| | | **4401.3** | 250 g | plastic | 185,45 |

## Bor salts, B

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **di-Sodium tetraborate decahydrate** | ≥99,5 %, p.a., ACS, ISO | **T880.1** | 500 g | plastic | 31,10 |
| | | **T880.2** | 1 kg | plastic | 46,15 |
| | | **T880.3** | 2,5 kg | plastic | 90,20 |
| **Sodium tetraphenyl borate** | ≥99,5 %, p.a., ACS | **4385.1** | 10 g | plastic | 40,75 |
| | | **4385.2** | 25 g | plastic | 89,15 |
| | | **4385.3** | 100 g | plastic | 278,45 |

## Cadmium salts, Cd

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Cadmium acetate dihydrate** | ≥99 %, p.a. | **KK06.1** | 100 g | plastic | 31,75 |
| | | **KK06.2** | 250 g | plastic | 67,20 |
| **Cadmium sulphate hydrate** | ≥99 %, p.a., ACS | **4482.2** | 25 g | plastic | 18,20 |
| | | **4482.1** | 100 g | plastic | 55,80 |
| | | **4482.3** | 250 g | plastic | 94,50 |
| | | **4482.4** | 500 g | plastic | 142,90 |
| | | **4482.5** | 1 kg | plastic | 267,70 |

## Caesium salts, Cs

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Caesium carbonate** | ≥99,9 %, p.a. | **6873.1** | 5 g | plastic | 16,70 |
| | | **6873.2** | 25 g | plastic | 36,45 |
| | | **6873.3** | 100 g | plastic | 117,20 |
| | | **6873.4** | 500 g | plastic | 347,15 |
| **Caesium chloride** | ≥99,999 %, p.a., ultra quality | **8627.3** | 50 g | plastic | 48,30 |
| | | **8627.1** | 100 g | plastic | 80,55 |
| | | **8627.2** | 1 kg | plastic | 532,15 |
| **Caesium sulphate** | ≥99,99 %, p.a. | **9355.3** | 25 g | plastic | 40,75 |
| | | **9355.1** | 100 g | plastic | 128,90 |
| | | **9355.2** | 1 kg | plastic | 880,45 |

## Calcium salts, Ca

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Calcium acetate monohydrate** | ≥99 %, p.a., ACS | **P011.1** | 500 g | plastic | 35,40 |
| | | **P011.2** | 1 kg | plastic | 65,05 |
| **Calcium carbonate** | ≥99 %, p.a., precipitated | **P012.1** | 500 g | plastic | 68,70 |
| | | **P012.2** | 1 kg | plastic | 120,30 |
| | | **P012.3** | 2,5 kg | plastic | 235,45 |
| **Calcium chloride dihydrate** | ≥99 %, p.a., ACS | **5239.2** | 500 g | plastic | 17,45 |
| | | **5239.1** | 1 kg | plastic | 24,20 |
| | | **5239.3** | 2,5 kg | plastic | 52,60 |
| **Calcium chloride hexahydrate** | ≥98 %, p.a. | **T886.2** | 500 g | plastic | 30,00 |
| | | **T886.1** | 1 kg | plastic | 50,45 |
| | | **T886.3** | 2,5 kg | plastic | 99,45 |
| **Calcium hydroxide** | ≥96 %, p.a. | **CN87.1** | 500 g | plastic | 40,75 |
| | | **CN87.2** | 1 kg | plastic | 66,55 |
| | | **CN87.3** | 2,5 kg | plastic | 138,70 |
| **Calcium nitrate tetrahydrate** | ≥99 %, p.a., ACS | **P740.1** | 500 g | plastic | 23,55 |
| | | **P740.2** | 1 kg | plastic | 37,10 |
| | | **P740.3** | 2,5 kg | plastic | 81,60 |
| **Calcium sulphate dihydrate** | ≥98 %, p.a., ACS | **P741.1** | 500 g | plastic | 51,50 |
| | | **P741.2** | 1 kg | plastic | 89,80 |
| | | **P741.3** | 2,5 kg | plastic | 192,45 |

## Cerium salts, Ce

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Ammonium cerium(IV) sulphate dihydrate** | ≥99 %, p.a. | **4386.1** | 100 g | plastic | 45,05 |
| | | **4386.2** | 250 g | plastic | 99,90 |
| | | **4386.3** | 500 g | plastic | 157,95 |
| **Cerium(IV) ammonium nitrate** | ≥99,5 %, p.a. | **HN28.1** | 50 g | plastic | 44,65 |
| | | **HN28.2** | 100 g | plastic | 81,60 |
| | | **HN28.3** | 250 g | plastic | 151,05 |
| **Cerium(III) nitrate hexahydrate** | ≥99,5 %, p.a. | **HN18.1** | 100 g | plastic | 75,15 |
| | | **HN18.2** | 500 g | plastic | 289,20 |
| **Cerium(IV) oxide** | ≥99,9 %, p.a. | **9837.1** | 100 g | plastic | 33,25 |
| | | **9837.2** | 500 g | plastic | 100,95 |
| | | **9837.3** | 1 kg | plastic | 155,90 |
| **Cerium(IV) sulphate tetrahydrate** | ≥98 %, p.a. | **P014.2** | 50 g | plastic | 65,05 |
| | | **P014.1** | 100 g | plastic | 111,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Chromium salts, Cr

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Chromium(III) chloride hexahydrate | ≥97 %, p.a. | 9832.1 | 100 g | plastic | 16,70 |
| | | 9832.2 | 500 g | plastic | 44,65 |
| | | 9832.3 | 1 kg | plastic | 73,00 |
| Chromium(III) potassium sulphate dodecahydrate | ≥98 %, p.a., ACS | 4389.1 | 250 g | plastic | 27,85 |
| | | 4389.2 | 500 g | plastic | 42,90 |
| | | 4389.3 | 1 kg | plastic | 81,60 |
| Potassium chromate | ≥99 %, p.a., ACS | HN33.1 | 100 g | plastic | 36,45 |
| | | HN33.2 | 250 g | plastic | 68,70 |
| | | HN33.3 | 500 g | plastic | 119,90 |
| | | HN33.4 | 1 kg | plastic | 206,95 |
| Potassium dichromate | ≥99,5 %, p.a., ACS, ISO | P744.3 | 100 g | plastic | 26,35 |
| | | P744.1 | 500 g | plastic | 95,15 |
| | | P744.2 | 1 kg | plastic | 160,75 |
| Reinecke salt monohydrate | ≥93%, p.a., ACS | 6629.1 | 25 g | glass | 57,95 |
| | | 6629.2 | 100 g | glass | 169,35 |

## Cobalt salts, Co

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Cobalt(II) acetate tetrahydrate | ≥98 %, p.a., ACS | HN29.1 | 50 g | plastic | 26,35 |
| | | HN29.2 | 100 g | plastic | 40,75 |
| | | HN29.3 | 250 g | plastic | 85,90 |
| Cobalt(II) chloride hexahydrate | ≥99 %, p.a., ACS, ISO | T889.2 | 50 g | plastic | 60,10 |
| | | T889.3 | 100 g | plastic | 92,35 |
| | | T889.1 | 250 g | plastic | 177,40 |
| Cobalt(II) nitrate hexahydrate | ≥98 %, p.a., ACS | HN16.1 | 50 g | plastic | 28,50 |
| | | HN16.2 | 100 g | plastic | 46,80 |
| | | HN16.3 | 250 g | plastic | 96,65 |
| Cobalt(II,III) oxide | ≥71 % Co, p.a. | 9834.1 | 25 g | plastic | 16,70 |
| | | 9834.2 | 100 g | plastic | 44,65 |
| | | 9834.3 | 500 g | plastic | 188,15 |
| Cobalt(II) sulphate heptahydrate | ≥97 %, p.a. | 4390.1 | 100 g | plastic | 35,40 |
| | | 4390.2 | 250 g | plastic | 76,25 |
| | | 4390.3 | 500 g | plastic | 139,65 |
| Sodium hexanitro-cobaltate(III) | p.a., ACS | 4409.1 | 25 g | plastic | 19,25 |
| | | 4409.2 | 100 g | plastic | 52,60 |
| | | 4409.3 | 250 g | plastic | 107,40 |

## Copper salts, Cu

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Copper(II) acetate monohydrate | ≥99 %, p.a., ACS | HN30.1 | 50 g | plastic | 21,40 |
| | | HN30.2 | 100 g | plastic | 32,15 |
| | | HN30.3 | 250 g | plastic | 66,15 |
| Copper(I) chloride | ≥98 %, p.a., ACS | 4391.1 | 100 g | plastic | 19,25 |
| | | 4391.2 | 250 g | plastic | 37,55 |
| | | 4391.3 | 500 g | plastic | 66,15 |
| | | 4391.4 | 1 kg | plastic | 117,20 |
| Copper(II) chloride dihydrate | ≥99 %, p.a. | CN82.1 | 250 g | plastic | 26,80 |
| | | CN82.2 | 500 g | plastic | 42,90 |
| | | CN82.3 | 1 kg | plastic | 77,30 |
| Copper(II) nitrate trihydrate | ≥99,5 %, p.a., ACS | P754.1 | 500 g | plastic | 61,20 |
| | | P754.2 | 1 kg | plastic | 160,75 |
| Copper(II) oxide | p.a., ACS, as wire | 4467.2 | 25 g | plastic | 21,40 |
| | | 4467.1 | 100 g | plastic | 64,40 |
| | | 4467.3 | 250 g | plastic | 145,05 |
| Copper(II) sulphate | ≥98 %, p.a., anhydrous | P023.1 | 250 g | plastic | 34,30 |
| | | P023.2 | 1 kg | plastic | 102,05 |
| | | P023.3 | 2,5 kg | plastic | 220,40 |
| Copper(II) sulphate pentahydrate | ≥99,5 %, p.a., ACS, ISO | P024.1 | 500 g | plastic | 27,85 |
| | | P024.2 | 1 kg | plastic | 47,85 |
| | | P024.3 | 2,5 kg | plastic | 89,15 |

## Gold salts, Au

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Tetrachloroauric(III) acid trihydrate NEW | ≥99,9 %, p.a., ultra quality | 0689.1 | 500 mg | glass | 84,95 |
| | | 0689.2 | 1 g | glass | 138,70 |
| | | 0689.3 | 5 g | glass | 525,70 |
| Tetrachloroauric(III) acid trihydrate | ≥99,5 %, p.a. | 3867.1 | 1 g | glass | 134,40 |
| | | 3867.2 | 5 g | glass | 536,45 |

## Indium salts, In NEW

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Indium(III) chloride | ≥99,9 %, p.a. | 0307.1 | 5 g | plastic | 26,80 |
| | | 0307.2 | 10 g | plastic | 42,90 |
| | | 0307.3 | 25 g | plastic | 85,90 |
| | | 0307.4 | 50 g | plastic | 149,45 |
| Indium(III) sulphate | ≥99,99 %, p.a. | 0314.1 | 5 g | plastic | 26,80 |
| | | 0314.2 | 10 g | plastic | 42,90 |
| | | 0314.3 | 25 g | plastic | 75,15 |
| | | 0314.4 | 50 g | plastic | 138,70 |

## Iron salts, Fe

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Ammonium iron(II) sulphate hexahydrate | ≥99 %, p.a., ISO | P728.1 | 500 g | plastic | 27,45 |
| | | P728.2 | 1 kg | plastic | 46,15 |
| | | P728.3 | 2,5 kg | plastic | 103,75 |
| Ammonium iron(III) sulphate dodecahydrate | ≥98,5 %, p.a., ACS, ISO | P734.1 | 500 g | plastic | 30,00 |
| | | P734.2 | 1 kg | plastic | 51,50 |
| | | P734.3 | 2,5 kg | plastic | 107,40 |
| Iron(III) chloride hexahydrate | ≥99 %, p.a. | P742.1 | 250 g | plastic | 27,85 |
| | | P742.2 | 1 kg | plastic | 87,00 |
| | | P742.5 | 25 kg | plastic | 837,45 |
| Iron(II) sulphate heptahydrate | ≥99 %, p.a., ACS | P015.1 | 500 g | plastic | 24,20 |
| | | P015.2 | 1 kg | plastic | 35,40 |
| | | P015.3 | 2,5 kg | plastic | 76,25 |
| | | P015.5 | 25 kg | plastic | 493,45 |
| Potassium hexacyano-ferrate(II) trihydrate | ≥99 %, p.a., ACS, ISO | P745.1 | 500 g | plastic | 90,20 |
| | | P745.2 | 1 kg | plastic | 160,20 |
| | | P745.3 | 2,5 kg | plastic | 342,95 |
| Potassium hexacyano-ferrate(III) | ≥99 %, p.a., ACS | P746.3 | 100 g | plastic | 21,75 |
| | | P746.1 | 500 g | plastic | 69,80 |
| | | P746.2 | 1 kg | plastic | 126,35 |
| Sodium nitroprusside dihydrate | ≥99 %, p.a., ACS | HN34.1 | 25 g | plastic | 27,45 |
| | | HN34.2 | 100 g | plastic | 72,60 |
| | | HN34.3 | 500 g | plastic | 282,20 |

## Lanthanum salts, La

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Lanthanum(III) nitrate hexahydrate | ≥99,99 %, p.a. | 8358.1 | 100 g | plastic | 91,95 |
| Lanthanum(III) oxide | ≥99,99 %, p.a. | 8373.1 | 100 g | plastic | 52,15 |

## Lead salts, Pb

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Lead(II) acetate, basic | ≥33 % PbO, p.a., ACS | 2559.1 | 500 g | plastic | 37,55 |
| | | 2559.2 | 1 kg | plastic | 55,80 |
| Lead(II) acetate trihydrate | ≥99,5 %, p.a., ACS, ISO | P739.1 | 500 g | plastic | 79,05 |
| | | P739.2 | 1 kg | plastic | 134,40 |
| | | P739.3 | 2,5 kg | plastic | 282,20 |
| Lead(II) carbonate | ≥98 %, p.a., ACS | 2558.1 | 100 g | plastic | 38,20 |
| | | 2558.2 | 250 g | plastic | 57,95 |
| | | 2558.3 | 500 g | plastic | 92,35 |
| Lead(II) nitrate | ≥99 %, p.a., ACS | HN32.1 | 100 g | plastic | 18,20 |
| | | HN32.2 | 250 g | plastic | 35,40 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Lithium salts, Li

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Lithium carbonate** | ≥99 %, p.a., ACS | **3995.1** | 250 g | plastic | 66,15 |
| | | **3995.2** | 500 g | plastic | 117,20 |
| **Lithium chloride** | ≥99,5 %, p.a., ultra quality | **3739.1** | 250 g | plastic | 49,35 |
| | | **3739.2** | 1 kg | plastic | 142,45 |
| | ≥99 %, p.a., ACS | **6698.1** | 50 g | plastic | 16,05 |
| | | **6698.2** | 100 g | plastic | 22,05 |
| | | **6698.3** | 500 g | plastic | 69,35 |
| | | **6698.4** | 1 kg | plastic | 125,70 |
| **Lithium fluoride** | ≥99 %, p.a. | **6715.1** | 25 g | plastic | 19,25 |
| | | **6715.2** | 100 g | plastic | 34,30 |
| | | **6715.3** | 250 g | plastic | 65,50 |
| **Lithium metaborate** | ≥98 %, p.a., ACS, anhydrous | **9840.1** | 50 g | plastic | 46,15 |
| | | **9840.2** | 100 g | plastic | 80,55 |
| **Lithium sulphate monohydrate** | ≥99 %, p.a. | **4393.1** | 250 g | plastic | 42,50 |
| | | **4393.2** | 500 g | plastic | 74,10 |
| | | **4393.3** | 1 kg | plastic | 126,35 |

## Magnesium salts, Mg

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Magnesium acetate tetrahydrate** | ≥99,5 %, p.a., ACS | **P026.1** | 500 g | plastic | 52,15 |
| | | **P026.2** | 1 kg | plastic | 87,65 |
| **Magnesium chloride hexahydrate** | ≥99 %, p.a., ACS | **2189.2** | 250 g | plastic | 15,60 |
| | | **2189.1** | 1 kg | plastic | 30,00 |
| | | **2189.3** | 2,5 kg | plastic | 55,40 |
| | | **2189.5** | 25 kg | plastic | 439,70 |
| **Magnesium nitrate hexahydrate** | ≥98 %, p.a., ACS | **HN31.1** | 500 g | plastic | 35,40 |
| | | **HN31.2** | 1 kg | plastic | 61,20 |
| | | **HN31.3** | 2,5 kg | plastic | 135,35 |
| **Magnesium sulphate** NEW | ≥99 %, p.a., anhydrous | **0682.1** | 100 g | plastic | 18,20 |
| | | **0682.2** | 500 g | plastic | 40,75 |
| | | **0682.3** | 1 kg | plastic | 69,80 |
| **Magnesium sulphate heptahydrate** | ≥99 %, p.a., ACS | **P027.1** | 500 g | plastic | 24,20 |
| | | **P027.2** | 1 kg | plastic | 38,60 |
| | | **P027.3** | 2,5 kg | plastic | 71,50 |

## Manganese salts, Mn

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Potassium permanganate** | ≥99 %, p.a., ACS, max. 0,005 ppm Hg | **KK08.1** | 500 g | plastic | 42,50 |
| | | **KK08.2** | 1 kg | plastic | 64,40 |
| | ≥99 %, p.a., ACS | **P752.1** | 500 g | plastic | 39,25 |
| | | **P752.2** | 1 kg | plastic | 59,05 |
| | | **P752.3** | 2,5 kg | plastic | 105,25 |
| **Manganese(II) carbonate** | ≥44 % Mn, p.a. | **9927.1** | 250 g | plastic | 21,00 |
| | | **9927.2** | 500 g | plastic | 33,25 |
| | | **9927.3** | 1 kg | plastic | 55,80 |
| | | **9927.4** | 2,5 kg | plastic | 110,65 |
| **Manganese(II) chloride monohydrate** | ≥99 %, p.a | **4320.1** | 100 g | plastic | 13,90 |
| | | **4320.2** | 500 g | plastic | 28,50 |
| | | **4320.3** | 1 kg | plastic | 45,70 |
| | | **4320.4** | 2,5 kg | plastic | 90,20 |
| **Manganese(II) chloride tetrahydrate** | ≥99 %, p.a. | **T881.3** | 100 g | plastic | 16,05 |
| | | **T881.1** | 500 g | plastic | 38,60 |
| | | **T881.2** | 1 kg | plastic | 61,20 |
| **Manganese(II) nitrate tetrahydrate** | ≥98 %, p.a. | **HN26.1** | 250 g | plastic | 23,15 |
| | | **HN26.2** | 500 g | plastic | 39,25 |
| | | **HN26.3** | 1 kg | plastic | 67,65 |
| | | **HN26.4** | 2,5 kg | plastic | 144,60 |
| **Manganese(II) sulphate monohydrate** | ≥99 %, p.a., ACS | **4487.1** | 250 g | plastic | 28,95 |
| | | **4487.2** | 500 g | plastic | 50,45 |

## Mercury salts, Hg

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Mercury(II) acetate** | ≥99 %, p.a., ACS | **KK05.1** | 50 g | glass | 56,90 |
| | | **KK05.2** | 100 g | glass | 101,60 |
| **Mercury(II) bromide** | ≥98 %, p.a., ACS | **6581.1** | 50 g | plastic | 52,60 |
| | | **6581.2** | 250 g | plastic | 203,20 |
| **Mercury(I) chloride** | ≥99,5 %, p.a., ACS | **6601.1** | 50 g | glass | 54,30 |
| | | **6601.2** | 100 g | glass | 88,70 |
| | | **6601.3** | 500 g | glass | 342,95 |
| **Mercury(II) chloride** | ≥99,5 %, p.a., ACS | **KK04.1** | 50 g | glass | 45,70 |
| | | **KK04.2** | 100 g | glass | 82,25 |
| **Mercury(II) iodide** | ≥99 %, p.a., ACS, red | **6590.1** | 50 g | plastic | 50,45 |
| | | **6590.2** | 100 g | plastic | 83,75 |
| | | **6590.3** | 500 g | plastic | 321,45 |
| **Mercury(I) nitrate dihydrate** | ≥97 %, p.a. | **6605.1** | 50 g | plastic | 39,25 |
| | | **6605.2** | 100 g | plastic | 64,40 |
| | | **6605.3** | 500 g | plastic | 284,90 |
| **Mercury(II) nitrate monohydrate** | ≥98 %, p.a., ACS | **6595.1** | 50 g | plastic | 39,70 |
| | | **6595.2** | 250 g | plastic | 138,70 |
| | | **6595.3** | 1 kg | plastic | 482,70 |
| **Mercury(II) oxide** | ≥99 %, p.a., red | **4470.2** | 25 g | plastic | 42,90 |
| | | **4470.1** | 50 g | plastic | 77,30 |
| **Mercury(II) sulphate** | ≥98 %, p.a., ACS | **T112.1** | 100 g | plastic | 74,10 |
| | | **T112.2** | 500 g | plastic | 263,40 |
| **Mercury(II) thiocyanate** | ≥99%, p.a. | **6600.1** | 25 g | plastic | 34,30 |
| | | **6600.2** | 100 g | plastic | 103,10 |
| | | **6600.3** | 500 g | plastic | 439,70 |

## Molybdenum salts, Mo

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Ammonium hepta-molybdate tetrahydrate** | ≥99 %, p.a. | **3666.1** | 250 g | plastic | 87,00 |
| | | **3666.2** | 500 g | plastic | 155,90 |
| | | **3666.3** | 1 kg | plastic | 278,45 |
| **Molybdenum(VI) oxide** NEW | ≥99,5 %, p.a. | **0142.1** | 50 g | plastic | 17,10 |
| | | **0142.2** | 250 g | plastic | 42,90 |
| | | **0142.3** | 500 g | plastic | 75,15 |
| | | **0142.4** | 1 kg | plastic | 138,70 |
| **Sodium molybdate dihydrate** | ≥99,5 %, p.a. | **0274.1** | 50 g | plastic | 18,20 |
| | | **0274.2** | 100 g | plastic | 26,35 |
| | | **0274.3** | 250 g | plastic | 47,20 |
| | | **0274.4** | 1 kg | plastic | 170,95 |

## Nickel salts, Ni

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Nickel(II) chloride hexahydrate** | ≥98 %, p.a. | **4489.1** | 100 g | plastic | 44,00 |
| | | **4489.2** | 250 g | plastic | 93,00 |
| **Nickel(II) nitrate hexahydrate** | ≥99 %, p.a. | **4395.1** | 100 g | plastic | 26,80 |
| | | **4395.2** | 250 g | plastic | 55,80 |
| | | **4395.3** | 500 g | plastic | 101,60 |
| **Nickel(II) oxide** | ≥78 % Ni, p.a., green, 325 mesh | **9996.1** | 100 g | plastic | 21,40 |
| | | **9996.2** | 500 g | plastic | 64,40 |
| | | **9996.3** | 1 kg | plastic | 106,45 |
| | ≥75 % Ni, p.a., black, 400 mesh | **9925.1** | 100 g | plastic | 21,40 |
| | | **9925.2** | 500 g | plastic | 64,40 |
| | | **9925.3** | 1 kg | plastic | 106,45 |
| **Nickel(II) sulphate hexahydrate** | ≥99 %, p.a., ACS | **T111.1** | 250 g | plastic | 66,55 |
| | | **T111.2** | 1 kg | plastic | 231,15 |

## Osmium salts, Os

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Osmium tetraoxide** | ≥99,95 %, p.a., for electron microscopy | **8371.1** | 100 mg | glass | 40,75 |
| | | **8371.2** | 500 mg | glass | 98,80 |
| | | **8371.3** | 1 g | glass | 152,55 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Potassium salts, K

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Potassium acetate** | ≥99 %, p.a. | **T874.1** | 500 g | plastic | 34,30 |
| | | **T874.2** | 1 kg | plastic | 52,60 |
| | | **T874.3** | 2,5 kg | plastic | 101,60 |
| | | **T874.5** | 25 kg | plastic | 686,95 |
| **Potassium aluminium sulphate dodecahydrate** | ≥98 %, p.a., ACS | **P724.2** | 500 g | plastic | 25,70 |
| | | **P724.1** | 1 kg | plastic | 45,70 |
| | | **P724.3** | 2,5 kg | plastic | 96,25 |
| **Potassium bromate** | ≥99,8%, p.a., ACS, ISO | **4396.1** | 100 g | plastic | 46,15 |
| | | **4396.2** | 250 g | plastic | 103,75 |
| | | **4396.3** | 500 g | plastic | 186,55 |
| **Potassium bromide** | ≥99 %, p.a., ACS | **A137.1** | 100 g | plastic | 20,65 |
| | | **A137.2** | 500 g | plastic | 39,25 |
| | | **A137.3** | 1 kg | plastic | 69,35 |
| **Potassium carbonate** | ≥99 %, p.a., ACS | **P743.1** | 500 g | plastic | 26,35 |
| | | **P743.2** | 1 kg | plastic | 40,75 |
| | | **P743.3** | 2,5 kg | plastic | 88,70 |
| **Potassium chlorate** | ≥99 %, p.a., ACS | **HN27.1** | 100 g | plastic | 15,30 |
| | | **HN27.2** | 250 g | plastic | 23,15 |
| | | **HN27.3** | 500 g | plastic | 35,40 |
| **Potassium chloride** | ≥99,5 %, p.a., ACS, ISO | **6781.3** | 500 g | plastic | 18,20 |
| | | **6781.1** | 1 kg | plastic | 25,30 |
| | | **6781.2** | 5 kg | plastic | 100,95 |
| | | **6781.5** | 25 kg | plastic | 385,95 |
| **Potassium chromate** | ≥99 %, p.a., ACS | **HN33.1** | 100 g | plastic | 36,45 |
| | | **HN33.2** | 250 g | plastic | 68,70 |
| | | **HN33.3** | 500 g | plastic | 119,90 |
| | | **HN33.4** | 1 kg | plastic | 206,95 |
| **Potassium dichromate** | ≥99,5 %, p.a., ACS, ISO | **P744.3** | 100 g | plastic | 26,35 |
| | | **P744.1** | 500 g | plastic | 95,15 |
| | | **P744.2** | 1 kg | plastic | 160,75 |
| **Potassium dihydrogen phosphate** | ≥99 %, p.a., ACS | **3904.2** | 250 g | plastic | 18,20 |
| | | **3904.1** | 1 kg | plastic | 52,60 |
| | | **3904.3** | 5 kg | plastic | 209,65 |
| | | **3904.5** | 25 kg | plastic | 912,70 |
| **Potassium disulphite** | ≥96 %, p.a. | **P019.1** | 500 g | plastic | 24,20 |
| | | **P019.2** | 1 kg | plastic | 35,40 |
| | | **P019.3** | 5 kg | plastic | 139,25 |
| **Potassium fluoride** | ≥99 %, p.a. | **CN83.1** | 100 g | plastic | 17,10 |
| | | **CN83.2** | 250 g | plastic | 28,50 |
| | | **CN83.3** | 500 g | plastic | 52,15 |
| | | **CN83.4** | 1 kg | plastic | 88,70 |
| **Potassium hexacyano-ferrate(II) trihydrate** | ≥99 %, p.a., ACS, ISO | **P745.1** | 500 g | plastic | 90,20 |
| | | **P745.2** | 1 kg | plastic | 160,20 |
| | | **P745.3** | 2,5 kg | plastic | 342,95 |
| **Potassium hexacyano-ferrate(III)** | ≥99 %, p.a., ACS | **P746.3** | 100 g | plastic | 21,75 |
| | | **P746.1** | 500 g | plastic | 69,80 |
| | | **P746.2** | 1 kg | plastic | 126,35 |
| **Potassium hydrogen carbonate** | ≥99,5 %, p.a. | **P748.1** | 500 g | plastic | 28,95 |
| | | **P748.2** | 1 kg | plastic | 49,35 |
| | | **P748.3** | 2,5 kg | plastic | 110,65 |
| **di-Potassium hydrogen phosphate** | ≥99 %, p.a., anhydrous | **P749.1** | 500 g | plastic | 27,85 |
| | | **P749.2** | 1 kg | plastic | 50,45 |
| | | **P749.3** | 2,5 kg | plastic | 101,60 |
| | | **P749.5** | 25 kg | plastic | 815,95 |
| **di-Potassium hydrogen phosphate trihydrate** | ≥99 %, p.a. | **6878.2** | 250 g | plastic | 19,90 |
| | | **6878.1** | 1 kg | plastic | 46,80 |
| | | **6878.3** | 2,5 kg | plastic | 94,50 |
| **Potassium hydrogen phthalate** | ≥99,5 %, p.a., ISO | **P750.1** | 500 g | plastic | 50,00 |
| | | **P750.2** | 1 kg | plastic | 87,00 |
| | | **P750.3** | 2,5 kg | plastic | 185,45 |
| **Potassium hydrogen sulphate** | ≥98 %, p.a. | **P020.1** | 500 g | plastic | 29,60 |
| | | **P020.2** | 1 kg | plastic | 52,15 |
| | | **P020.3** | 2,5 kg | plastic | 111,70 |
| **Potassium iodate** | ≥99,4 %, p.a., ACS | **P751.1** | 100 g | plastic | 37,55 |
| | | **P751.2** | 250 g | plastic | 80,10 |
| **Potassium iodide** | ≥99,5 %,p.a., ISO | **6750.1** | 250 g | glass | 82,25 |
| | | **6750.3** | 500 g | glass | 142,45 |
| | | **6750.2** | 1 kg | glass | 256,95 |
| **Potassium sodium tartrate tetrahydrate** | ≥99 %, p.a., ACS, ISO | **8087.2** | 500 g | plastic | 39,70 |
| | | **8087.1** | 1 kg | plastic | 65,05 |
| | | **8087.3** | 2,5 kg | plastic | 142,45 |
| **Potassium nitrate** | ≥99 %, p.a., ISO | **P021.1** | 500 g | plastic | 22,05 |
| | | **P021.2** | 1 kg | plastic | 34,30 |
| | | **P021.3** | 2,5 kg | plastic | 67,20 |
| **di-Potassium oxalate monohydrate** | ≥98,5 %,p.a., ACS | **HN38.1** | 250 g | plastic | 28,50 |
| | | **HN38.2** | 500 g | plastic | 46,80 |
| | | **HN38.3** | 1 kg | plastic | 83,35 |
| **Potassium periodate** | ≥99,8 %,p.a., ACS | **2588.1** | 25 g | plastic | 27,45 |
| | | **2588.2** | 100 g | plastic | 64,40 |
| | | **2588.3** | 500 g | plastic | 241,90 |
| **Potassium permanganate** | ≥99 %, p.a., ACS, max. 0,005 ppm Hg | **KK08.1** | 500 g | plastic | 42,50 |
| | | **KK08.2** | 1 kg | plastic | 64,40 |
| | ≥99 %, p.a., ACS | **P752.1** | 500 g | plastic | 39,25 |
| | | **P752.2** | 1 kg | plastic | 59,05 |
| | | **P752.3** | 2,5 kg | plastic | 105,25 |
| **Potassium sulphate** | ≥99 %, p.a., ACS, ISO | **P022.1** | 500 g | plastic | 38,60 |
| | | **P022.2** | 1 kg | plastic | 64,40 |
| | | **P022.3** | 2,5 kg | plastic | 145,15 |
| **Potassium thiocyanate** | ≥98,5 %,p.a., ACS | **P753.1** | 500 g | plastic | 76,90 |
| | | **P753.2** | 1 kg | plastic | 134,40 |
| | | **P753.3** | 2,5 kg | plastic | 309,10 |

## Rubidium salts, Rb

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Rubidium chloride** | ≥99 %, p.a. | **4471.2** | 5 g | plastic | 36,05 |
| | | **4471.1** | 10 g | plastic | 62,25 |
| | | **4471.3** | 25 g | plastic | 131,70 |
| | | **4471.4** | 50 g | plastic | 241,90 |

## Silver salts, Ag

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Silver nitrate** | ≥99,9 %, p.a., ultra quality | **6874.1** | 10 g | plastic | 37,10 |
| | | **6874.2** | 50 g | plastic | 141,80 |
| | | **6874.3** | 250 g | plastic | 514,95 |
| | ≥99,9 %, p.a. | **7908.1** | 50 g | plastic | 113,85 |
| | | **7908.2** | 250 g | plastic | 471,95 |
| | | **7908.3** | 1 kg | plastic | 1666,25 |
| **Silver oxide** | ≥99 %, p.a. | **5309.1** | 10 g | glass | 51,50 |
| | | **5309.2** | 50 g | glass | 177,40 |
| **Silver sulphate** | ≥99 %, p.a. | **6791.1** | 25 g | plastic | 115,60 |
| | | **6791.2** | 100 g | plastic | 407,45 |

## Sodium salts, Na

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Potassium sodium tartrate tetrahydrate** | ≥99 %, p.a., ACS, ISO | **8087.2** | 500 g | plastic | 39,70 |
| | | **8087.1** | 1 kg | plastic | 65,05 |
| | | **8087.3** | 2,5 kg | plastic | 142,45 |
| **Sodium acetate** | ≥99 %, p.a., ACS, anhydrous | **6773.1** | 250 g | plastic | 24,65 |
| | | **6773.2** | 1 kg | plastic | 64,40 |
| | | **6773.3** | 2,5 kg | plastic | 134,95 |
| | | **6773.5** | 25 kg | plastic | 891,20 |
| **Sodium acetate trihydrate** | ≥99,5 %, p.a., ACS, ISO | **6779.2** | 500 g | plastic | 18,20 |
| | | **6779.1** | 1 kg | plastic | 33,25 |
| | | **6779.3** | 5 kg | plastic | 103,75 |
| | | **6779.5** | 25 kg | plastic | 413,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Sodium ammonium hydrogen phosphate tetrahydrate** | ≥99 %, p.a. | **T882.1** | 500 g | plastic | 64,40 |
| | | **T882.2** | 1 kg | plastic | 95,15 |
| | | **T882.3** | 2,5 kg | plastic | 213,95 |
| **Sodium azide** | ≥99 %, p.a. | **K305.1** | 100 g | plastic | 42,90 |
| | | **K305.2** | 250 g | plastic | 76,90 |
| | | **K305.3** | 500 g | plastic | 138,70 |
| | | **K305.4** | 1 kg | plastic | 213,95 |
| **Sodium bismuthate** | ≥85 %, p.a. | **4401.1** | 50 g | plastic | 46,15 |
| | | **4401.2** | 100 g | plastic | 85,50 |
| | | **4401.3** | 250 g | plastic | 185,45 |
| **Sodium bromide** | ≥99 %, p.a., ACS | **HN15.1** | 250 g | plastic | 15,60 |
| | | **HN15.2** | 1 kg | plastic | 38,60 |
| | | **HN15.3** | 2,5 kg | plastic | 80,10 |
| **Sodium carbonate** | ≥99,5 %, p.a., ACS, anhydrous | **A135.1** | 500 g | plastic | 19,90 |
| | | **A135.2** | 1 kg | plastic | 34,30 |
| | | **A135.3** | 5 kg | plastic | 133,85 |
| **Sodium carbonate monohydrate** | ≥99,5 %, p.a., ACS | **2597.1** | 100 g | plastic | 16,70 |
| | | **2597.2** | 500 g | plastic | 28,95 |
| **Sodium carbonate decahydrate** | ≥99 %, p.a., ISO | **K303.2** | 500 g | plastic | 21,40 |
| | | **K303.1** | 1 kg | plastic | 35,40 |
| | | **K303.3** | 2,5 kg | plastic | 73,65 |
| **Sodium chloride** | ≥99,5 %, p.a., ACS, ISO | **3957.3** | 500 g | plastic | 16,05 |
| | | **3957.1** | 1 kg | plastic | 17,75 |
| | | **3957.2** | 5 kg | plastic | 64,40 |
| | | **3957.5** | 25 kg | plastic | 192,45 |
| **tri-Sodium citrate dihydrate** | ≥99 %, p.a., ACS | **3580.4** | 250 g | plastic | 20,35 |
| | | **3580.3** | 500 g | plastic | 26,80 |
| | | **3580.1** | 1 kg | plastic | 42,90 |
| | | **3580.2** | 5 kg | plastic | 181,70 |
| | | **3580.5** | 25 kg | plastic | 428,95 |
| **Sodium dihydrogen phosphate monohydrate** | ≥98 %, p.a., ACS | **K300.1** | 500 g | plastic | 26,80 |
| | | **K300.2** | 1 kg | plastic | 39,70 |
| | | **K300.3** | 2,5 kg | plastic | 80,10 |
| | | **K300.5** | 25 kg | plastic | 557,95 |
| **Sodium dihydrogen phosphate dihydrate** | ≥99 %, p.a. | **T879.1** | 500 g | plastic | 23,15 |
| | | **T879.2** | 1 kg | plastic | 34,30 |
| | | **T879.3** | 2,5 kg | plastic | 72,60 |
| | | **T879.5** | 25 kg | plastic | 600,95 |
| **tetra-Sodium diphosphate decahydrate** | ≥99 %, p.a. | **T883.1** | 500 g | plastic | 30,00 |
| | | **T883.2** | 1 kg | plastic | 42,90 |
| | | **T883.3** | 2,5 kg | plastic | 77,95 |
| **Sodium fluoride** | ≥99 %, p.a., ACS, ISO | **P756.1** | 500 g | plastic | 50,00 |
| | | **P756.2** | 1 kg | plastic | 89,80 |
| | | **P756.3** | 2,5 kg | plastic | 192,45 |
| **Sodium formate** | ≥99 %, p.a., ACS | **4404.1** | 250 g | plastic | 26,35 |
| | | **4404.2** | 500 g | plastic | 45,70 |
| | | **4404.3** | 1 kg | plastic | 79,05 |
| **Sodium hexanitro-cobaltate(III)** | p.a., ACS | **4409.1** | 25 g | plastic | 19,25 |
| | | **4409.2** | 100 g | plastic | 52,60 |
| | | **4409.3** | 250 g | plastic | 107,40 |
| **Sodium hydrogen carbonate** | ≥99,5 %, p.a., ACS, ISO | **6885.2** | 500 g | plastic | 15,60 |
| | | **6885.1** | 1 kg | plastic | 23,55 |
| | | **6885.3** | 5 kg | plastic | 83,75 |
| | | **6885.5** | 25 kg | plastic | 342,95 |
| **di-Sodium hydrogen phosphate** | ≥99 %, p.a., ACS, anhydrous | **P030.1** | 500 g | plastic | 31,10 |
| | | **P030.2** | 1 kg | plastic | 50,00 |
| | | **P030.3** | 2,5 kg | plastic | 94,10 |
| **di-Sodium hydrogen phosphate dihydrate** | ≥99,5 %, p.a. | **4984.2** | 500 g | plastic | 26,35 |
| | | **4984.1** | 1 kg | plastic | 44,00 |
| | | **4984.3** | 2,5 kg | plastic | 95,15 |
| **di-Sodium hydrogen phosphate heptahydrate** | ≥98 %, p.a., ACS | **X987.1** | 500 g | plastic | 22,05 |
| | | **X987.2** | 1 kg | plastic | 34,30 |
| | | **X987.3** | 2,5 kg | plastic | 69,35 |
| **di-Sodium hydrogen phosphate dodecahydrate** | ≥99 %, p.a., ISO | **T106.1** | 500 g | plastic | 20,35 |
| | | **T106.2** | 1 kg | plastic | 34,30 |
| | | **T106.3** | 2,5 kg | plastic | 72,60 |
| **Sodium iodate** | ≥99 %, p.a. | **HN17.1** | 50 g | plastic | 40,35 |
| | | **HN17.2** | 100 g | plastic | 70,85 |
| **Sodium iodide** | ≥99,5 %, p.a., ACS | **A134.3** | 100 g | plastic | 85,50 |
| | | **A134.1** | 250 g | plastic | 193,00 |
| | | **A134.2** | 1 kg | plastic | 740,70 |

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Sodium metabisulphite** | ≥97 %, p.a., ACS | **P755.1** | 500 g | plastic | 19,60 |
| | | **P755.2** | 1 kg | plastic | 30,00 |
| | | **P755.3** | 2,5 kg | plastic | 55,40 |
| | | **P755.4** | 5 kg | plastic | 97,30 |
| | | **P755.5** | 25 kg | plastic | 317,15 |
| **Sodium molybdate dihydrate** | ≥99,5 %, p.a. | **0274.1** | 50 g | plastic | 18,20 |
| | | **0274.2** | 100 g | plastic | 26,35 |
| | | **0274.3** | 250 g | plastic | 47,20 |
| | | **0274.4** | 1 kg | plastic | 170,95 |
| **Sodium nitrate** | ≥99 %, p.a., ACS, ISO | **A136.1** | 500 g | plastic | 28,95 |
| | | **A136.2** | 1 kg | plastic | 45,70 |
| | | **A136.3** | 2,5 kg | plastic | 100,55 |
| **Sodium nitrite** | ≥98 %, p.a., ACS | **4411.1** | 100 g | plastic | 12,05 |
| | | **4411.2** | 500 g | plastic | 26,35 |
| | | **4411.3** | 1 kg | plastic | 41,85 |
| | | **4411.4** | 2,5 kg | plastic | 85,90 |
| **di-Sodium oxalate** | ≥99,5 %, p.a., ACS | **HN39.1** | 100 g | plastic | 25,30 |
| | | **HN39.2** | 250 g | plastic | 49,35 |
| | | **HN39.3** | 500 g | plastic | 85,90 |
| **Sodium periodate** | ≥99,8 %, p.a., ACS | **2603.1** | 50 g | plastic | 41,40 |
| | | **2603.2** | 250 g | plastic | 144,60 |
| | | **2603.3** | 500 g | plastic | 263,40 |
| **Sodium peroxide** | ≥95 %, p.a., ACS, granulated | **4412.1** | 100 g | plastic | 57,95 |
| | | **4412.2** | 250 g | plastic | 130,65 |
| | | **4412.3** | 500 g | plastic | 235,45 |
| **tri-Sodium phosphate dodecahydrate** | ≥98 %, p.a., ACS | **T107.2** | 500 g | plastic | 23,15 |
| | | **T107.1** | 1 kg | plastic | 37,10 |
| | | **T107.3** | 2,5 kg | plastic | 83,35 |
| **Sodium salicylate** | ≥99 %, p.a. | **CP39.1** | 250 g | plastic | 26,35 |
| | | **CP39.2** | 1 kg | plastic | 79,05 |
| **Sodium sulphate** | ≥99 %, p.a., ACS, ISO, powdered, anhydrous | **8560.3** | 500 g | plastic | 25,30 |
| | | **8560.1** | 1 kg | plastic | 34,95 |
| | | **8560.2** | 5 kg | plastic | 143,55 |
| | | **8560.5** | 25 kg | plastic | 510,65 |
| | ≥99 %, p.a., ACS, granules, anhydrous | **0966.1** | 500 g | plastic | 20,65 |
| | | **0966.2** | 1 kg | plastic | 30,00 |
| | | **0966.3** | 5 kg | plastic | 124,20 |
| **Sodium sulphate decahydrate** | ≥99 %, p.a., ACS | **T108.2** | 500 g | plastic | 18,20 |
| | | **T108.1** | 1 kg | plastic | 27,45 |
| | | **T108.3** | 2,5 kg | plastic | 55,80 |
| **Sodium sulphite** | ≥98 %, p.a., ACS, anhydrous | **P033.1** | 500 g | plastic | 18,85 |
| | | **P033.2** | 1 kg | plastic | 27,85 |
| | | **P033.3** | 2,5 kg | plastic | 50,00 |
| **di-Sodium tartrate dihydrate** | ≥99 %, p.a. | **T110.1** | 500 g | plastic | 52,70 |
| | | **T110.2** | 1 kg | plastic | 93,00 |
| | | **T110.3** | 2,5 kg | plastic | 213,95 |
| | | **T110.5** | 25 kg | plastic | 1773,75 |
| **di-Sodium tetraborate decahydrate** | ≥99,5 %, p.a., ACS, ISO | **T880.1** | 500 g | plastic | 31,10 |
| | | **T880.2** | 1 kg | plastic | 46,15 |
| | | **T880.3** | 2,5 kg | plastic | 90,20 |
| **Sodium tetraphenyl borate** | ≥99,5 %, p.a., ACS | **4385.1** | 10 g | plastic | 40,75 |
| | | **4385.2** | 25 g | plastic | 89,15 |
| | | **4385.3** | 100 g | plastic | 278,45 |
| **Sodium thiocyanate** | ≥98 %, p.a., ACS | **2724.1** | 100 g | plastic | 17,10 |
| | | **2724.2** | 500 g | plastic | 40,35 |
| | | **2724.3** | 1 kg | plastic | 65,50 |
| **Sodium thiosulphate** | ≥99 %, p.a., anhydrous | **HN25.1** | 250 g | plastic | 21,00 |
| | | **HN25.2** | 500 g | plastic | 30,65 |
| | | **HN25.3** | 1 kg | plastic | 54,30 |
| | | **HN25.4** | 2,5 kg | plastic | 114,50 |
| **Sodium thiosulphate pentahydrate** | ≥99,5 %, p.a., ACS | **P034.1** | 500 g | plastic | 20,35 |
| | | **P034.2** | 1 kg | plastic | 31,75 |
| | | **P034.3** | 2,5 kg | plastic | 63,35 |
| | | **P034.5** | 25 kg | plastic | 439,70 |
| **Sodium tungstate dihydrate** | ≥99 %, p.a., ACS | **2604.1** | 100 g | plastic | 39,70 |
| | | **2604.2** | 250 g | plastic | 77,30 |
| | | **2604.3** | 500 g | plastic | 138,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Strontium salts, Sr

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Strontium chloride hexahydrate** | ≥99 %, p.a. | **4473.1** | 100 g | plastic | 21,40 |
| | | **4473.2** | 500 g | plastic | 54,75 |
| | | **4473.3** | 1 kg | plastic | 91,95 |
| **Strontium nitrate** | ≥99 %, p.a., ACS | **4413.1** | 100 g | plastic | 24,65 |
| | | **4413.2** | 250 g | plastic | 46,15 |
| | | **4413.3** | 500 g | plastic | 87,00 |

## Tellurium, Te NEW

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Tellurium(IV) oxide** | ≥99,9 %, p.a. | **0321.1** | 10 g | plastic | 32,15 |
| | | **0321.2** | 25 g | plastic | 64,40 |
| | | **0321.3** | 50 g | plastic | 117,20 |

## Tin salts, Sn

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Tin(II) chloride dihydrate** | ≥98 %, p.a., max. 0,005 ppm Hg | **KK07.1** | 100 g | glass | 43,55 |
| | | **KK07.2** | 250 g | glass | 96,25 |
| | ≥98 %, p.a., ACS | **4977.3** | 100 g | glass | 30,00 |
| | | **4977.1** | 250 g | glass | 66,15 |
| | | **4977.2** | 1 kg | glass | 213,95 |
| **Tin(IV) oxide** | ≥99,5 %, p.a. | **9929.1** | 100 g | plastic | 21,40 |
| | | **9929.2** | 500 g | plastic | 61,20 |
| | | **9929.3** | 1 kg | plastic | 105,25 |
| **Tin(II) sulphate** | ≥99 %, p.a. | **4382.1** | 100 g | plastic | 33,25 |
| | | **4382.2** | 250 g | plastic | 61,20 |
| | | **4382.3** | 1 kg | plastic | 188,15 |

## Tungsten salts, W

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Ammonium metatungstate hydrate** | ≥90 % $WO_3$, p.a. | **0742.1** | 25 g | plastic | 32,15 |
| | | **0742.2** | 100 g | plastic | 59,05 |
| | | **0742.3** | 500 g | plastic | 213,95 |
| **Sodium tungstate dihydrate** | ≥99 %, p.a., ACS | **2604.1** | 100 g | plastic | 39,70 |
| | | **2604.2** | 250 g | plastic | 77,30 |
| | | **2604.3** | 500 g | plastic | 138,70 |
| **Tungsten(VI) oxide** | ≥99,5 %, p.a. | **0760.1** | 50 g | plastic | 30,00 |
| | | **0760.2** | 100 g | plastic | 42,90 |
| | | **0760.3** | 500 g | plastic | 170,95 |
| **Tungstic acid** | ≥99 %, p.a. | **0747.1** | 25 g | plastic | 26,80 |
| | | **0747.2** | 100 g | plastic | 42,90 |
| | | **0747.3** | 500 g | plastic | 149,45 |

## Vanadium salts, V

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Ammonium monovanadate** | ≥99,8 %, p.a. | **4232.1** | 50 g | plastic | 24,20 |
| | | **4232.2** | 100 g | plastic | 34,95 |
| | | **4232.3** | 250 g | plastic | 71,95 |
| | | **4232.4** | 1 kg | plastic | 231,15 |

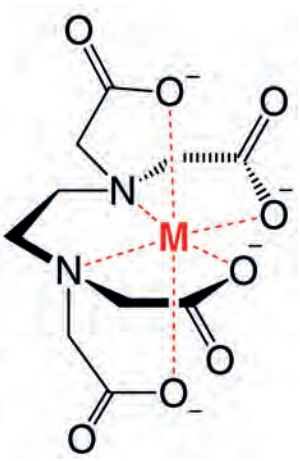
## Zinc salts, Zn

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Zinc acetate dihydrate** | ≥99,5 %, p.a., ACS | **P035.1** | 500 g | plastic | 44,00 |
| | | **P035.2** | 1 kg | plastic | 71,95 |
| **Zinc chloride** | ≥97 %, p.a. | **T887.1** | 500 g | plastic | 52,60 |
| | | **T887.2** | 1 kg | plastic | 79,45 |
| **Zinc iodide** | ≥99 %, p.a. | **9839.1** | 50 g | glass | 34,30 |
| | | **9839.2** | 100 g | glass | 64,40 |
| | | **9839.3** | 250 g | glass | 122,45 |
| **Zinc nitrate hexahydrate** | ≥99 %, p.a. | **6634.1** | 100 g | plastic | 19,60 |
| | | **6634.2** | 500 g | plastic | 40,75 |
| | | **6634.3** | 1 kg | plastic | 62,25 |
| **Zinc oxide** | ≥99 %, p.a., ACS | **T114.1** | 500 g | plastic | 64,40 |
| | | **T114.2** | 1 kg | plastic | 93,45 |
| **Zinc sulphate heptahydrate** | ≥99,5 %, p.a., ACS | **K301.1** | 500 g | plastic | 24,20 |
| | | **K301.2** | 1 kg | plastic | 42,50 |
| | | **K301.3** | 2,5 kg | plastic | 77,30 |
| | | **K301.5** | 25 kg | plastic | 643,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ For more qualities please see Chapter Chemicals A-Z

# Complexometry






## Salts for Complexometry

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **CDTA · $H_2O$** | ≥99 %, p.a., ACS | **1412.1** | 25 g | 31,75 |
| | | **1412.2** | 100 g | 93,45 |
| | | **1412.3** | 250 g | 209,65 |
| | | **1412.4** | 500 g | 385,95 |
| | ≥99 %, for synthesis | **1411.1** | 100 g | 69,35 |
| | | **1411.2** | 250 g | 162,90 |
| | | **1411.3** | 500 g | 284,90 |
| | | **1411.4** | 1 kg | 536,45 |
| **DTPA** | ≥99 %, for synthesis | **1407.1** | 100 g | 18,20 |
| | | **1407.2** | 250 g | 31,75 |
| | | **1407.3** | 500 g | 50,45 |
| | | **1407.4** | 1 kg | 89,15 |
| **EDTA** | ≥99 %, p.a., ACS | **8040.1** | 100 g | 15,60 |
| | | **8040.3** | 500 g | 35,40 |
| | | **8040.2** | 1 kg | 53,25 |
| | | **8040.4** | 2,5 kg | 106,45 |
| | | **8040.5** | 25 kg | 833,15 |
| | ≥99 % | **CN06.1** | 250 g | 16,35 |
| | | **CN06.2** | 500 g | 27,45 |
| | | **CN06.3** | 1 kg | 44,65 |
| | | **CN06.4** | 5 kg | 171,90 |
| **EDTA-$CaNa_2$ · 2 $H_2O$** | ≥98 %, Ph.Eur., USP | **6506.1** | 250 g | 44,00 |
| | | **6506.2** | 500 g | 81,60 |
| | | **6506.3** | 1 kg | 149,45 |
| **EDTA-$CuNa_2$ · 2 $H_2O$** | ≥99 %, for synthesis | **6499.1** | 250 g | 40,75 |
| | | **6499.2** | 500 g | 71,95 |
| | | **6499.3** | 1 kg | 131,70 |
| **EDTA-FeNa · 3 $H_2O$** | ≥98 %, for synthesis | **6498.1** | 250 g | 36,45 |
| | | **6498.2** | 500 g | 66,15 |
| | | **6498.3** | 1 kg | 110,65 |

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **EDTA-$K_2$ · 2 $H_2O$** | ≥99 %, p.a. | **3053.1** | 100 g | 23,15 |
| | | **3053.2** | 250 g | 44,65 |
| | | **3053.3** | 500 g | 77,30 |
| | | **3053.4** | 1 kg | 137,10 |
| | | **3053.5** | 5 kg | 557,95 |
| | ≥99 %, for synthesis | **1408.1** | 250 g | 25,30 |
| | | **1408.2** | 500 g | 43,55 |
| | | **1408.3** | 1 kg | 77,30 |
| | | **1408.4** | 5 kg | 338,65 |
| **EDTA-$K_3$ · 2 $H_2O$** | ≥99 % | **1409.1** | 100 g | 28,95 |
| | | **1409.2** | 250 g | 53,65 |
| | | **1409.3** | 1 kg | 160,20 |
| | | **1409.4** | 5 kg | 643,95 |
| **EDTA-$MgNa_2$ · 2 $H_2O$** | ≥90 %, for synthesis | **6508.1** | 250 g | 32,15 |
| | | **6508.2** | 500 g | 59,05 |
| | | **6508.3** | 1 kg | 103,10 |
| **EDTA-$MnNa_2$ · 2 $H_2O$** | ≥93 %, for synthesis | **6510.1** | 250 g | 41,40 |
| | | **6510.2** | 500 g | 73,00 |
| | | **6510.3** | 1 kg | 132,80 |
| **EDTA-$Na_2$ · 2 $H_2O$** | ≥99 %, p.a., ACS | **8043.3** | 100 g | 21,40 |
| | | **8043.1** | 250 g | 34,30 |
| | | **8043.2** | 1 kg | 100,55 |
| | | **8043.6** | 2,5 kg | 192,45 |
| | | **8043.4** | 5 kg | 364,45 |
| | | **8043.5** | 25 kg | 826,70 |
| | ≥99 %, USP | **X986.1** | 250 g | 19,25 |
| | | **X986.2** | 1 kg | 48,95 |
| | | **X986.4** | 2,5 kg | 105,25 |
| | | **X986.3** | 5 kg | 200,95 |
| | | **X986.5** | 25 kg | 805,20 |
| **EDTA-$Na_4$** | 86-88 % | **3619.2** | 500 g | 22,05 |
| | | **3619.1** | 1 kg | 30,00 |
| | | **3619.3** | 5 kg | 105,25 |
| **EDTA-$Na_4$ · 2 $H_2O$** | ≥99 % | **1410.1** | 250 g | 21,00 |
| | | **1410.2** | 500 g | 35,40 |
| | | **1410.3** | 1 kg | 63,35 |
| | | **1410.4** | 5 kg | 267,70 |
| **EDTA-$Na_4$ · 4 $H_2O$** | ≥99 %, p.a. | **CP87.1** | 250 g | 19,25 |
| | | **CP87.2** | 500 g | 29,60 |
| | | **CP87.3** | 1 kg | 50,00 |
| | | **CP87.4** | 5 kg | 203,20 |
| **EDTA-$ZnNa_2$ · 2 $H_2O$** | ≥96 %, for synthesis | **6518.1** | 250 g | 41,85 |
| | | **6518.2** | 500 g | 74,10 |
| | | **6518.3** | 1 kg | 134,40 |
| **EGTA** | ≥99 %, p.a. | **3054.1** | 10 g | 34,30 |
| | | **3054.2** | 50 g | 134,40 |
| | | **3054.3** | 100 g | 233,85 |
| **NTA** | ≥99 %, p.a., ACS | **4384.1** | 100 g | 66,55 |
| | ≥99 %, extra pure | **8653.1** | 100 g | 21,40 |
| | | **8653.2** | 500 g | 66,55 |
| | | **8653.3** | 1 kg | 123,65 |
| **NTA-$Na_3$ · $H_2O$** | ≥99 %, extra pure | **8242.1** | 100 g | 19,90 |
| | | **8242.2** | 500 g | 55,80 |
| | | **8242.3** | 1 kg | 89,15 |
| | | **8242.4** | 2,5 kg | 203,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Complexing Agents

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Acetyl acetone** | ≥98 %, for synthesis | **6716.1** | 100 ml | 13,90 |
| | | **6716.2** | 500 ml | 28,95 |
| | | **6716.3** | 1 l | 48,95 |
| | | **6716.4** | 2,5 l | 105,25 |
| **2-(2-Aminoethyl-amino)ethanol** | ≥98 %, for synthesis | **6717.1** | 100 ml | 14,95 |
| | | **6717.2** | 500 ml | 25,30 |
| | | **6717.3** | 1 l | 40,35 |
| | | **6717.4** | 2,5 l | 86,55 |
| **Citric acid** | ≥99,5 %, p.a., ACS, anhydrous | **X863.1** | 500 g | 19,60 |
| | | **X863.2** | 1 kg | 30,00 |
| | | **X863.3** | 2,5 kg | 60,10 |
| | | **X863.4** | 5 kg | 94,50 |
| | | **X863.6** | 10 kg | 170,95 |
| | | **X863.5** | 25 kg | 364,45 |
| | ≥99,5 %, Ph.Eur., anhydrous | **6490.3** | 500 g | 14,55 |
| | | **6490.1** | 1 kg | 23,35 |
| | | **6490.4** | 2,5 kg | 44,65 |
| | | **6490.2** | 5 kg | 82,25 |
| | | **6490.6** | 10 kg | 138,70 |
| | | **6490.5** | 25 kg | 244,60 |
| **Citric acid monohydrate** | ≥99,5 %, p.a., ACS, ISO | **3958.2** | 500 g | 18,85 |
| | | **3958.1** | 1 kg | 30,00 |
| | | **3958.3** | 2,5 kg | 55,40 |
| | | **3958.4** | 5 kg | 102,15 |
| | | **3958.6** | 10 kg | 170,95 |
| | | **3958.5** | 25 kg | 360,15 |
| | ≥99,5 %, Ph.Eur. | **5110.3** | 500 g | 13,90 |
| | | **5110.1** | 1 kg | 22,50 |
| | | **5110.4** | 2,5 kg | 38,60 |
| | | **5110.2** | 5 kg | 60,10 |
| | | **5110.6** | 10 kg | 92,35 |
| | | **5110.5** | 25 kg | 181,70 |
| **Diethylene triamine** | ≥98 %, for synthesis | **6723.1** | 100 ml | 13,45 |
| | | **6723.2** | 500 ml | 27,85 |
| | | **6723.3** | 1 l | 40,75 |
| | | **6723.4** | 2,5 l | 79,05 |
| **Dimethylglyoxim** | ≥99 %, p.a., ACS | **2677.1** | 50 g | 41,40 |
| | | **2677.2** | 100 g | 65,50 |
| | | **2677.3** | 500 g | 246,20 |
| **Dimethylglyoxime disodium salt octahydrate** | ≥98 %, p.a. | **KK24.1** | 25 g | 37,10 |
| | | **KK24.2** | 50 g | 62,25 |
| **2,2'-Dipyridyl** | ≥95 %, for biochemistry | **4153.1** | 5 g | 14,95 |
| | | **4153.2** | 25 g | 38,60 |
| **Ethylenediamine** | ≥99,5 %, p.a., anhydrous | **3049.1** | 250 ml | 53,25 |
| | ≥99,5 %, for synthesis | **4218.1** | 100 ml | 13,15 |
| | | **4218.2** | 500 ml | 17,10 |
| | | **4218.3** | 1 l | 26,80 |
| | | **4218.4** | 2,5 l | 52,60 |
| | | **4218.5** | 10 l | 177,40 |

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **8-Hydroxyquinoline** | ≥99,5 %, p.a., ACS | **2557.1** | 50 g | 28,95 |
| | | **2557.2** | 100 g | 40,75 |
| | | **2557.3** | 250 g | 75,15 |
| **Neocuproine hemihydrate** | ≥99 %, p.a. | **KK32.1** | 1 g | 21,00 |
| | | **KK32.2** | 5 g | 72,60 |
| **Oxalic acid dihydrate** | ≥99,5 %, p.a., ACS, ISO | **T113.1** | 500 g | 31,10 |
| | | **T113.2** | 1 kg | 51,50 |
| | | **T113.3** | 2,5 kg | 118,15 |
| | ≥99 %, cryst. | **8879.1** | 1 kg | 20,35 |
| | | **8879.3** | 5 kg | 67,20 |
| | | **8879.2** | 10 kg | 126,35 |
| **1,10-Phenanthroline monohydrate** | ≥99 %, p.a., ACS | **9113.2** | 5 g | 27,85 |
| | | **9113.3** | 25 g | 99,90 |
| | | **9113.1** | 50 g | 186,55 |
| **1,10-Phenanthroline hydrochloride monohydrate** | ≥99 %, p.a. | **KK21.1** | 5 g | 26,35 |
| | | **KK21.2** | 10 g | 45,05 |
| | | **KK21.3** | 50 g | 191,90 |
| **Potassium hydrogen tartrate** | ≥99,5 %, extra pure | **8645.1** | 100 g | 12,40 |
| | | **8645.2** | 500 g | 28,95 |
| | | **8645.3** | 1 kg | 46,80 |
| **Potassium sodium tartrate tetrahydrate** | ≥99 %, p.a., ACS, ISO | **8087.2** | 500 g | 39,70 |
| | | **8087.1** | 1 kg | 65,05 |
| | | **8087.3** | 2,5 kg | 142,45 |
| | ≥99 %, USP | **7998.3** | 500 g | 28,95 |
| | | **7998.1** | 1 kg | 52,15 |
| | | **7998.2** | 5 kg | 177,95 |
| **di-Sodium tartrate dihydrate** | ≥99 %, p.a. | **T110.1** | 500 g | 52,70 |
| | | **T110.2** | 1 kg | 93,00 |
| | | **T110.3** | 2,5 kg | 213,95 |
| | | **T110.5** | 25 kg | 1773,75 |
| | ≥99 %, extra pure | **0254.1** | 500 g | 32,15 |
| | | **0254.2** | 1 kg | 55,40 |
| | | **0254.3** | 5 kg | 235,45 |
| **D(-)-Tartaric acid** | ≥99 %, for biochemistry | **5529.1** | 25 g | 49,35 |
| **DL-Tartaric acid** | ≥99,5 %, anhydrous | **4891.2** | 25 g | 14,20 |
| | | **4891.1** | 100 g | 25,30 |
| | | **4891.3** | 500 g | 73,65 |
| **L(+)-Tartaric acid** | ≥99,5 %, p.a., ACS, ISO | **K302.1** | 250 g | 24,65 |
| | | **K302.2** | 1 kg | 72,60 |
| | | **K302.5** | 25 kg | 1202,95 |
| | ≥99,7 %, for biochemistry | **4890.3** | 500 g | 22,50 |
| | | **4890.1** | 1 kg | 39,25 |
| | | **4890.2** | 5 kg | 143,95 |
| | | **4890.5** | 25 kg | 557,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Volumetric standard solutions

A standard solution is a solution containing a precisely known concentration of a substance. The concentration of a standard solution is determined using a primary standard, which is accurately weighed and dissolved to make a specific volume. Standard solutions are made using reagent-grade (p.a.) substances as source materials.



# Volumetric standard solutions, ready-to-use

ready-to-use

The advantages of this over making them yourself are:

- Manufactured and tested using modern manufacturing and analytical methods
- Available in a wide range of concentrations
- Ready-to-use solutions
- High accuracy for precise analyses
- Application of NIST-certified reference substances for checking
- Connection to standard titrators is possible

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Acetic acid** | 1 mol/l - 1 N | **KK62.1** | 1 l | plastic | 27,85 |
| | 2 mol/l - 2 N | **9883.1** | 500 ml | plastic | 31,10 |
| | | **9883.2** | 1 l | plastic | 46,15 |
| **Ammonia solution** | 4 mol/l - 4 N | **9897.1** | 500 ml | plastic | 22,50 |
| | | **9897.2** | 1 l | plastic | 37,10 |
| **Ammonium iron(II) sulphate solution** | 0,12 mol/l - 0,12 N | **KK60.1** | 1 l | plastic | 45,05 |
| **Ammonium thiocyanate solution** | 0,1 mol/l - 0,1 N | **P718.1** | 1 l | plastic | 20,65 |
| **Barium chloride solution** | 0,05 mol/l - 0,1 N NEW | **0468.1** | 500 ml | plastic | 19,25 |
| **Barium hydroxyde solution** | 0,05 mol/l - 0,1 N | **N054.1** | 1 l | plastic | 35,40 |
| **Bariumperchlorate solution** | 0,005 mol/l - 0,005 N in 2-propanol/water | **KK61.1** | 1 l | glass | 27,85 |
| **Benzethonium chloride solution** | 0,004 mol/l - 0,004 M | **9217.1** | 1 l | plastic | 24,20 |
| **Bromide bromate solution** | 0,05 mol $Br_2$/l - 0,1 N | **8131.1** | 1 l | plastic | 30,65 |
| **CDTA disodium salt solution** | 0,1 mol/l - 0,1 N NEW | **0243.1** | 1 l | plastic | 181,70 |
| **Cerium(IV) sulphate solution** | 0,1 mol/l - 0,1 N | **P719.1** | 1 l | glass | 66,55 |
| **Copper(II) sulphate solution** | 0,1 mol/l - 0,1 N | **9948.1** | 1 l | plastic | 33,25 |
| **EDTA disodium salt solution** | 0,01 mol/l - 0,01 N | **CN34.1** | 1 l | plastic | 24,20 |
| | | **CN34.2** | 5 l | ROTI®CUBE | 71,95 |
| | | **CN34.3** | 10 l | ROTI®CUBE | 130,00 |
| | 0,05 mol/l - 0,05 N | **KK75.1** | 1 l | plastic | 21,40 |
| | | **KK75.2** | 5 l | plastic | 65,05 |
| | | **KK75.3** | 5 l | ROTI®CUBE | 69,35 |
| | 0,1 mol/l - 0,1 N | **K714.1** | 1 l | glass | 22,05 |
| | | **K714.2** | 5 l | plastic | 66,15 |
| | | **K714.3** | 5 l | ROTI®CUBE | 71,95 |
| | | **K714.4** | 10 l | ROTI®CUBE | 128,90 |
| | 0,2 mol/l - 0,2 N | **8084.1** | 1 l | plastic | 23,55 |
| | | **8084.2** | 5 l | ROTI®CUBE | 70,85 |
| **EDTA disodium salt solution A** | 0,1 mol/l - 0,1 N | **T136.1** | 1 l | glass | 29,60 |
| **EDTA disodium salt solution B** | 0,01783 mol/l - 0,01783 N | **T137.1** | 1 l | glass | 24,20 |
| | | **T137.2** | 5 l | ROTI®CUBE | 71,95 |
| | | **T137.3** | 10 l | ROTI®CUBE | 130,00 |
| **Hanus solution** | 0,1 mol IBr/l - 0,2 N | **KK63.1** | 1 l | glass | 47,85 |
| **Hydrochloric acid** | 0,01 mol/l - 0,01 N | **N075.1** | 1 l | plastic | 19,25 |
| | 0,05 mol/l - 0,05 N | **8085.1** | 1 l | plastic | 19,05 |
| | | **8085.2** | 2,5 l | plastic | 34,30 |
| | | **8085.3** | 5 l | ROTI®CUBE | 61,20 |
| | 0,1 mol/l - 0,1 N | **K024.5** | 500 ml | plastic | 13,90 |
| | | **K024.1** | 1 l | plastic | 19,05 |
| | | **K024.2** | 5 l | plastic | 56,45 |
| | | **K024.3** | 5 l | ROTI®CUBE | 61,20 |
| | | **K024.4** | 10 l | ROTI®CUBE | 90,20 |
| | 0,2 mol/l - 0,2 N | **4120.1** | 1 l | plastic | 18,20 |
| | 0,5 mol/l - 0,5 N | **P708.1** | 1 l | plastic | 19,05 |
| | | **P708.2** | 5 l | plastic | 56,45 |
| | | **P708.3** | 5 l | ROTI®CUBE | 61,20 |
| | | **P708.4** | 10 l | ROTI®CUBE | 90,20 |
| | 1 mol/l - 1 N | **K025.1** | 1 l | plastic | 19,05 |
| | | **K025.2** | 5 l | plastic | 56,45 |
| | | **K025.3** | 5 l | ROTI®CUBE | 61,20 |
| | | **K025.4** | 10 l | ROTI®CUBE | 90,20 |
| | 2 mol/l - 2 N | **T134.1** | 1 l | plastic | 19,05 |
| | | **T134.2** | 5 l | plastic | 56,45 |
| | | **T134.3** | 5 l | ROTI®CUBE | 61,20 |
| | 4 mol/l - 4 N | **N076.1** | 1 l | plastic | 30,00 |
| | 6 mol/l - 6 N | **0281.1** | 1 l | plastic | 30,00 |
| NEW | 10 mol/l - 10 N | **0226.1** | 1 l | plastic | 96,65 |
| **Iodid-iodate solution** | 1/128 mol $I_2$/l - 1/64 N | **KK65.1** | 1 l | plastic | 29,60 |
| NEW | 0,05 mol $I_2$/l - 0,1 N | **0228.1** | 1 l | plastic | 28,50 |
| **Iodine solution** | 0,05 mol $I_2$/l - 0,1 N | **K016.1** | 1 l | glass | 33,25 |
| | | **K016.2** | 2,5 l | glass | 68,70 |
| | 0,5 mol $I_2$/l - 1 N | **X868.1** | 1 l | glass | 103,75 |
| **Mercury(II) nitrate solution** | 0,05 mol/l - 0,1 N | **KK72.1** | 1 l | plastic | 31,75 |
| **Mercury(II) sulphate solution 80 g/l** | in sulphuric acid potassium dichromate standard solution. 0,02 mol/l, for determination of COD | **X871.1** | 1 l | glass | 62,90 |
| | | **X871.2** | 2,5 l | glass | 159,00 |
| **Nitric acid** | 0,1 mol/l - 0,1 N | **KK73.1** | 1 l | plastic | 18,50 |
| | 1 mol/l - 1 N | **N070.1** | 1 l | glass | 21,40 |
| | 2 mol/l - 2 N | **9887.1** | 500 ml | plastic | 23,55 |
| | | **9887.2** | 1 l | plastic | 34,30 |
| **Oxalic acid solution** | 0,05 mol/l - 0,1 N | **CN35.1** | 1 l | plastic | 23,15 |
| **Perchloric acid** | 0,1 mol/l - 0,1 N | **K023.1** | 1 l | glass | 79,05 |
| **ortho-Phosphoric acid** | 0,1 mol/l - 0,3 N | **8089.1** | 1 l | plastic | 49,35 |
| | 1/6 mol/l - 0,5 N | **8091.1** | 1 l | plastic | 49,35 |
| | 1 mol/l - 3 N | **8141.1** | 1 l | plastic | 49,35 |

# Inorganic & analytical reagents · Classics

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Potassium bromide solution** | 0,1 mol/l - 0,1 N | **8130.1** | 1 l | plastic | 69,80 |
| **Potassium chloride solution** | 0,2 mol/l - 0,2 N | **4117.1** | 1 l | plastic | 25,70 |
| | 3 mol/l - 3 N | **T138.1** | 250 ml | glass | 18,85 |
| **Potassium chloride solution with AgCl** | 3 mol/l - 3 N | **9880.1** | 250 ml | plastic | 22,40 |
| | | **9880.2** | 1 l | plastic | 38,20 |
| **Potassium dichromate solution** | 1/60 mol/l - 0,1 N | **P722.1** | 1 l | glass | 26,35 |
| | 0,02 mol/l - 0,12 N for determination of COD | **P720.1** | 1 l | plastic | 25,30 |
| | 1/24 mol/l - 0,25 N for determination of COD | **P721.1** | 1 l | glass | 30,00 |
| **Potassium hydroxide solution** | 0,1 mol/l - 0,1 N | **K018.1** | 1 l | plastic | 22,05 |
| | | **K018.2** | 5 l | plastic | 59,05 |
| | | **K018.3** | 5 l | ROTI®CUBE | 62,25 |
| | 0,5 mol/l - 0,5 N | **N071.1** | 1 l | plastic | 22,05 |
| | | **N071.2** | 5 l | plastic | 59,05 |
| | | **N071.3** | 5 l | ROTI®CUBE | 62,25 |
| | 1 mol/l - 1 N | **K017.1** | 1 l | plastic | 22,05 |
| | | **K017.2** | 5 l | plastic | 59,05 |
| | | **K017.3** | 5 l | ROTI®CUBE | 62,25 |
| **Potassium hydroxide solution in ethanol** | 0,1 mol/l - 0,1 N | **P706.1** | 1 l | glass | 39,25 |
| | 0,5 mol/l - 0,5 N | **P707.1** | 1 l | glass | 56,45 |
| **Potassium hydroxide solution in isopropanol** | 0,1 mol/l - 0,1 N | **KK68.1** | 1 l | glass | 50,45 |
| **Potassium hydroxide solution in methanol** | 0,1 mol/l - 0,1 N | **KK66.1** | 1 l | glass | 31,75 |
| | 0,5 mol/l - 0,5 N | **KK67.1** | 1 l | glass | 29,60 |
| **Potassium nitrate solution** | 1 mol/l - 1 N | **9898.1** | 500 ml | plastic | 31,10 |
| | | **9898.2** | 1 l | plastic | 54,75 |
| **Potassium permanganate solution** | 0,02 mol/l - 0,1 N | **K019.1** | 1 l | glass | 23,55 |
| | 0,1 mol/l - 0,5 N | **KK69.1** | 1 l | glass | 27,45 |
| **Potassium thiocyanate solution** | 1 mol/l - 1 N | **9899.1** | 1 l | plastic | 44,65 |
| **Silver nitrate solution** | 0,01 mol/l - 0,01 N | **6838.1** | 250 ml | plastic | 15,60 |
| | | **6838.2** | 500 ml | plastic | 20,65 |
| | | **6838.3** | 1 l | plastic | 30,00 |
| | | **6838.4** | 2,5 l | plastic | 60,10 |
| | 0,05 mol/l - 0,05 N | **6835.1** | 250 ml | plastic | 33,25 |
| | | **6835.2** | 500 ml | plastic | 39,70 |
| | | **6835.3** | 1 l | plastic | 56,90 |
| | | **6835.4** | 2,5 l | plastic | 103,10 |
| | 0,1 mol/l - 0,1 N | **K713.2** | 250 ml | plastic | 34,30 |
| | | **K713.4** | 500 ml | plastic | 44,65 |
| | | **K713.1** | 1 l | plastic | 74,10 |
| | | **K713.3** | 2,5 l | plastic | 114,50 |
| | 0,5 mol/l - 0,5 N | **6839.1** | 250 ml | plastic | 56,90 |
| | | **6839.2** | 500 ml | plastic | 91,30 |
| | | **6839.3** | 1 l | plastic | 170,95 |
| | 1 mol/l - 1 N | **6841.1** | 250 ml | plastic | 103,75 |
| | | **6841.2** | 500 ml | plastic | 155,90 |
| | | **6841.3** | 1 l | plastic | 295,65 |
| **Silver sulphate solution (10 g/l)** | 10 g/l in sulphuric acid, for determination of COD | **X870.1** | 1 l | glass | 64,40 |
| **Sodium acetate solution** | 0,1 mol/l - 0,1 N NEW in acetic acid | **0151.1** | 1 l | plastic | 38,60 |

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Sodium carbonate solution** | 0,05 mol/l - 0,1 N NEW | **0187.1** | 1 l | plastic | 96,65 |
| | 0,5 mol/l - 1 N NEW | **0211.1** | 1 l | plastic | 96,65 |
| **Sodium chloride solution** | 1 mol/l - 1 N | **8115.1** | 1 l | plastic | 26,80 |
| **Sodium thiosulphate solution** | 0,01 mol/l - 0,01 N | **X869.1** | 1 l | glass | 23,15 |
| | 0,1 mol/l - 0,1 N | **K022.1** | 1 l | glass | 18,20 |
| | | **K022.2** | 5 l | plastic | 48,30 |
| | | **K022.3** | 5 l | ROTI®CUBE | 56,45 |
| | | **K022.4** | 10 l | ROTI®CUBE | 84,40 |
| | 1 mol/l - 1 N | **9900.1** | 1 l | plastic | 33,25 |
| **Sodium hydroxide solution** NEW | 0,01 mol/l - 0,01 N | **N073.1** | 1 l | plastic | 19,60 |
| | 0,05 mol/l - 0,05 N | **0224.1** | 1 l | plastic | 19,25 |
| | 0,1 mol/l - 0,1 N | **K020.1** | 1 l | plastic | 19,05 |
| | | **K020.2** | 5 l | plastic | 56,90 |
| | | **K020.3** | 5 l | ROTI®CUBE | 60,10 |
| | | **K020.4** | 10 l | ROTI®CUBE | 90,20 |
| | 0,2 mol/l - 0,2 N | **N074.1** | 1 l | plastic | 19,05 |
| | | **N074.2** | 5 l | ROTI®CUBE | 60,10 |
| | | **N074.3** | 10 l | ROTI®CUBE | 90,20 |
| | 0,25 mol/l - 0,25 N | **P711.1** | 1 l | plastic | 19,05 |
| | | **P711.2** | 5 l | ROTI®CUBE | 60,10 |
| | | **P711.3** | 10 l | ROTI®CUBE | 90,20 |
| | 0,5 mol/l - 0,5 N | **P710.1** | 1 l | plastic | 19,05 |
| | | **P710.2** | 5 l | plastic | 56,90 |
| | | **P710.3** | 5 l | ROTI®CUBE | 60,10 |
| | | **P710.4** | 10 l | ROTI®CUBE | 90,20 |
| | 1 mol/l - 1 N | **K021.1** | 1 l | plastic | 18,85 |
| | | **K021.2** | 5 l | plastic | 56,45 |
| | | **K021.3** | 5 l | ROTI®CUBE | 60,75 |
| | | **K021.4** | 10 l | ROTI®CUBE | 90,20 |
| | 2 mol/l - 2 N | **T135.1** | 1 l | plastic | 19,25 |
| | | **T135.2** | 5 l | plastic | 63,35 |
| | | **T135.3** | 5 l | ROTI®CUBE | 68,70 |
| | 4 mol/l - 4 N | **T198.1** | 1 l | plastic | 36,05 |
| | 5 mol/l - 5 N | **KK71.1** | 1 l | plastic | 28,50 |
| NEW | 6 mol/l - 6 N | **0214.1** | 1 l | plastic | 96,65 |
| **Sulphuric acid** | 0,01 mol/l - 0,02 N | **X872.1** | 1 l | plastic | 24,20 |
| | 0,05 mol/l - 0,1 N | **K026.1** | 1 l | plastic | 19,05 |
| | | **K026.2** | 5 l | plastic | 56,45 |
| | | **K026.3** | 5 l | ROTI®CUBE | 61,20 |
| | | **K026.4** | 10 l | ROTI®CUBE | 90,20 |
| | 0,1 mol/l - 0,2 N | **N072.1** | 1 l | plastic | 19,05 |
| | 0,25 mol/l - 0,5 N | **P709.1** | 1 l | plastic | 19,05 |
| | | **P709.2** | 5 l | ROTI®CUBE | 61,20 |
| | | **P709.3** | 10 l | ROTI®CUBE | 90,20 |
| | 0,5 mol/l - 1 N | **K027.1** | 1 l | plastic | 19,05 |
| | | **K027.2** | 5 l | plastic | 56,45 |
| | | **K027.3** | 5 l | ROTI®CUBE | 61,20 |
| | | **K027.4** | 10 l | ROTI®CUBE | 90,20 |
| | 1 mol/l - 2 N | **X873.1** | 1 l | plastic | 24,20 |
| | 2 mol/l - 4 N | **9896.1** | 500 ml | plastic | 25,70 |
| | | **9896.2** | 1 l | plastic | 40,35 |
| | 2,5 mol/l - 5 N | **KK74.1** | 1 l | plastic | 26,80 |
| **Wijs-solution** | 0,1 mol ICl/l - 0,2 N | **CN36.1** | 1 l | glass | 75,15 |
| **Zinc chloride solution** | 0,1 mol/l - 0,1 N | **9901.1** | 500 ml | plastic | 89,15 |
| **Zinc sulphate solution** | 0,1 mol/l - 0,1 M | **P723.1** | 1 l | plastic | 26,35 |

For additional product data and safety information, see chapter Chemicals A-Z.

Titer details:
Many of our standard solutions also provide the corresponding titer details on the certificate of analysis, in addition to the amount of substance concentrations. If this is not the case, you can assume that the titer is as follows: 1 ± variation from specification.
Example: Amount of substance concentration 0,1 mol/l ±0,2 %
It follows that the titer is 1 ±0,2 %, i.e. 0,998-1,002
We recommend the regular checking of the titer prior to application for opened products.

## Volumetric standard solutions, ready-to-use, Reag. Ph.Eur.

ready-to-use

Solutions are produced and tested according to chapter 4.2 of the european pharmacopoeia. Traceable to SRM from NIST.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **EDTA disodium salt solution** | 0,1 mol/l - 0,1 N, Reag. Ph.Eur. | **6764.1** | 1 l | plastic | 30,65 |
| **Hydrochloric acid** | 0,1 mol/l - 0,1 N, Reag. Ph.Eur. | **6789.1** | 1 l | plastic | 21,40 |
| | 1 mol/l - 1 N, Reag. Ph.Eur. | **6792.1** | 1 l | plastic | 21,40 |
| **Iodine solution** | 0,05 mol $I_2$/l - 0,1 N, Reag. Ph.Eur. | **6765.1** | 1 l | glass | 41,40 |
| | 0,05 mol $I_2$/l - 1 N, Reag. Ph.Eur. | **6769.1** | 1 l | glass | 107,40 |
| **Perchloric acid** | 0,1 mol/l - 0,1 N, Reag. Ph.Eur. | **9525.1** | 1 l | plastic | 81,20 |
| **Potassium hydroxide solution** | 1 mol/l - 1 N, Reag. Ph.Eur. | **9522.1** | 1 l | plastic | 43,55 |
| **Potassium permanganate solution** | 0,02 mol/l - 0,1 N, Reag. Ph.Eur. | **9523.1** | 1 l | glass | 42,50 |
| **Silver nitrate solution** | 0,1 mol/l - 0,1 N, Reag. Ph.Eur. | **9526.1** | 1 l | glass | 96,65 |
| **Sodium thiosulphate solution** | 0,1 mol/l - 0,1 N, Reag. Ph.Eur. | **6782.1** | 1 l | plastic | 30,65 |
| **Sodium hydroxide solution** | 0,1 mol/l - 0,1 N, Reag. Ph.Eur. | **6783.1** | 1 l | plastic | 21,40 |
| | 1 mol/l - 1 N, Reag. Ph.Eur. | **6785.1** | 1 l | plastic | 21,40 |
| **Sulphuric acid** | 0,05 mol/l - 0,1 N, Reag. Ph.Eur. | **6793.1** | 1 l | plastic | 23,15 |
| | 0,5 mol/l - 1 N, Reag. Ph.Eur. | **6794.1** | 1 l | plastic | 23,15 |

## ROTI®VOLUM, volumetric solutions in ampoules

- Concentrated standard solutions packaged in practical and low-cost ampoules
- Designed for flexible and easy handling, and as a space-saving alternative to ready-to-use custom solutions
- Standard solutions are prepared through dilution to a final volume of exactly one litre.
- Exactly defined molar concentration (±0,2 %) according to the preparation
- High accuracy for precise analyses




| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Ammonium thiocyanate solution** | 0,1 mol/l - 0,1 N | **CN50.1** | 1 piece | 17,10 |
| **EDTA disodium salt solution** | 0,01 mol/l - 0,01 N | **CN52.1** | 1 piece | 28,95 |
| | 0,1 mol/l - 0,1 N | **CN51.1** | 1 piece | 27,45 |
| **Hydrochloric acid** | 0,1 mol/l - 0,1 N | **CN61.1** | 1 piece | 19,05 |
| | 0,5 mol/l - 0,5 N | **CN62.1** | 1 piece | 19,05 |
| | 1 mol/l - 1 N | **CN63.1** | 1 piece | 19,05 |
| **Nitric acid** | 1 mol/l - 1 N | **CN60.1** | 1 piece | 22,25 |
| **Oxalic acid solution** | 0,05 mol/l - 0,1 N | **CN59.1** | 1 piece | 19,05 |
| **Potassium hydroxide solution** | 0,1 mol/l - 0,1 N | **CN53.1** | 1 piece | 19,05 |
| **Silver nitrate solution** | 0,1 mol/l - 0,1 N | **CN66.1** | 1 piece | 61,20 |
| **Sodium chloride solution** | 0,1 mol/l - 0,1 N | **CN67.1** | 1 piece | 19,05 |
| **Sodium thiosulfate solution** | 0,1 mol/l - 0,1 N | **CN55.1** | 1 piece | 19,05 |
| **Sodium hydroxide solution** | 0,1 mol/l - 0,1 N | **CN56.1** | 1 piece | 19,05 |
| | 0,5 mol/l - 0,5 N | **CN57.1** | 1 piece | 19,05 |
| | 1 mol/l - 1 N | **CN58.1** | 1 piece | 19,05 |
| **Sulfuric acid** | 0,05 mol/l - 0,1 N | **CN64.1** | 1 piece | 19,05 |
| | 0,5 mol/l - 1 N | **CN65.1** | 1 piece | 22,25 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Indicators and Dyes

ready-to-use

Roth offers many indicators and dyes of high purity, which can be used in special applications.




## Indicator Solution – ready to use

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Bromocresol green indicator solution** | 0,1 % in ethanol denatured | **9949.1** | 100 ml | 22,05 |
| **Bromocresol purple indicator solution** | 0,1 % in water | **9955.1** | 100 ml | 41,85 |
| **Bromophenol blue indicator solution** | 0,1 % in ethanol denatured | **9952.1** | 100 ml | 22,50 |
| **Bromophenol red indicator solution** | 0,1 % in ethanol denatured | **9956.1** | 100 ml | 31,10 |
| **Bromothymol blue indicator solution** | 0,04 % in water | **9947.1** | 100 ml | 36,45 |
| **Ferroin indicator solution** | for sewage analysis, for determination of COD | **T131.1** | 100 ml | 31,10 |
| **Ferroin solution** | 1/40 mol/l (1/40 M) Redox indicator | **T132.1** | 100 ml | 39,25 |
| **Methylene blue indicator solution** | 0,01 mol/l in water | **9953.1** | 100 ml | 25,70 |
| **Methyl orange indicator solution** | 0,1 % in water | **T119.1** | 500 ml | 19,25 |
| **Methyl red indicator solution** | 0,1 % in ethanol, denatured | **T121.1** | 250 ml | 26,35 |
| **Mixed indicator 5** | for ammonia titration | **T125.1** | 250 ml | 55,80 |
| **Phenolphthalein indicator solution** | 0,1 % in ethanol 90 %, denatured | **8145.1** | 250 ml | 19,90 |
| | | **8145.2** | 500 ml | 26,35 |
| | 1 % in ethanol 90 %, denatured | **K034.1** | 250 ml | 21,00 |
| | | **K034.2** | 500 ml | 27,85 |
| | | **K034.3** | 1 l | 37,55 |
| **Starch 1 % indicator solution** | in water, stabilized | **T133.1** | 500 ml | 24,20 |
| **Tashiro's indicator solution** | in ethanol, denatured | **2624.1** | 250 ml | 17,10 |
| **Thymol blue indicator solution** | 0,1 % in ethanol denatured | **9954.1** | 250 ml | 42,50 |
| **Thymolphthalein indicator solution** | 0,1 % in ethanol denatured | **8152.1** | 500 ml | 34,30 |

Weitere Produktinformationen und Sicherheitshinweise siehe Kapitel Chemikalien A-Z.




## Unisol Indicator solutions

By Macherey-Nagel. For pH measurement in weak buffered solutions, in pure water, in surface water and in highly diluted acids or alkalis. Droplets of an indicator solution are added to the sample and the reaction colour is compared to a colour chart.

**Delivery incl.** 100 ml dropper bottle containing reagent (sufficient for approx. 500 pH measurements), colour chart and 1 type 13/72 measuring cuvette.

**Danger** H225

| Type | pH graduation | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **UNISOL 410** | 4,0-4,5-5,0-5,5-6,0-6,5-7,0-7,5-8,0-8,5-9,0-9,5-10,0 | **TK45.1** | 1 | 27,80 |
| **UNISOL 113** | 1-2-3-4-5-6-7-8-9-10-11-12-13 | **TK46.1** | 1 | 28,30 |

**Accessories:**

| | | | |
|---|---|---|---|
| **Replacement rectangular measuring cuvettes, made of PMMA, type 13/72** | **TK47.1** | 5 | 31,50 |

## Indicator buffer tablets

**for determination of water hardness with EDTA**

**Warning** H317

Dissolve one tablet in 100 ml water sample and bring to pH 11 with approx. 1 ml ammonia solution 30 % (art. CP17). Titrate with EDTA disodium salt volumetric solution (art. T136 or T137) from red to green.

**Type analysis:**

Suitability as indicator. ..... complies
Disintegration time (25 °C) ..... 100 s

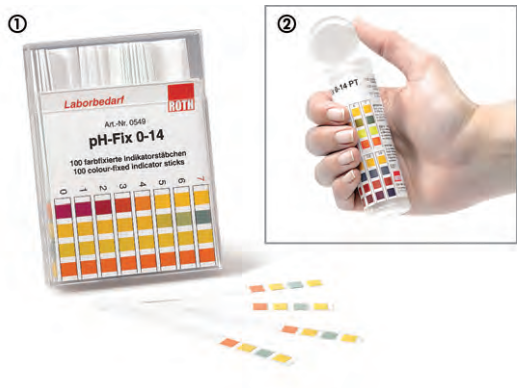
| | | |
|---|---|---|
| **7649.1** | 100 pieces | 19,90 € |
| **7649.2** | 500 pieces | 47,20 € |



## Universal indicator paper pH 1-11 and pH 1-14

Plastic rotating container with colour scale. Contains 1 roll, 5 m long and 7 mm wide. 1,0 pH intervals. Rolls individually packaged in refill pack.

| Type | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **Tin pH 1-11** (pH graduation 1-2-3-4-5-6-7-8-9-10-11) | **L861.1** | 1 | 11,60 |
| **Refill pack** pH 1-11 of 3 rolls | **L862.1** | 1 | 17,25 |
| **Tin pH 1-14** (pH graduation 1-2-3-5-6-7-8-9-10-12-14) | **N360.1** | 1 | 11,35 |
| **Refill pack** pH 1-14 of 3 rolls | **N361.1** | 1 | 16,50 |




## Universal indicator sticks pH-Fix

Test field made of colour-impregnated cellulose. Colour scale with colour grading included. Reliable, **non-bleeding**. Pack contains 100 sticks (L 85 x W 6 mm).

① **In square plastic box**

| pH-measuring range | pH graduation | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0-14 | 1,0 | **0549.2** | 100 | 11,95 |
| 0,0-6,0 | 0,5 | **C730.2** | 100 | 11,95 |
| 2,0-9,0 | 0,5 | **H913.2** | 100 | 11,95 |
| 4,5-10,0 | 0,5 | **C731.2** | 100 | 11,95 |
| 7,0-14,0 | 0,5 | **C732.2** | 100 | 11,95 |
| 0,3-2,3 | 0,3/0,4 | **H914.2** | 100 | 11,95 |
| 1,7-3,8 | 0,3 | **H915.2** | 100 | 11,95 |
| 3,6-6,1 | 0,3/0,5 | **H916.2** | 100 | 11,95 |
| 5,1-7,2 | 0,3 | **H917.2** | 100 | 11,95 |
| 6,0-7,7 | 0,3/0,4 | **H918.2** | 100 | 11,95 |
| 7,5-9,5 | 0,2/0,4 | **H919.2** | 100 | 12,30 |

② **In round plastic box with snap-on lid**

Single-handed opening and closing of lid with thumb.

| pH-measuring range | pH graduation | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0-14 | 1,0 | **KH69.1** | 100 | 12,30 |
| 3,6-6,1 | 0,3/0,5 | **LH91.1** | 100 | 12,50 |




## Rotilabo®-universal indicator papers type Eco

For fast and exact measurment of coloured or cloudy and aqueous solutions. Plastic tin with colour scale. On rolls, 5 m long, 7 mm wide.

| pH-measuring range | pH graduation | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 0,0-10,0 | 1,0 | **AP99.1** | 1 | 6,25 |
| 1,0-11,0 | 1,0 | **AX00.1** | 1 | 6,25 |
| 1,0-14,0 | 1,0/2,0 | **AX01.1** | 1 | 6,25 |
| 0,5-5,0 | 0,5 | **AX02.1** | 1 | 6,25 |
| 5,0-9,0 | 0,5 | **AX03.1** | 1 | 6,25 |
| 6,5-10,0 | 0,5 | **AX04.1** | 1 | 6,25 |
| 9,0-13,0 | 0,5 | **AX05.1** | 1 | 6,25 |

## pH indicators

| Product | Purity | Transition range pH | Colour change | Application | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| **Crystal violet (C.I. 42555)** | p.a., ACS | 0,0 - 2,0 | yellow - blue violet | 0,1 g in 100 ml ethanol (70 %) | **T123.2** | 5 g | 17,10 |
| | | | | | **T123.1** | 25 g | 26,80 |
| | | | | | **T123.3** | 100 g | 69,35 |
| **Malachite green hydrochloride** | p.a. | 0,0 - 2,0<br>11,6 - 14,0 | yellow - green<br>green - colorless | 0,1 g in 100 ml water | **7710.1** | 5 g | 14,20 |
| | | | | | **7710.2** | 25 g | 24,65 |
| | | | | | **7710.3** | 100 g | 47,85 |
| **Malachite green oxalate (C.I. 42000)** | for microscopy | 0,0 - 2,0<br>11,6 - 14,0 | yellow - green<br>green- colorless | 0,1 g in 100 ml water | **5895.2*** | 25 g | 16,05 |
| | | | | | **5895.1** | 100 g | 32,15 |
| | | | | | **5895.3** | 250 g | 46,15 |
| **Brilliant green (C.I. 42040)** | for microscopy | 0,0 - 2,6 | yellow - green | 0,1 g in 100 ml water | **0324.1** | 25 g | 17,75 |
| | | | | | **0324.2** | 100 g | 39,70 |
| **Eosin Y (C.I. 45380)** | for microscopy | 0,0 - 3,0 | yellow - red | 0,5 - 2,0 % in water or ethanol | **7089.1** | 50 g | 32,80 |
| | | | | | **7089.2** | 100 g | 55,40 |
| | | | | | **7089.3** | 500 g | 177,40 |
| **Ethyl violet (C.I. 42600)** | extra pure | 0,0 - 3,5 | yellow - blue | 0,1 g in 100 ml ethanol (50 %) | **7680.1** | 5 g | 14,55 |
| | | | | | **7680.2** | 25 g | 24,65 |
| | | | | | **7680.3** | 100 g | 48,95 |
| **Methyl green (C.I. 42590)** | for microscopy | 0,1 - 2,3 | yellow - green blue | 0,1 g in 100 ml water | **5159.1** | 5 g | 21,40 |
| | | | | | **5159.2** | 10 g | 34,30 |
| | | | | | **5159.3** | 25 g | 67,65 |
| **Methyl violet 2B (C.I. 42535)** | for microscopy | 0,15 - 3,2 | yellow - violet | 0,1 g in 100 ml ethanol (96 %) | **7715.1** | 5 g | 14,20 |
| | | | | | **7715.2** | 25 g | 24,65 |
| | | | | | **7715.3** | 100 g | 47,85 |
| **o-Cresol red** | p.a. | 0,2 - 1,8<br>7,0 - 8,8 | red - yellow<br>orange - purple | Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 1,05 ml NaOH 0,1 mol/l and fill up with water to 100 ml | **KK15.1** | 5 g | 18,85 |
| | | | | | **KK15.2** | 10 g | 30,00 |
| | | | | | **KK15.3** | 25 g | 60,10 |
| **Cresol red sodium salt** | p.a. | 0,2 - 1,8<br>7,0 - 8,8 | red - yellow<br>orange - purple | 0,1 g in 100 ml water | **5534.1** | 5 g | 25,70 |
| | | | | | **5534.2** | 25 g | 100,95 |
| **Fuchsine basic (C.I. 42510)** | for microscopy | 1,0 - 3,1 | black violet -<br>violet pink | 0,4 g in 100 ml water | **3256.2** | 25 g | 33,25 |
| | | | | | **3256.1** | 50 g | 60,10 |
| | | | | | **3256.3** | 100 g | 80,10 |
| **Metanil yellow (C.I. 13065)** | p.a. | 1,2 - 2,3 | violet red - yellow | 0,1 g in 100 ml water | **7714.1** | 5 g | 14,20 |
| | | | | | **7714.2** | 25 g | 24,65 |
| | | | | | **7714.3** | 100 g | 47,85 |
| **4-(Phenylazo) diphenylamine** | ≥97 %, p.a. | 1,2 - 2,5 | red - yellow | insoluble in water | **4538.1** | 5 g | 32,15 |
| | | | | | **4538.2** | 25 g | 85,90 |
| **m-Cresol purple** | p.a. | 1,2 - 2,8<br>7,4 - 9,0 | red - yellow<br>yellow - purple | Dissolve 0,04 g in 100 ml ethanol (20 %) or 0,04 g in 1,05 ml NaOH 0,1 mol/l and fill up with water to 100 ml | **5160.1** | 1 g | 12,80 |
| | | | | | **5160.2** | 5 g | 35,40 |
| | | | | | **5160.3** | 10 g | 61,20 |
| **Thymol blue** | p.a., ACS | 1,2 - 2,8<br>8,0 - 9,6 | red - yellow<br>yellow - blue | Dissolve 0,04 g in 100 ml ethanol (20 %) or 0,04 g in 0,86 ml NaOH 0,1 mol/l and fill up with water to 100 ml | **KK16.1** | 5 g | 17,10 |
| | | | | | **KK16.2** | 10 g | 24,65 |
| | | | | | **KK16.3** | 25 g | 50,00 |
| **Thymol blue sodium salt** | p.a., ACS | 1,2 - 2,8<br>8,0 - 9,6 | red - yellow<br>yellow - blue | 0,1 g in 100 ml water | **2606.1** | 5 g | 20,35 |
| | | | | | **2606.2** | 25 g | 52,15 |
| **Xylenolblue** | p.a. | 1,2 - 2,8<br>8,0 - 9,8 | red - yellow<br>yellow - violet | 0,1 g in 100 ml ethanol (50 %) | **7746.1** | 1 g | 14,20 |
| | | | | | **7746.2** | 5 g | 35,40 |
| | | | | | **7746.3** | 10 g | 60,10 |
| **Orange IV sodium salt (C.I. 13080)** | for microscopy | 1,4 - 2,6 | red - yellow | 0,1 g in 100 ml water | **7731.1** | 5 g | 14,20 |
| | | | | | **7731.2** | 25 g | 24,65 |
| | | | | | **7731.3** | 100 g | 59,05 |
| **Eosin B (C.I. 45400)** | for microscopy | 1,7 - 1,8 | colorless - pink fluore-scent | 0,5 - 2,0 % in water or ethanol | **0306.1** | 10 g | 17,10 |
| | | | | | **0306.2** | 25 g | 27,45 |
| | | | | | **0306.3** | 50 g | 42,90 |
| **Martius yellow (C.I. 10315)** | extra pure | 2,0 - 3,2 | colorless - yellow | 0,1 g in 100 ml water or ethanol | **7713.1** | 5 g | 18,85 |
| | | | | | **7713.2** | 25 g | 35,40 |
| | | | | | **7713.3** | 100 g | 84,85 |
| **Dimethyl yellow (C.I. 11020)** NEW | pure | 2,9 - 4,0 | red - yellow | 0,1 g in 100 ml ethanol (96 %) | **9982.1** | 10 g | 52,60 |
| **Bromophenol blue** | ACS, for microscopy | 3,0 - 4,6 | yellow - blue | Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 0,74 ml NaOH 0,1 mol/l and fill up with water to 100 ml | **T116.1** | 5 g | 22,05 |
| | | | | | **T116.2** | 10 g | 28,95 |
| | | | | | **T116.3** | 25 g | 46,15 |
| **Bromophenol blue sodium salt** | for electrophoresis | 3,0 - 4,6 | yellow - blue | 0,1 g in 100 ml water | **A512.2** | 5 g | 22,05 |
| | | | | | **A512.1** | 10 g | 41,85 |
| | | | | | **A512.3** | 25 g | 69,80 |
| **Congo red (C.I. 22120)** | for microscopy | 3,0 - 5,0 | blue - red | 0,2 g in 100 ml water | **0322.1** | 5 g | 15,60 |
| | | | | | **0322.2** | 25 g | 28,50 |
| | | | | | **0322.3** | 100 g | 56,90 |

| Product | Purity | Transition range pH | Colour change | Application | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| **Methyl orange (C.I. 13025)** | ACS, for microscopy | 3,2 - 4,4 | pink - yellow | 0,04 g in 100 ml ethanol (20 %) or 0,4 g in 100 ml water | **T118.1** | 50 g | 25,70 |
| | | | | | **T118.2** | 100 g | 39,25 |
| | | | | | **T118.3** | 250 g | 57,95 |
| **Bromochlorophenol blue sodium salt** | p.a. | 3,2 - 4,8 | yellow - purple | 0,1 g in 100 ml water | **6558.1** | 1 g | 42,90 |
| | | | | | **6558.2** | 5 g | 102,15 |
| **Ethyl orange sodium salt** | p.a. | 3,4 - 4,8 | pink - yellow | 0,1 g in 100 ml water | **7667.1** | 5 g | 18,85 |
| | | | | | **7667.2** | 25 g | 35,40 |
| | | | | | **7667.3** | 100 g | 72,60 |
| **Bromocresol green** | ACS | 3,8 - 5,4 | yellow - blue | Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 0,58 ml NaOH 0,1 mol/l and fill up with water to 100 ml | **T115.1** | 1 g | 16,70 |
| | | | | | **T115.2** | 5 g | 26,80 |
| | | | | | **T115.3** | 10 g | 45,70 |
| | | | | | **T115.4** | 25 g | 87,00 |
| **Bromocresol green sodium salt** | ACS | 3,8 - 5,4 | yellow - blue | 0,04 g in 100 ml water | **KK18.1** | 1 g | 12,80 |
| | | | | | **KK18.2** | 5 g | 33,25 |
| | | | | | **KK18.3** | 25 g | 115,60 |
| **Methyl red (C.I. 13020)** | p.a., ACS | 4,2 - 6,2 | pink - yellow | 0,1 g in 100 ml ethanol (96 %) | **T120.1** | 10 g | 14,95 |
| | | | | | **T120.2** | 25 g | 24,65 |
| **Methyl red hydrochloride (C.I. 13020)** | p.a. | 4,2 - 6,2 | red - yellow | 0,1 g in 100 ml ethanol (96 %) | **2562.1** | 25 g | 25,70 |
| | | | | | **2562.2** | 100 g | 60,10 |
| **Methyl red sodium salt (C.I. 13020)** | p.a., soluble in water | 4,2 - 6,2 | red - yellow | 0,1 g in 100 ml water | **5003.1** | 25 g | 23,15 |
| | | | | | **5003.2** | 100 g | 65,05 |
| **Alizarin red S (C.I. 58005)** | - | 4,3 - 6,3<br>9,4 - 12,0 | yellow - red violet<br>brown orange - violet | 0,1 g in 100 ml ethanol (96 %) | **0348.1** | 10 g | 19,25 |
| | | | | | **0348.2** | 25 g | 30,00 |
| | | | | | **0348.3** | 100 g | 92,35 |
| **Ethyl red** | p.a. | 4,5 - 6,5 | red - yellow | 0,1 g in 100 ml ethanol (96 %) | **7677.1** | 5 g | 19,25 |
| | | | | | **7677.2** | 25 g | 43,55 |
| | | | | | **7677.3** | 100 g | 117,20 |
| **Litmus (C.I. 1242)** | p.a. | 4,5 - 8,3 | red - blue | 4 g in 100 ml water | **0248.1** | 5 g | 12,80 |
| | | | | | **0248.2** | 25 g | 33,25 |
| **Chlorophenol red** | p.a. | 4,8 - 6,4 | yellow - red violet | Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 0,94 ml NaOH 0,1 mol/l and fill up with water to 100 ml | **0347.1** | 5 g | 30,00 |
| | | | | | **0347.2** | 10 g | 48,95 |
| | | | | | **0347.3** | 25 g | 104,20 |
| **Bromocresol purple** | p.a., ACS | 5,2 - 6,8 | yellow - purple | Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 0,74 ml NaOH 0,1 mol/l and fill up with water to 100 ml | **0317.1** | 5 g | 20,65 |
| | | | | | **0317.2** | 25 g | 65,05 |
| **Bromocresol purple sodium salt** | p.a., ACS | 5,2 - 6,8 | yellow - violet | 0,1 g in 100 ml water | **2555.1** | 5 g | 19,25 |
| | | | | | **2555.2** | 25 g | 48,95 |
| **Bromophenol red free acid** | p.a. | 5,2 - 7,0 | yellow red - purple | 0,1 g in 100 ml ethanol (20 %) | **6573.1** | 1 g | 20,35 |
| | | | | | **6573.2** | 5 g | 39,70 |
| | | | | | **6573.3** | 50 g | 188,15 |
| **Bromophenol red sodium salt** | p.a. | 5,2 - 7,0 | yellow red - purple | 0,1 g in 100 ml water | **6579.1** | 1 g | 19,60 |
| | | | | | **6579.2** | 5 g | 37,55 |
| | | | | | **6579.3** | 50 g | 170,95 |
| **Alizarin (C.I. 58000)** | p.a. | 5,5 - 6,8<br>10,1 - 12,1 | yellow - violet<br>violet - purple | 0,5 g in 100 ml ethanol (96 %) | **4476.2** | 25 g | 23,15 |
| | | | | | **4476.1** | 50 g | 34,30 |
| | | | | | **4476.3** | 100 g | 46,15 |
| **Nitrazine yellow (C.I. 14890)** | p.a. | 6,0 - 7,2 | yellow - blue | 0,1 g in 100 ml water | **7727.1** | 1 g | 16,05 |
| | | | | | **7727.2** | 5 g | 57,95 |
| | | | | | **7727.3** | 10 g | 105,25 |
| **Bromothymol blue** | p.a., ACS | 6,0 - 7,6 | yellow - blue | Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 0,64 ml NaOH 0,1 mol/l and fill up with water to 100 ml | **T117.1** | 5 g | 24,20 |
| | | | | | **T117.2** | 25 g | 57,95 |
| | | | | | **T117.3** | 50 g | 97,75 |
| **Bromothymol blue sodium salt** | p.a. | 6,0 - 7,6 | yellow - blue | 0,04 g in 100 ml water | **KK19.1** | 5 g | 20,35 |
| | | | | | **KK19.2** | 10 g | 31,75 |
| | | | | | **KK19.3** | 25 g | 57,95 |
| **Bromoxylenol blue** | p.a. | 6,0 - 7,6 | yellow - blue | 0,1 g in 100 ml ethanol (96 %) | **KK27.1** | 1 g | 14,20 |
| | | | | | **KK27.2** | 5 g | 38,60 |
| | | | | | **KK27.3** | 10 g | 64,40 |
| **Brilliant yellow (C.I. 24890)** | p.a. | 6,4 - 8,0 | yellow - red orange | 0,1 g in 100 ml water | **7645.1** | 5 g | 20,35 |
| | | | | | **7645.2** | 25 g | 31,75 |
| | | | | | **7645.3** | 100 g | 73,00 |
| **Xylenol orange tetrasodium salt** | p.a., ACS | 6,4 - 10,4 | yellow - orange red | 0,1 g in 100 ml water | **2727.1** | 1 g | 27,85 |
| | | | | | **2727.2** | 5 g | 63,35 |
| | | | | | **2727.3** | 10 g | 102,05 |
| | | | | | **2727.4** | 50 g | 364,45 |
| **Neutral red (C.I. 50040)** | p.a. | 6,8 - 8,0 | red - orange yellow | 0,3 g in 100 ml ethanol (70 %) | **T122.2** | 1 g | 21,40 |
| | | | | | **T122.1** | 10 g | 54,75 |
| | | | | | **T122.3** | 25 g | 107,40 |

## pH indicators

| Product | Purity | Transition range pH | Colour change | Application | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| **Phenol red** | p.a., ACS | 6,5 - 8,2 | yellow - red | Dissolve 0,1 g in 100 ml ethanol (20 %) or 0,04 g in 1,13 ml NaOH 0,1 mol/l and fill up with water to 100 ml | **T127.1** | 5 g | 14,95 |
| | | | | | **T127.2** | 25 g | 34,30 |
| | | | | | **T127.3** | 100 g | 93,00 |
| **Phenol red sodium salt** | p.a., ACS | 6,8 - 8,2 | yellow - red | 0,1 g in 100 ml water | **2566.1** | 5 g | 21,00 |
| | | | | | **2566.2** | 25 g | 47,20 |
| **Orange II sodium salt (C.I. 15510)** | for microscopy | 7,4 - 8,6<br>10,2 - 11,8 | amber - orange<br>orange - red | 0,1 g in 100 ml water | **7729.1** | 5 g | 14,20 |
| | | | | | **7729.2** | 25 g | 24,65 |
| | | | | | **7729.3** | 100 g | 59,05 |
| **Curcumin** | ≥90 %, nat., powdered, oil-soluble | 7,8 - 9,2 | yellow - maroon | 0,1 g in 100 ml ethanol (96 %) | **9469.1** | 10 g | 25,70 |
| | | | | | **9469.2** | 25 g | 46,15 |
| | | | | | **9469.3** | 50 g | 76,25 |
| **Phenolphthalein (C.I. 764)** | ≥99 %, p.a. | 8,0 - 10,0 | colorless - purple | 0,1 g in 100 ml ethanol (96 %) | **T126.2** | 50 g | 17,10 |
| | | | | | **T126.1** | 100 g | 23,15 |
| | | | | | **T126.3** | 500 g | 62,25 |
| **Thymolphthalein** | p.a., ACS | 8,8 - 10,5 | colorless - blue | 0,1 g in 100 ml ethanol (50 %) | **HN97.1** | 5 g | 19,25 |
| | | | | | **HN97.2** | 10 g | 32,15 |
| | | | | | **HN97.3** | 50 g | 115,60 |
| **Nile blue chloride (C.I. 51180)** | extra pure | 9,4 - 11,0 | blue - red | 0,1 g in ethanol or water | **7723.1** | 5 g | 24,65 |
| | | | | | **7723.2** | 25 g | 72,60 |
| | | | | | **7723.3** | 100 g | 177,40 |
| **Alkali blue 6B (C.I. 42750)** | p.a. | 9,4 - 14,0 | violet - pink | 0,1 g in 100 ml ethanol (96 %) | **5155.1** | 10 g | 20,35 |
| | | | | | **5155.2** | 25 g | 39,70 |
| | | | | | **5155.3** | 100 g | 117,20 |
| **Resorcinol yellow (C.I. 14270)** | extra pure | 11,0 - 12,7 | yellow - orange | 0,1 g in 100 ml water or ethanol | **7741.1** | 5 g | 13,90 |
| | | | | | **7741.2** | 25 g | 24,20 |
| | | | | | **7741.3** | 100 g | 60,10 |
| **4-(4-Nitrophenylazo)-resorcinol** | p.a. | 11,0 - 13,0 | yellow - violet | 0,1 g in dil. NaOH | **2563.1** | 10 g | 25,70 |
| | | | | | **2563.2** | 25 g | 38,60 |
| **Titan yellow (C.I. 19540)** | extra pure | 11,0 - 13,0 | yellow - red | 0,1 g in 100 ml ethanol (20 %) | **7739.1** | 5 g | 11,75 |
| | | | | | **7739.2** | 25 g | 24,65 |
| | | | | | **7739.3** | 100 g | 60,10 |
| **Indigo carmine (C.I. 73015)** | ≥80 %, p.a. | 11,5 - 14,0 | blue - yellow | 0,25 g in 100 ml ethanol (50 %) or 1 g in 100 ml water | **2700.1** | 25 g | 24,20 |
| | | | | | **2700.2** | 100 g | 66,55 |
| | for microscopy | 11,5 - 14,0 | blue - yellow | 0,25 g in 100 ml ethanol (50 %) or 1 g in 100 ml water | **5156.1** | 10 g | 14,55 |
| | | | | | **5156.2** | 25 g | 21,40 |
| | | | | | **5156.3** | 100 g | 62,25 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Redox indicators

| Product | Purity | Redoxpotential $E_0$[V] bei pH=0 und 20 °C | Ox colour | Red colour | Application | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|
| **Amido black 10 B (C.I. 20470)** | p.a. | +0,57 | yellow - brown | blue | 0,2 g in 100 ml water | **9590.1** | 25 g | 37,55 |
| **Brilliant cresyl blue (C.I. 51010)** | p.a. | +0,58 | blue | colourless | 0,5 g in 100 ml water or ethanol (96 %) | **5162.1** | 5 g | 23,15 |
| | | | | | | **5162.2** | 10 g | 33,90 |
| **2,6-Dichlorophenol-indophenol sodium salt hydrate** | p.a., ACS | +0,67 | blue | colourless | 0,02 g in 100 ml water | **HN79.1** | 1 g | 16,70 |
| | | | | | | **HN79.2** | 5 g | 36,45 |
| | | | | | | **HN79.3** | 25 g | 149,45 |
| **Diphenylamine** | ≥99 %, p.a., ACS | +0,76 | blue - violet | colourless | 1,0 g in 100 ml 96 % sulphuric acid | **9865.1** | 25 g | 16,70 |
| | | | | | | **9865.2** | 100 g | 39,25 |
| | | | | | | **9865.3** | 500 g | 110,65 |
| **Diphenylamine-4-sulphonic acid barium salt** | p.a., ACS | +0,84 in 1 M sulphuric acid | red - violet | colourless | 0,2 g in 100 ml water | **2674.1** | 5 g | 29,60 |
| | | | | | | **2674.2** | 25 g | 80,55 |
| **Diphenylamine-4-sulphonic acid sodium salt** | p.a., ACS | +0,84 in 1 M sulphuric acid | red - violet | colourless | 0,2 g in 100 ml water | **2602.3** | 1 g | 17,10 |
| | | | | | | **2602.1** | 10 g | 75,80 |
| | | | | | | **2602.2** | 25 g | 139,25 |
| **1,5-Diphenylcarbazide** | ≥97 %, p.a., ACS | - | colourless | violet | 1 g 1,5-diphenylcarbazide (DPC) in 100 ml acetone and acidify with a drop of glacial acetic acid. | **2696.1** | 10 g | 23,15 |
| | | | | | | **2696.2** | 25 g | 38,60 |
| | | | | | | **2696.3** | 100 g | 111,70 |
| **2,2'-Dipyridyl** | ≥95 %, for biochemistry | +1,03 | pale blue | red | 0,695 g $FeSO_4 \cdot 7\ H_2O$ and 1,171 g 2,2'-dipyridylamine in 100 ml water | **4153.1** | 5 g | 14,95 |
| | | | | | | **4153.2** | 25 g | 38,60 |
| **Indigo carmine (C.I. 73015)** | for microscopy | +0,29 | blue | yellowish | 0,25 g in 100 ml ethanol (50 %) or 1 g in 100 ml water | **5156.1** | 10 g | 14,55 |
| | | | | | | **5156.2** | 25 g | 21,40 |
| | | | | | | **5156.3** | 100 g | 62,25 |
| **Methylene blue (C.I. 52015)** | - | +0,53 (30 °C) | blue | colourless | 0,1 - 0,5 g in 100 ml water | **A514.1** | 10 g | 19,60 |
| | | | | | | **A514.2** | 50 g | 46,15 |
| | | | | | | **A514.3** | 100 g | 75,15 |

| Product | Purity | Redoxpotential $E_0$[V] bei pH=0 und 20 °C | Ox colour | Red colour | Application | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|---|
| **Neutral red (C.I. 50040)** | p.a. | +0,25 | violet - red | colourless | 0,3 g in 100 ml ethanol (70 %) | **T122.2** | 1 g | 21,40 |
| | | | | | | **T122.1** | 10 g | 54,75 |
| | | | | | | **T122.3** | 25 g | 107,40 |
| **Nile blue A (C.I. 51180)** | ~80 % | +0,41 | blue - red | colourless | 0,1 g in 100 ml water | **4377.2** | 5 g | 17,10 |
| | | | | | | **4377.1** | 10 g | 28,95 |
| | | | | | | **4377.3** | 25 g | 46,15 |
| **1,10-Phenanthroline monohydrate** | ≥99 %, p.a., ACS | +1,14 | pale blue | red | 0,695 g $FeSO_4 \cdot 7\ H_2O$ and 1,487 g 1,10-phenanthroline in 100 ml water | **9113.2** | 5 g | 27,85 |
| | | | | | | **9113.3** | 25 g | 99,90 |
| | | | | | | **9113.1** | 50 g | 186,55 |
| **N-Phenylanthranilic acid** | ≥97 %, p.a. | +0,89 | purple - red | colourless | Dissolve 0,1 g in 5 ml 0,1 M sodium hydroxide and fill up with water to 100 ml. Or dissolve 0,107 g in 20 ml sodium carbonate solution (5 %) and fill up with water to 100 ml. | **9858.1** | 25 g | 22,05 |
| | | | | | | **9858.2** | 50 g | 38,60 |
| | | | | | | **9858.3** | 100 g | 66,55 |
| **Safranin O (C.I. 50240)** | for microscopy | +0,24 | blue - violet (acid); brown (alkaline) | colourless | 0,05 g in 100 ml water | **T129.1** | 10 g | 40,75 |
| **Xylene cyanole (C.I. 42135)** | for histology and electrophoresis | +1,00 | yellow | pink | 0,2 g in 100 ml water | **A513.2** | 5 g | 24,65 |
| | | | | | | **A513.1** | 10 g | 39,70 |
| | | | | | | **A513.3** | 25 g | 72,60 |
| | | | | | | **A513.4** | 50 g | 117,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Metal indicators

| Product | Determination of | Application | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Alizarin red S (C.I. 58005)** | Al, B, Ce, Cr, Hf, La, Mo, Zr, Sc, Th, Y | 0,1 g in 100 ml ethanol (96 %) | **0348.1** | 10 g | 19,25 |
| | | | **0348.2** | 25 g | 30,00 |
| **Arsenazo III** | Ca | 0,1 g in 100 ml water | **KK22.1** | 1 g | 52,60 |
| | | | **KK22.2** | 5 g | 192,45 |
| **Aurin tricarboxylic acid ammonium salt** | Al, Ca, Fe(III), Mg | 0,2 g in 100 ml water | **2670.1** | 10 g | 18,20 |
| | | | **2670.2** | 25 g | 26,35 |
| | | | **2670.3** | 100 g | 63,35 |
| **Calcein** | Mg, Ba, Ca, Cr, Sr, $SO_4^{2-}$ | Trituration with $KNO_3$ (1:99) | **7688.1** | 5 g | 35,40 |
| | | | **7688.2** | 25 g | 107,40 |
| | | | **7688.3** | 100 g | 295,65 |
| **Calconcarboxylic acid** | Ca | Trituration with $Na_2SO_4$ (1:99) | **2676.1** | 5 g | 26,35 |
| | | | **2676.2** | 10 g | 38,20 |
| | | | **2676.3** | 50 g | 100,55 |
| **Chromotrope® 2B (C.I. 16575)** | Boric acid | 0,005 g in conc. $H_2SO_4$ | **7647.1** | 5 g | 14,20 |
| | | | **7647.2** | 25 g | 24,20 |
| | | | **7647.3** | 100 g | 60,10 |
| **Dimethylglyoxim** | Ni | 0,1 g in 100 ml water | **2677.1** | 50 g | 41,40 |
| | | | **2677.2** | 100 g | 65,50 |
| | | | **2677.3** | 500 g | 246,20 |
| **Dimethylglyoxime disodium salt octahydrate** | Ni | 0,1 g in 100 ml water | **KK24.1** | 25 g | 37,10 |
| | | | **KK24.2** | 50 g | 62,25 |
| **1,5-Diphenylcarbazide** | Cr(VI), Fe, Cd, Hg, Mg | 1 g 1,5-diphenylcarbazide (DPC) in 100 ml acetone and acidify with a drop of glacial acetic acid. | **2696.1** | 10 g | 23,15 |
| | | | **2696.2** | 25 g | 38,60 |
| | | | **2696.3** | 100 g | 111,70 |
| **Diphenylcarbazone** | Cd, Hg, In, Mn, Ni, Pb, V | 0,2 g in 100 ml ethanol (96 %) | **2678.1** | 10 g | 60,10 |
| | | | **2678.2** | 25 g | 117,20 |
| | | | **2678.3** | 50 g | 203,20 |
| **Dithizone** | Heavy metal ions | 0,025 - 0,05 g in 100 ml methanol | **2697.1** | 5 g | 32,15 |
| | | | **2697.2** | 25 g | 104,85 |
| | | | **2697.3** | 50 g | 166,65 |
| **Eriochrome® blue black B (C.I. 14640)** | Ca, Cd, Mg, U(IV), Zn, Zr | 0,2 - 0,4 g in 100 ml methanol | **7661.1** | 5 g | 14,55 |
| | | | **7661.2** | 25 g | 24,65 |
| | | | **7661.3** | 100 g | 48,95 |
| **Eriochrome® blue black R (C.I. 15705)** | Al, Ca, Cu, Fe, Ga, Zr | 0,4 g in 100 ml methanol or ethanol | **7663.1** | 5 g | 14,55 |
| | | | **7663.2** | 25 g | 24,65 |
| | | | **7663.3** | 100 g | 48,95 |

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| Product | Determination of | Application | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Eriochrome® black T (C.I. 14645)** NEW | Ba, Cd, In, Mg, Mn, Pb, Sc, Sr, Zn, Zr, rare earth metals | 0,1 g in water | **0112.1** | 25 g | 15,60 |
| | | | **0112.2** | 50 g | 26,80 |
| | | | **0112.3** | 100 g | 48,30 |
| **Eriochrome® black T (C.I. 14645), trituration** | Ba, Cd, In, Mg, Mn, Pb, Sc, Sr, Zn, Zr, rare earth metals | Trituration with NaCl (1:99) | **K860.2** | 25 g | 19,90 |
| | | | **K860.1** | 50 g | 28,50 |
| | | | **K860.3** | 100 g | 51,50 |
| **Fast sulphon black F (C.I. 26990)** | Cu | 0,1 % in water | **7685.1** | 5 g | 14,20 |
| | | | **7685.2** | 25 g | 24,20 |
| | | | **7685.3** | 100 g | 66,55 |
| **8-Hydroxyquinoline** | Mg | 0,1 g in 100 ml ethanol | **2557.1** | 50 g | 28,95 |
| | | | **2557.2** | 100 g | 40,75 |
| | | | **2557.3** | 250 g | 75,15 |
| **Hydroxy naphthol blue disodium salt** | Ca | 0,1 g in 100 ml water | **2556.1** | 5 g | 19,25 |
| | | | **2556.2** | 25 g | 38,60 |
| **Metal phthaleine** | Ba, Ca, Cd, Mg, Sr | 0,1 g in dil. $NH_3$ | **4231.1** | 1 g | 23,15 |
| | | | **4231.2** | 5 g | 46,15 |
| **Methylthymol blue sodium salt** | Ba, Bi, Ca, Cd, Cu, Fe(II), Hg, In, Mg, Mn, Pb, rare earth metals, Se, Sn(II), Th, Tl(II), Zn, Zr | Trituration with $KNO_3$ (1:99) | **KK17.1** | 1 g | 14,95 |
| | | | **KK17.2** | 5 g | 42,90 |
| **Morin hydrate** | Al, Be, B, Ga, In, Mo, Nb, Sc, Ta, Th, Ti, W, Sn, Zr | 0,1 g in 100 ml methanol | **6459.1** | 5 g | 103,75 |
| | | | **6459.2** | 50 g | 783,70 |
| **Murexide (C.I. 56085)** | Ag, Ca, Co, Cu, Mn, Ni, Sc, Th, Zn | freshly made saturated solution in water | **T124.1** | 5 g | 24,65 |
| | | | **T124.2** | 25 g | 57,95 |
| | | | **T124.3** | 50 g | 95,60 |
| **4-(4-Nitrophenylazo)-resorcinol** | Mg | 0,1 g in dil. NaOH | **2563.1** | 10 g | 25,70 |
| | | | **2563.2** | 25 g | 38,60 |
| **1-(2-Pyridylazo)-2-naphthol** | Al, Ba, Bi, Ca, Cd, Co, Cu, Fe, Ga, Hg, In, Mg, Mn, Ni, Pb, Sc, Th, Tl, V, Zn | 0,01 - 0,1 g in 100 ml ethanol (96 %) | **KK12.1** | 1 g | 18,85 |
| | | | **KK12.2** | 5 g | 64,00 |
| **4-(2'-Pyridylazo)-resorcinol** | Al, Ba, Bi, Cd, Cu, Fe, Hg, In, Mn, Ni, Pb, Sr, Th, Tl(III), Zn, rare earth metals | 0,1 g in 100 ml water | **2564.1** | 5 g | 78,40 |
| | | | **2564.2** | 25 g | 282,20 |
| **4-(2'-Pyridylazo)-resorcinol monosodium salt** | Mg | 0,1 g in dil. NaOH | **2565.1** | 5 g | 85,90 |
| | | | **2565.2** | 25 g | 321,45 |
| **Pyrogallol red** | Bi, Co, Ni, Pb | 0,05 g in ethanol 96 % | **0287.1** | 1 g | 24,65 |
| | | | **0287.2** | 5 g | 47,85 |
| **Silver diethyldithiocarbamate** | As | 0,5 % in pyridine | **KK25.1** | 5 g | 44,00 |
| | | | **KK25.2** | 10 g | 78,40 |
| **Sodium diethyldithiocarbamate trihydrate** | Cu | 0,1 g in 100 ml water | **2601.1** | 25 g | 22,05 |
| | | | **2601.2** | 100 g | 39,25 |
| | | | **2601.3** | 500 g | 131,70 |
| **Sodium nitroprusside dihydrate** | Zn | 0,1 g in 100 ml water or ethanol | **HN34.1** | 25 g | 27,45 |
| | | | **HN34.2** | 100 g | 72,60 |
| | | | **HN34.3** | 500 g | 282,20 |
| **5-Sulphosalicylic acid dihydrate** | Fe(III) | 1,0 - 5,0 g in 100 ml water | **4119.1** | 100 g | 18,20 |
| | | | **4119.2** | 500 g | 50,45 |
| **Thorin** | Bi, Th, U(IV), Sc, Y(III) | 0,5 g in 100 ml water | **KK34.1** | 5 g | 52,60 |
| | | | **KK34.2** | 10 g | 85,90 |
| **Tiron** | Fe(III) | 2 g in 100 ml water | **7302.1** | 10 g | 19,25 |
| | | | **7302.2** | 25 g | 26,35 |
| | | | **7302.3** | 100 g | 64,40 |
| **Titan yellow (C.I. 19540)** | Mg | 0,1 g in 100 ml ethanol (20 %) | **7739.1** | 5 g | 11,75 |
| | | | **7739.2** | 25 g | 24,65 |
| | | | **7739.3** | 100 g | 60,10 |
| **Xylenol orange tetrasodium salt** | Bi, Cd, Co, Cu, Fe, Hg, In, Pb, Sc, Th, Tl(III), V(V), Zn, Zr, rare earth metals | 0,1 g in 100 ml water | **2727.1** | 1 g | 27,85 |
| | | | **2727.2** | 5 g | 63,35 |
| | | | **2727.3** | 10 g | 102,05 |
| | | | **2727.4** | 50 g | 364,45 |
| **Xylidyl blue sodium salt** | Mg | 0,1 g in 100 ml water | **KK35.1** | 1 g | 39,25 |
| | | | **KK35.2** | 5 g | 166,65 |
| **Zincon** | Cu, Zn | 0,1 g in 100 ml ethanol (96 %) | **5563.1** | 1 g | 37,55 |
| | | | **5563.2** | 5 g | 124,60 |

For additional product data and safety information, see chapter Chemicals A-Z.



## Dyes

| Product | Soluble in | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Acid blue 93 (C.I. 42780)** | water | **4002.1** | 10 g | 74,75 |
| | | **4002.2** | 25 g | 161,80 |
| **Brilliant black BN (C.I. 28440)** | water | **7643.1** | 5 g | 19,25 |
| | | **7643.2** | 25 g | 36,05 |
| | | **7643.3** | 100 g | 97,75 |
| **Brilliant yellow (C.I. 24890)** | water | **7645.1** | 5 g | 20,35 |
| | | **7645.2** | 25 g | 31,75 |
| | | **7645.3** | 100 g | 73,00 |
| **Chromotrope® FB (C.I. 14720)** | water | **7648.1** | 5 g | 14,20 |
| | | **7648.2** | 25 g | 24,20 |
| | | **7648.3** | 100 g | 60,10 |
| **Cotton blue (C.I. 42780)** | water | **5750.1** | 10 g | 19,25 |
| **Crocein orange G (C.I. 15970)** | water | **7652.1** | 5 g | 14,20 |
| | | **7652.2** | 25 g | 24,20 |
| | | **7652.3** | 100 g | 60,10 |
| **Curcumin** | ethanol, acetic acid, DMSO | **9469.1** | 10 g | 25,70 |
| | | **9469.2** | 25 g | 46,15 |
| | | **9469.3** | 50 g | 76,25 |
| **Fat brown RR (C.I. 11285)** | fat/oil | **7687.1** | 5 g | 13,90 |
| | | **7687.2** | 25 g | 23,15 |
| | | **7687.3** | 100 g | 60,10 |
| **Fluorescein disodium salt (C.I. 45350)** | ethanol, water | **5283.3** | 25 g | 21,00 |
| | | **5283.1** | 100 g | 33,90 |
| | | **5283.2** | 500 g | 106,45 |
| **Indigo (C.I. 73000)** | acetic acid | **3903.1** | 50 g | 38,60 |
| | | **3903.3** | 100 g | 60,10 |
| | | **3903.2** | 500 g | 246,20 |
| **Lissamine green B (C.I. 44090)** | water | **7707.1** | 5 g | 14,20 |
| | | **7707.2** | 25 g | 24,20 |
| | | **7707.3** | 100 g | 60,10 |
| **Nigrosin, soluble in alcohol (C.I. 50415)** | ethanol | **7716.1** | 5 g | 13,90 |
| | | **7716.2** | 25 g | 24,65 |
| | | **7716.3** | 100 g | 48,95 |
| **Nigrosin, water soluble (C.I. 50420)** | water | **7718.1** | 25 g | 13,90 |
| | | **7718.2** | 100 g | 35,40 |
| **Nile blue A (C.I. 51180)** | fat/oil | **4377.2** | 5 g | 17,10 |
| | | **4377.1** | 10 g | 28,95 |
| | | **4377.3** | 25 g | 46,15 |
| **Quercetin dihydrate (C.I. 75670)** | acetic acid, hot ethanol | **7138.1** | 25 g | 50,00 |
| | | **7138.2** | 100 g | 160,20 |
| **Sudan II (C.I. 12140)** | fat/oil | **7732.1** | 5 g | 11,75 |
| | | **7732.2** | 25 g | 24,65 |
| | | **7732.3** | 100 g | 57,95 |
| **Sudan III (C.I. 26100)** | fat/oil | **4711.2** | 50 g | 23,15 |
| | | **4711.1** | 100 g | 44,00 |
| **Sudan IV (C.I. 26105)** | fat/oil | **0327.1** | 25 g | 22,50 |
| | | **0327.2** | 50 g | 32,15 |
| **Sudan black B (C.I. 26150)** | fat/oil | **0292.1** | 10 g | 22,50 |
| | | **0292.2** | 25 g | 32,15 |
| | | **0292.3** | 50 g | 50,45 |
| **Sudan orange G (C.I. 11920)** | chloroform | **7733.1** | 5 g | 11,75 |
| | | **7733.2** | 25 g | 24,65 |
| | | **7733.3** | 100 g | 57,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Further detection reagents

| Product | Application | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Alizarin complexone dihydrate** | Detection reagent for fluoride | ≥97 %, p.a. | **7634.1** | 1 g | 31,10 |
| | | | **7634.2** | 5 g | 96,65 |
| | | | **7634.3** | 10 g | 160,20 |
| **4'-Aminoacetophenone** | For determination of nicotinic acid and vitamin B | ≥99 % | **3973.2** | 10 g | 13,45 |
| | | | **3973.1** | 25 g | 20,35 |
| **4-Aminoantipyrine** | Reagent for phenol detection | ≥98 %, p.a., ACS | **2671.1** | 10 g | 23,15 |
| | | | **2671.2** | 25 g | 34,95 |
| | | | **2671.3** | 100 g | 60,75 |
| **1-Amino-2-hydroxy-4-naphthalenesulfonic acid** | For determination of phosphate | ≥97 %, p.a., ACS | **2672.1** | 25 g | 39,70 |
| | | | **2672.2** | 100 g | 99,45 |
| **Ammonium benzoate** | For precipitation of aluminium and iron | ≥98 %, extra pure | **9836.1** | 100 g | 16,70 |
| | | | **9836.2** | 500 g | 44,65 |
| | | | **9836.3** | 1 kg | 78,40 |
| **Azomethine H hydrate** | Reagent for the determination of boron | ≥95 %, p.a. | **CP99.1** | 5 g | 98,80 |
| **Bathocuproine sulphonate disodium salt hydrate** | Reagent for copper | ≥98 % | **KK28.1** | 250 mg | 35,40 |
| | | | **KK28.2** | 1 g | 111,70 |
| **Bathophenanthroline** | Reagent for iron | ≥99 %, p.a. | **KK29.1** | 500 mg | 47,20 |
| | | | **KK29.2** | 1 g | 83,75 |
| **4-Chloro-7-nitro-benzofurazan** | For detection of amino acids, some alkaloids, sulphonamides | ≥99 %, p.a. | **KK31.1** | 1 g | 17,10 |
| | | | **KK31.2** | 5 g | 47,85 |
| **Chromotropic acid disodium salt dihydrate** | Reagents for silver, boron, chrome, mercury, titanium, chromate, formaldehyde, nitrile and nitrate | ≥98,5 %, p.a., ACS | **KK30.1** | 10 g | 34,95 |
| | | | **KK30.2** | 25 g | 75,15 |
| **2,6-Dichlorophenol-indophenol sodium salt hydrate** | For determination of ascorbic acid | p.a., ACS | **HN79.1** | 1 g | 16,70 |
| | | | **HN79.2** | 5 g | 36,45 |
| | | | **HN79.3** | 25 g | 149,45 |
| **1,8-Dihydroxy-2-(4-sulfophenylazo)-naphthalene-3,6-disulfonic acid trisodium salt** | Reagent for fluoride | p.a., ACS | **2605.1** | 10 g | 25,70 |
| | | | **2605.2** | 25 g | 45,05 |
| **4-(Dimethylamino)-benzaldehyde** | Reagent for the detection of nitrogen containing compounds | ≥98 %, p.a., ACS | **X867.1** | 25 g | 43,55 |
| | | | **X867.2** | 100 g | 109,55 |
| **5-(4-Dimethylaminobenzylidene)rhodanine** | Analytical reagent for silver | p.a. | **KK23.1** | 5 g | 25,30 |
| | | | **KK23.2** | 10 g | 39,70 |
| | | | **KK23.3** | 50 g | 155,90 |
| **5,5'-Dithio-bis-(2-nitrobenzoic acid)** | For determination of thiol groups | ≥98 %, p.a. | **6334.1** | 1 g | 19,90 |
| | | | **6334.2** | 5 g | 55,80 |
| | | | **6334.3** | 25 g | 203,20 |
| **Hydrazinium sulphate** | Reducing agent; reagent for separation of Po and Te | ≥99 %, p.a., ACS | **HN96.1** | 100 g | 19,25 |
| | | | **HN96.2** | 500 g | 52,60 |
| **Isatin** | Reagent for the spectrophotometric determination of thiophene and proline | ≥98 %, for biochemistry | **4155.1** | 25 g | 12,40 |
| | | | **4155.2** | 100 g | 33,90 |
| **3-Methyl-2-benzothiazolinone hydrazone hydrochloride** | Analytical reagent for the qualitative determination of aldehydes | ≥98 %, p.a. | **8413.1** | 10 g | 142,45 |
| **1-Naphthol** | Reagent for carbohydrates | ≥99,5 %, p.a. | **KK14.1** | 50 g | 23,55 |
| | | | **KK14.2** | 100 g | 36,05 |
| **N-(1-Naphthyl)-ethylenediamine dihydrochloride** | For the detection of sulphonamide and the determination of nitrite | ≥99 %, p.a. | **4342.2** | 10 g | 34,30 |
| | | | **4342.1** | 25 g | 82,70 |
| | | | **4342.3** | 50 g | 138,70 |
| **Neocuproine hemihydrate** | Reagent for copper | ≥99 %, p.a. | **KK32.1** | 1 g | 21,00 |
| | | | **KK32.2** | 5 g | 72,60 |
| **Ninhydrin** | For the detection of amino acids | ≥99 %, p.a., ACS | **4378.1** | 25 g | 38,60 |
| | | | **4378.2** | 100 g | 99,90 |
| | | | **4378.3** | 500 g | 364,45 |
| **Phenylhydrazine hydrochloride** | Reagent for detection of sugar | ≥99 %, p.a. | **KK20.1** | 25 g | 19,25 |
| | | | **KK20.2** | 100 g | 51,10 |
| | | | **KK20.3** | 250 g | 113,45 |
| **meta-Phosphoric acid** | Reagent for protein, vitamines, urea and glucose | p.a., pieces (hyaline) | **CN91.1** | 100 g | 30,00 |
| | | | **CN91.2** | 250 g | 59,05 |
| | | | **CN91.3** | 500 g | 107,00 |
| | | | **CN91.4** | 1 kg | 193,40 |
| **Potassium hexacyanoferrate(II) trihydrate** | Reagent for the determination of Fe, Cu, Zn, protein. Preparation of Berlin blue | ≥99 %, p.a., ACS, ISO | **P745.1** | 500 g | 90,20 |
| | | | **P745.2** | 1 kg | 160,20 |
| | | | **P745.3** | 2,5 kg | 342,95 |
| **Potassium hexacyanoferrate(III)** | Oxidizing agent in organic synthesis. Reagent for the determination to Co, Zn and alkaloids | ≥99 %, p.a., ACS | **P746.3** | 100 g | 21,75 |
| | | | **P746.1** | 500 g | 69,80 |
| | | | **P746.2** | 1 kg | 126,35 |
| **Potassium hydrogen sulphate** | For disintegration of ores and silicates, detection of acetate. Cleaning of Pt crucibles | ≥98 %, p.a. | **P020.1** | 500 g | 29,60 |
| | | | **P020.2** | 1 kg | 52,15 |
| | | | **P020.3** | 2,5 kg | 111,70 |

| Product | Application | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **di-Potassium oxalate monohydrate** | For determination of Manganese | ≥98,5 %, p.a., ACS | **HN38.1** | 250 g | 28,50 |
| | | | **HN38.2** | 500 g | 46,80 |
| | | | **HN38.3** | 1 kg | 83,35 |
| **Resorcinol** | Reagent on alkaloids, aldehydes and invert sugar | ≥99 %, for biochemistry | **5727.1** | 100 g | 20,65 |
| | | | **5727.2** | 500 g | 53,25 |
| | | | **5727.3** | 1 kg | 92,35 |
| | | | **5727.4** | 2,5 kg | 198,90 |
| **Semicarbazide hydrochloride** | Reagent for aldehydes and ketones | ≥98 %, p.a. | **4681.1** | 100 g | 32,15 |
| | | | **4681.2** | 500 g | 115,60 |
| **Silver diethyldithiocarbamate** | Reagent for arsenic | ≥97 %, p.a. | **KK25.1** | 5 g | 44,00 |
| | | | **KK25.2** | 10 g | 78,40 |
| **Silver nitrate** | For detection of halogenides | ≥99,9 %, p.a. | **7908.1** | 50 g | 113,85 |
| | | | **7908.2** | 250 g | 471,95 |
| | | | **7908.3** | 1 kg | 1666,25 |
| **Sodium ammonium hydrogen phosphate tetrahydrate** | Reagent for Mg; phosphorus salt bead | ≥99 %, p.a. | **T882.1** | 500 g | 64,40 |
| | | | **T882.2** | 1 kg | 95,15 |
| | | | **T882.3** | 2,5 kg | 213,95 |
| **Sodium bismuthate** | Oxidation reagent, determination of manganese in iron and steel. | ≥85 %, p.a. | **4401.1** | 50 g | 46,15 |
| | | | **4401.2** | 100 g | 85,50 |
| | | | **4401.3** | 250 g | 185,45 |
| **Sodium diethyldithiocarbamate trihydrate** | Reagent for copper | p.a., ACS | **2601.1** | 25 g | 22,05 |
| | | | **2601.2** | 100 g | 39,25 |
| | | | **2601.3** | 500 g | 131,70 |
| **Sodium hexanitrocobaltate(III)** | Determination of potassium | p.a., ACS | **4409.1** | 25 g | 19,25 |
| | | | **4409.2** | 100 g | 52,60 |
| | | | **4409.3** | 250 g | 107,40 |
| **di-Sodium hydrogen phosphate** | Molecular biology; Reagent for the detection of Mg, Li, Pb and uric acid | ≥99 %, p.a., ACS, anhydrous | **P030.1** | 500 g | 31,10 |
| | | | **P030.2** | 1 kg | 50,00 |
| | | | **P030.3** | 2,5 kg | 94,10 |
| **Sodium molybdate dihydrate** | Reagent for alkaloids and for biochemical purposes | ≥99,5 %, p.a. | **0274.1** | 50 g | 18,20 |
| | | | **0274.2** | 100 g | 26,35 |
| | | | **0274.3** | 250 g | 47,20 |
| | | | **0274.4** | 1 kg | 170,95 |
| **Sodium nitroprusside dihydrate** | Reagent for Zn, $SO_2$, aldehydes | ≥99 %, p.a., ACS | **HN34.1** | 25 g | 27,45 |
| | | | **HN34.2** | 100 g | 72,60 |
| | | | **HN34.3** | 500 g | 282,20 |
| **Sodium salicylate** | Preservative; for determination of glucose at urine | ≥99 %, p.a. | **CP39.1** | 250 g | 26,35 |
| | | | **CP39.2** | 1 kg | 79,05 |
| **Sodium sulphite** | Reagent for detection of iodate in the presence of chlorate and bromate, for absorption of $NO_x$ in gas analysis | ≥98 %, p.a., ACS, anhydrous | **P033.1** | 500 g | 18,85 |
| | | | **P033.2** | 1 kg | 27,85 |
| | | | **P033.3** | 2,5 kg | 50,00 |
| **Sodium tetraphenyl borate** | Reagent for K, Pb, Cs, $NH_4$ and Alkaloids | ≥99,5 %, p.a., ACS | **4385.1** | 10 g | 40,75 |
| | | | **4385.2** | 25 g | 89,15 |
| | | | **4385.3** | 100 g | 278,45 |
| **Sodium thiosulphate pentahydrate** | For detection of hydrocyanic acid, quinine, chlorate hydrate and cobalt | ≥99,5 %, p.a., ACS | **P034.1** | 500 g | 20,35 |
| | | | **P034.2** | 1 kg | 31,75 |
| | | | **P034.3** | 2,5 kg | 63,35 |
| | | | **P034.5** | 25 kg | 439,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Karl Fischer Reagents Roti®hydroquant



There are two established Karl Fischer methods of calculating the water content of a substance: Volumetric analysis and coulometric analysis.

Which method is chosen depends primarily on the water content that the sample is expected to have. Making the right choice is vital for obtaining reliable and reproducible results. ROTH offers compatible reagents for both of these methods.

## Volumetric reagents

Karl Fischer volumetric analysis is recommended if the water content of a sample ought to be between 0,1 % and 100 %. Volumetric analysis is performed by measuring the amount of Karl Fischer reagent that needs to be added to a substance until the end point of the titration has been reached. In alcoholic solutions, water reacts 1:1 with iodine in the presence of sulphur dioxide. Methanol and sulphur dioxide form an acid ester that is neutralised by the base (e.g. imidazole, hereafter referred to as "RN" for simplicity).

$CH_3OH + SO_2 + RN \rightarrow [RNH]SO_3CH_3$

In the titration process, iodine is added which reacts with water to be reduced to colourless iodide:

$[RNH]SO_3CH_3 + H_2O + I_2 + 2\ RN \rightarrow [RNH]SO_4CH_3 + 2\ [RNH]I$

This reaction continues until there is no water left. The end point is determined by a change in colour due to a surplus of iodine and measured using a potentiometer.

### Single-component reagents

Single-component reagents contain all the substances required for the Karl Fischer reaction in a single solution. They are easy to use and provide for a high level of flexibility when choosing a solvent for the sample type. The high reactivity of the components means that the titre for single-component reagents must always be determined before titration is carried out.
Reactions with standard reagents containing methanol are not possible for samples that contain aldehydes or ketones, as the methanol will react with them to produce extra water in a secondary reaction.
ROTH offers methanol-free reagents that are suitable for substances containing aldehydes and ketones.

| Product | Purity | Application | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|---|
| **Karl Fischer Roti®hydroquant Working Medium K** | for KF titration for aldehydes and ketones | Solvent component | **5215.1** | 1 l | glass | 69,35 |
| **Karl Fischer Roti®hydroquant C2** | 2 mg $H_2O$/ml, free of pyridine | Single-component reagent | **T194.1** | 1 l | glass | 96,65 |
| **Karl Fischer Roti®hydroquant C5** | 5 mg $H_2O$/ml, free of pyridine | Single-component reagent | **T190.1** | 1 l | glass | 104,20 |
| **Karl Fischer Roti®hydroquant C5 K** | 5 mg $H_2O$/ml, for aldehydes and ketones | Single-component reagent | **5211.1** | 1 l | glass | 108,50 |
| **Karl Fischer methanol Roti®hydroquant D** | dry, for KF titration | Solvent component | **T193.1** | 1 l | glass | 25,30 |
| | | | **T193.2** | 2,5 l | glass | 48,95 |

### Two-components reagents

In two-component systems, the substances crucial for the reaction are separated, with some in the solvent component and some in the titration component. Separating the substances gives the system a longer shelf life and means that the titre needs to be determined less frequently.

| Product | Purity | Application | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|---|
| **Karl Fischer Roti®hydroquant S** | for KF titration | Solvent component | **T192.1** | 1 l | glass | 44,65 |
| **Karl Fischer Roti®hydroquant S CM** | for KF titration | Solvent component | **5218.1** | 1 l | glass | 37,55 |
| **Karl Fischer Roti®hydroquant T2** | 2 mg $H_2O$/ml, free of pyridine | Titrant component Two-components reagent | **X947.1** | 1 l | glass | 51,50 |
| **Karl Fischer Roti®hydroquant T5** | 5 mg $H_2O$/ml, free of pyridine | Titrant component Two-components reagent | **T191.1** | 1 l | glass | 45,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

The volumetric Karl Fischer reagents are suitable for water contents between 0,1 % and 100 %. Free water and water of hydration can be determined, respectively. Our solutions are based on methanol and free of pyridine.

**Using single-component reagents:**
Add methanol to the reaction vessel and titrate to dryness with the C-component. Then add the sample and titrate again to dryness.

**Using two-component reagents:**
Add solvent S to the reaction vessel and titrate to dryness with the T-component. Then add the sample and titrate again to dryness.

### Table illustrating the uses of Karl Fischer Roti®hydroquant volumetric reagents

| | | Solvent components | | | |
|---|---|---|---|---|---|
| | | Methanol (T193) | Working medium K (5215) | S (T192) | S CM (5218) |
| Titration components | C2 (T194) | X | | | |
| | C5 (T190) | X | | | |
| | C5 K (5211) | | X | | |
| | T2 (X947) | | | X | X |
| | T5 (T191) | | | X | X |

# Standards

Water standards with a defined water content are required to determine the titre for the reagents used (C or T components). Either a solid or a liquid standard can be chosen.




## Karl Fischer Roti®hydroquant standard sodium tartrate dihydrate

**≥99 %, for KF titration**

Primary standard substance for Karl Fischer titration
$C_4H_4Na_2O_6 \cdot 2\ H_2O$
M 230,08 g/mol

**Guarantee analysis:**
Assay (perchloric acidim). ..... 99,0-101,0 %
Loss on drying (150 °C). ..... 15,66 ±0,05 %

| | | | |
|---|---|---|---|
| **5229.1** | 100 g | glass | 37,55 € |

## Karl Fischer Roti®hydroquant water standard 10.0

**10 mg $H_2O$/g**

Water standard

**Danger** H226-H315-H318-H335-H336

**Guarantee analysis:**
Water content. ..... 10,0 ±0,1 mg $H_2O$/g

| | | | |
|---|---|---|---|
| **5219.1** | 10 x 10 ml | glass | 59,05 € |

## Karl Fischer Roti®hydroquant water standard 1.0

**1 mg $H_2O$/g**

Water standard for KF coulometry

**Warning** H226

**Guarantee analysis:**
Water content. ..... 1,0 ±0,03 mg $H_2O$/g

| | | | |
|---|---|---|---|
| **9971.1** | 10 x 4 ml | glass | 48,30 € |

# Coulometric reagents

Karl Fischer coulometric titration is suitable for substances with a low water content (i.e. <0,1 %) and, for example, for expensive substances that can only be examined in small quantities.

In the coulometric titration process, the iodine required is produced directly in situ at the electrode in the reaction vessel through the anodic oxidation of iodide. Hydrogen is produced at the cathode. The measuring cell contains an anode and cathode chamber, which can be separated by a diaphragm. This means that the titration cell can be equipped with diaphragms or be diaphragm-free.

ROTH offers suitable reagents for both models.

### For cells with diaphragms:

**Anolyte:**

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Karl Fischer Roti®hydroquant coulo A** | for coulometric KF titration | **9957.1** | 500 ml | glass | 75,15 |
| **Karl Fischer Roti®hydroquant coulo Oil** | for coulometric KF titration | **9960.1** | 100 ml | glass | 26,80 |

**Catholyte:**

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Karl Fischer Roti®hydroquant coulo CG** | for coulometric KF titration | **9861.1** | 100 ml | glass | 75,15 |

### For cells without diaphragms:

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Karl Fischer Roti®hydroquant coulo AG** | for coulometric KF titration | **9854.1** | 500 ml | glass | 75,15 |

### Table illustrating the uses of Karl Fischer Roti®hydroquant coulometric reagents:

| | **coulo CG (9861)** |
|---|---|
| **coulo A (9957)** | ✔ for cells with diaphragms. |
| **coulo Oil (9960)** | ✔ for cells with diaphragms. |
| | |
| **coulo AG (9854)** | Can be used without additional reagents. For cells without diaphragms. |

# Water analysis



Roth offers the essential reagents for your water analysis.
On the following pages you find
- determination of water hardness
- determination of adsorbable organic halogen compounds (AOX)
- determination of chemical oxygen demand (COD)
- determination of biological oxygen demand (BOD)
- potassium permanganate index
- determination of surfactants
- hydrocarbon index

## Determination of water hardness

Water contains a whole host of salts and other compounds in addition to the gases dissolved in it (oxygen, nitrogen, carbon dioxide). Its most important constituents are magnesium and calcium in the form of their chlorides, sulphates and bicarbonates. These dissolved salts are known as hardeners. The bicarbonates precipitate in the heat (during boiling) as carbonates and are known as carbonate hardness or temporary hardness. The sulphate and chloride compounds are known as permanent hardness or non-carbonate hardness. Total hardness describes the concentration of alkaline earth metal ions in water. The unit of measurement for water hardness used to be 1 °dH (German degrees of hardness), which corresponds to 10,00 mg CaO or 7,19 mg MgO in one litre of water. Today we use millimoles per litre (mmol/l), whereby 1 °dH corresponds to 0,18 mmol/l of earth metal ions and 1 mmol/l corresponds to 5,6 °dH.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Buffer solution pH 10,00 for complexometry** | buffer solution, ready to use | **T188.1** | 1 l | plastic | 24,20 |
| **EDTA disodium salt solution** | 0,01 mol/l - 0,01 N | **CN34.1** | 1 l | plastic | 24,20 |
| | | **CN34.2** | 5 l | ROTI®CUBE | 71,95 |
| | | **CN34.3** | 10 l | ROTI®CUBE | 130,00 |
| | 0,1 mol/l - 0,1 N | **K714.1** | 1 l | glass | 22,05 |
| | | **K714.2** | 5 l | plastic | 66,15 |
| | | **K714.3** | 5 l | ROTI®CUBE | 71,95 |
| | | **K714.4** | 10 l | ROTI®CUBE | 128,90 |
| **EDTA disodium salt solution A** | 0,1 mol/l - 0,1 N | **T136.1** | 1 l | glass | 29,60 |
| **EDTA disodium salt solution B** | 0,01783 mol/l - 0,01783 N | **T137.1** | 1 l | glass | 24,20 |
| | | **T137.2** | 5 l | ROTI®CUBE | 71,95 |
| | | **T137.3** | 10 l | ROTI®CUBE | 130,00 |
| **Eriochrome® black T (C.I. 14645)** | p.a. NEW | **0112.1** | 25 g | glass | 15,60 |
| | | **0112.2** | 50 g | glass | 26,80 |
| | | **0112.3** | 100 g | glass | 48,30 |

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Eriochrome® black T (C.I. 14645), trituration** | Indicator 1 % in NaCl, trituration | **K860.2** | 25 g | plastic | 19,90 |
| | | **K860.1** | 50 g | plastic | 28,50 |
| | | **K860.3** | 100 g | plastic | 51,50 |
| **Hydrochloric acid** | 0,1 mol/l - 0,1 N | **K024.1** | 1 l | plastic | 19,05 |
| | | **K024.2** | 5 l | plastic | 56,45 |
| | | **K024.3** | 5 l | ROTI®CUBE | 61,20 |
| | | **K024.4** | 10 l | ROTI®CUBE | 90,20 |
| | 1 mol/l - 1 N | **K025.1** | 1 l | plastic | 19,05 |
| | | **K025.2** | 5 l | plastic | 56,45 |
| | | **K025.3** | 5 l | ROTI®CUBE | 61,20 |
| | | **K025.4** | 10 l | ROTI®CUBE | 90,20 |
| **Murexide (C.I. 56085)** | ACS, for complexometry | **T124.1** | 5 g | glass | 24,65 |
| | | **T124.2** | 25 g | glass | 57,95 |
| | | **T124.3** | 50 g | glass | 95,60 |

For additional product data and safety information, see chapter Chemicals A-Z.

### Indicator buffer tablets

**for determination of water hardness with EDTA**

**Warning** H317

Dissolve one tablet in 100 ml water sample and bring to pH 11 with approx. 1 ml ammonia solution 30 % (art. CP17). Titrate with EDTA disodium salt volumetric solution (art. T136 or T137) from red to green.

**Type analysis:**

Suitability as indicator. ..... complies
Disintegration time (25 °C) ..... 100 s

| | | |
|---|---|---|
| **7649.1** | 100 pieces | 19,90 € |
| **7649.2** | 500 pieces | 47,20 € |






### Water hardness kit

Testing reagent is added drop by drop to 5 ml water sample until colour changes. Each drop equals 1 °dH. Pack with 2 x 15 ml reagent. Test reagent in dropping bottle.

**Warning** H226-H319-H336

| | | |
|---|---|---|
| **0519.1** | 2 x 15 ml | 19,60 € |

# Determination of adsorbable organic halogen compounds (AOX)

AOX (adsorbable organic halogens, where X = Cl, Br, I) is a sum parameter that describes the amount of organic halogen compounds in substances such as water, soil and sewage sludge. This parameter is used primarily in waste water analysis. The method for calculating AOX levels is set out in DIN EN ISO 9562. The quantity of organically bound halogens in a water sample is measured using either the shaking method or the column method. In the shaking method, the AOX in a sample are bound to activated carbon by shaking. In the column method, the AOX in a sample are bound to activated carbon by the action of flushing the sample through a glass column filled with activated carbon. The quantity of activated carbon, which is defined precisely in each case, is then burned in an oxygen chamber and the hydrogen halide released is measured by means of argentometry. The amount of fluoroorganic compounds present cannot be measured argentometrically.

## Charcoal
**for the determination of AOX (column method)**

**Type analysis:**
Iodine value. .....≥1050 mg/g
Chloride (Cl). .....≤0,0005 %
Particle size. .....~50-150 µm

| | | | |
|---|---|---|---|
| **1299.1** | 10 g | glass | 76,90 € |

## Charcoal
**for the determination of AOX (shaking method)**

**Type analysis:**
Iodine value. .....≥1050 mg/g
Chloride (Cl). .....≤0,0005 %
Particle size. .....≤50 µm

| | | | |
|---|---|---|---|
| **1319.1** | 10 g | glass | 71,95 € |

## 4-Chlorophenol solution
**200 mg AOX/l**
For determination of AOX acc. to EN ISO 9562:2004, DEV H14

| | | | |
|---|---|---|---|
| **2495.1** | 100 ml | glass | 59,05 € |

## Potassium iodide
**≥99,5 %, p.a., ISO**
Reagent used in iodometry and for the preparation of iodine-starch paper.

| | | | |
|---|---|---|---|
| **6750.1** | 250 g | glass | 82,25 € |
| **6750.3** | 500 g | glass | 142,45 € |
| Original pack 6 x 500 g | | | 135,33/500 g |
| **6750.2** | 1 kg | glass | 256,95 € |
| Original pack 6 x 1 kg | | | 244,10/1 kg |

## Hydrochloric acid (0,01 N)
**0,01 mol/l - 0,01 N volumetric standard solution**

| | | | |
|---|---|---|---|
| **N075.1** | 1 l | plastic | 19,25 € |
| Original pack 6 x 1 l | | | 18,29/1 l |

## Nitric acid 65 %
**ROTIPURAN® ≥65 %, p.a., ISO**
**Danger** H272-H290-H314-EUH071

| | | | |
|---|---|---|---|
| **4989.3** | 250 ml | glass | 18,85 € |
| **4989.1** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |
| **4989.2** | 2,5 l | glass | 57,95 € |
| Original pack 4 x 2,5 l | | | 55,05/2,5 l |

## Sodium nitrate
**≥99 %, p.a., ACS, ISO**
Oxidizing dissolving agent
**Warning** H272-H319

| | | | |
|---|---|---|---|
| **A136.1** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **A136.2** | 1 kg | plastic | 45,70 € |
| Original pack 6 x 1 kg | | | 43,42/1 kg |
| **A136.3** | 2,5 kg | plastic | 100,55 € |

## Sodium sulphite
**≥98 %, p.a., ACS, anhydrous**
For removal of chlorine and dissolution of cellulose, reagent for detection of iodate in the presence of chlorate and bromate, for absorption of $NO_x$ in gas analysis.

| | | | |
|---|---|---|---|
| **P033.1** | 500 g | plastic | 18,85 € |
| Original pack 6 x 500 g | | | 17,91/500 g |
| **P033.2** | 1 kg | plastic | 27,85 € |
| Original pack 6 x 1 kg | | | 26,46/1 kg |
| **P033.3** | 2,5 kg | plastic | 50,00 € |

## Starch 1 % indicator solution
**in water, stabilized**

| | | | |
|---|---|---|---|
| **T133.1** | 500 ml | plastic | 24,20 € |

## Sulphuric acid 96 %
**ROTIPURAN® 96 %, p.a., ISO**
**Danger** H290-H314

| | | | |
|---|---|---|---|
| **4623.3** | 250 ml | glass | 18,85 € |
| **4623.1** | 1 l | glass | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |
| **4623.4** | 1 l | plastic | 27,85 € |
| Original pack 6 x 1 l | | | 26,46/1 l |
| **4623.2** | 2,5 l | glass | 61,20 € |
| Original pack 4 x 2,5 l | | | 58,14/2,5 l |
| **4623.5** | 2,5 l | plastic | 64,40 € |
| Original pack 4 x 2,5 l | | | 61,18/2,5 l |
| **4623.6** | 10 l | plastic | 117,20 € |

# Determination of chemical oxygen demand (COD)

COD (chemical oxygen demand) is a measure of all the oxidisable components in water under specific conditions. The water sample is mixed with sulphuric acid and heated together with a defined quantity of potassium dichromate, with silver sulphate added as the catalyst. Chloride must be removed beforehand or masked with mercury sulphate. The remaining potassium dichromate is measured by means of titration, using an ammonium iron(II) sulphate solution and ferroin as the indicator. The equivalent amount of oxygen can then be calculated from the amount of potassium dichromate that is used up.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Ammonium iron(II) sulphate solution** | 0,12 mol/l - 0,12 N volumetric solution, for determination of COD | **KK60.1** | 1 l | plastic | 45,05 |
| **Ferroin indicator solution** | for sewage analysis, for determination of COD | **T131.1** | 100 ml | glass | 31,10 |
| **Mercury(II) sulphate solution** | 80 g/lin sulphuric acid potassium dichromate standard solution. 0,02 mol/l volumetric solution, for determination of COD | **X871.1** | 1 l | glass | 62,90 |
| **Potassium dichromate solution** | 0,02 mol/l - 0,12 N volumetric standard solution, for determination of COD | **P720.1** | 1 l | plastic | 25,30 |
| | 1/24 mol/l - 0,25 N volumetric standard solution for determination of COD | **P721.1** | 1 l | glass | 30,00 |
| **Silver sulphate solution** | 10 g/l in sulphuric acid, for determination of COD | **X870.1** | 1 l | glass | 64,40 |

# Determination of biological oxygen demand (BOD)

BOD (biochemical oxygen demand) is a measure of the amount of oxygen that microorganisms need to break down the organic material in a water sample over a specific period of time. It is important to calculate the oxygen concentration at the start and end of the measuring time, which is usually five days and is expressed as an index ($BOD_5$). Chemical, electrochemical or physical methods are used for this calculation.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Manganese(II) chloride tetrahydrate** | ≥99 %, p.a. | **T881.3** | 100 g | plastic | 16,05 |
| | | **T881.1** | 500 g | plastic | 38,60 |
| | | **T881.2** | 1 kg | plastic | 61,20 |
| **Manganese(II) sulphate monohydrate** | ≥99 %, p.a., ACS | **4487.1** | 250 g | plastic | 28,95 |
| | | **4487.2** | 500 g | plastic | 50,45 |
| **Sodium azide** | ≥99 %, p.a. | **K305.1** | 100 g | plastic | 42,90 |
| | | **K305.2** | 250 g | plastic | 76,90 |
| | | **K305.3** | 500 g | plastic | 138,70 |
| **Sodium hydroxide** | ≥99 %, p.a., ISO, in pellets | **6771.3** | 500 g | plastic | 17,10 |
| | | **6771.1** | 1 kg | plastic | 25,70 |
| | | **6771.2** | 5 kg | plastic | 92,35 |
| | | **6771.5** | 25 kg | plastic | 332,20 |
| **Sodium thiosulphate pentahydrate** | ≥99,5 %, p.a., ACS | **P034.1** | 500 g | plastic | 20,35 |
| | | **P034.2** | 1 kg | plastic | 31,75 |
| | | **P034.3** | 2,5 kg | plastic | 63,35 |
| | | **P034.5** | 25 kg | plastic | 439,70 |
| **Starch 1 % indicator solution** | in water, stabilized | **T133.1** | 500 ml | plastic | 24,20 |
| **Sulphuric acid** | 96 %, p.a., ISO | **4623.3** | 250 ml | glass | 18,85 |
| | | **4623.1** | 1 l | glass | 30,65 |
| | | **4623.4** | 1 l | plastic | 27,85 |
| | | **4623.2** | 2,5 l | glass | 61,20 |
| | | **4623.5** | 2,5 l | plastic | 64,40 |
| | | **4623.6** | 10 l | plastic | 117,20 |
| **Zinc iodide** | ≥98 %, powder | **2730.1** | 25 g | glass | 23,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Potassium permanganate index

The permanganate index measuring method is carried out in the same way as the COD method, only with potassium permanganate instead of potassium dichromate. This technique is used in drinking water analysis.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Oxalic acid dihydrate** | ≥99,5 %, p.a., ACS, ISO | **T113.1** | 500 g | plastic | 31,10 |
| | | **T113.2** | 1 kg | plastic | 51,50 |
| | | **T113.3** | 2,5 kg | plastic | 118,15 |
| **Potassium permanganate solution** | 0,02 mol/l - 0,1 N volumetric standard solution | **K019.1** | 1 l | glass | 23,55 |
| | 0,1 mol/l - 0,5 N volumetric standard solution | **KK69.1** | 1 l | glass | 27,45 |
| **Sulphuric acid** | 96 %, p.a., ISO | **4623.3** | 250 ml | glass | 18,85 |
| | | **4623.1** | 1 l | glass | 30,65 |
| | | **4623.4** | 1 l | plastic | 27,85 |
| | | **4623.2** | 2,5 l | glass | 61,20 |
| | | **4623.5** | 2,5 l | plastic | 64,40 |
| | | **4623.6** | 10 l | plastic | 117,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Determination of surfactants

Benzethonium chloride solution is used to measure anionic detergents. In this method, the anionic detergent and the cationic detergent form a 1:1 salt in dichloromethane. The end point of the titration is indicated by methylene blue.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Benzethonium chloride solution** | 0,004 mol/l - 0,004 M volumetric standard solution | **9217.1** | 1 l | plastic | 24,20 |
| **Dichloromethane** | ≥99,5 %, p.a., ACS, ISO | **6053.3** | 100 ml | glass | 15,60 |
| | | **6053.1** | 1 l | glass | 35,40 |
| | | **6053.2** | 2,5 l | glass | 64,40 |
| | | **6053.4** | 10 l | tinplate | 160,20 |
| | | **6053.5** | 25 l | tinplate | 310,70 |
| **Dimidium bromide** | ≥95 %, for biochemistry | **2217.1** | 500 mg | glass | 93,00 |
| **Methylene blue (C.I. 52015)** | - | **A514.1** | 10 g | glass | 19,60 |
| | | **A514.2** | 50 g | glass | 46,15 |
| | | **A514.3** | 100 g | glass | 75,15 |

# Determination of the hydrocarbon index



The hydrocarbon index is defined as the total of all organic substances that can be extracted with hexane, but cannot be adsorbed in Florisil® (magnesium sulphate). On a covalent GC column, these elute between n-decane and n-tetracontane and have a boiling range of 175-525 °C. These include heating oils, diesel fuels, kerosene, lubricants and transmission fluids. Benzines are not detected using this method. ROTH offers an extensive range of products for the determination of the hydrocarbon index in accordance with **EN ISO 9377-2-Mod. (DIN H53)**.

## Standards

Acc. to **ISO 9377-2-Mod. (DIN H53)**.

- Manufactured in accordance with **ISO Guide 34** in an accredited environment
- Tested in a laboratory accredited to **ISO/IEC 17025**
- Ideal for calibration of GC-FID, GC-TCD, GC-ECD, GC-MS, GC-MS-MS, LC-UV, LC-MS and LC-MS-MS

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **n-Alkane standard solution (C10-C40, all even)** | 16 components (each 50 mg/l) in n-hexane | **1772.1** | 1 ml | glass ampoule | 105,25 |
| | | **1772.2** | 5 ml | glass ampoule | 155,90 |
| **n-Alkane standard solution (C10-C40, all even)** | 16 components (each 100 mg/l) in n-hexane/petroleum ether (1/1) | **9331.1** | 5 ml | glass ampoule | 198,90 |
| **n-Alkane standard solution (C7, C8, C9, C10-C40, all even)** | 19 components (each 50 mg/l) in isooctane | **9629.1** | 5 ml | glass ampoule | 177,40 |
| **Extraction solvent stock solution** | 20 µl/l n-decane and 20 mg/l n-tetracontane in n-hexane | **1750.2** | 10 ml | glass ampoule | 87,65 |
| **Florisil® quality control standard** | 1000 mg/l mineral oil and 1000 mg/l diesel in n-hexane | **9334.1** | 5 ml | glass ampoule | 61,85 |
| **Standard mixture of mineral oils** | 500 mg/l mineral oil and 500 mg/l diesel in acetone | **1774.2** | 5 ml | glass ampoule | 99,90 |
| **Standard mixture of mineral oils** | 5000 mg/l mineral oil and 5000 mg/l diesel in n-hexane | **1773.2** | 5 ml | glass ampoule | 87,65 |
| **Stearyl stearate test solution** | 2000 mg/l in n-hexane | **1760.2** | 10 ml | glass ampoule | 117,20 |

## Additional chemicals for determination of the hydrocarbon index

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Acetone** | ≥99,9 %, Pestilyse® plus | **7535.1** | 2,5 l | glass | 54,75 |
| **Florisil®** | for Hydrocarbon Index analysis, 60-100 mesh | **CN39.1** | 100 g | plastic | 40,75 |
| | | **CN39.3** | 500 g | plastic | 137,10 |
| | | **CN39.2** | 1 kg | plastic | 216,65 |
| | | **CN39.4** | 2,5 kg | plastic | 428,40 |
| **n-Hexane** | ≥95 %, GC Ultra Grade | **KK48.1** | 2,5 l | glass | 100,55 |
| | ≥97,5 %, Pestilyse® | **T165.2** | 1 l | glass | 42,90 |
| | | **T165.1** | 2,5 l | glass | 98,40 |
| | | **T165.3** | 4 l | glass | 111,70 |
| | ≥96 %, Pestilyse® plus | **7567.1** | 2,5 l | glass | 95,15 |
| **Hydrochloric acid** | ≥25 %, p.a., ISO | **6331.1** | 1 l | glass | 18,20 |
| | | **6331.3** | 1 l | plastic | 15,60 |
| | | **6331.2** | 2,5 l | glass | 31,10 |
| | | **6331.4** | 2,5 l | plastic | 27,45 |
| **Magnesium sulphate heptahydrate** | ≥99 %, p.a., ACS | **P027.1** | 500 g | plastic | 24,20 |
| | | **P027.2** | 1 kg | plastic | 38,60 |
| | | **P027.3** | 2,5 kg | plastic | 71,50 |
| **Petroleum ether 40-60 °C** | Pestilyse® plus | **7588.1** | 2,5 l | glass | 69,35 |
| | Pestilyse® | **T170.2** | 1 l | glass | 33,25 |
| | | **T170.1** | 2,5 l | glass | 69,35 |
| | | **T170.3** | 4 l | glass | 95,60 |
| **Sodium sulphate** | ≥99 %, p.a., ACS, granules, anhydrous | **0966.1** | 500 g | plastic | 20,65 |
| | | **0966.2** | 1 kg | plastic | 30,00 |
| | | **0966.3** | 5 kg | plastic | 124,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

## SPE glass column CHROMABOND® $Na_2SO_4$/Florisil®



### SPE-glass column CHROMABOND® $Na_2SO_4$/Florisil®

**Extraction of hydrocarbons from water according to DIN H53 / ISO DIS 9377-4**

Special combination phase of sodium sulphate and Florisil®

**Recommended appllication:** Hydrocarbons from drinking, surface and waste water

| Volume (ml) | Adsorbent weight (mg) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| 6 | 2000/2000 | **N744.1** | 30 | 222,00 |
| 6 | 2000/2000 BIG PACK | **N744.2** | 250 (5x50) | 1325,00 |

▶ GC capillary columns ROTI®CAP-1, ROTI®CAP-5 and ROTI®CAP-5HT see page 1563

# Analysis of Food

ROTH also offers reagents suitable for food analysis.
On the following pages, you will find the determination of
- Nitrogen according to Kjeldahl
- Sugar
- Mercury
- Trichinae
- Fat

and the determination of the
- Iodine value
- Acid value
- Peroxide value
- Saponification value




## Determination of nitrogen according to Kjeldahl

The most common technique for measuring the amount of nitrogen in organic matter is the Kjeldahl method, which is used in a wide range of sectors such as environmental analysis, food analysis, water analysis and agricultural analysis, as well as in the pharmaceutical and chemical industries.
In this traditional method, a precisely weighed sample is broken down using concentrated sulphuric acid, a process which digests its organic contents and reacts nitrogen to form ammonium sulphate.

$$(CHNO)_{(s)} \xrightarrow{H_2SO_4} CO_{2\,(g)} + SO_{2\,(g)} + H_2O_{\,(g)} + NH_4SO_{4\,(solv,\,H_2SO_4)}$$

A catalyst or catalyst mixture consisting of copper, selenium, mercury and/or titanium is added to speed up the reaction. Sodium or potassium sulphate is used to give the sulphuric acid a higher boiling point.
If the nitrogen is contained in a nitro, nitroso or azo compound, however, the mixture must be reduced with zinc before digestion takes place.
The nitrogen is now present in the sulphuric acid as ammonium sulphate. Adding a strong base (such as NaOH) neutralises the sulphuric acid and liberates ammonia from the solution.

$$NH_4SO_{4\,(solv)} + 2\,NaOH_{\,(aq)} \longrightarrow Na_2SO_{4\,(aq)} + 2\,NH_{3\,(g)} + 2\,H_2O_{\,(l)}$$

The ammonia is led into an acid (such as boric acid) by means of steam distillation.

$$B(OH)_{3\,(aq)} + H_2O_{\,(l)} + NH_{3\,(g)} \longrightarrow B(OH)_4^-{}_{(aq)} + NH_4^+{}_{(aq)}$$

The resulting strong base (borate ion) is back-titrated with a strong acid (hydrochloric acid or sulphuric acid). The excess weak boric acid is not captured in the process. A Tashiro's indicator that changes colour in the acid is used for titration. The amount of acid that has been used up can then be converted into the amount of nitrogen in the sample.

$$NH_4^+{}_{(aq)} + B(OH)_4^-{}_{(aq)} + HCl_{\,(l)} \longrightarrow NH_4Cl_{\,(aq)} + B(OH)_{3\,(aq)} + H_2O_{\,(l)}$$

To calculate the protein content of the sample, the varying nitrogen content of the amino acids must be checked and the relevant conversion factors applied. The nitrogen contained in food derives mainly from proteins, but different samples may also contain other sources of nitrogen.

## Kjeldahl tablets

| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Kjeldahl tablets (free of mercury and selenium)** | Tablet 5 g | **HN19.1** | 250 pieces | 128,90 |
| | | **HN19.2** | 1000 pieces | 450,45 |
| | Tablet 2,5 g | **HN20.1** | 250 pieces | 98,80 |
| | | **HN20.2** | 1000 pieces | 310,70 |
| **Kjeldahl tablets (Wieninger catalyst)** | Tablet 2,5 g | **HN21.1** | 250 pieces | 100,95 |
| | | **HN21.2** | 1000 pieces | 332,20 |
| **Kjeldahl tablets (Missouri catalyst)** | Tablet 2,5 g | **HN22.1** | 250 pieces | 89,15 |
| | | **HN22.2** | 1000 pieces | 295,65 |
| **Kjeldahl tablets antifoam** | Tablet 1 g | **8225.1** | 250 pieces | 97,75 |
| | | **8225.2** | 1000 pieces | 289,20 |
| **Kjeldahl tablets C** | Tablet 5,1 g | **8241.1** | 250 pieces | 110,65 |
| | | **8241.2** | 1000 pieces | 332,20 |
| **Kjeldahl tablets CK** | Tablet 3,9 g | **8243.1** | 250 pieces | 110,65 |
| | | **8243.2** | 1000 pieces | 332,20 |
| **Kjeldahl tablets CT** | Tablet 5,3 g | **9637.1** | 250 pieces | 110,65 |
| | | **9637.2** | 1000 pieces | 332,20 |
| **Kjeldahl tablets CX** | Tablet 5,5 g | **8236.1** | 250 pieces | 110,65 |
| | | **8236.2** | 1000 pieces | 332,20 |
| **Kjeldahl tablets ST** | Tablet 3,5 g | **9693.1** | 250 pieces | 110,65 |
| | | **9693.2** | 1000 pieces | 332,20 |
| **Kjeldahl tablets TCT** | Tablet 3,71 g | **9763.1** | 250 pieces | 110,65 |
| | | **9763.2** | 1000 pieces | 332,20 |


- ▶ Kjeldahl flasks see page 132
- ▶ Weighing boats see page 189


## Composition of the Kjeldahl tablets:

| | | | Typical composition | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Art. No.** | **Designation** | **Weight of tablet (g)** | **$K_2SO_4$** | **$Na_2SO_4$** | **$CuSO_4$** | **$CuSO_4 \cdot 5\ H2O$** | **$TiO_2$** | **Se** | **Anti-foam** |
| HN19 | Kjeldahl tablets (mercury and selenium-free) | 5 | 23,10 % | 69,30 % | 1,80 % | - | 2,80 % | - | - |
| HN20 | Kjeldahl tablets (mercury and selenium-free) | 2,5 | 23,10 % | 69,30 % | 1,80 % | - | 2,80 % | - | - |
| HN21 | Kjeldahl tablets (Wieninger catalyst) | 2,5 | - | 96,25 % | 1,50 % | - | - | 1,50 % | - |
| HN22 | Kjeldahl tablets (Missouri catalyst) | 2,5 | 48,40 % | 48,30 % | 0,30 % | - | - | - | - |
| 8225 | Kjeldahl tablets, anti-foam | 1 | - | 97,00 % | - | - | - | - | 3,00 % |
| 8236 | Kjeldahl tablets CX | 5,5 | 90,91% | - | - | 9,09 % | - | - | - |
| 8241 | Kjeldahl tablets C | 5,1 | 98,04 % | - | - | 1,96 % | - | - | - |
| 8243 | Kjeldahl tablets CK | 3,9 | 89,74 % | - | - | 10,26 % | - | - | - |
| 9637 | Kjeldahl tablets CT | 5,3 | 94,34 % | - | - | 2,83 % | 2,83 % | - | - |
| 9693 | Kjeldahl tablets ST | 3,5 | 99,90 % | - | - | - | - | 0,10 % | - |
| 9763 | Kjeldahl tablets TCT | 3,71 | 94,34 % | - | - | 2,83 % | 2,83 % | - | - |

**Note:** 8225 Kjeldahl anti-foam tablets do not contain a catalyst.
Please use additional Kjeldahl tablet with catalyst.

## Reagents for the determination of nitrogen acc. to Kjeldahl

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Ammonium sulphate** | ≥99,5 %, p.a., ACS, ISO | **3746.2** | 250 g | plastic | 12,80 |
| | | **3746.1** | 1 kg | plastic | 28,95 |
| | | **3746.3** | 2,5 kg | plastic | 52,15 |
| | | **3746.4** | 5 kg | plastic | 91,95 |
| | | **3746.6** | 10 kg | plastic | 147,20 |
| | | **3746.5** | 25 kg | plastic | 321,45 |
| **Boric acid** | ≥99,8 %, p.a., ACS, ISO | **6943.2** | 250 g | plastic | 19,90 |
| | | **6943.1** | 1 kg | plastic | 35,40 |
| | | **6943.3** | 5 kg | plastic | 145,05 |
| | | **6943.5** | 25 kg | plastic | 665,45 |
| **Boric acid solution** | 4 %, p.a. | **HN24.1** | 1 l | plastic | 17,75 |
| | | **HN24.2** | 5 l | plastic | 39,70 |
| | | **HN24.3** | 10 l | plastic | 64,40 |
| **Bromocresol green** | ACS | **T115.1** | 1 g | glass | 16,70 |
| | | **T115.2** | 5 g | glass | 26,80 |
| | | **T115.3** | 10 g | glass | 45,70 |
| | | **T115.4** | 25 g | glass | 87,00 |
| **Copper(II) sulphate pentahydrate** | ≥99,5 %, p.a., ACS, ISO | **P024.1** | 500 g | plastic | 27,85 |
| | | **P024.2** | 1 kg | plastic | 47,85 |
| | | **P024.3** | 2,5 kg | plastic | 89,15 |
| **Hydrochloric acid** | 0,1 mol/l - 0,1 N volumetric standard solution | **K024.1** | 1 l | plastic | 19,05 |
| | | **K024.2** | 5 l | plastic | 56,45 |
| | | **K024.3** | 5 l | ROTI®CUBE | 61,20 |
| | | **K024.4** | 10 l | ROTI®CUBE | 90,20 |
| **L-Lysine hydrochloride** | ≥98,5 %, Ph.Eur., USP, JP, for biochemistry | **9357.1** | 100 g | plastic | 17,75 |
| | | **9357.2** | 1 kg | plastic | 111,70 |
| **Methyl red (C.I. 13020)** | p.a., ACS | **T120.1** | 10 g | glass | 14,95 |
| | | **T120.2** | 25 g | glass | 24,65 |
| **Mixed indicator 5** | for ammonia titration | **T125.1** | 250 ml | glass | 55,80 |
| **Potassium sulphate** | ≥99 %, p.a., ACS, ISO | **P022.1** | 500 g | plastic | 38,60 |
| | | **P022.2** | 1 kg | plastic | 64,40 |
| | | **P022.3** | 2,5 kg | plastic | 145,15 |
| **D(+)-Saccharose** | ≥99,5 %, Ph.Eur. | **4661.1** | 1 kg | plastic | 19,60 |
| | | **4661.2** | 5 kg | plastic | 79,05 |
| | | **4661.3** | 50 kg | cardboard | 310,70 |
| **Sodium hydroxide** | ≥99 %, p.a., ISO, in pellets | **6771.3** | 500 g | plastic | 17,10 |
| | | **6771.1** | 1 kg | plastic | 25,70 |
| | | **6771.2** | 5 kg | plastic | 92,35 |
| | | **6771.5** | 25 kg | plastic | 332,20 |
| **Sodium hydroxide solution** | ≥32 %, p.a. | **T196.1** | 1 l | plastic | 28,95 |
| | | **T196.2** | 2,5 l | plastic | 55,80 |
| | | **T196.3** | 5 l | plastic | 88,05 |
| **Sulphuric acid** | 98 %, for determination of nitrogen | **X945.1** | 1 l | glass | 27,85 |
| | | **X945.2** | 2,5 l | glass | 56,45 |
| | 0,05 mol/l - 0,1 N volumetric standard solution | **K026.1** | 1 l | plastic | 19,05 |
| | | **K026.2** | 5 l | plastic | 56,45 |
| | | **K026.3** | 5 l | ROTI®CUBE | 61,20 |
| | | **K026.4** | 10 l | ROTI®CUBE | 90,20 |
| | 0,1 mol/l - 0,2 N volumetric standard solution | **N072.1** | 1 l | plastic | 19,05 |
| | | **N072.2** | 5 l | plastic | 56,45 |
| **Tashiro's indicator solution** | in ethanol, denatured | **2624.1** | 250 ml | plastic | 17,10 |
| **L-Tryptophan** | ≥98,5 %, Ph.Eur., for biochemistry | **4858.1** | 10 g | glass | 14,55 |
| | | **4858.2** | 100 g | plastic | 70,45 |
| | | **4858.3** | 1 kg | plastic | 525,70 |
| **Water** | p.a., ACS | **T172.1** | 1 l | plastic | 11,00 |
| | | **T172.2** | 2,5 l | plastic | 21,75 |
| | | **T172.3** | 5 l | plastic | 31,10 |
| | | **T172.5** | 30 l | plastic | 117,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Determination of Sugar



## Fehling's test:

Fehling's test is used to identify reducing agents, such as aldehydes and reducing sugars. Combining the two separate solutions (Fehling's I and Fehling's II) produces a deep-blue tartrate-copper(II) complex. Adding a reducing sample then causes a red pigment consisting mainly of copper(I) oxide to precipitate out of the mixture. This change in colour does not happen in the presence of sucrose or ketones.

### Fehling's solution I

**for sugar determination, reag. Ph.Eur.**

Cupric sulphate solution, Copper(II) sulphate solution

**Danger** H318-H410

| | | | |
|---|---|---|---|
| **N055.1** | 1 l | glass | 31,10 € |
| Original pack 6 x 1 l | | | 29,55/1 l |

### Fehling's solution II

**for sugar determination, reag. Ph.Eur.**

Alkaline potassium sodium tartrate solution

**Danger** H290-H314

| | | | |
|---|---|---|---|
| **N056.1** | 1 l | glass | 44,00 € |
| Original pack 6 x 1 l | | | 41,80/1 l |

## Benedict reagent

As variant for Fehling's test, also for verification of reduced sugars. Due to the different composition, the Benedict reagent is less alkaline and more stable (due to the citrate) than the Fehling solutions.

### Benedict's reagent

**for sugar determination**

NEW

**Warning** H319-H411

**Type analysis:**

Appearance. ..... blue solution
Density (20 °C). ..... 1,15-1,19 g/cm³
Formulation: Sodium carbonate anhydrous, tri-Sodium citrate dihydrate, Copper(II) sulphate pentahydrate, water

| | | | |
|---|---|---|---|
| **0010.1** | 100 ml | dropp. bottle | 18,20 € |

## Luff-Schoorl method:

This method can be used to calculate the amount of reducing sugars, such as D-glucose, D-fructose, D-lactose and D-maltose, that a sample contains. In this method, the copper(II) ions in an alkaline solution are reduced by the sugar and determined by means of back-titration of the excess reagent added. Non-reducing sugars, such as D-sucrose, are not captured by this method. To determine the amount of this sugar present, it must first be broken down into reducing monosaccharides via acid hydrolysis.

### Luff-Schoorl's solution

**for sugar determination**

**Warning** H319-H411

| | | | |
|---|---|---|---|
| **X874.1** | 1 l | glass | 31,75 € |
| Original pack 6 x 1 l | | | 30,16/1 l |

## Carrez clarification:

The Carrez clarification technique is used primarily in sugar analysis to eliminate turbidity. Two solutions in equal parts are added to the solution to be clarified, which removes any disruptive colloids.

### Carrez solution I

**for determination of sugars and starch**

Zinc acetate and acetic acid solution

H411

| | | | |
|---|---|---|---|
| **9944.1** | 500 ml | plastic | 28,95 € |

### Carrez solution II

**for determination of sugars and starch**

Potassium hexacyanoferrate(II) solution

| | | | |
|---|---|---|---|
| **9950.1** | 500 ml | plastic | 30,00 € |

### Determination of sucrose and glucose content using the enzymatic method in accordance with DIN 10326.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Adenosin-5'-triphosphate disodium salt (ATP)** | ≥98 %, for biochemistry | **HN35.1** | 5 g | glass | 23,15 |
| | | **HN35.2** | 10 g | glass | 32,80 |
| | | **HN35.3** | 25 g | glass | 61,20 |
| | | **HN35.4** | 100 g | glass | 203,20 |
| **Citric acid monohydrate** | ≥99,5 %, p.a., ACS, ISO | **3958.2** | 500 g | plastic | 18,85 |
| | | **3958.1** | 1 kg | plastic | 30,00 |
| | | **3958.3** | 2,5 kg | plastic | 55,40 |
| | | **3958.4** | 5 kg | plastic | 102,15 |
| | | **3958.5** | 25 kg | plastic | 360,15 |
| **Magnesium sulphate heptahydrate** | ≥99 %, p.a., ACS | **P027.1** | 500 g | plastic | 24,20 |
| | | **P027.2** | 1 kg | plastic | 38,60 |
| | | **P027.3** | 2,5 kg | plastic | 71,50 |
| **NADP disodium salt** | ≥97 %, for biochemistry | **AE13.1** | 250 mg | glass | 35,40 |
| | | **AE13.2** | 500 mg | glass | 64,00 |
| | | **AE13.3** | 1 g | glass | 120,95 |
| **Potassium hexacyano-ferrate(II) trihydrate** | ≥99 %, p.a., ACS, ISO | **P745.1** | 500 g | plastic | 90,20 |
| | | **P745.2** | 1 kg | plastic | 160,20 |
| | | **P745.3** | 2,5 kg | plastic | 342,95 |
| **tri-Sodium citrate dihydrate** | ≥99 %, Ph.Eur. | **4088.3** | 500 g | plastic | 13,45 |
| | | **4088.1** | 1 kg | plastic | 22,50 |
| | | **4088.2** | 5 kg | plastic | 87,65 |
| | | **4088.5** | 25 kg | plastic | 244,60 |
| **Sodium hydrogen carbonate** | ≥99,5 %, p.a., ACS, ISO | **6885.2** | 500 g | plastic | 15,60 |
| | | **6885.1** | 1 kg | plastic | 23,55 |
| | | **6885.3** | 5 kg | plastic | 83,75 |
| | | **6885.5** | 25 kg | plastic | 342,95 |
| **Sodium hydroxide solution** | 2 mol/l - 2 N volumetric standard solution | **T135.1** | 1 l | plastic | 19,25 |
| | | **T135.2** | 5 l | plastic | 63,35 |
| | | **T135.3** | 5 l | ROTI®CUBE | 68,70 |
| **Triethanolamine hydrochloride** | ≥99 %, for biochemistry | **4804.1** | 100 g | plastic | 57,95 |
| **Water** | p.a., ACS | **T172.1** | 1 l | plastic | 11,00 |
| | | **T172.2** | 2,5 l | plastic | 21,75 |
| | | **T172.3** | 5 l | plastic | 31,10 |
| | | **T172.5** | 30 l | plastic | 117,20 |
| **Zinc sulphate heptahydrate** | ≥99,5 %, p.a., ACS | **K301.1** | 500 g | plastic | 24,20 |
| | | **K301.2** | 1 kg | plastic | 42,50 |
| | | **K301.3** | 2,5 kg | plastic | 77,30 |
| | | **K301.5** | 25 kg | plastic | 643,95 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Horne method of sugar analysis

### Anthrone

**p.a., ACS**

Reagent for carbohydrates

| | | | |
|---|---|---|---|
| **2673.1** | 10 g | plastic | 25,30 € |
| **2673.2** | 25 g | plastic | 39,70 € |
| **2673.3** | 100 g | plastic | 107,40 € |

### Lead(II) acetate, basic

**≥33 % PbO, p.a., ACS**

For the analysis of sugar acc. Horne.

**Danger** H351-H360Df-H373-H410

| | | | |
|---|---|---|---|
| **2559.3** | 25 g | plastic | 14,55 € |
| **2559.1** | 500 g | plastic | 37,55 € |
| Original pack 6 x 500 g | | | 35,67/500 g |
| **2559.2** | 1 kg | plastic | 55,80 € |
| Original pack 6 x 1 kg | | | 53,01/1 kg |

## Determination of mercury



Mercury has been used in technical applications since ancient times. Its high mobility means that it is particularly prevalent in the environment. Yet huge amounts of it are continuously being released into the atmosphere, for example through combustion reactions.
Mercury forms organic compounds that are fat-soluble, which enables them to enter the food chain. The two most commonly used standard methods for analysing mercury are the AAS (atomic absorption spectroscopy) procedure and the ICP (inductively coupled plasma) technique. It goes without saying that the reagents used to prepare samples must not contain mercury. ROTH offers these reagents with a mercury content of less than 0,005 ppm.

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Hydrochloric acid fuming** | 37 %, p.a., ISO, max. 0,005 ppm Hg | **X942.1** | 1 l | glass | 24,20 |
| | | **X942.2** | 2,5 l | glass | 32,80 |
| **Nitric acid** | 65 %, p.a., ISO, max. 0,005 ppm Hg | **X943.1** | 1 l | glass | 30,65 |
| | | **X943.2** | 2,5 l | glass | 60,10 |
| **Potassium permanganate** | ≥99 %, p.a., ACS, max. 0,005 ppm Hg | **KK08.1** | 500 g | plastic | 42,50 |
| | | **KK08.2** | 1 kg | plastic | 64,40 |
| **Sulphuric acid 95-98 %** | 95-98 %, p.a., ISO, max. 0,005 ppm Hg | **X944.1** | 1 l | glass | 34,30 |
| | | **X944.2** | 2,5 l | glass | 64,00 |
| **Tin(II) chloride dihydrate** | ≥98 %, p.a., max. 0,005 ppm Hg | **KK07.1** | 100 g | glass | 43,55 |
| | | **KK07.2** | 250 g | glass | 96,25 |

# Determination of trichina

Trichina (*Trichinella*, ssp.) are small roundworms approximately 1 mm long that live as parasites in the skeletal muscles of mammals, birds and reptiles. They can be transferred to a new host (human or animal) through the consumption of raw meat containing infectious larvae in the muscle tissue. Meat intended for human consumption must be inspected in accordance with Regulation (EU) No. 2075/2005. ROTH offers reagents suitable for this purpose.

## Hydrochloric acid 25 %

**ROTIPURAN® ≥25 %, p.a., ISO**

Hydrogen chloride
HCl
M 36,46 g/mol

**Danger** H314-H290-H335

| | | | |
|---|---|---|---|
| **6331.1** | 1 l | glass | 18,20 € |
| Original pack 6 x 1 l | | | 17,29/1 l |
| **6331.3** | 1 l | plastic | 15,60 € |
| Original pack 6 x 1 l | | | 14,82/1 l |
| **6331.2** | 2,5 l | glass | 31,10 € |
| Original pack 4 x 2,5 l | | | 29,55/2,5 l |
| **6331.4** | 2,5 l | plastic | 27,45 € |
| Original pack 4 x 2,5 l | | | 26,08/2,5 l |

## Potassium hydroxide

**≥85 %, p.a., pellets**

Reagent for the preparation of potassium hydroxide solution. Filled under protective gas.
KOH
M 56,11 g/mol

**Danger** H314-H290-H302

| | | | |
|---|---|---|---|
| **6751.3** | 250 g | plastic | 16,05 € |
| **6751.1** | 1 kg | plastic | 26,35 € |
| Original pack 6 x 1 kg | | | 25,03/1 kg |
| **6751.2** | 5 kg | plastic | 91,30 € |
| **6751.5** | 25 kg | plastic | 278,45 € |

## Pepsin

**≥2000 FIP-U/g, for biochemistry**

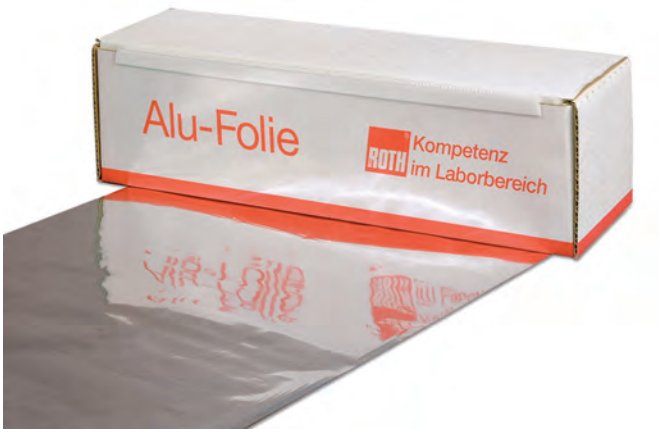
From porcine gastric mucosa. For detection of trichina in meat.
M 35000 g/mol
Storage temp.: +4 °C

**Danger** H334-H335-H315-H319

Acidic endopeptidase, the inactive precursor of which, pepsinogen, is produced in the stomach mucosa. Pepsin cleaves proteins preferentially at carboxylic groups of aromatic amino acids such as phenylalanine and tyrosine. Highly active pepsine is preferably used for detection of trichina in pre-digested muscle meat of animals.
1 FIP unit (≈Ph.Eur. unit) of Pepsin activity will, during incubation at 25±0,1 °C for one minute, cause decomposition of haemoglobin to an extent comparable with the colour caused by reaction of 1 micromole of tyrosine with the same dye. 2 000 FIP-Units correspond to 1: 10 000 NF-U and 1: 12 500 BP-U.

**Application:**
Well soluble in water, stable in aqueous solutions of pH up to 5,5, unstable above pH 6,0. Irreversible inactivated in alkaline medium. Solution is stable in temperatures of up to 60 °C, and also in higher concentrations of urea and guanidine.
pH optimum: 1-2
Isoelectric point: 1,0

| | | | |
|---|---|---|---|
| **KK38.1** | 50 g | plastic | 56,90 € |
| **KK38.2** | 100 g | plastic | 91,30 € |
| **KK38.3** | 250 g | plastic | 188,15 € |
| **KK38.4** | 1 kg | plastic | 665,45 € |
| Original pack 6 x 1 kg | | | 632,18/1 kg |




## Rotilabo®-aluminium foils

Ideal for covering up, wrapping and insulating. Approved for food handling. Al-content over 99,0 %. In cutter box (articles 0192.1 and 1770.2 refill rollers without cutter box).

| Thickness (µm) | Width (mm) | Length (m) | Art. No. | Pack Qty. (roll) | € |
|---|---|---|---|---|---|
| **12** | 295 | 150 | **1399.1** | 1 | 24,70 |
| **13** | 300 | 20 | **0192.1** | 6 | 28,50 |
| **15** | 300 | 150 | **AA76.1** | 1 | 24,65 |
| **15** | 450 | 150 | **AA77.1** | 1 | 40,35 |
| **16** | 300 | 100 | **1770.1** | 1 | 22,05 |
| | | | **1770.2** | 4 | 89,90 |
| **18** | 440 | 150 | **1502.1** | 1 | 48,40 |
| **20** | 450 | 150 | **0954.1** | 1 | 56,95 |
| **30** | 500 | 100 | **2596.1** | 1 | 62,35 |

# Determination of fat

Fat analysis is used to determine the fat content and fat composition of foodstuffs. Individual components or total fats levels can be calculated depending on the purpose of testing. Different components are subject to different procedures by law, such as the Gerber method or the Van Gulik technique.



| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Diethyl ether** | ≥99,5 %, p.a., stab. | **3942.1** | 1 l | glass | 44,65 |
| | | **3942.6** | 2,5 l | glass | 78,40 |
| | | **3942.4** | 5 l | aluminium | 149,45 |
| | | **3942.5** | 25 l | tinplate | 439,70 |
| **Isoamyl alcohol** | ≥98,5 %, p.a., ACS | **T870.1** | 500 ml | glass | 40,75 |
| | | **T870.2** | 1 l | glass | 76,90 |
| | | **T870.3** | 2,5 l | glass | 169,35 |
| **Petroleum ether 40-60 °C** | p.a., ACS, ISO | **T173.1** | 1 l | glass | 33,25 |
| | | **T173.2** | 2,5 l | glass | 62,90 |
| | | **T173.3** | 5 l | aluminium | 104,85 |
| | | **T173.5** | 25 l | tinplate | 330,60 |
| **Sulphuric acid** | 90-91 %, for determination of fat | **X946.1** | 1 l | plastic | 21,40 |
| | | **X946.2** | 2,5 l | plastic | 39,25 |
| | 62 %, p.a., for determination of fat in cheese (d 1,52) acc to van Gulik | **CN89.1** | 1 l | plastic | 24,65 |
| | | **CN89.2** | 2,5 l | plastic | 40,75 |
| | | **CN89.3** | 5 l | plastic | 66,55 |
| | | **CN89.4** | 10 l | plastic | 110,20 |
| | | **CN89.5** | 25 l | plastic | 238,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

**Fat- and protein-containing samples should be cleared using Carrez reagents:**

- Add sample to 60 ml water
- Subsequently add, while mixing after each step:
  a) 5 ml Carrez-I-solution, Art. No. 9944
  (or 7,2 g zinc sulphate heptahydrate, Art. No. K301 ad 100 ml)
  b) 5 ml Carrez-II-solution, Art. No. 9950
  (or 3,6 g potassium hexacyanoferrate(II), Art. No. P745 ad 100 ml)
- Adjust pH to 7,5 - 8,5 by adding NaOH (0,1 M)
- Fill volumetric flask up to mark, mix, and filter

## Iodine value determination

The iodine value is a measure of the unsaturated fatty acids in glycerides. The more olefinic double bonds there are in the fat, the higher the iodine value.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Acetic acid** | 100 %, p.a. | **3738.1** | 1 l | glass | 24,65 |
| | | **3738.4** | 1 l | plastic | 22,50 |
| | | **3738.2** | 2,5 l | glass | 52,60 |
| | | **3738.5** | 2,5 l | plastic | 50,00 |
| | | **3738.6** | 5 l | plastic | 74,10 |
| | | **3738.3** | 10 l | plastic | 125,25 |
| **Cyclohexane** | ≥99,5 %, p.a., ACS, ISO | **6886.1** | 1 l | glass | 50,00 |
| | | **6886.2** | 2,5 l | glass | 96,25 |
| **Iodine** | ≥99,8 %, p.a., ACS, resublimated | **X864.1** | 100 g | glass | 64,40 |
| | | **X864.2** | 250 g | glass | 117,20 |
| | | **X864.3** | 1 kg | glass | 413,90 |
| **Mercury(II) acetate** | ≥99 %, p.a., ACS | **KK05.1** | 50 g | glass | 56,90 |
| | | **KK05.2** | 100 g | glass | 101,60 |
| **Potassium iodide solution** | 10 %, p.a. | **8121.1** | 1 l | plastic | 46,15 |
| **Sodium thiosulphate solution** | 0,1 mol/l - 0,1 N volumetric standard solution | **K022.1** | 1 l | glass | 18,20 |
| | | **K022.2** | 5 l | plastic | 48,30 |
| | | **K022.3** | 5 l | ROTI®CUBE | 56,45 |
| | | **K022.4** | 10 l | ROTI®CUBE | 84,40 |
| **Starch 1 % indicator solution** | in water, stabilized | **T133.1** | 500 ml | plastic | 24,20 |
| **Trichloromethane/ Chloroform** | ≥99 %, p.a. | **3313.4** | 100 ml | glass | 16,05 |
| | | **3313.1** | 1 l | glass | 40,35 |
| | | **3313.2** | 2,5 l | glass | 84,85 |
| | | **3313.5** | 25 l | tinplate | 439,70 |
| **Wijs-solution** | 0,1 mol ICl/l - 0,2 N | **CN36.1** | 1 l | glass | 75,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Acid value determination

The acid value expresses the acidic components of fats. To calculate this value, a sample is dissolved in a solvent and titrated with a solution of potassium hydroxide with phenolphthalein as the colour indicator. Only the free fatty acids are captured; the fatty acids bound in the glycerides are not.

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Alkali blue 6B (C.I. 42750)** | p.a. | **5155.1** | 10 g | glass | 20,35 |
| | | **5155.2** | 25 g | glass | 39,70 |
| | | **5155.3** | 100 g | glass | 117,20 |
| **tert-Butyl methyl ether** | ≥99,5 %, p.a. | **8462.1** | 1 l | glass | 38,20 |
| | | **8462.2** | 2,5 l | glass | 76,90 |
| | | **8462.3** | 10 l | tinplate | 252,65 |
| | | **8462.4** | 25 l | tinplate | 568,70 |
| **Diethyl ether** | ≥99,5 %, p.a., stab. | **3942.1** | 1 l | glass | 44,65 |
| | | **3942.6** | 2,5 l | glass | 78,40 |
| | | **3942.4** | 5 l | alumi-nium | 149,45 |
| | | **3942.5** | 25 l | tinplate | 439,70 |
| **Ethanol** | 96 %, Ph.Eur., extra pure | **P075.1** | 1 l | glass | 70,85 |
| | | **P075.3** | 1 l | plastic | 69,80 |
| | | **P075.2** | 2,5 l | glass | 149,45 |
| | | **P075.4** | 2,5 l | plastic | 147,20 |
| | | **P075.5** | 5 l | plastic | 276,30 |
| | | **P075.6** | 10 l | tinplate | 439,70 |
| **Methanol** | ≥99,9 %, p.a., ACS, ISO | **4627.1** | 1 l | glass | 25,30 |
| | | **4627.4** | 1 l | plastic | 23,55 |
| | | **4627.2** | 2,5 l | glass | 44,00 |
| | | **4627.5** | 2,5 l | plastic | 40,75 |
| | | **4627.6** | 5 l | plastic | 75,15 |
| | | **4627.3** | 25 l | tinplate | 160,20 |
| **Potassium hydroxide solution in ethanol** | 0,1 mol/l - 0,1 N volumetric standard solution | **P706.1** | 1 l | glass | 39,25 |
| | 0,5 mol/l - 0,5 N volumetric standard solution | **P707.1** | 1 l | glass | 56,45 |
| **Potassium hydroxide solution in methanol** | 0,1 mol/l - 0,1 N volumetric standard solution | **KK66.1** | 1 l | glass | 31,75 |
| | 0,5 mol/l - 0,5 N volumetric standard solution | **KK67.1** | 1 l | glass | 29,60 |
| **Petroleum ether 40-60 °C** | p.a., ACS, ISO | **T173.1** | 1 l | glass | 33,25 |
| | | **T173.2** | 2,5 l | glass | 62,90 |
| | | **T173.3** | 5 l | alumi-nium | 104,85 |
| | | **T173.5** | 25 l | tinplate | 330,60 |
| **Phenolphthalein indicator solution** | 1 % in ethanol 90 %, denatured | **K034.1** | 250 ml | glass | 21,00 |
| | | **K034.2** | 500 ml | glass | 27,85 |
| | | **K034.3** | 1 l | glass | 37,55 |
| **2-Propanol** | ≥99,8 %, p.a., ACS, ISO | **6752.1** | 1 l | glass | 24,20 |
| | | **6752.3** | 1 l | plastic | 23,15 |
| | | **6752.2** | 2,5 l | glass | 54,75 |
| | | **6752.4** | 2,5 l | plastic | 52,60 |
| | | **6752.5** | 5 l | plastic | 81,60 |
| | | **6752.6** | 25 l | tinplate | 238,15 |
| **Thymolphthalein** | p.a., ACS | **HN97.1** | 5 g | glass | 19,25 |
| | | **HN97.2** | 10 g | glass | 32,15 |
| | | **HN97.3** | 50 g | glass | 115,60 |
| **Toluene** | ≥99,5 %, p.a., ACS, ISO | **7115.1** | 1 l | glass | 36,45 |
| | | **7115.2** | 2,5 l | glass | 71,95 |
| | | **7115.3** | 5 l | plastic | 101,60 |
| | | **7115.4** | 25 l | tinplate | 289,20 |
| **Water** | p.a., ACS | **T172.1** | 1 l | plastic | 11,00 |
| | | **T172.2** | 2,5 l | plastic | 21,75 |
| | | **T172.3** | 5 l | plastic | 31,10 |
| | | **T172.5** | 30 l | plastic | 117,20 |

## Peroxide value determination

The peroxide value of a substance denotes how much peroxide it contains. In a mixture of glacial acetic acid and chloroform, the peroxide oxidises the iodide into elementary iodine. The resulting quantity of iodine is then back-titrated using a thiosulphate solution (where a starch solution is used as the indicator). The blank solution tested in parallel is used to calculate the results.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Acetic acid** | 100 %, p.a. | **3738.1** | 1 l | glass | 24,65 |
| | | **3738.4** | 1 l | plastic | 22,50 |
| | | **3738.2** | 2,5 l | glass | 52,60 |
| | | **3738.5** | 2,5 l | plastic | 50,00 |
| | | **3738.6** | 5 l | plastic | 74,10 |
| | | **3738.3** | 10 l | plastic | 125,25 |
| **Potassium iodide solution** | 10 %, p.a. | **8121.1** | 1 l | plastic | 46,15 |
| **Sodium thiosulphate solution** | 0,1 mol/l - 0,1 N volumetric standard solution | **K022.1** | 1 l | glass | 18,20 |
| | | **K022.2** | 5 l | plastic | 48,30 |
| | | **K022.3** | 5 l | ROTI®CUBE | 56,45 |
| | | **K022.4** | 10 l | ROTI®CUBE | 84,40 |
| **Starch 1 % indicator solution** | in water, stabilized | **T133.1** | 500 ml | plastic | 24,20 |
| **Trichloromethane/ Chloroform** | ≥99 %, p.a. | **3313.4** | 100 ml | glass | 16,05 |
| | | **3313.1** | 1 l | glass | 40,35 |
| | | **3313.2** | 2,5 l | glass | 84,85 |
| | | **3313.5** | 25 l | tinplate | 439,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Saponification value

The saponification value denotes the amount of potassium hydroxide required to neutralise free fatty acids and saponify bound fatty acids. The lower the average molar mass of the fat, the higher the saponification value. The sample is heated under reflux in a defined quantity of ethanolic potassium hydroxide solution and the non-used alkaline solution is titrated with hydrochloric acid.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Alkali blue 6B (C.I. 42750)** | p.a. | **5155.1** | 10 g | glass | 20,35 |
| | | **5155.2** | 25 g | glass | 39,70 |
| | | **5155.3** | 100 g | glass | 117,20 |
| **Ethanol** | 96 %, Ph.Eur., extra pure | **P075.1** | 1 l | glass | 70,85 |
| | | **P075.3** | 1 l | plastic | 69,80 |
| | | **P075.2** | 2,5 l | glass | 149,45 |
| | | **P075.4** | 2,5 l | plastic | 147,20 |
| | | **P075.5** | 5 l | plastic | 276,30 |
| | | **P075.6** | 10 l | tinplate | 439,70 |
| **Hydrochloric acid** | 0,5 mol/l - 0,5 N volumetric standard solution | **P708.1** | 1 l | plastic | 19,05 |
| | | **P708.2** | 5 l | plastic | 56,45 |
| | | **P708.3** | 5 l | ROTI®CUBE | 61,20 |
| | | **P708.4** | 10 l | ROTI®CUBE | 90,20 |
| **Phenolphthalein indicator solution** | 0,1 % in ethanol 90 %, denatured | **8145.1** | 250 ml | glass | 19,90 |
| | | **8145.2** | 500 ml | glass | 26,35 |
| **Potassium hydroxide solution in ethanol** | 0,5 mol/l - 0,5 N volumetric standard solution | **P707.1** | 1 l | glass | 56,45 |

# Further deteminations

## Determination of viscosity

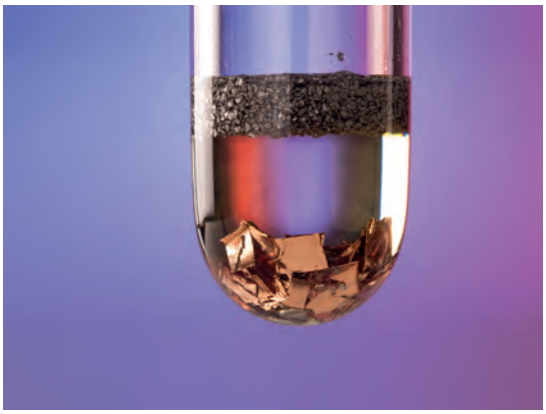
Viscosity is the measure of a fluid's resistance to flow. The lower a liquid's viscosity, the thinner it is and the more easy it is to pour; the higher a liquid's viscosity, the thicker it is and the harder it is to pour. The particles in viscous liquids are less mobile as they have to overcome the van der Waals forces and the bonds between the particles in them are stronger.

### Determination of viscosity

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Formic acid** | ≥98 %, p.a., ACS | **4724.3** | 500 ml | glass | 19,90 |
| | | **4724.1** | 1 l | glass | 33,90 |
| | | **4724.2** | 2,5 l | glass | 71,95 |
| **m-Cresol** | ≥99 %, for synthesis | **9269.1** | 250 g | glass | 39,70 |
| **Phenol** | ≥99,5 %, p.a., detached crystals | **0040.1** | 250 g | plastic | 30,00 |
| | | **0040.2** | 1 kg | plastic | 87,00 |
| **ortho-Phosphoric acid** | ≥85 %, p.a., ISO | **6366.1** | 1 l | plastic | 62,25 |
| | | **6366.2** | 2,5 l | plastic | 127,40 |
| **Sulphuric acid** | for determination of viscosity acc. to DIN EN ISO 307 | **4363.1** | 1 l | plastic | 37,10 |
| | | **4363.2** | 2,5 l | plastic | 75,15 |
| | | **4363.3** | 5 l | plastic | 141,40 |
| | | **4363.4** | 10 l | plastic | 241,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Density determination



Sodium polytungstate (SPT) is perfect for preparation of heavy liquids. ROTH offers an environmentally friendly alternative to using zinc chloride and mercury saline solutions or highly toxic halogenated hydrocarbons to conduct the sink or swim analyses required for density determination.

**Properties:**
- Highly water soluble
- pH-neutral solution adjustable
- Maximum achievable density of the solution is 3,1 g/cm³ at 25 °C

**Advantages:**
- Non-toxic
- Non-flammable
- Odourless
- Low viscosity
- Easy to use
- Extremely easy to clean the sinks and floats with water
- Environmentally friendly

Manufacture of aqueous sodium polytungstate solutions with the following densities and consequent viscosities at 25 °C

| Mass of SPT used [g] | Mass of $H_2O$ [g] | End volume of solution [ml] | Concentration c in [wt.-%] | Density ρ [g/cm³] | Viscosity η [mPa•s] |
|---|---|---|---|---|---|
| 5,00 | 48,80 | 50 | 9,3 | 1,08 | 0,99 |
| 10,00 | 47,66 | 50 | 17,3 | 1,15 | 1,05 |
| 15,08 | 46,63 | 50 | 24,4 | 1,23 | 1,13 |
| 20,00 | 45,87 | 50 | 30,4 | 1,32 | 1,19 |
| 25,02 | 44,98 | 50 | 35,7 | 1,40 | 1,29 |
| 35,01 | 42,94 | 50 | 44,9 | 1,56 | 1,51 |
| 45,15 | 41,10 | 50 | 52,3 | 1,73 | 1,83 |
| 55,01 | 38,93 | 50 | 58,6 | 1,88 | 2,27 |
| 65,17 | 36,99 | 50 | 63,8 | 2,04 | 2,90 |
| 75,00 | 34,68 | 50 | 68,4 | 2,19 | 3,93 |
| 85,00 | 32,54 | 50 | 72,3 | 2,35 | 5,15 |
| 95,00 | 30,10 | 50 | 75,9 | 2,50 | 8,19 |
| 105,01 | 28,42 | 50 | 78,7 | 2,67 | 12,18 |
| 115,17 | 25,92 | 50 | 81,6 | 2,82 | 20,55 |
| 125,12 | 23,72 | 50 | 84,1 | 2,98 | 36,65 |
| 133,00 | 22,00 | 50 | 85,8 | 3,10 | 59,52 |

## Sodium polytungstate hydrate

**≥99,9 %**
For the preparation of heavy liquid.
Sodium metatungstate
3 $Na_2WO_4$ · 9 $WO_3$ · $H_2O$
M 2986,01 g/mol

**Danger** H302-H318-H412

| | | | |
|---|---|---|---|
| **8828.1** | 50 g | plastic | 46,15 € |
| **8828.2** | 250 g | plastic | 170,95 € |
| **8828.3** | 1 kg | plastic | 618,15 € |
| Original pack 6 x 1 kg | | | 587,24/1 kg |

## Sodium polytungstate solution

NEW

**3,00 g/cm³**
Heavy liquid for separation of minerals.

**Danger** H302-H318-H412

| | | | |
|---|---|---|---|
| **0741.1** | 100 ml | plastic | 213,95 € |
| **0741.2** | 500 ml | plastic | 858,95 € |

# Hydroxyl value

The hydroxyl value is a measure of the hydroxy group content of organic materials such as paints, resins, polystyrenes, solvents and lipids.
It represents the amount in milligrams of potassium hydroxide required to neutralise the quantity of acetic acid that combines on acetylation of one gram of the substance being tested.

### Hydroxyl value

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Alkali blue 6B (C.I. 42750)** | p.a. | **5155.1** | 10 g | glass | 20,35 |
| | | **5155.2** | 25 g | glass | 39,70 |
| | | **5155.3** | 100 g | glass | 117,20 |
| **Acetic acid anhydride** | ≥99 %, p.a., ACS, ISO | **CP28.1** | 1 l | glass | 42,50 |
| | | **CP28.2** | 2,5 l | glass | 82,70 |
| | | **CP28.3** | 5 l | plastic | 131,70 |
| | | **CP28.4** | 10 l | plastic | 246,20 |
| | | **CP28.5** | 25 l | plastic | 504,20 |
| **Ethanol** | 96 %, Ph.Eur., extra pure | **P075.1** | 1 l | glass | 70,85 |
| | | **P075.3** | 1 l | plastic | 69,80 |
| | | **P075.2** | 2,5 l | glass | 149,45 |
| | | **P075.4** | 2,5 l | plastic | 147,20 |
| | | **P075.5** | 5 l | plastic | 276,30 |
| | | **P075.6** | 10 l | tinplate | 439,70 |
| **Phenolphthalein indicator solution** | 1 % in ethanol 90 %, denatured | **K034.1** | 250 ml | glass | 21,00 |
| | | **K034.2** | 500 ml | glass | 27,85 |
| | | **K034.3** | 1 l | glass | 37,55 |
| **Potassium hydroxide solution in ethanol** | 0,1 mol/l - 0,1 N volumetric standard solution | **P706.1** | 1 l | glass | 39,25 |
| | 0,5 mol/l - 0,5 N volumetric standard solution | **P707.1** | 1 l | glass | 56,45 |
| **Pyridine** | ≥99,5 %, p.a., ACS | **9729.3** | 500 ml | glass | 63,35 |
| | | **9729.1** | 1 l | glass | 117,20 |
| | | **9729.2** | 2,5 l | glass | 252,65 |

# Fluoride value determination

In quantitative assays, TISABs (total ionic strength adjustment buffers) are used to set the ionic strength of a solution to a stable level using ion-selective electrodes. The ionic strength must be kept stable during the measuring process in order to prevent the potential from changing regardless of the molar concentration. The measurement of fluoride ions is highly susceptible to error; high pH values or aluminium(III) and iron(III) ions will falsify the results.

## TISAB solution I

**for determination of fluoride**

Total ionic strength adjustment buffer

NEW

Formulation: Acetic acid, Sodium chloride, tri-Sodium citrate dihydrate, Water

| | | | |
|---|---|---|---|
| **0252.1** | 500 ml | plastic | 41,85 € |

## TISAB solution II

**for determination of fluoride**

Total ionic strength adjustment buffer

**Type analysis:**

pH value. .....5,0-5,5
Formulation: Sodium chloride, tri-Sodium citrate dihydrate, Acetic acid, Water

| | | | |
|---|---|---|---|
| **9945.1** | 1 l | plastic | 55,80 € |
| Original pack 6 x 1 l | | | 53,01/1 l |

## TISAB solution III

**for determination of fluoride**

Total ionic strength adjustment buffer

NEW

**Warning** H319

**Type analysis:**

pH value (20 °C). .....5,0-5,5
Formulation: Ammonium chloride, CDTA, Water, Cresol red sodium salt

| | | | |
|---|---|---|---|
| **0259.1** | 500 ml | plastic | 94,50 € |

## TISAB solution IV

**for determination of fluoride**

Total ionic strength adjustment buffer

**Warning** H315-H319

Formulation: Hydrochloric acid, Tris-(hydroxymethyl)-aminomethane, Tartaric acid, Sodium hydroxide, Water

| | | | |
|---|---|---|---|
| **9951.1** | 1 l | plastic | 144,60 € |
| Original pack 6 x 1 l | | | 137,37/1 l |

# Acids and bases for analysis (p.a.)

Roth provides suitable acids and bases for different requirements!

- high purity
- high batch consistancy
- detailed specifications
- good price-performance ratio

| Product | Purity | Art. No. | VE | Pack. | € |
|---|---|---|---|---|---|
| **Acetic acid** | 100 %, p.a. | **3738.1** | 1 l | glass | 24,65 |
| | | **3738.4** | 1 l | plastic | 22,50 |
| | | **3738.2** | 2,5 l | glass | 52,60 |
| | | **3738.5** | 2,5 l | plastic | 50,00 |
| | | **3738.6** | 5 l | plastic | 74,10 |
| | | **3738.3** | 10 l | plastic | 125,25 |
| | ≥95,9 %, p.a. | **T179.1** | 1 l | plastic | 21,40 |
| | | **T179.2** | 2,5 l | plastic | 44,00 |
| | | **T179.4** | 5 l | plastic | 64,00 |
| | | **T179.3** | 10 l | plastic | 107,00 |
| **Ammonia solution** | 30 %, p.a., ACS | **CP17.1** | 1 l | glass | 20,35 |
| | | **CP17.2** | 2,5 l | glass | 32,80 |
| | | **CP17.3** | 5 l | PE/steel | 61,20 |
| | | **CP17.4** | 10 l | PE/steel | 104,85 |
| | | **CP17.5** | 25 l | PE/steel | 171,50 |
| | ≥25 %, p.a. | **6774.1** | 1 l | glass | 21,40 |
| | | **6774.2** | 2,5 l | glass | 33,25 |
| | | **6774.3** | 5 l | plastic | 48,95 |
| **Boric acid solution** | 4 %, p.a. | **HN24.1** | 1 l | plastic | 17,75 |
| | | **HN24.2** | 5 l | plastic | 39,70 |
| | | **HN24.3** | 10 l | plastic | 64,40 |
| **Formic acid** | ≥98 %, p.a., ACS | **4724.3** | 500 ml | glass | 19,90 |
| | | **4724.1** | 1 l | glass | 33,90 |
| | | **4724.2** | 2,5 l | glass | 71,95 |
| | ≥85 %, p.a. | **CP16.1** | 500 ml | glass | 20,35 |
| | | **CP16.2** | 1 l | glass | 33,25 |
| | | **CP16.3** | 2,5 l | glass | 70,85 |
| | | **CP16.4** | 10 l | plastic | 214,90 |
| **Hydrochloric acid** | 37 %, p.a., ACS, ISO, fuming | **4625.1** | 1 l | glass | 20,35 |
| | | **4625.2** | 2,5 l | glass | 32,15 |
| | ≥32 %, p.a., ISO | **P074.1** | 1 l | glass | 17,75 |
| | | **P074.3** | 1 l | plastic | 15,60 |
| | | **P074.2** | 2,5 l | glass | 30,65 |
| | | **P074.4** | 2,5 l | plastic | 28,50 |

| Product | Purity | Art. No. | VE | Pack. | € |
|---|---|---|---|---|---|
| **Hydrochloric acid** | ≥25 %, p.a., ISO | **6331.1** | 1 l | glass | 18,20 |
| | | **6331.3** | 1 l | plastic | 15,60 |
| | | **6331.2** | 2,5 l | glass | 31,10 |
| | | **6331.4** | 2,5 l | plastic | 27,45 |
| **Molybdatophosphoric acid hydrate** | ≥99,0 %, p.a., ACS | **4440.1** | 25 g | glass | 37,55 |
| | | **4440.2** | 50 g | glass | 57,95 |
| | | **4440.3** | 100 g | glass | 103,10 |
| **Nitric acid** | ≥65 %, p.a., ISO | **4989.3** | 250 ml | glass | 18,85 |
| | | **4989.1** | 1 l | glass | 29,60 |
| | | **4989.2** | 2,5 l | glass | 57,95 |
| **Perchloric acid** | 70 %, p.a. | **9216.1** | 500 ml | glass | 67,20 |
| | | **9216.2** | 1 l | glass | 111,70 |
| **Periodic acid** | ≥99 %, p.a. | **3257.1** | 100 g | glass | 68,30 |
| | | **3257.2** | 500 g | glass | 235,45 |
| **meta-Phosphoric acid** | p.a., pieces (hyaline) | **CN91.1** | 100 g | plastic | 30,00 |
| | | **CN91.2** | 250 g | plastic | 59,05 |
| | | **CN91.3** | 500 g | plastic | 107,00 |
| | | **CN91.4** | 1 kg | plastic | 193,40 |
| **ortho-Phosphoric acid** | ≥85 %, p.a., ISO | **6366.1** | 1 l | plastic | 62,25 |
| | | **6366.2** | 2,5 l | plastic | 127,40 |
| **Potassium hydroxide** | ≥85 %, p.a., pellets | **6751.3** | 250 g | plastic | 16,05 |
| | | **6751.1** | 1 kg | plastic | 26,35 |
| | | **6751.2** | 5 kg | plastic | 91,30 |
| | | **6751.5** | 25 kg | plastic | 278,45 |
| **Sodium hydroxide** | ≥99 %, p.a., ISO, in pellets | **6771.3** | 500 g | plastic | 17,10 |
| | | **6771.1** | 1 kg | plastic | 25,70 |
| | | **6771.2** | 5 kg | plastic | 92,35 |
| | | **6771.5** | 25 kg | plastic | 332,20 |
| **Sulphuric acid** | 96 %, p.a., ISO | **4623.3** | 250 ml | glass | 18,85 |
| | | **4623.1** | 1 l | glass | 30,65 |
| | | **4623.4** | 1 l | plastic | 27,85 |
| | | **4623.2** | 2,5 l | glass | 61,20 |
| | | **4623.5** | 2,5 l | plastic | 64,40 |
| | | **4623.6** | 10 l | plastic | 117,20 |

For additional product data and safety information, see chapter Chemicals A-Z.





# Products in VLSI quality

ROTH's VLSI (Very Large Scale Integration) product line offers solvents and acids for cleaning and etching wafers for the semi-conductor industry. Both processes are essential for chip manufacture. ROTH offers a selected range of products.



## Solvents

### Properties:

- High purity
- Trace metal content generally between 10-50 ppb
- Particle-filtered, maximal 250 particles/ml

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Acetone** | ≥99,5 %, VLSI Grade | **9780.1** | 2,5 l | plastic | 67,20 |
| | | | 5 l | plastic | 110,65 |
| **2-Butanone** NEW | ≥99,5 %, VLSI Grade | **0051.1** | 2,5 l | plastic | 95,70 |
| **Isobutyl methyl-ketone** NEW | ≥99,5 %, VLSI Grade | **0061.1** | 2,5 l | plastic | 74,20 |
| **Methanol** | ≥99,5 %, VLSI Grade | **9785.1** | 2,5 l | plastic | 54,75 |
| | | **9785.2** | 5 l | plastic | 98,80 |
| **N-Methyl-2-pyrrolidone (NMP)** | ≥99,8 %, VLSI Grade | **9786.1** | 2,5 l | plastic | 88,05 |
| | | **9786.2** | 5 l | plastic | 153,65 |
| **L(-)-Lactic acid ethyl ester** NEW | ≥97 %, VLSI Grade | **0036.1** | 2,5 l | plastic | 106,45 |
| **2-Propanol** | ≥99,9 %, VLSI Grade | **9781.1** | 2,5 l | plastic | 66,55 |
| | | **9781.2** | 5 l | plastic | 110,20 |

## Acids

### Properties

- High purity
- Trace metal content usually below 100 ppb
- Particle-filtered, maximal 250 particles/ml

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Hydrochloric acid** | 37 %, VLSI Grade | **9787.1** | 2,5 l | plastic | 44,00 |
| **Hydrogen peroxide** | 30 %, VLSI Grade | **9790.1** | 2,5 l | plastic | 77,30 |
| **ortho-Phosphoric acid** | 85 %, VLSI Grade | **9788.1** | 2,5 l | plastic | 142,90 |
| **Sulphuric acid** | 96 %, VLSI Grade | **9789.1** | 2,5 l | plastic | 77,95 |

VLSI or Very Large Scale Integration means that a large number of transistors (now several 100 million) are located on one chip. Since the gaps are very small, roughly 3 µm, the solvents and acids must be of a correspondingly high purity and be particle-filtered. For VLSI, the number of particles is limited to 250 p/ml.

### Example specification:

### Acetone

**≥99,5 %, VLSI Grade**

2-Propanone, Dimethyl ketone

$C_3H_6O$

M 58,08 g/mol

**Danger** H225-H319-H336-EUH066

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥99,5 % |
| Bead number (≤0,5 µm) | ≤250 p/ml |
| Water | ≤0,5 % |
| Alkalinity | 0,5 µeq/g |
| Acidity | 0,2 µeq/g |
| Colour (APHA) | 10 |
| Chloride (Cl) | ≤0,00001 % |
| Phosphate ($PO_4$) | ≤0,00005 % |
| Ash content | ≤0,0005 % |
| Aluminium (Al) | ≤50 ppb |
| Antimony (Sb) | ≤10 ppb |
| Arsenic (As) | ≤10 ppb |
| Barium (Ba) | ≤20 ppb |
| Beryllium (Be) | ≤10 ppb |
| Bismuth (Bi) | ≤10 ppb |
| Lead (Pb) | ≤10 ppb |
| Boron (B) | ≤20 ppb |
| Cadmium (Cd) | ≤10 ppb |
| Calcium (Ca) | ≤50 ppb |
| Chromium (Cr) | ≤10 ppb |
| Iron (Fe) | ≤50 ppb |
| Gallium (Ga) | ≤10 ppb |
| Gold (Au) | ≤10 ppb |
| Potassium (K) | ≤20 ppb |
| Cobalt (Co) | ≤10 ppb |
| Copper (Cu) | ≤30 ppb |
| Lithium (Li) | ≤10 ppb |
| Magnesium (Mg) | ≤20 ppb |
| Manganese (Mn) | ≤10 ppb |
| Molybdenum (Mo) | ≤10 ppb |
| Sodium (Na) | ≤50 ppb |
| Nickel (Ni) | ≤10 ppb |
| Silver (Ag) | ≤10 ppb |
| Strontium (Sr) | ≤10 ppb |
| Titanium (Ti) | ≤10 ppb |
| Vanadium (V) | ≤10 ppb |
| Zinc (Zn) | ≤20 ppb |
| Tin (Sn) | ≤10 ppb |
| Zirconium (Zr) | ≤10 ppb |

# ROTI®CALIPURE standards for your calibration needs

ROTH offers an extensive range of calibration standards. These products are manufactured from highly pure starting material and are specially tested for each application. The corresponding batch-specific certificate of analysis is available online. Each product series offers excellent value for money.

## Melting point standards

The melting point of a substance is the temperature at which the transition from a solid phase to a liquid phase occurs. The determination of melting point is a quick and easy method of determining the basic purity of substances. As the melting point is a characteristic variable for pure substances, it is also used for the identification of organic compounds. ROTH offers a selected range of melting point standards. To allow easy handling and ensure maximum safety, the standards are filled in small quantities protected from light and are ready-to-use straight away.




**Features:**

ready-to-use

- Suitable for checking purity
- Suitable for use independent of instrument type
- Ready-to-use

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Anthraquinone** | Melting point standard 283-286 °C | **9754.1** | 1 g | glass | 30,00 |
| **Benzoic acid** | Melting point standard 121-123 °C | **9722.1** | 1 g | glass | 30,00 |
| **Benzophenone** | Melting point standard 47-49 °C | **9709.1** | 1 g | glass | 30,00 |
| **Carbazole** | Melting point standard 243-247 °C | **9752.1** | 1 g | glass | 30,00 |
| **Caffeine** | Melting point standard 235-238 °C, anhydrous | **9739.1** | 1 g | glass | 30,00 |

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **p-Nitrotoluene** | Melting point standard 52-54 °C | **9712.1** | 1 g | glass | 30,00 |
| **Phenacetin** | Melting point standard 133-135 °C | **9728.1** | 1 g | glass | 30,00 |
| **Salicylic acid** | Melting point standard 158-160 °C | **9731.1** | 1 g | glass | 30,00 |
| **Sulphanilamide** | Melting point standard 164-166 °C | **9734.1** | 1 g | glass | 30,00 |
| **Vanillin** | Melting point standard 81-83 °C | **9714.1** | 1 g | glass | 30,00 |



ready-to-use

## Conductivity standards ROTI®CALIPURE

Our conductivity standard solutions are made from high-quality reagents and therefore ensure maximum precision during calibration. They are ready-to-use and come supplied with a batch-specific certificate of analysis.

- 10 conductivity standards
- Variation in conductivity ±1 % (25 °C)
- Traceable to SRM from NIST

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **Conductivity standard 5 µS/cm** | **2462.1** | 500 ml | 149,45 |
| **Conductivity standard 84 µS/cm** | **2432.1** | 500 ml | 27,45 |
| | **2432.2** | 1 l | 36,05 |
| **Conductivity standard 100 µS/cm** | **2463.1** | 500 ml | 62,90 |
| **Conductivity standard 147 µS/cm** | **2433.1** | 500 ml | 27,45 |
| | **2433.2** | 1 l | 36,05 |
| **Conductivity standard 500 µS/cm** | **2464.1** | 500 ml | 62,90 |
| **Conductivity standard 1 000 µS/cm** | **2465.1** | 500 ml | 62,90 |
| **Conductivity standard 1413 µS/cm** | **2434.1** | 500 ml | 27,45 |
| | **2434.2** | 1 l | 36,05 |
| **Conductivity standard 10 000 µS/cm** | **2466.1** | 500 ml | 62,90 |
| **Conductivity standard 12 880 µS/cm** | **2435.1** | 500 ml | 27,45 |
| | **2435.2** | 1 l | 36,05 |
| **Conductivity standard 500 000 µS/cm** | **2467.1** | 500 ml | 62,90 |




# pH-Buffer Solutions, ROTI®CALIPURE

- Manufactured from high purity buffer substances
- No need for time-consuming drying and weighing of reagents
- The buffer solutions are adjusted to their respective pH values by comparison with standard buffer solutions (according to DIN 19266 and based on primary reference materials of the PTB and/or NIST)
- Quick and precise calibration of measuring equipment
- Stabilised against algae and bacterial action

| pH value | Design | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| 1,00 ±0,05 (20 °C) | colourless | T180.2 | 500 ml | plastic | 17,10 |
| | | T180.1 | 1 l | plastic | 24,20 |
| 1,679 ±0,03 (25 °C) | colourless | 8112.1 | 1 l | plastic | 41,85 |
| 2,00 ±0,02 (20 °C) | colourless | P715.2 | 500 ml | plastic | 17,10 |
| | | P715.1 | 1 l | plastic | 24,20 |
| 3,00 ±0,02 (20 °C) | colourless | T181.2 | 500 ml | plastic | 17,10 |
| | | T181.1 | 1 l | plastic | 24,20 |
| 3,776 ±0,012 (25 °C) | colourless | 4280.1 | 500 ml | plastic | 17,75 |
| | | 4280.2 | 1 l | plastic | 26,35 |
| 4,00 ±0,02 (20 °C) | colourless | P712.3 | 500 ml | plastic | 17,10 |
| | | P712.1 | 1 l | plastic | 24,20 |
| | | P712.2 | 10 l | plastic | 155,90 |
| 4,00 ±0,02 (20 °C) | tinted red | A517.3 | 250 ml | twin neck bottle | 14,55 |
| | | A517.2 | 500 ml | plastic | 17,10 |
| | | A517.4 | 500 ml | twin neck bottle | 18,20 |
| | | A517.1 | 1 l | plastic | 24,20 |
| | | A517.5 | 10 l | plastic | 155,90 |
| 4,005 ±0,02 (25 °C) | colourless | 4281.1 | 500 ml | plastic | 17,75 |
| | | 4281.2 | 1 l | plastic | 26,35 |
| 4,62 ±0,02 (20 °C) | colourless | T182.1 | 1 l | plastic | 24,20 |
| 5,00 ±0,02 (20 °C) | colourless | T183.2 | 500 ml | plastic | 17,10 |
| | | T183.1 | 1 l | plastic | 24,20 |
| 6,00 ±0,02 (20 °C) | colourless | T184.2 | 500 ml | plastic | 17,10 |
| | | T184.1 | 1 l | plastic | 24,20 |
| 6,865 ±0,02 (25 °C) | colourless | 4284.1 | 500 ml | plastic | 17,75 |
| | | 4284.2 | 1 l | plastic | 26,35 |
| 6,88 ±0,02 (20 °C) | colourless | T185.1 | 1 l | plastic | 24,20 |
| 7,00 ±0,02 (20 °C) | colourless | A518.3 | 500 ml | plastic | 17,10 |
| | | A518.1 | 1 l | plastic | 24,20 |
| | | A518.2 | 10 l | plastic | 155,90 |
| 7,00 ±0,02 (20 °C) | tinted green | P713.3 | 250 ml | twin neck bottle | 14,55 |
| | | P713.2 | 500 ml | plastic | 17,10 |
| | | P713.4 | 500 ml | twin neck bottle | 18,20 |
| | | P713.1 | 1 l | plastic | 24,20 |
| | | P713.5 | 10 l | plastic | 155,90 |
| 7,413 ±0,02 (25 °C) | colourless | 4285.1 | 500 ml | plastic | 17,75 |
| | | 4285.2 | 1 l | plastic | 26,35 |
| 8,00 ±0,02 (20 °C) | colourless | T186.2 | 500 ml | plastic | 17,10 |
| | | T186.1 | 1 l | plastic | 24,20 |
| 9,00 ±0,02 (20 °C) | colourless | A519.3 | 500 ml | plastic | 17,10 |
| | | A519.1 | 1 l | plastic | 24,20 |
| | | A519.2 | 10 l | plastic | 155,90 |
| 9,00 ±0,02 (20 °C) | tinted blue | P714.3 | 250 ml | twin neck bottle | 14,55 |
| | | P714.2 | 500 ml | plastic | 17,10 |
| | | P714.1 | 1 l | plastic | 24,20 |
| 9,180 ±0,02 (25 °C) | colourless | 4294.1 | 500 ml | plastic | 17,75 |
| | | 4294.2 | 1 l | plastic | 26,35 |
| 9,22 ±0,02 (20 °C) | colourless NEW | 0466.1 | 500 ml | plastic | 21,40 |
| 10,00 ±0,02 (20 °C) | colourless | P716.2 | 500 ml | plastic | 17,10 |
| | | P716.1 | 1 l | plastic | 24,20 |
| 10,00 ±0,02 (20 °C) | tinted blue | 8086.1 | 250 ml | twin neck bottle | 16,05 |
| | | 8086.2 | 500 ml | plastic | 17,75 |
| | | 8086.3 | 500 ml | twin neck bottle | 19,25 |
| | | 8086.4 | 1 l | plastic | 25,30 |
| | | 8086.5 | 10 l | plastic | 181,70 |
| 10,00 (20 °C) | for complexo-metric titration | T188.1 | 1 l | plastic | 24,20 |
| 11,00 ±0,05 (20 °C) | colourless | T187.2 | 500 ml | plastic | 16,55 |
| | | T187.1 | 1 l | plastic | 24,20 |
| 12,00 ±0,05 (20 °C) | colourless | T189.2 | 500 ml | plastic | 17,10 |
| | | T189.1 | 1 l | plastic | 24,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

# ROTI®STAR pH-buffer solutions

ready-to-use

- Tested in an accredited laboratory in accordance with **ISO 17025**
- Can be traced back to standard reference materials by NIST
- Certificate of analysis complete with information on measuring accuracy available online
- Produced according to a special recipe for maximum shelf life

## Buffer solution pH 4,00 ±0,01 (20 °C)

**ROTI®STAR**

Potassium hydrogen phthalate

**Type analysis:**

pH value (20 °C). ..... 4,00 ±0,01
Tested in an accredited laboratory acc. to ISO 17025.

| | | | |
|---|---|---|---|
| **9974.1** | 500 ml | plastic | 18,20 € |

## Buffer solution pH 7,00 ±0,01 (20 °C)

**ROTI®STAR**

Potassium dihydrogen phosphate/di-Sodium hydrogen phosphate

**Type analysis:**

pH value (20 °C). ..... 7,00 ±0,01
Tested in an accredited laboratory acc. to ISO 17025.

| | | | |
|---|---|---|---|
| **9977.1** | 500 ml | plastic | 18,20 € |

## Buffer solution pH 10,00 ±0,01 (20 °C)

**ROTI®STAR**

di-Sodium tetraborate/sodium hydroxide

**Type analysis:**

pH value (20 °C). ..... 10,00 ±0,01
Tested in an accredited laboratory acc. to ISO 17025.

| | | | |
|---|---|---|---|
| **9983.1** | 500 ml | plastic | 18,20 € |



## AL10 hand-held pH meter

By Aqualytic.
- Splash-proof membrane keyboard
- Manual single-point or double-point calibration via trimmer

**Technical specifications:**

| | |
|---|---|
| Measurement range/resolution | 0.01 to 14.00 pH |
| Accuracy | ±0.1 (pH 4.0-10.0)<br>±0.2 (pH 1.1-3.9 and pH 10.1-13.0)<br>±0.3 (pH 0.1-1.0 and pH 13.1-14.0) |
| Dimensions (L x W x H) | 208 x 110 x 34 mm |

**Delivery incl.** pH plastic electrodes with gel electrolyte and BNC connector, pH buffer solutions (pH 4.01 and pH 7.00, each 90 ml), protective cover for measuring in difficult conditions, case and E-type block 9 V battery.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **YP68.1** | 1 | 197,80 |

**Accessories:**

| | | | |
|---|---|---|---|
| Spare pH plastic electrodes | **YP69.1** | 1 piece | 77,40 |
| E-Block 9 V battery | **1025.1** | 1 piece | 4,85 |

▶ Further pH meters on page 835

# ROTI®STAR Standards for AAS and ICP

**ROTH** has an extensive range of products which meets the highest standards of quality in the field of element standards and ion standards. The solutions and mixtures are made using materials of the highest purity, and therefore meet the requirements for instrumental analysis by AAS and ICP. All solutions are certified and can be traced to NIST standard reference materials. Solutions are produced according to **ISO Guide 34** in an accredited environment. The solutions are tested in a laboratory accredited to **ISO/IEC 17025** and supplied with a detailed, batch-specific certificate of analysis.

## Single Element Standards for AAS
## (Atomic Absorption Spectroscopy)

ready-to-use



AAS standard solutions are made from high-quality reagents, and therefore ensure maximum precision during calibration. Accuracy and precision for reliable measurement results.

- 42 single element standards
- Concentration 1000 mg/l (1 g/l)
- Container sizes: 100 ml and 500 ml
- 24 months shelf life for unopened bottle & 12 months after the bottle has been opened

### Single Element Standards for AAS 1000 mg/l (1 g/l) - ready to use

| Element | | Matrix | Art. No. | Pack qty. (ml) | € |
|---|---|---|---|---|---|
| **Aluminium** | Al | 2 % $HNO_3$ | **2212.1** | 100 | 18,20 |
| | | | **2212.2** | 500 | 28,50 |
| **Antimony** | Sb | 20 % HCl | **2223.1** | 100 | 18,20 |
| | | | **2223.2** | 500 | 28,50 |
| **Arsenic** | As | 2 % $HNO_3$ | **2224.1** | 100 | 18,20 |
| | | | **2224.2** | 500 | 28,50 |
| **Barium** | Ba | 1 % $HNO_3$ | **2225.1** | 100 | 18,20 |
| | | | **2225.2** | 500 | 28,50 |
| **Beryllium** | Be | 2 % $HNO_3$ / 0,5 % HF | **2226.1** | 100 | 87,00 |
| | | | **2226.2** | 500 | 165,05 |
| **Bismuth** | Bi | 3 % $HNO_3$ | **2227.1** | 100 | 18,20 |
| | | | **2227.2** | 500 | 28,50 |
| **Boron** | B | $H_2O$ | **2237.1** | 100 | 18,20 |
| | | | **2237.2** | 500 | 28,50 |
| **Cadmium** | Cd | 2 % $HNO_3$ | **2238.1** | 100 | 18,20 |
| | | | **2238.2** | 500 | 28,50 |
| **Caesium** | Cs | 2 % $HNO_3$ | **2239.1** | 100 | 31,10 |
| | | | **2239.2** | 500 | 48,95 |
| **Calcium** | Ca | 2 % $HNO_3$ | **2240.1** | 100 | 18,20 |
| | | | **2240.2** | 500 | 28,50 |
| **Chromium** | Cr | 2 % $HNO_3$ | **2250.1** | 100 | 18,20 |
| | | | **2250.2** | 500 | 28,50 |
| **Cobalt** | Co | 2 % $HNO_3$ | **2251.1** | 100 | 18,20 |
| | | | **2251.2** | 500 | 28,50 |
| **Copper** | Cu | 2 % $HNO_3$ | **2329.1** | 100 | 18,20 |
| | | | **2329.2** | 500 | 28,50 |
| **Gold** | Au | 2 % HCl | **2258.1** | 100 | 76,25 |
| | | | **2258.2** | 500 | 209,65 |
| **Indium** | In | 2 % $HNO_3$ | **2284.1** | 100 | 36,45 |
| **Iron** | Fe | 2 % $HNO_3$ | **2252.1** | 100 | 18,20 |
| | | | **2252.2** | 500 | 28,50 |
| **Lead** | Pb | 2 % $HNO_3$ | **2228.1** | 100 | 18,20 |
| | | | **2228.2** | 500 | 28,50 |
| **Lithium** | Li | 2 % $HNO_3$ | **2332.1** | 100 | 18,20 |
| | | | **2332.2** | 500 | 28,50 |
| **Magnesium** | Mg | 2 % $HNO_3$ | **2333.1** | 100 | 18,20 |
| | | | **2333.2** | 500 | 28,50 |
| **Manganese** | Mn | 2 % $HNO_3$ | **2334.1** | 100 | 18,20 |
| | | | **2334.2** | 500 | 28,50 |
| **Mercury** | Hg | 10 % $HNO_3$ | **2346.1** | 100 | 18,20 |
| | | | **2346.2** | 500 | 28,50 |
| **Molybdenum** | Mo | 4 % $NH_3$ | **2335.1** | 100 | 18,20 |
| | | | **2335.2** | 500 | 28,50 |

| Element | | Matrix | Art. No. | Pack qty. (ml) | € |
|---|---|---|---|---|---|
| **Nickel** | Ni | 2 % $HNO_3$ | **2339.1** | 100 | 18,20 |
| | | | **2339.2** | 500 | 28,50 |
| **Palladium** | Pd | 3 % $HNO_3$ | **2340.1** | 100 | 120,95 |
| **Phosphorus** | P | $H_2O$ | **2599.1** | 100 | 18,20 |
| | | | **2599.2** | 500 | 28,50 |
| **Platinum** | Pt | 10 % HCl | **2341.1** | 100 | 131,70 |
| | | | **2341.2** | 500 | 471,95 |
| **Potassium** | K | 2 % $HNO_3$ | **2327.1** | 100 | 18,20 |
| | | | **2327.2** | 500 | 28,50 |
| **Scandium** | Sc | 2 % $HNO_3$ | **2347.1** | 100 | 77,30 |
| | | | **2347.2** | 500 | 231,15 |
| **Selenium** | Se | 2 % $HNO_3$ | **2348.1** | 100 | 18,20 |
| | | | **2348.2** | 500 | 28,50 |
| **Silver** | Ag | 2 % $HNO_3$ | **2349.1** | 100 | 18,20 |
| | | | **2349.2** | 500 | 28,50 |
| **Silicon** | Si | $H_2O$ | **2350.1** | 100 | 18,20 |
| | | | **2350.2** | 500 | 28,50 |
| **Silicon** | Si | 0,5 % NaOH | **2351.1** | 100 | 18,20 |
| **Sodium** | Na | 2 % $HNO_3$ | **2337.1** | 100 | 18,20 |
| | | | **2337.2** | 500 | 28,50 |
| **Strontium** | Sr | 2 % $HNO_3$ | **2352.1** | 100 | 18,20 |
| | | | **2352.2** | 500 | 28,50 |
| **Tellurium** | Te | 2 % $HNO_3$ | **2353.1** | 100 | 26,35 |
| | | | **2353.2** | 500 | 47,20 |
| **Thallium** | Tl | 2 % $HNO_3$ | **2354.1** | 100 | 26,35 |
| | | | **2354.2** | 500 | 47,20 |
| **Tin** | Sn | 10 % HCl | **2384.1** | 100 | 18,20 |
| | | | **2384.2** | 500 | 28,50 |
| **Titanium** | Ti | 2 % $HNO_3$ / 0,1 % HF | **2355.1** | 100 | 18,20 |
| | | | **2355.2** | 500 | 28,50 |
| **Tungsten** | W | 4 % $NH_3$ | **2361.1** | 100 | 26,80 |
| | | | **2361.2** | 500 | 47,20 |
| **Vanadium** | V | 2 % $HNO_3$ | **2360.1** | 100 | 18,20 |
| | | | **2360.2** | 500 | 28,50 |
| **Yttrium** | Y | 2 % $HNO_3$ | **2371.1** | 100 | 26,80 |
| | | | **2371.2** | 500 | 47,20 |
| **Zinc** | Zn | 2 % $HNO_3$ | **2383.1** | 100 | 18,20 |
| | | | **2383.2** | 500 | 28,50 |
| **Zircon** | Zr | 5 % HCl / 0,5 % HF | **2396.1** | 100 | 26,80 |
| | | | **2396.2** | 500 | 47,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Multi-Element Standards for Graphite Furnace AAS

ready-to-use

This multi-element standard is produced from ultra-pure raw materials and in accordance with strict quality guidelines. The traceability and standard reference material of the NIST is documented on the comprehensive certificate of analysis. The standard is suitable for the calibration of graphite furnace AAS units.

| Product | Elements | Composition | Matrix | Art. No. | Pack qty. (ml) | € |
|---|---|---|---|---|---|---|
| **GF AAS Multi-Element Standard Solution XVIII (concentration in mg/l)** | 16 | Ag (10), Al (100), As (100), Ba (50), Be (5), Cd (5), Co (50), Cr (20), Cu (50), Fe (20), Mn (20), Ni (50), Pb (100), Sb (100), Se (100), Tl (100) | 5 % $HNO_3$ | **9778.1** | 100 | 177,40 |

# Matrix Modifer Solutions for Graphite Furnace AAS

Matrix modifier solutions by ROTH are made from high purity starting materials (≥99,999 %) and delivered with a detailed batch specific certificate of analysis. The solutions can be used either diluted or as mixtures, and are suitable for eliminating matrix effects in graphite furnace AAS.

- Up to 70 measured trace impurities in ppm range and lower
- Guaranteed accuracy: ±1 %
- Container size: 50 ml
- 24 months shelf life for unopened bottle & 12 months after the bottle has been opened



| Compound | Matrix | Concentration | Art. No. | Pack qty. (ml) | € |
|---|---|---|---|---|---|
| **Ammonium dihydrogene phosphate** | 1 % $HNO_3$ | 20 g/l | **5150.1** | 50 | 62,25 |
| | | 100 g/l | **5148.1** | 50 | 120,95 |
| **Ammonium nitrate** | $H_2O$ | 50 g/l | **5145.1** | 50 | 120,95 |
| **Magnesium nitrate** | $H_2O$ | 10 g/l | **5140.1** | 50 | 73,00 |
| | | 20 g/l | **5142.1** | 50 | 120,95 |
| **Nickel nitrate** | 1 % $HNO_3$ | 10 g/l | **5146.1** | 50 | 73,00 |
| **Palladium nitrate & Magnesium nitrate** | 1 % $HNO_3$ | 2 g/l & 10 g/l | **5139.1** | 50 | 165,05 |
| **Palladium nitrate** | 1 % $HNO_3$ | 2 g/l | **5143.1** | 50 | 120,95 |
| | | 5 g/l | **5144.1** | 50 | 165,05 |
| | | 10 g/l | **4842.1** | 50 | 274,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Single Element Standards for ICP-OES
## (Inductively Coupled Plasma – Optical Emission Spectrometry)

The solutions and mixtures are made using materials of the highest purity, and therefore meet the requirements for instrumental analysis by AAS and ICP. All solutions are certified and can be traced to NIST standard reference solutions. Solutions are produced according to **ISO Guide 34** in an accredited environment. The solutions are tested in a laboratory accredited to **ISO/IEC 17025** and supplied with a detailed, batch-specific certificate of analysis.
Each standard solution is made of high purity starting materials (mostly ≥99,999 %), and its content is determined gravimetrically and by ICP. High quality acids (purified by subboiling distillation) and water are used for production of the solutions. This gives you first-class reference materials of the highest purity and quality.



- 68 single element standards
- Concentration 1000 mg/l (1 g/l) and 10 000 mg/l (10 g/l)
- Up to 70 measured trace impurities in the ppt range
- 24 months shelf life for unopened bottle & 12 months after the bottle has been opened

| Element | | Matrix | 1000 mg/l (1 g/l) | | | 10000 mg/l (10 g/l) | | |
|---|---|---|---|---|---|---|---|---|
| | | | Art. No. | Pack qty. (ml) | € | Art. No. | Pack qty. (ml) | € |
| **Aluminium** | Al | 2 % $HNO_3$ | **2397.1** | 100 | 50,00 | **2488.1** | 100 | 89,15 |
| | | | **2397.2** | 500 | 109,55 | - | - | |
| **Antimony** | Sb | 20 % HCl | **2398.1** | 100 | 50,00 | **2489.1** | 100 | 89,15 |
| **Arsenic** | | 2 % $HNO_3$ | **2399.2** | 30 | 36,45 | **2491.1** | 100 | 89,15 |
| | | | **2399.1** | 100 | 50,00 | - | - | |
| **Barium** | Ba | 1 % $HNO_3$ | **2400.1** | 100 | 50,00 | **2492.1** | 100 | 89,15 |
| | | | **2400.2** | 500 | 109,55 | **2492.2** | 500 | 196,20 |
| **Beryllium** | Be | 2-5 % $HNO_3$ / 0,5 % HF | **2401.1** | 100 | 89,80 | **2496.1** | 100 | 332,20 |
| **Bismuth** | Bi | 3 % $HNO_3$ | **2402.1** | 100 | 50,00 | **2497.1** | 100 | 89,15 |
| **Boron** | B | $H_2O$ | **2404.1** | 100 | 50,00 | **2500.1** | 100 | 89,15 |
| | | | **2404.2** | 500 | 109,55 | **2500.2** | 500 | 196,20 |
| **Cadmium** | Cd | 2 % $HNO_3$ | **2405.1** | 100 | 50,00 | **2501.1** | 100 | 89,15 |
| **Caesium** | Cs | 2 % $HNO_3$ | **2406.1** | 100 | 50,00 | **2502.1** | 100 | 93,45 |
| **Calcium** | Ca | 2 % $HNO_3$ | **2407.1** | 100 | 50,00 | **2503.1** | 100 | 89,15 |
| | | | **2407.2** | 500 | 109,55 | **2503.2** | 500 | 196,20 |
| **Cerium** | Ce | 2-3 % $HNO_3$ | **2408.1** | 100 | 50,00 | **2504.1** | 100 | 98,40 |
| **Chromium** | Cr | 2-3 % $HNO_3$ | **2409.1** | 100 | 50,00 | **2505.1** | 100 | 89,15 |
| | | | **2409.2** | 500 | 109,55 | **2505.2** | 500 | 196,20 |
| **Cobalt** | Co | 2-3 % $HNO_3$ | **2410.1** | 100 | 50,00 | **2506.1** | 100 | 89,15 |
| **Copper** | Cu | 2-3 % $HNO_3$ | **2426.1** | 100 | 50,00 | **2520.1** | 100 | 89,15 |
| **Dysprosium** | Dy | 2-3 % $HNO_3$ | **2411.1** | 100 | 53,25 | **2507.1** | 100 | 103,10 |
| **Erbium** | Er | 2-3 % $HNO_3$ | **2413.1** | 100 | 53,25 | **2509.1** | 100 | 98,40 |
| **Europium** | Eu | 2 % $HNO_3$ | **2414.1** | 100 | 53,25 | **2510.1** | 100 | 117,20 |
| **Gadolinium** | Gd | 2-3 % $HNO_3$ | **2416.1** | 100 | 53,25 | **2511.1** | 100 | 105,90 |
| **Gallium** | Ga | 2-3 % $HNO_3$ | **2418.1** | 100 | 53,25 | **2512.1** | 100 | 105,90 |
| **Germanium** | Ge | 2 % $HNO_3$ / 0,5 % HF | **2419.1** | 100 | 53,25 | **2513.1** | 100 | 117,20 |
| **Gold** | Au | 2-5 % HCl | **2420.1** | 100 | 155,90 | **2514.1** | 100 | 553,65 |
| **Hafnium** | Hf | 2 % HCl / 0,5 % HF bzw. 5 % $HNO_3$ / 0,5 % HF | **2421.1** | 100 | 165,05 | **2515.1** | 100 | 607,40 |
| **Holmium** | Ho | 2-3 % $HNO_3$ | **2422.1** | 100 | 68,30 | **2516.1** | 100 | 105,90 |
| **Indium** | In | 2-3 % $HNO_3$ | **2423.1** | 100 | 53,25 | **2517.1** | 100 | 105,90 |
| **Iridium** | Ir | 10 % HCl | **2424.1*** | 100 | 198,90 | **2518.1*** | 100 | 805,20 |
| **Iron** | Fe | 2-4 % $HNO_3$ | **2412.1** | 100 | 50,00 | **2508.1** | 100 | 89,15 |
| | | | **2412.2** | 500 | 109,55 | **2508.2** | 500 | 196,20 |
| **Lanthanum** | La | 2-3 % $HNO_3$ | **2427.1** | 100 | 50,00 | **2521.1** | 100 | 89,15 |
| **Lead** | Pb | 2-3 % $HNO_3$ | **2403.1** | 100 | 50,00 | **2499.1** | 100 | 89,15 |
| **Lithium** | Li | 2-3 % $HNO_3$ | **2428.1** | 100 | 50,00 | **2522.1** | 100 | 91,40 |
| **Luthetium** | Lu | 2-3 % $HNO_3$ | **2429.1** | 100 | 142,90 | **2523.1** | 100 | 499,90 |
| **Magnesium** | Mg | 2 % $HNO_3$ | **2430.1** | 100 | 50,00 | **2524.1** | 100 | 89,15 |
| | | | **2430.2** | 500 | 109,55 | **2524.2** | 500 | 196,20 |
| **Manganese** | Mn | 2-3 % $HNO_3$ | **2437.1** | 100 | 50,00 | **2525.1** | 100 | 89,15 |
| | | | **2437.2** | 500 | 109,55 | **2525.2** | 500 | 196,20 |

| Element | | Matrix | 1000 mg/l (1 g/l) | | | 10000 mg/l (10 g/l) | | |
|---|---|---|---|---|---|---|---|---|
| | | | Art. No. | Pack qty. (ml) | € | Art. No. | Pack qty. (ml) | € |
| **Mercury** | Hg | 10 % $HNO_3$ | **2453.1** | 100 | 50,00 | **2537.1** | 100 | 89,15 |
| **Molybdenum** | Mo | 4 % $NH_3$ | **2438.1** | 100 | 50,00 | **2526.1** | 100 | 89,15 |
| **Neodymium** | Nd | 2-3 % $HNO_3$ | **2443.1** | 100 | 53,25 | **2528.1** | 100 | 117,75 |
| **Nickel** | Ni | 2-3 % $HNO_3$ | **2444.1** | 100 | 50,00 | **2529.1** | 100 | 89,15 |
| **Niobium** | Nb | 2-5 % $HNO_3$ / 0,5 % HF | **2445.1** | 100 | 53,25 | **2531.1** | 100 | 89,15 |
| **Osmium** | Os | 2 % HCl | **2446.2*** | 30 | 154,30 | - | - | |
| | | | **2446.1*** | 100 | 284,90 | - | - | |
| **Palladium** | Pd | 3-4 % $HNO_3$ | **2447.1** | 100 | 160,20 | **2532.1** | 100 | 575,15 |
| **Phosphorus** | P | $H_2O$ | **2451.1** | 100 | 50,00 | **2534.1** | 100 | 89,15 |
| **Platinum** | Pt | 10 % HCl | **2448.1** | 100 | 193,50 | **2533.1** | 100 | 966,45 |
| **Potassium** | K | 2 % $HNO_3$ | **2425.1** | 100 | 50,00 | **2519.1** | 100 | 89,15 |
| | | | **2425.2** | 500 | 109,55 | **2519.2** | 500 | 196,20 |
| **Praseodymium** | Pr | 2-3 % $HNO_3$ | **2452.1** | 100 | 53,25 | **2536.1** | 100 | 98,40 |
| **Rhenium** | Re | 2 % $HNO_3$ | **2454.1** | 100 | 120,95 | **2538.1** | 100 | 439,70 |
| **Rhodium** | | 5 % HCl | **2455.2** | 30 | 235,45 | - | - | |
| | | | **2455.1** | 100 | 396,70 | - | - | |
| **Rubidium** | Rb | 2 % $HNO_3$ | **2456.1** | 100 | 50,00 | **2539.1** | 100 | 252,65 |
| **Ruthenium** | Ru | 5-10 % HCl | **2457.1*** | 100 | 204,25 | **2540.1*** | 100 | 439,70 |
| **Samarium** | Sm | 2 % $HNO_3$ | **2458.1** | 100 | 53,25 | **2541.1** | 100 | 115,60 |
| **Scandium** | Sc | 2 % $HNO_3$ | **2459.1** | 100 | 105,25 | - | - | |
| **Sulphur** | S | $H_2O$ | **2460.1** | 100 | 50,00 | **2542.1** | 100 | 89,15 |
| **Selenium** | Se | 2-3 % $HNO_3$ | **2461.1** | 100 | 50,00 | **2543.1** | 100 | 89,15 |
| **Silver** | Ag | 2-4 % $HNO_3$ | **2468.1** | 100 | 50,00 | **2544.1** | 100 | 89,15 |
| **Silicon** | Si | $H_2O$ | **2469.1** | 100 | 50,00 | **2546.1** | 100 | 89,15 |
| **Sodium** | Na | 2 % $HNO_3$ | **2439.1** | 100 | 50,00 | **2527.1** | 100 | 89,15 |
| | | | **2439.2** | 500 | 109,55 | **2527.2** | 500 | 196,20 |
| **Strontium** | Sr | 2 % $HNO_3$ | **2470.1** | 100 | 50,00 | **2547.1** | 100 | 89,15 |
| | | | **2470.2** | 500 | 109,55 | **2547.2** | 500 | 196,20 |
| **Tantalum** | Ta | 1 % $HNO_3$ / 0,5 % HF | **2471.1** | 100 | 53,25 | **2548.1** | 100 | 98,40 |
| **Tellurium** | Te | 2 % $HNO_3$ | **2472.1** | 100 | 53,25 | **2549.1** | 100 | 98,40 |
| **Terbium** | Tb | 2-3 % $HNO_3$ | **2476.1** | 100 | 105,25 | **2550.1** | 100 | 220,40 |
| **Thallium** | Tl | 2-5 % $HNO_3$ | **2477.1** | 100 | 50,00 | **2552.1** | 100 | 89,15 |
| **Thulium** | Tm | 2-5 % $HNO_3$ | **2478.1** | 100 | 131,70 | - | - | |
| **Tin** | Sn | 10 % HCl | **2486.1** | 100 | 50,00 | **2583.1** | 100 | 89,15 |
| **Titanium** | Ti | 2 % $HNO_3$ / 0,1 % HF | **2479.1** | 100 | 50,00 | **2561.1** | 100 | 89,15 |
| **Tungsten** | W | 4-10 % $NH_3$ | **2482.1** | 100 | 53,25 | **2571.1** | 100 | 89,15 |
| **Vanadium** | V | 2-3 % $HNO_3$ | **2480.1** | 100 | 50,00 | **2567.1** | 100 | 89,15 |
| **Ytterbium** | Yb | 2-3 % $HNO_3$ | **2483.1** | 100 | 53,25 | **2572.1** | 100 | 160,75 |
| **Yttrium** | Y | 2-3 % $HNO_3$ | **2484.1** | 100 | 53,25 | **2574.1** | 100 | 98,40 |
| **Zinc** | Zn | 2-3 % $HNO_3$ | **2485.1** | 100 | 53,25 | **2576.1** | 100 | 98,40 |
| | | | **2485.2** | 500 | 109,55 | **2576.2** | 500 | 196,20 |
| **Zircon** | Zr | 5 % HCl / 0,5 % HF | **2487.1** | 100 | 53,25 | **2584.1** | 100 | 107,00 |

For additional product data and safety information, see chapter Chemicals A-Z.

* Cannot be traced back to NIST SRM.

# Multi Element Standards for ICP-OES
## (Inductively Coupled Plasma – Optical Emission Spectrometry)

All solutions are certified and can be traced to NIST standard reference solutions.
Solutions are produced according to ISO Guide 34 in an accredited environment.
The solutions are tested in a laboratory accredited to ISO/IEC 17025 and supplied with a detailed, batch-specific certificate of analysis.
A series of mixtures of different element combinations and concentrations for standard environmental analyses.




- 16 different multi element standards
- Quality control standards
- Surface water analysis ①
- Sewage sludge analysis ②
- 12 months shelf life for unopened bottle & 6 months after the bottle has been opened

| Product | Elements | Composition | Matrix | Art. No. | Pack qty. (ml) | € |
|---|---|---|---|---|---|---|
| **ICP Multi-Element Standard Solution I (concentration in mg/l)** | 19 | Ag (50), Al (100), B (15), Ba (5), Be (1), Bi (200), Cd (20), Co (20), Cr (25), Cu (20), Fe (15), Ga (150), In (200), Mn (5), Ni (50), Pb (200), Sr (1), Tl (400), Zn (20) | 5 % $HNO_3$ | **2636.1** | 100 | 142,90 |
| **ICP Multi-Element Standard Solution III (1000 mg/l)** | 4 | Ba, Ca, Mg, Sr | 2 % $HNO_3$ | **2637.1** | 100 | 110,20 |
| **ICP Multi-Element Standard Solution IV (1000 mg/l)** | 23 | Ag, Al, B, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, In, K, Li, Mg, Mn, Na, Ni, Pb, Sr, Tl, Zn | 2 % $HNO_3$ | **2638.1** | 100 | 263,40 |
| **ICP Multi-Element Standard Solution VIII (100 mg/l)** | 24 | Al, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, Li, Mg, Mn, Na, Ni, Pb, Se, Sr, Te, Tl, Zn | 2 % $HNO_3$ | **2639.1** | 100 | 263,40 |
| **ICP Multi-Element Standard Solution IX (100 mg/l)** | 9 | As, Be, Pb, Cd, Cr, Ni, Hg, Se, Tl | 2 % $HNO_3$ | **2640.1** | 100 | 141,40 |
| **ICP Multi-Element Standard Solution X ① (concentration in mg/l)** | 23 | Ca (35000), Mg (15000), Na (8000), K (3000), B (100), Fe (100), Mo (100), Sr (100), As (50), Ba (50), Ni (50), V (50), Zn (50), Mn (30), Co (25), Pb (25), Be (20), Cd (20), Cr (20), Cu (20), Bi (10), Se (10), Tl (10) | 2 % $HNO_3$ | **2642.1** | 100 | 242,45 |
| **ICP Multi-Element Standard Solution XI ② (concentration in mg/l)** | 7 | Cd (10), Cr (900), Cu (800), Hg (8), Ni (200), Pb (900), Zn (2500) | 2 % $HNO_3$ | **2643.1** | 100 | 141,40 |
| **ICP Multi-Element Standard Solution XIII (concentration in mg/l)** | 15 | Al (500), As (100), Be (100), Cd (25,0), Co (100), Cr (100), Cu (100), Fe (100), Hg (5,0), Mn (100), Ni (100), Pb (100), Se (25,0), V (250), Zn (100) | 2 % $HNO_3$ | **2644.1** | 100 | 284,90 |
| **ICP Multi-Element Standard Solution XVI (100 mg/l)** | 21 | As, Be, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn | 2 % $HNO_3$ | **2645.1** | 100 | 241,90 |
| **ICP Multi-Element Standard Solution XVII (100 mg/l)** | 7 | Hf, Ir, Sb, Sn, Ta, Ti, Zr | 15 % HCl | **2646.1** | 100 | 165,05 |
| **ICP Multi-Element Standard Solution A (concentration in mg/l)** | 24 | Al (1000), As (100), Ba (500), B (500), Ca (1000), Cd (100), Co (500), Cr (500), Cu (500), Fe (1000), Hg (10), K (1000), Li (100), Mg (1000), Mn (500), Na (1000), Ni (500), Pb (500), Rb (500), Sr (500), Te (500), Ti (500), V (500), Zn (500) | 5 % $HNO_3$ | **8248.1** | 100 | 446,15 |
| **ICP Multi-Element Standard Solution B (concentration in mg/l)** | 25 | Al (200), As (5), Ba (50), B (20), Ca (500), Cd (5), Co (20), Cr (40), Cu (20), Fe (100), Hg (0,5), K (100), Li (10), Mg (500), Mn (10), Na (100), Ni (40), P (40), Pb (10), Rb (10), Sr (100), Te (10), Ti (10), V (40), Zn (50) | 5 % $HNO_3$ | **8249.1** | 100 | 332,20 |
| **ICP Multi-Element Standard Solution (9 elements, 1000 mg/l)** | 9 | As, Cd, Cr, Cu, Mo, Ni, Sb, Se, Zn NEW | 5 % $HNO_3$ | **9987.1** | 100 | 241,90 |
| **ICP Multi-Element Standard Solution (22 elements, 1 mg/l)** | 22 | As, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn | 5 % $HNO_3$ | **2647.1** | 100 | 64,00 |
| **ICP Multi-Element Standard Solution (22 elements, 100 mg/l)** | 22 | As, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn | 5 % $HNO_3$ | **2648.1** | 100 | 284,90 |
| **ICP Multi-Element Standard Solution (28 elements, 1 mg/l)** | 28 | Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn | 5 % $HNO_3$ | **2649.1** | 100 | 78,40 |
| **ICP Multi-Element Standard Solution (28 elements, 100 mg/l)** | 28 | Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn | 5 % $HNO_3$ | **2650.1** | 100 | 284,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ For the exact composition, safety information and additional data, see chapter Chemicals A-Z.

# Multi-element standards for the ICP-MS

## (Inductively Coupled Plasma - Mass spectrometry)

NEW ready-to-use

The standard solutions are manufactured from high-purity starting material (as a rule ≥99,999 %) under clean room conditions. Acids (purified by means of sub-boiling distillation) and water of highest quality are used to manufacture the solutions.

The solutions are certified and can be traced to NIST standard reference solutions. Solutions are produced according to **ISO Guide 34** in an accredited environment. The solutions are tested in a laboratory accredited to **ISO/IEC 17025** and supplied with a detailed, batch-specific certificate of analysis.

The range encompasses 19 different multi-element standards in various compositions for tuning, calibration and interference tests.

| Product | Elements | Composition | Matrix | Art. No. | Pack qty. (ml) | € |
|---|---|---|---|---|---|---|
| **ICP-MS Multi-Element Standard Solution (concentration in mg/l)** | 3 | Cr (4), Fe (20), Sr (4) | 2 % $HNO_3$ | **0381.1** | 100 | 90,30 |
| | | | | **0381.2** | 500 | 176,30 |
| **ICP-MS Multi-Element Standard Solution (1000 mg/)** | 4 | Ca, K, Mg, Na | 2 % $HNO_3$ | **6803.1** | 100 | 80,55 |
| **ICP-MS Multi-Element Standard Solution (10 mg/)** | 4 | Mo, Sb, Sn, Ti | 2 % $HNO_3$ / 0,1 % HF | **6807.1** | 100 | 83,85 |
| | | | | **6807.2** | 500 | 165,55 |
| **ICP-MS Calibration Standard Solution (1000 mg/l)** | 5 | Ca, Fe, K, Mg, Na | 2 % $HNO_3$ | **0409.1** | 100 | 95,70 |
| | | | | **0409.2** | 500 | 203,20 |
| **ICP-MS Tuning Solution (10 mg/l)** | 5 | Ce, Co, Li, Mg, Tl, Y | 2 % $HNO_3$ | **6819.1** | 100 | 84,95 |
| **ICP-MS Tuning Solution (1 µg/l)** | 6 | Ce, Co, Li, Mg, Tl, Y | 2 % $HNO_3$ | **6806.1** | 100 | 95,70 |
| | | | | **6806.2** | 500 | 176,30 |
| **ICP-MS Tuning Solution A (concentration in µg/l)** | 6 | Be (10), In (2), Bi (2), Ce (2), Co (5), Mn (5) | 1 % $HNO_3$ | **0900.2** | 250 | 258,00 |
| **ICP-MS Tuning Solution B (concentration in µg/l)** | 6 | Be (1000), In (200), Bi (200), Ce (200), Co (500), Mn (500) | 1 % $HNO_3$ | **0902.1** | 100 | 198,90 |
| **ICP-MS Multi-Element Standard Solution (concentration in mg/l)** | 8 | As (2), Cd (2), Cr (3), Cu (10), Fe (4), Ni (2), Pb (5), Zn (10) | 2 % $HNO_3$ | **6814.1** | 100 | 106,45 |
| | | | | **6814.2** | 500 | 212,85 |
| **ICP-MS Calibration Standard Solution (10 mg/l)** | 8 | Ge, Hf, Mo, Sb, Sn, Te, W, Zr | 2 % $HNO_3$ / 0,1 % HF | **6816.1** | 100 | 95,70 |
| | | | | **6816.2** | 500 | 187,05 |
| **ICP-MS Multi-Element Standard Solution (10 mg/l)** | 10 | Au, Hf, Ir, Pd, Pt, Rh, Ru, Sb, Sn, Te | 10 % HCl / 1 % $HNO_3$ | **0429.1** | 100 | 105,35 |
| **ICP-MS Multi-Element Standard Solution (concentration in mg/l)** | 10 | Mo (50), Pb (40), Pt (40), Rh (40), Sb (80), Si (40), Sn (80), Te (40), W (40), Zr (40) | 2 % HCl | **6815.1** | 100 | 230,05 |
| | | | | **6815.2** | 500 | 461,20 |
| **ICP-MS Interference Check Solution A - 6020 (concentration in µg/l)** | 12 | $Cl^-$ (20000), Ca (3000), Fe (2500), Na (2500), C (2000), Al (1000), Mg (1000), P (1000), K (1000), S (1000), Mo (20), Ti (20) | 5 % $HNO_3$ | **6808.1** | 100 | 230,05 |
| | | | | **6808.2** | 500 | 481,60 |
| **ICP-MS Multi-Element Standard Solution (concentration in mg/l)** | 12 | As (2,5), Ba (2,5), Cd (0,5), Cr (5), Cu (5), Hg (0,2), Mo (3), Ni (5), Pb(5), Sb (0,5), Se (0,7), Zn (5) | 2 % $HNO_3$ | **6810.1** | 100 | 138,70 |
| | | | | **6810.2** | 500 | 267,70 |
| **ICP-MS Multi-Element Standard Solution (10 mg/l)** | 16 | As, Be, Co, Cr, Cs, Cu, Li, Mn, Ni, Pb, Rb, Sc, Se, Sr, V, Zn | 5 % $HNO_3$ | **0416.1** | 100 | 144,05 |
| | | | | **0416.2** | 500 | 294,55 |
| **ICP-MS Multi-Element Standard Solution (100 mg/)** | 21 | Al, Ag, As, Ba, Be, Cd, Co, Cr, Cu, Fe, K, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn | 5 % $HNO_3$ | **6811.1** | 100 | 212,85 |
| **ICP-MS Multi-Element Standard Solution (concentration in mg/l)** | 22 | Ag (5), Al (30), As (10), B (30), Ba (10), Be (3), Cd (3), Co (5), Cr (10), Cu (10), Mn (5), Mo (3), Ni (10), Pb (5), Se (5), Sn (10), Sr (100), Te (10), Ti (3), Tl (2), V (10), Zn (100) | 2 % $HNO_3$ | **0383.1** | 100 | 273,05 |
| | | | | **0383.2** | 500 | 520,30 |
| **ICP-MS Multi-Element Standard Solution (concentration in mg/l)** | 27 | Ag (50), Al (80), As (80), B (40), Ba (50), Be (40), Ca (80), Cd (40), Co (50), Cr (50), Cu (50), Fe (50), In (40), K (80), Li (40), Mg (80), Mn (50), Na (80), Ni (50), P (200), Pb (80), Se (40), Sr (50), Ti (40), Tl (40), V (50), Zn (50) | 2 % $HNO_3$ | **6813.1** | 100 | 309,60 |
| | | | | **6813.2** | 500 | 563,30 |
| **ICP-MS Multi-Element Standard Solution (10 mg/l)** | 28 | Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, In, K, Li, Mg, Mn, Na, Ni, Pb, Rb, Se, Sr, Tl, V, Zn | 5 % $HNO_3$ | **6802.1** | 100 | 402,05 |

# Single Element Standards for ICP-MS

NEW

### Mercury ICP-MS Standard Solution

**10 mg/l Hg**

**Danger** H290-H314-EUH071

**Type analysis:**

c (Hg) in 5 % $HNO_3$ ..... 10 mg/l

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **5017.1** | 100 ml | HDPE | 47,30 € |

# ROTIPURAN® ULTRA / SUPRA

## Acids, Alkaline Solutions and Water for trace analysis via ICP-OES, ICP-MS, AAS and IC

**ROTH** provides two high quality product lines, **ROTIPURAN® Ultra & Supra** specially for research, trace analysis and electronics.
These ultrapure reagents are produced using a technologically complex distillation process (subboiling distillation) and are filled only into specially selected, suitable containers under clean room conditions. Very extensive production and quality controls guarantee extremely high quality.


Analysenzertifikat
CERTIFICATE OF ANALYSIS

## ROTIPURAN® Ultra



This ultrapure product line is characterised for its especially high purity **(in ppt-quality)** and fulfils the highest purity requirements. The metal content of these products is below 100 ppt [parts per trillion=$10^{-12}$] while key metals are under 10 ppt. These products are used in ultra trace analysis (via ICP-OES, ICP-MS, AAS, IC) and for applications in the electronics industry. The reagents are bottled and offered in high class fluoropolymer plastic bottles (PFA and FEP).

Features:
- Specified metal content: less than 100 ppt
- Preponderant metals are under 10 ppt
- More than 65 analysed metals
- Produced and bottled under clean room conditions
- Continuous process control for highest product purity
- Bottled exclusively in purified fluoropolymer bottles
- Highest purity and maximum product safety

## ROTIPURAN® Supra



This supra quality line **(in ppb-quality)** is perfectly suitable for sample preparation in trace analysis (e.g. via ICP-OES, AAS, IC, etc.). Over 60 elements are specified and their content is below 1 ppb [parts per billion =$10^{-9}$]. Bottled and delivered in special plastic bottles.

Features:
- Maximum metal contamination: <1 ppb
- 60 specified metals
- Produced and filled under clean room conditions
- Bottled in special lightweight bottles for greater safety and easier handling. 2,5 liter bottles have got a handle
- HF is delivered with additional drop spout for safe handling
- Extremely economical purity for most analytic applications

ROTIPURAN® Low Organic:
TOC (Total Organic Carbon) - content: <20 ppb

## ROTIPURAN® Ultra products at a glance

| Product | Trade Marks | Purity | Thread | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|---|---|
| **Acetic acid** | ROTIPURAN® Ultra | 100 % | 38 - 430 | **HN65.2** | 250 ml | plastic (FEP) | 351,45 |
| | | | | **HN65.1** | 500 ml | plastic (FEP) | 499,90 |
| | | | | **HN65.3** | 1 l | plastic (FEP) | 790,15 |
| **Ammonia solution** | ROTIPURAN® Ultra | 20 % | 38 - 430 | **HN66.2** | 250 ml | HDPE | 217,70 |
| | | | | **HN66.1** | 500 ml | HDPE | 367,55 |
| | | | | **HN66.3** | 1 l | HDPE | 607,40 |
| **Hydrobromic acid** | ROTIPURAN® Ultra | 48 % | 38 - 430 | **HN67.3** | 250 ml | plastic (FEP) | 547,20 |
| | | | | **HN67.1** | 500 ml | plastic (FEP) | 744,45 |
| | | | | **HN67.2** | 1 l | plastic (FEP) | 1149,20 |
| | | | | **HN67.4** | 2 l | plastic (FEP) | 1686,70 |
| **Hydrochloric acid** | ROTIPURAN® Ultra | 34 % | 38 - 430 | **HN63.1** | 250 ml | plastic (PFA) | 335,30 |
| | | | | **HN63.2** | 500 ml | plastic (PFA) | 499,90 |
| | | | | **HN63.3** | 1 l | plastic (PFA) | 833,15 |
| | | | | **HN63.4** | 2 l | plastic (PFA) | 1202,95 |
| **Hydrofluoric acid** | ROTIPURAN® Ultra | 48 % | 38 - 430 | **HN64.2** | 250 ml | plastic (PFA) | 439,70 |
| | | | | **HN64.1** | 500 ml | plastic (PFA) | 663,85 |
| | | | | **HN64.3** | 1 l | plastic (PFA) | 1064,25 |
| **Hydrogen peroxide** | ROTIPURAN® Ultra | 31 % | 38 - 430 | **HN69.1** | 500 ml | plastic (FEP) | 487,55 |
| **Nitric acid** | ROTIPURAN® Ultra | 69 % | 38 - 430 | **HN60.1** | 250 ml | plastic (FEP) | 356,80 |
| | | | | **HN60.2** | 500 ml | plastic (FEP) | 489,15 |
| | | | | **HN60.3** | 1 l | plastic (FEP) | 790,15 |
| | | | | **HN60.4** | 2 l | plastic (FEP) | 1209,40 |
| **Perchloric acid** | ROTIPURAN® Ultra | 70 % | 38 - 430 | **HN61.2** | 250 ml | plastic (FEP) | 439,70 |
| | | | | **HN61.1** | 500 ml | plastic (FEP) | 607,40 |
| | | | | **HN61.3** | 1 l | plastic (FEP) | 998,70 |
| | | | | **HN61.4** | 2 l | plastic (FEP) | 1579,20 |
| **Sulphuric acid** | ROTIPURAN® Ultra | 95 % | 38 - 430 | **HN62.1** | 250 ml | plastic (FEP) | 374,00 |
| | | | | **HN62.2** | 500 ml | plastic (FEP) | 534,85 |
| | | | | **HN62.3** | 1 l | plastic (FEP) | 891,20 |
| | | | | **HN62.4** | 2 l | plastic (FEP) | 1471,70 |
| **Water** | ROTIPURAN® | Ultra | 38 - 430 | **HN68.1** | 500 ml | LDPE | 50,00 |
| | | | | **HN68.2** | 1 l | LDPE | 74,10 |
| | | | | **HN68.3** | 2 l | LDPE | 139,65 |

## ROTIPURAN® Supra products at a glance

| Product | Trade Marks | Purity | Thread | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|---|---|
| **Acetic acid** | ROTIPURAN® Supra | 100 % | GL 45 | **HN55.1** | 500 ml | HDPE | 76,90 |
| | | | | **HN55.3** | 1 l | HDPE | 118,80 |
| | | | | **HN55.4** | 2,5 l | HDPE | 146,10 |
| | | | 38 - 430 | **HN55.5** | 4 l | HDPE | 284,90 |
| **Ammonia solution** | ROTIPURAN® Supra | 20 % | 38 - 430 | **HN56.1** | 500 ml | HDPE | 66,15 |
| | | | | **HN56.3** | 4 l | HDPE | 367,55 |
| **Hydrochloric acid** | ROTIPURAN® Supra | 35 % | GL 45 | **HN53.1** | 500 ml | HDPE | 70,85 |
| | | | | **HN53.2** | 1 l | HDPE | 109,55 |
| | | | | **HN53.3** | 2,5 l | HDPE | 121,40 |
| | | | 38 - 430 | **HN53.4** | 4 l | HDPE | 217,70 |
| | | 30 % | GL 45 | **NE57.2** | 1 l | HDPE | 100,55 |
| | | | | **NE57.3** | 2,5 l | HDPE | 111,30 |
| **Hydrofluoric acid** | ROTIPURAN® Supra | 48 % | 38 - 430 | **HN54.1** | 500 ml | LDPE | 133,20 |
| **Nitric acid** | ROTIPURAN® Supra | 69 % | GL 45 | **HN50.1** | 500 ml | HDPE | 71,95 |
| | | | | **HN50.2** | 1 l | HDPE | 118,15 |
| | | | | **HN50.3** | 2,5 l | HDPE | 128,90 |
| **Perchloric acid** | ROTIPURAN® Supra | 70 % | 38 - 430 | **HN51.1** | 500 ml | glass PVC coated | 160,20 |
| | | | | **HN51.3** | 1 l | glass PVC coated | 256,95 |
| | | | | **HN51.4** | 2,5 l | glass PVC coated | 389,05 |
| **Sulphuric acid** | ROTIPURAN® Supra | 95 % | GL 45 | **HN52.1** | 500 ml | HDPE | 73,00 |
| | | | | **HN52.2** | 1 l | HDPE | 121,40 |
| | | | | **HN52.5** | 2,5 l | HDPE | 146,10 |

## ROTIPURAN® Low organic

| Product | Trade Marks | Purity | Thread | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|---|---|
| **Water** | ROTIPURAN® | Low organic | 38 - 430 | **HN57.1** | 1 l | glass | 64,00 |
| | | | | **HN57.2** | 4 l | glass | 104,85 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ For safety information and product specification, see chapter Chemicals A-Z.



## Ultra / Ultra HF dispenser

For dispensing highly pure acids and alkalis.
Suitable for use in ultra trace analysis.

**Features:**
- **Free of metals**
- Made of high quality and highly pure plastics (PTFE, TFM and PFA)
- Calibrated and mechanically tested for precision and accuracy
- 38-430 thread (fits ROTIPURAN® Ultra products)

**Special features of Ultra dispenser:**
- Acid cleansed
- Manufactured in cleanroom (class 100)

**Special features of Ultra HF dispenser:**
- Specially for dispensing hydrofluoric acids
- Also suitable for analytical acids

When using bottles with a GL45 thread, please order fastening for dispenser KK11.1 separately.

| Model | Volume (ml) | Graduation (ml) | Tolerance (±ml) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|
| **Ultra** | 0,5-5 | 0,5 | 0,02 | **KK97.1** | 1 piece | 2234,95 |
| **Ultra HF** | 0,5-5 | 0,5 | 0,02 | **KK98.1** | 1 piece | 1757,65 |



## Accessories for Ultra/Ultra HF dispenser

### Bottle holder

Stabilises bottles when using a dispenser. The four-screw system is suitable for both square bottles and round bottles. The bottle holder is designed for ROTIPURAN® Supra and Ultra bottles with capacities from 250 ml to 2 litres. Also suitable for bottles with a diameter from approx. 7,0 cm to 11,5 cm.

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **Bottle holder** | **KK99.1** | 1 piece | 93,00 |

### Fastening for Ultra/Ultra HF dispenser to GL45

Made of PTFE. For bottles with GL45 thread, specially for the use of ROTIPURAN® Supra products with Ultra and Ultra HF dispensers.

| Product | Art. No. | Pack Qty. | € |
|---|---|---|---|
| **Fastening for ROTIPURAN® Supra (GL45)** | **KK11.1** | 1 piece | 256,95 |


- ▶ Bottles made of PTFE
  see chapter Labware page 116
- ▶ Beakers made of PTFE
  see chapter Labware page 12

# ROTI®METIC

## (**M**etal **I**norganic **C**ompounds) Ultra Pure Metals and Inorganic Compounds



The ROTI®METIC product range comprises more than 140 high purity inorganic metals and metal compounds with purity levels ranging from 99,9 % (3N) to 99,9999 % (6N). Modern production technology as well as high quality and safety standards make it possible to achieve these high purity levels of metal traces from 100 ppm to 1 ppm.
Up to 60 trace metal compounds are analysed by HR-ICP, ICP-OES, AA, GD-MS and documented in the batch specific certificate of analysis supplied with the product.
Our ultra high purity metals and metal compounds are ideal for the following applications:

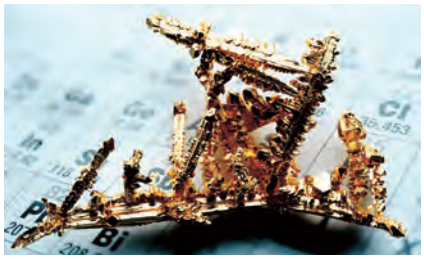
- Instrumental analytics
- Chemical analyses & syntheses
- Crystal growth technology
- Nanotechnology
- Photovoltaic technology
- Optical fibres
- Laser technology
- Photonics
- Fuel cells
- Catalysis

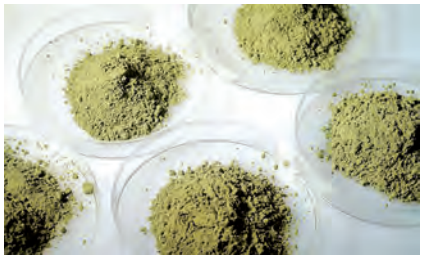
Our mission is to offer the quality and service you require in research & development and in production.

Excellent value for money and the option of ordering in semi-bulk are strong arguments in favour of the ROTI®METIC product range.

| Product | Purity | CAS-Nr. | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|---|---|
| **Aluminium chloride hexahydrate** | 99,9999 % (6N) | 7784-13-6 | **5368.1** | 25 | 91,30 |
| | | | **5368.2** | 100 | 332,20 |
| **Aluminium fluoride** | 99,99 % (4N), anhydrous | 7784-18-1 | **5395.1** | 10 | 81,60 |
| | | | **5395.2** | 50 | 289,20 |
| **Aluminium granulate** | 99,995 % (4N5) | 7429-90-5 | **5577.1** | 25 | 44,00 |
| | | | **5577.2** | 100 | 119,90 |
| **Aluminium nitrate nonahydrate** | 99,999 % (5N) | 7784-27-2 | **5567.1** | 10 | 39,25 |
| | | | **5567.2** | 50 | 113,45 |
| **Aluminium oxide** | 99,995 % (4N5) | 1344-28-1 | **5575.1** | 5 | 39,25 |
| | | | **5575.2** | 25 | 106,45 |
| **Ammonium chloride** | 99,999 % (5N) | 12125-02-9 | **5050.1** | 50 | 105,25 |
| | | | **5050.2** | 100 | 177,40 |
| **Ammonium dihydrogen phosphate** | 99,999 % (5N) | 7722-76-1 | **5580.1** | 25 | 50,45 |
| | | | **5580.2** | 100 | 116,00 |
| **Ammonium hexachloroosmate (IV)** | 99,99 % (4N) | 12125-08-5 | **5585.1** | 1 | 181,70 |
| **Ammonium hexachlororhodate(III)** | 99,995 % (4N5) | 15336-18-2 | **5586.1** | 1 | 482,70 |
| **Ammonium hexafluorosilicate** | 99,999 % (5N) | 16919-19-0 | **5587.1** | 10 | 57,55 |
| | | | **5587.2** | 25 | 115,60 |
| | | | **5587.3** | 50 | 196,20 |
| **Ammonium hexafluorotitanate (IV)** | 99,999 % (5N) | 16962-40-6 | **5589.2** | 25 | 107,40 |
| | | | **5589.3** | 100 | 332,20 |
| **Ammonium hydrogen fluoride** | 99,999 % (5N) | 1341-49-7 | **5363.1** | 25 | 107,40 |
| **di-Ammonium hydrogen phosphate** | 99,999 % (5N) | 7783-28-0 | **5596.1** | 100 | 224,70 |
| **Ammonium molybdate (VI)** | 99,99 % (4N) | 13106-76-8 | **5591.1** | 5 | 44,65 |
| | | | **5591.2** | 25 | 149,45 |
| **Ammonium monovanadate** | 99,995 % (4N5) | 7803-55-6 | **5590.3** | 1 | 23,15 |
| | | | **5590.2** | 25 | 364,45 |
| **Ammonium nitrate** | 99,999 % (5N) | 6484-52-2 | **5365.1** | 10 | 32,80 |
| **Ammonium sulphate** | 99,999 % (5N) | 7783-20-2 | **5606.1** | 10 | 28,95 |
| | | | **5606.2** | 50 | 77,95 |
| **Ammonium tetrathiomolybdate** | 99,99 % (4N) | 15060-55-6 | **5608.1** | 1 | 38,60 |
| | | | **5608.2** | 5 | 75,15 |
| **Ammonium tetrathiotungstate** | 99,9 % (3N) | 13862-78-7 | **5397.1** | 5 | 134,40 |
| | | | **5397.2** | 25 | 471,95 |
| **Ammonium tetraborate tetrahydrate** | 99,999 % (5N) | 12228-87-4 | **5396.1** | 25 | 97,75 |
| **Antimony shot** | 99,999 % (5N) | 7440-36-0 | **4516.2** | 50 | 185,45 |
| **Barium carbonate** | 99,999 % (5N) | 513-77-9 | **5321.1** | 25 | 117,20 |
| | | | **5321.2** | 100 | 364,45 |
| **Barium chloride** | 99,999 % (5N), anhydrous | 10361-37-2 | **5051.1** | 25 | 97,75 |
| **Barium chloride dihydrate** | 99,999 % (5N) | 10326-27-9 | **5115.1** | 50 | 163,95 |
| | | | **5115.2** | 100 | 256,95 |
| **Barium fluoride** | 99,995% (4N5) | 7787-32-8 | **5055.1** | 25 | 122,05 |
| **Barium hydroxide hydrate** | 99,995 % (4N5) | 40226-30-0 | **5609.1** | 5 | 59,05 |
| | | | **5609.2** | 25 | 224,70 |
| **Barium nitrate** | 99,9995 % (5N5) | 10022-31-8 | **5138.1** | 50 | 149,45 |
| | | | **5138.2** | 100 | 263,40 |
| **Beryllium acetate basic** | 99,999 % (5N) | 19049-40-2 | **5612.1** | 5 | 64,00 |
| | | | **5612.2** | 25 | 224,70 |
| **Boric acid** | 99,999 % (5N) | 10043-35-3 | **5614.1** | 25 | 51,10 |
| | | | **5614.2** | 100 | 126,35 |
| **Cadmium acetate** | 99,999 % (5N), anhydrous | 543-90-8 | **5247.1** | 10 | 93,00 |
| | | | **5247.2** | 25 | 149,45 |
| **Caesium carbonate** | 99,995 % (4N5) | 534-17-8 | **5618.1** | 5 | 34,30 |
| | | | **5618.2** | 25 | 112,35 |
| **Caesium chloride** | 99,999 % (5N) | 7647-17-8 | **5061.1** | 10 | 53,65 |
| | | | **5061.2** | 50 | 155,90 |
| **Caesium nitrate** | 99,999 % (5N) | 7789-18-6 | **4505.1** | 10 | 93,45 |
| | | | **4505.2** | 50 | 342,95 |
| **Calcium carbonate** | 99,999 % (5N) | 471-34-1 | **5616.1** | 5 | 45,70 |
| | | | **5616.2** | 25 | 145,15 |
| **Calcium chloride hydrate** | 99,999 % (5N) | 22691-02-7 | **5056.1** | 10 | 117,20 |

# Inorganic & analytical reagents · High purity

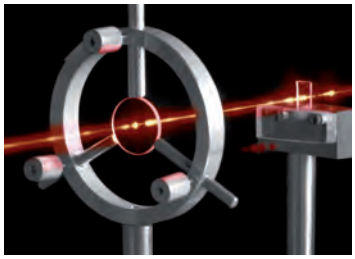


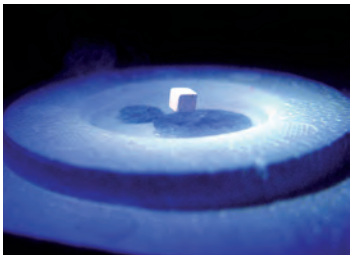




| Product | Purity | CAS-Nr. | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|---|---|
| **Calcium hydroxide** | 99,995 % (4N5) | 1305-62-0 | **5617.1** | 5 | 53,65 |
| | | | **5617.2** | 25 | 181,70 |
| **Calcium nitrate hydrate** | 99,999 % (5N) | 35054-52-5 | **5058.1** | 5 | 50,00 |
| | | | **5058.2** | 25 | 160,20 |
| **Cerium(III) acetate hydrate** | 99,999 % (5N) | 17829-82-2 | **5372.1** | 10 | 79,05 |
| | | | **5372.2** | 50 | 310,70 |
| **Cerium(III) nitrate hexahydrate** | 99,999 % (5N) | 10294-41-4 | **5312.1** | 5 | 64,40 |
| | | | **5312.2** | 25 | 198,90 |
| **Cerium(III) sulphate** | 99,99 % (4N), anhydrous | 13454-94-9 | **5603.1** | 25 | 192,45 |
| **Cerium(III) sulphate octahydrate** | 99,995 % (4N5) | 10450-59-6 | **5601.1** | 50 | 181,70 |
| | | | **5601.2** | 250 | 708,45 |
| **Chromium(III) nitrate nonahydrate** | 99,999 % (5N) | 7789-02-8 | **5619.1** | 5 | 60,10 |
| | | | **5619.2** | 25 | 177,40 |
| **Chromium(III) oxide** | 99,9 % (3N) | 1308-38-9 | **4498.1** | 5 | 35,40 |
| | | | **4498.2** | 25 | 144,60 |
| **Cobalt powder** | 99,999 % (5N) | 7440-48-4 | **5620.1** | 5 | 85,50 |
| | | | **5620.2** | 25 | 274,15 |
| **Cobalt(II) nitrate hexahydrate** | 99,999 % (5N) | 10026-22-9 | **5291.1** | 10 | 213,95 |
| | | | **5291.2** | 25 | 482,70 |
| **Cobalt(II) sulphate hydrate** | 99,999 % (5N) | 60459-08-7 | **5326.1** | 10 | 73,65 |
| **Copper pellets** | 99,999 % (5N) | 7440-50-8 | **5621.1** | 25 | 58,60 |
| | | | **5621.2** | 100 | 145,45 |
| **Copper powder** | 99,999 % (5N) | 7440-50-8 | **5386.1** | 10 | 128,50 |
| | | | **5386.2** | 50 | 532,15 |
| **Copper(I) chloride** | 99,995 % (4N5) | 7758-89-6 | **5379.1** | 10 | 78,40 |
| | | | **5379.2** | 50 | 256,95 |
| **Copper(I) iodide** | 99,995 % (4N5) | 7681-65-4 | **5300.2** | 50 | 213,95 |
| **Europium(III) oxide** | 99,995 % (4N5) | 1308-96-9 | **5394.1** | 5 | 274,15 |
| **Gallium** | 99,9999 % (6N) | 7440-55-3 | **4507.2** | 25 | 256,95 |
| **Gallium(III) nitrate hydrate** | 99,9995 % (5N5) | 69365-72-6 | **5548.1** | 25 | 263,40 |
| **Gallium(III) oxide** | 99,999 % (5N) | 12024-21-4 | **5377.1** | 10 | 138,70 |
| **Gold shot** | 99,999 % (5N) | 7440-57-5 | **5622.1** | 1 | 221,35 |
| | | | **5622.2** | 5 | 1041,70 |
| **Holmium(III) oxide** | 99,99 % (4N) | 12055-62-8 | **5338.1** | 10 | 223,10 |
| | | | **5338.2** | 50 | 676,20 |
| **Hydrogen hexachloro-platinate(IV) hydrate** | 99,995 % (4N5) | 26023-84-7 | **5626.1** | 1 | 169,35 |
| | | | **5626.2** | 5 | 783,70 |
| **Hydrogen tetrachloro-aurate(III) hydrate** | 99,999 % (5N) | 27988-77-8 | **5628.1** | 1 | 161,15 |
| **Indium shot** | 99,999 % (5N) | 7440-74-6 | **5629.1** | 5 | 53,65 |
| | | | **5629.2** | 25 | 181,70 |
| **Indium(III) bromide** | 99,999 % (5N) | 13465-09-3 | **5322.1** | 5 | 42,90 |
| | | | **5322.2** | 25 | 166,65 |
| **Indium(III) nitrate pentahydrate** | 99,999 % (5N) | 207398-97-8 | **5384.1** | 10 | 89,80 |
| **Indium(III) oxide** | 99,999 % (5N) | 1312-43-2 | **5630.1** | 5 | 47,20 |
| | | | **5630.2** | 25 | 158,60 |
| **Iodine(V) oxide** | 99,99 % (4N) | 12029-98-0 | **5364.1** | 5 | 39,70 |
| | | | **5364.2** | 25 | 150,00 |
| **Iron granules** | 99,99 % (4N) | 7439-89-6 | **5631.1** | 5 | 41,85 |
| | | | **5631.2** | 25 | 134,40 |
| **Iron(III) nitrate nonahydrate** | 99,999 % (5N) | 7782-61-8 | **5632.1** | 5 | 79,05 |
| | | | **5632.2** | 25 | 299,95 |
| **Iron(III) oxide** | 99,98 % (3N8) | 1309-37-1 | **5634.1** | 5 | 35,40 |
| | | | **5634.2** | 25 | 111,30 |

| Product | Purity | CAS-Nr. | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|---|---|
| **Lanthanum(III) nitrate hexahydrate** | 99,995 % (4N5) | 10277-43-7 | **5366.1** | 25 | 95,60 |
| | | | **5366.2** | 100 | 239,20 |
| **Lithium bromide** | 99,999 % (5N) | 7550-35-8 | **5062.1** | 25 | 120,95 |
| | | | **5062.2** | 50 | 192,45 |
| **Lithium carbonate** | 99,999 % (5N) | 554-13-2 | **5635.1** | 10 | 39,70 |
| | | | **5635.2** | 25 | 69,80 |
| | | | **5635.3** | 100 | 219,85 |
| **Lithium chloride** | 99,999 % (5N) | 7447-41-8 | **5079.1** | 25 | 120,95 |
| | | | **5079.2** | 50 | 192,45 |
| **Lithium fluoride** | 99,99 % (4N) | 7789-24-4 | **5082.1** | 5 | 53,65 |
| | | | **5082.2** | 25 | 169,35 |
| **Lithium nitrate** | 99,999 % (5N), anhydrous | 7790-69-4 | **5281.1** | 10 | 73,00 |
| | | | **5281.2** | 25 | 145,15 |
| **Lutetium(III) oxide** | 99,995 % (4N5) | 12032-20-1 | **5296.1** | 1 | 85,50 |
| **Magnesium chloride hexahydrate** | 99,999 % (5N) | 7791-18-6 | **5347.1** | 25 | 192,45 |
| | | | **5347.2** | 100 | 568,70 |
| **Magnesium nitrate hexahydrate** | 99,999 % (5N) | 13446-18-9 | **5420.1** | 10 | 48,95 |
| | | | **5420.2** | 50 | 100,55 |
| **Magnesium oxide** | 99,999 % (5N) | 1309-48-4 | **5639.1** | 10 | 105,25 |
| | | | **5639.2** | 50 | 471,95 |
| **Manganese flakes** | 99,98 % (3N8) | 7439-96-5 | **4509.1** | 25 | 87,65 |
| | | | **4509.2** | 50 | 127,95 |
| **Manganese (II) acetate tetrahydrate** | 99,999 % (5N) | 6156-78-1 | **5641.1** | 5 | 56,90 |
| | | | **5641.2** | 25 | 150,00 |
| **Manganese (II) chloride tetrahydrate** | 99,995 % (4N5) | 13446-34-9 | **5304.1** | 25 | 110,20 |
| | | | **5304.2** | 100 | 327,90 |
| **Manganese (II) nitrate hydrate** | 99,995 % (4N5) | 15710-66-4 | **5392.1** | 10 | 95,70 |
| | | | **5392.2** | 25 | 201,05 |
| **Manganese(IV) oxide** | 99,995 % (4N5) | 1313-13-9 | **5383.1** | 5 | 43,55 |
| | | | **5383.2** | 25 | 150,00 |
| **Molybdenum(VI) oxide** | 99,98 % (3N8) | 1313-27-5 | **4548.1** | 5 | 47,85 |
| | | | **4548.2** | 10 | 79,45 |
| **Nickel powder** | 99,995 % (4N5) | 7440-02-0 | **5643.1** | 25 | 75,15 |
| | | | **5643.2** | 100 | 239,20 |
| **Nickel(II) chloride hexahydrate** | 99,999 % (5N) | 7791-20-0 | **5373.1** | 50 | 321,45 |
| **Nickel(II) nitrate hexahydrate** | 99,999 % (5N) | 13478-00-7 | **5387.1** | 100 | 220,40 |
| | | | **5387.2** | 500 | 729,95 |
| **Nickel(II) oxide** | 99,999 % (5N) | 1313-99-1 | **5388.1** | 50 | 224,70 |
| | | | **5388.2** | 100 | 403,15 |
| **Palladium powder** | 99,999 % (5N) | 7440-05-3 | **5648.1** | 1 | 209,65 |
| **Palladium(II) chloride** | 99,999 % (5N) | 7647-10-1 | **5653.1** | 1 | 127,95 |
| | | | **5653.2** | 5 | 547,20 |
| **Palladium(II) oxide** | 99,995 % (4N5) | 1314-08-5 | **5393.1** | 1 | 160,20 |
| | | | **5393.2** | 5 | 591,25 |
| **Platinum powder** | 99,999 % (5N) | 7440-06-4 | **5654.1** | 1 | 407,45 |
| **Potassium bromide** | 99,995 % (4N5) | 7758-02-3 | **5064.1** | 10 | 103,75 |
| | | | **5064.2** | 50 | 354,75 |
| **Potassium carbonate** | 99,995 % (4N5) | 584-08-7 | **5335.1** | 10 | 46,15 |
| | | | **5335.2** | 50 | 146,10 |
| **Potassium chloride** | 99,995 % (4N5) | 7447-40-7 | **5346.1** | 25 | 74,10 |
| | | | **5346.2** | 100 | 214,50 |
| **Potassium fluoride** | 99,99 % (4N) | 7789-23-3 | **5656.1** | 5 | 52,15 |
| | | | **5656.2** | 25 | 181,70 |
| **di-Potassium hydrogen phosphate** | 99,99 % (4N), anhydrous | 7758-11-4 | **5066.1** | 25 | 160,20 |
| **Potassium hydroxide** | 99,98 % (3N8) | 1310-58-3 | **5658.1** | 100 | 109,15 |



| Product | Purity | CAS-Nr. | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|---|---|
| **Potassium iodide** | 99,999 % (5N) | 7681-11-0 | **5067.1** | 25 | 119,90 |
| **Potassium nitrate** | 99,999 % (5N) | 7757-79-1 | **5659.1** | 10 | 52,60 |
| | | | **5659.2** | 50 | 161,25 |
| **Potassium persulphate** | 99,99 % (4N) | 7727-21-1 | **5325.1** | 5 | 44,65 |
| | | | **5325.2** | 25 | 166,65 |
| **Potassium sulphate** | 99,995 % (4N5) | 7778-80-5 | **5071.1** | 10 | 88,70 |
| **Potassium tetrachloroaurate (III)** | 99,995 % (4N5) | 13682-61-6 | **5114.1** | 1 | 232,10 |
| | | | **5114.2** | 5 | 978,25 |
| **Potassium tetrachloroplatinate (II)** | 99,95 % (3N5) | 10025-99-7 | **5660.1** | 1 | 232,10 |
| **Rhodium(III) chloride hydrate** | 99,95 % (3N5) | 20765-98-4 | **5668.1** | 1 | 504,20 |
| **Rubidium chloride** | 99,98 % (3N8) | 7791-11-9 | **5679.1** | 5 | 209,65 |
| | | | **5679.2** | 10 | 349,40 |
| **Rubidium nitrate** | 99,99 % (4N) | 13126-12-0 | **5293.1** | 5 | 149,45 |
| | | | **5293.2** | 25 | 643,95 |
| **Ruthenium(III) chloride** | 99,9 % (3N), anhydrous | 10049-08-8 | **5686.1** | 1 | 88,70 |
| | | | **5686.2** | 5 | 385,95 |
| **Scandium(III) oxide** | 99,995 % (4N5) | 12060-08-1 | **5735.1** | 1 | 149,45 |
| **Selenium pellets** | 99,999 % (5N) | 7782-49-2 | **4547.1** | 10 | 46,15 |
| | | | **4547.2** | 50 | 170,95 |
| **Selenium(IV) oxide** | 99,999 % (5N) | 7446-08-4 | **5324.1** | 10 | 134,40 |
| **Silver bromide** | 99,999 % (5N) | 7785-23-1 | **5739.1** | 5 | 60,10 |
| | | | **5739.2** | 25 | 220,40 |
| **Silver chloride** | 99,9999 % (6N) | 7783-90-6 | **5302.1** | 1 | 45,70 |
| | | | **5302.2** | 5 | 81,20 |
| | | | **5302.3** | 25 | 317,15 |
| **Silver nitrate** | 99,9999 % (6N) | 7761-88-8 | **4500.1** | 10 | 71,95 |
| | | | **4500.2** | 50 | 327,90 |
| **Silver nitrite** | 99,99 % (4N) | 7783-99-5 | **5065.1** | 10 | 149,45 |
| | | | **5065.2** | 50 | 493,45 |
| **Silicon dioxide** | 99,998 % (4N8) | 60676-86-0 | **5738.1** | 5 | 42,50 |
| | | | **5738.2** | 25 | 106,45 |
| **Sodium acetate** | 99,99 % (4N), anhydrous | 127-09-3 | **5380.1** | 25 | 80,55 |
| **Sodium bromide** | 99,999 % (5N) | 7647-15-6 | **5086.1** | 25 | 146,10 |
| **Sodium carbonate** | 99,999 % (5N), anhydrous | 497-19-8 | **5740.1** | 5 | 44,00 |
| | | | **5740.2** | 25 | 149,45 |
| **Sodium chloride** | 99,999 % (5N) | 7647-14-5 | **5741.1** | 5 | 37,10 |
| | | | **5741.2** | 25 | 73,65 |
| | | | **5741.3** | 100 | 256,95 |

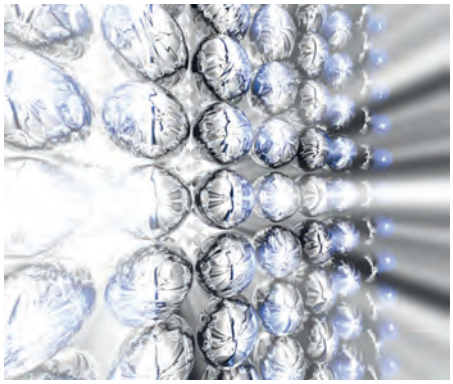
| Product | Purity | CAS-Nr. | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|---|---|
| **Sodium fluoride** | 99,995 % (4N5) | 7681-49-4 | **4503.1** | 10 | 54,75 |
| | | | **4503.2** | 50 | 170,95 |
| **Sodium nitrate** | 99,999 % (5N) | 7631-99-4 | **5742.1** | 25 | 169,35 |
| **Sodium sulphate** | 99,999 % (5N) | 7757-82-6 | **5076.1** | 10 | 74,20 |
| | | | **5076.2** | 25 | 155,90 |
| **Strontium carbonate** | 99,998 % (4N8) | 1633-05-2 | **5376.1** | 5 | 50,00 |
| | | | **5376.2** | 25 | 134,40 |
| **Strontium nitrate** | 99,999 % (5N) | 10042-76-9 | **5078.1** | 25 | 149,45 |
| **Tellurium(IV) oxide** | 99,999 % (5N) | 7446-07-3 | **5745.1** | 5 | 42,90 |
| | | | **5745.2** | 10 | 76,90 |
| | | | **5745.3** | 50 | 252,65 |
| **Tetraammine-platinum(II) nitrate** | 99,995 % (4N5) | 20634-12-2 | **5746.1** | 1 | 321,45 |
| **Tin shot** | 99,999 % (5N) | 7440-31-5 | **5097.1** | 5 | 78,40 |
| | | | **5097.2** | 10 | 127,95 |
| **Titanium(IV) oxide** | 99,999 % (5N) | 13463-67-7 | **5747.1** | 5 | 52,15 |
| | | | **5747.2** | 25 | 156,85 |
| **Tungsten(VI) oxide** | 99,995 % (4N5) | 1314-35-8 | **5399.1** | 50 | 274,15 |
| | | | **5399.2** | 100 | 461,20 |
| **Vanadium(V) oxide** | 99,995 % (4N5) | 1314-62-1 | **5370.1** | 5 | 75,15 |
| | | | **5370.2** | 25 | 299,95 |
| **Ytterbium(III) chloride hexahydrate** | 99,999 % (5N) | 10035-01-5 | **5749.1** | 10 | 174,15 |
| **Ytterbium(III) oxide** | 99,999 % (5N) | 1314-37-0 | **5303.1** | 5 | 81,60 |
| | | | **5303.2** | 25 | 278,45 |
| **Yttrium(III) oxide** | 99,999% (5N) | 1314-36-9 | **5751.1** | 10 | 66,15 |
| | | | **5751.2** | 50 | 197,30 |
| **Zinc shot** | 99,999 % (5N) | 7440-66-6 | **5345.1** | 25 | 44,65 |
| | | | **5345.2** | 100 | 138,70 |
| **Zinc oxide** | 99,999 % (5N) | 1314-13-2 | **5421.1** | 25 | 117,20 |
| | | | **5421.2** | 100 | 385,95 |
| **Zirconyl chloride octahydrate** | 99,995 % (4N5) | 13520-92-8 | **4502.1** | 10 | 60,10 |
| **Zirconyl nitrate hydrate** | 99,99 % (4N) | 14985-18-3 | **5415.1** | 25 | 235,45 |
| | | | **5415.2** | 100 | 719,20 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Ultra pure acids, alkaline solutions and water see page 1665

# ROTI®REMETIC

## Rare Earth Metal Inorganic Compounds



Our **ultra high purity rare earth metal compounds** work excellent for:

- Instrumental analytics
- Chemical analyses & syntheses
- Crystal growth technology
- Catalysis
- Doping agents
- Luminescent & fluorescent compounds
- Glas fibre technology
- Laser technology
- Fuel cells
- Oxidizing agents
- Electronic industry
- Ceramic manufacturing

Our mission is to offer the quality and service you require in research & development and in production. Excellent value for money and the option of ordering in semi-bulk are strong arguments in favour of the ROTI®REMETIC product range.

### Ultra-high-purity metal compounds

| Type | Purity | CAS-Nr. | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|---|---|
| **Cerium(III) acetate hydrate** | 99,99 % | 537-00-8 | **7084.1** | 10 | 68,70 |
| **Cerium(III) nitrate hexahydrate** | 99,9 % | 10294-41-4 | **7049.1** | 5 | 40,75 |
| | | | **7049.2** | 25 | 69,80 |
| **Cerium(III) oxalate hydrate** | 99,9 % | 15750-47-7 | **7067.1** | 10 | 68,70 |
| | | | **7067.2** | 50 | 235,45 |
| **Cerium(IV) oxide** | 99,99 % | 1306-38-3 | **7042.1** | 10 | 46,80 |
| | | | **7042.2** | 50 | 122,05 |
| **Dysprosium(III) oxide** | 99,9 % | 1308-87-8 | **7145.1** | 5 | 40,75 |
| | | | **7145.2** | 25 | 73,00 |
| **Erbium(III) oxide** | 99,9 % | 12061-16-4 | **7160.1** | 5 | 37,55 |
| | | | **7160.2** | 25 | 85,50 |
| **Europium(III) oxide** | 99,999 % | 1308-96-9 | **7127.2** | 5 | 143,55 |
| | 99,99 % | 1308-96-9 | **7187.3** | 50 | 665,45 |
| **Gadolinium(III) chloride hexahydrate** | 99,99 % | 13450-84-5 | **7209.2** | 10 | 111,30 |
| **Gadolinium(III) oxide** | 99,999 % | 12064-62-9 | **7189.1** | 1 | 16,70 |
| | | | **7189.2** | 5 | 26,80 |
| | | | **7189.3** | 50 | 213,95 |
| | 99,99 % | 12064-62-9 | **7136.1** | 1 | 31,10 |
| | | | **7136.2** | 5 | 44,65 |
| | | | **7136.3** | 25 | 110,65 |
| | | | **7136.4** | 100 | 289,20 |
| **Lanthanum(III) acetate hydrate** | 99,9 % | 25721-92-0 | **7031.1** | 100 | 79,45 |
| | | | **7031.2** | 250 | 166,65 |
| **Lanthanum(III) carbonate hydrate** | 99,99 % | 54451-24-0 | **7182.2** | 100 | 188,15 |
| | 99,9 % | 54451-24-0 | **7026.2** | 250 | 127,95 |
| **Lanthanum(III) chloride hydrate** | 99,999 % | 20211-76-1 | **7184.1** | 25 | 67,65 |
| **Lanthanum(III) fluoride** | 99,9 % | 13709-38-1 | **7028.2** | 50 | 177,40 |
| **Lanthanum(III) nitrate hexahydrate** | 99,999 % | 10277-43-7 | **7019.1** | 25 | 54,75 |
| | | | **7019.2** | 100 | 149,45 |
| | 99,99 % | 10277-43-7 | **7180.1** | 50 | 99,90 |
| | | | **7180.2** | 250 | 321,45 |
| **Lanthanum(III) oxalate** | 99,999 % | 537-03-1 | **7191.1** | 25 | 50,45 |
| | | | **7191.2** | 100 | 144,60 |
| **Lanthanum(III) oxide** | 99,999 % | 1312-81-8 | **7410.1** | 25 | 66,15 |
| | | | **7410.2** | 100 | 213,95 |
| **Lanthanum(III) phosphate hydrate** | 99,99 % | 14913-14-5 | **7203.2** | 25 | 155,90 |
| **Lutetium(III) nitrate hydrate** | 99,99 % | 100641-16-5 | **7265.1** | 1 | 78,40 |
| **Lutetium(III) oxide** | 99,99 % | 12032-20-1 | **7177.1** | 1 | 96,65 |
| | | | **7177.2** | 5 | 321,45 |
| **Neodymium(III) acetate hydrate** | 99,9 % | 6192-13-8 | **7107.1** | 50 | 91,30 |
| | | | **7107.2** | 100 | 155,90 |
| **Neodymium(III) carbonate hydrate** | 99,9 % | 38245-38-4 | **7103.2** | 50 | 112,35 |
| **Neodymium(III) nitrate hexahydrate** | 99,9 % | 16454-60-7 | **7097.1** | 25 | 66,55 |
| | | | **7097.2** | 100 | 153,20 |
| **Neodymium(III) oxide** | 99,999 % | 1313-97-9 | **7092.1** | 5 | 55,80 |
| | | | **7092.2** | 25 | 220,40 |
| **Praseodymium(III) carbonate octahydrate** | 99 % | 14948-62-0 | **7090.1** | 5 | 55,80 |
| | | | **7090.2** | 25 | 133,85 |
| **Praseodymium(III,IV) oxide** | 99,99 % | 12037-29-5 | **7087.1** | 1 | 22,40 |
| | | | **7087.2** | 5 | 90,20 |
| **Samarium(III) carbonate hydrate** | 99,98 % | 38245-37-3 | **7120.1** | 10 | 85,90 |
| | | | **7120.2** | 50 | 289,20 |
| **Samarium(III) oxide** | 99,95 % | 12060-58-1 | **7108.1** | 5 | 44,00 |
| | | | **7108.2** | 25 | 94,50 |
| | 99,9 % | 12060-58-1 | **7186.1** | 10 | 24,65 |
| | | | **7186.3** | 100 | 177,40 |
| **Scandium(III) oxide** | 99,999 % | 12060-08-1 | **7011.1** | 1 | 127,95 |
| | | | **7011.2** | 5 | 364,45 |
| **Thulium(III) nitrate pentahydrate** | 99,9 % | 36548-87-5 | **7282.1** | 1 | 40,35 |
| | | | **7282.2** | 5 | 145,05 |
| **Ytterbium(III) oxide** | 99,99 % | 1314-37-0 | **7353.1** | 10 | 88,05 |
| | | | **7353.2** | 25 | 149,45 |
| | | | **7353.3** | 50 | 267,70 |
| **Yttrium(III) oxide** | 99,99 % | 1314-36-9 | **7352.1** | 25 | 59,05 |
| | | | **7352.2** | 100 | 149,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Ultra pure acids, alkaline solutions and water see page 1665

# ROTI®nanoMETIC

## Nanoparticles

Our nanoparticles are well suited for many applications and are supplied as a hydrophilic powder that can be easily suspended in aqueous solutions.

| Product | Purity | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|---|
| **Aluminium oxide, nano** | ≥99,9 %, 40 nm | **8250.1** | 10 | 21,40 |
| | | **8250.2** | 50 | 81,60 |
| | | **8250.3** | 100 | 133,20 |
| **Copper, nano** | ≥97 %, 40 nm | **8279.1** | 5 | 33,25 |
| | | **8279.2** | 25 | 127,95 |
| | | **8279.3** | 100 | 461,20 |
| **Copper(II) oxide, nano** | ≥99 %, 25-45 nm | **8251.1** | 10 | 21,00 |
| | | **8251.2** | 50 | 78,40 |
| | | **8251.3** | 100 | 127,95 |
| **Titanium(IV) oxide, nano** | ≥99,9 %, 4-8 nm | **8254.1** | 10 | 55,80 |
| | | **8254.2** | 50 | 224,70 |
| **Zinc oxide, nano** | ≥99,5 %, 25 nm | **8278.1** | 10 | 28,95 |
| | | **8278.2** | 50 | 110,65 |
| | | **8278.3** | 100 | 203,20 |
| **Zirconium(IV) oxide, nano** | ≥92,5 %, 10-30 nm | **8255.1** | 10 | 27,85 |
| | | **8255.2** | 50 | 107,40 |
| | | **8255.3** | 100 | 198,90 |

For information on the handling of nanomaterials, see the WHO homepage.

## Phosphonic acids

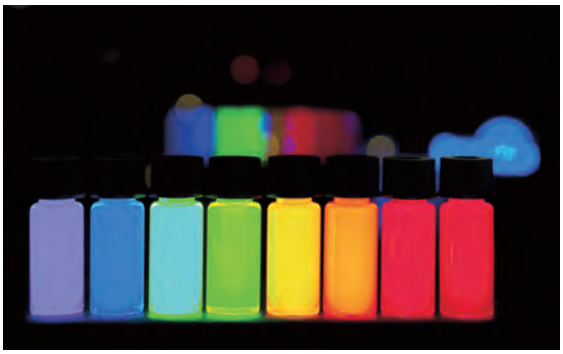
Alkylphosphonic acids are perfect hydrophobization ligands, owing to their classical bifunctional chemical structure. They contain an non-polar organic hydrophobic alkyl chain and an active hydrophilic phosphonic acid group. These molecules are capable to strongly bind to the surface of different inorganic materials ($SiO_2$, $Al_2O_3$, $TiO_2$, $Fe_xO_y$, $ZrO_2$, ZnS etc.) forming a selfassembled coating layer. Phosphonic acids can also be used as ligands for the synthesis of nanoparticles to control the size and hydrophobic properties of the particles. Further they are well soluble in non-polar and many polar solvents. The acids are also soluble in water (especially upon addition of alkali) at lower concentrations.

### Phosphonic acids suitable for the production and modification of nanoparticles

| Product | Art. No. | Pack Qty. (g) | € |
|---|---|---|---|
| **Hexadecylphosphonic acid** | **8466.1** | 1 | 37,55 |
| | **8466.2** | 5 | 139,65 |
| **Octadecylphosphonic acid** | **8468.1** | 1 | 38,20 |
| | **8468.2** | 5 | 138,70 |
| **Tetradecylphosphonic acid** | **8465.1** | 1 | 38,60 |
| | **8465.2** | 5 | 138,70 |

## Quantum Dots (QD)

Quantum dots are fluorescent nanoparticles of certain semiconducting materials, whose electronic properties closely depend on the size of the particles. The fluorescence wavelength shifts towards red for larger particles, and to blue for the smaller ones. This allows coverage of the complete visible colour spectrum with quantum dots of different sizes and yet the same material. The possibility to control the size of the particles during their manufacturing, allows to precisely adjust their electronic and fluorescent properties. The inorganic nature of quantum dots makes them far more stable than organic fluorescent dyes. Moreover, the surface of quantum dot particles is modified with carboxylic groups, which makes them highly soluble in water and enables covalent conjugation with proteins and other molecules.



### Quantum Dots, hydrophilic

| Product | Purity | Art. No. | Pack Qty. (mg) | € |
|---|---|---|---|---|
| **Cadmium telluride** | λ max. 510 ±5 nm | **8256.1** | 5 | 63,35 |
| | | **8256.2** | 10 | 100,95 |
| **Cadmium telluride** | λ max. 570 ±5 nm | **8257.1** | 5 | 63,35 |
| | | **8257.2** | 10 | 100,95 |
| **Cadmium telluride** | λ max. 610 ±5 nm | **8258.1** | 5 | 63,35 |
| | | **8258.2** | 10 | 100,95 |
| **Cadmium telluride** | λ max. 710 ±5 nm | **8260.1** | 5 | 63,35 |
| | | **8260.2** | 10 | 100,95 |
| **Cadmium telluride** | λ max. 780 ±5 nm | **8261.1** | 5 | 63,35 |
| | | **8261.2** | 10 | 100,95 |

### Quantum Dots, hydrophobic

| Product | Purity | Art. No. | Pack Qty. (mg) | € |
|---|---|---|---|---|
| **Zn-Cu-In-S/ZnS** | Cd-free, λ max. 530 ±15 nm | **8609.1** | 5 | 50,45 |
| | | **8609.2** | 10 | 75,15 |
| **Zn-Cu-In-S/ZnS** | Cd-free, λ max. 560 ±15 nm | **8610.1** | 5 | 50,45 |
| | | **8610.2** | 10 | 75,15 |
| **Zn-Cu-In-S/ZnS** | Cd-free, λ max. 590 ±15 nm | **8618.1** | 5 | 50,45 |
| | | **8618.2** | 10 | 75,15 |
| **Zn-Cu-In-S/ZnS** | Cd-free, λ max. 610 ±15 nm | **8614.1** | 5 | 50,45 |
| | | **8614.2** | 10 | 75,15 |
| **Zn-Cu-In-S/ZnS** | Cd-free, λ max. 650 ±15 nm | **8616.1** | 5 | 50,45 |
| | | **8616.2** | 10 | 75,15 |
| **Zn-Cu-In-S/ZnS** | Cd-free, λ max. 700 ±15 nm | **8615.1** | 5 | 50,45 |
| | | **8615.2** | 10 | 75,15 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Elements

## Alloys

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Alloy acc. to Wood** | used for metal heating baths | **1980.1** | 250 g | plastic | 35,40 |
| | | **1980.2** | 1 kg | plastic | 110,20 |
| **Nickel-aluminium alloy** NEW | 50/50 % Ni/Al powder, for synthesis | **0663.1** | 50 g | plastic | 17,10 |
| | | **0663.2** | 250 g | plastic | 75,15 |
| | | **0663.3** | 500 g | plastic | 134,40 |




## Aluminium

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Aluminium granulate** | ≥99,5 %, gran., ~1-5 mm | **5280.1** | 250 g | glass | 18,85 |
| | | **5280.2** | 1 kg | glass | 34,30 |
| **Aluminium powder** | ≥99,5 %, powdered, <160 µm | **5285.1** | 250 g | glass | 27,45 |
| | | **5285.2** | 1 kg | glass | 69,80 |

## Antimony

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Antimony** | ≥99,5 %, powder | **9258.1** | 100 g | plastic | 44,65 |
| | | **9258.2** | 500 g | plastic | 162,90 |

## Bismuth

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Bismuth** | ≥99,5 %, powder | **2735.1** | 50 g | glass | 50,00 |
| | | **2735.2** | 100 g | glass | 84,85 |

## Calcium

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Calcium** | ≥99,5 %, granules | **2729.1** | 50 g | glass | 70,45 |

## Carbon

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Graphite** | natural, amorphous | **7614.2** | 500 g | plastic | 17,45 |
| | | **7614.3** | 1 kg | plastic | 26,35 |
| | | **7614.1** | 3 kg | plastic | 42,90 |




## Copper

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Copper sheet** | sheet 0,1 mm thick, 60 cm wide | **8540.1** | 250 g | card board | 35,40 |
| | | **8540.2** | 1 kg | card board | 75,15 |
| **Copper beads** | ≥99,9 %, beads | **2728.1** | 100 g | glass | 39,70 |
| **Copper powder** | ≥99,8 %, p.a., <63 µm | **CP21.1** | 100 g | plastic | 17,75 |
| | | **CP21.2** | 500 g | plastic | 53,25 |
| **Copper wool** | ~99 % | **9597.1** | 100 g | plastic | 17,10 |
| | | **9597.2** | 250 g | plastic | 31,10 |
| | | **9597.3** | 500 g | plastic | 54,75 |
| | | **9597.4** | 1 kg | plastic | 98,80 |

## Gallium

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Gallium** | 99,9999 % | **3761.1** | 5 g | glass | 79,05 |

## Gold

| Product | Purity | Art. No. | Pack. | € |
|---|---|---|---|---|
| **Sheets of gold** | 22 carat, block of 25 sheets 80 x 80 mm | **7605.1** | 1 piece (25 sheets) | 109,55 |

For additional product data and safety information, see chapter Chemicals A-Z.

## Indium

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Indium, foil** | 99,99 % (4N), foil | **9803.1** | 10 g | plastic | 267,70 |
| **Indium shot** | >99,97 %, granulated | **3906.1** | 10 g | glass | 52,60 |

## Iodine

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Iodine** | ≥99,8 %, p.a., ACS, resublimated | **X864.1** | 100 g | glass | 64,40 |
| | | **X864.2** | 250 g | glass | 117,20 |
| | | **X864.3** | 1 kg | glass | 413,90 |
| | ≥99,5 %, Ph.Eur., resublimated | **7935.3** | 100 g | glass | 48,30 |
| | | **7935.1** | 250 g | glass | 110,65 |
| | | **7935.2** | 1 kg | glass | 385,95 |
| | ≥99,5 %, resublimated | **7335.1** | 250 g | glass | 83,35 |
| | | **7335.2** | 500 g | glass | 146,75 |
| | | **7335.3** | 1 kg | glass | 278,45 |
| | | **7335.4** | 2,5 kg | glass | 557,95 |



## Iron

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Iron** | ≥99,5 %, p.a., powdered | **3718.3** | 100 g | plastic | 18,20 |
| | | **3718.1** | 250 g | plastic | 33,25 |
| | | **3718.4** | 1 kg | plastic | 84,85 |
| | | **3718.2** | 2,5 kg | plastic | 177,40 |
| **Iron, reduced** | ≥96 %, powdered, extra pure | **9454.1** | 250 g | plastic | 17,10 |
| | | **9454.2** | 1 kg | plastic | 42,90 |
| | | **9454.3** | 2,5 kg | plastic | 81,20 |
| **Iron foil** NEW | 99,99 % (4N), foil | **0540.1** | 1 pieces | plastic | 106,35 |
| | | **0540.2** | 5 pieces | plastic | 471,95 |
| **Iron wool** | ~97 % | **9588.1** | 100 g | plastic | 11,50 |
| | | **9588.2** | 250 g | plastic | 19,60 |

## Lead

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Lead** | ≥99,9 %, granules | **2734.1** | 50 g | plastic | 40,75 |
| | | **2734.2** | 100 g | plastic | 69,35 |

## Magnesium

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Magnesium ribbon** | ≥99,5 %, tape | **4468.1** | 1 roll | box | 100,55 |
| **Magnesium powder** | ≥99,8 %, <75 µm | **CP20.1** | 100 g | plastic | 13,45 |
| | | **CP20.2** | 500 g | plastic | 38,60 |
| **Magnesium filings** | ≥99,9 %, acc. to Grignard, for synthesis | **AE61.1** | 250 g | tin | 17,75 |
| | | **AE61.2** | 500 g | tin | 26,80 |
| | | **AE61.3** | 1 kg | tin | 43,55 |



## Mercury

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Mercury** | ≥99,9995 %, p.a. | **8530.1** | 100 g | glass | 41,85 |
| | | **8530.2** | 1 kg | plastic | 203,20 |
| | ≥99,999 % | **7593.1** | 100 g | glass | 31,10 |
| | | **7593.3** | 500 g | glass | 114,50 |
| | | **7593.2** | 1 kg | plastic | 192,45 |
| | ≥99,9 % | **7594.2** | 100 g | glass | 27,45 |
| | | **7594.1** | 1 kg | plastic | 181,70 |

## Nickel

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Nickel foil** NEW | 99,99 % (4N), foil | **0529.1** | 1 piece | plastic | 91,30 |
| | | **0529.2** | 5 pieces | plastic | 418,20 |
| **Nickel powder** | ≥99 %, <63 µm | **CP22.1** | 100 g | plastic | 28,95 |

For additional product data and safety information, see chapter Chemicals A-Z.






## Pt

### Platinum

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Platinum wire | NEW ≥99,95 %, Ø 0,2 mm | **0737.1** | 25 cm | plastic | 80,55 |
| | | **0737.2** | 50 cm | plastic | 149,45 |
| | | **0737.3** | 1 m | plastic | 278,45 |
| | ≥99,9 %, Ø 0,3 mm | **8415.1** | 100 mm | plastic | 72,60 |
| | | **8415.2** | 500 mm | plastic | 241,90 |
| | NEW ≥99,95 %, Ø 0,5 mm | **0803.1** | 5 cm | plastic | 75,15 |
| | | **0803.2** | 10 cm | plastic | 134,40 |
| | | **0803.3** | 25 cm | plastic | 310,70 |
| Platinum black | 98,2-98,7 % | **8408.1** | 250 mg | glass | 42,90 |
| | | **8408.2** | 1 g | glass | 149,45 |

## Ag

### Silver

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Sheets of silver | thickness 4 µm, block of 25 sheets 95 x 95 mm | **9367.1** | 1 piece (25 sheets) | | 37,30 |
| Silver sheet | Sheet 100 x 100 x 0,1 mm | **8816.1** | 1 sheet | card-board | 72,60 |
| Silver wire | wire, Ø 0,1 mm | **8819.1** | 310 m | plastic | 149,45 |
| | ≥99,9 %, wire Ø 0,5 mm | **8821.1** | 25 g | plastic | 138,70 |
| | | **8821.2** | 100 g | plastic | 461,20 |
| Silver wool | ≥99,9 %, for elementary analysis | **9373.1** | 10 g | plastic | 67,65 |

## Na

### Sodium

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Sodium | ≥99 %, rods, in paraffin oil | **4469.1** | 250 g | plastic | 153,20 |

## S

### Sulphur

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Sulphur | ≥99,999% | **4669.1** | 10 g | plastic | 60,10 |
| | ≥99,5 %, ground | **9304.1** | 1 kg | plastic | 17,75 |
| | | **9304.2** | 5 kg | card-board | 54,75 |
| | | **9304.5** | 25 kg | plastic | 150,50 |

## Sn

### Tin

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Tin granules | ≥99,8 %, p.a., granulated | **4016.2** | 50 g | plastic | 44,65 |
| | | **4016.1** | 250 g | plastic | 166,65 |
| Tin beads | ≥99,8 %, beads | **2731.1** | 50 g | plastic | 36,45 |
| | | **2731.2** | 100 g | plastic | 66,55 |
| Tin foil | pure | **9296.1** | 1 roll | | 63,45 |

## W

### Tungsten

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Tungsten | ≥99 %, powder | **9835.1** | 50 g | plastic | 22,05 |
| | | **9835.2** | 100 g | plastic | 40,35 |
| | | **9835.3** | 500 g | plastic | 166,65 |

## Zn

### Zinc

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| Zinc granule | ≥99,99 %, p.a., particle size: 5-15 mm | **AE99.1** | 250 g | plastic | 31,10 |
| | | **AE99.2** | 500 g | plastic | 50,45 |
| | | **AE99.3** | 1 kg | plastic | 83,75 |
| Zinc dust | ≥98 %, particle size <63 µm, stab. | **9524.2** | 500 g | glass | 28,95 |
| | | **9524.3** | 1 kg | glass | 40,75 |
| | | **9524.1** | 2,5 kg | glass | 71,95 |

For additional product data and safety information, see chapter Chemicals A-Z.



# Desiccants




Desiccants can absorb water and bind it chemically (reversibly or irreversibly) or physically.

**The main desiccants can be subdivided into four categories:**

- non-renewable chemical desiccants
- renewable chemical desiccants
- silica gels
- molecular sieves

## Non-renewable desiccant

| Dessicant | Suitable for | Not suitable for | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|---|---|
| **Aluminium** | Alcohols | - | ≥99,5 %, powdered, <160 µm | **5285.1** | 250 g | glass | 27,45 |
| | | | ≥99,5 %, powdered, <160 µm | **5285.2** | 1 kg | glass | 69,80 |
| | | | ≥99,5 %, gran., ~1-5 mm | **5280.1** | 250 g | glass | 18,85 |
| | | | | **5280.2** | 1 kg | glass | 34,30 |
| **Calcium** | Alcohols | - | ≥99,5 %, granules | **2729.1** | 50 g | glass | 70,45 |
| **Magnesium** | Alcohols | -- | ≥99,5 %, tape | **4468.1** | 1 roll | box | 100,55 |
| | | | ≥99,8 %, <75 µm | **CP20.1** | 100 g | plastic | 13,45 |
| | | | | **CP20.2** | 500 g | plastic | 38,60 |
| | | | ≥99,9 %, acc. to Grignard, for synthesis | **AE61.1** | 250 g | tin | 17,75 |
| | | | | **AE61.2** | 500 g | tin | 26,80 |
| | | | | **AE61.3** | 1 kg | tin | 43,55 |
| **Phosphorous pentoxide** | Neutral and acidic gases, saturated aliphatic and aromatic hydrocarbons, acetylene, anhydrides, nitriles, alkyl and aryl halides, hydrogen sulphide | Alcohols, amines, acids, ketones, ethers, hydrogen chloride, hydrogen fluoride | ≥99 %, powdered | **9076.1** | 500 g | plastic | 23,55 |
| | | | | **9076.2** | 1 kg | plastic | 34,30 |
| | | | | **9076.3** | 2,5 kg | plastic | 76,25 |
| **Potassium hydroxide** | Alkaline fluids (e.g. amines) | Acids, esters, amides, phenols | ≥85 %, p.a., pellets | **6751.3** | 250 g | plastic | 16,05 |
| | | | | **6751.1** | 1 kg | plastic | 26,35 |
| | | | | **6751.2** | 5 kg | plastic | 91,30 |
| | | | | **6751.5** | 25 kg | plastic | 278,45 |
| **Sodium** | Ethers, saturated aliphatic and aromatic hydrocarbons, tertiary amines | Acids, acid derivatives, alcohols, aldehydes, ketones, alkyl and aryl halides | ≥99 %, rods, in paraffin oil | **4469.1** | 250 g | plastic | 153,20 |
| **Sodium hydroxide** | Alkaline fluids (e.g. amines) | Acids, acid derivatives, phenols | ≥99 %, p.a., ISO, in pellets | **6771.3** | 500 g | plastic | 17,10 |
| | | | | **6771.1** | 1 kg | plastic | 25,70 |
| | | | | **6771.2** | 5 kg | plastic | 92,35 |
| | | | | **6771.5** | 25 kg | plastic | 332,20 |
| **Sulphuric acid, concentrated** | Inert neutral and acidic gases and in dessicators | Unsaturated and other organic compounds, hydrogen sulphide, hydrogen iodide | 96 %, p.a., ISO | **4623.3** | 250 ml | glass | 18,85 |
| | | | | **4623.1** | 1 l | glass | 30,65 |
| | | | | **4623.4** | 1 l | plastic | 27,85 |
| | | | | **4623.2** | 2,5 l | glass | 61,20 |
| | | | | **4623.5** | 2,5 l | plastic | 64,40 |
| | | | | **4623.6** | 10 l | plastic | 117,20 |

For additional product data and safety information, see chapter Chemicals A-Z.



## Renewable desiccants

| Dessicant | Suitable for | Not suitable for | Regeneration at | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|---|---|---|
| **Calcium chloride** | Saturated, olefin and aromatic hydrocarbons, alkyl halides, ethers, multiple esters, acetone | Ammonia, amines, alcohols, aldehydes, phenols, several esters, ketones | 250 °C | ≥98 %, dehydrated, powder | **CN93.1** | 500 g | plastic | 25,30 |
| | | | | | **CN93.2** | 1 kg | plastic | 38,20 |
| | | | | | **CN93.3** | 2,5 kg | plastic | 79,45 |
| | | | | ≥96 %, dehydrated, granular material | **CN92.1** | 500 g | plastic | 24,65 |
| | | | | | **CN92.2** | 1 kg | plastic | 37,10 |
| | | | | | **CN92.3** | 2,5 kg | plastic | 77,95 |
| | | | | ≥94 %, dehydrated | **A119.1** | 1 kg | plastic | 18,20 |
| | | | | | **A119.2** | 5 kg | plastic | 48,30 |
| | | | | | **A119.5** | 25 kg | plastic | 116,00 |
| **Calcium oxide** | Ammonia, amines, alcohols, nitrous oxide, ether | Acids, acid derivatives, aldehydes, ketones, ester | 1000 °C | ≥96 %, powdered, extra pure | **CN88.1** | 500 g | plastic | 14,95 |
| | | | | | **CN88.2** | 1 kg | plastic | 23,15 |
| | | | | | **CN88.3** | 5 kg | plastic | 83,35 |
| **Copper(II) sulphate** | Low fatty acids, alcohols, ester | Amines, nitriles, ammonia | Above 50 °C under vacuum | ≥98 %, p.a., anhydrous | **P023.1** | 250 g | plastic | 34,30 |
| | | | | | **P023.2** | 1 kg | plastic | 102,05 |
| | | | | | **P023.3** | 2,5 kg | plastic | 220,40 |
| **Magnesium oxide** | Alkaline fluids, hydrocarbons, alcohols | Acidic compounds | 800 °C | ≥98 %, Ph.Eur., light | **8280.2** | 500 g | plastic | 19,90 |
| | | | | | **8280.1** | 1 kg | plastic | 27,85 |
| | | | | | **8280.3** | 5 kg | plastic | 117,20 |
| **Magnesium sulphate** | Almost all compounds including acids, acid derivatives, aldehydes, esters, nitriles and ketones | - | First 200 °C, then red heat | ≥99 %, dried, extra pure, DAC | **0261.1** | 500 g | plastic | 15,30 |
| | | | | | **0261.2** | 1 kg | plastic | 19,60 |
| | | | | | **0261.3** | 2,5 kg | plastic | 35,40 |
| **Potassium carbonate** | Alkaline solvents (e.g. ammonia, amines), nitriles, chlorinated hydrocarbons, acetone | Acids | 158 °C, finely powdered from as low as 100 °C | ≥99 %, p.a., ACS | **P743.1** | 500 g | plastic | 26,35 |
| | | | | | **P743.2** | 1 kg | plastic | 40,75 |
| | | | | | **P743.3** | 2,5 kg | plastic | 88,70 |
| **Sodium sulphate** | Alkyl and aryl halides, fatty acids, ester, aldehydes, ketones | - | 150 °C | ≥99 %, p.a., ACS, ISO, powdered, anhydrous | **8560.3** | 500 g | plastic | 25,30 |
| | | | | | **8560.1** | 1 kg | plastic | 34,95 |
| | | | | | **8560.2** | 5 kg | plastic | 143,55 |
| | | | | | **8560.5** | 25 kg | plastic | 510,65 |

For further product information and safety guidelines, refer to Chemicals A-Z.

TIPP

### Drying methods for solvents

| Solvent | Molecular sieve | Potassium carbonate | Calcium chloride | Phosphous pentoxide |
|---|---|---|---|---|
| Acetic acid | - | - | - | + |
| Acetic acid anhydride | - | - | + | - |
| Acetic acid ethyl ester | 4 Å | + | - | + |
| Acetic acid methyl ester | 4 Å | + | - | + |
| Acetone | 3 Å | + | + | - |
| Acetonitrile | 3 Å | + | + | + |
| Benzene | 4 Å | - | + | - |
| 1-Butanol | - | + | - | - |
| 2-Butanol | - | + | - | - |
| 1-Butanone | - | + | + | - |
| Chloroform | 4 Å | - | + | + |
| Cyclohexane | 4 Å | - | - | - |
| Dichloremethane | 4 Å | - | - | - |
| Diethylether | 4 Å | - | + | - |
| Diisopropyl ether | 4 Å | - | + | - |
| Dimethyl formamide | 4 Å | - | - | - |
| Dioxan | 4 Å | - | + | - |
| Ethanol | 3 Å | - | - | - |
| Ethyle formate | - | - | + | - |
| n-Hexane | 4 Å | - | - | - |
| Methanol | 3 Å | - | + | - |
| 2-Propanol | 3 Å | - | - | - |
| Pyridine | 4 Å | - | - | - |
| Tetrahydrofurane | 4 Å | - | + | - |
| Toluene | 4 Å | - | + | - |
| Trichloroethylene | - | + | - | - |
| Xylene (Isomer compound) | 4 Å | - | + | - |



# Silica Gels

Silica gels protect moisture sensitive goods or chemicals during storage and transport. They are suitable for drying virtually all gases and solids.

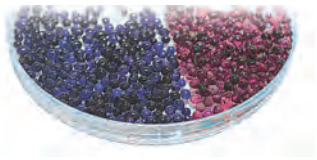
**Silica gels have a broad spectrum of application in the laboratory and in technical and industrial sectors:**

- Possible applications in the laboratory are in desiccators, drying towers and in absorption tubes
- In the industrial sector they are mainly used in drying plants and with various types of packaging
- Are not suitable for drying liquids and alkaline substances

# Silica Gel Blue

Alternative product: economically priced and environmentally friendly silica gel.

- **Free of cobalt(II) chloride**
- Colour change from blue to fuchsia
- Regeneration in drying cabinet at approx. 80-100 °C for approx. 2-4 hours



## Silica gel blue

**2-4 mm, with colour inidicator, pearls**

Drying agent

Drying pearls blue; colour change from blue to fuchsia.
Silica gel with a mixture of different indicators. Free of cobalt(II) chloride.
Colour change form blue to fuchsia.

**Type analysis:**

Particle size. ..... 2-4 mm
Adsorption capacity:
20 % rel. humidity. ..... approx. 8 %
50 % rel. humidity. ..... approx. 20 %
Filled under protective gas. Change in colour from blue to fuchsia.

Regeneration at ~80-100 °C, approximately 2-4 hours.

| | | | |
|---|---|---|---|
| **2440.1** | 500 g | plastic | 17,75 € |
| Original pack 6 x 500 g | | | 16,86/500 g |
| **2440.2** | 1 kg | plastic | 27,45 € |
| Original pack 6 x 1 kg | | | 26,08/1 kg |
| **2440.3** | 2,5 kg | plastic | 54,75 € |
| **2440.4** | 10 kg | plastic | 181,70 € |

# Silica Gel Orange

The environmentally friendly, alternative product to blue gel, used in the past.

**Properties:**

- Total adsorption capacity is similar to blue gel (Silica Gel Blue)
- Large surface (approx. 750 $m^2/g$), enables high absorption capacity of steam
- Adsorption capacity: approx. 40 wt% at 80 % relative humidity
- Patented humidity indicator - **heavy metal free**
- **Colour change from orange to colourless at approx. 6 wt% load**



## Silica gel orange

**2-5 mm, with colour indicator, pearls**

Drying agent

Drying pearls orange; colour change from orange to colourless.

**Type analysis:**

Particle size. ..... 2-5 mm
BET-surface. ..... approx. 750 $m^2/g$
Adsorptive capacity:
10 % rel. humidity. ..... approx. 6,5 weight %
80 % rel. humidity. ..... approx. 42 weight %
Filled under protective gas. Colour change from orange to colourless at approx. 6 weight-% load. Regeneration at 130 °C, approx. 4 hours.

| | | | |
|---|---|---|---|
| **P077.4** | 500 g | plastic | 25,30 € |
| Original pack 6 x 500 g | | | 24,04/500 g |
| **P077.1** | 1 kg | plastic | 38,20 € |
| Original pack 6 x 1 kg | | | 36,29/1 kg |
| **P077.2** | 2,5 kg | plastic | 74,10 € |
| **P077.3** | 10 kg | plastic | 224,70 € |

# Desiccant Sachets

Desiccant sachets protect valuable and sensitive goods against dampness.

**Properties:**
- Manufactured from white long fiber paper
- Filling: Silica Gel Orange (colour change from orange to colourless at 15-20 wt% shows the degree of saturation of the sachet)
- The different sized bags and different volumes enable multi-purpose application.

**Application:**
Used in packaging for storage and transport to protect sensitive electronic instruments, equipment, machine parts, chemical products and goods against dampness.

**Regeneration:**
Is not possible for the desiccant bags, as the long fiber paper is not temperature-stable.



## Desiccant sachet Silica gel orange

**10 g (4x9 cm), with indicator**

**Type analysis:**
Adsorption capacity:
20 % rel. humidity. ..... approx. 10 %
40 % rel. humidity. ..... approx. 19 %
50 % rel. humidity. ..... approx. 23 %
Colour change from orange to colourless. Regeneration is not possible.

| Packaging | Art. No. | Pack Qty. | € |
|---|---|---|---|
| 10 g (4 x 9 cm) | **N077.2** | 75 pieces/box | 32,15 |
| 25 g (10 x 10 cm) | **N078.1** | 30 pieces/box | 27,45 |
| 50 g (9 x 12 cm) | **N079.1** | 20 pieces/box | 38,60 |

# Silica Gel without colour indicator

- Non toxic
- Regeneration at 130-150 °C; approx. 4 hours
- Easy to handle
- Can be mixed with Silica Gel Orange/Blue
- Straightforward disposal



Drying Agent
Silica Gel
$SiO_2$

## Silica gel industry grade

**pearls, without indicator**

Universal drying agent, drying of buildings.

**Suitable, for example, for:**
- drying buildings
- drying carpets and furniture
- and much more

**Application:**
- distributing approx. 6-8 kg/m². Caution! Standing water must be removed beforehand
- keep windows and doors closed. Turn off heating!
- depending on moisture level, the dry pearls can be removed after approx. 1-10 days
- checking for water absorption: dry 1 kg of moist product in oven for approx. 4 hours at 130-150 °C and weigh subsequently. If the weight difference (=water absorption) is approx. 360 g, the product should be replaced

**Type analysis:**
Appearance. ..... pearls, colourless to brown
Particle size. ..... 1-2,3 mm
BET-surface. ..... approx. 750 m²/g
Adsorption capacity:
10 % rel. humidity. ..... approx. 6 weight %
80 % rel. humidity. ..... approx. 45 weight %
Regeneration at 130-150 °C.

| | | | |
|---|---|---|---|
| **CN70.1** | 1 kg | plastic | 39,25 € |
| Original pack 6 x 1 kg | | | 37,29/1 kg |
| **CN70.2** | 5 kg | plastic | 142,45 € |
| **CN70.3** | 10 kg | plastic | 256,95 € |
| **CN70.4** | 25 kg | plastic | 590,20 € |

## Silica gel white

**0,5-1 mm, granules**

**Type analysis:**
Bulk density. ..... 650-770 g/l
Absorption capacity:
10 % rel. humidity. ..... ≥5 weight %
80 % rel. humidity. ..... ≥28 weight %
Regeneration at ~130 °C, approximately 4 hours.

| | | | |
|---|---|---|---|
| **9376.1** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **9376.2** | 5 kg | plastic | 115,60 € |

**1-3 mm, granules**

Absorption capacity:
10 % rel. humidity. ..... approx. 6 weight %
80 % rel. humidity. ..... approx. 32 weight %
Regeneration at ~130 °C, approximately 4 hours.

| | | | |
|---|---|---|---|
| **T858.1** | 1 kg | plastic | 37,55 € |
| Original pack 6 x 1 kg | | | 35,67/1 kg |
| **T858.2** | 5 kg | plastic | 121,40 € |

# Silica gel water resistant

**Properties:**
- water resistant
- regeneration at 130-150 °C for approx. 4 hours
- can be mixed with other Silica gels
- protects other Silica gels from liquid water




## Silica gel water resistant
**2-5 mm, bead form**

**Type analysis:**
Particle size. ..... 2-5 mm
BET-surface..... ca. 650 $m^2/g$
Absorption capacity:
10 % rel. humidity. ..... approx. 4 %
80 % rel. humidity. ..... approx. 42 %
Regeneration at 130-150 °C.

| | | | |
|---|---|---|---|
| **8109.1** | 500 g | plastic | 27,85 € |
| Original pack 6 x 500 g | | | 26,46/500 g |
| **8109.2** | 1 kg | plastic | 41,40 € |
| Original pack 6 x 1 kg | | | 39,33/1 kg |
| **8109.3** | 2,5 kg | plastic | 76,90 € |
| **8109.4** | 10 kg | plastic | 223,10 € |

In order to achieve low residual water content over the silica gel, the capacity can only be utilised partially. The less silica gel is loaded with water the more intensively it dries. For example, to achieve a residual water content of 1 mg/l the loading must not be higher than 5,2 g water / 100 g silica gel.



DURAN WHEATON KIMBLE
Material DURAN®

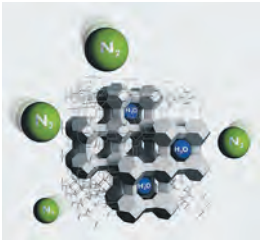
## Desiccator sets
Made of DURAN®. Designed for use up to the maximum technically possible vacuum (0 mbar).
**Delivery without** porcelain dessicator plate. Please order separately.

① **Includes lid with knob, without connection**
For drying moist products as well as storage of moisture-sensitive substances.

| DN | approx. volume (l) | Height (mm) | Flange ID (mm) | Flange OD (mm) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|---|---|
| 100 | 0,7 | 187 | 118,5 | 153 ±2 | **AHK8.1** | 1 | 107,50 |
| 150 | 2,4 | 252 | 172 | 215 ±2 | **AHK9.1** | 1 | 127,00 |
| 200 | 5,8 | 209 | 222 | 270 ±2 | **AHL0.1** | 1 | 151,00 |
| 250 | 10,5 | 357 | 272 | 320 ±2 | **AHL1.1** | 1 | 236,00 |
| 300 | 18,5 | 433 | 332 | 380 ±2 | **AHL2.1** | 1 | 356,00 |

# Molecular Sieves





For drying, cleaning or separating liquids and gases.

## Properties:

- Spherical metal aluminium silicates
- Spheres ∅ 1,6-2,5 mm and 2,5-5,0 mm
- Active surface: 600-700 $m^2/g$
- Activated at 500-600 °C; we nevertheless recommend activating the molecular sieve again before using it for the first time

## Typical application:

- In desiccators, drying tubes, columns
- For drying streaming gases
- For absoluting organic solvents
- For separating organic solvents

**Regenerating:**
- In drying cabinets at 200-300 °C
- Through pressure change or rinsing

**Critical molecular diameter for frequently occurring molecules, in Å (1 angstrom = $10^{-10}$ m = 0.1 nm)**

| Molecule | Size [Å] |
|---|---|
| Acetylene | 3.3 |
| Ammoniac | 2.9 |
| Argon | 3.8 |
| Benzole/toluene | 5.8 |
| n-butanes and higher n-hydrocarbons | 4.3 |
| i-butane and higher i-hydrocarbons | 5.1 |
| i-butene | 4.0 |
| trans-2-butene | 5.1 |
| 1.3 butadiene | 5.8 |
| Cyclohexane | 6.0 |
| Dimethylpropane | 6.2 |
| Ethane | 4.2 |
| Ethanol | 4.2 |
| Ethylene | 3.9 |
| Ethyl mercaptan | 3.8 |
| Helium | 2.0 |
| Carbon monoxide | 3.7 |
| Carbon dioxide | 3.3 |

| Molecule | Size [Å] |
|---|---|
| Methane | 3.8 |
| Propane | 4.3 |
| Methanol | 3.6 |
| Methyl mercaptan | 3.8 |
| Propane | 4.3 |
| Propylene | 4.0 |
| Oxygen | 3.5 |
| Hydrogen sulphide | 3.6 |
| Nitrogen | 3.6 |
| Carbon tetrachloride | 5.9 |
| Thiophene | 5.3 |
| Triethylamine | 7.8 |
| Trichlormethane/ Chloroform | 6.9 |
| Water | 2.6 |
| Hydrogen | 2.4 |
| o-Xylol | 6.6 |
| m-Xylol | 6.3 |
| p-Xylol | 5.9 |

## Molecular Sieves

| Product | Purity | Globe diameter | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|---|
| **Molecular sieve 3 Å** | activated, under argon | 1,6-2,5 mm | **N893.1** | 100 ml | glass | 12,40 |
| | 0,3 nm, type 564, pearls | 1,6-2,5 mm | **8487.1** | 250 g | glass | 27,45 |
| | | | **8487.2** | 750 g | glass | 61,85 |
| | | | **8487.3** | 2,5 kg | plastic | 160,75 |
| | 0,3 nm, type 562 C, pearls | 2,5-5,0 mm | **P729.1** | 250 g | glass | 27,45 |
| | | | **P729.2** | 750 g | glass | 61,85 |
| | | | **P729.3** | 2,5 kg | plastic | 160,75 |
| **Molecular sieve 4 Å** | 0,4 nm, type 514, pearls | 1,6-2,5 mm | **8471.1** | 250 g | glass | 30,00 |
| | | | **8471.2** | 750 g | glass | 63,35 |
| | | | **8471.3** | 2,5 kg | plastic | 166,65 |
| **Molecular sieve 5 Å** | 0,5 nm, type 522, pearls | 1,6-2,5 mm | **8475.1** | 250 g | glass | 30,00 |
| | | | **8475.2** | 750 g | glass | 63,35 |
| | | | **8475.3** | 2,5 kg | plastic | 166,65 |
| **Molecular sieve 10 Å** | 1,0 nm, type 544, pearls | 1,6-2,5 mm | **8483.1** | 250 g | glass | 30,00 |
| | | | **8483.2** | 750 g | glass | 63,35 |
| | | | **8483.3** | 2,5 kg | plastic | 166,65 |

# Ion Exchanger

The ion exchanger offered in our range differ depending on their application and requirements. Three different types are available:

- **Mixed bed ion exchanger**
- **Classical cation and anion exchanger**
- **Cation and anion exchanger for analytical purposes**

**Typical applications:**
- Water treatment
- Pharmaceutical industry and biochemistry
- Production and purifying of chemicals
- Classical laboratory analysis

# Amberjet™ Mixed Bed Ion Exchanger




## Amberjet™

**mixed bed exchanger, highly pure**

Mixed bed resin made of highly regenerated strongly acidic cation exchanger and strongly basic anion exchanger. Especially suited for all demanding applications, e.g. for disposable cartridges in systems with highly purified water in the electronics industry. Manufactured by a special process allowing the production of highly purified water as far as organic impurities and others are concerned. Contains stoichiometric amounts of cation and anion exchanger capacities.

**Type analysis:**

Delivery form. ..... $H^+/OH^-$
Blend ratio. ..... 0,90-1,10
Particle size. ..... 0,3-1,2 mm

| | | | |
|---|---|---|---|
| **K306.1** | 100 g | plastic | 28,50 € |
| **K306.2** | 500 g | plastic | 58,60 € |
| Original pack 6 x 500 g | | | 55,67/500 g |

# Dowex® Ion Exchanger



- **Anion exchanger, highly basic**
  Ion exchanger on a microporous styrene DVB copolymerisate base. Active group: quaternary ammonium compound type I
- **Cation exchanger, highly acidic**
  Matrix: polystyrene - DVB
  Active group: sulphonate

**DOWEX® Resin Properties**

| Description | DOWEX® 1 X | DOWEX® 50 WX |
|---|---|---|
| Type | Strongly basic anion exchanger | Strongly acid cation exchanger |
| Functional Group | Trimethyl ammonium | Sulphonic acid |
| Cross linkage (% DVB) | 2 or 8 | 2 or 8 |
| Ion form | $Cl^-$ | $H^+$ |
| Volume charge (%) | $Cl^-$ -> $OH^-$ + 20 % | $Na^+$ -> $H^+$ + 8 % |
| Effective working range (pH) | 0 - 14 | 0 - 14 |
| Selectivity for ions | $I^- > NO_3^- > Br^- > Cl^- >$ $Acetat^- > OH^- > F^-$ | $Ag^+ > Cs^+ > Rb^+ > K^+ >$ $NH_4^+ > Na^+ > Li^+ > Ba^{2+} >$ $Sn^{2+} > Ca^{2+} > Mg^{2+} > Be^{2+}$ |
| Total exchange capacity (eq/l) | approx. 0,6 - 1,4 | approx. 0,6 - 1,7 |
| Thermal stability | $OH^-$ form max. 50 °C $Cl^-$ form max. 150 °C | $Na^+$ form max. 120 °C $H^+$ form max. 80 °C |
| Moisture (%) | 39 - 80 | 40 - 82 |

## Dowex® Anion exchanger

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Dowex® 1 X 2** | 50-100 mesh, $Cl^-$-form | **0302.3** | 50 g | plastic | 67,20 |
| | | **0302.1** | 100 g | plastic | 110,65 |
| | | **0302.4** | 250 g | plastic | 212,35 |
| | | **0302.2** | 1 kg | plastic | 815,95 |
| **Dowex® 1 X 2** | 100-200 mesh, $Cl^-$-form | **0303.3** | 50 g | plastic | 48,30 |
| | | **0303.1** | 100 g | plastic | 87,00 |
| | | **0303.4** | 250 g | plastic | 166,55 |
| | | **0303.2** | 1 kg | plastic | 568,70 |
| **Dowex® 1 X 2** | 200-400 mesh, $Cl^-$-form | **0304.2** | 50 g | plastic | 51,50 |
| | | **0304.1** | 100 g | plastic | 88,70 |
| | | **0304.3** | 250 g | plastic | 179,45 |
| | | **0304.4** | 1 kg | plastic | 628,90 |
| **Dowex® 1 X 8** | 20-50 mesh, $Cl^-$-form | **0309.3** | 50 g | plastic | 58,05 |
| | | **0309.1** | 250 g | plastic | 224,70 |
| | | **0309.2** | 1 kg | plastic | 751,45 |
| **Dowex® 1 X 8** | 50-100 mesh, $Cl^-$-form | **0310.3** | 50 g | plastic | 51,50 |
| | | **0310.1** | 250 g | plastic | 179,45 |
| | | **0310.2** | 1 kg | plastic | 628,90 |
| **Dowex® 1 X 8** | 100-200 mesh, $Cl^-$-form | **0311.3** | 50 g | plastic | 53,65 |
| | | **0311.1** | 100 g | plastic | 99,90 |
| | | **0311.4** | 250 g | plastic | 189,10 |
| | | **0311.2** | 1 kg | plastic | 686,95 |
| **Dowex® 1 X 8** | 200-400 mesh, $Cl^-$-form | **0312.3** | 50 g | plastic | 67,20 |
| | | **0312.1** | 100 g | plastic | 110,65 |
| | | **0312.4** | 250 g | plastic | 212,35 |
| | | **0312.2** | 1 kg | plastic | 815,95 |

## Dowex® Cation exchanger

**Programme extension!**

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Dowex® 50 W X 2** | 50-100 mesh, $H^+$-form NEW | **6800.1** | 50 g | plastic | 46,15 |
| | | **6800.2** | 250 g | plastic | 156,45 |
| | | **6800.3** | 1 kg | plastic | 536,45 |
| **Dowex® 50 W X 2** | 100-200 mesh, $H^+$-form | **0334.2** | 50 g | plastic | 48,30 |
| | | **0334.1** | 100 g | plastic | 87,00 |
| | | **0334.3** | 250 g | plastic | 166,55 |
| | | **0334.4** | 1 kg | plastic | 568,70 |
| **Dowex® 50 W X 2** | 200-400 mesh, $H^+$-form | **N099.3** | 50 g | plastic | 46,15 |
| | | **N099.1** | 100 g | plastic | 84,85 |
| | | **N099.4** | 250 g | plastic | 156,45 |
| | | **N099.2** | 1 kg | plastic | 536,45 |
| **Dowex® 50 W X 4** | 200-400 mesh, $H^+$-form NEW | **6821.1** | 50 g | plastic | 43,55 |
| | | **6821.2** | 250 g | plastic | 147,20 |
| | | **6821.3** | 1 kg | plastic | 504,20 |
| **Dowex® 50 W X 8** | 50-100 mesh, $H^+$-form | **0344.2** | 50 g | plastic | 51,50 |
| | | **0344.1** | 250 g | plastic | 179,45 |
| | | **0344.3** | 1 kg | plastic | 628,90 |
| **Dowex® 50 W X 8** | 100-200 mesh, $H^+$-form | **0345.2** | 50 g | plastic | 53,65 |
| | | **0345.1** | 100 g | plastic | 99,90 |
| | | **0345.3** | 250 g | plastic | 189,10 |
| | | **0345.4** | 1 kg | plastic | 686,95 |
| **Dowex® 50 W X 8** | 200-400 mesh, $H^+$-form | **0346.2** | 50 g | plastic | 51,50 |
| | | **0346.1** | 100 g | plastic | 88,70 |
| | | **0346.3** | 250 g | plastic | 179,45 |
| | | **0346.4** | 1 kg | plastic | 628,90 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Ion Exchanger Roti®change

Roth's product range Roti®change contains ion exchanger, which are particularly suitable for analytical purposes. The corresponding polystyrene based resins were specially purified to reduce extractable residues to less than 1 mg/g resin.



### Cation exchange resins

Our cation exchange resins are available as 4 % and 8 % divinylbenzene (DVB) cross-linked polymers with sulphonate as active group. All cation exchange resins are provided in hydrogen ($H^+$) form.

Typical applications are: removal of ethidium bromide/propidium iodide from DNA samples; separation and preconcentration of amino acids, peptides and nucleotides; desalting (removal of cations) and separation of metal ions.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Ion exchange resin Roti®change 50 W x 4** | 100-200 mesh, analytical grade, $H^+$-form | **6864.4** | 25 g | plastic | 48,30 |
| | | **6864.1** | 100 g | plastic | 170,95 |
| | | **6864.2** | 250 g | plastic | 353,70 |
| | | **6864.3** | 500 g | plastic | 654,70 |
| **Ion exchange resin Roti®change 50 W x 8** | 50-100 mesh, analytical grade, $H^+$-form | **6865.4** | 25 g | plastic | 62,25 |
| | | **6865.1** | 100 g | plastic | 241,90 |
| | | **6865.2** | 250 g | plastic | 504,20 |
| | | **6865.3** | 500 g | plastic | 934,20 |
| **Ion exchange resin Roti®change 50 W x 8** | 100-200 mesh, analytical grade, $H^+$-form | **6866.4** | 25 g | plastic | 53,65 |
| | | **6866.1** | 100 g | plastic | 203,20 |
| | | **6866.2** | 250 g | plastic | 428,95 |
| | | **6866.3** | 500 g | plastic | 783,70 |
| **Ion exchange resin Roti®change 50 W x 8** | 200-400 mesh, analytical grade, $H^+$-form | **6867.4** | 25 g | plastic | 56,90 |
| | | **6867.1** | 100 g | plastic | 213,95 |
| | | **6867.2** | 250 g | plastic | 456,90 |
| | | **6867.3** | 500 g | plastic | 833,15 |

### Anion exchange resins

Our anion exchange resins are also available as 4 % and 8 % divinylbenzene (DVB) cross-linked polymers but with quaternary amines as active groups. All anion exchange resins are provided in chloride ($Cl^-$) form.

Typical applications are: exchange of anions of salts; cyclic nucleotide assays and fractionation of organic acids.

| Product | Purity | Art. No. | Pack Qty. | Packaging | € |
|---|---|---|---|---|---|
| **Ion exchange resin Roti®change 1 x 4** | 50-100 mesh, analytical grade, $Cl^-$-form | **6849.4** | 25 g | Kunst. | 42,90 |
| | | **6849.1** | 100 g | plastic | 149,45 |
| | | **6849.2** | 250 g | plastic | 306,40 |
| | | **6849.3** | 500 g | plastic | 568,70 |
| **Ion exchange resin Roti®change 1 x 4** | 100-200 mesh, analytical grade, $Cl^-$-form | **6851.4** | 25 g | plastic | 53,65 |
| | | **6851.1** | 100 g | plastic | 203,20 |
| | | **6851.2** | 250 g | plastic | 428,95 |
| | | **6851.3** | 500 g | plastic | 805,20 |
| **Ion exchange resin Roti®change 1 x 8** | 20-50 mesh, analytical grade, $Cl^-$-form | **6852.4** | 25 g | plastic | 26,80 |
| | | **6852.1** | 100 g | plastic | 81,60 |
| | | **6852.2** | 250 g | plastic | 170,95 |
| | | **6852.3** | 500 g | plastic | 310,70 |
| **Ion exchange resin Roti®change 1 x 8** | 50-100 mesh, analytical grade, $Cl^-$-form | **6854.4** | 25 g | plastic | 48,30 |
| | | **6854.1** | 100 g | plastic | 170,95 |
| | | **6854.2** | 250 g | plastic | 353,70 |
| | | **6854.3** | 500 g | plastic | 654,70 |
| **Ion exchange resin Roti®change 1 x 8** | 100-200 mesh, analytical grade, $Cl^-$-form | **6855.4** | 25 g | plastic | 48,30 |
| | | **6855.1** | 100 g | plastic | 170,95 |
| | | **6855.2** | 250 g | plastic | 353,70 |
| | | **6855.3** | 500 g | plastic | 654,70 |
| **Ion exchange resin Roti®change 1 x 8** | 200-400 mesh, analytical grade, $Cl^-$-form | **6856.4** | 25 g | plastic | 51,50 |
| | | **6856.1** | 100 g | plastic | 192,45 |
| | | **6856.2** | 250 g | plastic | 392,40 |
| | | **6856.3** | 500 g | plastic | 740,70 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Filtering Agents and Eluants

## Activated Charcoal

Activated charcoals are used in many areas within the chemical and pharmaceutical industry. The charcoal is available in powder or broken coal format and as extruded charcoal, depending on the application.

**Activated carbon and its application**

| Qualities of activated carbon | Art. No. | Air purification | Gas purification | Water purification | Chemical industry | Pharmaceutical industry |
|---|---|---|---|---|---|---|
| Powder carbon | X865 5963 | - | - | - | x | x |
| Carbon mould block | 0998 | x | x | - | - | - |
| Broken carbon | 5966 | - | x | x | x | - |



### Charcoal
**p.a., powder**
Adsorbent
Analytic activated carbon with extensive trace analysis.

Methylene blue adsorption (0,15 % solution). ..... ≥100 ml/g

| | | | |
|---|---|---|---|
| **X865.1** | 250 g | plastic | 23,15 € |
| **X865.2** | 500 g | plastic | 36,05 € |
| Original pack 6 x 500 g | | | 34,25/500 g |
| **X865.3** | 1 kg | plastic | 65,50 € |
| Original pack 6 x 1 kg | | | 62,23/1 kg |

### Charcoal activated
**powder, for decolourisation**
Activated by phosphoric acid activation.

**Warning** H252

Activated carbon with high absorption capacity and excellent filtering quality. Primarily used for the absorption of organic substances of high molecular weight, e.g. proteins and large colour molecules.

Methylene blue adsorption ..... ≥25 g/100 g

| | | | |
|---|---|---|---|
| **5963.3** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **5963.1** | 1 kg | plastic | 49,35 € |
| Original pack 6 x 1 kg | | | 46,88/1 kg |
| **5963.4** | 2,5 kg | plastic | 95,70 € |
| **5963.2** | 5 kg | plastic | 127,95 € |
| **5963.5** | 10 kg | plastic | 246,20 € |



### Charcoal
**1-3 mm, made from peat, grey**
Fractured coal

Methylene blue adsorption. ..... 11 g/100 g

| | | | |
|---|---|---|---|
| **5966.1** | 1 kg | plastic | 31,75 € |
| Original pack 6 x 1 kg | | | 30,16/1 kg |
| **5966.3** | 2,5 kg | plastic | 70,85 € |
| **5966.2** | 5 kg | plastic | 120,95 € |
| **5966.5** | 10 kg | plastic | 224,70 € |
| **5966.4** | 25 kg | plastic | 461,20 € |

### Charcoal
**~3 mm, steam activated**
For gas cleaning. Extruded charcoal.

Butane adsorption ($p/p_0$=0,1). ..... 18-23 g/100 g

| | | | |
|---|---|---|---|
| **0998.1** | 500 g | plastic | 38,60 € |
| Original pack 6 x 500 g | | | 36,67/500 g |
| **0998.2** | 1 kg | plastic | 64,00 € |
| Original pack 6 x 1 kg | | | 60,80/1 kg |
| **0998.4** | 2,5 kg | plastic | 131,05 € |
| **0998.3** | 5 kg | plastic | 231,70 € |
| **0998.5** | 10 kg | plastic | 396,70 € |

# Charcoal for determination of AOX

### Charcoal
**for the determination of AOX (shaking method)**

**Type analysis:**
Iodine value. ..... ≥1050 mg/g
Chloride (Cl). ..... ≤0,0005 %
Particle size. ..... ≤50 µm

| | | | |
|---|---|---|---|
| **1319.1** | 10 g | glass | 71,95 € |

### Charcoal
**for the determination of AOX (column method)**

**Type analysis:**
Iodine value. ..... ≥1050 mg/g
Chloride (Cl). ..... ≤0,0005 %
Particle size. ..... ~50-150 µm

| | | | |
|---|---|---|---|
| **1299.1** | 10 g | glass | 76,90 € |

# Additional Eluants






| Product | Purity | Application | Art. No. | Pack Qty. | € |
|---|---|---|---|---|---|
| **Glass wool** | 8 µm, chemically resistant glass according to DIN 1259-1 | Filter aid, for laboratory work. NEW | **0691.1** | 500 g | 21,40 |
| | | | **0691.2** | 1 kg | 35,40 |
| | 11 µm, chemically resistant glass according to DIN 1259-1 | Filter aid, for laboratory work. | **6574.1** | 500 g | 17,75 |
| | | | **6574.2** | 1 kg | 30,00 |
| | 25 µm, chemically resistant glass according to DIN 1259-1 | Filter aid, for laboratory work. NEW | **0700.1** | 500 g | 20,35 |
| | | | **0700.2** | 1 kg | 32,15 |
| **Infusorial earth** | natural | For filtration of organic solutions. | **8019.3** | 1 kg | 17,10 |
| | | | **8019.1** | 5 kg | 37,55 |
| | | | **8019.2** | 20 kg | 96,65 |
| **Quarz** | >99 % powdered, <125 µm | Resistant to chemicals (except very strong alkalis) | **4651.2** | 500 g | 17,10 |
| | | | **4651.1** | 1 kg | 23,15 |
| | | | **4651.3** | 5 kg | 52,15 |
| | fine, cryst., 0,4-0,8 mm | Filtration aids | **7897.1** | 2,5 kg | 19,25 |
| | | | **7897.2** | 20 kg | 59,05 |
| | fine, cryst., 0,4-0,8 mm | Filtration aids | **7898.1** | 2,5 kg | 20,65 |
| | | | **7898.2** | 20 kg | 61,20 |
| **Quarz wool** | chemically pure | Ideal for elementary analysis or as a final stopper in chromatography columns; filter aid. | **9208.1** | 10 g | 21,40 |
| | | | **9208.2** | 100 g | 138,70 |
| | | | **9208.3** | 250 g | 295,10 |
| **Sea sand** | p.a., purified by acid and calcinated | Filtration aids | **4309.2** | 500 g | 52,60 |
| | | | **4309.1** | 1 kg | 92,35 |
| | | | **4309.3** | 2,5 kg | 155,90 |
| | | | **4309.4** | 5 kg | 299,95 |
| | | | **4309.5** | 10 kg | 557,95 |
| | extra pure, purified by acid | Filtration aids | **8441.3** | 500 g | 28,95 |
| | | | **8441.1** | 1 kg | 46,15 |
| | | | **8441.4** | 2,5 kg | 93,45 |
| | | | **8441.2** | 5 kg | 179,45 |
| | | | **8441.5** | 10 kg | 332,20 |
| | | | **8441.6** | 25 kg | 751,45 |
| **Silicic acid** | for chromatography | Acc. to Ramsey and Patterson. | **0201.1** | 250 g | 20,65 |
| | | | **0201.2** | 1 kg | 55,80 |

For additional product data and safety information, see chapter Chemicals A-Z.

# Celite® - Silicate Basis



Prepared and standardized celite for application as a filtering aid or as carrier material in column chromatography.

**Composition:**
approx. 90 % $SiO_2$, 2-5 % $Al_2O_3$, 1-4 % $Fe_2O_3$ and various other oxides in a low concentration, that is why the Celite® may be slightly tinted.

### The complete Celite® range at a glance

| Product | Permeability (Darcy) | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Celite® 503** | 1,27-2,4 | **0007.1** | 2,5 kg | 52,60 |
| | | **0007.2** | 1 kg | 25,70 |
| **Celite® 512** | 0,28-0,76 | **0050.1** | 2,5 kg | 41,85 |
| | | **0050.2** | 1 kg | 22,50 |
| **Celite® 535** | 1,8-3,9 | **0009.2** | 1 kg | 19,90 |
| | | **0009.1** | 2,5 kg | 40,75 |
| **Celite® 545** | 3,5-5,5 | **0011.3** | 250 g | 11,75 |
| | | **0011.2** | 1 kg | 22,50 |
| | | **0011.1** | 2,5 kg | 32,15 |
| | | **0011.4** | 10 kg | 96,65 |
| | | **0011.5** | 25 kg | 181,70 |
| **Celite® Hyflo Super Cel®** | 0,73-1,64 | **0005.1** | 2,5 kg | 44,65 |
| | | **0005.2** | 1 kg | 24,20 |
| **Celite® Standard Super Cel®** | 0,16-0,36 | **0003.1** | 2,5 kg | 40,75 |
| | | **0003.2** | 1 kg | 21,40 |

For additional product data and safety information, see chapter Chemicals A-Z.


- ▶ Chromatography columns made of DURAN® see chapter Labware, page 160
- ▶ For further sorbents, see chapter Chromatography, page 1595


# Preliminary tests for qualitative determination

## Flame colouration

### Pt wire

### Platinum wire

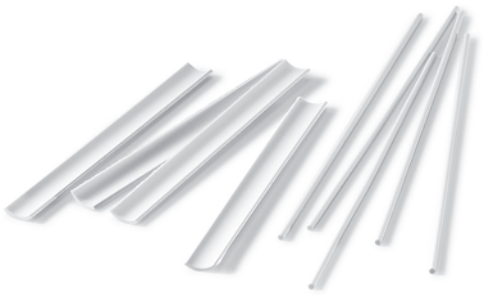
| Product | Purity | Art. No. | Pack Qty. | € |
|---|---|---|---|---|
| **Platinum wire** | ≥99,95 %, ∅ 0,2 mm NEW | **0737.1** | 25 cm | 80,55 |
| | | **0737.2** | 50 cm | 149,45 |
| | | **0737.3** | 1 m | 278,45 |
| | ≥99,9 %, ∅ 0,3 mm | **8415.1** | 100 mm | 72,60 |
| | | **8415.2** | 500 mm | 241,90 |
| | ≥99,95 %, ∅ 0,5 mm NEW | **0803.1** | 5 cm | 75,15 |
| | | **0803.2** | 10 cm | 134,40 |
| | | **0803.3** | 25 cm | 310,70 |


- ▶ Magnesia scoops and magnesia rods see page 1687


**Flame colours of some metals**

| Metal | without glass | with glass |
|---|---|---|
| Barium (Ba) | yellow green | blue green |
| Calcium (Ca) | brick red | light green |
| Caesium (Cs) | blue | - |
| Potassium (K) | violet | crimson |
| Copper (Cu) | green | - |
| Lithium (Li) | red | - |
| Sodium (Na) | yellow | - |
| Rubidium (Rb) | violet | - |
| Strontium (Sr) | crimson | violet |

# Oxidizing melt



## Magnesia scoops

For the preparation of the oxidizing melt upon detection of chromium, manganese etc. For bead tests.
W 9 mm x l 100 mm.

| | | | |
|---|---|---|---|
| **6537.1** | 25 pieces | cardboard | 20,40 € |

## Potassium nitrate

**≥99 %, p.a., ISO**
Reagent for the oxidative disintegration of anorganic and organic samples.

$KNO_3$
M 101,11 g/mol

**Danger** H272

| | | | |
|---|---|---|---|
| **P021.1** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **P021.2** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **P021.3** | 2,5 kg | plastic | 67,20 € |

## Potassium carbonate

**≥99 %, p.a., ACS**
Drying agent, disintegrating agent
Potash
$K_2CO_3$
M 138,21 g/mol

**Warning** H315-H319-H335

| | | | |
|---|---|---|---|
| **P743.1** | 500 g | plastic | 26,35 € |
| Original pack 6 x 500 g | | | 25,03/500 g |
| **P743.2** | 1 kg | plastic | 40,75 € |
| Original pack 6 x 1 kg | | | 38,71/1 kg |
| **P743.3** | 2,5 kg | plastic | 88,70 € |

# Phosphorous salt bead/ borax bead

## Magnesia rods

Ideal for flame analysis of sodium etc., for borax bead analysis of cobalt and for bead tests.
∅ 1,5 mm x l 140 mm.

| | | | |
|---|---|---|---|
| **6543.1** | 25 pieces | cardboard | 23,15 € |

## Sodium ammonium hydrogen phosphate tetrahydrate

**≥99 %, p.a.**
Reagent for Mg; phosphorus salt bead
Ammonium sodium phosphate, sec-Sodium ammonium phosphate
$NaNH_4HPO_4 \cdot 4\ H_2O$
M 209,07 g/mol

| | | | |
|---|---|---|---|
| **T882.1** | 500 g | plastic | 64,40 € |
| Original pack 6 x 500 g | | | 61,18/500 g |
| **T882.2** | 1 kg | plastic | 95,15 € |
| Original pack 6 x 1 kg | | | 90,39/1 kg |
| **T882.3** | 2,5 kg | plastic | 213,95 € |

## di-Sodium tetraborate decahydrate

**≥99,5 %, p.a., ACS, ISO**
For qualitative analysis. Decomposition agent.
Borax
$Na_2B_4O_7 \cdot 10\ H_2O$
M 381,37 g/mol

**Danger** H360FD

| | | | |
|---|---|---|---|
| **T880.1** | 500 g | plastic | 31,10 € |
| Original pack 6 x 500 g | | | 29,55/500 g |
| **T880.2** | 1 kg | plastic | 46,15 € |
| Original pack 6 x 1 kg | | | 43,84/1 kg |
| **T880.3** | 2,5 kg | plastic | 90,20 € |

# Other reagents

## Hexamethylene tetramine



**ROTIPURAN® ≥99 %, p.a., ACS**
Urotropin, Methenamine, Hexamine
$C_6H_{12}N_4$
M 140,19 g/mol

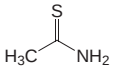
**Warning** H228-H317

| | | | |
|---|---|---|---|
| **4366.1** | 100 g | plastic | 16,05 € |
| **4366.2** | 500 g | plastic | 28,50 € |
| Original pack 6 x 500 g | | | 27,08/500 g |
| **4366.3** | 1 kg | plastic | 46,80 € |
| Original pack 6 x 1 kg | | | 44,46/1 kg |
| **4366.4** | 2,5 kg | plastic | 93,00 € |

**≥99 %, extra pure**

| | | | |
|---|---|---|---|
| **4484.1** | 500 g | plastic | 25,70 € |
| Original pack 6 x 500 g | | | 24,42/500 g |
| **4484.2** | 1 kg | plastic | 39,25 € |
| Original pack 6 x 1 kg | | | 37,29/1 kg |
| **4484.3** | 2,5 kg | plastic | 79,45 € |

## Thioacetamide



**≥99 %, p.a.**
TAA, Thioacetimidic acid
$C_2H_5NS$
M 75,13 g/mol

**Danger** H302-H315-H319-H350-H412

| | | | |
|---|---|---|---|
| **8646.1** | 50 g | plastic | 34,30 € |
| **8646.2** | 100 g | plastic | 57,95 € |
| **8646.3** | 250 g | plastic | 126,35 € |
| **8646.4** | 500 g | plastic | 220,40 € |
| Original pack 6 x 500 g | | | 209,38/500 g |

▶ Test sticks see page 825




121 °C

### ① Rotilabo®-fermentation tube

Made of soda-lime glass. With 2 spheres and extension. Overall length 200 mm, tube ∅ approx. 10-11 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **CKY8.1** | 1 | 3,45 |

### ② Rotilabo®-fermentation tube

Made of borosilicate glass 3.3. With NS 29/32 ground glass joint. Height 200 mm. Autoclavable.

| Art. No. | Pack Qty. | € |
|---|---|---|
| **ACL2.1** | 1 | 32,50 |

# Anion detection



## Carbonate $CO_3^{2-}$

| Product | Purity | Art. No. | Pack Qty. | Pack. | € |
|---|---|---|---|---|---|
| **Barium hydroxide octahydrate** | ≥98 %, p.a., ISO | **P009.2** | 250 g | plastic | 26,35 |
| | | **P009.1** | 500 g | plastic | 39,70 |
| | | **P009.3** | 1 kg | plastic | 60,75 |

## Chloride $Cl^-$

| Product | Purity | Art. No. | Pack Qty. | Packa-ging | € |
|---|---|---|---|---|---|
| **Silver nitrate** | ≥99,9 %, p.a., ultra quality | **6874.1** | 10 g | plastic | 37,10 |
| | | **6874.2** | 50 g | plastic | 141,80 |
| | | **6874.3** | 250 g | plastic | 514,95 |
| | ≥99,9 %, p.a. | **7908.1** | 50 g | plastic | 113,85 |
| | | **7908.2** | 250 g | plastic | 471,95 |
| | | **7908.3** | 1 kg | plastic | 1666,25 |

## Nitrate $NO_3^-$

| Product | Purity | Art. No. | Pack Qty. | Packa-ging | € |
|---|---|---|---|---|---|
| **Sulphanilic acid** | ≥98 %, p.a., ACS | **4496.1** | 100 g | plastic | 30,65 |
| | | **4496.2** | 500 g | plastic | 117,20 |
| **Zinc granule** | ≥99,99 %, p.a., particle size: 5-15 mm | **AE99.1** | 250 g | plastic | 31,10 |
| | | **AE99.2** | 500 g | plastic | 50,45 |
| | | **AE99.3** | 1 kg | plastic | 83,75 |
| **Zinc dust** | ≥98 %, particle size <63 µm, stab. | **9524.2** | 500 g | glass | 28,95 |
| | | **9524.3** | 1 kg | glass | 40,75 |
| | | **9524.1** | 2,5 kg | glass | 71,95 |

## Phosphate $PO_4^{3-}$

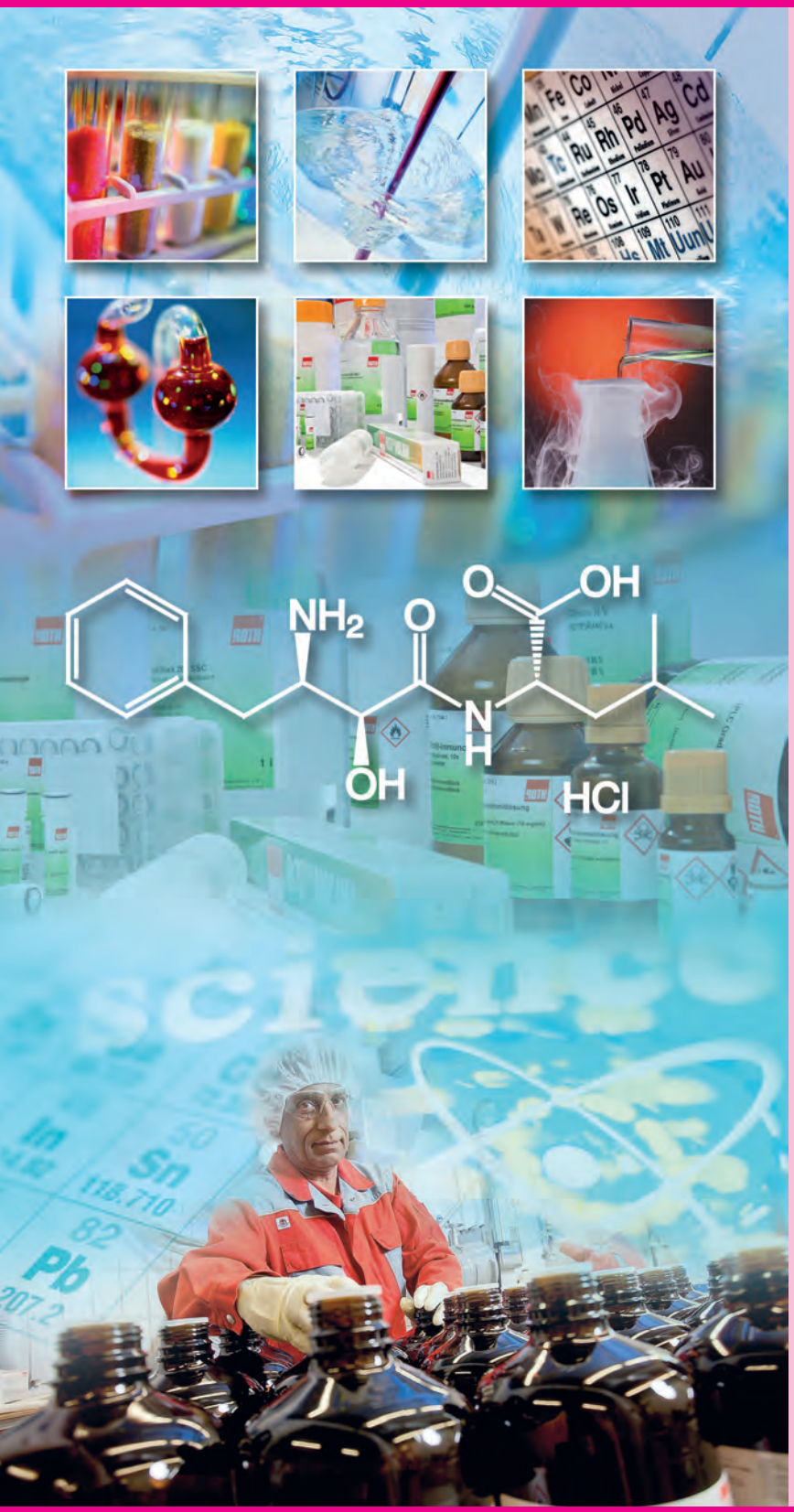
| Product | Purity | Art. No. | Pack Qty. | Packa-ging | € |
|---|---|---|---|---|---|
| **Zirconyl nitrate hydrate** | 99,99 % (4N) | **5415.1** | 25 g | plastic | 235,45 |
| | | **5415.2** | 100 g | plastic | 719,20 |
| **Zirconyl chloride octahydrate** | 99,995 % (4N5) | **4502.1** | 10 g | plastic | 60,10 |

## Sulphate $SO_4^{2-}$

| Product | Purity | Art. No. | Pack Qty. | Packa-ging | € |
|---|---|---|---|---|---|
| **Barium chloride dihydrate** | ≥99 %, p.a., ACS, ISO | **4453.1** | 250 g | plastic | 15,60 |
| | | **4453.2** | 500 g | plastic | 23,15 |
| | | **4453.3** | 1 kg | plastic | 38,60 |
| | | **4453.4** | 2,5 kg | plastic | 82,25 |
| | | **4453.5** | 25 kg | plastic | 665,45 |

For additional product data and safety information, see chapter Chemicals A-Z.

▶ Cation detection and metal indicators see page 1628
▶ Acids p.a. see page 1653




# Chemicals & Natural Reagents A-Z

A ..... 1690
B ..... 1760
C ..... 1800
D ..... 1856
E ..... 1898
F ..... 1923
G ..... 1944
H ..... 1967
I ..... 1999
J ..... 2018
K ..... 2019
L ..... 2024
M ..... 2046
N ..... 2087
O ..... 2107
P ..... 2128
Q ..... 2188
R ..... 2191
S ..... 2236
T ..... 2328
U ..... 2364
V ..... 2368
W ..... 2374
X ..... 2378
Y ..... 2383
Z ..... 2385

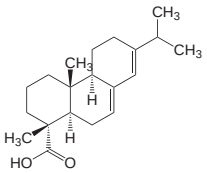
Abbreviations and Symbols ..... 2391
Labelling acc. to GHS ..... 2393
CAS-Numerical Index ..... 2399

A

## AAS standards

▶ Standards for AAS (Atom Absorption Spectroscopy): Element Standards 1000 mg/l, ready to use see p. 2294

## Abietic acid



Sylvic acid
$C_{20}H_{30}O_2$
M 302,46 g/mol
bp 250 °C
mp 175 °C
[514-10-3] • EC No. 208-178-3
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H315-H319-H335-H410

### Abietic acid

**≥70 %**

**Type analysis:**

Appearance. ..... yellow powder
Assay (GC). ..... ≥70,0 %

| | | | |
|---|---|---|---|
| **5008.1** | 25 g | plastic | 41,40 € |

### Abietic acid

**pure**

**Type analysis:**

Appearance. ..... yellow pellets
Softening point. ..... 92-98 °C
Acid value. ..... ≤15

| | | | |
|---|---|---|---|
| **5005.2** | 500 g | plastic | 25,30 € |
| Original pack 6 x 500 g | | | 24,04/500 g |
| **5005.1** | 1 kg | plastic | 39,70 € |
| Original pack 6 x 1 kg | | | 37,72/1 kg |

## Absinthon

▶ α+β-Thujone see p. 2341

## Absorbents

| Art. No. | Description | Page |
|---|---|---|
| 3287 | Basosorb | 1763 |
| X865 | Charcoal | 1824 |
| 5966 | Charcoal | 1824 |
| 0998 | Charcoal | 1824 |
| 5963 | Charcoal activated | 1824 |
| 2888 | Chemicals absorbant fleece | 695 |
| E391 | Industrial sorbent | 695 |
| AKX3 | Laboratory emergency kit | 695 |
| 9461 | Mercurisorb-ROTH® | 2063 |
| CTC2 | Oil binder Penta 99 | 695 |
| A377 | Oil sorbent | 694 |
| 0411 | Pyracidosorb-ROTH® | 2185 |
| T856 | Sekuroka® Decon-Bags | 2245 |
| 5128 | Öcu-Sorb fleece-wipes T-33 | 695 |
| 8652 | Soda lime | 2265 |
| 9356 | Sodium hydroxide | 2276 |
| EAA8 | UNI-SAFE chemical and oil binder | 694 |
| 1710 | Universal absorber Rotisorb® | 2365 |

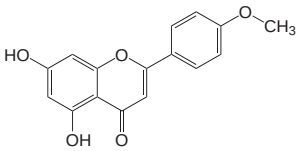
## H-DL-Abu-OH

▶ DL-2-Aminobutyric acid see p. 1724

## ACAC

▶ Acetyl acetone see p. 1701

## Acacetin



5,7-Dihydroxy-4'-methoxyflavone, Linarigenin
$C_{16}H_{12}O_5$
M 284,26 g/mol
mp ~265 °C
Storage temp.: +4 °C
[480-44-4] • EC No. 207-552-3
WGK 1

**Warning** H315-H319-H335

### Acacetin

**ROTICHROM® HPLC**

Reference substance for HPLC.

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **6531.1** | 10 mg | glass | 206,95 € |

### Acacetin

**ROTICHROM® ~CHR**

| | | | |
|---|---|---|---|
| **5010.1** | 25 mg | glass | 118,80 € |

## Acacia

▶ Gum arabic see p. 1967

## ACC

▶ N-Acetyl-L-cysteine see p. 1702

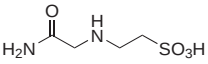
## Accelerator DMP-30

▶ Glycidether Accelerator DMP-30 see p. 1961

## Ac-Cys-OH

▶ N-Acetyl-L-cysteine see p. 1702

## ACES



### ACES

**PUFFERAN® ≥99 %**

N-(2-Acetamido)-2-aminoethanesulphonic acid
$C_4H_{10}N_2O_4S$
M 182,20 g/mol
mp 270-295 °C
Solubility: 40 g/l ($H_2O$, 20 °C)
[7365-82-4] • EC No. 230-908-4
WGK 1

**Guarantee analysis:**

Appearance. ..... white powder
Assay (titr.). ..... ≥99,0 %
Loss on drying. ..... ≤1,0 %
pH value (1 % solution). ..... 3,6-4,4
UV-absorption (5 % in $H_2O$):
260 nm. ..... ≤0,05
280 nm. ..... ≤0,05

| | | | |
|---|---|---|---|
| **9138.1** | 10 g | plastic | 21,00 € |
| **9138.2** | 100 g | plastic | 154,30 € |

For further information, please see page 1268

## Acetaldehyde



### Acetaldehyde

**≥99,5 %, p.a.**

Ethanal
$C_2H_4O$
M 44,05 g/mol
D 0,78 • bp 21 °C
mp -123 °C • flp -20 °C
Storage temp.: +4 °C
[75-07-0] • EC No. 200-836-8
UN No. 1089 • ADR 3 I • WGK 1

**Danger**

H224-H302-H319-H335-H351

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,0001 %
Potassium (K). ..... ≤0,00005 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Lithium (Li). ..... ≤0,00001 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Molybdenum (Mo). ..... ≤0,00001 %
Sodium (Na). ..... ≤0,00005 %
Nickel (Ni). ..... ≤0,000002 %
Strontium (Sr). ..... ≤0,00001 %
Bismuth (Bi). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00001 %
Refractive index $n_D^{20}$. ..... 1,331-1,333
Evaporation residue. ..... ≤0,002 %
Free acid (as $CH_3COOH$). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **3004.1** | 100 ml | glass | 23,15 € |

## Acetamide Broth (Solution A)

### Acetamide Broth (Solution A)

**DEV, EN ISO 16266:2008, for microbiology**

For confirmation of *Pseudomonas aeruginosa* in water samples.

Application: Use 3,4 g for 1 l broth. Solubilise in 900 ml, add freshly prepared solution B (sodium molybdate, Art. No. 0274.1, and iron sulfat, Art. No. P015.1) and adjust with water to 1 l.

Storage temp.: +20 °C

[60-35-5] • EC No. 200-473-5

WGK 1

**Warning** H351

**Guarantee analysis:**

| | |
|---|---|
| Potassium dihydrogen phosphate. | 1 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,2 g/l |
| Acetamide. | 2 g/l |
| Sodium chloride (NaCl). | 0,2 g/l |
| pH value. | 7,0 ±0,5 |

| | | | |
|---|---|---|---|
| **CP61.1** | 500 g | plastic | 177,95 € |
| Original pack 6 x 500 g | | | 169,05/500 g |

For further information, please see page 1376

### N-(2-Acetamido)-2-amino-ethanesulphonic acid

▶ ACES see p. 1690

### 2-Acetamido-2-deoxy-D-galactose

▶ N-Acetyl-D-galactosamine see p. 1703

### 2-Acetamido-2-deoxy-D-glucopyranose

▶ N-Acetyl-D-glucosamine see p. 1703

### 2-Acetamido-2-deoxy-D-mannopyranose

▶ N-Acetyl-D-mannosamine see p. 1703

### N-(2-Acetamido)-iminodiacetic acid

▶ ADA see p. 1707

### Acetamidomalonic acid diethyl ester

▶ Diethyl acetamidomalonate see p. 1871

### 2-Acetamido-3-mercapto-propionic acid

▶ N-Acetyl-L-cysteine see p. 1702

### L-α-Acetamido-β-mercapto-propionic acid

▶ N-Acetyl-L-cysteine see p. 1702

### Acetanhydride

▶ Acetic acid anhydride see p. 1693

### Acetate Standards

▶ Acetate IC Standard Solution see p. 2310

## Acetic acid Ultra-quality

### Acetic acid Ultra-quality

**ROTIPURAN® Ultra 100 %**

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.

Glacial acetic acid, Methane carboxylic acid, Ethanoic acid

$C_2H_4O_2$ • M 60,05 g/mol

D 1,05 • bp ~118 °C • mp ~17 °C • flp +40 °C

[64-19-7] • EC No. 200-580-7

UN No. 2789 • ADR 8 (3) II • WGK 1

**Danger** H314-H226-H290

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w). | ≥99 % |
| Aluminium (Al). | ≤50 ppt |
| Antimony (Sb). | ≤50 ppt |
| Arsenic (As). | ≤50 ppt |
| Barium (Ba). | ≤10 ppt |
| Beryllium (Be). | ≤10 ppt |
| Lead (Pb). | ≤10 ppt |
| Cadmium (Cd). | ≤10 ppt |
| Cesium (Cs). | ≤10 ppt |
| Calcium (Ca). | ≤50 ppt |
| Cerium (Ce). | ≤10 ppt |
| Chromium (Cr). | ≤10 ppt |
| Dysprosium (Dy). | ≤1 ppt |
| Iron (Fe). | ≤50 ppt |
| Erbium (Er). | ≤1 ppt |
| Europium (Eu). | ≤1 ppt |
| Gadolinium (Gd). | ≤1 ppt |
| Gallium (Ga). | ≤10 ppt |
| Germanium (Ge). | ≤10 ppt |
| Hafnium (Hf). | ≤10 ppt |
| Holmium (Ho). | ≤1 ppt |
| Indium (In). | ≤1 ppt |
| Potassium (K). | ≤50 ppt |
| Cobalt (Co). | ≤10 ppt |
| Copper (Cu). | ≤10 ppt |
| Lanthanum (La). | ≤1 ppt |
| Lithium (Li). | ≤10 ppt |
| Lutetium (Lu). | ≤10 ppt |
| Magnesium (Mg). | ≤50 ppt |
| Manganese (Mn). | ≤10 ppt |
| Molybdenum (Mo). | ≤10 ppt |
| Sodium (Na). | ≤100 ppt |
| Neodymium (Nd). | ≤1 ppt |
| Nickel (Ni). | ≤50 ppt |
| Platinum (Pt). | ≤50 ppt |
| Praseodymium (Pr). | ≤1 ppt |
| Rhenium (Re). | ≤10 ppt |
| Rhodium (Rh). | ≤50 ppt |
| Rubidium (Rb). | ≤10 ppt |
| Ruthenium (Ru). | ≤50 ppt |
| Samarium (Sm). | ≤1 ppt |
| Scandium (Sc). | ≤10 ppt |
| Silver (Ag). | ≤50 ppt |
| Strontium (Sr). | ≤10 ppt |
| Tellur (Te). | ≤1 ppt |
| Terbium (Tb). | ≤1 ppt |
| Thallium (Tl). | ≤10 ppt |
| Thorium (Th). | ≤1 ppt |
| Thulium (Tm). | ≤1 ppt |
| Titanium (Ti). | ≤10 ppt |
| Uranium (U). | ≤1 ppt |
| Vanadium (V). | ≤10 ppt |
| Bismuth (Bi). | ≤10 ppt |
| Tungsten (W). | ≤10 ppt |
| Ytterbium (Yb). | ≤1 ppt |
| Yttrium (Y). | ≤1 ppt |
| Zinc (Zn). | ≤50 ppt |
| Tin (Sn). | ≤50 ppt |
| Zirconium (Zr). | ≤10 ppt |

| | | | |
|---|---|---|---|
| **HN65.2** | 250 ml | plastic (FEP) | 351,45 € |
| **HN65.1** | 500 ml | plastic (FEP) | 499,90 € |
| **HN65.3** | 1 l | plastic (FEP) | 790,15 € |
| Original pack 6 x 1 l | | | 750,64/1 l |

For further information, please see page 1665

## Acetic acid Supra-quality

### Acetic acid Supra-quality

**ROTIPURAN® Supra 100 %**

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

Glacial acetic acid, Methane carboxylic acid, Ethanoic acid

$C_2H_4O_2$ • M 60,05 g/mol

D 1,05 • bp ~118 °C • mp ~17 °C • flp +40 °C

[64-19-7] • EC No. 200-580-7

UN No. 2789 • ADR 8 (3) II • WGK 1

**Danger** H314-H226-H290

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w). | ≥99 %. |
| Colour (APHA). | ≤10. |
| Chloride (Cl). | ≤0,0001 %. |
| Phosphate ($PO_4$). | ≤0,0001 %. |
| Sulphate ($SO_4$). | ≤0,00005 %. |
| Aluminium (Al). | ≤1 ppb. |
| Antimony (Sb). | ≤0,5 ppb. |
| Arsenic (As). | ≤0,5 ppb. |
| Barium (Ba). | ≤0,5 ppb. |
| Beryllium (Be). | ≤0,1 ppb. |
| Lead (Pb). | ≤0,1 ppb. |
| Cadmium (Cd). | ≤0,5 ppb. |
| Cesium (Cs). | ≤0,1 ppb. |
| Calcium (Ca). | ≤1 ppb. |
| Cerium (Ce). | ≤0,1 ppb. |
| Chromium (Cr). | ≤1 ppb. |
| Dysprosium (Dy). | ≤0,1 ppb. |
| Iron (Fe). | ≤1 ppb. |
| Erbium (Er). | ≤0,1 ppb. |
| Europium (Eu). | ≤0,1 ppb. |
| Gadolinium (Gd). | ≤0,1 ppb. |
| Gallium (Ga). | ≤0,1 ppb. |
| Germanium (Ge). | ≤0,5 ppb. |
| Hafnium (Hf). | ≤0,1 ppb. |
| Holmium (Ho). | ≤0,1 ppb. |
| Indium (In). | ≤0,1 ppb. |
| Potassium (K). | ≤1 ppb. |
| Cobalt (Co). | ≤0,1 ppb. |
| Copper (Cu). | ≤0,5 ppb. |
| Lanthanum (La). | ≤0,1 ppb. |
| Lithium (Li). | ≤0,1 ppb. |
| Lutetium (Lu). | ≤0,1 ppb. |
| Magnesium (Mg). | ≤0,5 ppb. |
| Manganese (Mn). | ≤0,5 ppb. |
| Molybdenum (Mo). | ≤0,5 ppb. |
| Sodium (Na). | ≤1 ppb. |
| Neodymium (Nd). | ≤0,1 ppb. |
| Nickel (Ni). | ≤0,5 ppb. |
| Platinum (Pt). | ≤0,5 ppb. |
| Praseodymium (Pr). | ≤0,1 ppb. |
| Mercury (Hg). | ≤1 ppb. |
| Rhenium (Re). | ≤0,1 ppb. |
| Rhodium (Rh). | ≤0,5 ppb. |
| Rubidium (Rb). | ≤0,1 ppb. |
| Ruthenium (Ru). | ≤0,5 ppb. |
| Samarium (Sm). | ≤0,1 ppb. |
| Scandium (Sc). | ≤0,1 ppb. |
| Selenium (Se). | ≤1 ppb. |
| Silver (Ag). | ≤1 ppb. |
| Strontium (Sr). | ≤0,5 ppb. |
| Tellur (Te). | ≤0,5 ppb. |
| Terbium (Tb). | ≤0,1 ppb. |
| Thallium (Tl). | ≤0,1 ppb. |
| Thorium (Th). | ≤0,1 ppb. |
| Thulium (Tm). | ≤0,1 ppb. |
| Titanium (Ti). | ≤0,5 ppb. |
| Uranium (U). | ≤0,1 ppb. |
| Vanadium (V). | ≤0,5 ppb. |
| Bismuth (Bi). | ≤0,1 ppb. |
| Tungsten (W). | ≤0,5 ppb. |
| Ytterbium (Yb). | ≤0,1 ppb. |
| Yttrium (Y). | ≤0,1 ppb. |
| Zinc (Zn). | ≤1 ppb. |
| Tin (Sn). | ≤0,5 ppb. |
| Zirconium (Zr). | ≤0,1 ppb. |
| $KMnO_4$ reducing substances. | complies. |
| $K_2Cr_2O_7$ reducing substances. | complies |

| | | | |
|---|---|---|---|
| **HN55.1** | 500 ml | plastic | 76,90 € |
| **HN55.3** | 1 l | plastic | 118,80 € |
| Original pack 6 x 1 l | | | 112,86/1 l |
| **HN55.4** | 2,5 l | plastic | 146,10 € |
| Original pack 4 x 2,5 l | | | 138,80/2,5 l |
| **HN55.5** | 4 l | plastic | 284,90 € |

For further information, please see page 1665

## Acetic acid 100 %

Glacial acetic acid, Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D 1,05 • bp 118 °C
mp 16,6 °C • flp +40 °C
[64-19-7] • EC No. 200-580-7
UN No. 2789 • ADR 8 (3) II • WGK 1

 **Danger** H314-H226-H290

### Acetic acid 100 %

**ROTIPURAN® 100 %, p.a.**

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥99,8 % |
| Colour (Hazen) | ≤5 |
| Aldehydes/acetaldehyde | ≤0,0002 % |
| Sulphate ($SO_4$) | ≤0,0002 % |
| Chloride (Cl) | ≤0,0001 % |
| Calcium (Ca) | ≤0,00001 % |
| Sodium (Na) | ≤0,00005 % |
| Potassium (K) | ≤0,00005 % |
| Mercury (Hg) | ≤0,000001 % |
| Aluminium (Al) | ≤0,000005 % |
| Cadmium (Cd) | ≤0,000001 % |
| Copper (Cu) | ≤0,000001 % |
| Iron (Fe) | ≤0,00001 % |
| Lead (Pb) | ≤0,000001 % |
| $KMnO_4$ reducing substances | ≤0,000001 % |
| Evaporation residue | ≤0,0005 % |
| Solidification point | 16,5 °C |

| | | | |
|---|---|---|---|
| **3738.1** | 1 l | glass | 24,65 € |
| Original pack 6 x 1 l | | | 23,42/1 l |
| **3738.4** | 1 l | plastic | 22,50 € |
| Original pack 6 x 1 l | | | 21,38/1 l |
| **3738.2** | 2,5 l | glass | 52,60 € |
| Original pack 4 x 2,5 l | | | 49,97/2,5 l |
| **3738.5** | 2,5 l | plastic | 50,00 € |
| Original pack 4 x 2,5 l | | | 47,50/2,5 l |
| **3738.6** | 5 l | plastic | 74,10 € |
| Original pack 2 x 5 l | | | 70,40/5 l |
| **3738.3** | 10 l | plastic | 125,25 € |

### Acetic acid 100 %

**100 %, Ph.Eur., extra pure**

**Guarantee analysis:**

| | |
|---|---|
| Appearance | clear, colourless liquid |
| Assay | 99,8-100,5 % |
| Identity | complies |
| Colour (Hazen) | ≤5 |
| Formic acid | ≤0,01 % |
| Iron (Fe) | ≤0,0005 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Chloride (Cl) | ≤0,0025 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Aldehydes/acetaldehyde | ≤0,0002 % |
| Potassium dichromate stable | complies |
| Potassium permanganate red. matter | complies |
| Evaporation residue | ≤0,01 % |
| Solidification point | ≥14,8 °C |

| | | | |
|---|---|---|---|
| **6755.1** | 1 l | glass | 21,75 € |
| Original pack 6 x 1 l | | | 20,66/1 l |
| **6755.2** | 2,5 l | glass | 44,65 € |
| Original pack 4 x 2,5 l | | | 42,42/2,5 l |
| **6755.3** | 5 l | plastic | 69,35 € |
| Original pack 2 x 5 l | | | 65,88/5 l |
| **6755.4** | 10 l | plastic | 111,70 € |
| **6755.5** | 25 l | plastic | 188,15 € |

### Acetic acid 99-100 %

**≥99 %, for synthesis**

**Type analysis:**

| | |
|---|---|
| Assay | ≥99 % |
| Colour (Hazen) | ≤5 |
| Formic acid | ≤0,01 % |

| | | | |
|---|---|---|---|
| **7332.1** | 1 l | plastic | 18,20 € |
| Original pack 6 x 1 l | | | 17,29/1 l |
| **7332.4** | 2,5 l | plastic | 36,45 € |
| Original pack 4 x 2,5 l | | | 34,63/2,5 l |
| **7332.2** | 5 l | plastic | 66,15 € |
| Original pack 2 x 5 l | | | 62,84/5 l |
| **7332.3** | 10 l | plastic | 99,45 € |
| **7332.5** | 25 l | plastic | 177,40 € |

## Acetic acid 96 %

Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D 1,05 • bp 118 °C
mp 16,6 °C • flp +40 °C
[64-19-7] • EC No. 200-580-7
UN No. 2789 • ADR 8 (3) II • WGK 1

 **Danger** H314-H226-H290

### Acetic acid 96 %

**ROTIPURAN® ≥95,9 %, p.a.**

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥95,9 % |
| Colour (Hazen) | ≤10 |
| Aldehydes/acetaldehyde | ≤0,0002 % |
| Formic acid, formiate | ≤0,01 % |
| Chloride (Cl) | ≤0,00005 % |
| Sulphate ($SO_4$) | ≤0,00005 % |
| Aluminium (Al) | ≤0,00001 % |
| Lead (Pb) | ≤0,000005 % |
| Iron (Fe) | ≤0,00001 % |
| Cadmium (Cd) | ≤0,000005 % |
| Calcium (Ca) | ≤0,00002 % |
| Potassium (K) | ≤0,00001 % |
| Copper (Cu) | ≤0,000001 % |
| Magnesium (Mg) | ≤0,00001 % |
| Sodium (Na) | ≤0,0001 % |
| Zinc (Zn) | ≤0,000005 % |
| $KMnO_4$ reducing substances (as O) | ≤0,002 % |
| $K_2Cr_2O_7$ reducing substances | ≤0,003 % |
| Non volatile matter | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **T179.1** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **T179.2** | 2,5 l | plastic | 44,00 € |
| Original pack 4 x 2,5 l | | | 41,80/2,5 l |
| **T179.4** | 5 l | plastic | 64,00 € |
| Original pack 2 x 5 l | | | 60,80/5 l |
| **T179.3** | 10 l | plastic | 107,00 € |

### Acetic acid 96 %

**≥95,9 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay | ≥95,9 % |
| Colour (Hazen) | ≤10 |
| Formic acid, formiate | ≤0,01 % |
| Chloride (Cl) | ≤0,0001 % |
| Sulphate ($SO_4$) | ≤0,0001 % |
| Iron (Fe) | ≤0,0001 % |
| Copper (Cu) | ≤0,00001 % |
| Non volatile matter | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **X895.1** | 1 l | plastic | 18,20 € |
| Original pack 6 x 1 l | | | 17,29/1 l |
| **X895.2** | 2,5 l | plastic | 35,40 € |
| Original pack 4 x 2,5 l | | | 33,63/2,5 l |
| **X895.4** | 5 l | plastic | 52,15 € |
| Original pack 2 x 5 l | | | 49,54/5 l |
| **X895.3** | 10 l | plastic | 84,40 € |

## Acetic acid 80 %

### Acetic acid 80 %

**80 %, pure**
Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D 1,07 • bp 104 °C
mp -8 °C
[64-19-7] • EC No. 200-580-7
UN No. 2790 • ADR 8 II • WGK 1

 **Danger** H290-H314

**Type analysis:**

| | |
|---|---|
| Assay | 79,0-81,0 % |
| Colour (Hazen) | ≤5 |
| Formic acid | ≤0,05 % |
| Iron (Fe) | ≤0,005 % |

| | | | |
|---|---|---|---|
| **6740.1** | 1 l | plastic | 17,10 € |
| Original pack 6 x 1 l | | | 16,25/1 l |
| **6740.2** | 2,5 l | plastic | 31,75 € |
| Original pack 4 x 2,5 l | | | 30,16/2,5 l |
| **6740.3** | 5 l | plastic | 39,70 € |
| Original pack 2 x 5 l | | | 37,72/5 l |
| **6740.4** | 10 l | plastic | 57,95 € |

## Acetic acid 60 %

### Acetic acid 60 %

**60 %, pure**
Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D 1,06-1,07 • bp ~100 °C
[64-19-7] • EC No. 200-580-7
UN No. 2790 • ADR 8 II • WGK 1

 **Danger** H314-H290

**Type analysis:**

| | |
|---|---|
| Assay | 59-61 % |
| Colour (APHA) | ≤30 |
| Density (20 °C) | 1,062-1,080 g/cm³ |

| | | | |
|---|---|---|---|
| **7329.1** | 1 l | plastic | 16,70 € |
| Original pack 6 x 1 l | | | 15,87/1 l |
| **7329.4** | 2,5 l | plastic | 23,15 € |
| Original pack 4 x 2,5 l | | | 21,99/2,5 l |
| **7329.3** | 5 l | plastic | 34,30 € |
| Original pack 2 x 5 l | | | 32,59/5 l |
| **7329.2** | 10 l | plastic | 46,15 € |
| **7329.5** | 25 l | plastic | 89,80 € |

## Acetic acid 25 %

### Acetic acid 25 %

**25 %, pure**

Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D ~1,04
[64-19-7] • EC No. 200-580-7
UN No. 2790 • ADR 8 III • WGK 1

**Warning** H290-H314

**Type analysis:**
Assay.....24,0-26,0 %

| | | | |
|---|---|---|---|
| **4340.1** | 1 l | plastic | 16,05 € |
| Original pack 6 x 1 l | | | 15,25/1 l |
| **4340.5** | 2,5 l | plastic | 21,75 € |
| Original pack 4 x 2,5 l | | | 20,66/2,5 l |
| **4340.2** | 5 l | plastic | 33,90 € |
| Original pack 2 x 5 l | | | 32,21/5 l |
| **4340.3** | 10 l | plastic | 44,00 € |
| **4340.4** | 25 l | plastic | 84,85 € |

## Acetic acid 10 %

### Acetic acid 10 %

**10 %, pure**

Methane carboxylic acid, Ethanoic acid
$C_2H_4O_2$
M 60,05 g/mol
D ~1,02
[64-19-7] • EC No. 200-580-7
UN No. 2790 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**
Assay.....10-11 %
Density (20 °C).....1,013-1,015 g/cm³
Colour number (Hazen).....≤30

| | | | |
|---|---|---|---|
| **4341.1** | 1 l | plastic | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |
| **4341.5** | 2,5 l | plastic | 21,00 € |
| Original pack 4 x 2,5 l | | | 19,95/2,5 l |
| **4341.2** | 5 l | plastic | 33,25 € |
| Original pack 2 x 5 l | | | 31,59/5 l |
| **4341.3** | 10 l | plastic | 39,70 € |
| **4341.4** | 25 l | plastic | 77,95 € |

## Acetic acid (1 N)

### Acetic acid

**1 mol/l - 1 N volumetric standard solution**

**Type analysis:**
Amount-of-substance conc. (20 °C).....1 mol/l ±0,3 %
Titer.....0,997-1,003

| | | | |
|---|---|---|---|
| **KK62.1** | 1 l | plastic | 27,85 € |
| Original pack 6 x 1 l | | | 26,46/1 l |

For further information, please see page 1621

## Acetic acid (2 N)

### Acetic acid

**2 mol/l - 2 N volumetric standard solution**

D 1,01
UN No. 2790 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**
Amount-of-substance conc. (20 °C).....2 mol/l ±0,2 %
Titer.....0,9980-1,0020

| | | | |
|---|---|---|---|
| **9883.1** | 500 ml | plastic | 31,10 € |
| **9883.2** | 1 l | plastic | 46,15 € |
| Original pack 6 x 1 l | | | 43,84/1 l |

## Acetic acid D1

### Acetic acid D1

**99 Atom%D**

For nuclear magnetic resonance spectroscopy.
$CH_3COOD$
M 61,06 g/mol
D 1,06 • bp 116 °C
mp 16 °C • flp 40 °C
[758-12-3] • EC No. 212-059-1
UN No. 2789 • ADR 8 II • WGK 2

**Danger**
H226-H314-H312+H332-H412

**Type analysis:**
Deuterising degree.....≥99,0 %
Water (KF, $H_2O$+$D_2O$).....≤1 %

| | | | |
|---|---|---|---|
| **9902.1** | 50 ml | glass | 83,35 € |

## Acetic acid D4

### Acetic acid D4

**99,5 Atom%D**

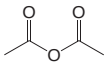
For nuclear magnetic resonance spectroscopy.
$C_2D_4O_2$
M 64,08 g/mol
bp ~118 °C
mp 17 °C • flp 39 °C
[1186-52-3] • EC No. 214-693-4
UN No. 2789 • ADR 8 (3) II • WGK 1

**Danger** H314-H226-H290

**Guarantee analysis:**
Deuterising degree.....≥99,5 %
Water (KF, $H_2O$+$D_2O$).....≤0,1 %

| | | | |
|---|---|---|---|
| **HN83.1** | 10 ml | glass | 79,05 € |

## Acetic acid anhydride



Acetic anhydride
$C_4H_6O_3$
M 102,09 g/mol
D 1,08 • bp 138-140 °C
mp -73 °C • flp 49 °C
[108-24-7] • EC No. 203-564-8
UN No. 1715 • ADR 8 (3) II • WGK 1

**Danger** H314-H226-H302+H332

### Acetic acid anhydride

**ROTIPURAN® ≥99 %, p.a., ACS, ISO**

Acetylation reagent

**Guarantee analysis:**
Assay (GC).....≥99,0 %
Chloride (Cl).....≤0,0005 %
Sulphate ($SO_4$).....≤0,0005 %
Phosphate ($PO_4$).....≤0,001 %
Non volatile matter.....≤0,003 %
Heavy metals (as Pb).....≤0,0002 %
$KMnO_4$ reducing substances.....complies
Aluminium (Al).....≤0,00005 %
Boron (B).....≤0,00005 %
Barium (Ba).....≤0,00001 %
Bismuth (Bi).....≤0,000005 %
Cadmium (Cd).....≤0,000002 %
Cobalt (Co).....≤0,000002 %
Chromium (Cr).....≤0,000002 %
Copper (Cu).....≤0,000002 %
Iron (Fe).....≤0,00001 %
Magnesium (Mg).....≤0,00001 %
Manganese (Mn).....≤0,000002 %
Nickel (Ni).....≤0,000002 %
Lead (Pb).....≤0,00001 %
Sodium (Na).....≤0,00005 %
Tin (Sn).....≤0,000005 %
Strontium (Sr).....≤0,000005 %
Zinc (Zn).....≤0,00001 %

| | | | |
|---|---|---|---|
| **CP28.1** | 1 l | glass | 42,50 € |
| Original pack 6 x 1 l | | | 40,38/1 l |
| **CP28.2** | 2,5 l | glass | 82,70 € |
| Original pack 4 x 2,5 l | | | 78,57/2,5 l |
| **CP28.3** | 5 l | plastic | 131,70 € |
| Original pack 2 x 5 l | | | 125,12/5 l |
| **CP28.4** | 10 l | plastic | 246,20 € |
| **CP28.5** | 25 l | plastic | 504,20 € |

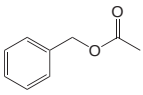
### Acetic acid anhydride

**≥99 %, for synthesis**

**Type analysis:**
Assay (GC).....≥99 %
Density (20 °C).....1,080-1,082
Refractive index (20 °C).....1,3890-1,3910

| | | | |
|---|---|---|---|
| **4483.1** | 1 l | glass | 32,15 € |
| Original pack 6 x 1 l | | | 30,54/1 l |
| **4483.2** | 2,5 l | glass | 51,50 € |
| Original pack 4 x 2,5 l | | | 48,93/2,5 l |
| **4483.3** | 5 l | plastic | 69,80 € |
| Original pack 2 x 5 l | | | 66,31/5 l |
| **4483.4** | 10 l | plastic | 118,15 € |
| **4483.5** | 25 l | plastic | 246,20 € |

## Acetic acid benzyl ester



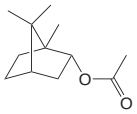
### Acetic acid benzyl ester

**≥99 %, for synthesis**
Benzylacetate
$C_9H_{10}O_2$
M 150,18 g/mol
D 1,06 • bp 214 °C
mp -51 °C • flp 102 °C
Solubility: <1 g/l ($H_2O$, 23 °C)
[140-11-4] • EC No. 205-399-7
WGK 1
H412

**Type analysis:**
Assay (GC). ..... ≥99 %
Density (d 20 °C/4 °C). ..... 1,052-1,057

| | | | |
|---|---|---|---|
| **4368.1** | 100 ml | glass | 16,70 € |
| **4368.2** | 500 ml | glass | 34,30 € |
| **4368.3** | 1 l | glass | 51,50 € |
| Original pack 6 x 1 l | | | 48,93/1 l |
| **4368.4** | 2,5 l | glass | 82,25 € |
| Original pack 4 x 2,5 l | | | 78,14/2,5 l |

## Acetic acid L-bornyl ester



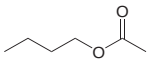
### Acetic acid L-bornyl ester

**ROTICHROM® GC**
Reference substance for GC
L-Bornyl acetate
$C_{12}H_{20}O_2$
M 196,28 g/mol
D 0,982 • bp 223-224 °C
flp 84 °C
Storage temp.: +4 °C
[5655-61-8] • EC No. 227-101-4
WGK 1

**Type analysis:**
Purity (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **9009.2** | 100 mg | glass | 96,65 € |

## Acetic acid n-butyl ester



n-Butyl acetate
$C_6H_{12}O_2$
M 116,16 g/mol
D 0,88 • bp 124-128 °C
mp -76 °C • flp 25 °C
Solubility: 5 g/l ($H_2O$, 20 °C)
[123-86-4] • EC No. 204-658-1
UN No. 1123 • ADR 3 III • WGK 1
**Warning** H226-H336-EUH066

### Acetic acid n-butyl ester

**ROTIPURAN® ≥99 %, p.a.**

**Guarantee analysis:**
Assay (GC). ..... ≥99,0 %
Density (d 20 °C/4 °C). ..... 0,880-0,882
Refractive index (20 °C). ..... 1,394-1,396
Non volatile matter. ..... ≤0,001 %
1-Butanol (GC). ..... ≤0,5 %
n-Butyl formiate (GC). ..... ≤0,1 %
n-Butyl propionate (GC). ..... ≤0,1 %
Matter discoloured by $H_2SO_4$. ..... complies
Acidity. ..... ≤0,0016 meq/g
Water. ..... ≤0,1 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **P036.1** | 1 l | glass | 44,65 € |
| Original pack 6 x 1 l | | | 42,42/1 l |
| **P036.2** | 2,5 l | glass | 98,40 € |
| Original pack 4 x 2,5 l | | | 93,48/2,5 l |

For further information, please see page 1439

### Acetic acid n-butyl ester

**≥99 %, for synthesis**

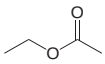
**Type analysis:**
Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99 %
Water. ..... ≤0,1 %
Density (20 °C). ..... 0,878-0,882
Refractive index $n_D^{20}$. ..... 1,393-1,395

| | | | |
|---|---|---|---|
| **4600.1** | 1 l | glass | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **4600.3** | 2,5 l | glass | 35,40 € |
| Original pack 4 x 2,5 l | | | 33,63/2,5 l |
| **4600.5** | 5 l | aluminium | 57,95 € |
| Original pack 2 x 5 l | | | 55,05/5 l |
| **4600.2** | 10 l | tinplate | 103,75 € |
| **4600.4** | 25 l | tinplate | 203,20 € |

## Acetic acid dimethylamide

▶ N,N-Dimethylacetamide (DMA) see p. 1880

## Acetic acid ethyl ester



Ethyl acetate, Acetic ester
$C_4H_8O_2$
M 88,11 g/mol
D 0,9 • bp 77-78 °C
mp -83 °C • flp -4 °C
Solubility: 85 g/l ($H_2O$, 20 °C)
[141-78-6] • EC No. 205-500-4
UN No. 1173 • ADR 3 II • WGK 1
**Danger** H225-H319-H336-EUH066

### Acetic acid ethyl ester

**ROTISOLV® ≥99,9 %, LC-MS-Grade**

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,05 %
Free acid (as $CH_3COOH$). ..... ≤0,001 %
Free alkali (as $NH_3$). ..... ≤0,0005 %
Non volatile matter. ..... ≤0,0001 %
Transmission:
275 nm. ..... ≥98 %
260 nm. ..... ≥75 %
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE69.1** | 1 l | glass | 48,30 € |
| Original pack 6 x 1 l | | | 45,89/1 l |
| **AE69.2** | 2,5 l | glass | 99,90 € |
| Original pack 4 x 2,5 l | | | 94,91/2,5 l |

### Acetic acid ethyl ester

**ROTISOLV® HPLC**

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,05 %
Free acid. ..... ≤0,005 %
Non volatile matter. ..... ≤0,0002 %
Transmission:
300 nm. ..... ≥99 %
270 nm. ..... ≥95 %
260 nm. ..... ≥75 %
255 nm. ..... ≥20 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **7336.2** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **7336.1** | 2,5 l | glass | 70,85 € |
| Original pack 4 x 2,5 l | | | 67,31/2,5 l |

For further information, please see page 1590

## Acetic acid ethyl ester

**ROTISOLV® ≥99,9 %, GC Ultra Grade**

For gaschromatographic residue analysis.

**Guarantee analysis:**

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,02 %
Free acid (as $CH_3COOH$). ≤0,005 %
Evaporation residue. ≤0,0002 %
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **KK42.1** | 2,5 l | glass | 68,70 € |
| Original pack 4 x 2,5 l | | | 65,27/2,5 l |

## Acetic acid ethyl ester

**ROTISOLV® ≥99,9 %, Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,05 %
Free acid (as $CH_3COOH$). ≤0,003 %
Evaporation residue. ≤0,0001 %
GC/FID suitability (as 2-octanol). ≤15 ng/ml
GC/ECD suitability (as heptachloro epoxide). ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
GC/ECD volatile impurities (as ethylene dibromide). ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). complies
Fluorescence (as quinine):
254 nm. ≤1,5 ppb
365 nm. ≤1 ppb
Transmission:
260 nm. ≥75 %

| | | | |
|---|---|---|---|
| **7565.1** | 2,5 l | glass | 65,50 € |
| Original pack 4 x 2,5 l | | | 62,23/2,5 l |

## Acetic acid ethyl ester

**ROTISOLV® ≥99,8 %, Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC). ≥99,8 %
Water (KF). ≤0,05 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

| | | | |
|---|---|---|---|
| **T164.2** | 1 l | glass | 30,00 € |
| Original pack 6 x 1 l | | | 28,50/1 l |
| **T164.1** | 2,5 l | glass | 64,40 € |
| Original pack 4 x 2,5 l | | | 61,18/2,5 l |
| **T164.3** | 4 l | glass | 90,20 € |

## Acetic acid ethyl ester

**ROTISOLV® ≥99,8 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC). ≥99,8 %
Water (KF). ≤0,02 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Transmission:
280 nm. ≥98 %
270 nm. ≥95 %
260 nm. ≥75 %

| | | | |
|---|---|---|---|
| **4442.1** | 2,5 l | glass | 56,90 € |
| Original pack 4 x 2,5 l | | | 54,06/2,5 l |

For further information, please see page 1581

## Acetic acid ethyl ester

**ROTIDRY® ≥99,8 % (≤100 ppm $H_2O$)**

Dried, for analysis and organic synthesis.

**Guarantee analysis:**

Assay (GC). ≥99,8 %
Water (KF). ≤0,01 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %

| | | | |
|---|---|---|---|
| **4424.1** | 1 l | glass | 28,50 € |
| Original pack 6 x 1 l | | | 27,08/1 l |

## Acetic acid ethyl ester

**ROTIPURAN® ≥99,5 %, p.a., ACS, ISO**

**Guarantee analysis:**

Assay (GC). ≥99,5 %
Colour (Hazen). ≤10
Water. ≤0,1 %
Acidity. ≤0,0008 meq/g
Density (d 20 °C/20 °C). 0,898-0,902
Matter discoloured by $H_2SO_4$. complies
Evaporation residue. ≤0,001 %
Ethanol (GC). ≤0,1 %
Methanol (GC). ≤0,1 %
Methyl acetate (GC). ≤0,1 %
Lead (Pb). ≤0,00001 %
Cadmium (Cd). ≤0,000005 %
Calcium (Ca). ≤0,00005 %
Chromium (Cr). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Cobalt (Co). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,000002 %
Zinc (Zn). ≤0,00001 %

| | | | |
|---|---|---|---|
| **6784.1** | 1 l | glass | 32,80 € |
| Original pack 6 x 1 l | | | 31,16/1 l |
| **6784.3** | 1 l | plastic | 31,75 € |
| Original pack 6 x 1 l | | | 30,16/1 l |
| **6784.2** | 2,5 l | glass | 60,10 € |
| Original pack 4 x 2,5 l | | | 57,10/2,5 l |
| **6784.4** | 2,5 l | plastic | 58,60 € |
| Original pack 4 x 2,5 l | | | 55,67/2,5 l |
| **6784.5** | 5 l | plastic | 96,65 € |
| Original pack 2 x 5 l | | | 91,82/5 l |

## Acetic acid ethyl ester

**≥99,5 %, Ph.Eur., extra pure**

**Guarantee analysis:**

Assay (GC). ≥99,5 %
Identity. complies
Appearance of solution. clear, colourless
Acid react. substances. complies
Density (d 20 °C/20 °C). 0,898-0,902
Refractive index $n_D^{20}$. 1,370-1,373
Related substances (GC). ≤0,2 %
Reaction with $H_2SO_4$. complies
Evaporation residue. ≤0,003 %
Water (KF). ≤0,1 %

| | | | |
|---|---|---|---|
| **CP42.1** | 1 l | glass | 24,65 € |
| Original pack 6 x 1 l | | | 23,42/1 l |
| **CP42.2** | 2,5 l | glass | 43,55 € |
| Original pack 4 x 2,5 l | | | 41,37/2,5 l |
| **CP42.3** | 2,5 l | plastic | 40,35 € |
| Original pack 4 x 2,5 l | | | 38,33/2,5 l |
| **CP42.4** | 5 l | plastic | 66,15 € |
| Original pack 2 x 5 l | | | 62,84/5 l |
| **CP42.5** | 10 l | tinplate | 117,20 € |
| **CP42.6** | 25 l | tinplate | 252,65 € |

## Acetic acid ethyl ester

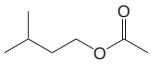
**≥99,5 %, for synthesis**

**Type analysis:**

Appearance. clear, colourless to slightly yellow
Assay (GC). ≥99,5 %
Water. <0,05 %
Density (20 °C). 0,899-0,903
Refractive index $n_D^{20}$. 1,371-1,374

| | | | |
|---|---|---|---|
| **7338.1** | 1 l | glass | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **7338.3** | 2,5 l | glass | 39,70 € |
| Original pack 4 x 2,5 l | | | 37,72/2,5 l |
| **7338.5** | 5 l | plastic | 53,65 € |
| Original pack 2 x 5 l | | | 50,97/5 l |
| **7338.2** | 10 l | tinplate | 88,05 € |
| **7338.4** | 25 l | tinplate | 177,40 € |

## Acetic acid isoamyl ester



### Acetic acid isoamyl ester

**≥98 %, extra pure**

Isoamyl acetate, 3-Methylbutyl acetate
$C_7H_{14}O_2$
M 130,19 g/mol
D 0,87 • bp 142 °C
mp -78,5 °C • flp 25 °C
Solubility: 2,1 g/l ($H_2O$, 19 °C)
[123-92-2] • EC No. 204-662-3
UN No. 1104 • ADR 3 III • WGK 1

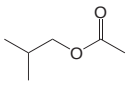
**Warning** H226-EUH066

**Type analysis:**

Appearance. clear, colourless to light yellowish liquid
Assay (GC). ≥98 %
Density (d 20 °C/4 °C). 0,866-0,880
Refractive index $n_D^{20}$. 1,398-1,404

| | | | |
|---|---|---|---|
| **7341.1** | 1 l | glass | 52,60 € |
| Original pack 6 x 1 l | | | 49,97/1 l |
| **7341.2** | 10 l | tinplate | 289,20 € |

## Acetic acid isobutyl ester



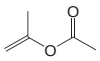
### Acetic acid isobutyl ester

**≥99 %, for synthesis**
Isobutyl acetate
$C_6H_{12}O_2$
M 116,16 g/mol
D ~0,87 • bp ~117 °C
mp -99 °C • flp 18 °C
Solubility: 53 g/l ($H_2O$, 20 °C)
[110-19-0] • EC No. 203-745-1
UN No. 1213 • ADR 3 II • WGK 1
**Danger** H225-H336-EUH066

**Type analysis:**
Assay (GC). ..... ≥99,0 %
Density (20 °C). ..... 0,868-0,873
Water. ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **4370.1** | 100 ml | glass | 12,80 € |
| **4370.2** | 500 ml | glass | 18,20 € |
| **4370.3** | 1 l | glass | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |
| **4370.4** | 2,5 l | glass | 52,15 € |
| Original pack 4 x 2,5 l | | | 49,54/2,5 l |

## Acetic acid isopropenyl ester



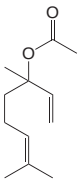
### Acetic acid isopropenyl ester

**≥98 %, for synthesis**
Acetonenol acetate, Isopropenyl acetate
$C_5H_8O_2$
M 100,11 g/mol
D 0,91 • bp 97 °C
mp -93 °C • flp 4 °C
Solubility: 34 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[108-22-5] • EC No. 203-562-7
UN No. 2403 • ADR 3 II • WGK 1
**Danger** H225-H335

**Type analysis:**
Assay (GC). ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **3012.1** | 250 ml | glass | 46,80 € |

## Acetic acid linalyl ester



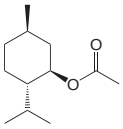
### Acetic acid linalyl ester

**ROTICHROM® GC**
Reference substance for GC
Linalyl acetate, Bergamol
$C_{12}H_{20}O_2$
M 196,29 g/mol
D 0,895 • bp ~220 °C
flp 90 °C
Storage temp.: +4 °C
[115-95-7] • EC No. 204-116-4
WGK 1
**Warning** H315-H319-H412

**Type analysis:**
Purity (GC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **5199.2** | 100 mg | glass | 83,75 € |

## Acetic acid (L)-menthyl ester



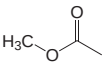
### Acetic acid (L)-menthyl ester

**ROTICHROM® GC**
Reference substance for GC
Menthyl acetate
$C_{12}H_{22}O_2$
M 198,31 g/mol
D 0,92 • bp 229-230 °C
flp 77 °C
Storage temp.: +4 °C
[2623-23-6] • EC No. 220-076-0
WGK 2

**Type analysis:**
Purity (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **5189.1** | 1 g | plastic | 81,60 € |

## Acetic acid methyl ester



Methyl acetate
$C_3H_6O_2$
M 74,08 g/mol
D 0,93 • bp 57 °C
mp -98 °C • flp -10 °C
Solubility: 320 g/l ($H_2O$, 20 °C)
[79-20-9] • EC No. 201-185-2
UN No. 1231 • ADR 3 II • WGK 1
**Danger** H225-H319-H336-EUH066

### Acetic acid methyl ester

**≥99 %, for synthesis**

**Type analysis:**
Assay (GC). ..... ≥99 %
Refractive index $n_D^{20}$ ..... 1,360-1,363
Water (KF). ..... ≤0,3 %

| | | | |
|---|---|---|---|
| **3730.3** | 500 ml | glass | 18,20 € |
| **3730.1** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **3730.2** | 2,5 l | glass | 57,55 € |
| Original pack 4 x 2,5 l | | | 54,67/2,5 l |
| **3730.4** | 5 l | aluminium | 78,40 € |
| Original pack 2 x 5 l | | | 74,48/5 l |

### Acetic acid methyl ester

**ROTICHROM® GC**
Reference substance for GC
Storage temp.: +4 °C

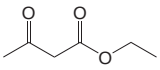
**Type analysis:**
Purity (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **5187.1** | 1 g | plastic | 25,30 € |

## Acetic esther

▶ Acetic acid ethyl ester see p. 1694

## Acetoacetic acid ethyl ester



### Acetoacetic acid ethyl ester

**≥98 %**
Ethyl acetoacetate
$C_6H_{10}O_3$
M 130,14 g/mol
D 1,03 • bp 181 °C
mp -43 °C • flp 65 °C
Solubility: 116 g/l ($H_2O$, 20 °C)
[141-97-9] • EC No. 205-516-1
WGK 1
**Warning** H319

**Type analysis:**
Assay (GC). ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **4474.1** | 500 ml | glass | 41,85 € |

## Acetoacetophenone

▶ Benzoylacetone see p. 1768

## Acetone

2-Propanone, Dimethyl ketone
$C_3H_6O$
M 58,08 g/mol
D ~0,79 • bp ~56 °C
mp -95 °C • flp -19 °C
[67-64-1] • EC No. 200-662-2
UN No. 1090 • ADR 3 II • WGK 1

**Danger** H225-H319-H336-EUH066

### Acetone
**ROTISOLV® HPLC**

**Guarantee analysis:**

Assay (GC). ≥99,9 %
Water (KF). ≤0,2 %
Free acid. ≤0,003 %
Non volatile matter. ≤0,0002 %
Transmission:
350 nm. ≥99 %
340 nm. ≥80 %
335 nm. ≥60 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **7328.1** | 1 l | glass | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |
| **7328.2** | 2,5 l | glass | 51,10 € |
| Original pack 4 x 2,5 l | | | 48,55/2,5 l |

For further information, please see page 1590

### Acetone
**ROTISOLV® ≥99,9 %, GC Ultra Grade**

For gaschromatographic residue analysis.

**Guarantee analysis:**

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,25 %
Free acid (as $CH_3COOH$). ≤0,002 %
Evaporation residue. ≤0,0002 %
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **KK40.1** | 2,5 l | glass | 60,75 € |
| Original pack 4 x 2,5 l | | | 57,71/2,5 l |

### Acetone
**ROTISOLV® ≥99,9 %, Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,3 %
Free acid (as $CH_3COOH$). ≤0,002 %
Evaporation residue. ≤0,0003 %
GC/FID suitability (as 2-octanol). ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤10 ng/l
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ≤0,1 mg/l
GC/ECD volatile impurities (as ethylene dibromide). ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). complies
Fluorescence (as quinine):
254 nm. ≤1 ppb
365 nm. ≤1 ppb

| | | | |
|---|---|---|---|
| **7535.1** | 2,5 l | glass | 54,75 € |
| Original pack 4 x 2,5 l | | | 52,01/2,5 l |

### Acetone
**ROTISOLV® ≥99,8 %, Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC). ≥99,8 %
Water (KF). ≤0,2 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

| | | | |
|---|---|---|---|
| **T161.2** | 1 l | glass | 26,70 € |
| Original pack 6 x 1 l | | | 25,37/1 l |
| **T161.1** | 2,5 l | glass | 52,15 € |
| Original pack 4 x 2,5 l | | | 49,54/2,5 l |
| **T161.3** | 4 l | glass | 73,00 € |

### Acetone
**ROTISOLV® ≥99,9 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC). ≥99,9 %
Water (KF). ≤0,2 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Fluorescence (as quinine):
365 nm. ≤1,0 ppb
Transmission:
350 nm. ≥98 %
342 nm. ≥90 %
339 nm. ≥80 %
335 nm. ≥50 %
330 nm. ≥10 %

| | | | |
|---|---|---|---|
| **T906.1** | 2,5 l | glass | 51,50 € |
| Original pack 4 x 2,5 l | | | 48,93/2,5 l |

### Acetone
**≥99,5 %, VLSI Grade**

**Guarantee analysis:**

Assay. ≥99,5 %
Bead number (≥0,5 µm). ≤250 p/ml
Water. ≤0,5 %
Alkalinity. 0,5 µeq/g
Acidity. 0,2 µeq/g
Colour (APHA). 10
Chloride (Cl). ≤0,00001 %
Phosphate ($PO_4$). ≤0,00005 %
Ash content. ≤0,0005 %
Aluminium (Al). ≤50 ppb
Antimony (Sb). ≤10 ppb
Arsenic (As). ≤10 ppb
Barium (Ba). ≤20 ppb
Beryllium (Be). ≤10 ppb
Bismuth (Bi). ≤10 ppb
Lead (Pb). ≤10 ppb
Boron (B). ≤20 ppb
Cadmium (Cd). ≤10 ppb
Calcium (Ca). ≤50 ppb
Chromium (Cr). ≤10 ppb
Iron (Fe). ≤50 ppb
Gallium (Ga). ≤10 ppb
Gold (Au). ≤10 ppb
Potassium (K). ≤20 ppb
Cobalt (Co). ≤10 ppb
Copper (Cu). ≤30 ppb
Lithium (Li). ≤10 ppb
Magnesium (Mg). ≤20 ppb
Manganese (Mn). ≤10 ppb
Molybdenum (Mo). ≤10 ppb
Sodium (Na). ≤50 ppb
Nickel (Ni). ≤10 ppb
Silver (Ag). ≤10 ppb
Strontium (Sr). ≤10 ppb
Titanium (Ti). ≤10 ppb
Vanadium (V). ≤10 ppb
Zinc (Zn). ≤20 ppb
Tin (Sn). ≤10 ppb
Zirconium (Zr). ≤10 ppb

| | | | |
|---|---|---|---|
| **9780.1** | 2,5 l | plastic | 67,20 € |
| Original pack 4 x 2,5 l | | | 63,84/2,5 l |
| **9780.2** | 5 l | plastic | 110,65 € |
| Original pack 2 x 5 l | | | 105,12/5 l |

For further information, please see page 1654

### Acetone
**ROTIPURAN® ≥99,8 %, p.a., ACS, ISO**

**Guarantee analysis:**

Assay (GC). ≥99,8 %
Colour (Hazen). ≤10
Density (d 20 °C). 0,790-0,793
Water . ≤0,05 %
Acidity. ≤0,0002 meq/g
Alkalinity. ≤0,0002 meq/g
Ethanol (GC). ≤0,01 %
Methanol (GC). ≤0,05 %
2-Propanol (GC). ≤0,05 %
Aldehydes (as $CH_2O$). <0,001 %
Aluminium (Al). ≤0,00005 %
Barium (Ba). ≤0,00001 %
Boron (B). ≤0,000002 %
Calcium (Ca). ≤0,00005 %
Iron (Fe). ≤0,00001 %
Copper (Cu). ≤0,000002 %
Manganese (Mn). ≤0,000002 %
Zinc (Zn). ≤0,00001 %
Tin (Sn). ≤0,00001 %
Cadmium (Cd). ≤0,000005 %
Kobalt (Co). ≤0,000002 %
Chromium (Cr). ≤0,000002 %
Magnesium (Mg). ≤0,00001 %
Nickel (Ni). ≤0,000002 %
Lead (Pb). ≤0,00001 %
Solubility in $H_2O$. complies
Evaporation residue. ≤0,0005 %
$KMnO_4$ reducing substances (as O). ≤0,00025 %

| | | | |
|---|---|---|---|
| **9372.1** | 1 l | glass | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |
| **9372.4** | 1 l | plastic | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **9372.2** | 2,5 l | glass | 56,90 € |
| Original pack 4 x 2,5 l | | | 54,06/2,5 l |
| **9372.5** | 2,5 l | plastic | 50,45 € |
| Original pack 4 x 2,5 l | | | 47,93/2,5 l |
| **9372.6** | 5 l | plastic | 87,00 € |
| Original pack 2 x 5 l | | | 82,65/5 l |
| **9372.3** | 25 l | tinplate | 252,65 € |

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## Acetone

**≥99,7 %, Ph.Eur., extra pure**

**Guarantee analysis:**

Assay (GC). ≥99,7 %
Identity. complies
Appearance of solution. complies
Acid or alkaline react. substances. complies
Relative density (20/20 °C). 0,790-0,793
Water. ≤0,3 %
Refractive index $n_D^{20}$. 1,358-1,361
In $H_2O$ insoluble matter. complies
Reducing substances . complies
Evaporation residue. ≤0,005 %
Related substances:
Methanol (GC). ≤0,05 %
Benzene (GC). ≤0,0002 %
2-Propanol (GC). ≤0,05 %
Related substances (GC). ≤0,05 %

| | | | |
|---|---|---|---|
| **CP40.1** | 1 l | glass | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **CP40.2** | 2,5 l | glass | 47,20 € |
| Original pack 4 x 2,5 l | | | 44,84/2,5 l |
| **CP40.3** | 2,5 l | plastic | 42,90 € |
| Original pack 4 x 2,5 l | | | 40,76/2,5 l |
| **CP40.4** | 5 l | plastic | 57,95 € |
| Original pack 2 x 5 l | | | 55,05/5 l |
| **CP40.5** | 10 l | tinplate | 102,70 € |
| **CP40.6** | 25 l | tinplate | 206,95 € |

## Acetone

**≥99,5 %, for synthesis**

**Type analysis:**

Appearance. clear, colourless liquid
Assay (GC). ≥99,5 %
Density (20 °C). 0,789-0,793 g/cm³
Colour (Hazen). ≤10
Water (KF). ≤0,3 %
Acid value. ≤0,003 %
Refractive index (20 °C). 1,358-1,360

| | | | |
|---|---|---|---|
| **5025.1** | 1 l | glass | 18,20 € |
| Original pack 6 x 1 l | | | 17,29/1 l |
| **5025.2** | 2,5 l | glass | 39,70 € |
| Original pack 4 x 2,5 l | | | 37,72/2,5 l |
| **5025.5** | 2,5 l | plastic | 38,20 € |
| Original pack 4 x 2,5 l | | | 36,29/2,5 l |
| **5025.6** | 5 l | plastic | 52,15 € |
| Original pack 2 x 5 l | | | 49,54/5 l |
| **5025.3** | 10 l | tinplate | 93,00 € |
| **5025.4** | 25 l | tinplate | 196,20 € |

## Acetone D6

Hexadeuteroacetone
$C_3D_6O$
M 63,13 g/mol
D 0,88 • bp 55,5 °C
mp ~-93,8 °C • flp -20 °C
[666-52-4] • EC No. 211-563-9
UN No. 1090 • ADR 3 II • WGK 1

**Danger** H225-H319-H336-EUH066

## Acetone D6

**99,8 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**

Deuterising degree. ≥99,8 %
Water (KF, $H_2O+D_2O$). ≤0,03 %

| | | | |
|---|---|---|---|
| **AE51.1** | 10 ml | glass | 46,15 € |
| **AE51.4** | 10 ml | septum bottle | 48,30 € |
| **AE51.2** | 50 ml | glass | 209,65 € |
| **AE51.3** | 10 x 0,75 ml | glass ampoule | 52,60 € |

## Acetone D6

**99,5 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Type analysis:**

Deuterising degree. ≥99,5 %
Water (KF, $H_2O+D_2O$). ≤0,05 %

| | | | |
|---|---|---|---|
| **7909.1** | 10 ml | glass | 38,20 € |
| **7909.2** | 50 ml | glass | 160,20 € |

## Acetonenol acetate

▶ Acetic acid isopropenyl ester see p. 1696

## Acetonitrile

Methyl cyanide, Cyanomethane
$C_2H_3N$
M 41,05 g/mol
D 0,78 • bp 81 °C
mp -46 °C • flp 2 °C
[75-05-8] • EC No. 200-835-2
UN No. 1648 • ADR 3 II • WGK 2

**Danger**

H225-H302+H312+H332-H319

## Acetonitrile

**ROTISOLV® ≥99,98 %, Ultra LC-MS**

**Guarantee analysis:**

Assay (GC). ≥99,98 %
Colour (APHA). ≤5
Water (KF). ≤0,01 %
Free acid (as $CH_3COOH$). ≤0,001 %
Free alkali (as $NH_3$). ≤0,0001 %
Non volatile matter. ≤0,0001 %
Transmission:
230 nm. ≥99 %
215 nm. ≥98 %
200 nm. ≥97 %
195 nm. ≥85 %
191 nm. ≥30 %
Gradient test:
UV-absorption of the greatest eluated peak.
210 nm. ≤0,001 AU
254 nm. ≤0,0003 AU
Fluorescence (as quinine):
254 nm. ≤0,25 ppb
365 nm. ≤0,25 ppb
Trace impurities:
Aluminium (Al). ≤20 ppb
Calcium (Ca). ≤50 ppb
Iron (Fe). ≤20 ppb
Potassium (K). ≤50 ppb
Magnesium (Mg). ≤20 ppb
Sodium (Na). ≤100 ppb
Filtered through 0,1 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **HN40.1** | 1 l | glass | 80,55 € |
| Original pack 6 x 1 l | | | 76,52/1 l |
| **HN40.2** | 2,5 l | glass | 150,40 € |
| Original pack 4 x 2,5 l | | | 142,88/2,5 l |

## Acetonitrile

**ROTISOLV® ≥99,95 %, LC-MS Grade**

**Guarantee analysis:**

Assay (GC). ≥99,95 %
Colour (APHA). ≤5
Water (KF). ≤0,01 %
Free acid (as $CH_3COOH$). ≤0,001 %
Free alkali (as $NH_3$). ≤0,0001 %
Non volatile matter. ≤0,0001 %
Transmission:
240 nm. ≥99 %
220 nm. ≥98 %
200 nm. ≥95 %
195 nm. ≥78 %
Gradient test:
UV absorption of the greatest eluated peak
210 nm. ≤0,005 AU
254 nm. ≤0,002 AU
Fluorescence (as quinine):
254 nm. ≤0,2 ppb
365 nm. ≤0,2 ppb
Trace impurities:
Aluminium (Al). ≤0,05 ppm
Calcium (Ca). ≤0,05 ppm
Iron (Fe). ≤0,05 ppm
Potassium (K). ≤0,05 ppm
Magnesium (Mg). ≤0,05 ppm
Sodium (Na). ≤0,05 ppm
LC-MS suitability test. complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE70.1** | 1 l | glass | 74,10 € |
| Original pack 6 x 1 l | | | 70,40/1 l |
| **AE70.2** | 2,5 l | glass | 121,40 € |
| Original pack 4 x 2,5 l | | | 115,33/2,5 l |

## Acetonitrile

**ROTISOLV® HPLC Ultra Gradient Grade**

**Guarantee analysis:**

Assay (GC). ≥99,95 %
Colour (Hazen). ≤5
Water (KF). ≤0,01 %
Free acid (as $CH_3COOH$). ≤0,001 %
Free alkali (as $NH_3$). ≤0,0001 %
Non volatile matter. ≤0,0001 %
Transmission:
230 nm. ≥99 %
215 nm. ≥98 %
200 nm. ≥96 %
195 nm. ≥85 %
191 nm. ≥25 %
Gradient test:
UV absorption of the greatest eluated peak
210 nm. ≤1,0 mAU
254 nm. ≤0,2 mAU
Fluorescence (as quinine):
254 nm. ≤0,2 ppb
365 nm. ≤0,2 ppb

Fluorescence:
Em: 250-700 nm, Ex: 240-600 nm . ..... ≤1 ppb (quinine standard)
Suitability for PAH analysis:
PAH-test (less than 2 ppb, HPLC). ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **T195.1** | 1 l | glass | 69,35 € |
| Original pack 6 x 1 l | | | 65,88/1 l |
| **T195.2** | 2,5 l | glass | 116,65 € |
| Original pack 4 x 2,5 l | | | 110,82/2,5 l |

For further information, please see page 1590

## Acetonitrile

### ROTISOLV® HPLC Gradient Grade

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,02 %
Free acid. ..... ≤0,001 %
Non volatile matter. ..... ≤0,0002 %
Transmission:
> 220 nm. ..... ≥99 %
220 nm. ..... ≥98 %
200 nm. ..... ≥96 %
195 nm. ..... ≥85 %
192 nm. ..... ≥50 %
190 nm. ..... ≥10 %
Gradient test:
UV absorption of the greatest eluated peak
210 nm. ..... ≤1,0 mAU
254 nm. ..... ≤0,5 mAU
Fluorescence (as quinine):
254 nm. ..... ≤1,0 ppb
365 nm. ..... ≤0,5 ppb
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **8825.1** | 1 l | glass | 44,65 € |
| Original pack 6 x 1 l | | | 42,42/1 l |
| **8825.2** | 2,5 l | glass | 93,00 € |
| Original pack 4 x 2,5 l | | | 88,35/2,5 l |

For further information, please see page 1590

## Acetonitrile

### ROTISOLV® HPLC Gradient

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,02 %
Free alkali (as $NH_3$). ..... ≤0,0002 %
Free acid (as $CH_3COOH$). ..... ≤0,002 %
Evaporation residue. ..... ≤0,0002 %
Fluorescence (as quinine):
254 nm. ..... ≤0,5 ppb
365 nm. ..... ≤0,5 ppb
LC-gradient (at 210 nm). ..... ≤2,0 mAU
UV-absorption:
254 nm. ..... ≥99 %
220 nm. ..... ≥98 %
200 nm. ..... ≥95 %
195 nm. ..... ≥80 %
193 nm. ..... ≥60 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **HN44.1** | 1 l | glass | 39,25 € |
| Original pack 6 x 1 l | | | 37,29/1 l |
| **HN44.2** | 2,5 l | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |

For further information, please see page 1590

## Acetonitrile

### ROTISOLV® HPLC

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,03 %
Free acid. ..... ≤0,002 %
Non volatile matter. ..... ≤0,0003 %
Transmission:
> 230 nm. ..... ≥99 %
215 nm. ..... ≥95 %
195 nm. ..... ≥80 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **7330.1** | 1 l | glass | 38,60 € |
| Original pack 6 x 1 l | | | 36,67/1 l |
| **7330.2** | 2,5 l | glass | 71,95 € |
| Original pack 4 x 2,5 l | | | 68,35/2,5 l |

For further information, please see page 1590

## Acetonitrile

### ROTISOLV® HPLC, isocratic

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,015 %
Transmission:
>240 nm. ..... ≥99 %
230 nm. ..... ≥96 %
200 nm. ..... ≥80 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **CN20.1** | 1 l | glass | 38,60 € |
| Original pack 6 x 1 l | | | 36,67/1 l |
| **CN20.2** | 2,5 l | glass | 72,60 € |
| Original pack 4 x 2,5 l | | | 68,97/2,5 l |

For further information, please see page 1590

## Acetonitrile

### ROTISOLV® ≥99,8 %, for preparative HPLC

**Guarantee analysis:**

Purity (GC). ..... ≥99,8 %
Water (KF). ..... ≤0,05 %
Acidity (as $CH_3COOH$). ..... ≤0,005 %
Alkalinity (as $NH_3$). ..... ≤0,0005 %
Transmission:
230 nm. ..... ≥96 %
220 nm. ..... ≥90 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **6827.1** | 2,5 l | glass | 57,55 € |
| Original pack 4 x 2,5 l | | | 54,67/2,5 l |
| **6827.2** | 25 l | tinplate | 413,90 € |

For further information, please see page 1590

## Acetonitrile

### ROTISOLV® ≥99,9 %, Pestilyse®

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,2 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
GC/ECD (individual signal as lindane). ..... ≤5 ng/l
GC/PND (individual signal as ethylparathion). ..... ≤10 ng/l

| | | | |
|---|---|---|---|
| **T168.2** | 1 l | glass | 34,65 € |
| Original pack 6 x 1 l | | | 32,92/1 l |
| **T168.1** | 2,5 l | glass | 73,65 € |
| Original pack 4 x 2,5 l | | | 69,97/2,5 l |
| **T168.3** | 4 l | glass | 106,45 € |

## Acetonitrile

### ROTISOLV® ≥99,9 %, UV/IR-Grade

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,01 %
Acidity. ..... ≤0,005 meq/g
Evaporation residue. ..... ≤0,005 %
Fluorescence (as quinine):
254 nm. ..... ≤1,0 ppb
365 nm. ..... ≤1,0 ppb
Transmission:
230 nm. ..... ≥98 %
215 nm. ..... ≥90 %
200 nm. ..... ≥80 %
195 nm. ..... ≥50 %
190 nm. ..... ≥10 %

| | | | |
|---|---|---|---|
| **T907.1** | 2,5 l | glass | 90,20 € |
| Original pack 4 x 2,5 l | | | 85,69/2,5 l |

## Acetonitrile

### ROTIDRY®Sept ≥99,9 % (≤10 ppm $H_2O$)

Dried; in a septum bottle

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,001 %
Acidity (as $CH_3COOH$). ..... ≤0,002 %
Evaporation residue. ..... ≤0,0003 %

| | | | |
|---|---|---|---|
| **5175.1** | 250 ml | glass | 46,15 € |

## Acetonitrile

### ROTIDRY® ≥99,9 % (≤10 ppm $H_2O$)

Dried; for DNA synthesis and analysis.

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Colour (Hazen). ..... ≤10
Water (KF). ..... ≤0,001 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Filtered through a membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE00.1** | 1 l | glass | 35,40 € |
| Original pack 6 x 1 l | | | 33,63/1 l |
| **AE00.2** | 2,5 l | glass | 72,60 € |
| Original pack 4 x 2,5 l | | | 68,97/2,5 l |
| **AE00.3** | 4 l | glass | 107,40 € |

## Acetonitrile

### ROTIPURAN® ≥99,5 %, p.a., ACS

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Colour (Hazen). ..... ≤10
Water . ..... ≤0,1 %
Acidity. ..... ≤0,008 meq/g
Alkalinity. ..... ≤0,0006 meq/g
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00001 %
Boron (B). ..... ≤0,000002 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %
Tin (Sn). ..... ≤0,00001 %
Evaporation residue. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4722.1** | 1 l | glass | 37,55 € |
| Original pack 6 x 1 l | | | 35,67/1 l |
| **4722.2** | 2,5 l | glass | 84,85 € |
| Original pack 4 x 2,5 l | | | 80,61/2,5 l |

## Acetonitrile
**≥99,5 %, for synthesis**

**Type analysis:**
Assay (GC). ..... ≥99,5 %
Density (d 20 °C/20 °C). ..... 0,780-0,785
Colour (APHA). ..... ≤10
Water. ..... ≤0,1 %
Acidity. ..... ≤0,008 meq/g
Alkalinity. ..... ≤0,005 meq/g
Evaporation residue. ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **4380.1** | 1 l | glass | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |
| **4380.2** | 2,5 l | glass | 61,20 € |
| Original pack 4 x 2,5 l | | | 58,14/2,5 l |
| **4380.3** | 10 l | tinplate | 195,65 € |
| **4380.4** | 25 l | tinplate | 428,95 € |

## Acetonitrile
**ROTISOLV® ≥99,9 %, for DNA synthesis**
Water content ≤10 ppm

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,001 %
Non volatile matter. ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **8824.2** | 2,5 l | glass | 103,10 € |
| Original pack 4 x 2,5 l | | | 97,95/2,5 l |

For further information, please see page 1494

## Acetonitrile
**ROTISOLV® ≥99,9 %, for DNA synthesis**
Water content ≤30 ppm

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,003 %
Free acid. ..... ≤0,002 %
Non volatile matter. ..... ≤0,0003 %

| | | | |
|---|---|---|---|
| **2216.2** | 2,5 l | glass | 81,60 € |
| Original pack 4 x 2,5 l | | | 77,52/2,5 l |

For further information, please see page 1494

## Acetonitrile
**ROTISOLV® ≥99,9 %, for DNA synthesis**
Water content ≤30 ppm

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,003 %
Packed for Applied Biosystems and Biosearch DNA-Synthesizer.

| | | | |
|---|---|---|---|
| **3620.1** | 100 ml | septum bottle | 26,80 € |

For further information, please see page 1494

## Acetonitrile D3

Methyl cyanide deuterated
$CD_3CN$
M 44,08 g/mol
D 0,84 • bp ~80,7 °C
mp -42 °C
[2206-26-0] • EC No. 218-616-5
UN No. 1648 • ADR 3 II • WGK 2
**Danger**
H225-H302+H312+H332-H319

## Acetonitrile D3
**99,8 Atom%D**
For nuclear magnetic resonance spectroscopy.

**Type analysis:**
Deuterising degree. ..... ≥99,8 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **7911.1** | 10 ml | glass | 73,00 € |
| **7911.2** | 10 x 0,75 ml | glass ampoule | 77,30 € |

## Acetonitrile D3
**99,5 Atom%D**
For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**
Deuterising degree. ..... ≥99,5 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **AE52.1** | 10 ml | glass | 69,80 € |
| **AE52.3** | 10 ml | septum bottle | 70,85 € |
| **AE52.2** | 25 ml | glass | 145,15 € |

## Acetonitrile with 0,1 % formic acid

## Acetonitrile with 0,1 % formic acid
**ROTISOLV® ≥99,9 %, LC-MS-Grade**
Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
$C_2H_3N$
M 41,05 g/mol
UN No. 1648 • ADR 3 II • WGK 2
**Danger**
H225-H302+H312+H332-H319

**Guarantee analysis:**
Assay. ..... ≥99,9 %
Formic acid (v/v). ..... 0,095-0,105 %
Transmission:
254 nm. ..... ≥90 %
230 nm. ..... ≥15 %
210 nm. ..... ≥5 %
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **CP00.1** | 1 l | glass | 81,20 € |
| Original pack 6 x 1 l | | | 77,14/1 l |
| **CP00.2** | 2,5 l | glass | 180,50 € |
| Original pack 4 x 2,5 l | | | 171,48/2,5 l |

## Acetonitrile with 0,1 % acetic acid

## Acetonitrile with 0,1 % acetic acid
**ROTISOLV® ≥99,9 %, LC-MS-Grade**
Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
$C_2H_3N$
M 41,05 g/mol
UN No. 1648 • ADR 3 II • WGK 2
**Danger**
H225-H302+H312+H332-H319

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Acetic acid (v/v). ..... 0,095-0,105 %
Transmission:
254 nm. ..... ≥90 %
230 nm. ..... ≥50 %
210 nm. ..... ≥20 %
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **CP01.1** | 1 l | glass | 81,20 € |
| Original pack 6 x 1 l | | | 77,14/1 l |
| **CP01.2** | 2,5 l | glass | 180,50 € |
| Original pack 4 x 2,5 l | | | 171,48/2,5 l |

## Acetonitrile with 0,1 % trifluoroacetic acid

## Acetonitrile with 0,1 % trifluoroacetic acid
**ROTISOLV® ≥99,9 %, LC-MS-Grade**
Eluent mixture for high performance liquid chromatography.
Acetonitrile mixture
$C_2H_3N$
M 41,05 g/mol
UN No. 1648 • ADR 3 II • WGK 2
**Danger**
H225-H302+H312+H332-H319

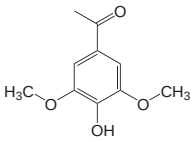
**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Trifluoroacetic acid (v/v). ..... 0,095-0,105 %
Transmission:
254 nm. ..... ≥90 %
230 nm. ..... ≥50 %
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **CP02.1** | 1 l | glass | 81,20 € |
| Original pack 6 x 1 l | | | 77,14/1 l |
| **CP02.2** | 2,5 l | glass | 180,50 € |
| Original pack 4 x 2,5 l | | | 171,48/2,5 l |

## 3-Acetopropionic acid

▶ Levulinic acid see p. 2036

## Acetosyringone



### Acetosyringone

**≥98 %**

3,5-Dimethoxy-4-hydroxy-acetophenone

$C_{10}H_{12}O_4$

M 196,20 g/mol

mp ~125 °C

[2478-38-8] • EC No. 219-610-5

WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Appearance. .....beige powder
Assay (GC). .....≥98,0 %

| | | | |
|---|---|---|---|
| **6003.1** | 500 mg | glass | 26,35 € |
| **6003.2** | 1 g | glass | 41,40 € |

## Acetovanillon

▶ Apocynin see p. 1748

## 1-Acetoxy-2-butoxyethane

▶ 2-Butoxyethyl acetate see p. 1796

## (3α,4β)-3-Acetoxy-olean-12-en-23-acid

▶ 3-Acetyl-α-boswellic acid see p. 1702

## Acetoxyphenyl mercury

▶ Phenyl mercuric acetate see p. 2148

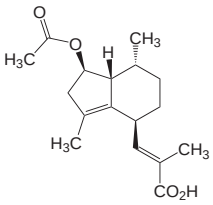
## (3α,4β)-3-Acetoxy-urs-12-en-23-acid

▶ 3-Acetyl-β-boswellic acid see p. 1702

## (3α,4β)-3-Acetoxy-urs-12-en-11-keto-23-acid

▶ 3-Acetyl-11-keto-β-boswellic acid see p. 1702

## Acetoxyvalerenic acid



$C_{17}H_{24}O_4$

M 292,37 g/mol

Storage temp.: -20 °C

[81397-67-3]

### Acetoxyvalerenic acid

**ROTI®STAR Primary Standard**

Transport temp.: cooled

**Type analysis:**

Assay (HPLC)..... ≥90,0 %
Residual solvents (GC). ..... ≤3,0 %
Water (KF)..... ≤2,0 %
Assay (qNMR)..... ≥85 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE36.1** | 10 mg | glass | 901,95 € |

### Acetoxyvalerenic acid

**ROTICHROM® Working Standard**

Transport temp.: cooled

**Type analysis:**

Assay (HPLC)..... ≥90,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC36.1** | 10 mg | glass | 327,90 € |

### Acetoxyvalerenic acid

**with analytical records**

From *Valeriana officinalis*.

Transport temp.: room temp.

**Type analysis:**

Purity (HPLC). ..... ≥99,0 %
Analytical records: HPLC, TLC, $^1$H-NMR, $^{13}$C-NMR, UV, IR, MS.

| | | | |
|---|---|---|---|
| **T890.1** | 25 mg | glass | 618,15 € |

### Acetoxyvalerenic acid

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Valeriana officinalis*.

Transport temp.: room temp.

**Type analysis:**

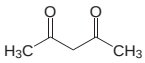
Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **4446.1** | 25 mg | glass | 482,70 € |

## Aceturic acid

▶ N-Acetylglycine see p. 1703

## Acetyl acetone



### Acetyl acetone

**≥98 %, for synthesis**

Pentane-2,4-dione, ACAC

$C_5H_8O_2$

M 100,12 g/mol

D 0,973 • bp 140 °C

mp -23 °C • flp 34 °C

Solubility: 200 g/l ($H_2O$, 20 °C)

[123-54-6] • EC No. 204-634-0

UN No. 2310 • ADR 3(6.1) III • WGK 1

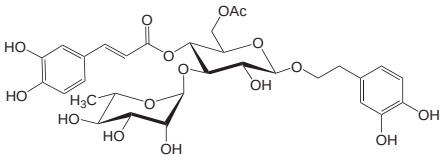
**Danger** H226-H302-H311+H331

**Type analysis:**

Appearance. ..... clear colourless to light yellow liquid
Assay (GC). .....≥98,0 %
Density.....0,971-0,974
Refractive index $n_D^{20}$.....1,451-1,453

| | | | |
|---|---|---|---|
| **6716.1** | 100 ml | plastic | 13,90 € |
| **6716.2** | 500 ml | plastic | 28,95 € |
| **6716.3** | 1 l | plastic | 48,95 € |
| Original pack 6 x 1 l | | | 46,50/1 l |
| **6716.4** | 2,5 l | plastic | 105,25 € |
| Original pack 4 x 2,5 l | | | 99,99/2,5 l |

## 6-O-Acetylacteoside



### 6-O-Acetylacteoside

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Harpagophytum procumbens.*

$C_{31}H_{38}O_{16}$

M 666,63 g/mol

Storage temp.: +4 °C

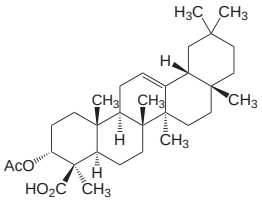
[441769-43-3]

**Type analysis:**

Purity (HPLC).....>99 %

| | | | |
|---|---|---|---|
| **1072.1** | 20 mg | glass | 360,15 € |

## 3-Acetyl-α-boswellic acid



### 3-Acetyl-α-boswellic acid

**ROTICHROM® HPLC**

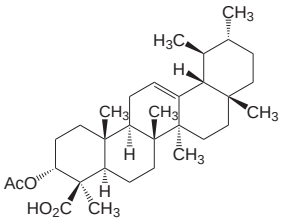
Reference substance for HPLC.
From *Boswellia serrata.*
(3α,4β)-3-Acetoxy-olean-12-en-23-acid
$C_{32}H_{50}O_4$
M 498,73 g/mol
Storage temp.: +4 °C
[89913-60-0]

**Type analysis:**

Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **1073.1** | 10 mg | glass | 439,70 € |

## 3-Acetyl-β-boswellic acid



### 3-Acetyl-β-boswellic acid

**ROTICHROM® HPLC**

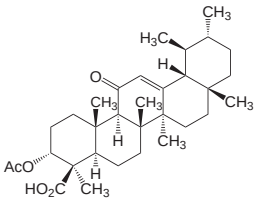
Reference substance for HPLC.
From *Boswellia serrata.*
(3α,4β)-3α-Acetoxy-urs-12-en-23-acid
$C_{32}H_{50}O_4$
M 498,73 g/mol
Storage temp.: +4 °C
[5968-70-7]

**Type analysis:**

Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **1074.1** | 10 mg | glass | 428,95 € |

## 3-Acetyl-11-keto-β-boswellic acid



### 3-Acetyl-11-keto-β-boswellic acid

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Boswellia serrata.*
(3α-4β)-3-Acetoxy-urs-12-en-11-keto-23-acid
$C_{32}H_{48}O_5$
M 512,73 g/mol
Storage temp.: +4 °C
[67416-61-9]

**Type analysis:**

Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **1075.1** | 10 mg | glass | 385,95 € |

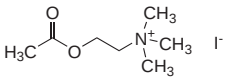
## Acetyl-γ-boswellic acid

▶ 3-O-Acetyl-9-11-dehydro-β-boswellic acid see p. 1702

## Acetylcellulose

▶ Cellulose acetate see p. 1821

## Acetylcholine iodide



### Acetylcholine iodide

**≥98 %**

ACh
$C_7H_{16}NO_2I$
M 273,12 g/mol
mp 161-165 °C
Storage temp.: +4 °C
[2260-50-6] • EC No. 218-862-3
WGK 2

**Warning** H315-H319-H335

**Guarantee analysis:**

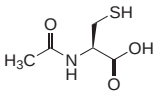
Assay (titr.). ..... ≥98,0 %
Solution (10 % in $H_2O$). ..... colourless
pH value (10 % in $H_2O$). ..... 3,9-5,7
Melting point. ..... 161-165 °C

| | | | |
|---|---|---|---|
| **5528.1** | 5 g | plastic | 36,45 € |
| **5528.2** | 25 g | plastic | 134,40 € |

## N-Acetylchondrosamine

▶ N-Acetyl-D-galactosamine see p. 1703

## N-Acetyl-L-cysteine



### N-Acetyl-L-cysteine

**≥98 %, for biochemistry**

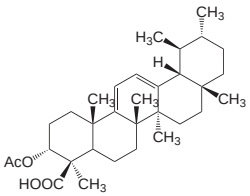
2-Acetamido-3-mercaptopropionic acid,
L-α-Acetamido-β-mercaptopropionic acid,
ACC, NAC, Ac-Cys-OH
$C_5H_9NO_3S$
M 163,20 g/mol
Storage temp.: +4 °C
[616-91-1] • EC No. 210-498-3
WGK 2

**Type analysis:**

Assay (titr.).....≥98 %
Solution (10 % in water). .....colourless
Loss on drying (70 °C, vacuum). .....≤2,0 %
Specific rotation $[\alpha]_D^{20}$ (c=5 at pH 7). ..... +21° to +27°
pH value (c=1 in water). .....2,0-2,8

| | | | |
|---|---|---|---|
| **4126.1** | 25 g | glass | 23,55 € |
| **4126.2** | 100 g | glass | 75,15 € |

## 3-O-Acetyl-9-11-dehydro-β-boswellic acid



### 3-O-Acetyl-9-11-dehydro-β-boswellic acid

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Boswellia serrata.*
Acetyl-γ-boswellic acid
$C_{32}H_{48}O_4$
M 496,71 g/mol
mp 258-263 °C
Storage temp.: +4 °C
[122651-20-1]
WGK 1

**Type analysis:**

Purity (HPLC).....≥98 %

| | | | |
|---|---|---|---|
| **6269.1** | 5 mg | glass | 349,40 € |

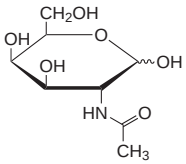
## 2-Acetyl-1,3-dihydroxybenzene

▶ 2,6-Dihydroxyacetophenone see p. 1876

## Acetylene trichloride

▶ Trichloroethylene see p. 2350

## N-Acetyl-D-galactosamine



### N-Acetyl-D-galactosamine

**≥99 %, for biochemistry**

2-Acetamido-2-deoxy-D-galactose,
N-Acetylchondrosamine, D-GalNAc,
N-Acetyl-D-galactosaminide

$C_8H_{15}NO_6$

M 221,21 g/mol

Storage temp.: -20 °C •
Transport temp.: room temp.

[14215-68-0]

**Type analysis:**

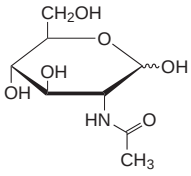
Assay (HPLC). ..... ≥99 %
Solution (5 % in water). ..... colourless, clear
Water (KF). ..... ≤7 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in water after 5 h). ..... +80° to +90°
Methanol (GC). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4114.1** | 250 mg | glass | 32,15 € |
| **4114.2** | 1 g | glass | 98,40 € |

## N-Acetyl-D-galactosaminide

▶ N-Acetyl-D-galactosamine see p. 1703

## N-Acetyl-D-glucosamine



### N-Acetyl-D-glucosamine

**≥99 %, for biochemistry**

2-Acetamido-2-deoxy-D-glucopyranose

$C_8H_{15}NO_6$

M 221,21 g/mol

mp 195-215 °C

Storage temp.: -20 °C
Transport temp.: room temp.

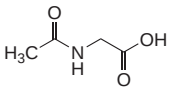
[7512-17-6] • EC No. 231-368-2

**Type analysis:**

Appearance. ..... white to whitish cryst. powder
Assay (HPLC). ..... ≥99 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$). ..... +39° to +43°
Sulphated ash. ..... ≤0,1 %
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **8993.3** | 5 g | plastic | 15,60 € |
| **8993.2** | 25 g | glass | 39,70 € |
| **8993.1** | 50 g | plastic | 69,80 € |
| **8993.4** | 100 g | plastic | 110,20 € |

## N-Acetylglycine



### N-Acetylglycine

**≥99 %, for biochemistry**

Aceturic acid, Ac-Gly-OH

$C_4H_7NO_3$

M 117,11 g/mol

bp >300 °C

mp 205-211 °C

Solubility: 26 g/l ($H_2O$, 15 °C)

Storage temp.: +4 °C

[543-24-8] • EC No. 208-839-6

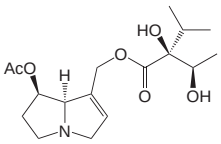
WGK 1

**Type analysis:**

Assay (titr.). ..... ≥99,0 %
Appearance of solution (1 % in $H_2O$). ..... colourless
Loss on drying. ..... ≤1,0 %
Melting point. ..... 205-211 °C

| | | | |
|---|---|---|---|
| **5526.1** | 25 g | plastic | 16,70 € |
| **5526.2** | 100 g | plastic | 30,00 € |
| **5526.3** | 500 g | plastic | 111,70 € |
| Original pack 6 x 500 g | | | 106,12/500 g |

## 7-O-Acetylintermedine



### 7-O-Acetylintermedine

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Symphythum*.

$C_{17}H_{27}NO_6$

M 341,40 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

[74243-01-9]

WGK 1

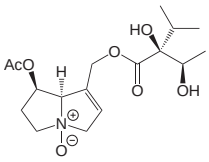
**Warning** H302

**Type analysis:**

Purity (HPLC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **7975.1** | 5 mg | glass | 375,20 € |

## 7-O-Acetylintermedine N-oxide



### 7-O-Acetylintermedine N-oxide

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Symphythum officinale.*

$C_{17}H_{27}NO_7$

M 357,40 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

WGK 1

**Warning** H302

**Type analysis:**

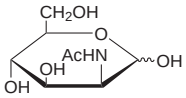
Purity (HPLC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **7980.1** | 5 mg | glass | 375,20 € |

## Acetyl-Leu-Leu-Argininal

▶ Leupeptin hemisulphate see p. 2036

## N-Acetyl-D-mannosamine



### N-Acetyl-D-mannosamine

**≥98 %**

2-Acetamido-2-deoxy-D-mannopyranose,
N-Acetyl-D-mannosaminide, ManNAc

$C_8H_{15}NO_6$

M 221,21 g/mol

Storage temp.: -20 °C •
Transport temp.: room temp.

[7772-94-3]

WGK 1

**Type analysis:**

Assay (HPLC). ..... ≥98,0 %
Solution (1 % in $H_2O$). ..... colourless
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$). ... +10,0° to +11,0°
Water (KF). ..... 6,5-8,5 %

| | | | |
|---|---|---|---|
| **5525.1** | 250 mg | glass | 14,95 € |
| **5525.2** | 1 g | glass | 45,05 € |
| **5525.3** | 5 g | plastic | 145,15 € |

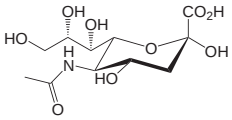
## N-Acetyl-D-mannosaminide

▶ N-Acetyl-D-mannosamine see p. 1703

## N-Acetyl-5-methoxytryptamine

▶ Melatonin see p. 2061

## N-Acetylneuraminic acid



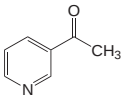
### N-Acetylneuraminic acid

**≥99 %, for biochemistry**
Sialic acid
$C_{11}H_{19}NO_9$
M 309,27 g/mol
bp 185 °C (dec.)
Storage temp.: -20 °C
Transport temp.: room temp.
[131-48-6] • EC No. 205-023-1
WGK 3

**Type analysis:**
Appearance. ..... white to off-white solid
Assay (GC). ..... ≥99 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$). ..... -34° to -30°

| | | | |
|---|---|---|---|
| **7480.1** | 100 mg | glass | 24,20 € |
| **7480.2** | 500 mg | glass | 71,50 € |
| **7480.3** | 1 g | glass | 117,20 € |
| **7480.4** | 5 g | glass | 353,70 € |

## 3-Acetylpyridine



### 3-Acetylpyridine

**≥99 %, for synthesis**
Methyl 3-pyridyl ketone,
1-(3-Pyridinyl)-ethanone
$C_7H_7NO$
M 121,14 g/mol
D 1,1 • bp 220 °C
mp 11-13 °C • flp 104 °C
[350-03-8] • EC No. 206-496-7
UN No. 2810 • ADR 6.1 III • WGK 1
**Danger** H301-H315

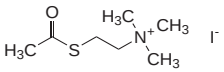
**Type analysis:**
Appearance. ..... clear, colourless to light yellow liquid
Assay (GC). ..... ≥99,0 %
2-Acetylpyridine. ..... ≤0,5 %
4-Acetylpyridine. ..... ≤0,5 %
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8740.1** | 10 g | plastic | 19,90 € |
| **8740.2** | 50 g | plastic | 54,75 € |
| **8740.3** | 100 g | plastic | 95,70 € |

## 2-Acetylresorcinol

▶ 2,6-Dihydroxyacetophenone see p. 1876

## Acetylthiocholine iodide



### Acetylthiocholine iodide

**≥99 %, for biochemistry**
Substrate
S-Acetylthiocholine iodide
$C_7H_{16}NOSI$
M 289,18 g/mol
mp 206-210 °C
Storage temp.: +4 °C
[1866-15-5] • EC No. 217-474-1
UN No. 2811 • ADR 6.1 III • WGK 3
**Danger** H301-H312-H315-H319-H335

**Type analysis:**
Assay (arg.). ..... ≥99 %
Solution (10 % in $H_2O$). ..... colourless
Water (KF). ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %
Thiocholine. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4001.1** | 1 g | glass | 24,20 € |
| **4001.2** | 5 g | glass | 72,60 € |
| **4001.3** | 10 g | glass | 128,50 € |

## Ac-Gly-OH

▶ N-Acetylglycine see p. 1703

## ACh

▶ Acetylcholine iodide see p. 1702

## Achromycin hydrochloride

▶ Tetracycline hydrochloride see p. 2335

## Acid black 2

▶ Nigrosin, water soluble (C.I. 50420) see p. 2095

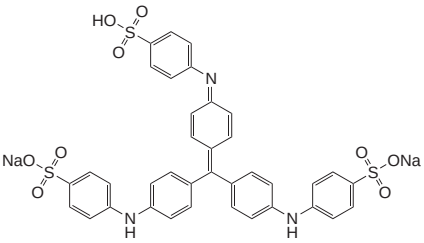
## Acid black 32

▶ Fast sulphon black F (C.I. 26990) see p. 1924

## Acid blue 110

▶ Alkali blue 6B (C.I. 42750) see p. 1717

## Acid blue 93 (C.I. 42780)



### Acid blue 93 (C.I. 42780)

**p.a., water soluble**
For staining of histological sections and for cytology.
Aniline blue water soluble, Methyl blue
$C_{37}H_{27}N_3O_9S_3Na_2$
M 799,81 g/mol
Solubility: 70 g/l ($H_2O$, 20 °C)
[28983-56-4] • EC No. 249-352-9
WGK 2

**Guarantee analysis:**
Appearance. ..... brownish crystals
Solution (1 % in $H_2O$). ..... clear, dark blue
Absorption max. (in $H_2O$). ..... 594-610 nm

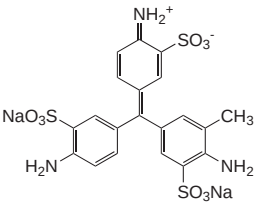
| | | | |
|---|---|---|---|
| **4002.1** | 10 g | glass | 74,75 € |
| **4002.2** | 25 g | glass | 161,80 € |

For further information, please see page 1461

## Acid buffer pH 2.2

▶ Legionella Acid Buffer see p. 2034

## Acid fuchsin (C.I. 42685)



### Acid fuchsin (C.I. 42685)

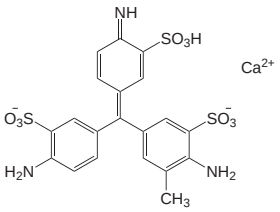
**for microscopy**
Fuchsine acidic
$C_{20}H_{17}N_3Na_2O_9S_3$
M 585,54 g/mol
mp >130 °C
Solubility: 200 g/l ($H_2O$, 20 °C)
[3244-88-0] • EC No. 221-816-5
WGK 2

**Type analysis:**
Absorption max. (HCl 0,005 mol/l). ..... 540-545 nm
Loss on drying (135 °C). ..... ≤10 %

| | | | |
|---|---|---|---|
| **T128.1** | 10 g | glass | 57,95 € |

For further information, please see page 1469

## Acid fuchsin calcium salt (C.I. 42685)




### Acid fuchsin calcium salt (C.I. 42685)

**extra pure**

$C_{20}H_{17}N_3O_9S_3Ca$
M 579,65 g/mol
mp 300 °C
[123334-10-1]
WGK 3

**Type analysis:**

Appearance. ..... green cryst. powder
Appearance of solution ($H_2O$). ..... clear, violet

| | | | |
|---|---|---|---|
| **7690.1** | 5 g | glass | 13,90 € |
| **7690.2** | 25 g | glass | 24,20 € |
| **7690.3** | 100 g | glass | 57,95 € |

## Acid green 1

▶ Naphthol green B (C.I. 10020) see p. 2088

## Acid green 3

▶ Guinea green B (C.I. 42085) see p. 1967

## Acid green 5

▶ Light green SF (C.I. 42095) see p. 2036

## Acid green 50

▶ Lissamine green B (C.I. 44090) see p. 2038

## Acid orange 7

▶ Orange II sodium salt (C.I. 15510) see p. 2124

## Acid orange 10

▶ Orange G (C.I. 16230) see p. 2124

## Acid orange 12

▶ Crocein orange G (C.I. 15970) see p. 1848

## Acid red 14

▶ Chromotrope® FB (C.I. 14720) see p. 1832

## Acid red 29

▶ Chromotrope® 2R (C.I. 16570) see p. 1832

## Acid red 51

▶ Erythrosine B (C.I. 45430) see p. 1909

## Acids in Ultra Quality


| Art. No. | Description | Page |
|---|---|---|
| HN65 | Acetic acid Ultra-quality | 1691 |
| HN67 | Hydrobromic acid Ultra-quality | 1984 |
| HN63 | Hydrochloric acid Ultra-quality | 1984 |
| HN64 | Hydrofluoric acid Ultra-quality | 1989 |
| HN60 | Nitric acid Ultra-quality | 2096 |
| HN61 | Perchloric acid Ultra-quality | 2138 |
| HN62 | Sulphuric acid Ultra-quality | 2323 |


## Acids in Supra Quality


| Art. No. | Description | Page |
|---|---|---|
| HN55 | Acetic acid Supra-quality | 1691 |
| HN53 | Hydrochloric acid Supra-quality | 1985 |
| HN54 | Hydrofluoric acid Supra-quality | 1990 |
| HN50 | Nitric acid Supra-quality | 2096 |
| HN51 | Perchloric acid Supra-quality | 2139 |
| HN52 | Sulphuric acid Supra-quality | 2323 |


## Acids for Analysis


| Art. No. | Description | Page |
|---|---|---|
| 3738 | Acetic acid 100 % | 1692 |
| T179 | Acetic acid 96 % | 1692 |
| 3525 | L(+)-Ascorbic acid | 1752 |
| P738 | Benzoic acid | 1766 |
| 6943 | Boric acid | 1783 |
| HN24 | Boric acid solution 4 % | 1783 |
| X863 | Citric acid | 1835 |
| 3958 | Citric acid monohydrate | 1836 |
| 4724 | Formic acid 98 % | 1940 |
| CP16 | Formic acid 85 % | 1941 |
| X942 | Hydrochloric acid fuming 37 % | 1985 |
| 4625 | Hydrochloric acid fuming 37 % | 1986 |
| P074 | Hydrochloric acid 32 % | 1986 |
| 6331 | Hydrochloric acid 25 % | 1987 |
| 4440 | Molybdatophosphoric acid hydrate | 2082 |
| 2722 | Molybdic acid | 2082 |
| X943 | Nitric acid 65 % | 2097 |
| 4989 | Nitric acid 65 % | 2097 |
| T113 | Oxalic acid dihydrate | 2126 |
| 9216 | Perchloric acid 70 % | 2139 |
| 3257 | Periodic acid | 2140 |
| CN91 | meta-Phosphoric acid | 2150 |
| 6366 | ortho-Phosphoric acid 85 % | 2150 |
| 2635 | Phosphotungstic acid hydrate | 2152 |
| 2723 | Salicylic acid | 2238 |
| 2725 | Succinic acid | 2319 |
| P725 | Sulphamic acid | 2321 |
| 4496 | Sulphanilic acid | 2322 |
| X944 | Sulphuric acid 95-98 % | 2324 |
| 4623 | Sulphuric acid 96 % | 2324 |
| CN89 | Sulphuric acid 62 % | 2325 |
| K302 | L(+)-Tartaric acid | 2329 |
| 8789 | Trichloroacetic acid | 2350 |
| 7437 | Trichloroacetic acid solution 20 % | 2350 |
| 9383 | Trichloroacetic acid solution 10 % | 2350 |
| 0760 | Tungsten(VI) oxide | 2362 |


## Acids in Pharmacopoeia Quality


| Art. No. | Description | Page |
|---|---|---|
| 6755 | Acetic acid 100 % | 1692 |
| P010 | Boric acid | 1783 |
| 6490 | Citric acid | 1835 |
| 5110 | Citric acid monohydrate | 1836 |
| 2607 | Hydrochloric acid fuming 37 % | 1986 |
| 2608 | ortho-Phosphoric acid 85 % | 2150 |
| 9370 | Silver nitrate | 2262 |
| 2609 | Sulphuric acid 96 % | 2324 |
| 3744 | Trichloroacetic acid | 2350 |


## Acids in Standard Quality

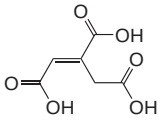

| Art. No. | Description | Page |
|---|---|---|
| 7332 | Acetic acid 99-100 % | 1692 |
| X895 | Acetic acid 96 % | 1692 |
| 6740 | Acetic acid 80 % | 1692 |
| 7329 | Acetic acid 60 % | 1692 |
| 4340 | Acetic acid 25 % | 1693 |
| 4341 | Acetic acid 10 % | 1693 |
| 4742 | Formic acid 98 % | 1941 |
| 5355 | Formic acid 85 % | 1941 |
| 6739 | Formic acid 45 % | 1941 |
| 9277 | Hydrochloric acid 37 % | 1986 |
| 7476 | Hydrochloric acid 37 % | 1986 |
| X896 | Hydrochloric acid 32 % | 1986 |
| 9280 | Hydrochloric acid 30 % | 1986 |
| X897 | Hydrochloric acid 25 % | 1987 |
| 0992 | Hydrochloric acid 25 % | 1987 |
| 4326 | Hydrochloric acid 20 % | 1987 |
| 4322 | Hydrochloric acid 15 % | 1987 |
| 0710 | Hydrochloric acid 10 % | 1987 |
| 4328 | Hydrochloric acid 5 % | 1987 |
| 2616 | Nitric acid 68 % | 2097 |
| X898 | Nitric acid 65 % | 2097 |
| 6745 | Nitric acid 60 % | 2097 |
| 9274 | Nitric acid 53 % | 2097 |
| 6748 | Nitric acid 40 % | 2097 |
| 4339 | Nitric acid 25 % | 2097 |
| 4337 | Nitric acid 20 % | 2098 |
| 2612 | Periodic acid | 2140 |
| 9079 | ortho-Phosphoric acid 85 % | 2150 |
| 2614 | ortho-Phosphoric acid 75 % | 2150 |
| 4336 | ortho-Phosphoric acid 50 % | 2151 |
| 4334 | ortho-Phosphoric acid 40 % | 2151 |
| 4332 | ortho-Phosphoric acid 25 % | 2151 |
| 2620 | Phosphorous acid | 2151 |
| X945 | Sulphuric acid 98 % | 2323 |
| 9316 | Sulphuric acid 96 % | 2324 |
| 0971 | Sulphuric acid 96 % | 2324 |
| 4363 | Sulphuric acid 96 % | 2324 |
| X946 | Sulphuric acid 90-91 % | 2325 |
| 4319 | Sulphuric acid 75 % | 2325 |
| 4318 | Sulphuric acid 50 % | 2325 |
| 4316 | Sulphuric acid 40 % | 2325 |
| 4312 | Sulphuric acid 37 % | 2325 |
| X876 | Sulphuric acid 30 % | 2325 |
| 0967 | Sulphuric acid 25 % | 2325 |
| 4300 | Sulphuric acid 20 % | 2325 |
| 9328 | Sulphurous acid | 2327 |
| P088 | Trifluoroacetic acid (TFA) | 2353 |
| 6957 | Trifluoroacetic acid (TFA) | 2353 |

A

## Acid yellow 36

▶ Metanil yellow (C.I. 13065) see p. 2066

## trans-Aconitic acid



### trans-Aconitic acid

**≥98 %**

trans-Propene-1,2,3-tricarboxylic acid,
1,2,3-Propenetricarboxylic acid

$C_6H_6O_6$

M 174,11 g/mol

D 0,56

mp 190 °C (dec.)

Storage temp.: +4 °C

[4023-65-8] • EC No. 223-688-6

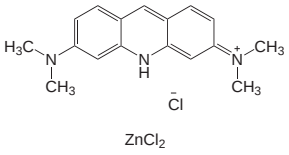
WGK 1

**Guarantee analysis:**

Assay (HPLC). ..... ≥98,0 %
Solution (5 % in water). ..... colourless to slightly yellow
Water (KF). ..... ≤1,0 %
Sulphated ash. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **5523.1** | 10 g | plastic | 36,05 € |
| **5523.2** | 25 g | plastic | 71,95 € |

## Acridine orange (C.I. 46005)



$ZnCl_2$

### Acridine orange (C.I. 46005)

**for microscopy**

Fluorescence indicator

Acridine orange zinc chloride double salt,
Basic orange 14

$C_{17}H_{20}Cl_3N_3Zn$

M 438,09 g/mol

mp 165 °C

[10127-02-3] • EC No. 233-353-6

WGK 3

**Warning** H341

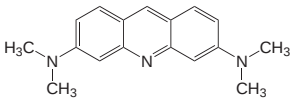
**Type analysis:**

Appearance. ..... orange to brownish powder
Loss on drying (110 °C). ..... ≤4 %

| | | | |
|---|---|---|---|
| **0249.1** | 10 g | glass | 22,05 € |
| **0249.2** | 25 g | glass | 41,85 € |

For further informations, please see page 1469

## Acridine orange base (C.I. 46005)



### Acridine orange base (C.I. 46005)

**for microscopy**

Fluorescence indicator

Basic orange 14

$C_{17}H_{19}N_3$

M 265,35 g/mol

mp 165 °C

[494-38-2]

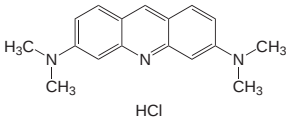
WGK 3

**Type analysis:**

Appearance. ..... brown to orange brown powder
Appearance of solution (0,1 % in 1 M HCl). ..... clear orange to orange red

| | | | |
|---|---|---|---|
| **7632.1** | 5 g | glass | 17,75 € |
| **7632.2** | 10 g | glass | 27,45 € |
| **7632.3** | 25 g | glass | 56,90 € |

## Acridine orange hydrochloride hydrate (C.I. 46005)



HCl

### Acridine orange hydrochloride hydrate (C.I. 46005)

**for microscopy**

$C_{17}H_{19}N_3 \cdot HCl \cdot x\ H_2O$

M 301,82 + x $H_2O$ g/mol

mp 284-287 °C

[65-61-2]

WGK 3

**Type analysis:**

Appearance. ..... burnt orange to brick red powder
Appearance of solution (0,1 % in $H_2O$). ..... clear orange to orange red

| | | | |
|---|---|---|---|
| **7633.1** | 1 g | glass | 24,20 € |
| **7633.2** | 5 g | glass | 48,95 € |
| **7633.3** | 10 g | glass | 77,95 € |

## Acridine orange zinc chloride double salt

▶ Acridine orange (C.I. 46005) see p. 1706

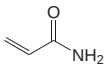
## Acriflavinium chloride

▶ Trypaflavine see p. 2359

## Acriflavinium hydrochloride

▶ Trypaflavine see p. 2359

## Acrylamide



Propene amide, acrylic acid amide

$C_3H_5NO$

M 71,08 g/mol

D 1,13

mp 84-85 °C • flp 138 °C

[79-06-1] • EC No. 201-173-7

UN No. 2074 • ADR 6.1 III • WGK 3

**Danger** H301-H312+H332-H315-H319-H317-H340-H350-H361f-H372

### Acrylamide, BioScience

**≥99,9 %, BioScience Grade, 4x cryst.**

For molecular biology.

**Type analysis:**

Appearance. ..... white crystals
Assay. ..... ≥99,9 %
Conductivity (35 % in $H_2O$). ..... ≤5 µS/cm
pH (10 % in 0,1 M NaCl). ..... 5,5-7,0
A (40 % in $H_2O$; 1 cm/410 nm). ..... ≤0,05
Water. ..... ≤0,3 %
Acrylic acid. ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0001 %
Magnesium (Mg). ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **0189.1** | 100 g | plastic | 41,85 € |
| **0189.2** | 500 g | plastic | 160,20 € |
| Original pack 6 x 500 g | | | 152,19/500 g |

For further information, please see page 1156

### Acrylamide, 4x cryst.

**≥99,9 %, p.a., 4x cryst.**

For gel electrophoresis.

**Type analysis:**

Appearance. ..... white crystals
Assay. ..... ≥99,9 %
Water. ..... ≤0,5 %
Acrylic acid. ..... ≤0,001 %
pH (5 % in $H_2O$). ..... ~5
Solution (5 % in $H_2O$). ..... clear and colourless
A (5 % in water, 1 cm/290 nm). ..... <0,6

| | | | |
|---|---|---|---|
| **7906.1** | 100 g | plastic | 34,30 € |
| **7906.3** | 250 g | plastic | 73,65 € |
| **7906.4** | 500 g | plastic | 126,75 € |
| Original pack 6 x 500 g | | | 120,41/500 g |
| **7906.2** | 1 kg | plastic | 232,10 € |
| Original pack 6 x 1 kg | | | 220,50/1 kg |

For further information, please see page 1156

## Acrylamide, 2x cryst.

**≥98 %, 2x cryst., extra pure**

For gel electrophoresis.

**Type analysis:**

Appearance. ..... white crystals
Assay ..... ≥98 %
Water ..... ≤2,0 %
Acrylic acid. ..... ≤0,1 %
pH (5 % in $H_2O$) ..... ~6
Solution (5 % in $H_2O$) ..... clear and colourless
A (5 % in water, 1 cm/290 nm) ..... <0,7

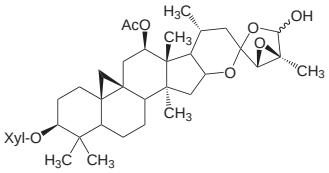
| | | | |
|---|---|---|---|
| **7871.1** | 500 g | plastic | 48,30 € |
| Original pack 6 x 500 g | | | 45,89/500 g |
| **7871.2** | 1 kg | plastic | 62,90 € |
| Original pack 6 x 1 kg | | | 59,76/1 kg |
| **7871.3** | 2,5 kg | plastic | 124,60 € |
| **7871.4** | 5 kg | plastic | 207,40 € |

For further information, please see page 1156

## Acrylamide- and bisacrylamide stock solutions

▶ Rotiphorese® gel solutions see p. 1154

## Actein



### Actein

**ROTICHROM® HPLC**

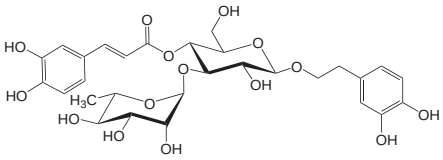
Reference substance for HPLC.
From *Cimicifuga racemosa.*
$C_{37}H_{56}O_{11}$
M 676,84 g/mol
Storage temp.: +4 °C
[18642-44-9]

**Type analysis:**

Purity (HPLC) ..... >99 %

| | | | |
|---|---|---|---|
| **1080.1** | 5 mg | glass | 396,70 € |

## Acteoside



Verbascoside
$C_{29}H_{36}O_{15}$
M 624,60 g/mol
[61276-17-3]

### Acteoside

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC) ..... ≥90,0 %
Residual solvents (GC) ..... ≤6,0 %
Water (KF) ..... ≤9,0 %
Assay (qNMR) ..... ≥80,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE33.1** | 10 mg | glass | 805,20 € |

### Acteoside

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC) ..... ≥80,0 %
Identity ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC33.2** | 25 mg | glass | 392,40 € |

### Acteoside

**with analytical records**

From *Paulownia tormentosa*.
Storage temp.: +4 °C

**Type analysis:**

Purity (HPLC) ..... >98 %
Analytical records: HPLC, TLC, $^1$H-NMR, $^{13}$C-NMR, UV, IR, MS.

| | | | |
|---|---|---|---|
| **T891.1** | 20 mg | glass | 510,65 € |

### Acteoside

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Paulownia tormentosa*.
Storage temp.: +4 °C

**Type analysis:**

Purity (HPLC) ..... >98 %

| | | | |
|---|---|---|---|
| **4451.1** | 20 mg | glass | 413,90 € |

## Actidione

▶ Cycloheximide see p. 1852

## Actinomycin D

### Actinomycin D

**≥95 %, for biochemistry**

Peptide antibiotic. Pure actinomycin $C_1$.
Actinomycin IV, Actinomycin $C_1$, Dactinomycin
$C_{62}H_{86}N_{12}O_{16}$
M 1255,5 g/mol
mp 241-243 °C
Solubility: 40 g/l ($H_2O$, 10 °C)
Storage temp.: +4 °C
[50-76-0] • EC No. 200-063-6
UN No. 3462 • ADR 6.1 II • WGK 3

**Danger** H300

**Type analysis:**

Appearance ..... red to orange powder
Assay (HPLC) ..... ≥95,0 %

| | | | |
|---|---|---|---|
| **8969.1** | 5 mg | glass | 77,95 € |

For further information, please see page 1426

## Activation reagent

### Activation reagent

**for DNA synthesis with ABI™ and PolyGen® Synthesizer**

Tetrazole/Acetonitrile
D 0,79
flp +2 °C
UN No. 1648 • ADR 3 II • WGK 2

**Danger**
H225-H302+H312+H332-H319

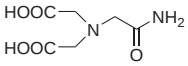
**Type analysis:**

Appearance. ..... clear, colourless solution
Assay (tetrazole) ..... 0,43-0,46 mol/l
Water (KF) ..... ≤0,003 %

| | | | |
|---|---|---|---|
| **2253.1** | 200 ml | glass | 104,85 € |
| **2253.2** | 450 ml | glass | 203,20 € |

For further information, please see page 1493

## ADA



### ADA

**PUFFERAN® ≥99 %**

N-(2-Acetamido)-iminodiacetic acid
$C_6H_{10}N_2O_5$
M 190,16 g/mol
mp 215 °C (dec.)
[26239-55-4] • EC No. 247-530-0

**Guarantee analysis:**

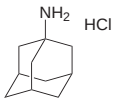
Appearance. ..... white powder
Assay (titr.) ..... ≥99,0 %
Lead (Pb) ..... ≤0,001 %
Iron (Fe) ..... ≤0,001 %
Loss on drying ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **0250.1** | 50 g | plastic | 22,05 € |
| **0250.2** | 100 g | plastic | 36,45 € |
| **0250.3** | 500 g | plastic | 127,95 € |
| Original pack 6 x 500 g | | | 121,55/500 g |

For further information, please see page 1268

A

## 1-Adamantanamine hydrochloride



### 1-Adamantanamine hydrochloride

**≥99 %, for synthesis**
Amantadine hydrochloride
$C_{10}H_{17}N \cdot HCl$
M 187,72 g/mol
mp >300 °C
[665-66-7] • EC No. 211-560-2
WGK 3

**Warning** H302

**Type analysis:**
Appearance. ..... white to off-white powder
Assay ..... ≥99,0 %
Identity. ..... complies
pH value (20 % in $H_2O$) ..... 3,0-5,5
Heavy metals (as Pb) ..... ≤0,001 %
Residual solvent (Acetone) ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7621.1** | 25 g | plastic | 21,40 € |
| **7621.2** | 100 g | plastic | 51,50 € |

## Adamantane



### Adamantane

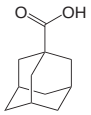
**≥99 %, for synthesis**
Tricyclo[3.3.1.1$^{3,7}$]decane
$C_{10}H_{16}$
M 136,24 g/mol
mp 266-268 °C
[281-23-2] • EC No. 206-001-4
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H410

**Type analysis:**
Appearance. ..... white to beige cryst. powder
Assay (GC). ..... ≥99,0 %
Identity (IR). ..... complies
Water (KF). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7620.1** | 25 g | glass | 16,70 € |
| **7620.2** | 100 g | glass | 32,15 € |

## 1-Adamantanecarboxylic acid



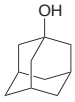
### 1-Adamantanecarboxylic acid

**≥99 %, for synthesis**
$C_{11}H_{16}O_2$
M 180,25 g/mol
mp 172-174 °C
[828-51-3] • EC No. 212-584-6
WGK 3

**Type analysis:**
Appearance. ..... white crystalline powder
Assay (titr.). ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7622.1** | 25 g | plastic | 22,05 € |
| **7622.2** | 100 g | plastic | 53,65 € |

## 1-Adamantanol



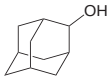
### 1-Adamantanol

**≥98,5 %, for synthesis**
1-Hydroxyadamantane
$C_{10}H_{16}O$
M 152,24 g/mol
mp 274-280 °C
[768-95-6] • EC No. 212-202-8
WGK 3

**Type analysis:**
Appearance. ..... white to off-white solid
Assay. ..... ≥98,5 %
Identity (IR). ..... complies
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7745.1** | 10 g | glass | 15,60 € |
| **7745.2** | 50 g | glass | 31,10 € |
| **7745.3** | 250 g | glass | 100,95 € |

## 2-Adamantanol



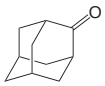
### 2-Adamantanol

**≥98 %, for synthesis**
2-Hydroxyadamantane
$C_{10}H_{16}O$
M 152,24 g/mol
mp 260-265 °C
[700-57-2] • EC No. 211-846-7
WGK 3

**Type analysis:**
Appearance. ..... white to yellow solid
Assay. ..... ≥98,0 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7863.1** | 5 g | glass | 24,20 € |
| **7863.2** | 25 g | glass | 66,55 € |
| **7863.3** | 50 g | glass | 107,40 € |

## 2-Adamantanone



### 2-Adamantanone

**≥99 %, for synthesis**
$C_{10}H_{14}O$
M 150,22 g/mol
mp 270 °C
[700-58-3] • EC No. 211-847-2
WGK 3

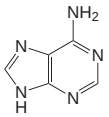
**Type analysis:**
Appearance. ..... white to off-white, cryst. powder
Assay (GC). ..... ≥99,0 %
Identity. ..... complies
Loss on drying ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **8406.1** | 25 g | glass | 24,20 € |
| **8406.2** | 100 g | glass | 75,15 € |

## ADCP

▶ 2-Amino-4,6-dichloropyrimidine see p. 1725

## Adenine



### Adenine

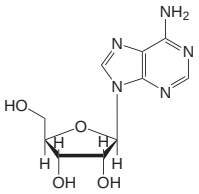
**≥98 %, for biochemistry**
6-Aminopurin, 1H-Purin-6-amin
$C_5H_5N_5$
M 135,13 g/mol
mp >300 °C
[73-24-5] • EC No. 200-796-1
UN No. 2811 • ADR 6.1 III • WGK 1

**Danger** H301

**Type analysis:**
Appearance. ..... white, cryst. powder
Assay (HPLC). ..... ≥98 %
Heavy metals (as Pb). ..... ≤0,001 %
Ash content (800 °C) ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **3025.1** | 5 g | glass | 16,70 € |
| **3025.2** | 25 g | glass | 41,40 € |

## Adenosine



### Adenosine

**≥99 %, p.a.**
9-β-D-Ribofuranosyladenine
$C_{10}H_{13}N_5O_4$
M 267,25 g/mol
mp 234-237 °C
[58-61-7] • EC No. 200-389-9
WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Appearance | white powder |
| Assay (HPLC) | ≥99,0 % |
| Heavy metals | ≤0,001 % |

| | | | |
|---|---|---|---|
| **6122.1** | 5 g | plastic | 16,05 € |
| **6122.2** | 10 g | plastic | 24,65 € |
| **6122.3** | 25 g | plastic | 49,35 € |

## Adenosine-BCE-phosphoramidite

### Adenosine-BCE-phosphoramidite

**for DNA-synthesis**
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-dA(N-Bz)P-($OCH_2CH_2CN$)-N($iPr)_2$
$C_{47}H_{52}N_7O_7P$
M 857,7 g/mol
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **K921.1** | 1 g | glass | 34,30 € |

For further information, please see page 1492

## Adenosine-CPG-Support

### Adenosine-CPG-Support

**500 Å pore size**
Support material for DNA-synthesis.
dA-lcaa-CPG
Storage temp.: +4 °C

**Type analysis:**

| | |
|---|---|
| Purity (HPLC) | ≥98,0 % |
| CPG loading | 30-40 µmol/g |
| Coupling efficiency | ≥99 % |

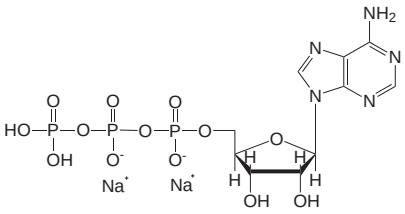
| | | | |
|---|---|---|---|
| **2318.3** | 1 g | plastic | 56,90 € |

For further information, please see page 1492

## Adenosine-5-triphosphate

▶ ATP solution see p. 1754
▶ ATP see p. 1754

## Adenosin-5'-triphosphate disodium salt (ATP)



### Adenosin-5'-triphosphate disodium salt (ATP)

**≥98 %, for biochemistry**
Coenzyme of kinases.
ATP disodium salt
$C_{10}H_{14}N_5Na_2O_{13}P_3$
M 551,10 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[987-65-5] • EC No. 213-579-1
WGK 1

**Type analysis:**

| | |
|---|---|
| Assay | ≥98 % |
| pH value | 2,5-3,5 |
| Chloride (Cl) | ≤0,05 % |
| Heavy metals | ≤0,002 % |
| Arsenic (As) | ≤0,0001 % |
| Loss on drying | 6,0-12,0 % |

| | | | |
|---|---|---|---|
| **HN35.1** | 5 g | glass | 23,15 € |
| **HN35.2** | 10 g | glass | 32,80 € |
| **HN35.3** | 25 g | glass | 61,20 € |
| **HN35.4** | 100 g | glass | 203,20 € |

For further information, please see page 1280

## Adermine hydrochloride

▶ Pyridoxine hydrochloride see p. 2185

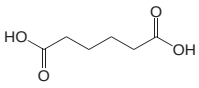
## ADF solution (acidic detergent solution)

### ADF solution (acidic detergent solution)

**for determination of acidic detergent fibre (ADF)**
acc. to VDLUFA method book, volume 3.
D 1,03
UN No. 1760 • ADR 8 III • WGK 2
**Warning** H290-H315-H319-H412

| | | | |
|---|---|---|---|
| **9942.1** | 1 l | plastic | 74,10 € |
| Original pack 6 x 1 l | | | 70,40/1 l |

## Adipic acid



### Adipic acid

**≥99,5 %, for biochemistry**
1,6-Hexanedioic acid
$C_6H_{10}O_4$
M 146,14 g/mol
D 1,37 • bp ~330 °C
mp 151 °C • flp 196 °C
Solubility: 15 g/l ($H_2O$, 20 °C)
[124-04-9] • EC No. 204-673-3
WGK 1
**Warning** H319

**Type analysis:**

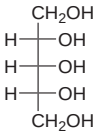
| | |
|---|---|
| Assay (dry substance) | ≥99,5 % |
| Water | ≤0,2 % |
| Nitrate ($NO_3$) | ≤0,0004 % |
| Ash | ≤0,0002 % |
| Iron (Fe) | ≤0,0001 % |

| | | | |
|---|---|---|---|
| **4475.2** | 100 g | plastic | 11,50 € |
| **4475.1** | 500 g | plastic | 23,15 € |
| Original pack 6 x 500 g | | | 21,99/500 g |
| **4475.3** | 1 kg | plastic | 39,25 € |
| Original pack 6 x 1 kg | | | 37,29/1 kg |

## Adonite

▶ Adonitol see p. 1709

## Adonitol



### Adonitol

**≥98 %, for biochemistry**
Adonite, Ribitol
$C_5H_{12}O_5$
M 152,15 g/mol
mp 101-105 °C
Storage temp.: +4 °C
[488-81-3] • EC No. 207-685-7
WGK 1

**Type analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥98 % |
| Solution (10 % in water) | colourless |
| Water (KF) | ≤0,5 % |
| Melting point | 101-105 °C |
| Heavy metals (as Pb) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **5522.1** | 1 g | glass | 16,70 € |
| **5522.2** | 5 g | plastic | 40,75 € |

A

## AEBSF hydrochloride

### AEBSF hydrochloride

**≥98 %, for biochemistry**

Inhibitor of serine proteases.

4-(2-Aminoethyl)benzenesulfonyl fluoride hydrochloride

$C_8H_{10}FNO_2S \cdot HCl$

M 239,69 g/mol

mp 175-177 °C

Storage temp.: -20 °C •
Transport temp.: room temp.

[30827-99-7]

UN No. 3261 • ADR 8 III • WGK 3

**Danger** H314

**Type analysis:**

Assay (HPLC)..... ≥98 %
No protected amines. ..... complies
Solubility (20 % in $H_2O$). ..... clear, colourless

| | | | |
|---|---|---|---|
| **2931.1** | 25 mg | plastic | 19,25 € |
| **2931.2** | 100 mg | plastic | 38,20 € |
| **2931.3** | 500 mg | plastic | 141,40 € |

For further information, please see page 1283

## Aerosil®

### Aerosil®

**≥99,8 %, powdered**

hydrophilic type

Pyrogenous silicic acid

$SiO_2$

M 60,09 g/mol

[7631-86-9] • EC No. 231-545-4

**Type analysis:**

Specific surface (BET).....200 ±25 $m^2/g$
pH value (4 % dispersion).....3,7-4,7
Loss on drying (2 h, 105 °C). ..... ≤1,5 %

| | | | |
|---|---|---|---|
| **9235.2** | 500 g | plastic | 51,50 € |
| Original pack 6 x 500 g | | | 48,93/500 g |
| **9235.1** | 1 kg | plastic | 93,00 € |
| Original pack 6 x 1 kg | | | 88,35/1 kg |

## Aerosporin

▶ Polymyxin B sulphate see p. 2159

## Aesculetine

▶ Esculetin see p. 1909

## Aesculin

▶ Esculin sesquihydrate see p. 1909

## Affinity chromatography columns/protein A conjugated

▶ Roti®garose-Protein A MINI columns see p. 2218
▶ Roti®garose-Protein A MIDI columns see p. 2218
▶ Roti®garose-Protein A MAXI columns see p. 2218

## Affinity chromatography columns/cobalt charged

▶ Roti®garose-His/Co Columns see p. 2217

## Affinity chromatography columns/nickel charged

▶ Roti®garose-His/Ni Cartridges see p. 2217
▶ Roti®garose-His/Ni Columns see p. 2217

## Agar-Agar

D 0,55

Storage temp.: +20 °C

[9002-18-0] • EC No. 232-658-1

### Agar-Agar, BioScience

**BioScience-Grade, powdered**

Agar of high purity for all culture media used in molecular- and microbiology. Recommended for plating in genetic engineering (GMOs).

**Guarantee analysis:**

Water content. ..... ≤12 %
Ash. ..... ≤5,0 %
Gel strength (1,5 % Nikan). ..... 800-1100 g/$cm^2$
Gelling temperature (1,5 % gel). ..... 35 ±3 °C
Melting temperature (1,5 % gel). ..... 85 ±5 °C
Turbidity (1,5 % solution). ..... ≤8 NTU
Absorption (450 nm). ..... ≤0,200
pH (1,5 % gel) before autoclaving. ..... 6,0-7,5

| | | | |
|---|---|---|---|
| **6494.1** | 250 g | plastic | 56,90 € |
| **6494.2** | 500 g | plastic | 96,65 € |
| Original pack 6 x 500 g | | | 91,82/500 g |
| **6494.3** | 1 kg | plastic | 172,00 € |
| Original pack 6 x 1 kg | | | 163,40/1 kg |
| **6494.4** | 2,5 kg | plastic | 381,65 € |

For further information, please see page 1423

### Agar-Agar, BioScience, granulated

**BioScience-Grade, granulated**

Agar of high purity for all culture media used in molecular- and microbiology. Recommended for plating in genetic engineering (GMOs).

**Guarantee analysis:**

Water content. ..... ≤10 %
Ash. ..... ≤5,0 %
Gel strength (1,5 % Nikan). ..... 800-1100 g/$cm^2$
Gelling temperature (1,5 % gel). ..... 35 ±3 °C
Melting temperature (1,5 % gel). ..... 85 ±5 °C
Turbidity (1,5 % solution). ..... ≤12 NTU
Absorption (450 nm). ..... ≤0,200
pH (1,5 % gel) before autoclaving. ..... 7,2 ±0,4
Granulation. ..... complies

| | | | |
|---|---|---|---|
| **1347.1** | 250 g | plastic | 67,65 € |
| **1347.2** | 500 g | plastic | 120,30 € |
| Original pack 6 x 500 g | | | 114,29/500 g |
| **1347.3** | 1 kg | plastic | 220,40 € |
| Original pack 6 x 1 kg | | | 209,38/1 kg |
| **1347.4** | 2,5 kg | plastic | 489,15 € |

For further information, please see page 1423

### Agar-Agar, bacteriological

**for bacteriology, extremely pure quality**

Ideal for immunodiffusion and electrophoresis and as a medium for tissue and cell cultures, bacteriology and mycology.

**Guarantee analysis:**

Electroendosmosis (EEO).....≤0,450
Water content. .....≤12 %
Ash.....≤1,6 %
Gel strength (1,5 % Nikan). ..... 500-1200 g/$cm^2$
Gelling temperature (1,5 % gel). .....34-38 °C
Melting temperature (1,5 % gel). .....85-90 °C
Turbidity (1,5 % solution). ..... ≤10 NTU
Absorption (450 nm). .....≤0,100
pH (1,5 % gel) before autoclaving. .....5,0-7,0
Resistance (1 % suspension).....≥20000 Ohm

| | | | |
|---|---|---|---|
| **2266.1** | 250 g | plastic | 107,00 € |
| **2266.3** | 500 g | plastic | 181,70 € |
| Original pack 6 x 500 g | | | 172,62/500 g |
| **2266.2** | 1 kg | plastic | 332,20 € |
| Original pack 6 x 1 kg | | | 315,59/1 kg |
| **2266.4** | 2,5 kg | plastic | 697,70 € |

For further information, please see page 1424

### Agar-Agar, Kobe I

**Kobe I, powdered, for microbiology**

Standard-Agar for application in culture media for molecular biology (e.g. LB medium) and microbiology.

**Type analysis:**

Gel strength (1,5 % gel). ..... ≥1000 g/$cm^2$
Gelling temperature. .....35-42 °C
Moisture. .....≤22 %
pH value .....5,0-8,0
Ash.....≤1,5 %

| | | | |
|---|---|---|---|
| **5210.1** | 250 g | plastic | 37,55 € |
| **5210.3** | 500 g | plastic | 64,00 € |
| Original pack 6 x 500 g | | | 60,80/500 g |
| **5210.2** | 1 kg | plastic | 120,95 € |
| Original pack 6 x 1 kg | | | 114,90/1 kg |
| **5210.4** | 2,5 kg | plastic | 252,65 € |
| **5210.5** | 5 kg | plastic | 450,45 € |

For further information, please see page 1423

### Agar-Agar, plant

**Genetic engineering quality, for plants**

For plant propagation and plant cell culture.

**Guarantee analysis:**

Water content. .....≤16 %
Ash.....6,5 %
Gel strength (1,5 % Nikan). ..... ≥900 g/$cm^2$
pH (1,5 % gel) before autoclaving. .....6,0-7,5
pH (1,5 % gel) after autoclaving. .....6,0-7,5
Gelling temperature. .....36 ±2 °C
Melting temperature. .....85-90 °C
Turbidity (1,5 % gel). ..... ≤15 NTU

| | | | |
|---|---|---|---|
| **4807.1** | 250 g | plastic | 80,65 € |
| **4807.2** | 500 g | plastic | 134,40 € |
| Original pack 6 x 500 g | | | 127,68/500 g |
| **4807.3** | 1 kg | plastic | 231,15 € |
| Original pack 6 x 1 kg | | | 219,59/1 kg |
| **4807.4** | 2,5 kg | plastic | 493,45 € |

For further information, please see page 1424

## Agar-Agar, danish

### Agar-Agar, danish

**Standardised Carrageenan mixture, sugar-containing, powdered**

Mixture of highly pured Carrageen extracts. For gelling of watery liquids like, e.g. media for cultivation of plants, and for special microbiological applications. Saccharated.

D 0,55

Storage temp.: +20 °C

[9002-18-0] • EC No. 232-658-1

**Type analysis:**

Appearance. ..... cream-coloured powder
Moisture. ..... <12 %
Sulphate (as $SO_4$, dry substance). ..... 15-40 %
Gel strength (1,5 % sol.). ..... ~400-500 g/cm²
Viscosity (1,5 % sol., 75 °C). ..... ≥0,005 Pas
pH value (1,5 % sol.). ..... 7,0-10,5
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0002 %
Mercury (Hg). ..... ≤0,0001 %
Methanol, ethanol, isopropanol. ..... ≤1 %
Ash insoluble in 1 % $H_2SO_4$ (dry substance). ..... ≤2 %
Standardized by mono- or disaccharides and KCl

| | | | |
|---|---|---|---|
| **4508.1** | 1 kg | plastic | 73,65 € |
| Original pack 6 x 1 kg | | | 69,97/1 kg |
| **4508.2** | 5 kg | plastic | 317,15 € |

For further information, please see page 1424

## Agar medium B

▶ CASO Agar see p. 1816
▶ CASO Agar, granulated see p. 1816

## Agar medium C

▶ Sabouraud 4 % Glucose Agar see p. 2237

## Agar medium F

▶ Violet Red Bile Agar with Dextrose and Lactose see p. 2371

## Agar medium H

▶ MacConkey Agar see p. 2047
▶ MacConkey Agar, granulated see p. 2047

## Agar medium J

▶ Deoxycholate Citrate Agar see p. 1860

## Agar medium K

▶ XLD-Agar see p. 2380

## Agar medium L

▶ Brilliant Green Lactose Sucrose Agar see p. 1785

## Agar medium M

▶ Triple Sugar Iron Agar see p. 2356

## Agar medium N

▶ Cetrimide Agar (Base) see p. 1823

## Agar medium O

▶ Baird Parker Agar (Base) see p. 1760

## Agar medium S

▶ R2A-Agar see p. 2191
▶ R2A-Agar, granulated see p. 2191

## Agarose

[9012-36-6] • EC No. 232-731-8

### Agarose Broad Range

**Roti®garose BioScience-Grade**

For gel electrophoresis, total size range (200 bp-40 kb).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... ≤0,12
Ash content. ..... ≤0,25 %
Sulphate ($SO_4$). ..... ≤0,12 %
Turbidity (1,5 % solution). ..... ≤4 NTU
Loss on drying. ..... ≤7 %
Gel strength (1 % gel). ..... ≥1800 g/cm²
Gel strength (1,5 % gel). ..... ≥3200 g/cm²
Gelling temperature. ..... 34,5-37,5 °C
Melting temperature. ..... 86,5-89,5 °C
DNA-separation (≥1000 bp). ..... complies
DNases, RNases. ..... none detected

| | | | |
|---|---|---|---|
| **T846.1** | 10 g | plastic | 24,20 € |
| **T846.2** | 100 g | plastic | 126,35 € |
| **T846.3** | 500 g | plastic | 536,45 € |
| Original pack 6 x 500 g | | | 509,63/500 g |

For further information, please see page 1161

### Agarose GTQ

**Roti®garose genetic engineering quality**

Especially tested agarose for gel elution and biomolecular approaches (500 bp-20 kb).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... ≤0,11
Water content. ..... ≤8 %
Ash. ..... ≤0,5 %
Sulphate ($SO_4$). ..... ≤0,1 %
Gel strength (1 % gel). ..... ≥1200 g/cm²
Gel strength (1,5 % gel). ..... ≥2300 g/cm²
Gelling temperature. ..... 36 ±2,0 °C
Melting temperature. ..... 92 ±2,0 °C
DNases, RNases. ..... none detected
DNA binding. ..... none detected

| | | | |
|---|---|---|---|
| **6352.1** | 10 g | plastic | 25,30 € |
| **6352.2** | 100 g | plastic | 155,90 € |
| **6352.4** | 500 g | plastic | 643,95 € |
| Original pack 6 x 500 g | | | 611,75/500 g |

For further information, please see page 1160

### Agarose HEEO ultra-quality

**Roti®garose high electroendosmosis (EEO = 0,23-0,26)**

Special agarose for protein separation and countercurrent electrophoresis.

**Guarantee analysis:**

Electroendosmosis (EEO). ..... 0,23-0,26
Water content. ..... ≤10 %
Ash. ..... ≤1,0 %
Sulphate ($SO_4$). ..... ≤0,2 %
Gel strength (1 % gel). ..... ≥750 g/cm²
Gel strength (1,5 % gel). ..... ≥1200 g/cm²
Gelling temperature (1,5 % gel). ..... 36 ±1,5 °C
Melting temperature (1,5 % gel). ..... 88 ±1,5 °C
Turbidity (1,5 % solution). ..... ≤4 NTU

| | | | |
|---|---|---|---|
| **2269.1** | 10 g | plastic | 22,05 € |
| **2269.2** | 100 g | plastic | 118,80 € |
| **2269.3** | 1 kg | plastic | 837,45 € |
| Original pack 6 x 1 kg | | | 795,58/1 kg |

For further information, please see page 1163

### Agarose High Resolution

**Roti®garose for small fragments**

Special agarose for PCR gels and small DNA fragments (50 bp-1 kb).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... ≤0,12
Water content. ..... ≤7 %
Ash. ..... ≤0,35 %
Sulphate ($SO_4$). ..... ≤0,11 %
Gel strength (1,5 % gel). ..... ≥600 g/cm²
Gel strength (3 % gel). ..... ≥1500 g/cm²
Gelling temperature (3 % gel). ..... ≤35,5 °C
Melting temperature (3 % gel). ..... ≤80 °C
Turbidity (1,5 % solution). ..... ≤5 NTU
DNases, RNases. ..... none detected

| | | | |
|---|---|---|---|
| **K297.1** | 10 g | plastic | 53,65 € |
| **K297.2** | 100 g | plastic | 346,70 € |
| **K297.3** | 500 g | plastic | 1494,25 € |
| Original pack 6 x 500 g | | | 1419,54/500 g |

For further information, please see page 1162

### Agarose HR-PLUS

**Roti®garose for analytical gels**

Special agarose for use in the main analytical range (100 bp-3 kb).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... ≤0,12
Water content. ..... ≤7 %
Ash. ..... ≤4 %
Sulphate ($SO_4$). ..... ≤0,11 %
Gel strength (1,5 % gel). ..... ≥1500 g/cm²
Gelling temperature (1,5 % gel). ..... ~36 °C
Melting temperature (1,5 % gel). ..... ~88 °C
Turbidity (1,5 % solution). ..... ≤4 NTU
DNases, RNases. ..... none detected
DNA binding. ..... very low

| | | | |
|---|---|---|---|
| **HP30.1** | 10 g | plastic | 45,05 € |
| **HP30.2** | 100 g | plastic | 278,45 € |
| **HP30.3** | 500 g | plastic | 1073,95 € |
| Original pack 6 x 500 g | | | 1020,25/500 g |

For further information, please see page 1162

### Agarose MEEO ultra-quality

**Roti®garose medium electroendosmosis (EEO = 0,16-0,19)**

Special agarose for immuno, countercurrent, serum and antibody electrophoresis (500 bp-10 kb).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... 0,16-0,19
Water content. ..... ≤7 %
Ash. ..... ≤0,5 %
Sulphate ($SO_4$). ..... ≤0,14 %
Gel strength (1 % gel). ..... ≥1000 g/cm²
Gel strength (1,5 % gel). ..... ≥2200 g/cm²
Gelling temperature (1,5 % gel). ..... 36 ±1,5 °C
Melting temperature (1,5 % gel). ..... 88 ±1,5 °C
Turbidity (1,5 % solution). ..... ≤4 NTU

| | | | |
|---|---|---|---|
| **2268.1** | 10 g | plastic | 20,35 € |
| **2268.2** | 100 g | plastic | 112,80 € |
| **2268.4** | 500 g | plastic | 471,95 € |
| Original pack 6 x 500 g | | | 448,35/500 g |
| **2268.3** | 1 kg | plastic | 794,45 € |
| Original pack 6 x 1 kg | | | 754,73/1 kg |

For further information, please see page 1162

A

## Agarose NEEO ultra-quality

**Roti®garose low electroendosmosis (EEO = 0,05-0,13)**

High-quality agarose for all general applications (500 bp-20 kb).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... ≤0,12
Water content. ..... ≤8,5 %
Ash. ..... ≤0,6 %
Sulphate ($SO_4$). ..... ≤0,14 %
Gel strength (1 % gel). ..... ≥1200 g/cm²
Gelling temperature (1,5 % gel). ..... 36 ±2,0 °C
Melting temperature (1,5 % gel). ..... 90-95 °C
DNases, RNases. ..... none detected

| | | | |
|---|---|---|---|
| **2267.1** | 10 g | plastic | 19,25 € |
| **2267.2** | 100 g | plastic | 91,95 € |
| **2267.5** | 250 g | plastic | 209,65 € |
| **2267.4** | 500 g | plastic | 396,70 € |
| Original pack 6 x 500 g | | | 376,87/500 g |
| **2267.3** | 1 kg | plastic | 665,45 € |
| Original pack 6 x 1 kg | | | 632,18/1 kg |

For further information, please see page 1159

## Agarose Pulsed-Field

**Roti®garose for Pulsed Field electrophoresis, genetic engineering quality**

Special agarose for separation of large fragments (20-50 kb).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... ≤0,05
Sulphate ($SO_4$). ..... ≤0,10 %
Loss on drying. ..... ≤10 %
Gel strength (1 % gel). ..... ≥1800 g/cm²
Gelling temperature. ..... 36 ±1,5 °C
Melting temperature. ..... 90-95 °C
DNases, RNases. ..... none detected

| | | | |
|---|---|---|---|
| **3771.1** | 10 g | plastic | 29,60 € |
| **3771.2** | 25 g | plastic | 53,65 € |
| **3771.3** | 100 g | plastic | 166,65 € |
| **3771.4** | 250 g | plastic | 338,65 € |

For further information, please see page 1161

## Agarose Standard

**Roti®garose for DNA/RNA-electrophoresis**

General agarose for routine gels, student's courses, and standard analyses (1 kb-20 kb).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... ≤0,12
Sulphate ($SO_4$). ..... ≤0,15 %
Loss on drying. ..... ≤10 %
Ash. ..... ≤0,6 %
Gel strength (1 % gel). ..... ≥1100 g/cm²
Gelling temperature (1,5 % gel). ..... 36 ±2 °C
Melting temperature (1,5 % gel). ..... 90-95 °C
DNases, RNases. ..... none detected

| | | | |
|---|---|---|---|
| **3810.1** | 10 g | plastic | 16,35 € |
| **3810.2** | 100 g | plastic | 66,55 € |
| **3810.3** | 500 g | plastic | 263,40 € |
| Original pack 6 x 500 g | | | 250,23/500 g |
| **3810.4** | 1 kg | plastic | 424,65 € |
| Original pack 6 x 1 kg | | | 403,42/1 kg |

For further information, please see page 1159

## Agarose-Tablets

**Roti®garose 0,5 g agarose/tablet**

Standard agarose with low EEO, for routine analyses (≥300 bp).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... 0,05-0,1
Water content. ..... <10 %
Sulphate ($SO_4$). ..... <0,2 %
Gel strength (1,5 % gel). ..... ≥1200 g/cm²
Gelling temperature. ..... 37 ±2,0 °C
Melting temperature. ..... 89 ±1,0 °C
DNases, RNases. ..... none detected

| | | | |
|---|---|---|---|
| **HP67.1** | 10 g | plastic | 23,55 € |
| **HP67.2** | 50 g | plastic | 74,95 € |
| **HP67.3** | 100 g | plastic | 137,60 € |
| **HP67.4** | 250 g | plastic | 320,35 € |
| **HP67.5** | 300 g | plastic | 376,25 € |

For further information, please see page 1160

## Agarose Low Melt

Hydroxyethyl agarose
[39346-81-1]

## Agarose LM/PCR

**Roti®garose with low melting and gelling temperature, genetic engineering quality**

Particularly for gel elution of small fragments (50 bp-1500 bp).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... ≤0,13
Water content. ..... ≤7 %
Ash. ..... ≤0,45 %
Sulphate ($SO_4$). ..... ≤0,12 %
Gel strength (4 % gel). ..... ≥800 g/cm²
Gelling temperature (4 % gel). ..... ≤35 °C
Melting temperature (4 % gel). ..... ≤65 °C
Turbidity (4 % solution). ..... ≤6 NTU
DNases, RNases. ..... none detected
DNA binding. ..... none detected
In-gel-processing. ..... complies
Agarase digest. ..... complies

| | | | |
|---|---|---|---|
| **HP31.1** | 5 g | plastic | 40,75 € |
| **HP31.2** | 100 g | plastic | 547,20 € |
| **HP31.3** | 250 g | plastic | 1073,95 € |

For further information, please see page 1163

## Agarose Low Melt

**Roti®garose with low melting and gelling temperature**

Particularly for gel elution and in-gel-application in a wide size range (500 bp-20kb).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... ≤0,12
Water content. ..... ≤10 %
Ash. ..... ≤0,4 %
Sulphate ($SO_4$). ..... ≤0,12 %
Gel strength (1,5 % gel). ..... ≥500 g/cm²
Gelling temperature (1,5 % gel). ..... ≤28 °C
Melting temperature (1,5 % gel). ..... ≤65,5 °C
Turbidity (1,5 % solution). ..... ≤4 NTU
DNases, RNases. ..... none detected

| | | | |
|---|---|---|---|
| **6351.1** | 5 g | plastic | 37,55 € |
| **6351.5** | 25 g | plastic | 154,30 € |
| **6351.2** | 100 g | plastic | 536,45 € |
| **6351.4** | 500 g | plastic | 2144,65 € |
| Original pack 6 x 500 g | | | 2037,42/500 g |

For further information, please see page 1163

## Agarose Super LM

**Roti®garose with particularly low melting and gelling temperature**

Particularly for gel elution from melted agarose, capillary electrophoresis and in-gel processing (≥1000 bp).

**Guarantee analysis:**

Electroendosmosis (EEO). ..... ≤0,12
Water content. ..... ≤7 %
Ash. ..... ≤0,35 %
Sulphate ($SO_4$). ..... ≤0,14 %
Gel strength (1,5 % gel). ..... ≥300 g/cm²
Gelling temperature (1,5 % gel). ..... ≤20 °C
Melting temperature (1,5 % gel). ..... ≤62 °C
Turbidity (1,5 % solution). ..... ≤4 NTU
DNases, RNases. ..... none detected

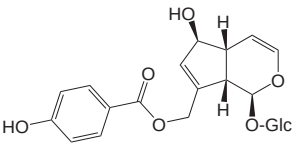
| | | | |
|---|---|---|---|
| **HP45.1** | 5 g | plastic | 39,70 € |
| **HP45.2** | 100 g | plastic | 550,95 € |
| **HP45.3** | 250 g | plastic | 1101,90 € |

For further information, please see page 1164

## Agarose beads for affinity chromatography


- Roti®garose-His/Ni Beads see p. 2217
- Roti®garose-Protein A Beads see p. 2218
- Roti®garose-His/Co Beads see p. 2217


## Agnuside




### Agnuside

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Vitex agnus castus.*
10-p-Hydroxybenzoylaucubin
$C_{22}H_{26}O_{11}$
M 466,44 g/mol
Storage temp.: +4 °C
[11027-63-7]

**Type analysis:**

Purity (HPLC). ..... >98 %

| | | | |
|---|---|---|---|
| **1081.1** | 10 mg | glass | 295,65 € |

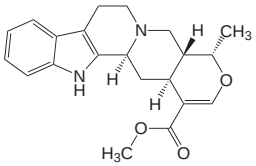
## H-D-Aha-OH · HCl


- D-γ-Azidohomoalanine hydrochloride see p. 1757


## H-L-Aha-OH · HCl


- L-γ-Azidohomoalanine hydrochloride see p. 1757

## Ajmalicine



### Ajmalicine

**~98 %**
Raubasine, δ-Yohimbine
$C_{21}H_{24}N_2O_3$
M 352,54 g/mol
mp 261-263 °C
[483-04-5] • EC No. 207-589-5
WGK 1

**Warning** H302

**Type analysis:**
Appearance. ..... white to yellow powder
Assay (titr.). ..... ≥98 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6192.1** | 250 mg | glass | 60,10 € |

## AKASOLV Aqua Care

### AKASOLV Aqua Care

**pH ~7**
Concentration to stop the formation of algae, mould fungus and bacteria in water baths and thermostat circulation.
WGK 1

**Warning** H315-H319-H411

| | | | |
|---|---|---|---|
| **AN93.1** | 100 ml | plastic | 16,35 € |

For further information, please see page 1119

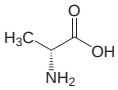
## H-β-Ala-His-OH

▶ L-Carnosine see p. 1814

## H-Ala(Me)-OH

▶ 2-Aminoisobutyric acid see p. 1726

## D-Alanine



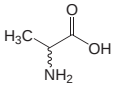
### D-Alanine

**≥99 %, for biochemistry**
*(R)*-2-Aminopropionic acid, H-D-Ala-OH
$C_3H_7NO_2$
M 89,10 g/mol
Storage temp.: +4 °C
[338-69-2] • EC No. 206-418-1
WGK 1

**Type analysis:**
Appearance. ..... white to off-white powder
Assay. ..... 99,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in 1 N HCl). ..... -15,0° to -13,0°
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7866.1** | 5 g | plastic | 21,00 € |
| **7866.2** | 25 g | plastic | 64,00 € |
| **7866.3** | 100 g | plastic | 192,45 € |

## DL-Alanine



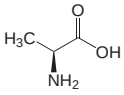
### DL-Alanine

**≥99 %, for biochemistry**
2-Aminopropionic acid
M 89,10 g/mol
mp 295-300 °C (dec.)
Solubility: ~167 g/l ($H_2O$, 25 °C)
[302-72-7] • EC No. 206-126-4
WGK 1

**Type analysis:**
Appearance. ..... white powder
Assay (titr.). ..... ≥99 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **9798.2** | 25 g | plastic | 11,00 € |
| **9798.1** | 100 g | plastic | 22,05 € |
| **9798.3** | 250 g | plastic | 42,50 € |

## L-Alanine



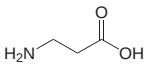
### L-Alanine

**≥99 %, for biochemistry**
*(S)*-2-Aminopropionic acid, H-L-Ala-OH
$C_3H_7NO_2$
M 89,10 g/mol
Solubility: ~167 g/l ($H_2O$, 25 °C)
[56-41-7] • EC No. 200-273-8
WGK 1

**Guarantee analysis:**
Appearance. ..... white, cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Specific rotation $[\alpha]_D^{20}$. ..... +13,5° to +15,5°
Ammonium ($NH_4$). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,03 %
Loss on drying. ..... ≤0,5 %
Loss on ignition. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **3076.1** | 25 g | plastic | 19,90 € |
| **3076.2** | 250 g | plastic | 100,55 € |

## β-Alanine



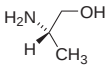
### β-Alanine

**≥99 %, for biochemistry**
3-Aminopropionic acid
M 89,10 g/mol
D 1,44
mp 208 °C (dec.)
Solubility: ~545 g/l ($H_2O$, 20 °C)
[107-95-9] • EC No. 203-536-5

**Type analysis:**
Assay (perchloric acid titration). ..... ≥99 %
Heavy metals. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **3078.2** | 50 g | plastic | 24,65 € |
| **3078.1** | 250 g | plastic | 70,85 € |

## L-Alaninol



### L-Alaninol

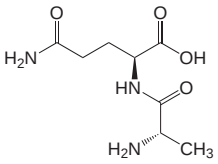
**≥98 %, for biochemistry**
S(+)-2-Amino-1-propanol
$C_3H_9NO$
M 75,11 g/mol
bp 173-176 °C
flp 62 °C
Storage temp.: +4 °C
[2749-11-3] • EC No. 220-388-7
UN No. 2735 • ADR 8 II • WGK 2

**Danger** H314

**Type analysis:**
Assay (titr.). ..... ≥98 %
Solution (2 % in ethanol). ..... clear, colourless
Specific rotation $[\alpha]_D^{20}$ (c=2 in ethanol). ..... +20,0° to + 24,0°
Refractive index $n_D^{20}$. ..... 1,4493-1,4503
Water (KF). ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **5521.1** | 1 g | plastic | 24,65 € |
| **5521.2** | 5 g | glass | 91,30 € |
| **5521.3** | 10 g | glass | 145,70 € |

## L-Alanyl-L-glutamine



$C_8H_{15}N_3O_4$
M 217,22 g/mol
mp 209 °C (dec.)
Solubility: 450 g/l ($H_2O$, 20 °C)
[39537-23-0]
WGK 1

### L-Alanyl-L-glutamine

**CELLPURE® ≥99 %**

**Type analysis:**

Appearance. ..... white, cryst. powder
Assay (dry substance). ..... ≥99 %
Endotoxins. ..... ≤12,0 E.U./g
Specific rotation $[\alpha]_D^{20}$. ..... +9,0° to +11,0°
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Loss on drying. ..... ≤0,5 %
Ash content. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **6831.1** | 5 g | plastic | 31,75 € |
| **6831.2** | 10 g | plastic | 44,00 € |
| **6831.3** | 25 g | plastic | 88,05 € |
| **6831.4** | 100 g | plastic | 299,95 € |

### L-Alanyl-L-glutamine

**≥98 %, for biochemistry**

**Type analysis:**

Assay (dry substance). ..... ≥98 %
Specific rotation $[\alpha]_D^{20}$. ..... +9,0° to +11,0°
Ammonium ($NH_4$). ..... ≤0,05 %
Chloride (Cl). ..... ≤0,05 %
Sulphate ($SO_4$). ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,001 %
Loss on drying. ..... ≤1 %

| | | | |
|---|---|---|---|
| **6830.1** | 10 g | plastic | 37,55 € |
| **6830.2** | 50 g | plastic | 132,15 € |

## Alanyl-L-glutamine solution

▶ Roti®-CELL Glutamine solution see p. 2206

## N-β-Alanyl-L-histidine

▶ L-Carnosine see p. 1814

## Albumin

BSA
M ~66 000 g/mol
Storage temp.: +4 °C
[9048-46-8] • EC No. 232-936-2
WGK 1

### Albumin, fatty acid-free, US-Origin

**≥98 %, fatty acid-free, for molecular biology**

Suitable as blocking or stabilising reagent in all fatty acid-sensitive assays. Recommended if BSA with US-Origin is required.

**Guarantee analysis:**

Appearance. ..... flakes
Colour. ..... pale yellow to beige
Origin. ..... USA
Assay. ..... ≥98 %
Protein. ..... ≥96 %
Water content. ..... ≤3 %
Heavy metals. ..... ≤2 ppm
pH value (10 % in $H_2O$). ..... 6,0-7,5
IgG (COBAS). ..... none detected
Endotoxin content. ..... ≤5 E.U./mg
Total fatty acids. ..... <0,01 %

| | | | |
|---|---|---|---|
| **9638.1** | 1 g | plastic | 18,85 € |
| **9638.2** | 10 g | plastic | 96,25 € |
| **9638.3** | 50 g | plastic | 375,20 € |
| **9638.4** | 100 g | plastic | 591,25 € |

For further information, please see page 1296

### Albumin, IgG free

**>98 %, IgG-free, for biochemistry and molecular biology**

Recommended as blocking and stabilising reagent in all antibody-mediated detection systems.

**Guarantee analysis:**

Appearance. ..... flakes
Colour. ..... yellow to beige
Assay (HPLC). ..... >98 %
Dry extract. ..... ≥94 %
Iron (Fe). ..... <15 mg/g
Sodium (Na). ..... <10 mg/g
Chloride (Cl). ..... <0,5 %
Solution (2 % in $H_2O$). ..... soluble
pH value (2 % in $H_2O$). ..... 6,5-7,5
IgG (HPLC). ..... none detected
Protease. ..... none detected
DNAse. ..... none detected
RNAse. ..... none detected

| | | | |
|---|---|---|---|
| **3737.1** | 10 g | plastic | 54,75 € |
| **3737.2** | 50 g | plastic | 152,15 € |
| **3737.3** | 200 g | plastic | 456,90 € |
| **3737.4** | 500 g | plastic | 938,50 € |
| Original pack 6 x 500 g | | | 891,58/500 g |

For further information, please see page 1297

### Albumin, nuclease-free

**>99 %, nuclease-free, for molecular biology**

Especially suitable for incubation methods with restriction-endonucleases and nucleic acid modifying enzymes.

Lyophilised, acetylated

**Guarantee analysis:**

Protein (in dry substance). ..... ≥95 %
Immunoglobuline. ..... <1 %
Assay. ..... >99 %
Water . ..... <1 %
Ash. ..... <2 %
Nicking activity. ..... none detected
Ribonucleases activity. ..... none detected
Exonuclease activity. ..... none detected
Phosphatases activity. ..... none detected
Acetylated from BSA solutions.

| | | | |
|---|---|---|---|
| **8895.1** | 10 mg | glass | 31,75 € |
| **8895.2** | 100 mg | glass | 169,75 € |

For further information, please see page 1295

## Albumin Fraction V

BSA
M ~66 000 g/mol
Storage temp.: +4 °C
[90604-29-8] • EC No. 292-322-5
WGK 1

### Albumin Fraction V

**≥98 %, powdered, for molecular biology**

Wide range of applications, e.g. as protein standard or blocking reagent.

**Guarantee analysis:**

Appearance. ..... beige, fine powder
Assay (HPLC). ..... ≥98 %
Solution (2 % in $H_2O$). ..... clear
pH value (2 % in $H_2O$). ..... 6,5-7,5
Loss on drying. ..... ≤6 %
Sulphated ash. ..... ≤3 %
Nitrogen (N). ..... ≥14 %
Fat. ..... ≤1 %

| | | | |
|---|---|---|---|
| **8076.1** | 10 g | plastic | 26,80 € |
| **8076.2** | 50 g | plastic | 84,40 € |
| **8076.4** | 200 g | plastic | 289,20 € |
| **8076.3** | 500 g | plastic | 643,95 € |
| Original pack 6 x 500 g | | | 611,75/500 g |
| **8076.5** | 1 kg | plastic | 1095,45 € |
| Original pack 6 x 1 kg | | | 1040,68/1 kg |

For further information, please see page 1295

## Albumin Fraction V, biotin-free

**≥98 %, biotin-free, for molecular biology**

Excellent as blocking and stabilising reagent in all biotin/streptavidin-mediated detection systems.

**Guarantee analysis:**

Appearance. ..... fine to coarse powder
Colour. ..... beige
Assay. ..... ≥98 %
Solution (2 % in $H_2O$). ..... soluble
pH value (2 % in $H_2O$). ..... 6,5-7,5
Loss on drying. ..... ≤6 %
Sulphated ash. ..... ≤3 %
Nitrogen (N). ..... ≥14 %
Fat. ..... ≤1 %
Biotin. ..... none detected

| | | | |
|---|---|---|---|
| **0163.1** | 10 g | plastic | 33,25 € |
| **0163.2** | 50 g | plastic | 103,10 € |
| **0163.4** | 200 g | plastic | 360,15 € |
| **0163.3** | 500 g | plastic | 772,95 € |
| Original pack 6 x 500 g | | | 734,30/500 g |

For further information, please see page 1296

## Albumin Fraction V, very low endotoxin

**CELLPURE® >98 %, very low endotoxin**

With extremely low endotoxin content. Recommended for the culture of primary cells and cell lines, as well as for sensitive cell culture assays.

**Guarantee analysis:**

Appearance. ..... light flakes
Colour. ..... pale yellow
Assay. ..... >98 %
Protein. ..... >920 mg/g
Water content. ..... <5,0 %
pH value (10 % in $H_2O$). ..... 6,5-7,4
Endotoxin content. ..... <2 E.U./mg

| | | | |
|---|---|---|---|
| **CP77.1** | 10 g | plastic | 138,70 € |
| **CP77.2** | 50 g | plastic | 536,45 € |

For further information, please see page 1298

## Albumin Fraction V, endotoxin-tested

**CELLPURE® >98 %, low endotoxin**

With low endotoxin content. Recommended for culturing of cell lines.

**Guarantee analysis:**

Appearance. ..... flakes
Colour. ..... pale yellow
Assay. ..... >98 %
Protein. ..... >92 %
Water content. ..... <5,0 %
pH value (10 % in $H_2O$). ..... 7,0 ±0,5
Endotoxin content. ..... <15 E.U./mg

| | | | |
|---|---|---|---|
| **CP84.1** | 10 g | plastic | 34,30 € |
| **CP84.2** | 50 g | plastic | 105,90 € |
| **CP84.3** | 500 g | plastic | 837,45 € |
| Original pack 6 x 500 g | | | 795,58/500 g |

For further information, please see page 1297

## Albumin Fraction V, fatty acid-free

**≥98 %, fatty acid-free, for molecular biology**

Excellent when working with membrane-associated proteins.

**Guarantee analysis:**

Appearance. ..... flakes
Colour. ..... pale yellow
Assay. ..... ≥98 %
Protein. ..... ≥97 %
Water content. ..... <3 %
pH value (10 % in water). ..... 6,5-7,4
Total fatty acids. ..... <0,01 %

| | | | |
|---|---|---|---|
| **0052.1** | 1 g | glass | 18,20 € |
| **0052.2** | 10 g | plastic | 95,15 € |
| **0052.3** | 50 g | plastic | 375,20 € |

For further information, please see page 1296

## Albumin Fraction V, pH 5,2

**>97 %, powdered, for protein analysis**

Non-neutralized albumin. Suitable as protein standard or hapten carrier, recommmended for use in ELISA and Western-Blotting.

**Guarantee analysis:**

Appearance. ..... flakes
Colour. ..... pale yellow to greenish
Assay. ..... >97 %
Protein. ..... >92 %
Dry extract. ..... >95 %
pH value (10 % solution). ..... 5,2 ±0,4

| | | | |
|---|---|---|---|
| **2834.1** | 10 g | plastic | 39,70 € |
| **2834.2** | 50 g | plastic | 126,35 € |
| **2834.3** | 200 g | plastic | 396,70 € |
| **2834.4** | 500 g | plastic | 805,20 € |
| Original pack 6 x 500 g | | | 764,94/500 g |

For further information, please see page 1296

## Albumin Fraction V, protease-free

**≥98 %, protease-free, for molecular biology**

For all sensitive enzymatic assays.

**Guarantee analysis:**

Appearance. ..... flakes
Colour. ..... yellow to beige
Assay. ..... ≥98 %
Protein. ..... ≥92 %
Loss on drying. ..... ≤5,0 %
pH value (10 % in water). ..... 6,5-7,4
Protease (hemoglobine hydrolysis). ..... none detected

| | | | |
|---|---|---|---|
| **T844.1** | 10 g | plastic | 53,65 € |
| **T844.2** | 50 g | plastic | 123,65 € |
| **T844.4** | 200 g | plastic | 407,45 € |
| **T844.3** | 500 g | plastic | 843,90 € |
| Original pack 6 x 500 g | | | 801,71/500 g |

For further information, please see page 1295

## Albumin Fraction V, US-Origin

**≥98 %, powdered, for molecular biology and biochemistry**

Suitable as blocking or stabilising reagent in all general assays. Recommended if BSA with US-Origin is required.

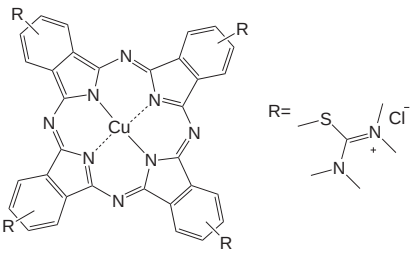
**Guarantee analysis:**

Appearance. ..... powder to flakes
Colour. ..... off-white to beige
Origin. ..... USA
Assay (HPLC). ..... ≥98,0 %
Protein. ..... ≥96,0 %
Dry extract. ..... ≥97,0 %
Sodium (Na). ..... ≤11,5 mg/g
Chloride (Cl). ..... ≤17,7 mg/g
Calcium (Ca). ..... ≤0,25 mg/g
Potassium (K). ..... ≤2 mg/g
Phosphorus (P). ..... ≤0,3 mg/g
Heavy metals. ..... ≤10 ppm
pH value (10 % solution). ..... 6,0-7,5

| | | | |
|---|---|---|---|
| **3854.1** | 10 g | plastic | 30,00 € |
| **3854.2** | 50 g | plastic | 90,85 € |
| **3854.3** | 200 g | plastic | 310,70 € |
| **3854.4** | 500 g | plastic | 671,90 € |
| Original pack 6 x 500 g | | | 638,31/500 g |
| **3854.5** | 1 kg | plastic | 1116,95 € |
| Original pack 6 x 1 kg | | | 1061,10/1 kg |

For further information, please see page 1295

## Alcian blue 8 GS (C.I. 74240)




## Alcian blue 8 GS (C.I. 74240)

**for microscopy**

Bacteriology and histology.
Alcian Blue 8 GX, Ingrain Blue 1
Solubility: 8 g/l ($H_2O$, 25 °C)
[33864-99-2] • EC No. 251-705-7
WGK 2

**Type analysis:**

Appearance. ..... dark blue powder
λ max.. ..... 610-625 nm
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **3082.2** | 5 g | glass | 35,40 € |
| **3082.1** | 10 g | glass | 60,10 € |
| **3082.3** | 25 g | glass | 132,15 € |
| **3082.4** | 100 g | glass | 403,15 € |

For further information, please see page 1461

A

## Alcian blue 1 % in acetic acid 3 %

### Alcian blue 1 % in acetic acid 3 %

NEW

**for microscopy**

For selective staining of acidic mucins.
Alcian Blue solution 1 %
Storage temp.: +20 °C
WGK 1

**Type analysis:**

Appearance. ..... deep blue liquid
Odour. ..... of acetic acid

| | | | |
|---|---|---|---|
| **1431.1** | 500 ml | glass | 150,00 € |
| **1431.2** | 1 l | glass | 226,85 € |
| Original pack 6 x 1 l | | | 215,51/1 l |

For further information, please see page 1458

## Alcohol C 16

▶ Cetyl alcohol see p. 1823

## Alcohols


| Art. No. | Description | Page |
|---|---|---|
| 0336 | Benzyl alcohol | 1769 |
| 4478 | Benzyl alcohol | 1769 |
| 6724 | Bioethanol 96 % | 1773 |
| 6726 | Bioethanol 96 % denatured | 1773 |
| 7473 | 1,3-Butanediol | 1793 |
| 4211 | 1,4-Butanediol | 1793 |
| T178 | 1-Butanol | 1794 |
| 7171 | 1-Butanol | 1794 |
| 7724 | 1-Butanol | 1794 |
| 9098 | 1-Butanol | 1794 |
| KK02 | 2-Butanol | 1794 |
| AE16 | tert-Butanol | 1795 |
| 4323 | tert-Butanol | 1795 |
| 5762 | Cetyl alcohol | 1823 |
| 4104 | 4-Chloro-1-naphthol | 1829 |
| 7756 | Cyclohexanol | 1852 |
| 4151 | 1-Decanol | 1858 |
| 9853 | 1-Dodecanol | 1893 |
| P076 | Ethanol | 1910 |
| 9065 | Ethanol | 1910 |
| 0911 | Ethanol denatured | 1911 |
| 5054 | Ethanol | 1911 |
| K928 | Ethanol denatured | 1911 |
| P075 | Ethanol 96 % | 1911 |
| T171 | Ethanol 96 % denatured | 1911 |
| 9474 | Ethanol 80 % denatured | 1911 |
| T868 | Ethanol 70 % | 1912 |
| 7301 | Ethanol 70 % | 1912 |
| T913 | Ethanol 70 % denatured | 1912 |
| 5127 | 2-Ethoxyethanol | 1913 |
| 3827 | 1-Heptanol | 1975 |
| 3173 | 1-Heptanol | 1975 |
| 3847 | 1-Hexanol | 1979 |
| 3174 | 1-Hexanol | 1979 |
| 3756 | trans-2-Hexen-1-ol | 1980 |
| 6257 | 4-Hydroxybenzyl alcohol | 1994 |
| T870 | Isoamyl alcohol | 2013 |
| 8930 | Isoamyl alcohol | 2013 |
| 6029 | Lignoceryl alcohol | 2036 |
| 4227 | 2-Mercaptoethanol | 2063 |
| HN41 | Methanol | 2067 |
| AE71 | Methanol | 2067 |
| X948 | Methanol | 2068 |
| 7342 | Methanol | 2068 |
| KK39 | Methanol | 2068 |
| P717 | Methanol | 2068 |
| KK44 | Methanol | 2068 |
| 7583 | Methanol | 2068 |
| T169 | Methanol | 2068 |
| T909 | Methanol | 2068 |
| 5181 | Methanol | 2068 |
| AE01 | Methanol | 2068 |
| 0082 | Methanol | 2069 |
| 9785 | Methanol | 2069 |
| 4627 | Methanol | 2069 |
| CP43 | Methanol | 2069 |
| 8388 | Methanol | 2069 |
| 9976 | Methanol 60 % | 2069 |
| CP08 | 2-Methoxyethanol | 2071 |
| 4379 | 2-Methyl-1-butanol | 2073 |
| 6772 | 2-Methyl-1-propanol | 2077 |
| CP09 | 2-Methyl-1-propanol | 2077 |
| 4439 | 1-Octanol | 2109 |
| 3182 | 1-Octanol | 2109 |
| 8949 | 1-Pentanol | 2136 |
| 9077 | 1-Pentanol | 2136 |
| 7135 | (-)- Perillic alcohol | 2139 |
| 4348 | 2-Phenoxyethanol | 2146 |
| 4422 | 2-Phenylethanol | 2147 |
| T177 | 1-Propanol | 2179 |
| 6776 | 1-Propanol | 2179 |
| 9169 | 1-Propanol | 2179 |
| 4916 | 1-Propanol | 2179 |
| AE73 | 2-Propanol | 2179 |
| 7343 | 2-Propanol | 2180 |
| 7590 | 2-Propanol | 2180 |
| T902 | 2-Propanol | 2180 |
| T910 | 2-Propanol | 2180 |
| 9781 | 2-Propanol | 2180 |
| 6752 | 2-Propanol | 2180 |
| CP41 | 2-Propanol | 2180 |
| 9866 | 2-Propanol | 2180 |
| CN09 | 2-Propanol 70 % | 2181 |
| 8663 | Stearyl alcohol | 2316 |


## sec. Alcoxy polyethylene glycol

▶ Tergitol™ 15-S-9 see p. 2332

## Alginic acid

### Alginic acid

**≥98 %, for biochemistry**

Norgine
$(C_6H_8O_6)_n$
M ~100 000 g/mol
Solubility: insoluble, ($H_2O$, 20 °C)
[9005-32-7] • EC No. 232-680-1

**Type analysis:**

Assay. ..... ≥98 %
Loss on drying. ..... ≤15 %
Heavy metals. ..... ≤0,004 %

| | | | |
|---|---|---|---|
| **8696.1** | 250 g | plastic | 30,00 € |
| **8696.3** | 1 kg | plastic | 92,35 € |
| Original pack 6 x 1 kg | | | 87,73/1 kg |
| **8696.2** | 2,5 kg | plastic | 209,65 € |

## Alginic acid ammonium salt

### Alginic acid ammonium salt

**for biochemistry**

From seaweed.
Ammonium alginate
$(C_{18}H_{23}O_{19})_n NH_4$
[9005-34-9]
WGK 1

**Type analysis:**

Appearance. ..... beige powder
Loss on drying. ..... ≤15 %
Ash (800 °C). ..... ≤7,0 %
pH value (1 % solution). ..... 5,5-7,5
Viscosity (1 % solution, 20 °C). ..... 100-150 mPas
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **7317.1** | 250 g | plastic | 32,15 € |
| **7317.2** | 1 kg | plastic | 89,15 € |
| Original pack 6 x 1 kg | | | 84,69/1 kg |

## Alginic acid sodium salt

### Alginic acid sodium salt

**for biochemistry**

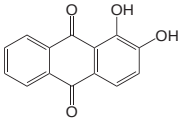
From brown algae.
Sodium alginate
[9005-38-3]
WGK 1

**Type analysis:**

Appearance. ..... fine white to cream-coloured powder
Loss on drying. ..... ≤15 %
Ash (800 °C). ..... 18,0-27,0 %
pH value (1 % solution). ..... 5,5-8,0
Viscosity (1 % solution, 20 °C). ..... 350-550 mPas
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **9180.1** | 250 g | plastic | 28,95 € |
| **9180.2** | 1 kg | plastic | 78,40 € |
| Original pack 6 x 1 kg | | | 74,48/1 kg |

## Alizarin (C.I. 58000)




### Alizarin (C.I. 58000)

**p.a.**

Indicator pH 5,5-6,8 and 10,1-12,1
1,2-Dihydroxyantraquinone
$C_{14}H_8O_4$
M 240,21 g/mol
bp 430 °C
mp 290 °C
[72-48-0] • EC No. 200-782-5
WGK 2

**Type analysis:**

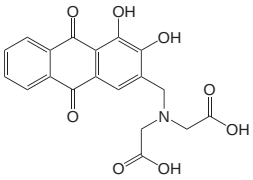
Appearance. ..... orange powder
Loss on drying (105 °C). ..... ≤1,5 %
Sulphated ash. ..... ≤1 %
pH transition range. ..... 5,5 (yellow)-6,8 (violet)
pH-transition range. ..... 10,1 (violet)-12,1 (purple)

| | | | |
|---|---|---|---|
| **4476.2** | 25 g | glass | 23,15 € |
| **4476.1** | 50 g | glass | 34,30 € |
| **4476.3** | 100 g | glass | 46,15 € |

## Alizarin carmine

▶ Alizarin red S (C.I. 58005) see p. 1717

## Alizarin complexone dihydrate



### Alizarin complexone dihydrate

**≥97 %, p.a.**

Detection reagent for fluoride.

Alizarin-3-methyliminodiacetic acid, Alizarin Fluorine Blue

$C_{19}H_{15}NO_8 \cdot 2\ H_2O$

M 421,36 g/mol

mp 190 °C

Solubility: 0,2 g/l ($H_2O$, 20 °C)

[3952-78-1]

WGK 3

**Type analysis:**

Appearance. ..... yellow to brown powder
Appearance of solution (1 % in 1 M NaOH). ..... blue to purple
Assay (dry substance). ..... ≥97 %
Water (KF). ..... ≤9,5 %
Sulphated ash. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7634.1** | 1 g | glass | 31,10 € |
| **7634.2** | 5 g | glass | 96,65 € |
| **7634.3** | 10 g | glass | 160,20 € |

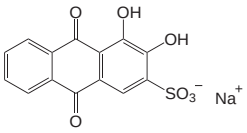
## Alizarin fluorine blue

▶ Alizarin complexone dihydrate see p. 1717

## Alizarin-3-methyliminodiacetic acid

▶ Alizarin complexone dihydrate see p. 1717

## Alizarin red S (C.I. 58005)



### Alizarin red S (C.I. 58005)

Indicator pH 4,3-6,3 and pH 9,4-12,0

Alizarin sulphonic acid sodium salt, Alizarin carmine

$C_{14}H_7NaO_7S$

M 342,26 g/mol

mp >250 °C

[130-22-3] • EC No. 204-981-8

WGK 1

**Type analysis:**

Absorption max. (in $H_2O$). ..... 550-560 nm
Loss on drying (110 °C). ..... ≤5,0 %
pH-transition range. ..... 4,3 (yellow)-6,3 (red-violet)
pH-transition range ... 9,4 (brown orange)-12,0 (purple)
Suitability as indicator. ..... complies

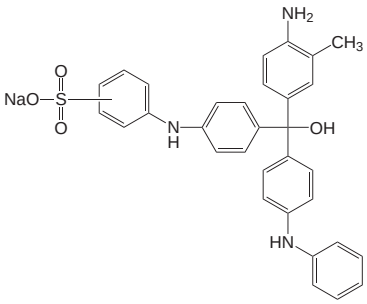
| | | | |
|---|---|---|---|
| **0348.1** | 10 g | glass | 19,25 € |
| **0348.2** | 25 g | glass | 30,00 € |
| **0348.3** | 100 g | glass | 92,35 € |

For further information, please see page 1469

## Alizarin sulphonic acid sodium salt

▶ Alizarin red S (C.I. 58005) see p. 1717

## Alkali blue 6B (C.I. 42750)



### Alkali blue 6B (C.I. 42750)

**p.a.**

Indicator pH 9,4-14,0

Acid blue 110

$C_{32}H_{28}N_3NaO_4S$

M 573,65 g/mol

mp >250 °C

[30586-13-1] • EC No. 250-253-8

WGK 2

**Warning** H315-H319-H335

**Type analysis:**

Dye content. ..... ≥75 %
pH-transition range. ..... 9,4 (blue)-14,0 (red)

| | | | |
|---|---|---|---|
| **5155.1** | 10 g | glass | 20,35 € |
| **5155.2** | 25 g | glass | 39,70 € |
| **5155.3** | 100 g | glass | 117,20 € |

## Alkaline phosphatase

### Alkaline phosphatase

**≥2000 Glycine U/mg protein (approx. 6000 DEA U/mg protein)**

From bovine intestinal mucosa. Solution in 50 % glycerol, 5 mM Tris/HCl, 5 mM $MgCl_2$ and 0,1 mM $ZnCl_2$, pH approx. 7,0.

Phosphatase, alkaline; ALP; AP

M ~120 000 g/mol

Storage temp.: +4 °C

[9001-78-9] • EC No. 232-631-4

WGK 1

**Type analysis:**

Activity. ..... ≥2000 glycine U/mg protein
Protein concentration. ..... 10-20 mg/ml

| | | | |
|---|---|---|---|
| **6024.1** | 10 KU | plastic | 364,45 € |

For further information, please see page 1276

## Alkalis


| Art. No. | Description | Page |
|---|---|---|
| HN66 | Ammonia solution Ultra-quality | 1728 |
| HN56 | Ammonia solution Supra-quality | 1728 |
| P093 | Ammonia solution 32 % | 1728 |
| A990 | Ammonia solution 32 % | 1728 |
| CP17 | Ammonia solution 30 % | 1729 |
| 6774 | Ammonia solution 25 % | 1729 |
| 5460 | Ammonia solution 25 % | 1729 |
| 6753 | Ammonia solution 20 % | 1729 |
| 4346 | Ammonia solution 15 % | 1729 |
| 6756 | Ammonia solution 10 % | 1729 |
| 5609 | Barium hydroxide hydrate | 1762 |
| P009 | Barium hydroxide octahydrate | 1762 |
| HN75 | Barium hydroxide octahydrate | 1762 |
| 5617 | Calcium hydroxide | 1805 |
| CN87 | Calcium hydroxide | 1805 |
| 3529 | Calcium hydroxide | 1805 |
| 9864 | Copper(II) hydroxide | 1844 |
| 6705 | Lithium hydroxide | 2041 |
| 3997 | Lithium hydroxide monohydrate | 2041 |
| A122 | Piperidine | 2154 |
| 0976 | Piperidine | 2154 |
| 5658 | Potassium hydroxide | 2170 |
| 6751 | Potassium hydroxide | 2170 |
| 7986 | Potassium hydroxide | 2170 |
| 7949 | Potassium hydroxide solution 50 % | 2170 |
| 0995 | Potassium hydroxide solution 45 % | 2170 |
| 4330 | Potassium hydroxide solution 20 % | 2170 |
| 6771 | Sodium hydroxide | 2276 |
| 9356 | Sodium hydroxide | 2276 |
| 8655 | Sodium hydroxide solution 50 % | 2276 |
| 0993 | Sodium hydroxide solution 45 % | 2276 |
| 4347 | Sodium hydroxide solution 40 % | 2276 |
| T196 | Sodium hydroxide solution 32 % | 2277 |
| T197 | Sodium hydroxide solution 32 % | 2277 |
| 4351 | Sodium hydroxide solution 25 % | 2277 |
| 4357 | Sodium hydroxide solution 20 % | 2277 |
| 4358 | Sodium hydroxide solution 10 % | 2277 |
| 4359 | Sodium hydroxide solution 5 % | 2277 |

A

## Alkalis in Pharmacopoeia Quality


| Art. No. | Description | Page |
|---|---|---|
| 2610 | Ammonia solution 25 % | 1729 |
| KK03 | Calcium hydroxide | 1805 |
| 9453 | Magnesium hydroxide | 2050 |
| P747 | Potassium hydroxide | 2170 |
| P031 | Sodium hydroxide | 2276 |

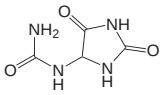

## Alkaloids


| Art. No. | Description | Page |
|---|---|---|
| 7975 | 7-O-Acetylintermedine | 1703 |
| 7980 | 7-O-Acetylintermedine N-oxide | 1703 |
| 6192 | Ajmalicine | 1713 |
| 4602 | Arecoline hydrobromide | 1750 |
| 3192 | Berberine chloride hydrate | 1770 |
| 8900 | Boldine | 1782 |
| 4255 | Brucine N-oxide | 1791 |
| N815 | Caffeine | 1802 |
| 7212 | DL-Carnitinchloride | 1814 |
| 4192 | (-)-α-Chaconine | 1823 |
| 6235 | Chelidonine | 1825 |
| 3406 | Choline hydroxide | 1831 |
| 8872 | Cinchonidine | 1834 |
| 8875 | Cinchonine | 1834 |
| 8884 | Colchicine | 1839 |
| 8985 | Corynanthine | 1846 |
| 5615 | Cytisine | 1855 |
| 7992 | Echimidine | 1898 |
| 8011 | Echimidine N-oxide | 1898 |
| 4116 | Emetine dihydrochloride | 1904 |
| 1657 | (Z)-Erucifoline | 1908 |
| 1664 | (Z)-Erucifoline N-oxide | 1908 |
| 1676 | Europine hydrochloride | 1923 |
| 1687 | Europine-N-oxide | 1923 |
| 6571 | Gelsemine hydrochloride | 1948 |
| 9968 | Harmine | 1968 |
| 1929 | Heliotrine | 1970 |
| 1944 | Heliotrine N-oxide | 1970 |
| 7855 | DL-Homatropine hydrobromide | 1982 |
| 4268 | Hydrocotarnine hydrobromide | 1989 |
| 6984 | 6-Hydroxytropinone | 1996 |
| 8914 | L-Hyoscyamine | 1997 |
| 6416 | Hypoxanthine | 1999 |
| 1960 | Indicine hydrochloride | 2001 |
| 1961 | Indicine N-oxide | 2001 |
| 1962 | Intermedine | 2005 |
| 8018 | Intermedine N-oxide | 2006 |
| 1963 | Jacobine | 2018 |
| 1970 | Jacobine N-oxide | 2018 |
| 2090 | Lasiocarpine | 2029 |
| 2202 | Lasiocarpine N-oxide | 2029 |
| 8997 | Lobeline sulphate | 2042 |
| 2208 | Lycopsamine | 2045 |
| 8022 | Lycopsamine N-oxide | 2045 |
| 2249 | Monocrotaline N-oxide | 2083 |
| 8746 | (-)-Nicotine | 2094 |
| 9113 | 1,10-Phenanthroline monohydrate | 2144 |
| 7523 | Pilocarpin nitrate | 2153 |
| 7099 | Piperine | 2154 |
| 6690 | Protopine | 2183 |
| 3348 | Quinidine sulphate dihydrate | 2190 |
| 6225 | Quinine hydrochloride dihydrate | 2191 |
| 7144 | Rauwolscine hydrochloride | 2192 |
| 4295 | Reserpic acid hydrochloride hemihydrate | 2196 |
| 1213 | Retrorsine | 2196 |
| 6733 | Retrorsine-N-oxide | 2197 |
| 7153 | Scopolamine hydrobromide trihydrate | 2243 |
| 2261 | Senecionine | 2245 |
| 6734 | Senecionine N-oxide | 2246 |
| 6414 | Seneciphylline | 2246 |
| 1214 | Seneciphylline | 2246 |
| 6735 | Seneciphylline N-oxide | 2246 |
| 2209 | Senecivernine | 2246 |
| 2215 | Senecivernine N-oxide | 2246 |
| 4934 | Senkirkine | 2246 |
| 4696 | Skatole | 2264 |
| 2826 | α-Solanine | 2287 |
| 4180 | α-Solanine | 2287 |
| 9457 | Stachydrine hydrochloride | 2292 |
| 4843 | Strychnine | 2318 |
| 4845 | Strychnine hydrochloride | 2318 |
| 4277 | Strychnine N-oxide | 2318 |
| 8963 | Theobromine | 2339 |
| 5676 | Tomatin | 2348 |
| 5413 | Trigonelline hydrochloride | 2354 |
| 4049 | Tropine | 2359 |


## Alkane C30

▶ Squalane see p. 2292

## Allantoin



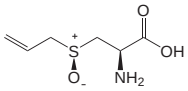
### Allantoin

**≥99 %**
Glyoxyldiureide, 5-Ureidohydantoin
$C_4H_6N_4O_3$
M 158,12 g/mol
mp 223-224 °C (dec.)
[97-59-6] • EC No. 202-592-8
WGK 1

**Type analysis:**
Appearance.....white to off-white, cryst. powder
Assay. ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %
Melting point (dec.)..... 223-224 °C

| | | | |
|---|---|---|---|
| **6327.2** | 100 g | plastic | 28,95 € |
| **6327.1** | 250 g | plastic | 60,10 € |

## Alliin



### Alliin

**ROTICHROM® HPLC**
Reference substance for HPLC.
(S)-3-(Allylsulphinyl)-L-alanine
$C_6H_{11}NO_3S$
M 177,22 g/mol
Storage temp.: +4 °C
[556-27-4] • EC No. 209-118-9

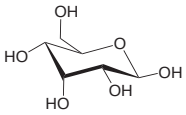
**Type analysis:**
Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **K031.1** | 10 mg | plastic | 274,15 € |

## β-D-Allopyranose

▶ D-Allose see p. 1718

## D-Allose



### D-Allose

**≥99 %**
D-Allopyranose
$C_6H_{12}O_6$
M 180,16 g/mol
mp 143-146 °C
[2595-97-3] • EC No. 219-994-4

**Type analysis:**
Appearance. .....white powder
Assay. .....≥99 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$). ..... 13,5° to 16,5°
Sulphated ash. .....≤0,05 %
Heavy metals. .....≤0,001 %

| | | | |
|---|---|---|---|
| **6010.2** | 50 mg | glass | 30,00 € |
| **6010.1** | 100 mg | glass | 41,40 € |

## Alloy acc. to Wood

### Alloy acc. to Wood

**used for metal heating baths**
Low melting point, Bi 50 %/ Cd 12,5 %/ Pb 25 %/ Sn 12,5 %. Can be used for manufacturing metal heating baths, for sealing and as a lead fuse.
Wood's metall
D ~8,6
mp ~70 °C
UN No. 2570 • ADR 6.1 II • WGK 3
**Danger** H302-H330-H341-H350-H360Df-H372-H410-EUH201

| | | | |
|---|---|---|---|
| **1980.1** | 250 g | plastic | 35,40 € |
| **1980.2** | 1 kg | plastic | 110,20 € |
| Original pack 6 x 1 kg | | | 104,69/1 kg |

## 4-Allyl anisole

▶ Methylchavicol see p. 2073

## 4-Allyl-1,2-dimethoxybenzene

▶ Eugenol methyl ether see p. 1922

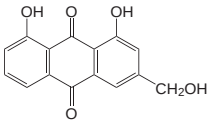
## 4-Allyl-2-methoxyphenol

▶ Eugenol see p. 1922

## (S)-3-(Allylsulphinyl)-L-alanine

▶ Alliin see p. 1718

## Aloe-emodin



$C_{15}H_{10}O_5$
M 270,23 g/mol
mp 223-225 °C
Storage temp.: +4 °C
[481-72-1] • EC No. 207-571-1
WGK 1

**Warning** H315-H319-H335

### Aloe-emodin
**ROTICHROM® HPLC**
Reference substance for HPLC.

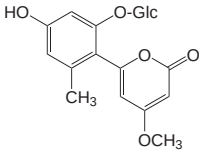
**Type analysis:**
Purity (HPLC)..... ≥98,5 %

| | | | |
|---|---|---|---|
| **6004.2** | 20 mg | glass | 237,60 € |

### Aloe-emodin
**ROTICHROM® TLC**

| | | | |
|---|---|---|---|
| **3524.1** | 100 mg | plastic | 375,20 € |

## Aloenin A

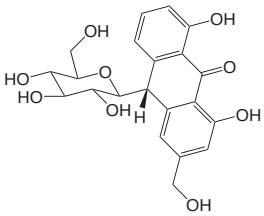


### Aloenin A
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Aloe arborescens.*
$C_{19}H_{22}O_{10}$
M 410,38 g/mol
Storage temp.: +4 °C
[38412-46-3]

**Type analysis:**
Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **1082.1** | 20 mg | glass | 467,65 € |

## Aloin



$C_{21}H_{22}O_9$
M 418,40 g/mol
mp 148-152 °C
Storage temp.: +4 °C
[5133-19-7]

**Warning** H302

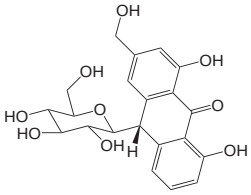
### Aloin
**ROTICHROM® TLC**
Reference substance for thin layer chromatography

| | | | |
|---|---|---|---|
| **5555.1** | 50 mg | glass | 59,05 € |

### Aloin
**ROTICHROM® CHR, cryst.**

| | | | |
|---|---|---|---|
| **4568.1** | 250 mg | glass | 51,50 € |

## Aloin A



### Aloin A
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{21}H_{22}O_9$
M 418,40 g/mol
Storage temp.: +4 °C
[1415-73-2]

**Warning** H302

**Type analysis:**
Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **4744.1** | 25 mg | glass | 97,30 € |

## ALP
▶ Alkaline phosphatase see p. 1717

## Alum
▶ Potassium aluminium sulphate dodecahydrate see p. 2162

## Alum chrome
▶ Chromium(III) potassium sulphate dodecahydrate see p. 1832

## Alumina
▶ Aluminium oxide see p. 1721

## Aluminium granulate

Al
M 26,98 g/mol
D 2,7 • bp 2500 °C
mp 660 °C
[7429-90-5] • EC No. 231-072-3

### Aluminium granulate
**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**
Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5577.1** | 25 g | plastic | 44,00 € |
| **5577.2** | 100 g | plastic | 119,90 € |

### Aluminium granulate
**≥99,5 %, gran., ~1-5 mm**

**Type analysis:**
Assay (Al)..... ≥99,5 %

| | | | |
|---|---|---|---|
| **5280.1** | 250 g | glass | 18,85 € |
| **5280.2** | 1 kg | glass | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |

## Aluminium powder

### Aluminium powder
**≥99,5 %, powdered, <160 µm**
Al
M 26,98 g/mol
bp 2500 °C
mp 660 °C
[7429-90-5] • EC No. 231-072-3
UN No. 1309 • ADR 4.1 III

**Danger** H228-H261

**Type analysis:**
Assay (Al)..... ≥99,5 %
Filled under protective gas.

| | | | |
|---|---|---|---|
| **5285.1** | 250 g | glass | 27,45 € |
| **5285.2** | 1 kg | glass | 69,80 € |
| Original pack 6 x 1 kg | | | 66,31/1 kg |

## Aluminium Standards
▶ Aluminium AAS Standard Solution see p. 2294
▶ Aluminium ICP Standard Solution see p. 2297
▶ Aluminium ICP Standard Solution see p. 2301

A

## Aluminium ammonium sulphate dodecahydrate

### Aluminium ammonium sulphate dodecahydrate

**≥99 %, p.a., ACS**

Ammonium aluminium sulphate, Ammonium alum

$NH_4Al(SO_4) \cdot 12\ H_2O$

M 453,33 g/mol

mp 93 °C

Solubility: 150 g/l ($H_2O$, 20 °C)

[7784-26-1] • EC No. 232-055-3

WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Assay (compl.) | ≥99,0 % |
| pH value (5 % solution) | ≥3,0 |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Chloride (Cl) | ≤0,001 % |
| Nitrate ($NO_3$) | ≤0,001 % |
| Silicate ($SiO_3$) | ≤0,002 % |
| Phosphate ($PO_4$) | ≤0,0025 % |
| Arsenic (As) | ≤0,00005 % |
| Lead (Pb) | ≤0,001 % |
| Calcium (Ca) | ≤0,05 % |
| Iron (Fe) | ≤0,001 % |
| Copper (Cu) | ≤0,0005 % |
| Potassium (K) | ≤0,05 % |
| Sodium (Na) | ≤0,01 % |
| Heavy metals (as Pb) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **X862.1** | 500 g | plastic | 30,00 € |
| Original pack 6 x 500 g | | | 28,50/500 g |
| **X862.2** | 1 kg | plastic | 48,95 € |
| Original pack 6 x 1 kg | | | 46,50/1 kg |
| **X862.3** | 2,5 kg | plastic | 99,90 € |

## Aluminium carbide

### Aluminium carbide

**pure, powdered**

$Al_4C_3$

M 143,96 g/mol

D 2,36

mp 2100 °C

[1299-86-1] • EC No. 215-076-2

UN No. 1394 • ADR 4.3 II • WGK 1

**Danger** H261-H315-H319-H335

**Type analysis:**

| | |
|---|---|
| Aluminium (Al) | ≥72 % |
| Carbon (C) | ≥24 % |
| Nitrogen (N) | ≤0,9 % |
| Iron (Fe) | ≤0,2 % |
| Oxygen ($O_2$) | ≤1,7 % |

| | | | |
|---|---|---|---|
| **3094.2** | 25 g | glass | 84,85 € |
| **3094.1** | 100 g | glass | 295,65 € |

## Aluminium chloride

### Aluminium chloride

**≥98 %, anhydrous, sublimated**

Hydrochloric acid aluminium salt anhydrous

$AlCl_3$

M 133,34 g/mol

D 1,31

mp ~181 °C (subl.)

Solubility: 450 g/l ($H_2O$, 20 °C)

[7446-70-0] • EC No. 231-208-1

UN No. 1726 • ADR 8 II • WGK 1

**Danger** H314-EUH014

**Type analysis:**

| | |
|---|---|
| Assay | ≥98 % |
| Sulphate ($SO_4$) | ≤0,05 % |
| Iron (Fe) | ≤0,02 % |
| Heavy metals | ≤0,005 % |

| | | | |
|---|---|---|---|
| **CN86.1** | 100 g | glass | 12,80 € |
| **CN86.2** | 500 g | glass | 25,30 € |
| Original pack 6 x 500 g | | | 24,04/500 g |
| **CN86.3** | 1 kg | glass | 40,35 € |
| Original pack 6 x 1 kg | | | 38,33/1 kg |

## Aluminium chloride hexahydrate

$AlCl_3 \cdot 6\ H_2O$

M 241,43 g/mol

D ~2,4

mp ~100 °C

Solubility: 1330 g/l ($H_2O$, 20 °C)

[7784-13-6] • EC No. 231-208-1

WGK 1

**Warning** H315-H319

### Aluminium chloride hexahydrate

**ROTI®METIC 99,9999 % (6N)**

**Type analysis:**

Assay (metals basis) ..... 99,9999 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5368.1** | 25 g | plastic | 91,30 € |
| **5368.2** | 100 g | plastic | 332,20 € |

### Aluminium chloride hexahydrate

**≥95 %, Ph.Eur., USP**

**Guarantee analysis:**

| | |
|---|---|
| Assay (compl.) | 95,0-101,0 % |
| Identity | complies |
| Appearance of solution | complies |
| Alkali and alkaline earth metals | ≤0,5 % |
| $SO_4$ content | ≤0,01 % |
| Sulphate ($SO_4$) | complies |
| Water (KF) | 42-48 % |
| Heavy metals (as Pb) | ≤0,002 % |
| Iron (Fe) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **CP88.1** | 500 g | plastic | 27,55 € |
| Original pack 6 x 500 g | | | 26,17/500 g |
| **CP88.2** | 1 kg | plastic | 44,65 € |
| Original pack 6 x 1 kg | | | 42,42/1 kg |
| **CP88.3** | 2,5 kg | plastic | 88,70 € |

## Aluminium fluoride

### Aluminium fluoride

**ROTI®METIC 99,99 % (4N), anhydrous**

Aluminium trifluoride

$AlF_3$

M 83,98 g/mol

D 3,1

mp ~1272 °C (subl.)

Solubility: 5 g/l ($H_2O$, 20 °C)

[7784-18-1] • EC No. 232-051-1

WGK 1

**Warning** H302-H315-H319-H335

**Type analysis:**

Assay (metals basis) ..... 99,99 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5395.1** | 10 g | plastic | 81,60 € |
| **5395.2** | 50 g | plastic | 289,20 € |

## Aluminium-nickel alloy

▶ Nickel-aluminium alloy see p. 2093

## Aluminium nitrate nonahydrate

$Al(NO_3)_3 \cdot 9\ H_2O$

M 375,13 g/mol

mp 73 °C

Solubility: 419 g/l ($H_2O$, 20 °C)

[7784-27-2] • EC No. 236-751-8

UN No. 1438 • ADR 5.1 III • WGK 1

**Danger** H272-H315-H319

### Aluminium nitrate nonahydrate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis) ..... 99,999 %

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5567.1** | 10 g | plastic | 39,25 € |
| **5567.2** | 50 g | plastic | 113,45 € |

### Aluminium nitrate nonahydrate

**≥98 %, p.a.**

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥98 % |
| pH value (5 %, 20 °C) | 2,5-3,5 |
| Chloride (Cl) | ≤0,005 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Calcium (Ca) | ≤0,02 % |
| Iron (Fe) | ≤0,005 % |
| Potassium (K) | ≤0,05 % |
| Magnesium (Mg) | ≤0,005 % |
| Sodium (Na) | ≤0,02 % |

| | | | |
|---|---|---|---|
| **CN85.1** | 500 g | plastic | 19,90 € |
| Original pack 6 x 500 g | | | 18,91/500 g |
| **CN85.2** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |
| **CN85.3** | 2,5 kg | plastic | 59,05 € |

## Aluminium oxide

### Aluminium oxide

**ROTI®METIC 99,995 % (4N5)**

Alumina
$Al_2O_3$
M 101,94 g/mol
D 3,97 • bp 2980 °C
mp 2045 °C
[1344-28-1] • EC No. 215-691-6

**Type analysis:**

Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5575.1** | 5 g | plastic | 39,25 € |
| **5575.2** | 25 g | plastic | 106,45 € |

## Aluminium oxide, nano

### Aluminium oxide, nano

**ROTI®nanoMETIC ≥99,9 %, 40 nm**

$Al_2O_3$
M 101,94 g/mol
D 3,97 • bp 2980 °C
mp 2045 °C
[1344-28-1] • EC No. 215-691-6
WGK 1

**Type analysis:**

Assay (metals basis)..... ≥99,9 %
Particle size. ..... ~40 nm
Specific surface (BET). ..... ≥40 $m^2/g$
Loss on drying (2 h, 105 °C). ..... ≤3 %
Phase. ..... gamma
Stabilized with $HNO_3$

| | | | |
|---|---|---|---|
| **8250.1** | 10 g | glass | 21,40 € |
| **8250.2** | 50 g | glass | 81,60 € |
| **8250.3** | 100 g | glass | 133,20 € |

## Aluminium oxide, neutral, basic, acidic

$Al_2O_3$
M 101,94 g/mol
[1344-28-1] • EC No. 215-691-6

### Aluminium oxide 90 neutral

**for column chromatography**

**Guarantee analysis:**

Particle size. ..... 0,063-0,2 mm (70 %)
pH value (10 %). ..... 6,8-7,8
Chloride (Cl). ..... ≤0,1 %
Calcium (Ca). ..... ≤0,15 %
Material washed out by $H_2O$. ..... ≤0,2 %
Filtration rate. ..... ≥0,3 ml/min
Activity stage I

| | | | |
|---|---|---|---|
| **P092.1** | 500 g | plastic | 63,35 € |
| Original pack 6 x 500 g | | | 60,18/500 g |
| **P092.2** | 1 kg | plastic | 112,90 € |
| Original pack 6 x 1 kg | | | 107,26/1 kg |
| **P092.3** | 2,5 kg | plastic | 244,60 € |

For further information, please see page 1596

### Aluminium oxide 90 basic

**for column chromatography**

**Guarantee analysis:**

Particle size. ..... 0,063-0,2 mm (70 %)
pH value (10 %). ..... 8,5-10,5
Chloride (Cl). ..... ≤0,004 %
Sulphate ($SO_4$). ..... ≤0,1 %
Filtration rate. ..... ≥0,3 ml/min
Activity stage I

| | | | |
|---|---|---|---|
| **X908.1** | 500 g | plastic | 63,35 € |
| Original pack 6 x 500 g | | | 60,18/500 g |
| **X908.2** | 1 kg | plastic | 112,90 € |
| Original pack 6 x 1 kg | | | 107,26/1 kg |
| **X908.3** | 2,5 kg | plastic | 244,60 € |

For further information, please see page 1596

### Aluminium oxide 90 acidic

**for column chromatography**

**Guarantee analysis:**

Particle size. ..... 0,063-0,2 mm (70 %)
pH value (10 %). ..... 3,5-4,5
Chloride (Cl). ..... ≤0,2 %
Sulphate ($SO_4$). ..... ≤0,1 %
Filtration rate. ..... ≥0,3 ml/min
Activity stage I

| | | | |
|---|---|---|---|
| **X909.1** | 500 g | plastic | 61,20 € |
| Original pack 6 x 500 g | | | 58,14/500 g |
| **X909.2** | 1 kg | plastic | 110,20 € |
| Original pack 6 x 1 kg | | | 104,69/1 kg |
| **X909.3** | 2,5 kg | plastic | 235,45 € |

For further information, please see page 1596

## Aluminium potassium sulphate

▶ Potassium aluminium sulphate dodecahydrate see p. 2162

## Aluminium sulphate hydrate

### Aluminium sulphate hydrate

**cryst.**

$Al_2O_{12}S_3 \cdot 13,5\text{-}15,0\ H_2O$
M 342,14 + x $H_2O$ g/mol
bp 770 °C (dec.)
mp 90-95 °C
Solubility: 360 g/l ($H_2O$, 20 °C)
[17927-65-0] • EC No. 233-135-0
WGK 1

**Danger** H318

**Type analysis:**

Assay (as $Al_2O_3$)..... 16,5-17,5 %
Alkalinity. ..... ≤0,5 % OH
Iron (Fe)..... ≤0,05 %

| | | | |
|---|---|---|---|
| **3731.1** | 1 kg | plastic | 16,70 € |
| Original pack 6 x 1 kg | | | 15,87/1 kg |
| **3731.2** | 5 kg | plastic | 39,70 € |

## Aluminium sulphate hexadecahydrate

### Aluminium sulphate hexadecahydrate

**≥98 %, p.a., ACS**

$Al_2O_{12}S_3 \cdot 16\ H_2O$
M 630,39 g/mol
[16828-11-8]
WGK 1

**Danger** H318

**Guarantee analysis:**

Appearance. ..... white crystals
Assay (titr.)..... 98,0-102,0 %
Insoluble matter. ..... ≤0,01 %
Chloride (Cl)..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,002 %
Potassium (K). ..... ≤0,005 %
Magnesium (Mg). ..... ≤0,002 %
Sodium (Na)..... ≤0,02 %

| | | | |
|---|---|---|---|
| **5340.2** | 100 g | plastic | 16,70 € |
| **5340.1** | 500 g | plastic | 39,25 € |
| Original pack 6 x 500 g | | | 37,29/500 g |
| **5340.3** | 1 kg | plastic | 67,20 € |
| Original pack 6 x 1 kg | | | 63,84/1 kg |

## Aluminium sulphate octadecahydrate

### Aluminium sulphate octadecahydrate

**extra pure**

$Al_2(SO_4)_3 \cdot 18\ H_2O$
M 666,42 g/mol
mp 90 °C
Solubility: 600 g/l ($H_2O$, 20 °C)
[7784-31-8] • EC No. 233-135-0
WGK 1

**Type analysis:**

Assay $Al_2(SO_4)_3$ (compl.). ..... 51,0-59,0 %
Chloride (Cl)..... ≤0,05 %
Ammonium ($NH_4$)..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,005 %
Arsenic (As). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **9507.1** | 500 g | plastic | 30,65 € |
| Original pack 6 x 500 g | | | 29,12/500 g |
| **9507.2** | 1 kg | plastic | 47,20 € |
| Original pack 6 x 1 kg | | | 44,84/1 kg |
| **9507.3** | 2,5 kg | plastic | 94,10 € |

## Aluminium trifluoride

▶ Aluminium fluoride see p. 1720

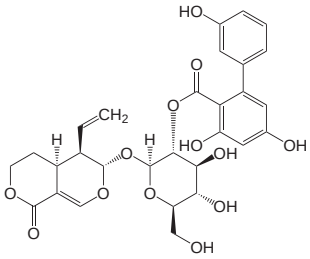
## Aluminon

▶ Aurin tricarboxylic acid ammonium salt see p. 1755

## Amantadine hydrochloride

▶ 1-Adamantanamine hydrochloride
see p. 1708

## Amarogentin



### Amarogentin

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Gentiana lutea.*
$C_{29}H_{30}O_{13}$
M 586,54 g/mol
Storage temp.: +4 °C
[21018-84-8]
WGK 1

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **6488.1** | 10 mg | glass | 299,95 € |

## Amber acid

▶ Succinic acid see p. 2319

## Amberjet™

### Amberjet™

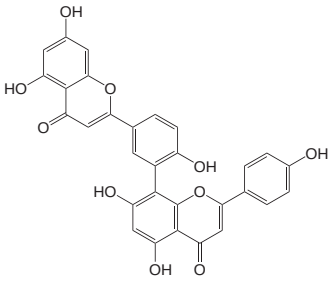
**mixed bed exchanger, highly pure**
WGK 1

**Type analysis:**
Delivery form..... $H^+/OH^-$
Blend ratio. ..... 0,90-1,10
Particle size. ..... 0,3-1,2 mm

| | | | |
|---|---|---|---|
| **K306.1** | 100 g | plastic | 28,50 € |
| **K306.2** | 500 g | plastic | 58,60 € |
| Original pack 6 x 500 g | | | 55,67/500 g |

For further information, please see page 1681

## Amentoflavone trihydrate



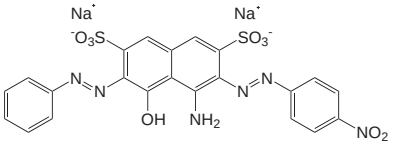
### Amentoflavone trihydrate

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{30}H_{18}O_{10} \cdot 3\ H_2O$
M 592,46 g/mol
Storage temp.: +4 °C
[1617-53-4]

**Type analysis:**
Appearance..... yellow powder
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **5255.1** | 10 mg | glass | 284,90 € |

## Amido Black 10 B (C.I. 20470)



### Amido black 10 B (C.I. 20470)

**p.a.**
For irreversible staining of proteins on membranes and for quantification of proteins in detergent containing solutions.
Naphthol blue black
$C_{22}H_{14}N_6Na_2O_9S_2$
M 616,50 g/mol
Solubility: 10 g/l ($H_2O$, 25 °C)
[1064-48-8] • EC No. 213-903-1
WGK 1

**Type analysis:**
Appearance..... dark-brown powder
Dye content. ..... ≥75 %
Loss on drying. ..... ≤10,0 %

| | | | |
|---|---|---|---|
| **9590.1** | 25 g | glass | 37,55 € |

## Amido sulphonic acid

▶ Sulphamic acid see p. 2321

## Amido sulphuric acid

▶ Sulphamic acid see p. 2321

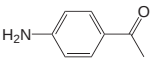
## 2-Aminoacetamide hydrochloride

▶ Glycinamide hydrochloride see p. 1962

## Aminoacetic acid

▶ Glycine see p. 1962

## 4'-Aminoacetophenone



### 4'-Aminoacetophenone

**≥99 %**
For determination of nicotinic acid and vitamin B.
$C_8H_9NO$
M 135,17 g/mol
bp 292-294 °C
mp 103-108 °C
Solubility: 6,5 g/l ($H_2O$, 25 °C)
[99-92-3] • EC No. 202-801-2
WGK 2

**Warning** H302-H315-H319-H335

**Type analysis:**
Assay (GC). ..... ≥99,0 %
Melting point. ..... 103-107 °C

| | | | |
|---|---|---|---|
| **3973.2** | 10 g | glass | 13,45 € |
| **3973.1** | 25 g | glass | 20,35 € |

## Amino Acids and their Derivatives


| Art. No. | Description | Page |
|---|---|---|
| 4126 | N-Acetyl-L-cysteine | 1702 |
| 5526 | N-Acetylglycine | 1703 |
| 7866 | D-Alanine | 1713 |
| 9798 | DL-Alanine | 1713 |
| 3076 | L-Alanine | 1713 |
| 3078 | β-Alanine | 1713 |
| 5521 | L-Alaninol | 1713 |
| 6831 | L-Alanyl-L-glutamine | 1714 |
| 6830 | L-Alanyl-L-glutamine | 1714 |
| K031 | Alliin | 1718 |
| 5519 | 2-Amino-5-bromobenzoic acid | 1724 |
| 5518 | DL-2-Aminobutyric acid | 1724 |
| 5516 | 2-Amino-4-chlorobenzoic acid | 1725 |
| 3113 | 6-Aminohexanoic acid | 1725 |
| 6187 | 4-Aminohippuric acid | 1725 |
| 5514 | 2-Aminoisobutyric acid | 1726 |
| 8451 | 5-Aminolevulinic acid hydrochloride | 1726 |
| 8592 | DL-Arginine | 1750 |
| 1655 | L-Arginine | 1750 |
| 3144 | L-Arginine | 1751 |
| 7868 | D-Arginine monohydrochloride | 1751 |
| 4925 | DL-Arginine monohydrochloride | 1751 |
| 1989 | L-Arginine monohydrochloride | 1751 |
| 3145 | L-Arginine monohydrochloride | 1751 |
| 7872 | D-Asparagine monohydrate | 1753 |
| 5495 | DL-Asparagine monohydrate | 1753 |
| KK37 | L-Asparagine monohydrate | 1753 |
| HN23 | L-Asparagine monohydrate | 1753 |
| 7873 | D-Aspartic acid | 1754 |
| 8593 | DL-Aspartic acid | 1754 |
| 1690 | L-Aspartic acid | 1754 |
| T202 | L-Aspartic acid | 1754 |
| 7856 | D-β-Azidoalanine hydrochloride | 1756 |
| 7854 | L-β-Azidoalanine hydrochloride | 1756 |
| 7858 | D-γ-Azidohomoalanine hydrochloride | 1757 |
| 7857 | L-γ-Azidohomoalanine hydrochloride | 1757 |
| 7862 | D-Azidolysine hydrochloride | 1757 |
| 7861 | L-Azidolysine hydrochloride | 1758 |
| 7860 | D-Azidoornithine hydrochloride | 1758 |

7859 L-Azidoornithine hydrochloride 1758
7853 D-4-Azidophenylalanine 1758
7850 L-4-Azidophenylalanine 1758
6907 Boc-L-Alanine 1778
6914 Boc-L-Arginine hydrochloride monohydrate 1778
6915 Boc-L-Asparagine 1779
8846 Boc-L-Aspartic acid-(OBenzyl) 1779
2042 Boc-L-Cysteine-(4-Mbzl) 1779
6917 Boc-L-Glutamic acid 1779
6916 Boc-L-Glutamine 1779
6918 Boc-Glycine 1779
6920 Boc-L-Histidine 1780
1994 Boc-L-Histidine-(Dnp) 1780
6921 Boc-L-Hydroxyproline 1780
6923 Boc-L-Isoleucine hemihydrate 1780
6924 Boc-L-Leucine monohydrate 1780
6942 Boc-L-tert-Leucine 1780
6926 Boc-L-Lysine 1781
6928 Boc-L-Methionine 1781
6931 Boc-L-Phenylalanine 1781
6932 Boc-L-Proline 1781
6933 Boc-L-Serine 1781
6935 Boc-L-Threonine 1781
6945 Boc-L-Tryptophan 1782
6949 Boc-L-Tyrosine 1782
6950 Boc-L-Valine 1782
7212 DL-Carnitinchloride 1814
4148 L-Carnosine 1814
6636 Cbz-Cyclohexyl-L-glycine 1818
7625 Cysteamine hydrochloride 1853
8594 DL-Cysteine 1854
1693 L-Cysteine 1854
3467 L-Cysteine 1854
3468 L-Cysteine hydrochloride 1854
7874 D-Cysteine hydrochloride monohydrate 1854
1694 L-Cysteine hydrochloride monohydrate 1854
T203 L-Cysteine hydrochloride monohydrate 1854
5565 DL-Cystine 1855
1695 L-Cystine 1855
3471 L-Cystine 1855
5431 DL-2,3-Diaminopropionic acid hydrochloride 1867
6646 Fmoc-L-Alanine monohydrate 1932
7400 Fmoc-8-Amino-3,6-dioxaoctanoic acid 1932
6896 Fmoc-L-Arginine 1932
8833 Fmoc-L-Arginine-(Pbf) 1932
6897 Fmoc-L-Asparagine 1933
9652 Fmoc-L-Asparagine-(Trityl) 1933
6641 Fmoc-L-Aspartic acid-(OAllyl) 1933
9654 Fmoc-L-Aspartic acid-(OtBu) 1933
7369 Fmoc-L-β-Azidoalanine 1933
7363 Fmoc-L-γ-Azidohomoalanine 1933
7357 Fmoc-L-Azidolysine 1934
7362 Fmoc-L-Azidoornithine 1934
7485 Fmoc-L-4-Azidophenylalanine 1934
7367 Fmoc-L-4-Azidoproline (2S,4R) 1934
8842 Fmoc-L-Cysteine-(Acetamidomethyl) 1934
8841 Fmoc-L-Cysteine-(Trityl) 1934
9655 Fmoc-L-Glutamic acid-(OtBu) monohydrate 1935
6898 Fmoc-L-Glutamine 1935
9653 Fmoc-L-Glutamine-(Trityl) 1935
6899 Fmoc-Glycine 1935
8843 Fmoc-L-Histidine-(Trityl) 1935
6647 Fmoc-L-Isoleucine 1936
6654 Fmoc-L-Leucine 1936
6900 Fmoc-L-Lysine 1936
8840 Fmoc-L-Lysine-(Boc) 1936
6656 Fmoc-L-Methionine 1936
1932 Fmoc-L-Ornithine-(Boc) 1937
6658 Fmoc-L-Phenylalanine 1937
6659 Fmoc-L-Proline 1937
7491 Fmoc-L-Propargylglycine 1937
6901 Fmoc-L-Serine monohydrate 1937
9666 Fmoc-L-Serine-(tBu) 1937
9659 Fmoc-L-Threonine-(tBu) 1938
6903 Fmoc-L-Tryptophan 1938
9668 Fmoc-L-Tryptophan-(Boc) 1938
6906 Fmoc-L-Tyrosine 1938
9669 Fmoc-L-Tyrosine-(tBu) 1938
6660 Fmoc-L-Valine 1938
6665 N-Formyl-L-Leucine 1942
7879 D-Glutamic acid 1958
8596 DL-Glutamic acid 1958
1743 L-Glutamic acid 1958
3774 L-Glutamic acid 1958
7876 D-Glutamine 1958
8595 DL-Glutamine 1958
HN08 L-Glutamine 1959
3772 L-Glutamine 1959
6378 Glutathione oxidized 1959
6382 L-Glutathione reduced 1960
5543 Glycinamide hydrochloride 1962
3908 Glycine 1962
HN07 Glycine 1962
T873 Glycine 1962
3187 Glycine 1962
3790 Glycine 1962
5542 Glycine anhydride 1962
3794 Glycylglycine 1963
HN74 Glycylglycine 1963
7507 Hippuric acid sodium salt hydrate 1980
7880 D-Histidine 1981
8597 DL-Histidine 1981
1696 L-Histidine 1981
3852 L-Histidine 1981
1697 L-Histidine hydrochloride monohydrate 1981
9455 L-Histidine hydrochloride monohydrate 1981
7511 o-Hydroxyhippuric acid 1994
3893 L-4-Hydroxyproline 1995
6662 L-Hydroxyproline methylester hydrochloride 1996
8598 DL-Isoleucine 2014
1698 L-Isoleucine 2014
3922 L-Isoleucine 2015
8456 L-Kynurenine 2024
7882 D-Leucine 2035
8599 DL-Leucine 2035
1699 L-Leucine 2035
3984 L-Leucine 2035
6664 L-tert-Leucine methylester hydrochloride 2035
6829 L-Lysine monohydrate 2045
4207 L-Lysine monohydrate 2045
7883 D-Lysine hydrochloride 2046
8600 DL-Lysine hydrochloride 2046
1700 L-Lysine hydrochloride 2046
9357 L-Lysine hydrochloride 2046
7885 D-Methionine 2070
8602 DL-Methionine 2070
1702 L-Methionine 2071
9359 L-Methionine 2071
5275 3-Nitro-L-tyrosine 2104
6663 L-Norvalinol 2105
1703 L-Ornithine monohydrochloride 2125
T204 L-Ornithine monohydrochloride 2125
7886 D-Phenylalanine 2146
8603 DL-Phenylalanine 2146
1709 L-Phenylalanine 2146
4491 L-Phenylalanine 2146
7888 D-Proline 2178
5267 DL-Proline 2178
1713 L-Proline 2178
T205 L-Proline 2178
1032 Roti®fair Glycine 3.0 2212
7531 D-Serine 2248
8606 DL-Serine 2248
1714 L-Serine 2248
4682 L-Serine 2248
8385 Serotonin creatinine sulphate monohydrate 2248
7889 D-Threonine 2340
7532 DL-Threonine 2341
1738 L-Threonine 2341
T206 L-Threonine 2341
7700 D-Tryptophan 2360
5236 DL-Tryptophan 2361
1739 L-Tryptophan 2361
4858 L-Tryptophan 2361
7890 D-Tyrosine 2364
8608 DL-Tyrosine 2364
1741 L-Tyrosine 2364
T207 L-Tyrosine 2364
7891 D-Valine 2369
7540 DL-Valine 2369
1742 L-Valine 2369
4879 L-Valine 2369
1914 Z-L-Arginine 2385
1894 Z-L-Aspartic acid 2385
1885 Z-L-Glutamic acid 2385
1859 Z-L-Leucine 2390
1907 Z-L-Lysine 2390
1865 Z-L-Phenylalanine 2390


## Amino acids, non-essential

▶ Roti®-CELL MEM-NEAA solution see p. 2207

## 3-Amino-DL-alanine hydrochloride

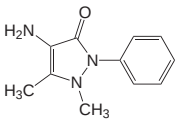
▶ DL-2,3-Diaminopropionic acid hydrochloride see p. 1867

## (*S*)-2-Amino-4-(2-amino-phenyl)-4-oxo-butanoic acid

▶ L-Kynurenine see p. 2024

A

## 4-Aminoantipyrine



### 4-Aminoantipyrine

**≥98 %, p.a., ACS**
Reagent for phenol detection
4-Amino-2,3-dimethyl-1-phenyl-3-pyrazolin-5-one
$C_{11}H_{13}N_3O$
M 203,25 g/mol
mp 107-109 °C
Solubility: 56 g/l ($H_2O$, 20 °C)
[83-07-8] • EC No. 201-452-3
WGK 1

**Warning** H302

**Guarantee analysis:**

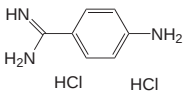
Assay..... ≥98,0 %
Melting point. ..... 107-109 °C
Solubility (1 g/20 ml $H_2O$)..... clear solution
Ash content..... ≤0,1 %
Loss on drying. ..... ≤0,5 %
Suitablility for determination of phenol. ..... complies

| | | | |
|---|---|---|---|
| **2671.1** | 10 g | glass | 23,15 € |
| **2671.2** | 25 g | glass | 34,95 € |
| **2671.3** | 100 g | glass | 60,75 € |

## p-Aminobenzamidine dihydrochloride

▶ 4-Aminobenzamidine dihydrochloride see p. 1724

## 4-Aminobenzamidine dihydrochloride



### 4-Aminobenzamidine dihydrochloride

**≥98 %, for biochemistry**
Potent inhibitor of serine proteases.
p-Aminobenzamidine dihydrochloride
$C_7H_9N_3 \cdot 2\ HCl$
M 208,09 g/mol
mp 300-304 °C (dec.)
Storage temp.: +4 °C
[2498-50-2] • EC No. 219-692-2
WGK 2

**Warning** H315-H319-H335

**Type analysis:**

Assay (dry substance). ..... 98,0-101,0 %
Melting point (dec.). ..... 300-304 °C
Loss on drying (105 °C). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **CN71.1** | 1 g | glass | 14,95 € |
| **CN71.2** | 5 g | plastic | 59,05 € |
| **CN71.3** | 10 g | plastic | 107,40 € |

For further information, please see page 1283

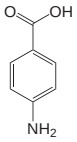
## 4-Aminobenzenesulphonamide

▶ Sulphanilamide see p. 2322

## 4-Aminobenzenesulphonic acid

▶ Sulphanilic acid see p. 2322

## 4-Aminobenzoic acid



NEW

### 4-Aminobenzoic acid

**≥98,5 %, for synthesis**
PABA, p-Aminobenzoic acid, Vitamin $B_{10}$
$C_7H_7NO_2$
M 137,14 g/mol
D 1,38
mp 186-189 °C • flp >171 °C
Solubility: 6 g/l (30 °C, $H_2O$)
[150-13-0] • EC No. 205-753-0
WGK 2

**Type analysis:**

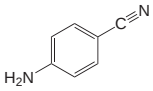
Assay (dry substance)..... ≥98,5 %
Melting point..... 186-189 °C
Loss on drying..... ≤0,5 %
Heavy metals..... ≤0,005 %

| | | | |
|---|---|---|---|
| **0979.1** | 50 g | plastic | 16,70 € |
| **0979.2** | 250 g | plastic | 33,25 € |
| **0979.3** | 1 kg | plastic | 89,15 € |
| Original pack 6 x 1 kg | | | 84,69/1 kg |

## p-Aminobenzoic acid

▶ 4-Aminobenzoic acid see p. 1724

## 4-Aminobenzonitrile



### 4-Aminobenzonitrile

**≥98 %, for synthesis**
p-Cyanoaniline
$C_7H_6N_2$
M 118,14 g/mol
D 1,08 • bp 288-290 °C
mp 84-87 °C
[873-74-5] • EC No. 212-850-1
UN No. 3439 • ADR 6.1 III • WGK 1

**Danger** H301-H319

**Type analysis:**

Appearance..... white to yellow brown clotting crystals
Assay. ..... ≥98,0 %
2-Aminobenzonitrile. ..... ≤0,5 %
3-Aminobenzonitrile. ..... ≤0,5 %
Sulphated ash. ..... ≤1,0 %
Water..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8721.1** | 10 g | plastic | 17,75 € |
| **8721.2** | 50 g | plastic | 77,95 € |
| **8721.3** | 100 g | plastic | 132,15 € |

## N-(4-Aminobenzoyl)-amino acetic acid

▶ 4-Aminohippuric acid see p. 1725

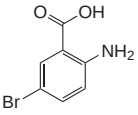
## N-(4-Aminobenzoyl)-glycine

▶ 4-Aminohippuric acid see p. 1725

## D-α-Aminobenzylpenicillin sodium salt

▶ Ampicillin sodium salt see p. 1740

## 2-Amino-5-bromobenzoic acid



### 2-Amino-5-bromobenzoic acid

**≥95 %, for biochemistry**
5-Bromoanthranilic acid
$C_7H_6BrNO_2$
M 216,04 g/mol
mp 204-211 °C
[5794-88-7] • EC No. 227-338-3
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (titr.)..... ≥95 %
Melting point. ..... 204-211 °C
Water (KF). ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **5519.1** | 5 g | plastic | 23,45 € |
| **5519.2** | 25 g | plastic | 77,30 € |

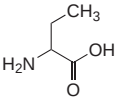
## α-Aminobutyric acid

▶ DL-2-Aminobutyric acid see p. 1724

## DL-α-Amino-n-butyric acid

▶ DL-2-Aminobutyric acid see p. 1724

## DL-2-Aminobutyric acid



### DL-2-Aminobutyric acid

**≥98 %, for biochemistry**
α-Aminobutyric acid, DL-α-Amino-n-butyric acid, H-DL-Abu-OH
$C_4H_9NO_2$
M 103,12 g/mol
mp 304 °C (dec.)
Solubility: 210 g/l ($H_2O$, 25 °C)
[2835-81-6] • EC No. 220-616-5
WGK 1

**Type analysis:**

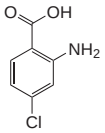
Assay (titr.)..... ≥98,0 %
Solution (10 % in $H_2O$). ..... colourless
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **5518.1** | 25 g | plastic | 45,70 € |
| **5518.2** | 100 g | plastic | 134,40 € |

## 6-Aminocaproic acid

▶ 6-Aminohexanoic acid see p. 1725

## 2-Amino-4-chlorobenzoic acid



### 2-Amino-4-chlorobenzoic acid

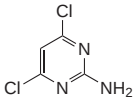
**≥98 %, for biochemistry**
4-Chloranthranilic acid
$C_7H_6ClNO_2$
M 171,58 g/mol
mp 231-233 °C (dec.)
Storage temp.: +4 °C
[89-77-0] • EC No. 201-938-5
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Assay (titr.). ..... ≥98 %
Solution (1 % in methanol). ..... colourless to slightly brown
Loss on drying. ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **5516.1** | 10 g | plastic | 18,20 € |
| **5516.2** | 25 g | plastic | 29,60 € |
| **5516.3** | 100 g | plastic | 89,15 € |

## 2-Amino-4,6-dichloropyrimidine



### 2-Amino-4,6-dichloropyrimidine

**≥95 %**
ADCP
$C_4H_3Cl_2N_3$
M 164,00 g/mol
mp 216-220 °C (subl.)
[56-05-3] • EC No. 200-253-9
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Assay (HPLC). ..... ≥95 %
Solution (1 % in DMF, 40 °C). ..... orange
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **5515.1** | 10 g | plastic | 32,15 € |
| **5515.2** | 25 g | plastic | 64,40 € |

## 5-Amino-2,3-dihydro-phthalazine-1,4-dione

▶ Luminol see p. 2043

## 4-Amino-2,3-dimethyl-1-phenyl-3-pyrazolin-5-one

▶ 4-Aminoantipyrine see p. 1724

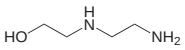
## 2-Aminoethanesulphonic acid

▶ Taurine see p. 2330

## 2-Aminoethanol

▶ Ethanolamine see p. 1912

## 2-(2-Aminoethylamino)ethanol



### 2-(2-Aminoethylamino)ethanol

**≥98 %, for synthesis**
N-(2-Aminoethyl)ethanolamine
$C_4H_{12}N_2O$
M 104,15 g/mol
D 1,03 • bp 240 °C
mp -28 °C • flp 144 °C
[111-41-1] • EC No. 203-867-5
UN No. 2735 • ADR 8 II • WGK 1

**Danger**
H314-H317-H335-H360Df

**Type analysis:**
Appearance. ..... clear colourless liquid
Assay (GC). ..... ≥98,0 %
Identity (IR). ..... complies
Density. ..... 0,971-0,974

| | | | |
|---|---|---|---|
| **6717.1** | 100 ml | glass | 14,95 € |
| **6717.2** | 500 ml | glass | 25,30 € |
| **6717.3** | 1 l | glass | 40,35 € |
| Original pack 6 x 1 l | | | 38,33/1 l |
| **6717.4** | 2,5 l | glass | 86,55 € |
| Original pack 4 x 2,5 l | | | 82,22/2,5 l |

## 4-(2-Aminoethyl)benzene-sulfonyl fluoride hydrochloride

▶ AEBSF hydrochloride see p. 1710

## 4-(2-Aminoethyl)-benzyl-sulphonyl fluoride

▶ Pefabloc® SC-Protease Inhibitor see p. 2132

## N-(2-Aminoethyl)ethanolamine

▶ 2-(2-Aminoethylamino)ethanol see p. 1725

## 3-(2-Aminoethyl)-5-hydroxy-indole hydrochloride

▶ Serotonin hydrochloride see p. 2248

## 4-(2-Aminoethyl)phenol hydrochloride

▶ Tyramine hydrochloride see p. 2363

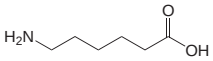
## 2-Amino-5-guanidinovaleric acid

▶ L-Arginine see p. 1750

## 2-Amino-5-guanidino-n-valeric acid hydrochloride

▶ D-Arginine monohydrochloride see p. 1751
▶ DL-Arginine monohydrochloride see p. 1751
▶ L-Arginine monohydrochloride see p. 1751

## 6-Aminohexanoic acid



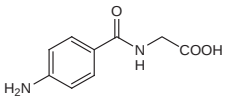
### 6-Aminohexanoic acid

**≥99 %, for biochemistry**
6-Aminocaproic acid
$C_6H_{13}NO_2$
M 131,18 g/mol
mp 200-205 °C • flp 207 °C
Solubility: ~800 g/l ($H_2O$, 20 °C)
[60-32-2] • EC No. 200-469-3
WGK 1

**Type analysis:**
Assay. ..... ≥99 %

| | | | |
|---|---|---|---|
| **3113.1** | 100 g | plastic | 25,70 € |
| **3113.3** | 250 g | plastic | 51,50 € |
| **3113.2** | 500 g | plastic | 92,35 € |
| Original pack 6 x 500 g | | | 87,73/500 g |

## 4-Aminohippuric acid



### 4-Aminohippuric acid

**≥98 %, for biochemistry**
N-(4-Aminobenzoyl)-aminoacetic acid,
N-(4-Aminobenzoyl)-glycine
p-Aminohippuric acid, PAH
$C_9H_{10}N_2O_3$
M 194,19 g/mol
mp 199-202 °C
[61-78-9] • EC No. 200-518-9
WGK 1

**Type analysis:**
Assay. ..... ≥98 %

| | | | |
|---|---|---|---|
| **6187.1** | 10 g | plastic | 35,40 € |
| **6187.2** | 100 g | plastic | 256,95 € |

## p-Aminohippuric acid

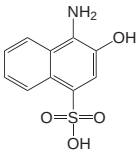
▶ 4-Aminohippuric acid see p. 1725

A

## 2-Amino-3-hydroxybutyric acid

- ▶ D-Threonine see p. 2340
- ▶ DL-Threonine see p. 2341
- ▶ L-Threonine see p. 2341

## 1-Amino-2-hydroxy-4-naphthalenesulfonic acid



### 1-Amino-2-hydroxy-4-naphthalenesulfonic acid

**≥97 %, p.a., ACS**
For determination of phosphate
1-Amino-2-naphthol-4-sulfonic acid
$C_{10}H_9NO_4S$
M 239,25 g/mol
mp 295 °C
[116-63-2] • EC No. 204-147-3
WGK 1

**Guarantee analysis:**

Assay..... ≥97,0 %
Solubility in $Na_2CO_3$..... complies
Ash content..... ≤0,1 %
Sulphate ($SO_4$)..... ≤0,2 %
Suitability for determination of phosphate..... complies

| | | | |
|---|---|---|---|
| **2672.1** | 25 g | glass | 39,70 € |
| **2672.2** | 100 g | glass | 99,45 € |

## N-[(2S,3R)-3-Amino-2-hydroxy-4-phenyl-buturyl]-L-leucin hydrochloride

- ▶ Bestatin hydrochloride see p. 1771

## 2-Amino-3-(4-hydroxyphenyl)-propionic acid

- ▶ D-Tyrosine see p. 2364
- ▶ DL-Tyrosine see p. 2364
- ▶ L-Tyrosine see p. 2364

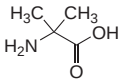
## 4-Aminohypoxanthine

- ▶ Guanine see p. 1966

## 2-Amino-3-(3-indolyl)propionic acid

- ▶ D-Tryptophan see p. 2360
- ▶ DL-Tryptophan see p. 2361
- ▶ L-Tryptophan see p. 2361

## 2-Aminoisobutyric acid



### 2-Aminoisobutyric acid

**≥97 %, for biochemistry**
2-Methylalanine, H-Ala(Me)-OH
$C_4H_9NO_2$
M 103,12 g/mol
mp >300 °C
Solubility: soluble ($H_2O$, 20 °C)
[62-57-7] • EC No. 200-544-0
WGK 1

**Type analysis:**

Assay (titr.)..... ≥97 %
Solution (2,5 % in $H_2O$)..... colourless
Loss on drying (160 °C)..... ≤1,0 %

| | | | |
|---|---|---|---|
| **5514.1** | 50 g | plastic | 38,60 € |
| **5514.2** | 100 g | plastic | 65,05 € |

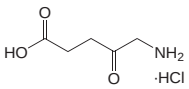
## α-Aminoisovaleric acid

- ▶ D-Valine see p. 2368
- ▶ DL-Valine see p. 2369
- ▶ L-Valine see p. 2369

## D-4-Amino-3-isoxazolidinone

- ▶ D-Cycloserine see p. 1853

## 5-Aminolevulinic acid hydrochloride



### 5-Aminolevulinic acid hydrochloride

**≥98 %, for biochemistry**
5-Amino-4-oxopentanoic acid HCl
$C_5H_9NO_3 \cdot HCl$
M 167,59 g/mol
mp 151-155 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[5451-09-2] • EC No. 226-679-5
WGK 3

**Type analysis:**

Appearance..... white to off-white, cryst. powder
Assay (arg. titr.)..... ≥98,0 %
Appearance of solution (5 % in $H_2O$)..... colourless to almost colourless
Sulphated ash..... ≤0,1 %
Loss on drying (3 h, 105 °C, vacuum)..... ≤2,0 %
Water (KF)..... ≤1,0 %

| | | | |
|---|---|---|---|
| **8451.1** | 500 mg | glass | 24,65 € |
| **8451.2** | 1 g | glass | 36,45 € |
| **8451.3** | 5 g | glass | 107,40 € |

## α-Amino-β-mercapto-propionic acid

- ▶ DL-Cysteine see p. 1854
- ▶ L-Cysteine see p. 1854

## 2-Amino-3-mercaptopropionic acid hydrochloride monohydrate

- ▶ D-Cysteine hydrochloride monohydrate see p. 1854
- ▶ L-Cysteine hydrochloride monohydrate see p. 1854

## α-(Aminomethyl)benzyl alcohol

- ▶ 2-Amino-1-phenylethanol see p. 1727

## 4-(Aminomethyl)-5-hydroxy-6-methyl-3-pyridinemethanol dihydrochloride

- ▶ Pyridoxamine dihydrochloride see p. 2185

## 2-Amino-4-methyl-mercapto butyric acid

- ▶ D-Methionine see p. 2070
- ▶ DL-Methionine see p. 2070
- ▶ L-Methionine see p. 2071

## 2-Amino-4-methylpentanoic acid

- ▶ D-Leucine see p. 2035
- ▶ DL-Leucine see p. 2035
- ▶ L-Leucine see p. 2035

## 2-Amino-2-methyl-1-propanol

- ▶ AMP see p. 1740

## 2-Amino-3-methylvaleric acid

- ▶ DL-Isoleucine see p. 2014
- ▶ L-Isoleucine see p. 2014

## 1-Amino-2-naphthol-4-sulfonic acid

- ▶ 1-Amino-2-hydroxy-4-naphthalenesulfonic acid see p. 1726

## 1-Amino-2-nitrobenzene

▶ 2-Nitroaniline see p. 2099

## 1-Amino-3-nitrobenzene

▶ 3-Nitroaniline see p. 2099

## 1-Amino-4-nitrobenzene

▶ 4-Nitroaniline see p. 2099

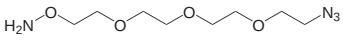
## 4-Amino-2-nitro-toluene

▶ 4-Methyl-3-nitroaniline see p. 2075

## 5-Amino-4-oxopentanoic acid HCl

▶ 5-Aminolevulinic acid hydrochloride see p. 1726

## Aminooxy-PEG3-Azide



### Aminooxy-PEG3-Azide

**≥90 %**
Linker
*O*-(2-(2-(2-(2-Azidoethoxy)ethoxy)ethoxy)-ethyl)hydroxylamine
$C_8H_{18}N_4O_4$
M 234,25 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[1306615-51-9]
WGK 3

**Type analysis:**

Appearance. ..... pale yellow oil
Assay (TLC)..... ≥90 %

| | | | |
|---|---|---|---|
| **7832.1** | 5 mg | plastic | 93,00 € |
| **7832.2** | 10 mg | plastic | 140,30 € |

## 2-Aminopentanedioic acid

▶ D-Glutamic acid see p. 1958
▶ DL-Glutamic acid see p. 1958
▶ L-Glutamic acid see p. 1958

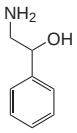
## (S)-(+)-2-Amino-1-pentanol

▶ L-Norvalinol see p. 2105

## 4-Aminophenyl benzyl ether hydrochloride

▶ 4-(Benzyloxy) aniline hydrochloride see p. 1769

## 2-Amino-1-phenylethanol



### 2-Amino-1-phenylethanol

**≥98 %**
α-(Aminomethyl)benzyl alcohol, Phenylethanolamine
$C_8H_{11}NO$
M 137,18 g/mol
mp 56–58 °C
[7568-93-6] • EC No. 231-469-1
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (titr.). ..... ≥98 %
Solution (1 % in ethanol)..... almost colourless, clear
Water (KF)..... ≤2,0 %

| | | | |
|---|---|---|---|
| **5513.1** | 25 g | plastic | 47,85 € |
| **5513.2** | 50 g | plastic | 80,10 € |

## 2-Amino-3-phenylpropionic acid

▶ D-Phenylalanine see p. 2146
▶ DL-Phenylalanine see p. 2146
▶ L-Phenylalanine see p. 2146

## 3-Aminophenyl sulphone

▶ 3,3'-Diaminodiphenyl sulphone see p. 1867

## 3-Aminophthalhydrazide

▶ Luminol see p. 2043

## S(+)-2-Amino-1-propanol

▶ L-Alaninol see p. 1713

## 2-Aminopropionic acid

▶ D-Alanine see p. 1713
▶ DL-Alanine see p. 1713
▶ L-Alanine see p. 1713

## 3-Aminopropionic acid

▶ β-Alanine see p. 1713

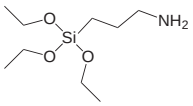
## N-(3-Aminopropyl)-1,4-butane-diamine

▶ Spermidine see p. 2291

## Aminopropyl-modified silica gel

▶ Silica gel 60 diamino see p. 2252

## γ-Aminopropyltriethoxysilane (APTES)



### γ-Aminopropyltriethoxysilane (APTES)

**≥98 %, for GC**
Silylation reagent
APES, 3-Aminopropyltriethoxysilane, APTES
$C_9H_{23}NO_3Si$
M 221,37 g/mol
D 0,95 • bp 217 °C
mp <-70 °C • flp 93 °C
[919-30-2] • EC No. 213-048-4
UN No. 2735 • ADR 8 II • WGK 1

**Danger** H314-H302

**Type analysis:**

Appearance. ..... clear liquid
Assay (GC). ..... ≥97,5 %

| | | | |
|---|---|---|---|
| **2328.1** | 25 g | glass | 21,00 € |
| **2328.2** | 100 g | glass | 60,10 € |

For further information, please see page 1568

## 6-Aminopurine

▶ Adenine see p. 1708

## 2-Amino-succinic acid

▶ D-Aspartic acid see p. 1754
▶ DL-Aspartic acid see p. 1754
▶ L-Aspartic acid see p. 1754

## 2-Aminotoluene

▶ o-Toluidine see p. 2348

## N-Aminourea hydrochloride

▶ Semicarbazide hydrochloride see p. 2245

## Aminoxybrucine

▶ Brucine N-oxide see p. 1791

## Aminoxystrychnine

▶ Strychnine N-oxide see p. 2318

## (±)-2-Aminsuccinic acid 4-amide

▶ DL-Asparagine monohydrate see p. 1753

## Ammann solution

▶ Cotton blue (C.I. 42780) see p. 1846

## Ammoidin

▶ Xanthotoxin see p. 2378

A

## Ammonia solution Ultra-quality

### Ammonia solution Ultra-quality

**ROTIPURAN® Ultra 20 %**

Extra highpure alkaline solution (ppt quality) for sample preparation in ultra trace analysis.

Ammonium hydroxide solution

$NH_3 + H_2O$

M 17,03 + aq g/mol

D ~0,92

[1336-21-6] • EC No. 215-647-6

UN No. 2672 • ADR 8 III • WGK 2

**Danger** H290-H314-H335

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 20-22 % |
| Aluminium (Al) | ≤20 ppt |
| Antimony (Sb) | ≤10 ppt |
| Arsenic (As) | ≤10 ppt |
| Barium (Ba) | ≤10 ppt |
| Beryllium (Be) | ≤10 ppt |
| Lead (Pb) | ≤10 ppt |
| Cadmium (Cd) | ≤10 ppt |
| Cesium (Cs) | ≤10 ppt |
| Calcium (Ca) | ≤10 ppt |
| Cerium (Ce) | ≤10 ppt |
| Chromium (Cr) | ≤10 ppt |
| Dysprosium (Dy) | ≤10 ppt |
| Iron (Fe) | ≤10 ppt |
| Erbium (Er) | ≤10 ppt |
| Europium (Eu) | ≤10 ppt |
| Gadolinium (Gd) | ≤10 ppt |
| Gallium (Ga) | ≤10 ppt |
| Germanium (Ge) | ≤10 ppt |
| Gold (Au) | ≤10 ppt |
| Holmium (Ho) | ≤10 ppt |
| Indium (In) | ≤10 ppt |
| Potassium (K) | ≤10 ppt |
| Cobalt (Co) | ≤10 ppt |
| Copper (Cu) | ≤10 ppt |
| Lanthanum (La) | ≤10 ppt |
| Lithium (Li) | ≤10 ppt |
| Lutetium (Lu) | ≤10 ppt |
| Magnesium (Mg) | ≤10 ppt |
| Manganese (Mn) | ≤10 ppt |
| Molybdenum (Mo) | ≤10 ppt |
| Sodium (Na) | ≤20 ppt |
| Neodymium (Nd) | ≤10 ppt |
| Nickel (Ni) | ≤10 ppt |
| Niobium (Nb) | ≤10 ppt |
| Praseodymium (Pr) | ≤10 ppt |
| Mercury (Hg) | ≤200 ppt |
| Rhodium (Rh) | ≤10 ppt |
| Rubidium (Rb) | ≤10 ppt |
| Samarium (Sm) | ≤10 ppt |
| Scandium (Sc) | ≤10 ppt |
| Silver (Ag) | ≤10 ppt |
| Strontium (Sr) | ≤10 ppt |
| Tellur (Te) | ≤10 ppt |
| Terbium (Tb) | ≤10 ppt |
| Thallium (Tl) | ≤10 ppt |
| Thorium (Th) | ≤10 ppt |
| Thulium (Tm) | ≤10 ppt |
| Titanium (Ti) | ≤10 ppt |
| Uranium (U) | ≤10 ppt |
| Vanadium (V) | ≤10 ppt |
| Bismuth (Bi) | ≤10 ppt |
| Tungsten (W) | ≤10 ppt |
| Ytterbium (Yb) | ≤10 ppt |
| Yttrium (Y) | ≤10 ppt |
| Zinc (Zn) | ≤10 ppt |
| Tin (Sn) | ≤10 ppt |
| Zirconium (Zr) | ≤10 ppt |

| | | | |
|---|---|---|---|
| **HN66.2** | 250 ml | HDPE | 217,70 € |
| **HN66.1** | 500 ml | HDPE | 367,55 € |
| **HN66.3** | 1 l | HDPE | 607,40 € |
| Original pack 6 x 1 l | | | 577,03/1 l |

For further information, please see page 1665

## Ammonia solution Supra-quality

### Ammonia solution Supra-quality

**ROTIPURAN® Supra 20 %**

Highpure alkaline solution (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

Ammonium hydroxide solution

$NH_3 + H_2O$

M 17,03 + aq g/mol

D ~0,92

[1336-21-6] • EC No. 215-647-6

UN No. 2672 • ADR 8 III • WGK 2

**Danger** H290-H314-H335

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 20-22 % |
| Colour (APHA) | ≤10 |
| Chloride (Cl) | ≤0,00005 % |
| Phosphate ($PO_4$) | ≤0,000001 % |
| Sulphate ($SO_4$) | ≤0,0001 % |
| Aluminium (Al) | ≤1 ppb |
| Antimony (Sb) | ≤0,5 ppb |
| Arsenic (As) | ≤1 ppb |
| Barium (Ba) | ≤0,1 ppb |
| Beryllium (Be) | ≤0,1 ppb |
| Lead (Pb) | ≤0,1 ppb |
| Cadmium (Cd) | ≤0,5 ppb |
| Cesium (Cs) | ≤0,1 ppb |
| Calcium (Ca) | ≤1 ppb |
| Cerium (Ce) | ≤0,1 ppb |
| Chromium (Cr) | ≤0,5 ppb |
| Dysprosium (Dy) | ≤0,1 ppb |
| Iron (Fe) | ≤1 ppb |
| Erbium (Er) | ≤0,1 ppb |
| Europium (Eu) | ≤0,1 ppb |
| Gadolinium (Gd) | ≤0,1 ppb |
| Gallium (Ga) | ≤0,1 ppb |
| Germanium (Ge) | ≤0,1 ppb |
| Gold (Au) | ≤0,5 ppb |
| Holmium (Ho) | ≤0,1 ppb |
| Indium (In) | ≤0,1 ppb |
| Potassium (K) | ≤1 ppb |
| Cobalt (Co) | ≤0,5 ppb |
| Copper (Cu) | ≤0,5 ppb |
| Lanthanum (La) | ≤0,1 ppb |
| Lithium (Li) | ≤0,1 ppb |
| Lutetium (Lu) | ≤0,1 ppb |
| Magnesium (Mg) | ≤1 ppb |
| Manganese (Mn) | ≤0,5 ppb |
| Molybdenum (Mo) | ≤0,5 ppb |
| Sodium (Na) | ≤1 ppb |
| Neodymium (Nd) | ≤0,1 ppb |
| Nickel (Ni) | ≤0,5 ppb |
| Niobium (Nb) | ≤0,1 ppb |
| Praseodymium (Pr) | ≤0,1 ppb |
| Mercury (Hg) | ≤0,2 ppb |
| Rhodium (Rh) | ≤0,5 ppb |
| Rubidium (Rb) | ≤0,1 ppb |
| Samarium (Sm) | ≤0,1 ppb |
| Scandium (Sc) | ≤0,1 ppb |
| Selenium (Se) | ≤1 ppb |
| Silver (Ag) | ≤0,5 ppb |
| Strontium (Sr) | ≤0,1 ppb |
| Tellur (Te) | ≤0,1 ppb |
| Terbium (Tb) | ≤0,1 ppb |
| Thallium (Tl) | ≤0,1 ppb |
| Thorium (Th) | ≤0,1 ppb |
| Thulium (Tm) | ≤0,1 ppb |
| Titanium (Ti) | ≤0,5 ppb |
| Uranium (U) | ≤0,1 ppb |
| Vanadium (V) | ≤0,5 ppb |
| Bismuth (Bi) | ≤0,1 ppb |
| Tungsten (W) | ≤0,1 ppb |
| Ytterbium (Yb) | ≤0,1 ppb |
| Yttrium (Y) | ≤0,1 ppb |
| Zinc (Zn) | ≤0,5 ppb |
| Tin (Sn) | ≤0,5 ppb |
| Zirconium (Zr) | ≤0,1 ppb |

| | | | |
|---|---|---|---|
| **HN56.1** | 500 ml | plastic | 66,15 € |
| **HN56.3** | 4 l | plastic | 367,55 € |

For further information, please see page 1665

## Ammonia solution 32 %

Ammonium hydroxide solution

$NH_3 + H_2O$

M 17,03 + aq g/mol

D 0,88 • bp 24,7 °C

mp -91,5 °C

[1336-21-6] • EC No. 215-647-6

UN No. 2672 • ADR 8 III • WGK 2

**Danger** H290-H314-H400-H335

### Ammonia solution 32 %

**30-33 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay ($NH_3$) | 30-33 % |
| Chloride (Cl) | ≤0,0002 % |
| Sulphate ($SO_4$) | ≤0,002 % |
| Iron (Fe) | ≤0,0001 % |
| Heavy metals (as Pb) | ≤0,0003 % |
| Non volatile matter | ≤0,002 % |

| | | | |
|---|---|---|---|
| **P093.1** | 1 l | glass | 32,80 € |
| Original pack 6 x 1 l | | | 31,16/1 l |
| **P093.2** | 2,5 l | glass | 60,75 € |
| Original pack 4 x 2,5 l | | | 57,71/2,5 l |
| **P093.3** | 10 l | plastic | 223,10 € |

### Ammonia solution 32 %

**30-33 %, for DNA synthesis.**

Storage temp.: +4 °C

**Type analysis:**

| | |
|---|---|
| Assay ($NH_3$) | ≥30 % |

| | | | |
|---|---|---|---|
| **A990.1** | 200 ml | glass | 17,10 € |

For further information, please see page 1494

## Ammonia solution 30 %

### Ammonia solution 30 %

**ROTIPURAN® 30 %, p.a., ACS**

For neutralisation and for manufacturing of buffer system.

Ammonium hydroxide solution

$NH_3 + H_2O$

M 17,03 + aq g/mol

D ~0,89 • bp ~30 °C

mp -77 °C

[1336-21-6] • EC No. 215-647-6

UN No. 2672 • ADR 8 III • WGK 2

**Danger** H290-H314-H400-H335

**Guarantee analysis:**

| | |
|---|---|
| Appearance | clear, colourless liquid |
| Assay (acidim.) | 28,0-30,0 % |
| Colour (APHA) | ≤10 |
| Solubility in $H_2O$ | complies |
| $KMnO_4$ reducing substances (as O) | complies |
| Non volatile matter | ≤0,002 % |
| Ash content | ≤0,002 % |
| Pyridine and homologues | ≤0,0002 % |
| Carbonate (as $CO_2$) | ≤0,002 % |
| Sulphur compounds (as $SO_4$) | ≤0,0002 % |
| Chloride (Cl) | ≤0,00005 % |
| Phosphate ($PO_4$) | ≤0,0001 % |
| Nitrate ($NO_3$) | ≤0,0002 % |
| Sulphide (S) | ≤0,00001 % |
| Heavy metals (as Pb) | ≤0,00005 % |
| Aluminium (Al) | ≤0,00001 % |
| Arsenic (As) | ≤0,000005 % |
| Barium (Ba) | ≤0,00001 % |
| Beryllium (Be) | ≤0,00001 % |

| | |
|---|---|
| Lead (Pb) | ≤0,000005 % |
| Cadmium (Cd) | ≤0,00001 % |
| Calcium (Ca) | ≤0,0001 % |
| Chromium (Cr) | ≤0,000005 % |
| Iron (Fe) | ≤0,00001 % |
| Gold (Au) | ≤0,00001 % |
| Indium (In) | ≤0,000005 % |
| Potassium (K) | ≤0,0001 % |
| Cobalt (Co) | ≤0,00001 % |
| Copper (Cu) | ≤0,00001 % |
| Lithium (Li) | ≤0,000002 % |
| Magnesium (Mg) | ≤0,00005 % |
| Manganese (Mn) | ≤0,00001 % |
| Molybdenum (Mo) | ≤0,000002 % |
| Sodium (Na) | ≤0,0002 % |
| Nickel (Ni) | ≤0,000005 % |
| Silver (Ag) | ≤0,000002 % |
| Strontium (Sr) | ≤0,0001 % |
| Bismuth (Bi) | ≤0,000005 % |
| Zinc (Zn) | ≤0,00001 % |

| | | | |
|---|---|---|---|
| **CP17.1** | 1 l | glass | 20,35 € |
| Original pack 6 x 1 l | | | 19,33/1 l |
| **CP17.2** | 2,5 l | glass | 32,80 € |
| Original pack 4 x 2,5 l | | | 31,16/2,5 l |
| **CP17.3** | 5 l | PE/steel | 61,20 € |
| Original pack 2 x 5 l | | | 58,14/5 l |
| **CP17.4** | 10 l | PE/steel | 104,85 € |
| **CP17.5** | 25 l | PE/steel | 171,50 € |

## Ammonia solution 25 %

Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D 0,91 • bp 37,7 °C
mp -57,5 °C
[1336-21-6] • EC No. 2672 • ADR 8 III • WGK 2
**Danger** H290-H314-H400-H335

### Ammonia solution 25 %

**ROTIPURAN® ≥25 %, p.a.**

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidimetric., $NH_3$) | ≥25 % |
| Colour (APHA) | ≤10 |
| Non volatile matter | ≤0,002 % |
| Sulphur compounds (as $SO_4$) | ≤0,0002 % |
| Pyridine and homologues | ≤0,0002 % |
| Carbonate (as $CO_2$) | ≤0,001 % |
| Chloride (Cl) | ≤0,00005 % |
| Sulphide (S) | ≤0,00001 % |
| Phosphate ($PO_4$) | ≤0,00005 % |
| Aluminium (Al) | ≤0,00001 % |
| Arsenic (As) | ≤0,000005 % |
| Barium (Ba) | ≤0,00001 % |
| Beryllium (Be) | ≤0,00001 % |
| Lead (Pb) | ≤0,000005 % |
| Cadmium (Cd) | ≤0,00001 % |
| Calcium (Ca) | ≤0,0001 % |
| Chromium (Cr) | ≤0,000005 % |
| Iron (Fe) | ≤0,00001 % |
| Gallium (Ga) | ≤0,000002 % |
| Gold (Au) | ≤0,00001 % |
| Indium (In) | ≤0,000002 % |
| Potassium (K) | ≤0,0001 % |
| Cobalt (Co) | ≤0,00001 % |
| Copper (Cu) | ≤0,00001 % |
| Lithium (Li) | ≤0,000002 % |
| Magnesium (Mg) | ≤0,00005 % |
| Manganese (Mn) | ≤0,00001 % |
| Molybdenum (Mo) | ≤0,000002 % |
| Sodium (Na) | ≤0,0001 % |
| Nickel (Ni) | ≤0,000005 % |
| Platinum (Pt) | ≤0,00001 % |
| Heavy metals (as Pb) | ≤0,00005 % |
| Silver (Ag) | ≤0,000002 % |
| Strontium (Sr) | ≤0,0001 % |
| Thallium (Tl) | ≤0,000002 % |
| Titanium (Ti) | ≤0,000005 % |
| Bismuth (Bi) | ≤0,000005 % |
| Zinc (Zn) | ≤0,00001 % |
| Tin (Sn) | ≤0,000005 % |
| $KMnO_4$ reducing substances (as O) | ≤0,0008 % |

| | | | |
|---|---|---|---|
| **6774.1** | 1 l | glass | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **6774.2** | 2,5 l | glass | 33,25 € |
| Original pack 4 x 2,5 l | | | 31,59/2,5 l |
| **6774.3** | 5 l | plastic | 48,95 € |
| Original pack 2 x 5 l | | | 46,50/5 l |

### Ammonia solution 25 %

**25 %, Ph.Eur.**

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | 25,0-27,0 % |
| Identity | complies |
| Appearance of solution | complies |
| Pyridine and homologues | ≤0,0002 % |
| $KMnO_4$ reducing substances | complies |
| Carbonate | ≤0,005 % |
| Chloride (Cl) | ≤0,0001 % |
| Sulphate ($SO_4$) | ≤0,0005 % |
| Heavy metals (as Pb) | ≤0,0001 % |
| Iron (Fe) | ≤0,000025 % |
| Non volatile matter | ≤0,002 % |

| | | | |
|---|---|---|---|
| **2610.1** | 1 l | glass | 20,35 € |
| Original pack 6 x 1 l | | | 19,33/1 l |
| **2610.2** | 2,5 l | glass | 32,15 € |
| Original pack 4 x 2,5 l | | | 30,54/2,5 l |
| **2610.4** | 5 l | plastic | 45,70 € |
| Original pack 2 x 5 l | | | 43,42/5 l |
| **2610.3** | 10 l | plastic | 79,45 € |

### Ammonia solution 25 %

**≥25 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay ($NH_3$) | 24,0-26,0 % |
| Density (20 °C) | 0,904-0,910 |
| Chloride (Cl) | ≤0,00001 % |
| Iron (Fe) | ≤0,0005 % |
| Evaporation residue | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **5460.1** | 1 l | plastic | 18,20 € |
| Original pack 6 x 1 l | | | 17,29/1 l |
| **5460.2** | 5 l | plastic | 33,25 € |
| Original pack 2 x 5 l | | | 31,59/5 l |
| **5460.3** | 10 l | plastic | 43,55 € |
| **5460.4** | 30 l | plastic | 105,90 € |

## Ammonia solution 20 %

### Ammonia solution 20 %

**20 %, pure**
Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D 0,93
[1336-21-6] • EC No. 2672-647-6
UN No. 2672 • ADR 8 III • WGK 2
**Danger** H290-H314-H335

**Type analysis:**

| | |
|---|---|
| Assay | 19,0-21,0 % |
| Iron (Fe) | ≤0,0001 % |
| Heavy metals | ≤0,0001 % |
| Evaporation residue | ≤0,0003 % |

| | | | |
|---|---|---|---|
| **6753.1** | 1 l | plastic | 15,60 € |
| Original pack 6 x 1 l | | | 14,82/1 l |
| **6753.2** | 5 l | plastic | 31,10 € |
| Original pack 2 x 5 l | | | 29,55/5 l |
| **6753.3** | 10 l | plastic | 39,70 € |
| **6753.4** | 25 l | plastic | 78,40 € |

## Ammonia solution 15 %

### Ammonia solution 15 %

**15 %, extra pure**
Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D ~0,94
[1336-21-6] • EC No. 215-647-6
UN No. 2672 • ADR 8 III • WGK 2
**Danger** H290-H314-H335

**Type analysis:**

| | |
|---|---|
| Assay | 14,5-15,5 % |
| Density (20 °C) | 0,9379-0,9413 |
| Chloride (Cl) | ≤0,00001 % |
| Iron (Fe) | ≤0,00001 % |
| Evaporation residue | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **4346.1** | 1 l | plastic | 15,60 € |
| Original pack 6 x 1 l | | | 14,82/1 l |
| **4346.5** | 2,5 l | plastic | 19,60 € |
| Original pack 4 x 2,5 l | | | 18,62/2,5 l |
| **4346.2** | 5 l | plastic | 31,10 € |
| Original pack 2 x 5 l | | | 29,55/5 l |
| **4346.3** | 10 l | plastic | 39,70 € |
| **4346.4** | 25 l | plastic | 78,40 € |

## Ammonia solution 10 %

### Ammonia solution 10 %

**10 %, pure**
Ammonium hydroxide solution
$NH_3 + H_2O$
M 17,03 + aq g/mol
D 0,96
[1336-21-6] • EC No. 215-647-6
UN No. 2672 • ADR 8 III • WGK 2
**Danger** H290-H314-H335

**Type analysis:**

| | |
|---|---|
| Assay | 9,0-11,0 % |
| Iron (Fe) | ≤0,0001 % |
| Heavy metals | ≤0,0001 % |
| Evaporation residue | ≤0,0003 % |

| | | | |
|---|---|---|---|
| **6756.1** | 1 l | plastic | 14,55 € |
| Original pack 6 x 1 l | | | 13,82/1 l |
| **6756.5** | 2,5 l | plastic | 16,70 € |
| Original pack 4 x 2,5 l | | | 15,87/2,5 l |
| **6756.2** | 5 l | plastic | 30,00 € |
| Original pack 2 x 5 l | | | 28,50/5 l |
| **6756.3** | 10 l | plastic | 37,10 € |
| **6756.4** | 25 l | plastic | 69,80 € |

A

## Ammonia solution (4 N)

### Ammonia solution

**4 mol/l - 4 N volumetric standard solution**

D 0,97

WGK 2

**Danger** H314-H335

**Type analysis:**

Amount-of-substance conc. (20 °C).....4 mol/l ±0,5 %
Titer. .....0,9950-1,0050

| | | | |
|---|---|---|---|
| **9897.1** | 500 ml | plastic | 22,50 € |
| **9897.2** | 1 l | plastic | 37,10 € |
| Original pack 6 x 1 l | | | 35,25/1 l |

## Ammonia-D3 solution 25 % in $D_2O$

### Ammonia-D3 solution 25 % in $D_2O$

**99 Atom%D**

For nuclear magnetic resonance spectroscopy.

$ND_3 + D_2O$

M 40,08 g/mol

D 1,056

[12168-30-8]

UN No. 2672 • ADR 8 III • WGK 2

**Danger**

H290-H314-H332-H335-H400

**Type analysis:**

Deuterising degree. .....≥99,0 %
Assay (titr.). .....≥25,0 %

| | | | |
|---|---|---|---|
| **9903.1** | 10 ml | glass | 69,80 € |

## Ammonium Standards

▶ Ammonium IC Standard Solution see p. 2312

## Ammonium acetate

$CH_3COONH_4$

M 77,08 g/mol

D 1,17

mp 114 °C • flp 136 °C

Solubility: 1480 g/l ($H_2O$, 20 °C)

[631-61-8] • EC No. 211-162-9

WGK 1

### Ammonium acetate

**≥97 %, p.a., ACS**

Buffer substance, for molecular biology.

**Guarantee analysis:**

Assay (acidim.). .....≥97 %
pH value (5 %, water). .....6,7-7,3
In $H_2O$ insoluble matter. .....≤0,005 %
Ash content (as $SO_4$). .....≤0,01 %
Chloride (Cl). .....≤0,0005 %
Phosphate ($PO_4$). .....≤0,0005 %
Nitrate ($NO_3$). .....≤0,001 %
Sulphate ($SO_4$). .....≤0,001 %
Heavy metals (as Pb). .....≤0,0005 %
Aluminium (Al). .....≤0,0005 %
Lead (Pb). .....≤0,0005 %
Calcium (Ca). .....≤0,001 %
Iron (Fe). .....≤0,0005 %
Copper (Cu). .....≤0,0005 %
Magnesium (Mg). .....≤0,001 %
Nickel (Ni). .....≤0,0005 %

| | | | |
|---|---|---|---|
| **7869.2** | 500 g | plastic | 27,85 € |
| Original pack 6 x 500 g | | | 26,46/500 g |
| **7869.1** | 1 kg | plastic | 39,70 € |
| Original pack 6 x 1 kg | | | 37,72/1 kg |
| **7869.3** | 2,5 kg | plastic | 67,65 € |

### Ammonium acetate

**≥96 %, extra pure**

Buffer substance

**Type analysis:**

Assay (acidim.). .....≥96 %
pH value (5 % solution). .....6,5-7,5
In $H_2O$ insoluble matter. .....≤0,01 %
Ash content (as $SO_4$). .....≤0,05 %
Chloride (Cl). .....≤0,003 %
Phosphate ($PO_4$). .....≤0,001 %
Nitrate ($NO_3$). .....≤0,003 %
Sulphate ($SO_4$). .....≤0,003 %
Lead (Pb). .....≤0,001 %
Iron (Fe). .....≤0,001 %
Copper (Cu). .....≤0,002 %
Nickel (Ni). .....≤0,002 %

| | | | |
|---|---|---|---|
| **T872.1** | 500 g | plastic | 26,80 € |
| Original pack 6 x 500 g | | | 25,46/500 g |
| **T872.2** | 1 kg | plastic | 38,60 € |
| Original pack 6 x 1 kg | | | 36,67/1 kg |
| **T872.3** | 2,5 kg | plastic | 64,40 € |
| **T872.5** | 25 kg | plastic | 435,40 € |

## Ammonium alginate

▶ Alginic acid ammonium salt see p. 1716

## Ammonium alum

▶ Aluminium ammonium sulphate dodecahydrate see p. 1720

## Ammonium aluminium sulphate

▶ Aluminium ammonium sulphate dodecahydrate see p. 1720

## Ammonium aurin tricarboxylate

▶ Aurin tricarboxylic acid ammonium salt see p. 1755

## Ammonium benzoate

### Ammonium benzoate

**≥98 %, extra pure**

For precipitation of aluminium and iron.

$C_7H_9NO_2$

M 139,15 g/mol

D 1,26

mp 198 °C (dec.)

Solubility: 140 g/l ($H_2O$, 20 °C)

[1863-63-4] • EC No. 217-468-9

WGK 1

**Warning** H302-H315-H319

**Type analysis:**

Assay. .....≥98,0 %
pH (10 % solution). .....5,0-8,0
Heavy metals (as Pb). .....≤0,001 %
Oxidizable impurities (as cinnamic acid). ..... complies

| | | | |
|---|---|---|---|
| **9836.1** | 100 g | plastic | 16,70 € |
| **9836.2** | 500 g | plastic | 44,65 € |
| Original pack 6 x 500 g | | | 42,42/500 g |
| **9836.3** | 1 kg | plastic | 78,40 € |
| Original pack 6 x 1 kg | | | 74,48/1 kg |

## Ammonium bicarbonate

▶ Ammonium hydrogen carbonate see p. 1733

## Ammonium bifluoride

▶ Ammonium hydrogen fluoride see p. 1734

## Ammonium biphosphate

▶ Ammonium dihydrogen phosphate see p. 1732

## Ammonium bisulphate

▶ Ammonium hydrogen sulphate see p. 1734

## Ammonium bromide

### Ammonium bromide

**≥99 %, p.a., ACS**

$NH_4Br$

M 97,94 g/mol

D ~2,43

mp 452 °C (subl.)

Solubility: 742 g/l ($H_2O$, 20 °C)

[12124-97-9] • EC No. 235-183-8

WGK 2

**Guarantee analysis:**

Assay (arg.). .....≥99,0 %
In $H_2O$ insoluble matter. .....≤0,005 %
pH value (5 % solution). .....4,5-6,0
Bromate ($BrO_3$). .....≤0,002 %
Chloride (Cl). .....≤0,2 %
Iodide (I). .....≤0,005 %
Sulphate ($SO_4$). .....≤0,005 %
Heavy metals (as Pb). .....≤0,0005 %
Barium (Ba). .....≤0,002 %
Iron (Fe). .....≤0,0005 %
Ash content. .....≤0,01 %

| | | | |
|---|---|---|---|
| **HN14.1** | 500 g | plastic | 31,10 € |
| Original pack 6 x 500 g | | | 29,55/500 g |
| **HN14.2** | 1 kg | plastic | 47,85 € |
| Original pack 6 x 1 kg | | | 45,46/1 kg |
| **HN14.3** | 2,5 kg | plastic | 103,10 € |

## Ammonium carbonate

$CH_6N_2O_2 \cdot CH_5NO_3$ (1:1)

M 157,13 g/mol

Solubility: ~320 g/l ($H_2O$, 20 °C)

[10361-29-2] • EC No. 233-786-0

WGK 1

**Danger** H302-H315-H318

### Ammonium carbonate

**≥30 %, $NH_3$, p.a., ACS**

**Guarantee analysis:**

Assay (acidim, $NH_3$). .....≥30,0 %
In $H_2O$ insoluble matter. .....≤0,005 %
Non volatile matter. .....≤0,01 %
Chloride (Cl). .....≤0,0005 %
Sulphur containing parts (as $SO_4$). .....≤0,002 %
Heavy metals (as Pb). .....≤0,0005 %
Iron (Fe). .....≤0,0005 %

| | | | |
|---|---|---|---|
| **CP98.1** | 500 g | plastic | 18,85 € |
| Original pack 6 x 500 g | | | 17,91/500 g |
| **CP98.2** | 1 kg | plastic | 28,50 € |
| Original pack 6 x 1 kg | | | 27,08/1 kg |
| **CP98.4** | 2,5 kg | plastic | 46,80 € |
| **CP98.3** | 5 kg | plastic | 83,75 € |

## Ammonium carbonate

**≥30,5 %, $NH_3$, extra pure, FCC**

**Guarantee analysis:**

Assay ($NH_3$)..... ≥30,5 %
Identity..... complies
Chloride (Cl)..... ≤0,003 %
Sulphate ($SO_4$)..... ≤0,003 %
Non volatile matter..... ≤0,01 %
Heavy metals (as Pb)..... ≤0,0003 %
Arsenic (As)..... ≤0,0001 %
Lead (Pb)..... ≤0,0001 %
Iron (Fe)..... ≤0,0003 %
Mercury (Hg)..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **CN94.1** | 500 g | plastic | 13,90 € |
| Original pack 6 x 500 g | | | 13,21/500 g |
| **CN94.2** | 1 kg | plastic | 19,90 € |
| Original pack 6 x 1 kg | | | 18,91/1 kg |
| **CN94.4** | 2,5 kg | plastic | 34,30 € |
| **CN94.3** | 5 kg | plastic | 55,40 € |

## Ammonium cerium(IV) nitrate

▶ Cerium(IV) ammonium nitrate see p. 1821

## Ammonium cerium(IV) sulphate dihydrate

### Ammonium cerium(IV) sulphate dihydrate

**≥99 %, p.a.**

Oxidant reagent, for cerimetric titrations
Cerium(IV) ammonium sulphate dihydrate
$(NH_4)_4Ce(SO_4)_4 \cdot 2\ H_2O$
M 632,55 g/mol
[10378-47-9] • EC No. 231-567-4
WGK 1

**Guarantee analysis:**

Assay..... ≥99,0 %
In $H_2SO_4$ insoluble matter..... ≤0,02 %
Chloride (Cl)..... ≤0,01 %
Phosphate ($PO_4$)..... ≤0,02 %
Iron (Fe)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **4386.1** | 100 g | plastic | 45,05 € |
| **4386.2** | 250 g | plastic | 99,90 € |
| **4386.3** | 500 g | plastic | 157,95 € |
| Original pack 6 x 500 g | | | 150,05/500 g |

## Ammonium chloride

Salmiaksalt
$NH_4Cl$
M 53,49 g/mol
D 1,52
mp 355 °C (subl.)
Solubility: 372 g/l ($H_2O$, 20 °C)
[12125-02-9] • EC No. 235-186-4
WGK 1

⚠ **Warning** H302-H319

### Ammonium chloride

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5050.1** | 50 g | plastic | 105,25 € |
| **5050.2** | 100 g | plastic | 177,40 € |

### Ammonium chloride

**≥99,7 %, p.a., ultra quality**

Reagent for photography, buffer substance, molecularbiology, mixtures cryogens.

**Guarantee analysis:**

Assay (arg.)..... ≥99,7 %
pH value (5 % solution)..... 4,5-5,5
Water (KF)..... ≤0,1 %
Appearance of solution..... complies
In $H_2O$ insoluble matter..... ≤0,005 %
Acidity or alkalinity..... complies
Ash content (as $SO_4$)..... ≤0,02 %
Pyridine and homologues..... ≤0,001 %
Bromide and Iodide (Br,I)..... complies
Phosphate ($PO_4$)..... ≤0,0002 %
Nitrate ($NO_3$)..... ≤0,001 %
Sulphate ($SO_4$)..... ≤0,002 %
Iodide (I)..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,0005 %
Arsenic (As)..... ≤0,00005 %
Lead (Pb)..... ≤0,0001 %
Cadmium (Cd)..... ≤0,0001 %
Calcium (Ca)..... ≤0,001 %
Chromium (Cr)..... ≤0,0005 %
Iron (Fe)..... ≤0,0002 %
Potassium (K)..... ≤0,005 %
Cobalt (Co)..... ≤0,0005 %
Copper (Cu)..... ≤0,0005 %
Magnesium (Mg)..... ≤0,0005 %
Nickel (Ni)..... ≤0,0005 %
Mercury (Hg)..... ≤0,0001 %
Zinc (Zn)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **K298.1** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **K298.2** | 1 kg | plastic | 37,10 € |
| Original pack 6 x 1 kg | | | 35,25/1 kg |
| **K298.3** | 2,5 kg | plastic | 57,95 € |
| **K298.4** | 5 kg | plastic | 77,95 € |
| **K298.6** | 10 kg | plastic | 132,15 € |
| **K298.5** | 25 kg | plastic | 256,95 € |

### Ammonium chloride

**≥99,5 %, Ph.Eur., USP, BP**

**Guarantee analysis:**

Assay (argentometric, dry substance)..... 99,5-100,5 %
Identity..... complies
pH value (5 % in water)..... 4,6-6,0
Appearance of solution..... complies
Loss on drying (100 °C)..... ≤0,5 %
Ash content (as $SO_4$)..... ≤0,1 %
Acid or alkaline react. substances..... complies
Bromide and Iodide (Br,I)..... complies
Phosphate ($PO_4$)..... ≤0,002 %
Sulphate ($SO_4$)..... ≤0,005 %
Thiocyanate (SCN)..... complies
Arsenic (As)..... ≤0,0001 %
Lead (Pb)..... ≤0,001 %
Calcium (Ca)..... ≤0,02 %
Iron (Fe)..... ≤0,002 %
Copper (Cu)..... ≤0,001 %
Magnesium (Mg)..... ≤0,005 %
Nickel (Ni)..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **P726.1** | 500 g | plastic | 17,75 € |
| Original pack 6 x 500 g | | | 16,86/500 g |
| **P726.2** | 1 kg | plastic | 28,50 € |
| Original pack 6 x 1 kg | | | 27,08/1 kg |
| **P726.4** | 2,5 kg | plastic | 39,25 € |
| **P726.3** | 5 kg | plastic | 55,80 € |
| **P726.6** | 10 kg | plastic | 80,55 € |
| **P726.5** | 25 kg | plastic | 166,65 € |

### Ammonium chloride

**≥99 %, cryst.**

**Type analysis:**

Appearance..... fine white crystals
Assay ($NH_4Cl$)..... ≥99,0 %
Iron (Fe)..... ≤0,0003 %
Sodium chloride (NaCl)..... ≤0,2 %
Water (KF)..... ≤0,1 %
Ash..... ≤0,25 %

| | | | |
|---|---|---|---|
| **5470.1** | 1 kg | plastic | 17,10 € |
| Original pack 6 x 1 kg | | | 16,25/1 kg |
| **5470.4** | 2,5 kg | plastic | 28,50 € |
| **5470.2** | 5 kg | plastic | 41,40 € |
| **5470.3** | 10 kg | plastic | 61,20 € |
| **5470.5** | 25 kg | plastic | 113,85 € |

## Ammonium citrate, dibasic

▶ di-Ammonium hydrogen citrate see p. 1734

## tri-Ammonium citrate

### tri-Ammonium citrate

**≥97 %, pure**

Ammonium citrate tribasic, Citric acid triammonium salt
$C_6H_{17}N_3O_7$
M 243,22 g/mol
mp 185 °C (dec.)
Solubility: 1000 g/l ($H_2O$, 20 °C)
[3458-72-8] • EC No. 222-394-5
WGK 1

**Type analysis:**

Assay (titr.)..... ≥97,0 %
pH value (5 %)..... 7,0-8,0
Chloride (Cl)..... ≤0,005 %
Sulphate ($SO_4$)..... ≤0,01 %
Iron (Fe)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **9488.1** | 100 g | plastic | 23,15 € |
| **9488.2** | 500 g | plastic | 57,55 € |
| Original pack 6 x 500 g | | | 54,67/500 g |
| **9488.3** | 1 kg | plastic | 87,65 € |
| Original pack 6 x 1 kg | | | 83,27/1 kg |

## Ammonium citrate tribasic

▶ tri-Ammonium citrate see p. 1731

## Ammonium dihydrogene phosphate matrix modifier solution

▶ Matrix modifier solution
Ammonium dihydrogen phosphate see p. 2059

A

## Ammonium dihydrogen phosphate

prim. Ammonium phosphate, Ammonium phosphate monobasic, Ammonium biphosphate
$(NH_4)H_2PO_4$
M 115,03 g/mol
D 1,80
mp 190 °C
Solubility: 368 g/l ($H_2O$, 20 °C)
[7722-76-1] • EC No. 231-764-5
WGK 1

### Ammonium dihydrogen phosphate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5580.1** | 25 g | plastic | 50,45 € |
| **5580.2** | 100 g | plastic | 116,00 € |

### Ammonium dihydrogen phosphate

**≥99 %, p.a., ACS**
Buffer substance

**Guarantee analysis:**

Assay (acidim.)..... ≥99 %
In $H_2O$ insoluble matter..... ≤0,005 %
pH value (5 %, water)..... 3,8-4,4
Sulphur compounds (as $SO_4$)..... ≤0,005 %
Chloride (Cl)..... ≤0,0005 %
Nitrate ($NO_3$)..... ≤0,001 %
Sulphate ($SO_4$)..... ≤0,005 %
Heavy metals (as Pb)..... ≤0,0005 %
Arsenic (As)..... ≤0,00005 %
Cadmium (Cd)..... ≤0,0005 %
Chromium (Cr)..... ≤0,0005 %
Iron (Fe)..... ≤0,0005 %
Lead (Pb)..... ≤0,0005 %
Magnesium (Mg)..... ≤0,0005 %
Calcium (Ca)..... ≤0,001 %
Sodium (Na)..... ≤0,005 %
Potassium (K)..... ≤0,005 %
Cobalt (Co)..... ≤0,0005 %
Copper (Cu)..... ≤0,0005 %
Manganese (Mn)..... ≤0,0005 %
Nickel (Ni)..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P727.1** | 500 g | plastic | 41,40 € |
| Original pack 6 x 500 g | | | 39,33/500 g |
| **P727.2** | 1 kg | plastic | 74,75 € |
| Original pack 6 x 1 kg | | | 71,01/1 kg |
| **P727.3** | 2,5 kg | plastic | 159,65 € |

### Ammonium dihydrogen phosphate

**≥98 %, extra pure**
Buffer substance

**Type analysis:**

Assay (acidim.)..... ≥98 %
pH value (5 %, water)..... 3,8-4,4
In $H_2O$ insoluble matter..... ≤0,01 %
Sulphur compounds (as $SO_4$)..... ≤0,05 %
Chloride (Cl)..... ≤0,003 %
Nitrate ($NO_3$)..... ≤0,005 %
Heavy metals (as Pb)..... ≤0,005 %
Arsenic (As)..... ≤0,0001 %
Iron (Fe)..... ≤0,003 %

| | | | |
|---|---|---|---|
| **CP85.1** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **CP85.2** | 1 kg | plastic | 45,05 € |
| Original pack 6 x 1 kg | | | 42,80/1 kg |
| **CP85.3** | 2,5 kg | plastic | 98,80 € |

## Ammonium ferric oxalate

▶ Ammonium iron(III) oxalate trihydrate see p. 1735

## Ammonium fluoride

### Ammonium fluoride

**≥98 %, p.a., ACS**
$NH_4F$
M 37,04 g/mol
D 1,01
mp ~100 °C (dec.)
Solubility: 820 g/l ($H_2O$, 20 °C)
[12125-01-8] • EC No. 235-185-9
UN No. 2505 • ADR 6.1 III • WGK 1

**Danger** H301+H311+H331

**Guarantee analysis:**

Appearance..... colorless or white hygroscopic solid
Assay..... ≥98,0 %
Insoluble matter..... ≤0,005 %
Chloride (Cl)..... ≤0,001 %
Sulphate ($SO_4$)..... ≤0,005 %
Iron (Fe)..... ≤0,0005 %
Heavy metals (as Pb)..... ≤0,0005 %
Loss on ignition..... ≤0,01 %

| | | | |
|---|---|---|---|
| **6549.1** | 250 g | plastic | 57,95 € |
| **6549.2** | 500 g | plastic | 99,90 € |
| Original pack 6 x 500 g | | | 94,91/500 g |
| **6549.3** | 1 kg | plastic | 177,40 € |
| Original pack 6 x 1 kg | | | 168,53/1 kg |

## Ammonium fluorosilicate

▶ Ammonium hexafluorosilicate see p. 1733

## Ammonium formate

### Ammonium formate

**≥95 %, extra pure**
$HCOONH_4$
M 63,06 g/mol
mp 116 °C
[540-69-2] • EC No. 208-753-9
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Appearance..... hygroscopic crystals
Assay ($HCOONH_4$)..... ≥95 %
pH value (5 % solution)..... 6-7
Chloride (Cl)..... ≤0,01 %
Sulphate ($SO_4$)..... ≤0,01 %
Iron (Fe)..... ≤0,002 %
Heavy metals (as Pb)..... ≤0,002 %

| | | | |
|---|---|---|---|
| **5093.2** | 500 g | plastic | 22,50 € |
| Original pack 6 x 500 g | | | 21,38/500 g |
| **5093.1** | 1 kg | plastic | 33,90 € |
| Original pack 6 x 1 kg | | | 32,21/1 kg |
| **5093.3** | 5 kg | plastic | 125,70 € |

## Ammonium heptamolybdate tetrahydrate

Ammonium molybdate
$(NH_4)_6Mo_7O_{24} \cdot 4\ H_2O$
M 1235,86 g/mol
mp 90 °C
Solubility: 400 g/l ($H_2O$, 20 °C)
[12054-85-2] • EC No. 234-722-4
WGK 1

### Ammonium heptamolybdate tetrahydrate

**≥99 %, p.a.**

**Type analysis:**

Assay..... ≥99,0 %
Aluminium (Al)..... ≤0,001 %
Lead (Pb)..... ≤0,0005 %
Calcium (Ca)..... ≤0,001 %
Chromium (Cr)..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Potassium (K)..... ≤0,01 %
Copper (Cu)..... ≤0,001 %
Magnesium (Mg)..... ≤0,001 %
Sodium (Na)..... ≤0,01 %
Nickel (Ni)..... ≤0,0005 %
Silicon (Si)..... ≤0,001 %
Titanium (Ti)..... ≤0,0005 %
Tin (Sn)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **3666.1** | 250 g | plastic | 87,00 € |
| **3666.2** | 500 g | plastic | 155,90 € |
| Original pack 6 x 500 g | | | 148,11/500 g |
| **3666.3** | 1 kg | plastic | 278,45 € |
| Original pack 6 x 1 kg | | | 264,53/1 kg |

For further information, please see page 1615

## Ammonium heptamolybdate tetrahydrate

**≥99 %, extra pure**

**Type analysis:**

Assay..... ≥99,0 %
Aluminium (Al)..... ≤0,001 %
Lead (Pb)..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Nickel (Ni)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **7311.1** | 100 g | plastic | 23,15 € |
| **7311.2** | 500 g | plastic | 73,00 € |
| Original pack 6 x 500 g | | | 69,35/500 g |
| **7311.3** | 1 kg | plastic | 120,95 € |
| Original pack 6 x 1 kg | | | 114,90/1 kg |
| **7311.4** | 2,5 kg | plastic | 256,95 € |

## Ammonium hexachloro-osmate (IV)

## Ammonium hexachloro-osmate (IV)

**ROTI®METIC 99,99 % (4N)**

Ammonium osmium chloride, Osmium(IV) ammonium chloride
$(NH_4)_2OsCl_6$
M 439,00 g/mol
D 2,93
[12125-08-5] • EC No. 235-188-5
WGK 3

**Warning** H315-H319-H335

**Type analysis:**

Assay (metals basis)..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5585.1** | 1 g | glass | 181,70 € |

## Ammonium hexachlororhodate(III)

## Ammonium hexachlororhodate(III)

**ROTI®METIC 99,995 % (4N5)**

Rhodium(III) ammonium chloride
$(NH_4)_3RhCl_6$
M 369,74 g/mol
[15336-18-2] • EC No. 239-364-2
WGK 1

**Warning** H315-H319

**Type analysis:**

Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5586.1** | 1 g | plastic | 482,70 € |

## Ammonium hexafluorosilicate

Ammonium fluorosilicate
$(NH_4)_2SiF_6$
M 178,14 g/mol
D 2,01
mp 145 °C (dec.)
Solubility: 186 g/l ($H_2O$, 17 °C)
[16919-19-0] • EC No. 240-968-3
UN No. 2854 • ADR 6.1 III • WGK 2

**Danger** H301+H311+H331

## Ammonium hexafluorosilicate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5587.1** | 10 g | plastic | 57,55 € |
| **5587.2** | 25 g | plastic | 115,60 € |
| **5587.3** | 50 g | plastic | 196,20 € |

## Ammonium hexafluorosilicate

**≥98,5 %, extra pure**

**Type analysis:**

Assay (titr.)..... ≥98,5 %
Sulphate ($SO_4$)..... ≤0,5 %
Water..... ≤0,5 %
In water insoluble matter..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7314.1** | 250 g | plastic | 23,15 € |
| **7314.2** | 500 g | plastic | 35,40 € |
| Original pack 6 x 500 g | | | 33,63/500 g |
| **7314.3** | 1 kg | plastic | 61,20 € |
| Original pack 6 x 1 kg | | | 58,14/1 kg |
| **7314.4** | 2,5 kg | plastic | 120,95 € |

## Ammonium hexafluorotitanate(IV)

## Ammonium hexafluorotitanate(IV)

**ROTI®METIC 99,999 % (5N)**

$(NH_4)_2TiF_6$
M 197,95 g/mol
[16962-40-6] • EC No. 241-036-9
WGK 1

**Warning** H302+H312+H332

**Type analysis:**

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5589.3** | 100 g | plastic | 332,20 € |

## Ammonium hydrogen carbonate

Ammonium bicarbonate
$(NH_4)HCO_3$
M 79,06 g/mol
D 1,586
mp 105 °C
Solubility: 220 g/l ($H_2O$, 20 °C)
[1066-33-7] • EC No. 213-911-5
WGK 1

**Warning** H302

## Ammonium hydrogen carbonate

**≥99 %, p.a.**

**Guarantee analysis:**

Assay (acidim.)..... ≥99,0 %
In $H_2O$ insoluble matter..... ≤0,005 %
Non volatile matter..... ≤0,005 %
Chloride (Cl)..... ≤0,0005 %
Phosphate ($PO_4$)..... ≤0,001 %
Sulphate ($SO_4$)..... ≤0,005 %
Arsenic (As)..... ≤0,0001 %
Lead (Pb)..... ≤0,0005 %
Calcium (Ca)..... ≤0,005 %
Iron (Fe)..... ≤0,0005 %
Potassium (K)..... ≤0,005 %
Copper (Cu)..... ≤0,0005 %
Magnesium (Mg)..... ≤0,005 %
Sodium (Na)..... ≤0,005 %
Sulphide (S)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **T871.1** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **T871.2** | 1 kg | plastic | 31,75 € |
| Original pack 6 x 1 kg | | | 30,16/1 kg |
| **T871.3** | 2,5 kg | plastic | 52,15 € |
| **T871.4** | 5 kg | plastic | 87,65 € |
| **T871.5** | 25 kg | plastic | 299,95 € |

## Ammonium hydrogen carbonate

**≥98 %, Ph.Eur., BP**

**Guarantee analysis:**

Assay (acidim.)..... 98,0-101,0 %
Identity..... complies
In $H_2O$ insoluble matter..... ≤0,01 %
Calcium (Ca)..... ≤0,01 %
Chloride (Cl)..... ≤0,005 %
Phosphate ($PO_4$)..... ≤0,005 %
Sulphate ($SO_4$)..... ≤0,007 %
Sulphide (S)..... complies
Arsenic (As)..... ≤0,0002 %
Iron (Fe)..... ≤0,001 %
Copper (Cu)..... ≤0,025 %
Nickel (Ni)..... ≤0,0025 %
Heavy metals (as Pb)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **7094.2** | 500 g | plastic | 15,60 € |
| Original pack 6 x 500 g | | | 14,82/500 g |
| **7094.1** | 1 kg | plastic | 22,05 € |
| Original pack 6 x 1 kg | | | 20,95/1 kg |
| **7094.4** | 2,5 kg | plastic | 33,25 € |
| **7094.3** | 5 kg | plastic | 59,70 € |
| **7094.5** | 25 kg | plastic | 203,75 € |

A

## di-Ammonium hydrogen citrate

Ammonium citrate, dibasic
$C_6H_{14}N_2O_7$
M 226,19 g/mol
D 1,48
Solubility: easily soluble ($H_2O$, 20 °C)
[3012-65-5] • EC No. 221-146-3
WGK 1

**Warning** H319

### di-Ammonium hydrogen citrate

**≥98 %, p.a., ACS**

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | 98,0-103,0 % |
| Water | ≤1,0 % |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Ash content (as $SO_4$) | ≤0,01 % |
| Phosphate ($PO_4$) | ≤0,0005 % |
| Chloride (Cl) | ≤0,001 % |
| Oxalate ($C_2O_4$) | ≤0,05 % |
| Sulphur compounds (as $SO_4$) | ≤0,005 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Arsenic (As) | ≤0,00001 % |
| Lead (Pb) | ≤0,0005 % |
| Cadmium (Cd) | ≤0,0005 % |
| Calcium (Ca) | ≤0,002 % |
| Chromium (Cr) | ≤0,0005 % |
| Iron (Fe) | ≤0,0005 % |
| Potassium (K) | ≤0,005 % |
| Cobalt (Co) | ≤0,0005 % |
| Copper (Cu) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,0005 % |
| Manganese (Mn) | ≤0,0005 % |
| Sodium (Na) | ≤0,005 % |
| Nickel (Ni) | ≤0,0005 % |
| Zinc (Zn) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **P735.1** | 500 g | plastic | 47,85 € |
| Original pack 6 x 500 g | | | 45,46/500 g |
| **P735.2** | 1 kg | plastic | 85,50 € |
| Original pack 6 x 1 kg | | | 81,23/1 kg |
| **P735.3** | 2,5 kg | plastic | 172,55 € |

### di-Ammonium hydrogen citrate

**≥98 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥98,0 % |
| In $H_2O$ insoluble matter | ≤0,05 % |
| Sulphated ash | ≤0,1 % |
| Chloride (Cl) | ≤0,005 % |
| Iron (Fe) | ≤0,002 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Total sulphur (as $SO_4$) | ≤0,01 % |

| | | | |
|---|---|---|---|
| **0267.2** | 1 kg | plastic | 40,75 € |
| Original pack 6 x 1 kg | | | 38,71/1 kg |
| **0267.1** | 500 g | plastic | 25,30 € |
| Original pack 6 x 500 g | | | 24,04/500 g |
| **0267.3** | 2,5 kg | plastic | 88,05 € |

## Ammonium hydrogen fluoride

Ammonium bifluoride, Ammonium difluoride
$(NH_4)HF_2$
M 57,04 g/mol
D 1,50 • bp ~240 °C (dec.)
mp 125 °C
Solubility: 630 g/l ($H_2O$, 20 °C)
[1341-49-7] • EC No. 215-676-4
UN No. 1727 • ADR 8 II • WGK 1

**Danger** H301-H314

### Ammonium hydrogen fluoride

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,999 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5363.1** | 25 g | plastic | 107,40 € |

### Ammonium hydrogen fluoride

**≥98 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay | ≥98,0 % |
| Chloride (Cl) | ≤0,1 % |
| Iron (Fe) | ≤0,05 % |
| Hexafluorosilicate ($SiF_6$) | ≤0,5 % |
| Heavy metals (as Pb) | ≤0,05 % |
| Ash content (as $SO_4$) | ≤0,5 % |

| | | | |
|---|---|---|---|
| **7313.1** | 250 g | plastic | 19,90 € |
| **7313.2** | 500 g | plastic | 30,00 € |
| Original pack 6 x 500 g | | | 28,50/500 g |
| **7313.3** | 1 kg | plastic | 45,70 € |
| Original pack 6 x 1 kg | | | 43,42/1 kg |
| **7313.4** | 2,5 kg | plastic | 97,30 € |

## di-Ammonium hydrogen phosphate

sec. Ammonium phosphate, Ammonium phosphate dibasic
$(NH_4)_2HPO_4$
M 132,06 g/mol
D 1,62
mp 155 °C (dec.)
Solubility: 690 g/l ($H_2O$, 20 °C)
[7783-28-0] • EC No. 231-987-8
WGK 1

### di-Ammonium hydrogen phosphate

**ROTI®METIC 99,999 % (5N)**

**Guarantee analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,999 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5596.1** | 100 g | plastic | 224,70 € |

### di-Ammonium hydrogen phosphate

**≥98 %, p.a., ACS**

Buffer substance

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥98,0 % |
| pH value (5 % in water) | 7,7-8,1 |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Sulphur compounds (as $SO_4$) | ≤0,004 % |
| Chloride (Cl) | ≤0,0005 % |
| Nitrate ($NO_3$) | ≤0,003 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Arsenic (As) | ≤0,0001 % |
| Lead (Pb) | ≤0,001 % |
| Calcium (Ca) | ≤0,001 % |
| Iron (Fe) | ≤0,001 % |
| Potassium (K) | ≤0,005 % |
| Copper (Cu) | ≤0,001 % |
| Magnesium (Mg) | ≤0,0005 % |
| Sodium (Na) | ≤0,005 % |
| Nickel (Ni) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **P736.1** | 500 g | plastic | 51,50 € |
| Original pack 6 x 500 g | | | 48,93/500 g |
| **P736.2** | 1 kg | plastic | 82,70 € |
| Original pack 6 x 1 kg | | | 78,57/1 kg |
| **P736.3** | 2,5 kg | plastic | 188,15 € |

### di-Ammonium hydrogen phosphate

**≥97 %, extra pure**

Buffer substance

**Type analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥97,0 % |
| pH value (5 % solution) | 7,7-8,3 |
| In $H_2O$ insoluble matter | ≤0,01 % |
| Chloride (Cl) | ≤0,005 % |
| Sulphate ($SO_4$) | ≤0,01 % |
| Heavy metals (as Pb) | ≤0,0003 % |
| Arsenic (As) | ≤0,0003 % |
| Iron (Fe) | ≤0,003 % |

| | | | |
|---|---|---|---|
| **0268.1** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **0268.2** | 1 kg | plastic | 27,85 € |
| Original pack 6 x 1 kg | | | 26,46/1 kg |
| **0268.4** | 2,5 kg | plastic | 54,75 € |
| **0268.3** | 5 kg | plastic | 103,10 € |

## Ammonium hydrogen sulphate

### Ammonium hydrogen sulphate

**≥98,5 %, p.a.**

Ammonium bisulphate
$NH_4HSO_4$
M 115,11 g/mol
mp 147 °C
Solubility: 115 g/l ($H_2O$, 20 °C)
[7803-63-6] • EC No. 232-265-5
UN No. 2506 • ADR 8 II • WGK 1

**Danger** H314

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥98,5 % |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Chloride (Cl) | <0,0002 % |
| Phosphate ($PO_4$) | ≤0,0003 % |
| Nitrate ($NO_3$) | ≤0,001 % |
| Heavy metals (as Pb) | ≤0,0002 % |
| Aluminium (Al) | ≤0,001 % |
| Arsenic (As) | ≤0,00002 % |

Calcium (Ca)..... <0,001 %
Magnesium (Mg)..... ≤0,0005 %
Manganese (Mn)..... ≤0,0005 %
Cadmium (Cd)..... <0,0005 %
Cobalt (Co)..... ≤0,0005 %
Copper (Cu)..... ≤0,0001 %
Iron (Fe)..... <0,0002 %
Potassium (K)..... ≤0,005 %
Sodium (Na)..... ≤0,005 %
Nickel (Ni)..... <0,0001 %
Lead (Pb)..... <0,0001 %
Zinc (Zn)..... ≤0,0001 %
Ash content..... ≤0,005 %

| | | | |
|---|---|---|---|
| **5485.2** | 250 g | plastic | 25,70 € |
| **5485.1** | 500 g | plastic | 42,50 € |
| Original pack 6 x 500 g | | | 40,38/500 g |
| **5485.3** | 1 kg | plastic | 76,25 € |
| Original pack 6 x 1 kg | | | 72,44/1 kg |

## Ammonium hydroxide solution


- ▶ Ammonia solution Ultra-quality see p. 1728
- ▶ Ammonia solution Supra-quality see p. 1728
- ▶ Ammonia solution 32 % see p. 1728
- ▶ Ammonia solution 30 % see p. 1728
- ▶ Ammonia solution 25 % see p. 1729
- ▶ Ammonia solution 15 % see p. 1729


## Ammonium iodide

### Ammonium iodide

**≥99 %, p.a., ACS**

$NH_4I$

M 144,94 g/mol

D 2,51 • bp 551 °C (dec.)

mp 405 °C (subl.)

Solubility: 1780 g/l ($H_2O$, 25 °C)

[12027-06-4] • EC No. 234-717-7

WGK 1

**Warning** H315-H319-H335

**Guarantee analysis:**

Assay (arg.)..... ≥99,0 %
Insoluble matter..... ≤0,005 %
Ash content..... ≤0,05 %
Chloride and bromide..... ≤0,005 %
Phosphate ($PO_4$)..... ≤0,001 %
Sulphate ($SO_4$)..... ≤0,05 %
Arsenic (As)..... ≤0,0005 %
Barium (Ba)..... ≤0,002 %
Iron (Fe)..... ≤0,0005 %
Heavy metals (as Pb)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **9818.1** | 100 g | glass | 50,45 € |
| **9818.2** | 250 g | glass | 110,65 € |
| **9818.3** | 500 g | glass | 209,65 € |
| Original pack 6 x 500 g | | | 199,17/500 g |

## Ammonium iron(III) citrate

Citric acid ammonium iron(III) salt, Iron(III) ammonium citrate, Ammonium ferric citrate, Ferric ammonium citrate

D 0,73

Solubility: 1,2 g/l ($H_2O$, 20 °C)

[1185-57-5] • EC No. 214-686-6

WGK 1

### Ammonium iron(III) citrate

NEW

**~21 % Fe, brown**

**Type analysis:**

Appearance..... red-brown powder
Assay (Fe)..... 20,5-22,5 %
pH value (10 % in $H_2O$)..... 6,0-8,0
Chloride (Cl)..... ≤0,05 %
Arsenic (As)..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,005 %
Loss on drying (105 °C, 2 h)..... ≤6,0 %

| | | | |
|---|---|---|---|
| **0618.1** | 250 g | plastic | 23,55 € |
| **0618.2** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **0618.3** | 1 kg | plastic | 53,65 € |
| Original pack 6 x 1 kg | | | 50,97/1 kg |
| **0618.4** | 2,5 kg | plastic | 117,20 € |

### Ammonium iron(III) citrate

**~18 % Fe, DAC**

Microbiology

**Guarantee analysis:**

Appearance..... yellowish, brown powder
Assay (Fe)..... 17,1-18,9 %
pH value (10 % solution)..... 6,0-8,0
Appearance of solution (10 %)..... complies
Chloride (Cl)..... ≤0,05 %
Sulphate ($SO_4$)..... ≤1,5 %
Heavy metals (as Pb)..... ≤0,005 %
Arsenic (As)..... ≤0,0004 %
Loss on drying..... ≤6,0 %

| | | | |
|---|---|---|---|
| **CN77.1** | 250 g | plastic | 16,05 € |
| **CN77.2** | 500 g | plastic | 24,20 € |
| Original pack 6 x 500 g | | | 22,99/500 g |
| **CN77.3** | 1 kg | plastic | 39,25 € |
| Original pack 6 x 1 kg | | | 37,29/1 kg |
| **CN77.4** | 2,5 kg | plastic | 79,45 € |

### Ammonium iron(III) citrate

**~15 % Fe, green**

**Type analysis:**

Assay (Fe)..... 14,5-16,0 %

| | | | |
|---|---|---|---|
| **9366.1** | 250 g | plastic | 22,50 € |
| **9366.2** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **9366.3** | 1 kg | plastic | 52,60 € |
| Original pack 6 x 1 kg | | | 49,97/1 kg |

## Ammonium iron(III) citrate solution

### Ammonium iron(III) citrate solution

**12,5 %, sterile, ready-to-use**

Media supplement for detection of *Listeria monocytogenes*.

One box of 10 vials Ammonium iron(III) citrate solution is sufficient for 10 x 500 ml Fraser Broth.

Ferric(III) ammonium citrate solution

Storage temp.: +20 °C

WGK 1

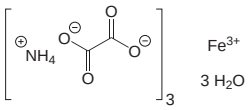
**Formulation per vial:**

Ammonium iron(III) citrate..... 0,25 g

| | | | |
|---|---|---|---|
| **3130.1** | 10 x 2 ml | plastic | 40,35 € |
| **3130.2** | 30 x 2 ml | plastic | 100,95 € |

For further information, please see page 1406

## Ammonium iron(III) oxalate trihydrate




NEW

### Ammonium iron(III) oxalate trihydrate

**≥99 %, pure**

Ammonium ferric oxalate, Iron ammonium oxalate

$(NH_4)_3Fe(C_2O_4)_3 \cdot 3\ H_2O$

M 428,06 g/mol

D 1,78

mp 160-170 °C (dec.)

Solubility: 1000 g/l ($H_2O$, 20 °C)

[13268-42-3] • EC No. 220-952-2

WGK 1

**Warning** H302+H312

**Type analysis:**

Assay (based on Fe)..... ≥99,0 %
pH value (5 % in $H_2O$)..... ~5,0
Chloride (Cl)..... ≤0,005 %
Heavy metals (as Pb)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **0517.1** | 250 g | plastic | 21,40 € |
| **0517.2** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **0517.3** | 1 kg | plastic | 53,65 € |
| Original pack 6 x 1 kg | | | 50,97/1 kg |
| **0517.4** | 2,5 kg | plastic | 107,40 € |

## Ammonium iron(II) sulphate hexahydrate

Iron(II) ammonium sulphate, Ferrous ammonium sulphate, Mohr's salt
$(NH_4)_2Fe(SO_4)_2 \cdot 6\ H_2O$
M 392,14 g/mol
D 1,86
mp 100 °C
Solubility: 270 g/l ($H_2O$, 20 °C)
[7783-85-9] • EC No. 233-151-8
WGK 1

### Ammonium iron(II) sulphate hexahydrate

**≥99 %, p.a., ISO**

**Guarantee analysis:**

| | |
|---|---|
| Assay (perm.) | 99,0-101,0 % |
| pH value (5 % in water) | 3,0-5,0 |
| In $H_2SO_4$ insoluble matter | ≤0,005 % |
| Substances not precipitated by ammonia | ≤0,1 % |
| Phosphate ($PO_4$) | ≤0,002 % |
| Chloride (Cl) | ≤0,001 % |
| Iron III (Fe III) | ≤0,02 % |
| Calcium (Ca) | ≤0,01 % |
| Copper (Cu) | ≤0,001 % |
| Potassium (K) | ≤0,01 % |
| Manganese (Mn) | ≤0,02 % |
| Lead (Pb) | ≤0,001 % |
| Cobalt (Co) | ≤0,005 % |
| Magnesium (Mg) | ≤0,005 % |
| Sodium (Na) | ≤0,01 % |
| Zinc (Zn) | ≤0,003 % |

| | | | |
|---|---|---|---|
| **P728.1** | 500 g | plastic | 27,45 € |
| Original pack 6 x 500 g | | | 26,08/500 g |
| **P728.2** | 1 kg | plastic | 46,15 € |
| Original pack 6 x 1 kg | | | 43,84/1 kg |
| **P728.3** | 2,5 kg | plastic | 103,75 € |

### Ammonium iron(II) sulphate hexahydrate

**≥98 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay | ≥98,0 % |
| Iron III (Fe III) | complies |
| Copper (Cu) | ≤0,005 % |
| Zinc (Zn) | ≤0,02 % |
| Alkali and alkaline-earth metals (as $SO_4$) | ≤0,07 % |

| | | | |
|---|---|---|---|
| **X884.1** | 500 g | plastic | 17,10 € |
| Original pack 6 x 500 g | | | 16,25/500 g |
| **X884.2** | 1 kg | plastic | 25,70 € |
| Original pack 6 x 1 kg | | | 24,42/1 kg |
| **X884.3** | 5 kg | plastic | 89,80 € |

## Ammonium iron(II) sulphate solution (0,12 N)

### Ammonium iron(II) sulphate solution

**0,12 mol/l - 0,12 N volumetric solution, for determination of COD**

According to DIN 38409 part H41.
UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**

| | |
|---|---|
| Amount-of-substance conc. (20 °C) | 0,12 mol/l |

The titre has to be determined at least daily.

| | | | |
|---|---|---|---|
| **KK60.1** | 1 l | plastic | 45,05 € |
| Original pack 6 x 1 l | | | 42,80/1 l |

## Ammonium iron(III) sulphate dodecahydrate

Iron(III) ammonium sulphate, Ferric alum, Iron alum
$(NH_4)Fe(SO_4)_2 \cdot 12\ H_2O$
M 482,19 g/mol
D 1,71
mp 39-41 °C
Solubility: 1240 g/l ($H_2O$, 20 °C)
[7783-83-7] • EC No. 233-382-4
WGK 1

### Ammonium iron(III) sulphate dodecahydrate

**≥98,5 %, p.a., ACS, ISO**

**Guarantee analysis:**

| | |
|---|---|
| Assay (iodom.) | 98,5-102,0 % |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Substances not precipitated by ammonia | ≤0,05 % |
| Chloride (Cl) | ≤0,0005 % |
| Nitrate ($NO_3$) | ≤0,01 % |
| Lead (Pb) | ≤0,001 % |
| Calcium (Ca) | ≤0,01 % |
| Iron II (Fe II) | ≤0,001 % |
| Potassium (K) | ≤0,005 % |
| Copper (Cu) | ≤0,002 % |
| Magnesium (Mg) | ≤0,001 % |
| Manganese (Mn) | ≤0,005 % |
| Sodium (Na) | ≤0,01 % |
| Zinc (Zn) | ≤0,003 % |

| | | | |
|---|---|---|---|
| **P734.1** | 500 g | plastic | 30,00 € |
| Original pack 6 x 500 g | | | 28,50/500 g |
| **P734.2** | 1 kg | plastic | 51,50 € |
| Original pack 6 x 1 kg | | | 48,93/1 kg |
| **P734.3** | 2,5 kg | plastic | 107,40 € |

### Ammonium iron(III) sulphate dodecahydrate

**≥98 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay | ≥98,0 % |
| Chloride (Cl) | ≤0,05 % |
| Copper (Cu) | ≤0,002 % |
| Zinc (Zn) | ≤0,005 % |
| Iron(II) salts | complies |
| In $NH_4OH$ not precipitated substances | ≤0,1 % |

| | | | |
|---|---|---|---|
| **X885.1** | 500 g | plastic | 18,85 € |
| Original pack 6 x 500 g | | | 17,91/500 g |
| **X885.2** | 1 kg | plastic | 28,50 € |
| Original pack 6 x 1 kg | | | 27,08/1 kg |
| **X885.3** | 5 kg | plastic | 105,25 € |

## Ammonium matrix modifier

▶ Ammonium nitrate matrix modifier solution see p. 2059

## Ammonium metatungstate hydrate

### Ammonium meta-tungstate hydrate

NEW

**≥90 % $WO_3$, p.a.**

Ammonium tungsten oxide hydrate, Hexaammonium tungstate hydrate, AMT
$(NH_4)_6H_2W_{12}O_{40} \cdot x\ H_2O$
M 2956,42 · x $H_2O$ g/mol
D 4,00
mp 120 °C (dec.)
Solubility: 1000 g/l ($H_2O$, 20 °C)
[12028-48-7] • EC No. 234-733-4
WGK 1

**Warning** H302

**Type analysis:**

| | |
|---|---|
| Assay ($WO_3$) | ≥90 % |
| In water insoluble matter | ≤0,05 % |
| Loss on ignition (2 h, 750 °C) | ≤10,0 % |
| Aluminium (Al) | ≤0,0005 % |
| Arsenic (As) | ≤0,0005 % |
| Iron (Fe) | ≤0,001 % |
| Molybdenum (Mo) | ≤0,005 % |
| Sodium (Na) | ≤0,001 % |
| Phosphorus (P) | ≤0,001 % |
| Silicon (Si) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **0742.1** | 25 g | plastic | 32,15 € |
| **0742.2** | 100 g | plastic | 59,05 € |
| **0742.3** | 500 g | plastic | 213,95 € |
| Original pack 6 x 500 g | | | 203,25/500 g |

## Ammonium metavanadate

▶ Ammonium monovanadate see p. 1737

## Ammonium molybdate

▶ Ammonium heptamolybdate tetrahydrate see p. 1732

## Ammonium molybdate(VI)

### Ammonium molybdate(VI)

**ROTI®METIC 99,99 % (4N)**

$(NH_4)_2MoO_4$
M 196,02 g/mol
Solubility: >10 g/l ($H_2O$, 20 °C)
[13106-76-8] • EC No. 236-031-3
WGK 1

**Warning** H302-H315-H319-H335

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,99 % |

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5591.1** | 5 g | plastic | 44,65 € |
| **5591.2** | 25 g | plastic | 149,45 € |

## Ammonium molybdenum sulfide

▶ Ammonium tetrathiomolybdate see p. 1739

## Ammonium monovanadate

Ammonium metavanadate
$NH_4VO_3$
M 116,98 g/mol
D 2,3
mp 200 °C (dec.)
Solubility: 5,1 g/l ($H_2O$, 20 °C)
[7803-55-6] • EC No. 232-261-3
UN No. 3285 • ADR 6.1 III • WGK 3

**Danger**
H301-H319-H332-H361fd-H372-H410

### Ammonium monovanadate

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**
Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5590.3** | 1 g | plastic | 23,15 € |
| **5590.2** | 25 g | plastic | 364,45 € |

### Ammonium monovanadate

**≥99,8 %, p.a.**
Component of the molybdate-vanadate reagent for the determination of phosphate.

**Guarantee analysis:**
Assay..... ≥99,8 %
Sodium (Na)..... ≤0,01 %
Potassium (K)..... ≤0,01 %
Iron (Fe)..... ≤0,01 %
Chromium (Cr)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **4232.1** | 50 g | plastic | 24,20 € |
| **4232.2** | 100 g | plastic | 34,95 € |
| **4232.3** | 250 g | plastic | 71,95 € |
| **4232.4** | 1 kg | plastic | 231,15 € |
| Original pack 6 x 1 kg | | | 219,59/1 kg |

### Ammonium monovanadate

**≥99 %, extra pure**

**Type analysis:**
Assay..... ≥99,0 %
Assay ($V_2O_5$)..... ≥77 %
Iron (Fe)..... ≤0,05 %
Potassium (K)..... ≤0,05 %
Sodium (Na)..... ≤0,05 %

| | | | |
|---|---|---|---|
| **9923.1** | 100 g | plastic | 22,05 € |
| **9923.2** | 500 g | plastic | 66,55 € |
| Original pack 6 x 500 g | | | 63,22/500 g |
| **9923.3** | 1 kg | plastic | 110,20 € |
| Original pack 6 x 1 kg | | | 104,69/1 kg |

## Ammonium nitrate

Ammonium saltpeter
$NH_4NO_3$
M 80,04 g/mol
D 1,72
mp 170 °C (dec.)
Solubility: 1877 g/l ($H_2O$, 20 °C)
[6484-52-2] • EC No. 229-347-8
UN No. 1942 • ADR 5.1 III • WGK 1

**Warning** H272-H319

### Ammonium nitrate

**≥98 %, p.a., ACS**

**Guarantee analysis:**
Assay (acidim.)..... ≥98,0 %
pH value (5 % in $H_2O$)..... 4,5-6,0
In $H_2O$ insoluble matter..... ≤0,005 %
Chloride (Cl)..... ≤0,0003 %
Sulphate ($SO_4$)..... ≤0,002 %
Nitrite ($NO_2$)..... ≤0,0005 %
Phosphate ($PO_4$)..... ≤0,0005 %
Heavy metals (as Pb)..... ≤0,0005 %
Iron (Fe)..... ≤0,0002 %
Ash content (as $SO_4$)..... ≤0,01 %

| | | | |
|---|---|---|---|
| **K299.1** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **K299.2** | 1 kg | plastic | 47,20 € |
| Original pack 6 x 1 kg | | | 44,84/1 kg |
| **K299.3** | 2,5 kg | plastic | 102,05 € |

### Ammonium nitrate

**≥98 %, extra pure**

**Type analysis:**
Assay (acidim.)..... ≥98,0 %
pH value (5 %, 20 °C)..... 4,5-6,0
Chloride (Cl)..... ≤0,005 %
Phosphate ($PO_4$)..... ≤0,001 %
Sulphate ($SO_4$)..... ≤0,01 %
Heavy metals (as Pb)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **X988.1** | 500 g | plastic | 27,85 € |
| Original pack 6 x 500 g | | | 26,46/500 g |
| **X988.2** | 1 kg | plastic | 45,05 € |
| Original pack 6 x 1 kg | | | 42,80/1 kg |
| **X988.3** | 2,5 kg | plastic | 98,80 € |

## Ammonium nitrate matrix modifier solution

▶ Matrix modifier solution Ammonium nitrate see p. 2059

## Ammonium osmium chloride

▶ Ammonium hexachloroosmate(IV) see p. 1733

## di-Ammonium oxalate monohydrate

Oxalic acid ammonium salt monohydrate
$(NH_4)_2C_2O_4 \cdot H_2O$
M 142,11 g/mol
D 1,5
mp 70 °C (dec.)
Solubility: 50 g/l ($H_2O$, 20 °C)
[6009-70-7] • EC No. 214-202-3
WGK 1

**Warning** H302+H312

### di-Ammonium oxalate monohydrate

**≥99,5 %, p.a., ACS**
Reagent for the determination of Ca, Pb and rare earth metals.

**Guarantee analysis:**
Assay (perm.)..... ≥99,5 %
In $H_2O$ insoluble matter..... ≤0,005 %
Ash content (as $SO_4$)..... ≤0,02 %
Chloride (Cl)..... ≤0,001 %
Nitrate ($NO_3$)..... ≤0,001 %
Sulphate ($SO_4$)..... ≤0,002 %
Lead (Pb)..... ≤0,0005 %
Calcium (Ca)..... ≤0,001 %
Iron (Fe)..... ≤0,0002 %
Copper (Cu)..... ≤0,0005 %
Potassium (K)..... ≤0,001 %
Sodium (Na)..... ≤0,001 %
Zinc (Zn)..... ≤0,0005 %
Heavy metals (as Pb)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P737.1** | 500 g | plastic | 50,00 € |
| Original pack 6 x 500 g | | | 47,50/500 g |
| **P737.2** | 1 kg | plastic | 81,60 € |
| Original pack 6 x 1 kg | | | 77,52/1 kg |
| **P737.3** | 2,5 kg | plastic | 171,50 € |

### di-Ammonium oxalate monohydrate

**≥98 %, BP**
Reagent for the determination of Ca, Pb and rare earth metals.

**Guarantee analysis:**
Appearance..... white crystals
Assay..... ≥98 %
Identity..... complies
Chloride (Cl)..... ≤0,018 %
Heavy metals (as Pb)..... ≤0,002 %
Ash content..... ≤0,05 %

| | | | |
|---|---|---|---|
| **4266.3** | 500 g | plastic | 22,50 € |
| Original pack 6 x 500 g | | | 21,38/500 g |
| **4266.1** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **4266.4** | 2,5 kg | plastic | 73,00 € |
| **4266.2** | 10 kg | plastic | 246,20 € |

## Ammonium peroxydisulphate

Ammonium persulphate, APS
$(NH_4)_2S_2O_8$
M 228,20 g/mol
D 1,982
mp 120 °C (dec.)
Solubility: 620 g/l ($H_2O$, 20 °C)
[7727-54-0] • EC No. 231-786-5
UN No. 1444 • ADR 5.1 III • WGK 1

**Danger**
H334-H272-H302-H335-H315-H319-H317

### Ammonium peroxydisulphate

**≥98 %, p.a., ACS**

Oxidizing agent for Cu, for separation of Mn and Cr. For electrophoresis. Polymerisation catalyst.

**Guarantee analysis:**

| | |
|---|---|
| Assay (iodom.) | ≥98,0 % |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Chlorides and chlorates (as Cl) | ≤0,001 % |
| Acidity | ≤0,04 meq/g |
| Lead (Pb) | ≤0,0005 % |
| Cadmium (Cd) | ≤0,0005 % |
| Calcium (Ca) | ≤0,01 % |
| Chromium (Cr) | ≤0,0005 % |
| Iron (Fe) | ≤0,001 % |
| Potassium (K) | ≤0,005 % |
| Cobalt (Co) | ≤0,0005 % |
| Copper (Cu) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,005 % |
| Manganese (Mn) | ≤0,00005 % |
| Sodium (Na) | ≤0,01 % |
| Nickel (Ni) | ≤0,0005 % |
| Heavy metals (as Pb) | ≤0,005 % |
| Zinc (Zn) | ≤0,0005 % |
| Ash content (as $SO_4$) | ≤0,05 % |

| | | | |
|---|---|---|---|
| **9592.3** | 50 g | plastic | 9,90 € |
| **9592.2** | 100 g | plastic | 13,15 € |
| **9592.5** | 500 g | plastic | 27,85 € |
| Original pack 6 x 500 g | | | 26,46/500 g |
| **9592.1** | 1 kg | plastic | 37,10 € |
| Original pack 6 x 1 kg | | | 35,25/1 kg |
| **9592.4** | 2,5 kg | plastic | 70,45 € |

For further information, please see page 1156

### Ammonium peroxydisulphate

**≥98 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay | ≥98,0 % |
| Acid content (as $H_2SO_4$) | ≤0,15 % |
| Active oxygen | ≥6,9 % |

| | | | |
|---|---|---|---|
| **9178.3** | 500 g | plastic | 16,70 € |
| Original pack 6 x 500 g | | | 15,87/500 g |
| **9178.1** | 1 kg | plastic | 23,55 € |
| Original pack 6 x 1 kg | | | 22,37/1 kg |
| **9178.4** | 2,5 kg | plastic | 48,95 € |
| **9178.2** | 5 kg | plastic | 92,35 € |

## Ammonium persulphate

▶ Ammonium peroxydisulphate see p. 1738

## Ammonium phosphate

▶ di-Ammonium hydrogen phosphate see p. 1734

## Ammoniumphosphate monobasic

▶ Ammonium dihydrogen phosphate see p. 1732

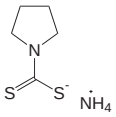
## sec. Ammonium phosphate

▶ di-Ammonium hydrogen phosphate see p. 1734

## Ammonium purpurate

▶ Murexide (C.I. 56085) see p. 2086

## Ammonium pyrrolidine dithiocarbamate



### Ammonium pyrrolidine dithiocarbamate

**≥98 %, p.a.**

APDC, Ammonium tetramethylene dithiocarbamate, Ammonium pyrrolidine dithiocarbamate
$C_5H_{12}N_2S_2$
M 164,29 g/mol
mp 146-151 °C
Solubility: 190 g/l ($H_2O$, 20 °C)
[5108-96-3] • EC No. 225-834-4
WGK 2

**Warning** H315-H319-H335

**Guarantee analysis:**

| | |
|---|---|
| Appearance | white powder |
| Assay (NT) | ≥98 % |
| Lead (Pb) | ≤0,001 % |
| Cadmium (Cd) | ≤0,001 % |
| Calcium (Ca) | ≤0,001 % |
| Chromium (Cr) | ≤0,001 % |
| Kobalt (Co) | ≤0,001 % |
| Iron (Fe) | ≤0,001 % |
| Potassium (K) | ≤0,005 % |
| Copper (Cu) | ≤0,001 % |
| Magnesium (Mg) | ≤0,001 % |
| Manganese (Mn) | ≤0,001 % |
| Sodium (Na) | ≤0,005 % |
| Nickel (Ni) | ≤0,001 % |
| Bismuth (Bi) | ≤0,001 % |
| Zinc (Zn) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **5486.1** | 10 g | plastic | 37,10 € |
| **5486.2** | 50 g | plastic | 131,70 € |

## Ammonium rhodanide

▶ Ammonium thiocyanate see p. 1739

## sec. Ammonium sodium phosphate

▶ Sodium ammonium hydrogen phosphate tetrahydrate see p. 2266

## Ammonium sulphate

di-Ammoniumsulphate
$(NH_4)_2SO_4$
M 132,14 g/mol
D 1,77
mp 230 °C (dec.)
Solubility: 760 g/l ($H_2O$, 20 °C)
[7783-20-2] • EC No. 231-984-1
WGK 1

### Ammonium sulphate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,999 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5606.1** | 10 g | plastic | 28,95 € |
| **5606.2** | 50 g | plastic | 77,95 € |

### Ammonium sulphate

**≥99,5 %, p.a., ACS, ISO**

Reagent for precipitation of proteins, buffer substance, preparation of ammonium alum.

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥99,5 % |
| pH value (5 % in $H_2O$) | 5,0-6,0 |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Ash content (as $SO_4$) | ≤0,005 % |
| Phosphate ($PO_4$) | ≤0,0005 % |
| Nitrate ($NO_3$) | ≤0,001 % |
| Chloride (Cl) | ≤0,0003 % |
| Arsenic (As) | ≤0,00002 % |
| Lead (Pb) | ≤0,0002 % |
| Cadmium (Cd) | ≤0,0001 % |
| Calcium (Ca) | ≤0,001 % |
| Iron (Fe) | ≤0,0002 % |
| Cobalt (Co) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,0005 % |
| Sodium (Na) | ≤0,005 % |
| Nickel (Ni) | ≤0,0005 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Zinc (Zn) | ≤0,0001 % |
| Loss on drying (100 °C) | ≤0,1 % |

| | | | |
|---|---|---|---|
| **3746.2** | 250 g | plastic | 12,80 € |
| **3746.1** | 1 kg | plastic | 28,95 € |
| Original pack 6 x 1 kg | | | 27,50/1 kg |
| **3746.3** | 2,5 kg | plastic | 52,15 € |
| **3746.4** | 5 kg | plastic | 91,95 € |
| **3746.6** | 10 kg | plastic | 147,20 € |
| **3746.5** | 25 kg | plastic | 321,45 € |

### Ammonium sulphate

**≥99 %, enzyme quality**

Reagent for precipitation of proteins, especially enzymes.

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥99,0 % |
| pH value (5 % in $H_2O$) | 5,0-6,0 |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Nitrate ($NO_3$) | ≤0,001 % |
| Chloride (Cl) | ≤0,0005 % |
| Phosphate ($PO_4$) | ≤0,0005 % |
| Arsenic (As) | ≤0,00002 % |
| Lead (Pb) | ≤0,0005 % |
| Cadmium (Cd) | ≤0,0005 % |
| Calcium (Ca) | ≤0,002 % |
| Iron (Fe) | ≤0,0005 % |

Cobalt (Co). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Ash content (as $SO_4$). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **9212.3** | 500 g | plastic | 19,90 € |
| Original pack 6 x 500 g | | | 18,91/500 g |
| **9212.2** | 1 kg | plastic | 27,85 € |
| Original pack 6 x 1 kg | | | 26,46/1 kg |
| **9212.1** | 2,5 kg | plastic | 50,45 € |

## Ammonium sulphate

**≥99 %, cryst.**

**Type analysis:**

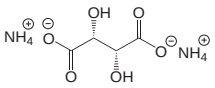
Appearance. ..... white crystals
Assay. ..... ≥99,0 %
Identity. ..... complies
Sulphated ash. ..... ≤0,005 %
Loss on drying (100 °C). ..... ≤0,20 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Phosphate ($PO_4$). ..... ≤0,0005 %
Chloride (Cl). ..... ≤0,001 %
pH value (5 % in $H_2O$). ..... 5,0-6,0
In water insoluble matter. ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **9218.3** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **9218.1** | 1 kg | plastic | 24,20 € |
| Original pack 6 x 1 kg | | | 22,99/1 kg |
| **9218.2** | 5 kg | plastic | 85,90 € |
| **9218.5** | 25 kg | plastic | 310,70 € |

## di-Ammoniumsulphate

▶ Ammonium sulphate see p. 1738

## di-Ammonium tartrate



NEW

### di-Ammonium tartrate

**≥95 %, pure**

Ammonium tartrate dibasic, Tartaric acid diammonium salt
$(NH_4)_2C_4H_4O_6$
M 184,15 g/mol
D 1,60
Solubility: 58 g/l ($H_2O$, 20°C)
[3164-29-2] • EC No. 221-618-9
WGK 1

**Type analysis:**

Assay. ..... ≥95,0 %
pH value (5 % in $H_2O$). ..... 5,5-7,0

| | | | |
|---|---|---|---|
| **0487.1** | 100 g | plastic | 18,20 € |
| **0487.2** | 500 g | plastic | 46,15 € |
| Original pack 6 x 500 g | | | 43,84/500 g |
| **0487.3** | 1 kg | plastic | 75,15 € |
| Original pack 6 x 1 kg | | | 71,39/1 kg |
| **0487.4** | 2,5 kg | plastic | 170,95 € |

## Ammonium tartrate dibasic

▶ di-Ammonium tartrate see p. 1739

## Ammonium tetraborate tetrahydrate

### Ammonium tetraborate tetrahydrate

**ROTI®METIC 99,999 % (5N)**
$(NH_4)_2B_4O_7 \cdot 4\ H_2O$
M 263,38 g/mol
D 2,4
mp ~87 °C
[12228-87-4]
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5396.1** | 25 g | plastic | 97,75 € |

## Ammonium tetramethylene dithiocarbamate

▶ Ammonium pyrrolidine dithiocarbamate see p. 1738

## Ammonium tetrathiocyanato-diamminechromate(III) monohydrate

▶ Reinecke salt monohydrate see p. 2195

## Ammonium tetrathiomolybdate

### Ammonium tetrathiomolybdate

**ROTI®METIC 99,99 % (4N)**
Ammonium molybdenum sulfide
$(NH_4)_2MoS_4$
M 260,27 g/mol
mp 300 °C
[15060-55-6]
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (metals basis). ..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5608.1** | 1 g | plastic | 38,60 € |
| **5608.2** | 5 g | plastic | 75,15 € |

## Ammonium tetrathiotungstate

### Ammonium tetrathiotungstate

**ROTI®METIC 99,9 % (3N)**
$(NH_4)_2WS_4$
M 348,18 g/mol
[13862-78-7]
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (metals basis). ..... 99,9 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5397.1** | 5 g | plastic | 134,40 € |
| **5397.2** | 25 g | plastic | 471,95 € |

## Ammonium thiocyanate

### Ammonium thiocyanate

**≥99 %, p.a., ACS, ISO**
Reagent for the detection of iron(III) ions. Stabilizer for photographic developer.
Ammonium rhodanide
$NH_4SCN$
M 76,12 g/mol
D 1,305
mp 150 °C
Solubility: 1650 g/l ($H_2O$, 19 °C)
[1762-95-4] • EC No. 217-175-6
WGK 1

**Warning**
H302+H312+H332-H412-EUH032

**Guarantee analysis:**

Assay (arg.). ..... ≥99,0 %
pH value (5 % solution). ..... 4,5-6,0
In $H_2O$ insoluble matter. ..... ≤0,005 %
Iodine reducing substances (as I). ..... ≤0,002 meq/g
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,005 %
Sulphide (S). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0001 %
Copper (Cu). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Ash content (as $SO_4$). ..... ≤0,025 %

| | | | |
|---|---|---|---|
| **4477.1** | 100 g | plastic | 16,05 € |
| **4477.2** | 250 g | plastic | 22,05 € |
| **4477.3** | 500 g | plastic | 32,80 € |
| Original pack 6 x 500 g | | | 31,16/500 g |
| **4477.4** | 1 kg | plastic | 52,60 € |
| Original pack 6 x 1 kg | | | 49,97/1 kg |

A

## Ammonium thiocyanate solution (0,1 N)

### Ammonium thiocyanate solution

**0,1 mol/l - 0,1 N volumetric standard solution**

D 1,05

**Type analysis:**

Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,2 %
Titer. ....0,998-1,002

| | | | |
|---|---|---|---|
| **P718.1** | 1 l | plastic | 20,65 € |
| Original pack 6 x 1 l | | | 19,62/1 l |

For further information, please see page 1621

## Ammonium thiocyanate solution (0,1 N)

### Ammonium thiocyanate solution

**ROTI®VOLUM 0,1 mol/l - 0,1 N**

Ampoule for preparation of 1000 ml volumetric solution.

$NH_4SCN$
M 76,12 g/mol
WGK 1
EUH032

**Type analysis:**

Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN50.1** | 1 piece | plastic ampoule | 17,10 € |

For further information, please see page 1623

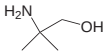
## Ammonium tungsten oxide hydrate

▶ Ammonium metatungstate hydrate see p. 1736

## Ammonium vanadium oxide

▶ Ammonium monovanadate see p. 1737

## AMP



### AMP

**PUFFERAN® ≥90 %**

2-Amino-2-methyl-1-propanol
$C_4H_{11}NO$
M 89,14 g/mol
D 0,93 • bp 165 °C
mp 30 °C • flp 78 °C
[124-68-5] • EC No. 204-709-8
UN No. 2735 • ADR 8 III • WGK 1

**Warning** H315-H319-H412

**Type analysis:**

Assay (GC). ....≥90,0 %
Water. ....≤1,0 %

| | | | |
|---|---|---|---|
| **3121.1** | 250 ml | glass | 36,45 € |

For further information, please see page 1268

## Ampholyte

▶ Roti®lyte Carrier Ampholyte see p. 2221

## Amphotericin B

### Amphotericin B

**≥850 I.U./mg, for biochemistry**

Broad-range fungicide, polyene.
Fungizon
$C_{47}H_{73}NO_{17}$
M 924,10 g/mol
mp >170 °C (dec.)
Storage temp.: +4 °C
[1397-89-3] • EC No. 215-742-2
WGK 3

**Warning** H315-H319-H335

**Type analysis:**

Activity. ....≥850 I.U./mg

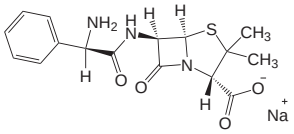
| | | | |
|---|---|---|---|
| **0246.1** | 50 mg | glass | 21,40 € |
| **0246.2** | 250 mg | glass | 68,30 € |
| **0246.3** | 500 mg | glass | 123,65 € |

For further information, please see page 1426

## Ampicillin-LB Selective Agar

▶ LB-Agar (Lennox) / Amp100 see p. 2031
▶ LB-Agar (Luria/Miller) / Amp100 see p. 2031
▶ LB-Agar (Luria/Miller) / Amp50 see p. 2031

## Ampicillin sodium salt



D-α-Aminobenzylpenicillin sodium salt
$C_{16}H_{18}N_3NaO_4S$
M 371,39 g/mol
Storage temp.: +4 °C
[69-52-3] • EC No. 200-708-1

**Danger** H334-H317

### Ampicillin sodium salt

**CELLPURE® ≥91 %**

β-lactam antibiotic. Semi synthetic penicillin. For cell culture and biochemistry.

**Guarantee analysis:**

Appearance. .... white powder
Assay (HPLC, dry substance). .... 91,0-102,0 %
Dimer. .... ≤4,5 %
Water (KF). .... ≤2,0 %
Heavy metals (as Pb). .... ≤0,002 %
pH value (10 % $H_2O$, 20 °C). .... 9,0 ±1,0
Endotoxins. .... <0,15 I.E./mg

| | | | |
|---|---|---|---|
| **HP62.1** | 10 g | plastic | 45,70 € |
| **HP62.2** | 50 g | plastic | 168,70 € |

For further information, please see page 1426

### Ampicillin sodium salt

**≥97 %, BioScience-Grade, for molecular biology and biochemistry**

β-lactam antibiotic. Semi synthetic penicillin.

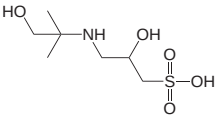
**Type analysis:**

Appearance. ....white powder
Assay. ....≥97,0 %
Water (KF). ....≤2,0 %
Heavy metals (as Pb). ....≤0,002 %
pH value (10 % $H_2O$, 20 °C). ....8,0-10,0
Specific rotation $[\alpha]_D^{20}$ (0,2 % in KH-phthalate). ....
....+258° to +287°
Absorption (430 nm). ....≤0,15
Dichloromethane. ....≤0,2 %

| | | | |
|---|---|---|---|
| **K029.1** | 10 g | plastic | 22,50 € |
| **K029.4** | 25 g | plastic | 42,50 € |
| **K029.5** | 50 g | plastic | 73,00 € |
| **K029.2** | 100 g | plastic | 124,60 € |
| **K029.3** | 250 g | plastic | 267,70 € |

For further information, please see page 1426

## AMPSO



### AMPSO

**PUFFERAN® ≥98 %**

3-N-(α,α-Dimethyl-hydroxyethyl)-amino-2-hydroxypropane sulphonic acid
$C_7H_{17}NO_5S$
M 227,28 g/mol
mp 228-230 °C
[68399-79-1] • EC No. 269-991-7

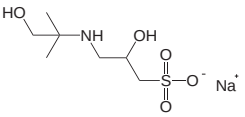
**Type analysis:**

Assay. ....≥98 %
UV-absorption (0,1 M in $H_2O$):
280 nm. ....≤0,02
260 nm. ....≤0,04

| | | | |
|---|---|---|---|
| **7159.1** | 25 g | plastic | 47,20 € |
| **7159.2** | 100 g | plastic | 149,45 € |

For further information, please see page 1268

## AMPSO sodium salt



### AMPSO sodium salt

**PUFFERAN® ≥98 %**

3-N-(α,α-Dimethyl hydroxyethyl)-amino-2-hydroxypropane sulphonic acid sodium salt
$C_7H_{16}NO_5SNa$
M 249,3 g/mol
[102029-60-7]

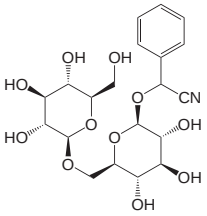
**Type analysis:**

Assay. ....≥98 %
Water (KF). ....≤4 %
Solution (10 % in $H_2O$). .... clear, colourless
UV-absorption (0,1 M in $H_2O$):
280 nm. ....≤0,05
260 nm. ....≤0,06

| | | | |
|---|---|---|---|
| **7014.1** | 25 g | plastic | 52,15 € |
| **7014.2** | 100 g | plastic | 166,65 € |

For further information, please see page 1268

## Amygdalin



Amygdaloside
$C_{20}H_{27}NO_{11}$
M 457,42 g/mol
D 0,4
mp 213 °C
Solubility: 83 g/l ($H_2O$, 25 °C)
Storage temp.: +4 °C
[29883-15-6] • EC No. 249-925-3

**Warning** H302

### Amygdalin

**≥97 %, for biochemistry**

**Type analysis:**

Appearance..... white powder
Assay (HPLC)..... ≥97 %
Specific rotation $[\alpha]_D^{20}$..... -37° to -41°
Loss on drying (110 °C)..... <6,0 %
Melting point..... 208-215 °C

| | | | |
|---|---|---|---|
| **8713.1** | 10 g | plastic | 50,00 € |
| **8713.2** | 100 g | plastic | 274,15 € |

### Amygdalin

**ROTICHROM® ~CHR**

| | | | |
|---|---|---|---|
| **5500.1** | 10 g | plastic | 34,30 € |

## Amygdalose

▶ β-D-Gentiobiose see p. 1950

## Amygdaloside

▶ Amygdalin see p. 1741

## n-Amyl alcohol

▶ 1-Pentanol see p. 2136

## β-Amylase

### β-Amylase

**16-24 U/mg, lyophil.**
Made from barley malt.
Storage temp.: +4 °C
[9000-91-3] • EC No. 232-566-1
WGK 1

**Danger** H334

**Type analysis:**

Appearance..... white to off-white powder
Description..... lyophilized
Activity (10 mg/ml starch solution, pH 6,0; 40 °C)..... 16-24 U/mg
α-Amylase..... ≤0,0001%
α-Glucosidase..... ≤0,0001%
1 Unit equivalent to the amount of enzyme, which produces 1 µmol maltose per minute at 40 °C and pH 6,0.

| | | | |
|---|---|---|---|
| **8717.1** | 100 mg | glass | 51,50 € |

For further information, please see page 1276

## Amylopectin

### Amylopectin

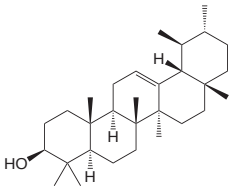
**for biochemistry**
From maize starch.
M >1 000 000 g/mol
[9037-22-3] • EC No. 232-911-6

**Type analysis:**

Appearance..... white powder
pH value..... 4-6
Water..... 10,5-13,5 %

| | | | |
|---|---|---|---|
| **8545.1** | 500 g | plastic | 25,70 € |
| Original pack 6 x 500 g | | | 24,42/500 g |
| **8545.2** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **8545.3** | 2,5 kg | plastic | 55,80 € |

## α-Amyrin



### α-Amyrin

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{30}H_{50}O$
M 426,73 g/mol
Storage temp.: +4 °C
[638-95-9] • EC No. 211-352-1

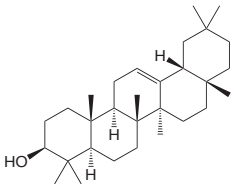
**Warning** H302

**Type analysis:**

Purity (HPLC)..... ≥98,5 %

| | | | |
|---|---|---|---|
| **7000.1** | 10 mg | glass | 235,45 € |

## β-Amyrin



### β-Amyrin

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{30}H_{50}O$
M 426,73 g/mol
Storage temp.: +4 °C
[559-70-6] • EC No. 209-204-6
WGK 1

**Warning** H302

**Type analysis:**

Purity (HPLC)..... ≥98,5 %

| | | | |
|---|---|---|---|
| **7001.1** | 10 mg | glass | 403,15 € |

## Anethole

### Anethole

**≥99 %, for biochemistry**
p-Propenylanisole, 1-Methoxy-4-propenyl benzene
$C_{10}H_{12}O$
M 148,20 g/mol
D 0,99 • bp ~236 °C
mp 21,5 °C • flp 96 °C
Solubility: insoluble ($H_2O$, 20 °C)
Storage temp.: +4 °C
[4180-23-8] • EC No. 224-052-0
UN No. 3077 • ADR 9 III • WGK 2

H411

**Type analysis:**

Appearance..... colourless to yellowish liquid or white cryst. substance
Assay (GC, trans-anethole)..... ≥99,0 %
Assay (GC, cis-anethole)..... ≤0,3 %
Solidification point..... ≥21,5 °C
Refractive index $n_D^{20}$..... 1,559-1,562
Density..... 0,986-0,989

| | | | |
|---|---|---|---|
| **5131.1** | 25 ml | glass | 21,00 € |
| **5131.2** | 250 ml | glass | 59,05 € |

## Aneurine hydrochloride

▶ Thiamine hydrochloride see p. 2339

## 7-O-Angelyl-9-O-echimidinyl-retronecine

▶ Echimidine see p. 1898

A

## 7-Angelyleuropine

▶ Lasiocarpine see p. 2029

## 7-Angelyleuropine N-oxide

▶ Lasiocarpine N-oxide see p. 2029

## Anhydrous soda

▶ Sodium carbonate see p. 2267

## Aniline



Aminobenzene, Benzamine, Benzenamine, Phenylamine
$C_6H_7N$
M 93,13 g/mol
D 1,02 • bp 184 °C
mp -6 °C • flp 70 °C
Solubility: 35 g/l ($H_2O$, 20 °C)
[62-53-3] • EC No. 200-539-3
UN No. 1547 • ADR 6.1 II • WGK 3
**Danger** H301+H311+H331-H317-H318-H341-H351-H372-H410

### Aniline

**≥99,5 %, p.a.**

**Type analysis:**

Assay ..... ≥99,5 %
Nitrobenzene ..... ≤0,005 %
Lead (Pb) ..... ≤0,0001 %
Iron (Fe) ..... ≤0,0001 %
Copper (Cu) ..... ≤0,0001 %
Non volatile matter ..... ≤0,005 %
Water ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **9846.1** | 100 ml | glass | 18,85 € |
| **9846.2** | 500 ml | glass | 40,35 € |
| **9846.3** | 1 l | glass | 59,05 € |
| Original pack 6 x 1 l | | | 56,10/1 l |

### Aniline

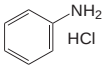
**≥99 %, for synthesis**

**Type analysis:**

Assay ..... ≥99,0 %
Non volatile matter ..... ≤0,01 %
Water ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **9931.1** | 250 ml | glass | 13,15 € |
| **9931.2** | 1 l | glass | 30,00 € |
| Original pack 6 x 1 l | | | 28,50/1 l |
| **9931.3** | 2,5 l | glass | 61,20 € |
| Original pack 4 x 2,5 l | | | 58,14/2,5 l |

## Aniline hydrochloride



### Aniline hydrochloride

**≥99 %, extra pure**
Anilinium chloride, Phenylamine hydrochloride
$C_6H_8ClN$
M 129,60 g/mol
bp 245 °C
mp 196-201 °C • flp 198 °C
Solubility: 107 g/l ($H_2O$, 20 °C)
[142-04-1] • EC No. 205-519-8
UN No. 1548 • ADR 6.1 III • WGK 2
**Danger** H301+H311+H331-H372-H341-H351-H318-H400-H317

**Type analysis:**

Assay (arg.) ..... ≥99 %
Melting range ..... 196-201 °C

| | | | |
|---|---|---|---|
| **5113.2** | 100 g | plastic | 31,10 € |
| **5113.1** | 250 g | plastic | 69,35 € |

## Aniline blue water soluble

▶ Acid blue 93 (C.I. 42780) see p. 1704

## Aniline phthalate spray solution

### Aniline phthalate spray solution

**for TLC**
Ready-to-use spray solution for detection of reducing sugars.
0,9 ml Anilin and 1,66 g Phthalic acid dissolved in 100 ml ethanol / 2-propanol (1/1 v/v).
UN No. 3316 • ADR 9 II • WGK 1
**Danger**
H225-H373-H319-H336-EUH208

**Type analysis:**

TLC-application ..... complies

| | | | |
|---|---|---|---|
| **CP35.1** | 100 ml | glass | 38,90 € |

## p-Anilinesulphonic acid

▶ Sulphanilic acid see p. 2322

## Anilinium chloride

▶ Aniline hydrochloride see p. 1742

## Anilinoacetic acid

▶ N-Phenylglycine see p. 2147

## 4-Anilinoazobenzene

▶ 4-(Phenylazo) diphenylamine see p. 2147

## Anilinobenzene

▶ Diphenylamine see p. 1887

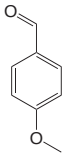
## o-Anilobenzoic acid

▶ *N*-Phenylanthranilic acid see p. 2147

## Anion exchangers

▶ Dowex® 1 X 2 Anion exchanger see p. 1894
▶ Ion exchange resin Roti®change see p. 2007

## 4-Anisaldehyde



### 4-Anisaldehyde

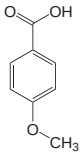
**≥97,5 %**
4-Methoxybenzaldehyde, Aubepine
$C_8H_8O_2$
M 136,14 g/mol
D 1,119 • bp 248 °C
mp ~1 °C • flp 116 °C
Solubility: 2 g/l ($H_2O$, 20 °C)
[123-11-5] • EC No. 204-602-6
WGK 1
**Warning** H302-H315-H319-H335

**Type analysis:**

Appearance ..... clear, colourless to slightly yellowish liquid
Assay (GC) ..... ≥97,5 %

| | | | |
|---|---|---|---|
| **7201.1** | 25 g | glass | 22,05 € |

## 4-Anisic acid



### 4-Anisic acid

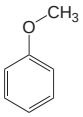
**≥98 %**
4-Methoxybenzoic acid
$C_8H_8O_3$
M 152,15 g/mol
bp 277 °C
mp 182-184 °C • flp 185 °C
Solubility: 0,3 g/l ($H_2O$, 20 °C)
[100-09-4] • EC No. 202-818-5
WGK 1
**Warning** H315-H319-H335

**Type analysis:**

Assay ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **3631.1** | 100 g | plastic | 19,25 € |
| **3631.2** | 250 g | plastic | 36,05 € |
| **3631.3** | 500 g | plastic | 66,55 € |
| Original pack 6 x 500 g | | | 63,22/500 g |

## Anisole



### Anisole

**≥99 %, for synthesis**
Methoxybenzene
$C_7H_8O$
M 108,14 g/mol
D 0,994 • bp 156 °C
mp -37 °C • flp 41 °C
Solubility: 1,6 g/l ($H_2O$, 20 °C)
[100-66-3] • EC No. 202-876-1
UN No. 2222 • ADR 3 III • WGK 2
**Warning** H226

**Type analysis:**
Assay (GC). ..... ≥99 %
Water. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4417.1** | 100 ml | glass | 12,80 € |
| **4417.2** | 500 ml | glass | 24,65 € |
| **4417.3** | 1 l | glass | 40,35 € |
| Original pack 6 x 1 l | | | 38,33/1 l |
| **4417.4** | 2,5 l | glass | 83,75 € |
| Original pack 4 x 2,5 l | | | 79,56/2,5 l |

## Anthocyans

| Art. No. | Description | Page |
|---|---|---|
| 3939 | Apigeninidin chloride | 1748 |
| 0641 | Cyanidin 3-arabinoside chloride | 1850 |
| 4545 | Cyanidin chloride | 1850 |
| 1133 | Cyanin chloride | 1850 |
| 5568 | Cyanin chloride | 1850 |
| 4537 | Delphinidin chloride | 1859 |
| 0643 | Delphinidin 3-galactoside chloride | 1859 |
| 0644 | Delphinidin 3-glucoside chloride | 1859 |
| 0977 | Delphinidin 3-rutinoside chloride | 1859 |
| 9326 | Diosmetinidin chloride | 1886 |
| 3967 | Idaein chloride | 1999 |
| 6134 | Keracyanine chloride | 2022 |
| 6136 | Kuromanin chloride | 2024 |
| 9325 | Luteolinidin chloride | 2044 |
| 6140 | Malvidin chloride | 2054 |
| K013 | Malvin chloride | 2054 |
| K030 | Oenin chloride | 2110 |
| 4541 | Pelargonidin chloride | 2134 |
| 6853 | Pelargonidin chloride | 2134 |
| 1646 | Pelargonidin 3,5-diglucoside chloride | 2134 |
| 4540 | Peonidin chloride | 2136 |
| 1413 | Peonidin 3,5-diglucoside chloride | 2136 |
| 1619 | Peonidin 3-glucoside chloride | 2137 |
| 1469 | Petunidin 3-glucoside chloride | 2144 |
| K014 | Primulin chloride | 2177 |

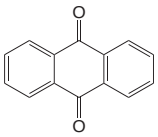
## 9,10-Anthracenedione

▶ Anthraquinone see p. 1743

## 9(10*H*)-Anthracenone

▶ Anthrone see p. 1743

## Anthraquinone



### Anthraquinone

**ROTI®CALIPURE Melting point standard 283-286 °C**
9,10-Anthracenedione, 9,10-Anthraquinone
$C_{14}H_8O_2$
M 208,22 g/mol
bp 380 °C
mp 283-286 °C • flp 185 °C
[84-65-1] • EC No. 201-549-0
WGK 1
**Warning** H317

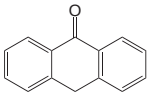
**Type analysis:**
Meniscus formation. ..... 283-286 °C
Complete liquefaction. ..... 283-286 °C

| | | | |
|---|---|---|---|
| **9754.1** | 1 g | glass | 30,00 € |

## 9,10-Anthraquinone

▶ Anthraquinone see p. 1743

## Anthrone



### Anthrone

**p.a., ACS**
Reagent for carbohydrates
9(10*H*)-Anthracenone
$C_{14}H_{10}O$
M 194,23 g/mol
mp 153-158 °C
Solubility: 4,6 g/mol ($H_2O$, 20 °C)
[90-44-8] • EC No. 201-994-0
WGK 1

**Guarantee analysis:**
Appearance. ..... light yellowish cryst. powder
Melting point. ..... 153-159 °C
Absorbance of reagent solution (425 nm). ..... complies
Absorbance of reagent solution (620 nm). ..... complies
Solubility in ethyl acetate. ..... complies
Suitability as reagent for carbohydrates. ..... complies

| | | | |
|---|---|---|---|
| **2673.1** | 10 g | plastic | 25,30 € |
| **2673.2** | 25 g | plastic | 39,70 € |
| **2673.3** | 100 g | plastic | 107,40 € |

## Antibiotic G 418

▶ Geneticin disulphate (G418 Sulphate) see p. 1949

## Antibiotic Medium No. 1

### Antibiotic Medium No. 1

**Ph.Eur., for microbiology**
Standard agar medium for detection and for assaying the potency of antibiotics.
Application: Use 30,5 g for 1 l agar.
Antibiotic Agar No. 1 (Ph.Eur. 7,0), Penassay Seed Agar
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**
Peptone. ..... 6,0 g/l
Casein peptone (Pancreas hydrolysate). ..... 4,0 g/l
Yeast extract. ..... 3,0 g/l
Beef extract. ..... 1,5 g/l
Glucose monohydrate. ..... 1,0 g/l
Agar. ..... 15,0 g/l
pH value ..... 6,6 ±0,1

| | | | |
|---|---|---|---|
| **CL53.1** | 500 g | plastic | 116,65 € |
| Original pack 6 x 500 g | | | 110,82/500 g |

For further information, please see page 1376

## Antibiotic Medium No. 23

### Antibiotic Medium No. 23

**for microbiology**
Agar medium for detection and for assaying the potency of antibiotics.
Application: Use 27,1 g for 1 l agar. Directly prior to pouring add 14,3 g ammonium chloride in 10 ml sterile water.
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**
Glucose. ..... 10,0 g/l
Yeast extract. ..... 2,5 g/l
di-Potassium hydrogen phosphate. ..... 0,69 g/l
Potassium dihydrogen phosphate. ..... 0,45 g/l
Agar. ..... 13,5 g/l
pH value ..... 5,6 ±0,1

| | | | |
|---|---|---|---|
| **CL54.1** | 500 g | plastic | 104,20 € |
| Original pack 6 x 500 g | | | 98,99/500 g |

For further information, please see page 1376

A

## Antibiotics


| Art. No. | Description | Page |
|---|---|---|
| 8969 | Actinomycin D | 1707 |
| 0246 | Amphotericin B | 1740 |
| HP62 | Ampicillin sodium salt, CELLPURE® | 1740 |
| K029 | Ampicillin sodium salt | 1740 |
| 5655 | Bacitracin | 1760 |
| CP14 | Blasticidin S hydrochloride | 1778 |
| 6344 | Carbenicillin disodium salt | 1811 |
| 4156 | Cefoxitin sodium salt | 1819 |
| 4014 | Cefsulodin sodium salt | 1819 |
| 3886 | Chloroamphenicol | 1826 |
| CN31 | Colistinsulphate | 1840 |
| 8682 | Cycloheximide | 1853 |
| CN37 | D-Cycloserine | 1853 |
| 4166 | Erythromycin | 1909 |
| HN71 | Geldanamycin | 1948 |
| 0239 | Geneticin disulphate (G418 Sulphate) | 1949 |
| CP11 | Geneticin disulphate (G418)-solution, CELLPURE® | 1949 |
| 2039 | Geneticin disulphate (G418)-solution | 1949 |
| 0233 | Gentamycin sulphate | 1949 |
| HN09 | Gentamycin sulphate solution, CELLPURE® | 1949 |
| 2475 | Gentamycin sulphate solution | 1949 |
| CP13 | Hygromycin B | 1997 |
| CP12 | Hygromycin B solution, CELLPURE® | 1997 |
| 1287 | Hygromycin B solution | 1997 |
| T832 | Kanamycin sulphate | 2020 |
| 4150 | Mitomycin C | 2081 |
| CN32 | Nalidixic acid | 2088 |
| 8668 | Neomycin sulphate | 2092 |
| 3011 | Nourseothricin dihydrogen sulphate | 2105 |
| 0247 | Novobiocin sodium salt | 2105 |
| 0241 | Nystatin dihydrate | 2107 |
| HP49 | Penicillin G potassium salt, CELLPURE® | 2134 |
| CN29 | Penicillin G potassium salt | 2134 |
| HP48 | Penicillin G sodium salt, CELLPURE® | 2134 |
| CN28 | Penicillin G sodium salt | 2134 |
| HP10 | Pen/Strep-PreMix, CELLPURE® | 2135 |
| 0235 | Polymyxin B sulphate | 2159 |
| 0240 | Puromycin dihydrochloride | 2184 |
| HN72 | Radicicol | 2191 |
| 4163 | Rifampicin | 2201 |
| 9830 | Roti®-CELL Myco-Free | 2207 |
| HP66 | Streptomycin sulphate, CELLPURE® | 2317 |
| 0236 | Streptomycin sulphate | 2317 |
| HP63 | Tetracycline hydrochloride, CELLPURE® | 2335 |
| 0237 | Tetracycline hydrochloride | 2335 |
| 4161 | Ticarcillin disodium salt | 2343 |
| 0242 | Vancomycin hydrochloride, CELLPURE® | 2369 |


## Antibody, primary

Storage temp.: -20 °C
Transport temp.: cooled

### Anti DYKDDDDK pAB

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection and isolation of DYKDDDDK-tagged proteins.

**Recommended dilution:** 1:1.000

Primary anti DYKDDDDK antibody

**Type analysis:**

Concentration.....0,9-1,1 mg/ml
Appearance..... clear, colourless liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target..... DYKDDDDK-tag
Western Blot..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4665.1** | 100 µl | plastic | 244,60 € |

For further information, please see page 1312

### Anti DYKDDDDK Serum

**polyclonal**

Polyclonal serum for detection and isolation of DYKDDDDK-tagged proteins.

**Recommended dilution:** 1:1.000

Primary anti DYKDDDDK antibody

**Type analysis:**

Appearance.....clear, ochre-rose coloured liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target..... DYKDDDDK-tag
Western Blot..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4664.1** | 100 µl | plastic | 200,50 € |

For further information, please see page 1312

### Anti GST pAB

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection and isolation of GST-tagged proteins.

**Recommended dilution:** 1:1.000

Primary anti GST antibody

**Type analysis:**

Concentration.....0,9-1,1 mg/ml
Appearance..... clear, colourless liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target..... GST-tag
Western Blot..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **3998.1** | 100 µl | plastic | 244,60 € |

For further information, please see page 1312

### Anti GST Serum

**polyclonal**

Polyclonal serum for detection and isolation of GST-tagged proteins.

**Recommended dilution:** 1:2.000

Primary anti GST antibody

**Type analysis:**

Appearance.....clear, ochre-rose coloured liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target..... GST-tag
Western Blot..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **3994.1** | 100 µl | plastic | 200,50 € |

For further information, please see page 1312

### Anti His-HRP

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of His-tagged proteins in Western Blot and ELISA.

**Recommended dilution:** 1:1.000 - 1:10.000

Primary Anti His antibody, HRP-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, lightly brown liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... His-tag
Labelling. ..... Peroxidase
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **3894.1** | 100 µl | plastic | 295,65 € |

For further information, please see page 1173

### Anti His pAB

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection and isolation of His-tagged proteins.

**Recommended dilution:** 1:1.000 - 1:10.000

Primary anti His antibody

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... His-tag
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **3742.1** | 100 µl | plastic | 244,60 € |

For further information, please see page 1173

### Anti His Serum

**polyclonal**

Polyclonal serum for detection and isolation of His-tagged proteins.

**Recommended dilution:** 1:1.000

Primary anti His antibody

**Type analysis:**

Appearance. ..... clear, ochre-rose coloured liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... His-tag
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **3735.1** | 100 µl | plastic | 200,50 € |

For further information, please see page 1173

### Anti Myc pAB

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection and isolation of Myc-tagged proteins.

**Recommended dilution:** 1:1.000

Primary anti Myc antibody

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... Myc-tag
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4667.1** | 100 µl | plastic | 244,60 € |

For further information, please see page 1312

## Anti Myc Serum

**polyclonal**

Polyclonal serum for detection and isolation of Myc-tagged proteins.

**Recommended dilution:** 1:1.000

Primary anti Myc antibody

**Type analysis:**

Appearance. ..... clear, ochre-rose coloured liquid
Raised in. ..... rabbit
Clonality. ..... polyclonal
Target. ..... Myc-tag
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4666.1** | 100 µl | plastic | 200,50 € |

For further information, please see page 1312

## Antibody, secondary

Storage temp.: -20 °C •
Transport temp.: cooled

## Anti Human-AP

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of human IgG in western blotting, ELISA, and immunohistochemistry.

**Recommended dilution:** 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti human antibody, AP-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... human
Labelling. ..... Alkaline Phosphatase (AP)
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4754.1** | 1 ml | plastic | 189,75 € |

For further information, please see page 1313

## Anti Human-FITC

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of human IgG in immunofluorescence, FACS analyses, and immunohistochemistry.

**Recommended dilution:** 1:1.000 - 1:20.000

Secondary anti human antibody, FITC-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, yellowish liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... human
Labelling. ..... Fluorescein isothiocyanate (FITC)
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4755.1** | 2 ml | plastic | 139,25 € |

For further information, please see page 1313

## Anti Human-HRP

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of human IgG in western blotting, ELISA, and immunohistochemistry.

**Recommended dilution:** 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti human antibody, HRP-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, lightly brown liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... human
Labelling. ..... Horse Raddish Peroxidase (HRP)
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4753.1** | 2 ml | plastic | 155,90 € |

For further information, please see page 1313

## Anti Mouse-AP

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of mouse IgG in western blotting, ELISA, and immunohistochemistry.

**Recommended dilution:** 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti mouse antibody, AP-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... mouse
Labelling. ..... Alkaline Phosphatase (AP)
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4760.1** | 1 ml | plastic | 189,75 € |

For further information, please see page 1313

## Anti Mouse-FITC

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of mouse IgG in immunofluorescence, FACS analyses, and immunohistochemistry.

**Recommended dilution:** 1:1000 - 1:20.000

Secondary anti mouse antibody, FITC-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, yellowish liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... mouse
Labelling. ..... Fluorescein isothiocyanate (FITC)
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4761.1** | 2 ml | plastic | 139,25 € |

For further information, please see page 1313

## Anti Mouse-HRP

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of mouse IgG in western blotting, ELISA, and immunohistochemistry.

**Recommended dilution:** 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti mouse antibody, HRP-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, lightly brown liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... mouse
Labelling. ..... Horse Raddish Peroxidase (HRP)
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4759.1** | 2 ml | plastic | 155,90 € |

For further information, please see page 1313

## Anti Rabbit-AP

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of rabbit IgG in western blotting, ELISA, and immunohistochemistry.

**Recommended dilution:** 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti rabbit antibody, AP-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rabbit
Labelling. ..... Alkaline Phosphatase (AP)
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4751.1** | 1 ml | plastic | 189,75 € |

For further information, please see page 1313

## Anti Rabbit-FITC

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of rabbit IgG in immunofluorescence, FACS analyses, and immunohistochemistry.

**Recommended dilution:** 1:1000 - 1:20.000

Secondary anti rabbit antibody, FITC-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, yellowish liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rabbit
Labelling. ..... Fluorescein isothiocyanate (FITC)
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4752.1** | 2 ml | plastic | 139,25 € |

For further information, please see page 1313

A

## Anti Rabbit-HRP

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of rabbit IgG in western blotting, ELISA, and immunohistochemistry.

**Recommended dilution:** 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti rabbit antibody, HRP-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, lightly brown liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rabbit
Labelling. ..... Horse Raddish Peroxidase (HRP)
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4750.1** | 2 ml | plastic | 155,90 € |

For further information, please see page 1313

## Anti Rat-AP

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of rat IgG in western blotting, ELISA, and immunohistochemistry.

**Recommended dilution:** 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti rat antibody, AP-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, colourless liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rat
Labelling. ..... Alkaline Phosphatase (AP)
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4763.1** | 1 ml | plastic | 189,75 € |

For further information, please see page 1313

## Anti Rat-FITC

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of rat IgG in immunofluorescence, FACS analyses, and immunohistochemistry

**Recommended dilution:** 1:1000 - 1:20.000

Secondary anti rat antibody, FITC-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, yellowish liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rat
Labelling. ..... Fluorescein isothiocyanate (FITC)
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4764.1** | 2 ml | plastic | 139,25 € |

For further information, please see page 1313

## Anti Rat-HRP

**1 mg/ml, polyclonal, affinity purified**

Polyclonal antibody for detection of rat IgG in western blotting, ELISA, and immunohistochemistry.

**Recommended dilution:** 1:1.000 - 1:10.000 (Western), 1:1.000 - 1:20.000 (ELISA)

Secondary anti rat antibody, HRP-conjugated

**Type analysis:**

Concentration. ..... 0,9-1,1 mg/ml
Appearance. ..... clear, lightly brown liquid
Raised in. ..... goat
Clonality. ..... polyclonal
Target. ..... rat
Labelling. ..... Horse Raddish Peroxidase (HRP)
Western Blot. ..... complies
ELISA. ..... complies

| | | | |
|---|---|---|---|
| **4762.1** | 2 ml | plastic | 155,90 € |

For further information, please see page 1313

## Antibody Diluent clear

### Antibody Diluent clear

NEW

**ready-to-use, for immunohistochemistry**

For optimisation of immunohistochemical detection signals.

One bottle for 125 ml is sufficient for enhancement of approx. 125 slides.

Enhancer solution
D 0,99
Storage temp.: +4 °C •
Transport temp.: cooled
WGK 1

**Type analysis:**

Composition. ..... complies
pH value. ..... 7,4 ±0,5
Stability. ..... complies
Colour. ..... colourless

| | | | |
|---|---|---|---|
| **0509.1** | 125 ml | plastic | 65,60 € |
| **0509.2** | 4 x 125 ml | plastic | 189,20 € |

For further information, please see page 1318

## Antibody Diluent green

### Antibody Diluent green

NEW

**ready-to-use, for immunohistochemistry**

For optimisation of immunohistochemical detection signals.

One bottle for 125 ml is sufficient for enhancement of approx. 125 slides.

Enhancer solution
D 0,99
Storage temp.: +4 °C •
Transport temp.: cooled
WGK 1

**Type analysis:**

Composition. ..... complies
pH value. ..... 7,4 ±0,5
Stability. ..... complies
Colour. ..... green

| | | | |
|---|---|---|---|
| **0070.1** | 125 ml | plastic | 65,60 € |
| **0070.2** | 4 x 125 ml | plastic | 189,20 € |

For further information, please see page 1318

## Antimonous oxide

▶ Antimony(III) oxide see p. 1747

## Antimonous chloride

▶ Antimony(III) chloride see p. 1747

## Antimony shot

### Antimony shot

**ROTI®METIC 99,999 % (5N)**

Sb
M 121,76 g/mol
D 6,68 • bp 1587 °C
[7440-36-0] • EC No. 231-146-5
UN No. 1549 • ADR 6.1 III • WGK 1

**Warning** H335

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Particle size. ..... 1-3 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **4516.2** | 50 g | glass | 185,45 € |

## Antimony

### Antimony

**≥99,5 %, powder**

Sb
M 121,75 g/mol
D 6,688 • bp 1635 °C
mp 630 °C
[7440-36-0] • EC No. 231-146-5
UN No. 2871 • ADR 6.1 III • WGK 1

**Warning** H335

**Type analysis:**

Appearance. ..... grey powder
Assay. ..... ≥99,5 %
Particle size. ..... ~325 mesh

| | | | |
|---|---|---|---|
| **9258.1** | 100 g | plastic | 44,65 € |
| **9258.2** | 500 g | plastic | 162,90 € |
| Original pack 6 x 500 g | | | 154,76/500 g |

## Antimony Standards

▶ Antimony AAS Standard Solution see p. 2294
▶ Antimony ICP Standard Solution see p. 2297
▶ Antimony ICP Standard Solution see p. 2301

## Antimony(III) chloride

### Antimony(III) chloride

**≥99 %, p.a., ACS**

Antimonous chloride, Butter of antimony, Stibous chloride, Trichlorostibane

$SbCl_3$

M 228,11 g/mol

D 3,14 • bp 220 °C

mp 73 °C

Solubility: 987 g/l ($H_2O$, 25 °C)

[10025-91-9] • EC No. 233-047-2

UN No. 1733 • ADR 8 II • WGK 2

**Danger** H314-H335-H411

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| Insoluble in $CHCl_3$ | ≤0,05 % |
| Insoluble in HCl | ≤0,005 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Arsenic (As) | ≤0,001 % |
| Lead (Pb) | ≤0,005 % |
| Calcium (Ca) | ≤0,005 % |
| Iron (Fe) | ≤0,002 % |
| Potassium (K) | ≤0,01 % |
| Copper (Cu) | ≤0,001 % |
| Sodium (Na) | ≤0,01 % |

| | | | |
|---|---|---|---|
| **9819.1** | 100 g | plastic | 27,85 € |
| **9819.2** | 500 g | plastic | 89,15 € |
| Original pack 6 x 500 g | | | 84,69/500 g |
| **9819.3** | 1 kg | plastic | 152,55 € |
| Original pack 6 x 1 kg | | | 144,92/1 kg |

## Antimony(III) oxide

di-Antimony trioxide, Antimonous oxide, Flowers of Antimony, Antimony sesquioxide

$Sb_2O_3$

M 291,52 g/mol

D 5,2 • bp 1425 °C

mp 655 °C

Solubility: 0,03 g/l ($H_2O$, 20 °C)

[1309-64-4] • EC No. 215-175-0

WGK 2

**Warning** H351

### Antimony(III) oxide

**≥99 %, p.a.**

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| Chloride (Cl) | ≤0,005 % |
| Sulphate ($SO_4$) | ≤0,05 % |
| Arsenic (As) | ≤0,005 % |
| Lead (Pb) | ≤0,05 % |
| Iron (Fe) | ≤0,005 % |
| Potassium (K) | ≤0,005 % |
| Sodium (Na) | ≤0,005 % |

| | | | |
|---|---|---|---|
| **9826.1** | 100 g | plastic | 18,85 € |
| **9826.2** | 500 g | plastic | 61,85 € |
| Original pack 6 x 500 g | | | 58,76/500 g |
| **9826.3** | 1 kg | plastic | 110,65 € |
| Original pack 6 x 1 kg | | | 105,12/1 kg |

### Antimony(III) oxide

**≥95 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay | ≥95,0 % |
| Arsenic (As) | ≤0,05 % |
| Lead (Pb) | ≤0,5 % |
| Iron (Fe) | ≤0,1 % |

| | | | |
|---|---|---|---|
| **7348.1** | 100 g | plastic | 14,55 € |
| **7348.2** | 500 g | plastic | 38,60 € |
| Original pack 6 x 500 g | | | 36,67/500 g |
| **7348.3** | 1 kg | plastic | 67,65 € |
| Original pack 6 x 1 kg | | | 64,27/1 kg |
| **7348.4** | 2,5 kg | plastic | 150,00 € |

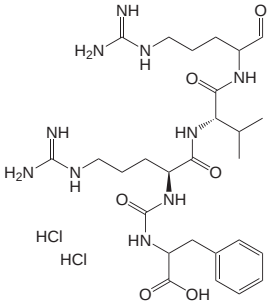
## Antimony sesquioxide

▶ Antimony(III) oxide see p. 1747

## di-Antimony trioxide

▶ Antimony(III) oxide see p. 1747

## Antipain dihydrochloride



### Antipain dihydrochloride

**≥30 U/mg, for biochemistry**

Inhibitor of serine/cysteine proteases and trypsin-like serine proteases.

N-(Nα-Carbonyl-Arg-Val-Arg-al)-Phe dihydrochloride

$C_{27}H_{44}N_{10}O_6 \cdot 2\ HCl$

M 677,6 g/mol

Storage temp.: -20 °C •
Transport temp.: room temp.

[37682-72-7]

WGK 1

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Activity (trypsin, L-BAPA) | ≥30 U/mg |
| Solubility (0,5 % in $H_2O$) | clear |

| | | | |
|---|---|---|---|
| **2933.1** | 5 mg | plastic | 53,25 € |
| **2933.2** | 25 mg | plastic | 193,00 € |

For further information, please see page 1283

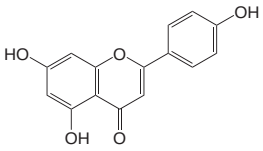
## AP

▶ Alkaline phosphatase see p. 1717

## APDC

▶ Ammonium pyrrolidine dithiocarbamate see p. 1738

## Apigenin



4',5,7-Trihydroxyflavone

$C_{15}H_{10}O_5$

M 270,23 g/mol

mp 352 °C

[520-36-5] • EC No. 208-292-3

WGK 1

**Warning** H315-H319-H335

### Apigenin

**ROTI®STAR Primary Standard**

**Type analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥95,0 % |
| Residual solvents (GC) | ≤3,0 % |
| Water (KF) | ≤2,0 % |
| Assay (qNMR) | ≥90,0 % |

Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV. The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE37.1** | 10 mg | glass | 805,20 € |

### Apigenin

**ROTICHROM® Working Standard**

**Type analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥85,0 % |
| Identity | complies |

Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC37.1** | 25 mg | glass | 224,70 € |

### Apigenin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Chamomillae romana.*

Storage temp.: +4 °C

**Type analysis:**

| | |
|---|---|
| Purity (HPLC) | ≥99 % |

| | | | |
|---|---|---|---|
| **7002.2** | 20 mg | glass | 185,45 € |

### Apigenin

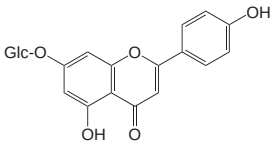
**ROTICHROM® TLC**

Reference substance for thin layer chromatography.

Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **5611.1** | 25 mg | glass | 42,90 € |

## Apigenin-7-glucoside



Apigetrin
$C_{21}H_{20}O_{10}$
M 432,57 g/mol
mp 224-237 °C
[578-74-5] • EC No. 209-430-5
WGK 3

### Apigenin-7-glucoside
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF). ..... ≤7,0 %
Assay (qNMR). ..... ≥85,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE19.1** | 25 mg | glass | 1009,45 € |

### Apigenin-7-glucoside
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC). ..... ≥90,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC19.1** | 25 mg | glass | 306,40 € |

### Apigenin-7-glucoside
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Chamomillae romana.*
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC). ..... >99 %

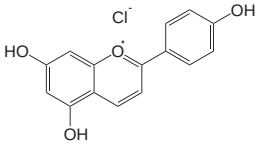
| | | | |
|---|---|---|---|
| **6348.1** | 10 mg | glass | 150,00 € |

### Apigenin-7-glucoside
**ROTICHROM® TLC**
Reference substance for thin layer chromatography.
From *Chamomillae romana.*
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **5557.1** | 100 mg | glass | 142,45 € |

## Apigenin-8-glucoside
▶ Vitexin see p. 2372

## Apigeninidin chloride



### Apigeninidin chloride
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{15}H_{11}O_4Cl$
M 290,69 g/mol
mp >350 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[1151-98-0]

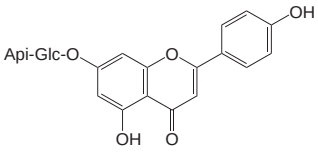
**Type analysis:**
Purity (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **3939.2** | 10 mg | glass | 385,95 € |

## Apigenin-7-rhamnoglucoside
▶ Rhoifolin see p. 2198

## Apigetrin
▶ Apigenin-7-glucoside see p. 1748

## Apiin



### Apiin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Petroselinum crispum.*
Apiosid, Apigenin-7-apiosylglucoside
$C_{26}H_{28}O_{14}$
M 564,50 g/mol
mp 236 °C
Storage temp.: +4 °C
[26544-34-3] • EC No. 247-780-0

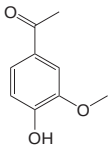
**Warning** H315-H319-H335

**Type analysis:**
Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **1085.1** | 10 mg | glass | 332,20 € |

## 6-O-(Apiofuranosyl)-1,6,8-trihydroxy-3-methyl-antrachinon
▶ Frangulin B see p. 1942

## Apocynin



### Apocynin
**≥97,5 %**
Acetovanillon
$C_9H_{10}O_3$
M 166,17 g/mol
mp 113-117 °C
[498-02-2] • EC No. 207-854-5
WGK 2

**Type analysis:**
Assay (GC). ..... ≥97,5 %

| | | | |
|---|---|---|---|
| **7884.1** | 25 g | plastic | 99,90 € |

## Aprotinin

### Aprotinin
**≥3,0 PEU/mg, for biochemistry**
Inhibitor of serine proteases.
M 6500 g/mol
Storage temp.: +4 °C
[9087-70-1] • EC No. 232-994-9
WGK 1

**Type analysis:**
Appearance. ..... white to off-white powder
Specific activity. .. ≥3,0 PEU/mg equals ≥5400 KIU/mg
pH value (aqueous solution). ..... 5,0-7,0
Loss on drying. ..... ≤6 %
Lyophilized from bovine lungs.

| | | | |
|---|---|---|---|
| **A162.1** | 10 mg | glass | 36,45 € |
| **A162.2** | 50 mg | glass | 107,40 € |
| **A162.3** | 100 mg | glass | 195,15 € |
| **A162.4** | 500 mg | glass | 736,40 € |

For further information, please see page 1283

## APS
▶ Ammonium peroxydisulphate see p. 1738

## Aqueous Gentamycin sulphate solution
▶ Gentamycin sulphate solution see p. 1949

## Aqueous Gentamicin solution
▶ Gentamycin sulphate solution see p. 1949

## Arabic acid

### Arabic acid
**for biochemistry**
Polyarabinic acid
M ~1100 g/mol
[32609-14-6] • EC No. 251-128-0

**Type analysis:**
Appearance. ..... white to off-white powder
Moisture. ..... <10 %
Ash content. ..... ≤1 %
pH value (5 % in $H_2O$). ..... 2,0-3,0
Solubility (10 % in $H_2O$). ..... clear to slightly turbid

| | | | |
|---|---|---|---|
| **7264.1** | 25 g | plastic | 96,25 € |

## Arabinitol

▶ D(+)-Arabitol see p. 1749
▶ L(-)-Arabitol see p. 1749

## DL-Arabinose

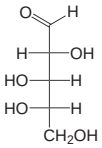
### DL-Arabinose

**≥99 %, for biochemistry**
$C_5H_{10}O_5$
M 150,13 g/mol
mp 161-162 °C
[20235-19-2] • EC No. 243-619-3

**Type analysis:**
Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥99,0 %
L-Arabinose. ..... ~50 %
D-Arabinose. ..... ~50 %

| | | | |
|---|---|---|---|
| **8954.1** | 10 g | plastic | 31,75 € |
| **8954.2** | 50 g | plastic | 90,20 € |

## L(+)-Arabinose



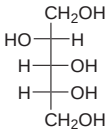
### L(+)-Arabinose

**≥99 %, for biochemistry**
Pectinose
$C_5H_{10}O_5$
M 150,13 g/mol
D 0,5
mp 158 °C
Solubility: 594 g/l ($H_2O$, 10 °C)
[5328-37-0] • EC No. 226-214-6

**Type analysis:**
Appearance. ..... white powder
Assay (HPLC). ..... ≥99,0 %
Specific rotation $[\alpha]_D^{20}$ (10 % in $H_2O$). ..... +102° to +105°
Solubility (10 % in $H_2O$). ..... clear, colourless
Water (KF). ..... ≤0,3 %
Sulphated ash. ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **5118.1** | 50 g | glass | 40,35 € |
| **5118.2** | 100 g | plastic | 63,35 € |
| **5118.3** | 250 g | plastic | 125,25 € |
| **5118.4** | 500 g | plastic | 192,45 € |
| Original pack 6 x 500 g | | | 182,83/500 g |
| **5118.5** | 1 kg | plastic | 289,20 € |
| Original pack 6 x 1 kg | | | 274,74/1 kg |

## D(+)-Arabitol



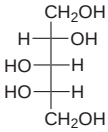
### D(+)-Arabitol

**≥99 %, for biochemistry**
D(+)-Arabinitol, D(+)-Ara-ol
$C_5H_{12}O_5$
M 152,15 g/mol
mp 100-104 °C
[488-82-4] • EC No. 207-686-2

**Type analysis:**
Assay (HPLC). ..... ≥99,0 %
Solution (10 % in $H_2O$). ..... colourless
Specific rotation $[\alpha]_D^{20}$ (c=5 in 8 % aq. $H_3BO_3$). ..... +11,0° to +13,0°
Water (KF). ..... ≤1,0 %
Melting point. ..... 100-104 °C

| | | | |
|---|---|---|---|
| **5510.3** | 5 g | plastic | 37,55 € |
| **5510.1** | 25 g | plastic | 117,20 € |
| **5510.2** | 50 g | plastic | 181,70 € |

## L(-)-Arabitol



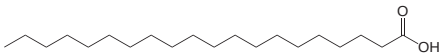
### L(-)-Arabitol

**for biochemistry**
L(-)-Arabinitol
$C_5H_{12}O_5$
M 152,15 g/mol
mp ~99 °C
[7643-75-6] • EC No. 231-582-6

**Type analysis:**
Appearance. ..... white to off-white powder
Specific rotation $[\alpha]_D^{20}$ (2 % in 2 % aq. $H_3BO_3$). ..... -12,0° to -10,0°
Water (KF). ..... ≤1,0 %
Melting point. ..... 97-107 °C

| | | | |
|---|---|---|---|
| **7738.1** | 1 g | plastic | 22,05 € |
| **7738.2** | 5 g | plastic | 57,95 € |

## Arachidic acid



### Arachidic acid

**≥99 %, synth.**
n-Eicosanoic acid
$C_{20}H_{40}O_2$
M 312,52 g/mol
D 0,824 • bp 328 °C (dec.)
mp 75 °C • flp 110 °C
[506-30-9] • EC No. 208-031-3

**Type analysis:**
Appearance. ..... light beige, fine crystals
Assay (GC). ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **8736.1** | 1 g | glass | 51,50 € |

## Arachidic acid calcium salt

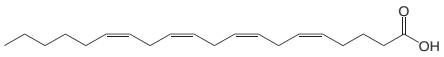
### Arachidic acid calcium salt

**DAB**
Calcium arachinate/-behenate
$C_{40}H_{78}CaO_4$
M 663,16 g/mol
mp ~150 °C
[22302-43-8] • EC No. 244-900-3

**Guarantee analysis:**
Appearance. ..... white, light powder
Identity. ..... complies
Appearance of solution. ..... complies
Acid value. ..... 176-192
pH value. ..... 6,8-8,1
Chloride (Cl). ..... ≤0,25 %
Sulphate ($SO_4$). ..... ≤0,25 %
Calcium (Ca). ..... (dry substance) 5,7-6,3 %
Heavy metals. ..... ≤0,004 %
Loss on drying. ..... ≤3 %

| | | | |
|---|---|---|---|
| **9264.1** | 500 g | plastic | 31,10 € |
| Original pack 6 x 500 g | | | 29,55/500 g |
| **9264.2** | 1 kg | plastic | 51,10 € |
| Original pack 6 x 1 kg | | | 48,55/1 kg |

## Arachidonic acid



### Arachidonic acid

**>99 %**
Isolated from porcine liver.
$C_{20}H_{32}O_2$
M 304,46 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[506-32-1] • EC No. 208-033-4
EUH019

**Type analysis:**
Appearance. ..... colourless to yellowish viscous oil
Assay. ..... >99 %

| | | | |
|---|---|---|---|
| **4717.2** | 10 mg | glass | 48,95 € |
| **4717.1** | 100 mg | glass | 110,65 € |
| **4717.3** | 1 g | glass | 719,20 € |

## Araldit® Binding medium B 1

### Araldit® Binding medium B 1

**liquid**
Epoxy resin, for connecting and filling of metal, ceramics and plastics.
Curing with Aradur® hardener H2 (2551)
[25068-38-6]
UN No. 3082 • ADR 9 III • WGK 3
**Warning**
H315-H317-H319-H410-EUH205

| | | | |
|---|---|---|---|
| **2530.1** | 500 g | tinplate | 70,85 € |

For further information, please see page 1143

A

## Araldite® Rapid

### Araldite® Rapid

**liquid**

Two component all-purpose glue, made on the basis of epoxid-resin.

D 1,17

UN No. 3082 • ADR 9 III • WGK 2

**Warning**

H315-H319-H317-H411-EUH205

| | | |
|---|---|---|
| **3131.1** | Two kits (= 60 ml glue) | 39,70 € |

For further information, please see page 1143

## Araldit® Resin G 2

### Araldit® Resin G 2

**liquid**

For casting and embedding electronic metal components

Curing with Aradur® hardener H2 (2551)

UN No. 3082 • ADR 9 III • WGK 2

**Warning**

H315-H317-H319-H411-EUH205

| | | |
|---|---|---|
| **2545.1** | 500 g | 36,45 € |

For further information, please see page 1143

## Aradur® Hardener H2

### Aradur® Hardener H2

**liquid**

For using with Araldit® Binding medium B1 and Araldit® Resin G2

flp 110 °C

[112-24-3]

UN No. 2259 • ADR 8 II • WGK 2

**Danger**

H302+H312-H314-H317-H412

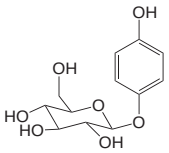
| | | | |
|---|---|---|---|
| **2551.1** | 100 g | glass | 15,30 € |
| **2551.2** | 500 g | glass | 53,25 € |

For further information, please see page 1143

## D(+)-Ara-ol

▶ D(+)-Arabitol see p. 1749

## p-Arbutin



Ursin, Ericolin

$C_{12}H_{16}O_7$

M 272,25 g/mol

mp 198 °C

[497-76-7] • EC No. 207-850-3

WGK 3

### p-Arbutin

**≥98 %, for biochemistry**

**Type analysis:**

Appearance..... white powder
Assay (HPLC)..... ≥98 %
Solubility.....clear, colourless
Specific rotation $[\alpha]_D^{20}$..... -63° to -67°
Sulphated ash..... ≤0,5 %
Loss on drying..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6115.1** | 10 g | plastic | 51,50 € |
| **6115.2** | 50 g | plastic | 160,75 € |

### p-Arbutin

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤1,0 %
Water (KF)..... ≤5,0 %
Assay (qNMR)..... ≥80,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE38.1** | 10 mg | glass | 510,65 € |

### p-Arbutin

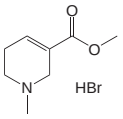
**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC38.2** | 100 mg | glass | 185,45 € |

## Arecoline hydrobromide



### Arecoline hydrobromide

**≥99 %**

Methylarecaidin hydrobromide

$C_8H_{13}NO_2HBr$

M 236,12 g/mol

mp 171-174 °C

[300-08-3] • EC No. 206-087-3

WGK 2

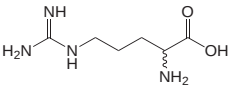
**Warning** H302

**Type analysis:**

Assay..... ≥99,0 %

| | | | |
|---|---|---|---|
| **4602.1** | 1 g | glass | 20,35 € |

## DL-Arginine



### DL-Arginine

**≥98,5 %, for biochemistry**

$C_6H_{14}N_4O_2$

M 174,2 g/mol

mp 228 °C

Storage temp.: +4 °C

[7200-25-1] • EC No. 230-571-3

WGK 1

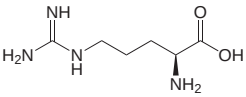
**Warning** H319

**Type analysis:**

Appearance..... white to off-white powder
Assay.....≥98,5 %
Identity (IR)..... complies
Heavy metals (as Pb).....≤0,001 %
Ash content.....≤0,1 %
Loss on drying.....≤0,5 %

| | | | |
|---|---|---|---|
| **8592.1** | 5 g | plastic | 20,35 € |
| **8592.2** | 25 g | plastic | 60,10 € |
| **8592.3** | 100 g | plastic | 198,90 € |

## L-Arginine



L-2-Amino-5-guanidino-n-valeric acid

$C_6H_{14}N_4O_2$

M 174,2 g/mol

D 1,42

mp 238 °C

Solubility: ~149 g/l ($H_2O$, 20 °C)

[74-79-3] • EC No. 200-811-1

WGK 1

**Warning** H319

### L-Arginine

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins.....≤6,0 E.U./g
Assay.....≥99 %
Loss on drying.....≤0,5 %
Specific rotation $[\alpha]_D^{20}$..... +26,9° to +27,9°
Foreign amino acids.....complies
Ammonium ($NH_4$).....≤0,02 %
Chloride (Cl).....≤0,02 %
Sulphate ($SO_4$).....≤0,02 %
Heavy metals (as Pb).....≤0,001 %
Arsenic (As).....≤0,0001 %
Iron (Fe).....≤0,001 %

| | | | |
|---|---|---|---|
| **1655.1** | 25 g | plastic | 10,25 € |
| **1655.2** | 100 g | plastic | 25,70 € |
| **1655.3** | 500 g | plastic | 83,75 € |
| Original pack 6 x 500 g | | | 79,56/500 g |

## L-Arginine

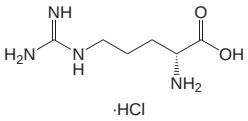
**≥98,5 %, USP, for biochemistry**

**Guarantee analysis:**

Appearance. ..... white, cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... clear, colourless
Specific rotation $[\alpha]_D^{25}$ (8 % in HCl 6 N). ..... +26,3° to +27,7°
pH value (1 g in 20 ml $H_2O$). ..... 10,5-12,0
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,05 %
Sulphate ($SO_4$). ..... ≤0,02 %
Arsenic ($As_2O_3$). ..... ≤0,05 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **3144.1** | 50 g | plastic | 17,10 € |
| **3144.3** | 250 g | plastic | 41,85 € |
| **3144.2** | 1 kg | plastic | 135,35 € |
| Original pack 6 x 1 kg | | | 128,58/1 kg |

## D-Arginine monohydrochloride




## D-Arginine monohydrochloride

**≥99 %, for biochemistry**

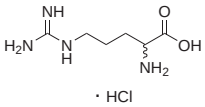
D-2-Amino-5-guanidino-n-valeric acid hydrochloride, H-D-Arg-OH · HCl
$C_6H_{14}N_4O_2 \cdot HCl$
M 210,7 g/mol
Storage temp.: +4 °C
[627-75-8] • EC No. 211-010-1
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... 99,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c= 2 in 6 N HCl). ..... -23° to -21°
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7868.1** | 5 g | plastic | 24,20 € |
| **7868.2** | 25 g | plastic | 72,60 € |
| **7868.3** | 100 g | plastic | 213,95 € |

## DL-Arginine monohydrochloride




## DL-Arginine monohydrochloride

**≥98 %, for biochemistry**

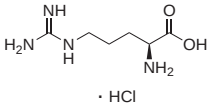
2-Amino-5-guanidino-n-valeric acid hydrochloride
$C_6H_{14}N_4O_2 \cdot HCl$
M 210,70 g/mol
mp <200 °C
[32042-43-6] • EC No. 250-903-0
WGK 1

**Type analysis:**

Appearance. ..... white to yellowish, cryst. powder
Assay (TLC). ..... ≥98 %
Water (KF). ..... ≤10 %
Solubility (50 mg/l $H_2O$). ..... clear, colourless to yellow

| | | | |
|---|---|---|---|
| **4925.1** | 5 g | plastic | 79,45 € |

## L-Arginine monohydrochloride




L-2-Amino-5-guanidino-n-valeric acid hydrochloride, H-L-Arg-OH · HCl
$C_6H_{14}N_4O_2 \cdot HCl$
M 210,67 g/mol
Solubility: ~730 g/l ($H_2O$, 20 °C)
[1119-34-2] • EC No. 214-275-1
WGK 1

## L-Arginine monohydrochloride

**CELLPURE® ≥98,5 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥98,5 %
Loss on drying. ..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. ..... +22,1° to +22,9°
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤17 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1689.1** | 25 g | plastic | 14,95 € |
| **1689.2** | 100 g | plastic | 26,35 € |
| **1689.3** | 500 g | plastic | 87,00 € |
| Original pack 6 x 500 g | | | 82,65/500 g |

## L-Arginine monohydrochloride

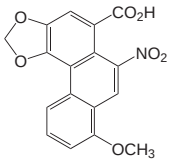
**≥98,5 %, Ph.Eur., USP**

**Guarantee analysis:**

Appearance. ..... white, cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... clear, colourless
Specific rotation $[\alpha]_D^{20}$. ..... +22,1° to +22,9°
pH value (1 g, 10 ml $H_2O$). ..... 4,7-6,2
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... 16,58- 17,00 %
Sulphate ($SO_4$). ..... ≤0,02 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **3145.1** | 50 g | plastic | 17,10 € |
| **3145.2** | 250 g | plastic | 45,70 € |

## Aristolochic acid I




## Aristolochic acid I

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Aristolochia clematitis.*
Aristolochin
$C_{17}H_{11}NO_7$
M 341,28 g/mol
mp 281-286 °C (dec.)
Storage temp.: +4 °C
[313-67-7] • EC No. 206-238-3
UN No. 1544 • ADR 6.1 III • WGK 1

**Danger**

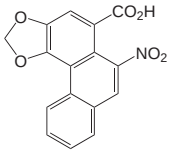
H301+H311+H331-H341-H351

**Type analysis:**

Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **1086.1** | 20 mg | glass | 306,40 € |

## Aristolochic acid II




## Aristolochic acid II

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Aristolochia clematitis.*
Noraristolochic acid
$C_{16}H_9NO_6$
M 311,25 g/mol
mp 269-271 °C
Storage temp.: +4 °C
[475-80-9] • EC No. 207-499-6
UN No. 1544 • ADR 6.1 III • WGK 1

**Danger**

H301+H311+H331-H341-H351

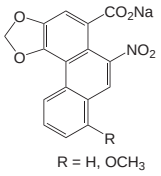
**Type analysis:**

Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **1088.1** | 20 mg | glass | 385,95 € |

A

## Aristolochic acid sodium salt (I and II)




### Aristolochic acid sodium salt (I and II)

**for biochemistry**

$C_{17}H_{10}NNaO_7$ / $C_{16}H_8NO_6Na$
M 363 / 333 g/mol
[10190-99-5] • EC No. 233-463-4
UN No. 1544 • ADR 6.1 II

**Danger**
H301+H311+H331-H351-H341

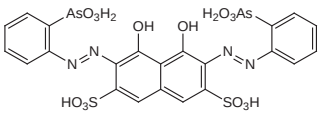
**Type analysis:**
Appearance. ..... yellow to orange powder
Identity (TLC). ..... complies
Solubility (c=20 mg/ml in $H_2O$). ..... soluble

| | | | |
|---|---|---|---|
| **7268.1** | 500 mg | glass | 360,15 € |

## Aristolochin

▶ Aristolochic acid I see p. 1751

## Arsenazo III




### Arsenazo III

**≥85 %, p.a.**
Indicator for metal ions
2,7-Bis(2-arsonophenylazo)-1,8-dihydroxy-naphthalin-3,6-disulphonic acid
$C_{22}H_{18}As_2N_4O_{14}S_2$
M 776,37 g/mol
[1668-00-4] • EC No. 216-788-6
UN No. 2811 • ADR 6.1 III • WGK 3

**Danger** H301+H331-H400-H410

**Guarantee analysis:**
Assay (HPLC). ..... ≥85,0 %
Sulphated ash. ..... ≤0,2 %
Loss on drying (120 °C). ..... ≤8,0 %
Specific Extinction E (1%/1cm). ..... 300,0-450,0
Absorption max. (in $H_2O$). ..... 535,0-543,0 nm
Absorption max. (in buffer pH 10). ..... 571,0-576,0 nm
Lead (Pb). ..... ≤0,001 %
Cadmium (Cd). ..... ≤0,005 %
Calcium (Ca). ..... ≤0,01 %
Chromium (Cr). ..... ≤0,005 %
Iron (Fe). ..... ≤0,01 %
Copper (Cu). ..... ≤0,005 %
Magnesium (Mg). ..... ≤0,005 %
Manganese (Mn). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,005 %
Tin (Sn). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **KK22.1** | 1 g | glass | 52,60 € |
| **KK22.2** | 5 g | glass | 192,45 € |

## Arsenic Standards

▶ Arsenic AAS Standard Solution see p. 2294
▶ Arsenic ICP Standard Solution see p. 2297
▶ Arsenic ICP Standard Solution see p. 2301

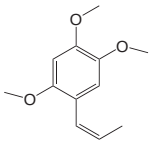
## 1-(2-Arsonophenylazo)-2-hydroxy-3,6-naphthalene-disulphonic acid sodium salt

▶ Thorin see p. 2340

## Asarin

▶ β-Asarone see p. 1752

## β-Asarone




### β-Asarone

**ROTICHROM® GC**
Reference substance for GC.
Asarin, Asarum camphor
$C_{12}H_{16}O_3$
M 208,25 g/mol
Storage temp.: +4 °C
[5273-86-9] • EC No. 226-096-6
WGK 1

**Warning** H302

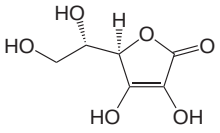
**Type analysis:**
Purity (GC). ..... ≥85 %

| | | | |
|---|---|---|---|
| **9363.1** | 1 g | plastic | 81,60 € |

## Asarum camphor

▶ β-Asarone see p. 1752

## L(+)-Ascorbic acid




Vitamin C
$C_6H_8O_6$
M 176,12 g/mol
D 1,65
mp 190-192 °C
Solubility: 333 g/l ($H_2O$, 20 °C)
[50-81-7] • EC No. 200-066-2
WGK 1

### L(+)-Ascorbic acid

**≥99 %, p.a.**
Antioxidant, for biochemistry.

**Guarantee analysis:**
Appearance. ..... white crystals
Assay. ..... ≥99 %
Identity. ..... complies
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0002 %
Copper (Cu). ..... ≤0,0005 %
Heavy metals. ..... ≤0,001 %
Oxalic acid ($C_2H_2O_4$). ..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. ..... +20,5° to +21,5°
pH value (2 % in $H_2O$). ..... 2,2-2,8

| | | | |
|---|---|---|---|
| **3525.1** | 100 g | plastic | 12,40 € |
| **3525.2** | 250 g | plastic | 17,75 € |
| **3525.3** | 500 g | plastic | 27,45 € |
| Original pack 6 x 500 g | | | 26,08/500 g |

### L(+)-Ascorbic acid

**≥99 %, Ph.Eur., USP, BP**

**Guarantee analysis:**
Appearance. ..... white to off-white crystals
Assay. ..... 99,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0002 %
Copper (Cu). ..... ≤0,0005 %
Heavy metals. ..... ≤0,001 %
Sulphated ash. ..... ≤0,1 %
Specific rotation $[\alpha]_D^{20}$. ..... +20,5° to +21,5°
Oxalic acid ($C_2H_2O_4$). ..... ≤0,2 %
Related substances:
Impurities total C and D (each). ..... ≤0,15 %
Impurities total (except C,D). ..... ≤0,2 %
Related substances (unspecific impurities). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **6288.1** | 100 g | plastic | 12,80 € |
| **6288.2** | 250 g | plastic | 20,35 € |
| **6288.3** | 1 kg | plastic | 61,85 € |
| Original pack 6 x 1 kg | | | 58,76/1 kg |

### L(+)-Ascorbic acid

**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC). ..... ≥90,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF). ..... ≤2,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE00.1** | 100 mg | glass | 729,95 € |

### L(+)-Ascorbic acid

**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC). ..... ≥90,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC00.1** | 100 mg | glass | 116,00 € |

## L(+)-Ascorbic acid sodium salt

Sodium L(+)-ascorbate
$C_6H_7O_6Na$
M 198,11 g/mol
D 1,8
mp 220 °C
[134-03-2] • EC No. 205-126-1
WGK 1

### L(+)-Ascorbic acid sodium salt

**≥99 %, USP, for biochemistry**

**Guarantee analysis:**

Appearance. ..... white to light yellowish crystals
Assay (iodom., dry substance). ..... 99,0 -101,0 %
Identity. ..... complies
pH value (10 % $H_2O$, 20 °C) ..... 7,0-8,0
Heavy metals (as Pb) ..... ≤0,001 %
Loss on drying. ..... ≤0,25 %
Volatile organic impurities. ..... complies
Specific rotation $[\alpha]_D^{25}$ (10 % in $H_2O$, dry substance) ..... +103° to +106°

| | | | |
|---|---|---|---|
| **3149.1** | 100 g | plastic | 24,20 € |
| **3149.2** | 500 g | plastic | 72,60 € |
| Original pack 6 x 500 g | | | 68,97/500 g |

### L(+)-Ascorbic acid sodium salt

**≥99 %, ROTI®click Grade**

for Click Chemistry
Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**

Appearance. ..... white crystals
Assay ..... ≥99 %

| | | | |
|---|---|---|---|
| **7819.1** | 10 mg | plastic | 13,15 € |
| **7819.2** | 5 x 10 mg | plastic | 39,25 € |

## Asiaticoside

### Asiaticoside

**ROTICHROM® HPLC**

Reference substance for HPLC.
$C_{48}H_{78}O_{19}$
M 959,15 g/mol
mp 235-238 °C
Storage temp.: +4 °C
[16830-15-2] • EC No. 240-851-7

**Type analysis:**

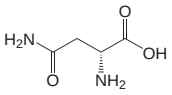
Purity (HPLC) ..... ≥99 %

| | | | |
|---|---|---|---|
| **3972.1** | 10 mg | glass | 203,20 € |

## H-Asn-OH

▶ D-Asparagine monohydrate see p. 1753
▶ DL-Asparagine monohydrate see p. 1753

## D-Asparagine monohydrate



### D-Asparagine monohydrate

**≥98 %, for biochemistry**

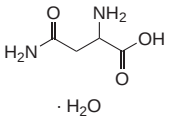
D-Asparaginic acid semiamide, H-D-Asn-OH
$C_4H_8N_2O_3 \cdot H_2O$
M 150,12 g/mol
Storage temp.: +4 °C
[5794-24-1] • EC No. 218-163-3
WGK 1

**Type analysis:**

Appearance ..... white cryst. powder
Assay. ..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in 5 N HCl). ..... -36,5° to -34,5°
Loss on drying. ..... 11,5-12,5 %

| | | | |
|---|---|---|---|
| **7872.1** | 5 g | plastic | 24,20 € |
| **7872.2** | 25 g | plastic | 72,60 € |

## DL-Asparagine monohydrate



### DL-Asparagine monohydrate

**≥98 %, for biochemistry**

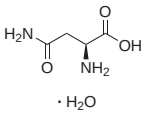
(±)-2-Aminsuccinic acid 4-amide, DL-Aspartic acid 4-amide, H-DL-Asn-OH
$C_4H_8N_2O_3 \cdot H_2O$
M 150,14 g/mol
[3130-87-8] • EC No. 221-521-1
WGK 1

**Type analysis:**

Assay (titr.). ..... ≥98,0 %
Solution (5 % in $H_2O$). ..... colourless, clear
Water (KF) ..... 10,5-13,5 %
Aspartic acid content (TLC). ..... ≤3,0 %

| | | | |
|---|---|---|---|
| **5495.1** | 100 g | plastic | 39,70 € |
| **5495.2** | 250 g | plastic | 85,90 € |

## L-Asparagine monohydrate



### L-Asparagine monohydrate

Asparaginic acid semiamide
$C_4H_8N_2O_3 \cdot H_2O$
M 150,14 g/mol
mp 215-217 °C (dec.)
Solubility: ~22 g/l ($H_2O$, 20 °C)
[5794-13-8] • EC No. 200-735-9
WGK 1

### L-Asparagine monohydrate

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying ..... 10,5-12,5 %
Sulphated ash. ..... ≤0,1 %
Specific rotation $[\alpha]_D^{20}$ ..... +33,7° to +36,0°
Foreign amino acids ..... complies
Ammonium ($NH_4$) ..... ≤0,1 %
Chloride (Cl) ..... ≤0,02 %
Sulphate ($SO_4$) ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **KK37.1** | 50 g | plastic | 26,35 € |
| **KK37.2** | 250 g | plastic | 90,85 € |
| **KK37.3** | 500 g | plastic | 167,60 € |
| Original pack 6 x 500 g | | | 159,22/500 g |

### L-Asparagine monohydrate

**≥99 %, Ph.Eur., for biochemistry**

**Guarantee analysis:**

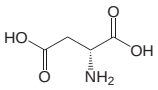
Appearance. ..... white, cryst. powder
Appearance of solution. ..... complies
Identity. ..... complies
Assay (dry substance). ..... 99,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ ..... +33,7° to +36,0°
pH value ..... 4,0-6,0
Ammonium ($NH_4$) ..... ≤0,1 %
Chloride (Cl) ..... ≤0,02 %
Sulphate ($SO_4$) ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Foreign amino acids ..... complies
Aspartic acid. ..... ≤0,5 %
Loss on drying ..... 10,5-12,5 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **HN23.1** | 100 g | plastic | 36,45 € |
| **HN23.2** | 500 g | plastic | 156,45 € |
| Original pack 6 x 500 g | | | 148,63/500 g |
| **HN23.3** | 1 kg | plastic | 256,95 € |
| Original pack 6 x 1 kg | | | 244,10/1 kg |

## Asparaginic acid semiamide

▶ D-Asparagine monohydrate see p. 1753
▶ DL-Asparagine monohydrate see p. 1753
▶ L-Asparagine monohydrate see p. 1753

## D-Aspartic acid



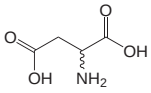
### D-Aspartic acid

**≥98 %, for biochemistry**
D-2-Amino-succinic acid, H-D-Asp-OH
$C_4H_7NO_4$
M 133,1 g/mol
Storage temp.: +4 °C
[1783-96-6] • EC No. 217-234-6
WGK 1

**Type analysis:**
Appearance. .....white to off-white powder
Assay.....98,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=8 in 6 N HCl). ..... -26° to -24°
Loss on drying. .....≤0,2 %

| | | | |
|---|---|---|---|
| **7873.1** | 5 g | plastic | 20,35 € |
| **7873.2** | 25 g | plastic | 60,10 € |
| **7873.3** | 100 g | plastic | 149,45 € |

## DL-Aspartic acid



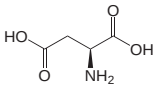
### DL-Aspartic acid

**≥98 %, for biochemistry**
2-Amino-succinic acid
$C_4H_7NO_4$
M 133,1 g/mol
Storage temp.: +4 °C
[617-45-8] • EC No. 210-513-3
WGK 1

**Type analysis:**
Appearance. .....white cryst. powder
Assay.....≥98,0 %
Heavy metals (as Pb).....≤0,005 %
Loss on drying. .....≤0,5 %

| | | | |
|---|---|---|---|
| **8593.1** | 100 g | plastic | 31,10 € |
| **8593.2** | 500 g | plastic | 133,20 € |
| Original pack 6 x 500 g | | | 126,54/500 g |

## L-Aspartic acid



L-2-Amino-succinic acid, H-L-Asp-OH
$C_4H_7NO_4$
M 133,1 g/mol
mp ~271 °C
Solubility: ~4 g/l ($H_2O$, 20 °C)
[56-84-8] • EC No. 200-291-6
WGK 1

### L-Aspartic acid

**CELLPURE® ≥99 %**
For cell culture and biochemistry.

**Guarantee analysis:**
Endotoxins. .....≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. .....+24,5° to +26,0°
Foreign amino acids. ..... complies
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1690.1** | 25 g | plasitc | 14,55 € |
| **1690.2** | 100 g | plasitc | 25,70 € |
| **1690.3** | 500 g | plasitc | 84,85 € |
| Original pack 6 x 500 g | | | 80,61/500 g |

### L-Aspartic acid

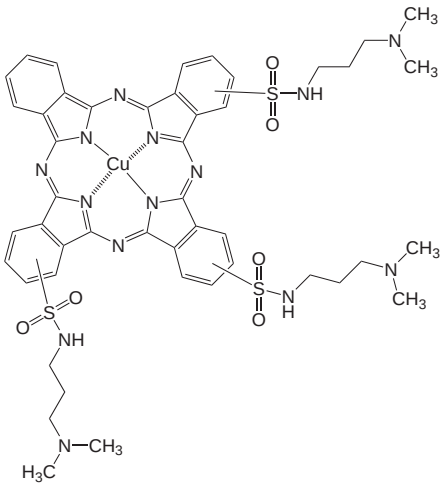
**≥98,5 %, Ph.Eur., for biochemistry**
**Guarantee analysis:**
Appearance.....white, cryst. powder
Assay (dry substance)..... 98,5 -101,0 %
Identity..... complies
Appearance of solution.....clear, colourless
Specific rotation $[\alpha]_D^{20}$. .....+24,5° to +26,0°
pH value . ..... 2,5-3,5
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,02 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe)..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **T202.1** | 100 g | plastic | 16,70 € |
| **T202.2** | 500 g | plastic | 71,50 € |
| Original pack 6 x 500 g | | | 67,93/500 g |
| **T202.3** | 1 kg | plastic | 119,25 € |
| Original pack 6 x 1 kg | | | 113,29/1 kg |

## DL-Aspartic acid 4-amide

▶ DL-Asparagine monohydrate see p. 1753

## Astra blue FM (C.I. 48048)



### Astra blue FM (C.I. 48048)

**for microscopy**
$C_{47}H_{52}CuN_{14}O_6S_3$
M 1068,75 g/mol
[82864-57-1]
WGK 2
⚠ **Warning** H315-H319-H335

**Type analysis:**
Absorption max. (in $H_2O$). .....605-615 nm
Loss on drying (110 °C). .....≤15 %

| | | | |
|---|---|---|---|
| **5165.1** | 10 g | glass | 13,45 € |
| **5165.2** | 50 g | glass | 27,85 € |

For further information, please see page 1461

## Astragalin

▶ Kaempferol-3-glucoside see p. 2019

## ATP

### ATP

**≥98 %, lyophilised**
Adenosine-5-triphosphate di-sodium salt
$C_{10}H_{14}N_5O_{13}P_3Na_2 \cdot 3\ H_2O$
M 605,18 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
[987-65-5] • EC No. 213-579-1

| | | | |
|---|---|---|---|
| **K054.1** | 1 g | plastic | 28,85 € |
| **K054.2** | 5 g | plastic | 40,35 € |
| **K054.3** | 10 g | plastic | 115,60 € |
| **K054.4** | 25 g | plastic | 140,30 € |
| **K054.5** | 50 g | plastic | 256,95 € |
| **K054.6** | 100 g | plastic | 461,10 € |

For further information, please see page 1262

## ATP disodium salt

▶ Adenosin-5'-triphosphate disodium salt (ATP) see p. 1709

## ATP solution

### ATP solution

**≥99 %, 100 mM solution**
Adenosine-5-triphosphate
$C_{10}H_{13}N_5O_{13}P_3$
M 504,16 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
[987-65-5] • EC No. 213-579-1
WGK 1

| | | | |
|---|---|---|---|
| **K045.1** | 25 µmol (250 µl) | plastic | 40,75 € |

For further information, please see page 1261

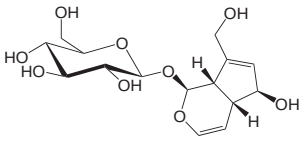
## Aubepine

▶ 4-Anisaldehyde see p. 1742

## Aucuboside

▶ Aucubin see p. 1755

## Aucubin



Aucuboside, Rhinanthin
$C_{15}H_{22}O_9$
M 346,34 g/mol
mp 180 °C
Storage temp.: +4 °C
[479-98-1] • EC No. 207-540-8

### Aucubin

**>97 %**

**Type analysis:**
Assay (HPLC).....>97 %

| | | | |
|---|---|---|---|
| **9149.1** | 250 mg | glass | 482,70 € |

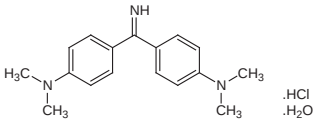
### Aucubin

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Aucuba japonica.*

**Type analysis:**
Purity (HPLC).....>98,5 %

| | | | |
|---|---|---|---|
| **7004.1** | 25 mg | glass | 145,05 € |

## Auramine O (C.I. 41000)



### Auramine O (C.I. 41000)

**for microscopy**
4,4'-Bis-(dimethylamino)-benzophenonimide-hydrochloride, Basic yellow 2
$C_{17}H_{22}ClN_3$
M 303,84 g/mol
mp >250 °C (dec.)
Solubility: 10 g/l ($H_2O$, 20 °C)
[2465-27-2] • EC No. 219-567-2
UN No. 3077 • ADR 9 III • WGK 3
**Warning** H351-H302-H319-H411

**Type analysis:**
Maximum absorption. .....430-440 nm

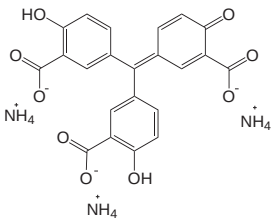
| | | | |
|---|---|---|---|
| **0319.1** | 25 g | glass | 16,05 € |
| **0319.2** | 50 g | glass | 26,80 € |

For further information, please see page 1470

## Aureine

▶ Senecionine see p. 2245

## Aurin tricarboxylic acid ammonium salt



### Aurin tricarboxylic acid ammonium salt

**p.a., ACS**
Reagent for aluminium.
Aluminon, Ammonium aurin tricarboxylate
$C_{22}H_{23}N_3O_9$
M 473,44 g/mol
mp 220-225 °C
Solubility: 800 g/l ($H_2O$, 20 °C)
[569-58-4] • EC No. 209-319-1
WGK 1
**Warning** H315-H319

**Guarantee analysis:**
Identity.....complies
Insoluble matter.....≤0,1 %
Ash content.....≤0,2 %
Suitability as reagent for aluminum.....complies

| | | | |
|---|---|---|---|
| **2670.1** | 10 g | glass | 18,20 € |
| **2670.2** | 25 g | glass | 26,35 € |
| **2670.3** | 100 g | glass | 63,35 € |

## Autoradiography Pen

### Autoradiography Pen

For marking of chemoluminescent or isotope labelled sheets prior to autoradiographic detection.
flp 20 °C
UN No. 1268 • ADR 3 II • WGK 2
**Danger** H225-H304-H372-EUH031

| | | | |
|---|---|---|---|
| **CL10.1** | 1 piece | | 122,45 € |

For further information, please see page 1329

## Avocado oil

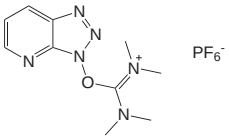
### Avocado oil

**refined, DAC**
Oleum Perseae
D 0,91
[8024-32-6] • EC No. 232-428-0

**Type analysis:**
Relative density (20 °C).....0,912-0,923
Refractive index $n_D^{20}$.....1,468-1,476
Acid value.....≤1,0 mg KOH/g
Peroxide value.....≤15,0 meq $O_2$/kg
Saponification value.....187-197 mg KOH/g
Iodine value (g $I_2$/ 100 g).....75-95
Unsaponifiable matter.....≤2,0 %
GC-fatty acid constituents:
<C 16:0.....≤2,0 %
C 16:0 Palmitic acid.....5,0-25 %
C 16:1 Palmitoleic acid.....1,0-12 %
C 18:0 Stearic acid.....≤3,0 %
C 18:1 Oleic acid.....50-74 %
C 18:2 Linoleic acid.....6,0-20 %
C 18:3 Linolenic acid.....≤3,0 %
Other fatty acids.....≤1,0 %

| | | | |
|---|---|---|---|
| **9341.1** | 1 l | glass | 62,90 € |
| Original pack 6 x 1 l | | | 59,76/1 l |

## O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HATU)



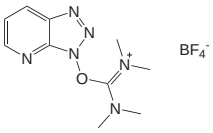
### O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HATU)

**≥99 %**
Coupling reagent for peptide synthesis.
HATU
$C_{10}H_{15}F_6N_6OP$
M 380,23 g/mol
mp 181-185 °C
Storage temp.: +4 °C
[148893-10-1]
UN No. 1325 • ADR 4.1 II • WGK 1
**Danger** H228-H315-H319-H335

**Type analysis:**
Assay (HPLC).....≥99,0 %
Loss on drying.....≤0,5 %
Solubility (5 % in DMF).....clearly soluble

| | | | |
|---|---|---|---|
| **2131.1** | 5 g | plastic | 52,60 € |
| **2131.2** | 25 g | plastic | 198,90 € |

## O-(7-Azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TATU)



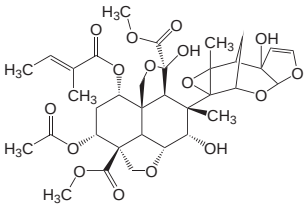
### O-(7-Azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TATU)

**≥99 %**
Coupling reagent for peptide synthesis.
TATU
$C_{10}H_{15}BF_4N_6O$
M 322,07 g/mol
[873798-09-5]
WGK 1
**Warning** H302

**Type analysis:**
Assay (HPLC).....≥99,0 %
Loss on drying.....≤0,5 %

| | | | |
|---|---|---|---|
| **2148.1** | 5 g | glass | 42,90 € |
| **2148.2** | 25 g | glass | 149,45 € |

## Azadirachtin



### Azadirachtin

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{35}H_{44}O_{16}$
M 720,72 g/mol
mp 158-160 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[11141-17-6]

**Type analysis:**
Purity (HPLC)..... ≥96 %

| | | | |
|---|---|---|---|
| **4314.1** | 1 mg | glass | 166,65 € |
| **4314.2** | 5 mg | glass | 364,45 € |

## 9-Azafluorene

▶ Carbazole see p. 1811

## 7-Azaindole



### 7-Azaindole

**≥98 %**
1H-Pyrrolo[2,3-b]pyridine
$C_7H_6N_2$
M 118,14 g/mol
bp 270 °C (1004 hPa)
mp 105-107 °C
[271-63-6] • EC No. 205-981-0

**Type analysis:**
Assay (GC)..... ≥98,0 %
Solution (5 % in methanol)..... colourless to slightly yellow, clear
Water (KF)..... ≤0,5 %
Melting point..... 105-107 °C

| | | | |
|---|---|---|---|
| **5490.1** | 1 g | glass | 18,85 € |
| **5490.2** | 5 g | plastic | 59,70 € |
| **5490.3** | 10 g | plastic | 107,40 € |

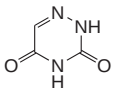
## H-D-Aza-OH · HCl

▶ D-β-Azidoalanine hydrochloride see p. 1756

## H-L-Aza-OH · HCl

▶ L-β-Azidoalanine hydrochloride see p. 1756

## 6-Azauracil



### 6-Azauracil

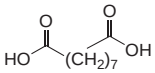
**≥98 %, for biochemistry**
1,2,4-Triazine-3,5-(2H,4H)-dione,
3,5-Dihydroxy-1,2,4-triazine
$C_3H_3N_3O_2$
M 113,08 g/mol
mp 277-281 °C
[461-89-2] • EC No. 207-318-0
WGK 1

**Warning** H371

**Type analysis:**
Assay (titr.)..... ≥98,0 %
Loss on drying..... ≤2,0 %
Melting point..... 277-281 °C

| | | | |
|---|---|---|---|
| **5488.1** | 5 g | plastic | 64,40 € |
| **5488.2** | 10 g | plastic | 107,40 € |

## Azelaic acid



### Azelaic acid

**≥80 %**
Nonanedioic acid
$C_9H_{16}O_4$
M 188,23 g/mol
D 1,03 • bp ~101 °C (20 hPa)
mp 97-107 °C • flp 215 °C
Solubility: 2,4 g/l ($H_2O$, 20 °C)
[123-99-9] • EC No. 204-669-1
WGK 1

**Warning** H319

**Type analysis:**
Assay (titr.)..... ≥80,0 %
Water (KF)..... ≤1,0 %
Melting point..... 97-107 °C

| | | | |
|---|---|---|---|
| **5487.1** | 25 g | plastic | 21,40 € |
| **5487.2** | 100 g | plastic | 53,25 € |

## Azide Dextrose Broth

### Azide Dextrose Broth

**for microbiology**
For enrichment and detection of enterococci.
Application: Use 34,7 g (1x) or 69,4 g (2x) for 1 l broth.
Storage temp.: +20 °C
WGK 1

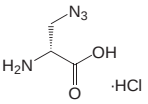
**Warning** H302-H412

**Formulation:**
Casein peptone..... 15 g/l
Meat extract..... 4,5 g/l
Glucose..... 7,5 g/l
Sodium chloride (NaCl)..... 7,5 g/l
Sodium azide..... 0,2 g/l
pH value..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **CL79.1** | 500 g | plastic | 94,10 € |
| Original pack 6 x 500 g | | | 89,40/500 g |

For further information, please see page 1376

## D-β-Azidoalanine hydrochloride



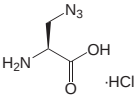
### D-β-Azidoalanine hydrochloride

**≥99 %**
3-Azido-D-alanine hydrochloride,
H-D-Aza-OH · HCl
$C_3H_6N_4O_2$ · HCl
M 166,56 g/mol
Storage temp.: +4 °C •
Transport temp.: cooled
[1379690-01-3]
WGK 3

**Type analysis:**
Appearance..... white powder
Assay (HPLC)..... ≥99 %
Enantiomeric purity..... ≤0,5 % L-enantiomer

| | | | |
|---|---|---|---|
| **7856.1** | 5 mg | plastic | 41,85 € |
| **7856.2** | 10 mg | plastic | 66,55 € |
| **7856.3** | 100 mg | plastic | 213,95 € |
| **7856.4** | 500 mg | plastic | 547,20 € |

## L-β-Azidoalanine hydrochloride



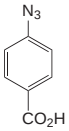
### L-β-Azidoalanine hydrochloride

**≥99 %**
3-Azido-L-alanine hydrochloride,
H-L-Aza-OH · HCl
$C_3H_6N_4O_2$ · HCl
M 166,56 g/mol
Storage temp.: +4 °C •
Transport temp.: cooled
[105661-40-3]
WGK 3

**Type analysis:**
Appearance..... white powder
Assay (HPLC)..... ≥99 %
Enantiomeric purity..... ≤0,5 % D-enantiomer

| | | | |
|---|---|---|---|
| **7854.1** | 5 mg | plastic | 41,85 € |
| **7854.2** | 10 mg | plastic | 66,55 € |
| **7854.3** | 100 mg | plastic | 213,95 € |
| **7854.4** | 500 mg | plastic | 547,20 € |

## 4-Azidobenzoic acid



### 4-Azidobenzoic acid

**≥97 %**
Linker
$C_7H_5N_3O_2$
M 163,14 g/mol
Storage temp.: +4 °C •
Transport temp.: cooled
[6427-66-3]
UN No. 1325 • ADR 4.1 III • WGK 1

**Warning** H228

**Type analysis:**
Appearance. .....white, cryst. powder
Assay (HPLC). .....≥97 %

| | | | |
|---|---|---|---|
| **7835.1** | 10 mg | plastic | 38,60 € |

## 2-[2-(2-Azidoethoxy)-ethoxy]ethanol

▶ HO-PEG2-Azide see p. 2132

## 5-((2-(2-(2-(2-Azidoethoxy)-ethoxy)ethoxy)ethyl) carbamoyl)-2-(6-(dimethyl-amino)-3-(dimethyliminio)-3*H*-xanthen-9-yl)benzoate

▶ 5-Carboxytetramethylrhodamine-PEG3-Azide (5-TAMRA-PEG3-Azide) see p. 1814

## 4-((2-(2-(2-(2-Azidoethoxy)-ethoxy)ethoxy)ethyl)carbamoyl) -2-(6-hydroxy-3-oxo-3*H*-xanthen-9-yl)benzoic acid

▶ 6-Carboxyfluorescein-PEG3-Azide (6-FAM-PEG3-Azide) see p. 1813

## *O*-(2-(2-(2-(2-Azidoethoxy)-ethoxy)ethoxy)ethyl)hydroxyl-amine

▶ Aminooxy-PEG3-Azide see p. 1727

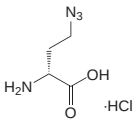
## *N*-(2-(2-(2-(2-Azidoethoxy)-ethoxy)ethoxy)ethyl)-5-((3aS,4S,6aR)-2-oxo-hexahydro-1*H*-thieno[3,4-d]-imidazol-4-yl)pentanamide

▶ Biotin-PEG3-Azide see p. 1774

## *O*-(2-Azidoethyl)-*O'*-methyl-heptaethylene glycole

▶ PEG8-Azide see p. 2133

## D-γ-Azidohomoalanine hydrochloride



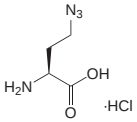
### D-γ-Azidohomoalanine hydrochloride

**≥99 %**
4-Azido-D-homoalanine hydrochloride,
H-D-Aha-OH · HCl
$C_4H_8N_4O_2$ · HCl
M 180,58 g/mol
Storage temp.: +4 °C •
Transport temp.: cooled
[120042-14-0]
WGK 3

**Type analysis:**
Appearance..... white powder
Assay (HPLC)..... ≥99 %
Enantiomeric purity..... ≤0,5 % L-enantiomer

| | | | |
|---|---|---|---|
| **7858.1** | 5 mg | plastic | 41,85 € |
| **7858.2** | 10 mg | plastic | 66,55 € |
| **7858.3** | 100 mg | plastic | 213,95 € |
| **7858.4** | 500 mg | plastic | 547,20 € |

## L-γ-Azidohomoalanine hydrochloride



### L-γ-Azidohomoalanine hydrochloride

**≥99 %**
4-Azido-L-homoalanine hydrochloride,
H-L-Aha-OH · HCl
$C_4H_8N_4O_2$ · HCl
M 180,58 g/mol
Storage temp.: +4 °C •
Transport temp.: cooled
[942518-29-8]
WGK 3

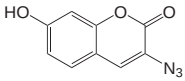
**Type analysis:**
Appearance..... white powder
Assay (HPLC)..... ≥99 %
Enantiomeric purity.....≤0,5 % D-enantiomer

| | | | |
|---|---|---|---|
| **7857.1** | 5 mg | plastic | 41,85 € |
| **7857.2** | 10 mg | plastic | 66,55 € |
| **7857.3** | 100 mg | plastic | 213,95 € |
| **7857.4** | 500 mg | plastic | 547,20 € |

## 3-Azido-7-hydroxy-chromen-2-one

▶ 3-Azido-7-hydroxycoumarin see p. 1757

## 3-Azido-7-hydroxycoumarin



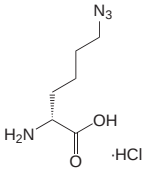
### 3-Azido-7-hydroxycoumarin

**≥98 %**
Fluorescent dye
3-Azido-7-hydroxy-chromen-2-one
$C_9H_5N_3O_3$
M 203,15 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
[817638-68-9]
WGK 3

**Type analysis:**
Appearance. .....brown solid
Assay (HPLC). .....≥98 %
Absorption max. (buffer, pH 7). .....
..... 404 nm (after click reaction)
Emission max. (buffer, pH 7). .....
..... 480 nm (after click reaction)
Solubility. .....DMSO, DMF, MeOH, MeCN
For a 10 mM solution: add 492 µl to 1 mg.

| | | | |
|---|---|---|---|
| **7811.1** | 1 mg | plastic | 87,65 € |
| **7811.2** | 5 mg | plastic | 292,95 € |

## D-Azidolysine hydrochloride



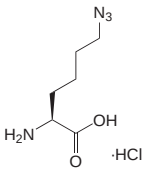
### D-Azidolysine hydrochloride

**≥99 %**
6-Azido-D-lysine hydrochloride,
H-D-Lys($N_3$)-OH · HCl
$C_6H_{12}N_4O_2$· HCl
M 208,64 g/mol
Storage temp.: +4 °C •
Transport temp.: cooled
[1159610-92-1]
WGK 3

**Type analysis:**
Appearance. .....white powder
Assay (HPLC). .....≥99 %
Enantiomeric purity. .....≤0,5 % L-enantiomer

| | | | |
|---|---|---|---|
| **7862.1** | 5 mg | plastic | 41,85 € |
| **7862.2** | 10 mg | plastic | 66,55 € |
| **7862.3** | 100 mg | plastic | 213,95 € |
| **7862.4** | 500 mg | plastic | 547,20 € |

## L-Azidolysine hydrochloride



### L-Azidolysine hydrochloride

**≥98 %**

6-Azido-L-lysine hydrochloride,
H-L-Lys($N_3$)-OH · HCl

$C_6H_{12}N_4O_2$ · HCl

M 208,64 g/mol

Storage temp.: +4 °C •
Transport temp.: cooled

[159610-92-1]

WGK 1

**Type analysis:**

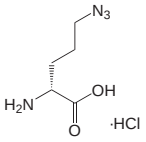
Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

| | | | |
|---|---|---|---|
| **7861.1** | 5 mg | plastic | 41,85 € |
| **7861.2** | 10 mg | plastic | 66,55 € |
| **7861.3** | 100 mg | plastic | 213,95 € |
| **7861.4** | 500 mg | plastic | 547,20 € |

## 26-Azido-3,6,9,12,15,18,-21,24-octaoxahexacosan-1-amine

▶ $H_2N$-PEG8-Azide see p. 2133

## D-Azidoornithine hydrochloride



### D-Azidoornithine hydrochloride

**≥99 %**

5-Azido-D-ornithine hydrochloride,
H-D-Orn($N_3$)-OH · HCl

$C_5H_{10}N_4O_2$ · HCl

M 194,7 g/mol

Storage temp.: +4 °C •
Transport temp.: cooled

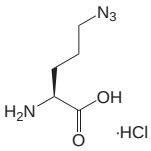
WGK 3

**Type analysis:**

Appearance. ..... white, cryst. powder
Assay (HPLC). ..... ≥99 %
Enantiomeric purity. ..... ≤0,5 % L-enantiomer

| | | | |
|---|---|---|---|
| **7860.1** | 5 mg | plastic | 41,85 € |
| **7860.2** | 10 mg | plastic | 66,55 € |
| **7860.3** | 100 mg | plastic | 213,95 € |
| **7860.4** | 500 mg | plastic | 547,20 € |

## L-Azidoornithine hydrochloride



### L-Azidoornithine hydrochloride

**≥99 %**

5-Azido-L-ornithine hydrochloride,
H-L-Orn($N_3$)-OH · HCl

$C_5H_{10}N_4O_2$ · HCl

M 194,7 g/mol

Storage temp.: +4 °C •
Transport temp.: cooled

[156463-09-1]

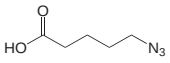
WGK 3

**Type analysis:**

Appearance. ..... white, cryst. powder
Assay (HPLC). ..... ≥99 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

| | | | |
|---|---|---|---|
| **7859.1** | 5 mg | plastic | 41,85 € |
| **7859.2** | 10 mg | plastic | 66,55 € |
| **7859.3** | 100 mg | plastic | 213,95 € |
| **7859.4** | 500 mg | plastic | 547,20 € |

## 5-Azidopentanoic acid



### 5-Azidopentanoic acid

**≥99 %**

Linker

$C_5H_9N_3O_2$

M 143,15 g/mol

Storage temp.: -20 °C •
Transport temp.: cooled

[79583-98-5]

WGK 3

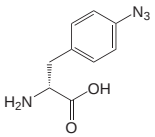
**Warning** H351

**Type analysis:**

Appearance. ..... clear yellow liquid
Assay (TLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7836.1** | 5 mg | plastic | 35,40 € |
| **7836.2** | 10 mg | plastic | 46,80 € |

## D-4-Azidophenylalanine



### D-4-Azidophenylalanine

**≥98 %**

4-Azido-D-phenylalanine, H-D-Phe(4-$N_3$)-OH

$C_9H_{10}N_4O_2$

M 206,2 g/mol

Storage temp.: -20 °C •
Transport temp.: cooled

[1241681-80-0]

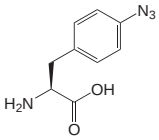
WGK 3

**Type analysis:**

Appearance. ..... off-white powder
Assay (HPLC). ..... ≥98 %
Enantiomeric purity. ..... ≤0,5 % L-enantiomer

| | | | |
|---|---|---|---|
| **7853.1** | 5 mg | plastic | 41,85 € |
| **7853.2** | 10 mg | plastic | 66,55 € |
| **7853.3** | 100 mg | plastic | 213,95 € |
| **7853.4** | 500 mg | plastic | 547,20 € |

## L-4-Azidophenylalanine



### L-4-Azidophenylalanine

**≥98 %**

4-Azido-L-phenylalanine, H-L-Phe(4-$N_3$)-OH

$C_9H_{10}N_4O_2$

M 206,2 g/mol

Storage temp.: -20 °C •
Transport temp.: cooled

[33173-53-4]

WGK 1

**Type analysis:**

Appearance. ..... off-white powder
Assay (HPLC). ..... ≥98 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

| | | | |
|---|---|---|---|
| **7850.1** | 5 mg | plastic | 41,85 € |
| **7850.2** | 10 mg | plastic | 66,55 € |
| **7850.3** | 100 mg | plastic | 213,95 € |
| **7850.4** | 500 mg | plastic | 547,20 € |

## 5-((3-Azidopropyl)carbamoyl)-2-(6-(dimethylamino)-3-(dimethyliminio)-3*H*-xanthen-9-yl)benzoate

▶ 5-Carboxytetramethylrhodamine Azide (5-TAMRA-Azide) see p. 1813

## 4-((3-Azidopropyl)carbamoyl)-2-(6-hydroxy-3-oxo-3*H*-xanthen-9-yl)benzoic acid

▶ 6-Carboxyfluorescein Azide (6-FAM-Azide) see p. 1813

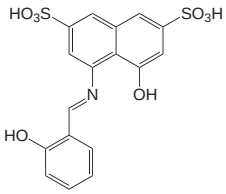
## 15-Azido-4,7,10,13-tetraoxapentadecanoic acid succinimidyl ester

▶ NHS-PEG4-Azide see p. 2133

## 11-Azido-3,6,9-trioxaundecan-1-amine

▶ $H_2N$-PEG3-Azide see p. 2133

## Azomethine H hydrate



### Azomethine H hydrate

**≥95 %, p.a.**

Reagent for the determination of boron.

4-Hydroxy-5-(2-hydroxybenzylidenamino)-naphthalene-2,7-disulphonic acid

$C_{17}H_{12}NNaO_8S_2 \cdot x\ H_2O$

M 445,40 g/mol

[206752-32-1] • EC No. 227-698-1

WGK 1

**Type analysis:**

Appearance..... yellow to orange powder
Assay (HPLC).....≥95,0 %
Water (KF).....≤8,0 %
Specific extinction E 1 %/ 1 cm (236 nm, pH 5,1).....≥1200
Suitability for determination of boron.....complies

| | | | |
|---|---|---|---|
| **CP99.1** | 5 g | plastic | 98,80 € |

## Azorubine

▶ Chromotrope® FB (C.I. 14720) see p. 1832

## Azo violet

▶ 4-(4-Nitrophenylazo)-resorcinol see p. 2102

## Azulene



### Azulene

**≥98 %**

Cyclopentacycloheptene

$C_{10}H_8$

M 128,16 g/mol

mp 98-99 °C

[275-51-4] • EC No. 205-993-6

WGK 2

**Type analysis:**

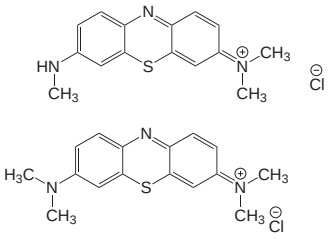
Assay (GC).....≥98 %

| | | | |
|---|---|---|---|
| **3159.1** | 100 mg | glass | 51,10 € |

## Azure I

▶ Azure B (C.I. 52010) see p. 1759

## Azure II



### Azure II

**for microscopy**

1:1 mixture of Azure B and Methylen blue

$C_{16}H_{18}ClN_3S \cdot C_{15}H_{16}ClN_3S$

M 625,68 g/mol

[37247-10-2]

WGK 2

**Warning** H302-H412

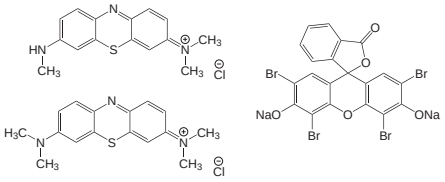
**Type analysis:**

Appearance.....greenish brown to greenish black powder
Appearance of solution (0,1 % in $H_2O$).....clear, dark blue
Loss on drying.....≤12 %

| | | | |
|---|---|---|---|
| **7640.1** | 1 g | glass | 11,75 € |
| **7640.2** | 10 g | glass | 19,60 € |
| **7640.3** | 50 g | glass | 47,20 € |

For further information, please see page 1462

## Azure II eosinat



### Azure II eosinat

**for microscopy**

1:1:1 mixture of Azure B, Methylen blue and Eosine Y

$C_{16}H_{18}ClN_3S \cdot C_{15}H_{16}ClN_3S \cdot C_{20}H_6Br_4Na_2O_5$

M 1317,92 g/mol

[53092-85-6]

WGK 3

**Danger** H318

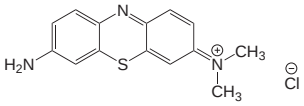
**Type analysis:**

Appearance.....dark green to greenish black powder

| | | | |
|---|---|---|---|
| **7642.1** | 5 g | glass | 18,85 € |
| **7642.2** | 25 g | glass | 35,40 € |
| **7642.3** | 100 g | glass | 103,10 € |

For further information, please see page 1462

## Azure A (C.I. 52005)



### Azure A (C.I. 52005)

**for microscopy**

Dimethylthionin

$C_{14}H_{14}ClN_3S$

M 291,80 g/mol

mp 290 °C (dec.)

[531-53-3] • EC No. 208-510-7

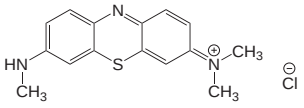
WGK 3

**Type analysis:**

Appearance.....dark green to green black cryst. powder
Appearance of solution (0,1 % in $H_2O$)..... clear, blue
Loss on drying (1 h, 110 °C).....≤8,0 %

| | | | |
|---|---|---|---|
| **7636.1** | 5 g | glass | 14,20 € |
| **7636.2** | 25 g | glass | 24,20 € |
| **7636.3** | 100 g | glass | 60,10 € |

## Azure B (C.I. 52010)



### Azure B (C.I. 52010)

**for microscopy**

N,N,N'-Trimethylthionin, Azure I

$C_{15}H_{16}ClN_3S$

M 305,83 g/mol

mp 205 °C (dec.)

[531-55-5] • EC No. 208-511-2

WGK 3

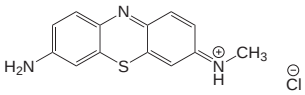
**Type analysis:**

Appearance. .....dark green to green black powder
Appearance of solution (0,1 % in $H_2O$)..... clear, blue
Loss on drying (1 h, 110 °C).....≤8,0 %

| | | | |
|---|---|---|---|
| **7637.1** | 5 g | glass | 14,20 € |
| **7637.2** | 25 g | glass | 24,20 € |
| **7637.3** | 100 g | glass | 60,10 € |

For further information, please see page 1462

## Azure C (C.I. 52002)



### Azure C (C.I. 52002)

**for microscopy**

Monomethylthionin

$C_{13}H_{12}ClN_3S$

M 277,78 g/mol

[531-57-7] • EC No. 208-512-8

WGK 3

**Type analysis:**

Appearance. ..... blackish green powder
Appearance of solution (0,1 % in $H_2O$). .....clear, blue
Loss on drying (1 h, 110 °C). ..... ≤8 %

| | | | |
|---|---|---|---|
| **7639.1** | 5 g | glass | 14,20 € |
| **7639.2** | 25 g | glass | 24,20 € |
| **7639.3** | 100 g | glass | 60,10 € |

## Bacillus cereus Selective Agar

▶ Mannitol Egg Yolk Polymyxin Agar (Base) see p. 2057

## Bacillus cereus Supplement

### Bacillus cereus Supplement

**lyophilised**

Media supplement for selective isolation of *Bacillus cereus.*

One box of 10 vials Bacillus cereus Supplement is sufficient for 10 x 500 ml Mannitol Egg Yolk Polymyxin Agar.

Storage temp.: +4 °C •
Transport temp.: room temp.

WGK 1

**Formulation:**

Polymyxin B. ..... 50 000 I.U. per vial

| | | | |
|---|---|---|---|
| **4856.1** | 10 vials | glass | 107,40 € |

For further information, please see page 1406

## Bacitracin

### Bacitracin

**≥60 IU/mg, Ph.Eur., for biochemistry**

Peptide antibiotic and protease inhibitor.

$C_{66}H_{103}N_{17}O_{16}S$

M 1422,72 g/mol

mp 221-225 °C

Storage temp.: +4 °C

[1405-87-4] • EC No. 215-786-2

WGK 1

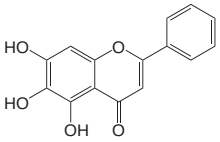
**Guarantee analysis:**

Appearance. ..... off-white powder
Assay (dry substance). ..... ≥60 I.E./mg
Identity. ..... complies
Solubility (water/ethanol 96 %). ..... complies
Appearance of solution. ..... complies
pH value. ..... 6,0-7,0
Loss on drying. ..... ≤5,0 %
Sulphated ash. ..... ≤1,0 %
Bacitracin A ..... ≥40,0 %
Sum Bacitracin A, B1, B2, B3. ..... ≥70,0 %
Related peptides. ..... ≤20,0 %
Bacitracin F. ..... ≤6,0 %

| | | | |
|---|---|---|---|
| **5655.1** | 5 g | glass | 53,25 € |
| **5655.2** | 25 g | plastic | 220,40 € |

For further information, please see page 1426

## Baicalein



### Baicalein

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Scutellaria baicalensis.*

5,6,7-Trihydroxyflavone

$C_{15}H_{10}O_5$

M 270,24 g/mol

Storage temp.: +4 °C

[491-67-8]

**Warning** H302

**Type analysis:**

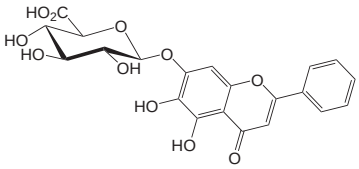
Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **1110.1** | 20 mg | glass | 310,70 € |

## Baicalein-7-β-D-glucapyranosidouronat

▶ Baicalin see p. 1760

## Baicalin



### Baicalin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Scutellaria baicalensis.*

Baicalein-7-β-D-glucopyranosidouronate

$C_{21}H_{18}O_{11}$

M 446,37 g/mol

Storage temp.: +4 °C

[21967-41-9]

WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **1121.1** | 20 mg | glass | 244,60 € |

## Baird Parker Agar (Base)

### Baird Parker Agar (Base)

**Ph.Eur., for microbiology**

For isolation and enumeration of staphylococci.

Application: Use 63 g for 1 l agar. Add egg yolk emulsion tellurit (Art. No. 0339.1) to 5 % final concentration.

Agar medium O (Ph.Eur. 6.0)

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Casein peptone (pancreas hydrolysate) ..... 10 g/l
Beef extract. ..... 5 g/l
Yeast extract. ..... 1 g/l
Lithium chloride. ..... 5 g/l
Glycine. ..... 12 g/l
Sodium pyruvate. ..... 10 g/l
Agar. ..... 20 g/l
pH value. ..... 6,8 ±0,2

| | | | |
|---|---|---|---|
| **X913.1** | 500 g | plastic | 110,65 € |
| Original pack 6 x 500 g | | | 105,12/500 g |

For further information, please see page 1377

## Ballistol®-oil

### Ballistol®-oil

Mildly alkaline special oil with cleaning, conserving, protective, regenerating, impregnating, lubricating and disinfecting properties.

D 0,865

flp 55 °C

UN No. 1268 • ADR 3 III • WGK 1

**Warning** H-226

| | | | |
|---|---|---|---|
| **AA74.1** | 50 ml | glass | 5,50 € |
| **AA74.2** | 500 ml | glass | 24,30 € |

For further information, please see page 1140

## Ballistol®-spray

### Ballistol®-spray

Mildly alkaline special oil with cleaning, conserving, protective, regenerating, impregnating, lubricating and disinfecting properties.

UN No. 1950 • ADR 2 • WGK 1

**Danger** H222-H229

| | | | |
|---|---|---|---|
| **AA75.1** | 200 ml | spray can | 9,65 € |

For further information, please see page 1140

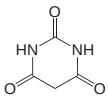
## Balsam Canada

▶ Canada balsam see p. 1809

## Balsamum canadense

▶ Canada balsam see p. 1809

## Barbituric acid



### Barbituric acid

**≥99 %, extra pure**
2,4,6-Trihydroxy-pyrimidine
$C_4H_4N_2O_3$
M 128,09 g/mol
mp ~250 °C (dec.) • flp 150 °C
Solubility: 11,4 g/l ($H_2O$, 25 °C)
[67-52-7] • EC No. 200-658-0
WGK 1

**Type analysis:**
Appearance. ..... light beige powder
Assay (acidim.). ..... ≥99 %

| | | | |
|---|---|---|---|
| **4927.1** | 100 g | plastic | 79,45 € |
| **4927.2** | 500 g | plastic | 282,20 € |
| Original pack 6 x 500 g | | | 268,09/500 g |

## Barium Standards


- Barium AAS Standard Solution see p. 2294
- Barium ICP Standard Solution see p. 2297
- Barium ICP Standard Solution see p. 2301
- Barium IC Standard Solution see p. 2312


## Barium acetate

### Barium acetate

**≥99 %, p.a., ACS**
$Ba(CH_3COO)_2$
M 255,42 g/mol
D 2,47
mp 450 °C
Solubility: 720 g/l ($H_2O$, 20 °C)
[543-80-6] • EC No. 208-849-0
WGK 1

**Warning** H302+H332

**Guarantee analysis:**
Assay (compl.). ..... 99,0-102,0 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,05 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,003 %
Sodium (Na). ..... ≤0,005 %
Strontium (Sr). ..... ≤0,2 %
Oxidizing substances (as $NO_3$). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **2553.1** | 250 g | plastic | 37,55 € |
| **2553.2** | 500 g | plastic | 60,10 € |
| Original pack 6 x 500 g | | | 57,10/500 g |
| **2553.3** | 1 kg | plastic | 100,55 € |
| Original pack 6 x 1 kg | | | 95,52/1 kg |

## Barium carbonate

$BaCO_3$
M 197,35 g/mol
D 4,43
mp >1450 °C (dec.)
Solubility: 0,02 g/l ($H_2O$, 20 °C)
[513-77-9] • EC No. 208-167-3

**Warning** H302

### Barium carbonate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5321.1** | 25 g | plastic | 117,20 € |
| **5321.2** | 100 g | plastic | 364,45 € |

### Barium carbonate

**≥99 %, p.a., ACS**
For preparation of further barium compounds.

**Guarantee analysis:**
Assay. ..... 99,0-101,0 %
In HCl insoluble matter. ..... ≤0,015 %
Oxidizing substances (as $NO_3$). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,001 %
Alkalinity. ..... ≤0,002 meq/g
Chloride (Cl). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,05 %
Iron (Fe). ..... ≤0,002 %
Potassium (K). ..... ≤0,005 %
Sodium (Na). ..... ≤0,02 %
Strontium (Sr). ..... ≤0,7 %
Sulphide (S). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **P008.2** | 25 g | plastic | 12,80 € |
| **P008.3** | 100 g | plastic | 25,30 € |
| **P008.1** | 500 g | plastic | 92,35 € |
| Original pack 6 x 500 g | | | 87,73/500 g |

### Barium carbonate

NEW

**≥99 %, extra pure**

**Type analysis:**
Assay. ..... ≥99,0 %
Total sulphur (as $SO_4$). ..... ≤0,5 %
Iron (Fe). ..... ≤0,005 %
Moisture. ..... ≤0,5 %
Insoluble in HCl. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **0326.1** | 100 g | plastic | 17,10 € |
| **0326.2** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **0326.3** | 1 kg | plastic | 53,65 € |
| Original pack 6 x 1 kg | | | 50,97/1 kg |
| **0326.4** | 2,5 kg | plastic | 107,40 € |

## Barium chloride

### Barium chloride

**ROTI®METIC 99,999 % (5N), anhydrous**
$BaCl_2$
M 208,23 g/mol
D 3,85 • bp 1560 °C
mp 563 °C
Solubility: 312 g/l ($H_2O$, 20 °C)
[10361-37-2] • EC No. 233-788-1
UN No. 1564 • ADR 6.1 III • WGK 1

**Danger** H301-H332

**Type analysis:**
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5051.1** | 25 g | plastic | 97,75 € |

## Barium chloride dihydrate

$BaCl_2 \cdot 2\ H_2O$
M 244,27 g/mol
D 3,86
mp 120 °C (dec.)
Solubility: 358 g/l ($H_2O$, 20 °C)
[10326-27-9] • EC No. 233-788-1
UN No. 1564 • ADR 6.1 III • WGK 1

**Danger** H301-H332

### Barium chloride dihydrate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5115.1** | 50 g | plastic | 163,95 € |
| **5115.2** | 100 g | plastic | 256,95 € |

## Barium chloride dihydrate

**≥99 %, p.a., ACS, ISO**

Reagent for the gravimetric determination of sulphate.

**Guarantee analysis:**

Assay (compl.).....≥99,0 %
pH (5 % $H_2O$, 25 °C).....5,2-8,0
In $H_2O$ insoluble matter.....≤0,005 %
Loss on drying (150 °C).....14,0-16,0 %
Total nitrogen (N).....≤0,002 %
Oxidizing substances (as $NO_3$).....≤0,005 %
Heavy metals.....≤0,0005 %
Calcium (Ca).....≤0,005 %
Iron (Fe).....≤0,0002 %
Potassium (K).....≤0,0025 %
Magnesium (Mg).....≤0,001 %
Sodium (Na).....≤0,005 %
Cadmium (Cd).....≤0,0005 %
Cobalt (Co).....≤0,0005 %
Copper (Cu).....≤0,0005 %
Manganese (Mn).....≤0,0005 %
Nickel (Ni).....≤0,0005 %
Lead (Pb).....≤0,0005 %
Strontium (Sr).....≤0,01 %
Zinc (Zn).....≤0,0005 %

| | | | |
|---|---|---|---|
| **4453.1** | 250 g | plastic | 15,60 € |
| **4453.2** | 500 g | plastic | 23,15 € |
| Original pack 6 x 500 g | | | 21,99/500 g |
| **4453.3** | 1 kg | plastic | 38,60 € |
| Original pack 6 x 1 kg | | | 36,67/1 kg |
| **4453.4** | 2,5 kg | plastic | 82,25 € |
| **4453.6** | 5 kg | plastic | 144,60 € |
| **4453.5** | 25 kg | plastic | 665,45 € |

## Barium chloride solution (0,1 N)

### Barium chloride solution

NEW

**0,05 mol/l - 0,1 N volumetric standard solution**

D 1,01

**Type analysis:**

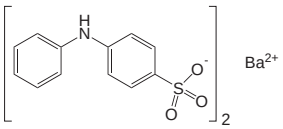
Amount-of-substance conc.....0,05 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **0468.1** | 500 ml | plastic | 19,25 € |

## Barium dinitrate

▶ Barium nitrate see p. 1763

## Barium diphenylamine sulfonate



### Barium diphenylamine sulfonate

**p.a., ACS**

Redox indicator
Diphenylamine-4-sulfonic acid barium salt
$C_{24}H_{20}BaN_2O_6S_2$
M 633,88 g/mol
mp 300 °C
[6211-24-1] • EC No. 228-278-0
WGK 1

**Warning** H302+H332

**Guarantee analysis:**

Ash content (as $SO_4$).....35,0-38,0 %
Clarity of solution (ACS-test).....complies
Suitability as redox indicator.....complies

| | | | |
|---|---|---|---|
| **2674.1** | 5 g | plastic | 29,60 € |
| **2674.2** | 25 g | plastic | 80,55 € |

## Barium fluoride

### Barium fluoride

**ROTI®METIC 99,995% (4N5)**

$BaF_2$
M 175,32 g/mol
D 4,83 • bp 2260 °C
mp 1353 °C
Solubility: 1,2 g/l ($H_2O$, 25 °C)
[7787-32-8] • EC No. 232-108-0
UN No. 1564 • ADR 6.1 III • WGK 1

**Danger** H301-H332

**Type analysis:**

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5055.1** | 25 g | plastic | 122,05 € |

## Barium hydroxide hydrate

### Barium hydroxide hydrate

**ROTI®METIC 99,995 % (4N5)**

$Ba(OH)_2 \cdot x\ H_2O$
M 171,36 + x $H_2O$ g/mol
mp 78 °C
[40226-30-0]
UN No. 3262 • ADR 8 II • WGK 1

**Danger** H302+H332-H314

**Type analysis:**

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5609.1** | 5 g | plastic | 59,05 € |
| **5609.2** | 25 g | plastic | 224,70 € |

## Barium hydroxide octahydrate

$Ba(OH)_2 \cdot 8\ H_2O$
M 315,48 g/mol
D 2,18
mp 78 °C
Solubility: 72 g/l ($H_2O$, 20 °C)
[12230-71-6] • EC No. 241-234-5
UN No. 3262 • ADR 8 II • WGK 1

**Danger** H302+H332-H314

### Barium hydroxide octahydrate

**≥98 %, p.a., ISO**

Reagent for the detection of $CO_2$ and for the preparation of various barium salts.

**Guarantee analysis:**

Assay.....≥98,0 %
In HCl insoluble matter.....≤0,005 %
Carbonate (as $BaCO_3$).....≤2,0 %
Chloride (Cl).....≤0,001 %
Sulphide (S).....≤0,001 %
Calcium (Ca).....≤0,05 %
Cadmium (Cd).....≤0,0005 %
Iron (Fe).....≤0,001 %
Magnesium (Mg).....≤0,002 %
Sodium (Na).....≤0,01 %
Lead (Pb).....≤0,0005 %
Copper (Cu).....≤0,0005 %
Potassium (K).....≤0,005 %
Strontium (Sr).....≤1,5 %
Zinc (Zn).....≤0,0005 %

| | | | |
|---|---|---|---|
| **P009.2** | 250 g | plastic | 26,35 € |
| **P009.1** | 500 g | plastic | 39,70 € |
| Original pack 6 x 500 g | | | 37,72/500 g |
| **P009.3** | 1 kg | plastic | 60,75 € |
| Original pack 6 x 1 kg | | | 57,71/1 kg |

### Barium hydroxide octahydrate

**≥97 %, extra pure**

**Type analysis:**

Assay (acidim.).....≥97 %
In HCl insoluble matter.....≤0,02 %
Carbonate (as $BaCO_3$).....≤2,0 %
Chloride (Cl).....≤0,01 %
Sulphide (S).....≤0,005 %
Iron (Fe).....≤0,003 %
Heavy metals (as Pb).....≤0,002 %

| | | | |
|---|---|---|---|
| **HN75.1** | 500 g | plastic | 26,80 € |
| Original pack 6 x 500 g | | | 25,46/500 g |
| **HN75.2** | 1 kg | plastic | 45,05 € |
| Original pack 6 x 1 kg | | | 42,80/1 kg |
| **HN75.3** | 2,5 kg | plastic | 98,80 € |

## Barium hydroxide solution (0,1 N)

### Barium hydroxide solution

**0,05 mol/l - 0,1 N volumetric standard solution**

**Type analysis:**

Amount-of-substance conc. (20 °C). 0,05 mol/l ±0,2 %
Titer.....0,998-1,002

| | | | |
|---|---|---|---|
| **N054.1** | 1 l | plastic | 35,40 € |
| Original pack 6 x 1 l | | | 33,63/1 l |

For further information, please see page 1621

## Barium nitrate

Barium dinitrate
$Ba(NO_3)_2$
M 261,35 g/mol
D 3,2
mp 590 °C (dec.)
Solubility: 90 g/l ($H_2O$, 20 °C)
[10022-31-8] • EC No. 233-020-5
UN No. 1446 • ADR 5.1 (6.1) II • WGK 1

**Danger** H272-H301-H319-H332

### Barium nitrate

**ROTI®METIC 99,9995 % (5N5)**

**Type analysis:**

Assay (metals basis)..... 99,9995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5138.1** | 50 g | plastic | 149,45 € |
| **5138.2** | 100 g | plastic | 263,40 € |

### Barium nitrate

**≥99 %, p.a., ACS**
Pyrotechnics

**Guarantee analysis:**

Assay (compl.).....≥99,0 %
pH value (5 % in $H_2O$).....5,0-8,0
In $H_2O$ insoluble matter.....≤0,01 %
Chloride (Cl).....≤0,0005 %
Calcium (Ca).....≤0,05 %
Iron (Fe).....≤0,0002 %
Potassium (K).....≤0,005 %
Sodium (Na).....≤0,005 %
Strontium (Sr).....≤0,05 %
Heavy metals (as Pb).....≤0,0005 %

| | | | |
|---|---|---|---|
| **4387.1** | 250 g | plastic | 26,35 € |
| **4387.2** | 500 g | plastic | 41,85 € |
| Original pack 6 x 500 g | | | 39,76/500 g |
| **4387.3** | 1 kg | plastic | 61,20 € |
| Original pack 6 x 1 kg | | | 58,14/1 kg |

## Barium perchlorate solution (0,005 N)

### Bariumperchlorate solution

**0,005 mol/l - 0,005 N volumetric standard solution in 2-propanol/water**
UN No. 1219 • ADR 3 II • WGK 1

**Danger** H225-H319-H336

**Type analysis:**

Amount-of-substance conc.....0,005 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **KK61.1** | 1 l | glass | 27,85 € |
| Original pack 6 x 1 l | | | 26,46/1 l |

For further information, please see page 1621

## Barium sulphate suspension

▶ McFarland BSS 0,5 see p. 2060
▶ McFarland PMS 0,5 see p. 2060

## Basic blue 9

▶ Methylene blue (C.I. 52015) see p. 2074

## Basic blue 11

▶ Victoria blue R (C.I. 44040) see p. 2371

## Basic blue 17

▶ Toluidine blue O (C.I. 52040) see p. 2348

## Basic brown 1

▶ Bismarck brown Y (C.I. 21000) see p. 1775

## Basic brown 4

▶ Bismarck brown R (C.I. 21010) see p. 1775

## Basic fuchsine

▶ Fuchsine basic (C.I. 42510) see p. 1944

## Basic green 1

▶ Brilliant green (C.I. 42040) see p. 1785

## Basic green 4

▶ Malachite green hydrochloride see p. 2052
▶ Malachite green oxalate (C.I. 42000) see p. 2052

## Basic orange 14

▶ Acridine orange (C.I. 46005) see p. 1706
▶ Acridine orange base (C.I. 46005) see p. 1706

## Basic violet

▶ Methyl violet 2B (C.I. 42535) see p. 2080

## Basic violet 4

▶ Ethyl violet (C.I. 42600) see p. 1921

## Basic yellow 2

▶ Auramine O (C.I. 41000) see p. 1755

## Basosorb

### Basosorb

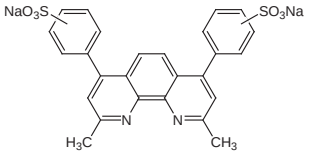
**pH value at 20 °C: 1,9**
For neutralizing alkaline solutions.
WGK 1

**Warning** H319

| | | | |
|---|---|---|---|
| **3287.1** | 5 kg | plastic | 66,55 € |

For further information, please see page 693

## Bathocuproine sulphonate disodium salt hydrate




### Bathocuproine sulphonate disodium salt hydrate

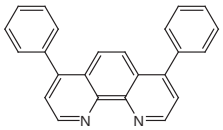
**≥98 %**
Reagent for copper.
2,9-Dimethyl-4,7-diphenyl-1,10-phenanthroline disulphonic acid disodium salt
$C_{26}H_{18}N_2Na_2O_6S_2 \cdot x\ H_2O$
M 564,55 + x $H_2O$ g/mol
mp 300 °C
[52698-84-7] • EC No. 258-111-7
WGK 3

**Type analysis:**

Assay.....≥98,0 %
Water (KF).....≤4,0 %
Suitability for determination of copper.....complies

| | | | |
|---|---|---|---|
| **KK28.1** | 250 mg | glass | 35,40 € |
| **KK28.2** | 1 g | glass | 111,70 € |

## Bathophenanthroline




### Bathophenanthroline

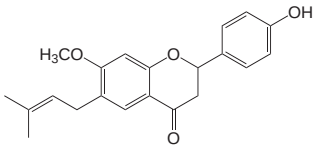
**≥99 %, p.a.**
Reagent for iron.
4,7-Diphenyl-1,10-phenanthroline
$C_{24}H_{16}N_2$
M 332,41 g/mol
mp 218-221 °C
[1662-01-7] • EC No. 216-767-1
WGK 3

**Type analysis:**

Assay.....≥99,0 %
Sulphated ash.....≤0,1 %
Suitability for determination of iron.....complies

| | | | |
|---|---|---|---|
| **KK29.1** | 500 mg | glass | 47,20 € |
| **KK29.2** | 1 g | glass | 83,75 € |

## Bavachinin A




### Bavachinin A
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{21}H_{22}O_4$
M 324,38 g/mol
mp 139-145 °C
Storage temp.: +4 °C
[19879-30-2]

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **8898.1** | 5 mg | glass | 213,95 € |

## BCG
▶ Bromocresol green see p. 1787

## BCIP-$Na_2$
▶ 5-Bromo-4-chloro-3-indolyl phosphate disodium salt see p. 1786

## BCIP-p-toluidine salt
▶ 5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt see p. 1786

## BDG
▶ Butyldiglycol see p. 1797

## BDI
▶ 1,4-Diisocyanatobutane see p. 1878

## Beeswax white

### Beeswax white
**pure, natural**
Cera alba
D ~0,96
mp 61-65 °C
[8012-89-3] • EC No. 232-383-7

**Type analysis:**
Melting range..... 61-65 °C
Acid value (mg KOH/g)..... 17-22
Ester value (mg KOH/g)..... 72-79
Saponification value (mg KOH/g)..... 87-102

| | | | |
|---|---|---|---|
| **5825.1** | 250 g | plastic | 18,20 € |
| **5825.2** | 1 kg | plastic | 51,50 € |
| Original pack 6 x 1 kg | | | 48,93/1 kg |

## Beeswax yellow

### Beeswax yellow
**pure, natural**
Cera flava
D ~0,96
mp 61-65 °C • flp >180 °C
[8012-89-3] • EC No. 232-383-7

**Type analysis:**
Melting range..... 61-65 °C
Acid value (mg KOH/g)..... 17-22
Ester value (mg KOH/g)..... 72-79
Saponification value (mg KOH/g)..... 87-102

| | | | |
|---|---|---|---|
| **5830.1** | 250 g | plastic | 18,20 € |
| **5830.2** | 1 kg | plastic | 51,50 € |
| Original pack 6 x 1 kg | | | 48,93/1 kg |

## Benedict's reagent

### Benedict's reagent
NEW
**for sugar determination**
UN No. 3082 • ADR 9 III • WGK 3
**Warning** H319-H411

**Type analysis:**
Appearance..... blue solution
Density (20 °C)..... 1,15-1,19 g/cm³
Formulation: Sodium carbonate anhydrous, tri-Sodium citrate dihydrate, Copper(II) sulphate pentahydrate, water

| | | | |
|---|---|---|---|
| **0010.1** | 100 ml | dropp. bottle | 18,20 € |

For further information, please see page 1645

## Bengal Red Agar (with chloroamphenicol)

### Bengal Red Agar (with chloroamphenicol)
**for microbiology**
Standard-selective agar for counting yeast and food mould fungi.
Application: Use 31,6 g for 1 l agar.
**RBC Agar**
Storage temp.: +20 °C
WGK 3

**Formulation:**
Peptone..... 5 g/l
Glucose..... 10 g/l
Potassium phosphate..... 1 g/l
Magnesium sulphate ($MgSO_4$)..... 0,5 g/l
Chloroamphenicol..... 0,1 g/l
Bengal red..... 0,05 g/l
Agar..... 15 g/l
pH value..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **AE24.1** | 500 g | plastic | 112,90 € |
| Original pack 6 x 500 g | | | 107,26/500 g |

For further information, please see page 1377

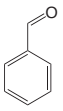
## Bentonite

### Bentonite
**pure**
Carrier in chromatography.
Montmorillonite
mp >1000 °C
[1302-78-9] • EC No. 215-108-5

**Type analysis:**
Appearance..... beige powder
Montmorillonit..... ~70 %
pH value ..... 9,0-11,0
Water..... 6-12 %
Methylene blue adsorption..... 320 ±40 mg/g
Bulk density..... 0,73-0,83 g/cm³
Swelling volume..... ≥22 ml/ 2 g
Sieve residue (63 µm, dry)..... ≤30 %

| | | | |
|---|---|---|---|
| **0113.2** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **0113.3** | 1 kg | plastic | 27,45 € |
| Original pack 6 x 1 kg | | | 26,08/1 kg |
| **0113.1** | 2,5 kg | plastic | 44,00 € |

## Benzaldehyde




$C_7H_6O$
M 106,13 g/mol
D ~1,05 • bp 179 °C
mp -26 °C • flp 64 °C
Solubility: 3 g/l ($H_2O$, 20 °C)
[100-52-7] • EC No. 202-860-4
UN No. 1990 • ADR 9 III • WGK 2
**Warning** H302

### Benzaldehyde
**≥99,5 %, for synthesis**

**Type analysis:**
Assay (GC)..... ≥99,5 %
Density (d 20 °C/4 °C)..... 1,044-1,046

| | | | |
|---|---|---|---|
| **4372.1** | 100 ml | glass | 13,15 € |
| **4372.2** | 500 ml | glass | 22,05 € |
| **4372.3** | 1 l | glass | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |
| **4372.4** | 2,5 l | glass | 53,65 € |
| Original pack 4 x 2,5 l | | | 50,97/2,5 l |

### Benzaldehyde
**ROTI®STAR Primary Standard**
Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**
Assay (GC)..... ≥95,0 %
Residual solvents (GC)..... ≤1,0 %
Water (KF)..... ≤2,0 %
Assay (qNMR)..... ≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE01.1** | 100 mg | glass | 729,95 € |

### Benzaldehyde
**ROTICHROM® Working Standard**
Storage temp.: -20 °C •
Transport temp.: room temp.

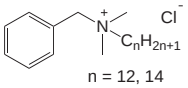
**Type analysis:**
Assay (GC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC01.1** | 100 mg | glass | 116,00 € |

## Benzalkonium chloride

▶ Benzalkonium chloride see p. 1765

## Benzalkonium chloride




n = 12, 14

### Benzalkonium chloride

**80 %**

Alkylbenzyldimethyl quaternary ammonium chloride, Zephiran chloride

D 0,97

mp 6 °C

UN No. 1760 • ADR 8 II • WGK 3

**Danger** H302-H314-H410

**Type analysis:**

Assay. ..... 78-82 %
pH value. ..... 7,0-9,0
Colour (Hazen). ..... ≤150

| | | | |
|---|---|---|---|
| **2999.1** | 100 g | glass | 18,20 € |
| **2999.2** | 500 g | glass | 43,55 € |
| Original pack 6 x 500 g | | | 41,37/500 g |
| **2999.3** | 1 kg | glass | 70,85 € |
| Original pack 6 x 1 kg | | | 67,31/1 kg |
| **2999.4** | 2,5 kg | plastic | 120,95 € |

## Benzalkonium chloride

### Benzalkonium chloride

**50 %, aqueous solution**

Alkylbenzyldimethyl quaternary ammonium compounds chloride, Zephiran chloride

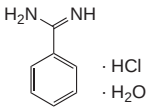
D 0,99 • bp 100 °C

UN No. 1760 • ADR 8 II • WGK 3

**Danger** H314-H400-H302+H312

| | | | |
|---|---|---|---|
| **5091.1** | 500 ml | glass | 34,30 € |
| **5091.2** | 2,5 l | glass | 120,95 € |
| Original pack 4 x 2,5 l | | | 114,90/2,5 l |

## Benzamidine hydrochloride monohydrate




### Benzamidine hydrochloride monohydrate

**≥98 %, for biochemistry**

Inhibitor of serine proteases.

$C_7H_8N_2 \cdot HCl \cdot H_2O$

M 174,63 g/mol

mp 83-87 °C • flp -31 °C

Storage temp.: +4 °C

[1670-14-0] • EC No. 216-795-4

WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay. ..... ≥98 %
Water (KF). ..... ≤15,0 %
Melting point. ..... 83-87 °C

| | | | |
|---|---|---|---|
| **CN38.1** | 5 g | plastic | 17,75 € |
| **CN38.2** | 10 g | plastic | 25,30 € |
| **CN38.3** | 25 g | plastic | 48,95 € |

For further information, please see page 1284

## Benzamine blue

▶ Trypan blue (C.I. 23850) see p. 2359

## Benzenamine

▶ Aniline see p. 1742

## Benzene D6

Cyclohexatriene deuterated

$C_6D_6$

M 84,16 g/mol

D 0,95 • bp ~80 °C

mp 6,8 °C • flp -11 °C

Solubility: 1,8 g/l ($H_2O$, 20 °C)

[1076-43-3] • EC No. 214-061-8

UN No. 1114 • ADR 3 II • WGK 3

**Danger**

H225-H340-H350-H372-H304-H315-H319

### Benzene D6

**99,8 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Type analysis:**

Deuterising degree. ..... ≥99,8 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **7912.1** | 10 ml | glass | 72,60 € |
| **7912.2** | 25 ml | glass | 163,30 € |
| **7912.3** | 10 x 0,75 ml | glass ampoule | 78,40 € |

### Benzene D6

**99,5 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**

Deuterising degree. ..... ≥99,5 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **AE53.1** | 10 ml | glass | 45,70 € |
| **AE53.3** | 10 ml | septum bottle | 47,20 € |
| **AE53.2** | 50 ml | glass | 192,45 € |

## Benzene

Cyclohexatriene

$C_6H_6$

M 78,11 g/mol

D 0,88 • bp 80 °C

mp 6 °C • flp -11 °C

Solubility: 0,7 g/l ($H_2O$, 20 °C)

[71-43-2] • EC No. 200-753-7

UN No. 1114 • ADR 3 II • WGK 3

**Danger** H225-H302-H304-H315-H319-H340-H350-H372-H412

### Benzene

**ROTIPURAN® ≥99,5 %, p.a.**

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,03 %
Density (d 20 °C/4 °C). ..... 0,877-0,878
Non volatile matter. ..... ≤0,001 %
Aluminium (Al). ..... ≤0,00005 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Magnesium (Mg). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Chromium (Cr). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Lead (Pb). ..... ≤0,00001 %
Iron (Fe). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %
Reaction with $H_2SO_4$. ..... complies

| | | | |
|---|---|---|---|
| **7173.4** | 100 ml | glass | 23,55 € |
| **7173.3** | 500 ml | glass | 30,65 € |
| **7173.1** | 1 l | glass | 50,00 € |
| Original pack 6 x 1 l | | | 47,50/1 l |
| **7173.2** | 2,5 l | glass | 114,50 € |
| Original pack 4 x 2,5 l | | | 108,78/2,5 l |

### Benzene

**≥99,5 %, extra pure**

**Type analysis:**

Appearance. ..... clear, colourless
Assay (GC). ..... ≥99,5 %
Free acid. ..... ≤0,0001 meq/g
Non volatile matter. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **5785.3** | 100 ml | glass | 19,25 € |
| **5785.1** | 1 l | glass | 45,05 € |
| Original pack 6 x 1 l | | | 42,80/1 l |
| **5785.4** | 2,5 l | glass | 89,80 € |
| Original pack 4 x 2,5 l | | | 85,31/2,5 l |
| **5785.2** | 10 l | tinplate | 342,95 € |

### Benzene

**ROTICHROM® GC**

Reference substance for GC

Storage temp.: +4 °C

**Type analysis:**

Purity (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **4898.1** | 1 g | glass | 30,00 € |

## Benzenecarbonylchloride

▶ Benzoyl chloride see p. 1768

## Benzenecarboxylic acid

▶ Benzoic acid see p. 1766

## Benzene 1,2-dialdehyde

▶ o-Phthaldialdehyde see p. 2152

## 1,3-Benzenediol

▶ Resorcinol see p. 2196

## Benzethonium chloride solution

### Benzethonium chloride solution

**0,004 mol/l - 0,004 M volumetric standard solution**

For determination of anionic tensides.
Hyamine® 1622-solution (0,004 M)
WGK 1

**Type analysis:**

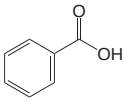
Amount-of-substance conc. (20 °C)..... 0,004 mol/l ±0,1 %

| | | | |
|---|---|---|---|
| **9217.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

## Benzoate Standards

▶ Benzoate IC Standard Solution see p. 2310

## Benzoic acid



Phenylformic acid, Benzenecarboxylic acid
$C_7H_6O_2$
M 122,12 g/mol
D 1,321 • bp 249 °C
mp 121-123 °C • flp 121 °C
Solubility: 2,9 g/l ($H_2O$, 20 °C)
[65-85-0] • EC No. 200-618-2
WGK 1

**Danger** H372-H318-H315

### Benzoic acid

**≥99,5 %, p.a., ACS**

**Guarantee analysis:**

Assay (acidim.)..... ≥99,5 %
Melting range..... 122-123 °C
In $CH_3OH$ insoluble matter..... ≤0,005 %
Ash content (as $SO_4$)..... ≤0,005 %
$KMnO_4$ reducing substances ..... complies
Chlorine compounds (as Cl)..... ≤0,005 %
Sulphur compounds (as S)..... ≤0,002 %
Arsenic (As)..... ≤0,0003 %
Lead (Pb)..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Copper (Cu)..... ≤0,001 %
Nickel (Ni)..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P738.1** | 100 g | plastic | 20,65 € |
| **P738.2** | 250 g | plastic | 41,85 € |

### Benzoic acid

**≥99,5 %, Ph.Eur., USP, BP**

**Guarantee analysis:**

Assay (acidim., dry substance)..... 99,5-100,5 %
Identity..... complies
Appearance of solution..... complies
Melting range..... 122-123 °C
Water (KF)..... ≤0,7 %
Sulphated ash..... ≤0,05 %
Halogen compound. (as Cl)..... ≤0,03 %
Reaction with $H_2SO_4$..... complies
$KMnO_4$ reducing substances (as O)..... complies
Lead (Pb)..... ≤0,0002 %
Heavy metals (as Pb)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **5781.2** | 500 g | plastic | 22,50 € |
| Original pack 6 x 500 g | | | 21,38/500 g |
| **5781.1** | 1 kg | plastic | 37,55 € |
| Original pack 6 x 1 kg | | | 35,67/1 kg |
| **5781.3** | 2,5 kg | plastic | 66,55 € |
| **5781.4** | 5 kg | plastic | 111,30 € |
| **5781.5** | 25 kg | plastic | 439,70 € |

### Benzoic acid

**ROTI®CALIPURE Melting point standard 121-123 °C**

**Type analysis:**

Meniscus formation..... 121-123 °C
Complete liquefaction..... 121-123 °C

| | | | |
|---|---|---|---|
| **9722.1** | 1 g | glass | 30,00 € |

### Benzoic acid

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤1,0 %
Water (KF)..... ≤2,0 %
Assay (qNMR)..... ≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE03.1** | 100 mg | glass | 729,95 € |

### Benzoic acid

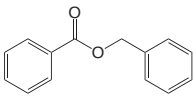
**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC)..... ≥95,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC03.1** | 100 mg | glass | 116,00 € |

## Benzoic acid benzyl ester



### Benzoic acid benzyl ester

**≥99 %, for synthesis**

Benzyl benzoate
$C_{14}H_{12}O_2$
M 212,26 g/mol
D 1,1 • bp 324 °C
mp 21 °C • flp 148 °C
[120-51-4] • EC No. 204-402-9
UN No. 3077 • ADR 9 III • WGK 2

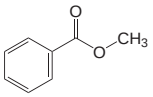
**Warning** H302-H400-H411

**Type analysis:**

Assay..... ≥99,0 %
Ash content (as $SO_4$)..... ≤0,1 %
Aldehyde (as benzaldehyde)..... ≤0,05 %
Density (d 20 °C/20 °C)..... 1,118-1,122

| | | | |
|---|---|---|---|
| **9498.1** | 250 ml | glass | 30,00 € |
| **9498.2** | 1 l | glass | 81,60 € |
| Original pack 6 x 1 l | | | 77,52/1 l |
| **9498.3** | 2,5 l | glass | 149,45 € |
| Original pack 4 x 2,5 l | | | 141,98/2,5 l |

## Benzoic acid methyl ester



### Benzoic acid methyl ester

**≥99 %, for histology and microscopy**

Clearing agent for histological embedding.
Methyl benzoate
$C_8H_8O_2$
M 136,2 g/mol
D 1,09 • bp 199 °C
mp -12 °C • flp 82 °C
[93-58-3] • EC No. 202-259-7
WGK 1

**Warning** H302

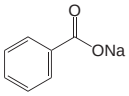
**Guarantee analysis:**

Appearance..... clear, colourless to light yellow liquid
Assay (GC)..... ≥99,0 %
Density (d 20 °C/4 °C)..... 1,085-1,089
Refractive index $n_D^{20}$..... 1,516-1,518

| | | | |
|---|---|---|---|
| **6944.5** | 500 ml | glass | 32,15 € |
| **6944.1** | 1 l | glass | 57,95 € |
| Original pack 6 x 1 l | | | 55,05/1 l |
| **6944.2** | 2,5 l | glass | 117,20 € |
| Original pack 4 x 2,5 l | | | 111,34/2,5 l |
| **6944.4** | 25 kg | tinplate | 547,20 € |

For further information, please see page 1439

## Benzoic acid sodium salt



Sodium benzoate
$C_7H_5NaO_2$
M 144,11 g/mol
D 1,44
mp 410-430 °C • flp >100 °C
[532-32-1] • EC No. 208-534-8
WGK 1

### Benzoic acid sodium salt

**≥99 %, Ph.Eur.**

**Guarantee analysis:**

Assay (dry substance). ..... 99,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
Acid or alkaline react. substances. ..... complies
Chloride (Cl). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Halogen comp. (as Cl). ..... ≤0,03 %
Loss on drying. ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **8548.1** | 500 g | plastic | 21,00 € |
| Original pack 6 x 500 g | | | 19,95/500 g |
| **8548.3** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **8548.2** | 2,5 kg | plastic | 73,00 € |

### Benzoic acid sodium salt

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF). ..... ≤3,0 %
Assay (qNMR). ..... ≥95,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE11.1** | 100 mg | glass | 729,95 € |

### Benzoic acid sodium salt

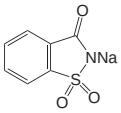
**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC). ..... ≥90,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC11.1** | 100 mg | glass | 116,00 € |

## o-Benzoic sulphimide sodium salt



### o-Benzoic sulphimide sodium salt

**≥99 %, Ph.Eur.**

Saccharin sodium salt, o-Sulphobenzoic acid imide sodium salt
$C_7H_4NO_3SNa$
M 205,16 g/mol
D 0,97
mp 226-230 °C
[128-44-9] • EC No. 204-886-1
WGK 1

**Guarantee analysis:**

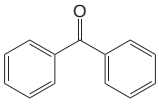
Appearance. ..... white, cryst. powder
Assay (dry substance). ..... 99,0-101,0 %
Water. ..... ≤15 %
Identity. ..... complies
Appearance of solution. ..... complies
Matter discoloured by $H_2SO_4$ ..... complies
Heavy metals. ..... ≤0,002 %
Acid or alkaline react. substances. ..... complies
2- and 4-Toluenesulphonamide. ..... each ≤0,001 %

| | | | |
|---|---|---|---|
| **9259.1** | 250 g | plastic | 33,25 € |
| **9259.2** | 1 kg | plastic | 98,40 € |
| Original pack 6 x 1 kg | | | 93,48/1 kg |

## Benzolchlorid

▶ Chlorobenzene see p. 1826

## Benzophenone



### Benzophenone

**ROTI®CALIPURE**
**Melting point standard 47-49 °C**

Diphenyl ketone, Diphenylmethanone, Benzoylbenzene, Phenyl ketone
$C_{13}H_{10}O$
M 182,22 g/mol
bp 305 °C
mp 47-49 °C
[119-61-9] • EC No. 204-337-6
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H373-H411

**Type analysis:**

Meniscus formation. ..... 47-49 °C
Complete liquefaction. ..... 47-49 °C

| | | | |
|---|---|---|---|
| **9709.1** | 1 g | glass | 30,00 € |

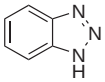
## α-Benzopyrone

▶ Coumarin see p. 1847

## 5,6-Benzo-2-pyrone

▶ Coumarin see p. 1847

## 1,2,3-Benzotriazole



### 1,2,3-Benzotriazole

**≥99 %, for synthesis**

1*H*-Benzotriazole, BtaH
$C_6H_5N_3$
M 119,13 g/mol
D 1,36 • bp 350 °C
mp 97 °C • flp 212 °C
Solubility: 20 g/l ($H_2O$, 20 °C)
[95-14-7] • EC No. 202-394-1
WGK 1

**Warning** H302+H332-H319-H412

**Type analysis:**

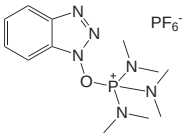
Assay. ..... ≥99,0 %
pH value. ..... 5,5-6,5
Ash content. ..... ≤0,5 %
Moisture. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9924.1** | 100 g | plastic | 22,05 € |
| **9924.2** | 500 g | plastic | 66,55 € |
| Original pack 6 x 500 g | | | 63,22/500 g |
| **9924.3** | 1 kg | plastic | 110,65 € |
| Original pack 6 x 1 kg | | | 105,12/1 kg |

## 1*H*-Benzotriazole

▶ 1,2,3-Benzotriazole see p. 1767

## Benzotriazole-1-yl-oxy-tris-(dimethylamino)-phosphonium hexafluorophosphate (BOP)



### Benzotriazole-1-yl-oxy-tris-(dimethylamino)-phosphonium hexafluorophosphate (BOP)

**≥99 %**

Coupling reagent for peptide synthesis.
BOP
$C_{12}H_{22}F_6N_6OP_2$
M 442,28 g/mol
mp 132-140 °C
Storage temp.: +4 °C
[56602-33-6] • EC No. 260-279-1
UN No. 1325 • ADR 4.1 II • WGK 1

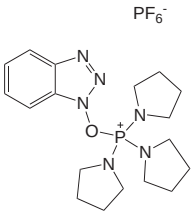
**Danger** H228-H315-H335-EUH044

**Type analysis:**

Assay (HPLC). ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2168.1** | 5 g | glass | 20,35 € |
| **2168.2** | 25 g | glass | 52,15 € |
| **2168.3** | 100 g | glass | 155,90 € |

## Benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBOP®)



### Benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBOP®)

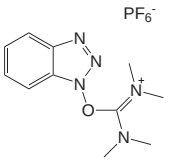
**≥98,5 %**
Coupling reagent for peptide synthesis.
PyBOP®
$C_{18}H_{28}F_6N_6OP_2$
M 520,39 g/mol
mp 140-155 °C
Storage temp.: +4 °C
[128625-52-5]
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Assay (HPLC)..... ≥98,5 %

| | | | |
|---|---|---|---|
| **2178.1** | 5 g | glass | 25,30 € |
| **2178.2** | 25 g | glass | 74,10 € |
| **2178.3** | 100 g | glass | 220,40 € |
| **2178.5** | 1 kg | glass | 1428,70 € |
| Original pack 6 x 1 kg | | | 1357,27/1 kg |

## O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HBTU)



### O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HBTU)

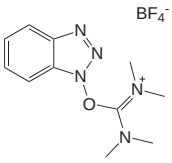
**≥99 %**
Coupling reagent for peptide synthesis.
HBTU
$C_{11}H_{16}F_6N_5OP$
M 379,24 g/mol
mp 170-175 °C
Solubility: 1,6 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[94790-37-1] • EC No. 423-020-5
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Assay (HPLC)..... ≥99,0 %
Water (KF)..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2132.1** | 5 g | glass | 17,75 € |
| **2132.2** | 25 g | glass | 39,70 € |
| **2132.3** | 100 g | glass | 104,85 € |
| **2132.5** | 1 kg | glass | 536,45 € |
| Original pack 6 x 1 kg | | | 509,63/1 kg |

## O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TBTU)



### O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TBTU)

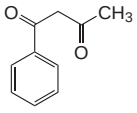
**≥99 %**
Coupling reagent for peptide synthesis.
TBTU
$C_{11}H_{16}BF_4N_5O$
M 321,08 g/mol
mp 205 °C (dec.)
Solubility: 3 g/l ($H_2O$, 20 °C)
[125700-67-6] • EC No. 423-040-4
UN No. 1325 • ADR 4.1 II • WGK 1

**Danger** H228-H315-H319-H335

**Type analysis:**
Assay (HPLC)..... ≥99,0 %
Water (KF)..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2140.1** | 5 g | glass | 16,70 € |
| **2140.2** | 25 g | glass | 37,55 € |
| **2140.3** | 100 g | glass | 103,75 € |
| **2140.5** | 1 kg | glass | 532,15 € |
| Original pack 6 x 1 kg | | | 505,54/1 kg |

## Benzoylacetone



### Benzoylacetone

**≥99 %**
1-Phenyl-1,3-butadione, Acetoacetophenone
$C_{10}H_{10}O_2$
M 162,19 g/mol
mp 56-58 °C
[93-91-4] • EC No. 202-286-4

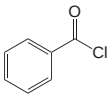
**Type analysis:**
Assay (GC)..... ≥99,0 %
Solution (5% in chloroform)..... colourless to yellow
Water (KF)..... ≤0,5 %
Melting point..... 56-58 °C

| | | | |
|---|---|---|---|
| **5484.1** | 25 g | plastic | 63,35 € |
| **5484.2** | 100 g | plastic | 224,70 € |

## Benzoylbenzene

▶ Benzophenone see p. 1767

## Benzoyl chloride



### Benzoyl chloride

**≥99%, for synthesis**
Benzenecarbonylchloride
$C_7H_5ClO$
M 140,57 g/mol
D 1,21 • bp ~197 °C
mp -1 °C
[98-88-4] • EC No. 202-710-8
UN No. 1736 • ADR 8 II • WGK 1

**Danger**
H302+H312+H332-H314-H317

**Type analysis:**
Assay (acidim.)..... ≥99,0 %
Identity (IR)..... complies
Density (d 20 °C/4 °C)..... 1,210-1,214

| | | | |
|---|---|---|---|
| **7456.1** | 100 ml | glass | 13,15 € |
| **7456.2** | 500 ml | glass | 28,95 € |
| **7456.3** | 1 l | glass | 42,50 € |
| Original pack 6 x 1 l | | | 40,38/1 l |
| **7456.4** | 2,5 l | glass | 82,70 € |
| Original pack 4 x 2,5 l | | | 78,57/2,5 l |

## N-Benzoylglycine sodium salt

▶ Hippuric acid sodium salt hydrate see p. 1980

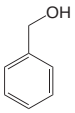
## Benzylacetate

▶ Acetic acid benzyl ester see p. 1694

## 6-Benzyladenine

▶ 6-Benzylaminopurine see p. 1769

## Benzyl alcohol



Phenylcarbinol, Phenylmethanol
$C_7H_8O$
M 108,14 g/mol
D 1,05 • bp 205 °C
mp -15,3 °C • flp 101 °C
Solubility: 39 g/l ($H_2O$, 20 °C)
[100-51-6] • EC No. 202-859-9
WGK 1

**Warning** H302+H332

### Benzyl alcohol

**ROTIPURAN® ≥99 %, p.a.**

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,0 % |
| Colour (APHA) | ≤20 |
| Water (KF) | ≤0,1 % |
| Ash content (as $SO_4$) | ≤0,005 % |
| Benzaldehyde (GC) | ≤0,1 % |
| Calcium (Ca) | ≤0,00005 % |
| Cadmium (Cd) | ≤0,000005 % |
| Cobalt (Co) | ≤0,000002 % |
| Chromium (Cr) | ≤0,000002 % |
| Copper (Cu) | ≤0,000002 % |
| Iron (Fe) | ≤0,00001 % |
| Magnesium (Mg) | ≤0,00001 % |
| Manganese (Mn) | ≤0,000002 % |
| Nickel (Ni) | ≤0,000002 % |
| Lead (Pb) | ≤0,00001 % |
| Zinc (Zn) | ≤0,00001 % |

| | | | |
|---|---|---|---|
| **0336.1** | 500 ml | glass | 27,45 € |
| **0336.2** | 1 l | glass | 48,30 € |
| Original pack 6 x 1 l | | | 45,89/1 l |
| **0336.3** | 2,5 l | glass | 99,90 € |
| Original pack 4 x 2,5 l | | | 94,91/2,5 l |

### Benzyl alcohol

**≥98 %, Ph.Eur.**

**Guarantee analysis:**

| | |
|---|---|
| Assay (titr., 1 M NaOH) | 98,0-100,5 % |
| Identity | complies |
| Appearance of solution | clear, colourless |
| Acidity | complies |
| Peroxide value | ≤5 meq O/kg |
| Refractive index $n_D^{20}$ | 1,539-1,541 |
| Related substances | complies |
| Non volatile matter | ≤0,05 % |

| | | | |
|---|---|---|---|
| **8657.1** | 500 ml | glass | 24,20 € |
| **8657.2** | 1 l | glass | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **8657.3** | 2,5 l | glass | 72,60 € |
| Original pack 4 x 2,5 l | | | 68,97/2,5 l |

### Benzyl alcohol

**≥98 %, for synthesis**

**Type analysis:**

| | |
|---|---|
| Assay (GC) | 98,0-100,5 % |
| Density (20 °C) | 1,043-1,049 |
| Refractive index $n_D^{20}$ | 1,539-1,541 |

| | | | |
|---|---|---|---|
| **4478.1** | 500 ml | glass | 21,40 € |
| **4478.2** | 1 l | glass | 32,15 € |
| Original pack 6 x 1 l | | | 30,54/1 l |
| **4478.3** | 2,5 l | glass | 69,35 € |
| Original pack 4 x 2,5 l | | | 65,88/2,5 l |

### Benzyl alcohol

**ROTI®STAR Primary Standard**

Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**

| | |
|---|---|
| Assay (GC) | ≥95,0 % |
| Residual solvents (GC) | ≤2,0 % |
| Water (KF) | ≤2,0 % |
| Assay (qNMR) | ≥95,0 % |

Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE02.1** | 100 mg | glass | 729,95 € |

### Benzyl alcohol

**ROTICHROM® Working Standard**

Storage temp.: -20 °C •
Transport temp.: room temp.

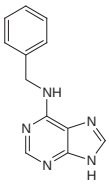
**Type analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥90,0 % |
| Identity | complies |

Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC02.1** | 100 mg | glass | 116,00 € |

## 6-Benzylaminopurine



### 6-Benzylaminopurine

**≥98 %, for biochemistry**

6-Benzyladenine
$C_{12}H_{11}N_5$
M 225,26 g/mol
mp 232 °C
Storage temp.: +4 °C
[1214-39-7] • EC No. 214-927-5
WGK 1

**Type analysis:**

| | |
|---|---|
| Appearance | light beige, cryst. powder |
| Assay (HPLC) | ≥98,0 % |
| Melting point | 229-233 °C |
| Heavy metals (as Pb) | ≤0,001 % |
| Sulphated ash | ≤0,2 % |

| | | | |
|---|---|---|---|
| **5552.1** | 1 g | glass | 17,75 € |
| **5552.2** | 5 g | glass | 41,40 € |
| **5552.3** | 25 g | glass | 163,95 € |

## Benzyl carbinol

▶ 2-Phenylethanol see p. 2147

## Benzyldimethylalkylammonium chloride

▶ Benzalkonium chloride see p. 1765

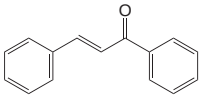
## Benzyl benzoate

▶ Benzoic acid benzyl ester see p. 1766

## Benzylglucosinolate potassium salt

▶ Glucotropaeolin see p. 1957

## Benzylidene acetophenone



### Benzylidene acetophenone

**≥98 %, for synthesis**

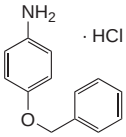
Chalcone, 1,3-Diphenyl-1-propen-3-one
$C_{15}H_{12}O$
M 208,25 g/mol
mp 55-58 °C
[94-41-7] • EC No. 202-330-2
WGK 2

**Type analysis:**

| | |
|---|---|
| Assay (GC) | ≥98,0 % |
| Melting range | 55-58 °C |

| | | | |
|---|---|---|---|
| **3982.1** | 100 g | plastic | 109,55 € |

## 4-(Benzyloxy) aniline hydrochloride



### 4-(Benzyloxy) aniline hydrochloride

**≥99 %**

4-Aminophenyl benzyl ether hydrochloride
$C_{13}H_{14}ClNO$
M 235,71 g/mol
mp 226 °C (dec.)
[51388-20-6] • EC No. 257-170-6

**Type analysis:**

| | |
|---|---|
| Assay (titr.) | ≥99,0 % |
| Solution (2 % in ethanol) | almost colourless to brown |
| Water (KF) | ≤1,0 % |
| Melting point | 214-218 °C |

| | | | |
|---|---|---|---|
| **5480.1** | 25 g | plastic | 36,45 € |
| **5480.2** | 100 g | plastic | 117,20 € |

## 4-Benzyloxybenzyl alcohol resin

▶ Wang resin see p. 2374

## $N_\alpha$-Benzyloxycarbonyl-L-arginine

▶ Z-L-Arginine see p. 2385

## $N_\alpha$-Benzyloxycarbonyl-L-aspartic acid

▶ Z-L-Aspartic acid see p. 2385

## $N_\alpha$-Benzyloxycarbonyl-L-glutamic acid

▶ Z-L-Glutamic acid see p. 2385

## $N_\alpha$-Benzyloxycarbonyl-L-leucine

▶ Z-L-Leucine see p. 2390

## $N_\alpha$-Benzyloxycarbonyl-L-lysine

▶ Z-L-Lysine see p. 2390

## $N_\alpha$-Benzyloxycarbonyl-L-phenylalanine

▶ Z-L-Phenylalanine see p. 2390

## Benzyl penicillin potassium salt

▶ Penicillin G potassium salt see p. 2134

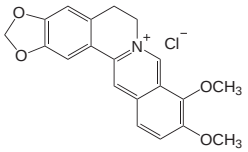
## Benzyl penicillin sodium salt

▶ Penicillin G sodium salt see p. 2134

## Benzyl salicylate

▶ Salicylic acid benzyl ester see p. 2239

## Berberine chloride hydrate



### Berberine chloride hydrate

**≥97 %, for biochemistry**

$C_{20}H_{18}ClNO_4 \cdot x\ H_2O$
M 371,81+ x $H_2O$ g/mol
mp 204-206 °C
[141433-60-5] • EC No. 211-195-9

**Type analysis:**

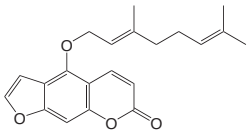
Appearance. ..... yellow, cryst. powder
Assay (argentometric). ..... ≥97,0 %
Loss on drying. ..... ≤5,0 %

| | | | |
|---|---|---|---|
| **3192.1** | 1 g | glass | 13,15 € |
| **3192.2** | 5 g | glass | 18,20 € |
| **3192.3** | 25 g | glass | 62,25 € |

## Bergamol

▶ Acetic acid linalyl ester see p. 1696

## Bergamottin



5-Geranoxypsoralen
$C_{21}H_{22}O_4$
M 338,42 g/mol
Storage temp.: +4 °C
[7380-40-7]

### Bergamottin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From Oleum bergamottae.

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **8889.1** | 25 mg | glass | 181,70 € |

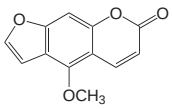
### Bergamottin

**ROTICHROM® TLC**

Reference substance for thin layer chromatography. From Oleum bergamottae.

| | | | |
|---|---|---|---|
| **1217.1** | 50 mg | glass | 299,95 € |

## Bergaptene



$C_{12}H_8O_4$
M 216,19 g/mol
mp 188 °C
Storage temp.: +4 °C
[484-20-8] • EC No. 207-604-5
WGK 3

**Danger** H317-H350

### Bergaptene

**ROTICHROM® HPLC**

Reference substance for HPLC.

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7006.2** | 20 mg | glass | 155,90 € |

### Bergaptene

**≥97 %**

**Type analysis:**

Purity (HPLC). ..... ≥97,0 %

| | | | |
|---|---|---|---|
| **8899.1** | 1 g | plastic | 332,20 € |

## Beryllium Standards

▶ Beryllium AAS Standard Solution see p. 2294
▶ Beryllium ICP Standard Solution see p. 2297
▶ Beryllium ICP Standard Solution see p. 2302

## Beryllium acetate basic

### Beryllium acetate basic

**ROTI®METIC 99,999 % (5N)**

$Be_4O(C_2H_3O_2)_6$
M 406,16 g/mol
D 1,25 • bp 330 °C
mp 285 °C
[19049-40-2] • EC No. 242-785-4
UN No. 1566 • ADR 6.1 II • WGK 3

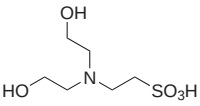
**Danger** H301-H330-H315-H319-H317-H350i-H335-H372**-H411

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5612.1** | 5 g | plastic | 64,00 € |
| **5612.2** | 25 g | plastic | 224,70 € |

## BES



### BES

**PUFFERAN® ≥99 %**

N,N-Bis-(2-hydroxyethyl)-2-aminoethane sulphonic acid
$C_6H_{15}NO_5S$
M 213,26 g/mol
mp 153-155 °C
[10191-18-1] • EC No. 233-465-5

**Warning** H315-H319

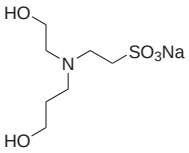
**Guarantee analysis:**

Assay (titr.). ..... ≥99,0 %
Loss on drying. ..... ≤1,0 %
pH value (1 % solution). ..... 3,0-5,0
Solubility (0,1 M in $H_2O$). ..... clear, colourless
UV-absorption (10 % in $H_2O$):
280 nm. ..... ≤0,08
260 nm. ..... ≤0,1

| | | | |
|---|---|---|---|
| **9134.1** | 25 g | plastic | 23,15 € |
| **9134.2** | 100 g | plastic | 63,35 € |
| **9134.3** | 250 g | plastic | 138,15 € |
| **9134.4** | 500 g | plastic | 220,40 € |
| Original pack 6 x 500 g | | | 209,38/500 g |

For further information, please see page 1268

## BES sodium salt



### BES sodium salt

**PUFFERAN® ≥99 %**

N,N-Bis-(hydroxyethyl)-2-aminoethane sulphonic acid sodium salt

$C_6H_{14}NaNO_5S$

M 235,2 g/mol

[66992-27-6]

**Warning** H315-H319

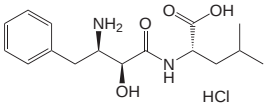
**Type analysis:**

Assay..... ≥99 %
Water (KF)..... ≤1,0 %
UV-absorption (10 % in $H_2O$):
300 nm..... ≤0,04 %
280 nm..... ≤0,07 %

| | | | |
|---|---|---|---|
| **6998.1** | 25 g | plastic | 36,05 € |
| **6998.2** | 100 g | plastic | 95,60 € |

For further information, please see page 1268

## Bestatin hydrochloride



### Bestatin hydrochloride

**≥98 %, for biochemistry**

Inhibitor of aminopeptidases.

N-[(2S,3R)-3-Amino-2-hydroxy-4-phenyl-buturyl]-L-leucin hydrochloride

$C_{16}H_{24}N_2O_4 \cdot HCl$

M 344,84 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

[65391-42-6]

WGK 1

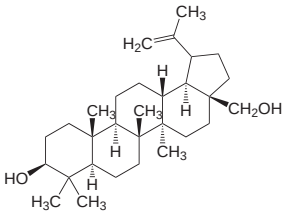
**Type analysis:**

Appearance..... white powder
Assay (HPLC)..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (in $H_2O$)..... -20° to -14°
Solubility (2,5 % in $H_2O$)..... clear

| | | | |
|---|---|---|---|
| **2937.1** | 5 mg | plastic | 76,25 € |
| **2937.2** | 25 mg | plastic | 273,60 € |

For further information, please see page 1284

## Betulin(ol)



### Betulin(ol)

**ROTICHROM® ~CHR**

Trochol

$C_{30}H_{50}O_2$

M 442,70 g/mol

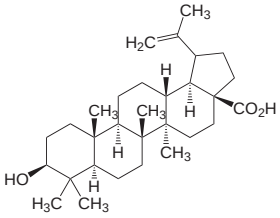
mp ~257 °C

Storage temp.: +4 °C

[473-98-3] • EC No. 207-475-5

| | | | |
|---|---|---|---|
| **8763.1** | 1 g | glass | 64,40 € |

## Betulinic acid



Mairin, Melaleucin, Gratiolon

$C_{30}H_{48}O_3$

M 456,71 g/mol

mp ~298 °C (dec.)

Solubility: 2 mg/l ($H_2O$, 25 °C)

Storage temp.: +4 °C

[472-15-1] • EC No. 207-448-8

### Betulinic acid

**ROTICHROM® HPLC**

Reference substance for HPLC.

**Type analysis:**

Purity (HPLC)..... ≥97 %

| | | | |
|---|---|---|---|
| **7007.1** | 25 mg | glass | 198,90 € |

### Betulinic acid

**ROTICHROM® ~CHR**

| | | | |
|---|---|---|---|
| **6516.1** | 250 mg | glass | 52,60 € |

## BHA

▶ Butylated hydroxyanisole see p. 1796

## BHT

▶ Butylated hydroxytoluene see p. 1797

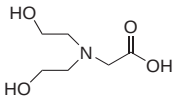
## Bicarbonate solution

▶ Roti®-CELL Bicarbonate solution see p. 2204

## Bicarnesin HCl

▶ DL-Carnitinchloride see p. 1814

## BICINE



### BICINE

**PUFFERAN® ≥99 %**

N,N-Bis-(2-hydroxyethyl)-glycine

$C_6H_{13}NO_4$

M 163,2 g/mol

mp ~194 °C

[150-25-4] • EC No. 205-755-1

**Guarantee analysis:**

Appearance..... white, cryst. powder
Assay (titration)..... ≥99,0 %
Loss on drying..... ≤1,0 %
pH value (1 M in $H_2O$)..... 4,0-6,0
UV-absorption (1 M in $H_2O$):
280 nm..... ≤0,05
260 nm..... ≤0,05

| | | | |
|---|---|---|---|
| **9162.1** | 50 g | plastic | 38,60 € |
| **9162.2** | 250 g | plastic | 125,25 € |
| **9162.3** | 500 g | plastic | 179,00 € |
| Original pack 6 x 500 g | | | 170,05/500 g |

For further information, please see page 1268

## Bicyclo-[2,2,1]-hepta-2,5-diene

▶ 2,5-Norbornadiene see p. 2105

## Biflorine

▶ Protopine see p. 2183

## Bile Esculin Azide Agar

### Bile Esculin Azide Agar

**DEV, ISO 7899-2:2000, for microbiology**

For isolation and identification of intestinal enterococci from water samples.

Application: Use 56,6 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

**Warning** H412-H302

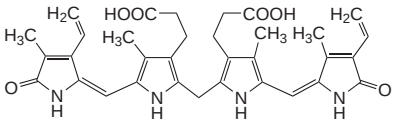
**Guarantee analysis:**

Tryptone..... 17 g/l
Peptone..... 3 g/l
Yeast extract..... 5 g/l
Ox bile dehydrated..... 10 g/l
Sodium chloride (NaCl)..... 5 g/l
Esculin..... 1 g/l
Ammonium iron(III) citrate..... 0,5 g/l
Sodium azide..... 0,15 g/l
Agar..... 15 g/l
pH value..... 7,1 ±0,1

| | | | |
|---|---|---|---|
| **CP62.1** | 500 g | plastic | 198,90 € |
| Original pack 6 x 500 g | | | 188,96/500 g |

For further information, please see page 1377

## Bilirubin



### Bilirubin

**p.a.**

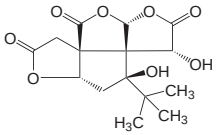
$C_{33}H_{36}N_4O_6$
M 584,68 g/mol
[635-65-4] • EC No. 211-239-7
WGK 2

**Guarantee analysis:**

Appearance. .....orange to red brownish, cryst. powder
Solution (0,01 % in chloroform).....yellowish, clear
Loss on drying (2 h, 60 °C, vacuum). ..... ≤2 %
Calcium (Ca)..... ≤0,06 %

| | | | |
|---|---|---|---|
| **4008.1** | 250 mg | glass | 32,15 € |
| **4008.2** | 1 g | glass | 87,65 € |

## Bilobalid



$C_{15}H_{18}O_8$
M 326,30 g/mol
[33570-04-6]
WGK 1

### Bilobalid

**ROTI®STAR Primary Standard**

Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**

Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF). ..... ≤2,0 %
Assay (qNMR). ..... ≥95,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE20.1** | 25 mg | glass | 805,20 € |

### Bilobalid

**ROTICHROM® Working Standard**

Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**

Assay (HPLC). ..... ≥85,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC20.2** | 25 mg | glass | 310,70 € |

### Bilobalid

**ROTICHROM® HPLC**

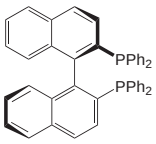
Reference substance for HPLC.
From *Ginkgo biloba.*
Storage temp.: +4 °C

**Type analysis:**

Purity (HPLC). ..... >98 %

| | | | |
|---|---|---|---|
| **1122.1** | 20 mg | glass | 407,45 € |

## (R)-BINAP



### (R)-BINAP

NEW

**≥98 %**

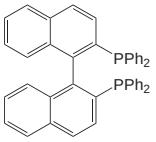
Chiral phosphine ligand
(R)-(+)-(1,1'-Binaphthalene-2,2'-diyl)-bis(diphenylphosphine), (R)-(+)-2,2'-Bis-(diphenylphosphino)-1,1'-binaphthyl, (R)-(+)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthalene
$C_{44}H_{32}P_2$
M 622,69 g/mol
mp 239-242 °C
[76189-55-4]
WGK 1

**Type analysis:**

Appearance..... white to off-white powder
Assay (HPLC)..... ≥98 %
Melting point..... 239-242 °C

| | | | |
|---|---|---|---|
| **2040.1** | 250 mg | glass | 19,25 € |
| **2040.2** | 1 g | glass | 42,90 € |
| **2040.3** | 5 g | glass | 117,20 € |

## (rac)-BINAP



### (rac)-BINAP

NEW

**≥97 %**

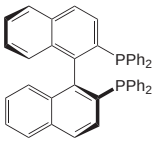
Phosphine ligand
(±)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthalene, (±)-2,2'-Bis(diphenyl-phosphino)-1,1'-binaphthyl, (±)-(1,1'-Binaphthalene-2,2'-diyl)bis(diphenyl-phosphine)
$C_{44}H_{32}P_2$
M 622,69 g/mol
mp 283-286 °C
[98327-87-8]
WGK 1

**Type analysis:**

Appearance..... white powder
Assay (HPLC)..... ≥97 %
Melting point..... 283-286 °C

| | | | |
|---|---|---|---|
| **1845.1** | 1 g | glass | 32,15 € |
| **1845.2** | 5 g | glass | 85,90 € |
| **1845.3** | 10 g | glass | 138,70 € |

## (S)-BINAP



### (S)-BINAP

NEW

**≥98 %**

Chiral phosphine ligand
(S)-(–)-(1,1'-Binaphthalene-2,2'-diyl)-bis(diphenylphosphine), (S)-(–)-2,2'-Bis-(diphenylphosphino)-1,1'-binaphthyl, (S)-(–)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthalene
$C_{44}H_{32}P_2$
M 622,69 g/mol
mp 241 °C
[76189-56-5]
WGK 1

**Type analysis:**

Appearance. .....white powder
Assay (HPLC). .....≥98 %
Melting point. .....≥241 °C

| | | | |
|---|---|---|---|
| **1950.1** | 250 mg | glass | 18,20 € |
| **1950.2** | 1 g | glass | 37,55 € |
| **1950.3** | 5 g | glass | 106,45 € |

## (R)-(+)-(1,1'-Binaphthalene-2,2'-diyl)bis(diphenylphosphine)

▶ (R)-BINAP see p. 1772

## (±)-(1,1'-Binaphthalene-2,2'-diyl)bis(diphenylphosphine)

▶ (rac)-BINAP see p. 1772

## (S)-(–)-(1,1'-Binaphthalene-2,2'-diyl)bis(diphenylphosphine)

▶ (S)-BINAP see p. 1772

## Biochanin B

▶ Formononetin see p. 1942

## Bioethanol 96 %

### Bioethanol 96 %

**96 %, Ph.Eur.**

Ethyl alcohol, EtOH
$C_2H_6O$
M 46,07 g/mol
D ~0,81 • bp 78 °C
mp -114,5 °C • flp 17 °C
[64-17-5] • EC No. 200-578-6
UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225-H319

**Guarantee analysis:**

Assay (V/V). .....95,1-96,9 %
Identity. .....complies
Properties. .....complies
Appearance. .....complies
Acid or alkaline react. substances. .....≤0,003 %
Density (d 20 °C/20 °C). .....0,805-0,812
Evaporation residue. .....≤0,0025 %
Permanganate test. .....complies

Absorption:
240 nm. ..... ≤0,40
250-260 nm. ..... ≤0,30
270-340 nm. ..... ≤0,10
Volatile impurities:
Acetaldehyde and acetal. ..... ≤0,001 %
Benzene. ..... ≤0,0002 %
Methanol. ..... ≤0,01 %
Sum of other impurities. ..... ≤0,03 %
From controlled organic cultivation.
Prices include german tax on alcohol.

| | | | |
|---|---|---|---|
| **6724.1** | 1 l | glass | 74,10 € |
| Original pack 6 x 1 l | | | 70,40/1 l |
| **6724.2** | 2,5 l | glass | 154,30 € |
| Original pack 4 x 2,5 l | | | 146,59/2,5 l |
| **6724.3** | 2,5 l | plastic | 149,45 € |
| Original pack 4 x 2,5 l | | | 141,98/2,5 l |
| **6724.4** | 5 l | plastic | 278,45 € |
| Original pack 2 x 5 l | | | 264,53/5 l |
| **6724.5** | 10 l | plastic | 525,70 € |
| **6724.6** | 25 l | plastic | 1073,95 € |

## Bioethanol 96 % denatured

### Bioethanol 96 % denatured

**96 %**
Ethyl alcohol, EtOH
$C_2H_6O$
M 46,07 g/mol
D ~0,81 • bp 78 °C
mp -114,5 °C • flp 17 °C
[64-17-5] • EC No. 200-578-6
UN No. 1170 • ADR 3 II • WGK 1
**Danger** H225-H319

**Type analysis:**
Assay (EtOH, v/v). ..... ≥96 %
Evaporation residue. ..... ≤0,005 %
Aldehydes (as acetaldehyde). ..... ≤0,001 %
Methanol (GC). ..... ≤0,01 %
Acid or alkaline react. substances. ..... ≤0,003 %
Sum of other impurities. ..... ≤0,03 %
Denaturing:
Methyl ethyl ketone (MEK). ..... 1 %
Isopropyl alcohol (IPA). ..... 1 %
Denatonium benzoate. ..... 1 g/100 l
From controlled organic cultivation.

| | | | |
|---|---|---|---|
| **6726.1** | 1 l | plastic | 13,90 € |
| Original pack 6 x 1 l | | | 13,21/1 l |
| **6726.2** | 2,5 l | plastic | 24,20 € |
| Original pack 4 x 2,5 l | | | 22,99/2,5 l |
| **6726.3** | 5 l | plastic | 42,90 € |
| Original pack 2 x 5 l | | | 40,76/5 l |
| **6726.4** | 10 l | plastic | 68,30 € |
| **6726.5** | 25 l | plastic | 153,20 € |

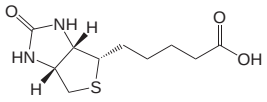
## Biological Buffers


| Art. No. | Description | Page |
|---|---|---|
| 9138 | ACES | 1690 |
| 0250 | ADA | 1707 |
| 3121 | AMP | 1740 |
| 7159 | AMPSO | 1740 |
| 7014 | AMPSO sodium salt | 1741 |
| 9134 | BES | 1770 |
| 6998 | BES sodium salt | 1771 |
| 9162 | BICINE | 1771 |
| 9140 | BIS-TRIS | 1777 |
| 6999 | BIS-TRIS-Propane | 1777 |
| 5169 | Cacodylic acid sodium salt trihydrate | 1800 |
| 9168 | CAPS | 1810 |
| 5584 | CAPSO | 1811 |
| 6861 | CAPSO sodium salt | 1811 |
| 9166 | CHES | 1825 |
| X863 | Citric acid | 1835 |
| 7151 | DIPSO | 1888 |
| 0079 | Glycine | 1962 |
| 3908 | Glycine, PUFFERAN® | 1962 |
| HN07 | Glycine, CELLPURE® | 1962 |
| 3187 | Glycine | 1962 |
| 3794 | Glycylglycine, PUFFERAN® | 1963 |
| HN74 | Glycylglycine, PUFFERAN® | 1963 |
| HN77 | HEPES, PUFFERAN®, CELLPURE® | 1972 |
| 6763 | HEPES, PUFFERAN® | 1972 |
| 9105 | HEPES, PUFFERAN® | 1972 |
| HN78 | HEPES, PUFFERAN® | 1972 |
| 5582 | HEPES 0,5 Na | 1972 |
| 7020 | HEPES sodium salt | 1973 |
| 9164 | HEPPS, EPPS | 1973 |
| X998 | Imidazole | 1999 |
| 4256 | MES, PUFFERAN® | 2065 |
| 4259 | MES | 2065 |
| 6066 | MES monohydrate | 2065 |
| 7033 | MES potassium salt | 2066 |
| 6922 | MES sodium salt | 2066 |
| 6979 | MOPS | 2083 |
| 6927 | MOPS sodium salt | 2083 |
| 7117 | MOPSO | 2083 |
| 7101 | MOPSO sodium salt | 2083 |
| 9156 | PIPES | 2154 |
| 9153 | PIPES monosodium salt | 2155 |
| 5583 | PIPES 1,5 Na | 2155 |
| 7109 | PIPES disodium salt | 2155 |
| 6632 | POPSO | 2161 |
| 6965 | POPSO 1,5 Na | 2161 |
| T874 | Potassium acetate | 2162 |
| 3904 | Potassium dihydrogen phosphate | 2166 |
| P749 | di-Potassium hydrogen phosphate | 2168 |
| 9729 | Pyridine | 2185 |
| 1032 | Roti®fair Glycine 3.0 | 2212 |
| 1195 | Roti®fair Na-Acetate 5.2 | 2212 |
| 1090 | Roti®fair 0.02M Na-Phosphate 7.0 | 2213 |
| 1094 | Roti®fair 0.02M Na-Phosphate 7.0 | 2213 |
| 1095 | Roti®fair 1M Na-Phosphate 6.5 | 2213 |
| 1097 | Roti®fair 1M Na-Phosphate 7.2 | 2213 |
| 1251 | Roti®fair 1M Tris 7.4 | 2216 |
| 1260 | Roti®fair 1M Tris 8.0 | 2216 |
| 1261 | Roti®fair 1M Tris 8.3 | 2216 |
| 6773 | Sodium acetate | 2265 |
| A135 | Sodium carbonate | 2268 |
| HN13 | Mono sodium citrate | 2270 |
| T879 | Sodium dihydrogen phosphate dihydrate | 2272 |
| 4404 | Sodium formate | 2273 |
| 6885 | Sodium hydrogen carbonate | 2274 |
| P030 | di-Sodium hydrogen phosphate | 2274 |
| 3195 | Succinic acid disodium salt hexahydrate | 2320 |
| 6982 | TAPS | 2329 |
| 6628 | TAPSO | 2329 |
| 6974 | TAPSO sodium salt | 2329 |
| 4721 | Taurine | 2330 |
| 9137 | TES | 2333 |
| 6977 | TRICINE | 2352 |
| 6300 | Triethanolamine | 2352 |
| 4804 | Triethanolamine hydrochloride | 2352 |
| 4855 | TRIS, PUFFERAN® | 2356 |
| 0188 | TRIS | 2356 |
| 3170 | TRIS, CELLPURE® | 2356 |
| 5429 | TRIS, PUFFERAN® | 2356 |
| A411 | TRIS | 2356 |
| AE15 | TRIS, PUFFERAN® | 2357 |
| 2449 | TRIS | 2357 |
| 7125 | TRIS acetate | 2357 |
| 9158 | TRIS carbonate | 2357 |
| 6986 | TRIS hemisulphate | 2358 |
| 9090 | TRIS hydrochloride | 2358 |
| 6991 | TRIS maleate | 2358 |


## Biomolecular rapid test


- RiboFlow® Campylobacter see p. 2198
- RiboFlow® Candida albicans see p. 2199
- RiboFlow® Cosmetics see p. 2199
- RiboFlow® Cronobacter see p. 2199
- RiboFlow® E. coli see p. 2199
- RiboFlow® Enterobacteriaceae see p. 2199
- RiboFlow® Listeria Twin see p. 2199
- RiboFlow® P/En see p. 2199
- RiboFlow® Pseudomonas aeruginosa see p. 2199
- RiboFlow® Salmonella see p. 2199
- RiboFlow® Staphylococcus aureus see p. 2200
- RiboFlow® Vibrio parahaemolyticus see p. 2200


## D(+)-Biotin



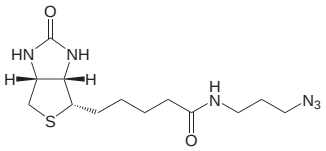
### D(+)-Biotin

**≥98,5 %, Ph.Eur., for biochemistry**
Vitamin H
$C_{10}H_{16}N_2O_3S$
M 244,31 g/mol
mp 232-233 °C
[58-85-5] • EC No. 200-399-3
WGK 1

**Guarantee analysis:**
Appearance. ..... off-white, cryst. powder
Assay (dry substance). ..... 98,5-100,5 %
Identity. ..... complies
Heavy metals. ..... ≤0,001 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in 0,1N NaOH, dry substance). ..... +89° to +93°
Solution (1 % in 0,1 N NaOH). ..... clear, colourless
Loss on drying. ..... ≤1,0 %
Sulphated ash. ..... ≤0,1 %
Residual solvents. ..... complies
Related substances. ..... complies

| | | | |
|---|---|---|---|
| **3822.2** | 500 mg | glass | 31,10 € |
| **3822.1** | 1 g | glass | 56,90 € |
| **3822.3** | 5 g | glass | 170,95 € |
| **3822.4** | 10 g | glass | 289,20 € |
| **3822.5** | 25 g | plastic | 536,45 € |

## Biotin-Azide



### Biotin-Azide

**≥95 %**

5-(2-Oxo-hexahydro-thieno[3,4-d]imidazol-6-yl)-pentanoic acid-(3-azido-propyl)-amide

$C_{13}H_{22}N_6O_2S$

M 326,42 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

[1314941-47-3]

WGK 3

**Type analysis:**

Appearance. ..... off-white powder
Assay (HPLC). ..... ≥95 %
Solubility. ..... DMSO, DMF, MeOH

| | | | |
|---|---|---|---|
| **7803.1** | 1 mg | plastic | 45,70 € |
| **7803.2** | 5 mg | plastic | 78,40 € |
| **7803.3** | 10 mg | plastic | 117,20 € |
| **7803.4** | 100 mg | plastic | 461,20 € |

## Biotin-11-dUTP

### Biotin-11-dUTP

**≥95 %, 1 mM solution**

For non-radioactive, enzymatic labelling of DNA.

Biotin-aminocaproyl-[5-(3-aminoallyl)-2'-deoxyuridine-5'-triphosphate]

$C_{28}H_{42}N_6O_{17}P_3S$

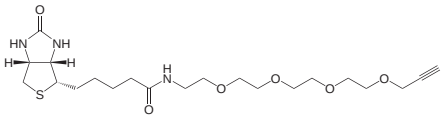
M 859,65 g/mol

Storage temp.: -20 °C •
Transport temp.: cooled

| | | | |
|---|---|---|---|
| **1047.1** | 25 nmol (25 µl) | plastic | 117,20 € |
| **1047.2** | 50 nmol (50 µl) | plastic | 196,20 € |

For further information, please see page 1260

## Biotin-PEG4-Alkyne



### Biotin-PEG4-Alkyne

**≥95 %**

5-((3aS,4S,6aR)-2-oxohexahydro-1*H*-thieno[3,4-d]imidazol-4-yl)-N-(3,6,9,12-tetraoxapentadec-14-yn-1-yl)pentanamide

$C_{21}H_{35}N_3O_6S$

M 457,58 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

[1458576-00-5]

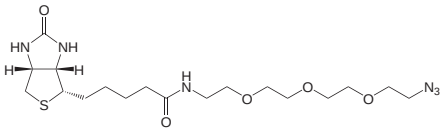
WGK 3

**Type analysis:**

Appearance. ..... white solid
Assay (NMR). ..... ≥95 %
Solubility. ..... DMSO, DMF, $CH_2Cl_2$, $CHCl_3$, MeOH

| | | | |
|---|---|---|---|
| **7805.1** | 1 mg | plastic | 110,20 € |
| **7805.2** | 5 mg | plastic | 396,70 € |

## Biotin-PEG3-Azide



### Biotin-PEG3-Azide

**≥95 %**

*N*-(2-(2-(2-(2-Azidoethoxy)ethoxy)-ethoxy)ethyl)-5-((3aS,4S,6aR)-2-oxo-hexahydro-1*H*-thieno[3,4-d]imidazol-4-yl)pentanamide

$C_{18}H_{32}N_6O_5S$

M 444,55 g/mol

Storage temp.: -20 °C •
Transport temp.: cooled

[875770-34-6]

WGK 3

**Type analysis:**

Appearance. ..... off-white solid
Assay (HPLC). ..... ≥95 %
Solubility. ..... $H_2O$, DMSO

| | | | |
|---|---|---|---|
| **7804.1** | 1 mg | plastic | 105,25 € |
| **7804.2** | 5 mg | plastic | 177,40 € |

## Biphenyl

▶ Diphenyl see p. 1887

## 2,2'-Bipyridine

▶ 2,2'-Dipyridyl see p. 1888

## Bis

▶ N,N'-Methylene bisacrylamide see p. 2073

## Bisacrylamide

▶ N,N'-Methylene bisacrylamide see p. 2073

## 2,7-Bis(2-arsonophenylazo)-1,8-dihydroxynaphthalin-3,6-disulphonicacid

▶ Arsenazo III see p. 1752

## 3,3'-Bis[N,N-bis(carboxy-methyl)aminomethyl]-o-cresolsulfonephthalein tetrasodium salt

▶ Xylenol orange tetrasodium salt see p. 2382

## 4,4'-Bis-(dimethylamino)-benzophenonimide hydrochloride

▶ Auramine O (C.I. 41000) see p. 1755

## 1,2-Bis-(dimethylamino)-ethane

▶ TEMED see p. 2332

## (R)-(+)-2,2'-Bis(diphenyl-phosphino)-1,1'-binaphthalene

▶ (R)-BINAP see p. 1772

## (±)-2,2'-Bis(diphenyl-phosphino)-1,1'-binaphthalene

▶ (rac)-BINAP see p. 1772

## (S)-(–)-2,2'-Bis(diphenyl-phosphino)-1,1'-binaphthalene

▶ (S)-BINAP see p. 1772

## 4,5-Bis(diphenylphosphino)-9,9-dimethylxanthene

▶ Xantphos see p. 2379

## Bis-(β-hydroxyethyl)-amine

▶ Diethanolamine see p. 1871

## N,N-Bis-(2-hydroxyethyl)-2-aminoethane sulphonic acid

▶ BES see p. 1770
▶ BES sodium salt see p. 1771

## 3-N-Bis-(hydroxyethyl)-amino-2-hydroxypropane sulphonic acid

▶ DIPSO see p. 1888

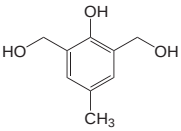
## N,N-Bis-(2-hydroxyethyl)-glycine

▶ BICINE see p. 1771

## Bis-(2-hydroxyethyl)imino-tris-(hydroxymethyl)-methane

▶ BIS-TRIS see p. 1777

## 2,6-Bis(hydroxymethyl)-p-cresol



### 2,6-Bis(hydroxymethyl)-p-cresol

**≥97 %**

$C_9H_{12}O_3$

M 168,19 g/mol

mp ≥120 °C

[91-04-3] • EC No. 202-036-4

WGK 3

**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... yellowish to light brown cryst. powder
Assay (HPLC). ..... ≥97 %
Loss on drying. ..... ≤1,5 %
Sulphated ash. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **7299.1** | 25 g | glass | 27,85 € |
| **7299.2** | 100 g | glass | 73,00 € |

## 2,2-Bis(hydroxymethyl)-1,3-propanediol

▶ Pentaerythritol see p. 2135

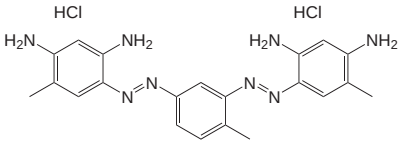
## Bis(hydroxypropyl) ether

▶ Dipropylene glycol see p. 1888

## Bismarck brown G

▶ Bismarck brown Y (C.I. 21000) see p. 1775

## Bismarck brown R (C.I. 21010)




### Bismarck brown R (C.I. 21010)

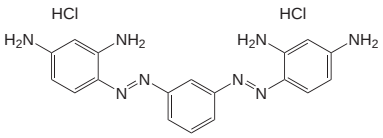
**for microscopy**
For modified Coomassie Blue-staining.
Basic brown 4, Vesuvin R
$C_{21}H_{24}N_8 \cdot 2\ HCl$
M 461,40 g/mol
[5421-66-9] • EC No. 226-541-4
WGK 1

**Type analysis:**
Appearance. ..... brown black powder
Loss on drying (60 °C). ..... ≤1,0 %
Absorption max. (ethanol 50 %). ..... 468 nm

| | | | |
|---|---|---|---|
| **0316.1** | 25 g | plastic | 19,90 € |

For further information, please see page 1462

## Bismarck brown Y (C.I. 21000)




### Bismarck brown Y (C.I. 21000)

**for microscopy**
Basic Brown 1, Bismarck brown G
$C_{18}H_{18}N_8 \cdot 2\ HCl$
M 418,33 g/mol
[10114-58-6] • EC No. 233-314-3
WGK 1

**Type analysis:**
Appearance. ..... red-brown to dark brown powder
Loss on drying (110 °C). ..... ≤10,0 %
Absorption max. (ethanol 50 %). ..... 450-460 nm

| | | | |
|---|---|---|---|
| **0313.1** | 10 g | glass | 19,25 € |
| **0313.2** | 25 g | glass | 33,90 € |

## Bis-N-methylacridinium nitrate

▶ Lucigenin see p. 2043

## Bis(methylendioxy)-protoberberin

▶ Coptisin chloride see p. 1846

## Bismut Standards

▶ Bismuth AAS Standard Solution see p. 2294
▶ Bismuth ICP Standard Solution see p. 2297
▶ Bismuth ICP Standard Solution see p. 2302

## Bismuth

### Bismuth

**≥99,5 %, powder**
Bi
M 208,98 g/mol
D 9,78 • bp 1560 °C
mp 271,3 °C
[7440-69-9] • EC No. 231-177-4
UN No. 3089 • ADR 4.1 III

**Warning** H228

**Type analysis:**
Assay. ..... ≥99,5 %
Particle size. ..... ~200 mesh

| | | | |
|---|---|---|---|
| **2735.1** | 50 g | glass | 50,00 € |
| **2735.2** | 100 g | glass | 84,85 € |

## Bismuth Standards

▶ Bismuth AAS Standard Solution see p. 2294
▶ Bismuth ICP Standard Solution see p. 2297
▶ Bismuth ICP Standard Solution see p. 2302

## Bismuth carbonate, basic

▶ Bismuth subcarbonate see p. 1776

## Bismuth(III) chloride

### Bismuth(III) chloride

**≥97 %, extra pure**
Bismuth trichloride, Trichlorobismuthine
$BiCl_3$
M 315,34 g/mol
D 4,75 • bp 447 °C
mp 230–232 °C
[7787-60-2] • EC No. 232-123-2
WGK 1

**Warning** H315-H319

**Type analysis:**
Assay. ..... ≥97,0 %
Sulphate ($SO_4$). ..... ≤0,05 %
Lead (Pb). ..... ≤0,005 %
Cadmium (Cd). ..... ≤0,005 %
Iron (Fe). ..... ≤0,01 %
Copper (Cu). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,005 %
Loss on drying (110 °C). ..... ≤3,0 %

| | | | |
|---|---|---|---|
| **9827.1** | 50 g | plastic | 27,85 € |
| **9827.2** | 100 g | plastic | 44,65 € |
| **9827.3** | 500 g | plastic | 177,40 € |
| Original pack 6 x 500 g | | | 168,53/500 g |

## Bismuth citrate

### Bismuth citrate

**extra pure**
$BiC_6H_5O_7$
M 398,08 g/mol
mp 300 °C (dec.)
[813-93-4] • EC No. 212-390-1
WGK 1

**Type analysis:**
Appearance. ..... white fine powder
Assay (Bi). ..... 49,0-54,0 %
Identity. ..... complies
Nitrate ($NO_3$). ..... complies
Arsenic (As). ..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Silver (Ag). ..... ≤0,001 %
Soluble Bismuth. ..... ≤0,004 %
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6550.3** | 100 g | plastic | 38,60 € |
| **6550.1** | 250 g | plastic | 83,75 € |
| **6550.2** | 1 kg | plastic | 274,15 € |
| Original pack 6 x 1 kg | | | 260,44/1 kg |

## Bismuth(III) nitrate

### Bismuth(III) nitrate

**≥71 % Bi, p.a., alkaline**
Bismuth trinitrate, Bismuthsubnitrate
$BiNO_4$
M 286,98 g/mol
Solubility: almost insoluble ($H_2O$, 20 °C)
[10361-46-3] • EC No. 233-792-3
UN No. 1477 • ADR 5.1 II • WGK 2

**Danger** H272-H315-H319-H335

**Guarantee analysis:**
Assay (Bi). ..... ≥71 %
Ammonium ($NH_4$). ..... ≤0,005 %
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,02 %
Arsenic (As). ..... ≤0,001 %
Lead (Pb). ..... ≤0,005 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,005 %
Copper (Cu). ..... ≤0,005 %
Silver (Ag). ..... ≤0,001 %
Zinc (Zn). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **4447.1** | 50 g | plastic | 43,55 € |
| **4447.2** | 100 g | plastic | 69,35 € |

For further information, please see page 1613

## Bismuth(III) nitrate pentahydrate

### Bismuth(III) nitrate pentahydrate

**≥98 %, p.a., ACS**
$Bi(NO_3)_3 \cdot 5\ H_2O$
M 485,07 g/mol
D 2,83 • bp 80 °C
mp 30 °C
[10035-06-0] • EC No. 233-791-8
UN No. 1477 • ADR 5.1. II • WGK 2

**Danger** H272-H315-H319-H335

**Guarantee analysis:**

| | |
|---|---|
| Assay (compl.) | ≥98,0 % |
| Insoluble matter | ≤0,005 % |
| Chloride (Cl) | ≤0,001 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Arsenic (As) | ≤0,001 % |
| Lead (Pb) | ≤0,002 % |
| Calcium (Ca) | ≤0,005 % |
| Iron (Fe) | ≤0,001 % |
| Potassium (K) | ≤0,01 % |
| Copper (Cu) | ≤0,002 % |
| Sodium (Na) | ≤0,02 % |
| Silver (Ag) | ≤0,001 % |
| Substances not precipitated by $H_2S$ | ≤0,1 % |

| | | | |
|---|---|---|---|
| **2554.1** | 250 g | plastic | 46,80 € |
| **2554.2** | 500 g | plastic | 84,85 € |
| Original pack 6 x 500 g | | | 80,61/500 g |
| **2554.3** | 1 kg | plastic | 149,45 € |
| Original pack 6 x 1 kg | | | 141,98/1 kg |

## Bismuth(III) oxide

### Bismuth(III) oxide

**≥99,5 %, p.a.**
Bismuth trioxide
$Bi_2O_3$
M 465,96 g/mol
mp 825 °C
[1304-76-3] • EC No. 215-134-7
WGK 3

**Guarantee analysis:**

| | |
|---|---|
| Appearance | yellow powder |
| Assay | ≥99,5 % |
| Identity (Bi) | complies |
| Chloride (Cl) | ≤0,001 % |
| Nitrate ($NO_3$) | ≤0,05 % |
| Sulphate ($SO_4$) | ≤0,002 % |
| Arsenic (As) | ≤0,0002 % |
| Lead (Pb) | ≤0,003 % |
| Iron (Fe) | ≤0,002 % |
| Copper (Cu) | ≤0,002 % |
| Silver (Ag) | ≤0,0005 % |
| Substances not precipitated by $NH_4OH$ | ≤0,5 % |
| Loss on drying (105 °C) | ≤0,1 % |

| | | | |
|---|---|---|---|
| **6555.1** | 50 g | plastic | 36,45 € |
| **6555.2** | 100 g | plastic | 50,00 € |
| **6555.3** | 500 g | plastic | 155,90 € |
| Original pack 6 x 500 g | | | 148,11/500 g |

## Bismuth subcarbonate

### Bismuth subcarbonate

**≥97,5 %, USP**
Bismuth carbonate, basic
$(BiO)_2CO_3$
M 509,97 g/mol
[5892-10-4] • EC No. 227-567-9
WGK 3

**Guarantee analysis:**

| | |
|---|---|
| Appearance | white to off-white powder |
| Assay (dry substance) | 97,6-100,7 % |
| Identity | complies |
| Chloride (Cl) | ≤0,05 % |
| Nitrate ($NO_3$) | ≤0,4 % |
| Arsenic (As) | ≤0,0005 % |
| Lead (Pb) | ≤0,002 % |
| Copper (Cu) | ≤0,005 % |
| Silver (Ag) | ≤0,0025 % |
| Alkali and alkaline earth metals | ≤1,0 % |
| Loss on drying | ≤1,0 % |

| | | | |
|---|---|---|---|
| **6551.3** | 100 g | plastic | 33,25 € |
| **6551.1** | 250 g | plastic | 75,15 € |
| **6551.2** | 1 kg | plastic | 220,40 € |
| Original pack 6 x 1 kg | | | 209,38/1 kg |

## Bismuthsubnitrate

▶ Bismuth(III) nitrate see p. 1775

## Bismuth subsalicylate

### Bismuth subsalicylate

**USP**
$C_7H_5BiO_4$
M 362,09 g/mol
[14882-18-9] • EC No. 238-953-1
WGK 3

**Guarantee analysis:**

| | |
|---|---|
| Appearance | white light powder |
| Assay (Bi) | 56,0-59,4 % |
| Identity | complies |
| Total salicylates | 36,5-39,3 % |
| Free salicylic acid | ≤0,2 % |
| Nitrate ($NO_3$) | ≤0,4 % |
| Arsenic (As) | ≤0,001 % |
| Lead (Pb), Silver (Ag), Copper (Cu) | ≤0,001 % |
| Soluble Bismuth | ≤0,004 % |
| Loss on drying (105 °C) | ≤1,0 % |
| pH value | 2,7-5,0 |

| | | | |
|---|---|---|---|
| **6552.3** | 100 g | plastic | 50,00 € |
| **6552.1** | 250 g | plastic | 99,90 € |
| **6552.2** | 1 kg | plastic | 321,45 € |
| Original pack 6 x 1 kg | | | 305,38/1 kg |

## Bismuth trichloride

▶ Bismuth(III) chloride see p. 1775

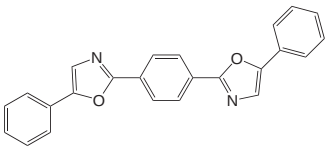
## Bismuth trinitrate

▶ Bismuth(III) nitrate see p. 1775

## Bismuth trioxide

▶ Bismuth(III) oxide see p. 1776

## 1,4-Bis[2-(5-phenyloxazolyl)]-benzene



### 1,4-Bis[2-(5-phenyloxazolyl)]-benzene

**≥99 %, for scintillation**
POPOP
$C_{24}H_{16}N_2O_2$
M 364,39 g/mol
mp 245 °C
[1806-34-4] • EC No. 217-304-6

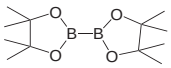
**Type analysis:**

| | |
|---|---|
| Appearance | yellow crystals |
| Assay | ≥99,0 % |
| Melting point | 243-246 °C |

Suitable for scintillation.

| | | | |
|---|---|---|---|
| **3210.1** | 5 g | glass | 34,30 € |
| **3210.2** | 100 g | plastic | 376,25 € |

## Bis(pinacolato)diboron



### Bis(pinacolato)-diboron

NEW

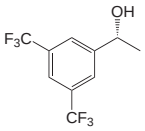
**≥98 %**
4,4,4',4',5,5,5',5'-Octamethyl-2,2'-bi-(1,3,2-dioxaborolane), $B_2pin_2$
$C_{12}H_{24}B_2O_4$
M 253,94 g/mol
mp 137-140 °C
[73183-34-3]
WGK 1

**Type analysis:**

| | |
|---|---|
| Appearance | white to off-white powder |
| Assay (GC) | ≥98 % |

| | | | |
|---|---|---|---|
| **1983.1** | 1 g | glass | 21,40 € |
| **1983.2** | 5 g | glass | 32,15 € |
| **1983.3** | 25 g | glass | 107,40 € |

## (R)-1-[3,5-Bis(trifluoromethyl)-phenyl]ethanol



### (R)-1-[3,5-Bis(trifluoromethyl)-phenyl]ethanol

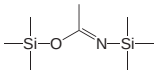
**≥99 %**
Chiral building block
$C_{10}H_8F_6O$
M 258,16 g/mol
mp 52-58 °C
[127852-28-2]
WGK 3

**Warning** H302-H412

**Type analysis:**
Appearance. ..... white to off-white powder
Assay (GC). ..... ≥99 %
Enantiomeric excess (GC). ..... ≥99 %
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7481.1** | 1 g | glass | 27,45 € |
| **7481.2** | 5 g | glass | 65,50 € |
| **7481.3** | 25 g | glass | 228,45 € |

## N,O-Bis(trimethylsilyl) acetamide (BSA)



### N,O-Bis(trimethylsilyl) acetamide (BSA)

**≥98 %, for GC**
Silylation reagent
BSA
$C_8H_{21}NOSi_2$
M 203,43 g/mol
D 0,83
mp 24 °C • flp 42 °C
[10416-59-8] • EC No. 233-892-7
UN No. 2920 • ADR 3 (8) II • WGK 1

**Danger**
H314-H226-H302-EUH014

**Type analysis:**
Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **2330.1** | 25 g | glass | 65,50 € |

For further information, please see page 1568

## Bis(trimethylsilyl)amine

▶ 1,1,1,3,3,3-Hexamethyldisilazane (HMDS) see p. 1977

## N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane

### N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane

**for GC**
Silylation agent
BSTFA:TMCS (99:1), Silyl 991
$C_8H_{18}F_3NOSi_2$
M 257,41 g/mol
D 0,97
mp -10 °C • flp 7 °C
Storage temp.: +4 °C
[25561-30-2] • EC No. 247-103-9
UN No. 2924 • ADR 3 (8) II • WGK 1

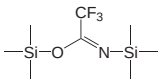
**Danger** H225-H314

**Type analysis:**
Appearance. ..... clear, yellowish liquid

| | | | |
|---|---|---|---|
| **9935.1** | 10 ml | septum bottle | 76,90 € |

For further information, please see page 1568

## N,O-Bis(trimethylsilyl)-trifluoroacetamide



### N,O-Bis(trimethylsilyl)-trifluoroacetamide

**≥98 %, for GC**
Silylation reagent
BSTFA, 2,2,2-Trifluoro-N,O-bis(trimethylsilyl)-acetamide
$C_8H_{18}F_3NOSi_2$
M 257,41 g/mol
D 0,98 • bp 145 °C
mp -10 °C • flp 34 °C
[25561-30-2] • EC No. 247-103-9
UN No. 2920 • ADR 8 (3) II • WGK 1

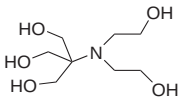
**Danger** H226-H314

**Type analysis:**
Appearance. ..... clear, colourless to yellowish liquid
Assay (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **2331.1** | 10 g | glass | 37,55 € |

For further information, please see page 1568

## BIS-TRIS



### BIS-TRIS

**PUFFERAN® ≥99 %**
Bis-(2-hydroxyethyl)imino-tris-(hydroxymethyl)-methane
$C_8H_{19}NO_5$
M 209,24 g/mol
mp 105 °C
[6976-37-0] • EC No. 230-237-7

**Guarantee analysis:**
Assay (titr.). ..... ≥99 %
Water. ..... ≤1,0 %
pH value (1 M, $H_2O$). ..... 9,0-11,0
Solubility (1 M solution in $H_2O$). ..... clear soluble
Iron (Fe). ..... ≤0,0003 %
Heavy metals (as Pb). ..... ≤0,0003 %
UV-absorption (0,1 M in $H_2O$):
340 nm. ..... ≤0,02
280 nm. ..... ≤0,04

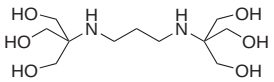
| | | | |
|---|---|---|---|
| **9140.1** | 50 g | plastic | 52,60 € |
| **9140.2** | 250 g | plastic | 209,65 € |
| **9140.3** | 500 g | plastic | 352,10 € |
| Original pack 6 x 500 g | | | 334,50/500 g |

For further information, please see page 1268

## 1,3-Bis(tris(hydroxymethyl)-methylaminopropane)

▶ BIS-TRIS-Propane see p. 1777

## BIS-TRIS-Propane



### BIS-TRIS-Propane

**PUFFERAN® ≥98 %**
1,3-Bis[tris(hydroxymethyl)-methylamino]-propane
$C_{11}H_{26}N_2O_6$
M 282,3 g/mol
[64431-96-5] • EC No. 264-899-3

**Guarantee analysis:**
Assay (titr.). ..... ≥98 %
Loss on drying. ..... ≤1,0 %
pH value (1 % in $H_2O$). ..... 10,4-11,0
UV-absorption (0,1 M in $H_2O$):
280 nm. ..... ≤0,15

| | | | |
|---|---|---|---|
| **6999.1** | 25 g | plastic | 58,60 € |
| **6999.2** | 100 g | plastic | 209,65 € |

For further information, please see page 1268

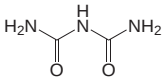
## Bitter salt

▶ Magnesium sulphate heptahydrate see p. 2051

## Bitter substance from Gentiana

▶ Gentiopicroside see p. 1950

## Biuret



### Biuret

**≥97 %, p.a.**
Reagent for positive control of the Biuret test
Carbamoylurea
$C_2H_5N_3O_2$
M 103,08 g/mol
mp 188-195 °C
Solubility: 0,2 g/l ($H_2O$, 20 °C)
[108-19-0] • EC No. 203-559-0
WGK 1

**Warning** H315-H319-H335

**Guarantee analysis:**

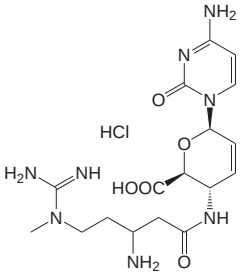
| | |
|---|---|
| Appearance. | white cryst. powder |
| Assay (N). | ≥97,0 % |
| Melting point. | 188-195 °C |
| Loss on drying. | ≤1 % |

| | | | |
|---|---|---|---|
| **2675.1** | 25 g | glass | 31,75 € |
| **2675.2** | 50 g | glass | 53,25 € |

## Biuret solutions

▶ Roti®-Quant universal see p. 2231

## Blasticidin S hydrochloride



### Blasticidin S hydrochloride

**≥98 %, for biochemistry**
Nucleoside antibiotic
$C_{17}H_{26}N_8O_5 \cdot HCl$
M 458,90 g/mol
Storage temp.: +4 °C
[3513-03-9] • EC No. 264-899-3
UN No. 2811 • ADR 6.1 II • WGK 2

**Danger** H300

**Type analysis:**

| | |
|---|---|
| Assay. | ≥98,0 % |

| | | | |
|---|---|---|---|
| **CP14.1** | 10 mg | plastic | 69,35 € |
| **CP14.2** | 25 mg | plastic | 138,70 € |

For further information, please see page 1426

## Blocking reagents

▶ Roti®-Block see p. 2203
▶ Roti®-ImmunoBlock see p. 2219

## Blood Agar No. 2 (Base)

### Blood Agar No. 2 (Base)

**ISO 7932, ISO 11290-1, for microbiology**
For cultivation and detection of haemolytic reaction of fastidious microorganisms.
Application: Use 39,5 g for 1 l agar, add 50-70 ml defibr. blood.
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Proteose peptone. | 15 g/l |
| Yeast extract. | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Liver extract. | 2,5 g/l |
| Agar. | 12 g/l |
| pH value. | 7,0 ±0,2 |

| | | | |
|---|---|---|---|
| **8281.1** | 500 g | plastic | 113,85 € |
| Original pack 6 x 500 g | | | 108,16/500 g |

For further information, please see page 1378

## Blood Agar (Base)

### Blood Agar (Base)

**for microbiology**
For isolation, cultivation and detection of haemolytic reaction of fastidious microorganisms.
Application: Use 40 g for 1 l agar. If required, add 50-110 ml defibr. blood.
Storage temp.: +20 °C
WGK 1

**Formulation:**

| | |
|---|---|
| Meat peptone. | 10 g/l |
| Heart infusion. | 10 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Agar. | 15 g/l |
| pH value. | 7,3 ±0,2 |

| | | | |
|---|---|---|---|
| **X914.1** | 500 g | plastic | 154,30 € |
| Original pack 6 x 500 g | | | 146,59/500 g |

For further information, please see page 1377

## Blood sugar

▶ D(+)-Glucose see p. 1955
▶ D(+)-Glucose monohydrate see p. 1956

## Blotting buffers

▶ Roti®-Blot 1 see p. 2203

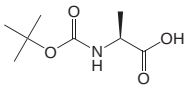
## Blue tetrazolium chloride

▶ Tetrazolium blue chloride see p. 2338

## BML-TC/100

▶ Roti®-CELL TC100 see p. 2208

## Boc-L-Alanine



### Boc-L-Alanine

**≥98,5 %, for biochemistry**
Boc-L-Ala-OH, N-(tert-Butoxycarbonyl)-L-alanine
$C_8H_{15}NO_4$
M 189,21 g/mol
mp 79 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[15761-38-3] • EC No. 239-847-8
WGK 3

**Type analysis:**

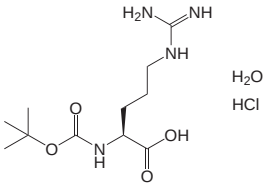
| | |
|---|---|
| Appearance. | white cryst. powder |
| Assay. | ≥98,5 % |
| Water (KF). | ≤0,5 % |

| | | | |
|---|---|---|---|
| **6907.1** | 5 g | glass | 15,60 € |
| **6907.2** | 25 g | glass | 38,60 € |
| **6907.3** | 100 g | glass | 113,45 € |

## Boc anhydride

▶ Di-*tert*-butyl dicarbonate ($Boc_2O$) see p. 1868

## Boc-L-Arginine hydrochloride monohydrate



### Boc-L-Arginine hydrochloride monohydrate

**≥98 %, for biochemistry**
Boc-L-Arg-OH, N-(tert-Butoxycarbonyl)-L-arginine
$C_{11}H_{22}N_4O_4 \cdot HCl \cdot H_2O$
M 328,79 g/mol
mp 105-115 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[114622-81-0]
WGK 3

**Type analysis:**

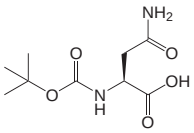
| | |
|---|---|
| Appearance. | white to off-white powder |
| Assay. | ≥98,0 % |
| Water (KF). | 5,0-6,0 % |

| | | | |
|---|---|---|---|
| **6914.1** | 5 g | glass | 28,95 € |
| **6914.2** | 25 g | glass | 76,25 € |
| **6914.3** | 100 g | glass | 224,70 € |

## Boc-L-Asn-OH

▶ Boc-L-Asparagine see p. 1779

## Boc-L-Asparagine



### Boc-L-Asparagine

**≥98 %, for biochemistry**

Boc-L-Asn-OH, N-(tert-Butoxycarbonyl)-L-asparagine

$C_9H_{16}N_2O_5$

M 232,23 g/mol

mp 165-175 °C

Storage temp.: +4 °C

[7536-55-2] • EC No. 231-405-2

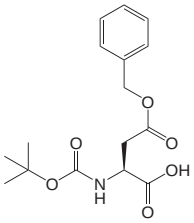
WGK 3

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (titr.). ..... 98,0-102,0 %
Purity (HPLC). ..... ≥98,0 %
Water (KF). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in DMF). ..... -8,0 ° to -6,0 °
Melting range. ..... 165,0-175,0 °C
Enantiomeric purity. ..... ≤0,3 % D-enantiomer
Free amino acids. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6915.1** | 5 g | glass | 11,75 € |
| **6915.2** | 25 g | glass | 31,10 € |
| **6915.3** | 100 g | glass | 96,65 € |

## Boc-L-Aspartic acid-(OBenzyl)



### Boc-L-Aspartic acid-(OBenzyl)

**≥98,5 %, for biochemistry**

N-α-Boc-L-aspartic acid β-benzyl ester, Boc-L-Asp(OBzl)-OH

$C_{16}H_{21}NO_6$

M 323,35 g/mol

mp 98-105 °C

Storage temp.: +4 °C

[7536-58-5] • EC No. 439-640-4

WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,5 %
Water (KF). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in DMF). ..... -21,5° to -18,5°
Enantiomeric purity. ..... ≤0,3 % D-Enantiomer

| | | | |
|---|---|---|---|
| **8846.1** | 5 g | glass | 18,85 € |
| **8846.2** | 25 g | glass | 55,80 € |
| **8846.3** | 100 g | glass | 177,40 € |

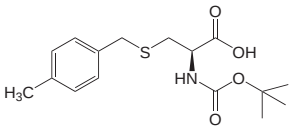
## Boc-L-Asp(OBzl)-OH

▶ Boc-L-Aspartic acid-(OBenzyl) see p. 1779

## Boc-Cys(4-Mbzl)-OH

▶ Boc-L-Cysteine-(4-Mbzl) see p. 1779

## Boc-L-Cysteine-(4-Mbzl)



NEW

### Boc-L-Cysteine-(4-Mbzl)

**≥98,5 %**

Boc-Cys(4-Mbzl)-OH, $N_α$-tert.-Butyloxycarbonyl-S-(4-methylbenzyl)-L-cysteine, N-α-t.-Boc-S-p-methylbenzyl-L-cysteine, Boc-S-(4-methylbenzyl)-L-cysteine

$C_{16}H_{23}NO_4S$

M 325,42 g/mol

mp 63-66 °C

Storage temp.: +4 °C

[61925-77-7]

WGK 1

**Type analysis:**

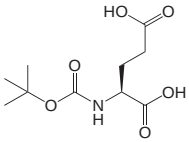
Appearance. ..... white to off-white powder
Purity (HPLC). ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (2 % in methanol). ..... -37,0° to -34,0°
Water (KF). ..... ≤2,0 %
Enantiomeric purity. ..... ≤0,5 % D-Enantiomer

| | | | |
|---|---|---|---|
| **2042.1** | 5 g | plastic | 21,40 € |
| **2042.2** | 10 g | plastic | 37,55 € |
| **2042.3** | 25 g | plastic | 69,80 € |

## Boc-L-Gln-OH

▶ Boc-L-Glutamine see p. 1779

## Boc-L-Glutamic acid



### Boc-L-Glutamic acid

**≥99 %, for biochemistry**

Boc-L-Glu-OH, N-(tert-Butoxycarbonyl)-L-glutamic acid

$C_{10}H_{17}NO_6$

M 247,25 g/mol

mp 110 °C

Storage temp.: +4 °C

[2419-94-5]

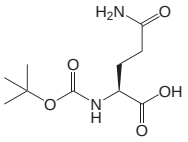
WGK 3

**Type analysis:**

Appearance. ..... white powder
Assay. ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **6917.1** | 5 g | glass | 19,25 € |
| **6917.2** | 25 g | glass | 60,75 € |
| **6917.3** | 100 g | glass | 209,65 € |

## Boc-L-Glutamine



### Boc-L-Glutamine

**≥99 %, for biochemistry**

Boc-L-Gln-OH, N-(tert-Butoxycarbonyl)-L-glutamine

$C_{10}H_{18}N_2O_5$

M 246,26 g/mol

mp 113 °C

[13726-85-7] • EC No. 237-296-8

WGK 3

**Type analysis:**

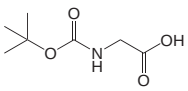
Appearance. ..... white powder
Assay. ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **6916.1** | 5 g | glass | 11,75 € |
| **6916.2** | 25 g | glass | 31,10 € |
| **6916.3** | 100 g | glass | 96,65 € |

## Boc-L-Glu-OH

▶ Boc-L-Glutamic acid see p. 1779

## Boc-Glycine



### Boc-Glycine

**≥98 %, for biochemistry**

Boc-Gly-OH, N-(tert-Butoxycarbonyl)-glycine

$C_7H_{13}NO_4$

M 175,18 g/mol

mp 85-90 °C

Storage temp.: +4 °C

[4530-20-5] • EC No. 224-864-5

WGK 3

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6918.1** | 5 g | glass | 11,75 € |
| **6918.2** | 25 g | glass | 31,10 € |
| **6918.3** | 100 g | glass | 96,65 € |

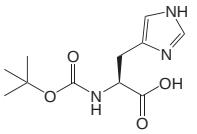
## Boc-Gly-OH

▶ Boc-Glycine see p. 1779

## Boc-L-His(Dnp)-OH

▶ Boc-L-Histidine-(Dnp) see p. 1780

## Boc-L-Histidine



### Boc-L-Histidine

**≥98 %, for biochemistry**

Boc-L-His-OH, N-(tert-Butoxycarbonyl)-L-histidine

$C_{11}H_{17}N_3O_4$

M 255,27 g/mol

mp 195 °C

[17791-52-5] • EC No. 241-768-9

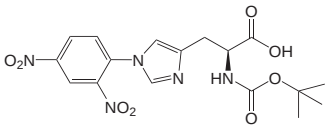
WGK 3

**Type analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6920.1** | 5 g | glass | 26,80 € |
| **6920.2** | 25 g | glass | 103,75 € |

## Boc-L-Histidine-(Dnp)



### Boc-L-Histidine-(Dnp)

NEW

**≥97,5 %, for biochemistry**

Boc-L-His(Dnp)-OH, $N_{\alpha}$-tert.-Butyloxycarbonyl-$N_{im}$-2,4-dinitrophenyl-L-histidine, N-α-Boc-N(im)-(2,4-dinitrophenyl)-L-histidine

$C_{17}H_{19}N_5O_8$

M 421,37 g/mol

mp 98-100 °C

Storage temp.: +4 °C

[25024-53-7] • EC No. 246-569-0

WGK 1

**Type analysis:**

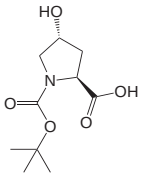
Appearance. ..... slightly yellow to light yellow powder
Purity (HPLC). ..... ≥97,5 %
Rotation spéc. $[\alpha]_D^{20}$ (1 % dans EtOAc). ..... +52,0 ° to +60,0 °
Water (KF). ..... ≤2,0 %
Residual solvents (2-Propanol). ..... ≤15,0 %
Enantiomeric purity. ..... ≤0,5 % D-Enantiomer

| | | | |
|---|---|---|---|
| **1994.1** | 1 g | glass | 21,40 € |
| **1994.2** | 5 g | plastic | 48,30 € |
| **1994.3** | 10 g | plastic | 85,90 € |

## Boc-L-His-OH

▶ Boc-L-Histidine see p. 1780

## Boc-L-Hydroxyproline



### Boc-L-Hydroxyproline

**≥98 %, for biochemistry**

Boc-L-Hyp-OH, N-(tert-Butoxycarbonyl)-L-hydroxyproline

$C_{10}H_{17}NO_5$

M 231,25 g/mol

mp 123 °C

[13726-69-7]

WGK 3

**Type analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6921.1** | 5 g | glass | 48,30 € |
| **6921.2** | 25 g | glass | 166,65 € |

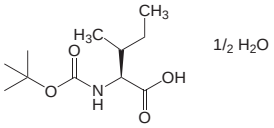
## Boc-L-Hyp-OH

▶ Boc-L-Hydroxyproline see p. 1780

## Boc-L-Ile-OH

▶ Boc-L-Isoleucine hemihydrate see p. 1780

## Boc-L-Isoleucine hemihydrate



### Boc-L-Isoleucine hemihydrate

**≥98 %, for biochemistry**

Boc-L-Ile-OH, N-(tert-Butoxycarbonyl)-L-isoleucine

$C_{11}H_{21}NO_4 \cdot ½\ H_2O$

M 240,31 g/mol

mp 50-60 °C

Storage temp.: +4 °C

[13139-16-7] • EC No. 236-074-8

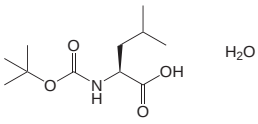
WGK 3

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (titr., dry substance). ..... 98,0-102,0 %
Purity (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤8,0 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in pyridine). ..... -31,0 ° to -26,0 °
Melting range. ..... 50,0-60,0 °C
Free amino acids. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **6923.1** | 5 g | glass | 11,75 € |
| **6923.2** | 25 g | glass | 31,10 € |
| **6923.3** | 100 g | glass | 96,65 € |

## Boc-L-Leucine monohydrate



### Boc-L-Leucine monohydrate

**≥98 %, for biochemistry**

Boc-L-Leu-OH, N-(tert-Butoxycarbonyl)-L-leucine

$C_{11}H_{21}NO_4 \cdot H_2O$

M 249,30 g/mol

mp 79-85 °C

Storage temp.: +4 °C

[13139-15-6] • EC No. 236-073-2

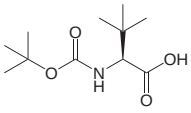
WGK 3

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (titr., dry substance). ..... 98,0-102,0 %
Purity (TLC). ..... ≥99,0 %
Water (KF). ..... 6,5-7,9 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in $CH_3COOH$). ..... -27,5 ° to -23,5 °
Melting range. ..... 79,0-85,0 °C
Enantiomeric purity. ..... ≤0,2 % D-Enantiomer
Free amino acids. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **6924.1** | 5 g | glass | 11,75 € |
| **6924.2** | 25 g | glass | 31,10 € |
| **6924.3** | 100 g | glass | 96,65 € |

## Boc-L-tert-Leucine



### Boc-L-tert-Leucine

**≥98,5 %, for biochemistry**

Boc-L-Tle-OH, N-(tert-Butoxycarbonyl)-L-tert-leucine

$C_{11}H_{21}NO_4$

M 231,29 g/mol

mp 118 °C

Storage temp.: +4 °C

[62965-35-9]

WGK 3

**Type analysis:**

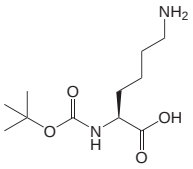
Appearance. ..... white powder
Assay. ..... ≥98,5 %
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6942.1** | 1 g | glass | 24,65 € |
| **6942.2** | 5 g | glass | 97,75 € |
| **6942.3** | 10 g | glass | 170,95 € |

## Boc-L-Leu-OH

▶ Boc-L-Leucine monohydrate see p. 1780

## Boc-L-Lysine



### Boc-L-Lysine

**≥98 %, for biochemistry**

Boc-L-Lys-OH, N-(tert-Butoxycarbonyl)-L-lysine

$C_{11}H_{22}N_2O_4$

M 246,30 g/mol

mp 205 °C

Storage temp.: +4 °C

[13734-28-6] • EC No. 237-303-4

WGK 3

**Type analysis:**

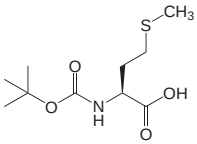
Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6926.1** | 1 g | glass | 19,25 € |
| **6926.2** | 5 g | glass | 60,10 € |
| **6926.3** | 10 g | glass | 109,15 € |

## Boc-L-Lys-OH

▶ Boc-L-Lysine see p. 1781

## Boc-L-Methionine



### Boc-L-Methionine

**≥99 %, for biochemistry**

Boc-L-Met-OH, N-(tert-Butoxycarbonyl)-L-methionine

$C_{10}H_{19}NO_4S$

M 249,33 g/mol

mp 47 °C

Storage temp.: +4 °C

[2488-15-5] • EC No. 219-639-3

WGK 3

**Type analysis:**

Appearance. ..... white powder
Assay. ..... ≥99,0 %
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6928.1** | 5 g | glass | 15,60 € |
| **6928.2** | 25 g | glass | 38,20 € |
| **6928.3** | 100 g | glass | 113,85 € |

## Boc-S-(4-methylbenzyl)-L-cysteine

▶ Boc-L-Cysteine-(4-Mbzl) see p. 1779

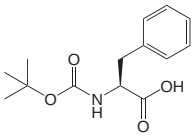
## Boc-L-Met-OH

▶ Boc-L-Methionine see p. 1781

## $Boc_2O$

▶ Di-*tert*-butyl dicarbonate ($Boc_2O$) see p. 1868

## Boc-L-Phenylalanine



### Boc-L-Phenylalanine

**≥99 %, for biochemistry**

Boc-L-Phe-OH, N-(tert-Butoxycarbonyl)-L-phenylalanine

$C_{14}H_{19}NO_4$

M 265,31 g/mol

mp 85-88 °C

Storage temp.: +4 °C

[13734-34-4] • EC No. 237-305-5

WGK 3

**Type analysis:**

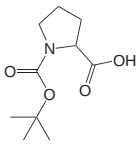
Appearance. ..... white cryst. powder
Assay. ..... ≥99,0 %
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6931.1** | 5 g | glass | 11,75 € |
| **6931.2** | 25 g | glass | 31,10 € |
| **6931.3** | 100 g | glass | 96,65 € |

## Boc-L-Phe-OH

▶ Boc-L-Phenylalanine see p. 1781

## Boc-L-Proline



### Boc-L-Proline

**≥99 %, for biochemistry**

Boc-L-Pro-OH, N-(tert-Butoxycarbonyl)-L-proline

$C_{10}H_{17}NO_4$

M 215,25 g/mol

mp 132-136 °C

Storage temp.: +4 °C

[15761-39-4] • EC No. 239-848-3

WGK 3

**Type analysis:**

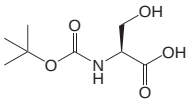
Appearance. ..... white to off-white powder
Assay (titr.). ..... 99,0-101,0 %
Purity (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in $CH_3COOH$). ..... -61,6 ° to -59,6 °
Melting range. ..... 132,0-136,0 °C
Enantiomeric purity. ..... ≤0,2 % D-Enantiomer
Free amino acids. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **6932.1** | 5 g | glass | 11,75 € |
| **6932.2** | 25 g | glass | 31,10 € |
| **6932.3** | 100 g | glass | 96,65 € |

## Boc-L-Pro-OH

▶ Boc-L-Proline see p. 1781

## Boc-L-Serine



### Boc-L-Serine

**≥99 %, for biochemistry**

Boc-L-Ser-OH, N-(tert-Butoxycarbonyl)-L-serine

$C_8H_{15}NO_5$

M 205,21 g/mol

mp 91 °C

Storage temp.: +4 °C

[3262-72-4] • EC No. 221-867-3

WGK 3

**Type analysis:**

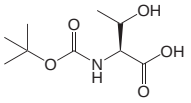
Appearance. ..... white to off-white powder
Assay. ..... ≥99,0 %
Water (KF). ..... ≤8,5 %

| | | | |
|---|---|---|---|
| **6933.1** | 5 g | glass | 18,85 € |
| **6933.2** | 25 g | glass | 55,80 € |
| **6933.3** | 100 g | glass | 177,40 € |

## Boc-L-Ser-OH

▶ Boc-L-Serine see p. 1781

## Boc-L-Threonine



### Boc-L-Threonine

**≥98 %, for biochemistry**

Boc-L-Thr-OH, N-(tert-Butoxycarbonyl)-L-threonine

$C_9H_{17}NO_5$

M 219,23 g/mol

mp 80 °C

Storage temp.: -20 °C
Transport temp.: room temp.

[2592-18-9] • EC No. 219-987-6

WGK 3

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **6935.1** | 5 g | glass | 26,80 € |
| **6935.2** | 25 g | glass | 100,95 € |

## Boc-L-Thr-OH

▶ Boc-L-Threonine see p. 1781

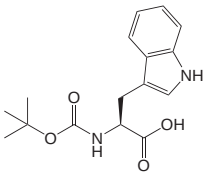
## Boc-L-Tle-OH

▶ Boc-L-tert-Leucine see p. 1780

## Boc-L-Trp-OH

▶ Boc-L-Tryptophan see p. 1782

## Boc-L-Tryptophan



### Boc-L-Tryptophan

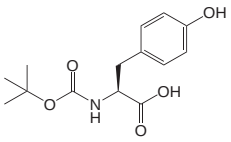
Boct
**≥95 %, for biochemistry**
Boc-L-Trp-OH, N-(tert-Butoxycarbonyl)-L-tryptophan
$C_{16}H_{20}N_2O_4$
M 304,34 g/mol
mp 132-140 °C
Storage temp.: +4 °C
[13139-14-5] • EC No. 236-072-7
WGK 3

**Type analysis:**

| | |
|---|---|
| Appearance. | white to off-white powder |
| Assay (titr.). | 95,0-102,0 % |
| Purity (HPLC) | ≥98,5 % |
| Water (KF). | ≤1,0 % |
| Spec. rotation $[\alpha]_D^{20}$ (c=1 in CH3COOH) | -23 ° to -19 ° |
| Melting range. | 132,0-140,0 °C |
| Enantiomeric purity. | ≤0,5 % D-enantiomer |

| | | | |
|---|---|---|---|
| **6945.1** | 5 g | glass | 11,75 € |
| **6945.2** | 25 g | glass | 31,10 € |
| **6945.3** | 100 g | glass | 96,65 € |

## Boc-L-Tyrosine



### Boc-L-Tyrosine

**≥98 %, for biochemistry**
Boc-L-Tyr-OH, N-(tert-Butoxycarbonyl)-L-tyrosine
$C_{14}H_{19}NO_5$
M 281,30 g/mol
mp 133 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[3978-80-1] • EC No. 223-613-7
WGK 3

**Type analysis:**

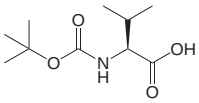
| | |
|---|---|
| Appearance. | white powder |
| Assay | ≥98,0 % |
| Water (KF). | ≤1,0 % |

| | | | |
|---|---|---|---|
| **6949.1** | 5 g | glass | 25,70 € |
| **6949.2** | 25 g | glass | 72,60 € |

## Boc-L-Tyr-OH

▶ Boc-L-Tyrosine see p. 1782

## Boc-L-Valine



### Boc-L-Valine

**≥98 %, for biochemistry**
Boc-L-Val-OH, N-(tert-Butoxycarbonyl)-L-valine
$C_{10}H_{19}NO_4$
M 217,26 g/mol
mp 75-82 °C
Storage temp.: +4 °C
[13734-41-3] • EC No. 237-307-6
WGK 3

**Type analysis:**

| | |
|---|---|
| Appearance. | white to off-white powder |
| Assay (titr.). | 98,0-102,0 % |
| Purity (HPLC). | ≥98,0 % |
| Water (KF). | ≤1,0 % |
| Spec. rotation $[\alpha]_D^{20}$ (c=1 in $CH_3COOH$). | -6,8 ° to -5,8 ° |
| Melting range. | 75,0-82,0 °C |
| Enantiomeric purity. | ≤0,3 % D-enantiomer |

| | | | |
|---|---|---|---|
| **6950.1** | 5 g | glass | 11,75 € |
| **6950.2** | 25 g | glass | 31,10 € |
| **6950.3** | 100 g | glass | 96,65 € |

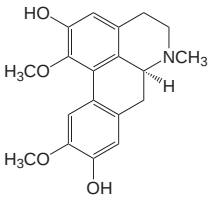
## Boc-L-Val-OH

▶ Boc-L-Valine see p. 1782

## Bold black

▶ Sudan black B (C.I. 26150) see p. 2320

## Boldine



### Boldine

**ROTICHROM® ~CHR**
$C_{19}H_{21}NO_4$
M 327,37 g/mol
mp 161 °C
[476-70-0] • EC No. 207-509-9
WGK 1

**Warning** H302-H315-H319-H335

| | | | |
|---|---|---|---|
| **8900.1** | 100 mg | glass | 127,40 € |

## Bolus

### Bolus

**finely powdered**
Kaolin, Hydrated aluminum silicate
D 2,6
[1332-58-7] • EC No. 310-127-6

**Type analysis:**

| | |
|---|---|
| Appearance. | powder |
| pH value | 5,5-8,0 |
| $SiO_2$. | 51,0-59,0 % |
| MgO. | 0,4-1,2 % |
| $Al_2O_3$. | 30,0-36,0 % |
| $K_2O$. | 4,0-7,0 % |
| $Fe_2O_3$. | 1,5-5,0 % |
| $Na_2O$. | 0,05-0,15 % |
| $TiO_2$. | 0,05-0,15 % |
| CaO. | 0,02-3,50 % |
| Loss on ignition. | 6,0-9,5 % |

| | | | |
|---|---|---|---|
| **8361.2** | 1 kg | plastic | 18,20 € |
| Original pack 6 x 1 kg | | | 17,29/1 kg |
| **8361.1** | 2,5 kg | plastic | 33,25 € |

## Bone ash

### Bone ash

**powder**
[68439-86-1] • EC No. 270-423-5

**Type analysis:**

| | |
|---|---|
| Appearance. | white powder |

| | | | |
|---|---|---|---|
| **8493.2** | 500 g | plastic | 14,95 € |
| Original pack 6 x 500 g | | | 14,20/500 g |
| **8493.1** | 1 kg | plastic | 22,05 € |
| Original pack 6 x 1 kg | | | 20,95/1 kg |

## BOP

▶ Benzotriazole-1-yl-oxy-tris-(dimethylamino)-phosphonium hexafluorophosphate (BOP) see p. 1767

## Borate Buffered Saline (tablets)

▶ Roti®fair BBS see p. 2211

## Borax

▶ di-Sodium tetraborate see p. 2285
▶ di-Sodium tetraborate decahydrate see p. 2285

## Boric acid

$H_3BO_3$
M 61,83 g/mol
D 1,44
mp >100 (dec.)
Solubility: 47 g/l ($H_2O$, 20 °C)
[10043-35-3] • EC No. 233-139-2
WGK 1

**Danger** H360FD

### Boric acid

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis). | 99,999 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5614.1** | 25 g | plastic | 51,10 € |
| **5614.2** | 100 g | plastic | 126,35 € |

## Boric acid

**≥99,8 %, p.a., ACS, ISO**

Buffer substance, for molecular biology

**Guarantee analysis:**

Assay (acidim.). ≥99,8 %
In $CH_3OH$ insoluble matter. ≤0,005 %
Chloride (Cl). ≤0,0005 %
Sulphate ($SO_4$). ≤0,002 %
Phosphate ($PO_4$). ≤0,0005 %
Heavy metals (as Pb). ≤0,0005 %
Arsenic (As). ≤0,00005 %
Calcium (Ca). ≤0,002 %
Cadmium (Cd). ≤0,0005 %
Copper (Cu). ≤0,0005 %
Iron (Fe). ≤0,0001 %
Magnesium (Mg). ≤0,0005 %
Lead (Pb). ≤0,0005 %
Zinc (Zn). ≤0,0005 %
With $CH_3OH$+HCl non volatile matter (as $SO_4$). ≤0,05 %

| | | | |
|---|---|---|---|
| **6943.2** | 250 g | plastic | 19,90 € |
| **6943.4** | 500 g | plastic | 24,65 € |
| Original pack 6 x 500 g | | | 23,42/500 g |
| **6943.1** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **6943.6** | 2,5 kg | plastic | 73,65 € |
| **6943.3** | 5 kg | plastic | 145,05 € |
| **6943.5** | 25 kg | plastic | 665,45 € |

## Boric acid

**≥99,5 %, Ph.Eur., USP, BP**

Buffer substance

**Guarantee analysis:**

Assay (acidim., dry substance). 99,5-100,5 %
Identity. complies
Appearance of solution. complies
pH value (3,3 %, water). 3,8-4,8
Solubility (in ethanol). complies
Loss on drying. ≤0,5 %
Ash content ($CH_3OH$+HCl) (as $SO_4$). ≤0,1 %
Organic material. complies
Chloride (Cl). ≤0,002 %
Phosphate ($PO_4$). ≤0,002 %
Sulphate ($SO_4$). ≤0,045 %
Heavy metals (as Pb). ≤0,0015 %
Arsenic (As). ≤0,0005 %
Copper (Cu). ≤0,001 %
Magnesium (Mg). ≤0,005 %
Lead (Pb). ≤0,001 %
Iron (Fe). ≤0,001 %
Nickel (Ni). ≤0,001 %

| | | | |
|---|---|---|---|
| **P010.1** | 500 g | plastic | 19,60 € |
| Original pack 6 x 500 g | | | 18,62/500 g |
| **P010.2** | 1 kg | plastic | 30,65 € |
| Original pack 6 x 1 kg | | | 29,12/1 kg |
| **P010.3** | 2,5 kg | plastic | 64,40 € |
| **P010.5** | 25 kg | plastic | 525,70 € |

## Boric acid

**≥99,8 %**

**Type analysis:**

Assay. ≥99,8 %
Sulphate ($SO_4$). ≤0,05 %
Iron (Fe). ≤0,001 %

| | | | |
|---|---|---|---|
| **5935.1** | 1 kg | plastic | 17,10 € |
| Original pack 6 x 1 kg | | | 16,25/1 kg |
| **5935.2** | 5 kg | plastic | 70,85 € |
| **5935.4** | 25 kg | plastic | 209,65 € |
| **5935.3** | 50 kg | plastic | 364,45 € |

## Boric acid solution 4 %

### Boric acid solution 4 %

**p.a.**

Analytical reagent
[10043-35-3] • EC No. 233-139-2
WGK 1

**Type analysis:**

Assay (Boric acid). ~40 g/l

| | | | |
|---|---|---|---|
| **HN24.1** | 1 l | plastic | 17,75 € |
| Original pack 6 x 1 l | | | 16,86/1 l |
| **HN24.4** | 2,5 l | plastic | 27,85 € |
| Original pack 4 x 2,5 l | | | 26,46/2,5 l |
| **HN24.2** | 5 l | plastic | 39,70 € |
| Original pack 2 x 5 l | | | 37,72/5 l |
| **HN24.3** | 10 l | plastic | 64,40 € |

## (-)-Borneol



### (-)-Borneol

**ROTICHROM® GC**

Reference substance for GC.
$C_{10}H_{18}O$
M 154,25 g/mol
bp 210 °C
mp 206-208 °C • flp 86 °C
Storage temp.: +4 °C
[464-45-9] • EC No. 207-353-1
UN No. 1312 • ADR 4.1 III • WGK 2

**Warning** H228

**Type analysis:**

Purity (GC). ≥96 %

| | | | |
|---|---|---|---|
| **8495.2** | 100 mg | glass | 82,70 € |

## (+)-Borneol



### (+)-Borneol

**ROTICHROM® GC**

Reference substance for GC
(+)-Bornyl alcohol
$C_{10}H_{18}O$
M 154,25 g/mol
mp 205-208 °C • flp 65 °C
Storage temp.: +4 °C
[464-43-7] • EC No. 207-352-6
UN No. 1312 • ADR 4.1 III • WGK 2

**Warning** H228

**Type analysis:**

Purity (GC). ≥96 %

| | | | |
|---|---|---|---|
| **8903.1** | 100 mg | plastic | 138,70 € |

## L-Bornyl acetate

▶ Acetic acid L-bornyl ester see p. 1694

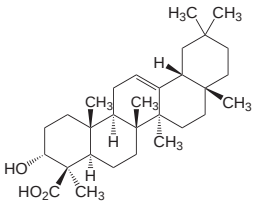
## (+)-Bornyl alcohol

▶ (+)-Borneol see p. 1783

## Boron Standards

▶ Boron AAS Standard Solution see p. 2294
▶ Boron ICP Standard Solution see p. 2297
▶ Boron ICP Standard Solution see p. 2302

## α-Boswellic acid



### α-Boswellic acid

**ROTICHROM® HPLC**

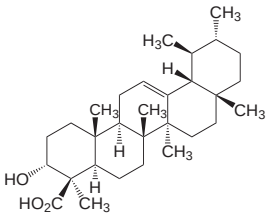
Reference substance for HPLC.
From *Boswellia serrata.*
(3α,4β)-3-Hydroxy-olean-12-en-23-oic acid
$C_{30}H_{48}O_3$
M 456,73 g/mol
Storage temp.: +4 °C
[471-66-9]

**Type analysis:**

Purity (HPLC). >99 %

| | | | |
|---|---|---|---|
| **1123.1** | 10 mg | glass | 418,20 € |

## β-Boswellic acid



### β-Boswellic acid

**ROTICHROM® HPLC**

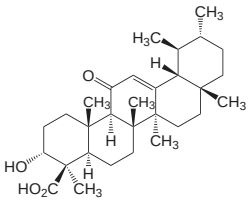
Reference substance for HPLC.
From *Boswellia serrata.*
(3α,4β)-3-Hydroxy-urs-12-en-23-oic acid
$C_{30}H_{48}O_3$
M 456,73 g/mol
Storage temp.: +4 °C
[631-69-6]

**Type analysis:**

Purity (HPLC). >99 %

| | | | |
|---|---|---|---|
| **1124.1** | 10 mg | glass | 418,20 € |

## 11-keto-β-Boswellic acid



### 11-keto-β-Boswellic acid

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Boswellia serrata.*
3α-Hydroxy-urs-12-en-11-keto-23-acid
$C_{30}H_{46}O_4$
M 470,69 g/mol
Storage temp.: +4 °C
[17019-92-0]

**Type analysis:**
Purity (HPLC).....>99 %

| | | | |
|---|---|---|---|
| **1155.1** | 10 mg | glass | 375,20 € |

## BPB

▶ Bromophenol blue see p. 1789

## Bradford solutions

▶ Roti®-Quant see p. 2231
▶ Roti®-Nanoquant see p. 2225

## Brain-Heart-Infusion Agar

### Brain-Heart-Infusion Agar

**for microbiology**

For cultivation of fastidious microorganisms.
Application: Use 52 g for 1 l agar.
**BHI Agar**
Storage temp.: +20 °C
WGK 3

**Formulation:**
Calf Brain Infusion..... 7,5 g/l
Beef Heart Infusion. ..... 10 g/l
Peptone. ..... 10 g/l
Glucose. ..... 2 g/l
Sodium chloride (NaCl). ..... 5 g/l
Disodium phosphate..... 2,5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,4 ±0,2

| | | | |
|---|---|---|---|
| **X915.1** | 500 g | plastic | 97,30 € |
| Original pack 6 x 500 g | | | 92,44/500 g |

For further information, please see page 1378

## Brain-Heart-Infusion Broth

### Brain-Heart-Infusion Broth

**for microbiology**

For cultivation of fastidious microorganisms.
Application: Use 37 g for 1 l broth.
**BHI Broth**
Storage temp.: +20 °C
WGK 1

**Formulation:**
Pig brain infusion. ..... 7,5 g/l
Pig heart infusion. ..... 10 g/l
Peptone. ..... 10 g/l
Glucose. ..... 2 g/l
Sodium chloride (NaCl). ..... 5 g/l
Disodium phosphate. ..... 2,5 g/l
pH value. ..... 7,4 ±0,2

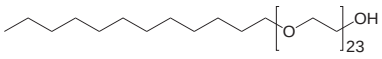
| | | | |
|---|---|---|---|
| **X916.1** | 500 g | plastic | 89,80 € |
| Original pack 6 x 500 g | | | 85,31/500 g |
| **X916.2** | 1 kg | plastic | 154,30 € |
| Original pack 6 x 1 kg | | | 146,59/1 kg |

For further information, please see page 1378

## Brenzcatechinmono-methylether

▶ Guaiacol see p. 1965

## Brij® 35



### Brij® 35

**for biochemisty**

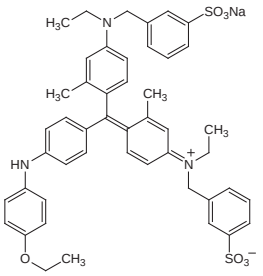
Non-ionic detergent.
Polyoxyethylene lauryl ether, Polyethylene glycol lauryl ether
$C_{58}H_{118}O_{24}$
M 1198,57 g/mol
D 1,05 • bp 100 °C
flp >149 °C
[9002-92-0]
WGK 2

**Type analysis:**
Water..... ≤4 %
Hydroxyl number (mg KOH/g). ..... 40-60

| | | | |
|---|---|---|---|
| **CN21.1** | 250 g | plastic | 17,10 € |
| **CN21.2** | 500 g | plastic | 26,80 € |
| Original pack 6 x 500 g | | | 25,46/500 g |
| **CN21.3** | 1 kg | plastic | 40,35 € |
| Original pack 6 x 1 kg | | | 38,33/1 kg |

For further information, please see page 1270

## Brilliant blue G 250 (C.I. 42655)



### Brilliant blue G 250 (C.I. 42655)

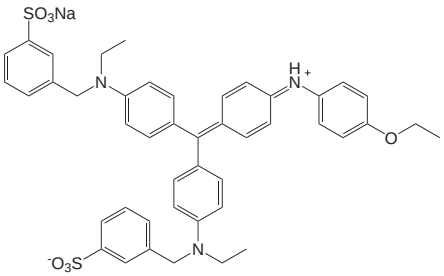
For preparing staining solution for protein analysis in gel electrophoresis.
Coomassie blue G 250
$C_{47}H_{48}N_3O_7S_2Na$
M 854,03 g/mol
Solubility: 40 g/l ($H_2O$, 20 °C)
[6104-58-1] • EC No. 228-058-4
WGK 2

**Type analysis:**
Maximum absorption. .....605-615 nm

| | | | |
|---|---|---|---|
| **9598.1** | 10 g | glass | 28,95 € |
| **9598.2** | 100 g | plastic | 149,45 € |

For further information, please see page 1183

## Brilliant blue R 250 (C.I. 42660)



### Brilliant blue R 250 (C.I. 42660)

For preparing staining solution for protein analysis in gel electrophoresis.
Coomassie Brillant Blue R 250
$C_{45}H_{44}N_3NaO_7S_2$
M 825,99 g/mol
mp ~174-180 °C
Solubility: 20 g/l ($H_2O$, 30 °C)
[6104-59-2] • EC No. 228-060-5
WGK 2

**Type analysis:**
Appearance. .....blue to purple powder
Absorption max. (in EtOH). .....580-600 nm
Loss on drying (110 °C). .....≤10 %

| | | | |
|---|---|---|---|
| **3862.1** | 10 g | glass | 23,15 € |
| **3862.2** | 100 g | glass | 94,10 € |

For further information, please see page 1183

## Brilliant cresyl blue (C.I. 51010)

### Brilliant cresyl blue (C.I. 51010)

**p.a.**

Brilliant blue C
$(C_{17}H_{20}N_3O)_2 \cdot ZnCl_4$
M 385,96 g/mol
Solubility: 30 g/l ($H_2O$, 25 °C)
[81029-05-2] • EC No. 279-675-0
WGK 2

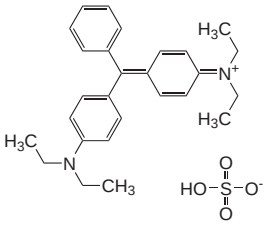
**Warning** H315-H319-H335

**Type analysis:**
Absorption max. (in $H_2O$). .....620-640 nm
Loss on drying (110 °C). .....≤5 %

| | | | |
|---|---|---|---|
| **5162.1** | 5 g | glass | 23,15 € |
| **5162.2** | 10 g | glass | 33,90 € |

For further information, please see page 1462

## Brilliant green (C.I. 42040)



### Brilliant green (C.I. 42040)

**for microscopy**

Indicator pH 0,0-2,6

Basic green 1, Malachite green G, Diamond green G, Ethyl green

$C_{27}H_{34}N_2O_4S$

M 482,64 g/mol

mp 210 °C (dec.)

Solubility: 100 g/l ($H_2O$, 20 °C)

[633-03-4] • EC No. 211-190-1

WGK 2

**Warning** H302-H319

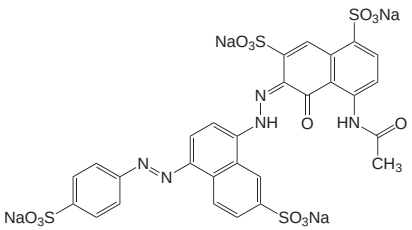
**Type analysis:**

Maximum absorption. ..... 628-632 nm
Specific extinction E 1 %/1 cm. ..... >1750
Loss on drying (135 °C). ..... ≤5 %

| | | | |
|---|---|---|---|
| **0324.1** | 25 g | glass | 17,75 € |
| **0324.2** | 100 g | plastic | 39,70 € |

For further information, please see page 1462

## Brilliant black BN (C.I. 28440)



### Brilliant black BN (C.I. 28440)

**p.a.**

$C_{28}H_{17}N_5Na_4O_{14}S_4$

M 867,69 g/mol

Solubility: 100 g/l ($H_2O$)

[2519-30-4] • EC No. 219-746-5

WGK 3

**Type analysis:**

Appearance. ..... black powder
Insoluble in water. ..... ≤0,5 %
Heavy metals. ..... ≤0,005 %
Lead (Pb). ..... ≤0,001 %
Mercury (Hg) ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **7643.1** | 5 g | glass | 19,25 € |
| **7643.2** | 25 g | glass | 36,05 € |
| **7643.3** | 100 g | glass | 97,75 € |

## Brilliant blue C

▶ Brilliant cresyl blue (C.I. 51010) see p. 1784

## Brilliant Green Bile Broth

### Brilliant Green Bile Broth

**DIN 10172, for microbiology**

For selective enrichment and enumeration of coli bacteria in milk, water samples, faeces and other material.

Application: Use 40 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Gelatine peptone. ..... 10 g/l
Lactose. ..... 10 g/l
Bile salts. ..... 20 g/l
Brilliant green. ..... 0,0133 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **CL06.1** | 500 g | plastic | 143,55 € |
| Original pack 6 x 500 g | | | 136,37/500 g |

For further information, please see page 1378

## Brilliant Green Lactose Sucrose Agar

### Brilliant Green Lactose Sucrose Agar

**Ph.Eur., for microbiology**

Highly selective medium for the isolation of *Salmonellae* from pathological specimens and food.

Application: Use 58,1 g for 1 l agar.

Agar medium L (Ph.Eur. 6.0), **BPLS**

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Meat and casein peptone. ..... 10 g/l
Yeast extract. ..... 3 g/l
Sodium chloride (NaCl). ..... 5 g/l
Lactose monohydrate. ..... 10 g/l
Saccharose. ..... 10 g/l
Phenol red. ..... 0,08 g/l
Brilliant green. ..... 0,0125 g/l
Agar. ..... 20 g/l
pH value. ..... 6,9 ±0,2

| | | | |
|---|---|---|---|
| **AE43.1** | 500 g | plastic | 97,30 € |
| Original pack 6 x 500 g | | | 92,44/500 g |

For further information, please see page 1378

## Brilliant Green Tetrathionate Bile Broth

### Brilliant Green Tetrathionate Bile Broth

**Ph.Eur., for microbiology**

For selective enrichment of *Salmonellae* in food and faeces.

Application: Use 63 g for 1 l broth.

Broth medium I (Ph.Eur. 6.0)

Storage temp.: +20 °C

WGK 1

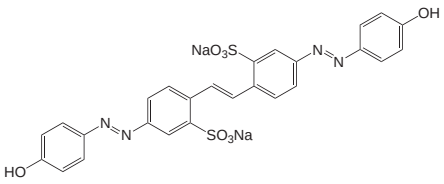
**Guarantee analysis:**

Peptone. ..... 8,6 g/l
Dried beef bile. ..... 8 g/l
Sodium chloride (NaCl). ..... 6,4 g/l
Calcium carbonate. ..... 20 g/l
Potassium tetrathionate. ..... 20 g/l
Brilliant green. ..... 0,07 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **AE42.2** | 100 g | plastic | 114,50 € |
| **AE42.1** | 500 g | plastic | 450,45 € |
| Original pack 6 x 500 g | | | 427,93/500 g |

For further information, please see page 1379

## Brilliant yellow (C.I. 24890)



### Brilliant yellow (C.I. 24890)

**p.a.**

Indicator pH 6,4-8,0

$C_{26}H_{18}N_4Na_2O_8S_2$

M 624,55 g/mol

mp >250 °C

Solubility: 25 g/l ($H_2O$)

[3051-11-4]

WGK 3

**Type analysis:**

Appearance. ..... brick red to rust powder
pH-transition range. ..... 6,4 (yellow)-8,0 (red orange)

| | | | |
|---|---|---|---|
| **7645.1** | 5 g | glass | 20,35 € |
| **7645.2** | 25 g | glass | 31,75 € |
| **7645.3** | 100 g | glass | 73,00 € |

## Brindi acid

### Brindi acid

**30 %, techn.**

Brindi resin with hydrochloric acid.

D 1,15

UN No. 1789 • ADR 8 II • WGK 1

**Danger** H314-H335-H290

**Type analysis:**

Appearance. ..... brown, viscous liquid
Assay. ..... 28,2-31,2 % (HCl)

Brindi acid is the trade name of a descaler, made on the basis of hydrochloric acid which is inhibited from corrosion.

The chemical cleaning of metal surfaces by Brindi acid makes it possible to dissolve deposits consisting of rust, ferric oxide, boiler scale and other acid soluble compounds.

Brindi acid dissolves such deposits with the same efficacy like a strong acid.

But at the same time, the use of Brindi resin as corrosion inhibitor protects the metal surface against the corrosion normally caused by acid.

For application the product has to be diluted with 3 to 6 times the amount of water. Not suitable for aluminium and zinc.

| | | | |
|---|---|---|---|
| **5141.2** | 1 l | plastic | 16,05 € |
| Original pack 6 x 1 l | | | 15,25/1 l |
| **5141.1** | 10 l | plastic | 44,00 € |

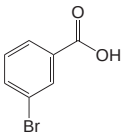
## Brindi resin with hydrochloric acid

▶ Brindi acid see p. 1785

## Bromate Standards

▶ Bromate IC Standard Solution see p. 2311

## 3-Brombenzoic acid



### 3-Brombenzoic acid

**≥99 %, for synthesis**
$C_7H_5BrO_2$
M 201,02 g/mol
mp 154-158 °C
[585-76-2] • EC No. 209-562-3
WGK 3
**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... white to pale yellow cryst. powder
Assay. ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **4273.1** | 25 g | glass | 32,15 € |
| **4273.2** | 100 g | glass | 81,20 € |

## Bromelain

### Bromelain

**~1200 GDU/g, for biochemistry**
Made from stems of young pineapple *(Bromeliaceae)*.
Bromelin
mp ~60 °C
Storage temp.: +4 °C
[9001-00-7] • EC No. 232-572-4
WGK 3
**Danger** H334-H335-H315-H319

**Type analysis:**
Appearance. ..... off-white, hygroscopic powder
Activity. ..... ~1200 GDU/g (~2,4 FIP-units/mg)
pH value (1 % solution). ..... 3,0-5,0
Ash. ..... <5 %
Loss on drying. ..... <5 %

| | | | |
|---|---|---|---|
| **5950.1** | 10 g | plastic | 21,00 € |
| **5950.2** | 100 g | plastic | 93,45 € |

For further information, please see page 1276

## Bromelin

▶ Bromelain see p. 1786

## Brome potassium

▶ Potassium bromide see p. 2163

## Bromide bromate solution (0,1 N)

### Bromide bromate solution

**0,05 mol $Br_2$/l - 0,1 N volumetric standard solution**
Potassium bromide bromate solution
WGK 3
**Danger** H350

**Type analysis:**
Amount-of-substance conc. (20 °C). ..... 0,05 mol $Br_2$/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **8131.1** | 1 l | plastic | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |

## Bromide Standards

▶ Bromide IC Standard Solution see p. 2311

## 5-Bromoanthranilic acid

▶ 2-Amino-5-bromobenzoic acid see p. 1724

## Bromobenzene D5

### Bromobenzene D5

**99,5 Atom%D**
For nuclear magnetic resonance spectroscopy.
$C_6D_5Br$
M 162,05 g/mol
D ~1,49 • bp 156 °C
mp -31 °C
[4165-57-5] • EC No. 224-013-8
UN No. 2514 • ADR 3 III • WGK 2
**Warning** H226-H315-H411

**Guarantee analysis:**
Deuterising degree. ..... ≥99,5 %
Water (KF, $H_2O+D_2O$). ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **HN93.1** | 10 ml | glass | 110,65 € |

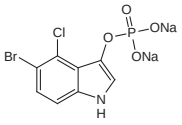
## 5-Bromo-4-chloro-indolyl-α-D-galactopyranoside

▶ X-α-Gal see p. 2379

## 5-Bromo-4-chloro-3-indolyl-β-D-glucuronide monohexyl ammonium salt

▶ X-Gluc see p. 2379

## 5-Bromo-4-chloro-3-indolyl phosphate disodium salt



### 5-Bromo-4-chloro-3-indolyl phosphate disodium salt

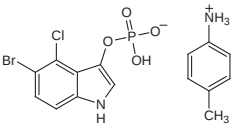
**≥99 %**
Substrate for alkaline phosphatase, in particular in immunoblot procedures.
BCIP-$Na_2$, X-phosphate disodium salt
$C_8H_4BrClNO_4PNa_2 \cdot 1,5\ H_2O$
M 397,46 g/mol
mp >300 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[102185-33-1]

**Type analysis:**
Appearance. ..... off-white powder
Assay (titr.). ..... ≥99,0 %
Water (KF). ..... 5,8-7,8 %

| | | | |
|---|---|---|---|
| **A155.1** | 100 mg | glass | 27,45 € |
| **A155.2** | 500 mg | glass | 115,60 € |
| **A155.3** | 1 g | glass | 198,90 € |
| **A155.4** | 5 g | glass | 665,45 € |

For further information, please see page 1287

## 5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt



### 5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt

**≥99 %, BioScience-Grade**
Histochemical substrate for phosphatase.
BCIP-p-toluidine salt, X-Phos
$C_{15}H_{15}N_2O_4BrClP$
M 433,63 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[6578-06-9] • EC No. 229-506-1
WGK 2
**Warning** H371

**Guarantee analysis:**
Appearance. ..... off-white powder
Assay (titr.). ..... ≥99 %
Water (KF). ..... ≤1 %
Appearance of solution (1% in DMF). ..... clear, colourless to slightly yellowish
Phosphate ($PO_4$). ..... ≤0,05 %

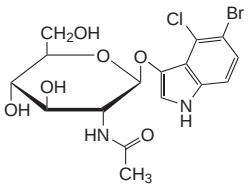
| | | | |
|---|---|---|---|
| **6368.1** | 500 mg | glass | 35,40 € |
| **6368.2** | 1 g | glass | 68,30 € |
| **6368.3** | 5 g | glass | 261,80 € |

For further information, please see page 1287

## 5-Bromo-4-chloro-3-indoxyl-2-acetamido-2-deoxy-β-D-glucopyranoside

▶ 5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide see p. 1787

## 5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide



### 5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide

**≥99,5 %, for biochemistry**

Glycosidase substrate

5-Bromo-4-chloro-3-indoxyl-2-acetamido-2-deoxy-β-D-glucopyranoside, X-β-D-GlcNAc

$C_{16}H_{18}BrClN_2O_6$

M 449,69 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

[4264-82-8]

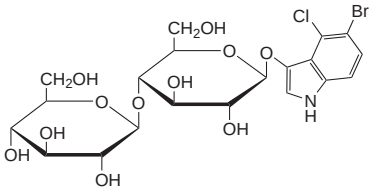
WGK 1

**Type analysis:**

Assay (HPLC).....≥99,5 %
Solution (1 % in methanol).....clear, almost colourless
Water (KF).....≤4 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol).....-68° ±3°

| | | | |
|---|---|---|---|
| **4149.1** | 25 mg | glass | 22,05 € |
| **4149.2** | 100 mg | glass | 44,00 € |

## 5-Bromo-4-chloro-3-indoxyl-β-D-cellobioside



### 5-Bromo-4-chloro-3-indoxyl-β-D-cellobioside

**≥99 %, for biochemistry**

Glycosidase substrate

X-β-D-Cellobioside

$C_{20}H_{25}BrClNO_{11}$

M 570,78 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

[177966-52-8] • EC No. 206-375-9

WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (HPLC).....≥99 %
Solution (1 % in methanol).....colourless
Water (KF).....≤5 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol).....-70° to -67°

| | | | |
|---|---|---|---|
| **4152.1** | 50 mg | glass | 28,95 € |

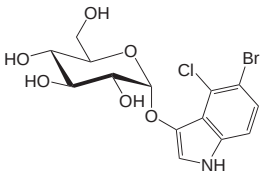
## 5-Bromo-4-chloro-3-indoxyl-β-D-galactoside

▶ X-β-Gal see p. 2379

## 5-Bromo-4-chloro-3-indoxyl-β-D-glucopyranoside

▶ X-Glu see p. 2379

## 5-Bromo-4-chloro-3-indoxyl-α-D-glucopyranoside



### 5-Bromo-4-chloro-3-indoxyl-α-D-glucopyranoside

**≥98 %, for biochemistry**

X-α-D-glucoside, X-α-Glu, X-α-D-Glu

$C_{14}H_{15}BrClNO_6$

M 408,64 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

[108789-36-2]

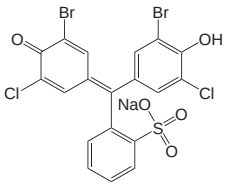
WGK 3

**Type analysis:**

Appearance.....white to off-white, cryst. powder
Assay (HPLC).....≥98,0 %
Appearance of solution (1 % in DMF).....colourless
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF, 20 °C).....+123,0° to +129,0°
Water (KF).....≤1,0 %

| | | | |
|---|---|---|---|
| **8434.1** | 100 mg | glass | 80,10 € |
| **8434.2** | 250 mg | glass | 166,65 € |
| **8434.3** | 500 mg | glass | 310,70 € |

## Bromochlorophenol blue sodium salt



### Bromochlorophenol blue sodium salt

**p.a.**

Indicator pH 3,2-4,8

5',5''-Dibromo-3',3''-dichlorophenolsulfonphthalein

$C_{19}H_9Br_2Cl_2NaO_5S$

M 603,06 g/mol

mp >250 °C

[102185-52-4]

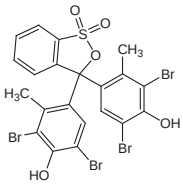
WGK 3

**Type analysis:**

Appearance.....black powder
pH-transition range.....3,2 (yellow)-4,8 (purple)

| | | | |
|---|---|---|---|
| **6558.1** | 1 g | glass | 42,90 € |
| **6558.2** | 5 g | glass | 102,15 € |

## Bromocresol green



### Bromocresol green

**ACS**

Indicator pH 3,8-5,4

3,3',5,5'-Tetrabrom-m-cresolsulfonphthalein, BCG

$C_{21}H_{14}Br_4O_5S$

M 698,04 g/mol

mp 217-218 °C

Solubility: insoluble ($H_2O$, 20 °C)

[76-60-8] • EC No. 200-972-8

WGK 1

**Guarantee analysis:**

Appearance.....slightly light brown powder
Appearance of solution.....complies
pH-transition range.....3,8 (yellow)-5,4 (blue)
Loss on drying (110 °C).....≤3 %

| | | | |
|---|---|---|---|
| **T115.1** | 1 g | glass | 16,70 € |
| **T115.2** | 5 g | glass | 26,80 € |
| **T115.3** | 10 g | glass | 45,70 € |
| **T115.4** | 25 g | glass | 87,00 € |

For further information, please see page 1644

## Bromocresol green indicator solution

### Bromocresol green indicator solution

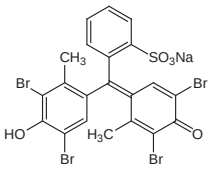
**0,1 % in ethanol denatured**

UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225-H319

| | | | |
|---|---|---|---|
| **9949.1** | 100 ml | plastic | 22,05 € |

## Bromocresol green sodium salt



### Bromocresol green sodium salt

**ACS**

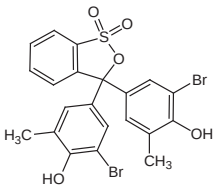
Indicator pH 3,8-5,4
$C_{21}H_{13}Br_4NaO_5S$
M 720,02 g/mol
mp 230 °C (dec.)
[62625-32-5] • EC No. 263-657-4
WGK 1

**Guarantee analysis:**

Solubility (0,1 % in $H_2O$). .....clearly soluble
pH-transition range. .....3,8 (yellow)-5,4 (blue)
Loss on drying. .....≤5,0 %

| | | | |
|---|---|---|---|
| **KK18.1** | 1 g | glass | 12,80 € |
| **KK18.2** | 5 g | glass | 33,25 € |
| **KK18.3** | 25 g | glass | 115,60 € |

## Bromocresol purple



### Bromocresol purple

**p.a., ACS**

Indicator pH 5,2-6,8
5',5''-Dibromo-cresolsulphonphthalein
$C_{21}H_{16}Br_2O_5S$
M 540,24 g/mol
D 3,86
mp 242 °C
Solubility: slightly soluble ($H_2O$, 20 °C)
[115-40-2] • EC No. 204-087-8
WGK 2

**Guarantee analysis:**

Dye content. .....≥89,0 %
Loss on drying (110 °C). .....≤1 %
Appearance of solution. .....complies
Melting point. .....241-245 °C
pH-transition range. ..... 5,2 (yellow)-6,8 (purple)

| | | | |
|---|---|---|---|
| **0317.1** | 5 g | glass | 20,65 € |
| **0317.2** | 25 g | glass | 65,05 € |

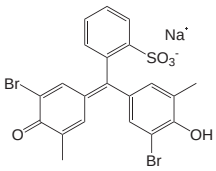
## Bromocresol purple indicator solution

### Bromocresol purple indicator solution

**0,1 % in water**

| | | | |
|---|---|---|---|
| **9955.1** | 100 ml | glass | 41,85 € |

## Bromocresol purple sodium salt



### Bromocresol purple sodium salt

**p.a., ACS**

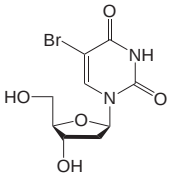
Indicator pH 5,2-6,8
5',5''-Dibromo-cresolsulphonphthalein sodium salt
$C_{21}H_{15}Br_2NaO_5S$
M 562,20 g/mol
mp 255 °C (dec.)
Solubility: soluble ($H_2O$)
[62625-30-3] • EC No. 263-655-3
WGK 1

**Guarantee analysis:**

Appearance of solution (ACS). ..... complies
Loss on drying. ..... ≤5 %
pH transition range. .....5,2 (yellow)-6,8 (purple)

| | | | |
|---|---|---|---|
| **2555.1** | 5 g | glass | 19,25 € |
| **2555.2** | 25 g | glass | 48,95 € |

## 5-Bromo-2'-deoxyuridine



### 5-Bromo-2'-deoxyuridine

**≥99 %, for biochemistry**

BrdU
$C_9H_{11}BrN_2O_5$
M 307,11 g/mol
mp 180-187 °C
Storage temp.: +4 °C
[59-14-3] • EC No. 200-415-9
WGK 3

**Warning** H341-H351

**Type analysis:**

Appearance..... white, cryst. powder
Assay (HPLC, area %). ..... ≥99,0 %
Heavy metals (as Pb). ..... ≤0,001 %
$[\alpha]_D^{20}$ (c=1 in 0,1 N NaOH). .....+30,0° to +32,0°
Loss on drying. ..... ≤0,5 %
Melting range. ..... 180-187 °C

| | | | |
|---|---|---|---|
| **3243.1** | 250 mg | glass | 33,25 € |

## Bromoethane

### Bromoethane

**≥99,5 %, for synthesis**

Ethyl bromide
$C_2H_5Br$
M 108,96 g/mol
D 1,46 • bp 37-39 °C
mp -118 °C • flp -20 °C
[74-96-4] • EC No. 200-825-8
UN No. 1891 • ADR 6.1 II • WGK 2

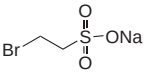
**Danger** H225-H302+H332-H351

**Type analysis:**

Appearance. .. clear, colourless to slightly yellow liquid
Assay (GC). .....≥99,5 %
Identity (GC).....complies
Evaporation residue. .....≤0,005 %
pH value (50 % in water). .....6,0-8,0
Water. .....≤0,05 %

| | | | |
|---|---|---|---|
| **4195.1** | 250 ml | glass | 24,20 € |
| **4195.2** | 500 ml | glass | 42,50 € |
| **4195.3** | 1 l | glass | 71,95 € |
| Original pack 6 x 1 l | | | 68,35/1 l |
| **4195.4** | 2,5 l | glass | 161,25 € |
| Original pack 4 x 2,5 l | | | 153,19/2,5 l |

## 2-Bromoethanesulfonic acid sodium salt



### 2-Bromoethanesulfonic acid sodium salt

**≥98 %**

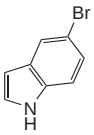
Sodium 2-bromoethanesulfonate
$C_2H_4BrNaO_3S$
M 211,02 g/mol
mp 283 °C
[4263-52-9] • EC No. 224-244-4

**Type analysis:**

Assay (titr.).....≥98,0 %
Solution (10 % in $H_2O$). .....colourless
Water (KF). .....≤5,0 %

| | | | |
|---|---|---|---|
| **5476.1** | 25 g | plastic | 29,60 € |
| **5476.2** | 100 g | plastic | 83,35 € |

## 5-Bromoindole



### 5-Bromoindole

**≥99,5 %**
$C_8H_6BrN$
M 196,05 g/mol
mp 90-94 °C
Solubility: 126 mg/l ($H_2O$, 25 °C)
Storage temp.: -20 °C
Transport temp.: room temp.
[10075-50-0] • EC No. 233-208-7
WGK 1

**Type analysis:**

Assay (titr.). ..... ≥99,5 %
Solution (1 % in acetone). ..... colourless, clear
Water (KF). ..... ≤0,5 %
Melting point. ..... 90-94 °C

| | | | |
|---|---|---|---|
| **5469.1** | 5 g | glass | 24,65 € |
| **5469.2** | 25 g | glass | 100,55 € |

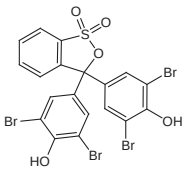
## α-Bromo-4-nitrotoluene

▶ 4-Nitrobenzyl bromide see p. 2101

## 5-Bromopentanoic acid

▶ 5-Bromovaleric acid see p. 1790

## Bromophenol blue



### Bromophenol blue

**ACS, for microscopy**
Indicator pH 3,0-4,6
3,3',5,5'-Tetrabromophenolsulphonphthalein, BPB
$C_{19}H_{10}Br_4O_5S$
M 669,99 g/mol
mp 273 °C (dec.)
Solubility: practically insoluble ($H_2O$, 20 °C)
[115-39-9] • EC No. 204-086-2
WGK 2

**Guarantee analysis:**

Appearance. ..... pink powder
Appearance of solution. ..... complies
pH-transition range. ..... 3,0 (yellow)-4,6 (blue)
Loss on drying (110 °C). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **T116.1** | 5 g | glass | 22,05 € |
| **T116.2** | 10 g | glass | 28,95 € |
| **T116.3** | 25 g | glass | 46,15 € |

For further information, please see page 1462

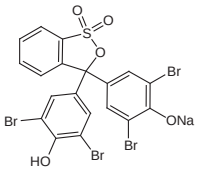
## Bromophenol blue indicator solution

### Bromophenol blue indicator solution

**0,1 % in ethanol denatured**
UN No. 1170 • ADR 3 II • WGK 1
**Danger** H225-H319

| | | | |
|---|---|---|---|
| **9952.1** | 100 ml | plastic | 22,50 € |

## Bromophenol blue sodium salt



### Bromophenol blue sodium salt

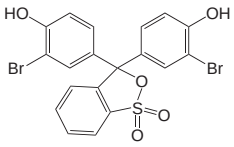
**for electrophoresis**
Staining agent for visualisation of running distance in gel electrophoresis.
Indicator pH 3,0-4,6
BPB, water soluble
$C_{19}H_9Br_4O_5SNa$
M 691,9 g/mol
mp >250 °C
[34725-61-6] • EC No. 252-170-2
WGK 1

**Type analysis:**

pH-transition range. ..... 3,0 (yellow)-4,6 (blue)

| | | | |
|---|---|---|---|
| **A512.2** | 5 g | glass | 22,05 € |
| **A512.1** | 10 g | glass | 41,85 € |
| **A512.3** | 25 g | glass | 69,80 € |

## Bromophenol red free acid



### Bromophenol red free acid

**p.a.**
Indicator pH 5,2-7,0
3',3''-Dibromophenolsulfonphthalein
$C_{19}H_{12}Br_2O_5S$
M 512,19 g/mol
mp >250 °C
Solubility: slightly soluble ($H_2O$, 20 °C)
[2800-80-8] • EC No. 220-538-1
WGK 1

**Type analysis:**

Appearance. ..... red brown powder
Loss on drying. ..... ≤5,0 %
pH-transition range. ..... 5,2 (yellow red)-7,0 (purple)

| | | | |
|---|---|---|---|
| **6573.1** | 1 g | glass | 20,35 € |
| **6573.2** | 5 g | glass | 39,70 € |
| **6573.3** | 50 g | glass | 188,15 € |

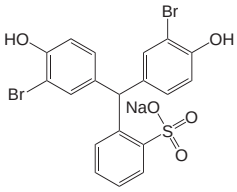
## Bromophenol red indicator solution

### Bromophenol red indicator solution

**0,1 % in ethanol denatured**
UN No. 1170 • ADR 3 II • WGK 1
**Danger** H225-H319

| | | | |
|---|---|---|---|
| **9956.1** | 100 ml | glass | 31,10 € |

## Bromophenol red sodium salt



### Bromophenol red sodium salt

**p.a.**
Indicator pH 5,2-6,8
$C_{19}H_{11}Br_2O_5SNa$
M 534,15 g/mol
[102185-50-2]
WGK 3

**Type analysis:**

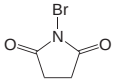
Appearance. ..... red brown to brown powder
pH-transition range. ..... 5,2 (yellow red)-7,0 (purple)

| | | | |
|---|---|---|---|
| **6579.1** | 1 g | glass | 19,60 € |
| **6579.2** | 5 g | glass | 37,55 € |
| **6579.3** | 50 g | glass | 170,95 € |

## Bromopropane

▶ Propyl bromide see p. 2182

## N-Bromosuccinimide



### N-Bromosuccinimide

**≥98 %, for synthesis**
NBS
$C_4H_4BrNO_2$
M 177,99 g/mol
mp 174-180 °C
Solubility: 14,8 g/l ($H_2O$, 20 °C)
[128-08-5] • EC No. 204-877-2
UN No. 3261 • ADR 8 II • WGK 3
**Danger** H302-H314-H410

**Type analysis:**

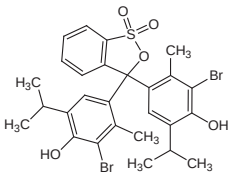
Assay (iodom.). ..... ≥98 %
Melting point. ..... 174-180 °C

| | | | |
|---|---|---|---|
| **3261.1** | 100 g | glass | 22,05 € |
| **3261.2** | 500 g | glass | 59,05 € |
| Original pack 6 x 500 g | | | 56,10/500 g |

## Bromosulfalein

▶ Sulfobromophthalein disodium salt
see p. 2321

## Bromothymol blue



### Bromothymol blue

**p.a., ACS**
Indicator pH 6,0-7,6
3',3''-Dibromothymolsulphonphthaleine, BTB
$C_{27}H_{28}Br_2O_5S$
M 624,40 g/mol
mp 201 °C
Solubility: insoluble ($H_2O$, 20 °C)
[76-59-5] • EC No. 200-971-2
WGK 1

**Guarantee analysis:**

Appearance. ..... light pink powder
Appearance of solution. ..... complies
pH-transition range. ..... 6,0 (yellow)-7,6 (blue)
Loss on drying (110 °C). ..... ≤3 %

| | | | |
|---|---|---|---|
| **T117.1** | 5 g | glass | 24,20 € |
| **T117.2** | 25 g | glass | 57,95 € |
| **T117.3** | 50 g | glass | 97,75 € |

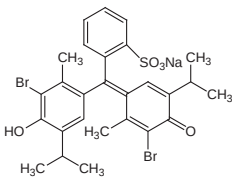
## Bromothymol blue indicator solution

### Bromothymol blue indicator solution

**0,04 % in water**

| | | | |
|---|---|---|---|
| **9947.1** | 100 ml | plastic | 36,45 € |

## Bromothymol blue sodium salt



### Bromothymol blue sodium salt

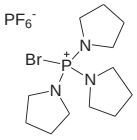
**p.a.**
Indicator pH 6,0-7,6
3',3''-Dibromo-thymolsulphonphthalein sodium salt
$C_{27}H_{27}Br_2NaO_5S$
M 646,38 g/mol
mp >250 °C
[34722-90-2] • EC No. 252-169-7
WGK 1

**Guarantee analysis:**

Specific Extinction E (1%/1cm). ..... ≥600
Absorption max. (in buffer). ..... 611,0-619,0 nm
Solubility (0,1 % in $H_2O$). ..... clearly soluble
pH-transition range. ..... 6,0 (yellow)-7,6 (blue)

| | | | |
|---|---|---|---|
| **KK19.1** | 5 g | glass | 20,35 € |
| **KK19.2** | 10 g | glass | 31,75 € |
| **KK19.3** | 25 g | glass | 57,95 € |

## Bromo-tris-pyrrolidino-phosphonium hexafluoro-phosphate (PyBrOP®)



### Bromo-tris-pyrrolidino-phosphonium hexafluoro-phosphate (PyBrOP®)

**≥98,5 %**
Coupling reagent for peptide synthesis.
PyBrOP®
$C_{12}H_{24}N_3P_2BrF_6$
M 466,2 g/mol
mp 152-156 °C
Storage temp.: +4 °C
[132705-51-2]
WGK 1

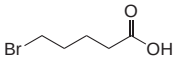
**Warning** H315-H319-H335

**Type analysis:**

Assay (HPLC) ..... ≥98,5 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2200.1** | 5 g | plastic | 39,70 € |
| **2200.2** | 25 g | plastic | 145,15 € |
| **2200.3** | 100 g | plastic | 521,40 € |
| **2200.5** | 1 kg | glass | 2750,95 € |
| Original pack 6 x 1 kg | | | 2613,40/1 kg |

## 5-Bromovaleric acid



### 5-Bromovaleric acid

**≥96 %**
5-Bromopentanoic acid
$C_5H_9BrO_2$
M 181,04 g/mol
bp 142-145 (17 hPa)
mp 39-41 °C • flp >112 °C
[2067-33-6] • EC No. 218-185-3
WGK 1

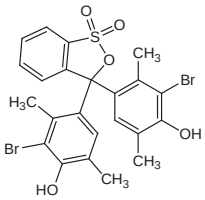
**Warning** H315-H319-H335

**Type analysis:**

Assay (titr.). ..... ≥96,0 %
Solution (1 % in ethanol) ..... colourless to slightly yellow, clear
Water (KF) ..... ≤2,0 %
Melting point. ..... 39-41 °C

| | | | |
|---|---|---|---|
| **5466.1** | 10 g | plastic | 22,05 € |
| **5466.2** | 50 g | plastic | 67,20 € |

## Bromoxylenol blue



### Bromoxylenol blue

**p.a.**
Indicator pH 6,0-7,6
$C_{23}H_{20}Br_2O_5S$
M 568,29 g/mol
mp 218 °C (dec.)
[40070-59-5] • EC No. 254-780-4
WGK 3

**Guarantee analysis:**

Specific Extinction E (1%/1cm). ..... ≥650
Absorption max. (0,001 N NaOH). ..... 611,0-619,0 nm
Solubility (0,1 % in ethanol). ..... clearly soluble
pH-transition range. ..... 6,0 (yellow)-7,6 (blue)

| | | | |
|---|---|---|---|
| **KK27.1** | 1 g | glass | 14,20 € |
| **KK27.2** | 5 g | glass | 38,60 € |
| **KK27.3** | 10 g | glass | 64,40 € |

## Brucella Agar

### Brucella Agar

**for microbiology**
For cultivation of *Brucella* and other fastidious microorganisms in foods and other specimens.
Application: Use 43,1 g for 1 l agar, add 50 ml defibr. sheep blood.
Storage temp.: +20 °C
WGK 1

**Formulation:**

Meat peptone. ..... 10 g/l
Casein peptone. ..... 10 g/l
Sodium chloride. ..... 5 g/l
Yeast extract. ..... 2 g/l
Glucose. ..... 1 g/l
Sodium bisulfite. ..... 0,1 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **5752.1** | 500 g | plastic | 95,60 € |
| Original pack 6 x 500 g | | | 90,82/500 g |

For further information, please see page 1379

## Brucella Broth

### Brucella Broth

**for microbiology**
For cultivation of *Brucella* and other fastidious microorganisms.
Application: Use 28,1 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

**Formulation:**

Meat peptone. ..... 10 g/l
Casein peptone. ..... 10 g/l
Sodium chloride. ..... 5 g/l
Yeast extract. ..... 2 g/l
Glucose. ..... 1 g/l
Sodium bisulfite. ..... 0,1 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **5754.1** | 500 g | plastic | 83,35 € |
| Original pack 6 x 500 g | | | 79,18/500 g |

For further information, please see page 1379

## Brucine N-oxide

### Brucine N-oxide
**ROTICHROM® CHR**
Aminoxybrucine
$C_{23}H_{26}N_2O_5$
M 410,49 g/mol
mp 133-145 °C
[17301-81-4] • EC No. 241-328-6
UN No. 1570 • ADR 6.1 I • WGK 3
**Danger** H300+H330-H412

| | | | |
|---|---|---|---|
| **4255.1** | 5 g | glass | 53,65 € |

## BSA
▶ N,O-Bis(trimethylsilyl) acetamide (BSA) see p. 1777

## BSA
▶ Albumin see p. 1714
▶ Albumin Fraction V see p. 1714

## BSC buffer powder (pouch)
▶ Roti®fair BSC see p. 2211

## BSTFA
▶ N,O-Bis(trimethylsilyl)-trifluoroacetamide see p. 1777

## BSTFA:TMCS (99:1)
▶ N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane see p. 1777

## BtaH
▶ 1,2,3-Benzotriazole see p. 1767

## BTB
▶ Bromothymol blue see p. 1790

## BTC
▶ Tetrazolium blue chloride see p. 2338

## Buffer Salts


| Art. No. | Description | Page |
|---|---|---|
| 9488 | tri-Ammonium citrate | 1731 |
| 6943 | Boric acid | 1783 |
| P010 | Boric acid | 1783 |
| 5935 | Boric acid | 1783 |
| X863 | Citric acid | 1835 |
| 6490 | Citric acid | 1835 |
| 3958 | Citric acid monohydrate | 1836 |
| 5110 | Citric acid monohydrate | 1836 |
| X888 | tri-Potassium citrate monohydrate | 2165 |
| 3904 | Potassium dihydrogen phosphate | 2166 |
| P018 | Potassium dihydrogen phosphate | 2166 |
| P748 | Potassium hydrogen carbonate | 2168 |
| X887 | Potassium hydrogen carbonate | 2168 |
| 9437 | Potassium hydrogen carbonate | 2168 |
| P749 | di-Potassium hydrogen phosphate | 2168 |
| T875 | di-Potassium hydrogen phosphate | 2169 |
| 6875 | di-Potassium hydrogen phosphate | 2169 |
| 6878 | di-Potassium hydrogen phosphate trihydrate | 2169 |
| P750 | Potassium hydrogen phthalate | 2169 |
| 6773 | Sodium acetate | 2265 |
| X891 | Sodium acetate | 2265 |
| 6779 | Sodium acetate trihydrate | 2266 |
| 3856 | Sodium acetate trihydrate | 2266 |
| T882 | Sodium ammonium hydrogen phosphate tetrahydrate | 2266 |
| A135 | Sodium carbonate | 2268 |
| 3580 | tri-Sodium citrate dihydrate | 2270 |
| 4088 | tri-Sodium citrate dihydrate | 2271 |
| K300 | Sodium dihydrogen phosphate monohydrate | 2271 |
| T878 | Sodium dihydrogen phosphate monohydrate | 2272 |
| T879 | Sodium dihydrogen phosphate dihydrate | 2272 |
| 2370 | Sodium dihydrogen phosphate dihydrate | 2272 |
| T883 | tetra-Sodium diphosphate decahydrate | 2272 |
| 0269 | tetra-Sodium diphosphate decahydrate | 2272 |
| 6885 | Sodium hydrogen carbonate | 2274 |
| 8551 | Sodium hydrogen carbonate | 2274 |
| 0965 | Sodium hydrogen carbonate | 2274 |
| 4984 | di-Sodium hydrogen phosphate dihydrate | 2275 |
| T877 | di-Sodium hydrogen phosphate dihydrate | 2275 |
| X987 | di-Sodium hydrogen phosphate heptahydrate | 2275 |
| T106 | di-Sodium hydrogen phosphate dodecahydrate | 2275 |
| N350 | di-Sodium hydrogen phosphate dodecahydrate | 2275 |
| 4267 | di-Sodium oxalate | 2282 |
| T880 | di-Sodium tetraborate decahydrate | 2285 |
| 8643 | di-Sodium tetraborate decahydrate | 2286 |


## Buffer solutions, ready to use

### Buffer solution pH 1,00 ±0,05 (20 °C)
**ROTI®CALIPURE buffer solution, ready to use**
Hydrochloric acid / Potassium chloride

**Type analysis:**
pH value (20 °C)..... 1,00 ±0,05

| | | | |
|---|---|---|---|
| **T180.2** | 500 ml | plastic | 17,10 € |
| **T180.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

### Buffer solution pH 1,679 ±0,03 (25 °C)
**ROTI®CALIPURE buffer solution, ready to use**
Potassium tetraoxalate

**Type analysis:**
pH value (25 °C)..... 1,679 ±0,03

| | | | |
|---|---|---|---|
| **8112.1** | 1 l | plastic | 41,85 € |
| Original pack 6 x 1 l | | | 39,76/1 l |

For further information, please see page 1656

### Buffer solution pH 2,00 ±0,02 (20 °C)
**ROTI®CALIPURE buffer solution, ready to use**
Citric acid / Hydrochloric acid / Sodium chloride

**Type analysis:**
pH value (20 °C).....2,00 ±0,02

| | | | |
|---|---|---|---|
| **P715.2** | 500 ml | plastic | 17,10 € |
| **P715.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

### Buffer solution pH 3,00 ±0,02 (20 °C)
**ROTI®CALIPURE buffer solution, ready to use**
Citric acid / Caustic soda lye / Sodium chloride

**Type analysis:**
pH value (20 °C).....3,00 ±0,02

| | | | |
|---|---|---|---|
| **T181.2** | 500 ml | plastic | 17,10 € |
| **T181.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

### Buffer solution pH 3,776 ±0,012 (25 °C)
**ROTI®CALIPURE buffer solution, ready to use**
Potassium dihydrogen citrate

**Type analysis:**
pH value (25 °C).....3,776 ±0,012

| | | | |
|---|---|---|---|
| **4280.1** | 500 ml | plastic | 17,75 € |
| **4280.2** | 1 l | plastic | 26,35 € |
| Original pack 6 x 1 l | | | 25,03/1 l |

For further information, please see page 1656

### Buffer solution pH 4,00 ±0,01 (20 °C)
**ROTI®STAR**
Potassium hydrogen phthalate

**Type analysis:**
pH value (20 °C).....4,00 ±0,01
Tested in an accredited laboratory acc. to ISO 17025.

| | | | |
|---|---|---|---|
| **9974.1** | 500 ml | plastic | 18,20 € |

For further information, please see page 1657

### Buffer solution pH 4,00 ±0,02 (20 °C)
**ROTI®CALIPURE buffer solution, ready to use**
Citric acid / Caustic soda lye / Sodium chloride
WGK 1

**Type analysis:**
pH value (20 °C).....4,00 ±0,02

| | | | |
|---|---|---|---|
| **P712.3** | 500 ml | plastic | 17,10 € |
| **P712.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **P712.2** | 10 l | plastic | 155,90 € |

For further information, please see page 1656

## Buffer solution pH 4,00 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use, tinted RED**

Citric acid / Caustic soda lye / Sodium chloride

WGK 1

**Type analysis:**

pH value (20 °C). ..... 4,00 ±0,02

| | | | |
|---|---|---|---|
| **A517.3** | 250 ml | twin neck bottle | 14,55 € |
| **A517.2** | 500 ml | plastic | 17,10 € |
| **A517.4** | 500 ml | twin neck bottle | 18,20 € |
| **A517.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **A517.5** | 10 l | plastic | 155,90 € |

For further information, please see page 1656

## Buffer solution pH 4,005 ±0,02 (25 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Potassium hydrogen phthalate

**Type analysis:**

pH value (25 °C). ..... 4,005 ±0,02

| | | | |
|---|---|---|---|
| **4281.1** | 500 ml | plastic | 17,75 € |
| **4281.2** | 1 l | plastic | 26,35 € |
| Original pack 6 x 1 l | | | 25,03/1 l |

For further information, please see page 1656

## Buffer solution pH 4,62 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Acetic acid / Caustic soda lye

**Type analysis:**

pH value (20 °C). ..... 4,62 ±0,02

| | | | |
|---|---|---|---|
| **T182.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

## Buffer solution pH 5,00 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Citric acid / Caustic soda lye

**Type analysis:**

pH value (20 °C). ..... 5,00 ±0,02

| | | | |
|---|---|---|---|
| **T183.2** | 500 ml | plastic | 17,10 € |
| **T183.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

## Buffer solution pH 6,00 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Citric acid / Caustic soda lye

**Type analysis:**

pH value (20 °C). ..... 6,00 ±0,02

| | | | |
|---|---|---|---|
| **T184.2** | 500 ml | plastic | 17,10 € |
| **T184.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

## Buffer solution pH 6,865 ±0,02 (25 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Potassium dihydrogen phosphate / di-Sodium hydrogen phosphate

**Type analysis:**

pH value (25 °C). ..... 6,865 ±0,02

| | | | |
|---|---|---|---|
| **4284.1** | 500 ml | plastic | 17,75 € |
| **4284.2** | 1 l | plastic | 26,35 € |
| Original pack 6 x 1 l | | | 25,03/1 l |

For further information, please see page 1656

## Buffer solution pH 6,88 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use**

0,025 M $KH_2PO_4$ and 0,025 M $Na_2HPO_4$

**Type analysis:**

pH value (20 °C). ..... 6,88 ±0,02

| | | | |
|---|---|---|---|
| **T185.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

## Buffer solution pH 7,00 ±0,01 (20 °C)

**ROTI®STAR**

Potassium dihydrogen phosphate / di-Sodium hydrogen phosphate

**Type analysis:**

pH value (20 °C). ..... 7,00 ±0,01

Tested in an accredited laboratory acc. to ISO 17025.

| | | | |
|---|---|---|---|
| **9977.1** | 500 ml | plastic | 18,20 € |

For further information, please see page 1657

## Buffer solution pH 7,00 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Potassium dihydrogen phosphate / Sodium hydroxide solution

**Type analysis:**

pH value (20 °C). ..... 7,00 ±0,02

| | | | |
|---|---|---|---|
| **A518.3** | 500 ml | plastic | 17,10 € |
| **A518.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **A518.2** | 10 l | plastic | 155,90 € |

For further information, please see page 1656

## Buffer solution pH 7,00 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use, tinted GREEN**

Potassium dihydrogen phosphate / Sodium hydroxide solution

**Type analysis:**

pH value (20 °C)..... 7,00 ±0,02

| | | | |
|---|---|---|---|
| **P713.3** | 250 ml | twin neck bottle | 14,55 € |
| **P713.2** | 500 ml | plastic | 17,10 € |
| **P713.4** | 500 ml | twin neck bottle | 18,20 € |
| **P713.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **P713.5** | 10 l | plastic | 155,90 € |

For further information, please see page 1656

## Buffer solution pH 7,413 ±0,02 (25 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Potassium dihydrogen phosphate / di-Sodium hydrogen phosphate

**Type analysis:**

pH value (25 °C)..... 7,413 ±0,02

| | | | |
|---|---|---|---|
| **4285.1** | 500 ml | plastic | 17,75 € |
| **4285.2** | 1 l | plastic | 26,35 € |
| Original pack 6 x 1 l | | | 25,03/1 l |

For further information, please see page 1656

## Buffer solution pH 8,00 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Potassium dihydrogen phosphate / Sodium hydroxide solution

**Type analysis:**

pH value (20 °C)..... 8,00 ±0,02

| | | | |
|---|---|---|---|
| **T186.2** | 500 ml | plastic | 17,10 € |
| **T186.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

## Buffer solution pH 9,00 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Boric acid / Potassium chloride / Caustic soda lye

**Type analysis:**

pH value (20 °C)..... 9,00 ±0,02

| | | | |
|---|---|---|---|
| **A519.3** | 500 ml | plastic | 17,10 € |
| **A519.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **A519.2** | 10 l | plastic | 155,90 € |

For further information, please see page 1656

B

## Buffer solution pH 9,00 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use, tinted BLUE**

Boric acid / Caustic soda lye / Potassium chloride

**Type analysis:**

pH value (20 °C). ..... 9,00 ±0,02

| | | | |
|---|---|---|---|
| **P714.3** | 250 ml | twin neck bottle | 14,55 € |
| **P714.2** | 500 ml | plastic | 17,10 € |
| **P714.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

## Buffer solution pH 9,180 ±0,02 (25 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Sodium tetraborate decahydrate

WGK 1

**Type analysis:**

pH value (25 °C). ..... 9,180 ±0,02

| | | | |
|---|---|---|---|
| **4294.1** | 500 ml | plastic | 17,75 € |
| **4294.2** | 1 l | plastic | 26,35 € |
| Original pack 6 x 1 l | | | 25,03/1 l |

For further information, please see page 1656

## Buffer solution pH 9,22 ±0,02 (20 °C)

NEW

**ROTI®CALIPURE buffer solution, ready to use**

Boric acid / Caustic soda lye

**Type analysis:**

pH value (20 °C). ..... 9,22 ±0,02

| | | | |
|---|---|---|---|
| **0466.1** | 500 ml | plastic | 21,40 € |

## Buffer solution pH 10,00 ±0,01 (20 °C)

**ROTI®STAR**

di-Sodium tetraborate / Sodium hydroxide

**Type analysis:**

pH value (20 °C). ..... 10,00 ±0,01
Tested in an accredited laboratory acc. to ISO 17025.

| | | | |
|---|---|---|---|
| **9983.1** | 500 ml | plastic | 18,20 € |

For further information, please see page 1657

## Buffer solution pH 10,00 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Boric acid / Caustic soda lye / Potassium chloride

**Type analysis:**

pH value (20 °C). ..... 10,00 ±0,02

| | | | |
|---|---|---|---|
| **P716.2** | 500 ml | plastic | 17,10 € |
| **P716.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

## Buffer solution pH 10,00 ±0,02 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use, tinted BLUE**

Boric acid / Caustic soda lye / Potassium chloride

**Type analysis:**

pH value (20 °C). ..... 10,00 ±0,02

| | | | |
|---|---|---|---|
| **8086.1** | 250 ml | twin neck bottle | 16,05 € |
| **8086.2** | 500 ml | plastic | 17,75 € |
| **8086.3** | 500 ml | twin neck bottle | 19,25 € |
| **8086.4** | 1 l | plastic | 25,30 € |
| Original pack 6 x 1 l | | | 24,04/1 l |
| **8086.5** | 10 l | plastic | 181,70 € |

## Buffer solution pH 10,00 for complexometry

**ROTI®CALIPURE buffer solution, ready to use**

Ammonium chloride / Ammonia 25 %

WGK 2

**Danger** H314-H335

| | | | |
|---|---|---|---|
| **T188.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

## Buffer solution pH 11,00 ±0,05 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Glycine / Caustic soda lye / Sodium chloride

**Type analysis:**

pH value (20 °C). ..... 11,00 ±0,05

| | | | |
|---|---|---|---|
| **T187.2** | 500 ml | plastic | 16,55 € |
| **T187.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

## Buffer solution pH 12,00 ±0,05 (20 °C)

**ROTI®CALIPURE buffer solution, ready to use**

Glycine / Caustic soda lye / Sodium chloride

**Type analysis:**

pH value (20 °C). ..... 12,00 ±0,05

| | | | |
|---|---|---|---|
| **T189.2** | 500 ml | plastic | 17,10 € |
| **T189.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1656

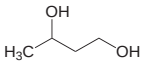
## 1,4-Butane diisocyanate

▶ 1,4-Diisocyanatobutane see p. 1878

## Butanedioic acid

▶ Succinic acid see p. 2319

## 1,3-Butanediol



### 1,3-Butanediol

**≥99 %, for synthesis**

1,3-Butylene glycol

$C_4H_{10}O_2$

M 90,12 g/mol

D 1,01 • bp 204 °C

mp -50 °C

[107-88-0] • EC No. 203-529-7

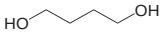
WGK 1

**Type analysis:**

Assay (GC). ..... ≥99,0 %
Water. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7473.1** | 250 ml | plastic | 24,65 € |
| **7473.2** | 500 ml | plastic | 41,40 € |
| **7473.3** | 1 l | plastic | 74,10 € |
| Original pack 6 x 1 l | | | 70,40/1 l |

## 1,4-Butanediol



1,4-Butylene glycol, Tetramethylene glycol

$C_4H_{10}O_2$

M 90,12 g/mol

D 1,02 • bp 230 °C

mp 20 °C • flp 135 °C

[110-63-4] • EC No. 203-786-5

WGK 1

**Warning** H302-H336

### 1,4-Butanediol

**≥99 %, for synthesis**

**Type analysis:**

Assay (GC). ..... ≥99,0 %
Density (d 20 °C/4 °C). ..... 1,015-1,016

| | | | |
|---|---|---|---|
| **4211.1** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **4211.2** | 2,5 l | glass | 79,05 € |
| Original pack 4 x 2,5 l | | | 75,10/2,5 l |
| **4211.3** | 10 l | plastic | 251,05 € |

### 1,4-Butanediol

**ROTICHROM® GC**

Reference substance for GC

Storage temp.: +4 °C

**Type analysis:**

Purity (GC). ..... ≥96 %

| | | | |
|---|---|---|---|
| **5077.1** | 1 g | plastic | 81,60 € |

## 2,3-Butanedionedioxime disodium salt

▶ Dimethylglyoxime disodium salt octahydrate see p. 1883

## 2,3-Butanedione monoxime

▶ Diacetyl monoxime see p. 1866

## Butane-1-sulphonic acid sodium salt




### Butane-1-sulphonic acid sodium salt

**≥99 %, for ion pair chromatography**

Ion pair reagent for HPLC.
Sodium-1-butane sulphonate
$C_4H_9NaO_3S$
M 160,17 g/mol
mp >310 °C
[2386-54-1] • EC No. 219-201-1
WGK 3

**Guarantee analysis:**

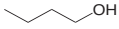
| | |
|---|---|
| Assay (acidim.) | ≥99,0 % |
| Solution (10 % in water) | clear, colourless |
| Water | ≤1 % |
| A 210 nm (0,5 M in water) | ≤0,1 AU |
| A 220 nm (0,5 M in water) | ≤0,06 AU |
| A 230 nm (0,5 M in water) | ≤0,04 AU |
| A 260 nm (0,5 M in water) | ≤0,02 AU |

| | | | |
|---|---|---|---|
| **KK50.1** | 10 g | glass | 49,35 € |
| **KK50.2** | 25 g | glass | 93,45 € |
| **KK50.3** | 100 g | glass | 284,90 € |

## Butanoic acide

▶ Butyric acid see p. 1799

## 1-Butanol




n-Butanol, Butyl alcohol
$C_4H_{10}O$
M 74,12 g/mol
D 0,81 • bp 116-118 °C
mp -89 °C • flp 35 °C
Solubility: 77 g/l ($H_2O$, 20 °C)
[71-36-3] • EC No. 200-751-6
UN No. 1120 • ADR 3 III • WGK 1

**Danger**
H318-H226-H302-H315-H335-H336

### 1-Butanol

**ROTISOLV® HPLC**

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,8 % |
| Water (KF) | ≤0,05 % |
| Acidity (as $CH_3COOH$) | ≤0,002 % |
| Non volatile matter | ≤0,0005 % |

Layer thickness d = 1 cm water in comparison
Transmission:

| | |
|---|---|
| 310 nm | ≥98 % |
| 240 nm | ≥75 % |
| 230 nm | ≥70 % |

Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **T178.1** | 2,5 l | glass | 97,75 € |
| Original pack 4 x 2,5 l | | | 92,86/2,5 l |

For further information, please see page 1590

### 1-Butanol

**ROTISOLV® ≥99,8 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,8 % |
| Water (KF) | ≤0,05 % |
| Acidity | ≤0,0005 meq/g |
| Evaporation residue | ≤0,0005 % |
| Transmission: | |
| 270 nm | ≥97 % |
| 250 nm | ≥95 % |
| 230 nm | ≥60 % |
| 220 nm | ≥30 % |

| | | | |
|---|---|---|---|
| **4431.1** | 2,5 l | glass | 90,20 € |
| Original pack 4 x 2,5 l | | | 85,69/2,5 l |

### 1-Butanol

**ROTIPURAN® ≥99,5 %, p.a.**

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,5 % |
| Colour (Hazen) | ≤10 |
| Water (KF) | ≤0,1 % |
| Butanal (GC) | ≤0,01 % |
| Dibutylether (GC) | ≤0,1 % |
| Isobutanol (GC) | ≤0,15 % |
| 2-Butanol (GC) | ≤0,05 % |
| Lead (Pb) | ≤0,00001 % |
| Cadmium (Cd) | ≤0,000005 % |
| Calcium (Ca) | ≤0,00005 % |
| Chromium (Cr) | ≤0,000002 % |
| Iron (Fe) | ≤0,00001 % |
| Cobalt (Co) | ≤0,000002 % |
| Copper (Cu) | ≤0,000002 % |
| Magnesium (Mg) | ≤0,00001 % |
| Manganese (Mn) | ≤0,000002 % |
| Nickel (Ni) | ≤0,000002 % |
| Zinc (Zn) | ≤0,00001 % |
| Evaporation residue | ≤0,002 % |
| Carbonylic compounds | ≤0,01 % |

| | | | |
|---|---|---|---|
| **7171.2** | 1 l | glass | 48,95 € |
| Original pack 6 x 1 l | | | 46,50/1 l |
| **7171.1** | 2,5 l | glass | 99,90 € |
| Original pack 4 x 2,5 l | | | 94,91/2,5 l |

### 1-Butanol

**≥99,5 %, for synthesis**

**Type analysis:**

| | |
|---|---|
| Appearance | colourless, clear liquid |
| Assay (GC) | ≥99,5 % |
| Water (KF) | ≤0,5 % |
| Density (20 °C) | 0,808-0,814 g/cm³ |
| Refractive index $n_D^{20}$ | 1,390-1,401 |

| | | | |
|---|---|---|---|
| **7724.4** | 250 ml | glass | 15,60 € |
| **7724.1** | 1 l | glass | 27,85 € |
| Original pack 6 x 1 l | | | 26,46/1 l |
| **7724.3** | 2,5 l | glass | 42,90 € |
| Original pack 4 x 2,5 l | | | 40,76/2,5 l |
| **7724.2** | 10 l | tinplate | 117,75 € |
| **7724.5** | 25 l | tinplate | 212,35 € |

### 1-Butanol

**ROTICHROM® GC**

Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**

| | |
|---|---|
| Purity (GC) | ≥99 % |

| | | | |
|---|---|---|---|
| **9098.1** | 1 g | plastic | 81,20 € |

## 2-Butanol




### 2-Butanol

**≥98,5 %, for synthesis**

sec-Butyl alcohol, sec-Butanol
$C_4H_{10}O$
M 74,12 g/mol
D 0,81 • bp 99-102 °C
mp -115 °C • flp 24 °C
Solubility: 125 g/l ($H_2O$, 20 °C)
[78-92-2] • EC No. 201-158-5
UN No. 1120 • ADR 3 III • WGK 1

**Warning** H226-H319-H335-H336

**Type analysis:**

| | |
|---|---|
| Assay (GC) | ≥98,5 % |
| Density (d 20 °C/4 °C) | 0,804-0,809 |
| Water | ≤0,2 % |

| | | | |
|---|---|---|---|
| **KK02.1** | 500 ml | glass | 26,35 € |
| **KK02.2** | 1 l | glass | 44,65 € |
| Original pack 6 x 1 l | | | 42,42/1 l |

## iso-Butanol

▶ 2-Methyl-1-propanol see p. 2077

## n-Butanol

▶ 1-Butanol see p. 1794

## sec-Butanol

▶ 2-Butanol see p. 1794

## tert-Butanol




2-Methyl-2-propanol, tert-Butyl alcohol, Trimethyl carbinol
$C_4H_{10}O$
M 74,12 g/mol
D 0,77 • bp 81-83 °C
mp ~25 °C • flp 14 °C
[75-65-0] • EC No. 200-889-7
UN No. 1120 • ADR 3 II • WGK 1

**Danger** H225-H332-H319-H335

### tert-Butanol

**ROTIPURAN® ≥99,5 %, p.a., ACS**

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,5 % |
| Melting point | 24-26 °C |
| Colour (APHA) | ≤20 |
| Water | ≤0,1 % |
| Acidity | ≤0,001 meq/g |
| Alkalinity | ≤0,0005 meq/g |
| Carbonyl compound (as $CH_2O$) | ≤0,01 % |
| Non volatile matter | ≤0,003 % |
| Calcium (Ca) | ≤0,00005 % |
| Cadmium (Cd) | ≤0,000005 % |
| Cobalt (Co) | ≤0,000002 % |
| Chromium (Cr) | ≤0,000002 % |
| Copper (Cu) | ≤0,000002 % |
| Iron (Fe) | ≤0,00001 % |
| Magnesium (Mg) | ≤0,00001 % |
| Manganese (Mn) | ≤0,000002 % |
| Nickel (Ni) | ≤0,000002 % |
| Lead (Pb) | ≤0,00001 % |
| Zinc (Zn) | ≤0,00001 % |

| | | | |
|---|---|---|---|
| **AE16.1** | 500 ml | glass | 20,35 € |
| **AE16.2** | 1 l | glass | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **AE16.3** | 2,5 l | glass | 68,30 € |
| Original pack 4 x 2,5 l | | | 64,89/2,5 l |

## tert-Butanol

**≥99 %, for synthesis**

**Type analysis:**

Assay (GC)..... ≥99 %
Water (KF)..... ≤0,1 %
Melting point..... ~25 °C

| | | | |
|---|---|---|---|
| **4323.1** | 1 l | glass | 24,65 € |
| Original pack 6 x 1 l | | | 23,42/1 l |
| **4323.3** | 2,5 l | glass | 44,00 € |
| Original pack 4 x 2,5 l | | | 41,80/2,5 l |
| **4323.2** | 10 l | tinplate | 153,20 € |

## 2-Butanone

MEK, Methyl ethyl ketone, Ethyl methyl ketone
$C_4H_8O$
M 72,11 g/mol
D 0,8 • bp 79-80,5 °C
mp -86,3 °C • flp -4 °C
Solubility: 290 g/l ($H_2O$, 20 °C)
[78-93-3] • EC No. 201-159-0
UN No. 1193 • ADR 3 II • WGK 1

**Danger** H225-H319-H336-EUH066

## 2-Butanone

NEW

**≥99,5 %, VLSI Grade**

**Guarantee analysis:**

Assay..... ≥99,5 %
Bead number (≥0,5 µm)..... ≤250 p/ml
Water..... ≤0,1 %
Alcohol (as 2-butanol)..... ≤0,1 %
Acidity (as $CH_3COOH$)..... ≤0,005 %
Colour (APHA)..... ≤10
Evaporation residue..... ≤0,0005 %
Chloride (Cl)..... ≤0,0001 %
Sulphate ($SO_4$)..... ≤0,00005 %
Aluminium (Al)..... ≤50 ppb
Antimony (Sb)..... ≤10 ppb
Arsenic (As)..... ≤10 ppb
Barium (Ba)..... ≤20 ppb
Bismuth (Bi)..... ≤10 ppb
Lead (Pb)..... ≤10 ppb
Boron (B)..... ≤20 ppb
Cadmium (Cd)..... ≤10 ppb
Calcium (Ca)..... ≤50 ppb
Chromium (Cr)..... ≤10 ppb
Iron (Fe)..... ≤50 ppb
Gallium (Ga)..... ≤10 ppb
Potassium (K)..... ≤20 ppb
Cobalt (Co)..... ≤10 ppb
Copper (Cu)..... ≤10 ppb
Lithium (Li)..... ≤10 ppb
Magnesium (Mg)..... ≤20 ppb
Manganese (Mn)..... ≤10 ppb
Molybdenum (Mo)..... ≤10 ppb
Sodium (Na)..... ≤50 ppb
Nickel (Ni)..... ≤10 ppb
Silver (Ag)..... ≤10 ppb
Strontium (Sr)..... ≤10 ppb
Titanium (Ti)..... ≤10 ppb
Vanadium (V)..... ≤10 ppb
Zinc (Zn)..... ≤20 ppb
Tin (Sn)..... ≤10 ppb
Zirconium (Zr)..... ≤10 ppb

| | | | |
|---|---|---|---|
| **0051.1** | 2,5 l | plastic | 95,70 € |
| Original pack 4 x 2,5 l | | | 90,92/2,5 l |

For further information, please see page 1654

## 2-Butanone

**ROTIPURAN® ≥99,5 %, p.a., ACS**

**Guarantee analysis:**

Assay (GC)..... ≥99,5 %
Density (d 20 °C/20 °C)..... 0,805-0,807
Colour (APHA)..... ≤15
Water..... ≤0,1 %
Acidity..... ≤0,0005 meq/g
Acetone (GC)..... ≤0,05 %
2-Butanol (GC)..... ≤0,02 %
2-Propanol (GC)..... ≤0,05 %
2-Methylpropan-2-ol (GC)..... ≤0,1 %
Evaporation residue..... ≤0,001 %
Aluminium (Al)..... ≤0,00005 %
Barium (Ba)..... ≤0,00001 %
Cadmium (Cd)..... ≤0,000005 %
Calcium (Ca)..... ≤0,00005 %
Cobalt (Co)..... ≤0,000002 %
Chromium (Cr)..... ≤0,000002 %
Copper (Cu)..... ≤0,000002 %
Iron (Fe)..... ≤0,00001 %
Magnesium (Mg)..... ≤0,00001 %
Nickel (Ni)..... ≤0,000002 %
Manganese (Mn)..... ≤0,000002 %
Lead (Pb)..... ≤0,00001 %
Zinc (Zn)..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **T920.1** | 1 l | glass | 39,25 € |
| Original pack 6 x 1 l | | | 37,29/1 l |
| **T920.2** | 2,5 l | glass | 84,40 € |
| Original pack 4 x 2,5 l | | | 80,18/2,5 l |

## 2-Butanone

**≥99,5 %, for synthesis**

**Type analysis:**

Appearance....clear, colourless to light yellowish liquid
Assay (GC)..... ≥99,5 %
Water..... ≤0,1 %
Acid value (mg KOH/g)..... ≤0,03
Refractive index $n_D^{20}$..... 1,378-1,380

| | | | |
|---|---|---|---|
| **8403.1** | 1 l | glass | 23,55 € |
| Original pack 6 x 1 l | | | 22,37/1 l |
| **8403.3** | 2,5 l | glass | 40,35 € |
| Original pack 4 x 2,5 l | | | 38,33/2,5 l |
| **8403.5** | 5 l | aluminium | 61,85 € |
| Original pack 2 x 5 l | | | 58,76/5 l |
| **8403.2** | 10 l | tinplate | 107,40 € |
| **8403.4** | 25 l | tinplate | 228,45 € |

## 2-Butanone

**ROTICHROM® GC**

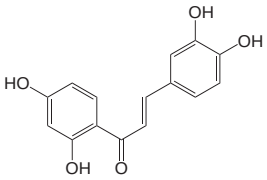
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**

Purity (GC)..... ≥99 %

| | | | |
|---|---|---|---|
| **4899.1** | 1 g | glass | 27,45 € |

## Butein




## Butein

**ROTICHROM® HPLC**

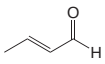
Reference substance for HPLC.
$C_{15}H_{12}O_5$
M 272,25 g/mol
Storage temp.: +4 °C
[21849-70-7] • EC No. 207-659-5

**Type analysis:**

Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7010.1** | 10 mg | glass | 321,45 € |

## 2-Butenal




## 2-Butenal

**≥98 %, for synthesis**

Crotonaldehyde
$C_4H_6O$
M 70,09 g/mol
D ~0,85 • bp 102 °C
mp ~-76 °C • flp 13 °C
Solubility: 181 g/l ($H_2O$, 20 °C)
[4170-30-3] • EC No. 224-030-0
UN No. 1143 • ADR 6.1 (3) I • WGK 3

**Danger**

H225-H301+H311-H315-H318-H330-H335-H341-H373-H410

**Type analysis:**

Assay (GC)..... ≥99,0 %
Density (d 20 °C/4 °C)..... 0,851-0,853

| | | | |
|---|---|---|---|
| **3425.1** | 250 ml | glass | 44,00 € |

## cis-Butenedioic acid

▶ Maleic acid see p. 2052

## 2-Butenedioic acid

▶ Fumaric acid see p. 1944

## cis-Butenedioic anhydride

▶ Maleic anhydride see p. 2052

## 3-Butenylglucosinolate potassium salt

▶ Gluconapin see p. 1954

## N-(tert-Butoxycarbonyl)-L-alanine

▶ Boc-L-Alanine see p. 1778

## N-(tert-Butoxycarbonyl)-L-arginine
▶ Boc-L-Arginine hydrochloride monohydrate see p. 1778

## N-(tert-Butoxycarbonyl)-L-asparagine
▶ Boc-L-Asparagine see p. 1779

## N-(tert-Butoxycarbonyl)-L-glutamic acid
▶ Boc-L-Glutamic acid see p. 1779

## N-(tert-Butoxycarbonyl)-L-glutamine
▶ Boc-L-Glutamine see p. 1779

## N-(tert-Butoxycarbonyl)-glycine
▶ Boc-Glycine see p. 1779

## N-(tert-Butoxycarbonyl)-L-histidine
▶ Boc-L-Histidine see p. 1780

## N-(tert-Butoxycarbonyl)-L-hydroxyproline
▶ Boc-L-Hydroxyproline see p. 1780

## N-(tert-Butoxycarbonyl)-L-isoleucine
▶ Boc-L-Isoleucine hemihydrate see p. 1780

## N-(tert-Butoxycarbonyl)-L-leucine
▶ Boc-L-Leucine monohydrate see p. 1780

## N-(tert-Butoxycarbonyl)-L-tert-leucine
▶ Boc-L-tert-Leucine see p. 1780

## N-(tert-Butoxycarbonyl)-L-lysine
▶ Boc-L-Lysine see p. 1781

## N-(tert-Butoxycarbonyl)-L-methionine
▶ Boc-L-Methionine see p. 1781

## N-(tert-Butoxycarbonyl)-L-phenylalanine
▶ Boc-L-Phenylalanine see p. 1781

## N-(tert-Butoxycarbonyl)-L-proline
▶ Boc-L-Proline see p. 1781

## N-(tert-Butoxycarbonyl)-L-serine
▶ Boc-L-Serine see p. 1781

## N-(tert-Butoxycarbonyl)-L-threonine
▶ Boc-L-Threonine see p. 1781

## N-(tert-Butoxycarbonyl)-L-tryptophan
▶ Boc-L-Tryptophan see p. 1782

## N-(tert-Butoxycarbonyl)-L-tyrosine
▶ Boc-L-Tyrosine see p. 1782

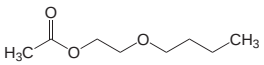
## N-(tert-Butoxycarbonyl)-L-valine
▶ Boc-L-Valine see p. 1782

## 2-Butoxyethanol
▶ Ethylene glycol monobutyl ether see p. 1919

## 2-(2-Butoxyethoxy)ethanol
▶ Butyldiglycol see p. 1797

## 2-(2-Butoxyethoxy)ethyl acetate
▶ Diethylene glycol monobutyl ether acetate see p. 1872

## 2-Butoxyethyl acetate



### 2-Butoxyethyl acetate
**≥98 %, pure**

Ethylene glycol monobutyl ether acetate, 1-Acetoxy-2-butoxyethane, EGBEA
$C_8H_{16}O_3$
M 160,21 g/mol
D 0,94 • bp 184-195 °C
mp -64 °C • flp 78 °C
Solubility: 15 g/l ($H_2O$, 20 °C)
[112-07-2] • EC No. 203-933-3
WGK 1

**Warning** H302+H312+H332

**Type analysis:**
Assay (GC)..... ≥98,0 %
Colour (Hazen)..... ≤15

| | | | |
|---|---|---|---|
| **8009.1** | 1 l | plastic | 21,00 € |
| Original pack 6 x 1 l | | | 19,95/1 l |
| **8009.2** | 2,5 l | plastic | 38,60 € |
| Original pack 4 x 2,5 l | | | 36,67/2,5 l |

## Butter of antimony
▶ Antimony(III) chloride see p. 1747

## n-Butyl acetate
▶ Acetic acid n-butyl ester see p. 1694

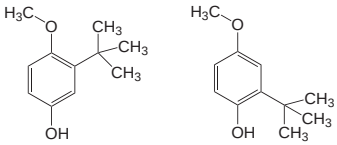
## n-Butyl alcohol
▶ 1-Butanol see p. 1794

## tert-Butyl alcohol
▶ tert-Butanol see p. 1794

## Butyl alcohol
▶ 1-Butanol see p. 1794

## sec-Butyl alcohol
▶ 2-Butanol see p. 1794

## Butylated hydroxyanisole



2(3)-tert-Butyl-4-hydroxyanisole, BHA
$C_{11}H_{16}O_2$
M 180,25 g/mol
bp 268 °C
mp 58-60 °C • flp 113 °C
[25013-16-5] • EC No. 246-563-8
WGK 2

**Warning**
H302-H315-H319-H351-H335

### Butylated hydroxyanisole
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC). .....≥95,0 %
Residual solvents (GC). .....≤2,0 %
Water (KF). .....≤3,0 %
Assay (qNMR). .....≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

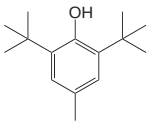
| | | | |
|---|---|---|---|
| **NE04.1** | 100 mg | glass | 729,95 € |

### Butylated hydroxyanisole
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (GC). .....≥95,0 %
Identity. .....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC04.1** | 100 mg | glass | 116,00 € |

## Butylated hydroxytoluene



2,6-Di-tert-butyl-p-cresol, 2,6-Di-tert.-butyl-4-methylphenol, BHT
$C_{15}H_{24}O$
M 220,34 g/mol
bp 265 °C
mp 69-71 °C
[128-37-0] • EC No. 204-881-4
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H410

### Butylated hydroxytoluene
**≥99,8 %, for synthesis**

**Type analysis:**
Appearance. ..... white crystals
Assay (GC). ..... ≥99,8 %
Ash. ..... ≤0,002 %
Solidification point. ..... 69-71 °C
Colour (Hazen) 30 % in acetone. ..... ≤30

| | | | |
|---|---|---|---|
| **3559.1** | 250 g | plastic | 25,70 € |
| **3559.2** | 1 kg | plastic | 57,95 € |
| Original pack 6 x 1 kg | | | 55,05/1 kg |
| **3559.3** | 5 kg | plastic | 235,45 € |

### Butylated hydroxytoluene
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF). ..... ≤3,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE05.1** | 100 mg | glass | 729,95 € |

### Butylated hydroxytoluene
**ROTICHROM® Working Standard**

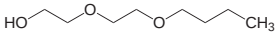
**Type analysis:**
Assay (GC). ..... ≥95,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC05.1** | 100 mg | glass | 116,00 € |

## sec-Butyl carbinol
▶ 2-Methyl-1-butanol see p. 2073

## n-Butyl carbinol
▶ 1-Pentanol see p. 2136

## Butyldiglycol



### Butyldiglycol
**≥97 %, pure**
Diethylene glycol butyl ether, BDG, 2-(2-Butoxyethoxy)ethanol
$C_8H_{18}O_3$
M 162,23 g/mol
D 0,95 • bp 224-234 °C
mp -68 °C • flp 109 °C
[112-34-5] • EC No. 203-961-6
WGK 1

**Warning** H319

**Type analysis:**
Assay (GC). ..... ≥97,0 %
Colour (Hazen). ..... ≤15

| | | | |
|---|---|---|---|
| **8046.1** | 1 l | glass | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **8046.2** | 2,5 l | glass | 39,70 € |
| Original pack 4 x 2,5 l | | | 37,72/2,5 l |
| **8046.3** | 10 l | tinplate | 122,45 € |

## Butyldiglycol acetate
▶ Diethylene glycol monobutyl ether acetate see p. 1872

## 1,4-Butylene glycol
▶ 1,4-Butanediol see p. 1793

## 1,3-Butylene glycol
▶ 1,3-Butanediol see p. 1793

## Butylglycol
▶ Ethylene glycol monobutyl ether see p. 1919

## tert-Butyl methyl ether



MTBE, Methyl tert-butyl ether, 2-Methyl-2-methoxypropane, TBME
$C_5H_{12}O$
M 88,14 g/mol
D ~0,74 • bp 55 °C
mp -108 °C • flp -30 °C
Solubility: 51 g/l ($H_2O$, 25 °C)
[1634-04-4] • EC No. 216-653-1
UN No. 2398 • ADR 3 II • WGK 1

**Danger** H225-H315

### tert-Butyl methyl ether
**ROTISOLV® HPLC**

**Guarantee analysis:**
Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,01 %
Free acid. ..... ≤0,002 %
Non volatile matter. ..... ≤0,0002 %
Transmission:
280 nm. ..... ≥98 %
255 nm. ..... ≥85 %
240 nm. ..... ≥60 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **T175.2** | 1 l | glass | 44,00 € |
| Original pack 6 x 1 l | | | 41,80/1 l |
| **T175.1** | 2,5 l | glass | 98,80 € |
| Original pack 4 x 2,5 l | | | 93,86/2,5 l |

For further information, please see page 1590

### tert-Butyl methyl ether
**≥99,5 %, p.a.**

**Type analysis:**
Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,1 %
Free acid (as $CH_3COOH$). ..... ≤0,001 %
Non volatile matter. ..... ≤0,002 %
Isobutyl methyl ketone. ..... ≤0,005 %
Carbonylic compounds (as CO). ..... ≤0,001 %
Aluminium (Al). ..... ≤0,00005 %
Lead (Pb). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Cadmium (Cd). ..... ≤0,000005 %
Chromium (Cr). ..... ≤0,00005 %
Iron (Fe). ..... ≤0,00005 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000005 %
Nickel (Ni). ..... ≤0,000005 %
Zinc (Zn). ..... ≤0,000005 %

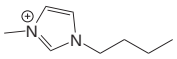
| | | | |
|---|---|---|---|
| **8462.1** | 1 l | glass | 38,20 € |
| Original pack 6 x 1 l | | | 36,29/1 l |
| **8462.2** | 2,5 l | glass | 76,90 € |
| Original pack 4 x 2,5 l | | | 73,06/2,5 l |
| **8462.3** | 10 l | tinplate | 252,65 € |
| **8462.4** | 25 l | tinplate | 568,70 € |

### tert-Butyl methyl ether
**≥99,5 %, for synthesis**

**Type analysis:**
Appearance. ..... clear, colourless to slightly yellow
Assay (GC). ..... ≥99,5 %
Water. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **6746.1** | 1 l | glass | 19,90 € |
| Original pack 6 x 1 l | | | 18,91/1 l |
| **6746.4** | 2,5 l | glass | 36,45 € |
| Original pack 4 x 2,5 l | | | 34,63/2,5 l |
| **6746.5** | 5 l | aluminium | 59,05 € |
| Original pack 2 x 5 l | | | 56,10/5 l |
| **6746.2** | 10 l | tinplate | 110,65 € |
| **6746.3** | 25 l | tinplate | 209,65 € |

## 1-Butyl-3-methyl-imidazolium-chloride (BMIM Cl)



### 1-Butyl-3-methyl-imidazolium-chloride (BMIM Cl)

**≥99 %**
Ionic liquid
BMIM Cl
$C_8H_{15}ClN_2$
M 174,67 g/mol
mp 65 °C
[79917-90-1]
UN No. 2811 • ADR 6.1 III • WGK 3

**Danger** H301-H315-H319-H335-H411

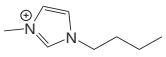
**Type analysis:**
Appearance. ..... yellow to orange, solid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2010.1** | 25 g | glass | 127,95 € |
| **2010.2** | 100 g | glass | 252,65 € |

Lit.: **"Dissolution and Regeneration of Bombyx mori Silk Fibroin Using Ionic Liquids"** D. M. Phillips, L. F. Drummy, D. G. Conrady, D. M. Fox, R. R. Naik, M. O. Stone, P. C. Trulove, H. C. De Long, R. A. Mantz, *J. Am. Chem. Soc.* **2004**, 126, 14350-14351.

For further information, please see page 1531

## 1-Butyl-3-methyl-imidazolium-hexafluorophosphate (BMIM $PF_6$)



### 1-Butyl-3-methyl-imidazolium-hexafluorophosphate (BMIM $PF_6$)

**≥99 %**
Ionic liquid
BMIM $PF_6$
$C_8H_{15}F_6N_2P$
M 284,18 g/mol
D 1,37
mp -8 °C
[174501-64-5]
WGK 3

**Warning** H315-H319-H335

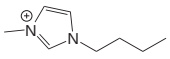
**Type analysis:**
Appearance. ..... yellowish liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,025 %
Halogens. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **2012.1** | 25 g | glass | 94,50 € |
| **2012.2** | 100 g | glass | 252,65 € |

Lit.: **"Vanadium-catalyzed selective aerobic alcohol oxidation in ionic liquid [bmim]$PF_6$"** N. Jiang, A. J. Ragauskas, *Tetrahedron Lett.* **2007,** 48, 273–276. **"Ionic Liquid (Molten Salt) Phase Organometallic Catalysis"** J. Dupont, R. F. de Souza, P. A. Z. Suarez, *Chem. Rev.* **2002,** 102, 3667-3692.

For further information, please see page 1531

## 1-Butyl-3-methyl-imidazolium-tetrafluoroborate (BMIM $BF_4$)



### 1-Butyl-3-methyl-imidazolium-tetrafluoroborate (BMIM $BF_4$)

**>99 %**
Ionic liquid
BMIM $BF_4$
$C_8H_{15}BF_4N_2$
M 226,01 g/mol
D 1,21
mp -75 °C
[174501-65-6]

**Warning** H315-H319-H335

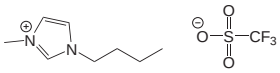
**Type analysis:**
Appearance. ..... yellow to orange liquid
Assay. ..... >99 %
Water (KF). ..... <0,025 %
Halogens. ..... <0,01 %

| | | | |
|---|---|---|---|
| **2014.1** | 25 g | glass | 81,60 € |
| **2014.2** | 100 g | glass | 203,20 € |

Lit.:**"Ionic Liquid (Molten Salt) Phase Organometallic Catalysis"** J. Dupont, R. F. de Souza, P. A. Z. Suarez, *Chem. Rev.* **2002,** 102, 3667-3692. **"Non-Aqueous Biocatalysis in Heterogeneous Solvent Systems"** N. Krieger, T. Bhatnagar, J. C. Baratt, A. M. Baron, V. M. de Lima, D. Mitchell, *Food Technol. Biotechnol.* **2004**, 42, 279–286.

For further information, please see page 1531

## 1-Butyl-3-methyl-imidazolium-trifluoromethanesulphonate (BMIM OTf)



### 1-Butyl-3-methyl-imidazolium-trifluoromethanesulphonate (BMIM OTf)

**≥99 %**
Ionic liquid
BMIM OTf
$C_9H_{15}F_3N_2O_3S$
M 288,28 g/mol
D 1,3
mp 16 °C
[174899-66-2]

**Warning** H315-H319-H335

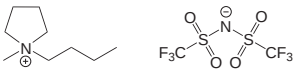
**Type analysis:**
Appearance. ..... clear, colourless to orange liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,1 %
Halogens. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **2015.1** | 25 g | glass | 203,20 € |
| **2015.2** | 100 g | glass | 471,95 € |

Lit.:**"tert-Amyl ethyl ether separation from its mixtures with ethanol using the 1-butyl-3-methyl-imidazolium trifluoromethanesulfonate ionic liquid: liquid-liquid equilibrium"** A. Arce, O. Rodriguez, A. Soto, *Ind. Eng. Chem. Res.* **2004,** 43, 8323-8327.

For further information, please see page 1531

## 1-Butyl-1-methyl-pyrrolidinium-bis-(trifluoromethylsulphonyl)-imide (BMPyrr BTA)



### 1-Butyl-1-methyl-pyrrolidinium-bis-(trifluoromethylsulphonyl)-imide (BMPyrr BTA)

**≥99 %**
Ionic liquid
BMPyrr $NTf_2$, BMPyrr BTA
$C_{11}H_{20}N_2F_6S_2O_4$
M 422,40 g/mol
D 1,40
mp -18 °C
[223437-11-4]

**Warning** H315-H319-H335

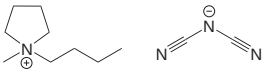
**Type analysis:**
Appearance. ..... colourless to yellow liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,01 %
Halogens. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **2021.1** | 25 g | glass | 170,95 € |
| **2021.2** | 100 g | glass | 349,40 € |

Lit.: **"In Situ STM Investigation of Gold Reconstruction and of Silicon Electro-deposition on Au(111) in the Room Temperature Ionic Liquid 1-Butyl-1-methyl-pyrrolidinium Bis(trifluoromethylsulfonyl)imide"** N. Borisenko, S. Zein El Abedin, F. Endres, *J. Phys. Chem. B* **2006,** 110, 6250-6256. **Electrodeposition of Metals and Semiconductors in Air-and Water-Stable Ionic Liquids"** S. Z. El Abedin, F. Endres, *Chem. Phys. Chem.* **2006,** 7, 58–61.

For further information, please see page 1531

## 1-Butyl-1-methyl-pyrrolidinium-dicyanamide (BMPyrr DCA)



### 1-Butyl-1-methyl-pyrrolidinium-dicyanamide (BMPyrr DCA)

**≥98 %**
Ionic liquid
BMPyrr $N(CN)_2$, BMPyrr DCA
$C_{11}H_{20}N_4$
M 208,31 g/mol
D 1,023 • bp >171 °C (dec.)
mp -55 °C
[370865-80-8]

**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... yellow to brown liquid
Assay. ..... ≥98 %
Water (KF). ..... ≤0,2 %
Halogens. ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **2022.1** | 25 g | glass | 327,90 € |
| **2022.2** | 100 g | glass | 697,70 € |

Lit:. **"Protein solubilising and stabilising ionic liquids"** K. Fujita, D. R. MacFarlane, M. Forsyth, *Chem. Commun*. **2005,** 4804–4806.

For further information, please see page 1531

## $N_{\alpha}$-tert.-Butyloxycarbonyl-$N_{im}$-2,4-dinitrophenyl-L-histidine

▶ Boc-L-Histidine-(Dnp) see p. 1780

## $N_{\alpha}$-tert.-Butyloxycarbonyl-S-(4-methylbenzyl)-L-cysteine

▶ Boc-L-Cysteine-(4-Mbzl) see p. 1779

## 5-Butylpicolinic acid

▶ Fusaric acid see p. 1944

## 5-Butylpyridine-2-carboxylic acid

▶ Fusaric acid see p. 1944

## Butyl stearate

▶ Stearic acid butyl ester see p. 2315

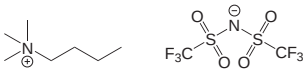
## (S)-(-)-tert-Butyl sulfinamide

▶ (S)-(-)-2-Methyl-2-propanesulfinamide see p. 2077

## (R)-(+)-tert-Butyl sulfinamide

▶ (R)-(+)-2-Methyl-2-propanesulfinamide see p. 2076

## Butyl-trimethyl-ammonium-bis-(trifluoromethylsulphonyl)-imide (N1114 BTA)



### Butyl-trimethyl-ammonium-bis-(trifluoromethylsulphonyl)-imide (N1114 BTA)

**≥99 %**
Ionic liquid
N1114 BTA
$C_9H_{18}F_6N_2O_4S_2$
M 396,36 g/mol
D 1,395
mp 7 °C
[258273-75-5]

**Warning** H315-H319-H335

**Type analysis:**

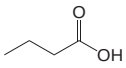
Appearance. ..... yellowish liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,01 %
Halogens. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **2025.1** | 25 g | glass | 213,95 € |
| **2025.2** | 100 g | glass | 482,70 € |

Lit:. **"Understanding structure-stability relationships of Candida antartica lipase B in ionic liquids"** T. De Diego, P. Lozano, S. Gmouh, M. Vaultier, J. L. Iborra, *Biomacromolecules* **2005**, 6, 1457-1464.

For further information, please see page 1531

## Butyric acid



### Butyric acid

**≥99 %, for synthesis**
Butanoic acide
$C_4H_8O_2$
M 88,11 g/mol
D ~0,96 • bp 164 °C
mp -5 °C • flp 72 °C
[107-92-6] • EC No. 203-532-3
UN No. 2820 • ADR 8 III • WGK 1

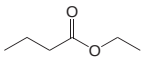
**Danger** H314

**Type analysis:**

Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99 %
Water (KF). ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **3277.1** | 100 ml | glass | 16,05 € |
| **3277.2** | 1 l | glass | 62,90 € |
| Original pack 6 x 1 l | | | 59,76/1 l |

## Butyric acid ethyl ester



### Butyric acid ethyl ester

**ROTICHROM® GC**
Reference substance for GC.
Ethyl butyrate
$C_6H_{12}O_2$
M 116,16 g/mol
D ~0,879 • bp 121 °C
mp -98 °C • flp 25 °C
Storage temp.: +4 °C
[105-54-4] • EC No. 203-306-4
UN No. 1180 • ADR 3 III • WGK 1

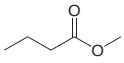
**Warning** H226-H315-H319-H335

**Type analysis:**

Purity (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **5572.1** | 1 g | plastic | 81,20 € |

## Butyric acid methyl ester



### Butyric acid methyl ester

**ROTICHROM® GC**
Reference substance for GC.
Methyl butyrate
$C_5H_{10}O_2$
M 102,14 g/mol
D ~0,90 • bp 102-103 °C
mp -84 °C • flp 14 °C
Solubility: 16 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[623-42-7] • EC No. 210-792-1
UN No. 1237 • ADR 3 II • WGK 1

**Danger** H225-H315-H319-H335

**Type analysis:**

Purity (GC). ..... ≥96 %

| | | | |
|---|---|---|---|
| **5186.1** | 1 g | plastic | 80,55 € |

## γ-Butyrolactame

▶ 2-Pyrrolidone see p. 2187

## γ-Butyrolactone



### γ-Butyrolactone

**≥99 %, for synthesis**
4-Hydroxybutyric acid lactone
$C_4H_6O_2$
M 86,09 g/mol
D 1,129 • bp 204-205 °C
mp -45 °C • flp 98 °C
[96-48-0] • EC No. 202-509-5
WGK 1

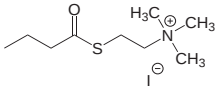
**Danger** H302-H318-H336

**Type analysis:**

Assay (GC). ..... ≥99,0 %
Density (d 20 °C/4 °C). ..... 1,128-1,129

| | | | |
|---|---|---|---|
| **HN98.1** | 100 ml | glass | 16,05 € |
| **HN98.2** | 500 ml | glass | 32,15 € |
| **HN98.3** | 1 l | glass | 59,05 € |
| Original pack 6 x 1 l | | | 56,10/1 l |

## 2-Butyrylthiocholine iodide



### 2-Butyrylthiocholine iodide

**≥99 %, for biochemistry**
$C_9H_{20}INOS$
mp 172-176 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[1866-16-6] • EC No. 217-475-7
WGK 3

**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay (arg.). ..... ≥99,0 %
Appearance of solution (10 %, $H_2O$). ..... colourless
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8452.1** | 1 g | glass | 19,25 € |
| **8452.2** | 5 g | glass | 64,40 € |
| **8452.3** | 10 g | glass | 117,20 € |

## Cable cleanser

### Cable cleanser

For cleaning and degreasing of dismantled cables.
Dipentene
D 0,84 • bp 178 °C
flp 52 °C
UN No. 2319 • ADR 3 III • WGK 3
**Danger**
H226-H304-H315-H317-H410

| | | | |
|---|---|---|---|
| **5235.1** | 1 l | tinplate | 22,05 € |

For further information, please see page 1121

## Cacodylic acid sodium salt trihydrate



### Cacodylic acid sodium salt trihydrate

**PUFFERAN® ≥98 %**
Sodium dimethylarsonate, Sodium cacodylate
$C_2H_6AsNaO_2 \cdot 3\ H_2O$
M 214,03 g/mol
Solubility: 2000 g/l ($H_2O$, 20 °C)
[6131-99-3] • EC No. 204-708-2
UN No. 1688 • ADR 6. 1 II • WGK 3
**Danger** H301+H331-H410

**Type analysis:**
Appearance. ..... fine, white crystals
Assay (as trihydrate). ..... ≥98,0 %
pH value. ..... 8,0-8,3
Aqueous solution (2 g +10 ml). ..... clear, colourless
Chloride (Cl). ..... ≤0,02 %
Arsenic (As). ..... ≤0,05 %
Methylarsonic acid disodium salt. ..... complies BPC-49
Acidity/alkalinity. ..... complies BPC-49

| | | | |
|---|---|---|---|
| **5169.3** | 10 g | plastic | 22,05 € |
| **5169.1** | 50 g | plastic | 62,25 € |
| **5169.2** | 250 g | plastic | 203,20 € |

For further information, please see page 1268

## Cadmium Standards


- ▶ Cadmium AAS Standard Solution see p. 2294
- ▶ Cadmium ICP Standard Solution see p. 2297
- ▶ Cadmium ICP Standard Solution see p. 2302


## Cadmium acetate

### Cadmium acetate

**ROTI®METIC 99,999 % (5N), anhydrous**
Cadmium diacetate
$Cd(CH_3COO)_2$
M 230,50 g/mol
mp 255 °C
[543-90-8] • EC No. 208-853-2
UN No. 2570 • ADR 6.1 III • WGK 3
**Danger**
H302+H312+H332-H350-H400-H410

**Type analysis:**
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5247.1** | 10 g | plastic | 93,00 € |
| **5247.2** | 25 g | plastic | 149,45 € |

## Cadmium acetate dihydrate

### Cadmium acetate dihydrate

**≥99 %, p.a.**
Reagent for determination of S, Se and Te.
$Cd(CH_3COO)_2 \cdot 2\ H_2O$
M 266,52 g/mol
D 2,01
mp 256 °C
[5743-04-4] • EC No. 208-853-2
UN No. 2570 • ADR 6.1 III • WGK 3
**Warning**
H400-H410-H302+H312+H332

**Guarantee analysis:**
Assay (compl.). ..... ≥99,0 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Total nitrogen (as N). ..... ≤0,002 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,005 %
Lead (Pb). ..... ≤0,003 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,002 %
Copper (Cu). ..... ≤0,001 %
Sodium (Na). ..... ≤0,002 %
Zinc (Zn). ..... ≤0,002 %
Substances not precipitated by $H_2S$ (as $SO_4$). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **KK06.1** | 100 g | plastic | 31,75 € |
| **KK06.2** | 250 g | plastic | 67,20 € |

## Cadmium diacetate

▶ Cadmium acetate see p. 1800

## Cadmium-free Quantum Dots

▶ Quantum Dots, hydrophobic see p. 2188

## Cadmium sulphate hydrate

### Cadmium sulphate hydrate

**≥99 %, p.a., ACS**
$CdSO_4 \cdot 8/3\ H_2O$, $3\ CdSO_4 \cdot 8\ H_2O$
M 256,51 g/mol
D 3,10
mp 41,5 °C
Solubility: 1130 g/l ($H_2O$, 20 °C)
[7790-84-3] • EC No. 233-331-6
UN No. 2570 • ADR 6.1 III • WGK 3
**Danger** H301-H330-H340-H350-H360FD-H372-H400-H410

**Guarantee analysis:**
Appearance. ..... fine, white crystals
Assay. ..... ≥99,0 %
Chloride (Cl). ..... ≤0,001 %
Nitrate and nitrite (as $NO_3$). ..... ≤0,003 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Calcium (Ca). ..... ≤0,005 %
Copper (Cu). ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,01 %
Sodium (Na). ..... ≤0,02 %
Lead (Pb). ..... ≤0,003 %
Zinc (Zn). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **4482.2** | 25 g | plastic | 18,20 € |
| **4482.1** | 100 g | plastic | 55,80 € |
| **4482.3** | 250 g | plastic | 94,50 € |
| **4482.4** | 500 g | plastic | 142,90 € |
| Original pack 6 x 500 g | | | 135,76/500 g |
| **4482.5** | 1 kg | plastic | 267,70 € |
| Original pack 6 x 1 kg | | | 254,32/1 kg |

## Cadmium telluride

▶ Quantum Dots, hydrophilic see p. 2188

## Caesium Standards


- ▶ Caesium AAS Standard Solution see p. 2294
- ▶ Caesium ICP Standard Solution see p. 2297
- ▶ Caesium ICP Standard Solution see p. 2302
- ▶ Caesium IC Standard Solution see p. 2312


## Caesium carbonate

Cesium carbonate
$Cs_2CO_3$
M 325,82 g/mol
D 4,072
mp 610 °C (dec.)
Solubility: 2615 g/l ($H_2O$, 15 °C)
[534-17-8] • EC No. 208-591-9
WGK 1
**Warning** H315-H319-H335

### Caesium carbonate

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**
Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5618.1** | 5 g | plastic | 34,30 € |
| **5618.2** | 25 g | plastic | 112,35 € |

## Caesium carbonate

**≥99,9 %, p.a.**
Base for organic chemistry

**Type analysis:**

| | |
|---|---|
| Appearance | colourless, cryst. and hygroscopic substance |
| Assay | ≥99,9 % |
| Lithium (Li) | ≤0,0005 % |
| Sodium (Na) | ≤0,01 % |
| Potassium (K) | ≤0,02 % |
| Rubidium (Rb) | ≤0,02 % |
| Calcium (Ca) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,0002 % |
| Barium (Ba) | ≤0,003 % |
| Strontium (Sr) | ≤0,0005 % |
| Aluminium (Al) | ≤0,001 % |
| Iron (Fe) | ≤0,0003 % |
| Chromium (Cr) | ≤0,0002 % |
| $P_2O_5$ | ≤0,002 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Chloride (Cl) | ≤0,01 % |
| Nitrate ($NO_3$) | ≤0,003 % |
| Silicate ($SiO_2$) | ≤0,005 % |
| Loss on ignition (500 °C) | ≤0,5 % |

| | | | |
|---|---|---|---|
| **6873.1** | 5 g | plastic | 16,70 € |
| **6873.2** | 25 g | plastic | 36,45 € |
| **6873.3** | 100 g | plastic | 117,20 € |
| **6873.4** | 500 g | plastic | 347,15 € |
| Original pack 6 x 500 g | | | 329,79/500 g |

## Caesium chloride

Cesium chloride
CsCl
M 168,36 g/mol
D 3,983 • bp 1303 °C
mp 646 °C
Solubility: 1800 g/l ($H_2O$, 20 °C)
[7647-17-8] • EC No. 231-600-2
WGK 1

**Warning** H361

## Caesium chloride

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,999 % |

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5061.1** | 10 g | plastic | 53,65 € |
| **5061.2** | 50 g | plastic | 155,90 € |

## Caesium chloride

**≥99,999 %, p.a., ultra quality**
Reagent for density gradient centrifugation.

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥99,999 % |
| Aluminium (Al) | ≤0,00001 % |
| Barium (Ba) | ≤0,0005 % |
| Lead (Pb) | ≤0,0001 % |
| Calcium (Ca) | ≤0,00005 % |
| Chromium (Cr) | ≤0,00001 % |
| Iron (Fe) | ≤0,00002 % |
| Potassium (K) | ≤0,0001 % |
| Lithium (Li) | ≤0,00005 % |
| Magnesium (Mg) | ≤0,00001 % |
| Manganese (Mn) | ≤0,0001 % |
| Sodium (Na) | ≤0,00003 % |
| Rubidium (Rb) | ≤0,0001 % |
| Strontium (Sr) | ≤0,0001 % |
| Sulphate ($SO_4$) | ≤0,0005 % |
| Extinction (50 % in $H_2O$): | |
| 260 nm | ≤0,02 |
| 280 nm | ≤0,02 |

| | | | |
|---|---|---|---|
| **8627.4** | 10 g | plastic | 22,05 € |
| **8627.3** | 50 g | plastic | 48,30 € |
| **8627.1** | 100 g | plastic | 80,55 € |
| **8627.5** | 250 g | plastic | 145,15 € |
| **8627.2** | 1 kg | plastic | 532,15 € |
| Original pack 6 x 1 kg | | | 505,54/1 kg |

For further information, please see page 1239

## Caesium chloride

**≥99,9 %, extra pure, for biochemistry**
Reagent for density gradient centrifugation.

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,9 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Aluminium (Al) | ≤0,002 % |
| Barium (Ba) | ≤0,005 % |
| Calcium (Ca) | ≤0,005 % |
| Chromium (Cr) | ≤0,002 % |
| Iron (Fe) | ≤0,002 % |
| Potassium (K) | ≤0,005 % |
| Lithium (Li) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,005 % |
| Manganese (Mn) | ≤0,002 % |
| Sodium (Na) | ≤0,005 % |
| Rubidium (Rb) | ≤0,02 % |
| Strontium (Sr) | ≤0,005 % |

In water insoluble matter, max. 25 ppm, may cause a light turbidity or opalescence in a concentrated solution.

| | | | |
|---|---|---|---|
| **7878.4** | 25 g | plastic | 19,90 € |
| **7878.1** | 100 g | plastic | 46,15 € |
| **7878.3** | 250 g | plastic | 100,55 € |
| **7878.5** | 500 g | plastic | 181,70 € |
| Original pack 6 x 500 g | | | 172,62/500 g |
| **7878.2** | 1 kg | plastic | 353,70 € |
| Original pack 6 x 1 kg | | | 336,02/1 kg |

For further information, please see page 1239

## Caesium nitrate

## Caesium nitrate

**ROTI®METIC 99,999 % (5N)**
Cesium nitrate
$CsNO_3$
M 194,91 g/mol
D 3,66
mp 414 °C
Solubility: 150 g/l ($H_2O$, 20 °C)
[7789-18-6] • EC No. 232-146-8
UN No. 1451 • ADR 5.1 III • WGK 1

**Danger** H272

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,999 % |

Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **4505.1** | 10 g | plastic | 93,45 € |
| **4505.2** | 50 g | plastic | 342,95 € |

## Caesium sulphate

## Caesium sulphate

**≥99,99 %, p.a.**
Reagent for density gradient centrifugation.
Cesium sulphate
$Cs_2SO_4$
M 361,89 g/mol
D 4,243
mp 1010 °C
Solubility: 1790 g/l ($H_2O$, 20 °C)
[10294-54-9] • EC No. 233-662-6

**Warning** H302-H361

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥99,99 % |
| Aluminium (Al) | ≤0,0001 % |
| Barium (Ba) | ≤0,001 % |
| Calcium (Ca) | ≤0,0001 % |
| Chromium (Cr) | ≤0,00005 % |
| Iron (Fe) | ≤0,00005 % |
| Potassium (K) | ≤0,0006 % |
| Lithium (Li) | ≤0,0001 % |
| Magnesium (Mg) | ≤0,0001 % |
| Manganese (Mn) | ≤0,0002 % |
| Sodium (Na) | ≤0,0002 % |
| Rubidium (Rb) | ≤0,001 % |
| Strontium (Sr) | ≤0,0002 % |
| Chloride (Cl) | ≤0,001 % |
| Extinction (50 % in $H_2O$): | |
| 260 nm | ≤0,02 |
| 280 nm | ≤0,02 |

Suitable for density gradient centrifugation

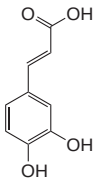
| | | | |
|---|---|---|---|
| **9355.3** | 25 g | plastic | 40,75 € |
| **9355.1** | 100 g | plastic | 128,90 € |
| **9355.2** | 1 kg | plastic | 880,45 € |
| Original pack 6 x 1 kg | | | 836,43/1 kg |

For further information, please see page 1239

## 2-Caffeeoyl tartaric acid

▶ Caftaric acid see p. 1802

## Caffeic acid




3,4-Dihydroxycinnamic acid
$C_9H_8O_4$
M 180,16 g/mol
[331-39-5] • EC No. 206-361-2
WGK 2

**Warning** H351

## Caffeic acid

**≥98 %**
Storage temp.: +4 °C

**Type analysis:**

| | |
|---|---|
| Appearance | beige powder |
| Assay | ≥98,0 % |

| | | | |
|---|---|---|---|
| **5869.3** | 5 g | glass | 19,25 € |
| **5869.1** | 10 g | glass | 31,75 € |
| **5869.2** | 50 g | glass | 118,15 € |

## Caffeic acid

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC)..... ≥90,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤2,0 %
Assay (qNMR)..... ≥90,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE08.1** | 25 mg | glass | 568,70 € |

## Caffeic acid

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC)..... ≥90,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC08.1** | 100 mg | glass | 116,00 € |

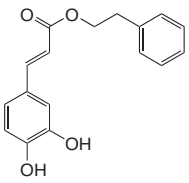
## Caffeic acid

**ROTICHROM® TLC**

Reference substance for thin layer chromatography
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **5574.1** | 100 mg | glass | 35,40 € |

## Caffeic acid phenethyl ester



## Caffeic acid phenethyl ester

**≥99 %, for biochemistry**

Phenethyl-3,4-dihydroxycinnamate, CAPE
$C_{17}H_{16}O_4$
M 284,31 g/mol
mp 127-129 °C
[104594-70-9]

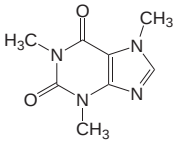
**Warning** H315-H319-H335

**Typ analysis:**

Assay (HPLC)..... ≥99,0 %
Solution (5 % in Aceton)..... colourless to yellow
Water (KF)..... ≤0,5 %
Melting point..... 127-129 °C

| | | | |
|---|---|---|---|
| **5465.1** | 25 mg | glass | 39,25 € |
| **5465.2** | 50 mg | glass | 57,95 € |

## Caffeine



1,3,7-Trimethylxanthine, 7-Methyltheobromine
$C_8H_{10}N_4O_2$
M 194,20 g/mol
D ~1,23
mp 234-239 °C • flp ~236 °C
[58-08-2] • EC No. 200-362-1
UN No. 1544 • ADR 6.1 III • WGK 1

**Danger** H301

## Caffeine

**≥98,5 %, for biochemistry, anhydrous**

**Type analysis:**

Appearance..... white cryst. powder
Assay (dry substance)..... 98,5-101,5 %
Melting range..... 234-239 °C
Appearance of solution..... complies
Sulphate ($SO_4$)..... ≤0,05 %
Heavy metals..... ≤0,001 %
Loss on drying..... ≤0,5 %

| | | | |
|---|---|---|---|
| **N815.1** | 50 g | plastic | 11,00 € |
| **N815.2** | 100 g | plastic | 14,95 € |
| **N815.3** | 500 g | plastic | 44,65 € |
| Original pack 6 x 500 g | | | 42,42/500 g |

## Caffeine

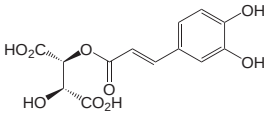
**ROTI®CALIPURE Melting point standard 235-238 °C, anhydrous**

**Type analysis:**

Meniscus formation..... 235-238 °C
Complete liquefaction..... 235-238 °C

| | | | |
|---|---|---|---|
| **9739.1** | 1 g | glass | 30,00 € |

## Caftaric acid



## Caftaric acid

**ROTICHROM® HPLC**

Reference substance for HPLC
From *Echinacea pallida*.
2-Caffeoyl tartaric acid
$C_{13}H_{12}O_9$
M 312,24 g/mol
Storage temp.: +4 °C
[67879-58-7]

**Type analysis:**

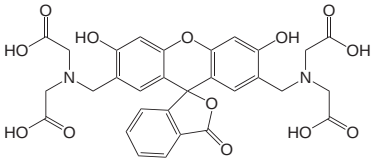
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1125.1** | 10 mg | glass | 385,95 € |

## Cakodylic acid sodium salt

▶ Cacodylic acid sodium salt trihydrate see p. 1800

## Calcein



## Calcein

**p.a.**

Metal indicator for Ca in the presence of Mg
Fluorexon, Fluorescein complexone
$C_{30}H_{26}N_2O_{13}$
M 622,55 g/mol
mp 200 °C
[1461-15-0] • EC No. 215-957-1
WGK 3

**Type analysis:**

Appearance..... yellow to orange powder
Suitability as indicator..... complies

| | | | |
|---|---|---|---|
| **7688.1** | 5 g | glass | 35,40 € |
| **7688.2** | 25 g | glass | 107,40 € |
| **7688.3** | 100 g | glass | 295,65 € |

## Calcium

## Calcium

**≥99,5 %, granules**

Ca
M 40,08 g/mol
bp 1484 °C
mp ~840 °C
[7440-70-2] • EC No. 231-179-5
UN No. 1401 • ADR 4.3 II • WGK 1

**Danger** H261

**Type analysis:**

Assay..... ≥99,5 %
Particle size..... ~6 mesh

| | | | |
|---|---|---|---|
| **2729.1** | 50 g | glass | 70,45 € |

## Calcium Standards

▶ Calcium AAS Standard Solution see p. 2294
▶ Calcium ICP Standard Solution see p. 2297
▶ Calcium ICP Standard Solution see p. 2302
▶ Calcium IC Standard Solution see p. 2312

## Calcium acetate hydrate

## Calcium acetate hydrate

**≥99 %, USP, extra pure**

$Ca(CH_3COO)_2 \cdot x\ H_2O$
M 158,17 + x $H_2O$ g/mol
[62-54-4] • EC No. 200-540-9
WGK 1

**Guarantee analysis:**

Assay (compl., dry substance)..... 99,0-100,5 %
Identity..... complies
Easily oxidizable substance..... complies
pH value (5 % solution)..... 6,3-9,6
Water..... ≤7,0 %
Chloride (Cl)..... ≤0,05 %
Sulphate ($SO_4$)..... ≤0,06 %
Fluoride (F)..... ≤0,005 %

Nitrate ($NO_3$)..... complies
Heavy metals (as Pb)..... ≤0,0025 %
Arsenic (As)..... ≤0,0003 %
Lead (Pb)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **0260.1** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **0260.2** | 1 kg | plastic | 28,50 € |
| Original pack 6 x 1 kg | | | 27,08/1 kg |
| **0260.4** | 2,5 kg | plastic | 54,75 € |
| **0260.3** | 5 kg | plastic | 100,55 € |

## Calcium acetate monohydrate

### Calcium acetate monohydrate

**≥99 %, p.a., ACS**

$Ca(CH_3COO)_2 \cdot H_2O$
M 176,18 g/mol
D 1,50
[5743-26-0] • EC No. 200-540-9
WGK 1

**Guarantee analysis:**

Assay (compl.)..... ≥99,0 %
In $H_2O$ insoluble matter..... ≤0,005 %
Alkalinity..... complies
Acidity..... ≤0,035 meq/g
Chloride (Cl)..... ≤0,001 %
Sulphate ($SO_4$)..... ≤0,01 %
Heavy metals (as Pb)..... ≤0,005 %
Barium (Ba)..... ≤0,01 %
Iron (Fe)..... ≤0,001 %
Potassium (K)..... ≤0,01 %
Magnesium (Mg)..... ≤0,05 %
Sodium (Na)..... ≤0,02 %
Strontium (Sr)..... ≤0,05 %

| | | | |
|---|---|---|---|
| **P011.1** | 500 g | plastic | 35,40 € |
| Original pack 6 x 500 g | | | 33,63/500 g |
| **P011.2** | 1 kg | plastic | 65,05 € |
| Original pack 6 x 1 kg | | | 61,80/1 kg |

## Calcium arachinate/-behenate

▶ Arachidic acid calcium salt see p. 1749

## Calcium carbide

Carbide
$CaC_2$
M 64,10 g/mol
D 2,22 • bp 2300 °C
mp 2160 °C
[75-20-7] • EC No. 200-848-3
UN No. 1402 • ADR 4.3 I • WGK 1

**Danger** H260-H315-H318

### Calcium carbide

**techn., 0,1-1 mm**

Suitable for water analysis.

**Type analysis:**

Granulation..... 0,1-1,0 mm
Gas yield..... 260 l $C_2H_2$ ±3 %/kg

| | | | |
|---|---|---|---|
| **6110.2** | 500 g | tinplate | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **6110.1** | 1 kg | tinplate | 25,70 € |
| Original pack 6 x 1 kg | | | 24,42/1 kg |
| **6110.3** | 2,5 kg | tinplate | 49,35 € |
| **6110.4** | 5 kg | tinplate | 81,60 € |

### Calcium carbide

**techn., 1-3 mm**

**Type analysis:**

Granulation..... 1-3 mm
Gas yield..... 260 l $C_2H_2$ ±3 %/kg

| | | | |
|---|---|---|---|
| **6666.1** | 500 g | tinplate | 18,85 € |
| Original pack 6 x 500 g | | | 17,91/500 g |
| **6666.2** | 1 kg | tinplate | 26,80 € |
| Original pack 6 x 1 kg | | | 25,46/1 kg |
| **6666.3** | 2,5 kg | tinplate | 51,50 € |
| **6666.4** | 5 kg | tinplate | 85,90 € |

### Calcium carbide

**techn., 7-20 mm**

**Type analysis:**

Granulation..... 7-20 mm
Gas yield..... 260 l $C_2H_2$ ±3 %/kg

| | | | |
|---|---|---|---|
| **6667.1** | 500 g | tinplate | 21,00 € |
| Original pack 6 x 500 g | | | 19,95/500 g |
| **6667.2** | 1 kg | tinplate | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **6667.3** | 2,5 kg | tinplate | 67,65 € |
| **6667.4** | 5 kg | tinplate | 117,20 € |

## Calcium carbonate

$CaCO_3$
M 100,09 g/mol
Solubility: ~14 mg/l ($H_2O$, 20 °C)
[471-34-1] • EC No. 207-439-9

### Calcium carbonate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5616.1** | 5 g | plastic | 45,70 € |
| **5616.2** | 25 g | plastic | 145,15 € |

### Calcium carbonate

**≥99 %, p.a., precipitated**

Disintegrating agent, for the determination of alkalis in silicates.

**Guarantee analysis:**

Assay (compl.)..... ≥99,0 %
In HCl insoluble matter..... ≤0,005 %
Chloride (Cl)..... ≤0,005 %
Sulphate ($SO_4$)..... ≤0,03 %
Barium (Ba)..... complies
Iron (Fe)..... ≤0,002 %
Magnesium (Mg)..... ≤0,05 %
Sodium (Na)..... ≤0,25 %
Copper (Cu)..... ≤0,0005 %
Potassium (K)..... ≤0,02 %
Strontium (Sr)..... ≤0,1 %

| | | | |
|---|---|---|---|
| **P012.1** | 500 g | plastic | 68,70 € |
| Original pack 6 x 500 g | | | 65,27/500 g |
| **P012.2** | 1 kg | plastic | 120,30 € |
| Original pack 6 x 1 kg | | | 114,29/1 kg |
| **P012.3** | 2,5 kg | plastic | 235,45 € |

### Calcium carbonate

**≥98,5 %, Ph.Eur., USP, BP, precipitated**

**Guarantee analysis:**

Assay (dry substance)..... 98,5-100,5 %
Identity..... complies
In $CH_3COOH$ insoluble matter..... ≤0,2 %
Loss on drying (200 °C)..... ≤2,0 %
Chloride (Cl)..... ≤0,033 %
Fluoride (F)..... ≤0,005 %
Sulphate ($SO_4$)..... ≤0,25 %
Magnesium and alkali metals..... ≤1 %
Heavy metals (as Pb)..... ≤0,002 %
Arsenic (As)..... ≤0,0003 %
Barium (Ba)..... complies
Lead (Pb)..... ≤0,0003 %
Iron (Fe)..... ≤0,02 %
Mercury (Hg)..... ≤0,00005 %

| | | | |
|---|---|---|---|
| **P013.1** | 500 g | plastic | 16,70 € |
| Original pack 6 x 500 g | | | 15,87/500 g |
| **P013.2** | 1 kg | plastic | 26,35 € |
| Original pack 6 x 1 kg | | | 25,03/1 kg |
| **P013.4** | 2,5 kg | plastic | 53,65 € |
| **P013.3** | 5 kg | plastic | 102,05 € |

### Calcium carbonate

**≥98,5 %, powdered**

**Type analysis:**

Assay (dry substance)..... ≥98,5 %
Chloride (Cl)..... ≤0,05 %
Sulphate ($SO_4$)..... ≤0,5 %
Antimony (Sb)..... ≤0,01 %
Lead (Pb)..... ≤0,005 %
Cadmium (Cd)..... ≤0,0001 %
Copper (Cu)..... ≤0,01 %
Zinc (Zn)..... ≤0,01 %
Particle size $d_{50}$..... 1,0 µm

| | | | |
|---|---|---|---|
| **6230.1** | 1 kg | plastic | 16,05 € |
| Original pack 6 x 1 kg | | | 15,25/1 kg |
| **6230.3** | 2,5 kg | plastic | 24,65 € |
| **6230.2** | 5 kg | plastic | 42,50 € |
| **6230.5** | 25 kg | plastic | 137,10 € |

## Calcium chloride

Chlorocalcium
$CaCl_2$
M 110,99 g/mol
Solubility: 740 g/l ($H_2O$, 20 °C)
[10043-52-4] • EC No. 233-140-8
WGK 1

**Warning** H319

### Calcium chloride

**≥98 %, dehydrated, powder**

Drying agent

**Type analysis:**

Assay ($CaCl_2$)..... ≥98,0 %
Fluoride (F)..... ≤0,004 %
Water insoluble content..... ≤0,1 %
Arsenic (As)..... ≤0,0003 %
Lead (Pb)..... ≤0,0002 %
Iron (Fe)..... ≤0,01 %
Mercury (Hg)..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **CN93.1** | 500 g | plastic | 25,30 € |
| Original pack 6 x 500 g | | | 24,04/500 g |
| **CN93.2** | 1 kg | plastic | 38,20 € |
| Original pack 6 x 1 kg | | | 36,29/1 kg |
| **CN93.3** | 2,5 kg | plastic | 79,45 € |
| **CN93.4** | 5 kg | plastic | 120,95 € |
| **CN93.5** | 25 kg | plastic | 284,90 € |

## Calcium chloride

**≥96 %, dehydrated, granular material**

Drying agent

**Type analysis:**

Assay ($CaCl_2$). ..... ≥96,0 %
Heavy metals. ..... ≤0,005 %
Iron (Fe). ..... ≤0,001 %
Magnesium (Mg) ..... ≤0,1 %
Zinc (Zn). ..... ≤0,003 %
Particle size. ..... ~0,5-5 mm

| | | | |
|---|---|---|---|
| **CN92.1** | 500 g | plastic | 24,65 € |
| Original pack 6 x 500 g | | | 23,42/500 g |
| **CN92.2** | 1 kg | plastic | 37,10 € |
| Original pack 6 x 1 kg | | | 35,25/1 kg |
| **CN92.3** | 2,5 kg | plastic | 77,95 € |
| **CN92.4** | 10 kg | plastic | 212,75 € |

## Calcium chloride

**≥94 %, dehydrated**

Drying agent

**Type analysis:**

Assay ($CaCl_2$). ..... ≥94 %
Sulphate ($SO_4$). ..... ≤0,1 %
Barium (Ba). ..... ≤0,1 %
Iron (Fe). ..... ≤0,0005 %
NaCl. ..... ≤2 %
$MgCl_2$. ..... ≤0,1 %
Potassium chloride (KCl). ..... ≤3 %
Particle size. ..... ~2-5 mm (4-8 mesh)

| | | | |
|---|---|---|---|
| **A119.1** | 1 kg | plastic | 18,20 € |
| Original pack 6 x 1 kg | | | 17,29/1 kg |
| **A119.3** | 2,5 kg | plastic | 31,10 € |
| **A119.2** | 5 kg | plastic | 48,30 € |
| **A119.4** | 10 kg | plastic | 78,40 € |
| **A119.5** | 25 kg | plastic | 116,00 € |

# Calcium chloride hydrate

## Calcium chloride hydrate

**ROTI®METIC 99,999 % (5N)**

$CaCl_2 \cdot x\ H_2O$
M 110,99 + x $H_2O$ g/mol
mp ~30 °C
[22691-02-7]
WGK 1

**Warning** H319

**Type analysis:**

Assay (metals basis) ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5056.1** | 10 g | plastic | 117,20 € |

# Calcium chloride dihydrate

$CaCl_2 \cdot 2\ H_2O$
M 147,02 g/mol
D 1,85
mp ~176 °C
Solubility: ~1000 g/l ($H_2O$, 0 °C)
[10035-04-8] • EC No. 233-140-8
WGK 1

**Warning** H319

## Calcium chloride dihydrate

**≥99 %, p.a., ACS**

Reagent for the preparation of freezing mixtures, molecular biology.

**Guarantee analysis:**

Assay (compl.). ..... ≥99,0 %
pH value (5 %, water). ..... 4,5-8,5
In $H_2O$ insoluble matter. ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,01 %
Phosphate ($PO_4$). ..... ≤0,001 %
Ammonium ($NH_4$). ..... ≤0,005 %
Oxidizing substances (as $NO_3$). ..... ≤0,003 %
Barium (Ba). ..... ≤0,005 %
Lead (Pb). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0003 %
Potassium (K). ..... ≤0,01 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,005 %
Manganese (Mn). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,02 %
Nickel (Ni). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Strontium (Sr). ..... ≤0,01 %
Zinc (Zn). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **5239.2** | 500 g | plastic | 17,45 € |
| Original pack 6 x 500 g | | | 16,58/500 g |
| **5239.1** | 1 kg | plastic | 24,20 € |
| Original pack 6 x 1 kg | | | 22,99/1 kg |
| **5239.3** | 2,5 kg | plastic | 52,60 € |

## Calcium chloride dihydrate

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤5,0 I.U./g
Assay. ..... ≥99 %
Appearance of solution. ..... complies
pH value (5 % solution). ..... 4,5-9,2
Sulphate ($SO_4$). ..... ≤0,024 %
Heavy metals (as Pb). ..... ≤0,0005 %
Aluminium (Al). ..... ≤0,00002 %
Arsenic (As). ..... ≤0,0002 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **HN04.1** | 250 g | plastic | 16,05 € |
| **HN04.2** | 500 g | plastic | 26,35 € |
| Original pack 6 x 500 g | | | 25,03/500 g |
| **HN04.3** | 1 kg | plastic | 39,70 € |
| Original pack 6 x 1 kg | | | 37,72/1 kg |

## Calcium chloride dihydrate

**≥99 %, Ph.Eur.**

**Guarantee analysis:**

Assay (compl.). ..... 99,0-103,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Free acid, free alkali. ..... complies
Sulphate ($SO_4$). ..... ≤0,03 %
Magnesium and alkali metals. ..... ≤0,5 %
Heavy metals. ..... ≤0,001 %
Aluminium (Al). ..... ≤0,0001 %
Barium (Ba). ..... complies
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **T885.2** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **T885.1** | 1 kg | plastic | 29,60 € |
| Original pack 6 x 1 kg | | | 28,12/1 kg |
| **T885.3** | 2,5 kg | plastic | 72,60 € |

# Calcium chloride hexahydrate

Chlorocalcium hexahydrate
$CaCl_2 \cdot 6\ H_2O$
M 219,09 g/mol
mp ~30 °C
Solubility: 5360 g/l ($H_2O$, 20 °C)
[7774-34-7] • EC No. 233-140-8
WGK 1

**Warning** H319

## Calcium chloride hexahydrate

**≥98 %, p.a.**

Analytical reagent, molecular biology

**Guarantee analysis:**

Assay (compl.). ..... ≥98,0 %
In $H_2O$ insoluble matter, precipated by $NH_4OH$ ..... ≤0,01 %
Oxidizing substances (as $NO_3$). ..... ≤0,003 %
Phosphate ($PO_4$). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,01 %
Ammonium ($NH_4$). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0005 %
Barium (Ba). ..... ≤0,005 %
Copper (Cu). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0025 %
Magnesium (Mg). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,0005 %
Strontium (Sr). ..... ≤0,01 %
Zinc (Zn). ..... ≤0,001 %
Melting point: approx. 30 °C

| | | | |
|---|---|---|---|
| **T886.2** | 500 g | plastic | 30,00 € |
| Original pack 6 x 500 g | | | 28,50/500 g |
| **T886.1** | 1 kg | plastic | 50,45 € |
| Original pack 6 x 1 kg | | | 47,93/1 kg |
| **T886.3** | 2,5 kg | plastic | 99,45 € |

## Calcium chloride hexahydrate

**≥97 %, Ph.Eur.**

**Guarantee analysis:**

Assay (compl.). ..... 97,0-103,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Acid or alkaline react. substances. ..... complies
Sulphate ($SO_4$). ..... ≤0,02 %
Aluminium (Al). ..... complies
Heavy metals (as Pb). ..... ≤0,0015 %
Barium (Ba). ..... complies
Iron (Fe). ..... ≤0,0007 %
Magnesium and alkali metals. ..... ≤0,3 %
Melting point: approx. 30 °C

| | | | |
|---|---|---|---|
| **CP89.1** | 500 g | plastic | 19,25 € |
| Original pack 6 x 500 g | | | 18,29/500 g |
| **CP89.2** | 1 kg | plastic | 27,45 € |
| Original pack 6 x 1 kg | | | 26,08/1 kg |
| **CP89.3** | 2,5 kg | plastic | 54,75 € |

## tri-Calcium dicitrate tetrahydrate

### tri-Calcium dicitrate tetrahydrate

**≥97 %, extra pure**

Calcium(II) citrate, Tricalcium citrate, TCC

$C_{12}H_{10}Ca_3O_{14} \cdot 4\ H_2O$

M 570,51 g/mol

Solubility: 1 g/l ($H_2O$, 20 °C)

[5785-44-4] • EC No. 212-391-7

WGK 1

**Type analysis:**

| | |
|---|---|
| Assay (dry substance) | ≥97,0 % |
| Fluoride (F) | ≤0,005 % |
| Aluminium (Al) | ≤0,005 % |
| Arsenic (As) | ≤0,0001 % |
| Lead (Pb) | ≤0,0001 % |
| Mercury (Hg) | ≤0,0001 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Loss on drying | 10,0-14,0 % |

| | | | |
|---|---|---|---|
| **7450.1** | 500 g | plastic | 25,70 € |
| Original pack 6 x 500 g | | | 24,42/500 g |
| **7450.2** | 1 kg | plastic | 40,75 € |
| Original pack 6 x 1 kg | | | 38,71/1 kg |
| **7450.3** | 2,5 kg | plastic | 87,00 € |

## Calcium EDTA disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid calcium disodium salt dihydrate see p. 1916

## D-Calciumgluconate monohydrate

▶ D-Gluconic acid calcium salt monohydrate see p. 1954

## Calcium hydrate

▶ Calcium hydroxide see p. 1805

## Calcium hydrogen phosphate

### Calcium hydrogen phosphate

**≥98 % extra pure, anhydrous**

Calcium phosphate dibasic, sec. Calcium phosphate, Calcium monohydrogen phosphate

$CaHPO_4$

M 136,06 g/mol

Solubility: 0,1 g/l ($H_2O$, 20 °C)

[7757-93-9] • EC No. 231-826-1

WGK 1

**Type analysis:**

| | |
|---|---|
| Assay (compl.) | ≥98,0 % |
| Chloride (Cl) | ≤0,05 % |
| Sulphate ($SO_4$) | ≤0,5 % |
| Heavy metals (as Pb) | ≤0,005 % |
| Arsenic (As) | ≤0,0005 % |
| Iron (Fe) | ≤0,05 % |
| Lead (Pb) | ≤0,00005 % |

| | | | |
|---|---|---|---|
| **9490.1** | 100 g | plastic | 23,15 € |
| **9490.2** | 500 g | plastic | 46,80 € |
| Original pack 6 x 500 g | | | 44,46/500 g |
| **9490.3** | 1 kg | plastic | 85,50 € |
| Original pack 6 x 1 kg | | | 81,23/1 kg |

## Calcium hydrogen phosphate dihydrate

### Calcium hydrogen phosphate dihydrate

**≥98 %, Ph.Eur., USP**

Calcium phosphate dibasic, sec. Calcium phosphate, Calcium monohydrogen phosphate

$CaHPO_4 \cdot 2\ H_2O$

M 172,10 g/mol

D 2,32

Solubility: 0,2 g/l ($H_2O$, 25 °C)

[7789-77-7] • EC No. 231-826-1

WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Assay (compl.) | 98,0-105,0 % |
| Identity | complies |
| In HCl insoluble matter | ≤0,2 % |
| Fluoride (F) | ≤0,005 % |
| Carbonate ($CO_3$) | complies |
| Chloride (Cl) | ≤0,033 % |
| Sulphate ($SO_4$) | ≤0,5 % |
| Arsenic (As) | ≤0,0003 % |
| Barium (Ba) | complies |
| Iron (Fe) | ≤0,04 % |
| Heavy metals (as Pb) | ≤0,003 % |
| Loss on ignition (800 °C) | 24,5-26,5 % |

| | | | |
|---|---|---|---|
| **HN70.1** | 500 g | plastic | 19,25 € |
| Original pack 6 x 500 g | | | 18,29/500 g |
| **HN70.2** | 1 kg | plastic | 29,60 € |
| Original pack 6 x 1 kg | | | 28,12/1 kg |
| **HN70.3** | 2,5 kg | plastic | 59,05 € |

## Calcium hydroxide

Calcium hydrate, slaked lime

$Ca(OH)_2$

M 74,10 g/mol

D 2,24

mp 550 °C (dec.)

Solubility: 1,7 g/l ($H_2O$, 20 °C)

[1305-62-0] • EC No. 215-137-3

WGK 1

**Danger** H318-H315-H335

### Calcium hydroxide

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,995 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5617.1** | 5 g | plastic | 53,65 € |
| **5617.2** | 25 g | plastic | 181,70 € |

### Calcium hydroxide

**≥96 %, p.a.**

For detection of $CO_2$

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥96 % |
| In HCl insoluble matter | ≤0,03 % |
| Carbonate (as $CaCO_3$) | ≤3 % |
| Chloride (Cl) | ≤0,005 % |
| Sulphur containing parts (as $SO_4$) | ≤0,1 % |
| Heavy metals (as Pb) | ≤0,003 % |
| Iron (Fe) | ≤0,05 % |
| Potassium (K) | ≤0,05 % |
| Magnesium (Mg) | ≤0,5 % |
| Sodium (Na) | ≤0,05 % |
| Strontium (Sr) | ≤0,05 % |

| | | | |
|---|---|---|---|
| **CN87.1** | 500 g | plastic | 40,75 € |
| Original pack 6 x 500 g | | | 38,71/500 g |
| **CN87.2** | 1 kg | plastic | 66,55 € |
| Original pack 6 x 1 kg | | | 63,22/1 kg |
| **CN87.3** | 2,5 kg | plastic | 138,70 € |

### Calcium hydroxide

**≥95 %, Ph.Eur., USP, BP**

**Guarantee analysis:**

| | |
|---|---|
| Assay (compl.) | 95,0-100,5 % |
| In HCl insoluble matter | ≤0,5 % |
| Carbonate (as $CaCO_3$) | ≤5,0 % |
| Chloride (Cl) | ≤0,033 % |
| Sulphate ($SO_4$) | ≤0,4 % |
| Mg and alkali salts | ≤4,0 % |
| Heavy metals (as Pb) | ≤0,002 % |
| Arsenic (As) | ≤0,0003 % |
| Residual solvents | complies |

| | | | |
|---|---|---|---|
| **KK03.1** | 500 g | plastic | 14,95 € |
| Original pack 6 x 500 g | | | 14,20/500 g |
| **KK03.2** | 1 kg | plastic | 20,65 € |
| Original pack 6 x 1 kg | | | 19,62/1 kg |
| **KK03.4** | 2,5 kg | plastic | 40,35 € |
| **KK03.3** | 5 kg | plastic | 72,60 € |

### Calcium hydroxide

**≥96 %, powdered**

**Type analysis:**

| | |
|---|---|
| Assay | ≥96 % |
| Water | 0,20 % |
| Sulphite ($SO_3$) | 0,01 % |
| Aluminium oxide ($Al_2O_3$) | 0,07 % |
| Calcium oxide (CaO) | 74,6 % |
| Ferric oxide ($Fe_2O_3$) | 0,04 % |
| Carbon dioxide ($CO_2$) | 0,6 % |
| Magnesium oxide (MgO) | 0,60 % |
| Manganese oxide ($Mn_3O_4$) | 0,02 % |
| Loss on ignition | 24,5 % |
| Hydrate water | 23,7 % |

| | | | |
|---|---|---|---|
| **3529.4** | 1 kg | plastic | 14,95 € |
| Original pack 6 x 1 kg | | | 14,20/1 kg |
| **3529.1** | 2,5 kg | plastic | 25,30 € |
| **3529.2** | 10 kg | plastic | 54,75 € |
| **3529.3** | 50 kg | plastic | 104,20 € |

## penta-Calcium hydroxide triphosphate

▶ Calcium hydroxyphosphate see p. 1806

C

## Calcium hydroxyphosphate

### Calcium hydroxyphosphate

**Ph.Eur., extra pure**

penta-Calcium hydroxide triphosphate, Calciumphosphate tribasic

$HCa_5O_{13}P_3$

M 502,32 g/mol

[12167-74-7] • EC No. 235-330-6

**Guarantee analysis:**

Appearance. ..... white to off-white powder
Assay (Ca). ..... 35,0-40,0 %
Identity. ..... complies
Identity Calcium. ..... complies
Identity Phosphate. ..... complies
Substances insoluble in HCl. ..... ≤0,2 %
Chloride (Cl). ..... ≤0,15 %
Fluoride (F). ..... ≤0,0075 %
Sulphate ($SO_4$). ..... ≤0,5 %
Heavy metals (as Pb). ..... ≤0,003 %
Arsenic (As). ..... ≤0,0004 %
Iron (Fe). ..... ≤0,04 %
Loss on ignition (800 °C). ..... ≤8,0 %

| | | | |
|---|---|---|---|
| **8450.1** | 250 g | plastic | 14,95 € |
| **8450.2** | 1 kg | plastic | 32,15 € |
| Original pack 6 x 1 kg | | | 30,54/1 kg |
| **8450.3** | 2,5 kg | plastic | 66,55 € |

## Calcium hypochlorite

### Calcium hypochlorite

**≥65 %, granulated**

Desinfectant and oxidizing agent

$CaCl_2O_2$

M 142,99 g/mol

D 2,35

Solubility: 200 g/l ($H_2O$, 20 °C)

[7778-54-3] • EC No. 231-908-7

UN No. 1748 • ADR 5.1 II • WGK 3

**Danger**

H272-H302-H314-H400-EUH031

**Type analysis:**

Availabe chlorine ($Ca(OCl)_2$). ..... ≥65 %
Water. ..... 5,5-8,5 %
Iron (Fe). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **5164.1** | 500 g | plastic | 23,15 € |
| Original pack 6 x 500 g | | | 21,99/500 g |
| **5164.3** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **5164.2** | 2,5 kg | plastic | 67,65 € |

## Calcium-L-lactate

▶ L(+)-Lactic acid calcium salt hydrate see p. 2025
▶ L(+)-Lactic acid calcium salt pentahydrate see p. 2025

## Calcium-lignosulphonate

▶ Lignosulphonic acid calcium salt see p. 2036

## Calcium monohydrogen phosphate

▶ Calcium hydrogen phosphate see p. 1805
▶ Calcium hydrogen phosphate dihydrate see p. 1805

## Calcium nitrate hydrate

### Calcium nitrate hydrate

**ROTI®METIC 99,999 % (5N)**

$Ca(NO_3)_2 \cdot x\ H_2O$

M 164,09 + x $H_2O$ g/mol

D 1,82

mp ~40 °C (dec.)

[35054-52-5] • EC No. 233-332-1

UN No. 1454 • ADR 5.1 III • WGK 1

**Danger** H272-H315-H319-H335

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5058.1** | 5 g | plastic | 50,00 € |
| **5058.2** | 25 g | plastic | 160,20 € |

## Calcium nitrate tetrahydrate

Lime salpetre

$Ca(NO_3)_2 \cdot 4\ H_2O$

M 236,15 g/mol

D 1,82

Solubility: 1470 g/l ($H_2O$, 0 °C)

[13477-34-4] • EC No. 233-332-1

UN No. 1454 • ADR 5.1 III • WGK 1

**Danger** H302-H318

### Calcium nitrate tetrahydrate

**≥99 %, p.a., ACS**

Application in pyrotechnics, as component of freezing salt solutions and as fertilizer.

**Guarantee analysis:**

Assay (compl.). ..... 99,0-103,0 %
pH value (5 % solution). ..... 5,0-7,0
In water insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,002 %
Nitrite ($NO_2$). ..... ≤0,001 %
Ammonium ($NH_4$). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Barium (Ba). ..... ≤0,005 %
Iron (Fe). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,01 %
Strontium (Sr). ..... ≤0,01 %
Copper (Cu). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Sodium (Na). ..... ≤0,005 %
Aluminium (Al). ..... ≤0,001 %
Cadmium (Cd). ..... ≤0,0005 %
Cobalt (Co). ..... ≤0,0005 %
Chromium (Cr). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P740.1** | 500 g | plastic | 23,55 € |
| Original pack 6 x 500 g | | | 22,37/500 g |
| **P740.2** | 1 kg | plastic | 37,10 € |
| Original pack 6 x 1 kg | | | 35,25/1 kg |
| **P740.3** | 2,5 kg | plastic | 81,60 € |

### Calcium nitrate tetrahydrate

**≥98 %, extra pure**

**Type analysis:**

Assay. ..... ≥98,0 %
pH value (5 % solution). ..... 5,0-7,5
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **X886.1** | 500 g | plastic | 13,90 € |
| Original pack 6 x 500 g | | | 13,21/500 g |
| **X886.2** | 1 kg | plastic | 18,20 € |
| Original pack 6 x 1 kg | | | 17,29/1 kg |
| **X886.4** | 2,5 kg | plastic | 31,10 € |
| **X886.3** | 5 kg | plastic | 52,60 € |

## Calcium oxalate monohydrate

### Calcium oxalate monohydrate

**≥98 %**

Oxalic acid calcium salt monohydrate

$CaC_2O_4 \cdot H_2O$

M 146,12 g/mol

[5794-28-5] • EC No. 209-260-1

WGK 1

**Warning** H302+H312

**Type analysis:**

Appearance. ..... white powder
Assay. ..... ≥98,0 %
Identity. ..... complies
Chloride (Cl). ..... ≤0,05 %
Sulphate ($SO_4$). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **6145.1** | 1 kg | plastic | 39,70 € |
| Original pack 6 x 1 kg | | | 37,72/1 kg |

## Calcium oxide

### Calcium oxide

**≥96 %, powdered, extra pure**

Lime caustic, Quicklime

CaO

M 56,08 g/mol

bp 2850 °C

mp 2580 °C

Solubility: ~1,5 g/l ($H_2O$, 20 °C)

[1305-78-8] • EC No. 215-138-9

UN No. 1910 • WGK 1

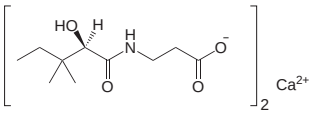
**Danger** H315-H318-H335

**Type analysis:**

Assay. ..... 96,0-100,5 %
In HCl insoluble matter. ..... ≤0,5 %
Loss on ignition. ..... ≤3,5 %
Fluoride (F). ..... ≤0,015 %
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0002 %

| | | | |
|---|---|---|---|
| **CN88.1** | 500 g | plastic | 14,95 € |
| Original pack 6 x 500 g | | | 14,20/500 g |
| **CN88.2** | 1 kg | plastic | 23,15 € |
| Original pack 6 x 1 kg | | | 21,99/1 kg |
| **CN88.4** | 2,5 kg | plastic | 44,65 € |
| **CN88.3** | 5 kg | plastic | 83,35 € |

## Calcium D(+)-pantothenate



### Calcium D(+)-pantothenate

**≥98 %, Ph.Eur., for biochemistry**

D(+)-Pantothenic acid calcium salt, Vitamin $B_5$ calcium salt

$C_{18}H_{32}CaN_2O_{10}$
M 476,53 g/mol
mp 190 °C • flp 145 °C
Solubility: 350 g/l ($H_2O$, 20 °C)
[137-08-6] • EC No. 205-278-9
WGK 1

**Guarantee analysis:**

Appearance. ..... white powder
Assay (perchloric acid titration, dry substance). ..... 98,0-101,0 %
Identity. ..... complies
pH value (5 % in $H_2O$). ..... 6,8-8,0
Appearance of solution (5 % in $H_2O$ ). ..... clear, colourless
Specific rotation $[\alpha]_D^{20}$ (5 % in $H_2O$, dry substance). ..... +25,5° to +27,5°
3-Aminopropionic acid. ..... ≤0,5 %
Chloride (Cl). ..... ≤0,02 %
Elemental impurities. ..... complies
Residual solvents. ..... complies
Loss on drying. ..... ≤3,0 %

| | | | |
|---|---|---|---|
| **3812.2** | 100 g | plastic | 26,80 € |
| **3812.1** | 250 g | plastic | 47,85 € |

## sec. Calcium phosphate


▶ Calcium hydrogen phosphate see p. 1805
▶ Calcium hydrogen phosphate dihydrate see p. 1805


## Calcium phosphate dibasic


▶ Calcium hydrogen phosphate see p. 1805
▶ Calcium hydrogen phosphate dihydrate see p. 1805


## Calciumphosphate tribasic


▶ Calcium hydroxyphosphate see p. 1806


## Calcium sulphate dihydrate

$CaSO_4 \cdot 2\ H_2O$
M 172,17 g/mol
D 2,32
Solubility: ~2 g/l ($H_2O$, 20 °C)
[10101-41-4] • EC No. 231-900-3
WGK 1

### Calcium sulphate dihydrate

**≥98 %, p.a., ACS**

**Guarantee analysis:**

Assay (compl.). ..... 98,0-101,0 %
In HCl insoluble matter. ..... ≤0,01 %
Carbonate ($CO_3$). ..... complies
Chloride (Cl). ..... ≤0,002 %
Nitrate ($NO_3$). ..... ≤0,002 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,00004 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,02 %
Strontium (Sr). ..... ≤0,05 %
Nickel (Ni). ..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Potassium (K). ..... ≤0,005 %
Sodium (Na). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **P741.1** | 500 g | plastic | 51,50 € |
| Original pack 6 x 500 g | | | 48,93/500 g |
| **P741.2** | 1 kg | plastic | 89,80 € |
| Original pack 6 x 1 kg | | | 85,31/1 kg |
| **P741.3** | 2,5 kg | plastic | 192,45 € |

### Calcium sulphate dihydrate

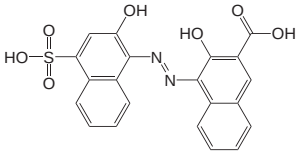
**≥98 %, Ph.Eur., extra pure**

**Guarantee analysis:**

Assay (compl.). ..... 98,0-102,0 %
Identity. ..... complies
Chloride (Cl). ..... ≤0,03 %
Arsenic (As). ..... ≤0,001 %
Iron (Fe). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,001 %
Acidity/alkalinity. ..... complies
Loss on ignition (800 °C). ..... 18,0-22,0 %
Loss on drying (250 °C). ..... 19,0-23,0 %

| | | | |
|---|---|---|---|
| **0256.1** | 500 g | plastic | 14,55 € |
| Original pack 6 x 500 g | | | 13,82/500 g |
| **0256.2** | 1 kg | plastic | 19,60 € |
| Original pack 6 x 1 kg | | | 18,62/1 kg |
| **0256.4** | 2,5 kg | plastic | 41,40 € |
| **0256.3** | 5 kg | plastic | 76,25 € |

## Calconcarboxylic acid



### Calconcarboxylic acid

**p.a.**

For metal titration.

2-Hydroxy-1-(2-hydroxy-4-sulfo-1-naphthyl-azo)-naphthalene-3-carboxylic acid; Patton and Reeder's Reagent

$C_{21}H_{14}N_2O_7S$
M 438,41 g/mol
mp 300 °C
[3737-95-9] • EC No. 223-117-0
WGK 1

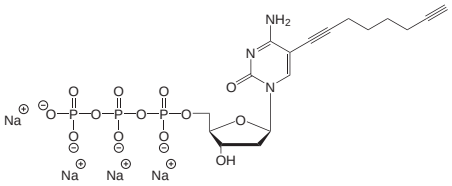
**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... black-violet powder
Maximum absorption. ..... ≤572 nm

| | | | |
|---|---|---|---|
| **2676.1** | 5 g | glass | 26,35 € |
| **2676.2** | 10 g | glass | 38,20 € |
| **2676.3** | 50 g | glass | 100,55 € |

## C8-Alkyne-dCTP



### C8-Alkyne-dCTP

**≥99 %, 100 mM in water**

Use of a family B polymerase is recommended.

5-(Octa-1,7-diynyl)-5'-*O*-triphosphate-2'-deoxycytidine

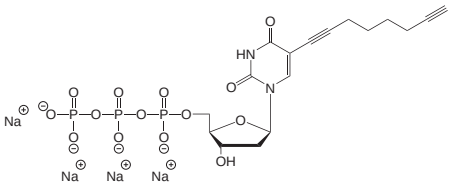
$C_{17}H_{20}N_3O_{13}P_3Na_4$
M 659,23 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[1004297-66-8]
WGK 3

**Type analysis:**

Appearance. ..... clear solution
Assay (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7801.1** | 0,5 µmol | plastic | 78,40 € |
| **7801.2** | 2,5 µmol | plastic | 111,70 € |
| **7801.3** | 5,0 µmol | plastic | 207,40 € |

## C8-Alkyne-dUTP



### C8-Alkyne-dUTP

**≥99 %, 100 mM in water**

Use of a family B polymerase is recommended.

5-(Octa-1,7-diynyl)-5'-*O*-triphosphate-2'-deoxyuridine

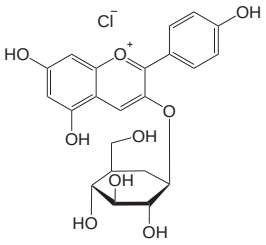
$C_{17}H_{19}N_2O_{14}P_3Na_4$
M 660,22 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[1004297-65-7]
WGK 3

**Type analysis:**

Appearance. ..... clear solution
Assay (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7799.1** | 0,5 µmol | plastic | 78,40 € |
| **7799.2** | 2,5 µmol | plastic | 111,70 € |
| **7799.3** | 5,0 µmol | plastic | 207,40 € |

## Callistephin (chloride)



### Callistephin (chloride)

**ROTICHROM® HPLC**

Reference substance for HPLC.
Pelargonidin chloride 3-glucoside
$C_{21}H_{21}ClO_{10}$
M 468,85 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[18466-51-8]
WGK 1

**Type analysis:**

Purity (HPLC)..... ≥95,0 %

| | | | |
|---|---|---|---|
| **8956.2** | 10 mg | glass | 385,95 € |

## Calomel

▶ Mercury(I) chloride see p. 2064

## 2-Camphanone

▶ (+)-Camphor see p. 1808

## Camphene



$C_{10}H_{16}$
M 136,24 g/mol
D 0,84 • bp 158-160 °C
mp 42-45 °C • flp 26 °C
Solubility: 0,0042 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[79-92-5] • EC No. 201-234-8
UN No. 1325 • ADR 4.1 II • WGK 2

**Danger** H228-H319-H410

### Camphene

**≥95 %**

**Type analysis:**

Assay (GC)..... ≥95 %
Tricyclene (GC)..... ≤5 %

| | | | |
|---|---|---|---|
| **7558.2** | 100 g | glass | 19,25 € |
| **7558.1** | 500 g | glass | 62,90 € |
| Original pack 6 x 500 g | | | 59,76/500 g |

### Camphene

**ROTICHROM® GC**

Reference substance for GC.

**Type analysis:**

Purity (GC)..... ≥90 %

| | | | |
|---|---|---|---|
| **5288.2** | 100 mg | glass | 80,55 € |

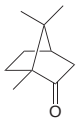
## DL-Campher

▶ (+/-)-Camphor see p. 1808

## D-(+)-Camphor

▶ (+)-Camphor see p. 1808

## (+)-Camphor



### (+)-Camphor

**≥98 %**

2-Camphanone, D-(+)-Camphor, (1R)-1,7,7-Trimethylbicyclo [2.2.1] heptan-2-one
$C_{10}H_{16}O$
M 152,24 g/mol
D 0,99 • bp 209 °C
mp 179 °C • flp 66 °C
Solubility: 15 g/l ($H_2O$, 20 °C)
[464-49-3] • EC No. 207-355-2
UN No. 2717 • ADR 4.1 III • WGK 1

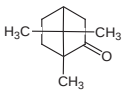
**Warning**
H228-H302-H315-H319-H335-H412

**Type analysis:**

Appearance..... colourless crystals
Assay (GC)..... ≥98 %
Melting point..... 177-182 °C

| | | | |
|---|---|---|---|
| **6155.1** | 250 g | plastic | 181,70 € |

## (+/-)-Camphor



DL-Campher
$C_{10}H_{16}O$
M 152,24 g/mol
D 0,992 • bp 204 °C
mp 172-176 °C • flp 64 °C
[76-22-2] • EC No. 244-350-4
UN No. 2717 • ADR 4.1 III • WGK 1

**Warning** H228-H315-H319-H335

### (+/-)-Camphor

**≥95 %**

**Type analysis:**

Appearance..... white, cryst. powder and/or pieces
Assay (GC)..... 95,5-100,0 %

| | | | |
|---|---|---|---|
| **7552.1** | 500 g | plastic | 79,05 € |
| Original pack 6 x 500 g | | | 75,10/500 g |

### (+/-)-Camphor

**ROTICHROM® GC**

Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**

Purity (GC)..... ≥95 %

| | | | |
|---|---|---|---|
| **4329.1** | 1 g | plastic | 81,60 € |

## Campylobacter Agar, blood-free (Base)

### Campylobacter Agar, blood-free (Base)

**for microbiology**

For isolation of *Campylobacter jejuni*, *Campylobacter coli*, and *Campylobacter laridis* in foods, and other samples.
Application: Use 45,5 g for 1 l agar. After cooling add 2 vials (2x5 ml) reconstituted Campylobacter Supplement (Art. No. 4857.1).
Campy-Selective-Bloodfree-Medium, Bolton-Agar, Blood-free **CCDA**, Modified **CCDA**
Storage temp.: +20 °C
WGK 1

**Formulation:**

Casein peptone..... 10 g/l
Beef extract..... 10 g/l
Sodium chloride..... 5 g/l
Casein hydrolysed..... 3 g/l
Bacteriological charcoal..... 4 g/l
Sodium deoxycholate..... 1 g/l
Iron sulphate..... 0,25 g/l
Sodium pyruvate..... 0,25 g/l
Agar..... 12 g/l
pH value..... 7,4 ±0,2

| | | | |
|---|---|---|---|
| **5756.1** | 500 g | plastic | 155,90 € |
| Original pack 6 x 500 g | | | 148,11/500 g |

For further information, please see page 1379

## Campylobacter Preston Supplement

### Campylobacter Preston Supplement

**for microbiology**

For selective isolation of *Campylobacter spp.*
One box of 10 vials Campylobacter Preston Supplement is sufficient for 10 x 500 ml Campylobacter Selective Agar.
Preston Supplement
Storage temp.: +4 °C
Transport temp.: room temp.
UN No. 2811 • ADR 6.1 II • WGK 3

**Danger** H300-H341-H360D-H411

**Formulation per vial:**

Polymyxin B sulphate..... 2500 IU
Cycloheximide..... 50 mg
Rifampicin..... 5 mg
Trimetoprim..... 5 mg

| | | | |
|---|---|---|---|
| **8851.1** | 10 vials | glass | 181,70 € |

For further information, please see page 1406

## Campylobacter Selective Agar (Base)

### Campylobacter Selective Agar (Base)

**for microbiology**

For isolation of *Campylobacter coli* and *C. jejuni*.
Application: Use 18,5 g for 475 ml agar. After cooling add 5-7 % lysed blood and 1 vial of Campylobacter Preston Supplement (Art. No. 8851).
Preston Agar, Campy Agar
Storage temp.: +20 °C
WGK 1

**Formulation:**
Casein peptone. ..... 10 g/l
Beef extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 12 g/l
pH value. ..... 7,5 ±0,2

| | | | |
|---|---|---|---|
| **8847.1** | 500 g | plastic | 138,70 € |
| Original pack 6 x 500 g | | | 131,77/500 g |

For further information, please see page 1379

## Campylobacter Supplement

### Campylobacter Supplement
**lyophilised**
Media supplement for selective isolation of *Campylobacter jejuni, C. coli,* and *C. laridis.*
One box of 10 vials Campylobacter Supplement is sufficient for 10 x 500 ml Campylobacter Agar, blood-free.
**CCDA Supplement**
Storage temp.: +4 °C
Transport temp.: room temp.
WGK 3
**Danger** H334-H317

**Formulation:**
Cefoperazone. ..... 16 mg
Amphotericin B. ..... 5 mg
per vial

| | | | |
|---|---|---|---|
| **4857.1** | 10 vials | glass | 154,30 € |

For further information, please see page 1406

## Campy-Selective-Bloodfree-Medium, CCDA
▶ Campylobacter Agar, blood-free (Base) see p. 1808

## Canada balsam

### Canada balsam
**natural, for microscopy**
Balsamum Canadense
D 0,99
flp 43 °C
[8007-47-4] • EC No. 232-362-2
UN No. 1993 • ADR 3 III • WGK 2
**Warning** H226

**Type analysis:**
Appearance. ..... yellowish translucent, highly viscous
Odour. ..... characteristic (like conifers)
Density (20 °C). ..... 0,980-0,998
Refractive index $n_D^{20}$. ..... 1,520-1,530
Flash point. ..... 43 °C
Solubility in:
Ether. ..... 1:1
Toluene. ..... 1:1
Chloroform. ..... 1:1

| | | | |
|---|---|---|---|
| **8016.1** | 25 ml | glass | 19,60 € |
| **8016.2** | 100 ml | glass | 48,30 € |

For further information, please see page 1474

## Candida chromogenic Agar

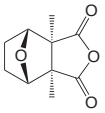
### Candida chromogenic Agar
**for microbiology**
Selective medium for isolation and quick identification of pathogeneous Candida species.
Application: Use 45,9 g for 1 l agar.
Storage temp.: +4 °C
WGK 3
**Warning** H351

**Formulation:**
Peptone. ..... 10 g/l
Glucose. ..... 20 g/l
Chloroamphenicol. ..... 0,5 g/l
Chromogene Mixture. ..... 0,4 g/l
Agar. ..... 15 g/l
pH value. ..... 6,1 ±0,2

| | | | |
|---|---|---|---|
| **2922.2** | 100 g | plastic | 145,15 € |
| **2922.1** | 500 g | plastic | 536,45 € |
| Original pack 6 x 500 g | | | 509,63/500 g |

For further information, please see page 1380

## Cantharidin



### Cantharidin
**for biochemistry**
Kantharidin
$C_{10}H_{12}O_4$
M 196,20 g/mol
mp 216 °C
[56-25-7] • EC No. 200-263-3
UN No. 2811 • ADR 6.1 I
**Danger** H300+H310+H330

**Typanalyse:**
Appearance. ..... white, cryst. powder
Melting point. ..... 216-218 °C

| | | | |
|---|---|---|---|
| **3322.1** | 25 mg | glass | 25,30 € |

## CAPE
▶ Caffeic acid phenethyl ester see p. 1802

## Capping reagent I

### Capping reagent I
**for DNA synthesis with ABI™ and PolyGen® Synthesizer**
Mixture of acetic anhydride, pyridine and tetrahydrofuran.
D 0,93 • bp ~65 °C
flp -21 °C
Storage temp.: +4 °C
UN No. 2924 • ADR 3 (8) II • WGK 2
**Danger** H225-H318-H302+H332-H335-H351-H315-EUH019

| | | | |
|---|---|---|---|
| **2255.1** | 200 ml | glass | 36,45 € |
| **2255.2** | 450 ml | glass | 77,30 € |
| **2255.3** | 2,5 l | glass | 212,85 € |
| Original pack 4 x 2,5 l | | | 202,21/2,5 l |

For further information, please see page 1493

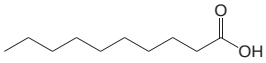
## Capping reagent II

### Capping reagent II
**for DNA synthesis with ABI™ and PolyGen® Synthesizer**
Mixture of 1-Methylimidazole and tetrahydrofuran.
D 0,92 • bp ~65 °C
flp -21 °C
Storage temp.: +4 °C
UN No. 2924 • ADR 3 (8) II • WGK 1
**Danger**
H225-H314-H302-H335-H351-EUH019

| | | | |
|---|---|---|---|
| **2256.1** | 200 ml | glass | 35,40 € |
| **2256.2** | 450 ml | glass | 74,10 € |
| **2256.3** | 2,5 l | glass | 196,65 € |
| Original pack 4 x 2,5 l | | | 186,82/2,5 l |

For further information, please see page 1493

## Capric acid



Decanoic acid
$C_{10}H_{20}O_2$
M 172,27 g/mol
D 0,89 • bp 270 °C
mp 31 °C • flp 148 °C
Solubility: 0,15 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[334-48-5] • EC No. 206-376-4
WGK 1
**Warning** H315-H319-H412

### Capric acid
**>99 %, for synthesis**

**Type analysis:**
Assay (GC). ..... >99 %

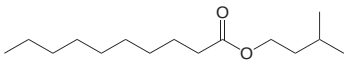
| | | | |
|---|---|---|---|
| **8797.1** | 100 g | glass | 19,90 € |
| **8797.3** | 500 g | glass | 48,30 € |
| Original pack 6 x 500 g | | | 45,89/500 g |
| **8797.2** | 1 kg | glass | 82,70 € |
| Original pack 6 x 1 kg | | | 78,57/1 kg |

### Capric acid
**ROTICHROM® GC**
Reference substance for GC.

**Type analysis:**
Purity (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **3164.1** | 1 g | glass | 26,35 € |

## Capric acid isoamyl ester

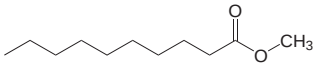


### Capric acid isoamyl ester
**ROTICHROM® GC**
Reference substance for GC.
Isoamyl caprate
$C_{15}H_{30}O_2$
M 242,4 g/mol
Storage temp.: +4 °C
[2306-91-4] • EC No. 218-004-8
WGK 1

**Type analysis:**
Purity (GC).....≥93 %

| | | | |
|---|---|---|---|
| **4420.1** | 1 g | plastic | 81,20 € |

## Capric acid methyl ester



### Capric acid methyl ester
**≥98 %, for synthesis**
Decanoic acid methyl ester, Methyldecanoate
$C_{11}H_{22}O_2$
M 186,29 g/mol
D 0,87 • bp 224 °C
mp ~ -13 °C • flp 94 °C
Storage temp.: +4 °C
[110-42-9] • EC No. 203-766-6
WGK 1

**Warning** H315

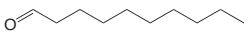
**Type analysis:**
Appearance.....clear, almost colourless liquid
Assay (GC).....≥98,0 %
Density (d 20 °C/20 °C).....0,8720-0,8750
Refractive index (20 °C).....1,4240-1,4270

| | | | |
|---|---|---|---|
| **3325.1** | 100 ml | glass | 64,40 € |

## Capric alcohol

▶ 1-Decanol see p. 1858

## Capric aldehyde



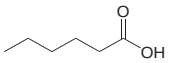
### Capric aldehyde
**≥97 %, for synthesis**
Decanal
$C_{10}H_{20}O$
M 156,27 g/mol
D 0,83 • bp ~220 °C
mp 7 °C • flp 88 °C
[112-31-2] • EC No. 203-957-4
WGK 2

**Warning** H315

**Type analysis:**
Assay (GC).....≥97 %
Density (d 20 °C/4 °C).....0,815-0,844
Stabilised with α-Tocopherol

| | | | |
|---|---|---|---|
| **7547.1** | 100 ml | glass | 112,80 € |

## Caproic acid



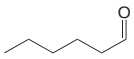
### Caproic acid
**≥98 %, for synthesis**
Hexanoic acid
$C_6H_{12}O_2$
M 116,16 g/mol
D ~0,93 • bp 205 °C
mp -2 °C
[142-62-1] • EC No. 205-550-7
UN No. 2829 • ADR 8 III • WGK 1

**Danger** H314-H302-H311

**Type analysis:**
Assay (GC).....≥98,0 %
Density (d 20 °C/4 °C).....0,921-0,932

| | | | |
|---|---|---|---|
| **8799.1** | 100 ml | glass | 18,20 € |
| **8799.3** | 500 ml | glass | 31,10 € |
| **8799.2** | 1 l | glass | 52,60 € |
| Original pack 6 x 1 l | | | 49,97/1 l |
| **8799.4** | 2,5 l | glass | 106,35 € |
| Original pack 4 x 2,5 l | | | 101,03/2,5 l |

## Caproic aldehyde



### Caproic aldehyde
**≥98 %, for synthesis**
Hexanal
$C_6H_{12}O$
M 100,16 g/mol
D 0,81 • bp 119-124 °C
mp -56 °C • flp 25 °C
Solubility: 6 g/l ($H_2O$, 20 °C)
[66-25-1] • EC No. 200-624-5
UN No. 1207 • ADR 3 III • WGK 1

**Warning** H226-H315-H319

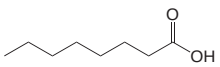
**Type analysis:**
Assay (GC).....≥98,0 %
Density (d 20 °C/4 °C).....0,813-0,820

| | | | |
|---|---|---|---|
| **3327.1** | 100 ml | glass | 38,60 € |

## Caprylic acid

▶ Octanoic acid see p. 2108

## Caprylic acid



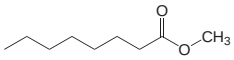
### Caprylic acid
**ROTICHROM® GC**
Reference substance for GC.
n-Octanoic acid
$C_8H_{16}O_2$
M 144,21 g/mol
D ~0,910 • bp 237 °C
mp 12-16 °C • flp 127 °C
Storage temp.: +4 °C
[124-07-2] • EC No. 204-677-5
UN No. 3265 • ADR 8 III • WGK 1

**Danger** H314-H412

**Type analysis:**
Purity (GC).....≥99 %

| | | | |
|---|---|---|---|
| **3168.1** | 1 g | glass | 40,35 € |

## Caprylic acid methyl ester



### Caprylic acid methyl ester
**≥99 %, for synthesis**
Methyl caprylate, Octanoic acid methyl ester, Methyloctanoate
$C_9H_{18}O_2$
M 158,24 g/mol
D 0,88 • bp 193 °C
mp -37 °C • flp 69 °C
Storage temp.: +4 °C
[111-11-5] • EC No. 203-835-0
WGK 1

**Warning** H315

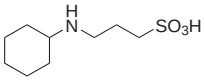
**Type analysis:**
Appearance.....clear, almost colourless liquid
Assay (GC).....≥99 %
Density (d 20 °C/4 °C).....0,8760-0,8800
Refractive index $n_D^{20}$.....1,4150-1,4190

| | | | |
|---|---|---|---|
| **3331.1** | 10 ml | glass | 25,70 € |

## Caprylic alcohol

▶ 1-Octanol see p. 2109

## CAPS



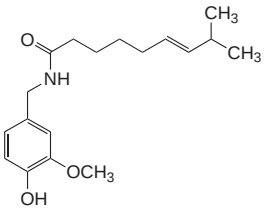
### CAPS
**PUFFERAN® ≥99 %**
Cyclohexylamino propanesulphonic acid
$C_9H_{19}NO_3S$
M 221,32 g/mol
[1135-40-6] • EC No. 214-492-1

**Guarantee analysis:**
Appearance.....white powder
Assay (N).....≥99,0 %
Water.....≤1,0 %
pH value (1 % in $H_2O$).....4,9-6,0
Solubility (5 % in $H_2O$).....clear, soluble
Absorption (0,5 M in $H_2O$):
280 nm.....≤0,1
250 nm.....≤0,1

| | | | |
|---|---|---|---|
| **9168.1** | 25 g | plastic | 18,85 € |
| **9168.3** | 100 g | plastic | 48,95 € |
| **9168.2** | 250 g | plastic | 111,70 € |

For further information, please see page 1268

## Capsaicin



### Capsaicin

**50 %, natural**

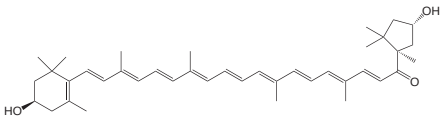
$C_{18}H_{27}NO_3$
M 305,42 g/mol
mp 62-65 °C
[404-86-4] • EC No. 206-969-8
UN No. 3462 • ADR 6.1 III • WGK 1

**Danger**
H301-H334-H318-H317-H335

**Type analysis:**
Appearance. ..... off-white to yellow crystals
Capsaicin (HPLC). ..... ≥50 %
Dihydrocapsaicin. ..... ≥20 %
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **8804.1** | 100 mg | glass | 61,85 € |

## Capsanthin



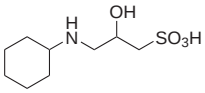
### Capsanthin

**ROTICHROM® TLC**

Reference substance for thin layer chromatography.
$C_{40}H_{56}O_3$
M 584,85 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[465-42-9] • EC No. 207-364-1

| | | | |
|---|---|---|---|
| **5674.1** | 1 mg | glass | 278,45 € |

## CAPSO



### CAPSO

**PUFFERAN® ≥98 %**

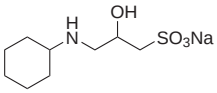
3-N-Cyclohexylamino-2-hydroxypropane sulphonic acid
$C_9H_{19}NO_4S$
M 237,3 g/mol
mp 275 °C
Solubility: 100 g/l ($H_2O$, 20 °C)
[73463-39-5]
WGK 1

**Guarantee analysis:**
Assay (titr.). ..... ≥98 %
Water (KF). ..... ≤1,0 %
pH value (1 % solution). ..... 5,0-6,5
UV-Absorption (0,5 M in $H_2O$):
280 nm. ..... ≤0,05
260 nm. ..... ≤0,05

| | | | |
|---|---|---|---|
| **5584.3** | 25 g | plastic | 28,95 € |
| **5584.1** | 100 g | plastic | 87,00 € |
| **5584.2** | 500 g | plastic | 321,45 € |
| Original pack 6 x 500 g | | | 305,38/500 g |

For further information, please see page 1268

## CAPSO sodium salt



### CAPSO sodium salt

**PUFFERAN® ≥95 %**

3-N-Cyclohexylamino-2-hydroxypropane sulphonic acid sodium salt
$C_9H_{18}NO_4NaS$
M 259,3 g/mol
[102601-34-3]

**Type analysis:**
Assay (titr.). ..... ≥95 %
Water (KF). ..... ≤6,0 %
pH value (1 % solution). ..... 10,9-11,6

| | | | |
|---|---|---|---|
| **6861.1** | 25 g | plastic | 27,85 € |

For further information, please see page 1268

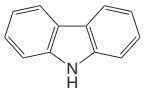
## Carbamide

▶ Urea see p. 2366

## Carbamoylurea

▶ Biuret see p. 1778

## Carbazole



### Carbazole

**ROTI®CALIPURE Melting point standard 243-247 °C**

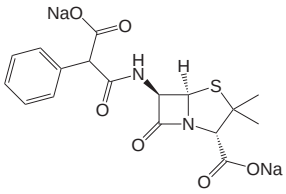
Dibenzopyrrole, Diphenylenimine, 9-Azafluorene
$C_{12}H_9N$
M 167,21 g/mol
bp 351 °C
mp 243-247 °C
[86-74-8] • EC No. 201-696-0
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H410

**Type analysis:**
Meniscus formation. ..... 243-247 °C
Complete liquefaction. ..... 243-247 °C

| | | | |
|---|---|---|---|
| **9752.1** | 1 g | glass | 30,00 € |

## Carbenicillin disodium salt



### Carbenicillin disodium salt

**≥88 %, for biochemistry**

β-lactam antibiotic, semi synthetic penicillin
α-Carboxybenzyl penicillin disodium salt
$C_{17}H_{16}N_2O_6SNa_2$
M 422,4 g/mol
D 0,7
Storage temp.: +4 °C
[4800-94-6]
WGK 1

**Danger** H334-H317

**Type analysis:**
Appearance. ..... white to nearly white powder
Assay (HPLC). ..... ≥88 %
Water . ..... ≤6 %
pH value (5 % in $H_2O$). ..... 6,0-8,0

| | | | |
|---|---|---|---|
| **6344.1** | 1 g | glass | 28,50 € |
| **6344.2** | 5 g | plastic | 65,05 € |
| **6344.3** | 25 g | plastic | 295,65 € |

For further information, please see page 1427

## Carbide

▶ Aluminium carbide see p. 1720
▶ Calcium carbide see p. 1803

## Carbinol

▶ Methanol see p. 2067

## $N_\alpha$-Carbobenzyloxy-L-arginine

▶ Z-L-Arginine see p. 2385

## $N_\alpha$-Carbobenzyloxy-L-aspartic acid

▶ Z-L-Aspartic acid see p. 2385

## $N_\alpha$-Carbobenzyloxy-L-glutamic acid

▶ Z-L-Glutamic acid see p. 2385

## $N_\alpha$-Carbobenzyloxy-L-leucine

▶ Z-L-Leucine see p. 2390

## $N_\alpha$-Carbobenzyloxy-L-lysine

▶ Z-L-Lysine see p. 2390

C

## Carbohydrates (Saccharides)


| Art. No. | Description | Page |
|---|---|---|
| 4114 | N-Acetyl-D-galactosamine | 1703 |
| 8993 | N-Acetyl-D-glucosamine | 1703 |
| 5525 | N-Acetyl-D-mannosamine | 1703 |
| 7480 | N-Acetylneuraminic acid | 1704 |
| 8954 | DL-Arabinose | 1749 |
| 5118 | L(+)-Arabinose | 1749 |
| 5510 | D(+)-Arabitol | 1749 |
| 7738 | L(-)-Arabitol | 1749 |
| 5840 | D(+)-Cellobiose | 1820 |
| 5463 | α-D-Cellobiose octaacetate | 1821 |
| 3363 | α-Chloralose | 1826 |
| 4122 | α-Cyclodextrin | 1851 |
| 9916 | 2-Deoxy-D-galactose | 1860 |
| CN96 | 2-Deoxy-D-glucose | 1861 |
| CN97 | 2-Deoxy-D-ribose | 1861 |
| 8718 | Dextran 2,5 | 1863 |
| 7615 | Dextran 6 | 1863 |
| 7616 | Dextran 10 | 1863 |
| 7617 | Dextran 20 | 1863 |
| 8943 | Dextran 35 | 1863 |
| 7626 | Dextran 40 | 1864 |
| 9227 | Dextran 40 | 1863 |
| 9228 | Dextran 70 | 1864 |
| 7618 | Dextran 100 | 1864 |
| 7619 | Dextran 150 | 1864 |
| 9233 | Dextran 250 | 1864 |
| 9219 | Dextran 500 | 1865 |
| 7610 | Dextran sulphate 8 sodium salt | 1865 |
| 7612 | Dextran sulphate 40 sodium salt | 1865 |
| 5956 | Dextran sulphate 500 sodium salt | 1865 |
| 6778 | Dextrin | 1865 |
| 6777 | Dextrin | 1865 |
| 3488 | Dextrin | 1865 |
| 4944 | Dulcitol | 1897 |
| 4981 | D(-)-Fructose | 1943 |
| 4982 | D-Fructose-1,6-diphosphate trisodium salt octahydrate | 1943 |
| KK10 | L(-)-Fucose | 1944 |
| 7411 | D-Galactosamine hydrochloride | 1945 |
| 8878 | D(+)-Galactose | 1945 |
| 4987 | D(+)-Galactose | 1945 |
| 5550 | α-D-Galactose-1-phosphate dipotassium salt pentahydrate | 1945 |
| 4123 | β-D-Gentiobiose | 1950 |
| 3769 | D(+)-Glucosamine hydrochloride | 1955 |
| X997 | D(+)-Glucose | 1955 |
| HN06 | D(+)-Glucose | 1956 |
| 7509 | L(-)-Glucose | 1956 |
| 6780 | D(+)-Glucose monohydrate | 1956 |
| 6887 | D(+)-Glucose monohydrate | 1956 |
| 6119 | α-D-Glucose-1-phosphate disodium salt tetrahydrate | 1956 |
| 5544 | D-Glucose-6-phosphate monosodium salt | 1956 |
| CN72 | D-Glucose-6-phosphate disodium dihydrate | 1957 |
| 4124 | D-Glucuronic acid | 1957 |
| 4355 | D-Glucuronic acid sodium salt monohydrate | 1957 |
| HP51 | Glycogen | 1963 |
| 6329 | meso-Inositol | 2005 |
| 4191 | meso-Inositol | 2005 |
| 6884 | Isomaltotriose | |
| 8400 | Isomaltulose | 2015 |
| 8921 | α-Lactose monohydrate | 2027 |
| 6868 | α-Lactose monohydrate | 2027 |
| CN98 | Lactulose | 2027 |
| 8882 | D(+)-Maltose monohydrate | 2054 |
| 8951 | D(+)-Maltose monohydrate | 2054 |
| 8883 | D(-)-Mannitol | 2057 |
| 4175 | D(-)-Mannitol | 2057 |
| 8887 | D(+)-Mannose | 2057 |
| 4220 | D(+)-Mannose | 2058 |
| 4222 | D(+)-Melezitose monohydrate | 2061 |
| 4223 | D(+)-Melibiose monohydrate | 2061 |
| 8356 | 1-*O*-Methyl-β-D-glucopyranoside | 2074 |
| 8407 | 1-*O*-Methyl-β-D-glucuronic acid, sodium salt | 2074 |
| 4196 | Phlorizin dihydrate | 2149 |
| 5241 | D(+)-Raffinose pentahydrate | 2191 |
| 4655 | L(+)-Rhamnose monohydrate | 2197 |
| 7168 | D(-)-Ribose | 2200 |
| 1030 | Roti®fair 20% Glucose | 2212 |
| 8890 | D(+)-Saccharose | 2237 |
| 4621 | D(+)-Saccharose | 2237 |
| 4661 | D(+)-Saccharose | 2238 |
| 9286 | D(+)-Saccharose | 2238 |
| 9097 | D(+)-Saccharose | 2238 |
| 6213 | D-Sorbitol | 2290 |
| 4028 | L(-)-Sorbose | 2291 |
| 6161 | D-Tagatose | 2328 |
| 8897 | D(+)-Trehalose dihydrate | 2349 |
| 5151 | D(+)-Trehalose dihydrate | 2349 |
| 4414 | Xylan | 2380 |
| 8659 | Xylan | 2380 |
| 9711 | Xylitol | 2382 |
| 5537 | D(+)-Xylose | 2382 |
| 4061 | L-Xylose | 2382 |


## Carbol gentian violet solution

### Carbol gentian violet solution

**for microscopy**

For Gram staining.

UN No. 1993 • ADR 3 III • WGK 2

**Warning** H226

**Type analysis:**

Suitability for microscopy..... complies

| | | | |
|---|---|---|---|
| **CN00.1** | 500 ml | glass | 23,15 € |
| **CN00.2** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |

For further information, please see page 1460

## Carbol-Gentianaviolet solution

▶ Carbol gentian violet solution see p. 1812

## Carbolic acid

▶ Phenol see p. 2145

## Carbolic fuchsine solution

### Carbolic fuchsine solution

**for microscopy**

For bacterial staining (Gram staining and staining of acid-fast bacteria, e.g. TB bacteria acc. to Ziehl-Neelsen).

D 0,987

UN No. 1760 • ADR 8 II • WGK 2

**Danger** H314-H341

| | | | |
|---|---|---|---|
| **A130.2** | 500 ml | glass | 22,05 € |
| **A130.1** | 1 l | glass | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |

For further information, please see page 1460

## Carbonate bicarbonate buffer (tablets)

▶ Roti®fair CBB see p. 2211

## Carbonic acid diethyl ester

▶ Diethyl carbonate see p. 1872

## Carbonic acid dimethyl ester

▶ Dimethyl carbonate see p. 1882

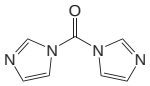
## Carbonic acid diphenyl ester

▶ Diphenyl carbonate see p. 1888

## N-(Nα-Carbonyl-Arg-Val-Arg-al)-Phe dihydrochloride

▶ Antipain dihydrochloride see p. 1747

## 1,1'-Carbonyldiimidazole (CDI)



### 1,1'-Carbonyldiimidazole (CDI)

**≥98 %**

Activation agent for carboxylic acids.
Coupling reagent for peptide synthesis.

CDI

$C_7H_6N_4O$

M 162,1 g/mol

mp 116-120 °C

[530-62-1] • EC No. 208-488-9

UN No. 3263 • ADR 8 III • WGK 1

**Danger** H302-H314

**Type analysis:**

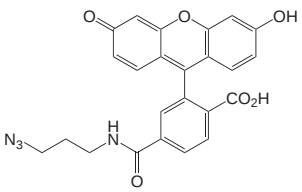
Appearance. ..... white to off-white powder
Assay (HPLC). .....≥98 %
Water (KF). .....≤0,5 %

| | | | |
|---|---|---|---|
| **6992.1** | 10 g | glass | 26,80 € |
| **6992.2** | 25 g | glass | 49,35 € |
| **6992.3** | 100 g | glass | 113,85 € |
| **6992.4** | 500 g | glass | 439,70 € |
| Original pack 6 x 500 g | | | 417,72/500 g |

## Carbowax

▶ Polyethylene glycol see p. 2157

## 6-Carboxyfluorescein Azide (6-FAM-Azide)



### 6-Carboxyfluorescein Azide (6-FAM-Azide)

**≥95 %**

Fluorescent dye

4-((3-Azidopropyl)carbamoyl)-2-(6-hydroxy-3-oxo-3*H*-xanthen-9-yl)benzoic acid, 6-FAM-Azide

$C_{24}H_{18}N_4O_6$

M 458,43 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

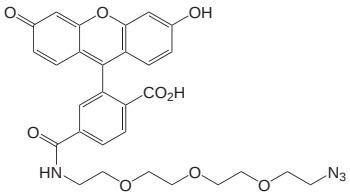
WGK 3

**Type analysis:**

Appearance. ..... orange solid
Assay (HPLC). ..... ≥95 %
Absorption max. (buffer, pH 9). ..... 496 nm
Emission max. (buffer, pH 9). ..... 516 nm
Molar extinction coefficient ε. ..... 83 000 $cm^{-1}M^{-1}$
Solubility. ..... DMSO, DMF, MeOH

| | | | |
|---|---|---|---|
| **7806.1** | 1 mg | plastic | 45,70 € |
| **7806.2** | 5 mg | plastic | 78,40 € |
| **7806.3** | 10 mg | plastic | 117,20 € |
| **7806.4** | 100 mg | plastic | 461,20 € |

## 6-Carboxyfluorescein-PEG3-Azide (6-FAM-PEG3-Azide)



### 6-Carboxyfluorescein-PEG3-Azide (6-FAM-PEG3-Azide)

**≥96 %**

Fluorescent dye

4-((2-(2-(2-(2-Azidoethoxy)ethoxy)ethoxy)-ethyl)carbamoyl)-2-(6-hydroxy-3-oxo-3*H*-xanthen-9-yl)benzoic acid, 6-FAM-PEG3-Azide

$C_{29}H_{28}N_4O_9$

M 576,55 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

WGK 3

**Type analysis:**

Appearance. ..... orange solid
Assay (HPLC). ..... ≥96 %
Absorption max. (buffer, pH 9). ..... 496 nm
Emission max. (buffer, pH 9). ..... 516 nm
Molar extinction coefficient ε. ..... 83 000 $cm^{-1}M^{-1}$
Solubility. ..... DMSO, DMF, MeOH
For a 10 mM solution: add 173 µl to 1 mg.

| | | | |
|---|---|---|---|
| **7812.1** | 1 mg | plastic | 133,20 € |
| **7812.2** | 5 mg | plastic | 504,20 € |

## 2-Carboxy-2'-hydroxy-5'-sulfoformazyl-benzene-monosodium salt

▶ Zincon see p. 2388

## Carboxylic acid C18

▶ Stearic acid see p. 2315

## Carboxymethylcellulose sodium salt

Sodium carboxymethylcellulose
[9004-32-4]
WGK 1

### Carboxymethylcellulose sodium salt

**≥99,5 %, powdered**

**Type analysis:**

Active assay (dry substance). ..... ≥99,5 %
Moisture. ..... ≤10,0 %
Heavy metals. ..... ≤0,002 %
Degree of substitution. ..... 0,75-0,85 %
pH value (1 %, $H_2O$). ..... 6,5-8,0
Viscosity (Brook., 1 %, 25 °C). ..... 1000-1500 mPa s

| | | | |
|---|---|---|---|
| **3333.1** | 250 g | plastic | 34,30 € |
| **3333.2** | 1 kg | plastic | 104,20 € |
| Original pack 6 x 1 kg | | | 98,99/1 kg |

### Carboxymethylcellulose sodium salt

**≥98 %, granulated**

Used as binder, thickener and dispersing agent.

**Type analysis:**

Active assay. ..... ≥98,0 %
Moisture. ..... ≤8,0 %
Sodium (Na). ..... 7,0-8,9 %
Degree of substitution. ..... 0,65-0,90
pH value (1 %, $H_2O$). ..... 6,5-8,5
Viscosity (2 % solution). ..... 1500-3100 mPa s

| | | | |
|---|---|---|---|
| **6190.1** | 250 g | plastic | 24,65 € |
| **6190.2** | 1 kg | plastic | 80,10 € |
| Original pack 6 x 1 kg | | | 76,10/1 kg |

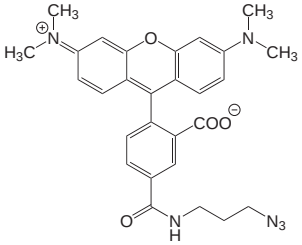
## N-[N-(L-3-trans-Carboxyoxirane-2-carbonyl)leucyl]-agmatine

▶ E-64 see p. 1898

## α-Carboxypenicillin Disodium

▶ Carbenicillin disodium salt see p. 1811

## 5-Carboxytetramethyl-rhodamine Azide (5-TAMRA-Azide)



### 5-Carboxytetramethyl-rhodamine Azide (5-TAMRA-Azide)

**≥95 %**

Fluorescent dye

5-((3-Azidopropyl)carbamoyl)-2-(6-(dimethyl-amino)-3-(dimethyliminio)-3*H*-xanthen-9-yl)benzoate, 5-TAMRA-Azide

$C_{28}H_{28}N_6O_4$

M 512,56 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

[1192590-89-8]

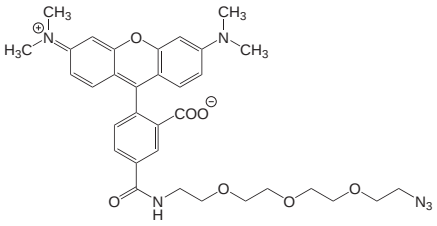
WGK 3

**Type analysis:**

Appearance. ..... dark red solid
Assay (LCMS). ..... ≥95 %
Absorption max. (DMF). ..... 546 nm
Emission max. (DMF). ..... 579 nm
Molar extinction coefficient ε. ..... 91 000 $cm^{-1}M^{-1}$
Solubility. ..... DMSO, DMF, MeOH
For a 10 mM solution: add 195 µl to 1 mg.

| | | | |
|---|---|---|---|
| **7807.1** | 1 mg | plastic | 45,70 € |
| **7807.2** | 5 mg | plastic | 78,40 € |
| **7807.3** | 10 mg | plastic | 117,20 € |
| **7807.4** | 100 mg | plastic | 461,20 € |

## 5-Carboxytetramethyl-rhodamine-PEG3-Azide (5-TAMRA-PEG3-Azide)



### 5-Carboxytetramethyl-rhodamine-PEG3-Azide (5-TAMRA-PEG3-Azide)

**≥93 %**

Fluorescent dye

5-((2-(2-(2-(2-Azidoethoxy)ethoxy)ethoxy)-ethyl)carbamoyl)-2-(6-(dimethylamino)-3-(dimethyliminio)-3*H*-xanthen-9-yl)benzoate, 5-TAMRA-PEG3-Azide

$C_{33}H_{38}N_6O_7$

M 630,69 g/mol

Storage temp.: -20 °C
Transport temp.: cooled

[1380486-02-1]

WGK 1

**Type analysis:**

Appearance. ..... dark red solid
Assay (HPLC). ..... ≥93 %
Absorption max. (DMF). ..... 546 nm
Emission max. (DMF). ..... 579 nm
Molar extinction coefficient ε. ..... 91 000 $cm^{-1}M^{-1}$
Solubility. ..... DMSO, DMF, MeOH, Water (low)
For a 10 mM solution: add 158 µl to 1 mg.

| | | | |
|---|---|---|---|
| **7808.1** | 1 mg | plastic | 44,00 € |
| **7808.2** | 5 mg | plastic | 76,90 € |
| **7808.3** | 10 mg | plastic | 115,60 € |
| **7808.4** | 100 mg | plastic | 456,90 € |

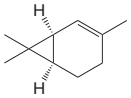
## α-Carboxy-α-3-thienylmethyl-penicillin disodium salt

▶ Ticarcillin disodium salt see p. 2343

## Cardiogreen

▶ Indocyanine green see p. 2003

## (+)-2-Carene



### (+)-2-Carene

**ROTICHROM® GC**

Reference substance for GC.

$C_{10}H_{16}$

M 136,23 g/mol

D ~0,862 • bp 167-168 °C

flp 38 °C

Storage temp.: +4 °C

[4497-92-1] • EC No. 224-792-4

UN No. 2319 • ADR 3 III

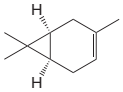
**Warning** H226

**Type analysis:**

Purity (GC). ..... ≥92 %

| | | | |
|---|---|---|---|
| **4952.1** | 1 g | plastic | 81,20 € |

## δ-3-Carene



### δ-3-Carene

**ROTICHROM® GC**

Reference substance for GC.

$C_{10}H_{16}$

M 136,23 g/mol

D ~0,864 • bp 166-170 °C

flp 43 °C

Storage temp.: +4 °C

[13466-78-9] • EC No. 236-719-3

UN No. 2319 • ADR 3 III • WGK 2

**Danger**

H304-H226-H315-H317-H412

**Type analysis:**

Purity (GC). ..... ≥90 %

| | | | |
|---|---|---|---|
| **3572.1** | 1 g | plastic | 39,70 € |

## Carmine (C.I. 75470)

### Carmine (C.I. 75470)

**for microscopy**

Karmin, Karminrot

$C_{22}H_{20}O_{13}$

M 492,38 g/mol

[1390-65-4] • EC No. 215-724-4

WGK 1

**Type analysis:**

Suitability for microscopy. ..... complies
Absorption max. (in $H_2O$). ..... 525-535 nm
Loss on drying. ..... ≤20,0 %
Dye content. ..... 50,0-55,0 %

| | | | |
|---|---|---|---|
| **6859.1** | 10 g | glass | 44,65 € |
| **6859.2** | 25 g | glass | 93,45 € |

For further information, please see page 1463

## Carmoisine

▶ Chromotrope® FB (C.I. 14720) see p. 1832

## Carnauba wax

### Carnauba wax

**natural-coloured flakes**

Cera Carnaubae

D ~0,99

mp 81-86 °C

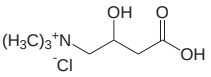
[8015-86-9] • EC No. 232-399-4

**Type analysis:**

Appearance. ..... light yellow flakes
Drop point. ..... 81-86 °C
Acid value (mg KOH/g). ..... 2-7

| | | | |
|---|---|---|---|
| **3514.1** | 1 kg | plastic | 50,45 € |
| Original pack 6 x 1 kg | | | 47,93/1 kg |

## DL-Carnitinchloride



### DL-Carnitinchloride

**≥98 %, for biochemistry**

Bicarnesin HCl, (±)-Carnitin hydrochloride

$C_7H_{15}O_3N \cdot HCl$

M 197,66 g/mol

mp 197-199 °C

[461-05-2] • EC No. 207-309-1

WGK 1

**Warning** H315-H319-H335

**Type analysis:**

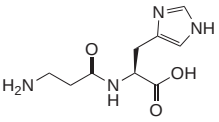
Appearance. ..... white, fine crystals
Assay. ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **7212.1** | 25 g | plastic | 59,05 € |

## (±)-Carnitin hydrochloride

▶ DL-Carnitinchloride see p. 1814

## L-Carnosine



### L-Carnosine

**≥98 %, for biochemistry**

N-β-Alanyl-L-histidine, H-β-Ala-His-OH

$C_9H_{14}N_4O_3$

M 226,24 g/mol

mp ~250 °C

Storage temp.: -20 °C
Transport temp.: room temp.

[305-84-0] • EC No. 206-169-9

WGK 2

**Type analysis:**

Assay (titr.). ..... ≥98 %
Solution (2 % in $H_2O$). ..... colourless
Water (KF). ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in $H_2O$). ..... +21,0° ±1°
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4148.1** | 1 g | glass | 26,35 € |
| **4148.2** | 5 g | glass | 85,90 € |

## Ψ,Ψ-Carotene

▶ Lycopene see p. 2045

## Carotene

### Carotene

**Natural, oil-soluble, liquid**

Carotenoids from *Tagetes erecta.*

$C_{40}H_{56}$

M 536,89 g/mol

D 1,0

mp 183 °C • flp 103 °C

Storage temp.: +4 °C

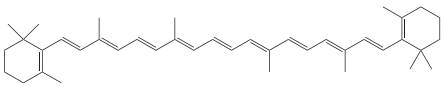
[7235-40-7] • EC No. 230-636-6

WGK 1

**Type analysis:**
Appearance. ..... red-brown liquid
Solubility. ..... completely soluble in cooking-oils
Dye content. ..... ≥2,5 % lutein
Water (KF). ..... ≤1 %
Density (20 °C). ..... 0,92-0,94
Viscosity (20 °C/Brookfield). ..... ≤300 mPa s
Intensity of colour (in dichloromethane/ethanol):
E/1 %/443 nm. ..... 69-73
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0002 %

| | | | |
|---|---|---|---|
| **7864.1** | 250 g | glass | 47,20 € |

## β-Carotene



### β-Carotene
**ROTICHROM® ~CHR**
$C_{40}H_{56}$
M 536,89 g/mol
D 1,0
mp 1863 °C • flp 103 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[7235-40-7] • EC No. 230-636-6
WGK 1

| | | | |
|---|---|---|---|
| **5669.1** | 10 mg | glass | 228,45 € |

## β-β-Carotene-3-ol
▶ β-Cryptoxanthin see p. 1849

## Carotinoids

| Art. No. | Description | Page |
|---|---|---|
| 5674 | Capsanthin | 1811 |
| 5669 | β-Carotene | 1815 |
| 5675 | β-Cryptoxanthin | 1849 |
| 4452 | Helenien | 1970 |
| 5671 | Lutein | 2044 |
| 1180 | Lycopene | 2045 |
| 5670 | Lycopene | 2045 |
| 5673 | Physalien | 2152 |
| 5672 | Zeaxanthin | 2385 |

## Carrageenan, iota

### Carrageenan, iota
**acc. to FAO/WHO, EEC, FCC, highly pure**
Weakly gelating Carrageenan of iota type. Forms soft gels. For gelling of watery liquids like culture media for plants or animals in general, and for gelling of dairy products in particular. Manufactured from cultured and controlled sea weeds.
Carrageenan E407
[9062-07-1] • EC No. 232-949-3

**Guarantee analysis:**
Appearance. ..... white-pale tan
Viscosity (in milk). ..... 2000-3500 mPa s
Particle size (98 %). ..... <0,149 mm
Loss on drying. ..... <12 %
Arsenic (As). ..... <3 ppm
Lead (Pb). ..... <5 ppm
Cadmium (Cd). ..... <2 ppm
Mercury (Hg). ..... <1 ppm
Heavy metals. ..... <20 ppm
pH value. ..... 7,0-11,0
Microbiological Analysis. ..... complies

| | | | |
|---|---|---|---|
| **3675.1** | 25 g | plastic | 22,50 € |
| **3675.2** | 100 g | plastic | 57,95 € |
| **3675.3** | 500 g | plastic | 198,90 € |
| Original pack 6 x 500 g | | | 188,96/500 g |

For further information, please see page 1425

## Carrageenan, kappa

### Carrageenan, kappa
**acc. to FAO/WHO, EEC, FCC, highly pure**
Strongly gelling Carrageenan of kappa type. Forms gels of high gel strength. For gelling of watery liquids like e.g. culture media for plants or animals. Manufactured from cultured and controlled sea weeds.
Carrageenan E407
[11114-20-8] • EC No. 234-350-2

**Guarantee analysis:**
Appearance. ..... white-pale tan
Gel strength (1,5 %, aqueous). ..... 1200-1800 g/cm²
Particle size (99 %). ..... <0,25 mm
Loss on drying. ..... <12 %
Arsenic (As). ..... <3 ppm
Lead (Pb). ..... <5 ppm
Cadmium (Cd). ..... <2 ppm
Mercury (Hg). ..... <1 ppm
Heavy metals. ..... <20 ppm
pH value. ..... 7,0-11,0
Microbiological Analysis. ..... complies
Contains KCl

| | | | |
|---|---|---|---|
| **3059.1** | 25 g | plastic | 22,50 € |
| **3059.2** | 100 g | plastic | 57,95 € |
| **3059.3** | 500 g | plastic | 198,90 € |
| Original pack 6 x 500 g | | | 188,96/500 g |

For further information, please see page 1425

## Carrez solution I

### Carrez solution I
**for determination of sugars and starch**
Zinc acetate and acetic acid solution
D 1,11
UN No. 3082 • ADR 9 III • WGK 3
H411

| | | | |
|---|---|---|---|
| **9944.1** | 500 ml | plastic | 28,95 € |

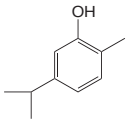
## Carrez solution II

### Carrez solution II
**for determination of sugars and starch**
Potassium hexacyanoferrate(II) solution.
D 1,07
WGK 2

| | | | |
|---|---|---|---|
| **9950.1** | 500 ml | plastic | 30,00 € |

## Carrier Ampholyte
▶ Roti®lyte Carrier Ampholyte see p. 2221

## Carvacrol

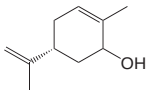



### Carvacrol
**≥97 %**
5-Isopropyl-2-methyl-phenol, Isothymol, 2-Hydroxy-p-cymene
$C_{10}H_{14}O$
M 150,21 g/mol
D 0,98 • bp 236-238 °C
mp 3-4 °C
Solubility: 1,25 g/l ($H_2O$, 25 °C)
[499-75-2] • EC No. 207-889-6
WGK 1
**Warning** H302-H315-H319

**Type analysis:**
Appearance. ..... colourless liquid
Assay (GC). ..... ≥97,0 %
Density (d 20 °C/4 °C). ..... 0,976-0,978

| | | | |
|---|---|---|---|
| **8808.1** | 10 ml | glass | 33,25 € |

## (-)-Carveol

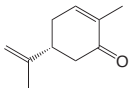



### (-)-Carveol
**97 %, mixture of isomers**
p-Mentha-6,8-dien-2-ol
$C_{10}H_{16}O$
M 152,24 g/mol
D 0,958 • bp 226-227 °C
flp 98 °C
[99-48-9] • EC No. 202-757-4
WGK 2
**Warning** H315-H319-H335

**Type analysis:**
Assay (GC). ..... ≥96,5 %
Appearance. ..... clear, colourless liquid
Specific rotation $[\alpha]_D^{20}$ (c=1 % in $CHCl_3$). ..... -112° ±5°

| | | | |
|---|---|---|---|
| **7219.1** | 5 g | glass | 77,95 € |

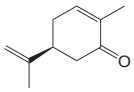
## (-)-Carvone




### (-)-Carvone
**ROTICHROM® ~CHR**
$C_{10}H_{14}O$
M 150,22 g/mol
D 0,92 • bp 230-231 °C
flp 88 °C
Solubility: insoluble ($H_2O$, 20 °C)
Storage temp.: +4 °C
[6485-40-1] • EC No. 229-352-5
WGK 2
**Warning** H302

| | | | |
|---|---|---|---|
| **8811.1** | 100 ml | glass | 51,10 € |

## (+)-Carvone

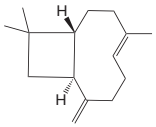


### (+)-Carvone
**ROTICHROM® GC**
Reference substance for GC.
$C_{10}H_{14}O$
M 150,22 g/mol
D ~0,960 • bp 229 °C
flp 89 °C
Solubility: 1,3 g/l ($H_2O$, 18 °C)
Storage temp.: +4 °C
[2244-16-8] • EC No. 218-827-2
WGK 1

**Type analysis:**
Purity (GC)..... ≥98 %

| | | | |
|---|---|---|---|
| **6947.2** | 100 mg | glass | 82,70 € |

## β-Caryophyllene



### β-Caryophyllene
**ROTICHROM® GC**
Reference substance for GC.
$C_{15}H_{24}$
M 204,36 g/mol
D 0,89 • bp 260-261 °C
flp >100 °C
Storage temp.: +4 °C
[87-44-5] • EC No. 201-746-1
WGK 1

**Type analysis:**
Purity (GC)..... ≥95 %

| | | | |
|---|---|---|---|
| **7232.2** | 100 mg | glass | 123,55 € |

## Casamino acids
▶ Casein hydrolysate see p. 1816

## Casein

### Casein
**≥95 %, soluble in alkalis**
Solubility: 20 g/l ($H_2O$, 25 °C)
[9000-71-9] • EC No. 232-555-1

**Type analysis:**
Assay (ex N, dry substance)..... ≥95 %
Ash content (800 °C)..... ≤3 %
Loss on drying (105 °C)..... ≤10 %
Free acid (as lactic acid)..... ≤1,5 %
Particle size (<315 µm)..... ≥95 %
Fat..... ≤1,0 %
Glucose (TLC)..... ≤0,2 %
Lactose (TLC)..... ≤0,5 %
Microbiological assay..... complies

| | | | |
|---|---|---|---|
| **7555.2** | 100 g | plastic | 25,70 € |
| **7555.1** | 500 g | plastic | 103,10 € |
| Original pack 6 x 500 g | | | 97,95/500 g |

## Casein hydrolysate

Casamino acids
Solubility: 310 g/l ($H_2O$, 23 °C)
Storage temp.: +20 °C
[65072-00-6] • EC No. 265-363-1
WGK 1

### Casein hydrolysate, bacteriological
**for biochemistry, acidic hydrolysate**

**Type analysis:**
Total nitrogen..... 7,0-8,0 %
pH value..... 4,5-6,0
Loss on drying..... <6 %
Ratio AN/TN..... 56-93 %

| | | | |
|---|---|---|---|
| **A157.3** | 250 g | plastic | 91,30 € |
| **A157.1** | 500 g | plastic | 139,25 € |
| Original pack 6 x 500 g | | | 132,29/500 g |
| **A157.2** | 1 kg | plastic | 249,95 € |
| Original pack 6 x 1 kg | | | 237,45/1 kg |

For further information, please see page 1419

### Casein hydrolysate, standard
**for molecular biology, acidic hydrolysate**
Ingredient of molecular and microbiological nutrient media, vitamin-free.

**Type analysis:**
Total nitrogen..... ≥5,0 %
Amino nitrogen..... ≥3,5 %
Ratio AN/TN..... ≥46 %
Ash content..... ≤45 %
pH value (2 % solution)..... 6,0-7,5

| | | | |
|---|---|---|---|
| **AE41.1** | 500 g | plastic | 70,45 € |
| Original pack 6 x 500 g | | | 66,93/500 g |
| **AE41.2** | 1 kg | plastic | 124,60 € |
| Original pack 6 x 1 kg | | | 118,37/1 kg |

For further information, please see page 1419

## Casein peptone Lecithin Polysorbate Broth
▶ TAT Broth (Base) see p. 2330

## Casein-sodium
▶ Sodium-Casein see p. 2269

## CASO Agar

### CASO Agar
**Ph.Eur., for microbiology**
For isolation and cultivation of non-fastidious organisms.
Application: Use 40 g for 1 l agar.
Agar medium B (Ph.Eur. 6.0), Casein Soya Bean Digest Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Agar, **TSB Agar**, Trypticasein Soy Agar
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**
Casein peptone (pancreas hydrolysate)..... 15 g/l
Soy peptone (papain hydrolysate)..... 5 g/l
Sodium chloride (NaCl)..... 5 g/l
Agar..... 15 g/l
pH value..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **X937.1** | 500 g | plastic | 81,60 € |
| Original pack 6 x 500 g | | | 77,52/500 g |
| **X937.2** | 1 kg | plastic | 145,15 € |
| Original pack 6 x 1 kg | | | 137,89/1 kg |
| **X937.3** | 2,5 kg | plastic | 310,70 € |

For further information, please see page 1380

## CASO Agar, granulated

### CASO Agar, granulated
NEW
**granulated, Ph.Eur., for microbiology**
For isolation and cultivation of non-fastidious organisms.
Application: Use 40 g for 1 l agar.
Agar medium B (Ph.Eur. 6.0), Agar medium with Casein- and Soy Peptone (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Pepton Agar, TSB Agar, Trypticasein Soy Agar
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**
Casein peptone (pancreas hydrolysate)..... 15 g/l
Soy peptone (papain hydrolysate)..... 5 g/l
Sodium chloride (NaCl)..... 5 g/l
Agar..... 15 g/l
pH value..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **1506.1** | 500 g | plastic | 110,20 € |
| Original pack 6 x 500 g | | | 104,69/500 g |

For further information, please see page 1404

## CASO Agar with Lecithin/ Polysorbate 80

### CASO Agar with Lecithin/ Polysorbate 80
**for microbiology**
For detection of microorganisms from cosmetics and disinfected surfaces.
Application: Use 45,7 g for 1 l agar.
TSA Letheen, Tryptone Soy Agar Letheen, TSA with Tween® 80 and Lecithin
Storage temp.: +20 °C
WGK 1

**Formulation:**
Pancreatic digest of casein..... 15 g/l
Soy peptone..... 5 g/l
Sodium chloride (NaCl)..... 5 g/l
Lecithin..... 0,7 g/l
Polysorbate 80..... 5 g/l
Agar..... 15 g/l
pH value..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **8848.1** | 500 g | plastic | 112,90 € |
| Original pack 6 x 500 g | | | 107,26/500 g |

For further information, please see page 1381

## CASO Broth

Storage temp.: +20 °C
WGK 1

### CASO Broth

**Ph.Eur., for microbiology**

For cultivation of fastidious and non-fastidious microorganisms.

Application: Use 30 g for 1 l broth.

Broth medium A (Ph.Eur. 6.0), Casein Soya Bean Digest Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth

**Guarantee analysis:**

Casein peptone (pancreas hydrolysate) . ..... 17 g/l
Soy peptone (papain hydrolysate). ..... 3 g/l
di-Potassium hydrogen phosphate. ..... 2,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Glucose monohydrate. ..... 2,5 g/l
pH value. ..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **X938.1** | 500 g | plastic | 68,30 € |
| Original pack 6 x 500 g | | | 64,89/500 g |
| **X938.2** | 1 kg | plastic | 112,90 € |
| Original pack 6 x 1 kg | | | 107,26/1 kg |
| **X938.3** | 2,5 kg | plastic | 239,75 € |

For further information, please see page 1380

### CASO Broth, granulated

**granulated, Ph.Eur., for microbiology**

For cultivation of fastidious and non-fastidious microorganisms.

Application: Use 30 g for 1 l broth.

Broth medium A (Ph.Eur. 6.0), Casein Soya Bean Digest Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth

**Guarantee analysis:**

Casein peptone (pancreas hydrolysate) . ..... 17 g/l
Soy peptone (papain hydrolysate). ..... 3 g/l
di-Potassium hydrogen phosphate. ..... 2,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Glucose monohydrate. ..... 2,5 g/l
pH value. ..... 7,3 ±0,2
Granulation. ..... complies

| | | | |
|---|---|---|---|
| **6678.1** | 500 g | plastic | 102,05 € |
| Original pack 6 x 500 g | | | 96,95/500 g |
| **6678.2** | 1 kg | plastic | 164,40 € |
| Original pack 6 x 1 kg | | | 156,18/1 kg |

For further information, please see page 1404

### CASO Broth vegetal

**for microbiology, animal-free**

For cultivation of fastidious and non-fastidious microorganisms.

Application: Use 30 g for 1 l broth.

Soy Peptone Broth, **TSB Broth**, Tryptic Soy Broth

**Formulation:**

Vegetable peptone ..... 20 g/l
di-Potassium hydrogen phosphate. ..... 2,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Glucose. ..... 2,5 g/l
pH value. ..... 7,3 ±0,2

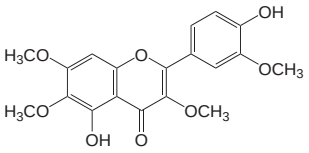
| | | | |
|---|---|---|---|
| **0139.1** | 500 g | plastic | 82,70 € |
| Original pack 6 x 500 g | | | 78,57/500 g |

For further information, please see page 1380

## Cassic acid

▶ Rhein see p. 2197

## Casticin



Vitexicarpin
$C_{19}H_{18}O_8$
M 374,32 g/mol
[479-91-4]
WGK 3

### Casticin

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC)..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF)..... ≤1,0 %
Assay (qNMR)..... ≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE39.1** | 10 mg | glass | 848,20 € |

### Casticin

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC39.1** | 25 mg | glass | 547,20 € |

### Casticin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Vitex agnus castus*.

Storage temp.: +4 °C

**Type analysis:**

Purity (HPLC). ..... >98 %

| | | | |
|---|---|---|---|
| **1126.1** | 20 mg | glass | 439,70 € |

## Castor oil

### Castor oil

**Ph.Eur., nativ, extra pure**

Oleum Ricini
D 0,95 • bp >350 °C
mp -10 to -18 °C • flp 229 °C
[8001-79-4] • EC No. 232-293-8

**Guarantee analysis:**

Appearance..... clear, colourless to yellowish oil
Identity..... complies
Relative density (20 °C)..... 0,952-0,965
Refractive index (20 °C). ..... 1,477-1,481
Optical rotation. ..... +3,5° to +6,0°
Absorption (270 nm)..... ≤0,7
Acid value..... ≤1,5 mg KOH/g
Peroxide value..... ≤10 meq $O_2$/kg
Unsaponifiable matter. ..... ≤0,8 %
Iodine value. ..... 82-90 g $I_2$/100 g
Water..... ≤0,3 %
Hydroxyl value..... ≥160 mg KOH/g

GC-fatty acid constituents:
C 16:0 Palmitic acid. ..... ≤2,0 %
C 18:0 Stearic acid..... ≤2,5 %
C 18:1 Oleic acid..... 2,5-6,0 %
C 18:1 Ricinoleic acid. ..... 85,0-92,0 %
C 18:2 Linoleic acid..... 2,5-7,0 %
C 18:3 Linolenic acid..... ≤1,0 %
C 20:1 Eicosenoic acid. ..... ≤1,0 %
Foreign oils (Ph.Eur.). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **4702.1** | 1 l | glass | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |
| **4702.3** | 2,5 l | glass | 51,50 € |
| Original pack 4 x 2,5 l | | | 48,93/2,5 l |
| **4702.4** | 5 l | plastic | 84,85 € |
| Original pack 2 x 5 l | | | 80,61/5 l |
| **4702.2** | 10 l | plastic | 160,20 € |

## Catalase

### Catalase

**≥11 700 U/mg material (approx. 40 000 U/mg protein)**

From bovine liver, freeze-dried.

Storage temp.: -20 °C
Transport temp.: room temp.
[9001-05-2] • EC No. 232-577-1
WGK 1

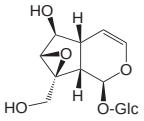
**Type analysis:**

Appearance. ..... brown green material
Activity. ..... ≥11 700 U/mg material

| | | | |
|---|---|---|---|
| **6025.1** | 5 MU | plastic | 149,45 € |

For further information, please see page 1276

## Catalpol



### Catalpol

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Picrorhiza kurroa*.

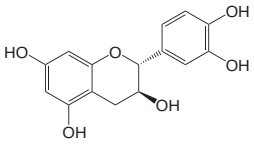
$C_{15}H_{22}O_{10}$
M 362,33 g/mol
Storage temp.: +4 °C
[2415-24-9] • EC No. 219-324-0

**Type analysis:**

Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **1127.1** | 25 mg | glass | 289,20 € |

## (+)-Catechin



(+)-Catechol
$C_{15}H_{14}O_6$
M 290,28 g/mol
mp 173-177 °C
Storage temp.: +4 °C
[154-23-4] • EC No. 205-825-1
WGK 1
**Warning** H315-H319-H335

### (+)-Catechin
**≥98 %**
From *Camellia sinensis*.

**Type analysis:**
Assay (HPLC)..... ≥98,0 %

| | | | |
|---|---|---|---|
| **6356.1** | 10 mg | glass | 146,10 € |

### (+)-Catechin
**ROTICHROM® ~CHR**
From *Camellia sinensis*.

| | | | |
|---|---|---|---|
| **6200.1** | 1 g | glass | 33,25 € |

## DL-Catechin hydrate

### DL-Catechin hydrate
**>96 %, for biochemistry**
trans-3,3',4',5,7-Pentahydroxyflavan
$C_{15}H_{14}O_6 \cdot x\ H_2O$
M 290,28 + x $H_2O$ g/mol
mp 200 °C
[7295-85-4] • EC No. 230-731-2
WGK 1
**Warning** H315-H319-H335

**Type analysis:**
Appearance..... light beige powder
Assay (HPLC)..... ≥96 %

| | | | |
|---|---|---|---|
| **8822.1** | 1 g | glass | 114,50 € |

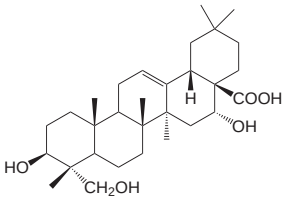
## Catechins / Tannins

| Art. No. | Description | Page |
|---|---|---|
| 6356 | (+)-Catechin | 1818 |
| 6200 | (+)-Catechin | 1818 |
| 8822 | DL-Catechin hydrate | 1818 |
| 7293 | (-)-Epicatechin | 1906 |
| NE41 | (-)-Epicatechin | 1906 |
| NC41 | (-)-Epicatechin | 1906 |
| 1139 | (-)-Epicatechin | 1906 |
| 5798 | (-)-Epicatechin | 1906 |
| 6358 | (-)-Epicatechin gallate | 1906 |
| 6361 | (-)-Epigallocatechin gallate | 1906 |
| 4480 | (-)-Gallocatechin | 1947 |
| 1151 | Hamamelitannin | 1968 |
| 2726 | Tannic acid | 2328 |
| 4239 | Tannic acid | 2328 |

## (+)-Catechol
▶ (+)-Catechin see p. 1818

## Cation exchanger
▶ Dowex® 50 W X 2 Cation exchanger see p. 1895
▶ Ion exchange resin Roti®change see p. 2007

## Caulophyllogenin



### Caulophyllogenin
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{30}H_{48}O_5$
M 488,71 g/mol
mp >300 °C
Storage temp.: +4 °C
[52936-64-8] • EC No. 258-265-5

**Type analysis:**
Purity (HPLC)..... ≥99 %

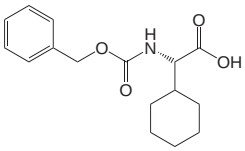
| | | | |
|---|---|---|---|
| **7439.1** | 5 mg | glass | 504,20 € |

## Caulosapogenin
▶ Hederagenin see p. 1970

## Cbz-L-Arginine
▶ Z-L-Arginine see p. 2385

## Cbz-L-Aspartic acid
▶ Z-L-Aspartic acid see p. 2385

## Cbz-Cyclohexyl-L-glycine



### Cbz-Cyclohexyl-L-glycine
**≥98 %, for biochemistry**
Cbz-L-Chg-OH
$C_{16}H_{21}NO_4$
M 291,34 g/mol
mp 111 °C
Storage temp.: +4 °C
[69901-75-3]
WGK 1

**Type analysis:**
Assay (HPLC)..... ≥98,0 %
Water (KF)..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6636.1** | 500 mg | glass | 21,00 € |
| **6636.2** | 1 g | glass | 33,25 € |
| **6636.3** | 5 g | glass | 139,75 € |

## Cbz-L-Glutamic acid
▶ Z-L-Glutamic acid see p. 2385

## Cbz-L-Chg-OH
▶ Cbz-Cyclohexyl-L-glycine see p. 1818

## Cbz-L-Leucine
▶ Z-L-Leucine see p. 2390

## Cbz-L-Lysine
▶ Z-L-Lysine see p. 2390

## CCA
▶ Coliforms chromogenic Agar (ISO) see p. 1839

## CCDA Supplement
▶ Campylobacter Supplement see p. 1809

## CDI
▶ 1,1'-Carbonyldiimidazole (CDI) see p. 1812

## CDTA
▶ trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate see p. 1866

## CDTA disodium salt solution (0,1 N)

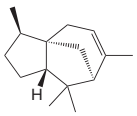
### CDTA disodium salt solution
NEW
**0,1 mol/l - 0,1 N**
**volumetric standard solution**
UN No. 1824 • ADR 8 III • WGK 1
**Warning** H290

**Type analysis:**
Amount-of-substance conc.. ..... 0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **0243.1** | 1 l | plastic | 181,70 € |
| Original pack 6 x 1 l | | | 172,62/1 l |

## CdTe
▶ Quantum Dots, hydrophilic see p. 2188

## (-)-α-Cedrene



### (-)-α-Cedrene
**ROTICHROM® GC**
Reference substance for GC.
$C_{15}H_{24}$
M 204,35 g/mol
D ~0,932 • bp 261-262 °C
flp 104 °C
Storage temp.: +4 °C
[469-61-4] • EC No. 207-418-4
UN No. 3082 • ADR 9 III • WGK 2
**Warning** H400-H410-H315-H319

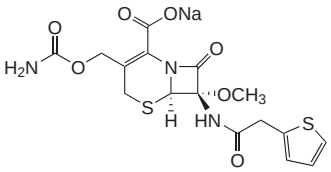
**Type analysis:**
Purity (GC).....≥96 %

| | | | |
|---|---|---|---|
| **8908.1** | 100 mg | plastic | 196,20 € |

## Cefomonil

▶ Cefsulodin sodium salt see p. 1819

## Cefoxitin sodium salt



### Cefoxitin sodium salt

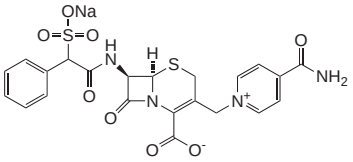
**≥98 %, for biochemistry**
Cephalosporin-antibiotic
$C_{16}H_{16}N_3NaO_7S_2$
M 449,43 g/mol
mp >160 °C
Solubility: 50 g/l
Storage temp.: +4 °C
[33564-30-6] • EC No. 251-574-6
WGK 1
**Danger** H334-H335-H315-H319-H317

**Type analysis:**
Assay (HPLC).....≥98 %
Solution (1 % in $H_2O$).....colourless to light yellowish
Water (KF).....≤2,0 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol)....+203° to +214°
pH value (10 % in water).....4,2-7,0
Heavy metals (as Pb).....≤0,002 %

| | | | |
|---|---|---|---|
| **4156.1** | 250 mg | glass | 52,15 € |
| **4156.2** | 500 mg | glass | 84,40 € |

For further information, please see page 1427

## Cefsulodin sodium salt



### Cefsulodin sodium salt

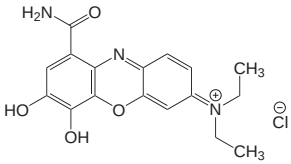
**≥97 %, for biochemistry**
Cephalosporin-antibiotic
Cefomonil, Pseudocef
$C_{22}H_{19}N_4O_8S_2Na$
M 554,53 g/mol
Solubility: 50 mg/l ($H_2O$, 20 °C)
Storage temp.: -20 °C
Transport temp.: room temp.
[52152-93-9] • EC No. 257-692-4
WGK 1
**Danger** H334-H335-H315-H319-H317

**Type analysis:**
Assay.....≥97 %
Solution (5 % in water).....yellowish, clear
Water (KF).....≤4 %
pH value (c=2 in water).....3,3-4,8
Spec. rotation $[\alpha]_D^{20}$ (c=1 in water). ..... +15,5° to +18,5°

| | | | |
|---|---|---|---|
| **4014.1** | 100 mg | glass | 52,15 € |
| **4014.2** | 250 mg | glass | 91,30 € |

For further information, please see page 1427

## Celestine blue (C.I. 51050)



### Celestine blue (C.I. 51050)

**for microscopy**
$C_{17}H_{18}ClN_3O_4$
M 363,80 g/mol
mp 227-230 °C
[1562-90-9] • EC No. 216-346-2
WGK 3

**Type analysis:**
Appearance.....black to dark brown powder
Appearance of solution (0,1 % in $H_2O$).....
.....dark blue to dark purple

| | | | |
|---|---|---|---|
| **7646.1** | 5 g | glass | 24,65 € |
| **7646.2** | 25 g | glass | 89,15 € |
| **7646.3** | 100 g | glass | 299,95 € |

For further information, please see page 1463

## Celite®

[68855-54-9] • EC No. 272-489-0

### Celite® 503

**filter aid on silicate basis**
Flux calcinated white diatoms

**Type analysis:**
Wet density.....≤345 g/l
Sieve residue (150 mesh).....≤16,5 %
Permeability (Darcy).....1,27-2,4

| | | | |
|---|---|---|---|
| **0007.2** | 1 kg | plastic | 25,70 € |
| Original pack 6 x 1 kg | | | 24,42/1 kg |
| **0007.1** | 2,5 kg | plastic | 52,60 € |

### Celite® 535

**filter aid on silicate basis**
Flux calcinated white diatoms

**Type analysis:**
Wet density.....≤370 g/l
Sieve residue (150 mesh).....≤25 %
Permeability (Darcy).....1,8-3,9

| | | | |
|---|---|---|---|
| **0009.2** | 1 kg | plastic | 19,90 € |
| Original pack 6 x 1 kg | | | 18,91/1 kg |
| **0009.1** | 2,5 kg | plastic | 40,75 € |

### Celite® 545

**filter aid on silicate basis**
Flux calcinated white diatoms.

**Type analysis:**
Wet density.....≤480 g/l
Sieve residue (150 mesh).....≤30 %
Permeability (Darcy).....3,5-5,5

| | | | |
|---|---|---|---|
| **0011.3** | 250 g | plastic | 11,75 € |
| **0011.2** | 1 kg | plastic | 22,50 € |
| Original pack 6 x 1 kg | | | 21,38/1 kg |
| **0011.1** | 2,5 kg | plastic | 32,15 € |
| **0011.4** | 10 kg | plastic | 96,65 € |
| **0011.5** | 25 kg | plastic | 181,70 € |

### Celite® Hyflo Super Cel®

**filter aid on silicate basis**
Flux calcinated white diatoms

**Type analysis:**
Wet density.....≤345 g/l
Sieve residue (150 mesh).....≤12 %
Permeability (Darcy).....0,73-1,64

| | | | |
|---|---|---|---|
| **0005.2** | 1 kg | plastic | 24,20 € |
| Original pack 6 x 1 kg | | | 22,99/1 kg |
| **0005.1** | 2,5 kg | plastic | 44,65 € |

## Celite®, calcinated

[91053-39-3] • EC No. 293-303-4

### Celite® 512

**filter aid on silicate basis**
Calcinated pink diatoms

**Type analysis:**
Wet density.....≤346 g/l
Sieve residue (150 mesh).....≤12 %
Permeability (Darcy).....0,28-0,76

| | | | |
|---|---|---|---|
| **0050.2** | 1 kg | plastic | 22,50 € |
| Original pack 6 x 1 kg | | | 21,38/1 kg |
| **0050.1** | 2,5 kg | plastic | 41,85 € |

### Celite® Standard Super Cel®

**filter aid on silicate basis**
Calcinated pink diatoms

**Type analysis:**
Wet density.....≤338 g/l
Sieve residue (150 mesh).....≤7 %
Permeability (Darcy).....0,16-0,36

| | | | |
|---|---|---|---|
| **0003.2** | 1 kg | plastic | 21,40 € |
| Original pack 6 x 1 kg | | | 20,33/1 kg |
| **0003.1** | 2,5 kg | plastic | 40,75 € |

## Cell Culture Media


| Art. No. | Description | Page |
|---|---|---|
| 9031 | Roti®-CELL DMEM : F12 | 2204 |
| 9005 | Roti®-CELL DMEM High Glucose | 2204 |
| 9006 | Roti®-CELL DMEM High Glucose | 2204 |
| 9007 | Roti®-CELL DMEM High Glucose | 2204 |
| 9010 | Roti®-CELL DMEM High Glucose | 2204 |
| 9011 | Roti®-CELL DMEM High Glucose | 2205 |
| 9019 | Roti®-CELL DMEM High Glucose | 2205 |
| 9023 | Roti®-CELL DMEM High Glucose | 2205 |
| 9030 | Roti®-CELL DMEM Low Glucose | 2205 |
| 9027 | Roti®-CELL DMEM Low Glucose | 2205 |
| 9124 | Roti®-CELL DPBS | 2205 |
| 9130 | Roti®-CELL 10x DPBS | 2205 |
| 9131 | Roti®-CELL DPBS | 2205 |
| 9058 | Roti®-CELL Eagle's MEM-Alpha | 2205 |
| 9082 | Roti®-CELL Eagle's MEM-Alpha | 2205 |
| 9049 | Roti®-CELL Eagle's MEM / Earle's | 2206 |
| 9048 | Roti®-CELL Eagle's MEM / Earle's | 2206 |
| 9047 | Roti®-CELL Eagle's MEM / Earle's | 2206 |
| 9044 | Roti®-CELL Eagle's MEM / Earle's | 2206 |
| 9056 | Roti®-CELL Eagle's MEM / Hanks' | 2206 |
| 9108 | Roti®-CELL Ham's F12 | 2206 |
| 9117 | Roti®-CELL Hanks' BSS | 2206 |
| 9118 | Roti®-CELL Hanks' BSS | 2206 |
| 9119 | Roti®-CELL Hanks' BSS | 2206 |
| 9122 | Roti®-CELL Hanks' BSS | 2206 |
| 9033 | Roti®-CELL Iscove's MDM | 2207 |
| 9035 | Roti®-CELL Iscove's MDM | 2207 |
| 9109 | Roti®-CELL Leibovitz's L15 | 2207 |
| 9111 | Roti®-CELL McCoy's 5A | 2207 |
| 9112 | Roti®-CELL Medium 199 / Earle's | 2207 |
| 9085 | Roti®-CELL RPMI-1640 | 2208 |
| 9086 | Roti®-CELL RPMI-1640 | 2208 |
| 9091 | Roti®-CELL RPMI-1640 | 2208 |
| 9093 | Roti®-CELL RPMI-1640 | 2208 |
| 9094 | Roti®-CELL RPMI-1640 | 2208 |
| 9099 | Roti®-CELL RPMI-1640 | 2208 |
| 9104 | Roti®-CELL RPMI-1640 | 2208 |
| 9114 | Roti®-CELL TC100 | 2208 |
| 9116 | Roti®-CELL William's E | 2208 |

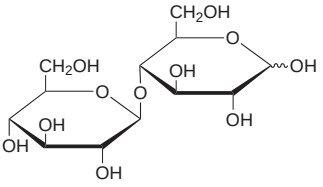

## Cell Culture Ready-made Solutions


| Art. No. | Description | Page |
|---|---|---|
| L787 | DOTAP | 1894 |
| CP11 | Geneticin disulphate (G418)-solution, CELLPURE® | 1949 |
| 2039 | Geneticin disulphate (G418)-solution | 1949 |
| HN09 | Gentamycin sulphate solution, CELLPURE® | 1949 |
| 2475 | Gentamycin sulphate solution | 1949 |
| CP12 | Hygromycin B solution, CELLPURE® | 1997 |
| 1287 | Hygromycin B solution | 1997 |
| 9165 | Roti®-CELL Bicarbonate solution | 2204 |
| 9124 | Roti®-CELL DPBS | 2205 |
| 9130 | Roti®-CELL 10x DPBS | 2205 |
| 9131 | Roti®-CELL DPBS | 2205 |
| 9135 | Roti®-CELL DPBS/EDTA | 2205 |
| 9155 | Roti®-CELL Glucose solution | 2206 |
| 9183 | Roti®-CELL Glutamine solution | 2206 |
| 9117 | Roti®-CELL Hanks' BSS | 2206 |
| 9118 | Roti®-CELL Hanks' BSS | 2206 |
| 9119 | Roti®-CELL Hanks' BSS | 2206 |
| 9122 | Roti®-CELL Hanks' BSS | 2206 |
| 9157 | Roti®-CELL HEPES solution | 2207 |
| 9185 | Roti®-CELL MEM-NEAA solution | 2207 |
| 9830 | Roti®-CELL Myco-Free | 2207 |
| 9143 | Roti®-CELL PBS | 2207 |
| 9150 | Roti®-CELL 10x PBS | 2207 |
| 9152 | Roti®-CELL PBS/EDTA | 2208 |
| 9182 | Roti®-CELL Pyruvate solution | 2208 |
| 9186 | Roti®-CELL Water | 2208 |
| P001 | Roti®-Fect | 2216 |
| CL21 | Roti®-Fect Plus | 2216 |
| 3129 | Roti®-Fect RNAi Kit | 2216 |
| AE29 | Roti®-Insectofect | 2220 |
| 3255 | Water | 2376 |


## Cell Culture Reagents


| Art. No. | Description | Page |
|---|---|---|
| 6831 | L-Alanyl-L-glutamine | 1714 |
| CP77 | Albumin Fraction V, very low endotoxin | 1715 |
| CP84 | Albumin Fraction V, endotoxin-tested | 1715 |
| HP62 | Ampicillin sodium salt | 1740 |
| 1655 | L-Arginine | 1750 |
| 1989 | L-Arginine monohydrochloride | 1751 |
| KK37 | L-Asparagine monohydrate | 1753 |
| 1690 | L-Aspartic acid | 1754 |
| HN04 | Calcium chloride dihydrate | 1804 |
| 1693 | L-Cysteine | 1854 |
| 1694 | L-Cysteine hydrochloride monohydrate | 1854 |
| 1695 | L-Cystine | 1855 |
| 4198 | DEAE Dextran | 1857 |
| A994 | Dimethyl sulphoxide (DMSO) | 1885 |
| L787 | DOTAP | 1894 |
| 6833 | Flavine-adenine-dinucleotide disodium salt (FAD) | 1929 |
| 8878 | D(+)-Galactose | 1945 |
| CP11 | Geneticin disulphate (G418)-solution, CELLPURE® | 1949 |
| 2039 | Geneticin disulphate (G418)-solution | 1949 |
| HN09 | Gentamycin sulphate solution, CELLPURE® | 1949 |
| 2475 | Gentamycin sulphate solution | 1949 |
| HN06 | D(+)-Glucose | 1956 |
| 1743 | L-Glutamic acid | 1958 |
| HN08 | L-Glutamine | 1959 |
| 6832 | L-Glutathione reduced | 1959 |
| HN07 | Glycine | 1962 |
| HN77 | HEPES | 1972 |
| 1696 | L-Histidine | 1981 |
| 1697 | L-Histidine hydrochloride monohydrate | 1981 |
| CP12 | Hygromycin B solution, CELLPURE® | 1997 |
| 1287 | Hygromycin B solution | 1997 |
| 1698 | L-Isoleucine | 2014 |
| 1699 | L-Leucine | 2035 |
| 6829 | L-Lysine monohydrate | 2045 |
| 1700 | L-Lysine hydrochloride | 2046 |
| HN11 | Magnesium acetate tetrahydrate | 2048 |
| HN03 | Magnesium chloride hexahydrate | 2049 |
| 8882 | D(+)-Maltose monohydrate | 2054 |
| 8883 | D(-)-Mannitol | 2057 |
| 8887 | D(+)-Mannose | 2057 |
| 1702 | L-Methionine | 2071 |
| 1703 | L-Ornithine monohydrochloride | 2125 |
| HP49 | Penicillin G potassium salt | 2134 |
| HP48 | Penicillin G sodium salt | 2134 |
| HP10 | Pen/Strep-PreMix | 2135 |
| 1709 | L-Phenylalanine | 2146 |
| HN10 | Potassium acetate | 2162 |
| HN02 | Potassium chloride | 2164 |
| 1713 | L-Proline | 2178 |
| 9165 | Roti®-CELL Bicarbonate solution | 2204 |
| 9135 | Roti®-CELL DPBS/EDTA | 2205 |
| 9155 | Roti®-CELL Glucose solution | 2206 |
| 9183 | Roti®-CELL Glutamine solution | 2206 |
| 9157 | Roti®-CELL HEPES solution | 2207 |
| 9185 | Roti®-CELL MEM-NEAA solution | 2207 |
| 9143 | Roti®-CELL PBS | 2207 |
| 9150 | Roti®-CELL 10x PBS | 2207 |
| 9152 | Roti®-CELL PBS/EDTA | 2208 |
| 9182 | Roti®-CELL Pyruvate solution | 2208 |
| 9186 | Roti®-CELL Water | 2208 |
| 1033 | Roti®fair HBS | 2212 |
| P001 | Roti®-Fect | 2216 |
| CL21 | Roti®-Fect Plus | 2216 |
| 3129 | Roti®-Fect RNAi Kit | 2216 |
| AE29 | Roti®-Insectofect | 2220 |
| 8890 | D(+)-Saccharose | 2237 |
| 1714 | L-Serine | 2248 |
| HN05 | Sodium acetate trihydrate | 2266 |
| HN00 | Sodium chloride | 2269 |
| 8607 | Sodium chloride solution 0,9 % | 1330 |
| HN12 | tri-Sodium citrate dihydrate | 2271 |
| HN01 | Sodium hydrogen carbonate | 2274 |
| HP66 | Streptomycin sulphate | 2317 |
| HP63 | Tetracycline hydrochloride | 2335 |
| 1738 | L-Threonine | 2341 |
| 8897 | D(+)-Trehalose dihydrate | 2349 |
| 3170 | TRIS | 2356 |
| 1739 | L-Tryptophan | 2361 |
| 1741 | L-Tyrosine | 2364 |
| 1742 | L-Valine | 2369 |
| 0242 | Vancomycin hydrochloride | 2369 |
| 3255 | Water | 2376 |


## D(+)-Cellobiose




### D(+)-Cellobiose

**≥98 %, for biochemistry**

4-O-β-D-Glucopyranosyl-D-glucose

$C_{12}H_{22}O_{11}$

M 342,29 g/mol

mp 225 °C

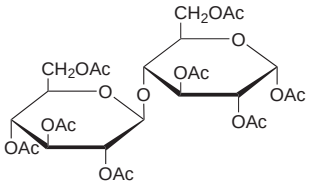
[528-50-7] • EC No. 208-436-5

**Type analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay (HPLC). ..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$ , 15 h) ..... +33° to +35°
Loss on drying (3 h, 110 °C) ..... ≤2,0 %
Solution (5 % in $H_2O$). ..... colourless
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **5840.1** | 5 g | plastic | 18,20 € |
| **5840.3** | 25 g | plastic | 55,80 € |
| **5840.2** | 100 g | plastic | 198,90 € |

## α-D-Cellobiose octaacetate



### α-D-Cellobiose octaacetate

**≥98 %, for biochemistry**
Octaacetyl-α-D-cellobiose
$C_{28}H_{38}O_{19}$
M 678,60 g/mol
mp 225-229 °C
[5346-90-7] • EC No. 226-304-5

**Type analysis:**
Assay (TLC).....≥98,0 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in chloroform). ..... +41,0° to +43,0°
Water (KF). .....≤0,5 %
Melting point. ..... 225-229 °C

| | | | |
|---|---|---|---|
| **5463.1** | 5 g | plastic | 28,95 € |
| **5463.2** | 25 g | plastic | 98,80 € |

## X-β-D-Cellobioside

▶ 5-Bromo-4-chloro-3-indoxyl-β-D-cellobioside see p. 1787

## Cell proliferation test solution

▶ Rotitest® Vital see p. 2234

## Cellulose

### Cellulose

**for column chromatography**
Fibre length 0,02-0,1 mm
mp 200 °C (dec.)
[9004-34-6] • EC No. 232-674-9

**Guarantee analysis:**
pH value .....5-7
Water . .....≤10 %

| | | | |
|---|---|---|---|
| **5873.3** | 100 g | plastic | 14,90 € |
| **5873.1** | 500 g | plastic | 35,50 € |
| Original pack 6 x 500 g | | | 33,73/500 g |
| **5873.2** | 1 kg | plastic | 58,90 € |
| Original pack 6 x 1 kg | | | 55,96/1 kg |

## Cellulose acetate

### Cellulose acetate

**pure**
Acetylcellulose
[9004-35-7]

**Type analysis:**
Appearance. ..... white granules

| | | | |
|---|---|---|---|
| **4458.1** | 250 g | plastic | 28,95 € |

## Cera alba

▶ Beeswax white see p. 1764

## Cera Carnaubae

▶ Carnauba wax see p. 1814

## Cera flava

▶ Beeswax yellow see p. 1764

## Cerium Standards

▶ Cerium ICP Standard Solution see p. 2297
▶ Cerium ICP Standard Solution see p. 2302

## Cerium(III) acetate hydrate

### Cerium(III) acetate hydrate

**ROTI®METIC 99,999 % (5N)**
$Ce(CH_3CO_2)_3 \cdot x\ H_2O$
M 317,25 + x $H_2O$ g/mol
mp ~115 °C
Solubility: ~260 g/l ($H_2O$, 20 °C)
[17829-82-2]
WGK 1

**Warning** H335

**Type analysis:**
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5372.1** | 10 g | plastic | 79,05 € |
| **5372.2** | 50 g | plastic | 310,70 € |

## Cerium(III) acetate hydrate

### Cerium(III) acetate hydrate

**ROTI®REMETIC 99,99 %**
$Ce(CH_3CO_2)_3 \cdot x\ H_2O$
M 317,25 + x $H_2O$ g/mol
[537-00-8] • EC No. 208-654-0
WGK 1

**Warning** H335

**Type analysis:**
Assay (TREO*)..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7084.1** | 10 g | plastic | 68,70 € |

## Cerium(IV) ammonium nitrate

Ammonium cerium(IV) nitrate
$(NH_4)_2Ce(NO_3)_6$
M 548,23 g/mol
D 2,49
mp ~108 °C
Solubility: 1410 g/l ($H_2O$, 20 °C)
[16774-21-3] • EC No. 240-827-6
UN No. 1477 • ADR 5.1 II • WGK 2

**Danger** H272-H314-H302

### Cerium(IV) ammonium nitrate

**≥99,5 %, p.a.**
Titration reagent in volumetry.

**Guarantee analysis:**
Assay (oxidim.). .....≥99,5 %
Chloride (Cl).....≤0,01 %
Sulphate ($SO_4$).....≤0,01 %
Aluminium (Al).....≤0,005 %
Barium (Ba).....≤0,001 %
Chromium (Cr). .....≤0,005 %
Copper (Cu). .....≤0,001 %
Potassium (K). .....≤0,001 %
Nickel (Ni). .....≤0,001 %
Strontium (Sr).....≤0,001 %

| | | | |
|---|---|---|---|
| **HN28.1** | 50 g | plastic | 44,65 € |
| **HN28.2** | 100 g | plastic | 81,60 € |
| **HN28.3** | 250 g | plastic | 151,05 € |

### Cerium(IV) ammonium nitrate

**≥99 %, extra pure**

**Type analysis:**
Assay. .....≥99 %
Ferric oxide ($Fe_2O_3$). .....≤0,02 %
Natriumoxide ($Na_2O$).....≤0,02 %
Chloride (Cl).....≤0,01 %

| | | | |
|---|---|---|---|
| **3338.1** | 100 g | plastic | 40,75 € |
| **3338.2** | 250 g | plastic | 87,65 € |
| **3338.4** | 500 g | plastic | 154,70 € |
| Original pack 6 x 500 g | | | 146,97/500 g |
| **3338.3** | 1 kg | plastic | 289,20 € |
| Original pack 6 x 1 kg | | | 274,74/1 kg |

## Cerium(IV) ammonium sulphate dihydrate

▶ Ammonium cerium(IV) sulphate dihydrate see p. 1731

## Cerium(III) nitrate hexahydrate

$Ce(NO_3)_3 \cdot 6\ H_2O$
M 434,23 g/mol
mp 150 °C (dec.)
Solubility: 1760 g/l ($H_2O$, 25 °C)
[10294-41-4] • EC No. 233-297-2
UN No. 1477 • ADR 5.1 III • WGK 1

**Danger** H272-H318

### Cerium(III) nitrate hexahydrate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**
Assay (metals basis).....99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5312.1** | 5 g | plastic | 64,40 € |
| **5312.2** | 25 g | plastic | 198,90 € |

## Cerium(III) nitrate hexahydrate

**ROTI®REMETIC 99,9 %**

**Type analysis:**

Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7049.1** | 5 g | plastic | 40,75 € |
| **7049.2** | 25 g | plastic | 69,80 € |

## Cerium(III) nitrate hexahydrate

**≥99,5 %, p.a.**

**Type analysis:**

Assay $CeO_2$ (TREO). ..... ≥99,5 %
Assay (TREO*). ..... ~39,0 %
Ferric oxide ($Fe_2O_3$). ..... ≤0,0015 %
Natriumoxide ($Na_2O$). ..... ≤0,005 %
Calcium oxide (CaO). ..... ≤0,005 %
Total REO impurities. ..... ≤0,5 %
Sulphate ($SO_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,01 %
*Total rare earth oxide

| | | | |
|---|---|---|---|
| **HN18.1** | 100 g | plastic | 75,15 € |
| **HN18.2** | 500 g | plastic | 289,20 € |
| Original pack 6 x 500 g | | | 274,74/500 g |

## Cerium(III) oxalate hydrate

### Cerium(III) oxalate hydrate

**ROTI®REMETIC 99,9 %**

$Ce_2(C_2O_4)_3 \cdot x\ H_2O$
M 544,29 + x $H_2O$ g/mol
[15750-47-7] • EC No. 205-362-5
WGK 3

**Warning** H302+H312

**Type analysis:**

Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7067.1** | 10 g | plastic | 68,70 € |
| **7067.2** | 50 g | plastic | 235,45 € |

## Cerium(IV) oxide

$CeO_2$
M 172,11 g/mol
mp ~2000 °C
Solubility: insoluble ($H_2O$, 20 °C)
[1306-38-3] • EC No. 215-150-4
WGK 1

### Cerium(IV) oxide

**ROTI®REMETIC 99,99 %**

**Type analysis:**

Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7042.1** | 10 g | plastic | 46,80 € |
| **7042.2** | 50 g | plastic | 122,05 € |

## Cerium(IV) oxide

**≥99,9 %, p.a.**

**Guarantee analysis:**

Assay. ..... ≥99,9 %
Total REO impurities. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9837.1** | 100 g | plastic | 33,25 € |
| **9837.2** | 500 g | plastic | 100,95 € |
| Original pack 6 x 500 g | | | 95,90/500 g |
| **9837.3** | 1 kg | plastic | 155,90 € |
| Original pack 6 x 1 kg | | | 148,11/1 kg |

## Cerium(III) sulphate

### Cerium(III) sulphate

**ROTI®METIC 99,99 % (4N), anhydrous**

Cerous sulphate
$Ce_2(SO_4)_3$
M 568,42 g/mol
mp 920 °C (dec.)
[13454-94-9] • EC No. 236-644-6
WGK 3

**Warning** H315-H319-H335

**Type analysis:**

Assay (metals basis). ..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5603.1** | 25 g | plastic | 192,45 € |

## Cerium(III) sulphate octahydrate

### Cerium(III) sulphate octahydrate

**ROTI®METIC 99,995 % (4N5)**

Cerous sulphate
$Ce_2(SO_4)_3 \cdot 8\ H_2O$
M 712,54 g/mol
mp 250 °C (dec.)
[10450-59-6] • EC No. 236-644-6
WGK 1

**Type analysis:**

Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5601.1** | 50 g | plastic | 181,70 € |
| **5601.2** | 250 g | plastic | 708,45 € |

## Cerium(IV) sulphate tetrahydrate

### Cerium(IV) sulphate tetrahydrate

**≥98 %, p.a.**

Titration agent for ceriometry.
Ceric sulphate
$Ce(SO_4)_2 \cdot 4\ H_2O$
M 404,30 g/mol
D 5,02
mp 180-200 °C
Solubility: 38 g/l ($H_2O$, 50 °C)
[10294-42-5] • EC No. 237-029-5
WGK 2

**Warning** H315-H319

**Guarantee analysis:**

Assay (iodom.). ..... ≥98 %
In $H_2SO_4$ insoluble matter. ..... ≤0,1 %
Substances not precipitated by $NH_4OH$. ..... ≤0,3 %
Chloride (Cl). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,003 %
Lead (Pb). ..... ≤0,003 %
Iron (Fe). ..... ≤0,015 %
Copper (Cu). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **P014.2** | 50 g | plastic | 65,05 € |
| **P014.1** | 100 g | plastic | 111,70 € |

## Cerium(IV) sulphate solution (0,1 N)

### Cerium(IV) sulphate solution (0,1 N)

**0,1 mol/l - 0,1 N volumetric standard solution**

D 1,07 • bp 100 °C
UN No. 2796 • ADR 8 II • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **P719.1** | 1 l | glass | 66,55 € |
| Original pack 6 x 1 l | | | 63,22/1 l |

For further information, please see page 1621

## Cerium trinitrate

▶ Cerium(III) nitrate hexahydrate see p. 1821

## Cerotic acid methyl ester

### Cerotic acid methyl ester

**95 %**

Hexacosanoic acid methyl ester
$C_{27}H_{54}O_2$
M 410,73 g/mol
mp 61-63 °C
[5802-82-4] • EC No. 227-355-6
WGK 1

**Type analysis:**

Appearance. ..... light beige powder
Assay (GC). ..... ~95 %
Melting point. ..... 61-63 °C

| | | | |
|---|---|---|---|
| **7752.1** | 250 mg | glass | 231,15 € |

## Cesium Standards

▶ Caesium AAS Standard Solution see p. 2294
▶ Caesium ICP Standard Solution see p. 2297
▶ Caesium ICP Standard Solution see p. 2302
▶ Caesium IC Standard Solution see p. 2312

## Cesium salts

▶ Caesium carbonate see p. 1800
▶ Caesium chloride see p. 1801
▶ Caesium nitrate see p. 1801
▶ Caesium sulphate see p. 1801

## Ceten

▶ 1-Hexadecene see p. 1976

## Cetrimide Agar (Base)

### Cetrimide Agar (Base)

**Ph.Eur., for microbiology**

For isolation and identification of *Pseudomonas aeruginosa*.

Application: Use 45,3 g for 1 l agar, add 10 ml glycerol.

Agar medium N (Ph.Eur. 6.0), Cetrimide Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), CTM

Storage temp.: +20 °C

UN No. 3077 • ADR 9 III • WGK 3

**Warning** H400

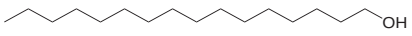
**Guarantee analysis:**

Gelatin peptone (Pancreas hydrolysate)..... 20 g/l
Magnesium chloride. ..... 1,4 g/l
Potassium sulphate. ..... 10 g/l
Cetrimide. ..... 0,3 g/l
Agar. ..... 13,6 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **X918.1** | 500 g | plastic | 95,15 € |
| Original pack 6 x 500 g | | | 90,39/500 g |

For further information, please see page 1381

## Cetyl alcohol




### Cetyl alcohol

**≥95 %**

1-Hexadecanol, Alcohol C 16

$C_{16}H_{34}O$

M 242,45 g/mol

D 0,81 • bp 305-330 °C

mp 49-54 °C • flp ~155 °C

Solubility: <0,1 mg/l ($H_2O$, 25 °C)

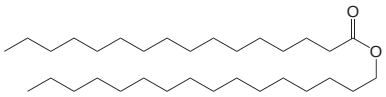
[36653-82-4] • EC No. 253-149-0

**Type analysis:**

Appearance. ..... white tablets
Assay. ..... ≥95 %
Water. ..... ≤0,1 %
Colour (Hazen). ..... ≤10
Ester value. ..... ≤0,5
Acid value. ..... ≤1,0
Iodine value. ..... ≤1,0
Melting point. ..... 49-54 °C

| | | | |
|---|---|---|---|
| **5762.1** | 1 kg | plastic | 50,00 € |
| Original pack 6 x 1 kg | | | 47,50/1 kg |

## Cetyl palmitate




### Cetyl palmitate

**synthetic**

Spermaceti, Cetaceum

$C_{32}H_{64}O_2$

M 480,96 g/mol

mp 45-52 °C

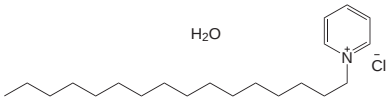
[540-10-3] • EC No. 208-736-6

**Type analysis:**

Appearance. ..... white, ceraceous powder respectively granules

| | | | |
|---|---|---|---|
| **9229.2** | 100 g | plastic | 17,75 € |
| **9229.1** | 1 kg | plastic | 116,00 € |
| Original pack 6 x 1 kg | | | 110,20/1 kg |

## Cetylpyridinium chloride monohydrate (CPC)




### Cetylpyridinium chloride monohydrate (CPC)

**≥98 %, for biochemistry**

Cationic detergent

Hexadecylpyridinium chloride monohydrate, CPC

$C_{21}H_{38}ClN \cdot H_2O$

M 358,01 g/mol

mp 77-83 °C

Solubility: 50 g/l ($H_2O$, 20 °C)

[6004-24-6] • EC No. 204-593-9

UN No. 2811 • ADR 6.1 II • WGK 3

**Danger**

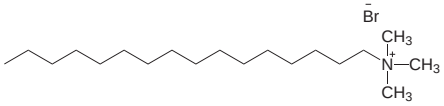
H301-H330-H400-H410-H315-H319-H335

**Type analysis:**

Assay. ..... ≥98 %

| | | | |
|---|---|---|---|
| **CN27.1** | 100 g | plastic | 28,50 € |
| **CN27.2** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |

## Cetyltrimethylammonium bromide (CTAB)




### Cetyltrimethylammonium bromide (CTAB)

**≥99 %, for biochemistry**

Cationic detergent

Hexadecyl-trimethylammonium bromide, CTAB

$C_{19}H_{42}BrN$

M 364,46 g/mol

mp 248-251 °C • flp 244 °C

Solubility: 3 g/l ($H_2O$, 20 °C)

[57-09-0] • EC No. 200-311-3

UN No. 3077 • ADR 9 III • WGK 3

**Danger**

H302-H315-H318-H335-H373-H410

**Type analysis:**

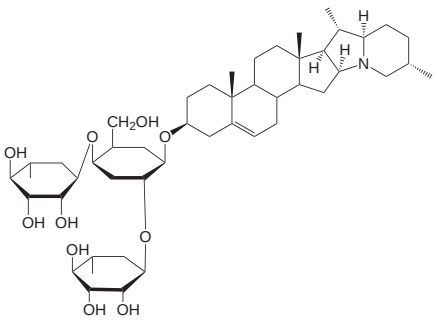
Assay (photometr., dry substance). ..... ≥99 %
pH value ..... 5,0-7,0
Sulphate ($SO_4^{2-}$). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Melting point. ..... 249-253 °C
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **9161.1** | 100 g | plastic | 19,90 € |
| **9161.3** | 500 g | plastic | 67,20 € |
| Original pack 6 x 500 g | | | 63,84/500 g |
| **9161.2** | 1 kg | plastic | 118,15 € |
| Original pack 6 x 1 kg | | | 112,24/1 kg |

## CFA

▶ 3-Chloro-4-fluoroaniline see p. 1828

## (-)-α-Chaconine




### (-)-α-Chaconine

**ROTICHROM® HPLC**

From *Solanum tuberosum.*

$C_{45}H_{73}NO_{14}$

M 852,07 g/mol

mp ~243 °C

Storage temp.: +4 °C

[20562-03-2]

WGK 3

**Warning** H361

**Type analysis:**

Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **4192.1** | 5 mg | glass | 246,20 € |

## Chalcone

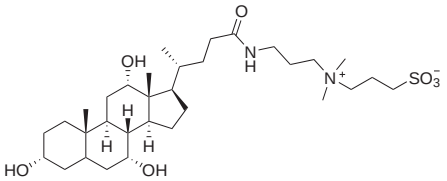
▶ Benzylidene acetophenone see p. 1769

## Chapman Lactose Agar

▶ TTC Chapman Agar (with sodium heptadecylsulphate) (Base) see p. 2362



## CHAPS



### CHAPS

**PUFFERAN® ≥98 %, for biochemistry**

Buffer substance, zwitterionic detergent
3-[(3-Cholamidopropyl)dimethyl ammonio]-1-propane sulphonate
$C_{32}H_{58}N_2SO_7$
M 614,9 g/mol
mp 116 °C
Storage temp.: +4 °C
[75621-03-3]

**Warning** H315-H319-H335

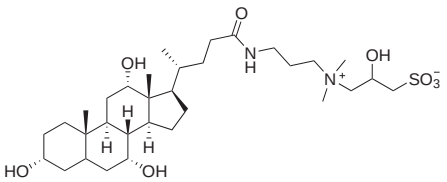
**Guarantee analysis:**

Appearance. ..... white powder
Assay. ..... ≥98 %
Loss on drying. ..... ≤2 %
Absorption:
400 nm. ..... ≤0,02
290 nm. ..... ≤0,05

| | | | |
|---|---|---|---|
| **1479.1** | 5 g | plastic | 60,10 € |
| **1479.3** | 10 g | plastic | 100,55 € |
| **1479.2** | 25 g | plastic | 207,40 € |
| **1479.4** | 100 g | plastic | 439,70 € |

For further information, please see page 1270

## CHAPSO



### CHAPSO

**PUFFERAN® ≥99 %, for biochemistry**

Buffer substance, zwitterionic detergent
3-[(3-Cholamidopropyl)-dimethylamino]-2-hydroxy-1-propanesulphonate
$C_{32}H_{58}N_2O_8S$
M 630,88 g/mol
mp ~184 °C
Storage temp.: +4 °C
[82473-24-3]
WGK 1

**Warning** H315-H319-H335

**Guarantee analysis:**

Assay (HPLC). ..... ≥99 %
Water (KF). ..... ≤2 %
UV-absorption (1 % in $H_2O$):
260 nm. ..... ≤0,1
350 nm. ..... ≤0,01

| | | | |
|---|---|---|---|
| **HN73.1** | 1 g | plastic | 59,05 € |
| **HN73.2** | 5 g | plastic | 192,45 € |
| **HN73.3** | 10 g | plastic | 342,95 € |

For further information, please see page 1270

## Charcoal

C
M 12,01 g/mol
mp 3550 °C
[7440-44-0] • EC No. 231-153-3

### Charcoal

**p.a., powder**

Adsorbent

**Guarantee analysis:**

Substances soluble in ethanol. ..... ≤0,2 %
Substances soluble in HCl ..... ≤1,0 %
Substances soluble in $H_2O$. ..... ≤0,2 %
Methylene blue adsorption (0,15 % solution). ..... ≥100 ml/g
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,01 %
Sulphide (S). ..... complies
Lead (Pb). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,05 %
Iron (Fe). ..... ≤0,025 %
Copper (Cu). ..... ≤0,002 %
Nickel (Ni). ..... ≤0,002 %
Ash content. ..... ≤1 %
Loss on drying (120 °C). ..... ≤10 %

| | | | |
|---|---|---|---|
| **X865.1** | 250 g | plastic | 23,15 € |
| **X865.2** | 500 g | plastic | 36,05 € |
| Original pack 6 x 500 g | | | 34,25/500 g |
| **X865.3** | 1 kg | plastic | 65,50 € |
| Original pack 6 x 1 kg | | | 62,23/1 kg |

For further information, please see page 1684

### Charcoal

**1-3 mm, made from peat, grey**

Fractured coal

**Type analysis:**

Methylene blue adsorption. ..... 11 g/100 g
Bulk density. ..... ~290 kg/m³
Ash. ..... ≤8,0 %
Water. ..... ≤2,0 %
pH value . ..... alkaline
Iodine value. ..... ≥700
Particle size:
>3,15 mm. ..... ≤10,0 %
<0,7 mm. ..... ≤5,0 %

| | | | |
|---|---|---|---|
| **5966.1** | 1 kg | plastic | 31,75 € |
| Original pack 6 x 1 kg | | | 30,16/1 kg |
| **5966.3** | 2,5 kg | plastic | 70,85 € |
| **5966.2** | 5 kg | plastic | 120,95 € |
| **5966.5** | 10 kg | plastic | 224,70 € |
| **5966.4** | 25 kg | plastic | 461,20 € |

For further information, please see page 1684

### Charcoal

**~3 mm, steam activated**

For gas cleaning. Extruded charcoal.

**Type analysis:**

Butane adsorption ($p/p_0$=0,1). ..... 18-23 g/100 g
Moisture. ..... ≤5 %
Bulk density. ..... 430-480 kg/m³

| | | | |
|---|---|---|---|
| **0998.1** | 500 g | plastic | 38,60 € |
| Original pack 6 x 500 g | | | 36,67/500 g |
| **0998.2** | 1 kg | plastic | 64,00 € |
| Original pack 6 x 1 kg | | | 60,80/1 kg |
| **0998.4** | 2,5 kg | plastic | 131,05 € |
| **0998.3** | 5 kg | plastic | 231,70 € |
| **0998.5** | 10 kg | plastic | 396,70 € |

For further information, please see page 1684

### Charcoal

**for the determination of AOX (column method)**

**Type analysis:**

Iodine value. ..... ≥1050 mg/g
Chloride (Cl). ..... ≤0,0005 %
Particle size. ..... ~50-150 µm

| | | | |
|---|---|---|---|
| **1299.1** | 10 g | glass | 76,90 € |

### Charcoal

**for the determination of AOX (shaking method)**

**Type analysis:**

Iodine value. ..... ≥1050 mg/g
Chloride (Cl). ..... ≤0,0005 %
Particle size. ..... ≤50 µm

| | | | |
|---|---|---|---|
| **1319.1** | 10 g | glass | 71,95 € |

## Charcoal activated

### Charcoal activated

**powder, for decolourisation**

Activated by phosphoric acid activation.
C
M 12,01 g/mol
[7440-44-0] • EC No. 931-334-3
UN No. 1362 • ADR 4.2 III

**Warning** H252

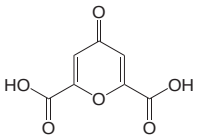
**Type analysis:**

Calcium (Ca). ..... ≤0,02 %
Iron (Fe). ..... ≤0,015 %
Phosphate ($PO_4$). ..... ≤3,5 %
Water . ..... ≤15 %
pH value ..... 2,0-3,5
Methylene blue adsorption. ..... ≥25 g/100 g
Particle size:
>75 µm. ..... 10 %
>10 µm. ..... 91 %

| | | | |
|---|---|---|---|
| **5963.3** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **5963.1** | 1 kg | plastic | 49,35 € |
| Original pack 6 x 1 kg | | | 46,88/1 kg |
| **5963.4** | 2,5 kg | plastic | 95,70 € |
| **5963.2** | 5 kg | plastic | 127,95 € |
| **5963.5** | 10 kg | plastic | 246,20 € |

For further information, please see page 1684

## Chelidonic acid



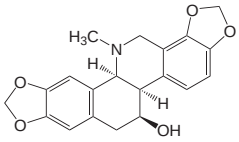
### Chelidonic acid

**98 % cryst.**
$C_7H_4O_6$
M 184,10 g/mol
mp ~260 °C
[99-32-1] • EC No. 202-749-0

**Guarantee analysis:**
Assay (titr.). ..... 97,5-102,5 %

| | | | |
|---|---|---|---|
| **6240.1** | 5 g | glass | 214,90 € |

## Chelidonine



Stylophorin
$C_{20}H_{19}NO_5$
M 353,36 g/mol
mp 125-135 °C
Storage temp.: +4 °C
[476-32-4] • EC No. 207-504-1
WGK 2

**Warning** H302+H312+H332

### Chelidonine

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Chelidonium majus.*

**Type analysis:**
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1129.1** | 25 mg | glass | 284,90 € |

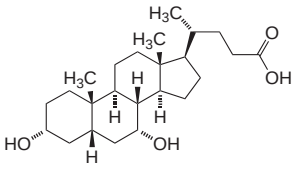
### Chelidonine

**ROTICHROM® TLC**

**Type analysis:**
Appearance. ..... colourless, cryst. powder
Melting point. ..... 125-135 °C

| | | | |
|---|---|---|---|
| **6235.1** | 25 mg | glass | 155,90 € |

## Chenodeoxycholic acid



### Chenodeoxycholic acid

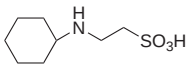
**≥98 %, for biochemistry**
Anionic detergent
3α,7α-Dihydroxy-5β-cholanic acid
$C_{24}H_{40}O_4$
M 392,58 g/mol
mp 162-167 °C
[474-25-9] • EC No. 207-481-8
WGK 1

**Warning** H361d

**Type analysis:**
Assay (titr.). ..... ≥98 %
Solution (5 % in ethanol)..... colourless
Water (KF)..... ≤3 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in ethanol). .....+12° ±1°
Sulphated ash. ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **4128.1** | 5 g | glass | 34,30 € |
| **4128.2** | 10 g | glass | 65,05 € |
| **4128.3** | 25 g | glass | 127,40 € |

## CHES



### CHES

**PUFFERAN® ≥99 %**
2-(Cyclohexylamino)-ethanesulphonic acid
$C_8H_{17}NO_3S$
M 207,29 g/mol
[103-47-9] • EC No. 203-115-6

**Guarantee analysis:**
Assay (titr.). ..... ≥99,0 %
Loss on drying. ..... ≤1,0 %
pH value. ..... 5,0-6,0
UV-absorption (0,1 M in $H_2O$):
280 nm. ..... ≤0,05
260 nm. ..... ≤0,04

| | | | |
|---|---|---|---|
| **9166.1** | 10 g | plastic | 13,90 € |
| **9166.3** | 25 g | plastic | 22,50 € |
| **9166.2** | 100 g | plastic | 62,25 € |

For further information, please see page 1268

### Chile saltpeter

▶ Sodium nitrate see p. 2281

## Chitin

### Chitin

**from crab shells**
$(C_8H_{13}NO_5)_n$
M ~400 000 g/mol
[1398-61-4] • EC No. 215-744-3

**Type analysis:**
Appearance. ..... white to brownish powder
Water (KF). ..... ≤10 %

| | | | |
|---|---|---|---|
| **8845.1** | 100 g | plastic | 39,25 € |
| **8845.2** | 1 kg | plastic | 289,20 € |
| Original pack 6 x 1 kg | | | 274,74/1 kg |

### Chitosamine hydrochloride

▶ D(+)-Glucosamine hydrochloride see p. 1955

## Chitosan

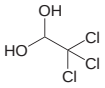
### Chitosan

**for biochemistry**
Partly deacetylated chitin
[9012-76-4]

**Type analysis:**
Appearance. ..... white to light yellowish powder
Degree of Deacetylation..... ≥90 %
Water content. ..... ≤8,0 %

| | | | |
|---|---|---|---|
| **5375.1** | 10 g | plastic | 34,30 € |

## Chloral hydrate



### Chloral hydrate

**≥99,5 %, Ph.Eur., BP, USP**
Trichloroacetaldehyde monohydrate
$C_2H_3Cl_3O_2$
M 165,40 g/mol
mp 52 °C
Solubility: 6600 g/l ($H_2O$, 20 °C)
[302-17-0] • EC No. 206-117-5
UN No. 2811 • ADR 6.1 III • WGK 2

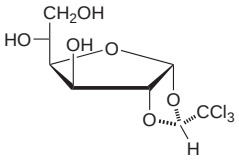
**Danger** H301-H315-H319

**Guarantee analysis:**
Assay (acidim.). ..... 99,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
pH value (10 % in $H_2O$). ..... 3,5-5,5
Chloral alcoholate. ..... complies
Heavy metals (as Pb). ..... ≤0,002 %
Chloride (Cl). ..... ≤0,007 %
Sulphated ash. ..... ≤0,1 %
Non volatile matter. ..... ≤0,1 %
Toluene. ..... ≤0,089 %
Benzene. ..... complies
Matter discoloured by $H_2SO_4$. ..... complies
Acid react. substances. ..... complies

| | | | |
|---|---|---|---|
| **K318.3** | 100 g | plastic | 26,35 € |
| **K318.1** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |
| **K318.2** | 2,5 kg | plastic | 450,45 € |

For further information, please see page 1442

## α-Chloralose



### α-Chloralose

**(≤20 % β-Anomer)**

α-D-Glucochloralose

$C_8H_{11}Cl_3O_6$

M 309,54 g/mol

mp 187 °C

Solubility: 4,4 g/l ($H_2O$, 15 °C)

[15879-93-3] • EC No. 240-016-7

WGK 1

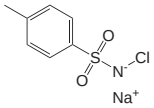
**Warning** H302+H332

**Type analysis:**

Appearance. ..... white to brownish powder
Water (KF). ..... ≤0,5 %
Sulphated ash. ..... ≤0,4 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in ethanol, after 5 h). ..... +15° to +19°

| | | | |
|---|---|---|---|
| **3363.2** | 25 g | plastic | 19,25 € |
| **3363.1** | 100 g | plastic | 57,95 € |
| **3363.3** | 250 g | plastic | 120,30 € |

## Chloramine T trihydrate



### Chloramine T trihydrate

**≥98 %, p.a.**

Chlorination reagent for determining halogens.

Toluene-4-sulphonechloramide sodium, N-Chloro-4-toluene sulphoneacid amide

$CH_3C_6H_4SO_2NClNa \cdot 3\ H_2O$

M 281,69 g/mol

mp 167-170 °C (dec.) • flp 192 °C

Solubility: 150 g/l ($H_2O$, 25 °C)

[7080-50-4] • EC No. 204-854-7

UN No. 3263 • ADR 8 III • WGK 2

**Danger**

H334-H314-H302-EUH031

**Guarantee analysis:**

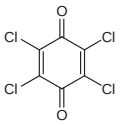
Assay (iodom.). ..... ≥98,0 %
pH value (5 % solution). ..... 8,0-11,0
In ethanol insoluble parts. ..... ≤1,5 %
Ortho-compounds. ..... complies
Iron (Fe). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **0271.1** | 250 g | plastic | 22,05 € |
| **0271.2** | 500 g | plastic | 34,95 € |
| Original pack 6 x 500 g | | | 33,20/500 g |
| **0271.3** | 1 kg | plastic | 62,90 € |
| Original pack 6 x 1 kg | | | 59,76/1 kg |

## Chloramphenicol-LB Selective Agar

▶ LB-Agar (Luria/Miller) / Chloramph34 see p. 2031

## p-Chloranil



### p-Chloranil

**≥98 %, p.a.**

Reagent for the dehydrogenation of hydroaromatic compounds.

2,3,5,6-Tetrachloro-1,4-benzoquinone

$C_6Cl_4O_2$

M 245,86 g/mol

mp 290-295 °C

[118-75-2] • EC No. 204-274-4

UN No. 3077 • ADR 9 III • WGK 2

**Warning** H315-H319-H410

**Guarantee analysis:**

Assay (HPLC). ..... ≥98,0 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **KK33.1** | 10 g | glass | 21,40 € |
| **KK33.2** | 25 g | glass | 36,05 € |
| **KK33.3** | 100 g | glass | 110,65 € |

## 4-Chloranthranilic acid

▶ 2-Amino-4-chlorobenzoic acid see p. 1725

## Chlorate Standards

▶ Chlorate IC Standard Solution see p. 2311

## Chloride Standards

▶ Chloride IC Standard Solution see p. 2311

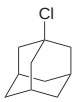
## Chlorite Standards

▶ Chlorite IC Standard Solution see p. 2311

## Chlornickel

▶ Nickel(II) chloride hexahydrate see p. 2093

## 1-Chloroadamantane



### 1-Chloroadamantane

**≥98 %, for synthesis**

$C_{10}H_{15}Cl$

M 170,68 g/mol

mp 161-166 °C

[935-56-8] • EC No. 213-305-0

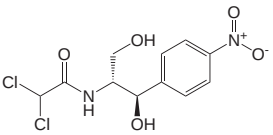
WGK 3

**Type analysis:**

Appearance. ..... white to light grey solid
Assay (titr.). ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **7627.1** | 5 g | glass | 13,90 € |
| **7627.2** | 25 g | glass | 23,15 € |
| **7627.3** | 100 g | glass | 57,95 € |

## Chloroamphenicol



### Chloroamphenicol

**≥98,5 %, Ph.Eur., for biochemistry**

Bacteriostatic antibiotic

Chloromycetin

$C_{11}H_{12}Cl_2N_2O_5$

M 323,15 g/mol

D 0,7

mp 150 °C

Solubility: 2,5 g/l ($H_2O$, 25 °C)

Storage temp.: +20 °C

[56-75-7] • EC No. 200-287-4

WGK 1

**Warning** H351-H361d

**Guarantee analysis:**

Appearance. ..... white to light grey, cryst. powder
Assay (dry substance). ..... 98,5-102,0 %
Identity. ..... complies
Solubility. ..... complies
Chloride (Cl). ..... ≤0,01 %
Specific rotation $[\alpha]_D^{20}$. ..... +18,5° to +20,5°
Acid or alkaline react. substances. ..... complies
Related substances. ..... ≤0,5 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **3886.2** | 25 g | plastic | 19,25 € |
| **3886.1** | 50 g | plastic | 32,15 € |
| **3886.3** | 100 g | plastic | 52,60 € |

For further information, please see page 1427

## Chloroauric acid hydrate

▶ Hydrogen tetrachloroaurate(III) hydrate see p. 1992

## Chlorobenzene



### Chlorobenzene

**≥99,5 %, for synthesis**

Phenyl chloride

$C_6H_5Cl$

M 112,56 g/mol

D 1,11 • bp 132 °C

mp -45 °C • flp 27 °C

[108-90-7] • EC No. 203-628-5

UN No. 1134 • ADR 3 III • WGK 2

**Warning** H226-H315-H332-H411

**Type analysis:**

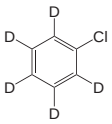
Assay (GC). ..... ≥99,5 %
Density (d 20 °C/4 °C). ..... 1,106-1,110
Acidity (as HCl). ..... ≤0,01 %
Water. ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **KK01.1** | 100 ml | glass | 13,15 € |
| **KK01.2** | 500 ml | glass | 24,20 € |
| **KK01.3** | 1 l | glass | 35,40 € |
| Original pack 6 x 1 l | | | 33,63/1 l |

## o-Chlorobenzene

▶ 1,2-Dichlorobenzene see p. 1868

## Chlorobenzene D5



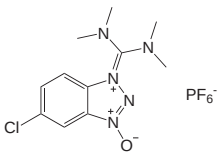
### Chlorobenzene D5

**99 Atom%D**
For nuclear magnetic resonance spectroscopy.
$C_6D_5Cl$
M 117,60 g/mol
D 1,16 • bp 130 °C
mp -45 °C • flp 23 °C
[3114-55-4] • EC No. 221-482-0
UN No. 1134 • ADR 3 III • WGK 2
**Warning** H226-H400-H410

**Type analysis:**
Deuterising degree. ..... ≥99 %
Water (KF, $H_2O+D_2O$). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **9905.1** | 5 ml | glass | 107,40 € |

## O-(1H-6-Chlorobenzotriazole-1-yl)-N,N,N',N'-tetramethyl-uronium hexafluorophosphate (HCTU)



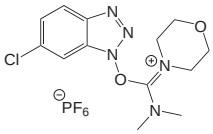
### O-(1H-6-Chlorobenzotriazole-1-yl)-N,N,N',N'-tetramethyl-uronium hexafluorophosphate (HCTU)

**≥99 %**
Coupling reagent for peptide synthesis
HCTU
$C_{11}H_{15}ClF_6N_5OP$
M 413,69 g/mol
mp >185 °C
Storage temp.: +4 °C
[330645-87-9]

**Type analysis:**
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2112.1** | 5 g | glass | 20,35 € |
| **2112.2** | 25 g | glass | 33,25 € |
| **2112.3** | 100 g | glass | 96,65 € |
| **2112.5** | 1 kg | glass | 579,45 € |
| Original pack 6 x 1 kg | | | 550,48/1 kg |

## 4-((6-Chloro-1H-benzo{d}[1,2,3]-triazol-1-yloxy)(dimethyl-amino)methylene)morpholin-4-ium hexafluorophosphate (HDMC)



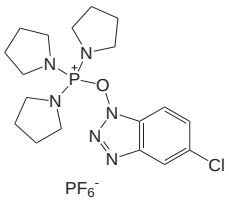
### 4-((6-Chloro-1H-benzo{d}[1,2,3]-triazol-1-yloxy)(dimethyl-amino)methylene)morpholin-4-ium hexafluorophosphate (HDMC)

**≥99 %**
Coupling reagent for peptide synthesis.
HDMC
$C_{13}H_{17}F_6N_5O_2PCl$
M 455,5 g/mol
mp 165-175 °C
Storage temp.: +4 °C
[1082951-62-9]
WGK 3

**Type analysis:**
Appearance. ..... white powder
Assay (HPLC). ..... ≥99 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6893.1** | 5 g | glass | 40,75 € |
| **6893.2** | 25 g | glass | 160,20 € |
| **6893.3** | 100 g | glass | 536,45 € |

## 6-Chloro-benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluoro-phosphate (PyClock®)



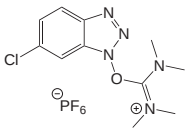
### 6-Chloro-benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluoro-phosphate (PyClock®)

**≥98,5 %**
Coupling reagent for peptide synthesis
PyClock®
$C_{18}H_{27}ClF_6N_6OP_2$
M 554,84 g/mol
mp 174-180 °C
Storage temp.: +4 °C
[893413-42-8]

**Type analysis:**
Assay (HPLC). ..... ≥98,5 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2123.1** | 5 g | glass | 27,45 € |
| **2123.2** | 25 g | glass | 87,00 € |
| **2123.3** | 100 g | glass | 295,65 € |
| **2123.5** | 1 kg | glass | 1924,25 € |
| Original pack 6 x 1 kg | | | 1828,04/1 kg |

## O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TCTU)



### O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TCTU)

**≥98 %**
Coupling reagent for peptide synthesis.
TCTU
$C_{11}H_{15}BClF_4N_5O$
M 355,5 g/mol
[330641-16-2]
WGK 3
**Warning** H302

**Type analysis:**
Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Water (KF). ..... ≤0,5 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6890.1** | 5 g | glass | 26,80 € |
| **6890.2** | 25 g | glass | 85,90 € |
| **6890.3** | 100 g | glass | 213,95 € |

## Chlorocalcium hexahydrate

▶ Calcium chloride hexahydrate see p. 1804

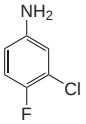
## Chloro-4,4'-dimethoxy-triphenylmethane

▶ 4,4'-Dimethoxytrityl chloride (DMT-Cl) see p. 1880

## Chlorofluoroaniline

▶ 3-Chloro-4-fluoroaniline see p. 1828

## 3-Chloro-4-fluoroaniline



### 3-Chloro-4-fluoroaniline

**≥95 %**
Chlorofluoroaniline, CFA
$C_6H_5ClFN$
M 145,56 g/mol
bp 230 °C
mp 42-46 °C • flp 114 °C
Solubility: 10 g/l ($H_2O$, 20 °C)
[367-21-5] • EC No. 206-682-8
WGK 2

**Warning** H302+H312+H332

**Type analysis:**
Assay (GC). ..... ≥95,0 %
Solution (1 % in acetone). ..... colourless to brown, clear
Melting point. ..... 42-46 °C

| | | | |
|---|---|---|---|
| **5461.1** | 25 g | plastic | 42,50 € |
| **5461.2** | 100 g | plastic | 122,05 € |

## Chloroform

▶ Trichloromethane/Chloroform see p. 2350

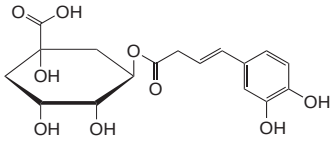
## Chloroform D1

▶ Trichloromethane/Chloroform D1 see p. 2351

## Chloroform D1 with TMS

▶ Trichloromethane/Chloroform D1 with TMS (0,03 vol.%) see p. 2352

## Chlorogenic acid



$C_{16}H_{18}O_9$
M 354,32 g/mol
mp 202-206 °C
[327-97-9] • EC No. 206-325-6
WGK 3

### Chlorogenic acid

**≥97 %**

**Type analysis:**
Appearance. ..... white to off-white powder
Assay (dry substance). ..... ≥97 %
Melting point. ..... 202-206 °C
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$). ..... -40° to -36°

| | | | |
|---|---|---|---|
| **6385.1** | 250 mg | glass | 29,60 € |
| **6385.2** | 1 g | glass | 92,35 € |

### Chlorogenic acid

**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF). ..... ≤5,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE06.1** | 25 mg | glass | 510,65 € |

### Chlorogenic acid

**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC). ..... ≥90,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC06.1** | 100 mg | glass | 116,00 € |

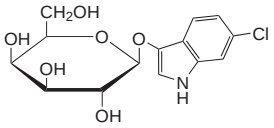
### Chlorogenic acid

**ROTICHROM® TLC**

Reference substance for thin layer chromatography.

| | | | |
|---|---|---|---|
| **5558.1** | 50 mg | glass | 40,75 € |

## 6-Chloro-3-indoxyl-β-D-galactopyranoside



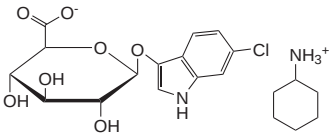
### 6-Chloro-3-indoxyl-β-D-galactopyranoside

**≥98 %, for biochemistry**
β-Galactosidase substrate
Rose-Gal
$C_{14}H_{16}ClNO_6$
M 329,74 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[138182-21-5]

**Guarantee analysis:**
Assay (HPLC). ..... ≥98 %
Solution (5 % in methanol). ..... colourless to light yellowish, clear
Water (KF). ..... ≤1 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol). ..... -49° to -45°

| | | | |
|---|---|---|---|
| **4251.1** | 25 mg | glass | 33,25 € |
| **4251.2** | 50 mg | glass | 43,55 € |
| **4251.3** | 100 mg | glass | 63,45 € |

## 6-Chloro-3-indoxyl-β-D-glucuronic acid cyclohexylammonium salt



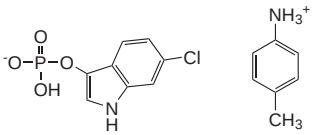
### 6-Chloro-3-indoxyl-β-D-glucuronic acid cyclohexylammonium salt

**≥98 %, for biochemistry**
β-Glucuronidase substrate
Rose-Glucuro CHAsalt
$C_{14}H_{14}ClNO_7 \cdot C_6H_{13}N$
M 442,9 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[138182-20-4]
WGK 1

**Guarantee analysis:**
Assay (HPLC). ..... ≥98 %
Solution (1 % in DMF). ..... nearly colourless, clear
Water (KF). ..... ≤2 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF/water 1:1). ..... -68° to -72°

| | | | |
|---|---|---|---|
| **4057.1** | 10 mg | glass | 31,10 € |
| **4057.2** | 50 mg | glass | 46,15 € |
| **4057.3** | 100 mg | glass | 78,40 € |

## 6-Chloro-3-indoxyl phosphate p-toluidine salt



### 6-Chloro-3-indoxyl phosphate p-toluidine salt

**≥98 %, for biochemistry**
Alkaline phosphatase substrate
Rose-Phos p-toluidine salt
$C_8H_7ClNO_4P \cdot C_7H_9N$
M 354,73 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[159954-33-3]

**Warning** H315-H319-H335

**Guarantee analysis:**
Assay (HPLC). ..... ≥98 %
Solution (1 % in methanol). ..... colourless to almost colourless, clear
Water (KF). ..... ≤1 %

| | | | |
|---|---|---|---|
| **4247.1** | 50 mg | glass | 46,80 € |
| **4247.2** | 100 mg | glass | 84,85 € |

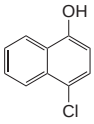
## 2-(Chloromethoxy)ethyl trimethyl silane

▶ 2-(Trimethylsilyl)ethoxymethyl chloride see p. 2355

## Chloromethyl 2-trimethylsilylethyl ether

▶ 2-(Trimethylsilyl)ethoxymethyl chloride see p. 2355

## 4-Chloro-1-naphthol



### 4-Chloro-1-naphthol

**≥97 %, for biochemistry**

Peroxidase substrate

4-CN

$C_{10}H_7ClO$

M 178,62 g/mol

mp ~120 °C

Storage temp.: -20 °C
Transport temp.: room temp.

[604-44-4] • EC No. 210-068-5

WGK 1

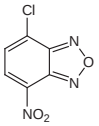
**Warning** H315-H319-H335

**Guarantee analysis:**

Assay (GC). ..... ≥97 %
Solution (10 % in methanol, 45 °C). ..... yellow to brownish, almost clear
Water (KF). ..... ≤0,5 %
Melting point. ..... 118-122 °C

| | | | |
|---|---|---|---|
| **4104.1** | 5 g | glass | 28,50 € |
| **4104.2** | 10 g | glass | 47,20 € |
| **4104.3** | 25 g | glass | 92,35 € |

## 4-Chloro-7-nitro-benzofurazan



### 4-Chloro-7-nitro-benzofurazan

**≥99 %, p.a.**

For detection of amino acids, some alkaloids, sulphonamides.

NBD-chloride, 7-Chloro-4-nitro-2,1,3-benzoxadiazol

$C_6H_2ClN_3O_3$

M 199,55 g/mol

mp 96-99 °C

[10199-89-0] • EC No. 233-496-4

WGK 3

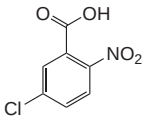
**Warning** H315-H319

**Guarantee analysis:**

Assay (GC). ..... ≥99,0 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **KK31.1** | 1 g | glass | 17,10 € |
| **KK31.2** | 5 g | glass | 47,85 € |

## 5-Chloro-2-nitrobenzoic acid



### 5-Chloro-2-nitrobenzoic acid

**≥98 %, for synthesis**

$C_7H_4ClNO_4$

M 201,57 g/mol

mp 137-141 °C

Solubility: 9,67 g/l ($H_2O$, 25 °C)

[2516-95-2] • EC No. 219-738-1

WGK 1

**Warning** H315-H319-H335

**Guarantee analysis:**

Assay (titr.). ..... ≥98,0 %
Solution (1 % in ethanol). ..... almost colourless to colourless
Water (KF). ..... ≤1,0 %
Melting point. ..... 137-141 °C

| | | | |
|---|---|---|---|
| **5456.1** | 25 g | plastic | 24,65 € |
| **5456.2** | 100 g | plastic | 67,65 € |

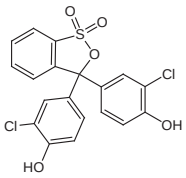
## 7-Chloro-4-nitro-2,1,3-benzoxadiazol

▶ 4-Chloro-7-nitro-benzofurazan see p. 1829

## α-Chloro-4-nitrotoluene

▶ 4-Nitrobenzyl chloride see p. 2101

## Chlorophenol red



### Chlorophenol red

**p.a.**

Indicator pH 4,8-6,4

3',3"-Dichlorophenol sulphonephthalein

$C_{19}H_{12}Cl_2O_5S$

M 423,27 g/mol

mp 261 °C

Solubility: insoluble ($H_2O$, 20 °C)

[4430-20-0] • EC No. 224-619-2

WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Maximum absorption. ..... 560-575 nm
Loss on drying (110 °C). ..... ≤5 %

| | | | |
|---|---|---|---|
| **0347.1** | 5 g | glass | 30,00 € |
| **0347.2** | 10 g | glass | 48,95 € |
| **0347.3** | 25 g | glass | 104,20 € |

## 4-Chlorophenol solution

### 4-Chlorophenol solution

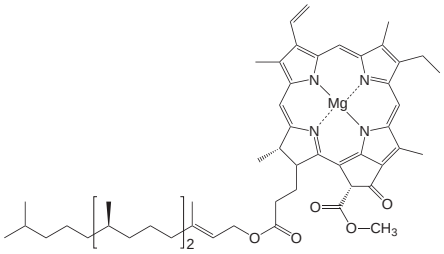
**200 mg AOX/l**

For determination of AOX acc. to EN ISO 9562:2004, DEV H14

WGK 1

| | | | |
|---|---|---|---|
| **2495.1** | 100 ml | glass | 59,05 € |

## Chlorophyll A



### Chlorophyll A

**powd.**

Isolated from algae *(Anacystis nidulans)*.

$C_{55}H_{72}MgN_4O_5$

M 893,48 g/mol

Storage temp.: -20 °C
Transport temp.: room temp.

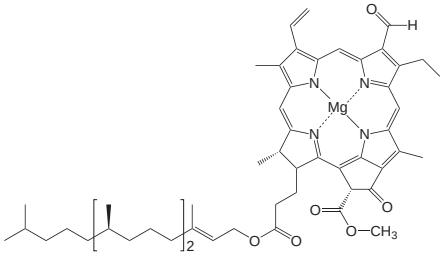
[479-61-8] • EC No. 207-536-6

**Type analysis:**

Appearance. ..... deep green to deep blue powder
UV-absorptionsmax. (I). ..... 426-430 nm
UV-absorptionsmax. (II). ..... 658-662 nm

| | | | |
|---|---|---|---|
| **6360.1** | 1 mg | glass | 385,95 € |
| **6360.2** | 5 mg | glass | 1589,95 € |

## Chlorophyll B



### Chlorophyll B

**≥90 %, powd.**

Isolated from spinach.

$C_{55}H_{70}MgN_4O_6$

M 907,46 g/mol

mp 183-185 °C

Storage temp.: +4 °C

[519-62-0] • EC No. 208-272-4

**Type analysis:**

Appearance. ..... dark green, fine powder
Assay (HPLC). ..... ≥90 %

| | | | |
|---|---|---|---|
| **6365.2** | 5 mg | glass | 1353,45 € |

## Chlorophyllin sodium salt

### Chlorophyllin sodium salt

**water-soluble**
Not copperized
WGK 1

**Type analysis:**

Appearance. ..... grey-green powder
Dye content. ..... ≥97 % Na chlorophyllin
Loss on drying (105 °C). ..... ≤10 %
pH value (10 % $H_2O$ solution). ..... 8,5-10,0
Intensity of colour E/ 1%/ 401 nm..... 680-780 in buffer pH 9
Intensity of colour E/1 %/653 nm. ..... 145-165 in buffer pH 9
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **6217.1** | 10 g | plastic | 32,15 € |

## Chloroplatinic acid hydrate

▶ Hydrogen hexachloroplatinate(IV) hydrate see p. 1990

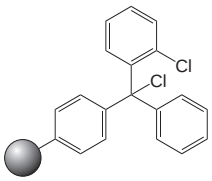
## N-Chloro-4-toluene sulphonic acid amide

▶ Chloramine T trihydrate see p. 1826

## Chlorotrimethylsilane

▶ Trimethylchlorosilane (TMCS) see p. 2354

## 2-Chlorotrityl chloride resin




### 2-Chlorotrityl chloride resin

**100-200 mesh, 1 % DVB**
For peptide synthesis.
CTC resin
WGK 3

**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... pale yellow-brown beads
Loading. ..... 1,0-1,6 mmol/g
Identity (IR). ..... complies
Swelling. ..... ≥3 ml/g (DMF, 24 h)
Kaiser test. ..... negative
Particle size. ..... 75-150 µm (100-200 mesh)

| | | | |
|---|---|---|---|
| **7405.1** | 5 g | plastic | 77,30 € |
| **7405.2** | 25 g | plastic | 299,95 € |

## 3-[(3-Cholamidopropyl)-dimethylamino]-2-hydroxy-1-propanesulphonate

▶ CHAPSO see p. 1824

## 3-[(3-Cholamidopropyl)-dimethyl ammonio]-1-propane sulphonate

▶ CHAPS see p. 1824

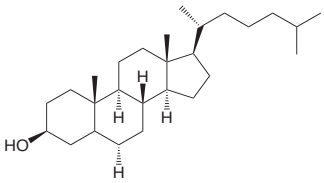
## Cholera Agar

▶ TCBS Agar see p. 2331

## Cholera Medium TCBS

▶ TCBS Agar see p. 2331

## 5-α-Cholestan-3β-ol




### 5-α-Cholestan-3β-ol

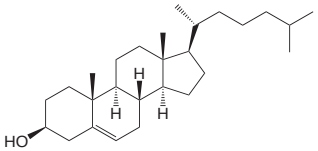
**≥90 %**
Dihydrocholesterol
$C_{27}H_{48}O$
M 388,68 g/mol
mp 138-142 °C
[80-97-7] • EC No. 201-315-8
WGK 1

**Type analysis:**

Assay (GC). ..... ≥90,0 %
Optical rotation $[\alpha]_D^{20}$ (1% $CHCl_3$). ..... +22° to +24°

| | | | |
|---|---|---|---|
| **3400.2** | 1 g | glass | 20,35 € |
| **3400.1** | 5 g | glass | 75,15 € |
| **3400.3** | 10 g | glass | 124,60 € |

## Cholesterol




### Cholesterol

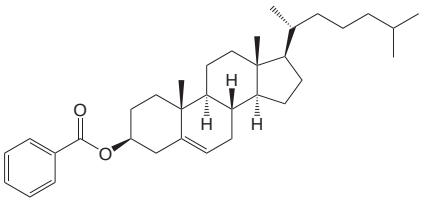
**≥95 %, Ph.Eur., for biochemistry**
$C_{27}H_{46}O$
M 386,67 g/mol
D 1,07
mp 147-150 °C • flp 250 °C
Solubility: insoluble ($H_2O$, 20 °C)
Storage temp.: +4 °C
[57-88-5] • EC No. 200-353-2
WGK 1

**Guarantee analysis:**

Appearance. ..... white to off-white, cryst. powder
Content (total sterols). ..... 97,0-103,0 %
Assay (cholesterol). ..... ≥95,0 %
Identity. ..... complies
Melting point. ..... 147-150 °C
Sulphated ash. ..... ≤0,1 %
Loss on drying. ..... ≤0,3 %
Acid react. substances. ..... complies
Solubility in ethanol % vol. ..... complies

| | | | |
|---|---|---|---|
| **8866.2** | 25 g | plastic | 24,65 € |
| **8866.1** | 100 g | plastic | 64,40 € |

## Cholesterol benzoate




### Cholesterol benzoate

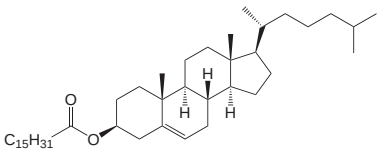
**>97,5 %, cryst.**
$C_{34}H_{50}O_2$
M 490,76 g/mol
mp ~150 °C
[604-32-0] • EC No. 210-064-3
WGK 1

**Type analysis:**

Appearance. ..... white, cryst. powder
Assay. ..... >97,5 %

| | | | |
|---|---|---|---|
| **3402.1** | 10 g | plastic | 47,85 € |

## Cholesterol palmitate




### Cholesterol palmitate

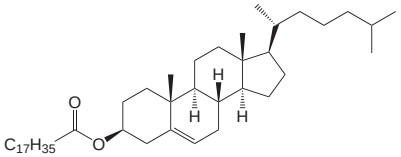
**≥97 %, pure**
$C_{43}H_{76}O_2$
M 625,08 g/mol
mp ~76 °C
[601-34-3] • EC No. 210-002-5
WGK 1

**Type analysis:**

Assay. ..... ≥97 %

| | | | |
|---|---|---|---|
| **3404.1** | 5 g | plastic | 47,85 € |

## Cholesterol stearate




### Cholesterol stearate

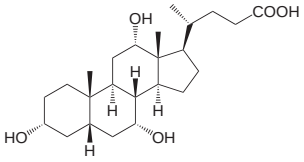
**≥97 %, pure**
$C_{45}H_{80}O_2$
M 653,14 g/mol
mp 79-81 °C
[35602-69-8] • EC No. 252-637-0
WGK 1

**Type analysis:**

Assay. ..... ≥97 %

| | | | |
|---|---|---|---|
| **3405.1** | 5 g | glass | 33,25 € |

## Cholic acid



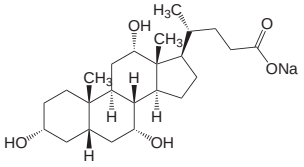
### Cholic acid

**≥99 %**
$C_{24}H_{40}O_5$
M 408,58 g/mol
mp 195-202 °C
Solubility: 0,28 g/l ($H_2O$, 15 °C)
Storage temp.: +4 °C
[81-25-4] • EC No. 201-337-8
WGK 2

**Typ analysis:**
Assay (HPLC).....≥99 %
Loss on drying.....≤0,5 %
Deoxy cholic acid.....≤1 %

| | | | |
|---|---|---|---|
| **8137.1** | 25 g | plastic | 45,70 € |
| **8137.2** | 100 g | plastic | 91,95 € |

## Cholic acid sodium salt



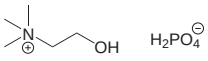
### Cholic acid sodium salt

**≥99 %, for biochemistry**
Anionic detergent
Sodium cholate
$C_{24}H_{39}NaO_5$
M 430,57 g/mol
[361-09-1] • EC No. 206-643-5
WGK 1

**Type analysis:**
Assay (dry substance).....≥99,0 %
Water (KF).....≤5 %
Specific rotation $[\alpha]_D^{20}$.....+34° to +37°

| | | | |
|---|---|---|---|
| **3407.1** | 50 g | plastic | 59,05 € |

## Choline-dihydrogenphosphate (Choline DHP)



### Choline-dihydrogenphosphate (Choline DHP)

**≥98 %**
Ionic liquid
Choline DHP
$C_5H_{16}NO_5P$
M 201,06 g/mol
mp 190 °C
[83846-92-8]
WGK 3

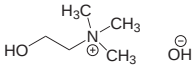
**Warning** H315-H319-H335

**Type analysis:**
Appearance.....white to yellowish, solid
Assay.....≥98 %
Water (KF).....≤0,25 %

| | | | |
|---|---|---|---|
| **2028.1** | 25 g | glass | 246,20 € |
| **2028.2** | 100 g | glass | 557,95 € |

Lit:. **"Protein solubilising and stabilising ionic liquids"** K. Fujita, D. R. MacFarlane, M. Forsyth, *Chem. Commun.* **2005,** 4804–4806.
For further information, please see page 1531

## Choline hydroxide



### Choline hydroxide

**48-50 % in water**
$C_5H_{15}NO_2$
M 121,18 g/mol
D 1,08
Storage temp.: +4 °C
[123-41-1] • EC No. 200-535-1
UN No. 3267 • ADR 8 II • WGK 1

**Danger** H314

**Type analysis:**
Assay.....48-50 %
Density (20 °C).....1,0780-1,0900

| | | | |
|---|---|---|---|
| **3406.2** | 50 ml | glass | 42,50 € |
| **3406.1** | 250 ml | glass | 189,10 € |

## Chondroitin sulphate sodium salt

### Chondroitin sulphate sodium salt

**for biochemistry**
From bovine trachea.
$(C_{14}H_{20}NNaO_{15}S)_n$
Storage temp.: +4 °C
[9007-28-7] • EC No. 232-696-9

**Type analysis:**
Appearance.....bright powder
Assay.....≥90,0 %
pH value.....5,5-7,5
Loss on drying.....≤10 %

| | | | |
|---|---|---|---|
| **5197.1** | 25 g | plastic | 44,65 € |

## Christensen Agar

▶ Urea Agar acc. to Christensen (Base) see p. 2366

## Chromium Standards

▶ Chromium AAS Standard Solution see p. 2294
▶ Chromium ICP Standard Solution see p. 2297
▶ Chromium ICP Standard Solution see p. 2302

## Chromate Standards

▶ Chromate IC Standard Solution see p. 2311

## Chromic chloride

▶ Chromium(III) chloride hexahydrate see p. 1831

## Chromic acid potassium salt

▶ Potassium chromate see p. 2165

## Chromic(III) potassium sulphate 12-hydrate

▶ Chromium(III) potassium sulphate dodecahydrate see p. 1832

## Chromium trichloride

▶ Chromium(III) chloride hexahydrate see p. 1831

## Chromium(III) chloride hexahydrate

### Chromium(III) chloride hexahydrate

**≥97 %, p.a.**
Chromium trichloride, Chromic chloride
$CrCl_3 \cdot 6\ H_2O$
M 266,45 g/mol
D 1,76
Solubility: 58 g/l ($H_2O$, 25 °C)
[10060-12-5] • EC No. 233-038-3
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H302-H317-H410

**Guarantee analysis:**
Assay.....≥97,0 %
pH (5 % $H_2O$, 25 °C).....2,0-3,0
Insoluble matter.....≤0,01 %
Ammonium ($NH_4$).....≤0,01 %
Sulphate ($SO_4$).....≤0,05 %
Aluminium (Al).....≤0,05 %
Iron (Fe).....≤0,005 %

| | | | |
|---|---|---|---|
| **9832.1** | 100 g | plastic | 16,70 € |
| **9832.2** | 500 g | plastic | 44,65 € |
| Original pack 6 x 500 g | | | 42,42/500 g |
| **9832.3** | 1 kg | plastic | 73,00 € |
| Original pack 6 x 1 kg | | | 69,35/1 kg |

## Chromium(III) nitrate nonahydrate

$Cr(NO_3)_3 \cdot 9\ H_2O$
M 400,14 g/mol
D 1,80 • bp 100 °C (dec.)
mp 36-37 °C
Solubility: 810 g/l ($H_2O$, 20 °C)
[7789-02-8] • EC No. 236-921-1
UN No. 2720 • ADR 5.1 III • WGK 2
**Warning** H272-H315-H319

### Chromium(III) nitrate nonahydrate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5619.1** | 5 g | plastic | 60,10 € |
| **5619.2** | 25 g | plastic | 177,40 € |

### Chromium(III) nitrate nonahydrate

**≥98 %, p.a.**

**Type analysis:**
Assay (iodom.)..... ≥98,0 %
Chloride (Cl). ..... ≤0,005 %
Ammonium ($NH_4$). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,005 %
Lead (Pb). ..... ≤0,002 %
Calcium (Ca)..... ≤0,005 %
Cadmium (Cd). ..... ≤0,001 %
Iron (Fe). ..... ≤0,02 %
Copper (Cu)..... ≤0,001 %
Magnesium (Mg)..... ≤0,005 %
Sodium (Na). ..... ≤0,01 %
Nickel (Ni)..... ≤0,005 %
Zinc (Zn). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **8773.1** | 100 g | plastic | 18,20 € |
| **8773.2** | 500 g | plastic | 36,45 € |
| Original pack 6 x 500 g | | | 34,63/500 g |
| **8773.3** | 1 kg | plastic | 64,40 € |
| Original pack 6 x 1 kg | | | 61,18/1 kg |

## Chromium(III) oxide

$Cr_2O_3$
M 151,99 g/mol
D 5,22 • bp ~3000 °C
mp 2435 °C
[1308-38-9] • EC No. 215-160-9

### Chromium(III) oxide

**ROTI®METIC 99,9 % (3N)**

**Type analysis:**
Assay (metals basis)..... 99,9 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **4498.1** | 5 g | plastic | 35,40 € |
| **4498.2** | 25 g | plastic | 144,60 € |

### Chromium(III) oxide

**≥98 %, extra pure**

**Type analysis:**
Assay. ..... ≥98,0 %
Water-soluble content. ..... ≤0,5 %
Sieve residue (45 µm). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9886.1** | 100 g | plastic | 17,75 € |
| **9886.2** | 500 g | plastic | 39,25 € |
| Original pack 6 x 500 g | | | 37,29/500 g |
| **9886.3** | 1 kg | plastic | 67,20 € |
| Original pack 6 x 1 kg | | | 63,84/1 kg |
| **9886.4** | 2,5 kg | plastic | 122,45 € |

## Chromium(III) potassium sulphate dodecahydrate

Potassium chromium(III) sulphate, Alum chrome
$KCr(SO_4)_2 \cdot 12\ H_2O$
M 499,41 g/mol
D 1,83
mp 89 °C
Solubility: 250 g/l ($H_2O$, 20 °C)
[7788-99-0] • EC No. 233-401-6
WGK 2
**Warning** H315-H319

### Chromium(III) potassium sulphate dodecahydrate

**≥98 %, p.a., ACS**

**Guarantee analysis:**
Appearance..... violet cryst. powder
Assay (iodom.). ..... ≥98,0-102,0 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,002 %
Aluminium (Al). ..... ≤0,005 %
Ammonium ($NH_4$). ..... ≤0,01 %
Lead (Pb). ..... ≤0,005 %
Iron (Fe)..... ≤0,01 %
Copper (Cu). ..... ≤0,001 %
Nickel (Ni)..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **4389.1** | 250 g | plastic | 27,85 € |
| **4389.2** | 500 g | plastic | 42,90 € |
| Original pack 6 x 500 g | | | 40,76/500 g |
| **4389.3** | 1 kg | plastic | 81,60 € |
| Original pack 6 x 1 kg | | | 77,52/1 kg |

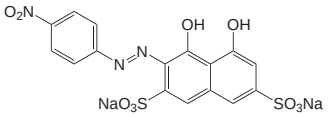
### Chromium(III) potassium sulphate dodecahydrate

**≥98 %**

**Type analysis:**
Assay (iodom.). ..... ≥98 %
Chloride (Cl). ..... ≤0,03 %
Lead (Pb). ..... ≤0,01 %
Iron (Fe)..... ≤0,03 %

| | | | |
|---|---|---|---|
| **3535.3** | 100 g | plastic | 12,40 € |
| **3535.1** | 1 kg | plastic | 42,50 € |
| Original pack 6 x 1 kg | | | 40,38/1 kg |
| **3535.4** | 2,5 kg | plastic | 85,90 € |
| **3535.2** | 10 kg | plastic | 299,95 € |

## Chromotrope® 2B (C.I. 16575)



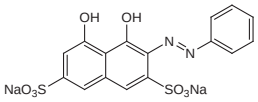

### Chromotrope® 2B (C.I. 16575)

**for microscopy**
$C_{16}H_9N_3Na_2O_{10}S_2$
M 513,37 g/mol
mp >300 °C
[548-80-1] • EC No. 208-959-9
WGK 3
**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... dark green to brown powder
Absorption max. (in $H_2O$). ..... 514 nm

| | | | |
|---|---|---|---|
| **7647.1** | 5 g | glass | 14,20 € |
| **7647.2** | 25 g | glass | 24,20 € |
| **7647.3** | 100 g | glass | 60,10 € |

## Chromotrope® 2R (C.I. 16570)




### Chromotrope® 2R (C.I. 16570)

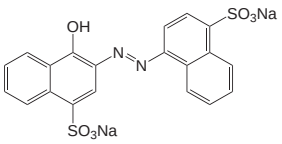
**for microscopy**
Indicator for complexometry.
$C_{16}H_{10}N_2Na_2O_8S_2$
M 468,39 g/mol
[4197-07-3] • EC No. 224-085-0
WGK 3
**Warning** H315-H319-H335

**Type analysis:**
Maximum absorption. ..... 500-520 nm
Loss on drying (110 °C). ..... ≤10 %

| | | | |
|---|---|---|---|
| **4937.2** | 10 g | glass | 28,95 € |
| **4937.1** | 50 g | glass | 107,40 € |

For further information, please see page 1463

## Chromotrope® FB (C.I. 14720)



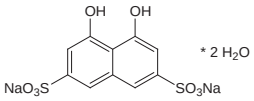

### Chromotrope® FB (C.I. 14720)

**for microscopy**
Acid red 14, Azorubine, Carmoisine
$C_{20}H_{12}N_2Na_2O_7S_2$
M 502,43 g/mol
[3567-69-9] • EC No. 222-657-4
WGK 3
**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... dark red to black powder
Appearance of solution (0,1 % in $H_2O$). ..... clear
Loss on drying. ..... ≤8 %

| | | | |
|---|---|---|---|
| **7648.1** | 5 g | glass | 14,20 € |
| **7648.2** | 25 g | glass | 24,20 € |
| **7648.3** | 100 g | glass | 60,10 € |

## Chromotropic acid disodium salt dihydrate

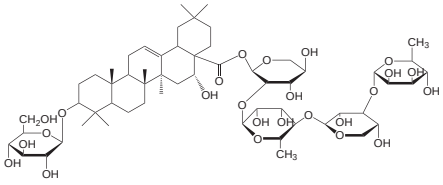



### Chromotropic acid disodium salt dihydrate
**≥98,5 %, p.a., ACS**
Reagents for silver, boron, chrome, mercury, titanium, chromate, formaldehyde, nitrile and nitrate.
4,5-Dihydroxy-2,7-naphthalene disulphonic acid sodium salt
$C_{10}H_6Na_2O_8S_2 \cdot 2\ H_2O$
M 400,30 g/mol
mp >300 °C
Solubility: 170 g/l ($H_2O$, 20 °C)
[5808-22-0] • EC No. 204-972-9
WGK 3

**Guarantee analysis:**
Assay (titr.). ..... ≥98,5 %
Water (KF). ..... 8,5-9,5 %
Solution (5 % in $H_2O$). ..... clear solution
In $H_2O$ insoluble matter. ..... ≤0,02 %
Suitability for determination of nitrate and formaldehyde. ..... complies

| | | | |
|---|---|---|---|
| **KK30.1** | 10 g | glass | 34,95 € |
| **KK30.2** | 25 g | glass | 75,15 € |

## Chrysanthellin A

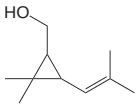


### Chrysanthellin A
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{58}H_{94}O_{25}$
M 1191,37 g/mol
Storage temp.: +4 °C
[73039-13-1] • EC No. 277-245-7

**Type analysis:**
Purity (HPLC). ..... ≥96 %

| | | | |
|---|---|---|---|
| **5261.1** | 10 mg | glass | 403,15 € |

## Chrysanthemyl alcohol



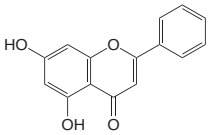

### Chrysanthemyl alcohol
**>97,5 %**
Mixture of cis-trans isomers.
$C_{10}H_{18}O$
M 154,25 g/mol
bp 66-69 °C
flp 84 °C
[18383-59-0] • EC No. 227-045-0

**Type analysis:**
Appearance. ..... light yellowish liquid
Assay (GC). ..... >97,5 %
Refractive index $n_D^{20}$. ..... 1,4730-1,4770

| | | | |
|---|---|---|---|
| **7243.1** | 2,5 g | glass | 56,90 € |

## Chrysatropic acid
▶ Scopoletin see p. 2243

## Chrysin

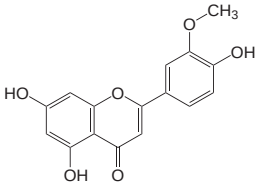



### Chrysin
**≥97 %**
5,7-Dihydroxyflavone
$C_{15}H_{10}O_4$
M 254,24 g/mol
mp 277-281 °C
[480-40-0] • EC No. 207-549-7

**Type analysis:**
Appearance. ..... yellow powder
Assay (HPLC). ..... 97,0-100,0 %

| | | | |
|---|---|---|---|
| **6475.1** | 500 mg | glass | 20,35 € |

## Chrysoeriol



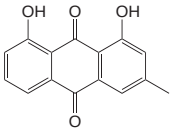

### Chrysoeriol
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{16}H_{12}O_6$
M 300,26 g/mol
Storage temp.: +4 °C
[491-71-4] • EC No. 207-742-6

**Type analysis:**
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **6044.1** | 5 mg | glass | 256,95 € |

## Chrysoidine solution
▶ Neisser's solution III see p. 2090

## Chrysophanic acid




### Chrysophanic acid
**ROTICHROM® HPLC**
Reference substance for HPLC.
Chrysophanol
$C_{15}H_{10}O_4$
M 254,23 g/mol
mp 196 °C (subl.)
Storage temp.: +4 °C
[481-74-3] • EC No. 207-572-2
WGK 2
**Warning** H315-H319-H335

**Type analysis:**
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7442.1** | 10 mg | glass | 192,45 € |

## Chrysophanol
▶ Chrysophanic acid see p. 1833

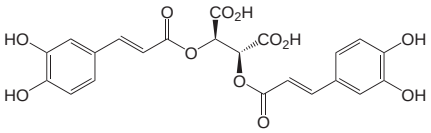
## Chymotrypsin

### Chymotrypsin
**≥1000 USP-U/mg, for biochemistry**
Made from bovine pancreas.
α-Chymotrypsin
Storage temp.: -20 °C
Transport temp.: room temp.
[9004-07-3] • EC No. 232-671-2
WGK 1
**Danger** H334-H335-H315-H319

**Type analysis:**
Identity. ..... complies
Activity. ..... ≥1000 USP-U/mg
pH value (1 % in $H_2O$). ..... 3,0-5,0
Trypsin. ..... ≤25 USP-U/mg
Sulphated ash. ..... <2,5 %
Loss on drying. ..... <5,0 %

| | | | |
|---|---|---|---|
| **0238.1** | 100 mg | glass | 25,70 € |
| **0238.2** | 500 mg | glass | 53,65 € |
| **0238.3** | 1 g | glass | 88,70 € |

## Cichoric acid



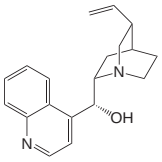
### Cichoric acid
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Echinacea pallida*.
2,3-Dicaffeoyltartaric acid
$C_{22}H_{18}O_{12}$
M 474,38 g/mol
Storage temp.: +4 °C
[70831-56-0]

**Type analysis:**
Purity (HPLC).....>98 %

| | | | |
|---|---|---|---|
| **1130.1** | 10 mg | glass | 403,15 € |

## CIN-Agar
▶ Yersinia Selective Agar (Base) see p. 2383

## Cinchonidine

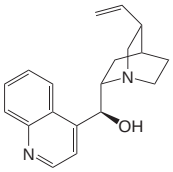


### Cinchonidine
**~96 %**
$C_{19}H_{22}N_2O$
M 294,40 g/mol
mp ~204 °C
[485-71-2] • EC No. 207-622-3
UN No. 1544 • ADR 6.1 III • WGK 1
**Warning** H302

**Type analysis:**
Assay.....≥95,5 %

| | | | |
|---|---|---|---|
| **8872.1** | 25 g | plastic | 107,40 € |

## Cinchonine



### Cinchonine
**≥99 %**
For resolution of racemates and synthesis.
$C_{19}H_{22}N_2O$
M 294,40 g/mol
mp ~260 °C
Solubility: 0,25 g/l ($H_2O$, 20 °C)
[118-10-5] • EC No. 204-234-6
UN No. 1544 • ADR 6.1 III • WGK 1
**Warning** H302-H317

**Type analysis:**
Assay (titr.).....≥99,0 %
Specific rotation $[\alpha]_D^{20}$ (c=0,5 in methanol).....+218° to +222°

| | | | |
|---|---|---|---|
| **8875.1** | 50 g | plastic | 224,70 € |

## 1,4-Cineole



### 1,4-Cineole
**ROTICHROM® GC**
Reference substance for GC.
$C_{10}H_{18}O$
M 154,25 g/mol
D ~0,890 • bp 173-174 °C
mp -46 °C • flp 47 °C
Storage temp.: +4 °C
[470-67-7] • EC No. 207-428-9
UN No. 1993 • ADR 3 III • WGK 2
**Warning** H226

**Type analysis:**
Purity (GC).....≥98 %

| | | | |
|---|---|---|---|
| **5833.2** | 100 mg | glass | 123,65 € |

## 1,8-Cineole
▶ Eucalyptol see p. 1922

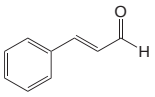
## trans-Cinnamaldehyde

### trans-Cinnamaldehyde
**≥98,5 %, for synthesis**
D ~1,05 • bp 250-252 °C
Storage temp.: +4 °C
[14371-10-9] • EC No. 203-213-9
WGK 1
**Warning** H315-H317-H319-H335

**Type analysis:**
Appearance.....clear, colourless to yellow liquid
Assay (GC).....98,5-100,0 %

| | | | |
|---|---|---|---|
| **7195.1** | 250 ml | glass | 64,40 € |

## Cinnamaldehyde



3-Phenyl-2-propenal
$C_9H_8O$
M 132,16 g/mol
D ~1,05 • bp 252 °C
mp -7 °C • flp 138 °C
Solubility: 1,1 g/l ($H_2O$, 20 °C)
[104-55-2] • EC No. 203-213-9
WGK 1
**Warning** H312-H315-H317-H319

### Cinnamaldehyde
**≥98 %, for synthesis**

**Type analysis:**
Assay (GC).....≥98 %
Density (20 °C).....1,047-1,051

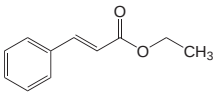
| | | | |
|---|---|---|---|
| **5549.1** | 250 ml | glass | 25,30 € |

### Cinnamaldehyde
**ROTICHROM® GC**
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**
Purity (GC).....≥97 %

| | | | |
|---|---|---|---|
| **3618.1** | 1 g | plastic | 81,20 € |

## Cinnamic acid ethyl ester

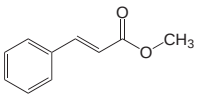


### Cinnamic acid ethyl ester
**ROTICHROM® GC**
Reference substance for GC.
Ethyl cinnamate
$C_{11}H_{12}O_2$
M 176,22 g/mol
D 1,05 • bp 271 °C
mp 6-8 °C • flp 135 °C
Storage temp.: +4 °C
[103-36-6] • EC No. 203-104-6
WGK 1

**Type analysis:**
Purity (GC).....≥98 %

| | | | |
|---|---|---|---|
| **3211.1** | 1 g | plastic | 82,70 € |

## Cinnamic acid methyl ester



### Cinnamic acid methyl ester

**≥98 %, for synthesis**
Methyl cinnamate
$C_{10}H_{10}O_2$
M 162,19 g/mol
bp 260-261 °C
mp 33-38 °C • flp 113 °C
[103-26-4] • EC No. 203-093-8
WGK 1

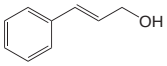
**Type analysis:**
Assay.....≥98,0 %

| | | | |
|---|---|---|---|
| **3643.1** | 25 g | plastic | 11,75 € |
| **3643.2** | 100 g | plastic | 19,25 € |
| **3643.3** | 500 g | plastic | 53,65 € |
| Original pack 6 x 500 g | | | 50,97/500 g |

## 8'-Cinnamoylharpagid

▶ Harpagoside see p. 1968

## Cinnamyl alcohol



### Cinnamyl alcohol

**≥98 %, for synthesis**
3-Phenyl-2-propen-1-ol
$C_9H_{10}O$
M 134,18 g/mol
D ~1,04 • bp 258 °C
mp 32-34 °C • flp 126 °C
Solubility: 1,8 g/l ($H_2O$, 20 °C)
[104-54-1] • EC No. 203-212-3
WGK 2

**Warning** H302-H315-H319-H317

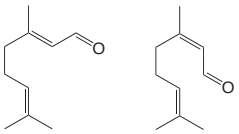
**Type analysis:**
Assay (GLC).....≥98 %
Melting point.....32-34 °C

| | | | |
|---|---|---|---|
| **4905.1** | 100 g | glass | 14,55 € |

## CIN Supplement

▶ Yersinia Supplement see p. 2384

## Citral




### Citral

Geranium aldehyde, Geranial + Neral
$C_{10}H_{16}O$
M 152,23 g/mol
D ~0,88 • bp 288 °C
mp <-20 °C • flp 98 °C
Solubility: 0,4 g/l ($H_2O$, 25 °C)
[5392-40-5] • EC No. 226-394-6
WGK 1

**Warning** H315-H317

### Citral

**for biochemistry**

**Type analysis:**
Appearance.....yellow oil
Assay (GC).....95-98 %
Density (20 °C).....0,885-0,895
Refractive index $n_D^{20}$.....1,486-1,491

| | | | |
|---|---|---|---|
| **5937.1** | 100 ml | glass | 22,05 € |

### Citral

**ROTICHROM® GC**
Reference substance for GC.

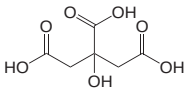
**Type analysis:**
Purity (GC).....≥95 %

| | | | |
|---|---|---|---|
| **5292.1** | 1 g | plastic | 117,20 € |

## Citrate Standards

▶ Citrate IC Standard Solution see p. 2311

## Citric acid



$C_6H_8O_7$
M 192,13 g/mol
D 1,542
mp 153 °C
Solubility: 1330 g/l ($H_2O$, 20 °C)
[77-92-9] • EC No. 201-069-1
WGK 1

**Warning** H319

### Citric acid

**≥99,5 %, p.a., ACS, anhydrous**

**Guarantee analysis:**
Assay (acidim.).....≥99,5 %
In $H_2O$ insoluble matter.....≤0,005 %
Chloride (Cl).....≤0,001 %
Phosphate ($PO_4$).....≤0,001 %
Oxalate ($C_2O_4$).....≤0,05 %
Sulphur compounds (as $SO_4$).....≤0,002 %
Heavy metals (as Pb).....≤0,0005 %
Arsenic (As).....≤0,00001 %
Lead (Pb).....≤0,0002 %
Calcium (Ca).....≤0,0025 %
Iron (Fe).....≤0,0003 %
Magnesium (Mg).....≤0,0005 %
Nickel (Ni).....≤0,0002 %
Ash content (as $SO_4$).....≤0,02 %
Matter discoloured by $H_2SO_4$.....complies

| | | | |
|---|---|---|---|
| **X863.1** | 500 g | plastic | 19,60 € |
| Original pack 6 x 500 g | | | 18,62/500 g |
| **X863.2** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |
| **X863.3** | 2,5 kg | plastic | 60,10 € |
| **X863.4** | 5 kg | plastic | 94,50 € |
| **X863.6** | 10 kg | plastic | 170,95 € |
| **X863.5** | 25 kg | plastic | 364,45 € |

For further information, please see page 1268

### Citric acid

**≥99,5 %, Ph.Eur., anhydrous**

**Guarantee analysis:**
Appearance.....white cryst. powder or white granular crystals
Assay (dry substance).....99,5-100,5 %
Appearance of solution.....complies
Identity.....complies
Water.....≤0,5 %
Sulphated ash.....≤0,05 %
Chloride (Cl).....≤0,0005 %
Sulphate ($SO_4$).....≤0,01 %
Oxalate (as $C_2H_2O_4$).....≤0,01 %
Heavy metals (as Pb).....≤0,0005 %
Iron (Fe).....≤0,0003 %
Arsenic (As).....≤0,0001 %
Calcium (Ca).....≤0,003 %
Reaction with $H_2SO_4$.....complies

| | | | |
|---|---|---|---|
| **6490.3** | 500 g | plastic | 14,55 € |
| Original pack 6 x 500 g | | | 13,82/500 g |
| **6490.1** | 1 kg | plastic | 23,35 € |
| Original pack 6 x 1 kg | | | 22,18/1 kg |
| **6490.4** | 2,5 kg | plastic | 44,65 € |
| **6490.2** | 5 kg | plastic | 82,25 € |
| **6490.6** | 10 kg | plastic | 138,70 € |
| **6490.5** | 25 kg | plastic | 244,60 € |

### Citric acid

**≥99,5 %, extra pure, anhydrous**

**Type analysis:**
Assay.....≥99,5 %
Lead (Pb).....≤0,001 %
Iron (Fe).....≤0,001 %
Heavy metals.....≤0,001 %
Ash content.....≤0,1 %
Water.....≤0,5 %

| | | | |
|---|---|---|---|
| **7624.1** | 1 kg | plastic | 17,75 € |
| Original pack 6 x 1 kg | | | 16,86/1 kg |
| **7624.2** | 5 kg | plastic | 70,85 € |
| **7624.3** | 10 kg | plastic | 117,20 € |
| **7624.4** | 25 kg | plastic | 224,70 € |

## Citric acid ammonium iron(III) salt

▶ Ammonium iron(III) citrate see p. 1735

## Citric acid monohydrate

$C_6H_8O_7 \cdot H_2O$
M 210,14 g/mol
D 1,54
mp 135-152 °C
Solubility: 1630 g/l ($H_2O$, 20 °C)
[5949-29-1] • EC No. 201-069-1
WGK 1
**Warning** H319

### Citric acid monohydrate

**≥99,5 %, p.a., ACS, ISO**
Buffer substance.

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥99,5 % |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Ash content (as $SO_4$) | ≤0,02 % |
| Matter discoloured by $H_2SO_4$ | complies |
| Chloride (Cl) | ≤0,0005 % |
| Oxalate ($C_2O_4$) | ≤0,05 % |
| Phosphate ($PO_4$) | ≤0,001 % |
| Sulphur compounds (as $SO_4$) | ≤0,002 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Arsenic (As) | ≤0,00001 % |
| Lead (Pb) | ≤0,0002 % |
| Calcium (Ca) | ≤0,002 % |
| Iron (Fe) | ≤0,0003 % |
| Copper (Cu) | ≤0,00005 % |
| Magnesium (Mg) | ≤0,0005 % |
| Nickel (Ni) | ≤0,0002 % |

| | | | |
|---|---|---|---|
| **3958.2** | 500 g | plastic | 18,85 € |
| Original pack 6 x 500 g | | | 17,91/500 g |
| **3958.1** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |
| **3958.3** | 2,5 kg | plastic | 55,40 € |
| **3958.4** | 5 kg | plastic | 102,15 € |
| **3958.6** | 10 kg | plastic | 170,95 € |
| **3958.5** | 25 kg | plastic | 360,15 € |

### Citric acid monohydrate

**≥99,5 %, Ph.Eur.**

**Guarantee analysis:**

| | |
|---|---|
| Appearance | white, cryst. powder |
| Assay (dry substance) | 99,5-100,5 % |
| Identity | complies |
| Appearance of solution | complies |
| Water (KF) | 7,5-8,8 % |
| Sulphate ($SO_4$) | ≤0,015 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Arsenic (As) | ≤0,0003 % |
| Lead (Pb) | ≤0,0001 % |
| Mercury (Hg) | ≤0,0001 % |
| Oxalate (as $C_2H_2O_4$) | ≤0,01 % |
| Reaction with $H_2SO_4$ | complies |
| Sulphated ash | ≤0,05 % |

| | | | |
|---|---|---|---|
| **5110.3** | 500 g | plastic | 13,90 € |
| Original pack 6 x 500 g | | | 13,21/500 g |
| **5110.1** | 1 kg | plastic | 22,50 € |
| Original pack 6 x 1 kg | | | 21,38/1 kg |
| **5110.4** | 2,5 kg | plastic | 38,60 € |
| **5110.2** | 5 kg | plastic | 60,10 € |
| **5110.6** | 10 kg | plastic | 92,35 € |
| **5110.5** | 25 kg | plastic | 181,70 € |

### Citric acid monohydrate

**for removing lime deposits**

| | | | |
|---|---|---|---|
| **1818.1** | 1 kg | plastic | 15,60 € |
| Original pack 6 x 1 kg | | | 14,82/1 kg |

For further information, please see page 1120

## Citric acid monopotassium salt

▶ mono-Potassium citrate see p. 2165

## Citric acid mono sodium salt

▶ Mono sodium citrate see p. 2270

## Citric acid potassium salt

▶ tri-Potassium citrate monohydrate see p. 2165

## Citric acid triammonium salt

▶ tri-Ammonium citrate see p. 1731

## Citric acid trisodium salt dihydrate

▶ tri-Sodium citrate dihydrate see p. 2270

## Claviformin

▶ Patulin see p. 2131

## Clear rinsing agent

### Clear rinsing agent

**for dishwashers, liquid**
pH 2
D 0,9964
WGK 1
**Warning** H319

| | | | |
|---|---|---|---|
| **N048.1** | 1 l | plastic | 6,40 € |

For further information, please see page 1111

## CLED Agar

### CLED Agar

**for microbiology**
For cultivation, differentiation and enumeration of gram-positive and gram-negative bacteria from the urinary tract.
Application: Use 36 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

**Formulation:**

| | |
|---|---|
| Casein peptone | 4 g/l |
| Gelatine peptone | 4 g/l |
| Beef extract | 3 g/l |
| Lactose | 10 g/l |
| L-Cystine | 0,128 g/l |
| Bromothymol blue | 0,02 g/l |
| Agar | 15 g/l |
| pH value | 7,3 ±0,2 |

| | | | |
|---|---|---|---|
| **2835.1** | 500 g | plastic | 93,00 € |
| Original pack 6 x 500 g | | | 88,35/500 g |
| **2835.2** | 1 kg | plastic | 155,90 € |
| Original pack 6 x 1 kg | | | 148,11/1 kg |

For further information, please see page 1381

## CLED Agar plus

### CLED Agar plus

**for microbiology**
For cultivation, easy differentiation by colour, and enumeration of gram-positive and gram-negative bacteria from the urinary tract.
Application: Use 36,2 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

**Formulation:**

| | |
|---|---|
| Casein peptone | 4 g/l |
| Gelatine peptone | 4 g/l |
| Beef extract | 3 g/l |
| Lactose | 10 g/l |
| L-Cystine | 0,128 g/l |
| Bromothymol blue | 0,02 g/l |
| Andrade's indicator | 0,1 g/l |
| Agar | 15 g/l |
| pH value | 7,5 ±0,2 |

| | | | |
|---|---|---|---|
| **2836.1** | 500 g | plastic | 104,20 € |
| Original pack 6 x 500 g | | | 98,99/500 g |

For further information, please see page 1381

## Cleland's Reagent

▶ 1,4-Dithioerythritol (DTE) see p. 1889
▶ 1,4-Dithiothreitol (DTT) see p. 1889

## Clostridium perfringens Supplement

### Clostridium perfringens Supplement

**lyophilised**
Media supplement for selective isolation of *Clostridium perfringens.*
One box of 10 vials Clostridium perfringens Supplement is sufficient for 10 x 500 ml TSC Agar or for 10 x 500 ml m-CP Agar.
Storage temp.: +4 °C
WGK 1

**Formulation per vial:**

| | |
|---|---|
| D-Cycloserine | 0,2 g |

| | | | |
|---|---|---|---|
| **CL52.1** | 10 vials | glass | 220,40 € |

For further information, please see page 1406

## Club-moss spores

▶ Lycopodium see p. 2045

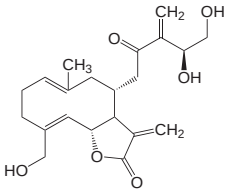
## 4-CN

▶ 4-Chloro-1-naphthol see p. 1829

## CN Agar

▶ Pseudomonas Selective Agar (Base) see p. 2183

## Cnicin



$C_{20}H_{26}O_7$
M 378,42 g/mol
mp 142-143 °C
Storage temp.: +4 °C
[24394-09-0] • EC No. 246-221-8
WGK 1

**Warning** H315-H319-H335

### Cnicin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Cnicus benedictus.*

**Type analysis:**
Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **2823.1** | 10 mg | glass | 252,65 € |

### Cnicin
**ROTICHROM® ~CHR**

| | | | |
|---|---|---|---|
| **4560.1** | 10 mg | glass | 75,15 € |

## Cobalt powder

### Cobalt powder
**ROTI®METIC 99,999 % (5N)**
Co
M 58,93 g/mol
D 8,86 • bp 2927 °C
mp 1495 °C
[7440-48-4] • EC No. 231-158-0
UN No. 3288 • ADR 6.1 I • WGK 3

**Danger** H302-H317-H319-H330-H334-H350-H361f-H410

**Type analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5620.1** | 5 g | plastic | 85,50 € |
| **5620.2** | 25 g | plastic | 274,15 € |

## Cobalt Standards

- Cobalt AAS Standard Solution see p. 2294
- Cobalt ICP Standard Solution see p. 2298
- Cobalt ICP Standard Solution see p. 2302


## Cobalt(II) acetate tetrahydrate

Cobaltous acetate
$Co(CH_3COO)_2 \cdot 4\ H_2O$
M 249,08 g/mol
D 1,70
Solubility: ~380 g/l ($H_2O$, 25 °C)
[6147-53-1] • EC No. 200-755-8
UN No. 3077 • ADR 9 III • WGK 3

**Danger**
H302-H317-H334-H341-H350i-H360F-H410

### Cobalt(II) acetate tetrahydrate
**≥98 %, p.a., ACS**

**Guarantee analysis:**
Assay (compl.)..... 98,0-102,0 %
In $H_2O$ insoluble matter..... ≤0,01 %
Chloride (Cl)..... ≤0,002 %
Nitrate ($NO_3$)..... ≤0,01 %
Sulphate ($SO_4$)..... ≤0,005 %
Calcium (Ca)..... ≤0,005 %
Copper (Cu)..... ≤0,002 %
Iron (Fe)..... ≤0,001 %
Potassium (K)..... ≤0,01 %
Magnesium (Mg)..... ≤0,005 %
Manganese (Mn)..... ≤0,01 %
Sodium (Na)..... ≤0,05 %
Lead (Pb)..... ≤0,001 %
Nickel (Ni)..... ≤0,1 %
Zinc (Zn)..... ≤0,01 %

| | | | |
|---|---|---|---|
| **HN29.1** | 50 g | plastic | 26,35 € |
| **HN29.2** | 100 g | plastic | 40,75 € |
| **HN29.3** | 250 g | plastic | 85,90 € |

### Cobalt(II) acetate tetrahydrate
**≥98 %, extra pure**

**Type analysis:**
Assay (based on Co)..... ≥98,0 %
Lead (Pb)..... ≤0,01 %
Iron (Fe)..... ≤0,01 %
Copper (Cu)..... ≤0,01 %
Nickel (Ni)..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9995.1** | 100 g | plastic | 21,00 € |
| **9995.2** | 500 g | plastic | 63,35 € |
| Original pack 6 x 500 g | | | 60,18/500 g |
| **9995.3** | 1 kg | plastic | 105,25 € |
| Original pack 6 x 1 kg | | | 99,99/1 kg |

## Cobalt agarose beads

- Roti®garose-His/Co Beads see p. 2217


## Cobalt(II) carbonate

### Cobalt(II) carbonate
**46 % Co, extra pure**
Cobaltous carbonate
$CoCO_3$
M 118,94 g/mol
D 4,13
mp 200 °C (dec.)
Solubility: 1,1 g/l ($H_2O$, 15 °C)
[513-79-1] • EC No. 208-169-4
UN No. 3077 • ADR 9 III • WGK 3

**Danger**
H302-H317-H334-H341-H350i-H360F-H410

**Type analysis:**
Assay (Co)..... ~46 %
Lead (Pb)..... ≤0,01 %
Iron (Fe)..... ≤0,01 %
Copper (Cu)..... ≤0,01 %
Manganese (Mn)..... ≤0,01 %
Nickel (Ni)..... ≤0,01 %
Zinc (Zn)..... ≤0,01 %

| | | | |
|---|---|---|---|
| **9930.1** | 50 g | plastic | 19,90 € |
| **9930.2** | 100 g | plastic | 33,25 € |
| **9930.3** | 500 g | plastic | 110,65 € |
| Original pack 6 x 500 g | | | 105,12/500 g |

## Cobalt charged IMAC columns

- Roti®garose-His/Co Columns see p. 2217


## Cobalt(II) chloride hexahydrate

Cobaltous chloride
$CoCl_2 \cdot 6\ H_2O$
M 237,93 g/mol
D 1,92
mp ~86 °C
Solubility: 562 g/l ($H_2O$, 25 °C)
[7791-13-1] • EC No. 231-589-4
UN No. 3077 • ADR 9 III • WGK 2

**Danger**
H302-H334-H317-H341-H350i-H360F-H410

### Cobalt(II) chloride hexahydrate
**≥99 %, p.a., ACS, ISO**
Colour indicator for drying agents, starting material for the preparation of further cobalt compounds.

**Guarantee analysis:**
Assay (compl.)..... 99,0-102,0 %
In $H_2O$ insoluble matter..... ≤0,005 %
Nitrate ($NO_3$)..... ≤0,01 %
Sulphate ($SO_4$)..... ≤0,005 %
Ammonium ($NH_4$)..... ≤0,005 %
Lead (Pb)..... ≤0,003 %
Calcium (Ca)..... ≤0,005 %
Iron (Fe)..... ≤0,005 %
Potassium (K)..... ≤0,01 %
Copper (Cu)..... ≤0,001 %
Magnesium (Mg)..... ≤0,005 %
Manganese (Mn)..... ≤0,01 %
Sodium (Na)..... ≤0,05 %
Nickel (Ni)..... ≤0,05 %
Zinc (Zn)..... ≤0,002 %
Substances not precipitated by $(NH_4)_2S$ ..... ≤0,25 %

| | | | |
|---|---|---|---|
| **T889.2** | 50 g | plastic | 60,10 € |
| **T889.3** | 100 g | plastic | 92,35 € |
| **T889.1** | 250 g | plastic | 177,40 € |

### Cobalt(II) chloride hexahydrate
**≥98 %, extra pure**

**Typ analysis:**
Assay (compl.)..... ≥98,0 %
Sulphate ($SO_4$)..... ≤0,01 %
Lead (Pb)..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Nickel (Ni)..... ≤0,001 %
Zinc (Zn)..... ≤0,001 %
In $H_2O$ insoluble matter..... ≤0,02 %

| | | | |
|---|---|---|---|
| **7095.1** | 50 g | plastic | 51,10 € |
| **7095.2** | 100 g | plastic | 77,95 € |

## Cobalt(II) nitrate hexahydrate

Cobaltous nitrate
$Co(NO_3)_2 \cdot 6\ H_2O$
M 291,04 g/mol
D 1,87 • bp 100 °C (dec.)
mp 57 °C
Solubility: 1030 g/l ($H_2O$, 25 °C)
[10026-22-9] • EC No. 233-402-1
UN No. 3077 • ADR 9 III • WGK 3

**Danger**
H317-H334-H341-H350i-H360F-H410

### Cobalt(II) nitrate hexahydrate
**ROTI®METIC 99,999 % (5N)**

**Typ analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5291.1** | 10 g | plastic | 213,95 € |
| **5291.2** | 25 g | plastic | 482,70 € |

### Cobalt(II) nitrate hexahydrate
**≥98 %, p.a., ACS**

**Guarantee analysis:**
Assay (compl.)..... 98,0-102,0 %
In $H_2O$ insoluble matter..... ≤0,01 %
Chloride (Cl)..... ≤0,002 %
Sulphate ($SO_4$)..... ≤0,005 %
Iron (Fe)..... ≤0,001 %
Lead (Pb)..... ≤0,002 %
Calcium (Ca)..... ≤0,005 %
Sodium (Na)..... ≤0,05 %
Nickel (Ni)..... ≤0,15 %
Magnesium (Mg)..... ≤0,005 %
Potassium (K)..... ≤0,01 %
Copper (Cu)..... ≤0,002 %
Zinc (Zn)..... ≤0,01 %

| | | | |
|---|---|---|---|
| **HN16.1** | 50 g | plastic | 28,50 € |
| **HN16.2** | 100 g | plastic | 46,80 € |
| **HN16.3** | 250 g | plastic | 96,65 € |

### Cobalt(II) nitrate hexahydrate
**≥98 %, extra pure**

**Type analysis:**
Assay (based on Co)..... ≥98,0 %
Lead (Pb)..... ≤0,01 %
Iron (Fe)..... ≤0,01 %
Copper (Cu)..... ≤0,01 %
Sodium (Na)..... ≤0,01 %
Nickel (Ni)..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9928.1** | 100 g | plastic | 22,05 € |
| **9928.2** | 500 g | plastic | 71,95 € |
| Original pack 6 x 500 g | | | 68,35/500 g |
| **9928.3** | 1 kg | plastic | 120,95 € |
| Original pack 6 x 1 kg | | | 114,90/1 kg |

## Cobaltous carbonate
▶ Cobalt(II) carbonate see p. 1837

## Cobaltous nitrate
▶ Cobalt(II) nitrate hexahydrate see p. 1838

## Cobalt(II,III) oxide

### Cobalt(II,III) oxide
**≥71 % Co, p.a.**
Cobaltosic oxide
$Co_3O_4$
M 240,80 g/mol
D 6,07
mp >900 °C (dec.)
Solubility: insoluble ($H_2O$)
[1308-06-1] • EC No. 215-157-2
UN No. 3077 • ADR 9 III • WGK 1

**Danger** H317-H334-H351-H410

**Guarantee analysis:**
Assay (Co)..... ≥71,0 %
Appearance of solution (10 %, HCl)..... clear
Lead (Pb)..... ≤0,001 %
Iron (Fe)..... ≤0,01 %
Nickel (Ni)..... ≤0,01 %

| | | | |
|---|---|---|---|
| **9834.1** | 25 g | plastic | 16,70 € |
| **9834.2** | 100 g | plastic | 44,65 € |
| **9834.3** | 500 g | plastic | 188,15 € |
| Original pack 6 x 500 g | | | 178,74/500 g |

## Cobalt(III) sodium nitrite
▶ Sodium hexanitrocobaltate(III) see p. 2273

## Cobalt(II) sulphate hydrate

### Cobalt(II) sulphate hydrate
**ROTI®METIC 99,999 % (5N)**
Cobalt(II) sulphate
$CoSO_4 \cdot x\ H_2O$
M 154,99 + x $H_2O$ g/mol
bp 420 °C
mp 41 °C
Solubility: 383 g/l ($H_2O$, 20 °C)
[60459-08-7]
UN No. 3077 • ADR 9 III • WGK 3

**Danger**
H302-H334-H317-H341-H350i-H360F-H410

**Type analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5326.1** | 10 g | plastic | 73,65 € |

## Cobalt(II) sulphate heptahydrate

Cobaltous sulphate
$CoSO_4 \cdot 7\ H_2O$
M 281,10 g/mol
mp 41 °C (dec.)
Solubility: 383 g/l ($H_2O$, 25 °C)
[10026-24-1] • EC No. 233-334-2
UN No. 3077 • ADR 9 III • WGK 3

**Danger**
H302-H317-H334-H341-H350i-H360F-H410

### Cobalt(II) sulphate heptahydrate
**≥97 %, p.a.**
For manufacturing of ceramics.

**Guarantee analysis:**
Assay..... ≥97,0 %
In $H_2O$ insoluble matter..... ≤0,01 %
Lead (Pb)..... ≤0,001 %
Calcium (Ca)..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Potassium (K)..... ≤0,001 %
Copper (Cu)..... ≤0,001 %
Magnesium (Mg)..... ≤0,005 %
Sodium (Na)..... ≤0,005 %
Nickel (Ni)..... ≤0,005 %
Zinc (Zn)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4390.1** | 100 g | plastic | 35,40 € |
| **4390.2** | 250 g | plastic | 76,25 € |
| **4390.3** | 500 g | plastic | 139,65 € |
| Original pack 6 x 500 g | | | 132,67/500 g |

### Cobalt(II) sulphate heptahydrate
**≥97,5 %, extra pure**

**Type analysis:**
Assay..... ≥97,5 %
Aluminium (Al)..... ≤0,005 %
Iron (Fe)..... ≤0,005 %
Nickel (Ni)..... ≤0,005 %
In water insoluble matter..... ≤0,05 %

| | | | |
|---|---|---|---|
| **7327.1** | 100 g | plastic | 15,60 € |
| **7327.2** | 500 g | plastic | 36,45 € |
| Original pack 6 x 500 g | | | 34,63/500 g |
| **7327.3** | 1 kg | plastic | 61,85 € |
| Original pack 6 x 1 kg | | | 58,76/1 kg |
| **7327.4** | 2,5 kg | plastic | 138,70 € |

## Coccionella
▶ Cochineal see p. 1839

## Cochin
▶ Oil of lemon-grass see p. 2116

## Cochineal colouring matter
▶ Carmine (C.I. 75470) see p. 1814

## Cochineal

### Cochineal

**pure**

Whole lice from *Coccus cacti.*

Coccionella

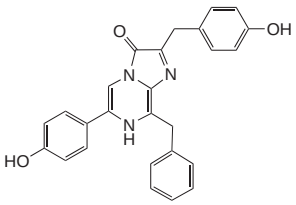
[1343-78-8] • EC No. 215-680-6

**Type analysis:**

Appearance..... grey violet

| | | | |
|---|---|---|---|
| **6500.1** | 25 g | plastic | 28,95 € |

## Coelenterazine



### Coelenterazine

**≥95 %, for biochemistry**

Luciferase substrate

$C_{26}H_{21}N_3O_3$

M 423,48 g/mol

Storage temp.: -20 °C

Transport temp.: room temp.

[55779-48-1]

WGK 1

**Type analysis:**

Assay (TLC)..... ≥95 %

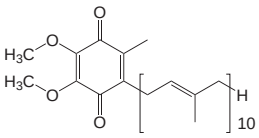
| | | | |
|---|---|---|---|
| **4094.3** | 1 mg | glass | 56,45 € |
| **4094.4** | 2,5 mg | glass | 107,40 € |

For further information, please see page 1288

## Coenzyme I

▶ NAD see p. 2087

## Coenzyme Q 10



### Coenzyme Q 10

**≥98 %, for biochemistry**

Ubiquinone 50

$C_{59}H_{90}O_4$

M 863,37 g/mol

mp 49-51 °C

Storage temp.: -20 °C

Transport temp.: room temp.

[303-98-0] • EC No. 206-147-9

**Type analysis:**

Assay (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **4047.1** | 25 mg | glass | 21,00 € |
| **4047.2** | 1 g | glass | 36,45 € |
| **4047.3** | 5 g | glass | 91,30 € |
| **4047.4** | 10 g | glass | 149,45 € |
| **4047.5** | 25 g | glass | 321,45 € |

For further information, please see page 1280

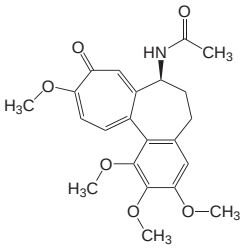
## Coenzymes

| Art. No. | Description | Page |
|---|---|---|
| HN35 | Adenosin-5'-triphosphate disodium salt (ATP) | 1709 |
| 4047 | Coenzyme Q 10 | 1839 |
| 6833 | Flavine-adenine-dinucleotide disodium salt (FAD) | 1929 |
| 5581 | Flavine-adenine-dinucleotide disodium salt (FAD) | 1929 |
| AE11 | NAD | 2087 |
| AE12 | NADH disodium salt | 2087 |
| AE13 | NADP disodium salt | 2087 |
| AE14 | NADPH tetrasodium salt | 2088 |

## Colamine

▶ Ethanolamine see p. 1912

## Colchicine



### Colchicine

**≥94 %, for biochemistry**

$C_{22}H_{25}NO_6$

M 399,45 g/mol

mp 155-157 °C (dec.)

Solubility: 45 g/l ($H_2O$, 20 °C)

[64-86-8] • EC No. 200-598-5

UN No. 1544 • ADR 6.1 II • WGK 3

**Danger** H300-H340

**Type analysis:**

Appearance..... pale yellow powder

Assay (HPLC)..... 94,0-101,0 %

Water (KF)..... ≤2,0 %

Specific rotation $[\alpha]_D^{20}$ (1% in ethanol). ... -250° to -240°

| | | | |
|---|---|---|---|
| **8884.1** | 500 mg | glass | 51,10 € |

## Cold spray

▶ Solidofix®-Cryo spray see p. 2287

## Coli Fluoro Broth

### Coli Fluoro Broth

**for microbiology**

Enrichment medium for the simultaneous and easy detection of total Coliforms and *E. coli* in water, foods and dairy products.

Application: Use 17 g for 1 l broth.

Storage temp.: +4 °C

WGK 1

**Formulation:**

Tryptose..... 5 g/l

Sodium chloride..... 5 g/l

Dipotassium phosphate..... 2,7 g/l

Potassium phosphate..... 2 g/l

Sorbitol..... 1 g/l

Tryptophane..... 1 g/l

Sodium lauryl sulphate..... 0,1 g/l

Chromogenic-fluorogenic mixture..... 0,23 g/l

pH value..... 6,8 ±0,2

| | | | |
|---|---|---|---|
| **2923.2** | 100 g | plastic | 88,05 € |
| **2923.1** | 500 g | plastic | 353,70 € |
| Original pack 6 x 500 g | | | 336,02/500 g |

For further information, please see page 1382

## Coliforms chromogenic Agar (ISO)

### Coliforms chromogenic Agar (ISO)

**ISO 9308-1, for microbiology**

For detection and enumeration of *E. coli* and other coliforms in water.

Application: Use 26,45 g for 1 l agar.

CCA

Storage temp.: +4 °C

WGK 1

**Guarantee analysis:**

Sodium chloride (NaCl)..... 5,0 g/l

di-Sodium hydrogen phosphate..... 2,7 g/l

Sodium dihydrogen phosphate ..... 2,2 g/l

Yeast extract..... 2,0 g/l

Casein, enzymatically digested..... 1,0 g/l

Sodium pyruvate..... 1,0 g/l

Tryptophane..... 1,0 g/l

Sorbitol..... 1,0 g/l

Chromogene Mixture..... 0,4 g/l

Sodium heptadecyl sulphate (Tergitol-7)..... 0,15 g/l

Agar..... 10 g/l

pH value..... 6,8 ±0,2

| | | | |
|---|---|---|---|
| **8849.1** | 500 g | plastic | 461,20 € |
| Original pack 6 x 500 g | | | 438,14/500 g |

For further information, please see page 1382

## Coliforms chromogenic Agar

### Coliforms chromogenic Agar

**for microbiology**

For selective enrichment and simultaneous detection of *E. coli* and other Coliforms in water and food samples.

Application: Use 26,4 g for 1 l agar.

Storage temp.: +20 °C

WGK 3

**Formulation:**

Sodium chloride (NaCl)..... 5 g/l

Phosphate buffer..... 4,9 g/l

Peptone..... 3 g/l

Sodium pyruvate..... 1 g/l

Tryptophane..... 1 g/l

Sorbitol..... 1 g/l

Chromogene Mixture..... 0,36 g/l

Sodium heptadecyl sulphate (Tergitol-7)..... 0,1 g/l

Agar..... 10 g/l

pH value..... 6,8 ±0,2

| | | | |
|---|---|---|---|
| **CL45.2** | 100 g | plastic | 124,20 € |
| **CL45.1** | 525 g | plastic | 456,90 € |

For further information, please see page 1382

## Colistinsulphate

### Colistinsulphate

**≥19000 IU/mg, for biochemistry**

Bacteriostatic antibiotic, peptide antibiotic

Polymyxin $E_1$-disulphate

$C_{45}H_{85}N_{13}O_{10} \cdot H_2SO_4$

M 1066,32 g/mol

mp 200-220 °C

Storage temp.: +4 °C

[1264-72-8] • EC No. 215-034-3

UN No. 2811 • ADR 6.1 III • WGK 1

**Danger** H301

**Type analysis:**

Activity. ..... ≥19 000 IU/mg
Sulphate ($SO_4$). ..... 15-18 %
pH value (1 % in $H_2O$). ..... 4,0-6,0
Loss on drying. ..... ≤3,5 %

| | | | |
|---|---|---|---|
| **CN31.1** | 100 mg | glass | 25,30 € |
| **CN31.2** | 250 mg | glass | 50,45 € |
| **CN31.3** | 1 g | glass | 77,95 € |

For further information, please see page 1427

## Colophony

### Colophony

**for biochemistry**

D 1,07

mp ~90 °C • flp >180 °C

Solubility: 130 mg/l ($H_2O$, 20 °C)

[8050-09-7] • EC No. 232-475-7

WGK 1

**Warning** H317

**Type analysis:**

Softening point (ring+pellet). ..... min. 71 °C
Acid value. ..... 145-185 mg KOH/g

| | | | |
|---|---|---|---|
| **9051.3** | 250 g | plastic | 13,15 € |
| **9051.1** | 1 kg | plastic | 27,45 € |
| Original pack 6 x 1 kg | | | 26,08/1 kg |
| **9051.4** | 2,5 kg | plastic | 53,65 € |
| **9051.2** | 5 kg | card board | 92,35 € |

## Columbia Agar (Base)

### Columbia Agar (Base)

**Ph.Eur., for microbiology**

For cultivation of fastidious and non-fastidious microorganisms, also for Mycoplasms.

Application: Use 42,5 g for 1 l agar. If required, add 50-110 ml defibr. blood.

Medium Q (Ph.Eur. 6.0), Columbia Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Columbia Blood Agar (Base)

Storage temp.: +20 °C

WGK 3

**Guarantee analysis:**

Casein peptone (Pancreas hydrolysate). ..... 10 g/l
Meat peptone (Pepsin hydrolysate). ..... 5 g/l
Heart peptone (Pancreas hydrolysate). ..... 3 g/l
Yeast extract. ..... 5 g/l
Corn starch. ..... 1 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 13,5 g/l
pH value. ..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **X919.1** | 500 g | plastic | 75,80 € |
| Original pack 6 x 500 g | | | 72,01/500 g |
| **X919.2** | 1 kg | plastic | 137,10 € |
| Original pack 6 x 1 kg | | | 130,25/1 kg |

For further information, please see page 1382

## Columbia Agar (Base), granulated

### Columbia Agar (Base), granulated

NEW

**granulated, Ph.Eur., for microbiology**

For cultivation of fastidious and non-fastidious microorganisms, also for Mycoplasms.

Application: Use 44 g for 1 l agar. If required, add 50-110 ml defibr. blood.

Medium Q (Ph.Eur. 6.0), Columbia Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), Columbia Blood Agar (Base)

Storage temp.: +20 °C

WGK 3

**Guarantee analysis:**

Casein peptone (Pancreas hydrolysate). ..... 10 g/l
Meat peptone (Pepsin hydrolysate). ..... 5 g/l
Heart peptone (Pancreas hydrolysate). ..... 3 g/l
Yeast extract. ..... 5 g/l
Corn starch. ..... 1 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **1507.1** | 500 g | plastic | 99,45 € |
| Original pack 6 x 500 g | | | 94,48/500 g |

For further information, please see page 1404

## Colza oil

### Colza oil

**crude oil**

Oleum Rapae

D 0,917

flp >100 °C

[8002-13-9] • EC No. 232-299-0

**Type analysis:**

Density (20 °C). ..... 0,915-0,919
Refractive index (20 °C). ..... 1,467-1,475
Optical rotation (20 °C). ..... -5° to +5°
Solubility (in ethanol). ..... insoluble

| | | | |
|---|---|---|---|
| **6964.1** | 1 l | glass | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **6964.2** | 2,5 l | glass | 67,20 € |
| Original pack 4 x 2,5 l | | | 63,84/2,5 l |
| **6964.3** | 5 l | plastic | 115,60 € |
| Original pack 2 x 5 l | | | 109,82/5 l |

## Common salt

▶ Sodium chloride see p. 2269

## Compact Dry

Storage temp.: +20 °C

WGK 1

### Compact Dry CF

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of coliforms.

Growth area is 20 $cm^2$

Ready-made agar plate coliforms

**Type analysis:**

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. ..... 6,8-7,2
Growth of test strains. ..... complies

| | | | |
|---|---|---|---|
| **4827.1** | 40 plates | blister | 76,90 € |
| **4827.2** | 240 plates | blister | 396,70 € |

For further information, please see page 1372

### Compact Dry EC

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of coliforms in general, particularly *E. coli*.

Growth area is 20 $cm^2$

Ready-made agar plate *E. coli*

**Type analysis:**

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. ..... 6,8-7,2
Growth of test strains. ..... complies

| | | | |
|---|---|---|---|
| **4826.1** | 40 plates | blister | 76,90 € |
| **4826.2** | 240 plates | blister | 396,70 € |

For further information, please see page 1372

### Compact Dry ETB

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of enterobacteriaceae.

Growth area is 20 $cm^2$

Ready-made agar plate enterobacteria

**Type analysis:**

Appearance nutrient disk. ..... light pink
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. ..... 7,2-7,6
Growth of test strains. ..... complies

| | | | |
|---|---|---|---|
| **4828.1** | 40 plates | blister | 84,85 € |
| **4828.2** | 240 plates | blister | 443,45 € |

For further information, please see page 1373

### Compact Dry SL

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of salmonellae.

Growth area is 20 $cm^2$

Ready-made agar plate salmonells

**Type analysis:**

Appearance nutrient disk. ..... violet
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. ..... 5,5-6,3
Growth of test strains. ..... complies

| | | | |
|---|---|---|---|
| **4817.1** | 40 plates | blister | 99,45 € |
| **4817.2** | 240 plates | blister | 493,45 € |

For further information, please see page 1373

## Compact Dry TC

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for total germ count.

Growth area is 20 $cm^2$

Ready-made agar plate total count

**Type analysis:**

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. ..... 6,8-7,2
Growth of test strains. ..... complies

| | | | |
|---|---|---|---|
| **4816.1** | 40 plates | blister | 73,00 € |
| **4816.2** | 240 plates | blister | 364,45 € |

For further information, please see page 1373

## Compact Dry X-BC

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of *Bacillus cereus.*

Growth area is 20 $cm^2$

**Type analysis:**

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. ..... 6,8-7,2
Growth of test strains. ..... complies

| | | | |
|---|---|---|---|
| **1070.1** | 40 plates | blister | 103,75 € |
| **1070.2** | 240 plates | blister | 547,20 € |

For further information, please see page 1373

## Compact Dry X-SA

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of *Staphylococcus aureus.*

Growth area is 20 $cm^2$

**Type analysis:**

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. ..... 7,2-7,6
Growth of test strains. ..... complies

| | | | |
|---|---|---|---|
| **1087.1** | 40 plates | blister | 103,75 € |
| **1087.2** | 240 plates | blister | 547,20 € |

For further information, please see page 1373

## Compact Dry YM

**NISSUI for microbiology**

Ready-made plates with anhydrous chromogenic nutrient medium for detection of yeasts and moulds.

Growth area is 20 $cm^2$

Ready-made agar plate yeasts and moulds

**Type analysis:**

Appearance nutrient disk. ..... light yellow
Loss on drying. ..... <10,0 %
Sterility. ..... complies
pH value. ..... 5,2-5,8
Growth of test strains. ..... complies

| | | | |
|---|---|---|---|
| **4818.1** | 40 plates | blister | 77,30 € |
| **4818.2** | 240 plates | blister | 416,05 € |

For further information, please see page 1374

## Compact Dry Swab

**NISSUI for microbiology**

All-in-one set of swab and nutrient broth for microbiological sampling of surfaces.

Contains 1 ml **Peptone Water, buffered**

**Type analysis:**

Appearance nutrient broth. ..... light yellow
Turbidity. ..... clear
Sterility. ..... complies
pH value. ..... 6,8-7,2

| | | | |
|---|---|---|---|
| **4809.1** | 40 swabs | box | 99,45 € |
| **4809.2** | 240 swabs | box | 493,45 € |

For further information, please see page 1374

## Compact Dry Dilution Rack MRD

**ELMEX for microbiology**

For preparation of dilution series of microbiological samples. Sterile nutrient broth.

128 wells in 32 racks of 4 separable wells each.

**Maximum Recovery Solution** in racks

**Type analysis:**

Appearance of solution. ..... light beige
Turbidity. ..... clear
Peptone. ..... 1,0 g/l
NaCl. ..... 8,5 ±0,5 g/l
Sterility. ..... complies
pH value. ..... 7,1 ±0,5

| | | | |
|---|---|---|---|
| **1096.1** | 128 wells | box | 181,70 € |

For further information, please see page 1375

## Compact Dry Dilution Rack

**ELMEX for microbiology**

For preparation of dilution series of microbiological samples. **Sterile PBS.**

128 wells in 32 racks of 4 separable wells each.

**Type analysis:**

Appearance of solution. ..... limpid to light yellow
Turbidity. ..... clear
Content NaCl. ..... 0,85 ±0,1 %
Sterility. ..... complies
pH value. ..... 7,1±0,5

| | | | |
|---|---|---|---|
| **4823.1** | 128 wells | box | 155,90 € |

For further information, please see page 1375

## Complexing Agents


| Art. No. | Description | Page |
|---|---|---|
| 6716 | Acetyl acetone | 1701 |
| 6717 | 2-(2-Aminoethylamino)ethanol | 1725 |
| X863 | Citric acid | 1835 |
| 6490 | Citric acid | 1835 |
| 3958 | Citric acid monohydrate | 1836 |
| 5110 | Citric acid monohydrate | 1836 |
| 1412 | trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate | 1866 |
| 1411 | trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate | 1866 |
| 6723 | Diethylene triamine | 1873 |
| 1407 | Diethylene triamine pentaacetic acid | 1873 |
| 2677 | Dimethylglyoxim | 1883 |
| KK24 | Dimethylglyoxime disodium salt octahydrate | 1883 |
| 4153 | 2,2'-Dipyridyl | 1888 |
| 3054 | EGTA | 1903 |
| 3049 | Ethylenediamine | 1915 |
| 4218 | Ethylenediamine | 1915 |
| 8040 | Ethylenediamine tetraacetic acid | 1915 |
| CN06 | Ethylenediamine tetraacetic acid | 1916 |
| 6506 | Ethylenediamine tetraacetic acid calcium disodium salt dihydrate | 1916 |
| 6499 | Ethylenediamine tetraacetic acid copper disodium salt dihydrate | 1916 |
| 3053 | Ethylenediamine tetraacetic acid dipotassium salt dihydrate | 1916 |
| 1408 | Ethylenediamine tetraacetic acid dipotassium salt dihydrate | 1916 |
| 8043 | Ethylenediamine tetraacetic acid disodium salt dihydrate | 1917 |
| X986 | Ethylenediamine tetraacetic acid disodium salt dihydrate | 1917 |
| 6498 | Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate | 1917 |
| 6508 | Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate | 1917 |
| 6510 | Ethylenediamine tetraacetic acid manganese disodium salt dihydrate | 1917 |
| 1410 | Ethylenediamine tetraacetic acid tetrasodium salt dihydrate | 1918 |
| 3619 | Ethylenediamine tetraacetic acid tetrasodium salt hydrate | 1917 |
| CP87 | Ethylenediamine tetraacetic acid tetrasodium salt tetrahydrate | 1918 |
| 1409 | Ethylenediamine tetraacetic acid tripotassium salt dihydrate | 1918 |
| 6518 | Ethylenediamine tetraacetic acid zinc disodium salt dihydrate | 1918 |
| 2557 | 8-Hydroxyquinoline | 1996 |
| KK32 | Neocuproine hemihydrate | 2091 |
| 8653 | Nitrilotriacetic acid | 2098 |
| 4384 | Nitrilotriacetic acid | 2098 |
| 8242 | Nitrilotriacetic acid trisodium salt monohydrate | 2098 |
| T113 | Oxalic acid dihydrate | 2126 |
| 8879 | Oxalic acid dihydrate | 2126 |
| 9113 | 1,10-Phenanthroline monohydrate | 2144 |
| KK21 | 1,10-Phenanthroline hydrochloride monohydrate | 2144 |
| 8645 | Potassium hydrogen tartrate | 2161 |
| 8087 | Potassium sodium tartrate tetrahydrate | 2174 |
| 7998 | Potassium sodium tartrate tetrahydrate | 2174 |
| T110 | di-Sodium tartrate dihydrate | 2285 |
| 0254 | di-Sodium tartrate dihydrate | 2285 |
| 5529 | D(-)-Tartaric acid | 2329 |
| 4891 | DL-Tartaric acid | 2329 |
| K302 | L(+)-Tartaric acid | 2329 |
| 4890 | L(+)-Tartaric acid | 2330 |

## COMU®

▶ 1-[(1-(Cyano-2-ethoxy-2-oxoethylidene-aminooxy) dimethylaminomorpholino)] uronium hexafluorophosphate (COMU®) see p. 1850

## Con A

▶ Concanavalin A see p. 1842

## Concanavalin A

### Concanavalin A

**lyophilized**

From *Canavalia ensiformis*.
Con A
Storage temp.: +4 °C
[11028-71-0] • EC No. 234-258-2
WGK 1

**Danger** H334-H317

**Type analysis:**

Appearance. ..... white lyophilisate
Solubility (1 mg/ml PBS). ..... slightly cloudy, colourless solution

| | | | |
|---|---|---|---|
| **7246.1** | 100 mg | glass | 95,60 € |

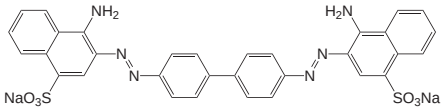
## Conductivity Standards

| Art. No. | Description | Page |
|---|---|---|
| 2462 | Conductivity Standard 5 µS/cm | 2313 |
| 2432 | Conductivity Standard 84 µS/cm | 2313 |
| 2463 | Conductivity Standard 100 µS/cm | 2313 |
| 2433 | Conductivity Standard 147 µS/cm | 2313 |
| 2464 | Conductivity Standard 500 µS/cm | 2313 |
| 2465 | Conductivity Standard 1000 µS/cm | 2313 |
| 2434 | Conductivity Standard 1413 µS/cm | 2313 |
| 2466 | Conductivity Standard 10000 µS/cm | 2313 |
| 2435 | Conductivity Standard 12880 µS/cm | 2314 |
| 2467 | Conductivity Standard 500000 µS/cm | 2314 |

## Conductivity standards

▶ Standards for conductivity measurement see p. 2313

## Congo red (C.I. 22120)




### Congo red (C.I. 22120)

**for microscopy**

Bacteriology, indicator pH 3,0-5,2
Direct red 28, Disodium-3,3'[[1,1-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalin-1-sulphonate)
$C_{32}H_{22}N_6Na_2O_6S_2$
M 696,66 g/mol
mp 360 °C
Solubility: 25 g/l ($H_2O$, 20 °C)
[573-58-0] • EC No. 209-358-4
WGK 3

**Danger** H350-H361d

**Type analysis:**

Absorption max. (in $H_2O$). ..... 490-500 nm
Loss on drying. ..... ≤3,0 %
pH-transition range. ..... 3,0 (blue)-5,2 (red)
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **0322.1** | 5 g | glass | 15,60 € |
| **0322.2** | 25 g | glass | 28,50 € |
| **0322.3** | 100 g | glass | 56,90 € |

For further information, please see page 1463

## Contact plates

▶ Roti®-ContiPlates see p. 2209

## Coomassie blue G 250

▶ Brilliant blue G 250 (C.I. 42655) see p. 1784

## Coomassie blue R 250

▶ Brilliant blue R 250 (C.I. 42660) see p. 1784

## Coomassie-Staining solution

▶ Roti®-Blue see p. 2204
▶ Roti®-Blue quick see p. 2204
▶ Rotiphorese® Blue R see p. 2227

## Copper

Cu
M 63,54 g/mol
D 8,96 • bp 2595 °C
mp 1083 °C
[7440-50-8] • EC No. 231-159-6

### Copper pellets

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Particle size. ..... 3 x 3 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5621.1** | 25 g | plastic | 58,60 € |
| **5621.2** | 100 g | plastic | 145,45 € |

### Copper beads

**≥99,9 %, beads**

**Type analysis:**

Assay. ..... ≥99,9 %
Particle size. ..... 1-10 mm

| | | | |
|---|---|---|---|
| **2728.1** | 100 g | glass | 39,70 € |

### Copper sheet

**sheet 0,1 mm thick, 60 cm wide**

| | | | |
|---|---|---|---|
| **8540.1** | 250 g | card board | 35,40 € |
| **8540.2** | 1 kg | card board | 75,15 € |
| Original pack 6 x 1 kg | | | 71,39/1 kg |

### Copper wool

**~99 %**

Fibre length ∅ 60 cm;
fibre cross section: 0,05 x 0,2 $mm^2$

**Type analysis:**

Assay (Cu). ..... ~99 %
Lead (Pb). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **9597.1** | 100 g | plastic | 17,10 € |
| **9597.2** | 250 g | plastic | 31,10 € |
| **9597.3** | 500 g | plastic | 54,75 € |
| Original pack 6 x 500 g | | | 52,01/500 g |
| **9597.4** | 1 kg | plastic | 98,80 € |
| Original pack 6 x 1 kg | | | 93,86/1 kg |

## Copper, nano

### Copper, nano

**ROTI®nanoMETIC ≥97 %, 40 nm**

Cu
M 63,54 g/mol
D 8,96 • bp 2567 °C
mp 1083 °C
[7440-50-8] • EC No. 231-159-6

**Type analysis:**

Appearance. ..... brown to red brown powder
Assay (dry substance). ..... ≥97 %
Particle size. ..... ~40 nm
Specific surface (BET). ..... 10-20 $m^2/g$
Stabilized with Oleic acid

| | | | |
|---|---|---|---|
| **8279.1** | 5 g | glass | 33,25 € |
| **8279.2** | 25 g | glass | 127,95 € |
| **8279.3** | 100 g | glass | 461,20 € |

## Copper powder

Cu
M 63,54 g/mol
D 8,96 • bp 2567 °C
mp 1083 °C
[7440-50-8] • EC No. 231-159-6
UN No. 3089 • ADR 4.1 III

**Warning** H228-H400

### Copper powder

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Particle size. ..... <100 mesh
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5386.1** | 10 g | glass | 128,50 € |
| **5386.2** | 50 g | glass | 532,15 € |

### Copper powder

**≥99,8 %, p.a., <63 µm**

**Type analysis:**

Assay (Cu). ..... ≥99,8 %

| | | | |
|---|---|---|---|
| **CP21.1** | 100 g | plastic | 17,75 € |
| **CP21.2** | 500 g | plastic | 53,25 € |
| Original pack 6 x 500 g | | | 50,59/500 g |

## Copper Standards


- Copper AAS Standard Solution see p. 2294
- Copper ICP Standard Solution see p. 2298
- Copper ICP Standard Solution see p. 2302


## Copper(II) acetate monohydrate

Cupric acetate
$Cu(CH_3COO)_2 \cdot H_2O$
M 199,65 g/mol
D 1,88
mp ~115 °C
Solubility: ~72 g/l ($H_2O$, 20 °C)
[6046-93-1] • EC No. 205-553-3
UN No. 3077 • ADR 9 III • WGK 3

**Danger** H302-H318-H410

### Copper(II) acetate monohydrate

**≥99 %, p.a., ACS**
Spray reagent for TLC.

**Guarantee analysis:**

Assay (iodom.).....≥99 %
pH value (2 % in $H_2O$).....5,0-5,5
In $H_2O$ insoluble matter.....≤0,01 %
Chloride (Cl).....≤0,003 %
Sulphate ($SO_4$).....≤0,01 %
Calcium (Ca).....≤0,005 %
Iron (Fe).....≤0,002 %
Potassium (K).....≤0,01 %
Sodium (Na).....≤0,01 %
Nickel (Ni).....≤0,01 %

| | | | |
|---|---|---|---|
| **HN30.1** | 50 g | plastic | 21,40 € |
| **HN30.2** | 100 g | plastic | 32,15 € |
| **HN30.3** | 250 g | plastic | 66,15 € |

### Copper(II) acetate monohydrate

**≥98 %, extra pure**

**Type analysis:**

Assay.....≥98 %
In $H_2O$ insoluble matter.....≤0,1 %
pH (5 % in $H_2O$).....5-6
Chloride (Cl).....≤0,05 %
Sulphate ($SO_4$).....≤0,05 %
Iron (Fe).....≤0,01 %

| | | | |
|---|---|---|---|
| **8625.1** | 100 g | plastic | 14,95 € |
| **8625.2** | 500 g | plastic | 41,40 € |
| Original pack 6 x 500 g | | | 39,33/500 g |
| **8625.3** | 1 kg | plastic | 76,25 € |
| Original pack 6 x 1 kg | | | 72,44/1 kg |

## Copper(I) bromide

### Copper(I) bromide

**≥99,999 %, ROTI®click Grade**
for Click Chemistry
CuBr
M 143,45 g/mol
mp 504 °C
[7787-70-4] • EC No. 232-131-6
WGK 2

**Warning** H315-H319-H335

**Type analysis:**

Appearance.....light green powder
Assay (metals basis).....≥99,999 %

| | | | |
|---|---|---|---|
| **7813.1** | 5 mg | plastic | 13,90 € |
| **7813.2** | 10 x 5 mg | plastic | 73,00 € |

## Copper(II) carbonate, basic

### Copper(II) carbonate, basic

**≥95 %, extra pure**
Cupric carbonate
$CuCO_3 \cdot Cu(OH)_2$
M 221,12 g/mol
mp 200 °C (dec.)
[12069-69-1] • EC No. 235-113-6
UN No. 3077 • ADR 9 III • WGK 3

**Warning** H302+H332-H319-H410

**Type analysis:**

Assay.....≥95,0 %
Chloride (Cl).....≤0,1 %
Iron (Fe).....≤0,05 %
Loss on drying.....≤1,0 %
Insoluble in HCl.....≤0,05 %

| | | | |
|---|---|---|---|
| **7318.1** | 250 g | plastic | 30,00 € |
| **7318.2** | 500 g | plastic | 52,15 € |
| Original pack 6 x 500 g | | | 49,54/500 g |
| **7318.3** | 1 kg | plastic | 90,20 € |
| Original pack 6 x 1 kg | | | 85,69/1 kg |
| **7318.4** | 2,5 kg | plastic | 192,45 € |

## Copper(I) chloride

Copper monochloride
CuCl
M 99,00 g/mol
D 4,14 • bp 1367 °C
mp 422 °C
Solubility: 0,001-0,1 g/l ($H_2O$)
[7758-89-6] • EC No. 231-842-9
UN No. 2802 • ADR 8 III • WGK 3

**Danger**
H302+H312-H315-H318-H410

### Copper(I) chloride

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5379.1** | 10 g | plastic | 78,40 € |
| **5379.2** | 50 g | plastic | 256,95 € |

### Copper(I) chloride

**≥98 %, p.a., ACS**
Absorption reagent in gas analysis, identification of arsenic and antimony hydrides.

**Guarantee analysis:**

Assay.....≥98 %
Insoluble matter in acid.....≤0,02 %
Sulphate ($SO_4$).....≤0,1 %
Lead (Pb).....≤0,02 %
Cadmium (Cd).....≤0,0005 %
Calcium (Ca).....≤0,01 %
Chromium (Cr).....≤0,005 %
Cobalt (Co).....≤0,0005 %
Iron (Fe).....≤0,005 %
Potassium (K).....≤0,005 %
Magnesium (Mg).....≤0,0005 %
Manganese (Mn).....≤0,0005 %
Sodium (Na).....≤0,05 %
Nickel (Ni).....≤0,0005 %
Zinc (Zn).....≤0,0005 %

| | | | |
|---|---|---|---|
| **4391.1** | 100 g | plastic | 19,25 € |
| **4391.2** | 250 g | plastic | 37,55 € |
| **4391.3** | 500 g | plastic | 66,15 € |
| Original pack 6 x 500 g | | | 62,84/500 g |
| **4391.4** | 1 kg | plastic | 117,20 € |
| Original pack 6 x 1 kg | | | 111,34/1 kg |

### Copper(I) chloride

**≥97 %, extra pure**

**Type analysis:**

Assay (mangan.).....≥97 %
Sulphate ($SO_4$).....≤0,05 %
Iron (Fe).....≤0,02 %
Substances not precipitated by $H_2S$ (as $SO_4$).....≤2 %

| | | | |
|---|---|---|---|
| **CN81.1** | 250 g | plastic | 24,65 € |
| **CN81.2** | 500 g | plastic | 40,35 € |
| Original pack 6 x 500 g | | | 38,33/500 g |
| **CN81.3** | 1 kg | plastic | 65,50 € |
| Original pack 6 x 1 kg | | | 62,23/1 kg |

## Copper(II) chloride dihydrate

Copper dichloride dihydrate
$CuCl_2 \cdot 2\ H_2O$
M 170,48 g/mol
D 2,54
Solubility: 1150 g/l ($H_2O$, 20 °C)
[10125-13-0] • EC No. 231-210-2
UN No. 2802 • ADR 8 III • WGK 3

**Danger**
H290-H302+H312-H315-H318-H410

### Copper(II) chloride dihydrate

**≥99 %, p.a.**
Catalyst

**Guaratee analysis:**

Assay (compl.).....≥99 %
pH value (5 %, 20 °C).....3,0-3,8
Sulphate ($SO_4$).....≤0,005 %
Total nitrogen (N).....≤0,004 %
Arsenic (As).....≤0,0001 %
Calcium (Ca).....≤0,002 %
Iron (Fe).....≤0,001 %
Potassium (K).....≤0,002 %
Magnesium (Mg).....≤0,002 %
Sodium (Na).....≤0,002 %
Nickel (Ni).....≤0,005 %
Lead (Pb).....≤0,004 %

| | | | |
|---|---|---|---|
| **CN82.1** | 250 g | plastic | 26,80 € |
| **CN82.2** | 500 g | plastic | 42,90 € |
| Original pack 6 x 500 g | | | 40,76/500 g |
| **CN82.3** | 1 kg | plastic | 77,30 € |
| Original pack 6 x 1 kg | | | 73,44/1 kg |

## Copper(II) chloride dihydrate

**≥98 %, extra pure**

**Type analysis:**

Assay.....≥98,0 %
pH value (5 % solution).....3,0-4,0
In $H_2O$ insoluble matter.....≤0,05 %
Sulphate ($SO_4$).....≤0,01 %
Arsenic (As).....≤0,01 %
Lead (Pb).....≤0,005 %
Calcium (Ca).....≤0,01 %
Iron (Fe).....≤0,01 %
Magnesium (Mg).....≤0,01 %
Zinc (Zn).....≤0,06 %

| | | | |
|---|---|---|---|
| **2623.1** | 250 g | plastic | 18,20 € |
| **2623.2** | 500 g | plastic | 28,50 € |
| Original pack 6 x 500 g | | | 27,08/500 g |
| **2623.3** | 1 kg | plastic | 45,70 € |
| Original pack 6 x 1 kg | | | 43,42/1 kg |
| **2623.4** | 2,5 kg | plastic | 100,55 € |

## Copper dichloride dihydrate

▶ Copper(II) chloride dihydrate see p. 1843

## Copper EDTA disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid copper disodium salt dihydrate see p. 1916

## Copper(II) hydroxide

### Copper(II) hydroxide

**≥97,5 %, extra pure**
Cupric hydroxide
$Cu(OH)_2$
M 97,56 g/mol
D 3,37
mp 160 °C (dec.)
Solubility: 3 mg/l ($H_2O$, 25 °C)
[20427-59-2] • EC No. 243-815-9
UN No. 3288 • ADR 6.1 II • WGK 3

**Danger** H302-H318-H330-H410

**Type analysis:**

Assay.....≥97,5 %
Moisture.....≤2 %
Lead (Pb).....≤0,1 %
Iron (Fe).....≤0,1 %

| | | | |
|---|---|---|---|
| **9864.1** | 100 g | plastic | 16,70 € |
| **9864.2** | 500 g | plastic | 39,25 € |
| Original pack 6 x 500 g | | | 37,29/500 g |
| **9864.3** | 1 kg | plastic | 67,20 € |
| Original pack 6 x 1 kg | | | 63,84/1 kg |
| **9864.4** | 2,5 kg | plastic | 134,40 € |

## Copper(I) iodide

CuI
M 190,45 g/mol
D 5,67 • bp 1290 °C
mp 591 °C
Solubility: ~0,0002 g/l ($H_2O$, 20 °C)
[7681-65-4] • EC No. 231-674-6
UN No. 3077 • ADR 9 III • WGK 3

**Warning**
H302-H315-H319-H335-H410

### Copper(I) iodide

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5300.2** | 50 g | plastic | 213,95 € |

### Copper(I) iodide

NEW

**≥98 %, pure**

**Type analysis:**

Assay.....≥98 %
Sulphate ($SO_4$).....≤0,1 %
Lead (Pb).....≤0,01 %
Iron (Fe).....≤0,1 %
Loss on drying.....≤1 %

| | | | |
|---|---|---|---|
| **0305.1** | 100 g | plastic | 26,80 € |
| **0305.2** | 500 g | plastic | 102,05 € |
| Original pack 6 x 500 g | | | 96,95/500 g |
| **0305.3** | 1 kg | plastic | 181,70 € |
| Original pack 6 x 1 kg | | | 172,62/1 kg |

## Copper monochloride

▶ Copper(I) chloride see p. 1843

## Copper nitrate trihydrate

▶ Copper(II) nitrate trihydrate see p. 1844

## Copper(II) nitrate trihydrate

Cupric nitrate trihydrate
$Cu(NO_3)_2 \cdot 3\,H_2O$
M 241,60 g/mol
D 2,05
mp ~114 °C
Solubility: 1378 g/l ($H_2O$, 20 °C)
[10031-43-3] • EC No. 221-838-5
UN No. 1477 • ADR 5.1 II • WGK 3

**Danger**
H272-H400-H410-H302-H315-H319

### Copper(II) nitrate trihydrate

**≥99,5 %, p.a., ACS**

**Guarantee analysis:**

Assay (iodom.).....99,5-102,0 %
pH value (5 % solution).....≥2,8
In $H_2O$ insoluble matter.....≤0,01 %
Chloride (Cl).....≤0,002 %
Sulphate ($SO_4$).....≤0,01 %
Lead (Pb).....≤0,001 %
Calcium (Ca).....≤0,005 %
Iron (Fe).....≤0,005 %
Potassium (K).....≤0,005 %
Sodium (Na).....≤0,01 %
Nickel (Ni).....≤0,01 %
Zinc (Zn).....≤0,03 %

| | | | |
|---|---|---|---|
| **P754.1** | 500 g | plastic | 61,20 € |
| Original pack 6 x 500 g | | | 58,14/500 g |
| **P754.2** | 1 kg | plastic | 160,75 € |
| Original pack 6 x 1 kg | | | 152,71/1 kg |

### Copper(II) nitrate trihydrate

**≥98 %, pure**

**Type analysis:**

Assay.....≥98,0 %
In $H_2O$ insoluble matter.....≤0,01 %
Chloride (Cl).....≤0,02 %
Sulphate ($SO_4$).....≤0,02 %
Iron (Fe).....≤0,01 %
Lead (Pb).....≤0,005 %

| | | | |
|---|---|---|---|
| **0255.1** | 500 g | plastic | 28,50 € |
| Original pack 6 x 500 g | | | 27,08/500 g |
| **0255.2** | 1 kg | plastic | 43,55 € |
| Original pack 6 x 1 kg | | | 41,37/1 kg |
| **0255.3** | 2,5 kg | plastic | 93,00 € |

## Copper(I) oxide

### Copper(I) oxide

**≥97 %, red, powder**
$Cu_2O$
M 143,08 g/mol
bp 1800 °C (dec.)
mp 1235 °C
[1317-39-1] • EC No. 215-270-7
UN No. 3077 • ADR 9 III • WGK 3

**Danger** H302+H322-H318-H410

**Type analysis:**

Appearance.....red powder
Assay.....≥97 %
Chloride (Cl).....≤0,5 %
Sulphate ($SO_4$).....≤0,5 %
Copper oxide (CuO).....≤1,0 %

| | | | |
|---|---|---|---|
| **2733.1** | 250 g | glass | 24,20 € |
| **2733.2** | 500 g | glass | 40,75 € |
| Original pack 6 x 500 g | | | 38,71/500 g |
| **2733.3** | 1 kg | glass | 71,95 € |
| Original pack 6 x 1 kg | | | 68,35/1 kg |

## Copper(II) oxide

CuO
M 79,55 g/mol
D 6,48
mp 1326 °C
Solubility: insoluble ($H_2O$, 20 °C)
[1317-38-0] • EC No. 215-269-1
UN No. 3077 • ADR 9 III • WGK 1

**Warning** H410

### Copper(II) oxide

**p.a., ACS, as wire**

For elementary analysis.

**Guarantee analysis:**

Assay (total oxygen as CuO). ..... ≥55,0 %
Chloride (Cl). ..... ≤0,005 %
Total carbon (as C). ..... ≤0,002 %
Total nitrogen (as N). ..... ≤0,002 %
Total sulphur (as $SO_4$). ..... ≤0,005 %
Wire ~0,65 x 6 mm
Surface: CuO, core: $Cu_2O$

| | | | |
|---|---|---|---|
| **4467.2** | 25 g | plastic | 21,40 € |
| **4467.1** | 100 g | plastic | 64,40 € |
| **4467.3** | 250 g | plastic | 145,05 € |

### Copper(II) oxide

**≥97,5 %, powder**

**Type analysis:**

Appearance. ..... fine, black powder
Assay (CuO). ..... ≥97,5 %
Copper (Cu). ..... ≥78 %
Cuprous oxide ($Cu_2O$). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8169.4** | 250 g | plastic | 19,25 € |
| **8169.2** | 500 g | plastic | 30,65 € |
| Original pack 6 x 500 g | | | 29,12/500 g |
| **8169.1** | 1 kg | plastic | 56,45 € |
| Original pack 6 x 1 kg | | | 53,63/1 kg |
| **8169.3** | 2,5 kg | plastic | 120,95 € |

## Copper(II) oxide, nano

### Copper(II) oxide, nano

**ROTI®nanoMETIC ≥99 %, 25-45 nm**

CuO
M 79,55 g/mol
D 6,315
mp 1326 °C
Solubility: insoluble ($H_2O$, 20 °C)
[1317-38-0] • EC No. 215-269-1
UN No. 3077 • ADR 9 III • WGK 1

**Warning** H410

**Type analysis:**

Appearance. ..... black powder
Assay. ..... ≥99 %
Particle size. ..... 25-45 nm
Specific surface (BET). ..... 30-55 $m^2/g$
Phase. ..... monoclinic

| | | | |
|---|---|---|---|
| **8251.1** | 10 g | glass | 21,00 € |
| **8251.2** | 50 g | glass | 78,40 € |
| **8251.3** | 100 g | glass | 127,95 € |

## Copper(II) sulphate

$CuSO_4$
M 159,60 g/mol
D 3,61
mp >560 °C (dec.)
Solubility: 203 g/l ($H_2O$, 20 °C)
[7758-98-7] • EC No. 231-847-6
UN No. 3077 • ADR 9 III • WGK 3

**Warning**

H302-H315-H319-H400-H410

### Copper(II) sulphate

**≥98 %, p.a., anhydrous**

Reagent for the detection of water, preparation of pigments.

**Guarantee analysis:**

Assay (iodom.). ..... ≥98,0 %
pH value (5 % solution). ..... 3,5-4,5
In $H_2O$ insoluble matter. ..... ≤0,01 %
Loss on drying (250 °C). ..... ≤1 %
Substances not precipitated by $H_2S$ (as $SO_4$). ≤0,15 %
Total nitrogen (as N). ..... ≤0,005 %
Chloride (Cl). ..... ≤0,002 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,01 %
Magnesium (Mg). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,05 %
Calcium (Ca). ..... ≤0,01 %
Potassium (K). ..... ≤0,005 %
Sodium (Na). ..... ≤0,01 %
Lead (Pb). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **P023.1** | 250 g | plastic | 34,30 € |
| **P023.2** | 1 kg | plastic | 102,05 € |
| Original pack 6 x 1 kg | | | 96,95/1 kg |
| **P023.3** | 2,5 kg | plastic | 220,40 € |

### Copper(II) sulphate

**≥99 %, Ph.Eur., anhydrous**

**Guarantee analysis:**

Assay (iodom., dry substance). ..... 99,0-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Chloride (Cl). ..... ≤0,015 %
Iron (Fe). ..... ≤0,015 %
Lead (Pb). ..... ≤0,008 %
Loss on drying (250 °C). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **CP86.1** | 250 g | plastic | 22,05 € |
| **CP86.2** | 500 g | plastic | 35,40 € |
| Original pack 6 x 500 g | | | 33,63/500 g |
| **CP86.3** | 1 kg | plastic | 60,75 € |
| Original pack 6 x 1 kg | | | 57,71/1 kg |
| **CP86.4** | 2,5 kg | plastic | 124,60 € |
| **CP86.5** | 5 kg | plastic | 235,45 € |

### Copper(II) sulphate

**≥98 %, anhydrous, ROTI®click Grade**

for Click Chemistry

**Type analysis:**

Appearance. ..... light grey powder
Assay. ..... ≥98 %

| | | | |
|---|---|---|---|
| **7816.1** | 10 mg | plastic | 14,55 € |
| **7816.2** | 5 x10 mg | plastic | 41,40 € |

## Copper(II) sulphate pentahydrate

Cupric vitriol
$CuSO_4 \cdot 5\ H_2O$
M 249,69 g/mol
D 2,28
Solubility: 317 g/l ($H_2O$, 20 °C)
[7758-99-8] • EC No. 231-847-6
UN No. 3077 • ADR 9 III • WGK 3

**Danger** H302-H318-H410

### Copper(II) sulphate pentahydrate

**≥99,5 %, p.a., ACS, ISO**

For the determination of reducing sugar (Fehling's solution). Used as spray in TLC.

**Guarantee analysis:**

Assay (iodom.). ..... ≥99,5 %
pH value (5 % solution). ..... ≥3,8
Insoluble matter. ..... ≤0,005 %
Total nitrogen (as N). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Cadmium (Cd). ..... ≤0,003 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,003 %
Magnesium (Mg). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,03 %
Cobalt (Co). ..... ≤0,001 %
Potassium (K). ..... ≤0,001 %
Sodium (Na). ..... ≤0,005 %
Lead (Pb). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **P024.1** | 500 g | plastic | 27,85 € |
| Original pack 6 x 500 g | | | 26,46/500 g |
| **P024.2** | 1 kg | plastic | 47,85 € |
| Original pack 6 x 1 kg | | | 45,46/1 kg |
| **P024.3** | 2,5 kg | plastic | 89,15 € |

### Copper(II) sulphate pentahydrate

**≥99 %, Ph.Eur., BP**

**Guarantee analysis:**

Assay (iodom.). ..... 99,0-100,5 %
Identity. ..... complies
pH value (5 % solution). ..... ≥3,8
Appearance of solution. ..... complies
In $H_2O$ insoluble matter. ..... ≤0,025 %
Loss on drying (250 °C). ..... 35,0-36,5 %
Volatile organic impurities. ..... complies
Chloride (Cl). ..... ≤0,01 %
Arsenic (As). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,005 %
Iron (Fe). ..... ≤0,01 %
Nickel (Ni). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **P025.1** | 500 g | plastic | 31,10 € |
| Original pack 6 x 500 g | | | 29,55/500 g |
| **P025.2** | 1 kg | plastic | 53,65 € |
| Original pack 6 x 1 kg | | | 50,97/1 kg |
| **P025.4** | 2,5 kg | plastic | 107,40 € |
| **P025.3** | 5 kg | plastic | 203,20 € |

## Copper(II) sulphate pentahydrate

**≥98 %, cryst.**

**Type analysis:**

Assay.....≥98,0 %
Lead (Pb).....≤0,02 %
Iron (Fe).....≤0,015 %
Nickel (Ni).....≤0,01 %

| | | | |
|---|---|---|---|
| **8175.1** | 1 kg | plastic | 24,65 € |
| Original pack 6 x 1 kg | | | 23,42/1 kg |
| **8175.3** | 2,5 kg | plastic | 49,35 € |
| **8175.2** | 5 kg | plastic | 88,15 € |
| **8175.4** | 10 kg | plastic | 144,95 € |
| **8175.5** | 25 kg | plastic | 239,20 € |

## Copper(II) sulphate solution

▶ Fehling's solution I see p. 1927

## Copper(II) sulphate solution (0,1 N)

### Copper(II) sulphate solution

**0,1 mol/l - 0,1 N volumetric standard solution**

D 1,01

UN No. 3082 • ADR 9 III • WGK 3

**Warning** H319-H411

**Type analysis:**

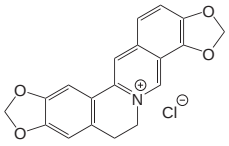
Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,2 %
Titer.....0,9980-1,0020

| | | | |
|---|---|---|---|
| **9948.1** | 1 l | plastic | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |

## Coppervitriole

▶ Copper(II) sulphate see p. 1845

## Coptisin chloride



### Coptisin chloride

**ROTICHROM® HPLC**

Reference substance for HPLC
From *Chelidonium majus.*
Bis(methylendioxy)protoberberinchloride
$C_{19}H_{14}NO_4Cl$
M 355,78 g/mol
Storage temp.: +4 °C
[6020-18-4]
UN No. 1544 • ADR 6.1 II

**Danger** H301+H311-H330-H373

**Type analysis:**

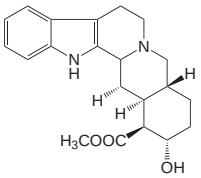
Purity (HPLC).....>99 %

| | | | |
|---|---|---|---|
| **1131.1** | 10 mg | glass | 233,85 € |

## Cornin

▶ Verbenalin see p. 2371

## Corynanthine



### Corynanthine

**ROTICHROM® CHR**

Rauhimbine (Rauwolfia alkaloid)
$C_{21}H_{26}N_2O_3$
M 354,44 g/mol
mp 225-230 °C
Storage temp.: +4 °C
[483-10-3] • EC No. 207-590-0
UN No. 1544 • ADR 6.1 II

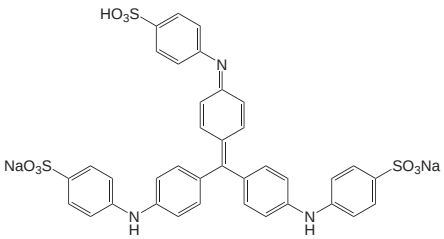
**Danger** H301

| | | | |
|---|---|---|---|
| **8985.1** | 500 mg | glass | 126,35 € |

## Cosbiol

▶ Squalane see p. 2292

## Cotton blue (C.I. 42780)



### Cotton blue (C.I. 42780)

**extra pure**

For preparing "Amann" solution.
Methyl blue
$C_{37}H_{27}N_3Na_2O_9S_3$
M 799,82 g/mol
Solubility: 70 g/l ($H_2O$, 20 °C)
[28983-56-4] • EC No. 249-352-9
WGK 2

**Type analysis:**

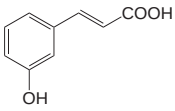
Maximum absorption.....590-610 nm

| | | | |
|---|---|---|---|
| **5750.1** | 10 g | glass | 19,25 € |

## Coulometric Karl Fischer solutions

▶ Karl Fischer Roti®hydroquant coulo A see p. 2020
▶ Karl Fischer Roti®hydroquant coulo AG see p. 2021
▶ Karl Fischer Roti®hydroquant coulo CG see p. 2021
▶ Karl Fischer Roti®hydroquant coulo Oil see p. 2021
▶ Karl Fischer Roti®hydroquant waterstandard 1.0 see p. 2022

## m-Coumaric acid



### m-Coumaric acid

**≥98 %**

trans-m-Hydroxy cinnamic acid
$C_9H_8O_3$
M 164,16 g/mol
mp 194-195 °C
[14755-02-3] • EC No. 209-615-0
WGK 1

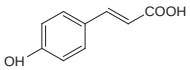
**Warning** H315-H319-H335

**Type analysis:**

Assay (GC).....≥98,0 %

| | | | |
|---|---|---|---|
| **9904.1** | 5 g | glass | 60,10 € |

## p-Coumaric acid



trans-p-Hydroxycinnamic acid
$C_9H_8O_3$
M 164,16 g/mol
mp 215-220 °C
[7400-08-0] • EC No. 231-000-0
WGK 1

**Warning** H315-H319-H335

### p-Coumaric acid

**≥98 %**

**Type analysis:**

Appearance..... slightly yellow powder
Assay.....≥98,0 %

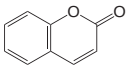
| | | | |
|---|---|---|---|
| **9908.1** | 10 g | glass | 35,40 € |
| **9908.2** | 50 g | glass | 73,00 € |

### p-Coumaric acid

**ROTICHROM® CHR**

| | | | |
|---|---|---|---|
| **9906.1** | 1 g | glass | 20,35 € |

## Coumarin



α-Benzopyrone, 5,6-Benzo-2-pyrone
$C_9H_6O_2$
M 146,15 g/mol
D 0,935 • bp 298-302 °C
mp ~70 °C • flp 162 °C
Solubility: 1,7 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[91-64-5] • EC No. 202-086-7
UN No. 2811 • ADR 6.1 III • WGK 1
**Danger** H301-H412

### Coumarin
**≥98,5 %, DAB**

**Guarantee analysis:**
Assay.....98,5-101,5 %
Identity.....complies
Appearance of solution.....complies
Related substances.....complies
Sulphated ash.....<0,1 %
Melting temperature.....68-71 °C

| | | | |
|---|---|---|---|
| **7942.1** | 100 g | plastic | 46,15 € |

### Coumarin
**ROTICHROM® GC**
Reference substance for GC

**Type analysis:**
Purity (GC).....≥99 %

| | | | |
|---|---|---|---|
| **5284.2** | 50 mg | glass | 91,30 € |

## Coumarins


| Art. No. | Description | Page |
|---|---|---|
| 8889 | Bergamottin | 1770 |
| 1217 | Bergamottin | 1770 |
| 7006 | Bergaptene | 1770 |
| 8899 | Bergaptene | 1770 |
| 7942 | Coumarin | 1847 |
| 5284 | Coumarin | 1847 |
| 6618 | Daphnetin | 1856 |
| 8690 | Esculetin | 1909 |
| 8704 | Esculin sesquihydrate | 1909 |
| 9369 | Fraxidin | 1943 |
| 9364 | Fraxin | 1943 |
| 7734 | Herniarin | 1975 |
| NE47 | Herniarin | 1975 |
| NC47 | Herniarin | 1975 |
| 8854 | Isopimpinellin | 2016 |
| 5883 | Isoscopoletin | 2017 |
| 6149 | 7-Methylcoumarin | 2073 |
| NE51 | Osthol | 2126 |
| NC51 | Osthol | 2126 |
| 7415 | Psoralen | 2184 |
| 7494 | Scoparone | 2243 |
| 7210 | Scopoletin | 2243 |
| 5437 | Umbelliferone | 2365 |
| 2827 | Umckalin | 2365 |
| 5497 | Xanthotoxin | 2378 |


## Coupling Reagents


| Art. No. | Description | Page |
|---|---|---|
| 2131 | O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HATU) | 1755 |
| 2148 | O-(7-Azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TATU) | 1755 |
| 2168 | Benzotriazole-1-yl-oxy-tris-(dimethylamino)-phosphonium hexafluorophosphate (BOP) | 1767 |
| 2178 | Benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBOP®) | 1768 |
| 2132 | O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluoro-phosphate (HBTU) | 1768 |
| 2140 | O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoro-borate (TBTU) | 1768 |
| 2200 | Bromo-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBrOP®) | 1790 |
| 6992 | 1,1'-Carbonyldiimidazole (CDI) | 1812 |
| 2112 | O-(1H-6-Chlorobenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HCTU) | 1827 |
| 6893 | 4-((6-Chloro-1H-benzo{d}[1,2,3]triazol-1-yloxy)(dimethylamino)methylene)-morpholin-4-ium hexafluorophosphate (HDMC) | 1827 |
| 2123 | 6-Chloro-benzotriazole-1-yl-oxy-tris-pyrrolidinophosphonium hexafluorophosphate (PyClock®) | 1827 |
| 6890 | O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TCTU) | 1827 |
| 2100 | 1-[(1-(Cyano-2-ethoxy-2-oxoethylidene-aminooxy) dimethylaminomorpholino)] uronium hexafluorophosphate (COMU®) | 1850 |
| 4193 | N,N'-Dicyclohexylcarbodiimide (DCC) | 1870 |
| 2103 | 3-(Diethoxy-phosphoryloxy)-1,2,3-benzotriazin-4-(3H)-one (DEPBT) | 1871 |
| 6981 | *N,N'*-Diisopropylcarbodiimide (DIC) | 1878 |
| 6888 | 1-[(Dimethylamino)(morpholino-methylene]-1H-[1,2,3]triazolo-[4,5-b]pyridine-1-ium 3-oxide hexafluorophosphate (HDMA) | 1881 |
| 6988 | 4-(Dimethylamino)pyridine (DMAP) | 1881 |
| 2110 | N,N'-Disuccinimidyl carbonate (DSC) | 1889 |
| 2125 | O-[(Ethoxycarbonyl)cyanomethylenamino]-N,N,N',N'-tetramethyluronium tetrafluoroborate (TOTU) | 1913 |
| 6891 | Ethyl cyanoglyxylate-2-oxyme potassium salt (K-Oxyma) | 1914 |
| 2120 | (Ethylcyano(hydroxyimino)-acetato-$O_2$)-tri-1-pyrrolidinylphosphonium hexafluorophosphate (PyOxim) | 1915 |
| 2156 | 1-Ethyl-3-(3-dimethylaminopropyl)-carbodiimide hydrochloride (EDC-HCl) | 1915 |
| 2118 | Ethyl(hydroxyimino)cyanoacetate (Oxyma Pure) | 1920 |
| 2130 | O-(N-Succinimidyl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TSTU) | 2320 |

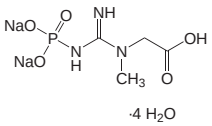

## CPG-Supports for DNA-Synthesis


| Art. No. | Description | Page |
|---|---|---|
| 2318 | Adenosine-CPG-Support | 1709 |
| 2319 | Cytidine-CPG-Support | 1855 |
| 2320 | Guanosine-CPG-Support | 1967 |
| 2321 | Thymidine-CPG-Support | 2342 |


## CPME
▶ Cyclopentyl methyl ether see p. 1853

## Cream of tartar
▶ Potassium hydrogen tartrate see p. 2161

## Creatine phosphate disodium salt tetrahydrate



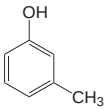
·4 $H_2O$

### Creatine phosphate disodium salt tetrahydrate
**≥98 %, for biochemistry**
$C_4H_8N_3Na_2O_5P \cdot 4\ H_2O$
M 327,14 g/mol
Storage temp.: +4 °C
[71519-72-7] • EC No. 213-074-6
WGK 3

**Type analysis:**
Appearance.....white to off-white, cryst. powder
Assay (titr.).....≥98,0 %
Appearance of solution (20 %, $H_2O$).....colourless
Water (KF).....21-26 %

| | | | |
|---|---|---|---|
| **8459.1** | 1 g | glass | 19,25 € |
| **8459.2** | 5 g | glass | 54,75 € |
| **8459.3** | 10 g | glass | 88,70 € |

## m-Cresol



### m-Cresol
**≥99 %, for synthesis**
3-Methylphenol
$C_7H_8O$
M 108,14 g/mol
D 1,03 • bp ~203 °C
mp 11 °C • flp 86 °C
Solubility: 31 g/l ($H_2O$, 20 °C)
[108-39-4] • EC No. 203-577-9
UN No. 2076 • ADR 6.1 (8) II • WGK 2
**Danger** H301+H311-H314

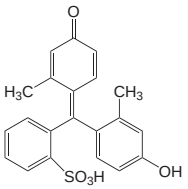
**Type analysis:**
Assay (GC).....≥99,0 %
Density (d 20 °C/4 °C).....1,031-1,037

| | | | |
|---|---|---|---|
| **9269.1** | 250 g | glass | 39,70 € |

## o-Cresolphthalein complexone

▶ Metal phthaleine see p. 2066

## m-Cresol purple



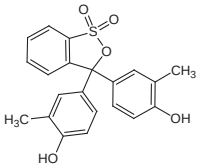
### m-Cresol purple

**p.a.**
Indicator pH 1,2-2,8 and pH 7,4-9,0
2',2''-Dimethylphenolsulfonphthalein,
m-Cresolsulfonphthalein, MCP
$C_{21}H_{18}O_5S$
M 382,43 g/mol
mp >250 °C
Solubility: slightly soluble ($H_2O$, 20 °C)
[2303-01-7] • EC No. 218-960-6
WGK 2

**Type analysis:**
Appearance. ..... green powder
Assay. ..... ≥99,0 %
pH-transition range. ..... 1,2 (red)-2,8 (yellow)
pH-transition range. ..... 7,4 (yellow)-9,0 (purple)
Maximum absorption. ..... ~579 nm

| | | | |
|---|---|---|---|
| **5160.1** | 1 g | glass | 12,80 € |
| **5160.2** | 5 g | glass | 35,40 € |
| **5160.3** | 10 g | glass | 61,20 € |

## o-Cresol red



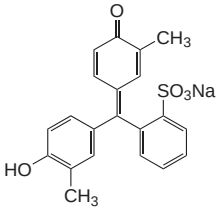
### o-Cresol red

**p.a.**
Indicator pH 0,2-1,8 and pH 7,0-8,8
$C_{21}H_{18}O_5S$
M 382,44 g/mol
mp 290 °C (dec.)
Solubility: slightly soluble ($H_2O$, 20 °C)
[1733-12-6] • EC No. 217-064-2
WGK 1

**Guarantee analysis:**
Specific Extinction E (1%/1cm). ..... ≥1500
UV-spectrum: maximum at. ..... 568,0-576,0 nm
Solubility (0,1 % in ethanol). ..... clearly soluble
pH-transition range. ..... 7,0 (orange)-8,8 (purple)

| | | | |
|---|---|---|---|
| **KK15.1** | 5 g | glass | 18,85 € |
| **KK15.2** | 10 g | glass | 30,00 € |
| **KK15.3** | 25 g | glass | 60,10 € |

## Cresol red sodium salt



### Cresol red sodium salt

**p.a.**
Indicator pH 0,2-1,8 and pH 7,0-8,8
o-Cresolsulfonephthaleine sodium salt
$C_{21}H_{17}O_5SNa$
M 404,41 g/mol
mp >250 °C (dec.)
[62625-29-0] • EC No. 263-654-8
WGK 1

**Type analysis:**
Absorption peak (0,001 % in 0,01 N NaOH). ..... 568 -576 nm
pH-transition range. ..... 7,0 (yellow)-8,8 (purple)

| | | | |
|---|---|---|---|
| **5534.1** | 5 g | plastic | 25,70 € |
| **5534.2** | 25 g | plastic | 100,95 € |

## o-Cresolsulfonephthaleine sodium salt

▶ Cresol red sodium salt see p. 1848

## m-Cresolsulfonphthalein

▶ m-Cresol purple see p. 1848

## 3,4-Cresotic acid

▶ 3-Hydroxy-4-methylbenzoic acid see p. 1995

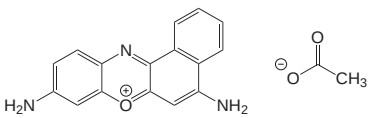
## Cresyl echt violet

▶ Cresyl violet acetate see p. 1848

## Cresyl fast violet

▶ Cresyl violet acetate see p. 1848

## Cresyl violet acetate



### Cresyl violet acetate

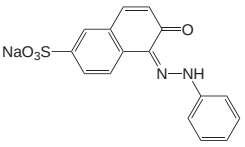
**p.a.**
Cresyl echt violet, Cresyl fast violet
$C_{18}H_{15}N_3O_3$
M 321,34 g/mol
mp 140-145 °C
Solubility: 20 g/l ($H_2O$)
[10510-54-0]
WGK 1

**Type analysis:**
Appearance. ..... dark green to almost black powder
Absorption max. (50 % $C_2H_5OH$). ..... 596-599 nm

| | | | |
|---|---|---|---|
| **7651.1** | 5 g | glass | 53,25 € |
| **7651.2** | 10 g | glass | 90,20 € |
| **7651.3** | 25 g | glass | 209,65 € |

For further information, please see page 1463

## Crocein orange G (C.I. 15970)



### Crocein orange G (C.I. 15970)

**for microscopy**
Acid orange 12, Ponceau 4G
$C_{16}H_{11}N_2NaO_4S$
M 350,32 g/mol
Solubility: 1 g/l ($H_2O$)
[1934-20-9] • EC No. 217-697-4
WGK 3

**Type analysis:**
Appearance. ..... red orange to orange powder
Appearance of solution. ..... clear, orange
Dye content. ..... ≥70 %
Absorption max. (1 % $H_2O$). ..... ≥457 nm

| | | | |
|---|---|---|---|
| **7652.1** | 5 g | glass | 14,20 € |
| **7652.2** | 25 g | glass | 24,20 € |
| **7652.3** | 100 g | glass | 60,10 € |

## Cronobacter chromogenic Agar

### Cronobacter chromogenic Agar

**ISO 22964:2006, for microbiology**
Selective medium for detection of *Cronobacter* (formerly *Enterobacter*) *sakazakii* in milk powder and powdered infant formulae.
Application: Use 30,7 g for 1 l agar.
Storage temp.: +4 °C

**Guarantee analysis:**
Casein peptone (Pancreas hydrolysate). ..... 7 g/l
Sodium chloride. ..... 5 g/l
Yeast extract. ..... 3 g/l
Sodium deoxycholate. ..... 0,6 g/l
Chromogene Mixture. ..... 0,15 g/l
Crystal Violet. ..... 0,002 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **2997.1** | 100 g | plastic | 227,40 € |

For further information, please see page 1383

## Crotaline

▶ Monocrotaline see p. 2082

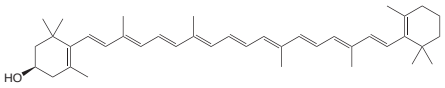
## Crotonaldehyde

▶ 2-Butenal see p. 1795

## Cryospray

▶ Solidofix®-Cryo spray see p. 2287

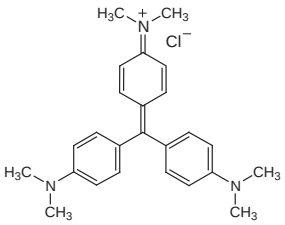
## β-Cryptoxanthin



### β-Cryptoxanthin
**ROTICHROM® TLC**
Reference substance for thin layer chromatography.
β,β-Caroten-3-ol
$C_{40}H_{56}O$
M 552,85 g/mol
mp ~169 °C
Storage temp.: -20 °C
Transport temp.: room temp.
[472-70-8]

| | | | |
|---|---|---|---|
| **5675.1** | 1 mg | glass | 306,40 € |

## Crystal violet (C.I. 42555)



### Crystal violet (C.I. 42555)
**p.a., ACS**
Indicator pH 0,0-2,0
Hexamethylpararosaniline chloride, Methyl violet 10B, Gentian violet
$C_{25}H_{30}ClN_3$
M 407,99 g/mol
D 1,19
mp 205-215 °C (dec.)
Solubility: 10 g/l ($H_2O$, 20 °C)
[548-62-9] • EC No. 208-953-6
UN No. 3077 • ADR 9 III • WGK 3
**Danger**
H318-H351-H400-H410-H302

**Type analysis:**
pH-transition range. ..... 0,0 (yellow)-2,0 (blue violet)
Assay (spectrophotometric)..... ≥90,0 %
Loss on drying (110 °C). ..... ≤7,5 %
Ash content..... ≤1,5 %
Suitability as indicator (in non aqueous solution) .....
..... complies
Absorption. ..... complies

| | | | |
|---|---|---|---|
| **T123.2** | 5 g | glass | 17,10 € |
| **T123.1** | 25 g | glass | 26,80 € |
| **T123.3** | 100 g | glass | 69,35 € |

For further information, please see page 1463

## Crystal violet solution
▶ Neisser's solution II see p. 2090

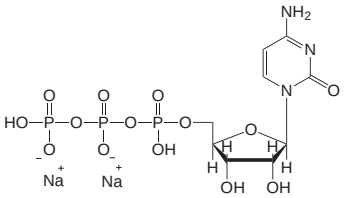
## CSB Determination

| Art. No. | Description | Page |
|---|---|---|
| P728 | Ammonium iron(II) sulphate hexahydrate | 1736 |
| KK60 | Ammonium iron(II) sulphate solution (0,12 N) | 1736 |
| T132 | Ferroin solution | 1928 |
| T112 | Mercury(II) sulphate | 2065 |
| X871 | Mercury(II) sulphate solution 80 g/l | 2065 |
| P720 | Potassium dichromate solution (0,12 N) | 2166 |
| P721 | Potassium dichromate solution (0,25 N) | 2166 |
| X870 | Silver sulphate solution (10 g/l) | 2263 |
| 4623 | Sulphuric acid 96 % | 2324 |

## CTAB
▶ Cetyltrimethylammonium bromide (CTAB) see p. 1823

## CTC resin
▶ 2-Chlorotrityl chloride resin see p. 1830

## CTP



### CTP
**≥98 %, lyophilised**
Cytidin-5'-triphosphate, di-sodium salt
$C_9H_{14}N_3O_{14}P_3Na_2 \cdot 3\,H_2O$
M 581,16 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[6757-06-8] • EC No. 252-849-3

| | | | |
|---|---|---|---|
| **K057.1** | 100 mg | plastic | 57,55 € |
| **K057.2** | 250 mg | plastic | 55,80 € |
| **K057.3** | 500 mg | plastic | 107,00 € |
| **K057.4** | 1 g | plastic | 230,60 € |
| **K057.5** | 10 g | plastic | 922,25 € |

For further information, please see page 1262

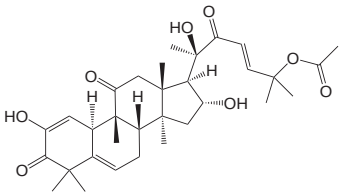
## CTP solution

### CTP solution
**≥99 %, 100 mM solution**
Cytidine-5'-triphosphate
$C_9H_{13}N_3O_{14}P_3$
M 480,13 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[6757-06-8] • EC No. 252-849-3
WGK 1

| | | | |
|---|---|---|---|
| **K048.1** | 25 µmol (250 µl) | plastic | 40,75 € |

For further information, please see page 1261

## Cucurbitacin E

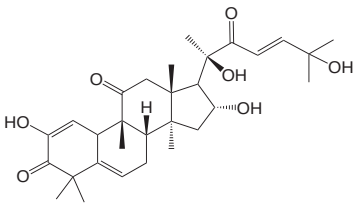


### Cucurbitacin E
**ROTICHROM® HPLC**
Reference substance for HPLC.
α-Elaterin
$C_{32}H_{44}O_8$
M 556,69 g/mol
mp 228-234 °C
Storage temp.: +4 °C
[18444-66-1] • EC No. 242-325-2
**Warning** H302+H312

**Type analysis:**
Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **9741.1** | 10 mg | glass | 310,70 € |

## Cucurbitacin I



### Cucurbitacin I
**ROTICHROM® HPLC**
Reference substance for HPLC.
Elatericin B
$C_{30}H_{42}O_7$
M 514,65 g/mol
mp 148-150 °C
Storage temp.: +4 °C
[2222-07-3] • EC No. 218-736-8
UN No. 2811 • ADR 6.1 I
**Danger** H300-H311

**Type analysis:**
Purity (HPLC)..... ≥95 %

| | | | |
|---|---|---|---|
| **9032.2** | 5 mg | glass | 306,40 € |

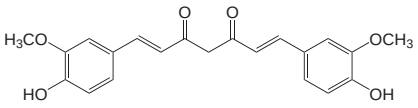
## Cupric acetate
▶ Copper(II) acetate monohydrate see p. 1843

## Cupric carbonate
▶ Copper(II) carbonate, basic see p. 1843

## Cupric hydroxide
▶ Copper(II) hydroxide see p. 1844

## Cuprous chloride
▶ Copper(I) chloride see p. 1843

## Curcumin



Diferuloylmethane
$C_{21}H_{20}O_6$
M 368,39 g/mol
mp 170-175 °C
Solubility: insoluble ($H_2O$, 20 °C)
Storage temp.: +4 °C
[458-37-7] • EC No. 207-280-5
WGK 2

### Curcumin

**≥90 %, nat., powdered, oil-soluble**

Mixture of curcumin, desmethoxycurcumin and bisdesmethoxycurcumin.

**Type analysis:**

Appearance. ..... orange coloured powder
Dye content. ..... ≥90 %
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0002 %
Intensity of colour E/1%/420 ($CH_2Cl_2$/EtOH). ..... ≥1450
Produced by extraction from *Curcuma longa*, followed by purification

| | | | |
|---|---|---|---|
| **9469.1** | 10 g | glass | 25,70 € |
| **9469.2** | 25 g | glass | 46,15 € |
| **9469.3** | 50 g | glass | 76,25 € |

### Curcumin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Curcuma longa.*

**Type analysis:**

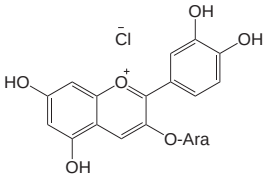
Purity (HPLC). ..... >98 %

| | | | |
|---|---|---|---|
| **1132.1** | 20 mg | glass | 385,95 € |

## Cyanide Standards

▶ Cyanide IC Standard Solution see p. 2311

## Cyanidin 3-arabinoside chloride



### Cyanidin 3-arabinoside chloride

**ROTICHROM® HPLC**

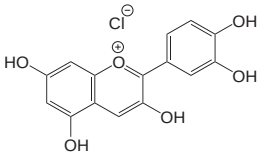
Reference substance for HPLC.
From *Aronia melanocarpa.*
$C_{20}H_{19}O_{10}Cl$
M 454,82 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[57186-11-5]
WGK 1

**Type analysis:**

Purity (HPLC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **0641.1** | 10 mg | glass | 396,70 € |

## Cyanidin chloride



### Cyanidin chloride

**ROTICHROM® HPLC**

Reference substance for HPLC.
$C_{15}H_{11}O_6Cl$
M 322,70 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[528-58-5] • EC No. 208-438-6
WGK 2

**Type analysis:**

Purity (HPLC). ..... ≥96 %

| | | | |
|---|---|---|---|
| **4545.1** | 10 mg | glass | 209,65 € |

## Cyanidin-3,5-diglucoside chloride

▶ Cyanin chloride see p. 1850

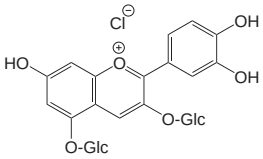
## Cyanidin-3-galactoside chloride

▶ Idaein chloride see p. 1999

## Cyanidin-3-O-glucoside

▶ Kuromanin chloride see p. 2024

## Cyanin chloride



Cyanidin-3,5-diglucoside chloride
$C_{27}H_{31}O_{16}Cl$
M 646,98 g/mol
mp 203-204 °C
Storage temp.: +4 °C
[2611-67-8] • EC No. 220-034-1

### Cyanin chloride

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Rosa centifolia.*

**Type analysis:**

Purity (HPLC). ..... >98 %

| | | | |
|---|---|---|---|
| **1133.1** | 20 mg | glass | 233,85 € |

### Cyanin chloride

**ROTICHROM® TLC**

Reference substance for thin layer chromatography.
From *Rosa centifolia.*

| | | | |
|---|---|---|---|
| **5568.1** | 25 mg | glass | 54,75 € |

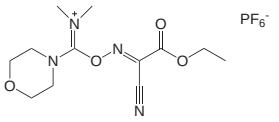
## p-Cyanoaniline

▶ 4-Aminobenzonitrile see p. 1724

## Cyanocobalamin

▶ Vitamin $B_{12}$ see p. 2372

## 1-[(1-(Cyano-2-ethoxy-2-oxoethylideneaminooxy) dimethylaminomorpholino)] uronium hexafluorophosphate (COMU®)



### 1-[(1-(Cyano-2-ethoxy-2-oxoethylideneaminooxy) dimethylaminomorpholino)] uronium hexafluorophosphate (COMU®)

**≥99 %**

Coupling reagent for peptide synthesis.
COMU®
$C_{12}H_{19}F_6N_4O_4P$
M 428,27 g/mol
mp >135 °C (dec.)
Storage temp.: +4 °C
[1075198-30-9]
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (HPLC). ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %
Solubility (10 % in DMF). ..... clearly soluble

| | | | |
|---|---|---|---|
| **2100.1** | 5 g | plastic | 36,45 € |
| **2100.2** | 25 g | plastic | 131,70 € |
| **2100.3** | 100 g | plastic | 450,45 € |

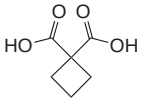
## Cyanomethane

▶ Acetonitrile see p. 1698

## 3-Cyano-1-nitrobenzene

▶ 3-Nitrobenzonitrile see p. 2100

## Cyclobutane-1,1-dicarboxylic acid



### Cyclobutane-1,1-dicarboxylic acid

**≥98 %**

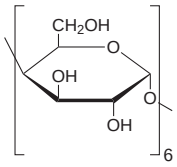
$C_6H_8O_4$
M 144,13 g/mol
mp 155-159 °C
Storage temp.: +4 °C
[5445-51-2] • EC No. 226-651-2
UN No. 3261 • ADR 8 II • WGK 3

**Danger** H314

**Type analysis:**
Assay (titr.). ..... ≥98,0 %
Solution (5 % in $H_2O$). ..... colourless, clear
Water (KF). ..... ≤0,5 %
Melting point. ..... 155-159 °C

| | | | |
|---|---|---|---|
| **5451.1** | 5 g | plastic | 37,55 € |
| **5451.2** | 25 g | plastic | 134,30 € |

## α-Cyclodextrin




### α-Cyclodextrin
**≥98 %, for biochemistry**
$C_{36}H_{60}O_{30}$
M 972,86 g/mol
mp ~275 °C
[10016-20-3] • EC No. 233-007-4
WGK 1

**Warning** H319

**Type analysis:**
Assay (HPLC). ..... ≥98,0 %
Solution (10 % in water). ..... colourless to slightly yellowish
Loss on drying (3 h, 105 °C, vacuum). ..... ≤2,5 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$). ..... +143° to +153°

| | | | |
|---|---|---|---|
| **4122.1** | 5 g | glass | 21,40 € |
| **4122.2** | 25 g | glass | 69,80 € |
| **4122.3** | 50 g | plastic | 115,60 € |

## Cyclo(Gly-Gly)
▶ Glycine anhydride see p. 1962

## Cyclohexane



Hexahydrobenzene
$C_6H_{12}$
M 84,16 g/mol
D 0,78 • bp 81 °C
mp 6 °C • flp -18 °C
Solubility: 0,05 g/l ($H_2O$, 20 °C)
[110-82-7] • EC No. 203-806-2
UN No. 1145 • ADR 3 II • WGK 2

**Danger**
H225-H304-H400-H410-H315-H336

### Cyclohexane
**ROTISOLV® HPLC**

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,01 %
Free acid. ..... ≤0,001 %
Non volatile matter. ..... ≤0,0005 %
Transmission:
255 nm. ..... ≥99 %
240 nm. ..... ≥90 %
215 nm. ..... ≥35 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **7333.2** | 1 l | glass | 47,20 € |
| Original pack 6 x 1 l | | | 44,84/1 l |
| **7333.1** | 2,5 l | glass | 84,85 € |
| Original pack 4 x 2,5 l | | | 80,61/2,5 l |

For further information, please see page 1590

### Cyclohexane
**ROTISOLV® ≥99,9 %, GC Ultra Grade**
For gaschromatographic residue analysis.

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,01 %
Free acid (as $CH_3COOH$). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0001 %
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤3 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **KK41.1** | 2,5 l | glass | 87,65 € |
| Original pack 4 x 2,5 l | | | 83,27/2,5 l |

### Cyclohexane
**ROTISOLV® ≥99,9 %, Pestilyse® plus**
For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,005 %
Free acid (as $CH_3COOH$). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0001 %
GC/FID suitability (as 2-octanol). ..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ..≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤2 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
GC/ECD volatile impurities (as ethylene dibromide). ..... ≤5 ng/ml
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ..... ≤0,1 mg/l
PAH-test (less than 2 ppb, HPLC). ..... complies
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb

| | | | |
|---|---|---|---|
| **7542.1** | 2,5 l | glass | 81,20 € |
| Original pack 4 x 2,5 l | | | 77,14/2,5 l |

### Cyclohexane
**ROTISOLV® ≥99,5 %, Pestilyse®**
For residue and environmental analysis.

**Guarantee analysis:**
Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,02 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0001 %
GC/ECD (individual signal as lindane). ..... ≤5 ng/l
GC/PND (individual signal as ethylparathion). .≤10 ng/l

| | | | |
|---|---|---|---|
| **T163.2** | 1 l | glass | 35,40 € |
| Original pack 6 x 1 l | | | 33,63/1 l |
| **T163.1** | 2,5 l | glass | 79,05 € |
| Original pack 4 x 2,5 l | | | 75,10/2,5 l |
| **T163.3** | 4 l | glass | 104,20 € |

### Cyclohexane
**ROTISOLV® ≥99,9 %, UV/IR-Grade**
For chromatography and spectroscopy.

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,01 %
Colour (Hazen). ..... ≤10
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Fluorescence (as quinine):
254 nm. ..... ≤1,0 ppb
365 nm. ..... ≤1,0 ppb
Transmission:
250 nm. ..... ≥98 %
240 nm. ..... ≥90 %
232 nm. ..... ≥80 %
223 nm. ..... ≥50 %
208 nm. ..... ≥10 %

| | | | |
|---|---|---|---|
| **CP81.1** | 2,5 l | glass | 86,55 € |
| Original pack 4 x 2,5 l | | | 82,22/2,5 l |

### Cyclohexane
**ROTIPURAN® ≥99,5 %, p.a., ACS, ISO**

**Guarantee analysis:**
Assay (GC). ..... ≥99,5 %
Colour (APHA). ..... ≤10
Density (d 20 °C/4 °C). ..... 0,776-0,780
Water . ..... ≤0,01 %
Acidity. ..... ≤0,0003 meq/g
Melting point. ..... >6,0 °C
Matter discoloured by $H_2SO_4$. ..... complies
$KMnO_4$ reducing substances (as O). ..... complies
Aromatic compounds (as benzene). ..... ≤0,01 %
Sulphur compounds (as S). ..... ≤0,002 %
Evaporation residue. ..... ≤0,001 %
Cyclohexene (GC). ..... ≤0,01 %
Cyclopentane (GC). ..... ≤0,05 %
Methyl cyclohexane (GC). ..... ≤0,05 %
Thiophene. ..... complies
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **6886.1** | 1 l | glass | 50,00 € |
| Original pack 6 x 1 l | | | 47,50/1 l |
| **6886.2** | 2,5 l | glass | 96,25 € |
| Original pack 4 x 2,5 l | | | 91,44/2,5 l |

### Cyclohexane
**≥99,5 %, for synthesis**

**Type analysis:**
Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99,5 %
Density (15 °C). ..... 0,775-0,784
Refractive index $n_D^{20}$. ..... 1,425-1,427

| | | | |
|---|---|---|---|
| **6570.1** | 1 l | glass | 22,05 € |
| Original pack 6 x 1 l | | | 20,95/1 l |
| **6570.3** | 2,5 l | glass | 32,05 € |
| Original pack 4 x 2,5 l | | | 30,45/2,5 l |
| **6570.5** | 5 l | aluminium | 52,60 € |
| Original pack 2 x 5 l | | | 49,97/5 l |
| **6570.2** | 10 l | tinplate | 83,75 € |
| **6570.4** | 25 l | tinplate | 166,65 € |

## Cyclohexane

**ROTICHROM® GC**

Reference substance for GC.

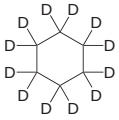
Storage temp.: +4 °C

**Type analysis:**

Purity (GC).....≥99 %

| | | | |
|---|---|---|---|
| **4901.1** | 1 g | glass | 31,75 € |

## Cyclohexane D12



### Cyclohexane D12

**99,5 Atom%D**

For nuclear magnetic resonance spectroscopy.

$C_6D_{12}$

M 96,23 g/mol

D 0,89 • bp 81 °C

mp 7 °C • flp -18 °C

[1735-17-7] • EC No. 210-077-3

UN No. 1145 • ADR 3 II • WGK 2

**Danger**

H225-H304-H315-H336-H400-H410

**Guarantee analysis:**

Deuterising degree. .....≥99,5 %

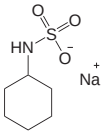
Water (KF, $H_2O+D_2O$). .....≤0,03 %

| | | | |
|---|---|---|---|
| **5200.1** | 5 ml | glass ampoule | 95,60 € |

## 1,2-Cyclohexane dinitrilo tetraacetic acid

▶ trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate see p. 1866

## Cyclohexane sulphamic acid sodium salt



### Cyclohexane sulphamic acid sodium salt

**≥98,5 %, Ph.Eur., extra pure**

Sodium cyclamate

$C_6H_{12}NNaO_3S$

M 201,22 g/mol

Solubility: 200 g/l ($H_2O$, 20 °C)

[139-05-9] • EC No. 205-348-9

WGK 1

**Warning** H302

**Guarantee analysis:**

Appearance.....white to off-white, cryst. powder

Appearance of solution.....clear, colourless

Assay (dry substance).....98,5-101,0 %

Identity.....complies

pH value (10 % solution). .....5,5-7,5

Loss on drying.....≤1,0 %

Sulphate ($SO_4$). .....≤0,1 %

Anilin. .....≤0,0001 %

Cyclohexylamin. .....≤0,001 %

Dicyclohexylamine. .....≤0,0001 %

Sulfamic acid. .....≤0,1 %

Heavy metals (as Pb). .....≤0,001 %

Arsenic (As).....≤0,0003 %

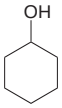
Selenium (Se).....≤0,003 %

Absorption:

270 nm. .....≤0,10

| | | | |
|---|---|---|---|
| **8578.1** | 250 g | plastic | 23,55 € |
| **8578.2** | 1 kg | plastic | 57,95 € |
| Original pack 6 x 1 kg | | | 55,05/1 kg |

## Cyclohexanol



### Cyclohexanol

**≥99 %, for synthesis**

Hexalin, Hexahydrophenol

$C_6H_{12}O$

M 100,16 g/mol

D ~0,94 • bp ~160 °C

mp 24 °C • flp 61 °C

Solubility: 56,7 g/l ($H_2O$, 20 °C)

[108-93-0] • EC No. 203-630-6

WGK 1

**Warning** H302+H332-H315-H335

**Type analysis:**

Assay (GC).....≥99,0 %

Water (KF).....≤0,2 %

Melting point.....≥23,5 %

| | | | |
|---|---|---|---|
| **7756.1** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |
| **7756.2** | 2,5 l | glass | 55,40 € |
| Original pack 4 x 2,5 l | | | 52,63/2,5 l |

## Cyclohexanone



### Cyclohexanone

**≥99,5 %, extra pure**

$C_6H_{10}O$

M 98,15 g/mol

D 0,95 • bp 153-156 °C

mp ~ -31 °C • flp 43 °C

Solubility: 80 g/l ($H_2O$, 20 °C)

[108-94-1] • EC No. 203-631-1

UN No. 1915 • ADR 3 III • WGK 1

**Danger**

H226-H302+H312+H332-H318-H315

**Type analysis:**

Assay (GC). .....≥99,5 %

Colour (Hazen).....≤10

Density (20 °C).....0,945-0,950

Water. .....≤0,2 %

| | | | |
|---|---|---|---|
| **CP27.1** | 1 l | glass | 28,50 € |
| Original pack 6 x 1 l | | | 27,08/1 l |
| **CP27.2** | 2,5 l | glass | 50,00 € |
| Original pack 4 x 2,5 l | | | 47,50/2,5 l |
| **CP27.5** | 5 l | aluminium | 80,55 € |
| Original pack 2 x 5 l | | | 76,52/5 l |
| **CP27.3** | 10 l | tinplate | 139,65 € |
| **CP27.4** | 25 l | tinplate | 255,35 € |

## Cyclohexatriene

▶ Benzene see p. 1765

## Cyclohexatriene deuterated

▶ Benzene D6 see p. 1765

## Cyclohexene



### Cyclohexene

**≥99 %, for synthesis**

1,2,3,4-Tetrahydrobenzene

$C_6H_{10}$

M 82,15 g/mol

D ~0,81 • bp 81-84 °C

mp -104 °C • flp -15,6 °C

Solubility: 50 mg/l ($H_2O$, 20 °C)

[110-83-8] • EC No. 203-807-8

UN No. 2256 • ADR 3 II • WGK 1

**Danger**

H225-H302-H304-H411

**Type analysis:**

Appearance. .....clear, colourless liquid

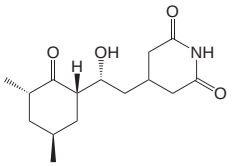
Assay (GC). .....≥99 %

Refractive index $n_D^{20}$.....1,445-1,447

Evaporation residue. .....≤0,01 %

| | | | |
|---|---|---|---|
| **3451.1** | 500 ml | glass | 60,75 € |

## Cycloheximide



### Cycloheximide

**≥98 %, for biochemistry**

Glutarimid antibiotic, fungicidal

Naramycin A, Actidione

$C_{15}H_{23}NO_4$

M 281,36 g/mol

mp 112 °C

Storage temp.: +4 °C

[66-81-9] • EC No. 200-636-0

UN No. 2811 • ADR 6.1 II • WGK 3

**Danger** H300-H360D-H341-H411

**Type analysis:**
Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98 %
Water (KF). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=1 % in $CHCl_3$) ..... -32° to -26°
Ash content. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8682.1** | 1 g | glass | 38,20 € |
| **8682.3** | 5 g | glass | 149,45 € |
| **8682.4** | 10 g | glass | 256,95 € |

For further information, please see page 1427

## 2-(Cyclohexylamino)-ethanesulphonic acid

▶ CHES see p. 1825

## 3-N-Cyclohexylamino-2-hydroxypropane sulphonic acid

▶ CAPSO see p. 1811
▶ CAPSO sodium salt see p. 1811

## Cyclohexylamino propanesulphonic acid

▶ CAPS see p. 1810

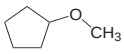
## Cyclohexyl dimethylamine

▶ N,N-Dimethylcyclohexylamine see p. 1882

## Cyclopentacycloheptene

▶ Azulene see p. 1759

## Cyclopentyl methyl ether



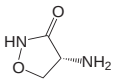
### Cyclopentyl methyl ether

**≥99 %, extra pure**
CPME, Methoxycyclopentane
$C_6H_{12}O$
M 100,16 g/mol
D 0,86 • bp 106 °C
mp <-140 °C • flp -1 °C
[5614-37-9] • EC No. 445-090-6
UN No. 3271 • ADR 3 II • WGK 2
**Danger**
H225-H302-H315-H319-H412-EUH019

**Type analysis:**
Assay (GC). ..... ≥99,0 %
Appearance of solution. ..... clear
Water. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **7763.1** | 250 ml | glass | 35,40 € |
| **7763.2** | 500 ml | glass | 60,10 € |
| **7763.3** | 1 l | glass | 95,70 € |
| Original pack 6 x 1 l | | | 90,92/1 l |
| **7763.4** | 2,5 l | glass | 192,45 € |
| Original pack 4 x 2,5 l | | | 182,83/2,5 l |

## D-Cycloserine



### D-Cycloserine

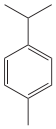
**≥90 %, for biochemistry**
Bacteriostatic antibiotic
Oxamycin, D-4-Amino-3-isoxazolidinone
$C_3H_6N_2O_2$
M 102,09 g/mol
mp 147 °C (dec.)
Storage temp.: +4 °C
[68-41-7] • EC No. 200-688-4
WGK 1

**Type analysis:**
Assay. ..... ≥90 %
Specific rotation $[\alpha]_D^{20}$. ..... +108° to +114°
Loss on drying. ..... ≤1 %

| | | | |
|---|---|---|---|
| **CN37.1** | 1 g | glass | 24,65 € |
| **CN37.2** | 5 g | plastic | 53,65 € |
| **CN37.3** | 10 g | plastic | 100,55 € |

For further information, please see page 1428

## p-Cymene



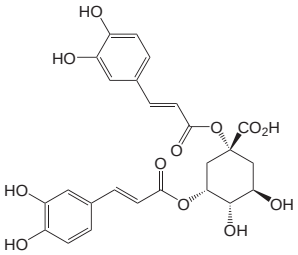
### p-Cymene

**≥98,5 %**
$C_{10}H_{14}$
M 134,22 g/mol
D 0,86 • bp ~175 °C
mp -68 °C • flp 47 °C
Storage temp.: +4 °C
[99-87-6] • EC No. 202-796-7
UN No. 2046 • ADR 3 III • WGK 2
**Warning** H226-H315-H319-H335

**Type analysis:**
Appearance. ..... clear, almost colourless liquid
Assay (GC). ..... ≥98,5 %

| | | | |
|---|---|---|---|
| **3465.1** | 500 ml | glass | 56,45 € |

## Cynarin



1,3-Dikaffeoylquinic acid
$C_{25}H_{24}O_{12}$
M 516,44 g/mol
Storage temp.: +4 °C
[1182-34-9]
**Warning** H315-H319-H335

### Cynarin

**with analytical records**
From *Cyanara scolymus*.

**Type analysis:**
Purity (HPLC). ..... >99 %
Analytical records: HPLC, TLC, $^1$H- NMR, $^{13}$C- NMR, UV, IR, MS, melting point.

| | | | |
|---|---|---|---|
| **T892.1** | 10 mg | glass | 446,15 € |

### Cynarin

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Cyanara scolymus*.

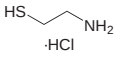
**Type analysis:**
Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **4457.1** | 10 mg | glass | 342,95 € |

## 8'-Cynnamoylharpagide

▶ Harpagoside see p. 1968

## Cysteamine hydrochloride



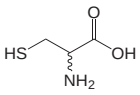
### Cysteamine hydrochloride

**≥99 %, for biochemistry**
2-Mercaptoethylamine hydrochloride
$C_2H_7NS$
M 113,61 g/mol
bp ~150 °C (dec.)
mp 66-70 °C
Solubility: ~440 g/l ($H_2O$, 20 °C)
[156-57-0] • EC No. 205-858-1
WGK 3
**Warning** H302

**Type analysis:**
Appearance. ..... white cryst. powder
Assay (dry substance). ..... ≥99,0 %
Identity (IR). ..... complies
Heavy metals. ..... ≤0,001 %
Loss on drying. ..... ≤3,0 %

| | | | |
|---|---|---|---|
| **7625.1** | 25 g | glass | 27,85 € |
| **7625.2** | 100 g | glass | 73,00 € |
| **7625.3** | 250 g | glass | 127,95 € |

## DL-Cysteine



### DL-Cysteine

**≥98 %, for biochemistry**

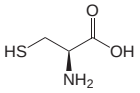
DL-α-Amino-β-mercapto-propionic acid
$C_3H_7NO_2S$
M 121,16 g/mol
Storage temp.: +4 °C
[3374-22-9] • EC No. 222-160-2
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8594.1** | 5 g | plastic | 48,30 € |
| **8594.2** | 25 g | plastic | 117,20 € |
| **8594.3** | 100 g | plastic | 342,95 € |

## L-Cysteine



L-α-Amino-β-mercapto-propionic acid
$C_3H_7NO_2S$
M 121,16 g/mol
mp 220-228 °C
Solubility: ~160 g/l ($H_2O$, 20 °C)
[52-90-4] • EC No. 200-158-2
WGK 1

**Warning** H302

### L-Cysteine

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤24 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +8,3° to +9,5°
Foreign amino acids. ..... complies
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,04 %
Sulphate ($SO_4$). ..... ≤0,028 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1693.1** | 25 g | plastic | 26,35 € |
| **1693.2** | 100 g | plastic | 65,05 € |
| **1693.3** | 500 g | plastic | 277,90 € |
| Original pack 6 x 500 g | | | 264,01/500 g |

### L-Cysteine

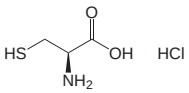
**≥98 %, DAB, for biochemistry**

**Guarantee analysis:**

Appearance. ..... white, cryst. powder
Appearance of solution. ..... clear and colourless
Identity. ..... complies
Assay. ..... 98,0-101,0 %
pH value . ..... 4,5-5,5
Specific rotation $[\alpha]_D^{20}$. ..... +8,3° to +9,5°
Loss on drying. ..... ≤0,5 %
Ash content (as $SO_4$). ..... ≤0,05 %
Foreign amino acids. ..... complies
Chloride (Cl). ..... ≤0,04 %
Sulphate ($SO_4$). ..... ≤0,028 %
Ammonium ($NH_4$). ..... ≤0,02 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **3467.1** | 10 g | glass | 14,95 € |
| **3467.2** | 50 g | glass | 29,60 € |
| **3467.3** | 250 g | plastic | 110,65 € |

## L-Cysteine hydrochloride



### L-Cysteine hydrochloride

**≥99 %, p.a., anhydrous**

$C_3H_7NO_2S \cdot HCl$
M 157,62 g/mol
D 0,84
[52-89-1] • EC No. 200-157-7
WGK 1

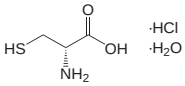
**Warning** H315-H319-H335

**Guarantee analysis:**

Assay. ..... ≥99,0 %
pH value. ..... 1,5-2,0
Heavy metals. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **3468.1** | 10 g | plastic | 14,95 € |
| **3468.2** | 50 g | plastic | 26,80 € |
| **3468.3** | 250 g | plastic | 76,90 € |

## D-Cysteine hydrochloride monohydrate



### D-Cysteine hydrochloride monohydrate

**≥98,5 %, for biochemistry**

D-2-Amino-3-mercaptopropionic acid hydrochloride monohydrate,
H-D-Cys-OH · HCl · $H_2O$
$C_3H_7NO_2S \cdot HCl \cdot H_2O$
M 175,7 g/mol
Storage temp.: +4 °C
[32443-99-5] • EC No. 251-043-9
WGK 1

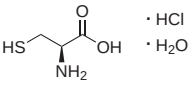
**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... 98,5-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=8 in 6 N HCl). ..... -7,0° to -5,5°
Loss on drying. ..... 8,0-12,0 %

| | | | |
|---|---|---|---|
| **7874.1** | 1 g | glass | 24,65 € |
| **7874.2** | 5 g | plastic | 73,00 € |

## L-Cysteine hydrochloride monohydrate



L-2-Amino-3-mercaptopropionic acid hydrochloride monohydrate,
H-L-Cys-OH · HCl · $H_2O$
$C_3H_7NO_2S \cdot HCl \cdot H_2O$
M 175,64 g/mol
Solubility: ~650 g/l ($H_2O$, 20 °C)
[7048-04-6] • EC No. 200-157-7
WGK 1

**Warning** H315-H319-H335

### L-Cysteine hydrochloride monohydrate

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤24 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... 8,5-12,0 %
Specific rotation $[\alpha]_D^{20}$. ..... +6,1° to +7,8°
Foreign amino acids. ..... complies
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... 19,89-20,29 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1694.1** | 25 g | plastic | 18,85 € |
| **1694.2** | 100 g | plastic | 42,50 € |
| **1694.3** | 500 g | plastic | 175,80 € |
| Original pack 6 x 500 g | | | 167,01/500 g |

### L-Cysteine hydrochloride monohydrate

**≥98,5 %, for biochemistry**

**Type analysis:**

Appearance. ..... white, cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Specific rotation $[\alpha]_D^{20}$. ..... +6,1° to +7,8°
pH value . ..... 1,5-2,0
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... 19,89-20,29 %
Sulphate ($SO_4$). ..... ≤0,02 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals. ..... ≤0,001 %
Foreign amino acids. ..... complies
Sulphated ash. ..... ≤0,1 %
Loss on drying. ..... 8,6-12,0 %

| | | | |
|---|---|---|---|
| **T203.1** | 50 g | plastic | 26,35 € |
| **T203.2** | 100 g | plastic | 40,75 € |
| **T203.3** | 500 g | plastic | 166,65 € |
| Original pack 6 x 500 g | | | 158,32/500 g |

## DL-Cystine

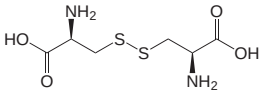
### DL-Cystine

**≥98,5 %**
$C_6H_{12}N_2O_4S_2$
M 240,30 g/mol
mp 250 °C
[923-32-0] • EC No. 213-094-5
**Warning** H302

**Type analysis:**
Appearance. ..... white, cryst. powder
Assay ..... ≥98,5 %
Loss on drying. ..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. ..... -5° to +5°

| | | | |
|---|---|---|---|
| **5565.1** | 1 g | glass | 47,85 € |

## L-Cystine



3,3'-Dithio-bis-(2-amino propionic acid)
$C_6H_{12}N_2O_4S_2$
M 240,30 g/mol
D 1,68
mp 261-262 °C (dec.)
Solubility: insoluble ($H_2O$, 20 °C)
[56-89-3] • EC No. 200-296-3
WGK 1

### L-Cystine

**CELLPURE® ≥98,5 %**
For cell culture and biochemistry.

**Guarantee analysis:**
Endotoxins ..... ≤0,5 E.U./g
Assay ..... ≥98,5 %
Loss on drying. ..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. ..... -225° to -215°
Chloride (Cl). ..... ≤0,05 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb) ..... ≤0,001 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1695.1** | 25 g | plastic | 24,65 € |
| **1695.2** | 100 g | plastic | 60,75 € |
| **1695.3** | 500 g | plastic | 252,65 € |
| Original pack 6 x 500 g | | | 240,02/500 g |

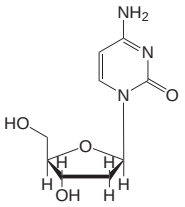
### L-Cystine

**≥98,5 %, for biochemistry**

**Type analysis:**
Appearance. ..... white, cryst. powder
Assay ..... ≥98,5 %
pH value ..... 5,0-6,5
Specific rotation $[\alpha]_D^{20}$. ..... -225° to -215°
Chloride (Cl). ..... ≤0,05 %
Sulphate ($SO_4$). ..... ≤0,02 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb) ..... ≤0,001 %
Loss on drying. ..... ≤0,2 %
Ash content ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **3471.1** | 100 g | plastic | 56,90 € |
| **3471.2** | 500 g | plastic | 246,20 € |
| Original pack 6 x 500 g | | | 233,89/500 g |

## Cytidine



### Cytidine

**≥99 %, for biochemistry**
Cytosine-1-β-D-ribofuranoside
$C_9H_{13}N_3O_5$
M 243,22 g/mol
mp 210-220 °C
[65-46-3] • EC No. 200-610-9
WGK 1

**Type analysis:**
Assay (HPLC) ..... ≥99,0 %
Heavy metals ..... ≤0,002 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **0717.1** | 10 g | plastic | 37,55 € |
| **0717.2** | 25 g | plastic | 74,10 € |

## Cytidine-BCE-phosphoramidite

### Cytidine-BCE-phosphoramidite

**for DNA synthesis**
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-dC(N-Bz)P-($OCH_2CH_2CN$)-N($iPr)_2$
$C_{46}H_{52}N_5O_8P$
M 833,7 g/mol
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **K922.1** | 1 g | glass | 34,30 € |

For further information, please see page 1492

## Cytidine-CPG-Support

### Cytidine-CPG-Support

**500 Å pore size**
Support material for DNA-synthesis.
dC-lcaa-CPG
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC). ..... ≥95,0 %
CPG loading. ..... 30-40 µmol/g
Coupling efficiency. ..... ≥99 %

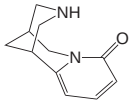
| | | | |
|---|---|---|---|
| **2319.3** | 1 g | plastic | 56,90 € |

For further information, please see page 1492

## Cytidine-5'-triphosphate disodium salt

▶ CTP see p. 1849

## Cytisine



### Cytisine

**ROTICHROM® TLC**
Reference substance for thin layer chromatography.
From *Laburnum anagyroides.*
$C_{11}H_{14}N_2O$
M 190,24 g/mol
mp 155 °C
Solubility: 439 g/l ($H_2O$, 16 °C)
Storage temp.: +4 °C
[485-35-8] • EC No. 207-616-0
UN No. 1544 • ADR 6.1 III • WGK 3
**Danger** H301+H311+H331

| | | | |
|---|---|---|---|
| **5615.1** | 25 mg | glass | 110,20 € |

## Cytochrome C

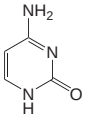
### Cytochrome C

**≥95 %, for biochemistry**
Iron porphyrin protein complex.
M ~13 000 g/mol
Storage temp.: +4 °C
[9007-43-6] • EC No. 232-700-9

**Type analysis:**
Assay ..... ≥95 %
pH value ..... 5,0-7,0
Water. ..... <6,0 %

| | | | |
|---|---|---|---|
| **6301.1** | 250 mg | glass | 214,50 € |

## Cytosine



### Cytosine

**≥99 %, for biochemistry**
$C_4H_5N_3O$
M 111,10 g/mol
mp 335 °C
[71-30-7] • EC No. 200-749-5
WGK 2

**Type analysis:**
Appearance. ..... white to off-white, cryst. powder
Assay (HPLC). ..... ≥99,0 %
Heavy metals. ..... ≤0,001 %
Loss on drying. ..... ≤0,5 %
Residue on ignition. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7295.1** | 5 g | glass | 30,65 € |
| **7295.2** | 25 g | plastic | 71,95 € |
| **7295.3** | 100 g | plastic | 192,45 € |

## Cytosine-1-β-D-ribofuranoside

▶ Cytidine see p. 1855

## DAB

▶ 3,3'-Diaminobenzidine tetrahydrochloride see p. 1866

## DABCO®



### DABCO®

**≥99 %**

Anti-bleaching reagent in histology.
Solubility may change depending on the batch. If required stir solution constantly overnight at a temperature of 40-60 °C.
Triethylendiamine, 1,4-Diazabicyclo[2.2.2]octane
$C_6H_{12}N_2$
M 112,18 g/mol
D ~1,14 • bp 174-176 °C
mp ~160 °C • flp 62 °C
Solubility: 400 g/l ($H_2O$, 20 °C)
[280-57-9] • EC No. 205-999-9
UN No. 1325 • ADR 4.1 II • WGK 1

**Danger**

H228-H302-H315-H318-H335

**Type analysis:**

Appearance. ..... white to off-white crystals
Assay. ..... ≥99,0 %
Water. ..... ≤0,5 %
Solubility may change depending on the batch. If required stir solution constantly overnight at a temperature of 40-60 °C.

| | | | |
|---|---|---|---|
| **0718.1** | 25 g | glass | 19,90 € |
| **0718.2** | 50 g | glass | 35,40 € |

For further information, please see page 1476

## DAB Metal Enhancer

### DAB Metal Enhancer

**for immunochemistry**

For enhancement of HRP signals on blot membranes and slides.
One bottle for 100 ml is sufficient for enhancement of approx. 10 minigel blots or 100 slides.
Enhancer solution
Storage temp.: +20 °C
WGK 2

**Danger**

H317-H334-H341-H350i-H360D-H372-H412

**Type analysis:**

RNAse. ..... complies
DNAse. ..... complies

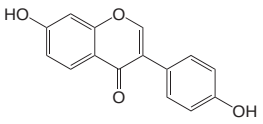
| | | | |
|---|---|---|---|
| **9204.1** | 100 ml | plastic | 94,50 € |

For further information, please see page 1318

## DAB substrate kit

▶ Roti®-DAB Kit see p. 2209

## Daidzein



### Daidzein

**ROTICHROM® HPLC**

$C_{15}H_{10}O_4$
M 254,23 g/mol
[486-66-8] • EC No. 207-635-4

**Warning** H315-H319

**Type analysis:**

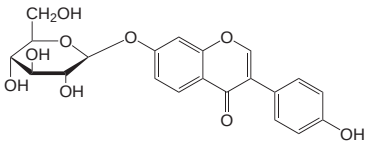
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **6047.2** | 20 mg | glass | 160,20 € |

## Daidzein-7-O-glucoside

▶ Daidzin see p. 1856

## Daidzin



### Daidzin

**ROTICHROM® ~CHR**

Daidzein-7-O-glucoside
$C_{21}H_{20}O_9$
M 416,38 g/mol
[552-66-9]

| | | | |
|---|---|---|---|
| **9323.1** | 5 mg | glass | 198,90 € |

## Dammar

### Dammar

**light**

Resina Dammar
mp 150 °C
[9000-16-2] • EC No. 232-528-4
WGK 1

**Type analysis:**

Melting point. ..... ≤150 °C
Acid value. ..... ≤35
Colour number (Gardner). ..... ≤5
Total ash. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6615.1** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |

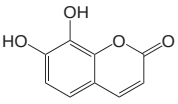
## Dansyl chloride

▶ 5-(Dimethylamino)-1-naphthalenesulphonyl chloride see p. 1881

## DAP · HCl

▶ DL-2,3-Diaminopropionic acid hydrochloride see p. 1867

## Daphnetin



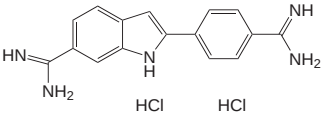
### Daphnetin

**ROTICHROM® ~CHR**

7,8-Dihydroxycoumarin
$C_9H_6O_4$
M 178,14 g/mol
mp 254-257 °C
[486-35-1] • EC No. 207-632-8

| | | | |
|---|---|---|---|
| **6618.1** | 10 mg | glass | 268,75 € |

## DAPI



4',6-Diamidino-2-phenylindole dihydrochloride
$C_{16}H_{17}Cl_2N_5$
M 350,3 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[28718-90-3] • EC No. 249-186-7
WGK 3

### DAPI

**≥98 %, p.a.**

For DNA-staining.

**Guarantee analysis:**

Appearance. ..... yellow powder
Assay (HPLC). ..... ≥98 %
Solubility (10 mg/ml in $H_2O$). ..... clear

| | | | |
|---|---|---|---|
| **6335.1** | 25 mg | glass | 90,20 € |
| **6335.2** | 100 mg | glass | 252,65 € |

For further information, please see page 1470

### DAPI

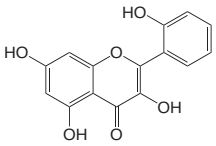
**≥98 %, for biochemistry**

**Type analysis:**

Assay (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **6843.1** | 10 mg | glass | 36,45 € |
| **6843.2** | 25 mg | glass | 67,20 € |
| **6843.3** | 100 mg | glass | 196,65 € |

## Datiscetin



### Datiscetin
**ROTICHROM® HPLC**
Reference substance for HPLC.
2,3,5,7-Tetrahydroxyflavone
$C_{15}H_{10}O_6$
M 286,23 g/mol
Storage temp.: +4 °C
[480-15-9] • EC No. 207-541-3

**Type analysis:**
Purity (HPLC).....≥99 %

| | | | |
|---|---|---|---|
| **7444.1** | 10 mg | plastic | 247,25 € |

## dATP

### dATP
**≥95 %, lyophilised**
2'-Deoxyadenosine-5'-triphosphate tri-sodium salt
$C_{10}H_{13}N_5O_{12}P_3Na_3 \cdot 3\ H_2O$
M 611,17 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[74299-50-6] • EC No. 277-809-2

| | | | |
|---|---|---|---|
| **K050.1** | 10 mg | plastic | 23,15 € |
| **K050.2** | 100 mg | plastic | 145,15 € |

For further information, please see page 1261

## dATP solution

### dATP solution
**≥99 %, 100 mM solution**
2'-Deoxyadenosine-5'-triphosphate
$C_{10}H_{13}N_5O_{12}P_3$
M 488,16 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[74299-50-6] • EC No. 277-809-2

| | | | |
|---|---|---|---|
| **K035.1** | 25 µmol (250 µl) | plastic | 33,25 € |

For further information, please see page 1259

## DBE
▶ Dibasic ester see p. 1867

## DBU
▶ 1,8-Diazabicyclo[5.4.0]undec-7-ene (DBU) see p. 1867

## DCC
▶ N,N'-Dicyclohexylcarbodiimide (DCC) see p. 1870

## DCM
▶ Dichloromethane see p. 1869

## DCPIP
▶ 2,6-Dichlorophenol-indophenol sodium salt hydrate see p. 1870

## dCTP

### dCTP
**≥95 %, lyophilised**
2'-Deoxycytidine-5'-triphosphate tri-sodium salt
$C_9H_{13}N_3O_{13}P_3Na_3 \cdot 3\ H_2O$
M 587,14 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[102783-51-7]

| | | | |
|---|---|---|---|
| **K053.1** | 10 mg | plastic | 23,15 € |
| **K053.2** | 100 mg | plastic | 145,15 € |

For further information, please see page 1261

## dCTP solution

### dCTP solution
**≥99 %, 100 mM solution**
2'-Deoxycytidine-5'-triphosphate
$C_9H_{13}N_3O_{13}P_3$
M 464,13 g/mol
Storage temp.: -20 °C
Transport temp.: cooled

| | | | |
|---|---|---|---|
| **K038.1** | 25 µmol (250 µl) | plastic | 33,25 € |

For further information, please see page 1259

## ddATP solution

### ddATP solution
**≥98 %, 10 mM solution**
2',3'-Dideoxyadenosine-5'-triphosphate
$C_{10}H_{13}N_5O_{11}P_3$
M 472,16 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[132619-65-9] • EC No. 300-359-6

| | | | |
|---|---|---|---|
| **K040.1** | 1 µmol (100 µl) | plastic | 46,15 € |

For further information, please see page 1262

## ddCTP solution

### ddCTP solution
**≥98 %, 10 mM solution**
2',3'-Dideoxycytidine-5'-triphosphate
$C_9H_{13}N_3O_{12}P_3$
M 448,13 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[132619-66-0] • EC No. 300-366-4

| | | | |
|---|---|---|---|
| **K043.1** | 1 µmol (100 µl) | plastic | 46,15 € |

For further information, please see page 1262

## ddGTP solution

### ddGTP solution
**≥98 %, 10 mM solution**
2',3'-Dideoxyguanosine-5'-triphosphate
$C_{10}H_{13}N_5O_{12}P_3$
M 488,16 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[68726-28-3] • EC No. 300-358-0

| | | | |
|---|---|---|---|
| **K042.1** | 1 µmol (100 µl) | plastic | 46,15 € |

For further information, please see page 1262

## ddNTP-Set

### ddNTP-Set
**≥98 %, ddATP, ddCTP, ddGTP, ddTTP**
ddNTP-set, composed of the nucleotid-single solutions
ddATP, ddCTP, ddGTP, ddTTP.
Concentration: 10 mM per ddNTP.
Dideoxynucleoside triphosphate set
Storage temp.: -20 °C
Transport temp.: cooled

| | | | |
|---|---|---|---|
| **K044.1** | 4 x 1 µmol (100 µl), 10 mM | plastic | 150,00 € |

For further information, please see page 1262

## ddTTP solution

### ddTTP solution
**≥98 %, 10 mM solution**
2',3'-Dideoxythymidine-5'-triphosphate
$C_{10}H_{14}N_2O_{13}P_3$
M 463,14 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[611-60-9] • EC No. 300-368-5

| | | | |
|---|---|---|---|
| **K041.1** | 1 µmol (100 µl) | plastic | 46,15 € |

For further information, please see page 1262

## DEAE Dextran

### DEAE Dextran
**for biochemistry**
Transfection reagent
Diethylaminoethyldextran
M ~500000 g/mol
[9013-34-7]
WGK 1

**Guarantee analysis:**
Appearance. ..... white to off-white powder
Loss on drying.....≤10 %
pH value (5 % in water). .....5,0-7,0
Nitrogen content (N).....3,0-3,8 %
Sulphated ash. .....≤2 %
Free DEAE-Cl. .....≤0,002 %

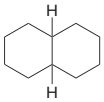
| | | | |
|---|---|---|---|
| **4198.1** | 25 g | plastic | 55,80 € |
| **4198.2** | 100 g | plastic | 177,40 € |

For further information, please see page 1336

## DEC

▶ Diethyl carbonate see p. 1872

## Decahydronaphthalene



### Decahydronaphthalene

**≥98 %, for synthesis**
Decalin® (mixture of cis and trans isomers).
$C_{10}H_{18}$
M 138,24 g/mol
D ~0,89
flp +57 °C
[91-17-8] • EC No. 202-046-9
UN No. 1147 • ADR 3 III • WGK 1
**Danger**
H226-H304-H314-H331-H410

**Type analysis:**
Assay (GC). ..... ≥98,0 %
Density (20 °C). ..... 0,870-0,895
Refractive index $n_D^{20}$. ..... 1,4740-1,4750

| | | | |
|---|---|---|---|
| **4438.1** | 1 l | glass | 32,15 € |
| Original pack 6 x 1 l | | | 30,54/1 l |
| **4438.3** | 2,5 l | glass | 59,05 € |
| Original pack 4 x 2,5 l | | | 56,10/2,5 l |
| **4438.4** | 5 l | aluminium | 106,45 € |
| Original pack 2 x 5 l | | | 101,13/5 l |
| **4438.2** | 10 l | tinplate | 192,45 € |

For further information, please see page 1522

## Decalcifier soft

### Decalcifier soft

**for histology**
Decalcifier solution on base of EDTA.
Used for gentle decalcification of bones and other calcified tissues. The solution is also suitable for immunological applications.
D 1,129
UN No. 1824 • ADR 8 II • WGK 2
**Danger** H290-H314-H373

**Type analysis:**
Appearance. ..... clear, colourless
pH (20 °C). ..... 7-9

| | | | |
|---|---|---|---|
| **6484.1** | 500 ml | glass | 23,15 € |
| **6484.2** | 1 l | glass | 35,40 € |
| Original pack 6 x 1 l | | | 33,63/1 l |
| **6484.3** | 2,5 l | plastic | 53,65 € |
| Original pack 4 x 2,5 l | | | 50,97/2,5 l |
| **6484.4** | 5 l | plastic | 92,35 € |
| Original pack 2 x 5 l | | | 87,73/5 l |

For further information, please see page 1443

## Decalcifier standard

### Decalcifier standard

**for histology**
Acid-based decalcifier. Contains trichloracetic acid and formalin. Used for acid decalcification of bones and other calcified tissues.
D 1,01
UN No. 3265 • ADR 8 III • WGK 2
**Danger**
H314-H335-H350-H411-EUH208

**Type analysis:**
Appearance. ..... clear, colourless
pH (20 °C). ..... 0,9 ±0,3

| | | | |
|---|---|---|---|
| **6483.1** | 500 ml | glass | 23,15 € |
| **6483.2** | 1 l | glass | 35,40 € |
| Original pack 6 x 1 l | | | 33,63/1 l |
| **6483.3** | 2,5 l | plastic | 53,65 € |
| Original pack 4 x 2,5 l | | | 50,97/2,5 l |
| **6483.4** | 5 l | plastic | 92,35 € |
| Original pack 2 x 5 l | | | 87,73/5 l |

For further information, please see page 1443

## Decalin®

▶ Decahydronaphthalene see p. 1858

## Decanal

▶ Capric aldehyde see p. 1810

## n-Decane



$C_{10}H_{22}$
M 142,29 g/mol
D 0,73 • bp 174 °C
mp -30 °C • flp +46 °C
Solubility: 37 mg/l ($H_2O$, 20 °C)
[124-18-5] • EC No. 204-686-4
UN No. 2247 • ADR 3 III • WGK 2
**Danger** H304-H226-EUH066

### n-Decane

**≥99 %, for synthesis**

**Type analysis:**
Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99,0 %
Density (15 °C). ..... 0,7330-0,7370

| | | | |
|---|---|---|---|
| **3475.1** | 100 ml | glass | 26,80 € |
| **3475.2** | 500 ml | glass | 69,80 € |
| **3475.3** | 1 l | glass | 122,05 € |
| Original pack 6 x 1 l | | | 115,95/1 l |
| **3475.4** | 2,5 l | glass | 235,45 € |
| Original pack 4 x 2,5 l | | | 223,68/2,5 l |

### n-Decane

**ROTICHROM® GC**
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**
Purity (GC). ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **3474.1** | 1 g | plastic | 81,20 € |

## Decane-1-sulphonic acid sodium salt




### Decane-1-sulphonic acid sodium salt

**≥99 %, for ion pair chromatography**
Ion pair reagent for HPLC.
Sodium-1-decane sulphonate
$C_{10}H_{21}NaO_3S$
M 244,33 g/mol
mp >300 °C
[13419-61-9] • EC No. 236-525-9
WGK 2

**Guarantee analysis:**
Assay (acidim.). ..... ≥99,0 %
Water. ..... ≤1 %
Absorption:
A 210 nm (0,2 M in water). ..... ≤0,05 AU
A 220 nm (0,2 M in water). ..... ≤0,03 AU
A 230 nm (0,2 M in water). ..... ≤0,02 AU
A 260 nm (0,2 M in water). ..... ≤0,02 AU

| | | | |
|---|---|---|---|
| **KK51.1** | 10 g | glass | 51,10 € |
| **KK51.2** | 25 g | glass | 99,90 € |
| **KK51.3** | 100 g | glass | 309,10 € |

## Decanoic acid

▶ Capric acid see p. 1809

## Decanoic acid methyl ester

▶ Capric acid methyl ester see p. 1810

## 1-Decanol




### 1-Decanol

**≥99 %, for synthesis**
Decylalcohol, Caprinalcohol
$C_{10}H_{22}O$
M 158,28 g/mol
D ~0,83 • bp 230 °C
mp 7 °C • flp 108 °C
[112-30-1] • EC No. 203-956-9
UN No. 3082 • ADR 9 III • WGK 1
**Warning** H315-H319-H411

**Type analysis:**
Assay (GC). ..... ≥99,0 %
Density (d 20 °C/4 °C). ..... 0,829-0,830

| | | | |
|---|---|---|---|
| **4151.1** | 1 l | glass | 53,65 € |
| Original pack 6 x 1 l | | | 50,97/1 l |

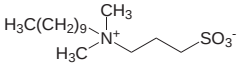
## Decontamination solution

▶ DNA AWAY® see p. 1890
▶ RNase AWAY® see p. 2201
▶ Roti® Nucleic Acid-free see p. 2225
▶ Roti® Nucleic Acid-free eXtra see p. 2225

## Decyl alcohol

▶ 1-Decanol see p. 1858

## N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate



### N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate

**≥98 %, for biochemistry**
Zwitterionic detergent
Sulfobetaine-10, SB-10
$C_{15}H_{33}NO_3S$
M 307,5 g/mol
[15163-36-7]
WGK 1

**Warning** H315-H319-H335

**Guarantee analysis:**
Assay (HPLC). ..... ≥98,0 %
Loss on drying. ..... ≤2,0 %
Sulphated ash. ..... ≤0,1 %

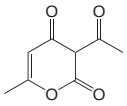
| | | | |
|---|---|---|---|
| **1816.1** | 5 g | glass | 53,25 € |
| **1816.2** | 25 g | glass | 138,70 € |

For further information, please see page 1274

## Defoamer

▶ Silicone anti-foaming emulsion see p. 2257

## Dehydracetic acid



### Dehydracetic acid

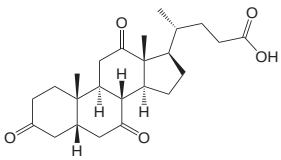
**>98 %**
$C_8H_8O_4$
M 168,15 g/mol
mp 109-111 °C
[520-45-6] • EC No. 208-293-9
WGK 1

**Warning** H302

**Type analysis:**
Assay. ..... >98 %

| | | | |
|---|---|---|---|
| **7548.1** | 100 g | plastic | 63,45 € |

## Dehydrocholic acid



### Dehydrocholic acid

**≥99 %, for biochemistry**
$C_{24}H_{34}O_5$
M 402,54 g/mol
mp ~238 °C
Storage temp.: +4 °C
[81-23-2] • EC No. 201-335-7

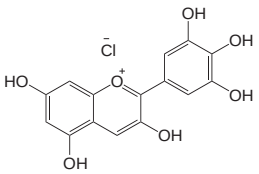
**Type analysis:**
Assay. ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **8139.1** | 25 g | plastic | 51,50 € |
| **8139.2** | 100 g | plastic | 144,60 € |

## Delafields hematoxylin solution

▶ Hematoxylin solution acc. to Delafield see p. 1971

## Delphinidin chloride



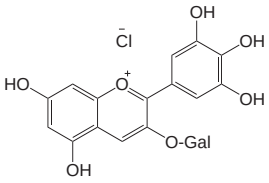
### Delphinidin chloride

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Vaccinium myrtillus* or *Vitis vinifera.*
$C_{15}H_{11}O_7Cl$
M 338,70 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[528-53-0] • EC No. 208-437-0

**Type analysis:**
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **4537.1** | 10 mg | plastic | 274,15 € |

## Delphinidin 3-galactoside chloride



### Delphinidin 3-galactoside chloride

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Vaccinium myrtillus.*
Empetrin
$C_{21}H_{21}O_{12}Cl$
M 500,84 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[28500-00-7]
WGK 1

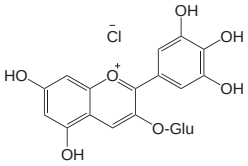
**Type analysis:**
Purity (HPLC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **0643.1** | 10 mg | glass | 413,90 € |

## Delphinidin 3-glucorhamnoside

▶ Delphinidin 3-rutinoside chloride see p. 1859

## Delphinidin 3-glucoside chloride



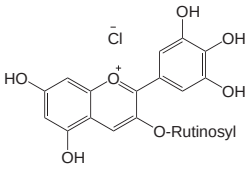
### Delphinidin 3-glucoside chloride

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Vaccinium myrtillus* or *Vitis vinifera.*
Myrtillin
$C_{21}H_{21}O_{12}Cl$
M 500,84 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[6906-38-3]
WGK 1

**Type analysis:**
Purity (HPLC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **0644.1** | 10 mg | glass | 364,45 € |

## Delphinidin 3-rutinoside chloride



### Delphinidin 3-rutinoside chloride

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Ribes nigrum.*
Delphinidin-3-glucorhamnoside, Tulipanin
$C_{27}H_{31}O_{16}Cl$
M 646,98 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[15674-58-5]
WGK 1

**Type analysis:**
Purity (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **0977.1** | 20 mg | glass | 364,45 € |

## Demoslides Fluoro-4C

### Demoslides Fluoro-4C

**Reference sample for fluorescent microscopy**

Glass slide with ready-to-use cell specimen.
For fine tuning of fluorescent microscopes.
Fluorescent preparation Fluoro-4C
Storage temp.: +4 °C
WGK 1

**Type analysis:**

Number of cells..... complies
Structure of growth. ..... complies
Cy2 fluorescence..... complies
Cy3 fluorescence..... complies
Cy5 fluorescence..... complies
DAPI fluorescence..... complies

| | | |
|---|---|---|
| **8987.1** | 1 piece | 274,15 € |
| **8987.2** | 2 pieces | 521,40 € |

For further information, please see page 1478

## D/E Neutralizing Agar

### D/E Neutralizing Agar

**for microbiology**

For detection and enumeration of microorganisms from a sanitized environment.
Application: Use 54 g for 1 l agar.
Dey-Engley Agar
Storage temp.: +20 °C
WGK 1

**Warning** H317-EUH031

**Formulation:**

Dextrose. ..... 10 g/l
Lecithin. ..... 7 g/l
Sodium thiosulphate. ..... 6 g/l
Casein peptone. ..... 5 g/l
Polysorbate 80..... 5 g/l
Yeast extract..... 2,5 g/l
Sodium bisulfite. ..... 2,5 g/l
Sodium thioglycolate. ..... 1 g/l
Bromocresol purple. ..... 0,02 g/l
Agar. ..... 15 g/l
pH value. ..... 7,6 ±0,2

| | | | |
|---|---|---|---|
| **8850.1** | 500 g | plastic | 96,65 € |
| Original pack 6 x 500 g | | | 91,82/500 g |

For further information, please see page 1383

## Denhardt's solution, lyophilised powder (50x)

### Denhardt's solution, lyophilised powder (50x)

**BioScience-Grade, for molecular biology**

Blocking reagent for hybridisation and stripping.
Storage temp.: +4 °C
WGK 1

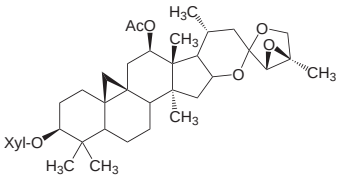
**Type analysis:**

Albumin Fraction V. ..... 0,5 g
Ficoll 400. ..... 0,5 g
Polyvinylpyrrolidone K30. ..... 0,5 g
pH value (stock solution in water). ..... 6,3 ±0,2

| | | | |
|---|---|---|---|
| **HP33.1** | Powder mix for 50 ml | plastic | 96,65 € |

For further information, please see page 1246

## 27-Deoxyactein




### 27-Deoxyactein

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Cimicifuga racemosa.*
$C_{37}H_{56}O_{10}$
M 660,84 g/mol
Storage temp.: +4 °C
[264624-38-6]

**Type analysis:**

Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **1134.1** | 5 mg | glass | 439,70 € |

## 2'-Deoxyadenosine-5'-triphosphate

▶ dATP solution see p. 1857

## 2-Deoxy-D-arabinohexose

▶ 2-Deoxy-D-glucose see p. 1861

## Deoxycholate Citrate Agar

### Deoxycholate Citrate Agar

**Ph.Eur., for microbiology**

For highly selective isolation of enteric pathogenes, particularly *Salmonella* and *Shigella*.
Application: Use 70 g for 1 l agar.
Agar medium J (Ph.Eur. 6.0)
Storage temp.: +20 °C
WGK 1

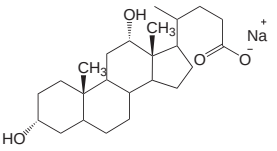
**Guarantee analysis:**

Beef extract. ..... 10 g/l
Meat peptone. ..... 10 g/l
Lactose monohydrate..... 10 g/l
Sodium citrate. ..... 20 g/l
Iron(III) citrate. ..... 1 g/l
Sodium deoxycholate..... 5 g/l
Neutral red. ..... 0,02 g/l
Agar..... 13,5 g/l
pH value. ..... 7,5 ±0,2

| | | | |
|---|---|---|---|
| **AE44.1** | 500 g | plastic | 104,20 € |
| Original pack 6 x 500 g | | | 98,99/500 g |
| **AE44.2** | 1 kg | plastic | 181,70 € |
| Original pack 6 x 1 kg | | | 172,62/1 kg |

For further information, please see page 1383

## Deoxycholic acid sodium salt (DOC)




### Deoxycholic acid sodium salt (DOC)

**≥98 %, for biochemistry**

Anionic detergent
Sodium deoxycholate, DOC
$C_{24}H_{39}NaO_4$
M 414,64 g/mol
mp 357-365 °C
Solubility: ~330 g/l ($H_2O$, 15 °C)
Storage temp.: +4 °C
[302-95-4] • EC No. 206-132-7
WGK 1

**Warning** H302-H335-H315-H319

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (titr.)..... 98,0-101,0 %
pH value (5 % in $H_2O$). ..... 7,2-9,5
Specific rotation $[\alpha]_D^{20}$ (c=2 in ethanol, dry substance)...
..... +43° to +45°
Heavy metals. ..... ≤0,002 %
Sodium cholate. ..... ≤1,0 %
Loss on drying (105 °C). ..... ≤5 %

| | | | |
|---|---|---|---|
| **3484.1** | 10 g | plastic | 18,20 € |
| **3484.2** | 50 g | plastic | 56,90 € |
| **3484.3** | 100 g | plastic | 99,90 € |

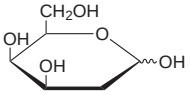
## 2'-Deoxycytidine-5'-triphosphate tetrasodium salt

▶ dCTP solution see p. 1857

## 2-Deoxy-D-erythropentose

▶ 2-Deoxy-D-ribose see p. 1861

## 2-Deoxy-D-galactose




### 2-Deoxy-D-galactose

**≥99 %, for biochemistry**

2-Deoxy-D-lyxohexose
$C_6H_{12}O_5$
M 164,16 g/mol
mp 107-108 °C
[1949-89-9] • EC No. 217-765-3

**Type analysis:**

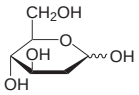
Assay (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **9916.1** | 250 mg | glass | 24,20 € |
| **9916.2** | 1 g | glass | 47,20 € |
| **9916.3** | 5 g | glass | 170,95 € |

## 6-Deoxy-L-galactose

▶ L(-)-Fucose see p. 1944

## 2-Deoxy-D-glucose



### 2-Deoxy-D-glucose

**≥98 %, for biochemistry**
2-Deoxy-D-arabinohexose
$C_6H_{12}O_5$
M 164,16 g/mol
mp ~148 °C
[154-17-6] • EC No. 205-823-0
WGK 1

**Type analysis:**
Assay.....≥98 %
Water.....≤1,0 %
Specific rotation $[\alpha]_D^{20}$. .....+44° to +48°
Ash content.....≤1,0 %

| | | | |
|---|---|---|---|
| CN96.1 | 50 mg | glass | 17,10 € |
| CN96.2 | 1 g | glass | 39,25 € |
| CN96.3 | 5 g | glass | 137,10 € |

## 2'-Deoxyguanosine-5'-triphosphate tetrasodium salt

▶ dGTP see p. 1866

## 2'-Deoxyinosine-5'-triphosphate tetrasodium salt

▶ dITP solution see p. 1890

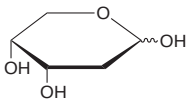
## 2-Deoxy-D-lyxohexose

▶ 2-Deoxy-D-galactose see p. 1860

## Deoxyribonucleic acid sodium salt

▶ Salmon Sperm DNA sodium salt see p. 2240

## 2-Deoxy-D-ribose



### 2-Deoxy-D-ribose

**≥99 %, for biochemistry**
2-Deoxy-D-erythropentose, Thyminose
$C_5H_{10}O_4$
M 134,13 g/mol
mp ~90 °C
Solubility: ~50 g/l ($H_2O$, 20 °C)
[533-67-5] • EC No. 208-573-0
WGK 1

**Type analysis:**
Assay.....≥99 %
pH value. .....6,0-8,0
Water.....≤1,0 %
Specific rotation $[\alpha]_D^{20}$. .....-58° to -55°
Heavy metals.....≤0,002 %
Sulphated ash.....≤0,5 %

| | | | |
|---|---|---|---|
| CN97.1 | 5 g | glass | 41,40 € |
| CN97.2 | 10 g | glass | 69,35 € |
| CN97.3 | 25 g | glass | 150,00 € |

## 2'-Deoxythymidine

▶ Thymidine see p. 2341

## 2'-Deoxythymidine-5'-triphosphate tetrasodium salt

▶ dTTP see p. 1897

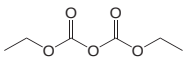
## 2'-Deoxyuridine-5'-triphosphate tetrasodium salt

▶ dUTP solution see p. 1897

## DEPBT

▶ 3-(Diethoxy-phosphoryloxy)-1,2,3-benzotriazin-4-(3H)-one (DEPBT) see p. 1871

## DEPC



### DEPC

**≥97 %, for biochemistry and molecular biology**
Diethyl pyrocarbonate, Pyrocarbonic acid diethyl ester,
Dicarbonic acid diethyl ester.
$C_6H_{10}O_5$
M 162,14 g/mol
D ~1,12 • bp 160-163 °C
flp 69 °C
Storage temp.: +4 °C
[1609-47-8] • EC No. 216-542-8
WGK 3

**Warning** H302+H332-H315-H319-H335

**Type analysis:**
Appearance.....clear liquid
Assay (titr.). .....≥97,0 %

| | | | |
|---|---|---|---|
| K028.3 | 5 ml | glass | 25,70 € |
| K028.1 | 25 ml | glass | 78,40 € |
| K028.2 | 100 ml | plastic | 138,15 € |

For further information, please see page 1253

## Derivatization reagents

| Art. No. | Description | Page |
|---|---|---|
| 2328 | γ-Aminopropyltriethoxysilane (APTES) | 1727 |
| 2330 | N,O-Bis(trimethylsilyl) acetamide (BSA) | 1777 |
| 2331 | N,O-Bis(trimethylsilyl)-trifluoro-acetamide | 1777 |
| 9935 | N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane | 1777 |
| 6870 | N,N-Dimethylformamid-dimethylacetal | 1883 |
| 0026 | Heptafluorobutyric acid anhydride (HFBA) | 1973 |
| 3840 | 1,1,1,3,3,3-Hexamethyldisilazane (HMDS) | 1977 |
| 9933 | N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA) | 2079 |
| 8007 | N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA) | 2079 |
| 0027 | Trifluoroacetic anhydride (TFAA) | 2353 |
| 2338 | Trimethylchlorosilane (TMCS) | 2354 |
| 0013 | N-(Trimethylsilyl)-diethylamine (TMSDEA) | 2354 |
| 0012 | N-(Trimethylsilyl)-imidazole (TSIM) | 2355 |
| 9934 | Trimethylsulfonium hydroxide in methanol | 2355 |

## Descaler

### Descaler

**ideal for removing lime deposits**
D 1,23
UN No. 3412 • ADR 8 II • WGK 1

**Danger**
H290-H302+H332-H314-EUH071

| | | | |
|---|---|---|---|
| 0023.1 | 500 ml | cardboard | 8,50 € |

For further information, please see page 1120

## Desiccant sachet Silica gel orange

WGK 1

### Desiccant sachet Silica gel orange

**10 g (4x9 cm), with indicator**
Desiccant sachet made of white long fiber paper with Silica gel orange filling.
**Regeneration is not possible.**

**Type analysis:**
Adsorption capacity:
20 % rel. humidity.....approx. 10 %
40 % rel. humidity.....approx. 19 %
50 % rel. humidity.....approx. 23 %
Colour change from orange to colourless.
Regeneration is not possible.

| | | | |
|---|---|---|---|
| N077.2 | 75 pieces/box | | 32,15 € |

For further information, please see page 1678

### Desiccant sachet Silica gel orange

**25 g (10x10 cm), with indicator**
Desiccant sachet made of white long fiber paper with Silica gel orange filling.
**Regeneration is not possible.**

**Type analysis:**
Adsorption capacity:
20 % rel. humidity.....approx. 10 %
40 % rel. humidity.....approx. 19 %
50 % rel. humidity.....approx. 23 %
Colour change from orange to colourless.
Regeneration is not possible.

| | | | |
|---|---|---|---|
| N078.1 | 30 pieces/box | | 27,45 € |

For further information, please see page 1678

## Desiccant sachet Silica gel orange

**50 g (9x12 cm), with indicator**

Desiccant sachet made of white long fiber paper with Silica gel orange filling.
**Regeneration is not possible.**

**Type analysis:**

Adsorption capacity:
20 % rel. humidity. ..... approx. 10 %
40 % rel. humidity. ..... approx. 19 %
50 % rel. humidity. ..... approx. 23 %
Colour change from orange to colourless.
Regeneration is not possible.

| | | |
|---|---|---|
| **N079.1** | 20 pieces/box | 38,60 € |

For further information, please see page 1678

## DETA

▶ Diethylene triamine see p. 1873

## Detergents

| Art. No. | Description | Page |
|---|---|---|
| CN21 | Brij® 35 | 1784 |
| CN27 | Cetylpyridinium chloride monohydrate (CPC) | 1823 |
| 9161 | Cetyltrimethylammonium b romide (CTAB) | 1823 |
| 1479 | CHAPS | 1824 |
| HN73 | CHAPSO | 1824 |
| 4128 | Chenodeoxycholic acid | 1825 |
| 3407 | Cholic acid sodium salt | 1831 |
| 1816 | N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate | 1859 |
| 3484 | Deoxycholic acid sodium salt (DOC) | 1860 |
| HN76 | Digitonin | 1874 |
| 1821 | N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate | 1894 |
| 4129 | n-Dodecyl-β-D-glucopyranoside | 1894 |
| CN26 | Dodecyl-β-D-maltoside (DDM) | 1894 |
| 0982 | Ecosurf™ SA-9 | 1899 |
| 1823 | N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate | 1976 |
| CN25 | Lithiumdodecyl sulphate (LDS) | 2040 |
| 1800 | N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate | 2109 |
| CN23 | n-Octyl-β-D-glucopyranoside (OGP) | 2109 |
| 4133 | n-Octyl-β-D-thiogalactopyranoside | 2109 |
| 4139 | n-Octyl-β-D-thioglucopyranoside | 2110 |
| 1156 | Roti®fair SDS 0.5g | 2214 |
| 1157 | Roti®fair 10% SDS | 2214 |
| 1057 | Roti®-Stock 20 % SDS | 2233 |
| 0183 | SDS Blotting Grade | 2244 |
| 2326 | SDS ultra pure | 2244 |
| 4360 | SDS for biochemistry | 2244 |
| 5136 | SDS | 2244 |
| 8029 | SDS Pellets for electrophoresis | 2244 |
| CN30 | SDS Pellets | 2244 |
| 9975 | Tergitol™ 15-S-9 | 2332 |
| 1822 | N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate | 2335 |
| 7452 | Tetradecyltrimethylammonium bromide (MTAB) | 2336 |
| 3051 | Triton® X 100 | 2359 |
| 9127 | Tween® 20 | 2363 |
| 8240 | Tween® 40 | 2363 |
| 9694 | Tween® 60 | 2363 |
| 9139 | Tween® 80 | 2363 |
| 4859 | Tween® 80 | 2363 |

## Deuterated Compounds

| Art. No. | Description | Page |
|---|---|---|
| 9902 | Acetic acid D1 | 1693 |
| HN83 | Acetic acid D4 | 1693 |
| AE51 | Acetone D6 | 1698 |
| 7909 | Acetone D6 | 1698 |
| 7911 | Acetonitrile D3 | 1700 |
| AE52 | Acetonitrile D3 | 1700 |
| 9903 | Ammonia-D3 solution 25 % in $D_2O$ | 1730 |
| 7912 | Benzene D6 | 1765 |
| AE53 | Benzene D6 | 1765 |
| HN93 | Bromobenzene D5 | 1786 |
| 9905 | Chlorobenzene D5 | 1827 |
| 5200 | Cyclohexane D12 | 1852 |
| HN80 | Deuterium chloride 38 % solution in $D_2O$ | 1862 |
| HN81 | Deuterium oxide | 1862 |
| 6672 | Deuterium oxide | 1862 |
| HN82 | 1,2-Dichlorobenzene D4 | 1868 |
| 7913 | Dichloromethane D2 | 1870 |
| AE55 | Dichloromethane D2 | 1870 |
| 9907 | Diethyl ether D10 | 1874 |
| CP92 | N,N-Dimethylformamide D7 | 1883 |
| 7915 | Dimethyl sulphoxide D6 | 1885 |
| AE56 | Dimethyl sulphoxide D6 | 1885 |
| 7916 | Dimethyl sulphoxide D6 with TMS (0,03 vol.%) | 1885 |
| AE60 | Dimethyl sulphoxide D6 with TMS (0,03 vol.%) | 1885 |
| HN84 | Ethanol D1 | 1912 |
| CP93 | Ethanol D6 | 1912 |
| HN92 | Formic acid D2, 95 % solution in $D_2O$ | 1941 |
| 9909 | 1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2) | 1977 |
| HN88 | Iodomethane D3 | 2007 |
| HN86 | Methanol D1 | 2069 |
| 9910 | Methanol D3 | 2070 |
| 7918 | Methanol D4 | 2070 |
| AE57 | Methanol D4 | 2070 |
| 7919 | Methanol D4 with TMS (0,03 vol.%) | 2070 |
| 9913 | Methylcyclohexane D14 | 2073 |
| 9914 | Nitrobenzene D5 | 2100 |
| HN91 | Nitromethane D3 | 2101 |
| 9915 | ortho-Phosphoric acid D3, 85 % solution in $D_2O$ | 2151 |
| 9917 | 2-Propanol D1 | 2181 |
| 9919 | 2-Propanol D8 | 2181 |
| 7922 | Pyridine D5 | 2185 |
| CP94 | Pyridine D5 | 2185 |
| HN89 | Sodium borodeuteride | 2267 |
| HN90 | Sodium deuterium oxide 30 % solution in $D_2O$ | 2271 |
| 9921 | Styrene D8 | 2319 |
| HN87 | Sulphuric acid D2, 98 % solution in $D_2O$ | 2327 |
| CP96 | 1,1,2,2-Tetrachloroethane D2 | 2335 |
| AE58 | Tetrahydrofuran D8 | 2337 |
| 7924 | Toluene D8 | 2347 |
| CP95 | Toluene D8 | 2347 |
| CP91 | Trichloromethane/Chloroform D1 | 2351 |
| 7903 | Trichloromethane/Chloroform D1 | 2351 |
| AE54 | Trichloromethane/Chloroform D1 | 2351 |
| 7905 | Trichloromethane/Chloroform D1 with TMS (0,03 vol.%) | 2352 |
| AE59 | Trichloromethane/Chloroform D1 with TMS (0,03 vol.%) | 2352 |
| CP97 | Trifluoroacetic acid D | 2353 |
| 9922 | 3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4) | 2355 |

## Deuterium chloride 38 % solution in $D_2O$

### Deuterium chloride 38 % solution in $D_2O$

**99,5 Atom%D**

For nuclear magnetic resonance spectroscopy.
DCl + $D_2O$
bp ~108,6 °C
[7698-05-7] • EC No. 231-715-8
UN No. 1789 • ADR 8 II • WGK 1

**Danger** H314-H335-H290

**Guarantee analysis:**
Deuterising degree.....≥99,5 %
Assay (mass %). .....≥38 %

| | | | |
|---|---|---|---|
| **HN80.1** | 10 ml | glass | 37,55 € |

## Deuterium oxide

Heavy water, Water $D_2$
$D_2O$
M 20,03 g/mol
D ~1,11 • bp 101,4 °C
mp 3,8 °C
[7789-20-0] • EC No. 232-148-9

### Deuterium oxide

**100 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**
Deuterising degree.....≥99,97 %
Assay. .....≤370 Bq/g Tritium

| | | | |
|---|---|---|---|
| **HN81.1** | 10 ml | glass | 27,85 € |
| **HN81.4** | 10 ml | septum bottle | 28,95 € |
| **HN81.2** | 50 ml | glass | 99,90 € |
| **HN81.3** | 10 x 0,75 ml | glass ampoule | 33,25 € |

### Deuterium oxide

**99,8 Atom%D**

For nuclear magnetic resonance spectroscopy.

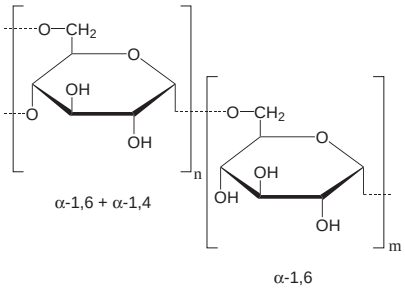
**Type analysis:**
Deuterising degree.....≥99,8 %

| | | | |
|---|---|---|---|
| **6672.1** | 10 ml | glass | 25,30 € |
| **6672.5** | 10 ml | septum bottle | 26,35 € |
| **6672.2** | 25 ml | glass | 49,35 € |
| **6672.3** | 100 ml | glass | 160,20 € |
| **6672.4** | 500 ml | glass | 719,20 € |
| **6672.6** | 10 x 0,75 ml | glass ampoule | 29,60 € |

## Deuterotrifluoroacetic acid

▶ Trifluoroacetic acid D see p. 2353

## Dextran 2,5




### Dextran 2,5

**for biochemistry**

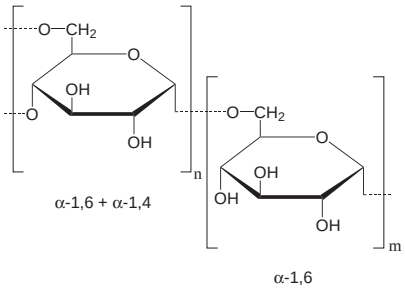
$(C_6H_{10}O_5)_n$
M ~2500 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

**Type analysis:**

Appearance. ..... white to slightly off-white powder
pH value. ..... 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... ≥+140°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤7,0 %

| | | | |
|---|---|---|---|
| **8718.1** | 10 g | plastic | 28,95 € |
| **8718.2** | 100 g | plastic | 111,70 € |
| **8718.3** | 500 g | plastic | 439,70 € |
| Original pack 6 x 500 g | | | 417,72/500 g |

## Dextran 6




### Dextran 6

**for biochemistry**

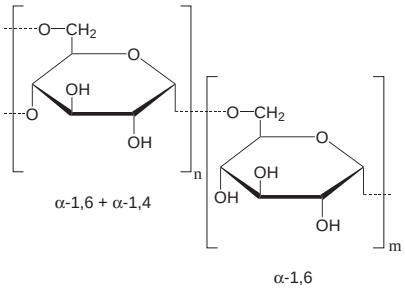
$(C_6H_{10}O_5)_n$
M ~6 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

**Type analysis:**

Appearance. ..... white to slightly off-white powder
pH value. ..... 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... ≥+148°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤7,0 %

| | | | |
|---|---|---|---|
| **7615.1** | 10 g | plastic | 15,60 € |
| **7615.2** | 100 g | plastic | 55,80 € |
| **7615.3** | 500 g | plastic | 231,15 € |
| Original pack 6 x 500 g | | | 219,59/500 g |

## Dextran 10




### Dextran 10

**for biochemistry**

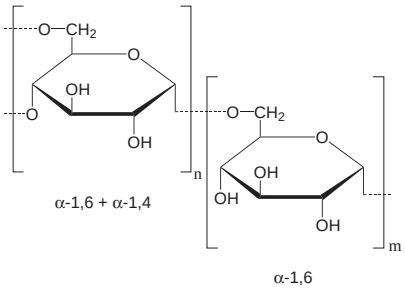
$(C_6H_{10}O_5)_n$
M ~10 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

**Type analysis:**

Appearance. ..... white to slightly off-white powder
pH value. ..... 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... ≥+148°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤7,0 %

| | | | |
|---|---|---|---|
| **7616.1** | 10 g | plastic | 15,60 € |
| **7616.2** | 100 g | plastic | 55,80 € |
| **7616.3** | 500 g | plastic | 231,15 € |
| Original pack 6 x 500 g | | | 219,59/500 g |

## Dextran 20




### Dextran 20

**for biochemistry**

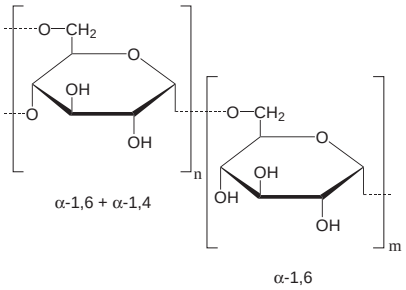
$(C_6H_{10}O_5)_n$
M ~20 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

**Type analysis:**

Appearance. ..... white to slightly off-white powder
pH value. ..... 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... ≥+148°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤7,0 %

| | | | |
|---|---|---|---|
| **7617.1** | 10 g | plastic | 15,60 € |
| **7617.2** | 100 g | plastic | 55,80 € |
| **7617.3** | 500 g | plastic | 231,15 € |
| Original pack 6 x 500 g | | | 219,59/500 g |

## Dextran 35




### Dextran 35

**for biochemistry**

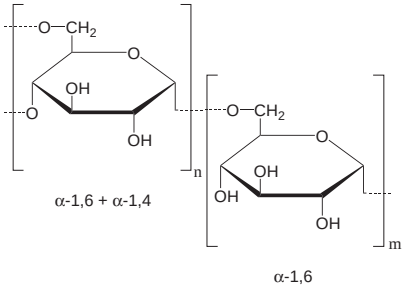
$(C_6H_{10}O_5)_n$
M ~35 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

**Type analysis:**

Appearance. ..... white powder
Molecular mass. ..... 30000-40000
pH value ..... 4,5-7,0
Sulphate ($SO_4$). ..... <0,03 %
Chloride (Cl). ..... <0,01 %
Nitrogen (N). ..... <0,01 %
Alcohol. ..... <0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +192° to +200°
Ash content. ..... <0,1 %
Loss on drying. ..... <7,0 %

| | | | |
|---|---|---|---|
| **8943.2** | 10 g | plastic | 15,60 € |
| **8943.1** | 50 g | plastic | 44,65 € |
| **8943.3** | 100 g | plastic | 72,60 € |

## Dextran 40




$(C_6H_{10}O_5)_n$
M ~40 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

### Dextran 40

**extra pure**

**Type analysis:**

Appearance. ..... white powder
Molecular mass. ..... 35000-45000
pH value (10 % solution). ..... 4,5-7,0
Appearance of solution. ..... complies
Acid or alkaline react. substances. ..... complies
Nitrogen (N). ..... ≤0,011 %
Heavy metals. ..... ≤0,001 %
Ethanol (GC). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +195° to +201°
Sulphated ash. ..... ≤0,3 %
Loss on drying. ..... ≤7,0 %

| | | | |
|---|---|---|---|
| **9227.3** | 10 g | plastic | 15,60 € |
| **9227.1** | 100 g | plastic | 41,40 € |
| **9227.4** | 250 g | plastic | 82,70 € |
| **9227.2** | 500 g | plastic | 139,25 € |
| Original pack 6 x 500 g | | | 132,29/500 g |

## Dextran 40

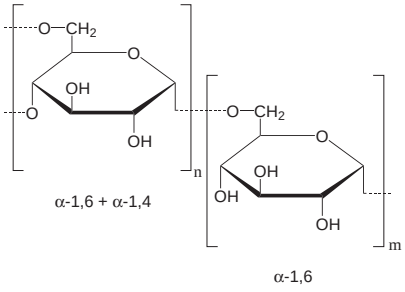
**for biochemistry**

**Type analysis:**

Appearance. ..... white to off-white powder
Molecular mass. ..... 35000-45000
pH value (10 % solution). ..... 4,5-7,0
Optical rotation. ..... +195° to +201°
Loss on drying. ..... ≤7,0 %

| | | | |
|---|---|---|---|
| **7626.1** | 10 g | plastic | 11,30 € |
| **7626.2** | 100 g | plastic | 35,40 € |
| **7626.3** | 250 g | plastic | 73,00 € |
| **7626.4** | 500 g | plastic | 127,95 € |
| Original pack 6 x 500 g | | | 121,55/500 g |

## Dextran 70




α-1,6 + α-1,4

α-1,6

## Dextran 70

**extra pure**

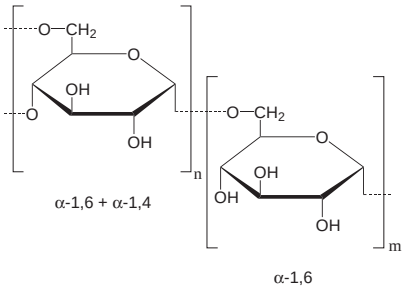
$(C_6H_{10}O_5)_n$
M ~70 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

**Type analysis:**

Appearance. ..... white powder
Molecular mass. ..... 63000-77000
Appearance of solution. ..... clear
pH value. ..... 4,5-7,0
Nitrogen (N). ..... ≤0,011 %
Heavy metals. ..... ≤0,001 %
Specific rotation $[\alpha]_D^{20}$. ..... +195° to +203°
Sulphate ($SO_4$). ..... ≤0,03 %
Loss on drying. ..... ≤7,0 %

| | | | |
|---|---|---|---|
| **9228.3** | 10 g | plastic | 17,10 € |
| **9228.1** | 100 g | plastic | 61,20 € |
| **9228.4** | 250 g | plastic | 121,40 € |
| **9228.2** | 500 g | plastic | 224,70 € |
| Original pack 6 x 500 g | | | 213,47/500 g |

## Dextran 100




α-1,6 + α-1,4

α-1,6

## Dextran 100

**for biochemistry**

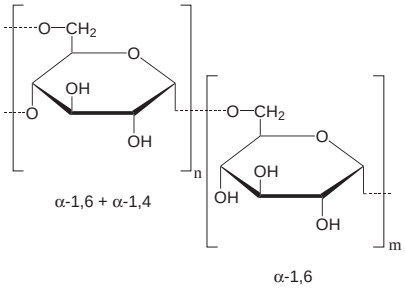
$(C_6H_{10}O_5)_n$
M ~100 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

**Type analysis:**

Appearance. ..... white to slightly off-white powder
pH value. ..... 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... +195° to +203°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤7,0 %

| | | | |
|---|---|---|---|
| **7618.1** | 10 g | plastic | 15,60 € |
| **7618.2** | 100 g | plastic | 55,80 € |
| **7618.3** | 500 g | plastic | 231,15 € |
| Original pack 6 x 500 g | | | 219,59/500 g |

## Dextran 150




α-1,6 + α-1,4

α-1,6

## Dextran 150

**for biochemistry**

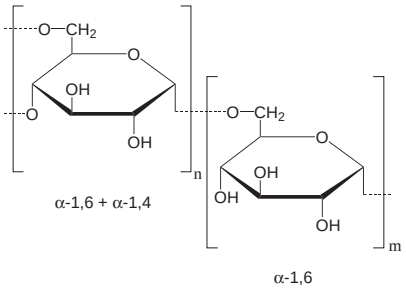
$(C_6H_{10}O_5)_n$
M ~150 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

**Type analysis:**

Appearance. ..... white to slightly off-white powder
pH value. ..... 4,5-7,0
Specific rotation $[\alpha]_D^{20}$. ..... +195° to +203°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤7,0 %

| | | | |
|---|---|---|---|
| **7619.1** | 10 g | plastic | 15,60 € |
| **7619.2** | 100 g | plastic | 55,80 € |
| **7619.3** | 500 g | plastic | 231,15 € |
| Original pack 6 x 500 g | | | 219,59/500 g |

## Dextran 250




α-1,6 + α-1,4

α-1,6

## Dextran 250

**for biochemistry**

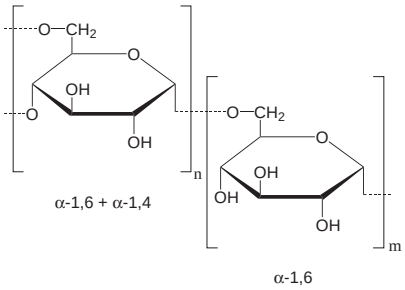
$(C_6H_{10}O_5)_n$
M ~250 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

**Type analysis:**

Appearance. ..... white powder
Molecular mass. ..... 225 000-275 000
pH value ..... 4,5-7,0
Loss on drying. ..... <7,0 %
Rotation $[\alpha]_D^{20}$. ..... +195° to +203°

| | | | |
|---|---|---|---|
| **9233.3** | 10 g | plastic | 34,30 € |
| **9233.1** | 100 g | plastic | 173,00 € |
| **9233.2** | 500 g | plastic | 751,45 € |
| Original pack 6 x 500 g | | | 713,88/500 g |

## Dextran 500




α-1,6 + α-1,4

α-1,6

### Dextran 500

**for biochemistry**

$(C_6H_{10}O_5)_n$
M ~500 000 g/mol
[9004-54-0] • EC No. 232-677-5
WGK 2

**Type analysis:**

Appearance. ..... white to off-white powder
Appearance of solution (6 % in $H_2O$ at 375 nm) ..... ≤0,15
Molecular mass. ..... 500 000
pH value ..... 4,0-7,0
Specific rotation $[\alpha]_D^{20}$. ..... +195° to +203°
Ash. ..... ≤2,0 %
Loss on drying. ..... ≤10,0 %

| | | | |
|---|---|---|---|
| **9219.3** | 10 g | plastic | 24,65 € |
| **9219.1** | 100 g | plastic | 81,60 € |
| **9219.2** | 500 g | plastic | 342,95 € |
| Original pack 6 x 500 g | | | 325,80/500 g |

## Dextranhydrogensulphate sodium salt


- Dextran sulphate 8 sodium salt see p. 1865
- Dextran sulphate 40 sodium salt see p. 1865
- Dextran sulphate 500 sodium salt see p. 1865


## Dextran sulphate 8 sodium salt

### Dextran sulphate 8 sodium salt

**for biochemistry**

Dextranhydrogensulphate 8 sodium salt
M ~8 000 g/mol
[9042-14-2]
WGK 2

**Type analysis:**

Appearance. ..... off-white to light yellow powder
Specific viscosity (25 °C, 1 M NaCl). ..... 0,018-0,032
pH value (1 % in $H_2O$) ..... 5,0-7,5
Specific rotation $[\alpha]_D^{20}$. ..... +75° to +105°
Loss on drying. ..... ≤10,0 %
Loss on ignition. ..... 35-50 %
Free sulphate. ..... ≤0,2 %
Sulphur (S). ..... 17,0-20,0 %
Iron (Fe). ..... ≤2,0 %
Chloride (Cl). ..... ≤0,1 %
Glucose. ..... 35-48 %

| | | | |
|---|---|---|---|
| **7610.1** | 10 g | plastic | 30,00 € |
| **7610.2** | 25 g | plastic | 55,80 € |
| **7610.3** | 50 g | plastic | 98,80 € |
| **7610.4** | 100 g | plastic | 181,70 € |

## Dextran sulphate 40 sodium salt

### Dextran sulphate 40 sodium salt

**for biochemistry**

Dextranhydrogensulphate 40 sodium salt
M ~40 000 g/mol
[9042-14-2]
WGK 2

**Type analysis:**

Appearance. ..... off-white to light yellow powder
Specific viscosity (25 °C, 1 M NaCl). ..... 0,05-0,13
pH value (1 % in $H_2O$). ..... 5,0-7,5
Specific rotation $[\alpha]_D^{20}$. ..... +75° to +105°
Loss on drying. ..... ≤10,0 %
Loss on ignition. ..... 35-50 %
Free sulphate. ..... ≤0,2 %
Sulphur (S). ..... 17,0-20,0 %
Iron (Fe). ..... ≤2,0 %
Chloride (Cl). ..... ≤0,1 %
Glucose. ..... 35-48 %

| | | | |
|---|---|---|---|
| **7612.1** | 10 g | plastic | 30,00 € |
| **7612.2** | 25 g | plastic | 55,80 € |
| **7612.3** | 50 g | plastic | 98,80 € |
| **7612.4** | 100 g | plastic | 181,70 € |

## Dextran sulphate 500 sodium salt

### Dextran sulphate 500 sodium salt

**for biochemistry and molecular biology**

Dextranhydrogensulphate 500 sodium salt
M ~500 000 g/mol
[9042-14-2]
WGK 2

**Type analysis:**

Appearance. ..... white to light yellow powder
Specific viscosity (25 °C, 1 M NaCl). ..... 0,1-0,7
pH value (1 %, $H_2O$). ..... 5,0-7,2
Specific rotation $[\alpha]_D^{20}$. ..... +75° to +105°
Loss on drying. ..... ≤10 %
Loss on ignition. ..... 40-50 %
Free sulphate. ..... ≤0,2 %
Sulphur (S). ..... 17-20 %
Iron (Fe). ..... ≤2 %
Chloride (Cl). ..... ≤0,1 %
Glucose. ..... 35-48 %

| | | | |
|---|---|---|---|
| **5956.5** | 10 g | plastic | 30,00 € |
| **5956.3** | 25 g | plastic | 57,95 € |
| **5956.4** | 50 g | plastic | 99,45 € |
| **5956.1** | 100 g | plastic | 189,10 € |
| **5956.2** | 500 g | plastic | 837,45 € |
| Original pack 6 x 500 g | | | 795,58/500 g |

For further information, please see page 1246

## Dextrin

Potato starch, Starch gum
$(C_6H_{10}O_5)_n \cdot x\ H_2O$
[9004-53-9] • EC No. 232-675-4
WGK 1

### Dextrin

**white, extra pure**

From potatoes, medium viscosity in solution.

**Type analysis:**

Appearance. ..... white, amorphous powder
Moisture. ..... ≤14,5 %
Solubility in cold water (10 %). ..... 50-70 %

| | | | |
|---|---|---|---|
| **6778.3** | 500 g | plastic | 17,10 € |
| Original pack 6 x 500 g | | | 16,25/500 g |
| **6778.1** | 1 kg | plastic | 26,35 € |
| Original pack 6 x 1 kg | | | 25,03/1 kg |
| **6778.4** | 2,5 kg | plastic | 53,65 € |
| **6778.2** | 5 kg | plastic | 99,90 € |

### Dextrin

**yellow, extra pure**

Starch gum, from potatoes, medium viscosity in solution.

**Type analysis:**

Appearance. ..... yellow, amorphous powder
Moisture. ..... ≤12 %
Viscosity (40 %, 20 °C). ..... 100-150 mPa s
Solubility in cold water ..... ≥99,7 %

| | | | |
|---|---|---|---|
| **6777.3** | 500 g | plastic | 11,75 € |
| Original pack 6 x 500 g | | | 11,16/500 g |
| **6777.1** | 1 kg | plastic | 17,10 € |
| Original pack 6 x 1 kg | | | 16,25/1 kg |
| **6777.4** | 2,5 kg | plastic | 33,25 € |
| **6777.2** | 5 kg | plastic | 60,10 € |

### Dextrin

**for microbiology**

From potato starch.

**Type analysis:**

Appearance. ..... light yellow powder

| | | | |
|---|---|---|---|
| **3488.2** | 100 g | plastic | 21,40 € |
| **3488.1** | 250 g | plastic | 34,30 € |

## Dextrose


- D(+)-Glucose see p. 1955
- D(+)-Glucose monohydrate see p. 1956


## Dey-Engley Agar


- D/E Neutralizing Agar see p. 1860

## dGTP

### dGTP

**≥95 %, lyophilised**

2'-Deoxyguanosine-5'-triphosphate tri-sodium salt

$C_{10}H_{13}N_5O_{13}P_3Na_3 \cdot 3\ H_2O$

M 627,16 g/mol

Storage temp.: -20 °C

Transport temp.: cooled

[93919-41-6] • EC No. 300-026-5

| | | | |
|---|---|---|---|
| **K052.1** | 10 mg | plastic | 23,15 € |
| **K052.2** | 100 mg | plastic | 145,15 € |

For further information, please see page 1261

## dGTP solution

### dGTP solution

**≥99 %, 100 mM solution**

2'-Deoxyguanosine-5'-triphosphate

$C_{10}H_{13}N_5O_{13}P_3$

M 504,16 g/mol

Storage temp.: -20 °C

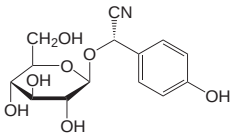
Transport temp.: cooled

[93919-41-6] • EC No. 300-026-5

| | | | |
|---|---|---|---|
| **K037.1** | 25 µmol (250 µl) | plastic | 33,25 € |

For further information, please see page 1259

## Dhurrin



### Dhurrin

**ROTICHROM® HPLC**

Reference substance for HPLC.

(S)-4-Hydroxymandelonitrile-β-D-glucoside, (S)-(β-D-Glucopyranosyloxy)(4-hydroxyphenyl)acetonitrile

$C_{14}H_{17}NO_7$

M 311,29 g/mol

mp >200 °C (dec.)

Storage temp.: +4 °C

[499-20-7] • EC No. 207-878-6

WGK 1

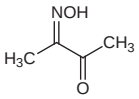
**Warning** H302

**Type analysis:**

Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **3866.1** | 1 mg | glass | 53,65 € |
| **3866.2** | 5 mg | glass | 161,15 € |
| **3866.3** | 25 mg | glass | 482,70 € |

## Diacetyl monoxime



### Diacetyl monoxime

**≥99 %, p.a.**

For determination of urea.

2,3-Butandione monoxime

$C_4H_7NO_2$

M 101,11 g/mol

bp 185-186 °C

mp ~75 °C

[57-71-6] • EC No. 200-348-5

WGK 2

**Type analysis:**

Assay. ..... ≥99 %

Melting point. ..... 74-77 °C

Sulphated ash. ..... ≤0,05 %

Solution (5 % in $H_2O$). ..... clear solution

| | | | |
|---|---|---|---|
| **3494.1** | 25 g | plastic | 18,20 € |
| **3494.2** | 100 g | plastic | 54,30 € |

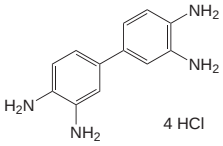
## 4',6-Diamidino-2-phenylindole dihydrochloride

▶ DAPI see p. 1856

## 1,4-Diaminobenzene

▶ 1,4-Phenylenediamine see p. 2147

## 3,3'-Diaminobenzidine tetrahydrochloride



### 3,3'-Diaminobenzidine tetrahydrochloride

**≥98 %, p.a.**

Substrate of horseradish peroxidase.

For detection of endogenous peroxidase and for immunohistochemical stainings.

3,3',4,4'-Tetra-aminobiphenyl tetrahydrochloride, DAB

$C_{12}H_{14}N_4 \cdot 4\ HCl$

M 360,10 g/mol

mp >300 °C

Storage temp.: +4 °C

[7411-49-6] • EC No. 231-018-9

WGK 1

**Warning**

H315-H319-H341-H351-H335

**Guarantee analysis:**

Assay (titr.). ..... ≥98 %

Sulphated ash. ..... ≤0,3 %

| | | | |
|---|---|---|---|
| **CN75.1** | 1 g | glass | 23,15 € |
| **CN75.2** | 5 g | plastic | 73,65 € |
| **CN75.3** | 10 g | plastic | 126,35 € |

For further information, please see page 1288

## 1,4-Diaminobutane

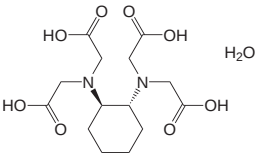
▶ Putrescin see p. 2184

▶ Putrescin dihydrochloride see p. 2184

## α,ε-Diamino-N-capronic acid hydrochloride

▶ L-Lysine hydrochloride see p. 2046

## trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate



1,2-Cyclohexane dinitrilo tetraacetic acid, CDTA, Titration complex IV

$C_{14}H_{22}N_2O_8 \cdot H_2O$

M 364,34 g/mol

mp 213 °C

Solubility: practically insoluble in $H_2O$ (20 °C)

[125572-95-4] • EC No. 236-308-9

WGK 2

**Warning** H315-H319

### trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate

**≥99 %, p.a., ACS**

**Guarantee analysis:**

Appearance. ..... white cryst. powder

Assay. ..... ≥99,0 %

pH value (saturated sol.). ..... 2,5-3,1

Chloride (Cl). ..... ≤0,002 %

Sulphate ($SO_4$). ..... ≤0,01 %

Heavy metals. ..... ≤0,001 %

Lead (Pb). ..... ≤0,0001 %

Iron (Fe). ..... ≤0,001 %

Sulphated ash. ..... ≤0,1 %

Water (KF). ..... 4,8-5,6 %

| | | | |
|---|---|---|---|
| **1412.1** | 25 g | plastic | 31,75 € |
| **1412.2** | 100 g | plastic | 93,45 € |
| **1412.3** | 250 g | plastic | 209,65 € |
| **1412.4** | 500 g | plastic | 385,95 € |
| Original pack 6 x 500 g | | | 366,65/500 g |

### trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate

**≥99 %, for synthesis**

**Type analysis:**

Appearance. ..... white cryst. powder

Assay. ..... ≥99,0 %

pH value (saturated sol.). ..... 2,5-3,1

Heavy metals. ..... ≤0,001 %

Water content. ..... 4,8-5,6 %

| | | | |
|---|---|---|---|
| **1411.1** | 100 g | plastic | 69,35 € |
| **1411.2** | 250 g | plastic | 162,90 € |
| **1411.3** | 500 g | plastic | 284,90 € |
| Original pack 6 x 500 g | | | 270,66/500 g |
| **1411.4** | 1 kg | plastic | 536,45 € |
| Original pack 6 x 1 kg | | | 509,63/1 kg |

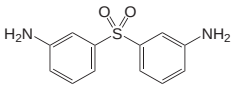
## 2,2'-Diaminodiethylamine

▶ Diethylene triamine see p. 1873

## 3,8-Diamino-5-(3-diethylamino-propyl)-6-phenyl-phenanthridinium iodide-methiodide

▶ Propidiumiodide see p. 2181

## 3,3'-Diaminodiphenyl sulphone



### 3,3'-Diaminodiphenyl sulphone

**≥99 %, for synthesis**

3,3'-Sulphonyldianiline, 3-Aminophenyl sulphone

$C_{12}H_{12}N_2O_2S_2$

M 248,29 g/mol

mp 170-173 °C

[599-61-1] • EC No. 209-967-5

WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8082.1** | 25 g | plastic | 14,95 € |
| **8082.2** | 250 g | plastic | 34,30 € |
| **8082.3** | 1 kg | plastic | 69,35 € |
| Original pack 6 x 1 kg | | | 65,88/1 kg |

## 1,2-Diaminoethane

▶ Ethylenediamine see p. 1915

## 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide

▶ Ethidium bromide see p. 1912
▶ Ethidium bromide solution 1 % see p. 1913

## 1,6-Diamino-hexane

▶ Hexamethylene diamine see p. 1977

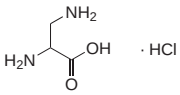
## 3,8-Diamino-5-methyl-6-phenyl-phenanthridium bromide

▶ Dimidium bromide see p. 1885

## 3,7-Diaminophenothiazin-5-ium acetate

▶ Thionine (acetate) (C.I. 52000) see p. 2340

## DL-2,3-Diaminopropionic acid hydrochloride



### DL-2,3-Diaminopropionic acid hydrochloride

**≥99 %, for biochemistry**

3-Amino-DL-alanine hydrochloride, DAP · HCl

$C_3H_9ClN_2O_2$

M 140,57 g/mol

mp 223-227 °C

[54897-59-5] • EC No. 259-387-1

WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (TLC). ..... ≥99,0 %
Solution (5 % in $H_2O$). ..... colourless
Melting point. ..... 223-227 °C

| | | | |
|---|---|---|---|
| **5431.1** | 1 g | glass | 23,55 € |
| **5431.2** | 5 g | plastic | 82,70 € |

## L(+)-2,5-Diaminovaleriic acid hydrochloride

▶ L-Ornithine monohydrochloride see p. 2125

## Diamondfuchsin

▶ Fuchsine basic (C.I. 42510) see p. 1944

## Diamond green G

▶ Brilliant green (C.I. 42040) see p. 1785

## 3,3'-Dianisole-4,4'-bis(3,5-diphenyltetrazolium chloride)

▶ Tetrazolium blue chloride see p. 2338

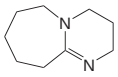
## Diatomaceous earth

▶ Infusorial earth see p. 2004

## 1,4-Diazabicyclo[2.2.2]octane

▶ DABCO® see p. 1856

## 1,8-Diazabicyclo[5.4.0]undec-7-ene (DBU)



### 1,8-Diazabicyclo[5.4.0]undec-7-ene (DBU)

**≥98 %, for synthesis**

Base for organic chemistry

DBU

$C_9H_{16}N_2$

M 152,24 g/mol

D 1,02 • bp 80-83 °C

mp -70 °C • flp 116 °C

[6674-22-2] • EC No. 229-713-7

UN No. 2922 • ADR 8 (6.1) II • WGK 2

**Danger** H290-H301-H314-H412

**Type analysis:**

Appearance. ..... colourless to light yellow liquid
Assay. ..... ≥98 %

| | | | |
|---|---|---|---|
| **6869.1** | 25 ml | glass | 28,95 € |
| **6869.2** | 100 ml | glass | 84,95 € |
| **6869.3** | 250 ml | glass | 155,90 € |
| **6869.4** | 500 ml | glass | 278,45 € |

## 1,3-Diaza-2,4-cyclopentadiene

▶ Imidazole see p. 1999

## Diazin Green S

▶ Janus green B (C.I. 11050) see p. 2018

## Dibasic ester

### Dibasic ester

**≥99 %, pure**

DBE

D 1,09 • bp 209 °C

mp -55 °C • flp 99 °C

EC No. 906-170-0

WGK 1

**Type analysis:**

Assay (GC). ..... ≥99,0 %
Colour (Hazen). ..... ≤20
Density (20 °C). ..... 1,087-1,093
Dimethyl adipate. ..... 8,0-22,0 %
Dimethyl glutarate. ..... 57,0-67,0 %
Dimethyl succinate. ..... 18,0-28,0 %

| | | | |
|---|---|---|---|
| **7973.1** | 1 l | plastic | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **7973.2** | 2,5 l | plastic | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |
| **7973.3** | 5 l | plastic | 69,80 € |
| Original pack 2 x 5 l | | | 66,31/5 l |

## Dibenz[de,kl]anthracene

▶ Perylene see p. 2140

## Dibenzopyrrole

▶ Carbazole see p. 1811

## DIBK

▶ Diisobutyl ketone see p. 1878

## 5',5''-Dibromo-cresolsulphonephthaleine

▶ Bromocresol purple see p. 1788
▶ Bromocresol purple sodium salt see p. 1788

## 4',5'-Dibromo-2',7'-dinitrofluorescein-disodium salt

▶ Eosin B (C.I. 45400) see p. 1905

## 3',3''-Dibromophenolsulphone-phthaleine

▶ Bromophenol red free acid see p. 1789

## 3',3''-Dibromothymol-sulphonphthaleine

▶ Bromothymol blue see p. 1790
▶ Bromothymol blue sodium salt see p. 1790

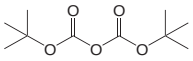
## N,N-Dibutyl-1-butanamine

▶ Tributylamine see p. 2349

## 2,6-Di-tert-butyl-p-cresol

▶ Butylated hydroxytoluene see p. 1797

## Di-*tert*-butyl dicarbonate ($Boc_2O$)



### Di-*tert*-butyl dicarbonate ($Boc_2O$)

**≥98 %**

Protective group reagent.
$Boc_2O$, Di-*tert*-butyl pyrocarbonate, Boc anhydride
$C_{10}H_{18}O_5$
M 218,25 g/mol
D 0,949
mp 23 °C • flp 37 °C
Solubility: insoluble ($H_2O$, 20 °C)
Storage temp.: +4 °C
[24424-99-5] • EC No. 246-240-1
UN No. 2929 • ADR 6.1 (3) I • WGK 1

**Danger** H226-H330-H315-H319-H317

**Type analysis:**

Appearance. ..... colorless solid
Assay (GC). ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **6985.1** | 100 g | plastic | 144,60 € |
| **6985.2** | 500 g | plastic | 456,90 € |
| Original pack 6 x 500 g | | | 434,06/500 g |

## 2,6-Di-tert.-butyl-4-methylphenol

▶ Butylated hydroxytoluene see p. 1797

## Di-*tert*-butyl pyrocarbonate

▶ Di-*tert*-butyl dicarbonate ($Boc_2O$) see p. 1868

## DIC

▶ *N,N'*-Diisopropylcarbodiimide (DIC) see p. 1878

## 1,3-Dicaffeoylquinic acid

▶ Cynarin see p. 1853

## 2,3-Dicaffeoyltartaric acid

▶ Cichoric acid see p. 1834

## Dichlorane Bengal Red Agar (with chloroamphenicol)

### Dichlorane Bengal Red Agar (with chloroamphenicol)

**ISO 21527-1, for microbiology**

Selective agar for enumeration of yeast and food mould fungi, especially for strongly hyphen-forming fungi.
Application: Use 31,6 g for 1 l agar.
**DRBC Agar**
Storage temp.: +20 °C
WGK 3

**Formulation:**

Peptone. ..... 5 g/l
Glucose. ..... 10 g/l
Potassium phosphate. ..... 1 g/l
Magnesium sulphate ($MgSO_4$). ..... 0,5 g/l
Chloroamphenicol. ..... 0,1 g/l
Dichlorane. ..... 0,002 g/l
Bengal red. ..... 0,025 g/l
Agar ..... 15 g/l
pH value. ..... 5,6 ±0,2

| | | | |
|---|---|---|---|
| **AE25.1** | 500 g | plastic | 149,45 € |
| Original pack 6 x 500 g | | | 141,98/500 g |

For further information, please see page 1383

## Dichlorane Glycerol Agar (Base)

### Dichlorane Glycerol Agar (Base)

**ISO 21527-2, for microbiology**

Selective agar for enumeration of yeast and food mould fungi, especially in half-dry and dry food.
Application: Use 31,6 g for 1 l agar, add 18 vol.-% glycerol.
**DG18 Agar**
Storage temp.: +20 °C
WGK 1

**Formulation:**

Peptone. ..... 5 g/l
Glucose. ..... 10 g/l
Potassium phosphate. ..... 1 g/l
Magnesium sulphate ($MgSO_4$). ..... 0,5 g/l
Chloroamphenicol. ..... 0,1 g/l
Dichlorane. ..... 0,002 g/l
Agar ..... 15 g/l
pH value. ..... 5,6 ±0,2

| | | | |
|---|---|---|---|
| **AE26.1** | 500 g | plastic | 126,35 € |
| Original pack 6 x 500 g | | | 120,03/500 g |

For further information, please see page 1384

## 1,2-Dichlorobenzene



### 1,2-Dichlorobenzene

**≥98 %, for synthesis**

o-Chlorobenzene
$C_6H_4Cl_2$
M 147,00 g/mol
D 1,307 • bp 180 °C
mp -17 °C • flp 66 °C
[95-50-1] • EC No. 202-425-9
UN No. 1591 • ADR 6.1 III • WGK 2

**Warning**

H400-H410-H302-H315-H319-H335

**Type analysis:**

Assay (GC). ..... ≥98,0 %
Density (d 20 °C/4 °C). ..... 1,305-1,307

| | | | |
|---|---|---|---|
| **4374.1** | 100 ml | glass | 13,45 € |
| **4374.2** | 500 ml | glass | 26,35 € |
| **4374.3** | 1 l | glass | 40,75 € |
| Original pack 6 x 1 l | | | 38,71/1 l |

## 1,2-Dichlorobenzene D4

### 1,2-Dichlorobenzene D4

**99 Atom%D**

For nuclear magnetic resonance spectroscopy.
$C_6D_4Cl_2$
M 151,03 g/mol
D 1,34 • bp 180 °C
mp -17 °C • flp 66 °C
[2199-69-1] • EC No. 218-606-0
UN No. 1591 • ADR 6.1 III • WGK 2

**Warning**

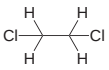
H400-H410-H302-H315-H319-H335

**Guarantee analysis:**

Deuterising degree. ..... ≥99 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **HN82.2** | 1 ml | glass | 56,90 € |
| **HN82.1** | 5 ml | glass | 181,70 € |

## 1,2-Dichloroethane



Ethylene chloride, Ethylene dichloride
$C_2H_4Cl_2$
M 98,96 g/mol
D 1,25 • bp 84 °C
mp -35,5 °C • flp 13 °C
Solubility: 8 g/l ($H_2O$, 20 °C)
[107-06-2] • EC No. 203-458-1
UN No. 1184 • ADR 3 (6.1) II • WGK 3

**Danger** H225-H302-H304-H315-H319-H331-H335-H350

### 1,2-Dichloroethane

**ROTIPURAN® ≥99,5 %, p.a.**

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Colour (Hazen). ..... ≤50
Water . ..... ≤0,03 %
Density (d 20 °C/20 °C). ..... ~1,25
Free chlorine (Cl). ..... ≤0,00003 %
Aluminium (Al). ..... ≤0,000005 %
Barium (Ba). ..... ≤0,000005 %
Lead (Pb). ..... ≤0,000002 %
Cadmium (Cd). ..... ≤0,000002 %
Calcium (Ca). ..... ≤0,00002 %
Chromium (Cr). ..... ≤0,000002 %
Cobalt (Co). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,0001 %
Potassium (K). ..... ≤0,00002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,000005 %
Manganese (Mn). ..... ≤0,000002 %
Sodium (Na). ..... ≤0,00005 %
Nickel (Ni). ..... ≤0,000002 %
Strontium (Sr). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %
Evaporation residue. ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **6837.4** | 500 ml | glass | 20,65 € |
| **6837.1** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **6837.2** | 2,5 l | glass | 66,15 € |
| Original pack 4 x 2,5 l | | | 62,84/2,5 l |
| **6837.3** | 10 l | tinplate | 213,95 € |

## 1,2-Dichloroethane

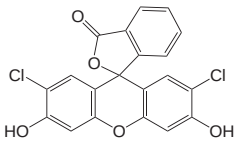
**≥99 %, for synthesis**

**Type analysis:**

Assay (GC). ..... ≥99 %
Free acid (as HCl). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0005 %
Evaporation residue. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **T869.1** | 1 l | glass | 20,65 € |
| Original pack 6 x 1 l | | | 19,62/1 l |
| **T869.2** | 2,5 l | glass | 41,40 € |
| Original pack 4 x 2,5 l | | | 39,33/2,5 l |
| **T869.3** | 10 l | tinplate | 106,45 € |
| **T869.4** | 25 l | tinplate | 209,65 € |

## 2',7'-Dichlorofluorescein




### 2',7'-Dichlorofluorescein

**p.a., ACS**

Fluorescence indicator
$C_{20}H_{10}Cl_2O_5$
M 401,20 g/mol
[76-54-0] • EC No. 200-968-6
WGK 2

**Guarantee analysis:**

Appearance. ..... red-brown powder
Appearance of solution. ..... complies
Loss on drying (110 °C). ..... ≤3,0 %
Suitability as adsorption indicator. ..... complies

| | | | |
|---|---|---|---|
| **X866.2** | 1 g | glass | 19,90 € |
| **X866.1** | 5 g | glass | 33,25 € |
| **X866.3** | 25 g | glass | 89,15 € |
| **X866.4** | 50 g | glass | 144,60 € |

## 2',7'-Dichlorofluorescein spray solution

### 2',7'-Dichlorofluorescein spray solution

**for TLC**

Ready-to-use spray solution for detection of Lipids (saturated, unsaturated).

0,2 g 2',7'- Dichlorofluorescein dissolved in 100 ml 2-propanol.

UN No. 1219 • ADR 3 II • WGK 1

**Danger** H225-H319-H336

**Type analysis:**

TLC-application. ..... complies

| | | | |
|---|---|---|---|
| **CP36.1** | 100 ml | glass | 37,50 € |

## Dichloromethane

Methylene chloride, DCM
$CH_2Cl_2$
M 84,93 g/mol
D ~1,33 • bp 40 °C
mp -95,1 °C
[75-09-2] • EC No. 200-838-9
UN No. 1593 • ADR 6.1 III • WGK 2

**Warning**

H315-H319-H335-H336-H351-H373

### Dichloromethane

**ROTISOLV® HPLC**

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,005 %
Free acid. ..... ≤0,0002 %
Non volatile matter. ..... ≤0,0001 %
Transmission:
255 nm. ..... ≥99 %
240 nm. ..... ≥80 %
235 nm. ..... ≥50 %
229 nm. ..... ≥10 %
Stabilized with approx. 30 ppm amylene

| | | | |
|---|---|---|---|
| **7334.2** | 1 l | glass | 37,10 € |
| Original pack 6 x 1 l | | | 35,25/1 l |
| **7334.1** | 2,5 l | glass | 57,55 € |
| Original pack 4 x 2,5 l | | | 54,67/2,5 l |

For further information, please see page 1590

### Dichloromethane

**ROTISOLV® ≥99,9 %, GC Ultra Grade**

For gaschromatographic residue analysis.

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,02 %
Free acid (as $CH_3COOH$). ..... ≤0,002 %
Evaporation residue. ..... ≤0,0002 %
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤5 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). ..... complies
Filtered through 0,2 µm membrane and filled under protective gas. Stabilized with 30-60 ppm Amylene

| | | | |
|---|---|---|---|
| **KK47.1** | 2,5 l | glass | 67,20 € |
| Original pack 4 x 2,5 l | | | 63,84/2,5 l |

### Dichloromethane

**ROTISOLV® ≥99,9 %, Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,02 %
Free acid (as HCl). ..... ≤0,0005 %
Evaporation residue. ..... ≤0,0003 %
GC/FID suitability (as 2-octanol). ..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ..≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤5 ng/l
GC/NPD pesticides (as parathion). ..... ≤10 ng/l
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ..... ≤0,1 mg/l
GC/ECD volatile impurities (as ethylene dibromide). ..... ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). ..... complies
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb
Stabilized with 30-60 ppm Amylene

| | | | |
|---|---|---|---|
| **7562.1** | 2,5 l | glass | 66,55 € |
| Original pack 4 x 2,5 l | | | 63,22/2,5 l |

### Dichloromethane

**ROTISOLV® ≥99,8 %, Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC). ..... ≥99,8 %
Water (KF). ..... ≤0,05 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
GC/ECD (individual signal as lindane). ..... ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l
Stabilized with approx. 50 ppm amylene

| | | | |
|---|---|---|---|
| **T162.2** | 1 l | glass | 32,15 € |
| Original pack 6 x 1 l | | | 30,54/1 l |
| **T162.1** | 2,5 l | glass | 65,05 € |
| Original pack 4 x 2,5 l | | | 61,80/2,5 l |
| **T162.3** | 4 l | glass | 80,10 € |

### Dichloromethane

**ROTISOLV® ≥99,8 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC). ..... ≥99,8 %
Water (KF). ..... ≤0,01 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Transmission:
260 nm. ..... ≥98 %
250 nm. ..... ≥90 %
240 nm. ..... ≥80 %
230 nm. ..... ≥5 %
Stabilized with approx. 50 ppm amylene

| | | | |
|---|---|---|---|
| **4433.1** | 2,5 l | glass | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |

### Dichloromethane

**ROTIDRY®Sept ≥99,9 % (≤50 ppm $H_2O$)**

Dried; in a septum bottle

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,005 %
Acidity (as HCl). ..... ≤0,001 %
Evaporation residue. ..... ≤0,001 %
Stabilized with approx. 50 ppm amylene

| | | | |
|---|---|---|---|
| **5176.1** | 250 ml | glass | 37,10 € |

### Dichloromethane

**ROTIDRY® ≥99,8 % (≤50 ppm $H_2O$)**

Dried; for analysis and organic synthesis.

**Guarantee analysis:**

Assay (GC). ..... ≥99,8 %
Colour (Hazen). ..... ≤10
Water (KF). ..... ≤0,005 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Stabilized with approx. 50 ppm amylene
Filtered through a membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE03.1** | 1 l | glass | 31,10 € |
| Original pack 6 x 1 l | | | 29,55/1 l |

## Dichloromethane

**ROTIPURAN® ≥99,5 %, p.a., ACS, ISO**

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Colour (Hazen). ..... ≤10
Density (d 20 °C/4 °C). ..... 1,323-1,325
Water . ..... ≤0,02 %
Acidity. ..... ≤0,0003 meq/g
Free chlorine (Cl). ..... ≤0,0001 %
Chloroform (GC). ..... ≤0,05 %
Carbon tetrachloride (GC). ..... ≤0,01 %
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00001 %
Boron (B). ..... ≤0,000002 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Cobalt (Co). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %
Tin (Sn). ..... ≤0,00001 %
Evaporation residue. ..... ≤0,001 %
Matter discoloured by $H_2SO_4$ (Hazen). ..... complies
Stabilized with approx. 20 ppm amylene

| | | | |
|---|---|---|---|
| **6053.3** | 100 ml | glass | 15,60 € |
| **6053.1** | 1 l | glass | 35,40 € |
| Original pack 6 x 1 l | | | 33,63/1 l |
| **6053.2** | 2,5 l | glass | 64,40 € |
| Original pack 4 x 2,5 l | | | 61,18/2,5 l |
| **6053.4** | 10 l | tinplate | 160,20 € |
| **6053.5** | 25 l | tinplate | 310,70 € |

## Dichloromethane

**≥99,5 %, Ph.Eur., extra pure**

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Identity. ..... complies
Appearance of solution. ..... complies
Density (d 20 °C/20 °C). ..... 1,320-1,332
Refractive index $n_D^{20}$. ..... 1,423-1,425
Free chlorine (Cl). ..... complies
Water (KF). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,0003 %
Acid react. substances. ..... complies
Heavy metals (as Pb). ..... ≤0,0001 %
Evaporation residue. ..... ≤0,002 %
Related substances:
Ethanol (GC). ..... ≤2,0 %
Chloroform (GC). ..... ≤0,005 %
Carbon tetrachloride (GC). ..... ≤0,001 %
2-Methylbut-2-ene. ..... ≤0,03 %
Sum of other impurities. ..... ≤0,1 %
Stabilized with approx. 20 ppm amylene

| | | | |
|---|---|---|---|
| **CP45.1** | 1 l | glass | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |
| **CP45.2** | 2,5 l | glass | 53,65 € |
| Original pack 4 x 2,5 l | | | 50,97/2,5 l |
| **CP45.3** | 10 l | tinplate | 137,10 € |
| **CP45.4** | 25 l | tinplate | 256,95 € |

## Dichloromethane

**>99,5 %, for synthesis**

**Type analysis:**

Assay (GC). ..... >99,5 %
Water . ..... ≤0,1 %
Density (20 °C). ..... 1,324-1,330
Refractive index $n_D^{20}$. ..... 1,4230-1,4250
Stabilized with amylene

| | | | |
|---|---|---|---|
| **8424.4** | 100 ml | glass | 10,25 € |
| **8424.1** | 1 l | glass | 20,35 € |
| Original pack 6 x 1 l | | | 19,33/1 l |
| **8424.2** | 2,5 l | glass | 39,70 € |
| Original pack 4 x 2,5 l | | | 37,72/2,5 l |
| **8424.3** | 10 l | tinplate | 103,75 € |
| **8424.5** | 25 l | tinplate | 177,40 € |

## Dichloromethane

**≥99,9 %, for peptide synthesis**

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,005 %
Non volatile matter. ..... ≤0,0005 %
Free amines. ..... ≤0,001 %
Stabilized with approx. 50 ppm amylene

| | | | |
|---|---|---|---|
| **P089.1** | 2,5 l | glass | 61,85 € |
| Original pack 4 x 2,5 l | | | 58,76/2,5 l |

## Dichloromethane D2

Methylene chloride D2
$CCl_2D_2$
M 86,95 g/mol
D 1,36 • bp 39 °C
mp -97 °C
[1665-00-5] • EC No. 216-776-0
UN No. 1593 • ADR 6.1 III • WGK 2

**Warning**
H315-H319-H335-H336-H351-H373

## Dichloromethane D2

**99,8 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Type analysis:**

Deuterising degree. ..... ≥99,8 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **7913.1** | 10 ml | glass | 96,65 € |
| **7913.2** | 10 x 0,75 ml | glass ampoule | 99,90 € |

## Dichloromethane D2

**99,5 Atom%D**

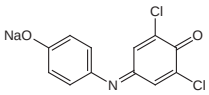
For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**

Deuterising degree. ..... ≥99,5 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **AE55.3** | 5 ml | glass | 48,30 € |
| **AE55.1** | 10 ml | glass | 90,20 € |
| **AE55.2** | 25 ml | glass | 198,90 € |
| **AE55.4** | 50 ml | glass | 306,40 € |
| **AE55.5** | 10 x 0,75 ml | glass ampoule | 92,35 € |

## 2,6-Dichlorophenol-indophenol sodium salt hydrate




## 2,6-Dichlorophenol-indophenol sodium salt hydrate

**p.a., ACS**

For determination of ascorbic acid.
DCPIP, Tillman's reagent
$C_{12}H_6Cl_2NNaO_2 \cdot x\ H_2O$
M 290,08 + x $H_2O$ g/mol
[620-45-1] • EC No. 210-640-4
WGK 3

**Guarantee analysis:**

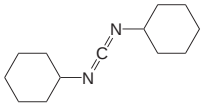
Appearance. ..... dark green powder
Solubility (0,1 % in 50 % EtOH + 1 ml 1 N $Na_2CO_3$). ..... clear blue solution
Loss on drying (120 °C). ..... ≤12 %
Disturbing dyes. ..... complies

| | | | |
|---|---|---|---|
| **HN79.1** | 1 g | glass | 16,70 € |
| **HN79.2** | 5 g | glass | 36,45 € |
| **HN79.3** | 25 g | glass | 149,45 € |

## 3',3"-Dichlorophenol sulphonic phthalein

▶ Chlorophenol red see p. 1829

## N,N'-Dicyclohexylcarbodiimide (DCC)




## N,N'-Dicyclohexylcarbodiimide (DCC)

**≥98 %, for peptide synthesis**

Coupling reagent for peptide synthesis.
DCC
$C_{13}H_{22}N_2$
M 206,33 g/mol
bp 32-35 °C
Solubility: 10 mg/l ($H_2O$, 20 °C)
[538-75-0] • EC No. 208-704-1
UN No. 2811 • ADR 6.1 II • WGK 3

**Danger** H302-H310-H317-H318

**Type analysis:**

Assay (GC). ..... ≥98,0 %
Loss on ignition. ..... ≤0,1 %
Solubility (10 % in acetone). ..... complete

| | | | |
|---|---|---|---|
| **4193.1** | 100 g | glass | 19,90 € |
| **4193.2** | 250 g | glass | 38,20 € |
| **4193.3** | 500 g | glass | 68,30 € |
| Original pack 6 x 500 g | | | 64,89/500 g |
| **4193.4** | 1 kg | glass | 126,35 € |
| Original pack 6 x 1 kg | | | 120,03/1 kg |
| **4193.5** | 2,5 kg | glass | 289,20 € |

## 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

▶ SPhos see p. 2292

## 2-Dicyclohexylphosphino-2',4',6'-triisopropylbiphenyl

▶ XPhos see p. 2380

## 13,19-Didehydro-12-hydroxy-senecionan-11,16-dione

▶ Seneciphylline see p. 2246

## 2',3'-Dideoxyadenosine-5'-triphosphate tetrasodium salt

▶ ddATP solution see p. 1857

## 2',3'-Dideoxycytidine-5'-triphosphate tetrasodium salt

▶ ddCTP solution see p. 1857

## 2',3'-Dideoxyguanosine-5'-triphosphate sodium salt

▶ ddGTP solution see p. 1857

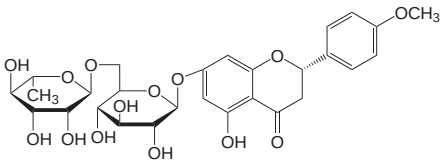
## 2',3'-Dideoxythymidine-5'-triphosphate sodium salt

▶ ddTTP solution see p. 1857

## 1,2-Dideutero-1,1,2,2-tetrachloroethane

▶ 1,1,2,2-Tetrachloroethane D2 see p. 2335

## Didymin



### Didymin

**ROTICHROM® HPLC**

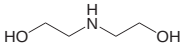
Reference substance for HPLC.
Rutinosyl-7-isosakuranetin
$C_{28}H_{34}O_{14}$
M 594,57 g/mol
Storage temp.: +4 °C
[14259-47-3] • EC No. 238-139-6

**Type analysis:**

Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7445.1** | 5 mg | glass | 349,40 € |

## Diethanolamine



2,2'-Dihydroxy diethylamine,
Bis-(β-hydroxyethyl)-amine
$C_4H_{11}NO_2$
M 105,14 g/mol
D ~1,09 • bp 269-270 °C
mp 27-28 °C • flp 176 °C
[111-42-2] • EC No. 203-868-0
WGK 1

**Danger** H318-H373-H302-H315

### Diethanolamine

**ROTIPURAN® ≥99 %, p.a., ACS**

For biochemistry.

**Guarantee analysis:**

Assay (GC)..... ≥99,0 %
Melting point..... 27-28 °C
Colour (APHA)..... ≤15
Water..... ≤0,15 %
Chloride (Cl)..... ≤0,001 %
Ethanol amine (GC)..... ≤0,3 %
Triethanol amine (GC)..... ≤0,3 %
Ash content (as $SO_4$)..... ≤0,002 %
Heavy metals (as Pb)..... ≤0,0001 %
Iron (Fe)..... ≤0,0001 %
Apparent equivalent weight..... 104,0-106,0

| | | | |
|---|---|---|---|
| **0332.1** | 250 ml | glass | 36,45 € |
| **0332.2** | 500 ml | glass | 64,00 € |
| **0332.3** | 1 l | glass | 110,20 € |
| Original pack 6 x 1 l | | | 104,69/1 l |

### Diethanolamine

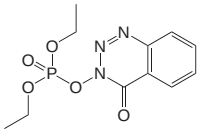
**≥99 %, for synthesis**

**Type analysis:**

Assay (GC)..... ≥99,0 %
Water..... ≤0,1 %
Melting range..... 25-28 °C

| | | | |
|---|---|---|---|
| **HN99.1** | 500 ml | plastic | 29,60 € |
| **HN99.2** | 1 l | plastic | 37,55 € |
| Original pack 6 x 1 l | | | 35,67/1 l |
| **HN99.3** | 2,5 l | plastic | 71,95 € |
| Original pack 4 x 2,5 l | | | 68,35/2,5 l |
| **HN99.4** | 5 l | plastic | 107,40 € |
| Original pack 2 x 5 l | | | 102,03/5 l |
| **HN99.5** | 10 l | plastic | 181,70 € |

## 3-(Diethoxy-phosphoryloxy)-1,2,3-benzotriazin-4-(3H)-one (DEPBT)



### 3-(Diethoxy-phosphoryloxy)-1,2,3-benzotriazin-4-(3H)-one (DEPBT)

**≥98,5 %**

Coupling reagent for peptide synthesis.
DEPBT
$C_{11}H_{14}N_3O_5P$
M 299,22 g/mol
mp 72-77 °C
Storage temp.: +4 °C
[165534-43-0]
WGK 1

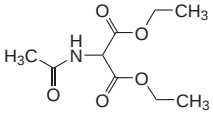
**Warning** H315-H319-H335

**Type analysis:**

Assay (HPLC)..... ≥98,5 %
Loss on drying..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2103.1** | 5 g | glass | 47,85 € |
| **2103.2** | 25 g | glass | 198,90 € |

## Diethyl acetamidomalonate



### Diethyl acetamidomalonate

**≥99 %**

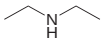
Acetamidomalonic acid diethyl ester
$C_9H_{15}NO_5$
M 217,22 g/mol
bp 185 °C
mp 96-98 °C
Solubility: insoluble ($H_2O$, 20 °C)
[1068-90-2] • EC No. 213-952-9

**Type analysis:**

Assay (GC)..... ≥99,0 %
Solution (5 % in methanol)..... colourless, clear
Melting point..... 96-98 °C

| | | | |
|---|---|---|---|
| **5428.1** | 25 g | plastic | 99,90 € |
| **5428.2** | 50 g | plastic | 180,10 € |

## Diethylamine



N-Ethyleneamine, DEA
$C_4H_{11}N$
M 73,14 g/mol
D ~0,70 • bp 55-58 °C
mp -50 °C
[109-89-7] • EC No. 203-716-3
UN No. 1154 • ADR 3 (8) II • WGK 1

**Danger**
H225-H302+H332-H311-H314-H335

### Diethylamine
**ROTIPURAN® ≥99,5 %, p.a., ACS**

**Guarantee analysis:**
Assay (GC). ..... ≥99,5 %
Water . ..... ≤0,1 %
Colour (APHA). ..... ≤20
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %
Evaporation residue. ..... ≤0,01 %
Monoethylamine (GC). ..... ≤0,5 %
Triethylamine (GC). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **3495.1** | 250 ml | glass | 18,20 € |
| **3495.2** | 1 l | glass | 48,30 € |
| Original pack 6 x 1 l | | | 45,89/1 l |

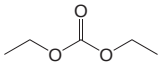
### Diethylamine
**≥99,5 %, for synthesis**

**Type analysis:**
Assay (GC). ..... ≥99,5 %
Water. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **KK00.1** | 100 ml | glass | 13,15 € |
| **KK00.2** | 500 ml | glass | 20,65 € |
| **KK00.3** | 1 l | glass | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |
| **KK00.4** | 2,5 l | glass | 46,15 € |
| Original pack 4 x 2,5 l | | | 43,84/2,5 l |

## Diethylaminoethyldextran
▶ DEAE Dextran see p. 1857

## Diethyl carbonate



### Diethyl carbonate
**≥99,9 %**
Carbonic acid diethyl ester, Ethyl carbonate, DEC
$C_5H_{10}O_3$
M 118,13 g/mol
D 0,98 • bp 126 °C
mp -43 °C • flp 33 °C
Solubility: insoluble ($H_2O$, 20 °C)
[105-58-8] • EC No. 203-311-1
UN No. 2366 • ADR 3, III • WGK 1

**Warning** H226

**Type analysis:**
Assay (GC). ..... ≥99,9 %
Water. ..... ≤0,1 %
Ethanol (GC). ..... ≤0,2 %
Density (20 °C). ..... 0,973-0,976

| | | | |
|---|---|---|---|
| **2627.1** | 100 ml | glass | 14,20 € |
| **2627.2** | 500 ml | glass | 23,55 € |
| **2627.3** | 1 l | glass | 32,15 € |
| Original pack 6 x 1 l | | | 30,54/1 l |
| **2627.4** | 2,5 l | glass | 60,10 € |
| Original pack 4 x 2,5 l | | | 57,10/2,5 l |

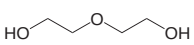
## Diethyl dicarbonate
▶ DEPC see p. 1861

## Diethyldithiocarbamic acid silver salt
▶ Silver diethyldithiocarbamate see p. 2261

## Diethyldithiocarbamic acid sodium salt
▶ Sodium diethyldithiocarbamate trihydrate see p. 2271

## 1.4-Diethylene dioxide
▶ 1,4-Dioxane see p. 1886

## Diethylene glycol



### Diethylene glycol
**≥99 %, for synthesis**
Diglycol, 2,2'-Dihydroxy diethyl ether
$C_4H_{10}O_3$
M 106,12 g/mol
D ~1,115 • bp 242-252 °C
mp -6 °C • flp 140 °C
[111-46-6] • EC No. 203-872-2
WGK 1

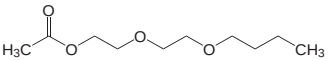
**Warning** H302

**Type analysis:**
Assay (GC). ..... ≥99 %
Density (20 °C). ..... 1,115-1,120
Water (KF). ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **0968.1** | 1 l | plastic | 17,10 € |
| Original pack 6 x 1 l | | | 16,25/1 l |
| **0968.2** | 2,5 l | plastic | 29,60 € |
| Original pack 4 x 2,5 l | | | 28,12/2,5 l |
| **0968.5** | 5 l | plastic | 53,65 € |
| Original pack 2 x 5 l | | | 50,97/5 l |
| **0968.3** | 10 l | plastic | 75,15 € |
| **0968.4** | 25 l | plastic | 164,40 € |

## Diethylene glycol butyl ether
▶ Butyldiglycol see p. 1797

## Diethylene glycol monobutyl ether acetate

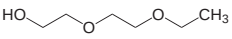


### Diethylene glycol monobutyl ether acetate
**≥97 %, pure**
2-(2-Butoxyethoxy)ethyl acetate, Butyldiglycol acetate
$C_{10}H_{20}O_4$
M 204,26 g/mol
D 0,98 • bp 238-248 °C
mp -32 °C • flp 102 °C
Solubility: 65 g/l (20 °C, $H_2O$)
[124-17-4] • EC No. 204-685-9
WGK 1

**Type analysis:**
Assay (GC). ..... ≥97,0 %
Colour (Hazen). ..... ≤20

| | | | |
|---|---|---|---|
| **8021.1** | 1 l | glass | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **8021.2** | 2,5 l | glass | 38,60 € |
| Original pack 4 x 2,5 l | | | 36,67/2,5 l |

## Diethylene glycol monoethyl ether

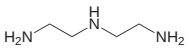


### Diethylene glycol monoethyl ether
**≥99 %, pure**
2-(2-Ethoxyethoxy)ethanol, Ethyldiglycol
$C_6H_{14}O_3$
M 134,17 g/mol
D 0,99 • bp 202 °C
mp -90 °C • flp 94 °C
[111-90-0] • EC No. 203-919-7
WGK 1

**Type analysis:**
Assay (GC). ..... ≥99,0 %
Colour (Hazen). ..... ≤15

| | | | |
|---|---|---|---|
| **8686.1** | 1 l | glass | 23,35 € |
| Original pack 6 x 1 l | | | 22,18/1 l |
| **8686.2** | 2,5 l | glass | 40,75 € |
| Original pack 4 x 2,5 l | | | 38,71/2,5 l |

## Diethylene triamine



### Diethylene triamine

**≥98 %, for synthesis**

2,2'-Diaminodiethylamine, DETA
$C_4H_{13}N_3$
M 103,17 g/mol
D 0,95 • bp 207 °C
mp -35 °C • flp 102 °C
[111-40-0] • EC No. 203-865-4
UN No. 2079 • ADR 8 II • WGK 2

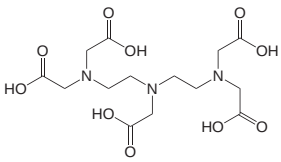
**Danger** H302+H312-H314-H317

**Type analysis:**

Appearance. .....clear colourless to yellowish liquid
Assay (GC). ..... ≥98,0 %
Density..... 0,949-0,952
Refractive index $n_D^{20}$. ..... 1,482-1,483
Water..... ≤0,3 %

| | | | |
|---|---|---|---|
| **6723.1** | 100 ml | glass | 13,45 € |
| **6723.2** | 500 ml | glass | 27,85 € |
| **6723.3** | 1 l | glass | 40,75 € |
| Original pack 6 x 1 l | | | 38,71/1 l |
| **6723.4** | 2,5 l | glass | 79,05 € |
| Original pack 4 x 2,5 l | | | 75,10/2,5 l |

## Diethylene triamine pentaacetic acid



### Diethylene triamine pentaacetic acid

**≥99 %, for synthesis**

Titration complex V
DTPA, Pentetic acid
$C_{14}H_{23}N_3O_{10}$
M 393,35 g/mol
mp 220-222 °C (dec.)
Solubility: 4,8 g/l ($H_2O$, 25 °C)
[67-43-6] • EC No. 200-652-8
WGK 2

**Warning** H319-H332-H361

**Type analysis:**

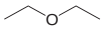
Appearance. .....white cryst. powder
Assay..... ≥99,0 %
Chloride (Cl). ..... ≤0,01 %
Nitrilotriacetic acid. ..... ≤0,5 %
Sulphate ($SO_4$). ..... ≤0,05 %
Heavy metals (as Pb)..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
pH value (saturated solution). ..... 2,1-2,5
Loss on drying. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **1407.1** | 100 g | plastic | 18,20 € |
| **1407.2** | 250 g | plastic | 31,75 € |
| **1407.3** | 500 g | plastic | 50,45 € |
| Original pack 6 x 500 g | | | 47,93/500 g |
| **1407.4** | 1 kg | plastic | 89,15 € |
| Original pack 6 x 1 kg | | | 84,69/1 kg |

## N,N-Diethylethane amine

▶ Triethylamine (TEA) see p. 2352

## Diethyl ether



Ether, Ethyl ether
$C_4H_{10}O$
M 74,12 g/mol
D 0,71 • bp 35 °C
mp -116,3 °C • flp -40 °C
Solubility: 69 g/l ($H_2O$, 20 °C)
[60-29-7] • EC No. 200-467-2
UN No. 1155 • ADR 3 I • WGK 1

**Danger**

H224-H302-H336-EUH019-EUH066

### Diethyl ether

**ROTISOLV® ≥99,8 %, Pestilyse®, stab.**

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC)..... ≥99,8 %
Water (KF)..... ≤0,1 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
GC/ECD (individual signal as lindane)..... ≤5 ng/l
GC/PND (individual signal as ethylparathion)..... ≤10 ng/l
Stabilized with approx. 1 % ethanol

| | | | |
|---|---|---|---|
| **T900.1** | 2,5 l | glass | 82,25 € |
| Original pack 4 x 2,5 l | | | 78,14/2,5 l |

### Diethyl ether

**ROTIDRY® Sept ≥99,5 % (≤50 ppm $H_2O$), stab.**

Dried; in a septum bottle.

**Guarantee analysis:**

Assay (GC)..... ≥99,5 %
Colour (APHA)..... ≤10
Water (KF)..... ≤0,005 %
Acidity (as $CH_3COOH$). ..... ≤0,001 %
Evaporation residue. ..... ≤0,001 %
Stabilized with approx. 10 ppm BHT

| | | | |
|---|---|---|---|
| **5177.1** | 250 ml | glass | 55,80 € |

### Diethyl ether

**ROTIDRY® ≥99,5 % (≤50 ppm $H_2O$), stab.**

Dried; for analysis and organic synthesis.

**Guarantee analysis:**

Assay (GC)..... ≥99,5 %
Colour (Hazen). ..... ≤10
Water (KF)..... ≤0,005 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,001 %
Stabilized with ~5 ppm BHT
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE04.1** | 1 l | glass | 45,05 € |
| Original pack 6 x 1 l | | | 42,80/1 l |

### Diethyl ether

**ROTIPURAN® ≥99,5 %, p.a., stab.**

**Guarantee analysis:**

Assay (GC). .....≥99,5 %
Density (20 °C).....0,714-0,716
Water (KF). .....≤0,1 %
Acetone (GC). .....≤0,01 %
Ethanol (GC). .....≤0,1 %
Methanol (GC). .....≤0,1 %
Acid content (as $CH_3COOH$).....≤0,01 %
Peroxides (as $H_2O_2$)..... none detected
Aluminium (Al).....≤0,00005 %
Barium (Ba). .....≤0,00001 %
Lead (Pb). .....≤0,000001 %
Cadmium (Cd). .....≤0,000005 %
Calcium (Ca). .....≤0,00005 %
Chromium (Cr). .....≤0,000002 %
Cobalt (Co). .....≤0,000002 %
Iron (Fe). .....≤0,000001 %
Copper (Cu). .....≤0,000001 %
Manganese (Mn).....≤0,000002 %
Nickel (Ni). .....≤0,00001 %
Zinc (Zn). .....≤0,000001 %
Tin (Sn). .....≤0,00001 %
Evaporation residue. .....≤0,002 %
Stabilized with ~5 ppm BHT

| | | | |
|---|---|---|---|
| **3942.1** | 1 l | glass | 44,65 € |
| Original pack 6 x 1 l | | | 42,42/1 l |
| **3942.6** | 2,5 l | glass | 78,40 € |
| Original pack 4 x 2,5 l | | | 74,48/2,5 l |
| **3942.4** | 5 l | aluminium | 149,45 € |
| Original pack 2 x 5 l | | | 141,98/5 l |
| **3942.5** | 25 l | tinplate | 439,70 € |

### Diethyl ether

**≥99,5 %, Ph.Eur., stab.**

**Guarantee analysis:**

Appearance. ..... clear, colourless
Assay (GC). .....≥99,5 %
Identity. .....complies
Density (d 20 °C/4 °C).....0,714- 0,716
Water . .....≤0,05 %
Evaporation residue. .....≤0,002 %
Acid react. substances.....complies
Destillation range. .....34,0-35,0 °C
Aldehydes. .....complies
Peroxides. ..... none detected
Foreign odour.....complies
Stabilized with ~5 ppm BHT

| | | | |
|---|---|---|---|
| **8810.1** | 1 l | glass | 35,40 € |
| Original pack 6 x 1 l | | | 33,63/1 l |
| **8810.5** | 2,5 l | glass | 64,40 € |
| Original pack 4 x 2,5 l | | | 61,18/2,5 l |
| **8810.2** | 5 l | aluminium | 127,95 € |
| Original pack 2 x 5 l | | | 121,55/5 l |
| **8810.4** | 25 l | tinplate | 375,20 € |

### Diethyl ether

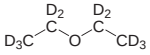
**≥99,5 %, for synthesis, stab.**

**Type analysis:**

Assay (GC). .....≥99,5 %
Density (20 °C).....0,714-0,716
Peroxides (as $H_2O_2$)..... none detected
Stabilized with ~5 ppm BHT

| | | | |
|---|---|---|---|
| **5920.2** | 1 l | glass | 32,80 € |
| Original pack 6 x 1 l | | | 31,16/1 l |
| **5920.3** | 5 l | aluminium | 115,60 € |
| Original pack 2 x 5 l | | | 109,82/5 l |
| **5920.4** | 25 l | tinplate | 332,20 € |

## Diethyl ether D10



### Diethyl ether D10

**99 Atom%D**

For nuclear magnetic resonance spectroscopy.
Ether D10, Ethyl ether D10
$C_4D_{10}O$
M 84,18 g/mol
D 0,8 • bp 35 °C
mp -116 °C • flp -45 °C
Storage temp.: +4 °C •
Transport temp.: room temp.
[2679-89-2] • EC No. 220-235-4
UN No. 1155 • ADR 3 I • WGK 1

**Danger**

H224-H302-H336-EUH019-EUH066

**Type analysis:**

Deuterising degree. ..... ≥99 %

| | | | |
|---|---|---|---|
| **9907.1** | 1 ml | glass ampoule | 118,15 € |

## Diethylketone

### Diethylketone

NEW

**≥99 %, for synthesis**

3-Pentanone, Dimethyl acetone, Propione
$C_5H_{10}O$
M 86,13 g/mol
D 0,81 • bp 101 °C
mp -39 °C • flp 7 °C
[96-22-0] • EC No. 202-490-3
UN No. 1156 • ADR 3 II • WGK 1

**Danger**

H225-H319-H335-H336-EUH066

**Type analysis:**

Assay (GC). ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **0262.1** | 500 ml | glass | 26,80 € |
| **0262.2** | 1 l | glass | 42,90 € |
| Original pack 6 x 1 l | | | 40,76/1 l |
| **0262.3** | 2,5 l | glass | 85,90 € |
| Original pack 4 x 2,5 l | | | 81,61/2,5 l |
| **0262.4** | 5 l | plastic | 149,45 € |
| Original pack 2 x 5 l | | | 141,98/5 l |

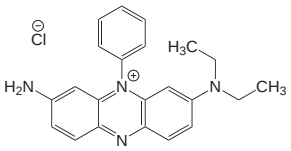
## Diethylmethane

▶ n-Pentane see p. 2135

## Diethyl pyrocarbonate

▶ DEPC see p. 1861

## Diethyl safranine (C.I. 50206)



### Diethyl safranine (C.I. 50206)

**for microscopy**

Methylene violet 3RAX
$C_{22}H_{23}ClN_4$
M 378,91 g/mol
mp ~285 °C
[4569-86-2]
WGK 3

**Type analysis:**

Appearance. ..... green cryst. powder
Appearance of solution (0,1 % in $H_2O$). ..... clear red
Absorption max. (in $H_2O$). ..... ≤557 nm

| | | | |
|---|---|---|---|
| **7654.1** | 1 g | glass | 12,05 € |
| **7654.2** | 5 g | glass | 24,20 € |
| **7654.3** | 10 g | glass | 36,45 € |

## Diferuloylmethane

▶ Curcumin see p. 1850

## Differential Reinforced Clostridial Medium

### Differential Reinforced Clostridial Medium

**for microbiology**

For enrichment and enumeration of clostridia in foods and other samples.
Application: Use 27,5 g for 1 l broth.

**DRCM**

Storage temp.: +20 °C
WGK 1

**Formulation:**

Casein peptone. ..... 5 g/l
Meat peptone. ..... 5 g/l
Beef extract. ..... 8 g/l
Yeast extract. ..... 1 g/l
Soluble starch. ..... 1 g/l
Glucose monohydrate. ..... 1 g/l
Cystein hydrochloride. ..... 0,5 g/l
Sodium acetate. ..... 5 g/l
Sodium bisulfite. ..... 0,5 g/l
Ammonium iron(III) citrate. ..... 0,5 g/l
Sodium resazurin. ..... 0,002 g/l
pH value. ..... 7,1 ±0,2

| | | | |
|---|---|---|---|
| **CL78.1** | 500 g | plastic | 112,90 € |
| Original pack 6 x 500 g | | | 107,26/500 g |

For further information, please see page 1384

## Digilanide

▶ Lanatoside C see p. 2027

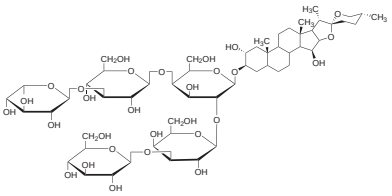
## Digitalin

▶ Digitoxin see p. 1875

## Digitoflavone

▶ Luteolin-7-glucoside see p. 2044

## Digitonin



$C_{56}H_{92}O_{29}$
M 1229,32 g/mol
mp ~250 °C
[11024-24-1] • EC No. 234-255-6
UN No. 2811 • ADR 6.1 III • WGK 3

**Danger** H301+H311+H331

### Digitonin

**ultra quality**

Water soluble quality, for biochemistry.
Non-ionic detergent.

**Guarantee analysis:**

Appearance. ..... white, cryst. powder
Solution (2,5 %, warm EtOH). ..... clear, colourless
Solubility (1 g dissolved in 20 ml $H_2O$ by heating up to 95-98 °C for 15 min, clear colorless). ..... complies
Specific rotation $[\alpha]_D^{20}$ ..... -48° ±2°
Sulphated ash. ..... ≤0,3 %
Loss on drying. ..... ≤6,0 %
Water (KF). ..... ≤6,0 %

| | | | |
|---|---|---|---|
| **HN76.3** | 100 mg | glass | 70,85 € |
| **HN76.1** | 250 mg | glass | 160,20 € |
| **HN76.2** | 1 g | glass | 461,20 € |

For further information, please see page 1271

### Digitonin

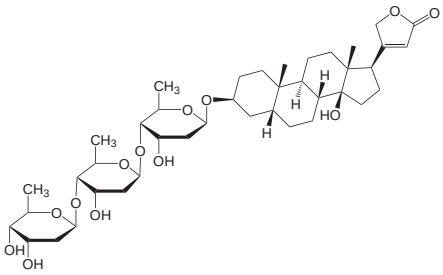
**for biochemistry**

**Guarantee analysis:**

Appearance. ..... white to yellowish powder
Appearance of solution (2,5 % EtOH). ..... clear, colourless to light yellowish
Solubility (2,5 %, warm EtOH). ..... complies
Specific rotation $[\alpha]_D^{20}$ ..... -48° ±3°
Ash content. ..... ≤0,3 %
Loss on drying. ..... ≤6 %

| | | | |
|---|---|---|---|
| **4005.1** | 100 mg | glass | 42,50 € |
| **4005.2** | 500 mg | glass | 142,45 € |
| **4005.3** | 1 g | glass | 256,95 € |
| **4005.4** | 5 g | glass | 987,95 € |

## Digitoxin

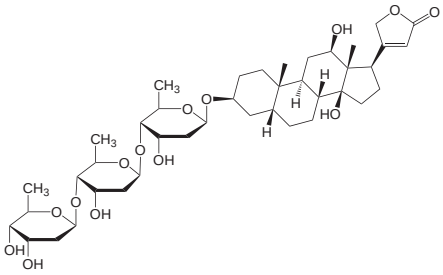


### Digitoxin
**ROTICHROM® ~CHR**
Digitalin
$C_{41}H_{64}O_{13}$
M 764,96 g/mol
mp 256-257 °C
Solubility: 10 mg/l ($H_2O$, 20 °C)
[71-63-6] • EC No. 200-760-5
UN No. 2811 • ADR 6.1 I • WGK 3
**Danger** H301+H331-H373

| | | | |
|---|---|---|---|
| **7359.1** | 50 mg | glass | 38,20 € |

## Diglycine
▶ Glycylglycine see p. 1963

## Digoxin



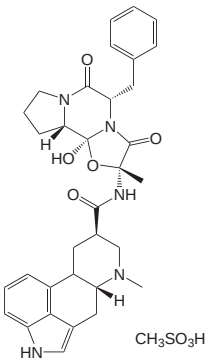
### Digoxin
**ROTICHROM® ~CHR**
Lanoxin
$C_{41}H_{64}O_{14}$
M 780,96 g/mol
mp 260-265 °C
Solubility: 65 mg/l ($H_2O$, 25 °C)
[20830-75-5] • EC No. 244-068-1
UN No. 2811 • ADR 6.1 I • WGK 3
**Danger** H300+H330-H400-H319

| | | | |
|---|---|---|---|
| **7323.1** | 50 mg | glass | 70,45 € |

## Diholmium trioxide
▶ Holmium(III) oxide see p. 1982

## Dihydrocholesterol
▶ 5-α-Cholestan-3β-ol see p. 1830

## Dihydroergotamine methane sulphonate

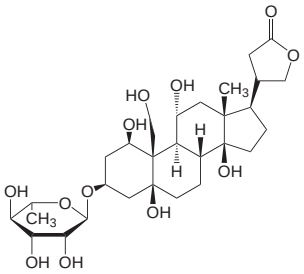


### Dihydroergotamine methane sulphonate
**≥98 %, for biochemistry**
$C_{33}H_{37}N_5O_5 \cdot CH_3SO_3H$
M 679,8 g/mol
mp 232 °C
[6190-39-2] • EC No. 228-235-6
WGK 1
**Warning** H312+H332

**Type analysis:**
Appearance..... cryst. powder
Assay (dry substance)..... 98,0-101,0 %
pH value (0,1 % in $H_2O$)..... 4,5-5,4
Specific rotation $[\alpha]_D^{20}$ (1 % in pyridine)..... -47° to -42°
Related substances..... complies
Loss on drying (5 h, 100-105 °C)..... ≤4,0 %

| | | | |
|---|---|---|---|
| **6948.1** | 100 mg | glass | 24,20 € |

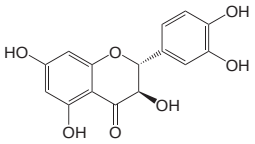
## Dihydroouabain



### Dihydroouabain
**ROTICHROM® ~CHR**
$C_{29}H_{46}O_{12}$
M 586,67 g/mol
[1183-35-3] • EC No. 214-663-0
UN No. 2811 • ADR 6.1 II
**Danger** H300+H330-H373

| | | | |
|---|---|---|---|
| **7197.1** | 50 mg | glass | 149,45 € |

## (+)-Dihydroquercetin



(+)-Taxifolin, Distylin
$C_{15}H_{12}O_7$
M 304,25 g/mol
mp 228-230 °C
[480-18-2] • EC No. 207-543-4
WGK 1

### (+)-Dihydroquercetin
**ROTI®STAR Primary Standard**
Storage temp.: -20 °C
Transport temp.: cooled

**Type analysis:**
Assay (HPLC). .....≥90,0 %
Residual solvents (GC). .....≤7,0 %
Water (KF). .....≤7,0 %
Assay (qNMR). .....≥85,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE55.1** | 10 mg | glass | 848,20 € |

### (+)-Dihydroquercetin
**ROTICHROM® Working Standard**
Storage temp.: -20 °C
Transport temp.: cooled

**Type analysis:**
Assay (HPLC). .....≥85,0 %
Identity. .....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC55.1** | 50 mg | glass | 392,40 € |

### (+)-Dihydroquercetin
**with analytical records**
From *Pseudozuga menziesii*.
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC). .....>99 %
Analytical records: HPLC, TLC, $^1$H- NMR, $^{13}$C- NMR, UV, IR, MS, melting point.

| | | | |
|---|---|---|---|
| **T893.1** | 20 mg | glass | 370,90 € |

### (+)-Dihydroquercetin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Pseudozuga menziesii*.
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC). .....>99 %

| | | | |
|---|---|---|---|
| **4464.1** | 20 mg | glass | 256,95 € |
| **4464.2** | 50 mg | glass | 482,70 € |

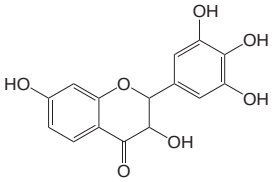
## (+)-Dihydroquercetin

**ROTICHROM® ~CHR**

Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **5797.2** | 100 mg | plastic | 213,95 € |

## Dihydrorobinetin



### Dihydrorobinetin

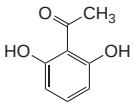
**ROTICHROM® ~CHR**

$C_{15}H_{12}O_7$
M 304,26 g/mol
mp ~225 °C
[4382-33-6] • EC No. 224-486-0
WGK 1

**Warning** H302

| | | | |
|---|---|---|---|
| **6960.1** | 100 mg | glass | 64,40 € |

## 2,6-Dihydroxyacetophenone



### 2,6-Dihydroxyacetophenone

**≥98 %**

2-Acetylresorcinol, 2-Acetyl-1,3-dihydroxybenzene
$C_8H_8O_3$
M 152,15 g/mol
mp 155-159 °C
Solubility: 10 g/l ($H_2O$, 20 °C)
[699-83-2] • EC No. 211-833-6
WGK 1

**Warning** H302+H312+H332

**Type analysis:**

Assay (GC).....≥98,0 %
Solution (1 % in ethanol).....yellowish, clear
Melting point.....155-159 °C
Sulphated ash.....≤0,5 %

| | | | |
|---|---|---|---|
| **5426.1** | 5 g | plastic | 19,25 € |
| **5426.2** | 10 g | plastic | 30,00 € |

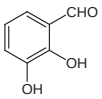
## 1,2-Dihydroxyantraquinone

▶ Alizarin (C.I. 58000) see p. 1716

## 2,2'-Dihydroxy-1,1'-azo-naphthalene-3',4,6'-trisulfonic acid disodium salt

▶ Hydroxy naphthol blue disodium salt see p. 1995

## 2,3-Dihydroxybenzaldehyde



### 2,3-Dihydroxybenzaldehyde

**≥98 %**

$C_7H_6O_3$
M 138,12 g/mol
bp 235 °C
mp 104-106 °C
[24677-78-9] • EC No. 246-398-1

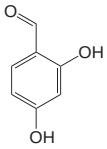
**Warning** H315-H319-H335

**Type analysis:**

Assay.....≥98,0 %

| | | | |
|---|---|---|---|
| **7274.1** | 1 g | glass | 15,60 € |
| **7274.2** | 5 g | glass | 28,95 € |
| **7274.3** | 25 g | glass | 93,00 € |

## 2,4-Dihydroxy benzaldehyde



### 2,4-Dihydroxy benzaldehyde

**≥98 %, for synthesis**

ß-Resorcylaldehyde
$C_7H_6O_3$
M 138,12 g/mol
mp 135-140 °C
[95-01-2] • EC No. 202-383-1
WGK 1

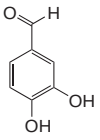
**Warning** H302-H315-H319-H335

**Type analysis:**

Appearance.....off-white to light red powder
Assay (HPLC).....≥98,0 %

| | | | |
|---|---|---|---|
| **4039.1** | 25 g | glass | 37,10 € |
| **4039.2** | 100 g | glass | 110,65 € |
| **4039.3** | 250 g | glass | 223,10 € |

## 3,4-Dihydroxybenzaldehyde



### 3,4-Dihydroxybenzaldehyde

**≥98 %**

Protocatechualdehyde, 4-Formyl-1,2-dihydroxybenzene
$C_7H_6O_3$
M 138,12 g/mol
mp 153-155 °C
Solubility: 6,3 g/l ($H_2O$, 25 °C)
Storage temp.: +4 °C
[139-85-5] • EC No. 205-377-7
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (titr.).....≥98,0 %
Loss on drying.....≤1,0 %

| | | | |
|---|---|---|---|
| **5424.1** | 5 g | plastic | 16,35 € |
| **5424.2** | 25 g | plastic | 38,20 € |
| **5424.3** | 100 g | plastic | 104,85 € |

## 1,2-Dihydroxybenzene

▶ Pyrocatechol see p. 2186

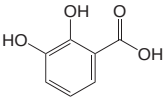
## 1,3-Dihydroxybenzene

▶ Resorcinol see p. 2196

## 1,4-Dihydroxybenzene

▶ Hydroquinone see p. 1992

## 2,3-Dihydroxybenzoic acid



### 2,3-Dihydroxybenzoic acid

**≥98 %**

$C_7H_6O_4$
M 154,12 g/mol
mp 206 °C
Solubility: 20 g/l ($H_2O$, 20 °C)
[303-38-8] • EC No. 206-139-5

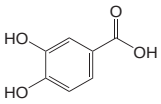
**Warning** H315-H319-H335

**Type analysis:**

Assay.....≥98,0 %

| | | | |
|---|---|---|---|
| **6057.1** | 5 g | plastic | 27,85 € |

## 3,4-Dihydroxybenzoic acid



Protocatechuic acid
$C_7H_6O_4$
M 154,12 g/mol
mp ~200 °C
[99-50-3] • EC No. 202-760-0
WGK 1

**Warning** H315-H319-H335

### 3,4-Dihydroxybenzoic acid
**≥97 %**

**Type analysis:**
Appearance. ..... light-brown, fine crystals
Assay (titr.). ..... ≥97 %

| | | | |
|---|---|---|---|
| **8274.1** | 10 g | glass | 44,65 € |

### 3,4-Dihydroxybenzoic acid
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤3,0 %
Water (KF). ..... ≤7,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE52.1** | 50 mg | glass | 568,70 € |

### 3,4-Dihydroxybenzoic acid
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC). ..... ≥90,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC52.1** | 100 mg | glass | 132,15 € |

## 3α,7α-Dihydroxy-5β-cholanic acid
▶ Chenodeoxycholic acid see p. 1825

## 3,4-Dihydroxycinnamic acid
▶ Caffeic acid see p. 1801

## 6,7-Dihydroxycoumarin
▶ Esculetin see p. 1909

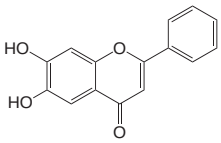
## 7,8-Dihydroxycoumarin
▶ Daphnetin see p. 1856

## 6,7-Dihydroxycoumarin-6-glycoside
▶ Esculin sesquihydrate see p. 1909

## 2,2'-Dihydroxydiethyl amine
▶ Diethanolamine see p. 1871

## 5,7-Dihydroxyflavone
▶ Chrysin see p. 1833

## 6,7-Dihydroxyflavone



### 6,7-Dihydroxyflavone
**ROTICHROM® ~CHR**
$C_{15}H_{10}O_4$
M 254,22 g/mol
[38183-04-9]

**Warning** H302

| | | | |
|---|---|---|---|
| **8066.1** | 10 mg | glass | 332,20 € |

## 1,7-Dihydroxyginkgolide A
▶ Ginkgolide C see p. 1951

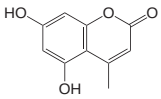
## 1,7-Dihydroxyheptane
▶ 1,7-Heptanediol see p. 1974

## 2,2-Dihydroxy-1,3-indanedione
▶ Ninhydrin see p. 2095

## 5,7-Dihydroxy-4'-methoxyflavone
▶ Acacetin see p. 1690

## 1,8-Dihydroxy-3-methoxy-6-methylanthraquinone
▶ Physcion see p. 2153

## 5,7-Dihydroxy-4-methylcoumarin Monohydrate



### 5,7-Dihydroxy-4-methylcoumarin Monohydrate
**≥97 %**
$C_{10}H_8O_4 \cdot H_2O$
M 210,18 g/mol
mp ~295 °C
[2107-76-8] • EC No. 218-289-9

**Warning** H315-H319-H335

**Type analysis:**
Assay. ..... ≥97 %
Melting point. ..... ≥280 °C
Water. ..... 8,1-9,1 %

| | | | |
|---|---|---|---|
| **6063.1** | 100 mg | glass | 39,25 € |

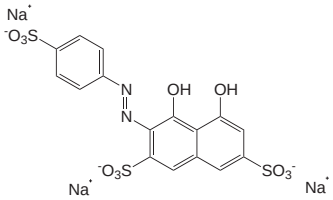
## 4,5-Dihydroxy-2,7-naphthalene disulphonic acid sodium salt
▶ Chromotropic acid disodium salt dihydrate see p. 1833

## 3,4-Dihydroxyphenylethanol
▶ Hydroxytyrosol see p. 1997

## 12,18-Dihydroxysenecionan-11,16-dion
▶ Retrorsine see p. 2196

## 12,18-Dihydroxysenecionan-11,16-dione-4-oxide
▶ Retrorsine-N-oxide see p. 2197

## 1,8-Dihydroxy-2-(4-sulfophenylazo)-naphthalene-3,6-disulfonic acid trisodium salt



### 1,8-Dihydroxy-2-(4-sulfophenylazo)-naphthalene-3,6-disulfonic acid trisodium salt
**p.a., ACS**
Reagent for fluoride
SPADNS
$C_{16}H_9N_2Na_3O_{11}S_3$
M 570,42 g/mol
Solubility: 220 g/l ($H_2O$, 22 °C)
[23647-14-5] • EC No. 245-803-9
WGK 1

**Guarantee analysis:**
Assay. ..... ≥80,0 %
Appearance of solution. ..... complies
Loss on drying. ..... ≤10 %
Suitability as reagent for fluoride. ..... complies

| | | | |
|---|---|---|---|
| **2605.1** | 10 g | glass | 25,70 € |
| **2605.2** | 25 g | glass | 45,05 € |

## 2,5-Dihydroxytoluene
▶ Toluhydroquinone see p. 2348

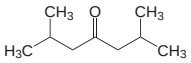
## 3,5-Dihydroxy-1,2,4-triazine
▶ 6-Azauracil see p. 1756

## 3',5-Dihydroxy-4',6,7-trimethoxyflavone
▶ Eupatorin see p. 1922

## Diiodine pentoxide

▶ Iodine(V) oxide see p. 2006

## Diisobutyl ketone



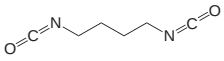
### Diisobutyl ketone

**≥94 %, pure**
2,6-Dimethyl-4-heptanone, DIBK
$C_9H_{18}O$
M 142,24 g/mol
D 0,81 • bp 169 °C
mp -46 °C • flp 49 °C
Solubility: 0,5 g/l (20 °C, $H_2O$)
[108-83-8] • EC No. 203-620-1
UN No. 1157 • ADR 3 III • WGK 1
**Warning** H226-H335

**Type analysis:**
Assay.....≥94,0 %
Colour (Hazen).....≤30
Density (20 °C).....0,804-0,813

| | | | |
|---|---|---|---|
| **7653.1** | 100 ml | glass | 11,50 € |
| **7653.2** | 500 ml | glass | 19,60 € |
| **7653.3** | 1 l | glass | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **7653.4** | 2,5 l | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |

## 1,4-Diisocyanatobutane



### 1,4-Diisocyanato-butane

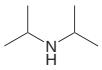
NEW

**≥99 %, for synthesis**
BDI, 1,4-Butane diisocyanate, Tetramethylene diisocyanate
$C_6H_8N_2O_2$
M 140,14 g/mol
D 1,11 • bp 220 °C
mp 27 °C • flp 106 °C
[4538-37-8]
WGK 1
**Danger** H302+H312+H332-H315-H317-H319-H334-H335

**Type analysis:**
Assay.....≥99,0 %

| | | | |
|---|---|---|---|
| **0660.1** | 1 g | glass | 32,15 € |
| **0660.2** | 5 g | glass | 106,45 € |
| **0660.3** | 10 g | glass | 181,70 € |

## Diisopropylamine



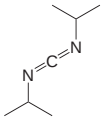
### Diisopropylamine

**≥99,5 %, for synthesis**
$C_6H_{15}N$
M 101,19 g/mol
D ~0,717 • bp 84 °C
mp -96 °C • flp -17 °C
[108-18-9] • EC No. 203-558-5
UN No. 1158 • ADR 3 (8) II • WGK 2
**Danger**
H225-H302-H314-H331-H335

**Type analysis:**
Assay (GC).....≥99,5 %
Water.....≤0,1 %

| | | | |
|---|---|---|---|
| **4369.1** | 100 ml | glass | 13,15 € |
| **4369.2** | 500 ml | glass | 25,70 € |
| **4369.3** | 1 l | glass | 40,75 € |
| Original pack 6 x 1 l | | | 38,71/1 l |

## *N,N'*-Diisopropylcarbodiimide (DIC)



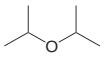
### *N,N'*-Diisopropylcarbodiimide (DIC)

**≥99 %**
Activation agent for carboxylic acids.
Coupling reagent for peptide synthesis.
DIC
$C_7H_{14}N_2$
M 126,2 g/mol
D 0,81 • bp 145-148 °C
[693-13-0] • EC No. 211-743-7
UN No. 2929 • ADR 6.1 (3) I • WGK 3
**Danger**
H226-H330-H318-H334-H317

**Type analysis:**
Appearance.....clear to yellowish liquid
Identity (IR).....complies
Assay (GC).....≥99 %
Refractive index (20 °C).....1,431-1,435

| | | | |
|---|---|---|---|
| **6981.1** | 5 ml | glass | 19,90 € |
| **6981.2** | 25 ml | glass | 53,65 € |
| **6981.3** | 100 ml | glass | 149,45 € |
| **6981.4** | 500 ml | glass | 525,70 € |

## Diisopropyl ether



Isopropyl ether, IPE
$C_6H_{14}O$
M 102,18 g/mol
D 0,72 • bp 67-70 °C
mp -86 °C • flp -28 °C
Solubility: 12 g/l ($H_2O$, 20 °C)
[108-20-3] • EC No. 203-560-6
UN No. 1159 • ADR 3 II • WGK 1
**Danger** H225-H336-EUH066-EUH019

### Diisopropyl ether

**ROTIPURAN® ≥99 %, p.a., stab.**

**Guarantee analysis:**
Assay (GC).....≥99,0 %
Density (d 20 °C/4 °C).....0,723-0,726
Water (KF).....≤0,1 %
Peroxide ($H_2O_2$, at the time of analysis).....≤0,001 %
Evaporation residue.....≤0,001 %
Lead (Pb).....≤0,00001 %
Cadmium (Cd).....≤0,000005 %
Calcium (Ca).....≤0,00005 %
Chromium (Cr).....≤0,000002 %
Iron (Fe).....≤0,00001 %
Cobalt (Co).....≤0,000002 %
Copper (Cu).....≤0,000002 %
Magnesium (Mg).....≤0,00001 %
Manganese (Mn).....≤0,000002 %
Nickel (Ni).....≤0,000002 %
Zinc (Zn).....≤0,00001 %
Stabilized with 50 ppm BHT

| | | | |
|---|---|---|---|
| **T919.1** | 1 l | glass | 37,55 € |
| Original pack 6 x 1 l | | | 35,67/1 l |
| **T919.2** | 2,5 l | glass | 78,40 € |
| Original pack 4 x 2,5 l | | | 74,48/2,5 l |
| **T919.4** | 5 l | aluminium | 138,70 € |
| Original pack 2 x 5 l | | | 131,77/5 l |
| **T919.3** | 10 l | tinplate | 256,95 € |

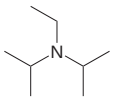
### Diisopropyl ether

**≥98 %, for synthesis, stab.**

**Type analysis:**
Assay (GC).....≥98,0 %
Density (20 °C).....0,724-0,726
Refractive index (20 °C).....1,3670-1,3690
Stabilized with 10 ppm Ionol

| | | | |
|---|---|---|---|
| **T899.1** | 1 l | glass | 20,35 € |
| Original pack 6 x 1 l | | | 19,33/1 l |
| **T899.2** | 2,5 l | glass | 35,40 € |
| Original pack 4 x 2,5 l | | | 33,63/2,5 l |
| **T899.4** | 5 l | aluminium | 62,25 € |
| Original pack 2 x 5 l | | | 59,14/5 l |
| **T899.3** | 10 l | tinplate | 109,55 € |
| **T899.5** | 25 l | tinplate | 224,70 € |

## N,N-Diisopropylethylamine (DIPEA)



DIPEA, Hunig's base, N-Ethyldiisopropylamine
$C_8H_{19}N$
M 129,3 g/mol
D 0,742 • bp 125 °C
mp -46 °C • flp 9,5 °C
Solubility: 3,9 g/l ($H_2O$, 20 °C)
[7087-68-5] • EC No. 230-392-0
UN No. 1992 • ADR 3 (6.1) II • WGK 2

**Danger**
H225-H331-H318-H302-H315-H335

### N,N-Diisopropylethylamine (DIPEA)

**≥99,5 %, for (peptide) synthesis**

**Type analysis:**
Appearance. .....colourless to yellowish, clear liquid
Assay (GC). .....≥99,5 %
Water. .....≤0,2 %

| | | | |
|---|---|---|---|
| **2474.1** | 100 ml | glass | 23,15 € |
| **2474.2** | 250 ml | glass | 41,85 € |
| **2474.3** | 1 l | glass | 139,65 € |
| Original pack 6 x 1 l | | | 132,67/1 l |
| **2474.4** | 2,5 l | glass | 284,90 € |
| Original pack 4 x 2,5 l | | | 270,66/2,5 l |

### N,N-Diisopropylethylamine (DIPEA)

**≥99 %, for synthesis**

**Type analysis:**
Assay. .....≥99,0 %
Water. .....≤0,3 %
Colour (APHA). .....≤50

| | | | |
|---|---|---|---|
| **4105.1** | 100 ml | glass | 16,05 € |
| **4105.2** | 250 ml | glass | 26,35 € |
| **4105.3** | 1 l | glass | 74,75 € |
| Original pack 6 x 1 l | | | 71,01/1 l |
| **4105.4** | 2,5 l | glass | 149,45 € |
| Original pack 4 x 2,5 l | | | 141,98/2,5 l |

## 2,5-Diketopiperazine

▶ Glycine anhydride see p. 1962

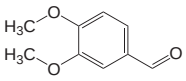
## Dilanthanum trioxide

▶ Lanthanum(III) oxide see p. 2029

## Dimercury dichloride

▶ Mercury(I) chloride see p. 2064

## 3,4-Dimethoxybenzaldehyde



### 3,4-Dimethoxybenzaldehyde

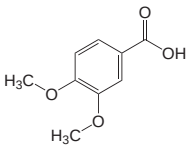
**≥99 %, for synthesis**
Veratric aldehyde
$C_9H_{10}O_3$
M 166,18 g/mol
bp 281 °C
mp 41-44 °C
Solubility: 6,3 g/l ($H_2O$, 25 °C)
[120-14-9] • EC No. 204-373-2
WGK 1

**Warning** H302-H315-H319-H335

**Type analysis:**
Assay (GC). ..... ≥99 %
Melting point. ..... 42-45 °C
Water. ..... ≤0,5 %
Heavy metals. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **9651.1** | 100 g | plastic | 45,05 € |
| **9651.2** | 500 g | plastic | 192,45 € |
| Original pack 6 x 500 g | | | 182,83/500 g |

## 3,4-Dimethoxybenzoic acid



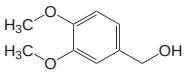
### 3,4-Dimethoxybenzoic acid

**≥99 %, for synthesis**
Veratric acid
$C_9H_{10}O_4$
M 182,18 g/mol
mp 179-182 °C
[93-07-2] • EC No. 202-215-7
WGK 3

**Type analysis:**
Appearance. ..... white to pale yellow cryst. powder
Assay (titr.). ..... 99,0-101,0 %

| | | | |
|---|---|---|---|
| **4230.1** | 100 g | plastic | 41,85 € |
| **4230.2** | 250 g | plastic | 92,35 € |
| **4230.3** | 1 kg | plastic | 342,95 € |
| Original pack 6 x 1 kg | | | 325,80/1 kg |

## 3,4-Dimethoxybenzyl alcohol



### 3,4-Dimethoxybenzyl alcohol

**≥95 %, for synthesis**
Veratryl alcohol
$C_9H_{12}O_3$
M 168,19 g/mol
mp 19 °C • flp 113 °C
[93-03-8] • EC No. 202-212-0
WGK 1

**Warning** H302

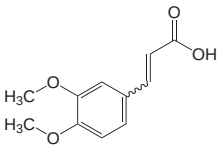
**Type analysis:**
Appearance.light yellow-brownish, clear, viscous liquid
Assay (GC). .....≥95 %
Refractive index $n_D^{20}$. .....1,549-1,555

| | | | |
|---|---|---|---|
| **6170.1** | 50 ml | glass | 44,65 € |

## 3,3'-(3,3'-Dimethoxy-[1,1'-biphenyl]-4,4'-diyl)-bis(2,5-diphenyl-2H-tetrazolium) dichloride

▶ Tetrazolium blue chloride see p. 2338

## 3,4-Dimethoxy cinnamic acid



### 3,4-Dimethoxy cinnamic acid

**ROTICHROM® CHR**
Dimethyl caffeic acid
$C_{11}H_{12}O_4$
M 208,21 g/mol
mp 185-188 °C
[2316-26-9] • EC No. 219-025-5
WGK 1

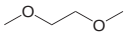
**Warning** H315-H319-H335

| | | | |
|---|---|---|---|
| **9918.1** | 5 g | glass | 22,50 € |

## 6,7-Dimethoxycoumarin

▶ Scoparone see p. 2243

## 1,2-Dimethoxyethane



### 1,2-Dimethoxyethane

**>99 %, for synthesis**

Ethylene glycol dimethyl ether, Monoglyme

$C_4H_{10}O_2$

M 90,12 g/mol

D 0,86 • bp 84-86 °C

mp -69 °C • flp -6 °C

[110-71-4] • EC No. 203-794-9

UN No. 2252 • ADR 3 II • WGK 1

**Danger**

H225-H360FD-H332-EUH019

**Type analysis:**

Assay (GC). ..... >99 %
Water (KF). ..... <0,2 %
Density (d 20 °C/4 °C). ..... 0,866-0,868

| | | | |
|---|---|---|---|
| **5498.2** | 100 ml | glass | 21,40 € |
| **5498.1** | 500 ml | glass | 66,15 € |

## 3,5-Dimethoxy-4-hydroxy-cinnamic acid

▶ Sinapic acid see p. 2264

## 3,5-Dimethoxy-4-hydroxy-acetophenone

▶ Acetosyringone see p. 1701

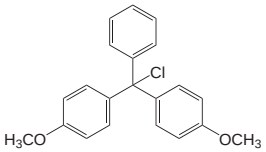
## 4-(2',4'-Dimethoxyphenyl-Fmoc-aminomethyl)phenoxy resin

▶ Rink amide resin see p. 2201

## Dimethoxypsoralen

▶ Isopimpinellin see p. 2016

## 4,4'-Dimethoxytrityl chloride (DMT-Cl)




### 4,4'-Dimethoxytrityl chloride (DMT-Cl)

**≥98 %, for synthesis**

Protective group reagent

4,4'-Dimethoxytriphenylmethyl chloride, Chloro-4,4'-dimethoxytriphenylmethane, DMT-Cl

$C_{21}H_{19}ClO_2$

M 338,83 g/mol

mp 120-127 °C

[40615-36-9] • EC No. 255-002-6

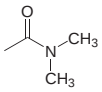
WGK 1

**Type analysis:**

Appearance. ..... light pink coloured powder
Assay (HPLC). ..... ≥98,0 %
Loss on drying. ..... ≤0,5 %
Melting range. ..... 120,0-127,0 °C

| | | | |
|---|---|---|---|
| **9671.1** | 5 g | glass | 23,15 € |
| **9671.2** | 25 g | glass | 69,80 € |
| **9671.3** | 50 g | glass | 115,60 € |
| **9671.4** | 100 g | glass | 181,70 € |

## N,N-Dimethylacetamide (DMA)




DMA, Acetic acid dimethylamide

$C_4H_9NO$

M 87,12 g/mol

D ~0,94 • bp 165 °C

mp -20 °C • flp 66 °C

[127-19-5] • EC No. 204-826-4

WGK 1

**Danger** H360D-H312+H332-H319

### N,N-Dimethylacetamide (DMA)

**ROTISOLV® ≥99,99 %, Headspace Grade**

For determination of solvent residues (O.V.I.).

**Guarantee analysis:**

Assay (GC). ..... ≥99,99 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,03 %
Free acid (as $CH_3COOH$). ..... ≤0,005 %
Refractive index (20 °C). ..... 1,437-1,439
Non volatile matter. ..... ≤0,001 %
UV-Cutoff. ..... 190-268 nm
Transmission:
400 nm. ..... ≥99 %
350 nm. ..... ≥98 %
300 nm. ..... ≥85 %
275 nm. ..... ≥55 %
268 nm. ..... ≥10 %
Headspace suitability test for O.V.I. ..... complies

| | | | |
|---|---|---|---|
| **HN45.1** | 1 l | glass | 244,60 € |
| Original pack 6 x 1 l | | | 232,37/1 l |

### N,N-Dimethylacetamide (DMA)

**≥99 %, for synthesis**

**Type analysis:**

Assay (GC). ..... ≥99,0 %
Water ..... ≤0,05 %
Colour (APHA). ..... ≤10
Acid content (as $CH_3COOH$). ..... ≤0,008 %

| | | | |
|---|---|---|---|
| **3617.1** | 250 ml | glass | 12,40 € |
| **3617.2** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **3617.3** | 2,5 l | glass | 50,00 € |
| Original pack 4 x 2,5 l | | | 47,50/2,5 l |
| **3617.4** | 10 l | plastic | 119,90 € |
| **3617.5** | 25 l | plastic | 252,65 € |

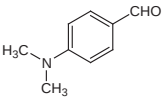
## Dimethyl acetone

▶ Diethylketone see p. 1874

## 4-(Dimethylamino)-azobenzene-4'-sulphonic acid sodium salt

▶ Methyl orange (C.I. 13025) see p. 2076

## 4-(Dimethylamino)-benzaldehyde




### 4-(Dimethylamino)-benzaldehyde

**≥98 %, p.a., ACS**

Reagent for the detection of nitrogen containing compounds.

p-Formyl dimethylamine, Ehrlich's reagent

$C_9H_{11}NO$

D ~1,03 • bp 176-177 °C (23 hPa)

mp 75 °C • flp >100 °C

[100-10-7] • EC No. 202-819-0

WGK 1

**Guarantee analysis:**

Assay (GC). ..... ≥98,0 %
Solubility (in ethanol). ..... complies
Color in ethanol. ..... ≤60 Hazen
Solubility in HCl. ..... complies
Color of the solution in HCl. ..... complies
Melting point. ..... 73-75 °C
Ash content (as $SO_4$). ..... ≤0,1 %
Calcium (Ca). ..... ≤0,005 %
Cadmium (Cd). ..... ≤0,0005 %
Cobalt (Co). ..... ≤0,0005 %
Chromium (Cr). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,01 %
Potassium (K). ..... ≤0,005 %
Manganese (Mn). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,05 %
Nickel (Ni). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **X867.1** | 25 g | plastic | 43,55 € |
| **X867.2** | 100 g | plastic | 109,55 € |

For further information, please see page 1632

## 4-(Dimethylamino) benzaldehyde spray solution

### 4-(Dimethylamino) benzaldehyde spray solution

**for TLC**

Ready-to-use spray solution for detection of terpenes, sugars and steroids.

0,5 g 4-(Dimethylamino)-benzaldehyde dissolved in 100 ml 2-propanol.

UN No. 1219 • ADR 3 II • WGK 2

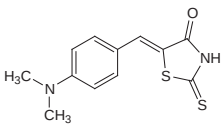
**Danger** H225-H319-H336

**Type analysis:**

TLC-application. ..... complies

| | | | |
|---|---|---|---|
| **CP38.1** | 100 ml | glass | 37,50 € |

## 5-(4-Dimethylamino-benzylidene)rhodanine



### 5-(4-Dimethylamino-benzylidene)rhodanine

**p.a.**

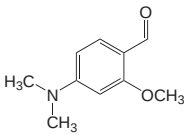
Analytical reagent for silver.
$C_{12}H_{12}N_2OS_2$
M 264,37 g/mol
mp 275-280 °C (dec.)
[536-17-4] • EC No. 208-625-2
WGK 3

**Guarantee analysis:**

Insoluble matter in acetone. ..... complies
Suitability for determination of silver. ..... complies
Sensitivity for silver. ..... 1:1000000

| | | | |
|---|---|---|---|
| **KK23.1** | 5 g | glass | 25,30 € |
| **KK23.2** | 10 g | glass | 39,70 € |
| **KK23.3** | 50 g | glass | 155,90 € |

## 4-Dimethylamino-2-methoxybenzaldehyde



### 4-Dimethylamino-2-methoxybenzaldehyde

**≥98 %, for biochemistry**

$C_{10}H_{13}NO_2$
M 179,22 g/mol
mp 59-61 °C
Storage temp.: +4 °C
[84562-48-1]
WGK 3

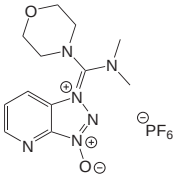
**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... white to light yellow cryst. powder
Assay (GC). ..... ≥98,0 %
Appearance of solution (1 % in Acetone). ..... colourless to almost colourless

| | | | |
|---|---|---|---|
| **8412.1** | 1 g | glass | 41,85 € |
| **8412.2** | 5 g | glass | 170,95 € |

## 1-[(Dimethylamino)(morpholino)methylene]-1H-[1,2,3]triazolo[4,5-b]pyridine-1-ium 3-oxide hexafluorophosphate (HDMA)



### 1-[(Dimethylamino)(morpholino)methylene]-1H-[1,2,3]triazolo[4,5-b]pyridine-1-ium 3-oxide hexafluorophosphate (HDMA)

**≥98 %**

Coupling reagent for peptide synthesis.
HDMA
$C_{12}H_{17}F_6N_6O_2P$
M 422,3 g/mol
mp 185-195 °C
Storage temp.: +4 °C
[958029-37-3]
WGK 3

**Warning**

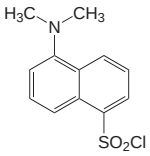
H302+H312+H332-H315-H319-H335

**Type analysis:**

Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6888.1** | 5 g | glass | 41,85 € |
| **6888.2** | 25 g | glass | 134,40 € |
| **6888.3** | 100 g | glass | 439,70 € |

## 5-(Dimethylamino)-1-naphthalenesulphonyl chloride



### 5-(Dimethylamino)-1-naphthalenesulphonyl chloride

**≥98 %, p.a.**

Dansyl chloride, DIS, DNSCl
$C_{12}H_{12}ClNO_2S$
M 269,75 g/mol
mp 68-73 °C
Storage temp.: +4 °C
[605-65-2] • EC No. 210-092-6
UN No. 3261 • ADR 8 II • WGK 1

**Danger** H290-H314

**Type analysis:**

Assay (HPLC). ..... ≥98,0 %
Melting point. ..... 68-73 °C

| | | | |
|---|---|---|---|
| **3624.1** | 1 g | glass | 70,45 € |

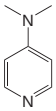
## 2-[(4-Dimethylamino)-phenylazo]-benzoeic acid

- Methyl red (C.I. 13020) see p. 2078
- Methyl red hydrochloride (C.I. 13020) see p. 2078
- Methyl red sodium salt (C.I. 13020) see p. 2078

## N-(3-Dimethylaminopropyl)-N'-ethylcarbodiimide hydrochloride

- 1-Ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride (EDC-HCl) see p. 1915

## 4-(Dimethylamino)pyridine (DMAP)



### 4-(Dimethylamino)pyridine (DMAP)

**≥99 %**

Nucleophilic catalyst.
Activation agent for carboxylic acids.
DMAP
$C_7H_{10}N_2$
M 122,17 g/mol
mp 108-112 °C • flp 124 °C
Solubility: 60 g/l ($H_2O$, 20 °C)
[1122-58-3] • EC No. 214-353-5
UN No. 2811 • ADR 6.1 I • WGK 3

**Danger** H301-H310-H315-H319

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (GC). ..... ≥99 %
Identity. ..... complies
Water (KF). ..... ≤0,1 %
Solution (10 % in methanol). ... clear, colorless solution
Lead (Pb). ..... ≤0,00001 %
Iron (Fe). ..... ≤0,00001 %
Magnesium (Mg). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **6988.1** | 5 g | glass | 13,15 € |
| **6988.2** | 25 g | glass | 27,45 € |
| **6988.3** | 100 g | glass | 82,70 € |
| **6988.4** | 500 g | glass | 289,20 € |
| Original pack 6 x 500 g | | | 274,74/500 g |

## Dimethyl benzene

- Xylene (isomers) see p. 2380

## 1,2-Dimethyl benzene

- o-Xylene see p. 2381

## 1,3-Dimethyl benzene

- m-Xylene see p. 2381

## 1,4-Dimethyl benzene

- p-Xylene see p. 2381

## N,N'-Dimethyl-9,9'-biacridinium dinitrate

▶ Lucigenin see p. 2043

## Dimethyl caffeic acid

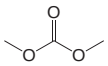
▶ 3,4-Dimethoxy cinnamic acid see p. 1879

## Dimethyl carbinol

▶ 2-Propanol see p. 2179



## Dimethyl carbonate



### Dimethyl carbonate

**≥99,8 %**

Carbonic acid dimethyl ester, Methyl carbonate, DMC

$C_3H_6O_3$

M 90,08 g/mol

D 1,07 • bp 90 °C

mp 0,5-4,7 °C • flp 16,7 °C

Solubility: 139 g/l ($H_2O$, 20 °C)

[616-38-6] • EC No. 210-478-4

UN No. 1161 • ADR 3 II • WGK 1

**Danger** H225

**Type analysis:**

Assay (GC). ..... ≥99,8 %
Water. ..... ≤0,1 %
Methanol (GC). ..... ≤0,1 %
Free acid (as $CH_3COOH$). ..... ≤0,015 %

| | | | |
|---|---|---|---|
| **2625.1** | 100 ml | glass | 12,80 € |
| **2625.2** | 500 ml | glass | 21,00 € |
| **2625.3** | 1 l | glass | 27,85 € |
| Original pack 6 x 1 l | | | 26,46/1 l |
| **2625.4** | 2,5 l | glass | 47,85 € |
| Original pack 4 x 2,5 l | | | 45,46/2,5 l |

## N,N-Dimethylcyclohexylamine

### N,N-Dimethylcyclohexylamine

**≥99 %, for synthesis**

Cyclohexyl dimethylamine

$C_8H_{17}N$

M 127,23 g/mol

D 0,85 • bp 162 °C

mp -77 °C • flp 41 °C

[98-94-2] • EC No. 202-715-5

UN No. 2264 • ADR 8 II • WGK 1

**Danger**

H226-H301+H311+H331-H314-H411

**Type analysis:**

Assay (GC). ..... ≥99,0 %
Water. ..... ≤0,3 %

| | | | |
|---|---|---|---|
| **9986.1** | 500 ml | glass | 26,80 € |
| **9986.2** | 1 l | glass | 37,55 € |
| Original pack 6 x 1 l | | | 35,67/1 l |
| **9986.3** | 2,5 l | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |
| **9986.4** | 5 l | plastic | 127,95 € |
| Original pack 2 x 5 l | | | 121,55/5 l |

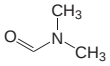
## 2,9-Dimethyl-4,7-diphenyl-1,10-phenanthrolinedisulphonic acid disodium salt

▶ Bathocuproine sulphonate disodium salt hydrate see p. 1763

## N,N'-Dimethylethylene urea

▶ 1,3-Dimethyl-2-imidazolidinone (DMI) see p. 1883

## N,N-Dimethylformamide (DMF)



DMF

$C_3H_7NO$

M 73,10 g/mol

D 0,95 • bp ~153 °C

mp -61 °C • flp 58 °C

[68-12-2] • EC No. 200-679-5

UN No. 2265 • ADR 3 III • WGK 2

**Danger**

H226-H360D-H312+H332-H319

### N,N-Dimethyl-formamide (DMF)

NEW

**ROTISOLV® HPLC**

**Guarantee analysis:**

Assay (GC). ..... ≥99,8 %
Water (KF). ..... ≤0,05 %
Acidity (as $CH_3COOH$). ..... ≤0,003 %
Evaporation residue. ..... ≤0,0005 %
Transmission:
320 nm. ..... ≥97 %
300 nm. ..... ≥90 %
275 nm. ..... ≥60 %
270 nm. ..... ≥30 %
Filtered through a 0,4 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **0702.1** | 2,5 l | glass | 89,80 € |
| Original pack 4 x 2,5 l | | | 85,31/2,5 l |

### N,N-Dimethylformamide (DMF)

**ROTISOLV® ≥99,99 %, Headspace Grade**

For determination of solvent residues (O.V.I.).

**Guarantee analysis:**

Assay (GC). ..... ≥99,99 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,03 %
Free acid (as $CH_3COOH$). ..... ≤0,003 %
Free alkali (as $NH_3$). ..... ≤0,002 %
Refractive index (20 °C). ..... 1,430-1,440
Non volatile matter. ..... ≤0,001 %
UV-Cutoff. ..... 190-268 nm
Transmission:
320 nm. ..... ≥97 %
300 nm. ..... ≥90 %
275 nm. ..... ≥60 %
270 nm. ..... ≥30 %
Headspace suitability test for O.V.I. ..... complies

| | | | |
|---|---|---|---|
| **HN46.1** | 1 l | glass | 225,65 € |
| Original pack 6 x 1 l | | | 214,37/1 l |

### N,N-Dimethylformamide (DMF)

**ROTISOLV® ≥99,9 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,02 %
Colour (Hazen). ..... ≤10
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Fluorescence (as quinine):
365 nm. ..... ≤1,0 ppb
Transmission:
330 nm. ..... ≥98 %
300 nm. ..... ≥90 %
290 nm. ..... ≥80 %
275 nm. ..... ≥50 %
270 nm. ..... ≥20 %

| | | | |
|---|---|---|---|
| **CP79.1** | 2,5 l | glass | 94,10 € |
| Original pack 4 x 2,5 l | | | 89,40/2,5 l |

### N,N-Dimethylformamide (DMF)

**ROTIPURAN® ≥99,8 %, p.a., ACS, ISO**

**Guarantee analysis:**

Assay (GC). ..... ≥99,8 %
Density (d 20 °C/4 °C). ..... 0,949-0,952
Colour (APHA). ..... ≤15
Water . ..... ≤0,1 %
Acidity. ..... ≤0,0005 meq/g
Alkalinity. ..... ≤0,0005 meq/g
Methanol (GC). ..... ≤0,05 %
Diethylamine (GC). ..... ≤0,05 %
Evaporation residue. ..... ≤0,005 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **T921.3** | 250 ml | glass | 18,50 € |
| **T921.1** | 1 l | glass | 35,80 € |
| Original pack 6 x 1 l | | | 34,01/1 l |
| **T921.2** | 2,5 l | glass | 65,05 € |
| Original pack 4 x 2,5 l | | | 61,80/2,5 l |

### N,N-Dimethylformamide (DMF)

**≥99,5 %, for synthesis**

**Type analysis:**

Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,05 %
Colour (Hazen). ..... ≤10
Refractive index $n_D^{20}$. ..... 1,427-1,431

| | | | |
|---|---|---|---|
| **6251.1** | 1 l | glass | 26,45 € |
| Original pack 6 x 1 l | | | 25,13/1 l |
| **6251.2** | 2,5 l | glass | 49,70 € |
| Original pack 4 x 2,5 l | | | 47,22/2,5 l |
| **6251.3** | 2,5 l | plastic | 44,85 € |
| Original pack 4 x 2,5 l | | | 42,61/2,5 l |
| **6251.5** | 10 l | plastic | 109,55 € |
| **6251.4** | 25 l | plastic | 252,75 € |

## N,N-Dimethylformamide (DMF)

**≥99,8 %, for peptide synthesis**

**Type analysis:**

Assay (GC). ..... ≥99,8 %
Water (KF). ..... ≤0,01 %
Free amines. ..... ≤0,0003 %
Free acid (as $CH_3COOH$). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **A529.3** | 500 ml | glass | 37,55 € |
| **A529.1** | 2,5 l | glass | 102,15 € |
| Original pack 4 x 2,5 l | | | 97,04/2,5 l |
| **A529.2** | 25 l | plastic | 321,45 € |

## N,N-Dimethylformamide D7

### N,N-Dimethylformamide D7

**99,5 Atom%D**

For nuclear magnetic resonance spectroscopy.
Heptadeuterodimethylformamide
$C_3D_7NO$
M 80,17 g/mol
D 1,05 • bp 152 °C
mp -60 °C • flp 58 °C
[4472-41-7] • EC No. 224-745-8
UN No. 2265 • ADR 3 III • WGK 1

**Danger**
H226-H360D-H312+H332-H319

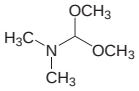
**Guarantee analysis:**

Deuterising degree. ..... ≥99,5 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **CP92.2** | 1 ml | glass ampoule | 71,50 € |
| **CP92.1** | 5 ml | glass | 198,90 € |

For further information, please see page 1533

## N,N-Dimethylformamide dimethyl acetal (DMF-DMA)



### N,N-Dimethylformamide dimethyl acetal (DMF-DMA)

**≥98 %**

Derivatization reagent for GC, alkylation agent.
DMF-DMA
$C_5H_{13}NO_2$
M 119,16 g/mol
D 0,897 • bp 104-110 °C
Storage temp.: +4 °C
[4637-24-5] • EC No. 225-063-3
UN No. 3271 • ADR 3 II • WGK 1

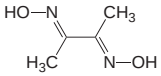
**Danger** H225-H332-H315-H319

**Type analysis:**

Appearance. ..... clear liquid
Assay. ..... ≥98 %

| | | | |
|---|---|---|---|
| **6870.1** | 5 ml | glass | 24,20 € |
| **6870.2** | 25 ml | glass | 35,40 € |
| **6870.3** | 100 ml | glass | 117,20 € |
| **6870.4** | 500 ml | glass | 439,70 € |

## Dimethylglyoxim



### Dimethylglyoxim

**≥99 %, p.a., ACS**

Reagent for nickel.
$C_4H_8N_2O_2$
M 116,12 g/mol
mp 239-242 °C (dec.)
Solubility: 0,6 g/l ($H_2O$, 20 °C)
[95-45-4] • EC No. 202-420-1
UN No. 1325 • ADR 4.1. III • WGK 2

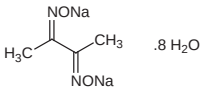
**Warning** H228

**Guarantee analysis:**

Assay (dry substance). ..... ≥99,0 %
Insoluble in alcohol. ..... ≤0,05 %
Melting point. ..... 239-242 °C
Ash content. ..... ≤0,05 %
Suitability for nickel determination. ..... complies

| | | | |
|---|---|---|---|
| **2677.1** | 50 g | plastic | 41,40 € |
| **2677.2** | 100 g | plastic | 65,50 € |
| **2677.3** | 500 g | plastic | 246,20 € |
| Original pack 6 x 500 g | | | 233,89/500 g |

## Dimethylglyoxime disodium salt octahydrate



### Dimethylglyoxime disodium salt octahydrate

**≥98 %, p.a.**

Reagent for nickel.
2,3-Butanedionedioxime disodium salt
$C_4H_6N_2Na_2O_2 \cdot 8\ H_2O$
M 304,21 g/mol
[75006-64-3] • EC No. 262-523-2
WGK 3

**Guarantee analysis:**

Assay (titr., dry substance). ..... ≥98 %
Water. ..... 44,0-49,0 %
Substances soluble in $H_2O$. ..... ≤0,01 %
Suitability for nickel determination. ..... complies

| | | | |
|---|---|---|---|
| **KK24.1** | 25 g | glass | 37,10 € |
| **KK24.2** | 50 g | glass | 62,25 € |

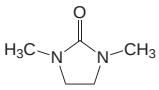
## 2,6-Dimethyl-4-heptanone

▶ Diisobutyl ketone see p. 1878

## 3-N-(α,α-Dimethyl-hydroxy-ethyl)-amino-2-hydroxypropane sulphonic acid

▶ AMPSO see p. 1740
▶ AMPSO sodium salt see p. 1740

## 1,3-Dimethyl-2-imidazolidinone (DMI)



### 1,3-Dimethyl-2-imidazolidinone (DMI)

**ROTISOLV® ≥99,5 %, Headspace Grade**

For determination of solvent residues (O.V.I.).
DMEU, N,N'-Dimethylethylene urea, DMI
$C_5H_{10}N_2O$
M 114,15 g/mol
D 1,06 • bp 104 °C (20 hPa)
mp 8 °C • flp 114 °C
[80-73-9] • EC No. 201-304-8
WGK 1

**Danger** H302-H318-H373

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,04 %
Refractive index (20 °C). ..... 1,470-1,473
UV-Cutoff. ..... 190-270 nm
Transmission:
>350 nm. ..... ≥90 %
325 nm. ..... ≥80 %
300 nm. ..... ≥60 %
275 nm. ..... ≥30 %
Headspace suitability test for O.V.I.. ..... complies

| | | | |
|---|---|---|---|
| **HN48.1** | 500 ml | glass | 901,95 € |

## Dimethyl ketone

▶ Acetone see p. 1697

## 3,7-Dimethyl-2,6-octadien-1-ol

▶ Geraniol see p. 1950

## 2,9-Dimethyl-1,10-phenanthroline

▶ Neocuproine hemihydrate see p. 2091

## 2',2''-Dimethylphenol-sulfonphthalein

▶ m-Cresol purple see p. 1848

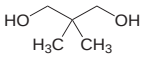
## Dimethylphthalate

▶ Phthalic acid dimethyl ester see p. 2152

## 1,3-Dimethylpropane

▶ n-Pentane see p. 2135

## 2,2-Dimethyl-1,3-propanediol



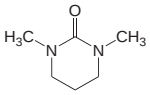
### 2,2-Dimethyl-1,3-propanediol

**≥99 %, for synthesis**
Neopentyl glycol
$C_5H_{12}O_2$
M 104,14 g/mol
bp ~209°C
mp ~127 °C • flp 103 °C
Solubility: 830 g/l ($H_2O$, 20 °C)
[126-30-7] • EC No. 204-781-0
WGK 1
**Danger** H318

**Type analysis:**
Assay (dry substance). ..... ≥99,0 %
Colour (APHA). ..... ≤10
Acidity (as $CH_3COOH$). ..... ≤0,01 %
Aldehyde. ..... ≤0,05 %
Water. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7349.1** | 100 g | plastic | 12,80 € |
| **7349.2** | 500 g | plastic | 24,20 € |
| Original pack 6 x 500 g | | | 22,99/500 g |
| **7349.3** | 1 kg | plastic | 36,45 € |
| Original pack 6 x 1 kg | | | 34,63/1 kg |
| **7349.4** | 2,5 kg | plastic | 78,40 € |

## N,N'-Dimethylpropylene urea



NEW

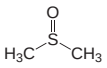
### N,N'-Dimethylpropylene urea

**≥99 %, for synthesis**
Polar aprotic solvent, substitute for hexamethylphosphoramide (HMPA).
DMPU, N,N'-Dimethyl-N,N'-trimethylene urea, 1,3-Dimethyl-3,4,5,6-tetrahydro-2(1H)-pyrimidinone
$C_6H_{12}N_2O$
M 128,18 g/mol
D 1,06 • bp 246 °C
mp -24 °C • flp 120 °C
[7226-23-5] • EC No. 230-625-6
WGK 1
**Danger** H302-H318-H361f

**Type analysis:**
Assay. ..... ≥99,0 %
Refractive index (20 °C). ..... 1,4883-1,4913
Water (KF). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **0662.1** | 25 ml | glass | 21,40 € |
| **0662.2** | 100 ml | glass | 48,30 € |
| **0662.3** | 500 ml | glass | 138,70 € |

## Dimethyl sulphoxide (DMSO)



DMSO
$C_2H_6OS$
M 78,13 g/mol
D 1,1 • bp 189 °C
mp 18,5 °C • flp 87 °C
Solubility: 1000 g/l ($H_2O$, 20 °C)
[67-68-5] • EC No. 200-664-3
WGK 1

### Dimethyl sulphoxide (DMSO)

NEW

**ROTISOLV® HPLC**

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,05 %
Acidity. ..... ≤0,001 meq/g
Evaporation residue. ..... ≤0,001 %
Transmission:
≥350 nm. ..... ≥98 %
330 nm. ..... ≥95 %
310 nm. ..... ≥90 %
290 nm. ..... ≥70 %
270 nm. ..... ≥40 %
Filtered through a 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **0728.1** | 2,5 l | glass | 149,45 € |
| Original pack 4 x 2,5 l | | | 141,98/2,5 l |

### Dimethyl sulphoxide (DMSO)

**ROTISOLV® ≥99,99 %, Headspace Grade**
For determination of solvent residues (O.V.I.).

**Guarantee analysis:**
Assay (GC). ..... ≥99,99 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,03 %
Free acid (as $CH_3COOH$). ..... ≤0,002 %
Free alkali (as $NH_3$). ..... ≤0,0005 %
Refractive index (20 °C). ..... 1,477-1,480
Non volatile matter. ..... ≤0,001 %
Melting point. ..... ≥18 °C
UV-Cutoff. ..... 190-265 nm
Transmission:
400 nm. ..... ≥98 %
350 nm. ..... ≥95 %
300 nm. ..... ≥85 %
275 nm. ..... ≥60 %
268 nm. ..... ≥30 %
Headspace suitability test for O.V.I. ..... complies

| | | | |
|---|---|---|---|
| **HN47.1** | 1 l | glass | 234,25 € |
| Original pack 6 x 1 l | | | 222,54/1 l |

### Dimethyl sulphoxide (DMSO)

**ROTIDRY®Sept ≥99,8 % (≤100 ppm $H_2O$)**
Dried; in a septum bottle

**Guarantee analysis:**
Assay (GC). ..... ≥99,8 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,01 %
Acidity (as $CH_3COOH$). ..... ≤0,002 %
Evaporation residue. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **5179.1** | 250 ml | glass | 61,85 € |

### Dimethyl sulphoxide (DMSO)

**ROTIDRY® ≥99,5 % (≤200 ppm $H_2O$)**
Dried; for analysis and organic synthesis.

**Guarantee analysis:**
Assay (GC). ..... ≥99,5 %
Colour (Hazen). ..... ≤10
Water (KF). ..... ≤0,02 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,005 %
Filtered through a membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE02.1** | 1 l | glass | 63,35 € |
| Original pack 6 x 1 l | | | 60,18/1 l |

### Dimethyl sulphoxide (DMSO)

**ROTIPURAN® ≥99,8 %, p.a.**

**Guarantee analysis:**
Assay (GC). ..... ≥99,8 %
Colour (Hazen). ..... ≤10
Water. ..... ≤0,05 %
Chloride (Cl). ..... ≤0,0001 %
Aluminium (Al). ..... ≤0,000001 %
Lead (Pb). ..... ≤0,000001 %
Calcium (Ca). ..... ≤0,000001 %
Iron (Fe). ..... ≤0,000001 %
Potassium (K). ..... ≤0,000001 %
Copper (Cu). ..... ≤0,000001 %
Sodium (Na). ..... ≤0,000001 %
Magnesium (Mg). ..... ≤0,000001 %
Manganese (Mn). ..... ≤0,000001 %
Zinc (Zn). ..... ≤0,000001 %

| | | | |
|---|---|---|---|
| **4720.4** | 100 ml | glass | 16,35 € |
| **4720.2** | 500 ml | glass | 28,95 € |
| **4720.1** | 1 l | glass | 48,95 € |
| Original pack 6 x 1 l | | | 46,50/1 l |
| **4720.3** | 2,5 l | glass | 100,95 € |
| Original pack 4 x 2,5 l | | | 95,90/2,5 l |

### Dimethyl sulphoxide (DMSO)

**≥99,5 %, for synthesis**

**Guarantee analysis:**
Assay (GC). ..... ≥99,5 %
Colour (APHA). ..... ≤10
Water . ..... ≤0,1 %
Melting point. ..... ≥18,2 °C
Acid value. ..... ≤0,04 mg KOH/g

| | | | |
|---|---|---|---|
| **7029.1** | 1 l | glass | 32,80 € |
| Original pack 6 x 1 l | | | 31,16/1 l |
| **7029.2** | 2,5 l | glass | 65,50 € |
| Original pack 4 x 2,5 l | | | 62,23/2,5 l |
| **7029.4** | 5 l | plastic | 106,45 € |
| Original pack 2 x 5 l | | | 101,13/5 l |
| **7029.3** | 10 l | plastic | 203,20 € |
| **7029.5** | 25 l | plastic | 396,70 € |

## Dimethyl sulphoxide (DMSO)

**≥99,5 %, BioScience-Grade, for molecular biology**

Recommended for PCR, sequencing, hybridisation and cell culture.

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Colour (APHA). ..... ≤10
Water content. ..... ≤0,1 %
Chloride (Cl). ..... ≤0,00005 %
Arsenic (As). ..... ≤0,000001 %
Cadmium (Cd). ..... ≤0,000001 %
Potassium (K). ..... ≤0,000001 %
Lithium (Li). ..... ≤0,000001 %
Magnesium (Mg). ..... ≤0,000001 %
Sodium (Na). ..... ≤0,000005 %

| | | | |
|---|---|---|---|
| **A994.1** | 100 ml | glass | 22,05 € |
| **A994.2** | 250 ml | glass | 34,30 € |

For further information, please see page 1247

## Dimethyl sulphoxide D6

Methyl sulphoxide deuterated, DMSO deuterated
$C_2D_6OS$
M 84,18 g/mol
D 1,19 • bp 190 °C
mp 20,2 °C • flp 88 °C
[2206-27-1] • EC No. 218-617-0
WGK 1

## Dimethyl sulphoxide D6

**99,9 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Type analysis:**

Deuterising degree. ..... ≥99,9 %
Water (KF, $H_2O+D_2O$). ..... ≤0,025 %

| | | | |
|---|---|---|---|
| **7915.1** | 10 ml | glass | 46,15 € |
| **7915.2** | 10 ml | septum bottle | 47,20 € |
| **7915.3** | 10 x 0,75 ml | glass ampoule | 49,35 € |

## Dimethyl sulphoxide D6

**99,8 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**

Deuterising degree. ..... ≥99,8 %
Water (KF, $H_2O+D_2O$). ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **AE56.3** | 10 x 0,75 ml | glass ampoule | 40,75 € |
| **AE56.1** | 10 ml | glass | 37,10 € |
| **AE56.4** | 10 ml | septum bottle | 38,60 € |
| **AE56.6** | 25 ml | glass | 85,50 € |
| **AE56.2** | 50 ml | glass | 149,45 € |
| **AE56.5** | 100 ml | glass | 263,40 € |

## Dimethyl sulphoxide D6 with TMS (0,03 vol.%)

Deuterated DMSO with TMS
$C_2D_6OS$
M 84,18 g/mol
D 1,19 • bp 190 °C
mp 20,2 °C • flp 88 °C
[2206-27-1] • EC No. 218-617-0
WGK 1

## Dimethyl sulphoxide D6 with TMS (0,03 vol.%)

**99,9 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Type analysis:**

Deuterising degree. ..... ≥99,9 %
Water (KF, $H_2O+D_2O$). ..... ≤0,025 %
Trimethylsilane (TMS). ..... 0,02-0,04 %

| | | | |
|---|---|---|---|
| **7916.1** | 10 x 0,75 ml | glass ampoule | 46,15 € |

## Dimethyl sulphoxide D6 with TMS (0,03 vol.%)

**99,8 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**

Deuterising degree. ..... ≥99,8 %
Water (KF, $H_2O+D_2O$). ..... ≤0,04 %
Tetramethylsilane (TMS). ..... 0,02-0,04 %

| | | | |
|---|---|---|---|
| **AE60.1** | 10 ml | glass | 39,70 € |
| **AE60.2** | 50 ml | glass | 149,45 € |

For further information, please see page 1533

## 1,3-Dimethyl-3,4,5,6-tetrahydro-2(1H)-pyrimidinone

▶ N,N'-Dimethylpropylene urea see p. 1884

## 3-(4,5-Dimethylthiazol-2-yl-2,5-diphenyl-2H-tetrazolium bromide

▶ Thiazolyl blue see p. 2339

## Dimethylthionin

▶ Azure A (C.I. 52005) see p. 1759

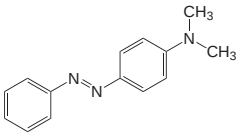
## N,N'-Dimethyl-N,N'-trimethylene urea

▶ N,N'-Dimethylpropylene urea see p. 1884

## 3,7-Dimethylxanthine

▶ Theobromine see p. 2339

## Dimethyl yellow (C.I. 11020)




NEW

## Dimethyl yellow (C.I. 11020)

**pure**

Indicator pH 2,9-4,0
p-Dimethylaminoazobenzene, Solvent Yellow 2, Butter Yellow, Methyl yellow
$C_{14}H_{15}N_3$
M 225,29 g/mol
mp 110-116 °C (dec.)
[60-11-7] • EC No. 200-455-7
UN No. 2811 • ADR 6.1 III • WGK 2

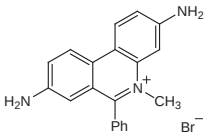
**Danger** H301-H351

**Type analysis:**

pH-transition range. ..... 2,9 (red)-4,0 (yellow)
Melting range. ..... 110-116 °C

| | | | |
|---|---|---|---|
| **9982.1** | 10 g | glass | 52,60 € |

## Dimidium bromide




## Dimidium bromide

**≥95 %, for biochemistry**

For fluorescence detection of nucleic acids; for titration of anion surfactants acc. to Epon as indicator.
3,8-Diamino-5-methyl-6-phenyl-phenanthridium bromide
$C_{20}H_{18}BrN_3$
M 380,30 g/mol
[518-67-2] • EC No. 208-256-7
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

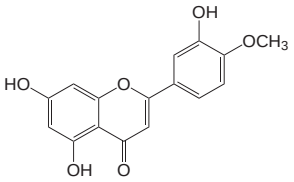
Assay (arg.). ..... ≥95 %
Loss on drying (105 °C). ..... ≤5 %

| | | | |
|---|---|---|---|
| **2217.1** | 500 mg | glass | 93,00 € |

## 2,4-Dinitro-1-naphthol

▶ Martius yellow (C.I. 10315) see p. 2058

## Diosmetin

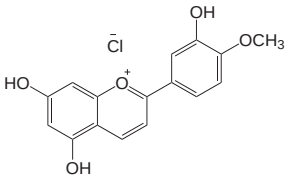


### Diosmetin
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{16}H_{12}O_6$
M 300,29 g/mol
Storage temp.: +4 °C
[520-34-3] • EC No. 208-291-8
**Warning** H302

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7446.1** | 10 mg | glass | 203,20 € |

## Diosmetinidin chloride

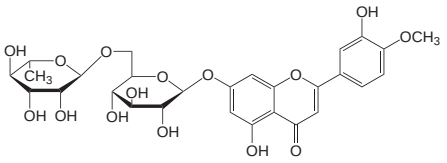


### Diosmetinidin chloride
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{16}H_{13}O_5Cl$
M 320,71 g/mol
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC)..... ≥97 %

| | | | |
|---|---|---|---|
| **9326.1** | 10 mg | glass | 306,40 € |

## Diosmin



$C_{28}H_{32}O_{15}$
M 608,55 g/mol
mp 275-277 °C
Storage temp.: +4 °C
[520-27-4] • EC No. 208-289-7

### Diosmin
**≥95 %**

**Type analysis:**
Appearance..... yellow to grey powder
Assay (HPLC)..... ≥95 %
Sulphated ash..... ≤0,2 %
Water..... ≤6,0 %

| | | | |
|---|---|---|---|
| **6736.1** | 5 g | glass | 41,85 € |
| **6736.2** | 25 g | glass | 84,85 € |
| **6736.3** | 100 g | glass | 252,65 € |

### Diosmin
**ROTICHROM® HPLC**
Reference substance for HPLC.

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7447.1** | 10 mg | glass | 225,25 € |

## 1,4-Dioxane



1,4-Diethylene dioxide
$C_4H_8O_2$
M 88,11 g/mol
D ~1,03 • bp 101,5 °C
mp 12 °C • flp 12 °C
[123-91-1] • EC No. 204-661-8
UN No. 1165 • ADR 3 II • WGK 2
**Danger**
H225-H319-H335-H351-EUH019-EUH066

### 1,4-Dioxane
**ROTISOLV® HPLC, not stabilized**

**Guarantee analysis:**
Assay (GC)..... ≥99,8 %
Colour (Hazen)..... ≤10
Water (KF)..... ≤0,02 %
Free acid (as $CH_3COOH$)..... ≤0,002 %
Non volatile matter..... ≤0,0005 %
Transmission:
300 nm..... ≥98 %
280 nm..... ≥90 %
240 nm..... ≥40 %
220 nm..... ≥20 %
Filtered through 0,2 µm membrane and filled under protective gas.
Note: Possible storage time is limited!

| | | | |
|---|---|---|---|
| **X949.1** | 1 l | glass | 62,25 € |
| Original pack 6 x 1 l | | | 59,14/1 l |
| **X949.2** | 2,5 l | glass | 142,90 € |
| Original pack 4 x 2,5 l | | | 135,76/2,5 l |

For further information, please see page 1590

### 1,4-Dioxane
**ROTIDRY® ≥99,8 % (≤100 ppm $H_2O$)**
Dried, for analysis and organic synthesis.

**Type analysis:**
Assay (GC)..... ≥99,8 %
Water (KF)..... ≤0,01 %
Acidity..... ≤0,0005 meq/g
Evaporation residue..... ≤0,0005 %
Unstabilised.
Note: Possible storage time is limited!

| | | | |
|---|---|---|---|
| **4429.1** | 1 l | glass | 70,85 € |
| Original pack 6 x 1 l | | | 67,31/1 l |

### 1,4-Dioxane
**ROTIPURAN® ≥99,5 %, p.a., ACS, ISO**

**Guarantee analysis:**
Assay (GC)..... ≥99,5 %
Colour (Hazen)..... ≤10
Water..... ≤0,05 %
Acidity..... ≤0,0016 meq/g
Evaporation residue..... ≤0,005 %
Density (d 20 °C/4 °C)..... 1,032-1,034
Melting point..... ≥11 °C
Aluminium (Al)..... ≤0,00005 %
Barium (Ba)..... ≤0,00001 %
Lead (Pb)..... ≤0,00001 %
Boron (B)..... ≤0,000002 %
Cadmium (Cd)..... ≤0,000005 %
Calcium (Ca)..... ≤0,00005 %
Chromium (Cr)..... ≤0,000002 %
Cobalt (Co)..... ≤0,000002 %
Iron (Fe)..... ≤0,00001 %
Copper (Cu)..... ≤0,000002 %
Magnesium (Mg)..... ≤0,00001 %
Manganese (Mn)..... ≤0,000002 %
Nickel (Ni)..... ≤0,000002 %
Zinc (Zn)..... ≤0,00001 %
Tin (Sn)..... ≤0,00001 %
Acetaldehyde..... ≤0,005 %
Peroxides (as $H_2O_2$)..... ≤0,005 %
Carbonylic compounds (as CO)..... ≤0,01 %
Stabilized with approx. 25 ppm 2,6-di-tert-butyl-4-methylphenol (BHT)

| | | | |
|---|---|---|---|
| **4626.4** | 100 ml | glass | 12,80 € |
| **4626.3** | 500 ml | glass | 36,45 € |
| **4626.1** | 1 l | glass | 64,00 € |
| Original pack 6 x 1 l | | | 60,80/1 l |
| **4626.2** | 2,5 l | glass | 133,85 € |
| Original pack 4 x 2,5 l | | | 127,16/2,5 l |
| **4626.5** | 5 l | aluminium | 234,25 € |
| Original pack 2 x 5 l | | | 222,54/5 l |
| **4626.6** | 25 l | tinplate | 1073,95 € |

### 1,4-Dioxane
**≥99,5 %, for synthesis**

**Type analysis:**
Assay (GC)..... ≥99,5 %
Peroxides..... ≤0,001 %
Water..... ≤0,1 %
Colour (APHA)..... ≤10
Stabilized with approx. 5 ppm BHT

| | | | |
|---|---|---|---|
| **4229.1** | 500 ml | glass | 23,15 € |
| **4229.2** | 1 l | glass | 32,80 € |
| Original pack 6 x 1 l | | | 31,16/1 l |
| **4229.3** | 2,5 l | glass | 67,20 € |
| Original pack 4 x 2,5 l | | | 63,84/2,5 l |
| **4229.5** | 5 l | aluminium | 117,20 € |
| Original pack 2 x 5 l | | | 111,34/5 l |
| **4229.6** | 10 l | tinplate | 213,95 € |
| **4229.4** | 25 l | tinplate | 482,70 € |

## 1,3-Dioxolane



### 1,3-Dioxolane

NEW

**90 %, for synthesis**
Formal glycol
$C_3H_6O_2$
M 74,08 g/mol
D 1,06 • bp 74 °C
mp -26 °C • flp 2 °C
[646-06-0] • EC No. 211-463-5
UN No. 1166 • ADR 3 II • WGK 1

**Danger** H225-H319-H360D

**Type analysis:**
Assay.....≥90 %
Water.....≤7 %
Methanol.....≤2 %

| | | | |
|---|---|---|---|
| **0447.1** | 100 ml | glass | 13,90 € |
| **0447.2** | 500 ml | glass | 32,15 € |
| **0447.3** | 1 l | glass | 53,65 € |
| Original pack 6 x 1 l | | | 50,97/1 l |
| **0447.4** | 2,5 l | glass | 107,40 € |
| Original pack 4 x 2,5 l | | | 102,03/2,5 l |

## 2,5-Dioxopyrrolidin-1-yl 17-oxo-4,7,10,13-tetraoxa-16-azahenicos-1-yn-21-oate

▶ NHS-PEG5-Alkyne see p. 2132

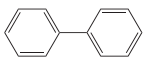
## DIPEA

▶ N,N-Diisopropylethylamine (DIPEA) see p. 1879

## Dipentene

▶ D-(+)-Limonene see p. 2037

## Diphenyl



### Diphenyl

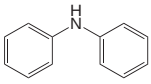
**ROTICHROM® GC**
Reference substance for GC.
Biphenyl
$C_{12}H_{10}$
M 154,21 g/mol
D ~0,992 • bp 255 °C
mp 69-72 °C
Storage temp.: +4 °C
[92-52-4] • EC No. 202-163-5
UN No. 3077 • ADR 9 III • WGK 2

**Warning**
H400-H410-H315-H319-H335

**Type analysis:**
Purity (GC).....≥96 %

| | | | |
|---|---|---|---|
| **9309.1** | 1 g | plastic | 81,20 € |

## Diphenylamine



### Diphenylamine

**≥99 %, p.a., ACS**
Redox indicator
*N*-Phenylaniline, *N*-Phenylbenzenamine, DPA, Anilinobenzene
$C_{12}H_{11}N$
M 169,23 g/mol
D 1,16 • bp 302 °C
mp 53 °C
Solubility: 40 mg/l ($H_2O$, 20 °C)
[122-39-4] • EC No. 204-539-4
UN No. 2811 • ADR 6.1 III • WGK 3

**Danger**
H301+H311+H331-H373-H410

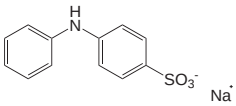
**Guarantee analysis:**
Assay. ..... ≥99,0 %
Sensitivity to $NO_3$. ..... 1:1600000
Solubility in ethanol. ..... complies
Melting range. ..... 52,5-54,0 °C
Anilin. ..... ≤0,01 %
Sulphated ash. ..... ≤0,03 %
Nitrate ($NO_3$). ..... complies
Lead (Pb). ..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Nickel (Ni)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **9865.1** | 25 g | glass | 16,70 € |
| **9865.2** | 100 g | glass | 39,25 € |
| **9865.3** | 500 g | glass | 110,65 € |
| Original pack 6 x 500 g | | | 105,12/500 g |

## Diphenylamine-2-carboxylic acid

▶ *N*-Phenylanthranilic acid see p. 2147

## Diphenylamine-4-sulphonic acid sodium salt



### Diphenylamine-4-sulphonic acid sodium salt

**p.a., ACS**
Redox indicator
Sodiumdiphenylaminesulphonate
$C_{12}H_{10}NNaO_3S$
M 271,27 g/mol
mp 200 °C
Solubility: 820 g/l ($H_2O$, 20 °C)
[6152-67-6] • EC No. 228-165-6
WGK 1

**Guarantee analysis:**
Appearance of solution.....clear, colourless
Suitability as indicator..... complies

| | | | |
|---|---|---|---|
| **2602.3** | 1 g | glass | 17,10 € |
| **2602.1** | 10 g | glass | 75,80 € |
| **2602.2** | 25 g | glass | 139,25 € |

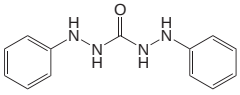
## Diphenylamine-4-sulphonic acid barium salt

▶ Barium diphenylamine sulfonate see p. 1762

## Diphenylboric acid β-aminoethyl ester complex

▶ Natural product reagent A see p. 2090

## 1,5-Diphenylcarbazide



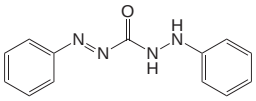
### 1,5-Diphenylcarbazide

**≥97 %, p.a., ACS**
Redox indicator
1,5-Diphenylcarbohydrazide
$C_{13}H_{14}N_4O$
M 242,28 g/mol
mp 173-176 °C
[140-22-7] • EC No. 205-403-7
WGK 1

**Guarantee analysis:**
Assay (HPLC). .....≥97,0 %
Solubility (ACS).....complies
Melting point. .....173-176 °C
Loss on drying.....≤1,0 %
Ash content. .....≤0,05 %
Suitability for chromate.....complies

| | | | |
|---|---|---|---|
| **2696.1** | 10 g | plastic | 23,15 € |
| **2696.2** | 25 g | plastic | 38,60 € |
| **2696.3** | 100 g | plastic | 111,70 € |

## Diphenylcarbazone



### Diphenylcarbazone

**p.a.**
Metal indicator
$C_{13}H_{12}N_4O$
M 240,26 g/mol
mp 156-159 °C (dec.)
[538-62-5] • EC No. 208-698-0
WGK 1

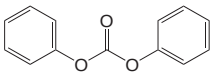
**Guarantee analysis:**
Appearance. .....dark orange cryst. powder
Melting point. .....156-159 °C
Solubility in aceton. .....complies
Ash content. .....≤0,1 %
Suitability as redox indicator. .....complies

| | | | |
|---|---|---|---|
| **2678.1** | 10 g | glass | 60,10 € |
| **2678.2** | 25 g | glass | 117,20 € |
| **2678.3** | 50 g | glass | 203,20 € |

## 1,5-Diphenylcarbohydrazide

▶ 1,5-Diphenylcarbazide see p. 1887

## Diphenyl carbonate



### Diphenyl carbonate

**≥99 %**

Carbonic acid diphenyl ester, Phenyl carbonate, DPC

$C_{13}H_{10}O_3$

M 214,22 g/mol

D 1,3 • bp 301 °C

mp 77,5-79 °C • flp 168 °C

Solubility: 12 mg/l ($H_2O$, 20 °C)

[102-09-0] • EC No. 203-005-8

WGK 1

**Warning** H302

**Type analysis:**

Assay (GC).....≥99,0 %
pH value.....6,8-7,2
Water.....≤0,1 %
Melting point.....77,5-79,5 °C

| | | | |
|---|---|---|---|
| **2626.1** | 100 g | plastic | 12,80 € |
| **2626.2** | 500 g | plastic | 25,30 € |
| Original pack 6 x 500 g | | | 24,04/500 g |
| **2626.3** | 1 kg | plastic | 45,70 € |
| Original pack 6 x 1 kg | | | 43,42/1 kg |

## trans-1,2-Diphenylethylene

▶ trans-Stilbene see p. 2316

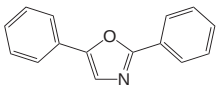
## Diphenyl ketone

▶ Benzophenone see p. 1767

## Diphenylmethanone

▶ Benzophenone see p. 1767

## 2,5-Diphenyloxazole



### 2,5-Diphenyloxazole

**~99 %, for scintillation**

PPO

$C_{15}H_{11}NO$

M 221,26 g/mol

bp 360 °C

mp 69-72 °C

[92-71-7] • EC No. 202-181-3

WGK 1

**Type analysis:**

Appearance.....white, cryst. powder
Assay.....~99 %
Suitable for scintillation.

| | | | |
|---|---|---|---|
| **3689.1** | 25 g | plastic | 28,95 € |
| **3689.2** | 100 g | plastic | 75,15 € |
| **3689.3** | 500 g | plastic | 311,75 € |
| Original pack 6 x 500 g | | | 296,16/500 g |

## 4,7-Diphenyl-1,10-phenanthroline

▶ Bathophenanthroline see p. 1763

## 1,3-Diphenyl-1-propen-3-one

▶ Benzylidene acetophenone see p. 1769

## 1,5-Diphenylthiocarbazone

▶ Dithizone see p. 1890

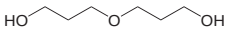
## Diphosphorous pentoxide

▶ Phosphorus pentoxide see p. 2152

## Dipotassium hydrogen phosphate

▶ di-Potassium hydrogen phosphate see p. 2168

## Dipropylene glycol



### Dipropylene glycol

**≥99 %, pure**

Bis(hydroxypropyl) ether

$C_6H_{14}O_3$

M 134,17 g/mol

D 1,03 • bp 228 °C

mp -40 °C • flp 138 °C

[25265-71-8] • EC No. 246-770-3

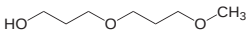
WGK 1

**Type analysis:**

Assay (GC).....≥99,0 %
Colour (Hazen).....≤15

| | | | |
|---|---|---|---|
| **8656.1** | 1 l | plastic | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **8656.2** | 2,5 l | plastic | 57,95 € |
| Original pack 4 x 2,5 l | | | 55,05/2,5 l |

## Dipropylene glycol monomethyl ether



### Dipropylene glycol monomethyl ether

**≥98 %, pure**

(2-Methoxymethylethoxy)propanol, DPGME

$C_7H_{16}O_3$

M 148,2 g/mol

D ~0,95 • bp 189 °C

mp -83 °C • flp 75 °C

[34590-94-8] • EC No. 252-104-2

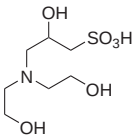
WGK 1

**Type analysis:**

Assay (isomers, GC).....≥98,0 %
Colour (Hazen).....≤15
Density (20 °C).....0,943-0,962

| | | | |
|---|---|---|---|
| **7656.1** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **7656.2** | 2,5 l | glass | 69,80 € |
| Original pack 4 x 2,5 l | | | 66,31/2,5 l |

## DIPSO



### DIPSO

**PUFFERAN® ≥98 %**

3-N-Bis(hydroxyethyl)-amino-2-hydroxy-propane sulphonic acid

$C_7H_{17}NO_6S$

M 243,29 g/mol

mp 189-191 °C

[68399-80-4] • EC No. 269-992-2

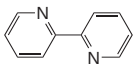
**Type analysis:**

Assay (titr.).....≥98 %
Solubility (25 % in $H_2O$).....clear
Loss on drying.....≤7,0 %
Heavy metals (as Pb).....≤0,0005 %

| | | | |
|---|---|---|---|
| **7151.1** | 25 g | plastic | 70,85 € |

For further information, please see page 1268

## 2,2'-Dipyridyl



### 2,2'-Dipyridyl

**≥95 %, for biochemistry**

Redox indicator

α,α'-Dipyridyl, 2,2'-Bipyridine

$C_{10}H_8N_2$

M 156,19 g/mol

bp 272 °C

mp 70-72 °C • flp 121 °C

Solubility: 5,5 g/l ($H_2O$, 22 °C)

[366-18-7] • EC No. 206-674-4

UN No. 2811 • ADR 6.1 III • WGK 3

**Danger** H301+H311

**Type analysis:**

Appearance.....white to brownish, cryst. powder
Assay (titr.).....≥95 %
Solution (5 % in ethanol).....colourless
Water (KF).....≤1,0 %

| | | | |
|---|---|---|---|
| **4153.1** | 5 g | glass | 14,95 € |
| **4153.2** | 25 g | glass | 38,60 € |

## α,α'-Dipyridyl

▶ 2,2'-Dipyridyl see p. 1888

## Direct blue 53

▶ Evan's blue (C.I. 23860) see p. 1923

## Direct Red 28

▶ Congo red (C.I. 22120) see p. 1842

## DIS

▶ 5-(Dimethylamino)-1-naphthalenesulphonyl chloride see p. 1881

## Dishwasher cleaner

### Dishwasher cleaner
**intensive cleaning powder for dishwashers**
pH 12
D 1,02
UN No. 3262 • ADR 8 III
**Danger**
H302-H314-H335-H412-EUH206

| | | | |
|---|---|---|---|
| **N047.1** | 5 kg | plastic | 21,45 € |

For further information, please see page 1111

## Dishwasher regenerating salt

### Dishwasher regenerating salt
pH (50 g/l) 6-9
D 2,16
Solubility: 358 g/l
WGK 1

| | | | |
|---|---|---|---|
| **N049.1** | 2 kg | plastic | 7,50 € |

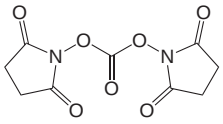
For further information, please see page 1111

## Disodium-3,3'[[1,1-biphenyl]-4,4'-diyl(bis(azo)]bis(4-amino-naphthalin-1-sulfonate)
▶ Congo red (C.I. 22120) see p. 1842

## Disodiumpentacyanonitrosylferrate(III) dihydrate
▶ Sodium nitroprusside dihydrate see p. 2281

## Distylin
▶ (+)-Dihydroquercetin see p. 1875

## N,N'-Disuccinimidyl carbonate (DSC)



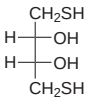
### N,N'-Disuccinimidyl carbonate (DSC)
**≥99 %**
Coupling reagent for peptide synthesis.
DSC, di-(N-Succinimidyl) carbonate
$C_9H_8N_2O_7$
M 256,17 g/mol
mp 190 °C
Storage temp.: +4 °C
[74124-79-1] • EC No. 277-730-3
WGK 1
**Warning** H315-H319-H335

**Type analysis:**
Assay (HPLC).....≥99,0 %
Loss on drying.....≤0,5 %

| | | | |
|---|---|---|---|
| **2110.1** | 5 g | glass | 23,15 € |
| **2110.2** | 25 g | glass | 60,10 € |
| **2110.3** | 100 g | glass | 166,65 € |

## 3,3'-Dithio-bis-(2-amino-propionic acid)
▶ L-Cystine see p. 1855

## 1,4-Dithioerythritol (DTE)

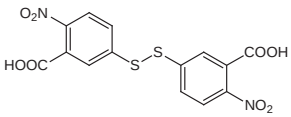


### 1,4-Dithioerythritol (DTE)
**≥99 %, p.a.**
For biochemistry and molecular biology.
DTE, Cleland's reagent
$C_4H_{10}O_2S_2$
M 154,2 g/mol
mp 82-86 °C • flp <110 °C
[6892-68-8] • EC No. 229-998-8
WGK 3
**Warning** H315-H319-H335

**Type analysis:**
Assay (iodom.).....≥99,0 %
Solution (10 % in $H_2O$).....colourless
Melting point.....84 ±2 °C
Reagent for stabilizing monothioles and for quantitative reduction of disulphide compounds to thiole compounds. DTE is an isomer of DTT and is as such used for reducing disulphide bridge-bonds and for stabilizing thiole groups in enzymes and other proteins.

| | | | |
|---|---|---|---|
| **8814.1** | 5 g | glass | 63,35 € |
| **8814.3** | 10 g | glass | 106,45 € |
| **8814.2** | 25 g | glass | 235,45 € |

## 5,5'-Dithio-bis-(2-nitrobenzoic acid)

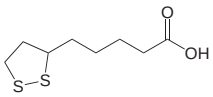


### 5,5'-Dithio-bis-(2-nitrobenzoic acid)
**≥98 %, p.a.**
For determination of thiol groups.
DTNB, Ellman's reagent
$C_{14}H_8N_2O_8S_2$
M 396,36 g/mol
mp 240-244 °C
Storage temp.: +4 °C
[69-78-3] • EC No. 200-714-4
WGK 1
**Warning** H315-H319-H335

**Guarantee analysis:**
Appearance.....white to yellow cryst. powder
Assay.....≥98,0 %
Water (KF).....≤1,0 %

| | | | |
|---|---|---|---|
| **6334.1** | 1 g | glass | 19,90 € |
| **6334.2** | 5 g | glass | 55,80 € |
| **6334.3** | 25 g | glass | 203,20 € |

## DL-6,8-Dithiooctanoic acid

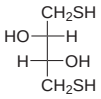


### DL-6,8-Dithiooctanoic acid
**≥98 %**
α-Lipoic acid, DL-6,8-Thioctic acid
$C_8H_{14}O_2S_2$
M 206,33 g/mol
mp 60-62 °C
Storage temp.: +4 °C
[1077-28-7] • EC No. 214-071-2
WGK 1
**Warning** H302

**Type analysis:**
Appearance.....light yellow powder
Assay (HPLC).....≥98 %
Loss on drying.....≤0,1 %
Ash content.....≤0,1 %
Melting point.....60-62 °C

| | | | |
|---|---|---|---|
| **6229.1** | 5 g | glass | 117,20 € |

## 1,4-Dithiothreitol (DTT)

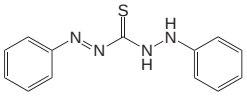


### 1,4-Dithiothreitol (DTT)
**≥99 %, p.a.**
For biochemistry and molecular biology.
DTT, Cleland's reagent, DL-threo-2,3-Dihydroxy-1,4-dithiobutane
$C_4H_{10}O_2S_2$
M 154,2 g/mol
mp 38-44 °C
Solubility: 1500 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[3483-12-3] • EC No. 222-468-7
WGK 2
**Warning** H302-H315-H319-H335

**Guarantee analysis:**
Appearance.....white to light grey, cryst. powder
Assay (iodom.).....≥99 %
pH value (0,1 M, $H_2O$).....4,0-6,5
Solution (10 % in $H_2O$).....clear, colourless
Oxidized part.....≤0,2 %
Melting point.....38-44 °C
Heavy metals (as Pb).....≤0,0001 %
UV-absorption (0,1 M in $H_2O$):
260 nm.....≤0,4
280 nm.....≤0,2

| | | | |
|---|---|---|---|
| **6908.1** | 5 g | plastic | 57,55 € |
| **6908.3** | 10 g | plastic | 85,90 € |
| **6908.2** | 25 g | plastic | 204,15 € |
| **6908.4** | 100 g | plastic | 600,95 € |

## Dithizone



### Dithizone

**≥98 %, p.a., ACS**
Metal indicator
1,5-Diphenylthiocarbazone
$C_{13}H_{12}N_4S$
M 256,32 g/mol
mp 168 °C (dec.)
[60-10-6] • EC No. 200-454-1
WGK 1

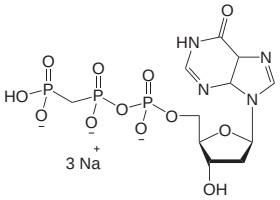
**Warning** H315-H319

**Guarantee analysis:**

Assay..... ≥98,0 %
Ash content..... ≤0,2 %
Heavy metals (as Pb)..... ≤0,002 %
Ratio of absorbance (A 605 nm/450 nm). ..... ≥1,55

| | | | |
|---|---|---|---|
| **2697.1** | 5 g | glass | 32,15 € |
| **2697.2** | 25 g | glass | 104,85 € |
| **2697.3** | 50 g | glass | 166,65 € |

## dITP solution



### dITP solution

**≥99 %, 100 mM solution**
2'-Deoxyinosine-5'-triphosphate
$C_{10}H_{12}N_4O_{13}P_3$
M 489,14 g/mol
Storage temp.: -20 °C
Transport temp.: cooled

| | | | |
|---|---|---|---|
| **P732.1** | 25 µmol (250 µl) | plastic | 33,25 € |

For further information, please see page 1259

## Diytterbium trioxide

▶ Ytterbium(III) oxide see p. 2384

## DMAP

▶ 4-(Dimethylamino)pyridine (DMAP) see p. 1881

## DMC

▶ Dimethyl carbonate see p. 1882

## DMEM : F12 cell culture medium

▶ Roti®-CELL DMEM : F12 see p. 2204

## DMEM cell culture medium

▶ Roti®-CELL DMEM Low Glucose see p. 2205
▶ Roti®-CELL DMEM High Glucose see p. 2204

## DMEU

▶ 1,3-Dimethyl-2-imidazolidinone (DMI) see p. 1883

## DMF

▶ N,N-Dimethylformamide (DMF) see p. 1882

## DMFA

▶ N,N-Dimethylformamide (DMF) see p. 1882

## DMF-DMA

▶ N,N-Dimethylformamide dimethyl acetal (DMF-DMA) see p. 1883

## DMI

▶ 1,3-Dimethyl-2-imidazolidinone (DMI) see p. 1883

## DMP

▶ Phthalic acid dimethyl ester see p. 2152

## DMPU

▶ N,N'-Dimethylpropylene urea see p. 1884

## DMSO

▶ Dimethyl sulphoxide (DMSO) see p. 1884

## DMSO/t-Butanol Solvent

### DMSO/t-Butanol Solvent

**ROTI®click Grade**
For Click Chemistry.
UN No. 1120 • ADR 3.III • WGK 1

**Warning** H226-H319-H335

**Formulation:**

DMSO:t-Butanol (v/v). ..... 3:1

| | | | |
|---|---|---|---|
| **7815.1** | 1 ml | plastic | 14,55 € |
| **7815.2** | 10 x 1 ml | plastic | 65,50 € |

## DMSO deuterated

▶ Dimethyl sulphoxide D6 see p. 1885
▶ Dimethyl sulphoxide D6 with TMS (0,03 vol.%) see p. 1885

## DMT-Cl

▶ 4,4'-Dimethoxytrityl chloride (DMT-Cl) see p. 1880

## DMT removal reagent

### DMT removal reagent

**for DNA synthesis with ABI™ Synthesizer**
3 % Trichloro acetic acid in dichloromethane
D 1,324
UN No. 2927 • ADR 6.1 (8) II • WGK 2

**Danger**
H315-H318-H335-H336-H351-H373-H411

| | | | |
|---|---|---|---|
| **2257.1** | 450 ml | glass | 36,45 € |
| **2257.2** | 2,5 l | glass | 117,75 € |
| Original pack 4 x 2,5 l | | | 111,86/2,5 l |

For further information, please see page 1493

## DNA AWAY®

### DNA AWAY®

**ready-to-use solution for removal of DNA-contaminations**

**Warning** H315-H319

| | | | |
|---|---|---|---|
| **X996.1** | 250 ml | plastic | 40,75 € |
| **X996.2** | 4 l | plastic | 214,90 € |

For further information, please see page 1253

## DNA from salmon sperm

▶ Salmon Sperm DNA sodium salt see p. 2240

## DNA-Isolation kits

▶ Roti®-Prep Plasmid MINI see p. 2231

## DNA-Marker, not prestained

Storage temp.: -20 °C •
Transport temp.: room temp.
WGK 3

### 20 bp-DNA-Ladder

**DNA marker ready-to-use**
**Size range: 20-200 bp**
**Number of fragments: 10**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **2805.1** | 500 µl (50 µg) | plastic | 117,20 € |

For further information, please see page 1178

### 50 bp-DNA-Ladder

**DNA marker ready-to-use**
**Size range: 50-500 bp**
**Number of fragments: 10**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **2810.1** | 500 µl (50 µg) | plastic | 98,40 € |

For further information, please see page 1178

## 100 bp-DNA-Ladder *equimolar*

**DNA ladder + gel loading buffer**
**Size range: 100-1000 bp**
**Number of fragments: 11**
**Number of lanes per 100 µg:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **T834.1** | 50 µg + gel loading buffer | plastic | 74,75 € |
| **T834.2** | 4 x 50 µg + gel loading buffer | plastic | 284,90 € |

For further information, please see page 1179

## 100 bp-DNA-Ladder *equalized*

**DNA ladder + gel loading buffer**
**Size range: 100-1000 bp**
**Number of fragments: 11**
**Number of lanes per 100 µg:**
**approx. 500 (mini gels)**

| | | | |
|---|---|---|---|
| **T833.1** | 20 µg + gel loading buffer | plastic | 73,65 € |
| **T833.2** | 4 x 20 µg + gel loading buffer | plastic | 283,30 € |

For further information, please see page 1179

## 100 bp-DNA-Ladder *extended*

**DNA ladder + gel loading buffer**
**Size range: 100-5000 bp**
**Number of fragments: 17**
**Number of lanes per 100 µg:**
**approx. 160 (mini gels)**

| | | | |
|---|---|---|---|
| **T835.1** | 50 µg + gel loading buffer | plastic | 74,75 € |
| **T835.2** | 4 x 50 µg + gel loading buffer | plastic | 284,90 € |

For further information, please see page 1179

## 200 bp-DNA-Ladder

**DNA marker ready-to-use**
**Size range: 200-2000 bp**
**Number of fragments: 10**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **8272.1** | 500 µl (50 µg) | | 87,65 € |

For further information, please see page 1179

## 250 bp-DNA-Ladder

**DNA ladder + gel loading buffer**
**Size range: 250-8000 bp**
**Number of fragments: 16**
**Number of lanes per 100 µg:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **T918.1** | 50 µg + gel loading buffer | plastic | 80,55 € |

For further information, please see page 1180

## 500 bp-DNA-Ladder

**DNA marker ready-to-use**
**Size range: 500-5000 bp**
**Number of fragments: 10**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **8273.1** | 500 µl (50 µg) | | 69,80 € |

For further information, please see page 1180

## 1 kbp DNA-Ladder

**DNA ladder + gel loading buffer**
**Size range: 500-10000 bp**
**Number of fragments: 11**
**Number of lanes per 100 µg:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **Y014.1** | 50 µg + gel loading buffer | plastic | 35,40 € |
| **Y014.2** | 4 x 50 µg + gel loading buffer | plastic | 122,05 € |

For further information, please see page 1180

## DNA-Ladder combi

**DNA marker + gel loading buffer**
**Size range: 100-10000 bp**
**Number of fragments 20**
**Number of lanes per 40 µg + 100 µg:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **CL22.1** | 20 µg + 50 µg + gel loading buffer | plastic | 107,40 € |

For further information, please see page 1180

## DNA-Marker ccc-plasmid

**DNA marker + gel loading buffer**
**Size range: 3000-12000 bp**
**Number of fragments: 3**
**Number of lanes per 100 µg:**
**approx. 1000 (mini gels)**
A "covalently closed circle" DNA-marker for rapid determination of plasmid size and estimation of plasmid concentration following DNA-preparation.

| | | | |
|---|---|---|---|
| **0149.1** | 10 µg + gel loading buffer | plastic | 61,20 € |

For further information, please see page 1181

## DNA-Marker short-run 1

**DNA marker + gel loading buffer**
**Size range: 500-2500 bp**
**Number of fragments: 5**
**Number of lanes per 100 µg:**
**approx. 400 (mini gels)**
The perfect DNA-marker for very short gel running distances and high-through-put approaches.

| | | | |
|---|---|---|---|
| **0146.1** | 50 µg + gel loading buffer | plastic | 71,95 € |

For further information, please see page 1181

## DNA-Marker short-run *extended*

**DNA marker + gel loading buffer**
**Size range: 100-6000 bp**
**Number of fragments: 9**
**Number of lanes per 100 µg:**
**approx. 300 (mini gels)**

| | | | |
|---|---|---|---|
| **CL05.1** | 50 µg + gel loading buffer | plastic | 83,75 € |

For further information, please see page 1181

## Lambda Hind III / phiX Hae III Marker

**DNA marker + gel loading buffer**
**Size range: 72-23130 bp**
**Number of fragments: 17**
**Number of lanes per 100 µg:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **CP49.1** | 50 µg + gel loading buffer | plastic | 137,10 € |

For further information, please see page 1175

## Lambda Hind III Marker

**DNA marker + gel loading buffer**
**Size range: 125-23130 bp**
**Number of fragments: 8**
**Number of lanes per 100 µg:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **X910.1** | 100 µg + gel loading buffer | plastic | 58,60 € |

For further information, please see page 1175

## pBR328 Mix I

**DNA marker + gel loading buffer**
**Size range: 154-2176 bp**
**Number of fragments: 11**
**Number of lanes per 100 µg:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **T146.1** | 50 µg + gel loading buffer | plastic | 74,10 € |

For further information, please see page 1175

## pBR328-Marker ready-to-use

**DNA marker ready-to-use**
**Size range: 154-2176 bp**
**Number of fragments: 11**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **X902.1** | 500 µl (50 µg) | plastic | 62,90 € |
| **X902.2** | 4 x 500 µl (4 x 50 µg) | plastic | 235,45 € |

For further information, please see page 1175

## PCR-Marker DNA*score*

**DNA marker + gel loading buffer**
**Size range: 500-1500 bp**
**Number of fragments: 7**
**Reinforced bands: 500 bp, 1000 bp, 1500 bp**
**Band for DNA quantitation: 1000 bp**
**Number of lanes per 100 µg:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **T917.1** | 50 µg + gel loading buffer | plastic | 80,55 € |

For further information, please see page 1181

## pUC19-Marker ready-to-use

**DNA marker ready-to-use**
**Size range: 26-501 bp**
**Number of fragments: 10**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **X901.1** | 500 µl (50 µg) | plastic | 59,05 € |
| **X901.2** | 4 x 500 µl (4 x 50 µg) | plastic | 209,65 € |

For further information, please see page 1174

## pUC19/Msp I

**DNA marker + gel loading buffer**
**Size range: 26-501 bp**
**Number of fragments: 10**
**Number of lanes per 100 µg:**
**approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **T149.1** | 50 µg + gel loading buffer | plastic | 74,75 € |
| **T149.2** | 4 x 50 µg + gel loading buffer | plastic | 246,20 € |

For further information, please see page 1174

D

## DNA-Marker, prestained

Storage temp.: -20 °C •
Transport temp.: room temp.
WGK 1

### 20 bp-DNA-Fluoro-Ladder

**DNA-Marker ready-to-use,**
**prestained with DNA fluorescent dye**
**Size range: 20-200 bp**
**Number of fragments: 10**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | |
|---|---|---|
| **8262.1** | 500 µl (50 µg) | 134,40 € |

For further information, please see page 1176

### 50 bp-DNA-Fluoro-Ladder

**DNA-Marker ready-to-use,**
**prestained with DNA fluorescent dye**
**Size range: 50-500 bp**
**Number of fragments: 10**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | |
|---|---|---|
| **8263.1** | 500 µl (50 µg) | 117,20 € |

For further information, please see page 1176

### 100 bp-DNA-Fluoro-Ladder

**DNA-Marker ready-to-use,**
**prestained with DNA fluorescent dye**
**Size range: 100-1000 bp**
**Number of fragments: 10**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | |
|---|---|---|
| **8264.1** | 500 µl (50 µg) | 107,40 € |

For further information, please see page 1177

### 200 bp-DNA-Fluoro-Ladder

**DNA-Marker ready-to-use,**
**prestained with DNA fluorescent dye**
**Size range: 200-2000 bp**
**Number of fragments: 10**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | |
|---|---|---|
| **8265.1** | 500 µl (50 µg) | 96,65 € |

For further information, please see page 1177

### 500 bp-DNA-Fluoro-Ladder

**DNA-Marker ready-to-use,**
**prestained with DNA fluorescent dye**
**Size range: 500-5000 bp**
**Number of fragments: 10**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | |
|---|---|---|
| **8266.1** | 500 µl (50 µg) | 83,75 € |

For further information, please see page 1177

### 1 kbp-DNA-Fluoro-Ladder

**DNA-Marker ready-to-use,**
**prestained with DNA fluorescent dye**
**Size range: 1000-10000 bp**
**Number of fragments: 10**
**Number of lanes per ml:**
**approx. 200 (mini gels)**

| | | |
|---|---|---|
| **8267.1** | 500 µl (50 µg) | 74,10 € |

For further information, please see page 1177

## DNA polymerase (thermostable)


- Roti®-Pol Hot-TaqUltra see p. 2229
- Roti®-Pol Hot-TaqHY see p. 2229
- Roti®-Pol Hot-TaqS see p. 2229
- Roti®-Pol Hot-TaqS Mix (2x) see p. 2229
- Roti®-Pol Hot-TaqS Red-Mix (2x) see p. 2230
- Roti®-Pol ProofRead see p. 2230
- Roti®-Pol TaqUltra see p. 2230
- Roti®-Pol TaqHY see p. 2230
- Roti®-Pol TaqS see p. 2230
- Roti®-Pol TaqS Mix (2x) see p. 2230
- Roti®-Pol TaqS Red-Mix (2x) see p. 2230


## DNA-quantifying marker

Storage temp.: -20 °C
Transport temp.: room temp.

### DNA-quantifying marker QSK 200

**for DNA-quantitation**

| | | | |
|---|---|---|---|
| **L508.1** | 40 µg | plastic | 193,50 € |

For further information, please see page 1243

### DNA-quantifying marker QSK 500

**for DNA-quantitation**

| | | | |
|---|---|---|---|
| **L507.1** | 40 µg | plastic | 193,50 € |

For further information, please see page 1243

### DNA-quantifying marker QSK 1000

**for DNA-quantitation**

| | | | |
|---|---|---|---|
| **L506.1** | 40 µg | plastic | 193,50 € |

For further information, please see page 1243

## DNase Test Agar

### DNase Test Agar

**for microbiology**

For detection of DNase activity for identification of pathogenic bacteria.
Application: Use 42 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

**Formulation:**

| | |
|---|---|
| Casein peptone | 15 g/l |
| Soy peptone | 5 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Deoxyribonucleic acid | 2 g/l |
| Agar | 15 g/l |
| pH value | 7,3 ±0,2 |

| | | | |
|---|---|---|---|
| **8295.1** | 500 g | plastic | 235,45 € |
| Original pack 6 x 500 g | | | 223,68/500 g |

For further information, please see page 1384

## DNA-Synthesis Reagents

| Art. No. | Description | Page |
|---|---|---|
| 2253 | Activation reagent | 1707 |
| K921 | Adenosine-BCE-phosphoramidite | 1709 |
| 2318 | Adenosine-CPG-Support | 1709 |
| 2255 | Capping reagent I | 1809 |
| 2256 | Capping reagent II | 1809 |
| K922 | Cytidine-BCE-phosphoramidite | 1855 |
| 2319 | Cytidine-CPG-Support | 1855 |
| K060 | DMT removal DCE | 1890 |
| 2257 | DMT removal reagent | 1890 |
| A133 | Fast Oxidation reagent | 1924 |
| K923 | Guanosine-BCE-phosphoramidite | 1967 |
| 2320 | Guanosine-CPG-Support | 1967 |
| N893 | Molecular sieve 3 Å | 2081 |
| 2254 | Oxidation reagent | 2127 |
| K924 | Thymidine-BCE-phosphoramidite | 2342 |
| 2321 | Thymidine-CPG-Support | 2342 |

## DNSCl


- 5-(Dimethylamino)-1-naphthalenesulphonyl chloride see p. 1881


## dNTP-Set 1

Deoxynucleoside triphosphate set
Storage temp.: -20 °C
Transport temp.: cooled
[3624-46-2]

### dNTP-Set 1

**≥99 %, dATP, dTTP, dGTP, dCTP**

dNTP-Set 1, composed of the nucleotide-single solutions:
dATP, dTTP, dGTP, dCTP.
Concentration: 100 mM per dNTP.

| | | |
|---|---|---|
| **K039.1** | 4 x 25 µmol (250 µl), 100 mM | 98,40 € |
| **K039.2** | 5 x 4 x 25 µmol (250 µl), 100 mM | 407,45 € |

For further information, please see page 1258

## dNTP-Set 1 (pH 7)

**≥99 %, dATP, dTTP, dGTP, dCTP**

dNTP-Set 1 (pH 7), composed of the nucleotide-single solutions:
dATP, dTTP, dGTP, dCTP.
Concentration: 100 mM per dNTP, **pH 7,0 ±0,1**

| | | |
|---|---|---|
| **0178.1** | 4 x 25 µmol (250 µl), 100 mM | 98,40 € |
| **0178.2** | 5 x 4 x 25 µmol (250 µl), 100 mM | 407,45 € |

For further information, please see page 1258

## dNTP-Set 2

### dNTP-Set 2

**≥99 %, dATP, dUTP, dGTP, dCTP**

dNTP-Set 2, composed of the nucleotide-single solutions:
dATP, dUTP, dGTP, dCTP.
Concentration: 100 mM per dNTP.
Deoxynucleoside triphosphate set
Storage temp.: -20 °C •
Transport temp.: cooled

| | | |
|---|---|---|
| **L540.1** | 4 x 25 µmol (250 µl), 100 mM | 98,80 € |
| **L540.2** | 5 x 4 x 25 µmol (250 µl), 100 mM | 413,90 € |

For further information, please see page 1258

## dNTP-Set 3

### dNTP-Set 3

**>98 %, dATP, dTTP, dITP, dCTP**

dNTP-Set 3, composed of the nucleotide-single solutions:
dATP, dTTP, dITP, dCTP.
Concentration: 100 mM per dNTP.
Deoxynucleoside triphosphate set
Storage temp.: -20 °C
Transport temp.: cooled

| | | |
|---|---|---|
| **P731.1** | 4 x 25 µmol (250 µl), 100 mM | 98,80 € |
| **P731.2** | 5 x 4 x 25 µmol (250 µl), 100 mM | 413,90 € |

For further information, please see page 1258

## DOC

▶ Deoxycholic acid sodium salt (DOC) see p. 1860

## cis-13-Docosenoic acid

▶ Erucic acid see p. 1908

## Dodecanal

▶ Dodecyl aldehyde see p. 1893

## n-Dodecane



$C_{12}H_{26}$
M 170,34 g/mol
D 0,75 • bp 213-216 °C
mp -10 °C • flp 71 °C
[112-40-3] • EC No. 203-967-9
WGK 1

**Danger** H304-EUH066

### n-Dodecane

**≥95 %, for synthesis**

**Type analysis:**

Appearance..... clear colourless liquid
Assay. ..... ≥95,0 %
Density (15 °C). ..... 0,750-0,756
Aromatic compounds. ..... ≤0,1 %
Refractive index $n_D^{20}$. ..... 1,418-1,425

| | | | |
|---|---|---|---|
| **8786.1** | 100 ml | glass | 18,20 € |
| **8786.2** | 500 ml | glass | 57,95 € |
| **8786.3** | 1 l | glass | 104,20 € |
| Original pack 6 x 1 l | | | 98,99/1 l |

### n-Dodecane

**ROTICHROM® GC**

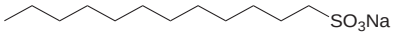
Reference substance for GC
Storage temp.: +4 °C

**Type analysis:**

Purity (GC). ..... ≥98,5 %

| | | | |
|---|---|---|---|
| **9029.1** | 1 g | plastic | 81,20 € |

## Dodecane-1-sulphonic acid sodium salt




### Dodecane-1-sulphonic acid sodium salt

**≥99 %, for ion pair chromatography**

Ion pair reagent for HPLC.
Sodium-1-dodecane sulphonate
$C_{12}H_{25}NaO_3S$
M 272,37 g/mol
[2386-53-0] • EC No. 219-200-6
WGK 2

**Guarantee analysis:**

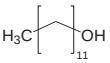
Assay (acidim.)..... ≥99,0 %
Water..... ≤2 %
A 210 nm (5 % in water). .....≤0,05 AU
A 220 nm (5 % in water). .....≤0,03 AU
A 230 nm (5 % in water). .....≤0,02 AU

| | | | |
|---|---|---|---|
| **KK52.1** | 10 g | glass | 54,75 € |
| **KK52.2** | 25 g | glass | 107,40 € |
| **KK52.3** | 100 g | glass | 353,70 € |

## Dodecanoic acid methyl ester

▶ Lauric acid methyl ester see p. 2030

## 1-Dodecanol




### 1-Dodecanol

**≥98 %, for synthesis**

Dodecan-1-ol, Dodecyl alcohol, Lauryl alcohol
$C_{12}H_{26}O$
M 186,34 g/mol
D 0,83 • bp 261 °C
mp 21-24 °C • flp 121 °C
Solubility: 4 mg/l ($H_2O$, 25 °C)
[112-53-8] • EC No. 203-982-0
UN No. 3082 • ADR 9 III • WGK 1

**Warning** H319-H410

**Type analysis:**

Assay. .....≥98,0 %
Melting point. .....21-24 °C

| | | | |
|---|---|---|---|
| **9853.1** | 250 ml | glass | 13,45 € |
| **9853.2** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **9853.3** | 2,5 l | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |

## 2-Dodecenylsuccinic acid anhydride

▶ Glycidether Hardener DBA see p. 1961

## Dodecyl alcohol

▶ 1-Dodecanol see p. 1893

## Dodecyl aldehyde




### Dodecyl aldehyde

**≥98 %, for synthesis**

Dodecanal, Lauraldehyde
$C_{12}H_{24}O$
M 184,32 g/mol
D 0,83 • bp 257 °C
mp 11-13 °C • flp 114 °C
[112-54-9] • EC No. 203-983-6
UN No. 3082 • ADR 9 III • WGK 2

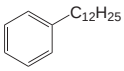
**Warning** H315-H411

**Type analysis:**

Assay (GC). .....≥98,0 %
Density (d 20 °C/4 °C).....0,830-0,840

| | | | |
|---|---|---|---|
| **3754.1** | 50 ml | glass | 48,30 € |

## Dodecylbenzene



### Dodecylbenzene

NEW

**≥98,5 %, tech.**
1-Phenyldodecane, Mixture of $C_{10}$-$C_{13}$ alkylbenzenes
$C_{18}H_{30}$
M 246,44 g/mol
D ~0,85
[123-01-3] • EC No. 204-591-8
WGK 1
H413

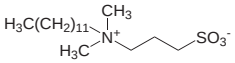
**Type analysis:**
Assay ($C_{10}$-$C_{13}$ alkylbenzenes).....≥98,5 %
Density.....0,850-0,870
Refractive index.....1,480-1,490

| | | | |
|---|---|---|---|
| **0974.1** | 100 ml | glass | 25,70 € |
| **0974.2** | 500 ml | glass | 83,75 € |

## n-Dodecyl-β-D-Glc

▶ n-Dodecyl-β-D-glucopyranoside see p. 1894

## N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate



### N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate

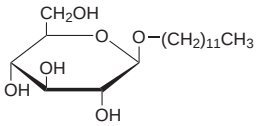
**≥98 %, for biochemistry**
Zwitterionic detergent
Sulfobetaine-12, SB-12
$C_{17}H_{37}NO_3S$
M 335,5 g/mol
[14933-08-5]
WGK 1
**Warning** H315-H319-H335

**Type analysis:**
Assay (HPLC).....≥98,0 %
Loss on drying.....≤2,0 %
Ash.....≤0,1 %

| | | | |
|---|---|---|---|
| **1821.1** | 5 g | glass | 22,05 € |
| **1821.2** | 25 g | glass | 54,30 € |
| **1821.3** | 100 g | glass | 185,45 € |

For further information, please see page 1274

## n-Dodecyl-β-D-glucopyranoside



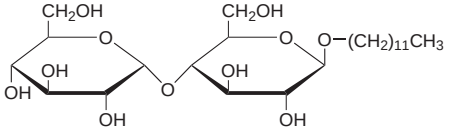
### n-Dodecyl-β-D-glucopyranoside

**for biochemistry**
Non-ionic detergent.
n-Dodecyl-β-D-Glc
$C_{18}H_{36}O_6$
M 348,48 g/mol
Storage temp.: +4 °C
[59122-55-3] • EC No. 261-614-4
WGK 1
**Warning** H315-H319-H335

**Type analysis:**
Solution (1 % in methanol).....colourless, clear
Water (KF).....≤2 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in methanol, after 24 h).....-25° ±2°

| | | | |
|---|---|---|---|
| **4129.1** | 500 mg | glass | 111,70 € |

## Dodecyl-β-D-maltoside (DDM)



### Dodecyl-β-D-maltoside (DDM)

**≥99 %, for biochemistry**
Non-ionic detergent.
DDM, Lauryl-β-D-maltoside
$C_{24}H_{46}O_{11}$
M 510,63 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[69227-93-6]
WGK 1

**Type analysis:**
Assay (HPLC).....≥99 %
α-Anomer (NMR).....≤2 %
Dodecanol (HPLC).....≤0,005 %
Conductance (10 % $H_2O$).....≤100 µS
pH value (1 % in $H_2O$).....5-8
Solubility (20 % in $H_2O$).....clear, colourless
Water (KF).....≤1,0 %
UV-absorption (1 % in $H_2O$):
225 nm.....≤0,1
260 nm.....≤0,06
280 nm.....≤0,04
340 nm.....≤0,02

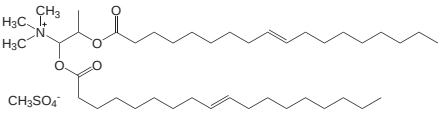
| | | | |
|---|---|---|---|
| **CN26.1** | 500 mg | glass | 41,40 € |
| **CN26.2** | 1 g | glass | 67,20 € |
| **CN26.3** | 2,5 g | glass | 145,15 € |
| **CN26.4** | 10 g | glass | 478,40 € |
| **CN26.5** | 50 g | plastic | 1343,75 € |

For further information, please see page 1271

## Dodecylsulphate sodium salt

▶ SDS see p. 2244
▶ Roti®fair SDS 0.5 g see p. 2214
▶ Roti®fair 10% SDS see p. 2214

## DOTAP



### DOTAP

**CELLPURE® for transfection**
Approx. 200 assays per ml in 24wells.
$C_{43}H_{83}NO_8S$
M 774,21 g/mol
Storage temp.: +4 °C
WGK 3

| | | | |
|---|---|---|---|
| **L787.1** | 0,5 ml | plastic | 78,40 € |
| **L787.2** | 1 ml | plastic | 126,35 € |
| **L787.3** | 5 x 1 ml | plastic | 460,10 € |

For further information, please see page 1336

## Double Sugar Iron Agar, KIA

▶ Kligler Iron Agar see p. 2024

## Dowex® 1 X 2 Anion exchanger

[9085-42-1]
WGK 1

### Dowex® 1 X 2

**50-100 mesh, $Cl^-$-form**
Highly basic anion exchanger.

**Type analysis:**
Appearance.....beads
Water capacity.....65-75 %
Capacity (eq/l).....≥0,7
Counter ion.....$Cl^-$
Particle size (mesh):
>35.....≤10 %
<80.....≤10 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group:
Quaternary ammonium compound type I.

| | | | |
|---|---|---|---|
| **0302.3** | 50 g | plastic | 67,20 € |
| **0302.1** | 100 g | plastic | 110,65 € |
| **0302.4** | 250 g | plastic | 212,35 € |
| **0302.2** | 1 kg | plastic | 815,95 € |
| Original pack 6 x 1 kg | | | 775,15/1 kg |

For further information, please see page 1682

### Dowex® 1 X 2

**100-200 mesh, $Cl^-$-form**
Highly basic anion exchanger.

**Type analysis:**
Appearance.....beads
Water capacity.....65-75 %
Capacity (eq/l).....≥0,6
Counter ion.....$Cl^-$
Particle size (mesh):
>50.....≤10 %
<140.....≤5 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group:
Quaternary ammonium compound type I.

| | | | |
|---|---|---|---|
| **0303.3** | 50 g | plastic | 48,30 € |
| **0303.1** | 100 g | plastic | 87,00 € |
| **0303.4** | 250 g | plastic | 166,55 € |
| **0303.2** | 1 kg | plastic | 568,70 € |
| Original pack 6 x 1 kg | | | 540,27/1 kg |

For further information, please see page 1682

## Dowex® 1 X 2

**200-400 mesh, $Cl^-$-form**

Highly basic anion exchanger.

**Type analysis:**

Appearance. ..... beads
Water capacity. ..... 65-80 %
Capacity (eq/l). ..... ≥0,6
Counter ion. ..... $Cl^-$
Particle size (mesh):
>70. ..... ≤15 %
<270. ..... ≤15 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group:
Quaternary ammonium compound type I.

| | | | |
|---|---|---|---|
| **0304.2** | 50 g | plastic | 51,50 € |
| **0304.1** | 100 g | plastic | 88,70 € |
| **0304.3** | 250 g | plastic | 179,45 € |
| **0304.4** | 1 kg | plastic | 628,90 € |
| Original pack 6 x 1 kg | | | 597,46/1 kg |

For further information, please see page 1682

# Dowex® 1 X 8 Anion exchanger

[12627-85-9]
WGK 1

## Dowex® 1 X 8

**20-50 mesh, $Cl^-$-form**

**Type analysis:**

Appearance. ..... cream-coloured grain
Particle size (mesh). ..... 20-50
Loss on drying (3 h, 105 °C). ..... ~45 %
Capacity (val/l). ..... ~1,2
Counter ion. ..... $Cl^-$
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group:
Quaternary ammonium compound type I.

| | | | |
|---|---|---|---|
| **0309.3** | 50 g | plastic | 58,05 € |
| **0309.1** | 250 g | plastic | 224,70 € |
| **0309.2** | 1 kg | plastic | 751,45 € |
| Original pack 6 x 1 kg | | | 713,88/1 kg |

For further information, please see page 1682

## Dowex® 1 X 8

**50-100 mesh, $Cl^-$-form**

**Type analysis:**

Appearance. ..... beige beads
Water capacity. ..... 43-48 %
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... $Cl^-$
Particle size (mesh):
>35. ..... ≤15 %
<80. ..... ≤15 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group:
Quaternary ammonium compound type I.

| | | | |
|---|---|---|---|
| **0310.3** | 50 g | plastic | 51,50 € |
| **0310.1** | 250 g | plastic | 179,45 € |
| **0310.2** | 1 kg | plastic | 628,90 € |
| Original pack 6 x 1 kg | | | 597,46/1 kg |

For further information, please see page 1682

## Dowex® 1 X 8

**100-200 mesh, $Cl^-$-form**

**Type analysis:**

Appearance. ..... white to yellow beads
Water capacity. ..... 39-45 %
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... $Cl^-$
Particle size (mesh):
>60. ..... ≤15 %
<170. ..... ≤15 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group:
Quaternary ammonium compound type I.

| | | | |
|---|---|---|---|
| **0311.3** | 50 g | plastic | 53,65 € |
| **0311.1** | 100 g | plastic | 99,90 € |
| **0311.4** | 250 g | plastic | 189,10 € |
| **0311.2** | 1 kg | plastic | 686,95 € |
| Original pack 6 x 1 kg | | | 652,60/1 kg |

For further information, please see page 1682

## Dowex® 1 X 8

**200-400 mesh, $Cl^-$-form**

**Type analysis:**

Appearance. ..... white to yellow beads
Water capacity. ..... 39-45 %
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... $Cl^-$
Particle size (mesh):
>100. ..... ≤15 %
<325. ..... ≤15 %
Ion exchanger on the basis of a microporous styrene DVB-copolymerisate. Active group:
Quaternary ammonium compound type I.

| | | | |
|---|---|---|---|
| **0312.3** | 50 g | plastic | 67,20 € |
| **0312.1** | 100 g | plastic | 110,65 € |
| **0312.4** | 250 g | plastic | 212,35 € |
| **0312.2** | 1 kg | plastic | 815,95 € |
| Original pack 6 x 1 kg | | | 775,15/1 kg |

For further information, please see page 1682

# Dowex® 50 W X 2 Cation exchanger

[69011-20-7]
WGK 1

**Warning** H319

NEW

## Dowex® 50 W X 2

**50-100 mesh, $H^+$-form**

Highly acidic cation exchanger.

**Type analysis:**

Appearance. ..... beads
Water capacity. ..... 74-82 %
Capacity (eq/l). ..... ≥0,6
Counter ion. ..... $H^+$
Particle size (mesh):
>20. ..... ≤15 %
<70. ..... ≤15 %
Matrix: Polystyrene - DVB; Active group: sulphonate

| | | | |
|---|---|---|---|
| **6800.1** | 50 g | plastic | 46,15 € |
| **6800.2** | 250 g | plastic | 156,45 € |
| **6800.3** | 1 kg | plastic | 536,45 € |
| Original pack 6 x 1 kg | | | 509,63/1 kg |

## Dowex® 50 W X 2

**100-200 mesh, $H^+$-form**

Highly acidic cation exchanger.

**Type analysis:**

Appearance. ..... beads
Water capacity. ..... 74-82 %
Capacity (eq/l). ..... ≥0,6
Counter ion. ..... $H^+$
Particle size (mesh):
>35. ..... ≤15 %
<140. ..... ≤15 %
Matrix: Polystyrene - DVB; Active group: sulphonate

| | | | |
|---|---|---|---|
| **0334.2** | 50 g | plastic | 48,30 € |
| **0334.1** | 100 g | plastic | 87,00 € |
| **0334.3** | 250 g | plastic | 166,55 € |
| **0334.4** | 1 kg | plastic | 568,70 € |
| Original pack 6 x 1 kg | | | 540,27/1 kg |

For further information, please see page 1682

## Dowex® 50 W X 2

**200-400 mesh, $H^+$-form**

Highly acidic cation exchanger.

**Type analysis:**

Appearance. ..... beige grain
Particle size (mesh). ..... 200-400
Loss on drying (3 h, 105 °C). ..... ~74-82 %
Capacity (eq/l). ..... ~0,6
Counter ion. ..... $H^+$
Matrix: Polystyrene - DVB; Active group: sulphonate

| | | | |
|---|---|---|---|
| **N099.3** | 50 g | plastic | 46,15 € |
| **N099.1** | 100 g | plastic | 84,85 € |
| **N099.4** | 250 g | plastic | 156,45 € |
| **N099.2** | 1 kg | plastic | 536,45 € |
| Original pack 6 x 1 kg | | | 509,63/1 kg |

For further information, please see page 1682

## Dowex® 50 W X 4 Cation exchanger

### Dowex® 50 W X 4

NEW

**200-400 mesh, $H^+$-form**

[11113-61-4]

**Warning** H319

**Type analysis:**

Appearance. ..... beads
Water capacity. ..... 64-72 %
Capacity (eq/l). ..... ≥1,1
Counter ion. ..... $H^+$
Particle size (mesh):
>100. ..... ≤15 %
<325. ..... ≤15 %
Matrix: Polystyrene - DVB; Active group: sulphonate

| | | | |
|---|---|---|---|
| **6821.1** | 50 g | plastic | 43,55 € |
| **6821.2** | 250 g | plastic | 147,20 € |
| **6821.3** | 1 kg | plastic | 504,20 € |
| Original pack 6 x 1 kg | | | 478,99/1 kg |

## Dowex® 50 W X 8 Cation exchanger

[11119-67-8]

**Warning** H319

### Dowex® 50 W X 8

**50-100 mesh, $H^+$-form**

**Type analysis:**

Appearance. ..... beige to green beige beads
Water capacity. ..... 50-56 %
Capacity (eq/l). ..... ≥1,7
Counter ion. ..... $H^+$
Particle size (mesh):
>35. ..... ≤15 %
<80. ..... ≤20 %
Matrix: Polystyrene - DVB; Active group: sulphonate

| | | | |
|---|---|---|---|
| **0344.2** | 50 g | plastic | 51,50 € |
| **0344.1** | 250 g | plastic | 179,45 € |
| **0344.3** | 1 kg | plastic | 628,90 € |
| Original pack 6 x 1 kg | | | 597,46/1 kg |

For further information, please see page 1682

### Dowex® 50 W X 8

**100-200 mesh, $H^+$-form**

**Type analysis:**

Appearance. ..... beige to light brown beads
Water capacity. ..... 50-58 %
Capacity (eq/l). ..... ≥1,7
Counter ion. ..... $H^+$
Particle size (mesh):
>60. ..... ≤15 %
<170. ..... ≤15 %
Matrix: Polystyrene - DVB; Active group: sulphonate

| | | | |
|---|---|---|---|
| **0345.2** | 50 g | plastic | 53,65 € |
| **0345.1** | 100 g | plastic | 99,90 € |
| **0345.3** | 250 g | plastic | 189,10 € |
| **0345.4** | 1 kg | plastic | 686,95 € |
| Original pack 6 x 1 kg | | | 652,60/1 kg |

For further information, please see page 1682

### Dowex® 50 W X 8

**200-400 mesh, $H^+$-form**

**Type analysis:**

Appearance. ..... beige to light brown beads
Water capacity. ..... 50-58 %
Capacity (eq/l). ..... ≥1,7
Counter ion. ..... $H^+$
Particle size (mesh):
>100. ..... ≤15 %
<325. ..... ≤15 %
Matrix: Polystyrene - DVB; Active group: sulphonate

| | | | |
|---|---|---|---|
| **0346.2** | 50 g | plastic | 51,50 € |
| **0346.1** | 100 g | plastic | 88,70 € |
| **0346.3** | 250 g | plastic | 179,45 € |
| **0346.4** | 1 kg | plastic | 628,90 € |
| Original pack 6 x 1 kg | | | 597,46/1 kg |

For further information, please see page 1682

## DPA

▶ Diphenylamine see p. 1887

## DpC

▶ *N*-Phenylanthranilic acid see p. 2147

## DPC

▶ Diphenyl carbonate see p. 1888

## DPGME

▶ Dipropylene glycol monomethyl ether see p. 1888

## DPN

▶ NAD see p. 2087

## $DPNH_2$-$Na_2$

▶ NADH disodium salt see p. 2087

## Dragendorff-Munier spray solution

### Dragendorff-Munier spray solution

**for TLC**

Ready-to-use spray solution for detection of nitrogen compounds and alkaloids.

1 % basic Bismuth nitrate, 16,5 % tartaric acid, 20 % potassium iodide dissolved in water.

WGK 1

**Warning** H319

**Type analysis:**

TLC-application. ..... complies

| | | | |
|---|---|---|---|
| **CP33.1** | 100 ml | glass | 37,50 € |

## DRBC Agar

▶ Dichlorane Bengal Red Agar (with chloroamphenicol) see p. 1868

## DRCM

▶ Differential Reinforced Clostridial Medium see p. 1874

## Dried Solvents ROTIDRY®Sept


| Art. No. | Description | Page |
|---|---|---|
| 5175 | Acetonitrile | 1699 |
| 5176 | Dichloromethane | 1869 |
| 5177 | Diethyl ether | 1873 |
| 5179 | Dimethyl sulphoxide (DMSO) | 1884 |
| 5180 | n-Hexane | 1978 |
| 5181 | Methanol | 2068 |
| 5182 | Tetrahydrofuran | 2336 |
| 5191 | Toluene | 2347 |


## Dried Solvents ROTIDRY®


| Art. No. | Description | Page |
|---|---|---|
| 4424 | Acetic acid ethyl ester | 1695 |
| AE00 | Acetonitrile | 1699 |
| AE03 | Dichloromethane | 1869 |
| AE04 | Diethyl ether | 1873 |
| AE02 | Dimethyl sulphoxide (DMSO) | 1884 |
| 4429 | 1,4-Dioxane | 1886 |
| AE05 | n-Hexane | 1978 |
| AE01 | Methanol | 2068 |
| AE07 | Tetrahydrofuran | 2336 |
| AE06 | Toluene | 2347 |
| 4423 | Trichloromethane/Chloroform | 2351 |


## Dry cleaning gasoline


▶ Petroleum benzine 30-50 see p. 2141
▶ Petroleum benzine 30-75 see p. 2141
▶ Petroleum benzine 40-60 see p. 2141
▶ Petroleum benzine 40-65 see p. 2141
▶ Petroleum benzine 40-80 see p. 2141
▶ Petroleum benzine 50-70 see p. 2141
▶ Petroleum benzine 60-70 see p. 2142
▶ Petroleum benzine 60-95 see p. 2142
▶ Petroleum benzine 63-80 see p. 2142
▶ Petroleum benzine 80-110 see p. 2142
▶ Petroleum benzine 100-140 see p. 2142
▶ Petroleum benzine 135-180 see p. 2142
▶ Petroleum benzine 145-200 see p. 2143
▶ Petroleum benzine 180-220 see p. 2143
▶ Petroleum benzine 190-245 see p. 2143
▶ Petroleum benzine 235-265 see p. 2143


## Drying Agents


| Art. No. | Description | Page |
|---|---|---|
| 5280 | Aluminium granulate | 1719 |
| 5285 | Aluminium powder | 1719 |
| 2729 | Calcium | 1802 |
| CN93 | Calcium chloride | 1803 |
| CN92 | Calcium chloride | 1804 |
| A119 | Calcium chloride | 1804 |
| CN88 | Calcium oxide | 1806 |
| P023 | Copper(II) sulphate | 1845 |
| N077 | Desiccant sachet Silica gel orange | 1861 |
| N078 | Desiccant sachet Silica gel orange | 1861 |
| N079 | Desiccant sachet Silica gel orange | 1862 |
| AE61 | Magnesium filings | 2047 |
| CP20 | Magnesium powder | 2047 |
| 4468 | Magnesium ribbon | 2048 |
| 8280 | Magnesium oxide | 2050 |
| 0261 | Magnesium sulphate hydrate | 2051 |
| N893 | Molecular sieve 3 Å | 2081 |
| 8487 | Molecular sieve 3 Å | 2081 |
| P729 | Molecular sieve 3 Å | 2081 |
| 8471 | Molecular sieve 4 Å | 2081 |

| | | |
|---|---|---|
| 8475 | Molecular sieve 5 Å | 2081 |
| 8483 | Molecular sieve 10 Å | 2081 |
| 9076 | Phosphorus pentoxide | 2152 |
| P743 | Potassium carbonate | 2163 |
| 6751 | Potassium hydroxide | 2170 |
| 2440 | Silica gel blue | 2256 |
| CN70 | Silica gel industry grade | 2256 |
| P077 | Silica gel orange | 2256 |
| 8109 | Silica gel water resistant | 2256 |
| 9376 | Silica gel white | 2256 |
| T858 | Silica gel white | 2256 |
| 4469 | Sodium | 2265 |
| 6771 | Sodium hydroxide | 2276 |
| 8560 | Sodium sulphate | 2284 |

## Drying agent water resistant
▶ Silica gel water resistant see p. 2256

## Drying pearls water resistant
▶ Silica gel water resistant see p. 2256

## Drying pearls blue
▶ Silica gel blue see p. 2256

## Drying pearls orange
▶ Silica gel orange see p. 2256

## Drying pearls white
▶ Silica gel white see p. 2256

## Drying pearls WS
▶ Silica gel water resistant see p. 2256

## DSC
▶ N,N'-Disuccinimidyl carbonate (DSC) see p. 1889

## DTE
▶ 1,4-Dithioerythritol (DTE) see p. 1889

## DTNB
▶ 5,5'-Dithio-bis-(2-nitrobenzoic acid) see p. 1889

## DTPA
▶ Diethylene triamine pentaacetic acid see p. 1873

## DTT
▶ 1,4-Dithiothreitol (DTT) see p. 1889

## dTTP

### dTTP
**≥95 %, lyophilised**
5'-Deoxythymidine-5'-triphosphate tri-sodium salt
$C_{10}H_{14}N_2O_{14}P_3Na_3 \cdot 3\ H_2O$
M 602,15 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[27821-54-1] • EC No. 248-679-4

| | | | |
|---|---|---|---|
| **K051.1** | 10 mg | plastic | 23,15 € |
| **K051.2** | 100 mg | plastic | 145,15 € |

For further information, please see page 1261

## dTTP solution

### dTTP solution
**≥99 %, 100 mM solution**
2'-Deoxythymidine-5'-triphosphate
$C_{10}H_{14}N_2O_{14}P_3$
M 479,14 g/mol
Storage temp.: -20 °C
Transport temp.: cooled
[3624-46-2] • EC No. 248-679-4

| | | | |
|---|---|---|---|
| **K036.1** | 25 µmol (250 µl) | plastic | 33,25 € |

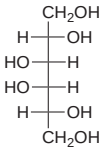
For further information, please see page 1259

## Dulbecco's balanced salt solution
▶ Roti®-CELL DPBS see p. 2205

## Dulbecco's Modified Eagle Medium
▶ Roti®-CELL DMEM Low Glucose see p. 2205

## Dulbecco's Modified Eagle Medium + Ham's F12 medium (1:1)
▶ Roti®-CELL DMEM : F12 see p. 2204

## Dulcitol



### Dulcitol
**≥99 %, for biochemistry**
Galactit, Melampyrit, Dulcitol
$C_6H_{14}O_6$
M 182,17 g/mol
D 1,47 • bp 275-280 °C
mp 186-192 °C
[608-66-2] • EC No. 210-165-2

**Type analysis:**
Appearance. ..... white, fine powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Melting point. ..... 186-192 °C

| | | | |
|---|---|---|---|
| **4944.2** | 10 g | plastic | 17,75 € |
| **4944.1** | 50 g | plastic | 57,95 € |

## dUTP solution

### dUTP solution
**≥99 %, 100 mM solution**
2'-Deoxyuridine-5'-triphosphate
$C_9H_{12}N_2O_{14}P_3$
M 465,12 g/mol
Storage temp.: -20 °C
Transport temp.: cooled

| | | | |
|---|---|---|---|
| **L539.1** | 25 µmol (250 µl) | plastic | 33,25 € |

For further information, please see page 1259

## Dyes
▶ Indicators and Dyes see p. 2000

## Dyes for vital staining
▶ Chapter histology see p. 1469

## Dysprosium Standards
▶ Dysprosium ICP Standard Solution see p. 2298
▶ Dysprosium ICP Standard Solution see p. 2302

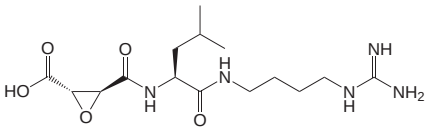
## Dysprosium(III) oxide

### Dysprosium(III) oxide
**ROTI®REMETIC 99,9 %**
Didysprosium trioxide, Dysprosia
$Dy_2O_3$
M 373,00 g/mol
bp 3900 °C
mp 2310 °C
Solubility: insoluble ($H_2O$, 20 °C)
[1308-87-8] • EC No. 215-164-0
WGK 1

**Type analysis:**
Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7145.1** | 5 g | plastic | 40,75 € |
| **7145.2** | 25 g | plastic | 73,00 € |

## E-64



### E-64

**≥99 %, for biochemistry**

Inhibitor of cysteine proteases.

N-[N-(L-3-trans-Carboxyoxirane-2-carbonyl)-leucyl]-agmatine, N-(trans-Epoxysuccinyl)-L-leucine-4-guanidinobutylamide

$C_{15}H_{27}N_5O_5 \cdot 0{,}5\ H_2O$

M 357,41 g/mol

mp 182 °C

Storage temp.: -20 °C •

Transport temp.: room temp.

[66701-25-5]

WGK 3

**Type analysis:**

Appearance. ..... white powder
Assay (HPLC). ..... ≥99,0 %
Spec. rotation $[\alpha]_D^{20}$ (in 0,1 N HCl)..... +21° to +26°

| | | | |
|---|---|---|---|
| **2935.1** | 5 mg | plastic | 88,05 € |
| **2935.2** | 25 mg | plastic | 314,45 € |

For further information, please see page 1284

## Eagle's MEM


- Roti®-CELL Eagle's MEM / Hanks' see p. 2206
- Roti®-CELL Eagle's MEM-Alpha see p. 2205
- Roti®-CELL Eagle's MEM / Earle's see p. 2206


## EC Blue 10

### EC Blue 10

**NISSUI for water analysis**

For qualitative and quantitative detection of Coliforms and *E. coli* in particular in water.

Add 10 ml sample water.

WGK 1

**Guarantee analysis:**

Appearance of the powder..... light to dark yellow
Solubility in 10 ml water. ..... complies
pH value. ..... 6,9-7,3
Sterility..... complies

| | | | |
|---|---|---|---|
| **7754.1** | 150 pieces | plastic | 536,45 € |

For further information, please see page 1359

## EC Blue 100

### EC Blue 100

**NISSUI for water analysis**

For qualitative and quantitative detection of Coliforms and *E. coli* in particular in water.

Add 100 ml sample water.

WGK 1

**Guarantee analysis:**

Appearance of the powder..... light to dark yellow
Solubility in 100 ml water. ..... complies
pH value. ..... 6,9-7,3
Sterility..... complies

| | | | |
|---|---|---|---|
| **0209.1** | 80 pieces | plastic | 618,15 € |

For further information, please see page 1359

## EC Blue 100P

### EC Blue 100P

**NISSUI for water analysis**

For qualitative and quantitative analysis of coliforms and specifically *E. coli* in water.

Dissolve a single-dose sachet of analysis reagent in 100 ml of test water.

WGK 1

**Guarantee analysis:**

Appearance of the powder. ..... light to dark yellow
Solubility in 100 ml water. ..... complies
pH value. ..... 6,9-7,3
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **0202.1** | 100 pieces | plastic | 428,95 € |

For further information, please see page 1359

## EC Blue Comparator

### EC Blue Comparator

**NISSUI for water analysis**

1 bottle of *E. coli* positive control for EC Blue system, colour intensity "1 cfu".

Storage temp.: +4 °C

WGK 1

**Guarantee analysis:**

Appearance of solution..... clear, light green-blue
Absorption (610 nm)..... complies
pH value. ..... 7,2-7,6

| | | | |
|---|---|---|---|
| **0349.2** | 10 ml | plastic | 138,70 € |
| **0349.1** | 100 ml | plastic | 160,20 € |

For further information, please see page 1360

## EC Broth

### EC Broth

**ISO 7251, for microbiology**

For detection and enumeration of coliform bacteria in water.

Application: Use 37,4 g for 1 l broth.

*E. coli* Bouillon

Storage temp.: +20 °C

WGK 1

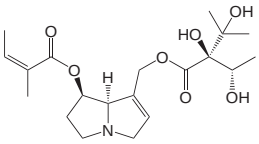
**Guarantee analysis:**

Tryptose. ..... 20 g/l
Lactose. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Dipotassium phosphate..... 4 g/l
Potassium phosphate..... 1,5 g/l
Bile salts No. 3. ..... 1,5 g/l
pH value. ..... 6,9 ±0,2

| | | | |
|---|---|---|---|
| **8310.1** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |

For further information, please see page 1384

## Echimidine



### Echimidine

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Echium plantagineum*.

7-O-Angelyl-9-O-echimidinylretronecine

$C_{20}H_{31}NO_7$

M 397,46 g/mol

Storage temp.: -20 °C •

Transport temp.: room temp.

[520-68-3]

UN No. 1544 • ADR 6.1 III • WGK 3

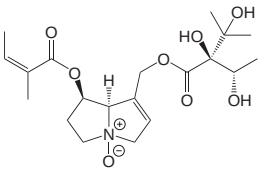
**Danger** H301+H311+H331-H373

**Type analysis:**

Purity (HPLC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **7992.1** | 5 mg | glass | 364,45 € |

## Echimidine N-oxide



### Echimidine N-oxide

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Echium plantagineum*.

7-O-Angelyl-9-O-echimidinylretronecine N-oxide

$C_{20}H_{31}NO_8$

M 413,46 g/mol

mp 164-165 °C

Storage temp.: -20 °C •

Transport temp.: room temp.

[41093-89-4]

UN No. 1544 • ADR 6.1 III • WGK 3

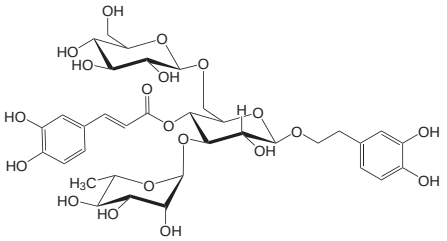
**Danger** H301+H311+H331-H373

**Type analysis:**

Purity (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **8011.1** | 5 mg | glass | 364,45 € |

## Echinacoside



$C_{35}H_{46}O_{20}$
M 786,70 g/mol
[82854-37-3]
WGK 3

### Echinacoside
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC)..... ≥90,0 %
Residual solvents (GC)..... ≤1,0 %
Water (KF)..... ≤17,0 %
Assay (qNMR)..... ≥80,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE40.1** | 10 mg | glass | 521,40 € |

### Echinacoside
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

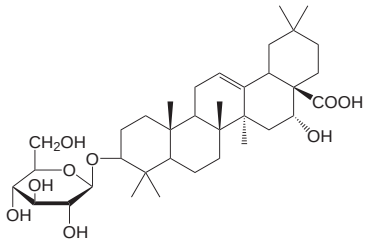
| | | | |
|---|---|---|---|
| **NC40.1** | 25 mg | glass | 332,20 € |

### Echinacoside
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Echinacea pallida.*
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1135.1** | 10 mg | glass | 392,40 € |

## Echinocystic acid 3-glucoside



### Echinocystic acid 3-glucoside
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{36}H_{58}O_{9}$
M 634 g/mol
Storage temp.: +4 °C
[78285-90-2]

**Type analysis:**
Purity (HPLC)..... ≥92 %

| | | | |
|---|---|---|---|
| **6995.1** | 25 mg | glass | 1030,95 € |

## *E. coli* Bouillon
▶ EC Broth see p. 1898

## Ecosurf™ SA-9

### Ecosurf™ SA-9
**extra pure**
Alternative to Triton X-100, non-ionic detergent.
Mixture of $C_6$-$C_{16}$ ethoxylated and propoxylated alcohols.
D 0,99 • bp >250 °C
WGK 1
**Danger** H302-H318

**Type analysis:**
Appearance..... colourless to yellow liquid
Cloud point (1%, $H_2O$)..... 55-60 °C
pH value (1 % in $H_2O$)..... 5-8
Water..... ≤0,50 %

| | | | |
|---|---|---|---|
| **0982.1** | 100 ml | glass | 16,05 € |
| **0982.2** | 500 ml | glass | 32,15 € |

## EDAC Hydrochloride
▶ 1-Ethyl-3-(3-dimethylaminopropyl)-carbodiimide hydrochloride (EDC-HCl) see p. 1915

## EDC-HCl
▶ 1-Ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride (EDC-HCl) see p. 1915

## EDTA
▶ Ethylenediamine tetraacetic acid see p. 1915

## EDTAs


| Art. No. | Description | Page |
|---|---|---|
| 8040 | Ethylenediamine tetraacetic acid | 1915 |
| CN06 | Ethylenediamine tetraacetic acid | 1916 |
| 6506 | Ethylenediamine tetraacetic acid calcium disodium salt dihydrate | 1916 |
| 6499 | Ethylenediamine tetraacetic acid copper disodium salt dihydrate | 1916 |
| 3053 | Ethylenediamine tetraacetic acid dipotassium salt dihydrate | 1916 |
| 1408 | Ethylenediamine tetraacetic acid dipotassium salt dihydrate | 1916 |
| 8043 | Ethylenediamine tetraacetic acid disodium salt dihydrate | 1917 |
| X986 | Ethylenediamine tetraacetic acid disodium salt dihydrate | 1917 |
| 6498 | Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate | 1917 |
| 6508 | Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate | 1917 |
| 6510 | Ethylenediamine tetraacetic acid manganese disodium salt dihydrate | 1917 |
| 1410 | Ethylenediamine tetraacetic acid tetrasodium salt dihydrate | 1918 |
| 3619 | Ethylenediamine tetraacetic acid tetrasodium salt hydrate | 1917 |
| CP87 | Ethylenediamine tetraacetic acid tetrasodium salt tetrahydrate | 1918 |
| 1409 | Ethylenediamine tetraacetic acid tripotassium salt dihydrate | 1918 |
| 6518 | Ethylenediamine tetraacetic acid zinc disodium salt dihydrate | 1918 |
| 1031 | Roti®fair 0.5M EDTA | 2211 |


## EDTA calcium disodium salt dihydrate
▶ Ethylenediamine tetraacetic acid calcium disodium salt dihydrate see p. 1916

## EDTA copper disodium salt dihydrate
▶ Ethylenediamine tetraacetic acid copper disodium salt dihydrate see p. 1916

## EDTA Dipotassium salt dihydrate
▶ Ethylenediamine tetraacetic acid dipotassium salt dihydrate see p. 1916

## EDTA disodium salt dihydrate
▶ Ethylenediamine tetraacetic acid disodium salt dihydrate see p. 1916

## EDTA disodium salt solution (0,01 N)

### EDTA disodium salt solution

**0,01 mol/l - 0,01 N volumetric standard solution**

For metal titration.

Titration complex III solution

[6381-92-6] • EC No. 205-358-3

WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,01 mol/l ±0,5 %

Titer. ..... 0,995-1,005

| | | | |
|---|---|---|---|
| **CN34.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **CN34.2** | 5 l | ROTI®CUBE | 71,95 € |
| Original pack 2 x 5 l | | | 68,35/5 l |
| **CN34.3** | 10 l | ROTI®CUBE | 130,00 € |

For further information, please see page 1621

## EDTA disodium salt solution (0,01 N)

### EDTA disodium salt solution

**ROTI®VOLUM 0,01 mol/l - 0,01 N**

Ampoule for preparation of 1000 ml volumetric solution.

Titration complex III solution

$C_{10}H_{14}N_2Na_2O_8 \cdot 2\ H_2O$

M 372,24 g/mol

[6381-92-6] • EC No. 205-358-3

WGK 2

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,01 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN52.1** | 1 piece | plastic ampoule | 28,95 € |

For further information, please see page 1623

## EDTA disodium salt solution (0,05 N)

### EDTA disodium salt solution

**0,05 mol/l - 0,05 N volumetric standard solution**

For metal titration.

Titration complex III solution

[6381-92-6] • EC No. 205-358-3

WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,05 mol/l ±0,2 %

Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **KK75.1** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **KK75.2** | 5 l | plastic | 65,05 € |
| Original pack 2 x 5 l | | | 61,80/5 l |
| **KK75.3** | 5 l | ROTI®CUBE | 69,35 € |
| Original pack 2 x 5 l | | | 65,88/5 l |

## EDTA disodium salt solution (0,1 N)

### EDTA disodium salt solution

**0,1 mol/l - 0,1 N volumetric standard solution**

For metal titration.

Titration complex III solution

[6381-92-6] • EC No. 205-358-3

WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C). .. 0,1 mol/l ±0,2 %

Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **K714.1** | 1 l | glass | 22,05 € |
| Original pack 6 x 1 l | | | 20,95/1 l |
| **K714.2** | 5 l | plastic | 66,15 € |
| Original pack 2 x 5 l | | | 62,84/5 l |
| **K714.3** | 5 l | ROTI®CUBE | 71,95 € |
| Original pack 2 x 5 l | | | 68,35/5 l |
| **K714.4** | 10 l | ROTI®CUBE | 128,90 € |

For further information, please see page 1621

## EDTA disodium salt solution (0,1 N)

### EDTA disodium salt solution

**0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.**

Titration complex III solution

WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... 0,1 mol/l

Measurement uncertainty. ..... ±0,2 %

| | | | |
|---|---|---|---|
| **6764.1** | 1 l | plastic | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |

## EDTA disodium salt solution (0,1 N)

### EDTA disodium salt solution

**ROTI®VOLUM 0,1 mol/l - 0,1 N**

Ampoule for preparation of 1000 ml volumetric solution.

Titration complex III solution

$C_{10}H_{14}N_2Na_2O_8 \cdot 2\ H_2O$

M 372,24 g/mol

[6381-92-6] • EC No. 205-358-3

WGK 2

**Warning** H373

**Type analysis:**

Amount-of-substance conc. (20 °C). .. 0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN51.1** | 1 piece | plastic ampoule | 27,45 € |

For further information, please see page 1623

## EDTA disodium salt solution (0,2 N)

### EDTA disodium salt solution

**0,2 mol/l - 0,2 N volumetric standard solution**

Titration complex III solution

[6381-92-6] • EC No. 205-358-3

WGK 2

**Type analysis:**

Amount-of-substance conc. (20 °C)... 0,2 mol/l ±0,2 %

Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **8084.1** | 1 l | plastic | 23,55 € |
| Original pack 6 x 1 l | | | 22,37/1 l |
| **8084.2** | 5 l | ROTI®CUBE | 70,85 € |
| Original pack 2 x 5 l | | | 67,31/5 l |

## EDTA disodium salt solution A (0,1 N)

### EDTA disodium salt solution A

**0,1 mol/l - 0,1 N volumetric standard solution**

For determination of water hardness.

WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %

Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **T136.1** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |

For further information, please see page 1621

## EDTA disodium salt solution B (0,01783 N)

### EDTA disodium salt solution B

**0,01783 mol/l - 0,01783 N volumetric standard solution**

For determination of water hardness.

WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,01783 mol/l ±0,4 %

Titer. ..... 0,996-1,004

| | | | |
|---|---|---|---|
| **T137.1** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **T137.2** | 5 l | ROTI®CUBE | 71,95 € |
| Original pack 2 x 5 l | | | 68,35/5 l |
| **T137.3** | 10 l | ROTI®CUBE | 130,00 € |

For further information, please see page 1621

## EDTA iron(III) sodium salt trihydrate

▶ Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate see p. 1917

## EDTA magnesium disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate see p. 1917

## EDTA manganese disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid manganese disodium salt dihydrate see p. 1917

## EDTA powder (pouch)

▶ Roti®fair 0.5M EDTA see p. 2211

## EDTA solution in DPBS

▶ Roti®-CELL DPBS/EDTA see p. 2205

## EDTA solution in PBS

▶ Roti®-CELL PBS/EDTA see p. 2208

## EDTA tetrasodium salt dihydrate

▶ Ethylenediamine tetraacetic acid tetrasodium salt dihydrate see p. 1918

## EDTA tripotassium salt dihydrate

▶ Ethylenediamine tetraacetic acid tripotassium salt dihydrate see p. 1918

## EDTA zinc disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid zinc disodium salt dihydrate see p. 1918

## EdU

▶ 5-Ethynyl-2'-deoxyuridine (EdU) see p. 1913

## EdU Click-488

### EdU Click-488

**ROTI®kit for Imaging**

For fast and simple detection of cell proliferation through fluorescence microscopy.
Marker: **6-FAM-Azid** ($\lambda_{Abs.}$ = 496 nm, $\lambda_{Em.}$= 516 nm)
For 100 Assays.
Storage temp.: see below, -20 °C / +4 °C
Transport temp.: cooled
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H315-H319-H400-H410

**Components:**

EdU. ..... 5 mg
6-FAM-Azide (10 mM in DMSO). ..... 130 µl
Buffer Additive. ..... 4 x 200 mg
DMSO. ..... 2 x 2 ml
Catalyst Solution. ..... 2 x 2 ml
Reaction Buffer. ..... 4 x 2 ml
*Store at -20 °C (EdU, 6-FAM-Azide, Buffer Additive); +4 °C (DMSO, Catalyst Solution, Reaction Buffer)*

| | | | |
|---|---|---|---|
| **7773.1** | 1 kit | cardboard | 364,45 € |

## EdU Click-555

### EdU Click-555

**ROTI®kit for Imaging**

For fast and simple detection of cell proliferation through fluorescence microscopy.
Marker: **5-TAMRA-PEG3-Azid** ($\lambda_{Abs.}$ = 546 nm, $\lambda_{Em.}$= 579 nm)
For 100 Assays.
Storage temp.: see below, -20 °C / +4 °C
Transport temp.: cooled
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H315-H319-H400-H410

**Components:**

EdU. ..... 5 mg
5-TAMRA-PEG3-Azide (10 mM in DMSO). ..... 130 µl
Buffer Additive. ..... 4 x 200 mg
DMSO. ..... 2 x 2 ml
Catalyst Solution. ..... 2 x 2 ml
Reaction Buffer. ..... 4 x 2 ml
*Store at. -20 °C (EdU, 5-TAMRA-PEG3-Azide, Buffer Additive); +4 °C (DMSO, Catalyst Solution, Reaction Buffer)*

| | | | |
|---|---|---|---|
| **7775.1** | 1 kit | cardboard | 364,45 € |

## EdU Click-594

### EdU Click-594

**ROTI®kit for Imaging**

For fast and simple detection of cell proliferation through fluorescence microscopy.
Marker: **5/6-Sulforhodamine-101-PEG3-Azid** ($\lambda_{Abs.}$ = 584 nm, $\lambda_{Em.}$= 603 nm)
For 100 Assays.
Storage temp.: see below, -20 °C/+4 °C
Transport temp.: cooled
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H315-H319-H400-H410

**Components:**

EdU. ..... 5 mg
5/6-Sulforhodamine-101-PEG3-Azide (10 mM in DMSO). ..... 130 µl
Buffer Additive. ..... 4 x 200 mg
DMSO. ..... 2 x 2 ml
Catalyst Solution. ..... 2 x 2 ml
Reaction Buffer. ..... 4 x 2 ml
*Store at -20 °C (EdU, 5/6-Sulforhodamine-101-PEG3-Azide, Buffer Additive); +4 °C (DMSO, Catalyst Solution, Reaction Buffer)*

| | | | |
|---|---|---|---|
| **7776.1** | 1 kit | cardboard | 364,45 € |

## EdU Click-647

### EdU Click-647

**ROTI®kit for Imaging**

For fast and simple detection of cell proliferation through fluorescence microscopy.
Marker: **Eterneon Red** ($\lambda_{Abs.}$ = 643 nm, $\lambda_{Em.}$= 662 nm)
For 100 Assays.
Storage temp.: see below, -20 °C/+4 °C
Transport temp.: cooled
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H315-H319-H400-H410

**Components:**

EdU. ..... 5 mg
Eterneon Red (10 mM in DMSO). ..... 130 µl
Buffer Additive. ..... 4 x 200 mg
DMSO. ..... 2 x 2 ml
Catalyst Solution. ..... 2 x 2 ml
Reaction Buffer. ..... 4 x 2 ml
*Store at -20 °C (EdU, Eterneon Red, Buffer Additive); +4 °C (DMSO, Catalyst Solution, Reaction Buffer)*

| | | | |
|---|---|---|---|
| **7777.1** | 1 kit | cardboard | 364,45 € |

## EdU Click FC-488

### EdU Click FC-488

**ROTI®kit for Flow Cytometry**

Kit for detection of cell proliferation through Flow Cytometry.
Marker: **6-FAM-Azid** ($\lambda_{Abs.}$ = 496 nm, $\lambda_{Em.}$= 516 nm)
For 50 assays.
Storage temp.: +4 °C
Transport temp.: cooled
UN No. 3077 • ADR 9 III • WGK 2

H411-EUH208

**Components:**

EdU. ..... 10 mg
6-FAM-Azide (10 mM in DMSO). ..... 130 µl
DMSO. ..... 5 ml
Fixative Solution. ..... 5 ml
Saponin Reagent. ..... 50 ml
Catalyst Solution. ..... 2 ml
Buffer Additive. ..... 400 mg

| | | | |
|---|---|---|---|
| **7779.1** | 1 kit | cardboard | 375,20 € |

## EdU Click FC-555

### EdU Click FC-555

**ROTI®kit for Flow Cytometry**

Kit for detection of cell proliferation through Flow Cytometry.
Marker: **5-TAMRA-PEG3-Azid** ($\lambda_{Abs.}$ = 546 nm, $\lambda_{Em.}$= 579 nm)
For 50 assays.
Storage temp.: +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

H411-EUH208

**Components:**

EdU. ..... 10 mg
5-TAMRA-PEG3-Azide (10 mM in DMSO). ..... 130 µl
DMSO. ..... 5 ml
Fixative Solution. ..... 5 ml
Saponin Reagent. ..... 50 ml
Catalyst Solution. ..... 2 ml
Buffer Additive. ..... 400 mg

| | | | |
|---|---|---|---|
| **7780.1** | 1 kit | cardboard | 375,20 € |

## EdU Click FC-594

### EdU Click FC-594

**ROTI®kit for Flow Cytometry**

Kit for detection of cell proliferation through Flow Cytometry.
Marker: **5/6-Sulforhodamine-101-PEG3-Azid** ($\lambda_{Abs.}$ = 584 nm, $\lambda_{Em.}$= 603 nm)
For 50 assays.
Storage temp.: +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

H411-EUH208

**Components:**

EdU. ..... 10 mg
5/6-Sulforhodamine-101-PEG3-Azide (10 mM in DMSO). ..... 130 µl
DMSO. ..... 5 ml
Fixative Solution. ..... 5 ml
Saponin Reagent. ..... 50 ml
Catalyst Solution. ..... 2 ml
Buffer Additive. ..... 400 mg

| | | | |
|---|---|---|---|
| **7781.1** | 1 kit | cardboard | 375,20 € |

## EdU Click FC-647

### EdU Click FC-647

**ROTI®kit for Flow Cytometry**

Kit for detection of cell proliferation through Flow Cytometry.
Marker: **Eterneon Red** ($\lambda_{Abs.}$ = 643 nm, $\lambda_{Em.}$= 662 nm)
For 50 assays.
Storage temp.: +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

H411-EUH208

**Components:**

EdU. ..... 10 mg
Eterneon Red (10 mM in DMSO). ..... 130 µl
DMSO. ..... 5 ml
Fixative Solution. ..... 5 ml
Saponin Reagent. ..... 50 ml
Catalyst Solution. ..... 2 ml
Buffer Additive. ..... 400 mg

| | | | |
|---|---|---|---|
| **7783.1** | 1 kit | cardboard | 375,20 € |

## EdU Click HTS 2-488

### EdU Click HTS 2-488

**ROTI®kit for High Throughput Screening**

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **6-FAM-Azid** ($\lambda_{Abs.}$ = 496 nm, $\lambda_{Em.}$= 516 nm)
For 200 reactions or 2 x 96 well plates.
Storage temp.: see below, room temp. / +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

**Warning** H315-H319-H411-EUH031

**Components:**

20x EdU. ..... 2 ml
6-FAM-Azide (10 mM in DMSO). ..... 130 µl
Reaction Buffer. ..... 10 ml
Catalyst Solution. ..... 1 ml
Buffer Additive. ..... 200 mg
Rinse Buffer. ..... 6 ml
*Store at +4 °C (20x EdU, 6-FAM-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)*

| | | | |
|---|---|---|---|
| **7786.1** | 1 kit | cardboard | 209,65 € |

## EdU Click HTS 4-488

### EdU Click HTS 4-488

**ROTI®kit for High Throughput Screening**

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **6-FAM-Azid** ($\lambda_{Abs.}$ = 496 nm, $\lambda_{Em.}$= 516 nm)
For 400 reactions or 4 x 96 well plates.
Storage temp.: see below, room temp. / +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

**Warning** H315-H319-H411-EUH031

**Components:**

20x EdU. ..... 4 ml
6-FAM-Azide (10 mM in DMSO). ..... 2 x 130 µl
Reaction Buffer. ..... 40 ml
Catalyst Solution. ..... 1 ml
Buffer Additive. ..... 400 mg
Rinse Buffer. ..... 2 x 6 ml
*Store at +4 °C (20x EdU, 6-FAM-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)*

| | | | |
|---|---|---|---|
| **7787.1** | 1 kit | cardboard | 321,45 € |

## EdU Click HTS 20-488

### EdU Click HTS 20-488

**ROTI®kit for High Throughput Screening**

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **6-FAM-Azid** ($\lambda_{Abs.}$ = 496 nm, $\lambda_{Em.}$= 516 nm)
For 2000 reactions or 20 x 96 well plates.
Storage temp.: see below, room temp. / +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 3

**Warning** H315-H319-H411-EUH031

**Components:**

20x EdU. ..... 20 ml
6-FAM-Azide (10 mM in DMSO). ..... 9 x 130 µl
Reaction Buffer. ..... 4 x 50 ml
Catalyst Solution. ..... 5 ml
Buffer Additive. ..... 2 x 1 g
Rinse Buffer. ..... 58 ml
*Store at +4 °C (20x EdU, 6-FAM-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)*

| | | | |
|---|---|---|---|
| **7788.1** | 1 kit | cardboard | 1063,20 € |

## EdU Click HTS 2-555

### EdU Click HTS 2-555

**ROTI®kit for High Throughput Screening**

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **5-TAMRA-PEG3-Azid** ($\lambda_{Abs.}$ = 546 nm, $\lambda_{Em.}$= 579 nm)
For 200 reactions or 2 x 96 well plates.
Storage temp.: see below, room temp. / +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

**Warning** H315-H319-H411-EUH031

**Components:**

20x EdU. ..... 2 ml
5-TAMRA-PEG3-Azide (10 mM in DMSO). ..... 130 µl
Reaction Buffer. ..... 20 ml
Catalyst Solution. ..... 1 ml
Buffer Additive. ..... 200 mg
Rinse Buffer. ..... 6 ml
*Store at +4 °C (20x EdU, 5-TAMRA-PEG3-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)*

| | | | |
|---|---|---|---|
| **7789.1** | 1 kit | cardboard | 208,45 € |

## EdU Click HTS 4-555

### EdU Click HTS 4-555

**ROTI®kit for High Throughput Screening**

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **5-TAMRA-PEG3-Azid** ($\lambda_{Abs.}$ = 546 nm, $\lambda_{Em.}$= 579 nm)
For 400 reactions or 4 x 96 well plates.
Storage temp.: see below, room temp. / +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

**Warning** H315-H319-H411-EUH031

**Components:**

20x EdU. ..... 4 ml
5-TAMRA-PEG3-Azide (10 mM in DMSO). ..... 2 x 130 µl
Reaction Buffer. ..... 40 ml
Catalyst Solution. ..... 1 ml
Buffer Additive. ..... 400 mg
Rinse Buffer. ..... 2 x 6 ml
*Store at +4 °C (20x EdU, 5-TAMRA-PEG3-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)*

| | | | |
|---|---|---|---|
| **7791.1** | 1 kit | cardboard | 321,45 € |

## EdU Click HTS 20-555

### EdU Click HTS 20-555

**ROTI®kit for High Throughput Screening**

For fast and specific detection of cell proliferation in High Throughput Screening.
Marker: **5-TAMRA-PEG3-Azid** ($\lambda_{Abs.}$ = 546 nm, $\lambda_{Em.}$= 579 nm)
For 2000 reactions or 20 x 96 well plates.
Storage temp.: see below, room temp. / +4 °C
Transport temp.: cooled
UN No. 3082 • ADR 9 III • WGK 2

**Warning** H315-H319-H411-EUH031

**Components:**

20x EdU. ..... 20 ml
5-TAMRA-PEG3-Azide (10 mM in DMSO). ..... 9 x 130 µl
Reaction Buffer. ..... 4 x 50 ml
Catalyst Solution. ..... 5 ml
Buffer Additive. ..... 2 x 1 g
Rinse Buffer. ..... 58 ml
*Store at +4 °C (20x EdU, 5-TAMRA-PEG3-Azide, Catalyst Solution); room temp. (Reaction Buffer, Buffer Additive, Rinse Buffer)*

| | | | |
|---|---|---|---|
| **7792.1** | 1 kit | cardboard | 1063,20 € |

## EdUTP

▶ 5-Ethynyl-dUTP see p. 1921

## EGBEA

▶ 2-Butoxyethyl acetate see p. 1796

## Egg Yolk Emulsion (20 %)

### Egg Yolk Emulsion (20 %)

**ISO 7932, sterile, stabilised, for microbiology**

NEW

Media supplement for preparation of egg yolk agar for detection of microbial lecithinase activity.

100 ml Egg Yolk Emulsion are sufficient for 1 l agar medium.

Storage temp.: +4 °C •

Transport temp.: room temp.

**Guarantee analysis:**

Colour..... yellow
Egg yolk..... 20 %
Sterility..... complies

| | | | |
|---|---|---|---|
| **0402.1** | 100 ml | glass | 42,90 € |

For further information, please see page 1407

## Egg Yolk Tellurite Emulsion (20 %)

### Egg Yolk Tellurite Emulsion (20 %)

**ISO 6888, sterile, stabilised, for microbiology**

NEW

Media supplement for preparation of egg yolk tellurite agar, for detection of *Staphylococcus aureus*.

100 ml Egg Yolk Tellurite Emulsion is sufficient for 2 l agar medium.

Storage temp.: +4 °C •

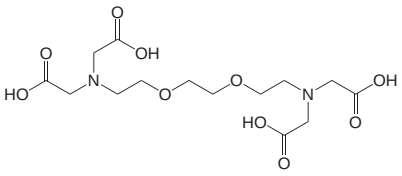
Transport temp.: room temp.

**Guarantee analysis:**

Colour..... yellow
Egg yolk..... 20 %
Sterile saline solution..... 80 %
Potassium tellurite..... 0,21 %
Sterility..... complies

| | | | |
|---|---|---|---|
| **0339.1** | 100 ml | glass | 46,80 € |

## EGTA



### EGTA

**≥99 %, p.a.**

For molecular biology and biochemistry.

Ethylene glycol bis(β-aminoethyl)-ether) N,N,N',N' tetraacetic acid

$C_{14}H_{24}N_2O_{10}$

M 380,35 g/mol

mp ~240 °C

[67-42-5] • EC No. 200-651-2

WGK 1

**Type analysis:**

Appearance..... white, cryst. powder
Assay (titr.)..... ≥99,0 %
pH value (saturated sol.)..... 2,6-3,0
Loss on drying..... ≤2,0 %
Iron (Fe)..... ≤0,001 %
Heavy metals..... ≤0,001 %

| | | | |
|---|---|---|---|
| **3054.1** | 10 g | plastic | 34,30 € |
| **3054.2** | 50 g | plastic | 134,40 € |
| **3054.3** | 100 g | plastic | 233,85 € |

For further information, please see page 1284

## Ehrlich's acid Hematoxylin solution

▶ Hematoxylin solution acid acc. to Ehrlich see p. 1971

## Ehrlich's Reagent

▶ 4-(Dimethylamino)-benzaldehyde see p. 1880

## Ehtyl-4-hydroxybenzoate

▶ 4-Hydroxybenzoic acid ethyl ester see p. 1993

## n-Eicosanoic acid

▶ Arachidic acid see p. 1749

## Elastica van Gieson staining kit

### Elastica van Gieson staining kit

**for microscopy**

Staining kit for visualising connective tissue with elastic fibres, incl. instructions for use.

Storage temp.: +20 °C

UN No. 1219 • ADR 3 II • WGK 1

**Danger** H224-H302+H312+H332-H318-H336-H370-EUH001

**Formulation:**

Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml
Van Gieson's Solution (Art.-No. 3925)..... 500 ml
Resorcinol-Fuchsine-solution acc. to Weigert (Art. No. X877)..... 500 ml

| | | | |
|---|---|---|---|
| **8275.1** | 1 kit | glass | 129,55 € |

For further information, please see page 1454

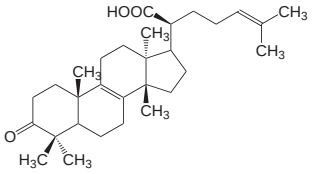
## Elatericin B

▶ Cucurbitacin I see p. 1849

## α-Elaterin

▶ Cucurbitacin E see p. 1849

## β-Elemonic acid



### β-Elemonic acid

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Boswellia serrata*.

$C_{30}H_{46}O_3$

M 454,70 g/mol

mp 216-220 °C

Storage temp.: +4 °C

[28282-25-9]

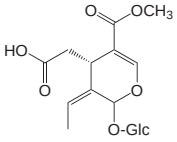
WGK 1

**Type analysis:**

Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **6491.1** | 10 mg | glass | 482,70 € |

## Elenolic acid glucoside



### Elenolic acid glucoside

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Olea europaea*.

Oleoside-11-methylester

$C_{17}H_{24}O_{11}$

M 404,38 g/mol

Storage temp.: +4 °C

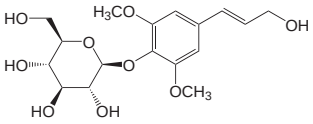
[60539-23-3]

**Type analysis:**

Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1136.1** | 20 mg | glass | 310,70 € |

## Eleutheroside B



### Eleutheroside B

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Syringa vulgaris.*

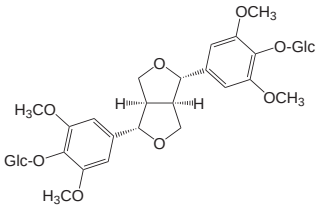
Syringin, Syringoside
$C_{17}H_{24}O_9$
M 372,36 g/mol
Storage temp.: +4 °C
[118-34-3]

**Warning** H302

**Type analysis:**
Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **1137.1** | 5 mg | glass | 246,20 € |

## Eleutheroside E



### Eleutheroside E

**ROTICHROM® HPLC**

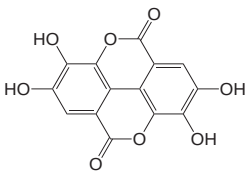
Reference substance for HPLC.
From *Eleutherococcus.*

Syringaresinol-4',4'-O-bis-β-D-glucoside
$C_{34}H_{46}O_{18}$
M 742,71 g/mol
Storage temp.: +4 °C
[39432-56-9]
WGK 1

**Type analysis:**
Purity (HPLC)..... >96 %

| | | | |
|---|---|---|---|
| **1138.1** | 5 mg | glass | 246,20 € |

## Ellagic acid



### Ellagic acid

**≥97 %, for biochemistry**

$C_{14}H_6O_8$
M 302,20 g/mol
mp >350 °C
[476-66-4] • EC No. 207-508-3

**Warning** H315-H319-H335

**Type analysis:**
Assay (GC)..... ≥97 %
Water (KF)..... ≤12 %

| | | | |
|---|---|---|---|
| **7263.1** | 5 g | glass | 83,75 € |

## Ellman's reagent

▶ 5,5'-Dithio-bis-(2-nitrobenzoic acid)
see p. 1889

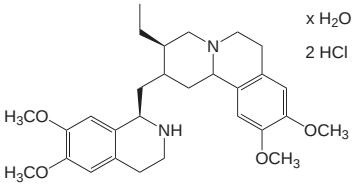
## Embedding- / Inclusion Media

| Art. No. | Description | Page |
|---|---|---|
| 9180 | Alginic acid sodium salt | 1716 |
| 8016 | Canada balsam | 1809 |
| 7356 | Euparal | 1922 |
| A145 | Euparal essence | 1922 |
| 4582 | Gelatine | 1947 |
| 3783 | Glycerol | 1960 |
| 8619 | Glycidether 100 | 1961 |
| 9279 | Granopent® "P" | 1964 |
| 6474 | Kaiser's glycerol gelatine phenol-free | 2020 |
| 4233 | Methacrylic acid methyl ester | 2067 |
| 0713 | Mowiol®4-88 | 2084 |
| 6478 | OCT Embedding Matrix | 2109 |
| CN48 | Paraffin 50-52 °C | 2130 |
| CN49 | Paraffin 52-54 °C | 2130 |
| X880 | Paraplast® | 2131 |
| X881 | Paraplast PLUS® | 2131 |
| X882 | Paraplast X-TRA® | 2131 |
| 6471 | Phytohistol® plus | 2153 |
| 0152 | Polyethylene glycol 1500 | 2158 |
| 6638 | Roti®-Histokitt | 2219 |
| T160 | Roti®-Histokitt II | 2219 |
| HP68 | Roti®-Mount | 2225 |
| 2848 | Roti®-Mount Aqua | 2225 |
| HP19 | Roti®-Mount FluorCare | 2225 |
| HP20 | Roti®-Mount FluorCare DAPI | 2225 |
| HP21 | Roti®-Mount FluorCare PI | 2225 |
| 6642 | Roti®-Plast | 2229 |
| 6643 | Roti®-Plast with DMSO | 2229 |
| T200 | Solidofix®-Cryo spray | 2287 |

## EMEM cell culture medium

▶ Roti®-CELL Eagle's MEM / Hanks'
see p. 2206
▶ Roti®-CELL Eagle's MEM-Alpha see p. 2205
▶ Roti®-CELL Eagle's MEM / Earle's
see p. 2206

## Emetine dihydrochloride



### Emetine dihydrochloride

**≥99 %, for biochemistry**

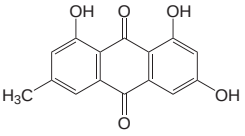
$C_{29}H_{40}N_2O_4 \cdot 2\ HCl \cdot x\ H_2O$
M 553,58 + x $H_2O$ g/mol
mp 240-250 °C
Storage temp.: +4 °C
[316-42-7] • EC No. 206-259-8
UN No. 1544 • ADR 6.1 I • WGK 3

**Danger** H300-H315-H319-H335

**Type analysis:**
Appearance. ..... light beige powder
Assay (acidim., dry substance). ..... ≥99 %
Water (KF). ..... ≤19,0 %

| | | | |
|---|---|---|---|
| **4116.1** | 1 g | glass | 156,45 € |

## Emodin



$C_{15}H_{10}O_5$
M 270,23 g/mol
mp ~255 °C (dec.)
Storage temp.: +4 °C
[518-82-1] • EC No. 208-258-8
WGK 1

**Warning** H315-H319-H335

### Emodin

**ROTICHROM® HPLC**

Reference substance for HPLC.

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7451.2** | 20 mg | glass | 181,70 € |

### Emodin

**ROTICHROM® ~CHR**

| | | | |
|---|---|---|---|
| **7272.1** | 100 mg | glass | 29,60 € |
| **7272.2** | 500 mg | glass | 103,10 € |

## Emodinrhamnoside

▶ Frangulin A see p. 1942

## Empetrin

▶ Delphinidin 3-galactoside chloride
see p. 1859

## Endo Agar (Base)

### Endo Agar (Base)

**for microbiology**

For isolation of enteric gram-negative bacteria, especially coliforms, from water, dairy products and foods.

Application: Use 36 g for 1 l agar, add 5 ml basic fuchsin solution.

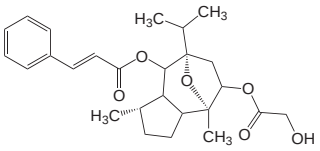
Storage temp.: +20 °C
WGK 1

**Formulation:**
Peptone. ..... 10 g/l
Lactose. ..... 10 g/l
di-Potassium phosphate. ..... 3,5 g/l
Sodium sulphite. ..... 2,5 g/l
Agar. ..... 10 g/l
pH value. ..... 7,5 ±0,2

| | | | |
|---|---|---|---|
| **X920.1** | 500 g | plastic | 79,45 € |
| Original pack 6 x 500 g | | | 75,48/500 g |

For further information, please see page 1385

## Englerin A



### Englerin A
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Phyllanthus engleri.*
$C_{26}H_{34}O_6$
M 442,56 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[1094250-15-3]
WGK 1

**Type analysis:**
Purity (HPLC).....≥96 %

| | | | |
|---|---|---|---|
| **6492.1** | 10 mg | glass | 439,70 € |

## Enhancer solution
▶ DAB Metal Enhancer see p. 1856
▶ Signal Enhancer Western/ELISA see p. 2249

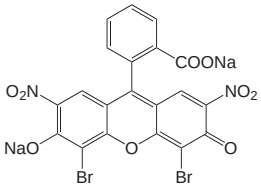
## Enoxolone
▶ 18-β-Glycyrrhetinic acid see p. 1963

## Enterobacter sakazakii Chromogenic Agar
▶ Cronobacter chromogenic Agar see p. 1848

## Enzymes

| Art. No. | Description | Page |
|---|---|---|
| 6024 | Alkaline phosphatase | 1717 |
| 8717 | β-Amylase | 1741 |
| 5950 | Bromelain | 1786 |
| 6025 | Catalase | 1817 |
| 0238 | Chymotrypsin | 1833 |
| 6028 | Glucose oxidase (GOD) | 1956 |
| 7512 | β-Glucosidase | 1957 |
| 6052 | Glutamate dehydrogenase (GDH, GLDH) | 1958 |
| 9978 | Hyaluronidase | 1983 |
| 9980 | Hyaluronidase | 1983 |
| 6060 | Lactate dehydrogenase (LDH) | 2025 |
| CN73 | Lipoxygenase | 2038 |
| 8259 | Lysozyme | 2046 |
| 6062 | Malate dehydrogenase (MDH) | 2052 |
| 8933 | Papain | 2130 |
| KK38 | Pepsin | 2137 |
| 0230 | Pepsin | 2137 |
| 6055 | Peroxidase | 2140 |
| 7528 | Proteinase K | 2183 |
| 8178 | Rennin | 2195 |
| 7164 | Ribonuclease | 2200 |
| 7156 | Ribonuclease A | 2200 |
| 9350 | Roti®-Pol Hot-TaqUltra | 2229 |
| 9346 | Roti®-Pol Hot-TaqHY | 2229 |
| 9245 | Roti®-Pol Hot-TaqS | 2229 |
| 9248 | Roti®-Pol Hot-TaqS Mix (2x) | 2229 |
| 9256 | Roti®-Pol Hot-TaqS Red-Mix (2x) | 2230 |
| 9344 | Roti®-Pol ProofRead | 2230 |
| 9345 | Roti®-Pol TaqHY | 2230 |
| 9223 | Roti®-Pol TaqS | 2230 |
| 9239 | Roti®-Pol TaqS Mix (2x) | 2230 |
| 9241 | Roti®-Pol TaqS Red-Mix (2x) | 2230 |
| 9347 | Roti®-Pol TaqUltra | 2230 |
| 2193 | Trypsin | 2360 |
| 5455 | Trypsin | 2360 |
| 6065 | Urease | 2366 |
| 7537 | Urease | 2367 |
| 9324 | Zymolyase® 20T | 2390 |
| 9329 | Zymolyase® 100T | 2390 |

## Eosin B (C.I. 45400)



### Eosin B (C.I. 45400)
**for microscopy**
Eosin scarlet, Eosin bluish, 4',5'-Dibromo-2',7'-dinitrofluoroesceine disodium salt.
$C_{20}H_6Br_2N_2Na_2O_9$
M 624,09 g/mol
Solubility: 300 g/l ($H_2O$, 25 °C)
[548-24-3] • EC No. 208-943-1
WGK 2

**Type analysis:**
Appearance.....dark red powder
Solubility.....soluble in alcohol and water
Maximum absorption.....510-530 nm

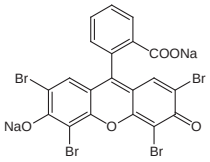
| | | | |
|---|---|---|---|
| **0306.1** | 10 g | glass | 17,10 € |
| **0306.2** | 25 g | glass | 27,45 € |
| **0306.3** | 50 g | glass | 42,90 € |

For further information, please see page 1470

## Eosin bluish
▶ Eosin B (C.I. 45400) see p. 1905

## Eosin scarlet
▶ Eosin B (C.I. 45400) see p. 1905

## Eosin Y (C.I. 45380)



### Eosin Y (C.I. 45380)
**for microscopy**
Eosin yellowish
$C_{20}H_6Br_4Na_2O_5$
M 691,86 g/mol
mp 295-296 °C
Solubility: 300 g/l ($H_2O$, 20 °C)
[17372-87-1] • EC No. 241-409-6
WGK 1

**Warning** H319

**Type analysis:**
Maximum absorption. .....510-520 nm
Solubility. ..... in alcohol and water

| | | | |
|---|---|---|---|
| **7089.1** | 50 g | glass | 32,80 € |
| **7089.2** | 100 g | glass | 55,40 € |
| **7089.3** | 500 g | glass | 177,40 € |
| Original pack 6 x 500 g | | | 168,53/500 g |

For further information, please see page 1471

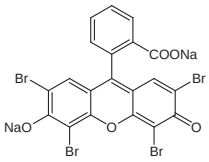
## Eosin Y solution 0,5 % in water

### Eosin Y solution 0,5 % in water
**for microscopy**
For visualising cell structures during standard staining methods (H&E staining).
[17372-87-1] • EC No. 241-409-6

| | | | |
|---|---|---|---|
| **X883.1** | 500 ml | glass | 20,35 € |
| **X883.2** | 1 l | glass | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |

For further information, please see page 1453

## Eosin Y solution 1 % in methanol



### Eosin Y solution 1 % in methanol
**for microscopy**
For visualising cell structures during standard staining methods (H&E staining).
UN No. 1230 • ADR 3 (6.1) II • WGK 1

**Danger**
H225-H301+H311+H331-H370

| | | | |
|---|---|---|---|
| **3139.1** | 500 ml | glass | 26,35 € |
| **3139.2** | 1 l | glass | 39,70 € |
| Original pack 6 x 1 l | | | 37,72/1 l |

For further information, please see page 1453

## Eosin Y solution 1 % in water

### Eosin Y solution 1 % in water
**for microscopy**
For visualising cell structures during standard staining methods (H&E staining).

| | | | |
|---|---|---|---|
| **3137.1** | 500 ml | glass | 22,50 € |
| **3137.2** | 1 l | glass | 32,15 € |
| Original pack 6 x 1 l | | | 30,54/1 l |

For further information, please see page 1453

## Eosin methylene blue solution acc. to Wright
▶ Wright's eosin methylene blue solution see p. 2378
▶ May-Gruenwald's solution see p. 2060

## Eosin methylene blue

▶ Wright's stain see p. 2378

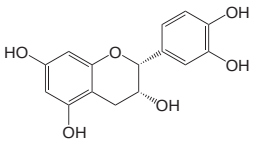
## Eosin methylene blue acc. to Leishman

▶ Leishman stain see p. 2034

## Eosine Yellowish

▶ Eosin Y (C.I. 45380) see p. 1905

## (-)-Epicatechin



(-)-Epicatechol
$C_{15}H_{14}O_6$
M 290,27 g/mol
mp 240-245 °C
[490-46-0] • EC No. 207-710-1

**Warning** H315-H319-H335

### (-)-Epicatechin

**>90 %**
Storage temp.: +4 °C

**Type analysis:**
Appearance. ..... light beige powder
Assay (HPLC). ..... >90 %
$[\alpha]_D^{20}$ ( c=1 in acetone/$H_2O$ 1:1) ..... -59° to -53°

| | | | |
|---|---|---|---|
| **7293.1** | 500 mg | glass | 111,70 € |

### (-)-Epicatechin

**ROTI®STAR Primary Standard**
Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**
Assay (HPLC). ..... ≥93,0 %
Residual solvents (GC). ..... ≤3,0 %
Water (KF). ..... ≤7,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE41.1** | 10 mg | glass | 521,40 € |

### (-)-Epicatechin

**ROTICHROM® Working Standard**
Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**
Assay (HPLC). ..... ≥90,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC41.1** | 50 mg | glass | 241,90 € |

### (-)-Epicatechin

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Acacia catechu.*
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC). ..... >99 %

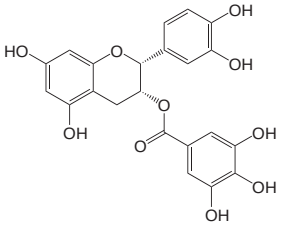
| | | | |
|---|---|---|---|
| **1139.1** | 20 mg | glass | 209,65 € |

### (-)-Epicatechin

**ROTICHROM® TLC**
Reference substance for thin layer chromatography.
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **5798.1** | 50 mg | glass | 52,70 € |

## (-)-Epicatechin gallate



### (-)-Epicatechin gallate

**ROTICHROM® HPLC**
Reference substance for HPLC
$C_{22}H_{18}O_{10}$
M 442,36 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[1257-08-5]

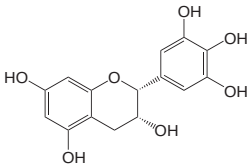
**Type analysis:**
Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **6358.1** | 10 mg | glass | 246,20 € |

## (-)-Epicatechol

▶ (-)-Epicatechin see p. 1906

## (-)-Epigallocatechin



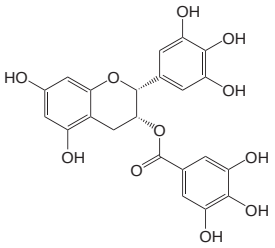
### (-)-Epigallocatechin

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Camellia sinensis*.
$C_{15}H_{14}O_7$
M 306,26 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[970-74-1]
WGK 1

**Type analysis:**
Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **6359.1** | 10 mg | glass | 256,95 € |

## (-)-Epigallocatechin gallate



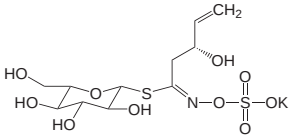
### (-)-Epigallocatechin gallate

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{22}H_{18}O_{11}$
M 458,36 g/mol
Storage temp.: +4 °C
[989-51-5]

**Type analysis:**
Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **6361.1** | 10 mg | glass | 170,95 € |

## Epiprogoitrin



### Epiprogoitrin

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Crambe abyssinica.*
(2S)-2-Hydroxybut-3-enyl glucosinolate
$C_{11}H_{18}KNO_{10}S_2$
M 427,48 g/mol
Storage temp.: +4 °C
[19237-18-4]
WGK 1

**Type analysis:**
Purity (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **2273.1** | 10 mg | glass | 267,70 € |

## Epon 812

▶ Glycidether 100 see p. 1961

## 1,8-Epoxy-p-menthane

▶ Eucalyptol see p. 1922

## N-(trans-epoxysuccinyl)-L-leucine-4-guanidino-butylamide

▶ E-64 see p. 1898

## Epsom salt

▶ Magnesium sulphate heptahydrate see p. 2051

## Erbia

▶ Erbium(III) oxide see p. 1907

## Erbium Standards

▶ Erbium ICP Standard Solution see p. 2298
▶ Erbium ICP Standard Solution see p. 2302

## Erbium(III) oxide

### Erbium(III) oxide

**ROTI®REMETIC 99,9 %**

Erbium trioxide, Erbia
$Er_2O_3$
M 382,52 g/mol
bp 3920 °C
mp 2344 °C
Solubility: insoluble ($H_2O$, 20 °C)
[12061-16-4] • EC No. 235-045-7
WGK 1

**Type analysis:**

Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7160.1** | 5 g | plastic | 37,55 € |
| **7160.2** | 25 g | plastic | 85,50 € |

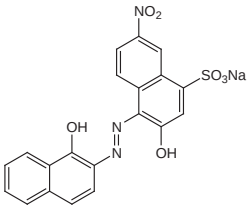
## Erbium trioxide

▶ Erbium(III) oxide see p. 1907

## Ericolin

▶ p-Arbutin see p. 1750

## Eriochrome® black T (C.I. 14645)




### Eriochrome® black T (C.I. 14645)

NEW

**p.a.**

Metal indicator
Mordant black 11
$C_{20}H_{12}N_3NaO_7S$
M 461,38 g/mol
Solubility: 50 mg/l ($H_2O$, 20 °C)
[1787-61-7] • EC No. 217-250-3
UN No. 3077 • ADR 9 III • WGK 2

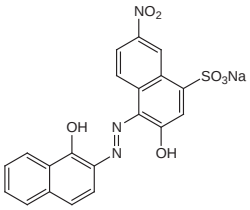
**Warning** H319-H411

**Type analysis:**

Appearance. ..... black powder
Loss on drying. ..... ≤7 %
Suitability as indicator for complexometry..... complies

| | | | |
|---|---|---|---|
| **0112.1** | 25 g | glass | 15,60 € |
| **0112.2** | 50 g | glass | 26,80 € |
| **0112.3** | 100 g | glass | 48,30 € |

## Eriochrome® black T (C.I. 14645), trituration




### Eriochrome® black T (C.I. 14645), trituration

**Indicator 1 % in NaCl, trituration**

2-Hydroxy-1-(1-hydroxynaphthyl-2-azo)-6-nitronaphthalene 4-sulphonic acid monosodium salt
$C_{20}H_{12}N_3NaO_7S$
M 461,38 g/mol
Solubility: 50 mg/l ($H_2O$, 20 °C)
[1787-61-7] • EC No. 217-250-3
UN No. 3077 • ADR 9 III • WGK 2

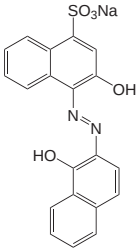
**Warning** H319-H411

**Type analysis:**

Suitability as indicator..... complies
Trituration of Eriochrome black T with NaCl p.a., 1:100 simply add to the solution that has to be titrated; 1-4 mg dye in 100 ml.

| | | | |
|---|---|---|---|
| **K860.2** | 25 g | plastic | 19,90 € |
| **K860.1** | 50 g | plastic | 28,50 € |
| **K860.3** | 100 g | plastic | 51,50 € |

## Eriochrome® blue black B (C.I. 14640)




### Eriochrome® blue black B (C.I. 14640)

**for complexometry**

Metal indicator
Mordant black 3
$C_{20}H_{14}N_2O_5S$
M 416,39 g/mol
[3564-14-5] • EC No. 222-639-6
WGK 2

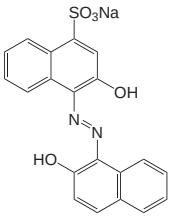
**Warning** H319

**Type analysis:**

Appearance..... brown to black powder
Appearance of solution (0,1 % in $H_2O$). ..... opaque, dark purple
Absorption max. 528 nm ($H_2O$ + 1 ml 1 M HCl)..... ...complies

| | | | |
|---|---|---|---|
| **7661.1** | 5 g | glass | 14,55 € |
| **7661.2** | 25 g | glass | 24,65 € |
| **7661.3** | 100 g | glass | 48,95 € |

## Eriochrome® blue black R (C.I. 15705)




### Eriochrome® blue black R (C.I. 15705)

**for complexometry**

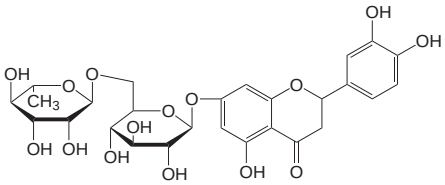
Metal indicator for Al, Fe, Zr, Cu, Ca
Mordant black 17
$C_{20}H_{13}N_2O_5SNa$
M 416,39 g/mol
Solubility: 20 g/l ($H_2O$, 20 °C)
[2538-85-4] • EC No. 219-810-2
WGK 3

**Type analysis:**

Appearance. ..... dark brown to black powder
Solubility (water/ethanol)..... complies

| | | | |
|---|---|---|---|
| **7663.1** | 5 g | glass | 14,55 € |
| **7663.2** | 25 g | glass | 24,65 € |
| **7663.3** | 100 g | glass | 48,95 € |

## Eriocitrin




Eriodictyol-7-rutinoside
Storage temp.: +4 °C
[13463-28-0] • EC No. 236-668-7
WGK 3

### Eriocitrin

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤10,0 %
Assay (qNMR). ..... ≥85,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV. The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE42.1** | 10 mg | glass | 521,40 € |

### Eriocitrin

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC). ..... ≥85,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC42.1** | 25 mg | glass | 256,95 € |

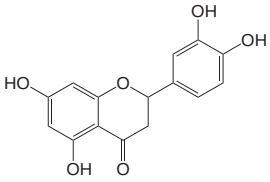
## Eriocitrin

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{27}H_{32}O_{15}$
M 596,54 g/mol

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **9327.2** | 10 mg | glass | 278,45 € |

## Eriodictyol



3',4',5,7-Tetrahydroxyflavanone
$C_{15}H_{12}O_6$
M 288,27 g/mol
mp 262-267 °C
Storage temp.: +4 °C
[552-58-9] • EC No. 209-016-4

## Eriodictyol

**>90 %**

**Type analysis:**
Assay (HPLC)..... >90 %

| | | | |
|---|---|---|---|
| **7453.1** | 500 mg | glass | 392,40 € |

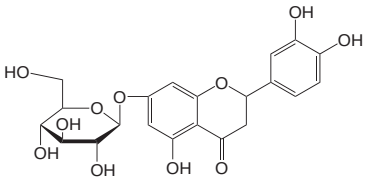
## Eriodictyol

**ROTICHROM® HPLC**
Reference substance for HPLC.

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **6990.1** | 10 mg | glass | 185,45 € |

## Eriodictyol-7-glucoside



## Eriodictyol-7-glucoside

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{21}H_{22}O_{11}$
M 450,41 g/mol
Storage temp.: +4 °C
[38965-51-4] • EC No. 254-225-6

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **6521.1** | 10 mg | glass | 274,15 € |

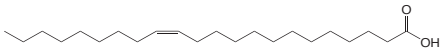
## Eriodictyol-7-neohesperidoside

▶ Neoeriocitrin see p. 2091

## Eriodictyol-7-rutinoside

▶ Eriocitrin see p. 1907

## Erucic acid



## Erucic acid

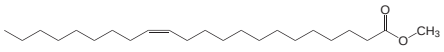
**≥99 %**
cis-13-Docosenoic acid
$C_{22}H_{42}O_2$
M 338,55 g/mol
D 0,86 • bp 358 °C (533 mbar)
mp 31-33 °C • flp 113 °C
Storage temp.: +4 °C
[112-86-7] • EC No. 204-011-3
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Appearance..... white powder
Assay (GC)..... ≥99,0 %
Solubility (5 % in $CHCl_3$)..... clear, colourless

| | | | |
|---|---|---|---|
| **7065.2** | 250 mg | glass | 78,40 € |
| **7065.1** | 1 g | glass | 246,20 € |

## Erucic acid methyl ester



## Erucic acid methyl ester

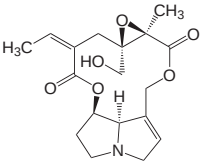
**≥90 %**
cis-13-Docosenoic acid methyl ester
$C_{23}H_{44}O_2$
M 352,61 g/mol
D 0,87
Storage temp.: +4 °C
[1120-34-9] • EC No. 214-305-3
UN No. 3272 • ADR 3 III • WGK 1

**Warning** H226

**Type analysis:**
Assay (GC)..... ≥90 %
Specific density (20 °C)..... 0,8710-0,8750
Refractive index $n_D^{20}$..... 1,4550-1,4580

| | | | |
|---|---|---|---|
| **9431.1** | 10 ml | glass | 66,55 € |
| **9431.2** | 50 ml | glass | 256,95 € |

## (Z)-Erucifoline



## (Z)-Erucifoline

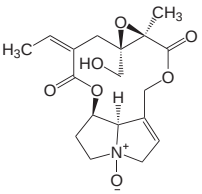
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Senecio jacobea*.
$C_{18}H_{23}NO_6$
M 349,38 g/mol
mp 185-190 °C
Storage temp.: +4 °C
[40158-95-0]
UN No. 1544 • ADR 6.1 III • WGK 2

**Danger** H301-H373

**Type analysis:**
Purity (HPLC)..... ≥97,0 %

| | | | |
|---|---|---|---|
| **1657.1** | 5 mg | glass | 310,70 € |

## (Z)-Erucifoline N-oxide



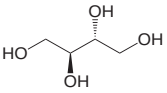
## (Z)-Erucifoline N-oxide

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Senecio jacobea*.
$C_{18}H_{23}NO_7$
M 356,38 g/mol
Storage temp.: +4 °C
WGK 3

**Type analysis:**
Purity (HPLC)..... ≥97,0 %

| | | | |
|---|---|---|---|
| **1664.1** | 5 mg | glass | 327,90 € |

## meso-Erythritol



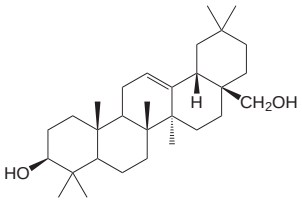
## meso-Erythritol

**for biochemistry**
meso-Erythritol
$C_4H_{10}O_4$
M 122,12 g/mol
bp 330 °C
mp 117-121 °C
[149-32-6] • EC No. 205-737-3

**Type analysis:**
Appearance..... white to off-white powder
Solution (10 % in $H_2O$)..... clear, colourless
Water (KF)..... ≤2,0 %
Melting point..... 117-121 °C
Ash content..... ≤0,1 %

| | | | |
|---|---|---|---|
| **6241.1** | 25 g | plastic | 106,45 € |

## Erythrodiol

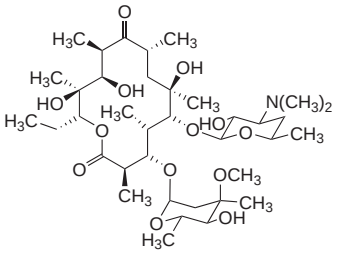


### Erythrodiol
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{30}H_{50}O_2$
M 442,68 g/mol
mp 229-237 °C
Storage temp.: +4 °C
[545-48-2] • EC No. 208-890-4

**Type analysis:**
Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **7455.1** | 10 mg | plastic | 213,95 € |

## Erythromycin



### Erythromycin
**≥93 %, for biochemistry**
Macrolide antibiotic
$C_{37}H_{67}NO_{13}$
M 733,95 g/mol
Storage temp.: +4 °C
[114-07-8] • EC No. 204-040-1
WGK 1

**Type analysis:**
Assay (HPLC)..... ≥93,0 %
Solution (5 % in ethanol 96 %)..... colourless to light yellowish
Water (KF)..... ≤6,5 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in ethanol, after 30 min)..... -78° to -71°
Sulphated ash..... ≤0,2 %
Thiocyanate (SCN)..... ≤0,3 %

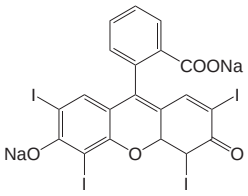
| | | | |
|---|---|---|---|
| **4166.1** | 5 g | glass | 28,95 € |
| **4166.2** | 10 g | glass | 47,20 € |

For further information, please see page 1428

## Erythrosine Bluish

▶ Erythrosine B (C.I. 45430) see p. 1909

## Erythrosine B (C.I. 45430)



### Erythrosine B (C.I. 45430)
**for microscopy**
Tetraiodine fluorescein disodium salt,
Iodine eosin, Erythrosine bluish, Acid red 51
$C_{20}H_6I_4Na_2O_5$
M 879,84 g/mol
Solubility: 100 g/l ($H_2O$, 20 °C)
[16423-68-0] • EC No. 240-474-8
WGK 2

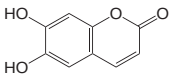
**Warning** H302

**Type analysis:**
Maximum absorption..... 520-527 nm
Specific extinction E 1 %/1 cm..... >850
Loss on drying (110 °C)..... ≤10 %

| | | | |
|---|---|---|---|
| **0331.1** | 25 g | plastic | 45,05 € |

For further information, please see page 1471

## Esculetin



### Esculetin
**≥98 %, for biochemistry**
6,7-Dihydroxycoumarin
$C_9H_6O_4$
M 178,14 g/mol
mp ~269 °C (dec.)
[305-01-1] • EC No. 206-161-5
WGK 1

**Warning** H315-H319-H335

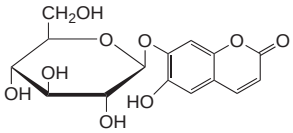
**Type analysis:**
Assay (titr.)..... ≥98,0 %
Melting point (dec.)..... 268-274 °C

| | | | |
|---|---|---|---|
| **8690.1** | 1 g | glass | 35,40 € |

## Esculetin dimethyl ether

▶ Scoparone see p. 2243

## Esculin sesquihydrate



### Esculin sesquihydrate
**≥97,5 %, DAB, for biochemistry**
6,7-Dihydroxycoumarin-6-glycoside
$C_{15}H_{16}O_9 \cdot 1{,}5\ H_2O$
M 367,31 g/mol
mp 193-210 °C
[66778-17-4] • EC No. 208-517-5
WGK 2

**Guarantee analysis:**
Appearance..... white powder
Assay (HPLC)..... ≥97,5 %
Identity..... complies
pH value (1 % in $H_2O$)..... 3,8-4,5
Water (KF)..... 6,5-8,0 %
Sulphated ash..... ≤0,1 %
Heavy metals (as Pb)..... ≤0,002 %
Specific rotation $[\alpha]_D^{20}$ (1,5 % dioxane/$H_2O$ 1:1, dry substance)..... -87° to -84°
Related substances..... complies

| | | | |
|---|---|---|---|
| **8704.1** | 5 g | glass | 21,00 € |
| **8704.2** | 25 g | plastic | 85,90 € |
| **8704.3** | 50 g | plastic | 149,45 € |
| **8704.4** | 100 g | plastic | 256,95 € |

E

## Essential Oils


| Art. No. | Description | Page |
|---|---|---|
| 4501 | Hypericon oil, extra pure | 1998 |
| 9404 | Hypericon oil, pure | 1998 |
| 6609 | Laurel oil, essential, natural | 2030 |
| 3314 | Laurel oil, artificial | 2030 |
| 3364 | Musk oil, artificial | 2086 |
| 6587 | Oil of angelica roots, hungarian, natural | 2110 |
| 7036 | Oil of anise, natural | 2110 |
| 3278 | Oil of anise, artificial | 2110 |
| 6507 | Oil of balm, natural | 2110 |
| 7039 | Oil of basil, natural | 2110 |
| 6501 | Oil of bergamot, natural | 2111 |
| 3282 | Oil of bergamot, artificial | 2111 |
| 6105 | Oil of cajeput, natural | 2111 |
| 3357 | Oil of camphor, light | 2111 |
| 7050 | Oil of caraway, natural | 2111 |
| 3307 | Oil of caraway, artificial | 2111 |
| 6593 | Oil of cassia, natural, chinese | 2111 |
| 6594 | Oil of cedar leaf, pure | 2111 |
| 3291 | Oil of cedar leaf, artificial | 2111 |
| 5308 | Oil of cedar wood, for microscopy | 2112 |
| 7040 | Oil of celery, Oleum Apii, from seeds | 2112 |
| 4208 | Oil of cembra pine, pure | 2112 |
| 6504 | Oil of chamomile, blue | 2112 |
| 3354 | Oil of chamomile, roman, natural | 2112 |
| 3305 | Oil of chamomile, artificial | 2112 |
| A432 | Oil of cinnamon, natural | 2112 |
| 6512 | Oil of cinnamon, artificial | 2112 |
| 6502 | Oil of citronella, natural | 2112 |
| 3292 | Oil of citronella, artificial | 2113 |
| 3355 | Oil of clary-sage, natural | 2113 |
| 8662 | Oil of cloves, ≥80 %, DAB, natural | 2113 |
| 7052 | Oil of coriander, natural | 2113 |
| 6608 | Oil of cubeb, natural | 2113 |
| 6596 | Oil of cypress, french, natural | 2113 |
| 6597 | Oil of dill herb, natural | 2113 |
| 3352 | Oil of dill seed, extra pure | 2113 |
| 6602 | Oil of estragon, pure | 2113 |
| 5337 | Oil of eucalyptus, >70 %, Ph.Eur. | 2114 |
| 3297 | Oil of eucalyptus, artificial | 2114 |
| 3299 | Oil of fennel, artificial | 2114 |
| 3301 | Oil of fir needles, artificial | 2114 |
| 7075 | Oil of gardensage, natural, Dalmat. | 2114 |
| 3540 | Oil of garlic, natural | 2114 |
| 7054 | Oil of geranium, natural | 2114 |
| 6718 | Oil of grapefruit, natural | 2114 |
| 7059 | Oil of juniper, pure | 2115 |
| 7057 | Oil of juniper wood, natural | 2115 |
| 6603 | Oil of lavandin, french | 2115 |
| 5443 | Oil of lavender, DAB | 2115 |
| 3367 | Oil of lavender, artificial | 2115 |
| 3797 | Oil of lemon, italian | 2115 |
| 5213 | Oil of lemon, natural | 2115 |
| 3346 | Oil of lemon, artificial | 2115 |
| 6625 | Oil of lemon, low in terpenes | 2115 |
| 6606 | Oil of lemon-grass, natural purity | 2116 |
| 6721 | Oil of lime, natural | 2116 |
| 6607 | Oil of lovage, pure | 2116 |
| 3796 | Oil of mandarin, italian | 2116 |
| 6730 | Oil of mint, China, raw | 2116 |
| 6731 | Oil of mint, japan, natural | 2116 |
| 6732 | Oil of mint, rectified twice | 2116 |
| 6610 | Oil of niaouli, natural | 2116 |
| 7064 | Oil of nutmeg, volatile | 2116 |
| 6509 | Oil of orange, bitter, italian | 2116 |
| 3803 | Oil of orange, Brazil | 2117 |
| 6728 | Oil of orange, Florida | 2117 |
| 6611 | Oil of orange, sweet, natural | 2117 |
| 3323 | Oil of orange flowers, artificial | 2117 |
| 6612 | Oil of origanum, natural | 2117 |
| 6613 | Oil of palmarosa, east indian | 2117 |
| 7072 | Oil of parsley, french | 2117 |
| 6511 | Oil of patchouli, artificial | 2117 |
| 6616 | Oil of pepper, natural | 2117 |
| 9318 | Oil of peppermint, pure | 2118 |
| 7063 | Oil of peppermint italian, pure | 2118 |
| 3777 | Oil of peppermint Kennewick, USA, natural | 2118 |
| 3329 | Oil of peppermint, artificial | 2118 |
| 6614 | Oil of petitgrain, south american | 2118 |
| 5733 | Oil of rose, bulgarian, natural | 2118 |
| 4092 | Oil of rose, artificial | 2118 |
| 6514 | Oil of rosemary, spanish | 2118 |
| 3764 | Oil of rosemary, marrocan | 2118 |
| 3336 | Oil of rosemary, artificial | 2119 |
| 3275 | Oil of rose-wood, nature identical | 2119 |
| 6620 | Oil of sandal-wood, west indian | 2119 |
| 3341 | Oil of sandal-wood, artificial | 2119 |
| 7073 | Oil of Scotch pine needles, natural | 2119 |
| 3306 | Oil of Scotch pine needles, artificial | 2119 |
| 3295 | Oil of silver fir, artificial | 2119 |
| 6598 | Oil of silver fir cones, natural | 2119 |
| 3353 | Oil of silver fir needles, natural | 2119 |
| 7079 | Oil of spike, natural pure | 2120 |
| 7081 | Oil of tansy, pure | 2120 |
| K032 | Oil of tea tree, australian natural | 2120 |
| K500 | Oil of thyme, natural | 2120 |
| 6513 | Oil of thyme, natural/nature-identical | 2120 |
| 6588 | Oil of valerian, polish | 2121 |
| 3279 | Oil of valerian, artificial | 2121 |
| 6622 | Oil of vetiver, natural | 2121 |
| 7053 | Oil of wintergreen, artificial | 2121 |
| 6909 | Oil of wormwood, natural | 2121 |
| 6624 | Oil of ylang-ylang, Comoren, natural | 2121 |
| 3343 | Oil of ylang-ylang, artificial | 2121 |


## Estragole

▶ Methylchavicol see p. 2073

## Ethanal

▶ Acetaldehyde see p. 1690

## Ethanedial

▶ Glyoxal see p. 1964

## 1,2-Ethanediamine

▶ Ethylenediamine see p. 1915

## 1,2-Ethanediol

▶ Ethylene glycol see p. 1918

## Ethanedioic acid

▶ Oxalic acid dihydrate see p. 2126

## Ethanoic acid


▶ Acetic acid Ultra-quality see p. 1691
▶ Acetic acid Supra-quality see p. 1691
▶ Acetic acid 100 % see p. 1692
▶ Acetic acid 96 % see p. 1692
▶ Acetic acid 80 % see p. 1692
▶ Acetic acid 60 % see p. 1692
▶ Acetic acid 25 % see p. 1693
▶ Acetic acid 10 % see p. 1693
▶ Acetic acid D1 see p. 1693
▶ Acetic acid D4 see p. 1693
▶ Acetic acid (1 N) see p. 1693
▶ Acetic acid (2 N) see p. 1693


## Ethanol absolut

Ethyl alcohol, EtOH
$C_2H_6O$
M 46,07 g/mol
D 0,79 • bp 78 °C
mp -114,5 °C • flp 13 °C
[64-17-5] • EC No. 200-578-6
UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225-H319

### Ethanol

**ROTISOLV® HPLC Gradient Grade**

**Guarantee analysis:**

Assay (GC). ....≥99,9 %
Water (KF). ....≤0,1 %
Free acid. ....≤0,002 %
Free alkali. ....≤0,0005 %
Non volatile matter. ....≤0,0002 %
Transmission:
260 nm. ....≥98 %
240 nm. ....≥85 %
225 nm. ....≥60 %
Gradient test:
UV absorption of the greatest eluated peak
235 nm. ....≤5 mAU
254 nm. ....≤2 mAU
Filtered through 0,2 µm membrane and filled under protective gas. Prices include german tax on alcohol.

| | | | |
|---|---|---|---|
| **P076.1** | 1 l | glass | 93,00 € |
| Original pack 6 x 1 l | | | 88,35/1 l |
| **P076.2** | 2,5 l | glass | 189,75 € |
| Original pack 4 x 2,5 l | | | 180,26/2,5 l |

For further information, please see page 1590

### Ethanol

**ROTIPURAN® ≥99,8 %, p.a.**

**Guarantee analysis:**

Assay. ....≥99,8 %
Identity. ....complies
Water. ....≤0,2 %
Solubility. ....clear, colourless
Density (d 20 °C/20 °C). ....0,790-0,793
Acetaldehyde and acetal. ....≤0,001 %
Acid or alkaline react. substances. ....≤0,003 %
Evaporation residue. ....≤0,0025 %
Benzene. ....≤0,0002 %
Methanol. ....≤0,01 %
Sum of other impurities. ....≤0,03 %
Aluminium (Al). ....≤0,00005 %
Barium (Ba). ....≤0,00001 %
Lead (Pb). ....≤0,00001 %
Cadmium (Cd). ....≤0,000005 %
Calcium (Ca). ....≤0,00005 %
Chromium (Cr). ....≤0,000002 %
Iron (Fe). ....≤0,00001 %
Cobalt (Co). ....≤0,000002 %
Copper (Cu). ....≤0,000002 %
Manganese (Mn). ....≤0,000002 %
Nickel (Ni). ....≤0,000002 %
Zinc (Zn). ....≤0,00001 %
Tin (Sn). ....≤0,00001 %
Prices include german tax on alcohol.

| | | | |
|---|---|---|---|
| **9065.1** | 1 l | glass | 81,20 € |
| Original pack 6 x 1 l | | | 77,14/1 l |
| **9065.3** | 1 l | plastic | 80,10 € |
| Original pack 6 x 1 l | | | 76,10/1 l |
| **9065.2** | 2,5 l | glass | 163,95 € |
| Original pack 4 x 2,5 l | | | 155,75/2,5 l |
| **9065.4** | 2,5 l | plastic | 161,80 € |
| Original pack 4 x 2,5 l | | | 153,71/2,5 l |
| **9065.5** | 5 l | plastic | 291,90 € |
| Original pack 2 x 5 l | | | 277,31/5 l |
| **9065.6** | 25 l | tinplate | 1015,90 € |

## Ethanol denatured

NEW

**ROTIPURAN® ≥99,8 %, p.a., denatured**

**Guarantee analysis:**

Appearance. ..... clear, colorless solution
Assay (EtOH, v/v). ..... ≥99,8 %
Water. ..... ≤0,2 %
Aldehyde content (as acetaldehyde ). ..... ≤0,003 %
Acid content (as $CH_3COOH$). ..... ≤0,001 %
Evaporation residue. ..... ≤0,003 %
Aluminium (Al). ..... ≤0,00005 %
Boron (B). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Calcium (Ca). ..... ≤0,00005 %
Cadmium (Cd). ..... ≤0,000005 %
Cobalt (Co). ..... ≤0,000002 %
Chromium (Cr). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Potassium (K). ..... ≤0,0001 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Lead (Pb). ..... ≤0,00001 %
Tin (Sn). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00001 %
Denaturing:
Methyl ethyl ketone (MEK). ..... 1 %
Isopropyl alcohol (IPA). ..... 1 %
Denatonium benzoate. ..... 1 g/100 l

| | | | |
|---|---|---|---|
| **0911.1** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **0911.2** | 2,5 l | glass | 33,25 € |
| Original pack 4 x 2,5 l | | | 31,59/2,5 l |
| **0911.3** | 2,5 l | plastic | 31,10 € |
| Original pack 4 x 2,5 l | | | 29,55/2,5 l |
| **0911.4** | 5 l | plastic | 53,65 € |
| Original pack 2 x 5 l | | | 50,97/5 l |
| **0911.5** | 10 l | tinplate | 91,30 € |
| **0911.6** | 25 l | tinplate | 181,70 € |

## Ethanol

**≥99,5 %, Ph.Eur., extra pure**

**Guarantee analysis:**

Assay (V/V). ..... ≥99,5 %
Properties. ..... complies
Identity. ..... complies
Appearance. ..... clear, colorless
Acid or alkaline react. substances. ..... complies
Density (d 20 °C/20 °C). ..... 0,790-0,793
Absorption:
240 nm. ..... ≤0,4
250-260 nm. ..... ≤0,3
270-340 nm. ..... ≤0,1
Volatile impurities:
Acetaldehyde and acetal. ..... ≤0,001 %
Benzene. ..... ≤0,0002 %
Methanol. ..... ≤0,01 %
Evaporation residue. ..... ≤0,0025 %
Sum of other impurities. ..... ≤0,03 %
Disregard limit. ..... ≤0,0009 %
Prices include german tax on alcohol.

| | | | |
|---|---|---|---|
| **5054.1** | 1 l | glass | 72,60 € |
| Original pack 6 x 1 l | | | 68,97/1 l |
| **5054.3** | 1 l | plastic | 71,50 € |
| Original pack 6 x 1 l | | | 67,93/1 l |
| **5054.2** | 2,5 l | glass | 150,00 € |
| Original pack 4 x 2,5 l | | | 142,50/2,5 l |
| **5054.4** | 2,5 l | plastic | 147,85 € |
| Original pack 4 x 2,5 l | | | 140,46/2,5 l |
| **5054.5** | 5 l | plastic | 282,20 € |
| Original pack 2 x 5 l | | | 268,09/5 l |
| **5054.6** | 25 l | tinplate | 966,45 € |

## Ethanol denatured

**≥99,8 %**

Universal alcoholic solvent for laboratory use and histology.

**Type analysis:**

Assay (EtOH, v/v). ..... ≥99,8 %
Water ..... ≤0,2 %
Appearance. ..... clear, colourless liquid
Aldehyde content (as acetaldehyde ). ..... ≤0,003 %
Acid content (as $CH_3COOH$). ..... ≤0,001 %
Sum of other impurities. ..... ≤0,03 %
Methanol. ..... ≤0,1 %
Evaporation residue. ..... ≤0,003 %
Denaturing:
Methyl ethyl ketone (MEK). ..... 1 %
Isopropyl alcohol (IPA). ..... 1 %
Denatonium benzoate. ..... 1 g/100 l
Denaturated ethanol recommended from Roth is an economical universal solvent which is ideal for many typical laboratory operations: It is excellent for extracting, as a flow and eluation agent in chromatography, for dehydrating in histology. Denaturated ethanol can be mixed with water.

| | | | |
|---|---|---|---|
| **K928.5** | 1 l | plastic | 13,45 € |
| Original pack 6 x 1 l | | | 12,78/1 l |
| **K928.1** | 2,5 l | glass | 28,70 € |
| Original pack 4 x 2,5 l | | | 27,27/2,5 l |
| **K928.3** | 2,5 l | plastic | 27,10 € |
| Original pack 4 x 2,5 l | | | 25,75/2,5 l |
| **K928.4** | 5 l | plastic | 48,40 € |
| Original pack 2 x 5 l | | | 45,98/5 l |
| **K928.6** | 10 l | tinplate | 83,35 € |
| **K928.2** | 25 l | tinplate | 160,20 € |

## Ethanol 96 % from controlled organic cultivation

▶ Bioethanol 96 % see p. 1772

## Ethanol 96 %

Ethyl alcohol, EtOH
$C_2H_6O$
M 46,07 g/mol
D 0,81 • bp 78 °C
mp -114,5 °C • flp 17 °C
[64-17-5] • EC No. 200-578-6
UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225-H319

## Ethanol 96 %

**96 %, Ph.Eur., extra pure**

**Guarantee analysis:**

Assay (V/V). ..... 95,1-96,9 %
Properties. ..... complies
Identity. ..... complies
Appearance. ..... complies
Acid or alkaline react. substances. ..... complies
Density (d 20 °C/20 °C). ..... 0,805-0,812
Absorption:
240 nm. ..... ≤0,4
250-260 nm. ..... ≤0,3
270-340 nm. ..... ≤0,1
Volatile impurities:
Acetaldehyde and acetal. ..... ≤0,001 %
Benzene. ..... ≤0,0002 %
Methanol. ..... ≤0,01 %
Evaporation residue. ..... ≤0,0025 %
Sum of other impurities. ..... ≤0,03 %
Disregard limit. ..... ≤0,0009 %
Prices include german tax on alcohol.

| | | | |
|---|---|---|---|
| **P075.1** | 1 l | glass | 70,85 € |
| Original pack 6 x 1 l | | | 67,31/1 l |
| **P075.3** | 1 l | plastic | 69,80 € |
| Original pack 6 x 1 l | | | 66,31/1 l |
| **P075.2** | 2,5 l | glass | 149,45 € |
| Original pack 4 x 2,5 l | | | 141,98/2,5 l |
| **P075.4** | 2,5 l | plastic | 147,20 € |
| Original pack 4 x 2,5 l | | | 139,84/2,5 l |
| **P075.5** | 5 l | plastic | 276,30 € |
| Original pack 2 x 5 l | | | 262,49/5 l |
| **P075.6** | 10 l | tinplate | 439,70 € |

## Ethanol 96 % denatured

**≥96 %**

Universal alcoholic solvent for laboratory use and histology.

**Type analysis:**

Assay (EtOH, v/v). ..... ≥96 %
Aldehydes (as acetaldehyde). ..... ≤0,03 %
Acid content (as $CH_3COOH$). ..... ≤0,001 %
Sum of other impurities. ..... ≤0,03 %
Methanol (GC). ..... ≤0,1 %
Evaporation residue. ..... ≤0,003 %
Denaturing:
Methyl ethyl ketone (MEK). ..... 1 %
Isopropyl alcohol (IPA). ..... 1 %
Denatonium benzoate. ..... 1 g/100 l

| | | | |
|---|---|---|---|
| **T171.5** | 1 l | plastic | 12,40 € |
| Original pack 6 x 1 l | | | 11,78/1 l |
| **T171.1** | 2,5 l | glass | 23,90 € |
| Original pack 4 x 2,5 l | | | 22,71/2,5 l |
| **T171.3** | 2,5 l | plastic | 21,75 € |
| Original pack 4 x 2,5 l | | | 20,66/2,5 l |
| **T171.4** | 5 l | plastic | 40,75 € |
| Original pack 2 x 5 l | | | 38,71/5 l |
| **T171.6** | 10 l | tinplate | 71,50 € |
| **T171.2** | 25 l | tinplate | 120,95 € |

## Ethanol 80 %

## Ethanol 80 % denatured

**≥80 %**
$C_2H_6O$
M 46,07 g/mol
D 0,86 • bp 78 °C
flp 22 °C
[64-17-5] • EC No. 200-578-6
UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225-H319

**Type analysis:**

Assay (EtOH, v/v). ..... ≥80 %
Water . ..... ~20 %
Aldehydes (as acetaldehyde). ..... ≤0,003 %
Acid content (as $CH_3COOH$). ..... ≤0,001 %
Sum of other impurities. ..... ≤0,03 %
Methanol (GC). ..... ≤0,1 %
Evaporation residue. ..... ≤0,003 %
Denaturing:
Methyl ethyl ketone (MEK). ..... 1 %
Isopropyl alcohol (IPA). ..... 1 %
Denatonium benzoate. ..... 1 g/100 l

| | | | |
|---|---|---|---|
| **9474.1** | 1 l | plastic | 11,75 € |
| Original pack 6 x 1 l | | | 11,16/1 l |
| **9474.2** | 2,5 l | plastic | 21,00 € |
| Original pack 4 x 2,5 l | | | 19,95/2,5 l |
| **9474.3** | 5 l | plastic | 39,25 € |
| Original pack 2 x 5 l | | | 37,29/5 l |
| **9474.4** | 10 l | plastic | 68,70 € |
| **9474.5** | 25 l | plastic | 117,20 € |

## Ethanol 70 %

Ethyl alcohol, EtOH
$C_2H_6O$
M 46,07 g/mol
D 0,88 • bp ~78 °C
flp 22 °C
[64-17-5] • EC No. 200-578-6
UN No. 1170 • ADR 3 II • WGK 1
**Danger** H225-H319

### Ethanol 70 %
**ROTIPURAN® ≥70 %, p.a.**

**Guarantee analysis:**
Assay (V/V). ≥70 %
Water. ~30 %
Aldehydes (as acetaldehyde). ≤0,001 %
Acid or alkaline react. substances. ≤0,003 %
Methanol (GC). ≤0,01 %
Evaporation residue. ≤0,003 %
Prices include german tax on alcohol.

| | | | |
|---|---|---|---|
| **T868.1** | 1 l | plastic | 54,75 € |
| Original pack 6 x 1 l | | | 52,01/1 l |
| **T868.2** | 2,5 l | plastic | 120,95 € |
| Original pack 4 x 2,5 l | | | 114,90/2,5 l |
| **T868.3** | 5 l | plastic | 231,15 € |
| Original pack 2 x 5 l | | | 219,59/5 l |
| **T868.4** | 10 l | plastic | 418,20 € |
| **T868.5** | 25 l | plastic | 837,45 € |

### Ethanol 70 %
**DAB**

**Guarantee analysis:**
Appearance. clear, colourless solution
Assay (V/V). 69,2-70,8 %
Identity. complies
Relative density (20 °C). 0,885-0,889
Prices include german tax on alcohol.

| | | | |
|---|---|---|---|
| **7301.1** | 500 ml | glass | 33,25 € |

### Ethanol 70 % denatured
**≥70 %**
Universal alcoholic solvent for laboratory use and histology.

**Type analysis:**
Assay (EtOH, v/v). ≥70 %
Water . ~30 %
Aldehydes (as acetaldehyde). ≤0,003 %
Acid content (as $CH_3COOH$). ≤0,001 %
Sum of other impurities. ≤0,03 %
Methanol (GC). ≤0,1 %
Evaporation residue. ≤0,003 %
Denaturing:
Methyl ethyl ketone (MEK). 1 %
Isopropyl alcohol (IPA). 1 %
Denatonium benzoate. 1 g/100 l

| | | | |
|---|---|---|---|
| **T913.1** | 1 l | plastic | 11,75 € |
| Original pack 6 x 1 l | | | 11,16/1 l |
| **T913.2** | 2,5 l | plastic | 20,65 € |
| Original pack 4 x 2,5 l | | | 19,62/2,5 l |
| **T913.3** | 5 l | plastic | 34,30 € |
| Original pack 2 x 5 l | | | 32,59/5 l |
| **T913.4** | 10 l | plastic | 55,40 € |
| **T913.5** | 25 l | plastic | 110,20 € |

## Ethanol denatured
- ▶ Bioethanol 96 % denatured see p. 1773
- ▶ Ethanol 96 % denatured see p. 1911
- ▶ Ethanol 80 % denatured see p. 1911
- ▶ Ethanol 70 % denatured see p. 1912
- ▶ Rotisol® see p. 2232

## Ethanol D1

### Ethanol D1
**99,5 Atom%D**
For nuclear magnetic resonance spectroscopy.
$C_2H_5DO$
M 47,08 g/mol
D 0,80 • bp 78 °C
mp -130 °C • flp 12 °C
[925-93-9] • EC No. 213-128-9
UN No. 1170 • ADR 3 II • WGK 1
**Danger** H225-H319

**Guarantee analysis:**
Deuterising degree. ≥99,5 %
Water (KF, $H_2O$+$D_2O$). ≤0,5 %

| | | | |
|---|---|---|---|
| **HN84.1** | 50 ml | glass | 128,90 € |

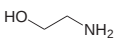
## Ethanol D6

### Ethanol D6
**99 Atom%D**
For nuclear magnetic resonance spectroscopy.
Hexadeuteroethanol
$C_2D_6O$
M 52,11 g/mol
D 0,89 • bp 78 °C
mp -114,5 °C • flp 11 °C
Solubility: ~1000 g/l ($H_2O$, 20 °C)
[1516-08-1] • EC No. 216-162-2
UN No. 1170 • ADR 3 II • WGK 1
**Danger** H225-H319

**Guarantee analysis:**
Deuterising degree. ≥99 %
Water (KF, $H_2O$+$D_2O$). ≤1,0 %

| | | | |
|---|---|---|---|
| **CP93.2** | 1 ml | glass | 52,70 € |
| **CP93.1** | 5 ml | glass | 188,15 € |

## Ethanolamine




2-Aminoethanol, Colamine, Monoethanolamine
$C_2H_7NO$
M 61,08 g/mol
D ~1,02 • bp 171 °C
mp 10,5 °C • flp 92-93 °C
[141-43-5] • EC No. 205-483-3
UN No. 2491 • ADR 8 III • WGK 1
**Danger**
H314-H302+H312+H332-H335

### Ethanolamine
**ROTIPURAN® ≥99,5 %, p.a.**
For biochemistry.

**Guarantee analysis:**
Assay (GC). ≥99,5 %
Colour (APHA). ≤20
Water. ≤0,3 %
Diethanolamine (GC). ≤0,3 %
Triethanol amine (GC). ≤0,1 %
Calcium (Ca). ≤0,00005 %
Cadmium (Cd). ≤0,000005 %
Cobalt (Co). ≤0,000002 %
Chromium (Cr). ≤0,000002 %
Copper (Cu). ≤0,00001 %
Iron (Fe). ≤0,0005 %
Magnesium (Mg). ≤0,0005 %
Manganese (Mn). ≤0,000005 %
Nickel (Ni). ≤0,00005 %
Lead (Pb). ≤0,00001 %
Zinc (Zn). ≤0,0005 %

| | | | |
|---|---|---|---|
| **0342.1** | 500 ml | glass | 22,50 € |
| **0342.2** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |

### Ethanolamine
**≥99 %, for synthesis**

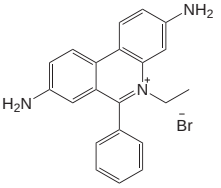
**Type analysis:**
Assay (GC). ≥99 %
Water. ≤0,3 %

| | | | |
|---|---|---|---|
| **4376.1** | 100 ml | plastic | 12,05 € |
| **4376.2** | 500 ml | plastic | 19,25 € |
| **4376.3** | 1 l | plastic | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |

## Ether
- ▶ Diethyl ether see p. 1873

## Ether D10
- ▶ Diethyl ether D10 see p. 1874

## Ethidium bromide




### Ethidium bromide
**≥98 %**
For DNA-staining.
Homidium bromide, 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide
$C_{21}H_{20}BrN_3$
M 394,33 g/mol
D 1,01
mp 261-264 °C • flp >100 °C
Solubility: 40 g/l ($H_2O$, 25 °C)
Storage temp.: +20 °C
[1239-45-8] • EC No. 214-984-6
UN No. 2811 • ADR 6.1 I • WGK 2
**Danger** H330-H341-H302

**Type analysis:**
Appearance. red, cryst. powder
Assay. ≥98,0 %
Solubility (in $H_2O$). clear, red
pH value (2 % in $H_2O$). 4,0-7,0
Loss on drying. ≤10,0 %

| | | | |
|---|---|---|---|
| **7870.1** | 1 g | glass | 23,15 € |
| **7870.2** | 5 g | glass | 90,85 € |

For further information, please see page 1188

## Ethidiumbromide absorber bags

▶ Sekuroka® Decon-Bags see p. 2245

## Ethidium bromide solution 0,025 % in dropper bottle

### Ethidium bromide solution 0,025 % in dropper bottle

**aqueous solution (250 µg/ml)**

For staining of DNA or RNA in agarose gels during electrophoresis.

| | | | |
|---|---|---|---|
| **HP47.1** | 15 ml | plastic | 29,60 € |
| **HP47.2** | 5 x 15 ml | plastic | 104,20 € |

For further information, please see page 1188

## Ethidium bromide solution 0,5 % in dropper bottle

### Ethidium bromide solution 0,5 % in dropper bottle

**aqueous solution (5 mg/ml)**

For counterstaining of nuclei in histology and cytology.
For staining of DNA/RNA after electrophoresis.
WGK 1

**Warning** H332

| | | | |
|---|---|---|---|
| **HP46.1** | 15 ml | plastic | 29,60 € |
| **HP46.2** | 5 x 15 ml | plastic | 104,20 € |

For further information, please see page 1188

## Ethidium bromide solution 1 %

### Ethidium bromide solution 1 %

**1 % solution in water (10 mg/ml)**

For staining of DNA/RNA after electrophoresis.
Homidium bromide, 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide
D 1,0 • bp 100 °C
mp 0 °C
[1239-45-8] • EC No. 214-984-6
UN No. 2810 • ADR 6.1 III • WGK 2

**Warning** H332-H341

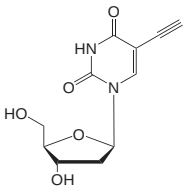
| | | | |
|---|---|---|---|
| **2218.1** | 10 ml | glass | 10,65 € |
| **2218.4** | 15 ml | dropp. bottle | 30,00 € |
| **2218.2** | 30 ml | glass | 22,05 € |
| **2218.3** | 100 ml | glass | 53,65 € |

For further information, please see page 1188

## Ethidium bromide substitutes

▶ Eva Green® Fluorescent Dye see p. 1923
▶ Roti®-GelStain see p. 2218
▶ Roti®-Load DNAstain see p. 2221

## 5-Ethynyl-2'-deoxyuridine (EdU)



### 5-Ethynyl-2'-deoxyuridine (EdU)

**≥99 %**

EdU
$C_{11}H_{12}N_2O_5$
M 252,23 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
[61135-33-9]
WGK 3

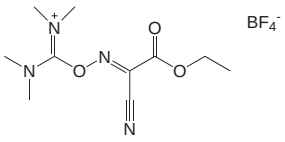
**Danger** H340-H361

**Type analysis:**

Appearance..... white to off-white solid
Assay (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7845.1** | 5 mg | plastic | 27,45 € |
| **7845.2** | 10 mg | plastic | 41,85 € |
| **7845.3** | 50 mg | plastic | 96,65 € |
| **7845.4** | 100 mg | plastic | 155,90 € |
| **7845.5** | 500 mg | plastic | 536,45 € |
| **7845.6** | 1 g | plastic | 987,95 € |

## O-[(Ethoxycarbonyl)-cyanomethylenamino]-N,N,N',N'-tetramethyluronium tetrafluoroborate (TOTU)



### O-[(Ethoxycarbonyl)-cyanomethylenamino]-N,N,N',N'-tetramethyluronium tetrafluoroborate (TOTU)

**≥99 %**

Coupling reagent for peptide synthesis.
TOTU
$C_{10}H_{17}BF_4N_4O_3$
M 328,08 g/mol
mp 143-146 °C
[136849-72-4]
WGK 1

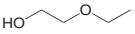
**Warning** H302-H315-H319-H335

**Type analysis:**

Assay (HPLC)..... ≥99,0 %
Water (KF)..... ≤0,2 %
Solubility (10 % in ACN)..... clearly soluble
Solubility (10 % in DMF)..... clearly soluble

| | | | |
|---|---|---|---|
| **2125.1** | 5 g | glass | 30,00 € |
| **2125.2** | 25 g | glass | 95,15 € |
| **2125.3** | 100 g | glass | 338,65 € |

## 2-Ethoxyethanol



### 2-Ethoxyethanol

**≥99 %, for synthesis**

Ethylene glycol monoethyl ether
$C_4H_{10}O_2$
M 90,12 g/mol
D 0,93 • bp 135 °C
mp -100 °C • flp 40 °C
[110-80-5] • EC No. 203-804-1
UN No. 1171 • ADR 3 III • WGK 1

**Danger**

H226-H302-H331-H360FD

**Type analysis:**

Assay..... ≥99 %
Density (20 °C)..... 0,930-0,934
Water ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **5127.3** | 1 l | glass | 27,45 € |
| Original pack 6 x 1 l | | | 26,08/1 l |
| **5127.1** | 2,5 l | glass | 53,65 € |
| Original pack 4 x 2,5 l | | | 50,97/2,5 l |
| **5127.4** | 5 l | aluminium | 83,75 € |
| Original pack 2 x 5 l | | | 79,56/5 l |
| **5127.2** | 10 l | tinplate | 155,90 € |

## 2-(2-Ethoxyethoxy)ethanol

▶ Diethylene glycol monoethyl ether see p. 1872

## N-(4-Ethoxyphenyl)acetamide

▶ Phenacetin see p. 2144

## Ethyl acetate

▶ Acetic acid ethyl ester see p. 1694

## Ethyl acetoacetate

▶ Acetoacetic acid ethyl ester see p. 1696

## Ethyl alcohol

▶ Ethanol absolut see p. 1910
▶ Ethanol 96 % see p. 1911
▶ Ethanol 80 % see p. 1911
▶ Ethanol 70 % see p. 1912
▶ Bioethanol 96 % see p. 1772

## Ethylamine hydrochloride



### Ethylamine hydrochloride

**≥98 %, for biochemistry**
Ethylammonium chloride
$C_2H_7N \cdot HCl$
M 81,55 g/mol
mp 110-115 °C
[557-66-4] • EC No. 209-182-8
WGK 1

**Warning** H315-H319-H335

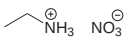
**Type analysis:**
Assay..... ≥98,0 %
Appearance..... white to off-white powder
Water (KF)..... ≤1,1 %

| | | | |
|---|---|---|---|
| **9745.2** | 25 g | plastic | 13,90 € |
| **9745.3** | 100 g | plastic | 32,80 € |
| **9745.1** | 500 g | plastic | 118,15 € |
| Original pack 6 x 500 g | | | 112,24/500 g |

## Ethyl ammoniumchloride

▶ Ethylamine hydrochloride see p. 1914

## Ethylammonium-nitrate (EAN)



### Ethylammonium-nitrate (EAN)

**≥97 %**
Ionic liquid
EAN
$C_2H_8N_2O_3$
M 108,10 g/mol
D 1,209
mp 9 °C
[22113-86-6]
WGK 3

**Warning** H315-H319-H335

**Type analysis:**
Appearance..... yellowish liquid
Assay..... ≥97 %
Water (KF)..... ≤2 %

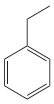
| | | | |
|---|---|---|---|
| **2035.1** | 25 g | glass | 160,20 € |
| **2035.2** | 100 g | glass | 349,40 € |

Lit:. "**Ethylammonium nitrate: a protein crystallization reagent**" J. A. Garlitz, C. A. Summers, R. A. Flowers II, G. E. O. Borgstahl, *Acta Cryst.* **1999,** D55, 2037-2038.
For further information, please see page 1531

## Ethyl amyl carbinol

▶ 1-Octanol see p. 2109

## Ethylbenzene



### Ethylbenzene

NEW

**≥99 %, for synthesis**
Phenylethane
$C_8H_{10}$
M 106,17 g/mol
D 0,87 • bp 136 °C
mp -95 °C • flp >15 °C
[100-41-4] • EC No. 202-849-4
UN No. 1175 • ADR 3 II • WGK 1

**Danger** H225-H332-H373-H304

**Type analysis:**
Assay (GC)..... ≥99,0 %
Benzene..... ≤0,5 %
Toluene..... ≤0,5 %
Xylene..... ≤0,5 %
Water (KF)..... ≤0,05 %

| | | | |
|---|---|---|---|
| **0272.1** | 500 ml | glass | 21,40 € |
| **0272.2** | 1 l | glass | 32,15 € |
| Original pack 6 x 1 l | | | 30,54/1 l |
| **0272.3** | 2,5 l | glass | 59,05 € |
| Original pack 4 x 2,5 l | | | 56,10/2,5 l |
| **0272.4** | 5 l | plastic | 106,45 € |
| Original pack 2 x 5 l | | | 101,13/5 l |

## Ethyl bromide

▶ Bromoethane see p. 1788

## Ethyl carbonate

▶ Diethyl carbonate see p. 1872

## Ethyl cellulose

[9004-57-3]
WGK 1

### Ethyl cellulose

**~50 cP, extra pure**

**Type analysis:**
Viscosity (25 °C, 5 % in toluene/ethanol 80:20 (w/w))..... 45,0-55,0 cP
Ethoxyl assay..... 48,0-49,5 %
Chloride (as NaCl)..... ≤0,05 %
Loss on drying..... ≤2,0 %

| | | | |
|---|---|---|---|
| **5023.1** | 250 g | plastic | 40,75 € |
| **5023.3** | 500 g | plastic | 70,45 € |
| Original pack 6 x 500 g | | | 66,93/500 g |
| **5023.4** | 1 kg | plastic | 126,35 € |
| Original pack 6 x 1 kg | | | 120,03/1 kg |
| **5023.2** | 2,5 kg | plastic | 289,20 € |

### Ethyl cellulose

**~200 cP, extra pure**

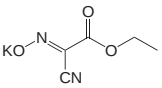
**Type analysis:**
Viscosity (25 °C, 5 % in toluene/ethanol 80:20 (w/w))..... 180-220 cP
Ethoxyl assay..... 48,0-49,5 %
Chloride (as NaCl)..... ≤0,05 %
Loss on drying..... ≤2,0 %

| | | | |
|---|---|---|---|
| **9128.1** | 250 g | plastic | 40,75 € |
| **9128.3** | 500 g | plastic | 70,45 € |
| Original pack 6 x 500 g | | | 66,93/500 g |
| **9128.4** | 1 kg | plastic | 126,35 € |
| Original pack 6 x 1 kg | | | 120,03/1 kg |
| **9128.2** | 2,5 kg | plastic | 289,20 € |

## Ethyl cinnamate

▶ Cinnamic acid ethyl ester see p. 1834

## Ethyl cyanoglyxylate-2-oxyme potassium salt (K-Oxyma)



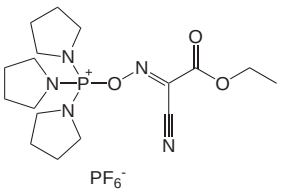
### Ethyl cyanoglyxylate-2-oxyme potassium salt (K-Oxyma)

**≥99 %**
Coupling reagent for peptide synthesis.
K-Oxyma
$C_5H_5KN_2O_3$
M 180,2 g/mol
mp 145-155 °C
Storage temp.: +4 °C
[158014-03-0]
WGK 3

**Type analysis:**
Appearance..... bright yellow powder
Assay (HPLC)..... ≥99 %
Water (KF)..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6891.1** | 25 g | glass | 28,95 € |
| **6891.2** | 50 g | glass | 47,85 € |
| **6891.3** | 250 g | glass | 188,15 € |

## (Ethylcyano(hydroxyimino)-acetato-$O_2$)tri-1-pyrrolidinyl-phosphonium hexafluoro-phosphate (PyOxim)



$PF_6^-$

### (Ethylcyano(hydroxyimino)-acetato-$O_2$)tri-1-pyrrolidinyl-phosphonium hexafluoro-phosphate (PyOxim)

**≥99 %**

Coupling reagent for peptide synthesis.
PyOxim
$C_{17}H_{29}F_6N_5O_3P_2$
M 527,38 g/mol
mp 167-172 °C
Storage temp.: +4 °C
[153433-21-7]
EUH044

**Type analysis:**
Assay (HPLC).....≥99,0 %
Loss on drying.....≤0,5 %

| | | | |
|---|---|---|---|
| **2120.1** | 5 g | plastic | 26,80 € |
| **2120.2** | 25 g | plastic | 85,50 € |
| **2120.3** | 100 g | plastic | 295,65 € |
| **2120.5** | 1 kg | glass | 1880,20 € |
| Original pack 6 x 1 kg | | | 1786,19/1 kg |

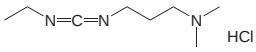
## Ethyldiglycol

▶ Diethylene glycol monoethyl ether see p. 1872

## N-Ethyldiisopropylamine

▶ N,N-Diisopropylethylamine (DIPEA) see p. 1879

## 1-Ethyl-3-(3-dimethyl-aminopropyl)carbodiimide hydrochloride (EDC-HCl)



### 1-Ethyl-3-(3-dimethyl-aminopropyl)carbodiimide hydrochloride (EDC-HCl)

**≥99 %**

Coupling reagent for peptide synthesis
EDC-HCl, EDAC hydrochloride, N-(3-Dimethylaminopropyl)-N'-ethylcarbodiimide hydrochloride
$C_8H_{17}N_3 \cdot HCl$
M 191,7 g/mol
mp 110-115 °C
Solubility: soluble ($H_2O$, 20 °C)
Storage temp.: -20 °C •
Transport temp.: room temp.
[25952-53-8]
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Assay (titr.).....≥99,0 %
Water (KF).....≤0,5 %

| | | | |
|---|---|---|---|
| **2156.1** | 5 g | glass | 20,35 € |
| **2156.2** | 25 g | glass | 54,30 € |
| **2156.3** | 100 g | glass | 155,90 € |
| **2156.5** | 1 kg | glass | 1095,45 € |
| Original pack 6 x 1 kg | | | 1040,68/1 kg |

## Ethylenediamine tetraacetic acid disodium salt solution

▶ EDTA disodium salt solution (0,1 N) see p. 1900

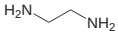
## N-Ethyleneamine

▶ Diethylamine see p. 1872

## Ethylene chloride

▶ 1,2-Dichloroethane see p. 1868

## Ethylenediamine



### Ethylenediamine

**ROTIPURAN® ≥99,5 %, p.a., anhydrous**

**Guarantee analysis:**
Appearance.....clear, colourless liquid
Assay (GC).....≥99,5 %
Water.....≤0,5 %
Lead (Pb).....≤0,0001 %
Cadmium (Cd).....≤0,0001 %
Calcium (Ca).....≤0,0005 %
Cobalt (Co).....≤0,0001 %
Chromium (Cr).....≤0,0001 %
Iron (Fe).....≤0,0001 %
Potassium (K).....≤0,002 %
Copper (Cu).....≤0,0001 %
Magnesium (Mg).....≤0,0001 %
Manganese (Mn).....≤0,0001 %
Sodium (Na).....≤0,002 %
Nickel (Ni).....≤0,0001 %
Zinc (Zn).....≤0,0001 %
Refractive index $n_D^{20}$.....1,456-1,458

| | | | |
|---|---|---|---|
| **3049.1** | 250 ml | glass | 53,25 € |

1,2-Ethanediamine, 1,2-Diaminoethane
$C_2H_8N_2$
M 60,10 g/mol
D 0,90 • bp 116 °C
mp 11 °C • flp 38 °C
[107-15-3] • EC No. 203-468-6
UN No. 1604 • ADR 8 (3) II • WGK 2

**Danger** H226-H302+H332-H311-H314-H317-H334-H412

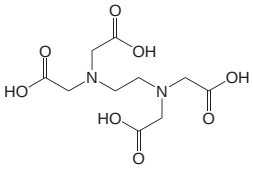
### Ethylenediamine

**≥99,5 %, for synthesis**

**Type analysis:**
Assay (GC).....≥99,5 %
Water.....≤0,5 %

| | | | |
|---|---|---|---|
| **4218.1** | 100 ml | glass | 13,15 € |
| **4218.2** | 500 ml | glass | 17,10 € |
| **4218.3** | 1 l | glass | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |
| **4218.4** | 2,5 l | glass | 52,60 € |
| Original pack 4 x 2,5 l | | | 49,97/2,5 l |
| **4218.5** | 10 l | PE/steel | 177,40 € |

## Ethylenediamine tetraacetic acid



EDTA, Ethylenedinitrilo tetraacetic acid, Titration complex II
$C_{10}H_{16}N_2O_8$
M 292,25 g/mol
D ~0,86
mp >220 °C (dec.)
Solubility: ~0,5 g/l ($H_2O$, 20 °C)
[60-00-4] • EC No. 200-449-4
WGK 2

**Warning** H319

### Ethylenediamine tetraacetic acid

**≥99 %, p.a., ACS**

For molecular biology and biochemistry.

**Guarantee analysis:**
Assay (compl.).....99,4-100,6 %
Identity.....complies
In $NH_4OH$ insoluble matter.....≤0,005 %
Nitrilotriacetic acid.....≤0,1 %
Chloride (Cl).....≤0,005 %
Heavy metals (as Pb).....≤0,001 %
Calcium (Ca).....≤0,001 %
Copper (Cu).....≤0,001 %
Magnesium (Mg).....≤0,0005 %
Nickel (Ni).....≤0,001 %
Lead (Pb).....≤0,001 %
Iron (Fe).....≤0,001 %
Ash content (as $SO_4$).....≤0,1 %

| | | | |
|---|---|---|---|
| **8040.1** | 100 g | plastic | 15,60 € |
| **8040.3** | 500 g | plastic | 35,40 € |
| Original pack 6 x 500 g | | | 33,63/500 g |
| **8040.2** | 1 kg | plastic | 53,25 € |
| Original pack 6 x 1 kg | | | 50,59/1 kg |
| **8040.4** | 2,5 kg | plastic | 106,45 € |
| **8040.5** | 25 kg | plastic | 833,15 € |

## Ethylenediamine tetraacetic acid

**≥99 %**

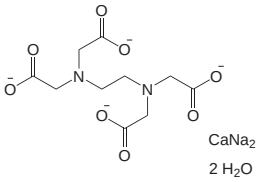
For molecular biology and biochemistry.

**Type analysis:**

Assay (compl.).....≥99 %
In $NH_4OH$ insoluble matter.....≤0,01 %
Nitrilotriacetic acid. .....≤0,5 %
Heavy metals (as Pb).....≤0,01 %
Calcium (Ca).....≤0,05 %
Iron (Fe). .....≤0,05 %
Magnesium (Mg).....≤0,005 %
Sulphated ash.....≤0,2 %

| | | | |
|---|---|---|---|
| **CN06.1** | 250 g | plastic | 16,35 € |
| **CN06.2** | 500 g | plastic | 27,45 € |
| Original pack 6 x 500 g | | | 26,08/500 g |
| **CN06.3** | 1 kg | plastic | 44,65 € |
| Original pack 6 x 1 kg | | | 42,42/1 kg |
| **CN06.5** | 2,5 kg | plastic | 90,20 € |
| **CN06.4** | 5 kg | plastic | 171,90 € |
| **CN06.6** | 10 kg | plastic | 289,20 € |

## Ethylenediamine tetraacetic acid calcium disodium salt dihydrate




## Ethylenediamine tetraacetic acid calcium disodium salt dihydrate

**≥98 %, Ph.Eur., USP**

Ca-Titration complex dihydrate
EDTA calcium disodium salt dihydrate,
Calcium EDTA disodium salt dihydrate
$C_{10}H_{12}CaN_2Na_2O_8 \cdot 2\ H_2O$
M 410,31 g/mol
Solubility: ~500 g/l ($H_2O$, 20 °C)
[6766-87-6] • EC No. 200-529-9
WGK 2

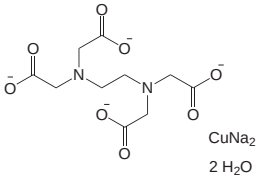
**Danger** H318

**Guarantee analysis:**

Appearance. .....white to off-white hygroscopic powder
Assay (dry substance). .....98,0-102,0 %
Identity. .....complies
Appearance of solution. .....complies
Nitrilotriacetic acid. .....≤0,1 %
Dinatriumedetat. .....≤1,0 %
Chloride (Cl). .....≤0,1 %
Iron (Fe). .....≤0,008 %
Heavy metals (as Pb).....≤0,002 %
pH value (5 % in water).....6,5-8,0
Water. .....5,0-13,0 %

| | | | |
|---|---|---|---|
| **6506.1** | 250 g | plastic | 44,00 € |
| **6506.2** | 500 g | plastic | 81,60 € |
| Original pack 6 x 500 g | | | 77,52/500 g |
| **6506.3** | 1 kg | plastic | 149,45 € |
| Original pack 6 x 1 kg | | | 141,98/1 kg |

## Ethylenediamine tetraacetic acid copper disodium salt dihydrate




## Ethylenediamine tetraacetic acid copper disodium salt dihydrate

**≥99 %, for synthesis**

EDTA copper disodium salt dihydrate,
Copper EDTA disodium salt dihydrate
$C_{10}H_{12}CuN_2Na_2O_8 \cdot 2\ H_2O$
M 433,77 g/mol
mp >150 °C (dec.)
Solubility: ~1200 g/l ($H_2O$, 20 °C)
[61916-40-3] • EC No. 237-864-5
WGK 2

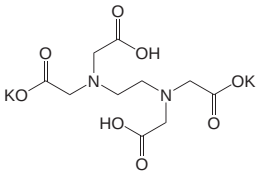
**Warning** H315-H319-H412

**Type analysis:**

Appearance..... blue cryst. powder
Assay. ..... ≥99,0 %
Assay (Cu). ..... 14,7-15,3 %

| | | | |
|---|---|---|---|
| **6499.1** | 250 g | plastic | 40,75 € |
| **6499.2** | 500 g | plastic | 71,95 € |
| Original pack 6 x 500 g | | | 68,35/500 g |
| **6499.3** | 1 kg | plastic | 131,70 € |
| Original pack 6 x 1 kg | | | 125,12/1 kg |

## Ethylenediamine tetraacetic acid dipotassium salt dihydrate



EDTA dipotassium salt dihydrate
$C_{10}H_{14}K_2N_2O_8 \cdot 2\ H_2O$
M 404,47 g/mol
mp 272 °C
Solubility: ~40 g/l ($H_2O$, 20 °C)
[25102-12-9] • EC No. 217-895-0
WGK 2

## Ethylenediamine tetraacetic acid dipotassium salt dihydrate

**≥99 %, p.a.**

**Guarantee analysis:**

Assay. ..... ≥99 %
pH value (5 % solution 25 °C)..... 4-5
In water insoluble matter..... ≤0,005 %
Chloride (Cl). ..... ≤0,005 %
Iron (Fe)..... ≤0,001 %
Copper (Cu). ..... ≤0,0001 %
Heavy metals (as Pb). ..... ≤0,001 %
Loss on drying (150 °C)..... 8-10 %

| | | | |
|---|---|---|---|
| **3053.1** | 100 g | plastic | 23,15 € |
| **3053.2** | 250 g | plastic | 44,65 € |
| **3053.3** | 500 g | plastic | 77,30 € |
| Original pack 6 x 500 g | | | 73,44/500 g |
| **3053.4** | 1 kg | plastic | 137,10 € |
| Original pack 6 x 1 kg | | | 130,25/1 kg |
| **3053.5** | 5 kg | plastic | 557,95 € |

## Ethylenediamine tetraacetic acid dipotassium salt dihydrate

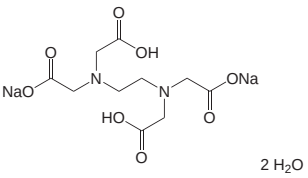
**≥99 %, for synthesis**

**Type analysis:**

Appearance. .....white powder
Assay (compl., dry substance).....≥99 %
Identity (IR). .....complies
pH (5 % in $H_2O$). .....4-5
Loss on drying (150 °C, 6 h).....≤10 %

| | | | |
|---|---|---|---|
| **1408.1** | 250 g | plastic | 25,30 € |
| **1408.2** | 500 g | plastic | 43,55 € |
| Original pack 6 x 500 g | | | 41,37/500 g |
| **1408.3** | 1 kg | plastic | 77,30 € |
| Original pack 6 x 1 kg | | | 73,44/1 kg |
| **1408.4** | 5 kg | plastic | 338,65 € |

## Ethylenediamine tetraacetic acid disodium salt dihydrate




EDTA disodium salt dihydrate,
Titration complex III
$C_{10}H_{14}N_2Na_2O_8 \cdot 2\ H_2O$
M 372,24 g/mol
D 1,019
Solubility: 100 g/l ($H_2O$, 20 °C)
[6381-92-6] • EC No. 205-358-3
WGK 2

**Warning** H332-H373

## Ethylenediamine tetraacetic acid disodium salt dihydrate

**≥99 %, p.a., ACS**

For molecular biology and biochemistry.

**Guarantee analysis:**

Assay (compl.).....≥99,0 %
pH value (5 % in $H_2O$).....4,0-5,0
In $H_2O$ insoluble matter. .....≤0,005 %
Chloride (Cl).....≤0,01 %
Sulphate ($SO_4$).....≤0,02 %
Lead (Pb). .....≤0,0005 %
Calcium (Ca). .....≤0,002 %
Iron (Fe). .....≤0,0005 %
Copper (Cu). .....≤0,0001 %
Nickel (Ni). .....≤0,0005 %
Heavy metals (as Pb).....≤0,001 %
Nitrilotriacetic acid.....≤0,05 %

| | | | |
|---|---|---|---|
| **8043.3** | 100 g | plastic | 21,40 € |
| **8043.1** | 250 g | plastic | 34,30 € |
| **8043.2** | 1 kg | plastic | 100,55 € |
| Original pack 6 x 1 kg | | | 95,52/1 kg |
| **8043.6** | 2,5 kg | plastic | 192,45 € |
| **8043.4** | 5 kg | plastic | 364,45 € |
| **8043.5** | 25 kg | plastic | 826,70 € |

## Ethylenediamine tetraacetic acid disodium salt dihydrate

**≥99 %, USP**

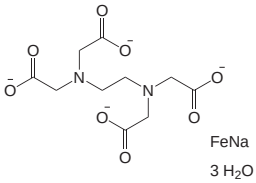
For molecular biology and biochemistry.

**Guarantee analysis:**

Assay (compl.).....99,0-101,0 %
Identity.....complies
pH value (5 % solution).....4,6-6,0
Nitrilotriacetic acid.....≤0,1 %
Heavy metals (as Pb).....≤0,005 %
Calcium (Ca).....complies
Loss on drying (150 °C).....8,7-11,4 %

| | | | |
|---|---|---|---|
| **X986.1** | 250 g | plastic | 19,25 € |
| **X986.2** | 1 kg | plastic | 48,95 € |
| Original pack 6 x 1 kg | | | 46,50/1 kg |
| **X986.4** | 2,5 kg | plastic | 105,25 € |
| **X986.3** | 5 kg | plastic | 200,95 € |
| **X986.5** | 25 kg | plastic | 805,20 € |

## Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate




## Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate

**≥98 %, for synthesis**

EDTA iron(III) sodium salt trihydrate,
Iron(III) EDTA sodium salt trihydrate
$C_{10}H_{12}FeN_2NaO_8 \cdot 3\ H_2O$
M 421,10 g/mol
Solubility: ~90 g/l ($H_2O$, 20 °C)
[15708-41-5] • EC No. 239-802-2
WGK 2

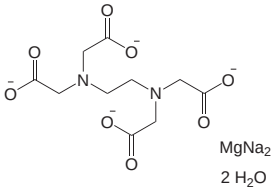
**Warning** H315-H319-H335

**Type analysis:**

Appearance.....brownish yellow cryst. powder
Assay.....≥98,0 %
Assay (Fe).....≥13,0 %
Assay (EDTA-acid).....≥68,0 %
pH value ($H_2O$).....4,5-5,5

| | | | |
|---|---|---|---|
| **6498.1** | 250 g | plastic | 36,45 € |
| **6498.2** | 500 g | plastic | 66,15 € |
| Original pack 6 x 500 g | | | 62,84/500 g |
| **6498.3** | 1 kg | plastic | 110,65 € |
| Original pack 6 x 1 kg | | | 105,12/1 kg |

## Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate




## Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate

**≥90 %, for synthesis**

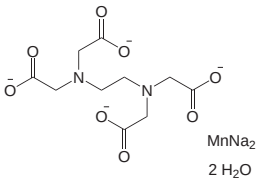
EDTA magnesium disodium salt dihydrate,
Magnesium EDTA disodium salt dihydrate
$C_{10}H_{12}MgN_2Na_2O_8 \cdot 2\ H_2O$
M 394,54 g/mol
mp >275 °C (dec.)
Solubility: ~900 g/l ($H_2O$, 20 °C)
[14402-88-1] • EC No. 238-372-3
WGK 1

**Type analysis:**

Appearance.....pure white powder
Assay.....≥90,0 %
Assay (Mg).....≥5,5 %
Assay (MgO).....~9,5 %
Heavy metals (as Pb).....≤0,001 %
pH value (1 %, $H_2O$).....6,0-7,5

| | | | |
|---|---|---|---|
| **6508.1** | 250 g | plastic | 32,15 € |
| **6508.2** | 500 g | plastic | 59,05 € |
| Original pack 6 x 500 g | | | 56,10/500 g |
| **6508.3** | 1 kg | plastic | 103,10 € |
| Original pack 6 x 1 kg | | | 97,95/1 kg |

## Ethylenediamine tetraacetic acid manganese disodium salt dihydrate




## Ethylenediamine tetraacetic acid manganese disodium salt dihydrate

**≥93 %, for synthesis**

EDTA manganese disodium salt dihydrate,
Manganese EDTA disodium salt dihydrate
$C_{10}H_{12}MnN_2Na_2O_8 \cdot 2\ H_2O$
M 425,17 g/mol
Solubility: ~900 g/l ($H_2O$, 20 °C)
[73637-20-4] • EC No. 239-407-5
WGK 2

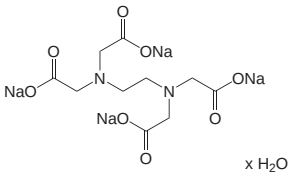
**Warning** H319

**Type analysis:**

Appearance.....pale pink cryst. powder
Assay.....≥93,0 %
Assay (Mn).....12,2-12,8 %
pH value (1 %, $H_2O$).....6,0-7,0

| | | | |
|---|---|---|---|
| **6510.1** | 250 g | plastic | 41,40 € |
| **6510.2** | 500 g | plastic | 73,00 € |
| Original pack 6 x 500 g | | | 69,35/500 g |
| **6510.3** | 1 kg | plastic | 132,80 € |
| Original pack 6 x 1 kg | | | 126,16/1 kg |

## Ethylenediamine tetraacetic acid tetrasodium salt hydrate




## Ethylenediamine tetraacetic acid tetrasodium salt hydrate

**86-88 %**

$C_{10}H_{12}N_2Na_4O_8 \cdot x\ H_2O$
M 380,17 + x $H_2O$ g/mol
Solubility: 580 g/l ($H_2O$, 20 °C)
[64-02-8] • EC No. 200-573-9
WGK 2

**Danger** H318-H302+H332

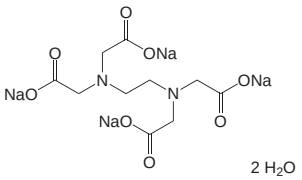
**Type analysis:**

Appearance.....nearly white powder
Assay (titr.).....86,0-88,0 %
pH value (1 %, $H_2O$).....10,5-12,5
Bulk density.....620-760 g/l

Belongs to the group of organic chelating agents which form water soluble complexes with alkaline earth metals and with heavy metals and thus reducing the reactivity of these ions.

| | | | |
|---|---|---|---|
| **3619.2** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **3619.1** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |
| **3619.4** | 2,5 kg | plastic | 56,90 € |
| **3619.3** | 5 kg | plastic | 105,25 € |

## Ethylenediamine tetraacetic acid tetrasodium salt dihydrate




### Ethylenediamine tetraacetic acid tetrasodium salt dihydrate

**≥99 %**

EDTA tetrasodium salt dihydrate.
$C_{10}H_{12}N_2Na_4O_8 \cdot 2\ H_2O$
M 416,2 g/mol
mp 400 °C (dec.)
Solubility: ~580 g/l ($H_2O$, 20 °C)
[10378-23-1] • EC No. 200-573-9
WGK 2

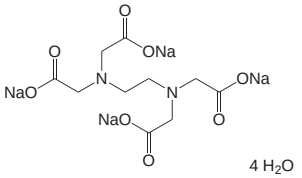
**Danger** H302-H332-H318

**Type analysis:**

Appearance. ..... white cryst. powder
Assay. ..... ≥99,0 %
pH value (1 % solution). ..... 10,7-11,7
Heavy metals (as Pb). ..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,008 %
Mercury (Hg). ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **1410.1** | 250 g | plastic | 21,00 € |
| **1410.2** | 500 g | plastic | 35,40 € |
| Original pack 6 x 500 g | | | 33,63/500 g |
| **1410.3** | 1 kg | plastic | 63,35 € |
| Original pack 6 x 1 kg | | | 60,18/1 kg |
| **1410.4** | 5 kg | plastic | 267,70 € |

## Ethylenediamine tetraacetic acid tetrasodium salt tetrahydrate




### Ethylenediamine tetraacetic acid tetrasodium salt tetrahydrate

**≥99 %, p.a.**

$C_{10}H_{12}N_2Na_4O_8 \cdot 4\ H_2O$
M 452,24 g/mol
mp 400 °C
Solubility: 100 g/l ($H_2O$, 20 °C)
[13235-36-4] • EC No. 200-573-9
WGK 2

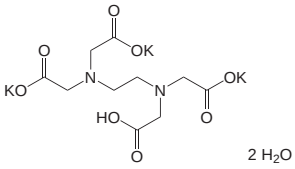
**Warning** H302+H332-H318

**Guarantee analysis:**

Assay (compl.). ..... ≥99,0 %
pH value (1 % solution). ..... 10,0-12,0
In $H_2O$ insoluble matter. ..... ≤0,005 %
Nitrilotriacetic acid. ..... ≤0,1 %
Chloride (Cl). ..... ≤0,004 %
Sulphate ($SO_4$). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0025 %
Iron (Fe). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,001 %
Copper (Cu). ..... ≤0,0005 %
Sulphated ash. ..... 62,0-63,5 %
Loss on drying (200 °C). ..... 15,0-17,0 %

| | | | |
|---|---|---|---|
| **CP87.1** | 250 g | plastic | 19,25 € |
| **CP87.2** | 500 g | plastic | 29,60 € |
| Original pack 6 x 500 g | | | 28,12/500 g |
| **CP87.3** | 1 kg | plastic | 50,00 € |
| Original pack 6 x 1 kg | | | 47,50/1 kg |
| **CP87.4** | 5 kg | plastic | 203,20 € |

## Ethylenediamine tetraacetic acid tripotassium salt dihydrate




### Ethylenediamine tetraacetic acid tripotassium salt dihydrate

**≥99 %**

EDTA tripotassium salt dihydrate
$C_{10}H_{13}K_3N_2O_8 \cdot 2\ H_2O$
M 442,56 g/mol
mp 182 °C
Solubility: ~44 g/l ($H_2O$, 20 °C)
[65501-24-8] • EC No. 241-543-5
WGK 2

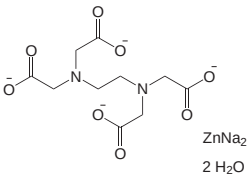
**Warning** H319

**Type analysis:**

Appearance. ..... white, cryst. powder
Assay. ..... ≥99 %
Identity. ..... complies
pH value (5 % in water). ..... 7,0-9,0
Heavy metals (as Pb). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,1 %
Chloride (Cl). ..... ≤0,01 %
Water content (KF). ..... 7-9 %

| | | | |
|---|---|---|---|
| **1409.1** | 100 g | plastic | 28,95 € |
| **1409.2** | 250 g | plastic | 53,65 € |
| **1409.3** | 1 kg | plastic | 160,20 € |
| Original pack 6 x 1 kg | | | 152,19/1 kg |
| **1409.4** | 5 kg | plastic | 643,95 € |

## Ethylenediamine tetraacetic acid zinc disodium salt dihydrate




### Ethylenediamine tetraacetic acid zinc disodium salt dihydrate

**≥96 %, for synthesis**

EDTA zinc disodium salt dihydrate,
Zinc EDTA disodium salt dihydrate
$C_{10}H_{12}ZnN_2Na_2O_8 \cdot 2\ H_2O$
M 435,64 g/mol
Solubility: ~1000 g/l ($H_2O$, 20 °C)
[73513-47-0] • EC No. 237-865-0
WGK 2

**Warning** H319

**Type analysis:**

Appearance. ..... white cryst. powder
Assay. ..... ≥96,0 %
Assay (Zinc). ..... 14,5-15,1 %
pH value (1 %, $H_2O$). ..... 6,0-7,0

| | | | |
|---|---|---|---|
| **6518.1** | 250 g | plastic | 41,85 € |
| **6518.2** | 500 g | plastic | 74,10 € |
| Original pack 6 x 500 g | | | 70,40/500 g |
| **6518.3** | 1 kg | plastic | 134,40 € |
| Original pack 6 x 1 kg | | | 127,68/1 kg |

## trans-1,2-Ethylenedicarbonic acid

▶ Fumaric acid see p. 1944

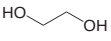
## Ethylene dichloride

▶ 1,2-Dichloroethane see p. 1868

## Ethylenedinitrilo tetraacetic acid

▶ Ethylenediamine tetraacetic acid see p. 1915

## Ethylene glycol




1,2-Ethanediol, Monoethylene glycol
$C_2H_6O_2$
M 62,07 g/mol
D 1,11 • bp 197 °C
mp -12,4 °C • flp 111 °C
Solubility: 1000 g/l ($H_2O$, 20 °C)
[107-21-1] • EC No. 203-473-3
WGK 1

**Warning** H302-H373

### Ethylene glycol

**ROTIPURAN® ≥99,5 %, p.a.**

**Guarantee analysis:**
Assay (GC). ..... ≥99,5 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,1 %
Acidity. ..... ≤0,0005 meq/g
Chloride (Cl). ..... ≤0,0005 %
Sulphate ($SO_4$). ..... ≤0,0005 %
Matter discoloured by $H_2SO_4$. ..... complies
$KMnO_4$ reducing substances (as O). ..... ≤0,0003 %
Calcium (Ca). ..... ≤0,00005 %
Cadmium (Cd). ..... ≤0,000005 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Lead (Pb). ..... ≤0,00001 %
Ash content (as $SO_4$). ..... ≤0,003 %

| | | | |
|---|---|---|---|
| **6881.1** | 1 l | plastic | 41,85 € |
| Original pack 6 x 1 l | | | 39,76/1 l |
| **6881.2** | 2,5 l | plastic | 84,40 € |
| Original pack 4 x 2,5 l | | | 80,18/2,5 l |
| **6881.4** | 5 l | plastic | 127,95 € |
| Original pack 2 x 5 l | | | 121,55/5 l |
| **6881.3** | 10 l | plastic | 241,90 € |
| **6881.5** | 25 l | plastic | 428,95 € |

## Ethylene glycol
**≥99 %, for synthesis**

**Type analysis:**
Assay (GC). ..... ≥99 %
Water . ..... ≤0,5 %
Density (20 °C). ..... 1,110-1,116
Refractive index $n_D^{20}$. ..... 1,431-1,433

| | | | |
|---|---|---|---|
| **9516.1** | 1 l | plastic | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **9516.3** | 2,5 l | plastic | 44,65 € |
| Original pack 4 x 2,5 l | | | 42,42/2,5 l |
| **9516.5** | 5 l | plastic | 74,20 € |
| Original pack 2 x 5 l | | | 70,49/5 l |
| **9516.2** | 10 l | plastic | 114,50 € |
| **9516.4** | 25 l | plastic | 206,95 € |

## Ethylene glycol
**≥98 %, techn.**

**Type analysis:**
Appearance. ..... clear, colourless to slightly yellowish liquid
Assay (GC). ..... ≥98 %
Water. ..... ≤1 %

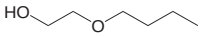
| | | | |
|---|---|---|---|
| **2441.1** | 1 l | plastic | 17,75 € |
| Original pack 6 x 1 l | | | 16,86/1 l |
| **2441.2** | 2,5 l | plastic | 27,45 € |
| Original pack 4 x 2,5 l | | | 26,08/2,5 l |
| **2441.5** | 5 l | plastic | 51,50 € |
| Original pack 2 x 5 l | | | 48,93/5 l |
| **2441.3** | 10 l | plastic | 75,80 € |
| **2441.4** | 25 l | plastic | 166,65 € |

## Ethylene glycol bis(β-amino-ethylether) tetraacetic acid
▶ EGTA see p. 1903

## Ethylene glycol dimethyl ether
▶ 1,2-Dimethoxyethane see p. 1880

## Ethylene glycol dimethyl ether
▶ 1,2-Dimethoxyethane see p. 1880

## Ethylene glycol monobutyl ether



### Ethylene glycol monobutyl ether
**≥99 %, for synthesis**
2-Butoxyethanol, Butylglycol
$C_6H_{14}O_2$
M 118,17 g/mol
D ~0,9 • bp ~170 °C
mp -70 °C • flp ~64 °C
[111-76-2] • EC No. 203-905-0
UN No. 2810 • ADR 6.1 III • WGK 1
**Danger** H302-H311+H331-H315-H319

**Type analysis:**
Assay (GC). ..... ≥99,0 %
Density (d 20 °C/4 °C). ..... 0,898-0,907
Water. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **0341.1** | 1 l | glass | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **0341.2** | 2,5 l | glass | 44,65 € |
| Original pack 4 x 2,5 l | | | 42,42/2,5 l |

## Ethylene glycol monobutyl ether acetate
▶ 2-Butoxyethyl acetate see p. 1796

## Ethylene glycol monoethyl ether
▶ 2-Ethoxyethanol see p. 1913

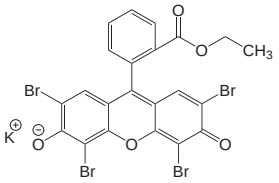
## Ethylene glycol monoisopropyl ether
▶ 2-Isopropoxyethanol see p. 2016

## Ethylene glycol monomethyl ether
▶ 2-Methoxyethanol see p. 2071

## Ethylene glycol monophenyl ether
▶ 2-Phenoxyethanol see p. 2146

## Ethylene tetrachloride
▶ Tetrachloroethylene see p. 2335

## Ethyl eosin (C.I. 45386)



### Ethyl eosin (C.I. 45386)
**extra pure**
2',4',5',7'-Tetrabromoeosin ethyl ester potassium salt, Solvent red 45
$C_{22}H_{11}Br_4KO_5$
M 714,07 g/mol
[6359-05-3]
WGK 3

**Type analysis:**
Appearance. ..... red powder
Appearance of solution (1 g/l in 95 % EtOH). ..... clear, pink orange

| | | | |
|---|---|---|---|
| **7664.1** | 5 g | glass | 18,85 € |
| **7664.2** | 25 g | glass | 35,40 € |
| **7664.3** | 100 g | glass | 72,60 € |

## Ethyl ether
▶ Diethyl ether see p. 1873

## Ethyl ether D10
▶ Diethyl ether D10 see p. 1874

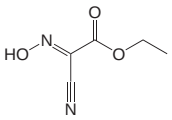
## Ethyl formiate
▶ Formic acid ethyl ester see p. 1941

## Ethyl gallate
▶ Gallic acid ethyl ester see p. 1946

## Ethyl green
▶ Brilliant green (C.I. 42040) see p. 1785

## Ethyl green zinc chloride double salt
▶ Methyl green (C.I. 42590) see p. 2075

## Ethyl(hydroxyimino)cyanoacetate (Oxyma Pure)



### Ethyl(hydroxyimino)cyanoacetate (Oxyma Pure)

**≥99,5 %**
Coupling reagent for peptide synthesis
Oxyma Pure, Ethyl isonitrosocyanoacetate
$C_5H_6N_2O_3$
M 142,11 g/mol
mp 130-132 °C
Storage temp.: +4 °C
[3849-21-6] • EC No. 223-351-3
WGK 1

**Warning** H302

**Type analysis:**
Assay (HPLC). ..... ≥99,5 %
Water (KF). ..... ≤0,5 %
Melting point. ..... 128-132 °C

| | | | |
|---|---|---|---|
| **2118.1** | 25 g | glass | 27,45 € |
| **2118.2** | 100 g | glass | 79,45 € |

## Ethyl isonitrosocyanoacetate

▶ Ethyl(hydroxyimino)cyanoacetate (Oxyma Pure) see p. 1920

## Ethyl lactate

▶ L(-)-Lactic acid ethyl ester see p. 2026

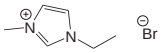
## Ethylmercurithiosalicylate sodium salt

▶ Sodium ethylmercurithiosalicylate see p. 2272

## Ethyl methanoate

▶ Formic acid ethyl ester see p. 1941

## 1-Ethyl-3-methyl-imidazolium-bromide (EMIM Br)



### 1-Ethyl-3-methyl-imidazolium-bromide (EMIM Br)

**≥99 %**
Ionic liquid
EMIM Br
$C_6H_{11}BrN_2$
M 191,07 g/mol
bp ~200 °C (dec.)
mp 91 °C
[65039-08-9]
WGK 3

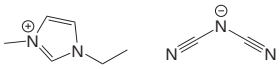
**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... white solid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2037.1** | 25 g | glass | 177,40 € |
| **2037.2** | 100 g | glass | 295,65 € |

Lit:. "**1-Alkyl-3-methyl Imidazolium Bromide Ionic Liquids in the Ionothermal Synthesis of Aluminium Phosphate Molecular Sieves**" E. R. Parnham, R. E. Morris, *Chem. Mater.* **2006,** 18, 4882-4887.
For further information, please see page 1531

## 1-Ethyl-3-methyl-imidazolium-dicyanamide (EMIM DCA)



### 1-Ethyl-3-methyl-imidazolium-dicyanamide (EMIM DCA)

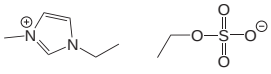
**≥98 %**
Ionic liquid
EMIM $N(CN)_2$, EMIM DCA
$C_8H_{11}N_5$
M 177,21 g/mol
D 1,101
mp -21 °C
[370865-89-7]
WGK 3

**Type analysis:**
Appearance. ..... yellow to orange liquid
Assay. ..... ≥98 %
Water (KF). ..... ≤0,2 %
Halogens. ..... ≤2 %
Alkali metals. ..... ≤2 %

| | | | |
|---|---|---|---|
| **2053.1** | 25 g | glass | 278,45 € |
| **2053.2** | 100 g | glass | 622,45 € |

Lit:. "**A New Ionic Liquid Electrolyte Enhances the Conversion Efficiency of Dye-Sensitized SolarCells**" P. Wang, S. M. Zakeeruddin, J.-E. Moser, M. Grätzel, *J. Phys. Chem. B* **2003**, 107, 13280-13285.
For further information, please see page 1531

## 1-Ethyl-3-methyl-imidazolium-ethylsulphate (EMIM $EtOSO_3$)



### 1-Ethyl-3-methyl-imidazolium-ethylsulphate (EMIM $EtOSO_3$)

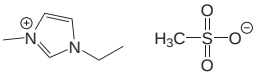
**≥99 %**
Ionic liquid
EMIM $EtOSO_3$
$C_8H_{16}N_2O_4S$
M 236,29 g/mol
D 1,241
[342573-75-5 ]
WGK 1

**Type analysis:**
Appearance. ..... yellow to orange liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **2054.1** | 25 g | glass | 91,40 € |
| **2054.2** | 100 g | glass | 198,90 € |

Lit:. "**Physical Properties of Pure 1-Ethyl-3-methylimidazolium Ethylsulfate and Its Binary Mixtures with Ethanol and Water at Several Temperatures**" E. Gomez, B. Gonzalez, N. Calvar, E. Tojo, A. Domınguez, *J. Chem. Eng. Data* **2006,** 51, 2096-2102.
For further information, please see page 1531

## 1-Ethyl-3-methyl-imidazolium-methanesulphonate (EMIM OMs)



### 1-Ethyl-3-methyl-imidazolium-methanesulphonate (EMIM OMs)

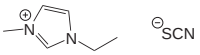
**≥99 %**
Ionic liquid
EMIM OMs
$C_7H_{14}N_2O_3S$
M 206,26 g/mol
D 1,242
[145022-45-3]
WGK 3

**Type analysis:**
Appearance. ..... yellow to brownish liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2056.1** | 25 g | glass | 213,95 € |
| **2056.2** | 100 g | glass | 547,20 € |

Lit.: "**Essential oil terpenless by extraction using organic solvents or ionic liquids**" A. Arce, A. Marchiaro, O. Rodríguez, A. Soto, *AIChE* **2006,** 52, 2089-2097.
For further information, please see page 1531

## 1-Ethyl-3-methyl-imidazolium-thiocyanate (EMIM SCN)



### 1-Ethyl-3-methyl-imidazolium-thiocyanate (EMIM SCN)

**≥98 %**
Ionic liquid
EMIM SCN
$C_7H_{11}N_3S$
M 169,24 g/mol
D 1,119
mp -6 °C
[331717-63-6]
WGK 2

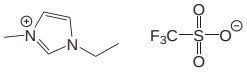
**Warning**
H302+H312+H332-H412-EUH032

**Type analysis:**
Appearance. ..... yellow to orange liquid
Assay. ..... ≥98 %
Water (KF). ..... ≤0,2 %
Halogens. ..... ≤2 %

| | | | |
|---|---|---|---|
| **2059.1** | 25 g | glass | 241,90 € |
| **2059.2** | 100 g | glass | 478,40 € |

Lit.: "**An efficient organogelator for ionic liquids to prepare stable quasi-solid-state dye-sensitized solar cells**" N. Mohmeyer, D. Kuang, P. Wang, H.-W. Schmidt, S. M. Zakeeruddin, M. Grätzel, *J. Mater. Chem.* **2006,** 16, 2978-2983.
For further information, please see page 1531

## 1-Ethyl-3-methyl-imidazolium-trifluoromethansulphonate (EMIM OTf)



### 1-Ethyl-3-methyl-imidazolium-trifluoromethansulphonate (EMIM OTf)

**≥99 %**
Ionic liquid
EMIM OTf
$C_7H_{11}F_3N_2O_3S$
M 260,23 g/mol
D 1,386
mp -9 °C
[145022-44-2]
WGK 3

**Warning** H315-H319

**Type analysis:**
Appearance. ..... yellow to brownish liquid
Assay ..... ≥99 %
Water (KF). ..... ≤0,05 %

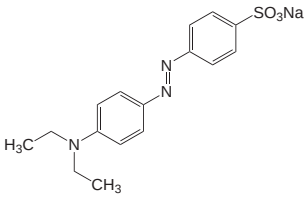
| | | | |
|---|---|---|---|
| **2062.1** | 25 g | glass | 213,95 € |
| **2062.2** | 100 g | glass | 622,45 € |

Lit.: "**Electropolymerization of pyrrole in 1-ethyl-3-methylimidazolium trifluoro-methanesulfonate room temperature ionic liquid**" K. Sekiguchi, M. Atobe, T. Fuchigami, *Electrochemistry Communications* **2002,** 4, 881-885.
For further information, please see page 1531

## Ethyl methyl ketone

▶ 2-Butanone see p. 1795

## Ethyl orange sodium salt



### Ethyl orange sodium salt

**p.a.**
Indicator pH 3,4-4,8
$C_{16}H_{18}N_3NaO_3S$
M 355,39 g/mol
mp >300 °C
[62758-12-7]
WGK 3

**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... orange powder
Appearance of solution (0,1 % in $H_2O$). .. clear, orange
pH-transition range. ..... 3,4 (rose-red)-4,8 (yellow)

| | | | |
|---|---|---|---|
| **7667.1** | 5 g | glass | 18,85 € |
| **7667.2** | 25 g | glass | 35,40 € |
| **7667.3** | 100 g | glass | 72,60 € |

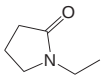
## Ethylparaben (Paraben)

▶ 4-Hydroxybenzoic acid ethyl ester see p. 1993

## Ethyl purple 6B

▶ Ethyl violet (C.I. 42600) see p. 1921

## N-Ethyl-2-pyrrolidone (NEP)



### N-Ethyl-2-pyrrolidone (NEP)

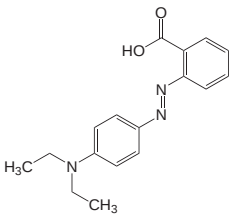
**≥98 %, for synthesis**
NEP, 1-Ethylpyrrolidin-2-one
$C_6H_{11}NO$
M 113,2 g/mol
D 0,998 • bp ~212 °C
mp -75 °C • flp 90,5 °C
[2687-91-4] • EC No. 220-250-6
WGK 1

**Danger** H318-H360Df

**Type analysis:**
Assay (GC). ..... ≥98,0 %
Water ..... ≤0,5 %
Colour (APHA) ..... ≤50

| | | | |
|---|---|---|---|
| **CN19.1** | 500 ml | glass | 27,45 € |
| **CN19.2** | 1 l | glass | 40,75 € |
| Original pack 6 x 1 l | | | 38,71/1 l |
| **CN19.3** | 2,5 l | glass | 85,90 € |
| Original pack 4 x 2,5 l | | | 81,61/2,5 l |
| **CN19.5** | 10 l | tinplate | 267,70 € |
| **CN19.4** | 25 l | tinplate | 600,95 € |

## Ethyl red



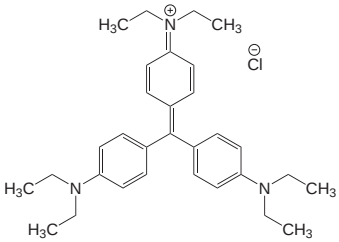
### Ethyl red

**p.a.**
Indicator pH 4,5-6,5
$C_{17}H_{19}N_3O_2$
M 297,36 g/mol
mp 135 °C (dec)
[76058-33-8]
WGK 3

**Type analysis:**
Appearance. ..... dark red to maroon powder
Appearance of solution (0,1 % in $H_2O$). ..... clear, dark red
pH-transition range. ..... 4,5 (red)-6,5 (yellow)

| | | | |
|---|---|---|---|
| **7677.1** | 5 g | glass | 19,25 € |
| **7677.2** | 25 g | glass | 43,55 € |
| **7677.3** | 100 g | glass | 117,20 € |

## Ethyl violet (C.I. 42600)



### Ethyl violet (C.I. 42600)

**extra pure**
Indicator pH 0,0-3,5
Basic violet 4, Ethyl purple 6B
$C_{31}H_{42}N_3Cl$
M 492,15 g/mol
mp >250 °C
[2390-59-2] • EC No. 219-231-5
WGK 1

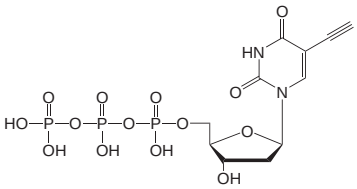
**Type analysis:**
Appearance. ..olive green to dark brown cryst. powder
Appearance of solution (0,1 % in $H_2O$). ..... clear, dark purple
Loss on drying (105 °C). ..... ≤5,0 %

| | | | |
|---|---|---|---|
| **7680.1** | 5 g | glass | 14,55 € |
| **7680.2** | 25 g | glass | 24,65 € |
| **7680.3** | 100 g | glass | 48,95 € |

## 5-Ethynyl-2'-deoxyuridine-5'-triphosphate

▶ 5-Ethynyl-dUTP see p. 1921

## 5-Ethynyl-dUTP



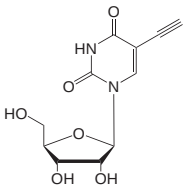
### 5-Ethynyl-dUTP

**≥98 %, 100 mM in water**
5-Ethynyl-2'-deoxyuridine-5'-triphosphate, EdUTP
$C_{11}H_{15}N_2O_{14}P_3$
M 491,97 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
[1004955-96-7]
WGK 3

**Type analysis:**
Appearance. ..... clear solution
Assay (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **7802.1** | 0,5 µmol | plastic | 91,30 € |
| **7802.2** | 2,5 µmol | plastic | 349,40 € |
| **7802.3** | 5,0 µmol | plastic | 532,15 € |

## 5-Ethynyl uridine (EU)



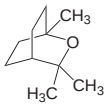
### 5-Ethynyl uridine (EU)

**≥98 %**
EU
$C_{11}H_{12}N_2O_6$
M 268,22 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
[69075-42-9]
WGK 3

**Type analysis:**
Appearance. ..... white to off-white solid
Assay (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **7848.1** | 5 mg | plastic | 55,80 € |
| **7848.2** | 10 mg | plastic | 95,60 € |

## Eucalyptol



1,8-Cineol, 1,8-Epoxy-p-menthane
$C_{10}H_{18}O$
M 154,25 g/mol
D 0,92 • bp 175-179 °C
mp 1-2 °C • flp 49 °C
[470-82-6] • EC No. 207-431-5
UN No. 1993 • ADR 3 III • WGK 2
**Warning** H226

### Eucalyptol

**≥98 %**

**Type analysis:**
Assay (GC). ..... ≥98,0 %
Density (d 20 °C/4 °C). ..... 0,923-0,928

| | | | |
|---|---|---|---|
| **7244.1** | 25 ml | glass | 27,45 € |

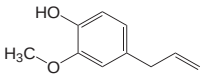
### Eucalyptol

**ROTICHROM® GC**
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**
Purity (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **6938.2** | 100 mg | glass | 80,55 € |

## Eugenol



4-Allyl-2-methoxyphenol
$C_{10}H_{12}O_2$
M 164,21 g/mol
D 1,06 • bp 255 °C
mp -9 °C • flp >110 °C
Solubility: ~2,5 g/l ($H_2O$, 25 °C)
[97-53-0] • EC No. 202-589-1
WGK 1
**Warning** H302-H315-H317

### Eugenol

**extra pure**

**Type analysis:**
Appearance. ..... clear, light yellowish liquid
Density (20 °C). ..... 1,066-1,070 g/cm³
Refractive index (20 °C). ..... 1,540-1,542
Optical rotation (20 °C). ..... -0,5° to +0,5°

| | | | |
|---|---|---|---|
| **7292.1** | 50 ml | glass | 18,20 € |

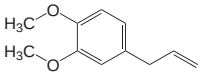
### Eugenol

**ROTICHROM® GC**
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**
Purity (GC). ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **6941.1** | 1 g | plastic | 81,60 € |

## Eugenol methyl ether



### Eugenol methyl ether

**ROTICHROM® GC**
Reference substance for GC.
4-Allyl-1,2-dimethoxybenzene
$C_{11}H_{14}O_2$
M 178,23 g/mol
D 1,04 • bp 254-255 °C
mp -4 °C
Storage temp.: +4 °C
[93-15-2] • EC No. 202-223-0
WGK 1
**Warning** H302-H319

**Type analysis:**
Purity (GC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **5073.1** | 1 g | plastic | 81,20 € |

## Euparal

### Euparal

**for microscopy**
Mounting agent
D 0,99 • bp >100 °C
flp 41 °C
UN No. 1993 • ADR 3 III • WGK 1
**Warning** H226-H315-H319

**Type analysis:**
Appearance. ..... yellowish solution
Solubility (EtOH). ..... soluble
Refractive index (20 °C). ..... 1,480-1,510

| | | | |
|---|---|---|---|
| **7356.1** | 100 g | glass | 50,45 € |
| **7356.2** | 5 x 100 g | glass | 206,95 € |

For further information, please see page 1474

## Euparal essence

### Euparal essence

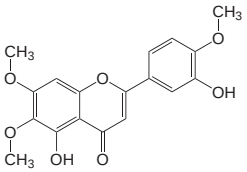
**for microscopy**
Diluent and solvent for Euparal (Art. No. 7356).
D 1,0
flp 41 °C
UN No. 1993 • ADR 3 III • WGK 2
**Warning** H226-H315-H319-H335

**Type analysis:**
Appearance. ..... yellowish solution
Refractive index (20 °C). ..... 1,450-1,500

| | | | |
|---|---|---|---|
| **A145.1** | 100 ml | glass | 43,55 € |

For further information, please see page 1474

## Eupatorin



### Eupatorin

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Orthosiphon stamineus.*
3'5-Dihydroxy-4',6,7-trimethoxyflavone
$C_{18}H_{16}O_7$
M 344,32 g/mol
mp 190-195 °C
Storage temp.: +4 °C
[855-96-9]
WGK 1

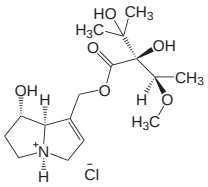
**Type analysis:**
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **6493.1** | 20 mg | glass | 278,45 € |

## Europia

▶ Europium(III) oxide see p. 1923

## Europine hydrochloride

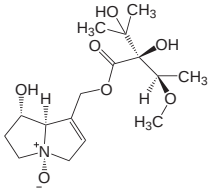


### Europine hydrochloride
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Heliotropium.*
$C_{16}H_{28}ClNO_6$
M 365,84 g/mol
Storage temp.: +4 °C
WGK 3
**Warning** H302

**Type analysis:**
Purity (HPLC)..... ≥97,0 %

| | | | |
|---|---|---|---|
| **1676.1** | 10 mg | glass | 403,15 € |

## Europine-N-oxide



### Europine-N-oxide
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Heliotropium.*
$C_{16}H_{27}NO_7$
M 345,39 g/mol
mp 164-168 °C
Storage temp.: +4 °C
[65582-53-8]
WGK 3
**Warning** H302

**Type analysis:**
Purity (HPLC)..... ≥97,0 %

| | | | |
|---|---|---|---|
| **1687.1** | 10 mg | glass | 403,15 € |

## Europium Standards
▶ Europium ICP Standard Solution see p. 2298
▶ Europium ICP Standard Solution see p. 2302

## Europium(III) oxide

Europium trioxide, Europia
$Eu_2O_3$
M 351,92 g/mol
D 7,42 • bp 3790 °C
mp 2291 °C
Solubility: insoluble ($H_2O$, 20 °C)
[1308-96-9] • EC No. 215-165-6
WGK 1

### Europium(III) oxide
**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**
Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5394.1** | 5 g | plastic | 274,15 € |

### Europium(III) oxide
**ROTI®REMETIC 99,999 %**

**Type analysis:**
Assay (TREO*)..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7127.2** | 5 g | plastic | 143,55 € |

### Europium(III) oxide
**ROTI®REMETIC 99,99 %**

**Type analysis:**
Assay (TREO*)..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7187.3** | 50 g | plastic | 665,45 € |

## Europium trioxide
▶ Europium(III) oxide see p. 1923

## Eva Green® Fluorescent Dye

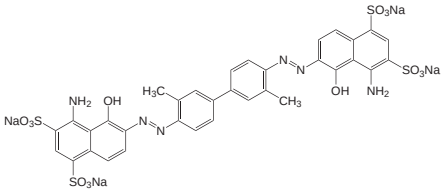
### Eva Green® Fluorescent Dye
**for electrophoresis, 100x concentrated**
For fluorescent staining of nucleic acids in agarose- and polyacrylamide gels.
500 µl is sufficient for running and staining of approx. 500 lanes.
Storage temp.: -20 °C •
Transport temp.: room temp.
WGK 3

**Type analysis:**
Appearance..... clear, orange solution

| | | | |
|---|---|---|---|
| **8905.1** | 500 µl | plastic | 87,65 € |

For further information, please see page 1187

## Evan's blue (C.I. 23860)



### Evan's blue (C.I. 23860)
**for microscopy**
Direct Blue 53
$C_{34}H_{24}N_6Na_4O_{14}S_4$
M 960,82 g/mol
[314-13-6] • EC No. 206-242-5
WGK 3
**Danger** H350-H361d

**Type analysis:**
Appearance. ..... black to purple cryst. powder
Appearance of solution (0,1 % in $H_2O$)..... clear, blue
Loss on drying (110 °C). ..... ≤10 %

| | | | |
|---|---|---|---|
| **7684.1** | 5 g | glass | 26,80 € |
| **7684.2** | 25 g | glass | 54,75 € |
| **7684.3** | 100 g | glass | 181,70 € |

For further information, please see page 1463

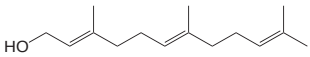
## FAD disodium salt
▶ Flavine-adenine-dinucleotide disodium salt (FAD) see p. 1929

## 6-FAM-Azide
▶ 6-Carboxyfluorescein Azide (6-FAM-Azide) see p. 1813

## FAME
▶ Fatty acid mixtures see p. 1924

## 6-FAM-PEG3-Azide
▶ 6-Carboxyfluorescein-PEG3-Azide (6-FAM-PEG3-Azide) see p. 1813

## Farnesol

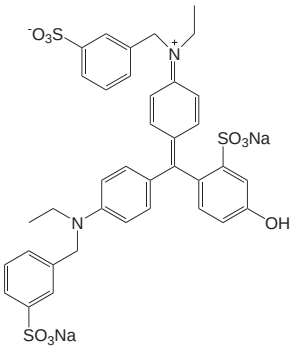


### Farnesol
**ROTICHROM® GC**
Reference substance for GC.
Mixture of isomers.
$C_{15}H_{26}O$
M 222,37 g/mol
D 0,89
flp 96 °C
Storage temp.: +4 °C
[4602-84-0] • EC No. 225-004-1
WGK 2

**Type analysis:**
Purity (GC, Isomers). ..... ≥79 %

| | | | |
|---|---|---|---|
| **8707.1** | 1 g | plastic | 81,20 € |

## Fast Green FCF



### Fast Green FCF

**for microscopy**
For staining proteins.
Food Green 3
$C_{37}H_{34}N_2Na_2O_{10}S_3$
M 808,84 g/mol
[2353-45-9] • EC No. 219-091-5
WGK 2

**Warning** H341

**Type analysis:**
Dye content. ..... ≥85 %
In $H_2O$ insoluble matter. ..... ≤0,2 %
Solubility (0,1 % in $H_2O$). ..... complies

| | | | |
|---|---|---|---|
| **0301.1** | 25 g | glass | 92,35 € |

For further information, please see page 1463

## Fast Oxidation reagent

### Fast Oxidation reagent

**for DNA-Synthesis with ABI™ and PolyGen® Synthesizer**
For quick separating phosphoramidites.
Iodine/water/pyridine/tetrahydrofuran-mixture.
0,02 M iodine.
D 0,935 • bp ~65 °C
flp -21 °C
Storage temp.: +20 °C
UN No. 1993 • ADR 3 II • WGK 2

**Danger**
H225-H315-H319-H335-H351-H373-EUH019

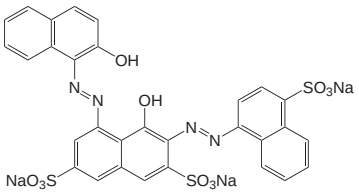
| | | | |
|---|---|---|---|
| **A133.2** | 450 ml | glass | 50,00 € |

For further information, please see page 1493

## Fast staining kits for histology & cytology

▶ Panoptical fast staining kit see p. 2129
▶ H&E fast staining kit see p. 1970
▶ PAP fast staining kit see p. 2130

## Fast sulphon black F (C.I. 26990)



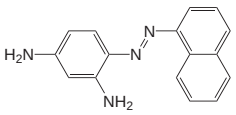
### Fast sulphon black F (C.I. 26990)

**≥95 %, p.a.**
Metal indicator for Cu
Acid black 32
$C_{30}H_{17}N_4O_{11}S_3Na_3$
M 774,6 g/mol
[3682-47-1]
WGK 3

**Type analysis:**
Appearance. ..... black powder
Assay (TLC). ..... ≥95,0 %
Appearance of solution (0,1 % in $H_2O$). ..... clear, green
Suitability as indicator. ..... complies

| | | | |
|---|---|---|---|
| **7685.1** | 5 g | glass | 14,20 € |
| **7685.2** | 25 g | glass | 24,20 € |
| **7685.3** | 100 g | glass | 66,55 € |

## Fat brown RR (C.I. 11285)



### Fat brown RR (C.I. 11285)

**for microscopy**
Liposoluble dye
$C_{16}H_{14}N_4$
M 262,31 g/mol
mp 147-158 °C
[6416-57-5]
WGK 3

**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... dark red to rusty brown powder
Appearance of solution (1 mg/ml in $CHCl_3$). ..... clear to slightly hazy, orange to dark red brown
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7687.1** | 5 g | glass | 13,90 € |
| **7687.2** | 25 g | glass | 23,15 € |
| **7687.3** | 100 g | glass | 60,10 € |

## Fat-soluble dyes

▶ Chapter histology see p. 1468

## Fatty acid mixtures

Storage temp.: +4 °C

### Fatty acid methyl ester mixture

**ROTICHROM® ME 11**
UN No. 1993 • ADR 3 III • WGK 1

**Warning** H226-H315

**Type analysis:**
C 6:0 Methyl hexanoate. ..... 20 %
C 7:0 Methyl heptanoate. ..... 20 %
C 8:0 Methyl octanoate. ..... 20 %
C 9:0 Methyl nonanoate. ..... 20 %
C 10:0 Methyl decanoate. ..... 20 %

| | | | |
|---|---|---|---|
| **8632.1** | 100 mg | plastic | 160,20 € |

### Fatty acid methyl ester mixture

**ROTICHROM® ME 12**
WGK 1

**Type analysis:**
C 11:0 Methyl undecanoate. ..... 20 %
C 12:0 Methyl laurate. ..... 20 %
C 13:0 Methyl tridecanoate. ..... 20 %
C 14:0 Methyl myristate. ..... 20 %
C 15:0 Methyl pentadecanoate. ..... 20 %

| | | | |
|---|---|---|---|
| **8636.1** | 100 mg | plastic | 160,20 € |

### Fatty acid methyl ester mixture

**ROTICHROM® ME 13**
UN No. 1888 • ADR 6.1 III • WGK 3

**Danger**
H331-H372-H351-H361d-H302-H315-H319

**Type analysis:**
C 16:0 Methyl hexadecanoate. ..... 20 %
C 17:0 Methyl heptadecanoate. ..... 20 %
C 18:0 Methyl stearate. ..... 20 %
C 19:0 Methyl nonadecanoate. ..... 20 %
C 20:0 Methyl eicosanoate. ..... 20 %
Dissolved in trichloromethane

| | | | |
|---|---|---|---|
| **8642.1** | 100 mg | plastic | 160,20 € |

### Fatty acid methyl ester mixture

**ROTICHROM® ME 14**
UN No. 1888 • ADR 6.1 III • WGK 3

**Danger**
H331-H372-H351-H361d-H302-H315-H319

**Type analysis:**
C 18:0 Methyl stearate. ..... 20 %
C 19:0 Methyl nonadecanoate. ..... 20 %
C 20:0 Methyl arachinate. ..... 20 %
C 21:0 Methyl heneicosanoate. ..... 20 %
C 22:0 Methyl behenate. ..... 20 %
Dissolved in trichloromethane

| | | | |
|---|---|---|---|
| **8644.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 15**
WGK 1

**Type analysis:**
C 8:0 Methyl octanoate. 20 %
C 9:0 Methyl nonanoate. 20 %
C 10:0 Methyl decanoate. 20 %
C 11:0 Methyl undecanoate. 20 %
C 12:0 Methyl dodecanoate. 20 %

| | | | |
|---|---|---|---|
| **8650.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 16**
WGK 1

**Type analysis:**
C 13:0 Methyl tridecanoate. 20 %
C 14:0 Methyl myristate. 20 %
C 15:0 Methyl pentadecanoate. 20 %
C 16:0 Methyl palmitate. 20 %
C 17:0 Methyl heptadecanoate. 20 %

| | | | |
|---|---|---|---|
| **8661.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 17**
UN No. 1888 • ADR 6.1 III • WGK 3

**Danger**
H331-H372-H351-H361d-H302-H315-H319

**Type analysis:**
C 20:0 Methyl arachinate. 20 %
C 21:0 Methyl heneicosanoate. 20 %
C 22:0 Methyl docosanoate. 20 %
C 23:0 Methyl tricosanoate. 20 %
C 24:0 Methyl tetracosanoate. 20 %
Dissolved in trichloromethane

| | | | |
|---|---|---|---|
| **8666.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 18**
WGK 1

**Type analysis:**
C 6:0 Methyl caproate 20 %
C 8:0 Methyl caprylate. 20 %
C 10:0 Methyl caprate 20 %
C 12:0 Methyl laurate. 20 %
C 14:0 Methyl myristate. 20 %

| | | | |
|---|---|---|---|
| **8667.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 19**
WGK 1

**Type analysis:**
C 8:0 Methyl caprylate. 20 %
C 10:0 Methyl caprate 20 %
C 12:0 Methyl laurate. 20 %
C 14:0 Methyl myristate. 20 %
C 16:0 Methyl palmitate. 20 %

| | | | |
|---|---|---|---|
| **8669.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 21**
UN No. 1888 • ADR 6.1 III • WGK 3

**Danger**
H331-H372-H351-H361d-H302-H315-H319

**Type analysis:**
C 16:0 Methyl palmitate. 20 %
C 18:0 Methyl stearate. 20 %
C 20:0 Methyl arachinate 20 %
C 22:0 Methyl behenate. 20 %
C 24:0 Methyl lignocerate. 20 %
Dissolved in trichloromethane

| | | | |
|---|---|---|---|
| **8676.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 22**
WGK 1

**Type analysis:**
C 12:0 Methyl laurate. 20 %
C 14:0 Methyl myristate. 20 %
C 16:0 Methyl palmitate. 20 %
C 18:0 Methyl stearate. 20 %
C 20:0 Methyl arachinate 20 %

| | | | |
|---|---|---|---|
| **8677.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 24**
WGK 1

**Type analysis:**
C 13:0 Methyl tridecanoate. 20 %
C 15:0 Methyl pentadecanoate. 20 %
C 17:0 Methyl heptadecanoate. 20 %
C 19:0 Methyl nonadecanoate. 20 %
C 21:0 Methyl heneicosanoate. 20 %

| | | | |
|---|---|---|---|
| **8679.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 26**
WGK 1

**Type analysis:**
C 12:0 Methyl laurate. 20 %
C 14:0 Methyl myristate. 20 %
C 14:1 Methyl myristoleate. 20 %
C 16:0 Methyl palmitate. 20 %
C 16:1 Methyl palmitoleate. 20 %

| | | | |
|---|---|---|---|
| **8685.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 28**
WGK 1

**Type analysis:**
C 16:0 Methyl palmitate. ~20 %
C 18:0 Methyl stearate. ~20 %
C 18:1 Methyl oleate. ~20 %
C 18:2 Methyl linoleate. ~20 %
C 18:3 Methyl linolenate. ~20 %

| | | | |
|---|---|---|---|
| **8691.1** | 100 mg | plastic | 170,95 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 29**
WGK 1

**Type analysis:**
C 16:1 Methyl palmitoleate 20 %
C 18:1 Methyl oleate. 20 %
C 20:1 Methyl eicosenate 20 %
C 22:1 Methyl erucate. 20 %
C 24:1 Methyl nervonate. 20 %

| | | | |
|---|---|---|---|
| **8692.1** | 100 mg | plastic | 170,95 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 30**
WGK 1

**Type analysis:**
C 18:0 Methyl stearate. 20 %
C 18:1 Methyl oleate. 20 %
C 18:2 Methyl linoleate 20 %
C 18:3 Methyl linolenate 20 %
C 20:4 Methyl arachidonate. 20 %

| | | | |
|---|---|---|---|
| **8693.1** | 100 mg | plastic | 170,95 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 32**
WGK 1

**Type analysis:**
C 20:0 Methyl eicosanoate ~20 %
C 20:1 Methyl eicosenate ~20 %
C 20:2 Methyl eicosadienoate ~20 %
C 20:3 Methyl eicosatrienoate ~20 %
C 20:4 Methyl arachidonate. ~20 %

| | | | |
|---|---|---|---|
| **8697.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 35**
WGK 1

**Type analysis:**
C 4:0 Methyl butyrate. 4,0 %
C 6:0 Methyl hexanoate. 3,0 %
C 8:0 Methyl octanoate. 2,0 %
C 10:0 Methyl decanoate. 3,0 %
C 12:0 Methyl laurate. 3,0 %
C 14:0 Methyl myristate. 12,0 %
C 16:0 Methyl palmitate. 30,0 %
C 18:0 Methyl stearate. 10,0 %
C 18:1 Methyl oleate. 30,0 %
C 18:2 Methyl linoleate 2,0 %
C 18:3 Methyl linolenate 1,0 %

| | | | |
|---|---|---|---|
| **8701.1** | 100 mg | plastic | 192,45 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 36**
WGK 1

**Type analysis:**
C 4:0 Methyl butyrate ~4 %
C 6:0 Methyl caproate ~2 %
C 8:0 Methyl caprylate ~1 %
C 10:0 Methyl caprate ~3 %
C 12:0 Methyl laurate ~4 %
C 14:0 Methyl myristate ~10 %
C 14:1 Methyl myristoleate ~2 %
C 16:0 Methyl palmitate ~25 %
C 16:1 Methyl palmitoleate ~5 %
C 18:0 Methyl stearate ~10 %
C 18:1 Methyl oleate ~25 %
C 18:2 Methyl linoleate ~3 %
C 18:3 Methyl linolenate ~4 %
C 20:0 Methyl arachinate ~2 %

| | | | |
|---|---|---|---|
| **8702.1** | 100 mg | plastic | 192,45 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 37**
WGK 2
⚠ **Warning** H315

**Type analysis:**
C 4:0 Methyl butyrate 7,7 %
C 6:0 Methyl caproate 7,7 %
C 8:0 Methyl caprylate 7,7 %
C 10:0 Methyl caprate 7,7 %
C 12:0 Methyl laurate 7,7 %
C 14:0 Methyl myristate 7,7 %
C 16:0 Methyl palmitate 7,7 %
C 18:0 Methyl stearate 7,7 %
C 18:1 Methyl oleate 7,7 %
C 18:2 Methyl linoleate 7,7 %
C 18:3 Methyl linolenate 7,7 %
C 20:0 Methyl arachinate 7,7 %
C 22:0 Methyl behenate 7,7 %

| | | | |
|---|---|---|---|
| **8703.1** | 100 mg | plastic | 192,45 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 38**
WGK 1

**Type analysis:**
C 8:0 Methyl octanoate 2,0 %
C 10:0 Methyl decanoate 3,0 %
C 12:0 Methyl dodecanoate 4,0 %
C 14:0 Methyl tetradecanoate 8,0 %
C 16:0 Methyl hexadecanoate 10,0 %
C 18:0 Methyl octadecanoate 7,0 %
C 18:1 Methyl oleate 8,0 %
C 18:2 Methyl linoleate 8,0 %
C 18:3 Methyl linolenate 10,0 %
C 20:0 Methyl eicosanoate 8,0 %
C 22:0 Methyl docosanoate 10,0 %
C 22:1 Methyl erucate 10,0 %
C 24:0 Methyl tetracosanoate 12,0 %

| | | | |
|---|---|---|---|
| **8705.1** | 100 mg | plastic | 192,45 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 39**
WGK 1

**Type analysis:**
C 12:0 Methyl laurate 2,0 %
C 14:0 Methyl myristate 2,0 %
C 14:1 Methyl myristoleate 1,0 %
C 16:0 Methyl palmitate 22,0 %
C 16:1 Methyl palmitoleate 5,0 %
C 17:0 Methyl heptadecanoate 10,0 %
C 18:0 Methyl stearate 10,0 %
C 18:1 Methyl oleate 32,0 %
C 18:2 Methyl linoleate 8,0 %
C 18:3 Methyl linolenate 4,0 %
C 20:4 Methyl arachidonate 4,0 %

| | | | |
|---|---|---|---|
| **8709.1** | 100 mg | plastic | 192,45 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 46**
WGK 1

**Type analysis:**
C 16:0 Methyl palmitate 10,0 %
C 18:0 Methyl stearate 5,0 %
C 18:1 Methyl oleate 30,0 %
C 18:2 Methyl linoleate 50,0 %
C 18:3 Methyl linolenate 5,0 %

| | | | |
|---|---|---|---|
| **8730.1** | 100 mg | plastic | 170,95 € |

## Fatty acid methyl ester mixture
**ROTICHROM® ME 51**
WGK 1

**Type analysis:**
C 16:0 Methyl palmitate 4,0 %
C 18:0 Methyl stearate 1,0 %
C 18:1 Methyl oleate 58,0 %
C 18:2 Methyl linoleate 20,0 %
C 18:3 Methyl linolenate 10,0 %
C 20:0 Methyl arachinate 1,0 %
C 20:1 Methyl eicosenoate 2,0 %
C 22:0 Methyl behenate 1,0 %
C 22:1 Methyl erucate 2,0 %
C 24:0 Methyl lignocerate 1,0 %

| | | | |
|---|---|---|---|
| **8737.1** | 100 mg | plastic | 213,95 € |

## Fatty acid methyl ester mixture
**ROTICHROM® FO 3**
Suitable for coconut, rape seed and mustard seed oils.
WGK 1

**Type analysis:**
C 14:0 Methyl myristate 1,0 %
C 16:0 Methyl palmitate 4,0 %
C 18:0 Methyl stearate 3,0 %
C 18:1 Methyl oleate 45,0 %
C 18:2 Methyl linoleate 15,0 %
C 18:3 Methyl linolenate 3,0 %
C 20:0 Methyl arachinate 3,0 %
C 22:0 Methyl behenate 3,0 %
C 22:1 Methyl erucate 20,0 %
C 24:0 Methyl lignocerate 3,0 %

| | | | |
|---|---|---|---|
| **8756.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® FO 4**
Suitable for olive and tea seed oils.
WGK 1

**Type analysis:**
C 16:0 Methyl palmitate 11,0 %
C 18:0 Methyl stearate 3,0 %
C 18:1 Methyl oleate 80,0 %
C 18:2 Methyl linoleate 6,0 %

| | | | |
|---|---|---|---|
| **8758.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® FO 5**
Suitable for coconut, palm kernel and babassu oils.
WGK 1

**Type analysis:**
C 8:0 Methyl caprylate ~7 %
C 10:0 Methyl caprate ~5 %
C 12:0 Methyl laurate ~48 %
C 14:0 Methyl myristate ~15 %
C 16:0 Methyl palmitate ~7 %
C 18:0 Methyl stearate ~3 %
C 18:1 Methyl oleate ~12 %
C 18:2 Methyl linoleate ~3 %

| | | | |
|---|---|---|---|
| **8759.1** | 100 mg | plastic | 160,20 € |

## Fatty acid methyl ester mixture
**ROTICHROM® FO 7**
Suitable for rape seed oil.
WGK 1

**Type analysis:**
C 14:0 Methyl myristate 1,0 %
C 16:0 Methyl palmitate 4,0 %
C 18:0 Methyl stearate 3,0 %
C 18:1 Methyl oleate 60,0 %
C 18:2 Methyl linoleate 12,0 %
C 18:3 Methyl linolenate 5,0 %
C 20:0 Methyl arachidate 3,0 %
C 20:1 Methyl eicosenoate 1,0 %
C 22:0 Methyl behenate 3,0 %
C 22:1 Methyl erucate 5,0 %
C 24:0 Methyl lignocerate 3,0 %

| | | | |
|---|---|---|---|
| **8761.1** | 100 mg | plastic | 170,95 € |

## Fatty acid methyl ester mixture
**ROTICHROM® FO 8**
Suitable for rape seed oil.
WGK 1

**Type analysis:**
C 16:0 Methyl palmitate 4,0 %
C 18:0 Methyl stearate 1,0 %
C 18:1 Methyl oleate 53,8 %
C 18:1 Methyl vaccenate 4,0 %
C 18:2 Methyl linoleate 20,2 %
C 18:3 Methyl linolenate 10,0 %
C 20:0 Methyl arachidate 2,0 %
C 20:1 Methyl eicosenoate 1,9 %
C 22:0 Methyl behenate 1,0 %
C 22:1 Methyl erucate 2,1 %

| | | | |
|---|---|---|---|
| **6330.1** | 100 mg | plastic | 192,45 € |

## Free acid mixture

**ROTICHROM® FA 1**

UN No. 1760 • ADR 8 III • WGK 1

**Danger** H314-H335

**Type analysis:**

C 6:0 Caproic acid. ..... 20 %
C 8:0 Caprylic acid. ..... 20 %
C 10:0 Capric acid. ..... 20 %
C 12:0 Lauric acid. ..... 20 %
C 14:0 Myristic acid. ..... 20 %

| | | | |
|---|---|---|---|
| **8792.1** | 100 mg | plastic | 181,70 € |

## FA Glyceride mixture

**ROTICHROM® TLC 8**

UN No. 1888 • ADR 6.1 III • WGK 3

**Danger**

H331-H372-H351-H361d-H302-H315-H319

**Type analysis:**

Monopalmitin. ..... 20 %
Dipalmitin. ..... 20 %
Tripalmitin. ..... 20 %
Methyl palmitate. ..... 20 %
Palmitic acid. ..... 20 %
Dissolved in trichloromethane

| | | | |
|---|---|---|---|
| **8823.1** | 100 mg | plastic | 170,95 € |

## FA Glyceride mixture

**ROTICHROM® TLC 10**

WGK 1

**Type analysis:**

Monoolein. ..... 20 %
Diolein. ..... 20 %
Triolein. ..... 20 %
Methyl oleate. ..... 20 %
Oleic acid. ..... 20 %

| | | | |
|---|---|---|---|
| **8827.1** | 100 mg | plastic | 192,45 € |

## Fatty Acids and their Derivatives

| Art. No. | Description | Page |
|---|---|---|
| 8736 | Arachidic acid | 1749 |
| 9264 | Arachidic acid calcium salt | 1749 |
| 4717 | Arachidonic acid | 1749 |
| 5487 | Azelaic acid | 1756 |
| 5466 | 5-Bromovaleric acid | 1790 |
| 3277 | Butyric acid | 1799 |
| 5186 | Butyric acid methyl ester | 1799 |
| 8797 | Capric acid | 1809 |
| 3164 | Capric acid | 1809 |
| 3325 | Capric acid methyl ester | 1810 |
| 7547 | Capric aldehyde | 1810 |
| 8799 | Caproic acid | 1810 |
| 3327 | Caproic aldehyde | 1810 |
| 3168 | Caprylic acid | 1810 |
| 3331 | Caprylic acid methyl ester | 1810 |
| 5762 | Cetyl alcohol | 1823 |
| 9229 | Cetyl palmitate | 1823 |
| 3404 | Cholesterol palmitate | 1830 |
| 3405 | Cholesterol stearate | 1830 |
| 3754 | Dodecyl aldehyde | 1893 |
| 7065 | Erucic acid | 1908 |
| 9431 | Erucic acid methyl ester | 1908 |
| 3787 | Glyceryl monostearate | 1961 |
| 5085 | Lanolin alcohols | 2028 |
| AE81 | Lecithin | 2034 |
| 9812 | Lecithin | 2034 |
| 7514 | Lecithin | 2034 |
| 3976 | Levulinic acid | 2036 |
| 5315 | Linoleic acid | 2037 |
| 3198 | Linoleic acid ethyl ester | 2037 |
| 7217 | Linoleic acid methyl ester | 2037 |
| 3199 | Linoleic acid methyl ester | 2037 |
| 6039 | Linolenic acid | 2038 |
| 5320 | Linolenic acid | 2038 |
| 6469 | Myristic acid | 2086 |
| 5527 | Myristic acid isopropyl ester | 2087 |
| 3753 | Myristic acid methyl ester | 2087 |
| 7213 | Oleic acid | 2122 |
| 5362 | Oleic acid | 2122 |
| 3186 | Oleic acid methyl ester | 2122 |
| 8856 | Oleic acid sodium salt | 2122 |
| 5907 | Palmitic acid | 2129 |
| 4459 | Palmitic acid methyl ester | 2129 |
| 7015 | Pelargonic acid | 2133 |
| 4462 | Pelargonic acid vanillylamide | 2133 |
| 5270 | Pimelic acid | 2153 |
| 9459 | Stearic acid | 2315 |
| 8150 | Stearic acid butyl ester | 2315 |
| 8238 | Stearic acid lithium salt | 2316 |
| 4704 | Stearic acid methyl ester | 2316 |
| 8628 | Stearic acid sodium salt | 2316 |
| 8663 | Stearyl alcohol | 2316 |
| 4813 | Tributyrin | 2350 |
| 7252 | Tricaprin | 2350 |
| 4866 | Undecanoic acid methyl ester | 2365 |
| 4874 | n-Valeric acid | 2368 |
| 4876 | n-Valeric acid methyl ester | 2368 |
| 9295 | Zinc stearate | 2388 |

## Fatty ponceau

▶ Sudan IV (C.I. 26105) see p. 2320

## Fehling's solution I

### Fehling's solution I

**for sugar determination, reag. Ph.Eur.**

Cupric sulphate solution,
Copper(II) sulphate solution
D 1,042
UN No. 3082 • ADR 9 III • WGK 3

**Danger** H318-H410

| | | | |
|---|---|---|---|
| **N055.1** | 1 l | glass | 31,10 € |
| Original pack 6 x 1 l | | | 29,55/1 l |

## Fehling's solution II

### Fehling's solution II

**for sugar determination, reag. Ph.Eur.**

Alkaline potassium sodium tartrate solution.
Potassium sodium tartrate solution.
D 1,255
UN No. 1824 • ADR 8 II • WGK 1

**Danger** H290-H314

| | | | |
|---|---|---|---|
| **N056.1** | 1 l | glass | 44,00 € |
| Original pack 6 x 1 l | | | 41,80/1 l |

## Fenamic acid

▶ *N*-Phenylanthranilic acid see p. 2147

## (-)-Fenchone



(-)-1,3,3-Trimethyl-2-norbornanone,
L-Fenchone
$C_{10}H_{16}O$
M 152,24 g/mol
D 0,948 • bp 192-194 °C
mp 5 °C • flp 68 °C
[7787-20-4] • EC No. 232-107-5
UN No. 1224 • ADR 3 III

**Warning** H226

### (-)-Fenchone

**≥98 %**

**Type analysis:**

Appearance. ..... colourless to light yellow liquid
Assay (GC). ..... ≥98,0 %
Optical rotation. ..... -53,5° to -47,5°

| | | | |
|---|---|---|---|
| **7294.1** | 50 ml | glass | 77,95 € |

### (-)-Fenchone

**ROTICHROM® GC**

Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**

Purity (GC). ..... ≥96 %

| | | | |
|---|---|---|---|
| **9377.2** | 100 mg | glass | 117,20 € |

## Fermentation salt

▶ di-Ammonium hydrogen phosphate see p. 1734

## Ferric ammonium citrate

▶ Ammonium iron(III) citrate see p. 1735

## Ferric chloride

▶ Iron(III) chloride see p. 2010
▶ Iron(III) chloride hexahydrate see p. 2011

## Ferric citrate

▶ Iron(III) citrate hydrate see p. 2011

## Ferric orthophosphate

▶ Iron(III) phosphate hydrate see p. 2012

## Ferric oxide

▶ Iron(III) oxide see p. 2012

## Ferric sulphate

▶ Iron(III) sulphate hydrate see p. 2012

F

## Ferroin

1,10-Phenanthroline iron(II) salt solution
WGK 2
H412

### Ferroin indicator solution

**for sewage analysis, for determination of COD**

According to DIN 38409 part H41, H43 and H44.

| | | | |
|---|---|---|---|
| **T131.1** | 100 ml | glass | 31,10 € |

### Ferroin solution

**1/40 mol/l (1/40 M) Redox indicator**

| | | | |
|---|---|---|---|
| **T132.1** | 100 ml | glass | 39,25 € |

## Ferrous ammonium sulphate

▶ Ammonium iron(II) sulphate hexahydrate see p. 1736

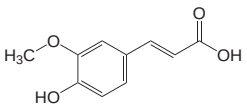
## Ferrous chloride hydrate

▶ Iron(II) chloride hydrate see p. 2010

## Ferrous sulphate heptahydrate

▶ Iron(II) sulphate heptahydrate see p. 2012

## trans-Ferulic acid



### trans-Ferulic acid

**≥99 %**
4-Hydroxy-3-methoxycinnamic acid
$C_{10}H_{10}O_4$
M 194,19 g/mol
mp 169-173 °C
[537-98-4] • EC No. 208-679-7
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Assay (acidim.). ..... ≥99,0 %
Melting range. ..... 169-173 °C
Loss on drying (3 h, 105 °C). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **9936.1** | 10 g | plastic | 34,30 € |
| **9936.2** | 100 g | plastic | 192,45 € |

## Ficoll® 400

### Ficoll® 400

**for molecular biology and biochemistry**

For density gradient centrifugation; ingredient of gel loading buffers. Non-ionic polymer of saccharose.
M ~400 000 g/mol
[26873-85-8]
WGK 1

**Guarantee analysis:**
Appearance. ..... white powder
Solubility (10 % in $H_2O$). ..... clear, colourless
Loss on drying. ..... ≤3 %
Heavy metals. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **CN90.1** | 10 g | plastic | 39,70 € |
| **CN90.2** | 25 g | plastic | 83,75 € |
| **CN90.3** | 100 g | plastic | 267,70 € |

For further information, please see page 1239

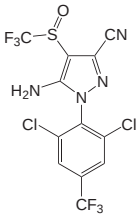
## Filter aids

▶ Charcoal see p. 1824
▶ Aluminium oxide, neutral, basic, acidic see p. 1721
▶ Celite® see p. 1819
▶ Cellulose see p. 1821
▶ Florisil® see p. 1930
▶ Glass wool see p. 1953
▶ Infusorial earth see p. 2004
▶ Polyamide see p. 2157
▶ Quarz see p. 2188
▶ Quarz wool see p. 2188
▶ Sea sand see p. 2244

## Filter glass wool

▶ Glass wool see p. 1953

## Fipronil



### Fipronil

**ROTICHROM® HPLC**

NEW

$C_{12}H_4Cl_2F_6N_4OS$
M 437,15 g/mol
Storage temp.: +4 °C
[120068-37-3] • EC No. 424-610-5
UN No. 2811 • ADR 6.1 III • WGK 3

**Danger**
H301-H311-H331-H372-H410

**Type analysis:**
Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **0925.1** | 100 mg | glass | 106,35 € |

## Firponil Standard Solution

### Firponil Standard Solution

NEW

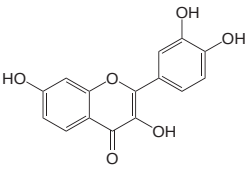
**100 mg/ml in acetonitrile**
Storage temp.: +4 °C
UN No. 1648 • ADR 3 II • WGK 2

**Danger**
H225-H302+H312+H332-H319

**Type analysis:**
Fipronil. ..... 100 µg/ml

| | | | |
|---|---|---|---|
| **0935.1** | 1 ml | glass ampoule | 42,90 € |

## Fisetin



3,3',4',7-Tetrahydroxyflavone
$C_{15}H_{10}O_6$
M 286,23 g/mol
mp 330 °C
Storage temp.: +4 °C
[528-48-3] • EC No. 208-434-4

### Fisetin

**ROTICHROM® HPLC**
Reference substance for HPLC.

**Type analysis:**
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7457.1** | 10 mg | plastic | 198,90 € |

### Fisetin

**ROTICHROM® ~CHR**

| | | | |
|---|---|---|---|
| **7383.1** | 250 mg | glass | 73,00 € |

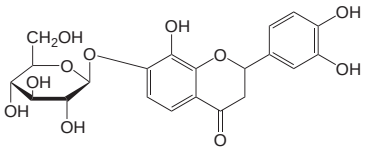
## FITC

▶ Fluorescein isothiocyanate Isomer I see p. 1931

## Fixation spray

▶ Roti®-Fix spray fixative see p. 2217

## Flavanomarein



### Flavanomarein

**ROTICHROM® HPLC**

Reference substance for HPLC.

$C_{21}H_{22}O_{11}$

M 450,29 g/mol

Storage temp.: +4 °C

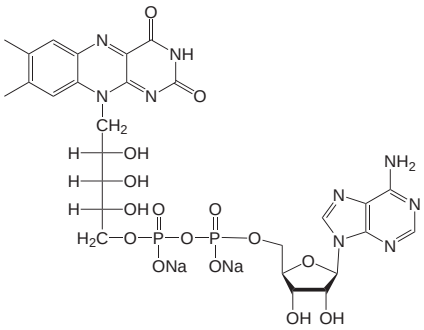
[577-38-8] • EC No. 209-411-1

**Type analysis:**

Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7458.1** | 10 mg | glass | 342,95 € |

## Flavine-adenine-dinucleotide disodium salt (FAD)



FAD disodium salt, Riboflavin-5'-adenosine diphosphate disodium salt

$C_{27}H_{31}O_{15}N_9Na_2P_2$

M 865,55 g/mol

Storage temp.: +4 °C

[84366-81-4] • EC No. 282-733-8

WGK 3

### Flavine-adenine-dinucleotide disodium salt (FAD)

**CELLPURE® ≥95 %**

**Type analysis:**

Appearance..... orange yellow to pale yellowish brown powder
Assay (dry substance)..... ≥95 %
Endotoxins..... ≤100 E.U./g
Heavy metals (as Pb)..... ≤0,001 %
Arsenic ($As_2O_3$)..... ≤0,0001 %
Moisture..... ≤10 %

| | | | |
|---|---|---|---|
| **6833.1** | 10 mg | glass | 25,30 € |
| **6833.2** | 50 mg | glass | 37,55 € |
| **6833.3** | 100 mg | glass | 50,45 € |

### Flavine-adenine-dinucleotide disodium salt (FAD)

**≥95 %, for biochemisty**

**Type analysis:**

Appearance..... light orange powder
Assay (dry substance)..... ≥95 %
Water content..... ≤10 %
pH value (1 % in $H_2O$)..... 5,5-6,5

| | | | |
|---|---|---|---|
| **5581.2** | 10 mg | glass | 18,20 € |
| **5581.3** | 25 mg | glass | 23,15 € |
| **5581.1** | 100 mg | glass | 46,15 € |
| **5581.4** | 500 mg | glass | 57,95 € |
| **5581.5** | 1 g | glass | 93,45 € |

## Flavonoids


| Art. No. | Description | Page |
|---|---|---|
| 6531 | Acacetin | 1690 |
| 5010 | Acacetin | 1690 |
| 5255 | Amentoflavone trihydrate | 1722 |
| NE37 | Apigenin | 1747 |
| NC37 | Apigenin | 1747 |
| 5611 | Apigenin | 1747 |
| NE19 | Apigenin-7-glucoside | 1748 |
| NC19 | Apigenin-7-glucoside | 1748 |
| 6348 | Apigenin-7-glucoside | 1748 |
| 5557 | Apigenin-7-glucoside | 1748 |
| 1085 | Apiin | 1748 |
| 1110 | Baicalein | 1760 |
| 1121 | Baicalin | 1760 |
| 8898 | Bavachinin A | 1764 |
| 7010 | Butein | 1795 |
| 6356 | (+)-Catechin | 1818 |
| 6200 | (+)-Catechin | 1818 |
| 8822 | DL-Catechin hydrate | 1818 |
| 6475 | Chrysin | 1833 |
| 6044 | Chrysoeriol | 1833 |
| 0641 | Cyanidin 3-arabinoside chloride | 1850 |
| 4545 | Cyanidin chloride | 1850 |
| 1133 | Cyanin chloride | 1850 |
| 5568 | Cyanin chloride | 1850 |
| 9323 | Daidzin | 1856 |
| 7444 | Datiscetin | 1857 |
| 4537 | Delphinidin chloride | 1859 |
| 0643 | Delphinidin 3-galactoside chloride | 1859 |
| 0644 | Delphinidin 3-glucoside chloride | 1859 |
| 0977 | Delphinidin 3-rutinoside chloride | 1859 |
| 7445 | Didymin | 1871 |
| T893 | (+)-Dihydroquercetin | 1875 |
| 6960 | Dihydrorobinetin | 1876 |
| 8066 | 6,7-Dihydroxyflavone | 1877 |
| 7446 | Diosmetin | 1886 |
| 9326 | Diosmetinidin chloride | 1886 |
| 6736 | Diosmin | 1886 |
| 7447 | Diosmin | 1886 |
| 7293 | (-)-Epicatechin | 1906 |
| NE41 | (-)-Epicatechin | 1906 |
| NC41 | (-)-Epicatechin | 1906 |
| 1139 | (-)-Epicatechin | 1906 |
| 5798 | (-)-Epicatechin | 1906 |
| 6358 | (-)-Epicatechin gallate | 1906 |
| 6359 | (-)-Epigallocatechin | 1906 |
| 6361 | (-)-Epigallocatechin gallate | 1906 |
| NE42 | Eriocitrin | 1907 |
| NC42 | Eriocitrin | 1907 |
| 7453 | Eriodictyol | 1908 |
| 6990 | Eriodictyol | 1908 |
| 6521 | Eriodictyol-7-glucoside | 1908 |
| 6493 | Eupatorin | 1922 |
| 7457 | Fisetin | 1928 |
| 7383 | Fisetin | 1928 |
| 7458 | Flavanomarein | 1929 |
| 9570 | Formononetin | 1942 |
| 7460 | Galangin | 1946 |
| 0716 | Genistein | 1949 |
| 9374 | Genistin | 1949 |
| 7743 | Hesperetin | 1975 |
| 7570 | Hesperetin | 1975 |
| 9972 | Hesperidin | 1975 |
| 7577 | Hesperidin | 1975 |
| 5800 | Hesperidin | 1975 |
| 7737 | Hesperidin | 1975 |
| 7585 | Homoeriodictyol | 1982 |
| 6002 | Homoorientin | 1982 |
| NE23 | Hyperoside | 1998 |
| NC23 | Hyperoside | 1998 |
| 7932 | Hyperoside | 1999 |
| 4215 | Hyperoside | 1999 |
| 3967 | Idaein chloride | 1999 |
| NE24 | Isoquercitrin | 2016 |
| NC24 | Isoquercitrin | 2016 |
| 7586 | Isoquercitrin | 2017 |
| 5573 | Isoquercitrin | 2017 |
| 7589 | Isorhamnetin | 2017 |
| 6528 | Isorhamnetin | 2017 |
| 6989 | Isorhoifolin | 2017 |
| 7498 | Isosakuranetin | 2017 |
| 5883 | Isoscopoletin | 2017 |
| NE25 | Isovitexin | 2018 |
| NC25 | Isovitexin | 2018 |
| 6412 | Isovitexin | 2018 |
| 7501 | Kaempferide | 2019 |
| NE26 | Kaempferol | 2019 |
| NC26 | Kaempferol | 2019 |
| 7503 | Kaempferol | 2019 |
| 5859 | Kaempferol | 2019 |
| 9321 | Kaempferol-3-glucoside | 2019 |
| 4526 | Kaempferol-3-rhamnosidoglucoside | 2020 |
| 6134 | Keracyanine chloride | 2022 |
| NE49 | Luteolin | 2044 |
| NC49 | Luteolin | 2044 |
| 4546 | Luteolin | 2044 |
| 4164 | Luteolin-7-glucoside | 2044 |
| 9325 | Luteolinidin chloride | 2044 |
| 6496 | (-)-Maackiain | 2046 |
| 6140 | Malvidin chloride | 2054 |
| K013 | Malvin chloride | 2054 |
| 4171 | Marein | 2058 |
| 4172 | Maritimein | 2058 |
| 6459 | Morin hydrate | 2083 |
| 6461 | Myricetin | 2086 |
| 4187 | Myricetin | 2086 |
| 9391 | Myricitrin | 2086 |
| 8524 | Naringenin | 2089 |
| 1186 | Naringenin | 2089 |
| 8865 | Naringenin-7-glucoside | 2089 |
| 6481 | Naringin | 2090 |
| 4200 | Naringin | 2090 |
| 4206 | Neoeriocitrin | 2091 |
| 6767 | Neohesperidin | 2091 |
| K030 | Oenin chloride | 2110 |
| 6151 | Orientin | 2125 |
| 4541 | Pelargonidin chloride | 2134 |
| 6853 | Pelargonidin chloride | 2134 |
| 1646 | Pelargonidin 3,5-diglucoside chloride | 2134 |
| 7406 | Peltatoside | 2134 |
| 1413 | Peonidin 3,5-diglucoside chloride | 2136 |


F

| | | |
|---|---|---|
| 1619 | Peonidin 3-glucoside chloride | 2137 |
| 1469 | Petunidin 3-glucoside chloride | 2144 |
| 4196 | Phlorizin dihydrate | 2149 |
| 7413 | Poncirin | 2161 |
| K014 | Primulin chloride | 2177 |
| 1210 | Quercetin | 2189 |
| 7138 | Quercetin dihydrate (C.I. 75670) | 2189 |
| 2629 | Quercetin dihydrate (C.I. 75670) | 2189 |
| NE27 | Quercetin dihydrate | 2189 |
| NC27 | Quercetin dihydrate | 2189 |
| 7417 | Quercetin dihydrate | 2189 |
| 9419 | Quercetin-3-O-glucose-6''-acetate | 2190 |
| NE29 | Quercitrin | 2190 |
| 9417 | Quercitrin | 2190 |
| 7418 | Rhamnetin | 2197 |
| 7420 | Rhoifolin | 2198 |
| 7421 | Robinetin | 2201 |
| 6413 | Saponarin | 2242 |
| 9410 | Sciadopitysin | 2243 |
| 5578 | Silybin | 2264 |
| 1216 | Spiraeoside | 2292 |
| 4564 | Spiraeoside | 2292 |
| 7569 | Sulfuretin | 2321 |
| 9432 | Syringetin-3-glucoside | 2327 |
| 7425 | Tamarixetin | 2328 |
| 3268 | Tilirosid | 2343 |
| NE56 | Vitexin | 2372 |
| NC56 | Vitexin | 2372 |
| 6418 | Vitexin | 2373 |
| 5579 | Vitexin | 2373 |
| 4173 | Vitexin | 2373 |
| NE34 | Vitexin-2''-O-rhamnoside | 2373 |
| NC34 | Vitexin-2''-O-rhamnoside | 2373 |
| 5819 | Vitexin-2''-O-rhamnoside | 2373 |

## Florisil®

Magnesium silicate
$MgO \cdot 3{,}6\ SiO_2 \cdot 1{,}53\ OH$
D 2,51
[1343-88-0] • EC No. 215-681-1

### Florisil®

**for Hydrocarbon Index analysis, 60-100 mesh**

For Hydrocarbon Index determination according to EN ISO 9377-2 (H53).

**Type analysis:**

Magnesium oxide (MgO). ..... ~15,5 %
Sodium sulphate ($Na_2SO_4$). ..... ~0,5 %
Adapted for EN ISO 9377-2 (H53)

| | | | |
|---|---|---|---|
| **CN39.1** | 100 g | plastic | 40,75 € |
| **CN39.3** | 500 g | plastic | 137,10 € |
| Original pack 6 x 500 g | | | 130,25/500 g |
| **CN39.2** | 1 kg | plastic | 216,65 € |
| Original pack 6 x 1 kg | | | 205,82/1 kg |
| **CN39.4** | 2,5 kg | plastic | 428,40 € |

### Florisil® PR

**for (pesticides) residue analysis, 60-100 mesh**

Specially activated.

**Type analysis:**

Magnesium oxide (MgO). ..... ~15,5 %
Sodium sulphate ($Na_2SO_4$). ..... ~0,5 %

| | | | |
|---|---|---|---|
| **T201.1** | 100 g | plastic | 41,95 € |
| **T201.2** | 500 g | plastic | 144,60 € |
| Original pack 6 x 500 g | | | 137,37/500 g |
| **T201.3** | 1 kg | plastic | 249,95 € |
| Original pack 6 x 1 kg | | | 237,45/1 kg |

### Florisil®

**for chromatography 60-100 mesh**

Standard adsorbent

**Type analysis:**

Magnesium oxide (MgO). ..... ~15,5 %
Sodium sulphate ($Na_2SO_4$). ..... ~0,5 %

| | | | |
|---|---|---|---|
| **0101.1** | 100 g | plastic | 40,75 € |
| **0101.2** | 500 g | plastic | 137,10 € |
| Original pack 6 x 500 g | | | 130,25/500 g |

### Florisil®

**for chromatography 100-200 mesh**

**Type analysis:**

Magnesium oxide (MgO). ..... ~15,5 %
Sodium sulphate ($Na_2SO_4$). ..... ~0,5 %

| | | | |
|---|---|---|---|
| **0102.1** | 100 g | plastic | 40,75 € |
| **0102.2** | 500 g | plastic | 137,10 € |
| Original pack 6 x 500 g | | | 130,25/500 g |

## Flower of sulphur

▶ Sulphur see p. 2322

## Flowers of Antimony

▶ Antimony(III) oxide see p. 1747

## Flowers of tin

▶ Tin(IV) oxide see p. 2344

## N-(9-Fluorenylmethoxycarbonyl)-L-alanine

▶ Fmoc-L-Alanine monohydrate see p. 1932

## N-(9-Fluorenylmethoxycarbonyl)-L-arginine

▶ Fmoc-L-Arginine see p. 1932

## N-(9-Fluorenylmethoxycarbonyl)-L-asparagine

▶ Fmoc-L-Asparagine see p. 1933

## N-α-(9-Fluorenylmethoxycarbonyl)-L-Aspartic-acid-β-allyl ester

▶ Fmoc-L-Aspartic acid-(OAllyl) see p. 1933

## *N*-α-(9-Fluorenylmethoxycarbonyl)-β-azido-L-alanine

▶ Fmoc-L-β-Azidoalanine see p. 1933

## *N*-α-(9-Fluorenylmethoxycarbonyl)-γ-azido-L-homoalanine

▶ Fmoc-L-γ-Azidohomoalanine see p. 1933

## *N*-α-(9-Fluorenylmethoxycarbonyl)-ε-azido-L-lysine

▶ Fmoc-L-Azidolysine see p. 1934

## *N*-α-(9-Fluorenylmethoxycarbonyl)-δ-azido-L-ornithine

▶ Fmoc-L-Azidoornithine see p. 1934

## *N*-α-(9-Fluorenylmethoxycarbonyl)-4-azido-L-phenylalanine

▶ Fmoc-L-4-Azidophenylalanine see p. 1934

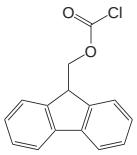
## trans-*N*-α-(9-Fluorenylmethoxycarbonyl)-4-azido-L-proline

▶ Fmoc-L-4-Azidoproline (2S,4R) see p. 1934

## $N_\alpha$-9-Fluorenylmethoxycarbonyl-$N_\delta$-tert. Butyloxycarbonyl-L-ornithine

▶ Fmoc-L-Ornithine-(Boc) see p. 1937

## 9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl)



### 9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl)

**≥ 98%**

Protective group reagent.
Fmoc-Cl, (9-Fluorenylmethyl) chloroformate
$C_{15}H_{11}ClO_2$
M 258,7 g/mol
Storage temp.: +4 °C
[28920-43-6] • EC No. 249-313-6
UN No. 1759 • ADR 8 II • WGK 1

**Danger** H302+H332-H314

**Type analysis:**

Appearance. ..... white to off-white powder
Appearance of solution. ..... clear, colourless
Assay (HPLC). ..... ≥98,0 %
Melting point. ..... 55-70 °C

| | | | |
|---|---|---|---|
| **2201.1** | 5 g | glass | 19,25 € |
| **2201.2** | 25 g | glass | 42,90 € |
| **2201.3** | 100 g | glass | 126,35 € |

## N-(9-Fluorenylmethoxy-carbonyl)-L-glutamine
▶ Fmoc-L-Glutamine see p. 1935

## N-(9-Fluorenylmethoxy-carbonyl)-glycine
▶ Fmoc-Glycine see p. 1935

## N-(9-Fluorenylmethoxy-carbonyl)-L-isoleucine
▶ Fmoc-L-Isoleucine see p. 1936

## N-(9-Fluorenylmethoxy-carbonyl)-L-leucine
▶ Fmoc-L-Leucine see p. 1936

## N-(9-Fluorenylmethoxy-carbonyl)-L-lysine
▶ Fmoc-L-Lysine see p. 1936

## N-(9-Fluorenylmethoxy-carbonyl)-L-methionine
▶ Fmoc-L-Methionine see p. 1936

## N-(9-Fluorenylmethoxy-carbonyl)-L-phenylalanine
▶ Fmoc-L-Phenylalanine see p. 1937

## N-(9-Fluorenylmethoxy-carbonyl)-L-proline
▶ Fmoc-L-Proline see p. 1937

## *N*-α-(9-Fluorenylmethoxy-carbonyl)-L-propargylglycine
▶ Fmoc-L-Propargylglycine see p. 1937

## N-(9-Fluorenylmethoxy-carbonyl)-L-serine
▶ Fmoc-L-Serine monohydrate see p. 1937

## N-(9-Fluorenylmethoxy-carbonyl)-L-tryptophane
▶ Fmoc-L-Tryptophan see p. 1938

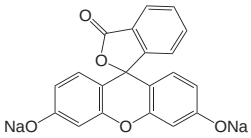
## N-(9-Fluorenylmethoxy-carbonyl)-L-tyrosine
▶ Fmoc-L-Tyrosine see p. 1938

## N-(9-Fluorenylmethoxy-carbonyl)-L-valine
▶ Fmoc-L-Valine see p. 1938

## (9-Fluorenylmethyl) chloro formate
▶ 9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl) see p. 1930

## Fluorescein complexone
▶ Calcein see p. 1802

## Fluorescein disodium salt




### Fluorescein disodium salt (C.I. 45350)

**extra concentrated**

For source staining and for the study of water current.

Uranin, Resorcinophthalein sodium

$C_{20}H_{10}Na_2O_5$

M 376,28 g/mol

mp >300 °C

Solubility: 500 g/l ($H_2O$, 20 °C)

[518-47-8] • EC No. 208-253-0

WGK 1

**Type analysis:**

Appearance.....orange-red to brown powder
Water..... ≤5,0 %
Absorption max. (in $H_2O$). .....~491 nm
Solubilities:
Water .....40 mg/ml
Ethanol. .....70 mg/ml
Soluble in water with a yellow-green fluorescence.

| | | | |
|---|---|---|---|
| **5283.3** | 25 g | plastic | 21,00 € |
| **5283.1** | 100 g | plastic | 33,90 € |
| **5283.2** | 500 g | plastic | 106,45 € |
| Original pack 6 x 500 g | | | 101,13/500 g |

## Fluorescein-12-dUTP

### Fluorescein-12-dUTP

**≥95 %, 1 mM solution**

For non-radioactive, enzymatic labelling of DNA.

Fluorescein-6-carboxyaminocaproyl-[5-(3-aminoallyl)-2'-deoxyuridine-5'-triphosphate]

$C_{39}H_{38}N_4O_{21}P_3$

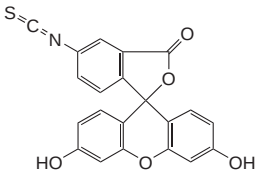
M 991,66 g/mol

Storage temp.: -20 °C •
Transport temp.: cooled

| | | | |
|---|---|---|---|
| **1048.1** | 25 nmol (25 µl) | plastic | 178,35 € |
| **1048.2** | 50 nmol (50 µl) | plastic | 317,15 € |

For further information, please see page 1260

## Fluorescein isothiocyanate Isomer I




### Fluorescein isothiocyanate Isomer I

**≥90 %, p.a.**

For the study of antigen and antibody reactions.

FITC

$C_{21}H_{11}NO_5S$

M 389,39 g/mol

Storage temp.: -20 °C •
Transport temp.: room temp.

[3326-32-7] • EC No. 222-042-0

WGK 2

**Danger** H334-H317

**Type analysis:**

Appearance. ..... orange-yellow, fine powder
Assay (HPLC). .....≥90,0 %
Sulphated ash. .....≤1,0 %
Loss on drying.....≤5 %

| | | | |
|---|---|---|---|
| **3745.2** | 100 mg | glass | 36,45 € |
| **3745.1** | 250 mg | glass | 69,80 € |

For further information, please see page 1471

## Fluorescence staining (DNA-Gels)
▶ Roti®-GelStain see p. 2218
▶ Ethidium bromide solution 1 % see p. 1913

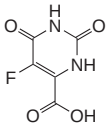
## Fluorescent preparation Fluoro-4C
▶ Demoslides Fluoro-4C see p. 1860

## Fluorexon
▶ Calcein see p. 1802

## Fluorhydric acid
▶ Hydrofluoric acid Ultra-quality see p. 1989
▶ Hydrofluoric acid Supra-quality see p. 1990

## Fluoride-Standards
▶ Fluoride IC Standard Solution see p. 2311

## 5-Fluoroorotic acid



### 5-Fluoroorotic acid

**≥98 %, for biochemistry**

For identification and selection of yeast strains.

5-Fluorouracil-4-carboxylic acid, 5-FOA

$C_5H_3FN_2O_4$

M 174,09 g/mol

mp ~280 °C

Storage temp.: -20 °C •

Transport temp.: room temp.

[703-95-7] • EC No. 211-876-0

WGK 1

**Warning** H302-H315-H319-H335

**Type analysis:**

Assay (titr.). ..... ≥98 %

Water (KF). ..... ≤10,5 %

| | | | |
|---|---|---|---|
| **4015.1** | 500 mg | glass | 39,70 € |
| **4015.2** | 1 g | glass | 60,10 € |
| **4015.3** | 2,5 g | glass | 117,20 € |

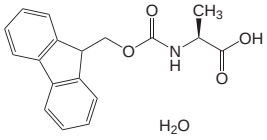
## 5-Fluorouracil-4-carboxylic acid

▶ 5-Fluoroorotic acid see p. 1932

## Fmoc-L-Aha-OH

▶ Fmoc-L-γ-Azidohomoalanine see p. 1933

## Fmoc-L-Alanine monohydrate



### Fmoc-L-Alanine monohydrate

**≥98 %, for biochemistry**

Fmoc-L-Ala-OH, N-(9-Fluorenylmethoxycarbonyl)-L-alanine

$C_{18}H_{17}NO_4$

M 311,33 g/mol

mp 147 °C

Storage temp.: -20 °C •

Transport temp.: room temp.

[35661-39-3]

WGK 2

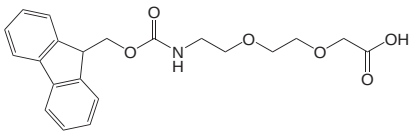
**Type analysis:**

Assay (HPLC). ..... ≥98,0 %

Free amino acids. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **6646.1** | 10 g | glass | 15,60 € |
| **6646.2** | 50 g | glass | 36,05 € |
| **6646.3** | 250 g | glass | 137,10 € |
| **6646.4** | 500 g | glass | 246,20 € |
| Original pack 6 x 500 g | | | 233,89/500 g |
| **6646.5** | 1 kg | glass | 461,20 € |
| Original pack 6 x 1 kg | | | 438,14/1 kg |

## Fmoc-8-Amino-3,6-dioxaoctanoic acid



### Fmoc-8-Amino-3,6-dioxaoctanoic acid

**≥99 %, for biochemistry**

Linker

{2-[2-(Fmoc-amino)ethoxy]ethoxy}acetic acid, Fmoc-$O_2$Oc-OH

$C_{21}H_{23}NO_6$

M 385,4 g/mol

mp 85-102 °C

Storage temp.: +4 °C

[166108-71-0]

WGK 3

**Type analysis:**

Appearance. ..... white cryst. powder

Assay (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7400.1** | 500 mg | glass | 72,60 € |
| **7400.2** | 1 g | glass | 117,20 € |

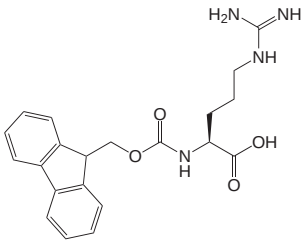
## {2-[2-(Fmoc-amino)ethoxy]-ethoxy}acetic acid

▶ Fmoc-8-Amino-3,6-dioxaoctanoic acid see p. 1932

## 9-Fmoc-amino-xanthen-3-yloxy-Merrifield resin

▶ Sieber amide resin see p. 2249

## Fmoc-L-Arginine



### Fmoc-L-Arginine

**≥98 %, for biochemistry**

Fmoc-L-Arg-OH, N-(9-Fluorenylmethoxycarbonyl)-L-arginine

$C_{21}H_{24}N_4O_4$

M 396,44 g/mol

mp 145 °C

[91000-69-0]

WGK 3

**Type analysis:**

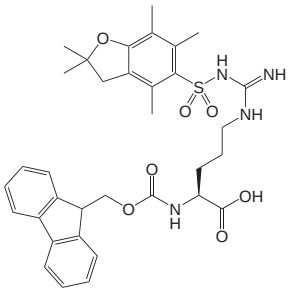
Appearance. ..... white to off-white powder

Assay. ..... ≥98,0 %

Water (KF). ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **6896.1** | 5 g | glass | 31,75 € |
| **6896.2** | 25 g | glass | 122,45 € |

## Fmoc-L-Arginine-(Pbf)



### Fmoc-L-Arginine-(Pbf)

**≥85 %, for biochemistry**

N-α-Fmoc-N-ω-(2,2,4,6,7-pentamethyl-dihydrobenzofuran-5-sulfonyl)-L-arginine, Fmoc-L-Arg(Pbf)-OH

$C_{34}H_{40}N_4O_7S$

M 648,77 g/mol

mp 130-136 °C

Storage temp.: +4 °C

[154445-77-9]

WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... white to off-white powder

Assay (acidim.). ..... 85,0-102,0 %

Purity (HPLC). ..... ≥95 %

Water (KF). ..... ≤2,0 %

Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). ..... -6,0° to -4,0°

Enantiomeric purity. ..... ≤0,5 % D-Enantiomer

| | | | |
|---|---|---|---|
| **8833.1** | 5 g | glass | 38,60 € |
| **8833.2** | 25 g | glass | 141,40 € |
| **8833.3** | 100 g | glass | 456,90 € |

## Fmoc-L-Arg-OH

▶ Fmoc-L-Arginine see p. 1932

## Fmoc-L-Arg(Pbf)-OH

▶ Fmoc-L-Arginine-(Pbf) see p. 1932

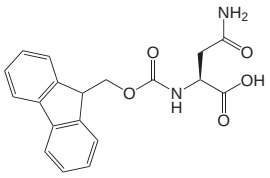
## Fmoc-L-Asn-OH

▶ Fmoc-L-Asparagine see p. 1933

## Fmoc-L-Asn(Trt)-OH

▶ Fmoc-L-Asparagine-(Trityl) see p. 1933

## Fmoc-L-Asparagine



### Fmoc-L-Asparagine

**≥98,5 %, for biochemistry**

Fmoc-L-Asn-OH, N-(9-Fluorenyl-methoxycarbonyl)-L-asparagine

$C_{19}H_{18}N_2O_5$

M 354,36 g/mol

mp 190 °C

Storage temp.: +4 °C

[71989-16-7] • EC No. 276-252-2

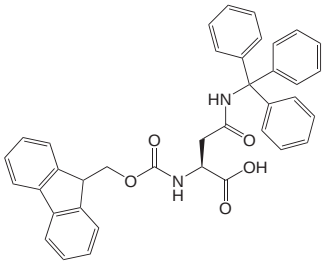
WGK 3

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6897.1** | 5 g | glass | 18,20 € |
| **6897.2** | 25 g | glass | 51,50 € |
| **6897.3** | 100 g | glass | 162,90 € |

## Fmoc-L-Asparagine-(Trityl)



### Fmoc-L-Asparagine-(Trityl)

**≥98 %, for biochemistry**

Fmoc-L-Asn(Trt)-OH, N-α-(9-Fluorenyl-methyloxycarbonyl)-N-β-trityl-L-asparagine

$C_{38}H_{32}N_2O_5$

M 596,68 g/mol

[132388-59-1]

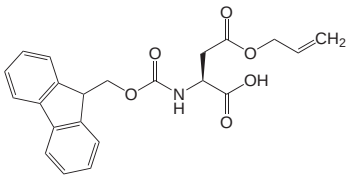
WGK 2

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,0 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]^{24}_D$ (0,5 % in MeOH). ..... -16,0° to -13,0°
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

| | | | |
|---|---|---|---|
| **9652.1** | 5 g | glass | 20,65 € |
| **9652.2** | 25 g | glass | 62,90 € |
| **9652.3** | 100 g | glass | 209,65 € |

## Fmoc-L-Aspartic acid-(OAllyl)



### Fmoc-L-Aspartic acid-(OAllyl)

**≥98,5 %, for biochemistry**

Fmoc-L-Asp(OAll)-OH, N-α-(9-Fluorenyl-methoxycarbonyl)-L-Aspartic-acid-β-allyl ester

$C_{22}H_{21}NO_6$

M 395,41 g/mol

mp 111 °C

Storage temp.: +4 °C

[146982-24-3]

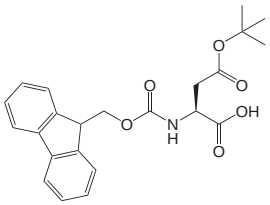
WGK 2

**Type analysis:**

Assay (HPLC). ..... ≥98,5 %

| | | | |
|---|---|---|---|
| **6641.1** | 500 mg | glass | 18,85 € |
| **6641.2** | 1 g | glass | 28,95 € |
| **6641.3** | 5 g | glass | 111,30 € |

## Fmoc-L-Aspartic acid-(OtBu)



### Fmoc-L-Aspartic acid-(OtBu)

**≥99 %, for biochemistry**

Fmoc-L-Asp(OtBu)-OH, N-α-(9-Fluorenyl-methyloxycarbonyl)-L-aspartic acid-β-tert-butyl ester

$C_{23}H_{25}NO_6$

M 411,46 g/mol

Storage temp.: +4 °C

[71989-14-5] • EC No. 276-251-7

WGK 1

**Type analysis:**

Appearance. ..... white powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in DMF). ..... -25,5° to -22,5°
Foreign amino acids. ..... ≤0,3 %
Enantiomeric purity. ..... ≤0,3 % D-enantiomer

| | | | |
|---|---|---|---|
| **9654.1** | 5 g | glass | 23,15 € |
| **9654.2** | 25 g | glass | 69,80 € |
| **9654.3** | 100 g | glass | 228,45 € |

## Fmoc-L-Asp(OAll)-OH

▶ Fmoc-L-Aspartic acid-(OAllyl) see p. 1933

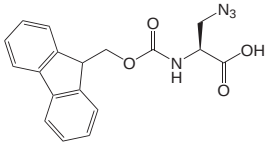
## Fmoc-L-Asp(OtBu)-OH

▶ Fmoc-L-Aspartic acid-(OtBu) see p. 1933

## Fmoc-L-Aza-OH

▶ Fmoc-L-β-Azidoalanine see p. 1933

## Fmoc-L-β-Azidoalanine



### Fmoc-L-β-Azidoalanine

**≥98 %, for biochemistry**

*N*-α-(9-Fluorenylmethoxycarbonyl)-β-azido-L-alanine, Fmoc-L-Aza-OH

$C_{18}H_{16}N_4O_4$

M 352,3 g/mol

mp 117-130 °C

Storage temp.: +4 °C

[684270-46-0]

WGK 3

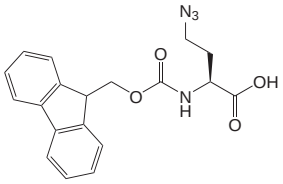
**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥98 %
Specific rotation $[\alpha]^{20}_D$ (c=1 in DMF). ..... -11,0° to -8,0°

| | | | |
|---|---|---|---|
| **7369.1** | 250 mg | glass | 106,45 € |
| **7369.2** | 1 g | glass | 353,70 € |

## Fmoc-L-γ-Azidohomoalanine



### Fmoc-L-γ-Azidohomoalanine

**≥99 %, for biochemistry**

*N*-α-(9-Fluorenylmethoxycarbonyl)-γ-azido-L-homoalanine, Fmoc-L-Aha-OH

$C_{19}H_{18}N_4O_4$

M 366,41 g/mol

mp 123-128 °C

Storage temp.: +4 °C

[942518-20-9]

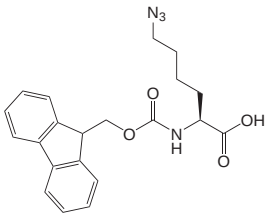
WGK 3

**Type analysis:**

Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥99 %
Specific rotation $[\alpha]^{20}_D$ (c=1 in DMF). ..... -29,0° to -26,5°

| | | | |
|---|---|---|---|
| **7363.1** | 250 mg | glass | 85,90 € |
| **7363.2** | 1 g | glass | 295,65 € |

## Fmoc-L-Azidolysine



### Fmoc-L-Azidolysine

**≥98 %, for biochemistry**

*N*-α-(9-Fluorenylmethoxycarbonyl)-ε-azido-L-lysine, Fmoc-L-Lys($N_3$)-OH

$C_{21}H_{22}N_4O_4$

M 394,42 g/mol

mp 74-82 °C

Storage temp.: +4 °C

[159610-89-6]

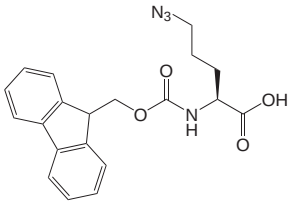
WGK 3

**Type analysis:**

Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). .... -14,0° to -12,0°

| | | | |
|---|---|---|---|
| **7357.1** | 250 mg | glass | 102,05 € |
| **7357.2** | 1 g | glass | 332,20 € |

## Fmoc-L-Azidoornithine



### Fmoc-L-Azidoornithine

**≥98 %, for biochemistry**

*N*-α-(9-Fluorenylmethoxycarbonyl)-δ-azido-L-ornithine, Fmoc-L-Orn($N_3$)-OH

$C_{20}H_{20}N_4O_4$

M 380,4 g/mol

mp 132-138 °C

Storage temp.: +4 °C

[1097192-04-5]

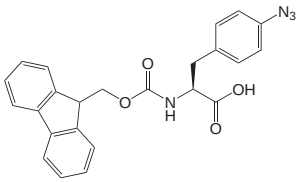
WGK 3

**Type analysis:**

Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). .... -15,5° to -13,5°

| | | | |
|---|---|---|---|
| **7362.1** | 250 mg | glass | 107,40 € |
| **7362.2** | 1 g | glass | 353,70 € |

## Fmoc-L-4-Azidophenylalanine



### Fmoc-L-4-Azidophenylalanine

**≥98 %, for biochemistry**

*N*-α-(9-Fluorenylmethoxycarbonyl)-4-azido-L-phenylalanine, Fmoc-L-Phe(4-$N_3$)-OH

$C_{24}H_{20}N_4O_4$

M 428,5 g/mol

Storage temp.: +4 °C

[163217-43-4]

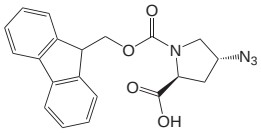
WGK 3

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (TLC). ..... ≥98 %
Solubility (5 % in MeOH). ..... clear solution

| | | | |
|---|---|---|---|
| **7485.1** | 100 mg | glass | 52,70 € |
| **7485.2** | 250 mg | glass | 112,35 € |

## Fmoc-L-4-Azidoproline (2S,4R)



### Fmoc-L-4-Azidoproline (2S,4R)

**≥98 %, for biochemistry**

trans-*N*-α-(9-Fluorenylmethoxycarbonyl)-4-azido-L-proline, Fmoc-L-Pro(4-$N_3$)-OH

$C_{20}H_{18}N_4O_4$

M 378,38 g/mol

mp 140-145 °C

Storage temp.: +4 °C

[702679-55-8]

WGK 3

**Type analysis:**

Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥98 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol)... -37,5° to -34,0°

| | | | |
|---|---|---|---|
| **7367.1** | 100 mg | glass | 96,65 € |
| **7367.2** | 250 mg | glass | 192,45 € |
| **7367.3** | 1 g | glass | 633,20 € |

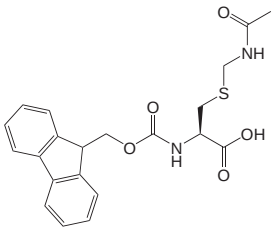
## Fmoc-Cl

▶ 9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl) see p. 1930

## Fmoc-L-Cys(Acm)-OH

▶ Fmoc-L-Cysteine-(Acetamidomethyl) see p. 1934

## Fmoc-L-Cysteine-(Acetamidomethyl)



### Fmoc-L-Cysteine-(Acetamidomethyl)

**≥99 %, for biochemistry**

N-α-Fmoc-S-acetamidomethyl-L-cysteine, Fmoc-L-Cys(Acm)-OH

$C_{21}H_{22}N_2O_5S$

M 414,48 g/mol

mp 148-154 °C

Storage temp.: +4 °C

[86060-81-3]

WGK 1

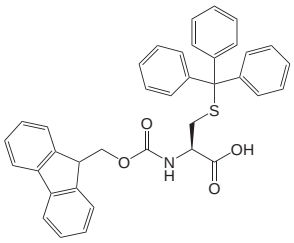
**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥99,0 %
Enantiomeric purity. ..... ≤0,2 % D-Enantiomer

| | | | |
|---|---|---|---|
| **8842.1** | 5 g | glass | 34,30 € |
| **8842.2** | 25 g | glass | 100,55 € |
| **8842.3** | 100 g | glass | 310,70 € |

## Fmoc-L-Cysteine-(Trityl)



### Fmoc-L-Cysteine-(Trityl)

**≥98,5 %, for biochemistry**

N-α-Fmoc-S-trityl-L-cysteine, Fmoc-L-Cys(Trt)-OH

$C_{37}H_{31}NO_4S$

M 585,71 g/mol

mp 169-179 °C

Storage temp.: +4 °C

[103213-32-7]

WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,5 %
Enantiomeric purity. ..... ≤0,2 % D-Enantiomer

| | | | |
|---|---|---|---|
| **8841.1** | 5 g | glass | 19,25 € |
| **8841.2** | 25 g | glass | 57,95 € |
| **8841.3** | 100 g | glass | 175,80 € |

## Fmoc-L-Cys(Trt)-OH

▶ Fmoc-L-Cysteine-(Trityl) see p. 1934

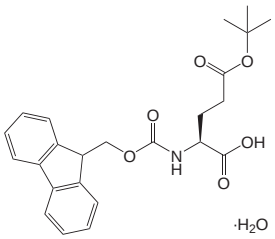
## Fmoc-L-Gln-OH

▶ Fmoc-L-Glutamine see p. 1935

## Fmoc-L-Gln(Trt)-OH

▶ Fmoc-L-Glutamine-(Trityl) see p. 1935

## Fmoc-L-Glutamic acid-(OtBu) monohydrate



### Fmoc-L-Glutamic acid-(OtBu) monohydrate

**≥99 %, for biochemistry**

Fmoc-L-Glu(OtBu)-OH, N-α-(9-Fluorenylmethyloxycarbonyl)-L-glutamic acid-γ-tert-butyl ester monohydrate

$C_{24}H_{27}NO_6 \cdot H_2O$

M 443,50 g/mol

Storage temp.: +4 °C

[204251-24-1]

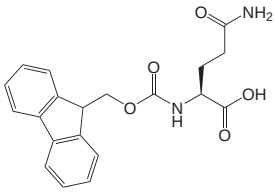
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... 3,0-5,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in DMF)..... -19,0° to -17,0°
Foreign amino acids. ..... ≤0,3 %
Enantiomeric purity. ..... ≤0,1 % D-enantiomer

| | | | |
|---|---|---|---|
| **9655.1** | 5 g | glass | 22,05 € |
| **9655.2** | 25 g | glass | 67,65 € |
| **9655.3** | 100 g | glass | 220,40 € |

## Fmoc-L-Glutamine



### Fmoc-L-Glutamine

**≥98 %, for biochemistry**

Fmoc-L-Gln-OH, N-(9-Fluorenylmethoxycarbonyl)-L-glutamine

$C_{20}H_{20}N_2O_5$

M 368,39 g/mol

mp 218-226 °C

Storage temp.: +4 °C

[71989-20-3] • EC No. 276-254-3

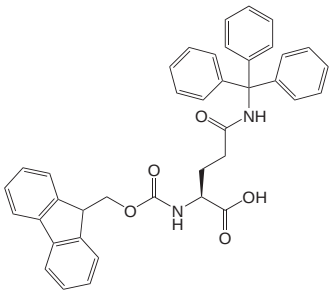
WGK 3

**Type analysis:**

Appearance..... white to off-white powder
Assay (titr.). ..... 95,0-102,0 %
Purity (HPLC). ..... ≥97,0 %
Water (KF)..... ≤1,0 %
Specific rotation $[\alpha]^{20}_D$ (c=1 in DMF)..... -20,0° to -16,0°
Enantiomeric purity.....≤0,5 % D-enantiomer

| | | | |
|---|---|---|---|
| **6898.1** | 5 g | glass | 18,20 € |
| **6898.2** | 25 g | glass | 51,50 € |
| **6898.3** | 100 g | glass | 162,90 € |

## Fmoc-L-Glutamine-(Trityl)



### Fmoc-L-Glutamine-(Trityl)

**≥98 %, for biochemistry**

Fmoc-L-Gln(Trt)-OH, N-α-(9-Fluorenylmethyloxycarbonyl)-N-γ-trityl-L-glutamine

$C_{39}H_{34}N_2O_5$

M 610,71 g/mol

[132327-80-1]

WGK 1

**Type analysis:**

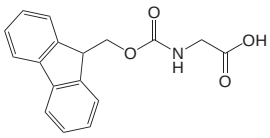
Appearance..... white powder
Assay (HPLC)..... ≥98,0 %
Water (KF)..... ≤1,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in MeOH)..... -3,0° to -1,0°
Foreign amino acids. ..... ≤0,3 %
Enantiomeric purity.....≤0,1 % D-enantiomer

| | | | |
|---|---|---|---|
| **9653.1** | 5 g | glass | 24,65 € |
| **9653.2** | 25 g | glass | 80,55 € |
| **9653.3** | 100 g | glass | 267,70 € |

## Fmoc-L-Glu(OtBu)-OH

▶ Fmoc-L-Glutamic acid-(OtBu) monohydrate see p. 1935

## Fmoc-Glycine



### Fmoc-Glycine

**≥99 %, for biochemistry**

Fmoc-Gly-OH, N-(9-Fluorenylmethoxycarbonyl)-glycine

$C_{17}H_{15}NO_4$

M 297,31 g/mol

mp 174 °C

Storage temp.: +4 °C

[29022-11-5] • EC No. 249-373-3

WGK 3

**Type analysis:**

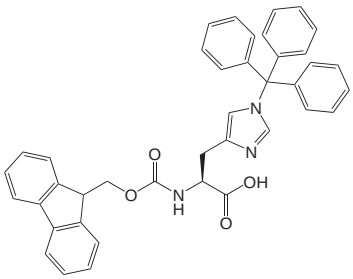
Appearance. ..... white to off-white powder
Assay. ..... ≥99,0 %
Loss on drying..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6899.1** | 5 g | glass | 11,75 € |
| **6899.2** | 25 g | glass | 34,30 € |
| **6899.3** | 100 g | glass | 117,20 € |

## Fmoc-Gly-OH

▶ Fmoc-Glycine see p. 1935

## Fmoc-L-Histidine-(Trityl)



### Fmoc-L-Histidine-(Trityl)

**≥97 %, for biochemistry**

N-α-Fmoc-N-(im)-trityl-L-histidine, Fmoc-L-His(Trt)-OH

$C_{40}H_{33}N_3O_4$

M 619,71 g/mol

mp 150-170 °C

Storage temp.: +4 °C

[109425-51-6] • EC No. 439-640-4

WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (titr.)..... ≥97 %
Purity (HPLC)..... ≥99 %
Enantiomeric purity. ..... ≤0,2 % D-Enantiomer
Free amino acids. ..... ≤0,2 %
Specific rotation $[\alpha]^{20}_D$ (c=1 % in $CHCl_3$)..... +82,5° to +88,5°
Water (KF). ..... ≤1 %

| | | | |
|---|---|---|---|
| **8843.1** | 5 g | glass | 22,05 € |
| **8843.2** | 25 g | glass | 67,65 € |
| **8843.3** | 100 g | glass | 203,20 € |

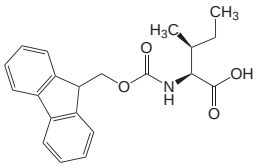
## Fmoc-L-His(Trt)-OH

▶ Fmoc-L-Histidine-(Trityl) see p. 1935

## Fmoc-L-Ile-OH

▶ Fmoc-L-Isoleucine see p. 1936

## Fmoc-L-Isoleucine



### Fmoc-L-Isoleucine

**≥98 %, for biochemistry**

Fmoc-L-Ile-OH,
N-(9-Fluorenylmethoxycarbonyl)-L-isoleucine
$C_{21}H_{23}NO_4$
M 353,41 g/mol
mp 145 °C
Storage temp.: +4 °C
[71989-23-6]
WGK 2

**Type analysis:**

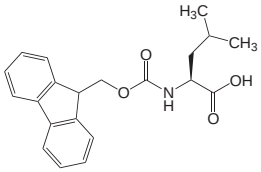
Appearance. ..... white to off-white powder
Assay (titr.). ..... 98,0-102,0 %
Purity (HPLC)..... ≥98,5 %
Water (KF). ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). .... -12,5° to -10,5°
Free amino acids. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **6647.1** | 10 g | glass | 15,60 € |
| **6647.2** | 50 g | glass | 36,05 € |
| **6647.3** | 250 g | glass | 137,10 € |

## Fmoc-L-Ala-OH

▶ Fmoc-L-Alanine monohydrate see p. 1932

## Fmoc-L-Leucine



### Fmoc-L-Leucine

**≥95 %, for biochemistry**

Fmoc-L-Leu-OH, N-(9-Fluorenylmethoxycarbonyl)-L-leucine
$C_{21}H_{23}NO_4$
M 353,41 g/mol
mp 152 °C
Storage temp.: +4 °C
[35661-60-0]
WGK 2

**Type analysis:**

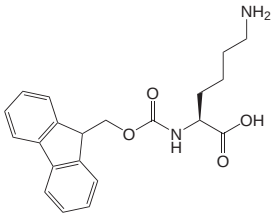
Appearance. ..... white to off-white powder
Assay (titr.). ..... 95,0-105,0 %
Purity (HPLC)..... ≥98,5 %
Free amino acids. ..... ≤0,2 %
Enantiomeric purity. ..... ≤0,3 % D-enantiomer

| | | | |
|---|---|---|---|
| **6654.1** | 10 g | glass | 15,60 € |
| **6654.2** | 50 g | glass | 36,05 € |
| **6654.3** | 250 g | glass | 137,10 € |
| **6654.4** | 500 g | glass | 246,20 € |
| Original pack 6 x 500 g | | | 233,89/500 g |

## Fmoc-L-Leu-OH

▶ Fmoc-L-Leucine see p. 1936

## Fmoc-L-Lysine



### Fmoc-L-Lysine

**≥98 %, for biochemistry**

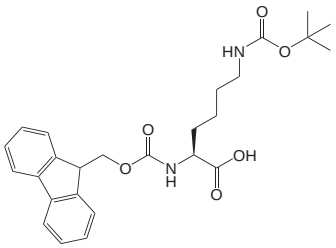
Fmoc-L-Lys-OH,
N-(9-Fluorenylmethoxycarbonyl)-L-lysine
$C_{21}H_{24}N_2O_4$
M 368,44 g/mol
Storage temp.: +4 °C
[105047-45-8]
WGK 1

**Type analysis:**

Appearance..... white to off-white powder
Assay. ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **6900.1** | 1 g | glass | 17,10 € |
| **6900.2** | 5 g | glass | 52,60 € |
| **6900.3** | 10 g | glass | 93,45 € |

## Fmoc-L-Lysine-(Boc)



### Fmoc-L-Lysine-(Boc)

**≥98,5 %, for biochemistry**

N-α-Fmoc-N-ε-Boc-L-lysine,
Fmoc-L-Lys(Boc)-OH
$C_{26}H_{32}N_2O_6$
M 486,55 g/mol
mp 126-132 °C
Storage temp.: +4 °C
[71989-26-9] • EC No. 276-256-4
WGK 1

**Type analysis:**

Appearance..... white to off-white powder
Assay (HPLC)..... ≥98,5 %
Water (KF)..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF)..... -13,0° to -11,0°
Enantiomeric purity..... ≤0,2 % D-Enantiomer

| | | | |
|---|---|---|---|
| **8840.1** | 5 g | glass | 19,25 € |
| **8840.2** | 25 g | glass | 57,95 € |
| **8840.3** | 100 g | glass | 175,80 € |

## Fmoc-L-Lys-OH

▶ Fmoc-L-Lysine see p. 1936

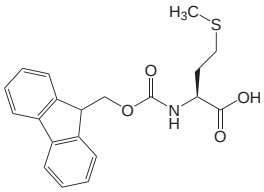
## Fmoc-L-Lys(Boc)-OH

▶ Fmoc-L-Lysine-(Boc) see p. 1936

## Fmoc-L-Lys($N_3$)-OH

▶ Fmoc-L-Azidolysine see p. 1934

## Fmoc-L-Methionine



### Fmoc-L-Methionine

**≥98,5 %, for biochemistry**

Fmoc-L-Met-OH,
N-(9-Fluorenylmethoxycarbonyl)-L-methionine
$C_{20}H_{21}NO_4S$
M 371,45 g/mol
Storage temp.: +4 °C
[71989-28-1]
WGK 2

**Type analysis:**

Assay (HPLC). ..... ≥98,5 %
Free amino acids. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **6656.1** | 10 g | glass | 15,60 € |
| **6656.2** | 50 g | glass | 36,05 € |
| **6656.3** | 250 g | glass | 137,10 € |

## Fmoc-L-Met-OH

▶ Fmoc-L-Methionine see p. 1936

## Fmoc-$O_2$Oc-OH

▶ Fmoc-8-Amino-3,6-dioxaoctanoic acid see p. 1932

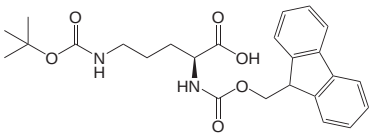
## Fmoc-L-Orn($N_3$)-OH

▶ Fmoc-L-Azidoornithine see p. 1934

## Fmoc-L-Orn(Boc)-OH

▶ Fmoc-L-Ornithine-(Boc) see p. 1937

## Fmoc-L-Ornithine-(Boc)



### Fmoc-L-Ornithine-(Boc)

NEW

**≥98 %, for biochemistry**

Fmoc-L-Orn(Boc)-OH,
$N_\alpha$-9-Fluorenylmethoxycarbonyl-$N_\delta$-tert. Butyloxycarbonyl-L-ornithine,
$N_\alpha$-Fmoc-$N_\delta$-t.-Boc-L-Ornithine
$C_{25}H_{30}N_2O_6$
M 454,52 g/mol
mp 100-115 °C
Storage temp.: + 4 °C
[109425-55-0]
WGK 1

**Type analysis:**

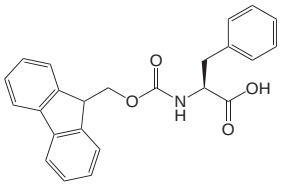
Appearance. ..... white to off-white powder
Purity (HPLC)..... ≥98,0 %
Specific rotation (1 % in DMF). ..... -10,0° to -6,0°
Water (KF). ..... ≤2,0 %
Enantiomeric purity. ..... ≤0,5 % D-Enantiomer

| | | | |
|---|---|---|---|
| **1932.1** | 1 g | glass | 21,40 € |
| **1932.2** | 5 g | plastic | 53,65 € |
| **1932.3** | 10 g | plastic | 96,65 € |

## Fmoc-L-Phe(4-$N_3$)-OH

▶ Fmoc-L-4-Azidophenylalanine see p. 1934

## Fmoc-L-Phenylalanine



### Fmoc-L-Phenylalanine

**≥99 %, for biochemistry**

Fmoc-L-Phe-OH,
N-(9-Fluorenylmethoxycarbonyl)-L-phenylalanine
$C_{24}H_{21}NO_4$
M 387,43 g/mol
mp 184 °C
Storage temp.: +4 °C
[35661-40-6]
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (titr.). ..... 99,0-101,0 %
Purity (HPLC)..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). .... -40,0° to -38,0°
Melting range. ..... 180-190 °C
Free amino acids. ..... ≤0,1 %
Enantiomeric purity. ..... ≤0,2 % D-enantiomer

| | | | |
|---|---|---|---|
| **6658.1** | 10 g | glass | 17,10 € |
| **6658.2** | 50 g | glass | 42,90 € |
| **6658.3** | 250 g | glass | 162,90 € |

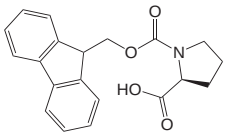
## Fmoc-L-Phe-OH

▶ Fmoc-L-Phenylalanine see p. 1937

## Fmoc-L-Pra-OH

▶ Fmoc-L-Propargylglycine see p. 1937

## Fmoc-L-Proline



### Fmoc-L-Proline

**≥99 %, for biochemistry**

Fmoc-L-Pro-OH,
N-(9-Fluorenylmethoxycarbonyl)-L-proline
$C_{20}H_{21}NO_4$
M 337,37 g/mol
mp 117 °C
Storage temp.: +4 °C
[71989-31-6]
WGK 1

**Type analysis:**

Assay (HPLC)..... ≥99 %
Free amino acids. ..... ≤0,1 %
Water (KF)..... ≤6,0 %

| | | | |
|---|---|---|---|
| **6659.1** | 10 g | glass | 17,10 € |
| **6659.2** | 50 g | glass | 42,90 € |
| **6659.3** | 250 g | glass | 162,90 € |

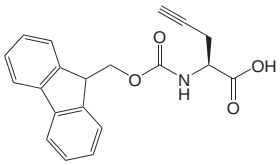
## Fmoc-L-Pro-OH

▶ Fmoc-L-Proline see p. 1937

## Fmoc-L-Pro(4-$N_3$)-OH

▶ Fmoc-L-4-Azidoproline (2S,4R) see p. 1934

## Fmoc-L-Propargylglycine



### Fmoc-L-Propargylglycine

**≥99 %, for biochemistry**

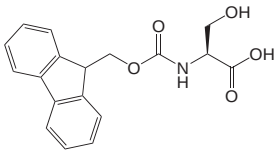
*N*-α-(9-Fluorenylmethoxycarbonyl)-L-propargylglycine, Fmoc-L-Pra-OH
$C_{20}H_{17}NO_4$
M 335,3 g/mol
Storage temp.: +4 °C
[198561-07-8]
WGK 3

**Type analysis:**

Appearance. ..... white powder
Assay. ..... ≥99 %
Enantiomeric purity. ..... ≥99 %
Identity. ..... complies
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7491.1** | 100 mg | glass | 48,95 € |
| **7491.2** | 250 mg | glass | 90,20 € |

## Fmoc-L-Serine monohydrate



### Fmoc-L-Serine monohydrate

**≥98 %, for biochemistry**

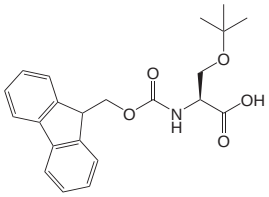
Fmoc-L-Ser-OH,
N-(9-Fluorenylmethoxycarbonyl)-L-serine
$C_{18}H_{19}NO_6$
M 345,35 g/mol
Storage temp.: +4 °C
[73724-45-5]
WGK 3

**Type analysis:**

Appearance. ..... white powder
Assay. ..... ≥98,0 %
Loss on drying..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6901.1** | 5 g | glass | 51,50 € |
| **6901.2** | 25 g | glass | 162,90 € |

## Fmoc-L-Serine-(tBu)



### Fmoc-L-Serine-(tBu)

**≥99 %, for biochemistry**

Fmoc-L-Ser(tBu)-OH, N-α-(9-Fluorenyl-methyloxycarbonyl)-O-tert-butyl-L-serine
$C_{22}H_{25}NO_5$
M 383,44 g/mol
[71989-33-8] • EC No. 276-260-6
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in EtOAc)...+24,5° to +26,5°
Foreign amino acids..... ≤0,3 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

| | | | |
|---|---|---|---|
| **9666.1** | 5 g | glass | 23,15 € |
| **9666.2** | 25 g | glass | 69,80 € |
| **9666.3** | 100 g | glass | 228,45 € |

## Fmoc-L-Ser-OH

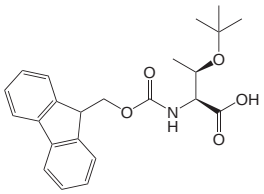
▶ Fmoc-L-Serine monohydrate see p. 1937

## Fmoc-L-Ser(tBu)-OH

▶ Fmoc-L-Serine-(tBu) see p. 1937

F

## Fmoc-L-Threonine-(tBu)



### Fmoc-L-Threonine-(tBu)

**≥99 %, for biochemistry**

Fmoc-L-Thr(tBu)-OH, N-α-(9-Fluorenylmethyloxycarbonyl)-O-tert-butyl-L-threonine

$C_{23}H_{27}NO_5$

M 397,47 g/mol

Storage temp.: +4 °C

[71989-35-0] • EC No. 276-261-1

WGK 1

**Type analysis:**

Appearance. ..... white powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in DMF). ..... -7,0° to -5,0°
Foreign amino acids. ..... ≤0,3 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

| | | | |
|---|---|---|---|
| **9659.1** | 5 g | glass | 23,15 € |
| **9659.2** | 25 g | glass | 69,80 € |
| **9659.3** | 100 g | glass | 228,45 € |

## Fmoc-L-Thr(tBu)-OH

▶ Fmoc-L-Threonine-(tBu) see p. 1938

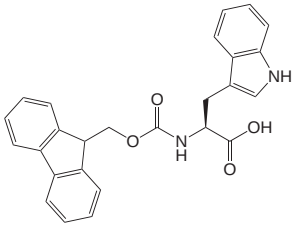
## Fmoc-L-Trp-OH

▶ Fmoc-L-Tryptophan see p. 1938

## Fmoc-L-Trp(Boc)-OH

▶ Fmoc-L-Tryptophan-(Boc) see p. 1938

## Fmoc-L-Tryptophan



### Fmoc-L-Tryptophan

**≥98 %, for biochemistry**

Fmoc-L-Trp-OH, N-(9-Fluorenylmethoxycarbonyl)-L-tryptophan

$C_{26}H_{22}N_2O_4$

M 426,46 g/mol

mp 160-170 °C

Storage temp.: +4 °C

[35737-15-6] • EC No. 252-706-5

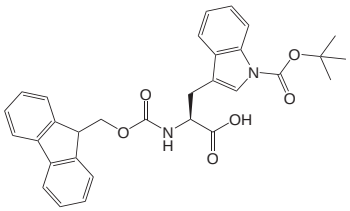
WGK 3

**Type analysis:**

Appearance. ..... white powder
Assay. ..... ≥98,0 %
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6903.1** | 5 g | glass | 11,75 € |
| **6903.2** | 25 g | glass | 34,30 € |
| **6903.3** | 100 g | glass | 117,20 € |

## Fmoc-L-Tryptophan-(Boc)



### Fmoc-L-Tryptophan-(Boc)

**≥97 %, for biochemistry**

Fmoc-L-Trp(Boc)-OH, N-α-(9-Fluorenylmethyloxycarbonyl)-N-(in)-Boc-L-tryptophan

$C_{31}H_{30}N_2O_6$

M 526,59 g/mol

Storage temp.: -20 °C

Transport temp.: room temp.

[143824-78-6]

WGK 1

**Type analysis:**

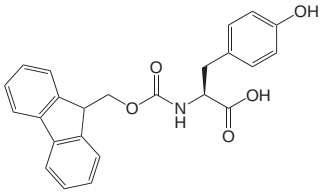
Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥97,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in DMF). ..... -22,0° to -18,0°
Foreign amino acids. ..... ≤0,3 %
Enantiomeric purity. ..... ≤0,5 % D-enantiomer

| | | | |
|---|---|---|---|
| **9668.1** | 5 g | glass | 28,95 € |
| **9668.2** | 25 g | glass | 96,65 € |
| **9668.3** | 100 g | glass | 303,70 € |

## Fmoc-L-Tyr-OH

▶ Fmoc-L-Tyrosine see p. 1938

## Fmoc-L-Tyrosine



### Fmoc-L-Tyrosine

**≥98 %, for biochemistry**

Fmoc-L-Tyr-OH, N-(9-Fluorenylmethoxycarbonyl)-L-tyrosine

$C_{24}H_{21}NO_5$

M 403,43 g/mol

mp 170-180 °C

Storage temp.: +4 °C

[92954-90-0]

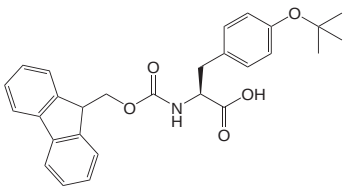
WGK 3

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6906.1** | 1 g | glass | 34,30 € |
| **6906.2** | 5 g | glass | 81,60 € |
| **6906.3** | 10 g | glass | 138,70 € |

## Fmoc-L-Tyrosine-(tBu)



### Fmoc-L-Tyrosine-(tBu)

**≥99 %, for biochemistry**

Fmoc-L-Tyr(tBu)-OH, N-α-(9-Fluorenylmethyloxycarbonyl)-O-tert-butyl-L-tyrosine

$C_{28}H_{29}NO_5$

M 459,54 g/mol

[71989-38-3] • EC No. 276-262-7

WGK 1

**Type analysis:**

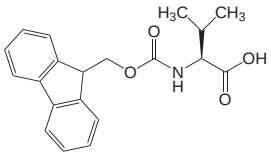
Appearance. ..... white to pale yellow powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Spec. rotation $[\alpha]^{24}_D$ (1 % in DMF). ..... -30,0° to -27,0°
Foreign amino acids. ..... ≤0,3 %
Enantiomeric purity. ..... ≤0,1 % D-enantiomer

| | | | |
|---|---|---|---|
| **9669.1** | 5 g | glass | 23,15 € |
| **9669.2** | 25 g | glass | 69,80 € |
| **9669.3** | 100 g | glass | 228,45 € |

## Fmoc-L-Tyr(tBu)-OH

▶ Fmoc-L-Tyrosine-(tBu) see p. 1938

## Fmoc-L-Valine



### Fmoc-L-Valine

**≥95 %, for biochemistry**

Fmoc-L-Val-OH, N-(9-Fluorenylmethoxycarbonyl)-L-valine

$C_{20}H_{21}NO_4$

M 339,39 g/mol

mp 143 °C

Storage temp.: +4 °C

[68858-20-8]

WGK 2

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (titr.). ..... 95,0-105,0 %
Purity (HPLC). ..... ≥98,5 %
Water (KF). ..... ≤1,0 %
Enantiomeric purity. ..... ≤0,2 % D-enantiomer
Free amino acids. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **6660.1** | 10 g | glass | 15,60 € |
| **6660.2** | 50 g | glass | 36,05 € |
| **6660.3** | 250 g | glass | 137,10 € |
| **6660.4** | 500 g | glass | 246,20 € |
| Original pack 6 x 500 g | | | 233,89/500 g |

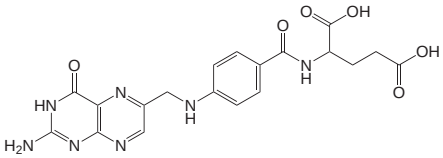
## Fmoc-L-Val-OH

▶ Fmoc-L-Valine see p. 1938

## 5-FOA

▶ 5-Fluoroorotic acid see p. 1932

## Folic acid



### Folic acid

**≥96 %, for biochemistry**
Pteroyl glutamic acid
$C_{19}H_{19}N_7O_6$
M 441,4 g/mol
mp 250 °C
Solubility: 2 mg/l ($H_2O$, 25 °C)
[59-30-3] • EC No. 200-419-0
WGK 1

**Type analysis:**

Appearance. ..... yellow to orange cryst. powder
Assay (dry substance). ..... 96,0-102,0 %
Water (KF). ..... 5,0-8,5 %
Sulphated ash. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **T912.1** | 25 g | plastic | 41,95 € |
| **T912.2** | 50 g | plastic | 74,10 € |

## Food Green 3

▶ Fast Green FCF see p. 1924

## Formaldehyde solutions

Formol, Formalin
$CH_2O$
M 30,03 g/mol
D 1,09 • bp 99 °C
flp 62 °C
Storage temp.: >+15 °C
[50-00-0] • EC No. 200-001-8
UN No. 2209 • ADR 8 III • WGK 2

**Danger** H301+H311+H331-H314-H317-H341-H350-H370-H335

### Formaldehyde solution 37 %

**ROTIPURAN® 37 %, p.a., ACS**
Stabilised with methanol.

**Guarantee analysis:**

Assay (acidimetric after oxidation) ..... 36,5-38,0 %
Colour (Hazen). ..... ≤10
Acidity. ..... ≤0,025 %
Methanol (GC). ..... 9,0-14,0 %
Ash content (as $SO_4$) ..... ≤0,005 %
Chloride (Cl). ..... ≤0,0005 %
Sulphate ($SO_4$). ..... ≤0,002 %
Heavy metals. ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0001 %
Calcium (Ca). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0001 %
Cobalt (Co). ..... ≤0,0001 %
Chromium (Cr). ..... ≤0,0001 %
Copper (Cu). ..... ≤0,0001 %
Potassium (K). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,0001 %
Manganese (Mn). ..... ≤0,0001 %
Sodium (Na). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0001 %
Zinc (Zn). ..... ≤0,0001 %
Stabilised with methanol.
**Do not store under 15 °C**
Lower temperatures favour the polymerization to paraformaldehyde. The formaldehyde solution can, however, be used after decanting deposit to a clear solution.

| | | | |
|---|---|---|---|
| **4979.1** | 1 l | plastic | 26,55 € |
| Original pack 6 x 1 l | | | 25,22/1 l |
| **4979.2** | 2,5 l | plastic | 49,35 € |
| Original pack 4 x 2,5 l | | | 46,88/2,5 l |
| **4979.3** | 5 l | plastic | 65,25 € |
| Original pack 2 x 5 l | | | 61,99/5 l |

For further information, please see page 1447

### Formaldehyde solution 37 %

**≥37 %, Ph.Eur., BP, USP**
Histology, for fixation. Stabilised with methanol.

**Guarantee analysis:**

Assay (acidim.) ..... 37,0-38,0 %
Identity ..... complies
Appearance of solution ..... complies
Sulphated ash. ..... ≤0,05 %
Free acid. ..... complies
Methanol (GC) ..... 9,0-15,0 %
Chloride (Cl). ..... ≤0,003 %
Sulphate ($SO_4$). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,001 %
Stabilised with methanol
**Do not store under 15 °C**

| | | | |
|---|---|---|---|
| **CP10.1** | 1 l | plastic | 17,75 € |
| Original pack 6 x 1 l | | | 16,86/1 l |
| **CP10.2** | 2,5 l | plastic | 31,10 € |
| Original pack 4 x 2,5 l | | | 29,55/2,5 l |
| **CP10.3** | 5 l | plastic | 44,65 € |
| Original pack 2 x 5 l | | | 42,42/5 l |
| **CP10.4** | 10 l | plastic | 66,55 € |

For further information, please see page 1447

### Formaldehyde solution 37 %

**≥37 %, for synthesis**
Stabilised with methanol.

**Type analysis:**

Appearance. ..... clear to slightly turbid solution
Assay. ..... 37,0-37,5 %
Methanol. ..... 8,0-12,0 %
Formic acid. ..... ≤0,02 %
Stabilised with methanol.
**Do not store under 15 °C**

| | | | |
|---|---|---|---|
| **7398.1** | 1 l | plastic | 13,90 € |
| Original pack 6 x 1 l | | | 13,21/1 l |
| **7398.4** | 2,5 l | plastic | 22,50 € |
| Original pack 4 x 2,5 l | | | 21,38/2,5 l |
| **7398.2** | 10 l | plastic | 47,20 € |
| **7398.3** | 30 l | plastic | 109,15 € |

For further information, please see page 1447

### Formaldehyde solution 35 %

**≥35 % DAB, for histology**
Stabilised with methanol.

**Guarantee analysis:**

Appearance. ..... clear to turbid, colourless liquid
Assay. ..... 35,5-36,5 %
Methanol. ..... 9,0-11,0 %
Formic acid. ..... ≤0,03 %
Sulphated ash. ..... ≤0,1 %
Stabilised with methanol.
**Do not store under 15 °C**

| | | | |
|---|---|---|---|
| **4980.1** | 1 l | plastic | 16,05 € |
| Original pack 6 x 1 l | | | 15,25/1 l |
| **4980.2** | 5 l | plastic | 37,55 € |
| Original pack 2 x 5 l | | | 35,67/5 l |
| **4980.4** | 10 l | plastic | 59,70 € |
| **4980.3** | 30 l | plastic | 118,15 € |

For further information, please see page 1447

## Formaldehyde solution 30 %, methanol-free

### Formaldehyde solution 30 %, methanol-free

**30 %**
Concentrated fixative for histology, methanol-free.
Formol, Formalin
$CH_2O$
M 30,03 g/mol
D 1,09 • bp 99 °C
flp 62 °C
Storage temp.: >+15 °C
[50-00-0] • EC No. 200-001-8
UN No. 2209 • ADR 8 III • WGK 2

**Danger** H302-H311+H331-H314-H317-H341-H350-H335

**Type analysis:**

Appearance. ..... clear to turbid, colourless solution
Assay. ..... 29,0-31,0 %
Density (20 °C). ..... 1,080-1,095
Methanol. ..... ≤1,5 %
Formic acid. ..... ≤0,2 %
**Do not store under 15 °C**

| | | | |
|---|---|---|---|
| **4235.1** | 1 l | plastic | 12,40 € |
| Original pack 6 x 1 l | | | 11,78/1 l |
| **4235.2** | 5 l | plastic | 30,00 € |
| Original pack 2 x 5 l | | | 28,50/5 l |
| **4235.3** | 10 l | plastic | 41,85 € |
| **4235.4** | 30 l | plastic | 99,90 € |

For further information, please see page 1447

## Formaldehyde solution 23,5 %, methanol-free

### Formaldehyde solution 23,5 %, methanol-free

**23,5 %**

Formol, Formalin
$CH_2O$
M 30,03 g/mol
D 1,07 • bp 79-85 °C
mp <-15 °C
Storage temp.: >+15 °C
[50-00-0] • EC No. 200-001-8
WGK 2

**Danger** H302+H312+H332-H315-H317-H319-H335-H341-H350

**Type analysis:**

Assay.....23,1-23,9 %
Methanol (GC).....≤1,0 %
Formic acid.....≤0,05 %
Density.....1,066-1,076
**Do not store under 15 °C**

| | | | |
|---|---|---|---|
| **6742.1** | 1 l | plastic | 10,65 € |
| Original pack 6 x 1 l | | | 10,12/1 l |
| **6742.2** | 5 l | plastic | 26,35 € |
| Original pack 2 x 5 l | | | 25,03/5 l |
| **6742.3** | 10 l | plastic | 37,55 € |
| **6742.4** | 25 l | plastic | 72,60 € |

## Formaldehyde solution, non-acidic

### Formaldehyde solution, non-acidic

**≥37 %, for histology**

Stabilised with methanol and calcium carbonate.
Formol, Formalin
D 1,09 • bp 99 °C
flp 62 °C
Storage temp.: >+15 °C
[50-00-0] • EC No. 200-001-8
UN No. 2209 • ADR 8 III • WGK 2

**Danger** H301+H311+H331-H341-H350-H314-H317-H370-H335

**Type analysis:**

Appearance..... clear to turbid, colourless liquid
Assay.....≥37 %
Methanol.....8-12 %
Stabilised with methanol and calcium carbonate.
Please note the added acid binding sediment.
You can filter it, if necessary, before use.
**Do not store under 15 °C**

| | | | |
|---|---|---|---|
| **P733.1** | 1 l | plastic | 17,75 € |
| Original pack 6 x 1 l | | | 16,86/1 l |
| **P733.2** | 2,5 l | plastic | 32,15 € |
| Original pack 4 x 2,5 l | | | 30,54/2,5 l |
| **P733.3** | 30 l | plastic | 120,95 € |

For further information, please see page 1447

## Formaldehyde Solutions, Phosphate Buffered


| Art. No. | Description | Page |
|---|---|---|
| P087 | Roti®-Histofix 4 % | 2218 |
| 3105 | Roti®-Histofix 4 %, prefilled containers | 2218 |
| 2213 | Roti®-Histofix 4,5 % | 2218 |
| 8244 | Roti®-Histofix 4,5 %, prefilled containers | 2219 |
| A146 | Roti®-Histofix 10 % | 2219 |


## Formaline


▶ Formaldehyde solutions see p. 1939
▶ Formaldehyde solution, non-acidic see p. 1940


## Formaline methanol-free


▶ Formaldehyde solution 30 %, methanol-free see p. 1939
▶ Formaldehyde solution 23,5 %, methanol-free see p. 1940


## Formamide



Formic acid amide
$CH_3NO$
M 45,04 g/mol
D 1,13 • bp 210 °C
mp 2 °C • flp 175 °C
[75-12-7] • EC No. 200-842-0
WGK 1

**Danger** H351-H360FD-H373

### Formamide

**≥99,5 %, p.a.**

**Guarantee analysis:**

Assay. ..... ≥99,5 %
Density (d 20 °C/4 °C). ..... 1,132-1,135
Water (KF)..... ≤0,5 %
Colour (APHA)..... ≤10
Lead (Pb). ..... ≤0,001 %
Cadmium (Cd)..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Sulphated ash (600 °C). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **6749.3** | 500 ml | glass | 26,35 € |
| **6749.1** | 1 l | glass | 44,65 € |
| Original pack 6 x 1 l | | | 42,42/1 l |
| **6749.2** | 2,5 l | glass | 79,45 € |
| Original pack 4 x 2,5 l | | | 75,48/2,5 l |

### Formamide

**≥98 %, extra pure**

**Type analysis:**

Assay. ..... ≥98,0 %
Density (20 °C). ..... 1,131-1,134
Formic acid..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4095.1** | 1 l | plastic | 30,00 € |
| Original pack 6 x 1 l | | | 28,50/1 l |
| **4095.2** | 2,5 l | plastic | 61,20 € |
| Original pack 4 x 2,5 l | | | 58,14/2,5 l |
| **4095.3** | 5 l | plastic | 105,25 € |
| Original pack 2 x 5 l | | | 99,99/5 l |
| **4095.4** | 10 l | plastic | 181,70 € |

### Formamide, deionized

**≥99,5 %, BioScience-Grade, RNAse / DNAse-free**

Storage temp.: -20 °C •
Transport temp.: room temp.

**Guarantee analysis:**

Appearance. ..... clear, colourless to light yellowish
Assay. .....≥99,5 %
pH value.....5,0-6,0
Deionization. .....complies

| | | | |
|---|---|---|---|
| **P040.1** | 250 ml | plastic | 45,05 € |

## Formate Standards

▶ Formate IC Standard Solution see p. 2311

## Formic acid 98 %

Methanoic acid, Formylic acid, Hydrogen carboxylic acid
$CH_2O_2$
M 46,02 g/mol
D 1,22 • bp 101 °C
mp 9 °C • flp 50 °C
[64-18-6] • EC No. 200-579-1
UN No. 1779 • ADR 8 (3) II • WGK 1

**Danger**

H226-H290-H302-H331-H314-EUH071

### Formic acid 98 %

**ROTIPURAN® ≥98 %, p.a., ACS**

**Guarantee analysis:**

Assay (acidim.). .....≥98,0 %
Colour (APHA). .....≤10
In $H_2O$ insoluble matter. .....complies
Non volatile matter. .....≤0,001 %
Acetic acid ($CH_3COOH$).....≤0,05 %
Chloride (Cl).....≤0,0005 %
Sulphate ($SO_4$).....≤0,0005 %
Sulphite ($SO_3$). .....≤0,001 %
Aluminium (Al).....≤0,000005 %
Ammonium ($NH_4$).....≤0,001 %
Barium (Ba).....≤0,000005 %
Beryllium (Be). .....≤0,000002 %
Lead (Pb). .....≤0,000002 %
Cadmium (Cd). .....≤0,000005 %
Calcium (Ca).....≤0,00002 %
Chromium (Cr). .....≤0,000002 %
Iron (Fe). .....≤0,00001 %
Germanium (Ge).....≤0,000002 %
Potassium (K). .....≤0,00001 %
Cobalt (Co). .....≤0,000002 %
Copper (Cu). .....≤0,000002 %
Lithium (Li). .....≤0,000002 %
Magnesium (Mg).....≤0,00005 %
Manganese (Mn).....≤0,000005 %
Molybdenum (Mo).....≤0,000002 %
Sodium (Na).....≤0,00005 %
Nickel (Ni). .....≤0,000005 %
Heavy metals (as Pb).....≤0,001 %
Silver (Ag). .....≤0,000002 %
Strontium (Sr).....≤0,000002 %
Thallium (Tl). .....≤0,000002 %
Titanium (Ti).....≤0,000005 %
Vanadium (V).....≤0,000002 %
Bismuth (Bi). .....≤0,000005 %
Zinc (Zn). .....≤0,000005 %
Zirconium (Zr). .....≤0,000005 %

| | | | |
|---|---|---|---|
| **4724.3** | 500 ml | glass | 19,90 € |
| **4724.1** | 1 l | glass | 33,90 € |
| Original pack 6 x 1 l | | | 32,21/1 l |
| **4724.2** | 2,5 l | glass | 71,95 € |
| Original pack 4 x 2,5 l | | | 68,35/2,5 l |

## Formic acid 98 %

**≥98 %, for synthesis**

**Type analysis:**

Assay.....≥98,0 %
Colour (APHA).....≤10
Evaporation residue.....≤0,002 %
Chloride (Cl).....≤0,0001 %
Iron (Fe).....≤0,0001 %

| | | | |
|---|---|---|---|
| **4742.1** | 1 l | glass | 22,05 € |
| Original pack 6 x 1 l | | | 20,95/1 l |
| **4742.2** | 2,5 l | glass | 44,00 € |
| Original pack 4 x 2,5 l | | | 41,80/2,5 l |
| **4742.3** | 10 l | plastic | 95,60 € |

## Formic acid 85 %

Methanoic acid, Formylic acid, Hydrogen carboxylic acid
$CH_2O_2$
M 46,02 g/mol
D 1,19 • bp 101 °C
flp 71 °C
[64-18-6] • EC No. 200-579-1
UN No. 3412 • ADR 8 II • WGK 1

**Danger**

H290-H302-H314-H331-EUH071

## Formic acid 85 %

**ROTIPURAN® ≥85 %, p.a.**

**Guarantee analysis:**

Assay (acidim.).....≥85,0 %
Colour (APHA).....≤15
In $H_2O$ insoluble matter.....complies
Non volatile matter.....≤0,002 %
Acetic acid ($CH_3COOH$).....≤0,4 %
Chloride (Cl).....≤0,001 %
Sulphate ($SO_4$).....≤0,002 %
Sulphite ($SO_3$).....≤0,001 %
Ammonium ($NH_4$).....≤0,005 %
Heavy metals (as Pb).....≤0,0005 %
Aluminium (Al).....≤0,000005 %
Beryllium (Be).....≤0,000002 %
Lead (Pb).....≤0,000002 %
Cadmium (Cd).....≤0,000005 %
Calcium (Ca).....≤0,00005 %
Chromium (Cr).....≤0,000002 %
Iron (Fe).....≤0,00005 %
Germanium (Ge).....≤0,000002 %
Potassium (K).....≤0,00001 %
Cobalt (Co).....≤0,000002 %
Copper (Cu).....≤0,000002 %
Lithium (Li).....≤0,000002 %
Magnesium (Mg).....≤0,00005 %
Manganese (Mn).....≤0,000005 %
Molybdenum (Mo).....≤0,000002 %
Sodium (Na).....≤0,0001 %
Nickel (Ni).....≤0,000005 %
Silver (Ag).....≤0,000002 %
Strontium (Sr).....≤0,000002 %
Titanium (Ti).....≤0,000005 %
Vanadium (V).....≤0,000002 %
Bismuth (Bi).....≤0,000005 %
Zinc (Zn).....≤0,00001 %
Zirconium (Zr).....≤0,000005 %

| | | | |
|---|---|---|---|
| **CP16.1** | 500 ml | glass | 20,35 € |
| **CP16.2** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **CP16.3** | 2,5 l | glass | 70,85 € |
| Original pack 4 x 2,5 l | | | 67,31/2,5 l |
| **CP16.4** | 10 l | plastic | 214,90 € |

## Formic acid 85 %

**≥85 %, pure**

**Type analysis:**

Assay.....≥85 %

| | | | |
|---|---|---|---|
| **5355.1** | 1 l | glass | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **5355.2** | 2,5 l | glass | 36,45 € |
| Original pack 4 x 2,5 l | | | 34,63/2,5 l |
| **5355.3** | 10 l | plastic | 65,50 € |

## Formic acid 45 %

## Formic acid 45 %

**45 %, pure**

Methanoic acid, Formylic acid, Hydrogen carboxylic acid
$CH_2O_2$
M 46,02 g/mol
D 1,10
[64-18-6] • EC No. 200-579-1
UN No. 3412 • ADR 8 II • WGK 1

**Danger**

H290-H302+H332-H314-EUH071

**Type analysis:**

Assay.....44,0-46,0 %
Chloride (Cl).....≤0,0005 %
Sulphate ($SO_4$).....≤0,0005 %
Iron (Fe).....≤0,0005 %
Evaporation residue.....≤0,005 %

| | | | |
|---|---|---|---|
| **6739.1** | 1 l | glass | 17,45 € |
| Original pack 6 x 1 l | | | 16,58/1 l |
| **6739.2** | 2,5 l | glass | 25,70 € |
| Original pack 4 x 2,5 l | | | 24,42/2,5 l |
| **6739.3** | 10 l | plastic | 48,30 € |

## Formic acid D2, 95 % solution in $D_2O$

## Formic acid D2, 95 % solution in $D_2O$

**98 Atom%D**

For nuclear magnetic resonance spectroscopy.
$CD_2O_2$
M 48,04 g/mol
D ~1,2 • bp 101 °C
mp 5,9 °C • flp 69 °C
[920-42-3] • EC No. 213-057-3
UN No. 1779 • ADR 8 (3) II • WGK 1

**Danger**

H226-H290-H302-H331-H314-EUH071

**Guarantee analysis:**

Deuterising degree.....≥98 %
Assay (mass %).....≥95 %

| | | | |
|---|---|---|---|
| **HN92.1** | 5 ml | glass | 95,15 € |

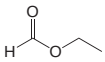
## Formic acid amide

▶ Formamide see p. 1940

## Formic acid dimethylamide

▶ N,N-Dimethylformamide (DMF) see p. 1882

## Formic acid ethyl ester



## Formic acid ethyl ester

**≥99 %**

Ethyl formate, Ethyl methanoate
$C_3H_6O_2$
M 74,08 g/mol
D ~0,92 • bp ~54 °C
mp -80 °C • flp -20 °C
[109-94-4] • EC No. 203-721-0
UN No. 1190 • ADR 3 II • WGK 1

**Danger**

H225-H302+H332-H319-H335

**Type analysis:**

Assay (GC).....≥99,0 %
Density (d 25 °C/25 °C).....0,915-0,925
Refractive index (20 °C).....1,359-1,363

| | | | |
|---|---|---|---|
| **3574.2** | 100 ml | glass | 17,10 € |
| **3574.1** | 1 l | glass | 87,00 € |
| Original pack 6 x 1 l | | | 82,65/1 l |
| **3574.3** | 2,5 l | glass | 166,65 € |
| Original pack 4 x 2,5 l | | | 158,32/2,5 l |

## Formic acid sodium salt

▶ Sodium formate see p. 2273

## Formol

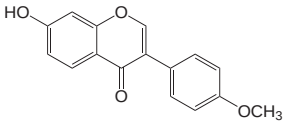
▶ Formaldehyde solutions see p. 1939
▶ Formaldehyde solution, non-acidic see p. 1940

## Formol methanol-free

▶ Formaldehyde solution 30 %, methanol-free see p. 1939
▶ Formaldehyde solution 23,5 %, methanol-free see p. 1940

F

## Formononetin



### Formononetin
**ROTICHROM® HPLC**
Reference substance for HPLC.
Biochanin B, 7-Hydroxy-4'-methoxyisoflavone
$C_{16}H_{12}O_4$
M 268,26 g/mol
mp 257-260 °C
[485-72-3] • EC No. 207-623-9
WGK 2
**Warning** H315-H319-H335

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **9570.1** | 10 mg | glass | 132,80 € |

## Formononetin-7-O-glucoside
▶ Ononin see p. 2124

## 4-Formyl-1,2-dihydroxybenzene
▶ 3,4-Dihydroxybenzaldehyde see p. 1876

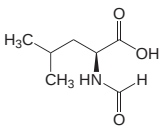
## p-Formyldimethylanilin
▶ 4-(Dimethylamino)-benzaldehyde see p. 1880

## Formylic acid
▶ Formic acid 98 % see p. 1940
▶ Formic acid 85 % see p. 1941
▶ Formic acid 45 % see p. 1941

## 3-Formylindole
▶ Indole-3-carboxaldehyde see p. 2003

## N-Formyl-L-Leu
▶ N-Formyl-L-Leucine see p. 1942

## N-Formyl-L-Leucine



### N-Formyl-L-Leucine
**≥98 %, for biochemistry**
N-Formyl-L-Leu
$C_7H_{13}NO_3$
M 159,18 g/mol
mp 139-142 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[6113-61-7]
WGK 3

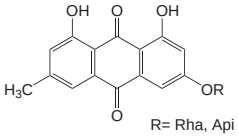
**Type analysis:**
Assay (HPLC)..... ≥98,0 %
Loss on drying (105 °C)..... ≤0,5 %
Melting point..... 139,0-142,0 °C

| | | | |
|---|---|---|---|
| **6665.1** | 500 mg | glass | 26,35 € |
| **6665.2** | 1 g | glass | 42,50 € |
| **6665.3** | 5 g | glass | 177,40 € |

## 3-Formylphenol
▶ 3-Hydroxybenzaldehyde see p. 1992

## Fractured coal
▶ Charcoal see p. 1824

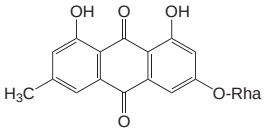
## Frangulin (A+B)



### Frangulin (A+B)
**ROTICHROM® ~CHR**
Franguloside
$C_{21}H_{20}O_9$ / $C_{20}H_{18}O_9$
M 416,37 / 402,36 g/mol
mp 203-214 °C
Storage temp.: +4 °C
[60529-33-1]
**Warning** H302

| | | | |
|---|---|---|---|
| **7404.1** | 25 mg | glass | 40,35 € |

## Frangulin A

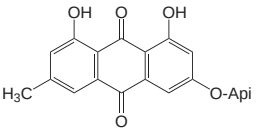


### Frangulin A
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Rhamnus frangula.*
Emodinrhamnoside, Rhamnoxanthine
$C_{21}H_{20}O_9$
M 416,40 g/mol
mp ~228 °C
Storage temp.: +4 °C
[521-62-0] • EC No. 208-316-2
**Warning** H302

**Type analysis:**
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1140.1** | 20 mg | glass | 284,90 € |

## Frangulin B



6-O-(Apiofuranosyl)-1,6,8-trihydroxy-3-methylantraquinone
$C_{20}H_{18}O_9$
M 402,36 g/mol
mp 196 °C
Storage temp.: +4 °C
[14101-04-3] • EC No. 237-953-9
**Warning** H302

### Frangulin B
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Rhamnus frangula.*

**Type analysis:**
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1142.1** | 10 mg | glass | 299,95 € |

### Frangulin B
**ROTICHROM® ~CHR**
From *Rhamnus frangula*.

| | | | |
|---|---|---|---|
| **7655.1** | 10 mg | glass | 241,90 € |

## Franguloside
▶ Frangulin (A+B) see p. 1942

## Fraser Broth (Base)

### Fraser Broth (Base)
**ISO 11290-1, for microbiology**
Enrichment medium for detection and isolation of *Listeria* in foods and environmental samples.
Application: Use 57,3 g for 1 l broth. A slight precipitate may appear after autoclaving. Prior to use add sterile filtered ferric(III) ammonium citrate solution ad 0,5 g/l broth (Art. No. 3130.1).
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**
Pancreatic digest of casein. ..... 5 g/l
Meat peptone. ..... 5 g/l
Beef extract. ..... 5 g/l
Yeast extract. ..... 5 g/l
Sodium chloride. ..... 20 g/l
Disodium phosphate. ..... 12 g/l
Potassium phosphate. ..... 1,35 g/l
Lithium chloride. ..... 3 g/l
Esculin. ..... 1 g/l
Acriflavine. ..... 0,025 g/l
Nalidixic acid. ..... 0,02 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **HP17.1** | 500 g | plastic | 125,25 € |
| Original pack 6 x 500 g | | | 118,99/500 g |

For further information, please see page 1385

## Fraser Half Broth (Base)

### Fraser Half Broth (Base)

**ISO 11290-1, for microbiology**

Enrichment medium for detection and isolation of *Listeria* in foods and environmental samples.

Application: Use 57,3 g for 1 l broth. A slight precipitate may appear after autoclaving. Prior to use add sterile filtered iron(III) ammonium citrate solution ad 0,5 g/l broth (Art. No. 3130.1).

Storage temp.: +20 °C

WGK 1

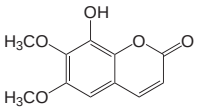
**Guarantee analysis:**

| | |
|---|---|
| Pancreatic digest of casein | 5 g/l |
| Meat peptone | 5 g/l |
| Beef extract | 5 g/l |
| Yeast extract | 5 g/l |
| Sodium chloride | 20 g/l |
| Disodium phosphate | 12 g/l |
| Potassium phosphate | 1,3 g/l |
| Lithium chloride | 3 g/l |
| Esculin | 1 g/l |
| Acriflavine | 0,0125 g/l |
| Nalidixic acid | 0,01 g/l |
| pH value | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **HP18.1** | 500 g | plastic | 97,75 € |
| Original pack 6 x 500 g | | | 92,86/500 g |
| **HP18.2** | 1 kg | plastic | 174,70 € |
| Original pack 6 x 1 kg | | | 165,97/1 kg |

For further information, please see page 1385

## Fraxidin



### Fraxidin

**ROTICHROM® ~CHR**

$C_{11}H_{10}O_5$

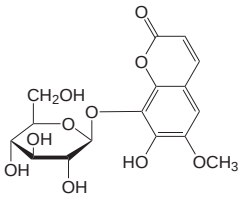
M 222 g/mol

mp 196-198 °C

[525-21-3] • EC No. 208-370-7

| | | | |
|---|---|---|---|
| **9369.1** | 10 mg | glass | 166,65 € |

## Fraxin



### Fraxin

**ROTICHROM® HPLC**

Reference substance for HPLC.

$C_{16}H_{18}O_{10}$

M 317,31 g/mol

mp 205 °C

Storage temp.: +4 °C

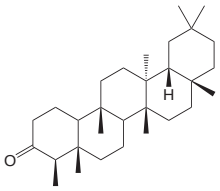
[524-30-1] • EC No. 208-355-5

**Type analysis:**

Purity (HPLC) ≥99 %

| | | | |
|---|---|---|---|
| **9364.1** | 10 mg | glass | 335,95 € |

## Friedelin



### Friedelin

**ROTICHROM® HPLC**

Reference substance for HPLC.

$C_{30}H_{50}O$

M 426,70 g/mol

mp 262-265 °C

Storage temp.: +4 °C

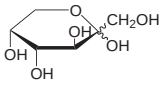
[559-74-0] • EC No. 209-205-1

**Type analysis:**

Purity (HPLC) ≥98 %

| | | | |
|---|---|---|---|
| **7459.1** | 25 mg | glass | 203,20 € |

## D(-)-Fructose



### D(-)-Fructose

**>99,5%, for biochemistry**

Fruit sugar, Levulose

$C_6H_{12}O_6$

M 180,16 g/mol

D 1,59

mp 102-104 °C (dec.)

Solubility: 790 g/l ($H_2O$, 20 °C)

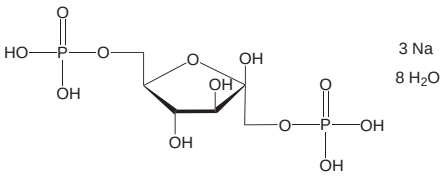
[57-48-7] • EC No. 200-333-3

**Type analysis:**

| | |
|---|---|
| Appearance | white cryst. powder |
| Assay | >99,5 % |
| pH value | 3,0-6,0 |
| Specific rotation $[\alpha]_D^{20}$ | -93,5° to -91,0° |
| Loss on drying | <0,2 % |
| Ash content | <0,1 % |

| | | | |
|---|---|---|---|
| **4981.1** | 500 g | plastic | 16,05 € |
| Original pack 6 x 500 g | | | 15,25/500 g |
| **4981.4** | 1 kg | plastic | 24,65 € |
| Original pack 6 x 1 kg | | | 23,42/1 kg |
| **4981.2** | 2,5 kg | plastic | 51,50 € |
| **4981.5** | 5 kg | plastic | 68,30 € |
| **4981.6** | 10 kg | plastic | 89,15 € |
| **4981.3** | 25 kg | plastic | 184,40 € |

## D-Fructose-1,6-diphosphate trisodium salt octahydrate



### D-Fructose-1,6-diphosphate trisodium salt octahydrate

**≥98 %, for biochemistry**

FDP-$Na_3H$

$C_6H_{11}Na_3O_{12}P_2 \cdot 8\ H_2O$

M 550,18 g/mol

mp ~71-75 °C

Storage temp.: +4 °C

[81028-91-3] • EC No. 253-778-0

**Type analysis:**

| | |
|---|---|
| Assay | ≥98,0 % |
| Loss on drying | 25-28 % |
| pH value | 5,5-6,5 |

| | | | |
|---|---|---|---|
| **4982.1** | 1 g | glass | 18,20 € |
| **4982.2** | 5 g | glass | 33,90 € |
| **4982.3** | 25 g | glass | 100,55 € |

## Fruit sugar

▶ D(-)-Fructose see p. 1943

## FTA® Purification Reagent

### FTA® Purification Reagent

**ready-to-use, for molecular biology**

For purification of nucleic acids stored on FTA® Cards. Originally Whatman.

WGK 2

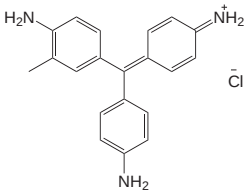
| | | | |
|---|---|---|---|
| **CL99.1** | 500 ml | plastic | 359,00 € |

For further information, please see page 1237

## Fuchsine acidic

▶ Acid fuchsin (C.I. 42685) see p. 1704

## Fuchsine basic (C.I. 42510)



### Fuchsine basic (C.I. 42510)

**for microscopy**
Indicator pH 1,0-3,1
Basic violet, Magenta
$C_{20}H_{20}N_3Cl$
M 337,85 g/mol
mp 235 °C (dec.)
Solubility: 4 g/l ($H_2O$, 25 °C)
[632-99-5] • EC No. 211-189-6
WGK 3

**Warning** H351

**Type analysis:**
Thin-layer chromatography (TLC)..... complies
UV-absorption max. (EtOH 50 %)..... 549-552 nm
Loss on drying (135 °C)..... ≤15 %

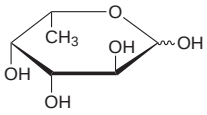
| | | | |
|---|---|---|---|
| **3256.2** | 25 g | glass | 33,25 € |
| **3256.1** | 50 g | glass | 60,10 € |
| **3256.3** | 100 g | glass | 80,10 € |

For further information, please see page 1464

## Fuchsine sulphurous acid

▶ Schiff's reagent see p. 2243

## L(-)-Fucose



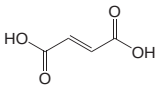
### L(-)-Fucose

**≥95 %, for biochemistry**
6-Desoxy-L-galactose
$C_6H_{12}O_5$
M 164,16 g/mol
mp 150-153 °C
[2438-80-4] • EC No. 219-452-7
WGK 1

**Type analysis:**
Assay (HPLC)..... ≥95 %

| | | | |
|---|---|---|---|
| **KK10.1** | 1 g | glass | 30,00 € |
| **KK10.2** | 5 g | glass | 96,25 € |
| **KK10.3** | 25 g | glass | 403,15 € |

## Fumaric acid



### Fumaric acid

**≥99,5 %, for biochemistry**
trans-1,2-Ethylene dicarboxylic acid, 2-Butenedioic acid
$C_4H_4O_4$
M 116,08 g/mol
D 1,64
mp ~200 °C (subl.) • flp 273 °C
Solubility: 4,9 g/l ($H_2O$, 20 °C)
[110-17-8] • EC No. 203-743-0
WGK 1

**Warning** H319

**Type analysis:**
Assay (dry substance)..... 99,5-100,5 %
Maleic acid..... ≤0,1 %
Lead (Pb)..... ≤0,0002 %
Heavy metals (as Pb)..... ≤0,001 %
Ash content..... ≤0,1 %

| | | | |
|---|---|---|---|
| **3748.1** | 500 g | plastic | 19,25 € |
| Original pack 6 x 500 g | | | 18,29/500 g |
| **3748.2** | 2,5 kg | plastic | 64,40 € |

## Fumarine

▶ Protopine see p. 2183

## Fungicidine

▶ Nystatin dihydrate see p. 2107

## Fungizone

▶ Amphotericin B see p. 1740

## 2,5-Furandione

▶ Maleic anhydride see p. 2052

## 6-Furfuryladenine

▶ Kinetin see p. 2022

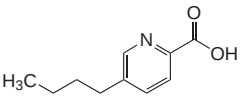
## 6-Furfurylaminopurine

▶ Kinetin see p. 2022

## 7-*H*-Furo[3,2-g]benzopyran-7-one

▶ Psoralen see p. 2184

## Fusaric acid



### Fusaric acid

**≥99 %**
5-Butylpicolinic acid, 5-Butylpyridine-2-carboxylic acid
$C_{10}H_{13}NO_2$
M 179,22 g/mol
mp 97-101 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[536-69-6] • EC No. 208-643-0
WGK 1

**Warning** H302

**Type analysis:**
Assay (titr.)..... ≥99,0 %
Solution (1 % in ethanol)..... colourless, clear
Water (KF)..... ≤0,5 %
Melting point..... 97-101 °C

| | | | |
|---|---|---|---|
| **5561.1** | 250 mg | glass | 35,40 € |
| **5561.2** | 1 g | glass | 110,65 € |

## G418 solution

▶ Geneticin disulphate (G418)-solution see p. 1949

## Gadolinia

▶ Gadolinium(III) oxide see p. 1945

## Gadolinium Standards

▶ Gadolinium ICP Standard Solution see p. 2298
▶ Gadolinium ICP Standard Solution see p. 2302

## Gadolinium(III) chloride hexahydrate

### Gadolinium(III) chloride hexahydrate

**ROTI®REMETIC 99,99 %**
Gadoliniumtrichloride
$GdCl_3 \cdot 6\ H_2O$
M 371,70 g/mol
[13450-84-5] • EC No. 233-386-6
WGK 3

**Warning** H315-H319

**Type analysis:**
Assay (TREO*)..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7209.2** | 10 g | plastic | 111,30 € |

## Gadolinium(III) oxide

Gadolinium trioxide, Gadolinia
$Gd_2O_3$
M 362,49 g/mol
bp 3900 °C
mp 2339 °C
Solubility: insoluble ($H_2O$, 20 °C)
[12064-62-9] • EC No. 235-060-9
WGK 1

**Warning** H319

### Gadolinium(III) oxide
**ROTI®REMETIC 99,999 %**

**Type analysis:**
Assay (TREO*). ..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7189.1** | 1 g | plastic | 16,70 € |
| **7189.2** | 5 g | plastic | 26,80 € |
| **7189.3** | 50 g | plastic | 213,95 € |

### Gadolinium(III) oxide
**ROTI®REMETIC 99,99 %**

**Type analysis:**
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7136.1** | 1 g | plastic | 31,10 € |
| **7136.2** | 5 g | plastic | 44,65 € |
| **7136.3** | 25 g | plastic | 110,65 € |
| **7136.4** | 100 g | plastic | 289,20 € |

## Gadolinium trioxide
▶ Gadolinium(III) oxide see p. 1945

## Galactitol
▶ Dulcitol see p. 1897

## Galactomannan

### Galactomannan
**for biochemistry**
Carubin type
M ~300 000 g/mol
[11078-30-1] • EC No. 234-299-6

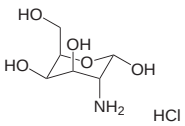
**Type analysis:**
Appearance. ..... white powder

| | | | |
|---|---|---|---|
| **3768.1** | 5 g | plastic | 47,20 € |

## 4-O-ß-D-Galactopyranosyl-D-fructose
▶ Lactulose see p. 2027

## α-D-Galactopyranosyl phosphat dipotassium salt pentahydrate
▶ α-D-Galactose-1-phosphate dipotassium salt pentahydrate see p. 1945

## D-Galactosamine hydrochloride

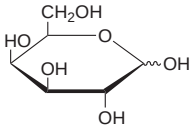



### D-Galactosamine hydrochloride
**≥98 %, for biochemistry**
For experimental generation of hepatitis.
Hepasamin®
$C_6H_{14}ClNO_5$
M 215,64 g/mol
mp 182-185 °C (dec.)
Storage temp.: +4 °C
[1772-03-8] • EC No. 217-198-1

**Type analysis:**
Appearance..... white to off-white, cryst. powder
Assay. ..... ≥98,0 %
pH value (1 % in $H_2O$). ..... 3,5-5,0
Specific rotation $[\alpha]_D^{20}$. ..... +92° to +98°
Solution (1 % in $H_2O$). ..... clear, colourless to slightly yellowish
Ash content. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **7411.1** | 1 g | plastic | 81,60 € |
| **7411.2** | 5 g | plastic | 347,15 € |
| **7411.3** | 25 g | plastic | 1342,70 € |

## D(+)-Galactose




$C_6H_{12}O_6$
M 180,16 g/mol
mp 166-170 °C
Solubility: 650 g/l ($H_2O$, 20 °C)
[59-23-4] • EC No. 200-416-4
WGK 1

### D(+)-Galactose
**CELLPURE® ≥99 %**
For cell culture and biochemistry.

**Guarantee analysis:**
Endotoxins. ..... ≤10 E.U./g
Appearance..... white to off-white powder
Assay (HPLC)..... ≥99,0 %
Water..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=10 in $H_2O$, $NH_3$). .....
..... +78,0° to +81,5°
Residue on ignition..... ≤0,1 %
Lead (Pb). ..... ≤0,00005 %

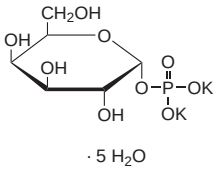
| | | | |
|---|---|---|---|
| **8878.1** | 10 g | plastic | 28,95 € |
| **8878.2** | 25 g | plastic | 55,80 € |
| **8878.3** | 50 g | plastic | 100,95 € |
| **8878.4** | 100 g | plastic | 189,10 € |

### D(+)-Galactose
**≥98 %, for biochemistry**

**Type analysis:**
Appearance. ..... white to off-white, cryst. powder
Assay (HPLC). ..... ≥98,0 %
Water . ..... ≤0,5 %
Chloride (Cl)..... ≤0,01 %
Sulphate ($SO_4$)..... ≤0,005 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in $H_2O$, 5 h). ..... +80° ±2,0°
Solubility (10 % in $H_2O$)..... clear, colourless
Glucose (HPLC)..... ≤0,1 %
Heavy metals (as Pb)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4987.1** | 100 g | plastic | 26,35 € |
| **4987.2** | 500 g | plastic | 90,20 € |
| Original pack 6 x 500 g | | | 85,69/500 g |
| **4987.3** | 1 kg | plastic | 154,30 € |
| Original pack 6 x 1 kg | | | 146,59/1 kg |

## α-D-Galactose-1-phosphate dipotassium salt pentahydrate




· 5 $H_2O$

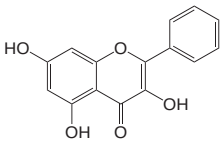
### α-D-Galactose-1-phosphate dipotassium salt pentahydrate
**≥99 %, for biochemistry**
α-D-Galactopyranosyl phosphat dipotassium salt pentahydrate, Phos-α-D-Gal
$C_6H_{11}K_2O_9P$ · 5 $H_2O$
M 426,40 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[19046-60-7] • EC No. 242-783-3

**Type analysis:**
Assay (titr.)..... ≥99,0 %
Solution (5 % in $H_2O$). ..... colourless
Water (KF). ..... ≤23,0 %
Specific rotation $[\alpha]_D^{20}$..... +80,0° to +83,0°

| | | | |
|---|---|---|---|
| **5550.1** | 25 mg | plastic | 28,95 € |
| **5550.2** | 100 mg | plastic | 99,45 € |

G

## Galangin

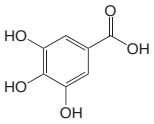


### Galangin
**ROTICHROM® HPLC**
Reference substance for HPLC.
3,5,7-Trihydroxyflavone
$C_{15}H_{10}O_5$
M 270,25 g/mol
mp 214-215 °C
Storage temp.: +4 °C
[548-83-4] • EC No. 208-960-4
WGK 1

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7460.2** | 20 mg | glass | 192,45 € |

## Gallic acid



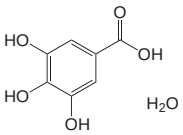
### Gallic acid
**≥98 %, p.a., ACS, anhydrous**
3,4,5-Trihydroxy benzoic acid
$C_7H_6O_5$
M 170,12 g/mol
mp 251 °C
[149-91-7] • EC No. 205-749-9
WGK 1

**Warning** H315-H319-H335

**Guarantee analysis:**
Assay..... ≥98,0 %
In $H_2O$ insoluble matter..... ≤0,01 %
Sulphate ($SO_4$)..... ≤0,02 %
Ash content..... ≤0,05 %
Loss on drying (105 °C)..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2699.1** | 100 g | glass | 49,35 € |
| **2699.2** | 250 g | glass | 90,20 € |
| **2699.3** | 500 g | glass | 143,55 € |
| Original pack 6 x 500 g | | | 136,37/500 g |

## Gallic acid monohydrate



3,4,5-Trihydroxybenzoic acid hydrate
$C_7H_6O_5 \cdot H_2O$
M 188,14 g/mol
mp 250 °C
[5995-86-8] • EC No. 205-749-9
WGK 1

**Warning** H315-H319-H335

### Gallic acid monohydrate
**≥98 %, p.a., ACS**

**Guarantee analysis:**
Assay..... ≥98,0 %
In $H_2O$ insoluble matter..... ≤0,01 %
Sulphate ($SO_4$)..... ≤0,02 %
Ash content..... ≤0,05 %
Loss on drying (105 °C)..... ≤10 %

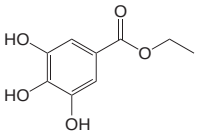
| | | | |
|---|---|---|---|
| **2698.1** | 100 g | plastic | 46,15 € |
| **2698.2** | 250 g | plastic | 84,40 € |
| **2698.3** | 500 g | plastic | 142,45 € |
| Original pack 6 x 500 g | | | 135,33/500 g |

### Gallic acid monohydrate
**≥99 %**

**Type analysis:**
Appearance..... white to off-white powder
Assay..... ≥99,0 %
Loss on drying (105 °C)..... ≤10 %

| | | | |
|---|---|---|---|
| **7300.1** | 50 g | plastic | 30,00 € |
| **7300.2** | 100 g | plastic | 42,50 € |
| **7300.3** | 500 g | plastic | 121,40 € |
| Original pack 6 x 500 g | | | 115,33/500 g |

## Gallic acid ethyl ester



### Gallic acid ethyl ester
**≥98 %**
Ethyl gallate
$C_9H_{10}O_5$
M 198,18 g/mol
mp 150-152 °C
[831-61-8] • EC No. 212-608-5

**Type analysis:**
Assay (acidim.)..... ≥98 %
Melting range..... 150-152 °C

| | | | |
|---|---|---|---|
| **3629.1** | 25 g | plastic | 31,10 € |

## Gallium

Ga
M 69,72 g/mol
D ~5,91 • bp 2403 °C
mp 29,8 °C
[7440-55-3] • EC No. 231-163-8
UN No. 2803 • ADR 8 III • WGK 1

**Danger** H314

### Gallium
**ROTI®METIC 99,9999 % (6N)**

**Type analysis:**
Assay (metals basis)..... 99,9999 %
Particle size..... 6-12 mm
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **4507.2** | 25 g | plastic | 256,95 € |

### Gallium
**99,9999 %**

**Type analysis:**
Assay (Ga)..... 99,9999 %

| | | | |
|---|---|---|---|
| **3761.1** | 5 g | glass | 79,05 € |

## Gallium Standards

▶ Gallium ICP Standard Solution see p. 2298
▶ Gallium ICP Standard Solution see p. 2302

## Gallium(III) nitrate hydrate

### Gallium(III) nitrate hydrate
**ROTI®METIC 99,9995 % (5N5)**
Gallium trinitrate
$Ga(NO_3)_3 \cdot x\ H_2O$
M 255,74 + x $H_2O$ g/mol
mp 110 °C (dec.)
[69365-72-6] • EC No. 236-815-5
UN No. 1477 • ADR 5.1 II • WGK 1

**Danger** H272-H315-H319

**Type analysis:**
Assay (metals basis)..... 99,9995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5548.1** | 25 g | plastic | 263,40 € |

## Gallium(III) oxide

### Gallium(III) oxide
**ROTI®METIC 99,999 % (5N)**
$Ga_2O_3$
M 187,44 g/mol
D 5,88
mp 1807 °C
[12024-21-4] • EC No. 234-691-7

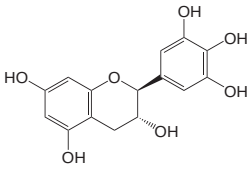
**Type analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5377.1** | 10 g | plastic | 138,70 € |

## Gallium trinitrate

▶ Gallium(III) nitrate hydrate see p. 1946

## (-)-Gallocatechin



### (-)-Gallocatechin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Camellia sinensis*.

Gallocatechol
$C_{15}H_{14}O_7$
M 306,27 g/mol
Storage temp.: +4 °C
[3371-27-5]

**Warning** H315-H319-H335

**Type analysis:**
Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **4480.1** | 10 mg | glass | 241,90 € |
| **4480.2** | 20 mg | glass | 385,95 € |

## Gallocatechol

▶ (-)-Gallocatechin see p. 1947

## D-GalNAc

▶ N-Acetyl-D-galactosamine see p. 1703

## Gas-leak tester Roth

### Gas-leak tester Roth

Special liquid for finding smallest leaks in tubing or hollow spaces.
WGK 1

| | | | |
|---|---|---|---|
| **2686.1** | 500 ml | pump spray bottle | 17,15 € |

For further information, please see page 1146

## Gasoline

▶ Petroleum benzine 30-50 see p. 2141

## GDH

▶ Glutamate dehydrogenase (GDH, GLDH) see p. 1958

## Gelatine

Storage temp.: +20 °C
[9000-70-8] • EC No. 232-554-6
WGK 1

### Gelatine

**platinum, extra pure, 240 Bloom**

**Type analysis:**
Gel strength..... 240 Bloom
Particle size..... ≤30 mesh
Water ..... <15 %
Ash..... <2 %
Peroxides (as $H_2O_2$)..... <0,001 %
Sulphur dioxide ($SO_2$)..... <0,005 %
Gelatine is produced from porcine skin.

| | | | |
|---|---|---|---|
| **4582.3** | 500 g | plastic | 31,10 € |
| Original pack 6 x 500 g | | | 29,55/500 g |
| **4582.1** | 1 kg | plastic | 50,00 € |
| Original pack 6 x 1 kg | | | 47,50/1 kg |
| **4582.2** | 5 kg | plastic | 180,10 € |

### Gelatine

**gold, extra pure, 180 Bloom**

**Type analysis:**
Gel strength..... approx. 180 Bloom
Particle size..... ≤30 mesh
Water ..... <15 %
Ash..... <2 %
Peroxides (as $H_2O_2$)..... <0,001 %
Sulphur dioxide ($SO_2$)..... <0,005 %
Gelatine is produced from porcine skin.

| | | | |
|---|---|---|---|
| **4274.3** | 500 g | plastic | 29,60 € |
| Original pack 6 x 500 g | | | 28,12/500 g |
| **4274.1** | 1 kg | plastic | 42,50 € |
| Original pack 6 x 1 kg | | | 40,38/1 kg |
| **4274.2** | 5 kg | plastic | 174,70 € |

### Gelatine

**crystal, extra pure, 160 Bloom**

**Type analysis:**
Gel strength..... ~160 Bloom
Particle size..... ≤30 mesh
Protein..... 82-91 %
Water ..... <15 %
Ash..... <2 %
Peroxides (as $H_2O_2$)..... <0,001 %
Sulphur dioxide ($SO_2$)..... <0,005 %
Gelatine is produced from porcine skin.

| | | | |
|---|---|---|---|
| **4308.3** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **4308.1** | 1 kg | plastic | 41,85 € |
| Original pack 6 x 1 kg | | | 39,76/1 kg |
| **4308.2** | 5 kg | plastic | 170,95 € |

### Gelatine

**silver, extra pure, 140 Bloom**

**Type analysis:**
Gel strength. ..... ~140 Bloom
Particle size..... ≤30 mesh
Water . ..... ≤15 %
Ash..... ≤2 %
Peroxides (as $H_2O_2$)..... ≤0,001 %
Sulphur dioxide ($SO_2$). ..... ≤0,005 %
Gelatine is produced from porcine skin.

| | | | |
|---|---|---|---|
| **4275.3** | 500 g | plastic | 28,50 € |
| Original pack 6 x 500 g | | | 27,08/500 g |
| **4275.1** | 1 kg | plastic | 40,75 € |
| Original pack 6 x 1 kg | | | 38,71/1 kg |
| **4275.2** | 5 kg | plastic | 169,35 € |

## Gelatin Agar (DEV)

### Gelatin Agar (DEV)

**DEV, for microbiology**

For enumeration of the total microbial population and detection of gelatin-liquefying microorganisms in water samples.
Application: Use 50 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**
Meat peptone..... 10 g/l
Meat extract. ..... 10 g/l
Sodium chloride (NaCl)..... 5 g/l
Gelatine. ..... 10 g/l
Agar. ..... 15 g/l
pH value..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **HP07.1** | 500 g | plastic | 145,05 € |
| Original pack 6 x 500 g | | | 137,80/500 g |

For further information, please see page 1385

## Gelatine Capsules

### Gelatine Capsules

**for electron microscopy**

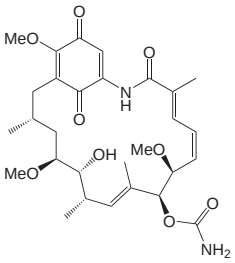
No. 0, length 22 mm, diameter 7 mm, volume 0,68 ml.

**Type analysis:**
Loss on drying..... ≤16 %
Disintegration time (25 °C). ..... ≤30 min

| | | | |
|---|---|---|---|
| **8641.1** | 100 pieces | plastic | 18,85 € |

For further information, please see page 1452

## Geldanamycin



### Geldanamycin

**≥98 %, for biochemistry**

HSP90 inhibitor, tyrosine kinase inhibitor. Benzoquinone ansamycin antibiotic. Binds specifically to the heat shock protein HSP90.

$C_{29}H_{40}N_2O_9$
M 560,64 g/mol
mp 260-275 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[30562-34-6]
WGK 1

**Type analysis:**

Assay (HPLC).....≥98 %
λ max.....259 nm, 307 nm
Melting point.....258-262 °C

| | | | |
|---|---|---|---|
| **HN71.1** | 1 mg | glass | 67,20 € |
| **HN71.2** | 5 mg | glass | 166,10 € |
| **HN71.3** | 10 mg | glass | 238,15 € |

For further information, please see page 1428

## Gel Loading Buffer

| Art. No. | Description | Page |
|---|---|---|
| K929 | Roti®-Load 1 | 2220 |
| K930 | Roti®-Load 2 | 2220 |
| 3359 | Roti®-Load 3 (LDS) | 2220 |
| X905 | Roti®-Load DNA (with ficoll) | 2220 |
| T847 | Roti®-Load DNA (with saccharose) | 2220 |
| X904 | Roti®-Load DNA (with glycerol) | 2220 |
| 0100 | Roti®-Load DNA 1x (with glycerol) | 2221 |
| 0095 | Roti®-Load DNA short-run (with glycerol) | 2221 |
| 0099 | Roti®-Load DNA short-run 1x (with glycerol) | 2221 |
| HP03 | Roti®-Load DNA small (with glycerol) | 2221 |
| HP04 | Roti®-Load DNA orange 1 (with glycerol) | 2221 |
| HP05 | Roti®-Load DNA-orange 2 (with glycerol) | 2221 |
| HP06 | Roti®-Load DNA-tricolor (with glycerol) | 2221 |
| 5783 | Roti®-Load DNAstain 1 | 2221 |
| 5784 | Roti®-Load DNAstain 2 | 2221 |
| 6472 | Roti®-Load DNAstain 3 | 2221 |
| T848 | Roti®-Load RNA | 2221 |

## Gel matrix buffer

▶ Rotiphorese®-PAGE Matrix Buffer plus see p. 2228

## Gel Media and Additives

| Art. No. | Description | Page |
|---|---|---|
| 5834 | Roti®lyte pH 3-5 | 2221 |
| 5835 | Roti®lyte pH 3-6 | 2222 |
| 5839 | Roti®lyte pH 3-7 | 2222 |
| 5841 | Roti®lyte pH 3-10 | 2222 |
| 5845 | Roti®lyte pH 4-6 | 2222 |
| 5850 | Roti®lyte pH 4-7 | 2222 |
| 5851 | Roti®lyte pH 5-6 | 2222 |
| 5856 | Roti®lyte pH 5-7 | 2222 |
| 5857 | Roti®lyte pH 5-8 | 2222 |
| 5858 | Roti®lyte pH 6-7 | 2222 |
| 5860 | Roti®lyte pH 6-8 | 2222 |
| 5861 | Roti®lyte pH 7-9 | 2222 |
| 5864 | Roti®lyte pH 8-10 | 2223 |
| 3029 | Rotiphorese® Gel 30 (37,5:1) | 2227 |
| A124 | Rotiphorese® NF-Acrylamide/ Bis-solution 30 % (29:1) | 2227 |
| 3030 | Rotiphorese® Gel 40 (19:1) | 2227 |
| A515 | Rotiphorese® Gel 40 (29:1) | 2227 |
| T802 | Rotiphorese® Gel 40 (37,5:1) | 2227 |
| A516 | Rotiphorese® NF-Acrylamide/ Bis-solution 40 % (19:1) | 2227 |
| A121 | Rotiphorese® NF-Acrylamide/ Bis-solution 40 % (29:1) | 2227 |
| 3037 | Rotiphorese® Gel A | 2227 |
| 7748 | Rotiphorese® Gel A-40 | 2227 |
| 3039 | Rotiphorese® Gel B | 2227 |
| 8996 | Rotiphorese®-PAGE Matrix Buffer plus | 2228 |
| A431 | Rotiphorese® DNA sequencing system | 2228 |
| 3043 | Rotiphorese® Sequencing gel concentrate | 2228 |
| 3047 | Rotiphorese® Sequencing gel diluent | 2228 |
| 3050 | Rotiphorese® Sequencing gel buffer concentrate | 2228 |

## GELRITE®

### GELRITE®

**Gelling agent for microbiological culture media**

Alternative to Agar
Storage temp.: +20 °C
[71010-52-1] • EC No. 275-117-5

**Type analysis:**

Gel strength.....400-700 g/cm²
Loss on drying.....≤15,0 %

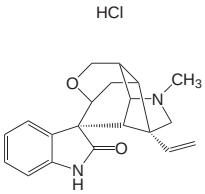
| | | | |
|---|---|---|---|
| **0039.1** | 500 g | plastic | 256,95 € |
| Original pack 6 x 500 g | | | 244,10/500 g |
| **0039.2** | 1 kg | plastic | 418,20 € |
| Original pack 6 x 1 kg | | | 397,29/1 kg |

For further information, please see page 1425

## Gel Running Buffer

| Art. No. | Description | Page |
|---|---|---|
| 1249 | Roti®fair SDS-PAGE | 2215 |
| 1250 | Roti®fair SDS-PAGE | 2215 |
| 1234 | Roti®fair 50x TAE | 2215 |
| 1240 | Roti®fair 50x TAE | 2215 |
| 1241 | Roti®fair 1x TBE | 2215 |
| 1242 | Roti®fair 5x TBE | 2215 |
| 1243 | Roti®fair 10x TBE | 2215 |
| 1269 | Roti®fair TG-Western | 2216 |
| 1276 | Roti®fair TG-Western | 2216 |
| A118 | Rotiphorese® NF 10 x TBE Buffer | 2227 |
| 3060 | Rotiphorese® 10x SDS-PAGE | 2228 |
| T845 | Rotiphorese® 10x TAE Buffer | 2228 |
| 0122 | Rotiphorese® 10x TAE Buffer *light* | 2228 |
| CL86 | Rotiphorese® 50x TAE Buffer | 2228 |
| 3061 | Rotiphorese® 10x TBE Buffer | 2228 |

## Gelsemine hydrochloride



### Gelsemine hydrochloride

**~90 %**

$C_{20}H_{22}N_2O_2 \cdot HCl$
M 358,87 g/mol
mp ~326 °C
[35306-33-3] • EC No. 252-504-7
UN No. 1544 • ADR 6.1 I

**Danger** H300+H330

**Type analysis:**

Appearance.....white powder
Melting point.....~326 °C

| | | | |
|---|---|---|---|
| **6571.1** | 500 mg | glass | 55,80 € |

## Gelseminic acid

▶ Scopoletin see p. 2243

## Gel Staining Solutions and Kits

| Art. No. | Description | Page |
|---|---|---|
| HP47 | Ethidium bromide solution 0,025 % in dropper bottle | 1913 |
| HP46 | Ethidium bromide solution 0,5 % in dropper bottle | 1913 |
| 2218 | Ethidium bromide solution 1 % | 1913 |
| 8905 | Eva Green® Fluorescent Dye | 1923 |
| N769 | Roti®-Black N | 2203 |
| P081 | Roti®-Black NSeq | 2203 |
| L533 | Roti®-Black P | 2203 |
| N766 | Roti®-Bleach | 2203 |
| A152 | Roti®-Blue | 2204 |
| 4829 | Roti®-Blue quick | 2204 |
| 3865 | Roti®-GelStain | 2218 |
| 0984 | Roti®-GelStain Red | 2218 |
| 5783 | Roti®-Load DNAstain 1 | 2221 |
| 5784 | Roti®-Load DNAstain 2 | 2221 |
| 6472 | Roti®-Load DNAstain 3 | 2221 |
| 0648 | Roti®-Methylene blue staining concentrate | 2224 |
| 3074 | Rotiphorese® Blue R | 2227 |

## Geneticin disulphate (G418 Sulphate)

### Geneticin disulphate (G418 Sulphate)

**≥650 U/mg, for biochemistry**

Aminoglycoside antibiotic

Antibiotic G418, Geneticin disulphate, G418 sulphate

$C_{20}H_{40}N_4O_{10} \cdot 2\ H_2SO_4$

M 692,70 g/mol

Storage temp.: +4 °C

[108321-42-2]

**Danger** H334-H317

**Type analysis:**

Activity. ..... ≥650 U/mg
Water (KF). ..... ≤10 %

| | | | |
|---|---|---|---|
| **0239.1** | 250 mg | glass | 35,40 € |
| **0239.2** | 500 mg | glass | 46,15 € |
| **0239.3** | 1 g | glass | 85,50 € |
| **0239.4** | 10 g | glass | 596,65 € |

For further information, please see page 1428

## Geneticin disulphate (G418)-solution

Aqueous G418 sulphate solution, G418 solution

$C_{20}H_{40}N_4O_{10} \cdot 2\ H_2SO_4$

M 692,70 g/mol

Storage temp.: +4 °C

[108321-42-2]

WGK 1

**Danger** H334-H317

### Geneticin disulphate (G418)-solution

**CELLPURE® 50 mg/ml, sterile**

Aminoglycoside antibiotic. For cell culture, biochemistry and molecular biology.

**Type analysis:**

Concentration. ..... 50 mg/ml
Activity (powder). ..... >600 µg/mg
Endotoxins. ..... <10 EU/ml
Sterility. ..... complies
Suitability for cell cultur. ..... complies
pH value. ..... 5,0-6,0

| | | | |
|---|---|---|---|
| **CP11.1** | 10 ml | plastic | 68,30 € |
| **CP11.2** | 20 ml | plastic | 89,15 € |
| **CP11.3** | 100 ml | plastic | 321,45 € |

For further information, please see page 1428

### Geneticin disulphate (G418)-solution

**50 mg/ml, BioScience-Grade, sterile**

Aminoglycoside antibiotic. For cell culture, biochemistry and molecular biology.

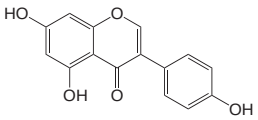
**Type analysis:**

Concentration. ..... 50 ±10 mg/ml
Active assay. ..... ≥700 µg/mg
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **2039.1** | 10 ml | plastic | 62,25 € |
| **2039.2** | 20 ml | plastic | 81,60 € |
| **2039.3** | 100 ml | plastic | 306,40 € |

For further information, please see page 1429

## Genistein




### Genistein

**≥98 %, for biochemistry**

Inhibitor of tyrosine specific protein kinases.

Prunetol, Genisteol, 4',5,7-Trihydroxyisoflavone

$C_{15}H_{10}O_5$

M 270,24 g/mol

mp 297-298 °C

Storage temp.: +4 °C

[446-72-0] • EC No. 207-174-9

WGK 3

**Type analysis:**

Assay (HPLC). ..... ≥98 %
Heavy metals. ..... ≤0,001 %
Loss on drying. ..... ≤1,0 %

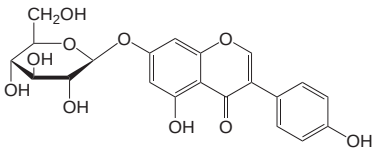
| | | | |
|---|---|---|---|
| **0716.1** | 25 mg | plastic | 64,40 € |
| **0716.2** | 50 mg | plastic | 90,20 € |
| **0716.3** | 100 mg | plastic | 154,70 € |

For further information, please see page 1285

## Genisteol

▶ Genistein see p. 1949

## Genistin




### Genistin

**ROTICHROM® HPLC**

Reference substance for HPLC.

$C_{21}H_{20}O_{10}$

M 432,38 g/mol

mp 254 °C

Storage temp.: +4 °C

[529-59-9]

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **9374.1** | 5 mg | glass | 289,20 € |

## Gentamycin sulphate

### Gentamycin sulphate

**≥590 I.U./mg, for biochemistry**

Aminoglycoside antibiotic

Gentamicin sulphate

$C_{19\text{-}21}H_{39\text{-}43}N_5O_7 \cdot 2{,}5\ H_2SO_4$

M 694,75-723,75 g/mol

Storage temp.: +4 °C

[1405-41-0] • EC No. 215-778-9

WGK 1

**Danger** H334-H317

**Type analysis:**

Assay (dry substance). ..... ≥590 I.U./mg
pH value (4 % in $H_2O$). ..... 3,5-5,5
Specific rotation $[\alpha]_D^{20}$ (10 % in $H_2O$). ..... +107° to +121°
Sulphate ($SO_4$). ..... 32-35 %
Water (KF). ..... ≤15,0 %
Sulphated ash. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **0233.1** | 1 g | glass | 11,00 € |
| **0233.2** | 5 g | glass | 21,00 € |
| **0233.3** | 10 g | glass | 32,15 € |
| **0233.4** | 25 g | glass | 62,25 € |

For further information, please see page 1429

## Gentamycin sulphate solution

Aqueous gentamycin sulphate solution

$C_{19\text{-}21}H_{39\text{-}43}N_5O_7 \cdot 2{,}5\ H_2SO_4$

M 694,75-723,75 g/mol

Storage temp.: +4 °C

[1405-41-0] • EC No. 215-778-9

WGK 1

**Danger** H334-H317

### Gentamycin sulphate solution

**CELLPURE® 50 mg/ml, sterile**

Aminoglycoside antibiotic.
For cell culture and biochemistry.

**Type analysis:**

Concentration. ..... 50 mg/ml
Endotoxins. ..... <10 EU/ml
pH value. ..... 4,5-5,5
Sterility. ..... complies
Suitability for cell cultur. ..... complies

| | | | |
|---|---|---|---|
| **HN09.1** | 20 ml | plastic | 96,25 € |
| **HN09.2** | 100 ml | plastic | 310,70 € |

For further information, please see page 1429

### Gentamycin sulphate solution

**50 mg/ml, BioScience-Grade, sterile**

Aminoglycoside antibiotic.
For cell culture and biochemistry.

**Type analysis:**

Appearance. ..... clear, colourless to pale yellow
Concentration. ..... 50 mg/ml
Active assay. ..... ≥590 µg/mg
pH value. ..... 3,5-5,5
Sterility. ..... complies

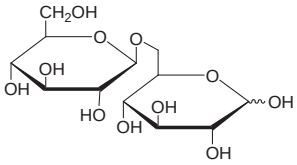
| | | | |
|---|---|---|---|
| **2475.1** | 20 ml | plastic | 95,70 € |
| **2475.2** | 100 ml | plastic | 303,15 € |

For further information, please see page 1429

## Gentian violet

▶ Crystal violet (C.I. 42555) see p. 1849

## β-D-Gentiobiose



### β-D-Gentiobiose

**≥98 %, for biochemistry**

Amygdalose, 6-O-β-D-Glucopyranosyl-D-glucose

$C_{12}H_{22}O_{11}$

M 342,30 g/mol

[554-91-6] • EC No. 209-074-0

WGK 1

**Type analysis:**

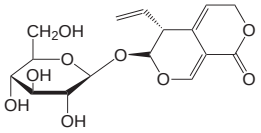
Assay (HPLC).....≥98 %
Solution (5 % in $H_2O$).....almost colourless, clear
Water (KF).....≤1 %
Specific rotation $[\alpha]_D^{20}$ (c=2 in $H_2O$ after 6 h)...+9,5° ±1°

| | | | |
|---|---|---|---|
| **4123.4** | 100 mg | glass | 38,60 € |
| **4123.1** | 250 mg | glass | 87,00 € |
| **4123.2** | 500 mg | glass | 155,90 € |
| **4123.3** | 1 g | glass | 278,45 € |

## Gentiopicrin

▶ Gentiopicroside see p. 1950

## Gentiopicroside



### Gentiopicroside

**≥95 %, for biochemistry**

Gentiopicrin, bitter constituent from *Gentiana.*

$C_{16}H_{20}O_9$

M 356,32 g/mol

mp 117-120 °C

[20831-76-9] • EC No. 244-070-2

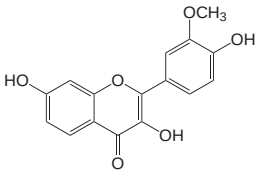
WGK 1

**Type analysis:**

Appearance.....white powder
Assay (HPLC).....≥95 %
Melting point.....117-120 °C
Specific rotation $[\alpha]_D^{20}$ (in ethanol).....-203° to -193°

| | | | |
|---|---|---|---|
| **0467.2** | 10 mg | glass | 289,20 € |

## Geraldol



### Geraldol

**ROTICHROM® HPLC**

Reference substance for HPLC.

$C_{16}H_{12}O_6$

M 300,27 g/mol

Storage temp.: +4 °C

[21511-25-1] • EC No. 244-414-1

**Type analysis:**

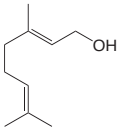
Purity (HPLC).....≥99 %

| | | | |
|---|---|---|---|
| **7461.2** | 5 mg | glass | 299,95 € |

## Geranial

▶ Citral see p. 1835

## Geraniol



3,7-Dimethyl-2,6-octadien-1-ol

$C_{10}H_{18}O$

M 154,25 g/mol

D 0,889 • bp 229-230 °C

flp 76 °C

Storage temp.: +4 °C

[106-24-1] • EC No. 203-377-1

WGK 1

**Danger** H318-H315-H317

### Geraniol

**≥90 %**

**Type analysis:**

Appearance.....colourless to yellowish liquid
Assay (GC).....≥90 %

| | | | |
|---|---|---|---|
| **4988.1** | 25 ml | glass | 15,60 € |
| **4988.2** | 100 ml | glass | 46,15 € |

### Geraniol

**ROTICHROM® GC**

Reference substance for GC.

**Type analysis:**

Purity (GC).....≥95,0 %

| | | | |
|---|---|---|---|
| **5264.1** | 1 g | plastic | 81,20 € |

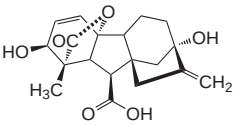
## Geranium aldehyde

▶ Citral see p. 1835

## Germanium Standards

▶ Germanium ICP Standard Solution see p. 2298
▶ Germanium ICP Standard Solution see p. 2303

## Gibberellic acid



### Gibberellic acid

**90 %, for biochemistry**

Gibberellin $A_3$

$C_{19}H_{22}O_6$

M 346,38 g/mol

mp ~225 °C • flp 111 °C

Solubility: 5 g/l ($H_2O$, 25 °C)

Storage temp.: +4 °C

[77-06-5] • EC No. 201-001-0

WGK 1

**Type analysis:**

Appearance.....white powder
Assay (Gibberellin in $A_3$).....≥900 µg/mg
Specific rotation $[\alpha]_D^{20}$.....≥+85°
Loss on drying.....≤0,5 %

| | | | |
|---|---|---|---|
| **7464.1** | 250 mg | glass | 15,60 € |
| **7464.2** | 1 g | glass | 27,45 € |

## Gibberellin $A_3$

▶ Gibberellic acid see p. 1950

## Giemsa stain

### Giemsa stain

**for microscopy**

mp 300 °C

[51811-82-6] • EC No. 257-438-2

WGK 3

**Warning** H319

**Type analysis:**

Appearance.....dark green to black powder
Appearance of solution (0,1 % in MeOH).....clear, blue to brown
Loss on drying (1 h, 110 °C).....≤10,0 %

| | | | |
|---|---|---|---|
| **7691.1** | 5 g | glass | 13,90 € |
| **7691.2** | 25 g | glass | 24,20 € |
| **7691.3** | 100 g | glass | 62,25 € |

For further information, please see page 1464

## Giemsa stock solution

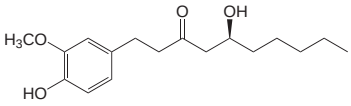
### Giemsa stock solution
**for microscopy**
For use in all current assays of blood and bone marrow smears.
Azure eosin solution
UN No. 1992 • ADR 3 (6.1) II • WGK 2
**Danger**
H225-H301+H311+H331-H370

**Type analysis:**
Suitability for microscopy (blood smear)..... complies

| | | | |
|---|---|---|---|
| **T862.1** | 500 ml | plastic | 26,35 € |
| **T862.2** | 1 l | glass | 38,60 € |
| Original pack 6 x 1 l | | | 36,67/1 l |
| **T862.3** | 2,5 l | plastic | 83,75 € |
| Original pack 4 x 2,5 l | | | 79,56/2,5 l |

For further information, please see page 1454

## [6]-Gingerol

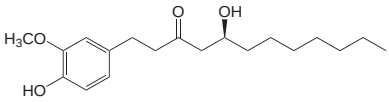


### [6]-Gingerol
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Zingiber officinale.*
$C_{17}H_{26}O_4$
M 294,40 g/mol
Storage temp.: +4 °C
[23513-14-6]
WGK 1
**Warning** H302-H315-H319-H335

**Type analysis:**
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **T895.1** | 10 mg | glass | 284,90 € |

## [8]-Gingerol

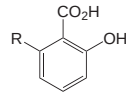


### [8]-Gingerol
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Zingiber officinale.*
$C_{19}H_{30}O_4$
M 322,44 g/mol
Storage temp.: +4 °C
[23513-08-8]
WGK 1
**Warning** H315-H319-H335

**Type analysis:**
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1143.1** | 10 mg | glass | 321,45 € |

## Ginkgolic acids RN



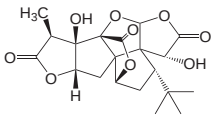
R= $C_{13}H_{27}$, $C_{15}H_{29}$, $C_{17}H_{33}$

### Ginkgolic acids RN
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Ginkgo biloba.*
$C_{20}H_{32}O_3/C_{22}H_{34}O_3/C_{24}H_{38}O_3$
M 320,5/ 346,5/ 374,6 g/mol
Storage temp.: +4 °C
WGK 1
**Warning** H315-H319-H335

**Type analysis:**
Purity (HPLC). ..... >90 %

| | | | |
|---|---|---|---|
| **1148.1** | 5 mg | glass | 310,70 € |

## Ginkgolide A



$C_{20}H_{24}O_9$
M 408,41 g/mol
[15291-75-5]
WGK 1

### Ginkgolide A
**ROTI®STAR Primary Standard**
Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC). ..... ≤3,0 %
Water (KF)..... ≤7,0 %
Assay (qNMR)..... ≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE43.1** | 10 mg | glass | 901,95 € |

### Ginkgolide A
**ROTICHROM® Working Standard**
Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**
Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

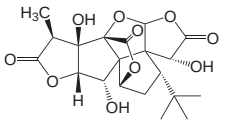
| | | | |
|---|---|---|---|
| **NC43.1** | 25 mg | glass | 299,95 € |

### Ginkgolide A
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Ginkgo biloba.*
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1145.1** | 20 mg | glass | 321,45 € |

## Ginkgolide B

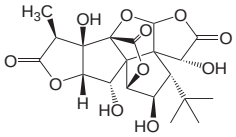


### Ginkgolide B
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Ginkgo biloba.*
1-Hydroxyginkgolide A
$C_{20}H_{24}O_{10}$
M 424,40 g/mol
Storage temp.: +4 °C
[15291-77-7]
WGK 1
**Warning** H315-H319-H335

**Type analysis:**
Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **1146.1** | 20 mg | glass | 364,45 € |

## Ginkgolide C

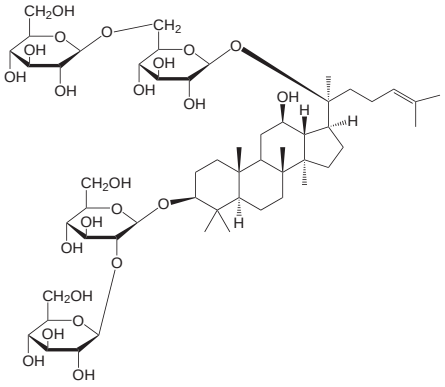


### Ginkgolide C
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Ginkgo biloba.*
1,7-Dihydroxyginkgolide A
$C_{20}H_{24}O_{11}$
M 440,40 g/mol
Storage temp.: +4 °C
[15291-76-6]
WGK 1
**Warning** H315-H319-H335

**Type analysis:**
Purity (HPLC)..... >95 %

| | | | |
|---|---|---|---|
| **1147.1** | 20 mg | glass | 385,95 € |

## Ginsenoside Rb1



$C_{54}H_{92}O_{23}$
M 1109,31 g/mol
[41753-43-9] • EC No. 255-532-8
WGK 1

**Warning** H302

### Ginsenoside Rb1
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC).....≥90,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤10,0 %
Assay (qNMR).....≥80,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE44.1** | 10 mg | glass | 772,95 € |

### Ginsenoside Rb1
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC).....≥85,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

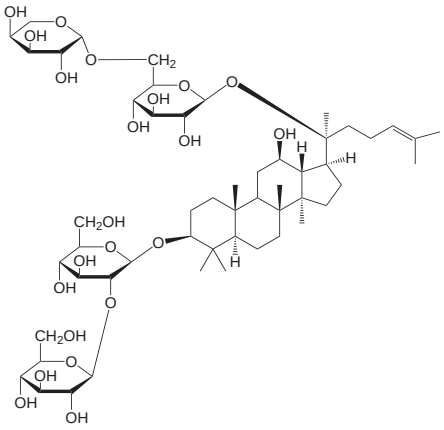
| | | | |
|---|---|---|---|
| **NC44.1** | 25 mg | glass | 396,70 € |

### Ginsenoside Rb1
**ROTICHROM® HPLC**
Reference substance for HPLC.
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC).....≥98 %

| | | | |
|---|---|---|---|
| **7462.1** | 5 mg | glass | 170,95 € |

## Ginsenoside Rb2

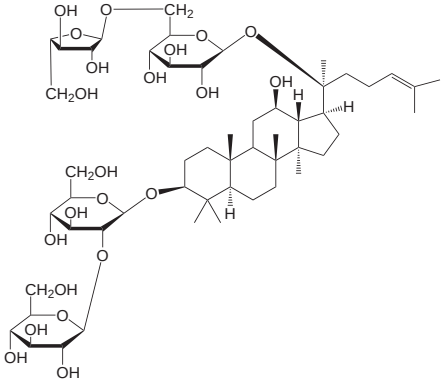


### Ginsenoside Rb2
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{53}H_{90}O_{22}$
M 1079,28 g/mol
Storage temp.: +4 °C
[11021-13-9] • EC No. 234-251-4
WGK 1

**Type analysis:**
Purity (HPLC). ..... ≥94 %

| | | | |
|---|---|---|---|
| **7463.1** | 5 mg | glass | 299,95 € |

## Ginsenoside Rc



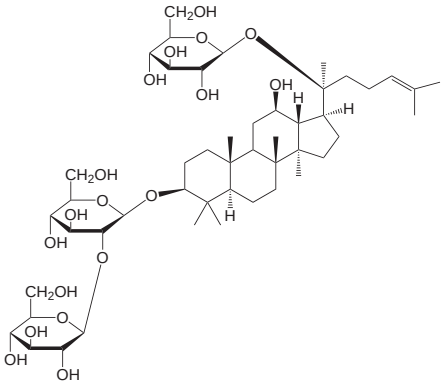
### Ginsenoside Rc
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{53}H_{90}O_{22}$
M 1079,28 g/mol
Storage temp.: +4 °C
[11021-14-0] • EC No. 234-253-5
WGK 1

**Warning** H302+H312+H332

**Type analysis:**
Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **7465.1** | 5 mg | glass | 203,20 € |

## Ginsenoside Rd

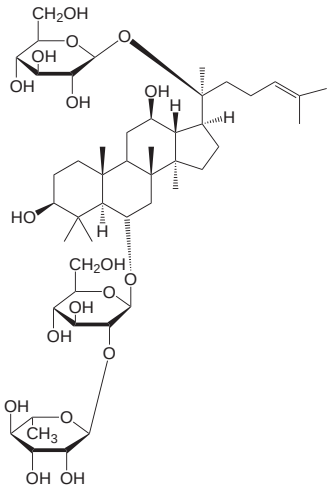


### Ginsenoside Rd
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{48}H_{82}O_{18}$
M 947,16 g/mol
Storage temp.: +4 °C
[52705-93-8] • EC No. 258-118-5

**Type analysis:**
Purity (HPLC).....≥98 %

| | | | |
|---|---|---|---|
| **7466.1** | 5 mg | glass | 177,40 € |

## Ginsenoside Re



[52286-59-6] • EC No. 257-814-6
WGK 3

### Ginsenoside Re
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC).....≥90,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤14,0 %
Assay (qNMR).....≥80,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE45.1** | 10 mg | glass | 772,95 € |

## Ginsenoside Re
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC).....≥80,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

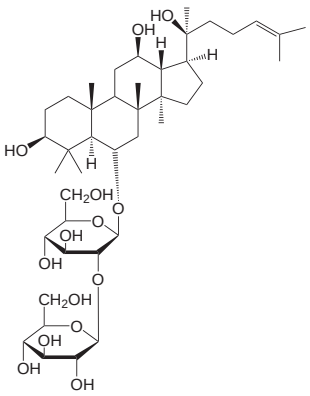
| | | | |
|---|---|---|---|
| **NC45.1** | 25 mg | glass | 246,20 € |

## Ginsenoside Re
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{48}H_{82}O_{18}$
M 947,16 g/mol
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC).....≥98 %

| | | | |
|---|---|---|---|
| **7468.1** | 5 mg | glass | 126,35 € |

## Ginsenoside Rf

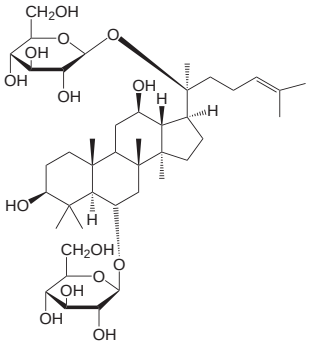


## Ginsenoside Rf
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{42}H_{72}O_{14}$
M 801,05 g/mol
Storage temp.: +4 °C
[52286-58-5]

**Type analysis:**
Purity (HPLC).....≥98 %

| | | | |
|---|---|---|---|
| **4552.1** | 5 mg | glass | 375,20 € |

## Ginsenoside Rg1



$C_{42}H_{72}O_{14}$
M 801,02 g/mol
Storage temp.: -20 °C
[22427-39-0] • EC No. 244-989-9
WGK 3
**Warning** H302

## Ginsenoside Rg1
**ROTI®STAR Primary Standard**
Transport temp.: cooled

**Type analysis:**
Assay (HPLC).....≥90,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤10,0 %
Assay (qNMR).....≥80,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE62.1** | 10 mg | glass | 772,95 € |

## Ginsenoside Rg1
**ROTICHROM® Working Standard**
Transport temp.: cooled

**Type analysis:**
Assay (HPLC).....≥85,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC62.1** | 25 mg | glass | 407,45 € |

## Ginsenoside Rg1
**ROTICHROM® HPLC**
Reference substance for HPLC.
Transport temp.: room temp.

**Type analysis:**
Purity (HPLC).....≥98 %

| | | | |
|---|---|---|---|
| **7467.1** | 5 mg | glass | 170,95 € |

## Glacial acetic acid
▶ Acetic acid 100 % see p. 1692

## Glass wool
[65997-17-3] • EC No. 266-046-0
WGK 1

## Glass wool, 8 µm
**chemically resistant glass according to DIN 1259-1**
Filter aid, for laboratory work.

**Type analysis:**
Fiber diameter.....7,2-8,8 µm
Loss on ignition.....≤0,3 %

| | | | |
|---|---|---|---|
| **0691.1** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **0691.2** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |

## Glass wool, 11 µm
**chemically resistant glass according to DIN 1259-1**
Filter aid, for laboratory work.
Type N (filter glass wool)

**Type analysis:**
Fibre size.....9,9-12,1 µm
Loss on ignition.....≤0,3 %
Transformation temp.....~530 °C

| | | | |
|---|---|---|---|
| **6574.1** | 500 g | plastic | 17,75 € |
| Original pack 6 x 500 g | | | 16,86/500 g |
| **6574.2** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |

## Glass wool, 25 µm
**chemically resistant glass according to DIN 1259-1**
Filter aid, for laboratory work.

**Type analysis:**
Fiber diameter.....22,0-28,0 µm
Loss on ignition.....≤0,3 %

| | | | |
|---|---|---|---|
| **0700.1** | 500 g | plastic | 20,35 € |
| Original pack 6 x 500 g | | | 19,33/500 g |
| **0700.2** | 1 kg | plastic | 32,15 € |
| Original pack 6 x 1 kg | | | 30,54/1 kg |

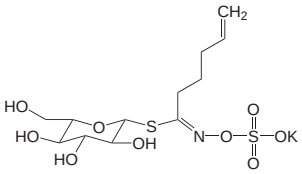
## D-GlcA
▶ D-Glucuronic acid see p. 1957

## X-β-D-GlcNAc
▶ 5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide see p. 1787

## GLDH
▶ Glutamate dehydrogenase (GDH, GLDH) see p. 1958

## β-1,3-glucan laminari-pentaohydrolase
▶ Zymolyase® 20T see p. 2390
▶ Zymolyase® 100T see p. 2390

## Glucobrassicanapin



### Glucobrassicanapin

**ROTICHROM® HPLC**

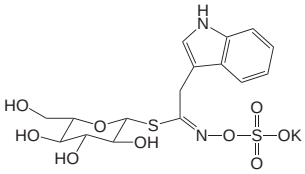
Reference substance for HPLC.
From *Brassica napus.*
4-Pentenylglucosinolate potassium salt
$C_{12}H_{20}KNO_9S_2$
M 443,52 g/mol
Storage temp.: +4 °C
[19041-10-2]
WGK 1

**Type analysis:**

Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **2276.1** | 10 mg | glass | 295,65 € |

## Glucobrassicin



### Glucobrassicin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Brassica oleracea.*
3-Indolylmethylglucosinolate potassium salt
$C_{16}H_{19}KN_2O_9S_2$
M 476,26 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[4356-52-9]
WGK 1

**Type analysis:**

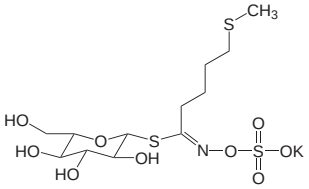
Purity (HPLC)..... ≥97 %

| | | | |
|---|---|---|---|
| **2279.1** | 20 mg | glass | 467,65 € |

## α-D-Glucochloralose

▶ α-Chloralose see p. 1826

## Glucoerucin



### Glucoerucin

**ROTICHROM® HPLC**

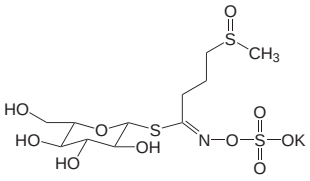
Reference substance for HPLC.
From *Eruca sativa.*
4-Methylthiobutylglucosinolate potassium salt
$C_{12}H_{22}KNO_9S_3$
M 459,61 g/mol
Storage temp.: +4 °C
[21973-56-8]
WGK 1

**Type analysis:**

Purity (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **2280.1** | 10 mg | glass | 310,70 € |

## Glucoiberin



### Glucoiberin

**ROTICHROM® HPLC**

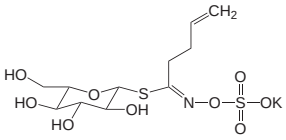
Reference substance for HPLC.
From *Iberis amara.*
3-(Methylsulphinyl)propylglucosinolate potassium salt
$C_{11}H_{20}KNO_{10}S_3$
M 461,56 g/mol
Storage temp.: +4 °C
[554-88-1]
WGK 1

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **2281.1** | 10 mg | glass | 246,20 € |

## Gluconapin



### Gluconapin

**ROTICHROM® HPLC**

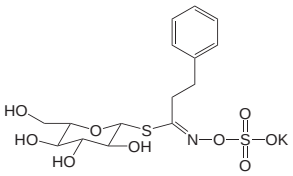
Reference substance for HPLC.
From *Brassica napus.*
3-Butenylglucosinolate potassium salt
$C_{11}H_{18}KNO_9S_2$
M 411,48 g/mol
Storage temp.: +4 °C
[19041-09-9]
WGK 1

**Type analysis:**

Purity (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **2282.1** | 10 mg | glass | 256,95 € |

## Gluconasturtiin



### Gluconasturtiin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Nasturtium officinale.*
Phenylethylglucosinolate potassium salt
$C_{15}H_{20}KNO_9S_2$
M 461,16 g/mol
Storage temp.: +4 °C
[499-30-9]
WGK 1

**Type analysis:**

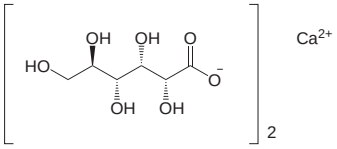
Purity (HPLC)..... ≥97 %

| | | | |
|---|---|---|---|
| **2357.1** | 20 mg | glass | 446,15 € |

## D-Gluconate-6-phosphate trisodium salt

▶ 6-Phosphogluconic acid trisodium salt dihydrate see p. 2150

## D-Gluconic acid calcium salt monohydrate



### D-Gluconic acid calcium salt monohydrate

**≥98,5 %, Ph.Eur.**

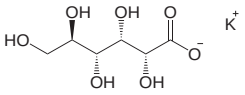
Calcium gluconate-monohydrate
$C_{12}H_{22}CaO_{14} \cdot H_2O$
M 448,4 g/mol
mp 195 °C
Solubility: 33 g/l ($H_2O$, 20 °C)
[18016-24-5] • EC No. 206-075-8
WGK 1

**Guarantee analysis:**

Appearance. ..... white powder
Assay. ..... 98,5-102,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Chloride (Cl)..... ≤0,02 %
Sulphate ($SO_4$)..... ≤0,01 %
Magnesium and alkali metals. ..... ≤0,4 %
Heavy metals (as Pb). ..... ≤0,001%
Org. substances and boric acid..... complies
Sucrose and reducing sugar. ..... complies
Bioburden (TAMC)..... ≤1000 cfu/g
Yeasts/Moulds (TYMC)..... ≤100 cfu/g

| | | | |
|---|---|---|---|
| **7502.1** | 500 g | plastic | 31,75 € |
| Original pack 6 x 500 g | | | 30,16/500 g |
| **7502.2** | 1 kg | plastic | 53,25 € |
| Original pack 6 x 1 kg | | | 50,59/1 kg |
| **7502.3** | 2,5 kg | plastic | 111,30 € |

## Gluconic acid potassium salt



### Gluconic acid potassium salt

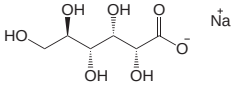
**≥99 %, for synthesis**
Potassium gluconate
$C_6H_{11}KO_7$
M 234,24 g/mol
mp 180 °C (dec.)
Solubility: 590 g/l ($H_2O$, 20 °C)
[299-27-4] • EC No. 206-074-2
WGK 1

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| Chloride (Cl) | ≤0,005 % |
| Sulphate ($SO_4$) | ≤0,01 % |
| pH value (10 % solution) | 7,0-8,3 |
| Heavy metals (as Pb) | ≤0,001 % |
| Arsenic (As) | ≤0,0001 % |
| Lead (Pb) | ≤0,0002 % |

| | | | |
|---|---|---|---|
| **2621.1** | 100 g | plastic | 14,95 € |
| **2621.2** | 500 g | plastic | 26,80 € |
| Original pack 6 x 500 g | | | 25,46/500 g |
| **2621.3** | 1 kg | plastic | 42,50 € |
| Original pack 6 x 1 kg | | | 40,38/1 kg |

## Gluconic acid sodium salt



### Gluconic acid sodium salt

**≥99 %, for synthesis**
Sodium gluconate
$C_6H_{11}NaO_7$
M 218,14 g/mol
mp 170-175 °C
Solubility: 590 g/l ($H_2O$, 25 °C)
[527-07-1] • EC No. 208-407-7
WGK 1

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| pH value (10 % solution) | 6,5-7,5 |
| Heavy metals (as Pb) | ≤0,002 % |
| Arsenic (As) | ≤0,0003 % |

| | | | |
|---|---|---|---|
| **2622.1** | 100 g | plastic | 13,90 € |
| **2622.2** | 500 g | plastic | 19,90 € |
| Original pack 6 x 500 g | | | 18,91/500 g |
| **2622.3** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |
| **2622.4** | 2,5 kg | plastic | 47,85 € |

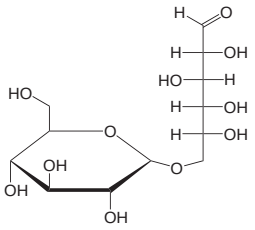
## 4-O-β-D-Glucopyranosyl-D-glucose

▶ D(+)-Cellobiose see p. 1820

## 6-O-β-D-Glucopyranosyl-D-glucose

▶ β-D-Gentiobiose see p. 1950

## 1-O-α-D-Glucopyranosyl-D-mannitol



### 1-O-α-D-Glucopyranosyl-D-mannitol

**~99 %, for biochemistry**
α-D-Glucopyranosyl-1,6-mannitol
$C_{12}H_{24}O_{11} \cdot 2\ H_2O$
M 380,32 g/mol
mp 70 °C
[20942-99-8] • EC No. 244-122-4

**Type analysis:**

| | |
|---|---|
| Assay | ~99 % |

| | | | |
|---|---|---|---|
| **6337.1** | 10 g | plastic | 100,55 € |
| **6337.2** | 100 g | plastic | 729,95 € |

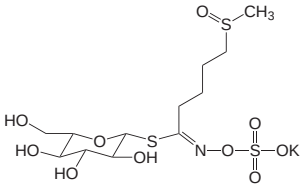
## (S)-(β-D-Glucopyranosyloxy)-(4-hydroxyphenyl)acetonitrile

▶ Dhurrin see p. 1866

## α-D-Glucopyranyl-1,6-mannitol

▶ 1-O-α-D-Glucopyranosyl-D-mannitol see p. 1955

## Glucoraphanin



### Glucoraphanin

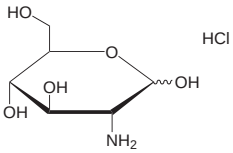
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Brassica olevacea.*
3-(Methylsulphinyl)butyl-glucosinolate potassium salt
$C_{12}H_{22}KNO_{10}S_2$
M 475,66 g/mol
Storage temp.: +4 °C
[21414-41-5]
WGK 1

**Type analysis:**

| | |
|---|---|
| Purity (HPLC) | ≥97,0 % |

| | | | |
|---|---|---|---|
| **2374.1** | 10 mg | glass | 263,40 € |

## D(+)-Glucosamine hydrochloride



### D(+)-Glucosamine hydrochloride

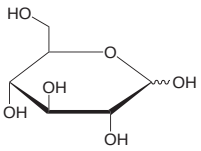
**≥99 %, for biochemistry**
Chitosamine hydrochloride
$C_6H_{14}ClNO_5$
M 215,64 g/mol
mp >300 °C
[66-84-2] • EC No. 200-638-1

**Type analysis:**

| | |
|---|---|
| Appearance | fine white crystals |
| Assay | ≥99 % |

| | | | |
|---|---|---|---|
| **3769.1** | 100 g | plastic | 82,25 € |

## D(+)-Glucose



Dextrose, Blood sugar
$C_6H_{12}O_6$
M 180,16 g/mol
Solubility: ~470 g/l ($H_2O$, 20 °C)
[50-99-7] • EC No. 200-075-1

### D(+)-Glucose

**p.a., ACS, anhydrous**
Biochemical and microbiological applications.

**Guarantee analysis:**

| | |
|---|---|
| Specific rotation $[\alpha]_D^{25}$ (c=10 in $H_2O$) | +52,5° to +53,0° |
| In $H_2O$ insoluble matter | ≤0,003 % |
| Loss on drying (105 °C) | ≤0,2 % |
| Ash content (as $SO_4$) | ≤0,01 % |
| Acidity (as $CH_3COOH$) | ≤0,002 meq/g |
| Starch | complies |
| Chloride (Cl) | ≤0,0025 % |
| Sulphate and sulphite (as $SO_4$) | ≤0,0025 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Arsenic (As) | ≤0,00004 % |
| Lead (Pb) | ≤0,0005 % |
| Cadmium (Cd) | ≤0,001 % |
| Iron (Fe) | ≤0,0005 % |
| Copper (Cu) | ≤0,0005 % |
| Nickel (Ni) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **X997.1** | 250 g | plastic | 13,90 € |
| **X997.2** | 1 kg | plastic | 32,80 € |
| Original pack 6 x 1 kg | | | 31,16/1 kg |
| **X997.3** | 2,5 kg | plastic | 67,65 € |
| **X997.4** | 5 kg | plastic | 116,00 € |
| **X997.5** | 25 kg | plastic | 536,45 € |

G

## D(+)-Glucose

**CELLPURE® ≥99,5 %, anhydrous**

For cell culture and biochemistry.

**Guarantee analysis:**

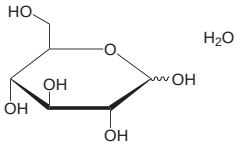
Endotoxins.....≤5,0 I.U./g
Assay.....≥99,5 %
Sulphated ash.....≤0,1 %
Water (KF).....≤1 %
Sulphite ($SO_3$).....≤0,0015 %

| | | | |
|---|---|---|---|
| **HN06.1** | 250 g | plastic | 13,45 € |
| **HN06.2** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **HN06.3** | 1 kg | plastic | 32,15 € |
| Original pack 6 x 1 kg | | | 30,54/1 kg |
| **HN06.4** | 5 kg | plastic | 104,20 € |

## D(+)-Glucose

▶ Roti®fair 20 % Glucose see p. 2212

## D(+)-Glucose monohydrate



Dextrose, blood sugar
$C_6H_{12}O_6 \cdot H_2O$
M 198,17 g/mol
mp 83 °C
Solubility: 1000 g/l ($H_2O$, 20 °C)
[14431-43-7] • EC No. 200-075-1

## D(+)-Glucose monohydrate

**≥99,5 %, Ph.Eur.**

Suitable for cell culture, tested for endotoxines.

**Guarantee analysis:**

Appearance.....white to off-white, cryst. powder
Assay (dry substance).....≥99,5 %
Identity.....complies
Water (KF).....7,5-9,5 %
Appearance of solution.....complies
Specific rotation $[\alpha]_D^{20}$.....+52,5° to +53,3°
Acidity.....≤0,3 ml
Conductivity (25 °C).....≤20 µS/cm
Chloride (Cl).....≤0,02 %
Sulphate ($SO_4$).....≤0,025 %
Soluble starch, sulphite ($SO_3$).....≤0,0015 %
Dextrine.....complies
Arsenic (As).....≤0,0001 %
Endotoxin content.....<1,25 I.U./g
Related substances:
Impurities A and B (sum).....≤0,4 %
Impurity C.....≤0,2 %
Impurity D.....≤0,15 %
Related substances (unspecific impurities).....≤0,1 %
Related substances (total).....≤0,5 %
Disregard limit.....≤0,05 %

| | | | |
|---|---|---|---|
| **6780.1** | 1 kg | plastic | 19,25 € |
| Original pack 6 x 1 kg | | | 18,29/1 kg |
| **6780.2** | 5 kg | plastic | 66,15 € |
| **6780.4** | 10 kg | plastic | 109,15 € |
| **6780.3** | 50 kg | plastic | 321,45 € |

## D(+)-Glucose monohydrate

**for microbiology**

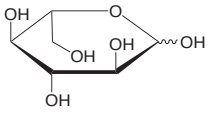
Biochemical and microbiological applications.

**Guarantee analysis:**

Specific rotation $[\alpha]_D^{20}$.....+52,5° to +53,3°
Appearance of solution.....clear brownish yellow solution
Water (KF).....7,0-9,5 %
Arsenic (As).....≤0,0001 %
Suitable for microbiology.....complies

| | | | |
|---|---|---|---|
| **6887.1** | 1 kg | plastic | 18,85 € |
| Original pack 6 x 1 kg | | | 17,91/1 kg |
| **6887.2** | 2,5 kg | plastic | 39,25 € |
| **6887.3** | 5 kg | plastic | 63,35 € |
| **6887.5** | 25 kg | plastic | 170,95 € |

## L(-)-Glucose



## L(-)-Glucose

**≥98 %, for biochemistry**

Mixture of anomers.
$C_6H_{12}O_6$
M 180,16 g/mol
mp 140-145 °C
[921-60-8] • EC No. 213-068-3

**Type analysis:**

Appearance.....white powder
Assay (HPLC).....≥98,0 %

| | | | |
|---|---|---|---|
| **7509.1** | 100 mg | glass | 30,00 € |
| **7509.2** | 500 mg | glass | 71,95 € |
| **7509.3** | 1 g | glass | 119,25 € |

## Glucose oxidase (GOD)

## Glucose oxidase (GOD)

**~360 U/mg protein**
**(approx. 280 U/mg material)**

From *Aspergillus niger*, freeze-dried.
GOx, GOD
Storage temp.: -20 °C •
Transport temp.: room temp.
[9001-37-0] • EC No. 232-601-0
WKK 1

**Danger** H334

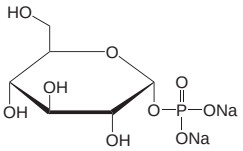
**Type analysis:**

Appearance.....yellow powder
Activity.....~360 U/mg protein
α-Amylase.....<0,05 %
Invertase.....<0,5 %
Maltase.....<0,05 %
Ratio glucose-oxidase/catalase.....>2000

| | | | |
|---|---|---|---|
| **6028.1** | 0,5 MU | plastic | 184,40 € |

For further information, please see page 1276

## α-D-Glucose-1-phosphate disodium salt tetrahydrate



## α-D-Glucose-1-phosphate disodium salt tetrahydrate

**≥98 %, for biochemistry**

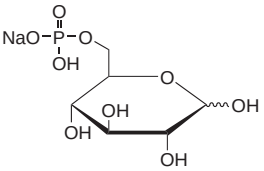
$C_6H_{11}Na_2O_9P \cdot 4\ H_2O$
M 376,17 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[56401-20-8] • EC No. 260-154-1

**Type analysis:**

Assay.....≥98 %

| | | | |
|---|---|---|---|
| **6119.1** | 1 g | glass | 32,15 € |
| **6119.2** | 10 g | glass | 201,60 € |

## D-Glucose-6-phosphate monosodium salt



## D-Glucose-6-phosphate monosodium salt

**≥98 %, for biochemistry**

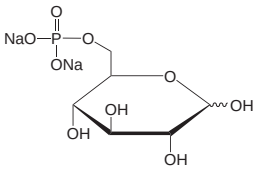
$C_6H_{12}O_9PNa$
M 282,12 g/mol
Storage temp.: +4 °C
[54010-71-8] • EC No. 258-921-0

**Type analysis:**

Assay (titr.).....≥98,0 %
Solution (10 % in $H_2O$).....colourless
Water (KF).....≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (10 % in $H_2O$).....+31° to +35°

| | | | |
|---|---|---|---|
| **5544.1** | 1 g | glass | 45,70 € |
| **5544.2** | 5 g | plastic | 162,90 € |

## D-Glucose-6-phosphate disodium dihydrate



### D-Glucose-6-phosphate disodium dihydrate

**≥98 %, for biochemistry**
G-6-P-$Na_2$
$C_6H_{11}Na_2O_9P \cdot 2\ H_2O$
M 340,13 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[3671-99-6] • EC No. 222-938-1
WGK 1

**Type analysis:**
Appearance. ..... white powder
Assay. ..... ≥98 %

| | | | |
|---|---|---|---|
| **CN72.1** | 1 g | glass | 30,65 € |
| **CN72.2** | 5 g | plastic | 104,85 € |
| **CN72.3** | 10 g | plastic | 185,45 € |

## Glucose powder (pouch)

▶ Roti®fair 20% Glucose see p. 2212

## Glucose solution in water

▶ Roti®-CELL Glucose solution see p. 2206

## β-Glucosidase

### β-Glucosidase

**≥1000 U/mg, from almonds**
ex amygdal
Storage temp.: -20 °C •
Transport temp.: room temp.
[9001-22-3] • EC No. 232-589-7
WGK 1

**Danger** H334

**Type analysis:**
Appearance. ... off-white to yellow, lyophilisate powder
Activity. ..... ≥1000 U/mg

| | | | |
|---|---|---|---|
| **7512.1** | 100 mg | glass | 25,30 € |
| **7512.2** | 1 g | glass | 192,45 € |

For further information, please see page 1276

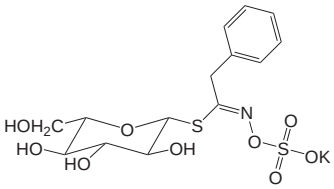
## X-β-D-Glucoside

▶ X-Glu see p. 2379

## Glucosinolates


| Art. No. | Description | Page |
|---|---|---|
| 2273 | Epiprogoitrin | 1906 |
| 2276 | Glucobrassicanapin | 1954 |
| 2279 | Glucobrassicin | 1954 |
| 2280 | Glucoerucin | 1954 |
| 2281 | Glucoiberin | 1954 |
| 2282 | Gluconapin | 1954 |
| 2357 | Gluconasturtiin | 1954 |
| 2374 | Glucoraphanin | 1955 |
| 2436 | Progoitrin | 2178 |
| 6694 | Sinalbin potassium salt | 2264 |
| 5319 | Sinigrin monohydrate | 2264 |


## Glucotropaeolin



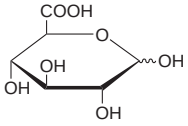
### Glucotropaeolin

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Tropaeolum majus*.
Benzylglucosinolate potassium salt
$C_{14}H_{18}KNO_9S_2$
M 447,52 g/mol
Storage temp.: +4 °C
[5115-71-9]

**Type analysis:**
Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **1149.1** | 50 mg | glass | 446,15 € |

## D-Glucuronic acid



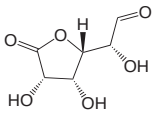
### D-Glucuronic acid

**≥98 %, for biochemistry**
D-GlcA
$C_6H_{10}O_7$
M 194,14 g/mol
mp 159-161 °C
Storage temp.: +4 °C
[6556-12-3] • EC No. 229-486-4
WGK 1

**Type analysis:**
Assay (titr.). ..... ≥98 %
Solution (20 % in water). ..... colourless, clear
Water (KF). ..... ≤1 %
Specific rotation $[\alpha]_D^{20}$ (c= 6 in $H_2O$, after 4 h). ..... +36,5° ±1°
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **4124.1** | 1 g | glass | 18,20 € |
| **4124.2** | 5 g | glass | 39,70 € |
| **4124.3** | 10 g | glass | 65,50 € |
| **4124.4** | 25 g | glass | 111,70 € |

## D(+)-Glucuronic acid γ-lactone



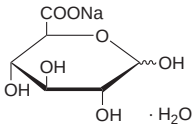
### D(+)-Glucuronic acid γ-lactone

**≥98 %, for biochemistry**
D-Glucuronolactone
$C_6H_8O_6$
M 176,13 g/mol
mp 176-180 °C
[32449-92-6] • EC No. 251-053-3

**Type analysis:**
Appearance. ..... white to off-white powder
Assay. ..... 98,0-102 %
Specific rotation $[\alpha]_D^{20}$ (10 % in $H_2O$, 24 h). ..... 18,0° ±1,0°
Loss on drying. ..... ≤0,5 %
Loss on ignition. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9946.1** | 25 g | glass | 33,25 € |

## D-Glucuronic acid sodium salt monohydrate



### D-Glucuronic acid sodium salt monohydrate

**≥99 %, for biochemistry**
Sodium glucuronate hydrate.
$C_6H_9NaO_7 \cdot H_2O$
M 234,14 g/mol
[14984-34-0] • EC No. 239-065-7

**Type analysis:**
Assay (acidim.). ..... ≥99 %
Water (KF). ..... 6,7-8,7 %

| | | | |
|---|---|---|---|
| **4355.1** | 10 g | glass | 42,50 € |
| **4355.2** | 25 g | glass | 71,50 € |

## D-Glucuronolactone

▶ D(+)-Glucuronic acid γ-lactone see p. 1957

## Glutamate dehydrogenase (GDH, GLDH)

### Glutamate dehydrogenase (GDH, GLDH)

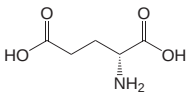
**≥10 U/mg material**
**(approx. 40 U/mg protein)**
From bovine liver, freeze-dried.
GDH, GLDH; L-Glutamic dehydrogenase
Storage temp.: -20 °C •
Transport temp.: room temp.
[9029-12-3] • EC No. 232-848-4
WGK 1

**Type analysis:**
Appearance. ..... white powder
Activity. ..... ≥10 U/mg material

| | | | |
|---|---|---|---|
| **6052.1** | 10 KU | plastic | 150,40 € |

For further information, please see page 1276

## D-Glutamic acid



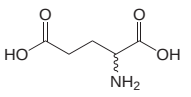
### D-Glutamic acid

**≥99 %, for biochemistry**
*(R)*-2-Aminopentanedioic acid, H-D-Glu-OH
$C_5H_9NO_4$
M 147,1 g/mol
Storage temp.: +4 °C
[6893-26-1] • EC No. 230-000-8
WGK 1

**Type analysis:**
Appearance. ..... white to off-white powder
Assay. ..... 99,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=10 in 2 N HCl). ..... -32,5° to -31,5°
Loss on drying. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **7879.1** | 5 g | plastic | 24,65 € |
| **7879.2** | 25 g | plastic | 73,00 € |
| **7879.3** | 100 g | plastic | 177,40 € |

## DL-Glutamic acid



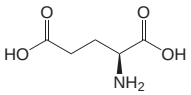
### DL-Glutamic acid

**≥98,5 %, for biochemistry**
$C_5H_9NO_4$
M 147,13 g/mol
Storage temp.: +4 °C
[617-65-2] • EC No. 210-522-2
WGK 1

**Type analysis:**
Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Identity (IR). ..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8596.1** | 25 g | plastic | 60,10 € |
| **8596.2** | 100 g | plastic | 192,45 € |

## L-Glutamic acid



*(S)*-2-Aminopentanedioic acid, H-L-Glu-OH
$C_5H_9NO_4$
M 147,13 g/mol
mp 160 °C
Solubility: 11 g/l ($H_2O$, 25 °C)
[56-86-0] • EC No. 200-293-7
WGK 1

### L-Glutamic acid

**CELLPURE® ≥99 %**
For cell culture and biochemistry.

**Guarantee analysis:**
Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,1 %
Specific rotation $[\alpha]_D^{20}$. ..... +31,5° to +32,4°
Foreign amino acids. ..... complies
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1743.1** | 25 g | plastic | 14,55 € |
| **1743.2** | 100 g | plastic | 22,50 € |
| **1743.3** | 500 g | plastic | 71,95 € |
| Original pack 6 x 500 g | | | 68,35/500 g |

### L-Glutamic acid

**≥98,5 %, Ph.Eur., for biochemistry**

**Guarantee analysis:**
Appearance. ..... white crystals
Assay. ..... 98,5-100,5 %
Identity. ..... complies
pH value (0,67 %, 25 °C). ..... 2,5-4,0
Specific rotation $[\alpha]_D^{20}$ (10 % in HCl 2 N). ..... +31,5° to +32,4°
Light permeability (10 % in HCl 2 N). ..... ≥98 %
Loss on drying. ..... ≤0,1 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,02 %
Ammonium ($NH_4$). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals. ..... ≤0,001 %
Ash content (as $SO_4$). ..... ≤0,1 %
Foreign amino acids (TLC). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **3774.1** | 250 g | plastic | 31,75 € |
| **3774.2** | 1 kg | plastic | 88,70 € |
| Original pack 6 x 1 kg | | | 84,27/1 kg |

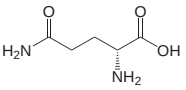
## Glutamic acid 5-amide


- ▶ D-Glutamine see p. 1958
- ▶ DL-Glutamine see p. 1958
- ▶ L-Glutamine see p. 1959


## L-Glutamic dehydrogenase


- ▶ Glutamate dehydrogenase (GDH, GLDH) see p. 1958


## D-Glutamine



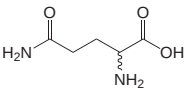
### D-Glutamine

**≥98,5 %, for biochemistry**
D-Glutamic acid 5-amide, H-D-Gln-OH
$C_5H_{10}N_2O_3$
M 146,1 g/mol
Storage temp.: +4 °C
[5959-95-5]
WGK 1

**Type analysis:**
Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (c= 2 in 6 N HCl). ..... -38,0° to -33,0°
Loss on drying. ..... ≤0,3 %

| | | | |
|---|---|---|---|
| **7876.1** | 1 g | glass | 24,65 € |
| **7876.2** | 5 g | plastic | 73,00 € |
| **7876.3** | 25 g | plastic | 213,95 € |

## DL-Glutamine



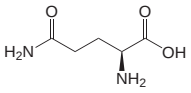
### DL-Glutamine

**≥98,5 %, for biochemistry**
Glutamic acid 5-amide
$C_5H_{10}N_2O_3$
M 146,14 g/mol
Storage temp.: +4 °C
[585-21-7]
WGK 1

**Type analysis:**
Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Identity (IR). ..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8595.1** | 1 g | glass | 46,80 € |
| **8595.2** | 5 g | plastic | 88,05 € |
| **8595.3** | 25 g | plastic | 284,90 € |

## L-Glutamine



L-Glutamic acid 5-amide, H-L-Gln-OH
$C_5H_{10}N_2O_3$
M 146,15 g/mol
mp 185-187 °C (dec.)
Solubility: 26 g/l ($H_2O$, 18 °C)
[56-85-9] • EC No. 200-292-1
WGK 1

### L-Glutamine

**CELLPURE® ≥99 %**
For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ≤50 E.U./g
Assay. ≥99 %
Loss on drying. ≤0,3 %
Ammonium ($NH_4$). ≤0,1 %
Chloride (Cl). ≤0,02 %
Sulphate ($SO_4$). ≤0,02 %
Heavy metals (as Pb). ≤0,001 %
Arsenic (As). ≤0,0001 %
Iron (Fe). ≤0,001 %

| | | | |
|---|---|---|---|
| **HN08.1** | 25 g | plastic | 19,25 € |
| **HN08.2** | 100 g | plastic | 36,45 € |
| **HN08.3** | 500 g | plastic | 126,35 € |
| Original pack 6 x 500 g | | | 120,03/500 g |

### L-Glutamine

**≥99 %, USP, for biochemistry**

**Guarantee analysis:**

Appearance. white, cryst. powder
Assay (titr., dry substance). 99,0-101,0 %
Identity. complies
Specific rotation $[\alpha]_D^{20}$ (c=4 in $H_2O$). +6,3° to +7,3°
Specific rotation $[\alpha]_D^{20}$ (10 % in HCl 2 N). +31,5° to +33,0°
pH value 4,5-6,0
Arsenic ($As_2O_3$). ≤0,0001 %
Iron (Fe). ≤0,001 %
Heavy metals (as Pb). ≤0,001 %
Chloride (Cl). ≤0,02 %
Ammonium ($NH_4$). ≤0,1 %
Sulphate ($SO_4$). ≤0,02 %
Loss on drying (105 °C). ≤0,3 %
Ash content (as $SO_4$). ≤0,1 %
Foreign amino acids. complies

| | | | |
|---|---|---|---|
| **3772.1** | 100 g | plastic | 31,10 € |
| **3772.2** | 500 g | plastic | 99,90 € |
| Original pack 6 x 500 g | | | 94,91/500 g |

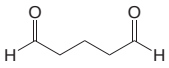
## Glutamine solution

▶ Roti®-CELL Glutamine solution see p. 2206

## γ-L-Glutamyl-L-cysteinyl-glycine

▶ L-Glutathione reduced see p. 1959

## Glutaraldehyde 50 %



### Glutaraldehyde 50 %

**for electron microscopy**
50 % solution in water.
1,5-Pentanedial, Glutaric dialdehyde, Glutaral
$C_5H_8O_2$
M 100,12 g/mol
D 1,13 • bp 100 °C
mp -21 °C • flp >100 °C
[111-30-8] • EC No. 203-856-5
UN No. 2927 • ADR 6.1 (8) II • WGK 2

**Danger** H301-H314-H317-H330-H334-H335-H410-EUH071

**Type analysis:**

Appearance. clear to pale yellow liquid
Assay. ~50 %

| | | | |
|---|---|---|---|
| **4995.1** | 500 ml | plastic | 70,45 € |
| **4995.2** | 2,5 l | plastic | 278,45 € |
| Original pack 4 x 2,5 l | | | 264,53/2,5 l |

For further information, please see page 1448

## Glutaraldehyde 25 %

1,5-Pentanedial, Glutaric dialdehyde, Glutaral
$C_5H_8O_2$
M 100,12 g/mol
D 1,06 • bp 100 °C
flp >100 °C
[111-30-8] • EC No. 203-856-5
UN No. 2927 • ADR 6.1 (8) II • WGK 2

**Danger** H302-H314-H317-H331-H334-H335-H410-EUH071

### Glutaraldehyde 25 %

**for electron microscopy**
25 % solution in water.

**Type analysis:**

Assay. 23-27 %
Density (d 20 °C/4 °C). 1,055-1,065

| | | | |
|---|---|---|---|
| **3778.1** | 1 l | plastic | 54,75 € |
| Original pack 6 x 1 l | | | 52,01/1 l |
| **3778.2** | 5 l | plastic | 213,95 € |
| Original pack 2 x 5 l | | | 203,25/5 l |

For further information, please see page 1448

### Glutaraldehyde 25 % Mini Pack

**for electron microscopy**
25 % solution in water.

**Type analysis:**

Appearance. colourless to light yellow
Odour. characteristic
Assay. 23-27 %
Density (d 20 °C/4 °C). 1,055-1,065

| | | | |
|---|---|---|---|
| **4157.1** | 25 ml | glass | 18,20 € |
| **4157.2** | 10 x 1 ml (with septum) | cardboard | 65,05 € |

For further information, please see page 1448

## Glutaric dialdehyde

▶ Glutaraldehyde 50 % see p. 1959

## Glutathione oxidized

### Glutathione oxidized

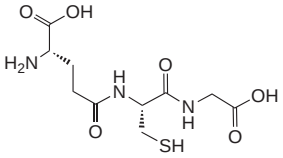
**≥98 %, for biochemistry**
Dimer of GSH
GSSG
$C_{20}H_{32}N_6O_{12}S_2$
M 612,6 g/mol
Storage temp.: +4 °C
[27025-41-8]

**Type analysis:**

Appearance. white powder
Assay. ≥98,0 %
Water. ≤8,0 %
Heavy metals. ≤0,002 %
Specific rotation $[\alpha]_D^{20}$. -106° to -96°

| | | | |
|---|---|---|---|
| **6378.1** | 1 g | glass | 34,95 € |
| **6378.2** | 5 g | glass | 145,15 € |

## L-Glutathione reduced



γ-L-Glutamyl-L-cysteinyl-glycine, GSH
$C_{10}H_{17}N_3O_6S$
M 307,33 g/mol
mp 177-183 °C
Storage temp.: +4 °C
[70-18-8] • EC No. 200-725-4
WGK 1

### L-Glutathione reduced

**CELLPURE® ≥99 %**

**Type analysis:**

Appearance. white cryst. powder
Endotoxins. ≤6,0 E.U./g
Assay (dry substance). ≥99 %
Specific rotation $[\alpha]_D^{20}$. -17,5° to -15,5°
Ammonium ($NH_4$). ≤0,05 %
Sulphate ($SO_4$). ≤0,05 %
Heavy metals (as Pb). ≤0,001 %
Arsenic ($As_2O_3$). ≤0,0001 %
Iron (Fe). ≤0,001 %
Loss on drying. ≤0,5 %
Ash content. ≤0,1 %

| | | | |
|---|---|---|---|
| **6832.1** | 2,5 g | glass | 25,30 € |
| **6832.2** | 5 g | glass | 35,40 € |
| **6832.3** | 10 g | glass | 54,75 € |
| **6832.4** | 25 g | glass | 110,65 € |

## L-Glutathione reduced

**>98 %, for biochemistry**

**Type analysis:**

Appearance. ..... white powder
Assay (dry substance). ..... ≥98,0 %
Loss on drying (105 °C). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... -17,5° to -15,5°

| | | | |
|---|---|---|---|
| **6382.1** | 5 g | glass | 27,45 € |
| **6382.2** | 25 g | glass | 91,30 € |
| **6382.3** | 50 g | glass | 165,05 € |
| **6382.4** | 100 g | glass | 295,65 € |

For further information, please see page 1499

# Gluten

## Gluten

**~80 % protein**

From wheat
[8002-80-0] • EC No. 232-317-7

**Type analysis:**

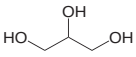
Assay (protein). ..... ~80 %

| | | | |
|---|---|---|---|
| **4601.1** | 100 g | plastic | 23,15 € |

# Gly

▶ Glycine see p. 1962

# Glycerol




1,2,3-Propanetriol
$C_3H_8O_3$
M 92,09 g/mol
D 1,26 • bp 290 °C (dec.)
mp 18,2 °C • flp 199 °C
[56-81-5] • EC No. 200-289-5
WGK 1

## Glycerol

**≥99,7 %, p.a., ultra quality, synthetic, anhydrous**

**Type analysis:**

Assay. ..... ≥99,7 %
Water. ..... ≤0,5 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,002 %
Sulphated ash. ..... ≤0,01 %
Relative density (20/20 °C). ..... 1,260-1,265
Refractive index $n_D^{20}$. ..... 1,470-1,475
Heavy metals. ..... ≤0,0005 %
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Boron (B). ..... ≤0,000002 %
Calcium (Ca). ..... ≤0,0001 %
Cadmium (Cd). ..... ≤0,000005 %
Kobalt (Co). ..... ≤0,000005 %
Chromium (Cr). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000005 %
Iron (Fe). ..... ≤0,0002 %
Magnesium (Mg). ..... ≤0,0001 %
Manganese (Mn). ..... ≤0,00001 %
Nickel (Ni). ..... ≤0,00002 %
Lead (Pb). ..... ≤0,00001 %
Tin (Sn). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00005 %

| | | | |
|---|---|---|---|
| **6962.1** | 1 l | plastic | 60,75 € |
| Original pack 6 x 1 l | | | 57,71/1 l |
| **6962.2** | 2,5 l | plastic | 120,30 € |
| Original pack 4 x 2,5 l | | | 114,29/2,5 l |
| **6962.3** | 5 l | plastic | 192,35 € |
| Original pack 2 x 5 l | | | 182,73/5 l |
| **6962.4** | 10 l | plastic | 310,70 € |

## Glycerol

**ROTIPURAN® ≥99,5 %, p.a., anhydrous**

**Guarantee analysis:**

Appearance. ..... clear liquid
Assay. ..... ≥99,5 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,5 %
Chloride (Cl). ..... ≤0,001 %
Sulphated ash. ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,0005 %
Relative density (20/20 °C). ..... 1,263-1,2651
Refractive index $n_D^{20}$. ..... 1,470-1,475
Halogen compounds. ..... ≤0,0035 %

| | | | |
|---|---|---|---|
| **3783.3** | 1 l | glass | 56,45 € |
| Original pack 6 x 1 l | | | 53,63/1 l |
| **3783.1** | 1 l | plastic | 52,15 € |
| Original pack 6 x 1 l | | | 49,54/1 l |
| **3783.4** | 2,5 l | glass | 99,90 € |
| Original pack 4 x 2,5 l | | | 94,91/2,5 l |
| **3783.2** | 2,5 l | plastic | 94,10 € |
| Original pack 4 x 2,5 l | | | 89,40/2,5 l |
| **3783.5** | 5 l | plastic | 143,55 € |
| Original pack 2 x 5 l | | | 136,37/5 l |
| **3783.6** | 10 l | plastic | 220,40 € |

## Glycerol

**≥99 %, Ph.Eur., USP, synthetic, anhydrous**

**Guarantee analysis:**

Appearance. ..... clear, colourless liquid
Assay (dry substance). ..... 99,0-101,0 %
Identity. ..... complies
Water. ..... ≤2,0 %
Colour. ..... complies
Acidity/alkalinity. ..... complies
Ester. ..... complies
Halogen compounds. ..... ≤0,003 %
Aldehydes. ..... ≤0,001 %
Sugar. ..... complies
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,002 %
Heavy metals. ..... ≤0,0005 %
Specific density (25/25 °C). ..... ≥1,249
Refractive index $n_D^{20}$. ..... 1,470-1,475
Ash content. ..... ≤0,01 %
Sulphated ash. ..... ≤0,01 %
Ethylene and diethylene glycol. ..... complies
Related substances. ..... complies
Impurities A, related substances. ..... complies

| | | | |
|---|---|---|---|
| **6967.1** | 1 l | plastic | 42,90 € |
| Original pack 6 x 1 l | | | 40,76/1 l |
| **6967.2** | 2,5 l | plastic | 85,90 € |
| Original pack 4 x 2,5 l | | | 81,61/2,5 l |
| **6967.3** | 5 l | plastic | 138,70 € |
| Original pack 2 x 5 l | | | 131,77/5 l |
| **6967.4** | 10 l | plastic | 213,95 € |

## Glycerol

**≥98 %, Ph.Eur., anhydrous**

**Guarantee analysis:**

Assay. ..... 98,0-101,0 %
Appearance of solution. ..... complies
Identity. ..... complies
Refractive index $n_D^{20}$. ..... 1,470-1,475
Relative density (20/20 °C). ..... 1,263-1,2651
Acidity/alkalinity. ..... complies
Ester. ..... complies
Colour. ..... complies
Heavy metals (as Pb). ..... ≤0,0005 %
Sulphated ash. ..... ≤0,01 %
Halogen compounds. ..... complies
Water (KF). ..... ≤2,0 %
Chloride (Cl). ..... ≤0,001 %
Aldehydes. ..... ≤0,001 %
Sugar. ..... complies
Impurity A, related substances. ..... complies

| | | | |
|---|---|---|---|
| **7530.1** | 1 l | plastic | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **7530.4** | 2,5 l | plastic | 59,70 € |
| Original pack 4 x 2,5 l | | | 56,72/2,5 l |
| **7530.5** | 5 l | plastic | 107,40 € |
| Original pack 2 x 5 l | | | 102,03/5 l |
| **7530.2** | 10 l | plastic | 198,90 € |
| **7530.3** | 35 kg | plastic | 385,95 € |

# Glycerol 86 %

1,2,3-Propanetriol
M 92,1 g/mol
D 1,23 • bp 290 °C (dec.)
mp 18,2 °C
[56-81-5] • EC No. 200-289-5
WGK 1

## Glycerol 86 %

**ROTIPURAN® ≥86 %, p.a.**

For freeze technique.

**Guarantee analysis:**

Appearance. ..... clear liquid
Assay. ..... 85-87 %
Water (KF). ..... 12,0-16,0 %
Chloride (Cl). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Reducing substances (Aldehydes). ..... complies
Sulphated ash. ..... ≤0,01 %
Halogen compounds. ..... ≤0,003 %

| | | | |
|---|---|---|---|
| **4043.1** | 1 l | plastic | 46,80 € |
| Original pack 6 x 1 l | | | 44,46/1 l |
| **4043.3** | 2,5 l | plastic | 69,80 € |
| Original pack 4 x 2,5 l | | | 66,31/2,5 l |
| **4043.2** | 5 l | plastic | 127,40 € |
| Original pack 2 x 5 l | | | 121,03/5 l |

## Glycerol 86 %

**~86 %, Ph.Eur., extra pure**

**Guarantee analysis:**

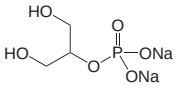
Appearance. ..... clear liquid
Assay. ..... 83,5-88,5 %
Identity. ..... complies
Water (KF). ..... 12,0-16,0 %
Appearance of solution. ..... complies
Acidity/alkalinity. ..... complies
Ester. ..... complies
Refractive index $n_D^{20}$. ..... 1,449-1,455
Aldehydes, red. substances. ..... complies
Sugar test. ..... complies
Sulphated ash. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Halogen compounds. ..... ≤0,003 %
Impurity A, related substances. ..... complies

| | | | |
|---|---|---|---|
| **7533.1** | 1 l | plastic | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **7533.3** | 2,5 l | plastic | 60,10 € |
| Original pack 4 x 2,5 l | | | 57,10/2,5 l |
| **7533.4** | 5 l | plastic | 102,05 € |
| Original pack 2 x 5 l | | | 96,95/5 l |
| **7533.2** | 10 l | plastic | 180,10 € |
| **7533.5** | 25 l | plastic | 349,40 € |

## Glycerol gelatine

▶ Kaiser's glycerol gelatine phenol-free see p. 2020

## β-Glycerophosphate disodium salt pentahydrate



### β-Glycerophosphate disodium salt pentahydrate

**≥97 %, for biochemistry**

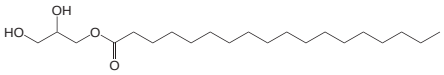
Phosphatase inhibitor
$C_3H_7Na_2O_6P \cdot 5\ H_2O$
M 306,12 g/mol
Solubility: 370 g/l ($H_2O$, 20 °C)
[13408-09-8] • EC No. 212-464-3
WGK 3

**Type analysis:**

Appearance. ..... white cryst. powder
Assay. ..... ≥97,0 %
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **6847.1** | 50 g | glass | 48,30 € |
| **6847.2** | 100 g | glass | 88,70 € |
| **6847.3** | 250 g | glass | 203,20 € |
| **6847.4** | 500 g | glass | 385,95 € |
| Original pack 6 x 500 g | | | 366,65/500 g |

## Glyceryl monostearate



### Glyceryl monostearate

**pure**

$C_{21}H_{42}O_4$
M 358,57 g/mol
mp 54-60 °C
Storage temp.: +4 °C
[31566-31-1] • EC No. 250-705-4
WGK 1

**Type analysis:**

Monoglyceride. ..... ≥35 %
Acid value (mg KOH/g). ..... ≤6,0
Iodine value (g $I_2$/100 g). ..... ≤5,0
Melting point. ..... 54-60 °C

| | | | |
|---|---|---|---|
| **3787.1** | 500 g | plastic | 20,65 € |
| Original pack 6 x 500 g | | | 19,62/500 g |

## Glyceryl triacetate

▶ Triacetin see p. 2349

## Glyceryl tributyrate

▶ Tributyrin see p. 2350

## Glyceryl tricaprinate

▶ Tricaprin see p. 2350

## Glycidether 100

### Glycidether 100

**for electron microscopy**

Formerly known as Epon 812, Epoxipropyl ether of glycerol.
Epon 812
D ~1,22 • bp >200 °C
flp 118 -135 °C
[90529-77-4] • EC No. 292-011-4
WGK 1

**Warning** H319-H335

**Type analysis:**

Appearance. ..... clear, colourless to pale yellow viscous liquid

| | | | |
|---|---|---|---|
| **8619.1** | 500 g | glass | 36,45 € |
| Original pack 6 x 500 g | | | 34,63/500 g |
| **8619.2** | 2,5 kg | glass | 130,65 € |

For further information, please see page 1452

## Glycidether Accelerator DMP-30

### Glycidether Accelerator DMP-30

**for glycidether 100**

2,4,6-Tris(dimethylaminomethyl)-phenol
D 0,98 • bp >200 °C
flp 107 °C
[90-72-2] • EC No. 202-013-9
UN No. 2735 • ADR 8 II • WGK 2

**Warning** H302-H315-H319

| | | | |
|---|---|---|---|
| **8621.1** | 100 g | glass | 24,65 € |

## Glycidether Hardener DBA

### Glycidether Hardener DBA

**for glycidether 100**

DDSA, 2-Dodecenylsuccinic acid anhydride
bp 160-180 °C
mp 12 °C
[25377-73-5] • EC No. 246-917-1
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... clear, yellowish viscous liquid

| | | | |
|---|---|---|---|
| **8623.1** | 100 g | glass | 26,35 € |
| **8623.2** | 1 kg | glass | 155,90 € |
| Original pack 6 x 1 kg | | | 148,11/1 kg |

## Glycidether Hardener MNA

### Glycidether Hardener MNA

**for glycidether 100**

1-Methyl-5-norbornene-2,3-dicarboxylic acid anhydride, Methylnadic anhydride
$C_{10}H_{10}O_3$
M 178,15 g/mol
D 1,23 • bp 295 °C
flp 150 °C
[25134-21-8] • EC No. 246-644-8
UN No. 3265 • ADR 8 II • WGK 2

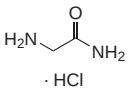
**Danger** H334-H302-H335-H315-H319

**Type analysis:**

Appearance. ..... clear, pale yellow viscous liquid

| | | | |
|---|---|---|---|
| **8639.1** | 100 g | glass | 32,15 € |
| **8639.2** | 1 kg | glass | 213,95 € |
| Original pack 6 x 1 kg | | | 203,25/1 kg |

## Glycinamide hydrochloride



### Glycinamide hydrochloride

**≥95 %, for biochemistry**

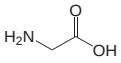
H-Gly-$NH_2$ · HCl, 2-Aminoacetamide hydrochloride
$C_2H_7ClN_2O$
M 110,54 g/mol
mp 193-203 °C
[1668-10-6] • EC No. 216-789-1
WGK 1

**Type analysis:**

Assay (titr.). ..... ≥95,0-105,0 %
Solution (10 % in $H_2O$). ..... colourless to yellow
Melting point. ..... 193-203 °C
Heavy metals (as Pb). ..... ≤0,0015 %

| | | | |
|---|---|---|---|
| **5543.1** | 10 g | plastic | 23,15 € |
| **5543.2** | 25 g | plastic | 42,50 € |
| **5543.3** | 50 g | plastic | 67,65 € |

## Glycine



α-Aminoacetic acid, Glycocoll, Gly
$C_2H_5NO_2$
M 75,07 g/mol
D 1,595
mp 232-236 °C (dec.)
Solubility: 225 g/l ($H_2O$, 20 °C)
[56-40-6] • EC No. 200-272-2
WGK 1

### Glycine

**≥99 %, Blotting-Grade**

For Western blotting.

**Type analysis:**

Appearance. ..... white cryst. powder
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,2 %
Hydrolysable substances. ..... complies
pH value (5 % solution). ..... 6,1 ±0,2
Sulphated ash. ..... ≤0,1 %
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,007 %
Sulphate ($SO_4$). ..... ≤0,006 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **0079.1** | 250 g | plastic | 25,30 € |
| **0079.2** | 500 g | plastic | 47,20 € |
| Original pack 6 x 500 g | | | 44,84/500 g |
| **0079.3** | 1 kg | plastic | 75,15 € |
| Original pack 6 x 1 kg | | | 71,39/1 kg |
| **0079.4** | 2,5 kg | plastic | 149,45 € |

For further information, please see page 1224

### Glycine

**PUFFERAN® ≥99 %, p.a.**

**Guarantee analysis:**

Appearance. ..... white cryst. powder
Assay. ..... ≥99 %
pH value (5 % in $H_2O$). ..... 5,9-6,4
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,007 %
Sulphate ($SO_4$). ..... ≤0,006 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals. ..... ≤0,0005 %
Sulphated ash. ..... ≤0,1 %
Loss on drying. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **3908.1** | 250 g | plastic | 22,05 € |
| **3908.2** | 1 kg | plastic | 71,95 € |
| Original pack 6 x 1 kg | | | 68,35/1 kg |
| **3908.3** | 5 kg | plastic | 200,50 € |
| **3908.5** | 25 kg | plastic | 708,45 € |

For further information, please see page 1268

### Glycine

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,2 %
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,007 %
Sulphate ($SO_4$). ..... ≤0,006 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **HN07.1** | 100 g | plastic | 16,70 € |
| **HN07.2** | 500 g | plastic | 45,70 € |
| Original pack 6 x 500 g | | | 43,42/500 g |
| **HN07.3** | 1 kg | plastic | 83,35 € |
| Original pack 6 x 1 kg | | | 79,18/1 kg |

### Glycine

**≥98,5 %, Ph.Eur., USP, JP**

Buffer substance.

**Guarantee analysis:**

Assay (perchl. based on dry substance). ..... 98,5-101,0 %
pH value (5 % solution). ..... 5,9-6,3
Identity. ..... complies
Chloride (Cl). ..... ≤0,007 %
Sulphate ($SO_4$). ..... ≤0,006 %
Loss on drying (105 °C). ..... ≤0,2 %
Ash content (as $SO_4$). ..... ≤0,1 %
Hydrolysable substances. ..... complies
Ninhydrin-positive substances. ..... ≤0,5 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,0001 %
Residual solvents. ..... complies

| | | | |
|---|---|---|---|
| **T873.1** | 250 g | plastic | 25,30 € |
| **T873.3** | 500 g | plastic | 46,15 € |
| Original pack 6 x 500 g | | | 43,84/500 g |
| **T873.2** | 1 kg | plastic | 79,05 € |
| Original pack 6 x 1 kg | | | 75,10/1 kg |
| **T873.4** | 2,5 kg | plastic | 170,95 € |

### Glycine

**≥99 %, for biochemistry**

**Type analysis:**

Assay. ..... ≥99,0 %
pH value (5 % in $H_2O$). ..... 5,5-6,5
Loss on drying. ..... ≤0,2 %
Heavy metals (as Pb). ..... ≤0,002 %
Ammonium ($NH_4$). ..... ≤0,01 %
Chloride (Cl). ..... ≤0,007 %
Sulphate ($SO_4$). ..... ≤0,006 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **3187.1** | 250 g | plastic | 19,25 € |
| **3187.2** | 500 g | plastic | 25,30 € |
| Original pack 6 x 500 g | | | 24,04/500 g |
| **3187.3** | 1 kg | plastic | 38,60 € |
| Original pack 6 x 1 kg | | | 36,67/1 kg |
| **3187.4** | 5 kg | plastic | 161,25 € |

For further information, please see page 1268

### Glycine

**≥99 %, for synthesis**

**Type analysis:**

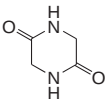
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **3790.1** | 250 g | plastic | 17,75 € |
| **3790.2** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **3790.3** | 5 kg | plastic | 126,35 € |

## Glycine powder (pouch)

▶ Roti®fair Glycine 3.0 see p. 2212

## Glycine anhydride



### Glycine anhydride

**extra pure**

2,5-Piperazinedione, 2,5-Diketopiperazine, Cyclo(Gly-Gly)
$C_4H_6N_2O_2$
M 114,10 g/mol
mp >300 °C
Solubility: 142 g/l ($H_2O$, 20 °C)
[106-57-0] • EC No. 203-411-5

**Type analysis:**

Appearance. ..... white to off-white, cryst. powder
Appearance of solution (0,1 % in $H_2O$). ..... colourless, clear
Loss on drying. ..... ≤0,5 %
pH value (0,1 % in $H_2O$). ..... 5,3-6,3
Elemental analysis:
Carbon (C). ..... 41,80-42,40 %
Hydrogen. ..... 5,00-5,60 %
Nitrogen (N). ..... 24,25-24,85 %
Chloride (Cl). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **5542.1** | 25 g | plastic | 42,90 € |

## Glycocholic acid sodium salt

▶ Sodium glycocholate see p. 2273

## Glycocoll

▶ Glycine see p. 1962

## Glycocoll

▶ Glycine see p. 1962

## Glycogen

### Glycogen

**lyophilised, from oysters**

For molecular biology and biochemistry.

[9005-79-2] • EC No. 232-683-8

WGK 1

**Type analysis:**

Appearance. ..... bright powder
Origin. ..... oysters
Solubility (0,25 %, 1 M NaCl). ..... complies
Loss on drying. ..... ≤15 %
Specific rotation $[\alpha]_D^{20}$. ..... +170° to +200°

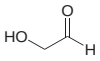
| | | | |
|---|---|---|---|
| **HP51.1** | 1 g | glass | 24,65 € |
| **HP51.2** | 5 g | plastic | 96,65 € |
| **HP51.3** | 10 g | plastic | 166,65 € |
| **HP51.4** | 25 g | plastic | 357,90 € |

For further information, please see page 1241

## Glycol

▶ Ethylene glycol see p. 1918

## Glycolaldehyde



### Glycolaldehyde

**Dimer**

Hydroxyacetaldehyde

$C_4H_8O_4$

M 120,10 g/mol

mp ~85 °C

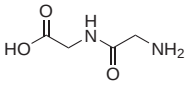
[141-46-8] • EC No. 205-484-9

**Type analysis:**

Appearance. ..... white powder
Melting point. ..... 80-90 °C

| | | | |
|---|---|---|---|
| **3801.1** | 1 g | glass | 78,40 € |
| **3801.2** | 5 g | glass | 310,70 € |

## Glycylglycine



Diglycine, Gly-gly

$C_4H_8N_2O_3$

M 132,12 g/mol

mp 220-230 °C

[556-50-3] • EC No. 209-127-8

### Glycylglycine

**PUFFERAN® ≥99 %, ultra quality**

**Guarantee analysis:**

Appearance. ..... white cryst. powder
Assay (titr.). ..... 99,0-100,5 %
pH value. ..... 5,5-6,5
Sulphated ash. ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,0005 %
Foreign amino acids. ..... non detected
UV-absorption (10 % in $H_2O$):
405 nm. ..... ≤0,01

| | | | |
|---|---|---|---|
| **3794.1** | 10 g | plastic | 16,70 € |
| **3794.2** | 100 g | plastic | 83,75 € |
| **3794.3** | 250 g | plastic | 180,10 € |
| **3794.4** | 500 g | plastic | 327,90 € |
| Original pack 6 x 500 g | | | 311,51/500 g |

For further information, please see page 1268

### Glycylglycine

**PUFFERAN® ≥98,5 %, Buffer Grade**

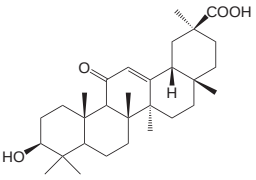
**Guarantee analysis:**

Assay (titr.). ..... ≥98,5 %
Loss on drying. ..... ≤2,0 %
pH value (0,5 % in $H_2O$). ..... 5,5-6,0
Residue on ignition. ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **HN74.1** | 50 g | plastic | 33,25 € |
| **HN74.2** | 100 g | plastic | 53,25 € |
| **HN74.3** | 250 g | plastic | 115,60 € |
| **HN74.4** | 500 g | plastic | 206,95 € |
| Original pack 6 x 500 g | | | 196,60/500 g |

For further information, please see page 1268

## 18-β-Glycyrrhetinic acid



### 18-β-Glycyrrhetinic acid

**ROTICHROM® HPLC**

Reference substance for HPLC.

Enoxolone

$C_{30}H_{46}O_4$

M 470,69 g/mol

Storage temp.: +4 °C

[471-53-4] • EC No. 207-444-6

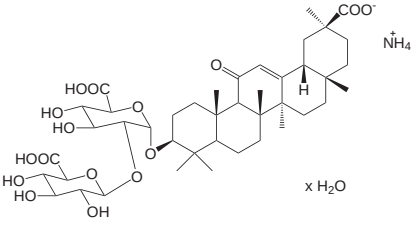
**Warning** H319

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7469.2** | 20 mg | glass | 163,95 € |

## Glycyrrhizic acid ammonium salt hydrate



### Glycyrrhizic acid ammonium salt hydrate

**≥98 %, for biochemistry**

Monoammonium glycyrrhizinate hydrate

$C_{42}H_{65}NO_{16} \cdot x\ H_2O$

M 839,95 + x $H_2O$ g/mol

mp >200 °C

[53956-04-0] • EC No. 258-887-7

WGK 1

**Type analysis:**

Assay (dry substance). ..... ≥98 %
Water. ..... ≤6 %
Specific rotation $[\alpha]_D^{20}$. ..... +49° to +54°
Heavy metals. ..... ≤0,002 %
Sulphated ash. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **6247.1** | 10 g | glass | 42,50 € |
| **6247.2** | 50 g | glass | 162,90 € |

## Gly-Gly

▶ Glycylglycine see p. 1963

## H-Gly-$NH_2$·HCl

▶ Glycinamide hydrochloride see p. 1962

## Glyoxal



### Glyoxal
**solution 40 %**
Ethanedial, Oxaldehyde
$C_2H_2O_2$
M 58,04 g/mol
D ~1,27 • bp 104 °C
mp -14 °C
[107-22-2] • EC No. 203-474-9
WGK 1
**Warning**
H341-H315-H319-H317-H332-H335

**Guarantee analysis:**
Assay (titr.). ..... 40 % ±0,5 %
pH value. ..... 2,0-3,5
Colour number (APHA). ..... ≤20

| | | | |
|---|---|---|---|
| **HN49.1** | 100 ml | glass | 14,55 € |
| **HN49.2** | 1 l | glass | 34,95 € |
| Original pack 6 x 1 l | | | 33,20/1 l |
| **HN49.3** | 2,5 l | glass | 67,20 € |
| Original pack 4 x 2,5 l | | | 63,84/2,5 l |

## Glyoxalin
▶ Imidazole see p. 1999

## Glyoxyldiureide
▶ Allantoin see p. 1718

## GOD
▶ Glucose oxidase (GOD) see p. 1956

## Gold shot

### Gold shot
**ROTI®METIC 99,999 % (5N)**
Au
M 196,97 g/mol
D 19,3 • bp 2800 °C
mp 1064 °C
[7440-57-5] • EC No. 231-165-9

**Type analysis:**
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5622.1** | 1 g | plastic | 221,35 € |
| **5622.2** | 5 g | plastic | 1041,70 € |

## Gold
▶ Sheets of gold see p. 2249

## Gold Standards
▶ Gold AAS Standard Solution see p. 2294
▶ Gold ICP Standard Solution see p. 2298
▶ Gold ICP Standard Solution see p. 2303

## Gold(III) chloride trihydrate
▶ Tetrachloroauric(III) acid trihydrate see p. 2334

## Goldner's staining I

### Goldner's staining I
**for microscopy**
For visualising connective tissue (Masson-Goldner trichrome staining).
Ponceau-Fuchsin solution
WGK 1

| | | | |
|---|---|---|---|
| **3469.1** | 500 ml | glass | 28,50 € |
| **3469.2** | 1 l | glass | 39,70 € |
| Original pack 6 x 1 l | | | 37,72/1 l |

For further information, please see page 1454

## Goldner's staining II

### Goldner's staining II
**for microscopy**
For visualising connective tissue (Masson-Goldner trichrome staining).
Phosphotungstic acid-Orange G solution
WGK 1
**Danger** H315-H318

| | | | |
|---|---|---|---|
| **3470.1** | 500 ml | glass | 50,45 € |
| **3470.2** | 1 l | glass | 85,90 € |
| Original pack 6 x 1 l | | | 81,61/1 l |

For further information, please see page 1454

## Goldner's staining III

### Goldner's staining III
**for microscopy**
For visualising connective tissue (Masson-Goldner trichrome staining).
Light green SF yellowish solution

| | | | |
|---|---|---|---|
| **3473.1** | 500 ml | glass | 29,60 € |
| **3473.2** | 1 l | glass | 38,60 € |
| Original pack 6 x 1 l | | | 36,67/1 l |

For further information, please see page 1454

## Gold potassium cyanide
▶ Potassium dicyanoaurate see p. 2166

## Gold trichloride hydrochloride
▶ Tetrachloroauric(III) acid trihydrate see p. 2334

## Gold trichloride trihydrate
▶ Tetrachloroauric(III) acid trihydrate see p. 2334

## GOx
▶ Glucose oxidase (GOD) see p. 1956

## G-6-P-$Na_2$
▶ D-Glucose-6-phosphate disodium dihydrate see p. 1957

## Gram's decolourising solution

### Gram's decolourising solution
**for Gram staining**
Ethanolic solution containing 25 % acetone. It is used for differentiation of bacteria during Gram staining.
UN No. 1993 • ADR 3 II • WGK 1
**Danger** H225-H319-H336

| | | | |
|---|---|---|---|
| **CN02.1** | 500 ml | glass | 22,50 € |

For further information, please see page 1460

## Gram staining kit

### Gram staining kit
**for microscopy**
Kit for differentiation of gram-positive and gram-negative bacteria, incl. instructions for use.
Storage temp.: +20 °C
UN No. 1992 • ADR 3 (6.1) II • WGK 2
**Danger**
H225-H314-H302+H312+H332-H336-H341

**Formulation:**
Carbol gentianaviolet solution (Art. No. CN00). ..... 500 ml
Iodine-potassium iodide solution acc. to Lugol (Art. No. N052). ..... 500 ml
Gram's decolourising solution (Art. No. CN02). .. 500 ml
Carbol fuchsine solution (Art. No. A130). ..... 500 ml

| | | | |
|---|---|---|---|
| **HP02.1** | 1 kit | glass | 90,20 € |

For further information, please see page 1460

## Granopent® "P"

### Granopent® "P"
**Paraffin, in pellets, for histology**
**Melting range: 52-54 °C**
D 0,9 • bp >315 °C
flp 200 °C
[8002-74-2] • EC No. 232-315-6

**Type analysis:**
Appearance. ..... white, wax-like pellets
Solidification point. ..... 52-54 °C
Needle penetration (25 °C, 1/10 mm). ..... 14-20

| | | | |
|---|---|---|---|
| **9279.1** | 1 kg | plastic | 19,25 € |
| Original pack 6 x 1 kg | | | 18,29/1 kg |
| **9279.2** | 2,5 kg | plastic | 38,60 € |

For further information, please see page 1450

## Granulopent
▶ Phosphorus pentoxide see p. 2152

## Graphite

### Graphite

**natural, amorphous**

Ideal as lubricant for metals and for metal blacking, absorbent.

D 2,2

[7782-42-5] • EC No. 231-955-3

**Type analysis:**

Carbon (C).....45-50 %
Ash.....50-55 %
Humidity.....≤0,7 %
Sieve analysis: ≥85 % passes 75 µm sieve (200 mesh)

| | | | |
|---|---|---|---|
| **7614.2** | 500 g | plastic | 17,45 € |
| Original pack 6 x 500 g | | | 16,58/500 g |
| **7614.3** | 1 kg | plastic | 26,35 € |
| Original pack 6 x 1 kg | | | 25,03/1 kg |
| **7614.1** | 3 kg | plastic | 42,90 € |

## Graciolon

▶ Betulinic acid see p. 1771

## GSH

▶ L-Glutathione reduced see p. 1959

## GSSG

▶ Glutathione oxidized see p. 1959

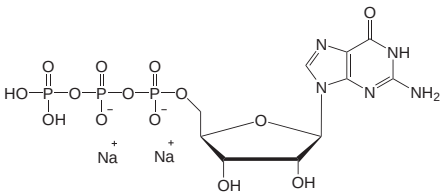
## G418 sulphate solution

▶ Geneticin disulphate (G418 Sulphate) see p. 1949

## GTC

▶ Guanidine thiocyanate see p. 1966

## GTP



### GTP

**≥90 %, lyophilised**

Guanosine-5'-triphosphate di-sodium salt

$C_{10}H_{14}N_5O_{14}P_3Na_2 \cdot 3\ H_2O$

M 621,18 g/mol

Storage temp.: -20 °C •

Transport temp.: cooled

[56001-37-7] • EC No. 259-940-7

| | | | |
|---|---|---|---|
| **K056.1** | 100 mg | plastic | 57,55 € |
| **K056.2** | 250 mg | plastic | 99,45 € |
| **K056.3** | 500 mg | plastic | 192,45 € |
| **K056.4** | 1 g | plastic | 230,60 € |
| **K056.5** | 10 g | plastic | 922,25 € |

For further information, please see page 1262

## GTP solution

### GTP solution

**≥99 %, 100 mM solution**

Guanosine-5'-triphosphate

$C_{10}H_{13}N_5O_{14}P_3$

M 520,15 g/mol

Storage temp.: -20 °C •

Transport temp.: cooled

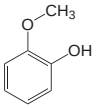
[56001-37-7]

WGK 1

| | | | |
|---|---|---|---|
| **K047.1** | 25 µmol (250 µl) | plastic | 40,75 € |

For further information, please see page 1261

## Guaiacol



### Guaiacol

**≥98%, extra pure**

2-Hydroxyanisole

$C_7H_8O_2$

M 124,14 g/mol

D 1,13 • bp 205 °C

mp 27-29 °C • flp 82 °C

[90-05-1] • EC No. 201-964-7

WGK 1

**Warning** H302-H315-H319

**Type analysis:**

Assay (GC).....≥98,0 %

| | | | |
|---|---|---|---|
| **7308.1** | 100 ml | glass | 39,70 € |

## Guaiac (resin)

### Guaiac (resin)

**soluble in alcohol**

mp >90 °C

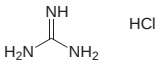
[9000-29-7] • EC No. 232-535-2

**Type analysis:**

Appearance.....powdered, light brown
Water (KF).....≤3 %
Ash.....≤5 %

| | | | |
|---|---|---|---|
| **6033.1** | 100 g | plastic | 68,70 € |

## Guanidine hydrochloride



Guanidine HCl, Guanidinium chloride, Iminomethanediamine HCl

$CH_5N_3 \cdot HCl$

M 95,53 g/mol

D 1,345

mp 185 -188 °C

Solubility: 2150 g/l ($H_2O$, 20 °C)

[50-01-1] • EC No. 200-002-3

WGK 1

**Warning** H302-H315-H319

### Guanidine hydrochloride

**≥99,7 %, p.a., Protein Grade**

Reagent used for reversible denaturation and renaturation of proteins.

**Guarantee analysis:**

Assay.....≥99,7 %
Appearance of solution (50 % solution).....clear, colourless
Dicyandiamide.....≤0,01 %
Ammonium ($NH_4$).....≤0,01 %
Iron (Fe).....≤0,0001 %
Melamin.....≤0,01 %
Water .....≤0,2 %
Melting point.....185-188 °C
pH value (6 M, 50 % sol.).....4,5-7,0
UV-absorption (6 M):
230 nm.....≤0,15
260 nm.....≤0,03
280 nm.....≤0,015
DNAse.....none detected
RNAse.....none detected
Protease.....none detected

| | | | |
|---|---|---|---|
| **0035.1** | 100 g | plastic | 55,80 € |
| **0035.2** | 500 g | plastic | 201,60 € |
| Original pack 6 x 500 g | | | 191,52/500 g |
| **0035.3** | 1 kg | plastic | 289,20 € |
| Original pack 6 x 1 kg | | | 274,74/1 kg |

### Guanidine hydrochloride

**≥99,5 %, for biochemistry**

**Type analysis:**

Assay.....≥99,5 %
Water .....≤0,2 %
Ammonium ($NH_4$).....≤0,05 %
Iron (Fe).....≤0,0001 %
Melamin.....≤0,01 %
Dicyandiamide.....≤0,1 %
pH value (6 M, 50 % in $H_2O$).....4,5-7,0
UV-absorption (55 %):
260 nm.....≤0,05
280 nm.....≤0,20

| | | | |
|---|---|---|---|
| **0037.3** | 250 g | plastic | 37,10 € |
| **0037.2** | 500 g | plastic | 64,40 € |
| **0037.1** | 1 kg | plastic | 118,15 € |
| Original pack 6 x 1 kg | | | 112,24/1 kg |

## Guanidine hydrochloride

**≥98 %**

For technical use.

**Type analysis:**

Appearance..... colourless crystals
Assay..... ≥98 %
Water..... ≤0,3 %
Ammonium chloride..... ≤0,5 %
Insoluble in water..... ≤0,4 %

| | | | |
|---|---|---|---|
| **6069.2** | 500 g | plastic | 30,00 € |
| Original pack 6 x 500 g | | | 28,50/500 g |
| **6069.1** | 1 kg | plastic | 44,65 € |
| Original pack 6 x 1 kg | | | 42,42/1 kg |
| **6069.3** | 2,5 kg | plastic | 92,35 € |

## Guanidine HCl

▶ Guanidine hydrochloride see p. 1965

## Guanidine hydrochloride solution

### Guanidine hydrochloride solution

**55 % in water (6,7 M)**

For protein denaturation.
D ~1,16
EC No. 200-002-3
WGK 1

**Warning** H302-H315-H319

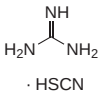
**Type analysis:**

Assay..... 54,0-56,0 %
pH value..... 5,0-7,0
Iron (Fe)..... ≤0,0001 %
Ammonium ($NH_4$)..... ≤0,5 %
UV-absorption:
260 nm..... ≤0,30
280 nm..... ≤0,15
Clear solution. Due to low iron content, substance is excellent e.g. for iron determination in biological solutions.

| | | | |
|---|---|---|---|
| **9465.1** | 1 l | glass | 83,75 € |
| Original pack 6 x 1 l | | | 79,56/1 l |

For further information, please see page 1306

## Guanidine thiocyanate



· HSCN

GTC, Guanidinium isothiocyanate
$C_2H_6N_4S$
M 118,16 g/mol
D 1,29
mp 118 °C
Solubility: 1420 g/l ($H_2O$, 20 °C)
[593-84-0] • EC No. 209-812-1
WGK 2

**Warning**
H302+H312+H332-H412-EUH032

### Guanidine thiocyanate

**≥99 %, for biochemistry**

Reagent for denaturation of proteins and for isolation of DNA and RNA.
For a 4 M solution, solubilise 472,64 g in distilled water and fill to 1 l.

**Type analysis:**

Appearance..... colourless crystals
Appearance (33 %, water)..... colourless, clear
Assay..... ≥99,0 %
Melting point..... 118-121 °C
Water..... ≤0,3 %
Iron (Fe)..... ≤0,0001 %
Heavy metals..... ≤0,001 %
pH value (1 M, $H_2O$)..... 5,0-7,0
Absorption:
280 nm..... ≤0,40
300 nm..... ≤0,05

| | | | |
|---|---|---|---|
| **0017.1** | 100 g | plastic | 28,95 € |
| **0017.3** | 500 g | plastic | 106,35 € |
| Original pack 6 x 500 g | | | 101,03/500 g |
| **0017.2** | 1 kg | plastic | 170,95 € |
| Original pack 6 x 1 kg | | | 162,40/1 kg |
| **0017.5** | 5 kg | plastic | 750,90 € |

For further information, please see page 1247

### Guanidine thiocyanate

**≥99 %, extra pure**

**Type analysis:**

Assay (titr.)..... ≥99,0 %
pH value..... 5-7
Water (KF)..... ≤0,5 %
Melting range..... 118-121 °C
Ash..... ≤0,1 %
Iron (Fe)..... ≤0,0001 %
Absorption:
280 nm..... ≤0,5
300 nm..... ≤0,1

| | | | |
|---|---|---|---|
| **2628.1** | 100 g | plastic | 23,15 € |
| **2628.2** | 250 g | plastic | 42,50 € |
| **2628.3** | 500 g | plastic | 76,90 € |
| Original pack 6 x 500 g | | | 73,06/500 g |
| **2628.4** | 1 kg | plastic | 131,70 € |
| Original pack 6 x 1 kg | | | 125,12/1 kg |

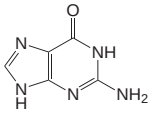
## Guanidinium chloride

▶ Guanidine hydrochloride see p. 1965

## Guanidinium isothiocyanate

▶ Guanidine thiocyanate see p. 1966

## Guanine



### Guanine

**≥97 %, for biochemistry**

4-Aminohypoxanthine
$C_5H_5N_5O$
M 151,13 g/mol
mp 360 °C
Storage temp.: +4 °C
[73-40-5] • EC No. 200-799-8
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Appearance..... white powder
Assay..... ≥97,0 %

| | | | |
|---|---|---|---|
| **7505.1** | 10 g | glass | 25,30 € |
| **7505.2** | 25 g | glass | 51,50 € |

## Guanine hydrochloride

### Guanine hydrochloride

**≥98 %, for biochemistry**

$C_5H_5N_5O \cdot HCl$
M 187,59 g/mol
mp ~300 °C
Storage temp.: +4 °C
[635-39-2] • EC No. 211-235-2
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

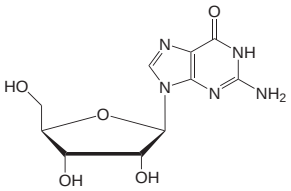
Assay (HPLC)..... ≥98,0 %
Loss on drying..... ≤1,0 %

| | | | |
|---|---|---|---|
| **3814.2** | 5 g | glass | 14,55 € |
| **3814.1** | 10 g | glass | 21,40 € |
| **3814.3** | 50 g | glass | 73,00 € |

## Guanine-9-β-D-ribofuranoside

▶ Guanosine see p. 1967

## Guanosine



### Guanosine
**≥98 %, for biochemistry**
Guanine-9-β-D-ribofuranoside
$C_{10}H_{13}N_5O_5$
M 283,24 g/mol
mp 250 °C (dec.)
[118-00-3] • EC No. 104-227-8
WGK 1

**Type analysis:**
Assay (HPLC).....≥98,0 %
Arsenic (As).....≤0,0001 %
Heavy metals.....≤0,001 %
Loss on drying.....≤3,0 %

| | | | |
|---|---|---|---|
| **0715.1** | 10 g | plastic | 22,05 € |
| **0715.2** | 25 g | plastic | 38,60 € |

## Guanosine-BCE-phosphoramidite

### Guanosine-BCE-phosphoramidite
**for DNA synthesis**
For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.
DMT-dG(N-Bu)P-($OCH_2CH_2CN$)-N($iPr)_2$
$C_{44}H_{54}N_7O_8P$
M 839,7 g/mol
Storage temp.: +4 °C
[93183-15-4]

| | | | |
|---|---|---|---|
| **K923.1** | 1 g | glass | 34,30 € |

For further information, please see page 1492

## Guanosine-CPG-Support

### Guanosine-CPG-Support
**500 Å pore size**
Support material for DNA-synthesis.
dG-lcaa-CPG
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC).....≥98,0 %
CPG loading.....30-40 µmol/g
Coupling efficiency.....≥99 %

| | | | |
|---|---|---|---|
| **2320.3** | 1 g | plastic | 56,45 € |

For further information, please see page 1492

## Guanosine-5'-triphosphate disodium salt

▶ GTP see p. 1965

## Guarana powder

### Guarana powder
**powdered**
Guar plant containing ~3-5 % caffeine.
Semen guaranae powdered
[84929-28-2] • EC No. 284-512-1
WGK 1

**Type analysis:**
Appearance.....light brownish powder

| | | | |
|---|---|---|---|
| **A527.1** | 250 g | plastic | 29,60 € |
| **A527.2** | 1 kg | plastic | 85,90 € |
| Original pack 6 x 1 kg | | | 81,61/1 kg |

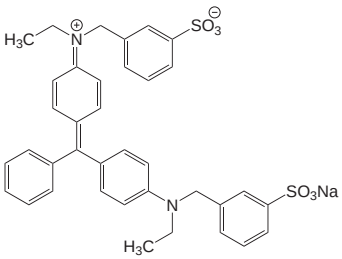
## Guar flour

### Guar flour
**~5000 cP**
[9000-30-0] • EC No. 232-536-8
WGK 1

**Type analysis:**
Viscosity (1 % solution).....~5000 cP
pH value (1 M in $H_2O$).....5,4-7,0
Moisture.....≤12 %
Carbohydrates.....≥80 %
Protein.....≤5,0 %
Ash.....≤0,8 %
Optained from endosperm of the seed of the guar plant *Cyamopsis tetragonolobus* which is mainly cultivated in Asia.

| | | | |
|---|---|---|---|
| **3527.2** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **3527.1** | 1 kg | plastic | 49,35 € |
| Original pack 6 x 1 kg | | | 46,88/1 kg |

## Guinea green B (C.I. 42085)



### Guinea green B (C.I. 42085)
**extra pure**
Acid green 3
$C_{37}H_{35}N_2NaO_6S_2$
M 690,82 g/mol
mp 225 °C (dec.)
[4680-78-8] • EC No. 225-132-8
WGK 3

**Type analysis:**
Appearance.....dark green to dark purple powder
Appearance of solution (1 % in $H_2O$).....clear, blue to green

| | | | |
|---|---|---|---|
| **7694.1** | 5 g | glass | 14,55 € |
| **7694.2** | 25 g | glass | 25,70 € |
| **7694.3** | 100 g | glass | 67,20 € |

## Gum arabic

### Gum arabic
**spray dried**
Acacia
flp >250 °C
[9000-01-5] • EC No. 232-519-5

**Warning** H319

**Guarantee analysis:**
Appearance.....white powder
Identity.....complies
pH value (25 % in $H_2O$).....4,1-5,8
Specific rotation $[\alpha]_D^{20}$.....-36° to -22°
Loss on drying.....≤10 %
Heavy metals (as Pb).....≤0,004 %
Arsenic (As).....<0,0003 %
Lead (Pb).....≤0,0002 %
Mercury (Hg).....<0,0001 %
Cadmium (Cd).....<0,0001 %
Total ash.....≤4 %
Products of hydrolysis.....complies
Acid insoluble ash.....≤0,5 %
Insoluble matter.....≤0,5 %

| | | | |
|---|---|---|---|
| **4159.2** | 100 g | plastic | 16,05 € |
| **4159.3** | 500 g | plastic | 39,70 € |
| Original pack 6 x 500 g | | | 37,72/500 g |
| **4159.1** | 1 kg | plastic | 72,60 € |
| Original pack 6 x 1 kg | | | 68,97/1 kg |

## Hafnium Standards

▶ Hafnium ICP Standard Solution see p. 2298
▶ Hafnium ICP Standard Solution see p. 2303

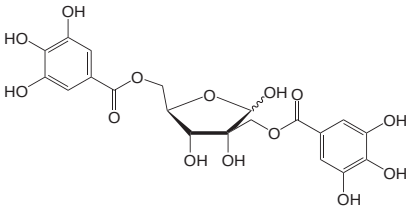
## Hafnium(IV) oxide

### Hafnium(IV) oxide
**≥99,3 %**
$HfO_2$
M 210,49 g/mol
D 9,68
mp 2812 °C
[12055-23-1] • EC No. 235-013-2

**Type analysis:**
Assay.....≥99,3 %

| | | | |
|---|---|---|---|
| **9073.1** | 1 g | glass | 27,45 € |
| **9073.2** | 10 g | glass | 181,70 € |

## Hamamelitannin



### Hamamelitannin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Hamamelis virginiana.*
$C_{20}H_{20}O_{14}$
M 484,37 g/mol
Storage temp.: +4 °C
[469-32-9] • EC No. 207-416-3

**Type analysis:**
Purity (HPLC).....>99 %

| | | | |
|---|---|---|---|
| **1151.1** | 20 mg | glass | 256,95 € |

## Ham's F12 cell culture medium
▶ Roti®-CELL Ham's F12 see p. 2206

## Hanks' salt solution
▶ Roti®-CELL Hanks' BSS see p. 2206

## Hanus solution (0,2 N)

### Hanus solution
**0,1 mol IBr/l - 0,2 N volumetric standard solution**
For determination of iodine number.
UN No. 2789 • ADR 8 (3) II • WGK 1
**Danger** H226-H314-H290

**Type analysis:**
Amount-of-substance conc. (20 °C).....
..... 0,1 mol IBr/l ±2 %

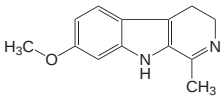
| | | | |
|---|---|---|---|
| **KK63.1** | 1 l | glass | 47,85 € |
| Original pack 6 x 1 l | | | 45,46/1 l |

For further information, please see page 1621

## Hardener DBA
▶ Glycidether Hardener DBA see p. 1961

## Hardener MNA
▶ Glycidether Hardener MNA see p. 1961

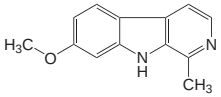
## Harmaline



### Harmaline
**ROTICHROM® ~CHR**
$C_{13}H_{14}N_2O$
M 214,26 g/mol
mp 232-234 °C (dec.)
[304-21-2] • EC No. 206-152-6

| | | | |
|---|---|---|---|
| **7644.3** | 25 mg | glass | 149,45 € |

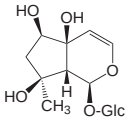
## Harmine



### Harmine
**ROTICHROM® TLC**
Reference substance for thin layer chromatography.
$C_{13}H_{12}N_2O$
M 212,25 g/mol
mp 262-264 °C (dec.)
Storage temp.: +4 °C
[442-51-3] • EC No. 207-131-4
UN No. 1544 • ADR 6.1 II
**Warning** H302+H312+H332-H319

| | | | |
|---|---|---|---|
| **9968.1** | 500 mg | glass | 42,90 € |

## Harpagid

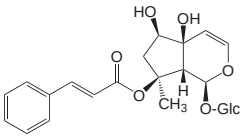


### Harpagid
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Harpagophytum procumbens.*
$C_{15}H_{24}O_{10}$
M 364,34 g/mol
Storage temp.: +4 °C
[6926-08-5]
**Warning** H302

**Type analysis:**
Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **1152.1** | 10 mg | glass | 299,95 € |

## Harpagoside



8'-Cinnamoylharpagide
$C_{24}H_{30}O_{11}$
M 494,48 g/mol
mp 120-129 °C
[19210-12-9] • EC No. 242-881-6
WGK 1

### Harpagoside
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC). .....≥95,0 %
Residual solvents (GC). .....≤2,0 %
Water (KF). .....≤5,0 %
Assay (qNMR). .....≥80,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE21.1** | 25 mg | glass | 772,95 € |

### Harpagoside
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC). .....≥80,0 %
Identity. .....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC21.1** | 50 mg | glass | 439,70 € |

### Harpagoside
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Harpagophytum procumbens.*
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC).....>98 %

| | | | |
|---|---|---|---|
| **7471.1** | 10 mg | glass | 99,45 € |

## Harris Hematoxylin solution
▶ Hematoxylin solution acc. to Harris see p. 1971

## HATU
▶ O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HATU) see p. 1755

## HBBS
▶ Roti®-CELL Hanks' BSS see p. 2206

## HBTU

▶ O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HBTU) see p. 1768

## HCl-ethanol solution 0,75 %

### HCl-ethanol solution 0,75 %

**for histology**

Differentiating solution for histological staining.
Hydrochloric acid in ethanol.
UN No. 2924 • ADR 3 (8) II • WGK 1

**Danger** H225-H290-H319

**Type analysis:**

Appearance. ..... clear, colourless
Density (20 °C). ..... 0,880-0,899

| | | | |
|---|---|---|---|
| **9969.1** | 500 ml | plastic | 14,95 € |
| **9969.2** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **9969.3** | 5 l | plastic | 83,75 € |
| Original pack 2 x 5 l | | | 79,56/5 l |

For further information, please see page 1442

## HCl-ethanol solution 3 %

### HCl-ethanol solution 3 %

**for histology**

Differentiating solution for histological staining.
Hydrochloric acid in ethanol.
D 0,9
UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225

**Type analysis:**

Appearance. ..... clear, colourless
Density (20 °C). ..... 0,896-0,905

| | | | |
|---|---|---|---|
| **6477.1** | 500 ml | plastic | 17,10 € |
| **6477.2** | 1 l | plastic | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |
| **6477.3** | 5 l | plastic | 103,10 € |
| Original pack 2 x 5 l | | | 97,95/5 l |

For further information, please see page 1442

## 0.2 M HCl/KCl Solution, pH 2.2

▶ Legionella Acid Buffer see p. 2034

## HCTU

▶ O-(1H-6-Chlorobenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HCTU) see p. 1827

## HDMA

▶ 1-[(Dimethylamino)(morpholino)methylene]-1H-[1,2,3]triazolo[4,5-b]pyridine-1-ium 3-oxide hexafluorophosphate (HDMA) see p. 1881

## HDMC

▶ 4-((6-Chloro-1H-benzo{d}[1,2,3]triazol-1-yloxy)(dimethylamino)methylene)morpholin-4-ium hexafluorophosphate (HDMC) see p. 1827

## HDPA

▶ Hexadecylphosphonic acid see p. 1976

## Heart infusion

### Heart infusion

**for microbiology**

Storage temp.: +20 °C
WGK 1

**Type analysis:**

Total nitrogen. ..... ≥10 %
Amino nitrogen. ..... ≥3 %
Loss on drying. ..... ≤6 %
Ash. ..... ≤15 %
pH (2 % solution). ..... 6,5-7,5

| | | | |
|---|---|---|---|
| **7596.1** | 250 g | plastic | 57,55 € |
| **7596.2** | 500 g | plastic | 98,80 € |
| Original pack 6 x 500 g | | | 93,86/500 g |

For further information, please see page 1420

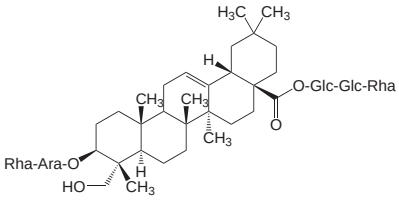
## Heating Bath Media


| Art. No. | Description | Page |
|---|---|---|
| 1980 | Alloy acc. to Wood | 1718 |
| 1670 | Rotitherm® H250 | 2234 |
| 0991 | Rotitherm® M 220 | 2235 |
| 0990 | Rotitherm® M 150 | 2235 |
| 7143 | Rotitherm® K + H | 2235 |
| 4106 | Silicone oil M 3 | 2258 |
| 4217 | Silicone oil M 3, stabilised | 2259 |
| 7844 | Silicone oil M 5 | 2258 |
| A413 | Silicone oil M 5, stabilised | 2259 |
| 4113 | Silicone oil M 10 | 2258 |
| 4010 | Silicone oil M 20 | 2258 |
| 2188 | Silicone oil M 20, stabilised | 2259 |
| 4020 | Silicone oil M 50 | 2258 |
| 4212 | Silicone oil M 50, stabilised | 2259 |
| 4025 | Silicone oil M 100 | 2258 |
| 4030 | Silicone oil M 200 | 2258 |
| 4035 | Silicone oil M 350 | 2258 |
| 4040 | Silicone oil M 500 | 2258 |
| 4045 | Silicone oil M 1000 | 2258 |
| 4050 | Silicone oil M 5000 | 2258 |
| 4055 | Silicone oil M 10 000 | 2258 |
| 4060 | Silicone oil M 20 000 | 2259 |
| 4080 | Silicone oil M 60 000 | 2259 |
| 4085 | Silicone oil M 100 000 | 2259 |
| 4112 | Silicone oil M 250 000 | 2259 |
| 4109 | Silicone oil M 500 000 | 2259 |
| 9375 | Silicone oil M 1 000 000 | 2259 |
| 4130 | Silicone oil PN 200 | 2260 |
| 6826 | Silicone oil PN 1000 | 2260 |


## Heavy water

▶ Deuterium oxide see p. 1862

## Hederacoside C




$C_{59}H_{96}O_{26}$
M 1221,39 g/mol
mp 218-223 °C
[27013-76-9] • EC No. 238-072-2
UN No. 2811 • ADR 6.1 III • WGK 2

**Warning** H302

### Hederacoside C

**>90 %, for biochemistry**

Storage temp.: +4 °C

**Type analysis:**

Appearance. ..... colourless to light ochre coloured powder
Assay (HPLC, 205 nm). ..... >90 %

| | | | |
|---|---|---|---|
| **6775.1** | 250 mg | glass | 152,15 € |

### Hederacoside C

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤8,0 %
Water (KF). ..... ≤3,0 %
Assay (qNMR). ..... ≥84,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE46.1** | 10 mg | glass | 568,70 € |

### Hederacoside C

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC). ..... ≥85,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC46.1** | 25 mg | glass | 321,45 € |

### Hederacoside C

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Hedera helix*.
Storage temp.: +4 °C

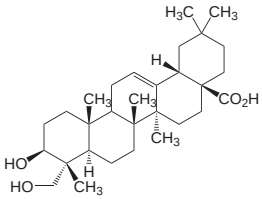
**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7472.1** | 10 mg | glass | 121,40 € |

H

## Hederagenin



Caulosapogenin, Melanthigenin
$C_{30}H_{48}O_4$
M 472,71 g/mol
mp 310-320 °C
Storage temp.: +4 °C
[465-99-6] • EC No. 207-369-9
WGK 1

### Hederagenin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Hedera helix*.

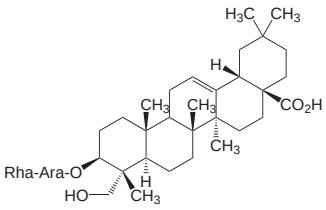
**Type analysis:**
Purity (HPLC).....≥98 %

| | | | |
|---|---|---|---|
| **7474.2** | 20 mg | glass | 205,90 € |

### Hederagenin
**ROTICHROM® ~CHR**

| | | | |
|---|---|---|---|
| **9141.2** | 250 mg | glass | 235,45 € |

## α-Hederin



### α-Hederin
**ROTICHROM® HPLC**
Reference substance for HPLC.
Helixin
$C_{41}H_{66}O_{12}$
M 750,98 g/mol
mp 256-257 °C
Storage temp.: +4 °C
[27013-91-8] • EC No. 248-166-5
WGK 1

**Type analysis:**
Purity (HPLC).....≥98 %

| | | | |
|---|---|---|---|
| **7486.1** | 10 mg | glass | 170,95 € |

## H&E fast staining kit

### H&E fast staining kit
**for microscopy**
Staining kit for fast oversight staining of tissue sections. Hematoxylin-eosin staining, incl. instructions for use.
Storage temp.: +20 °C
UN No. 1230 • ADR 3 II • WGK 3

**Danger**
H225-H290-H301+H311+H331-H370

**Formulation:**
Fast staining H&E, solution 1 (Art. No. 8947)
Fast staining H&E, solution 2 (Art. No. 8950)
Contents of this kit may not be bought separately.

| | | | |
|---|---|---|---|
| **9194.1** | 2 x 250 ml | plastic | 52,60 € |
| **9194.2** | 2 x 500 ml | plastic | 76,90 € |

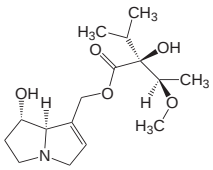
For further information, please see page 1455

## Helenien

### Helenien
**ROTICHROM® ~CHR**
Mixture of natural fatty acid esters of lutein.
Storage temp.: -20 °C •
Transport temp.: room temp.
[547-17-1] • EC No. 208-916-4

| | | | |
|---|---|---|---|
| **4452.2** | 10 mg | glass | 299,95 € |

## Heliotrine

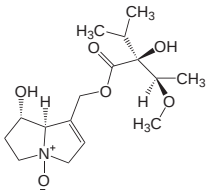


### Heliotrine
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Heliotropium*.
$C_{16}H_{27}NO_5$
M 313,39 g/mol
mp 118-122 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[303-33-3]
WGK 3

**Type analysis:**
Purity (HPLC). ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **1929.1** | 20 mg | glass | 317,15 € |

## Heliotrine N-oxide



### Heliotrine N-oxide
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Heliotropium*.
$C_{16}H_{27}NO_6$
M 329,39 g/mol
mp 163-167 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[6209-65-0]
WGK 3

**Type analysis:**
Purity (HPLC).....≥97 %

| | | | |
|---|---|---|---|
| **1944.1** | 10 mg | glass | 274,15 € |

## Helixin

▶ α-Hederin see p. 1970

## Hemalum solution acid acc. to Mayer

### Hemalum solution acid acc. to Mayer
**for microscopy**
For visualising nuclei.
Mayers Hemalum solution
WGK 1

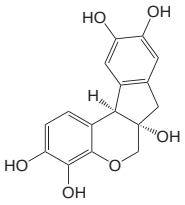
**Warning** H302-H315-H319

**Type analysis:**
Suitability for microscopy (tissue section). .....complies

| | | | |
|---|---|---|---|
| **T865.1** | 500 ml | glass | 26,35 € |
| **T865.2** | 1 l | glass | 42,90 € |
| Original pack 6 x 1 l | | | 40,76/1 l |
| **T865.3** | 2,5 l | plastic | 77,95 € |
| Original pack 4 x 2,5 l | | | 74,05/2,5 l |

For further information, please see page 1455

## Hematoxylin (C.I. 75290)



### Hematoxylin (C.I. 75290)

**for microscopy**
Hydroxybrasilin
$C_{16}H_{14}O_6$
M 302,29 g/mol
mp 145 °C
[517-28-2] • EC No. 208-237-3

**Type analysis:**
Appearance. .....light-brown powder
Maximum absorption. .....~292 nm in methanol
pH value (1 % in $H_2O$).....5,0-7,0

| | | | |
|---|---|---|---|
| **3816.1** | 10 g | glass | 40,75 € |
| **3816.3** | 50 g | glass | 161,15 € |
| **3816.2** | 100 g | glass | 284,90 € |

For further information, please see page 1461

## Hematoxylin solution acc. to Delafield

### Hematoxylin solution acc. to Delafield

**20x conc., for microscopy**
Delafield's hematoxylin solution.
UN No. 1992 • ADR 3 (6.1) II • WGK 1
**Danger**
H225-H370-H332+H312+H302

**Type analysis:**
Suitability for microscopy. .....complies

| | | | |
|---|---|---|---|
| **CN03.1** | 500 ml | glass | 38,60 € |

For further information, please see page 1455

## Hematoxylin solution acid acc. to Ehrlich

### Hematoxylin solution acid acc. to Ehrlich

**for microscopy**
Ehrlich's acid hematoxylin solution.
UN No. 1993 • ADR 3 II • WGK 1
**Danger** H225-H319-H336

**Type analysis:**
Suitability for microscopy. .....complies

| | | | |
|---|---|---|---|
| **CN04.1** | 500 ml | glass | 38,60 € |

For further information, please see page 1455

## Hematoxylin solution acc. to Gill II

### Hematoxylin solution acc. to Gill II

**for microscopy**
WGK 1
**Danger**
H302-H318-H373-EUH208

**Type analysis:**
Suitability for microscopy (tissue section)..... complies

| | | | |
|---|---|---|---|
| **T864.1** | 500 ml | glass | 38,60 € |
| **T864.2** | 1 l | glass | 55,80 € |
| Original pack 6 x 1 l | | | 53,01/1 l |
| **T864.3** | 2,5 l | plastic | 107,40 € |
| Original pack 4 x 2,5 l | | | 102,03/2,5 l |

For further information, please see page 1455

## Hematoxylin solution acc. to Harris

### Hematoxylin solution acc. to Harris

**for microscopy**
Harris Hematoxylin solution,
Papanicolaou solution 1a
WGK 1

**Type analysis:**
Suitability for microscopy (tissue section)..... complies

| | | | |
|---|---|---|---|
| **X903.1** | 500 ml | glass | 33,25 € |
| **X903.2** | 1 l | glass | 52,15 € |
| Original pack 6 x 1 l | | | 49,54/1 l |
| **X903.3** | 2,5 l | plastic | 109,55 € |
| Original pack 4 x 2,5 l | | | 104,07/2,5 l |

For further information, please see page 1455

## Hematoxylin solution A acc. to Weigert

### Hematoxylin solution A acc. to Weigert

**for microscopy**
Hematoxylin solution acc. to Weigert.
Solution A acc. to Weigert
UN No. 1219 • ADR 3 II • WGK 1
**Danger** H225-H319-H336

**Type analysis:**
Suitability for microscopy..... complies
**Working solution:**
Mix Weigert's solution A and Weigert's solution B at a ratio of 1:1.

| | | | |
|---|---|---|---|
| **X906.1** | 500 ml | glass | 55,40 € |

For further information, please see page 1454

## Hematoxylin solution B acc. to Weigert

### Hematoxylin solution B acc. to Weigert

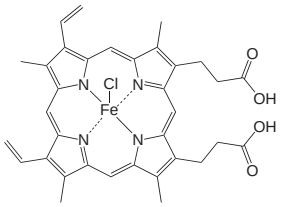
**for microscopy**
Iron(III) chloride solution acc. to Weigert
Solution B acc. to Weigert
WGK 1
**Danger** H318

**Type analysis:**
Suitability for microscopy. .....complies
**Working solution:**
Mix Weigert's solution A and Weigert's solution B at a ratio of 1:1.

| | | | |
|---|---|---|---|
| **X907.1** | 500 ml | glass | 21,00 € |

For further information, please see page 1454

## Hemin(chloride)



### Hemin(chloride)

**≥98 %, cryst.**
$C_{34}H_{32}ClFeN_4O_4$
M 651,96 g/mol
[16009-13-5] • EC No. 240-140-1
WGK 1

**Type analysis:**
Appearance. .....fine black cryst. powder
Assay (HPLC). .....≥98,0 %
Moisture. .....≤0,5 %

| | | | |
|---|---|---|---|
| **7629.1** | 1 g | glass | 17,10 € |
| **7629.2** | 5 g | glass | 46,80 € |

## Heptadeuterodimethyl-formamide

▶ N,N-Dimethylformamide D7 see p. 1883

## Heparin sodium salt

### Heparin sodium salt

**≥180 I.U./mg, Ph.Eur., from porcine intestine mucosa**

M ~2x10$^4$ g/mol

Storage temp.: +4 °C

[9041-08-1]

WGK 1

**Guarantee analysis:**

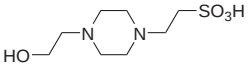
Appearance. ....white to off-white, hygroscopic powder
Assay (dry substance). ....≥180 I.U./mg
Identity. ....complies
Appearance of solution. .... clear
pH value (1 %, $H_2O$). ....5,5-8,0
Loss on drying. ....≤8,0 %
Endotoxins. ....≤0,01 I.U./I.U. Hep.
Protein (in dry substance). ....≤0,5 %
Nitrogen (dry substance). ....1,5-2,5 %
Sodium (dry substance). ....10,5-13,5 %
Heavy metals. ....≤0,003 %
Nucleotidic impurities (260 nm). ....≤0,15
Related substances:
Sum of dermatan sulphate and chondroitin sulphate. ....≤2,0 %
Any other impurities. ....complies

| | | | |
|---|---|---|---|
| **7692.1** | 1 g | glass | 71,50 € |
| **7692.2** | 5 g | glass | 310,15 € |
| **7692.3** | 25 g | plastic | 1392,15 € |

## Hepasamin

▶ D-Galactosamine hydrochloride see p. 1945

## HEPES




N-2-Hydroxyethyl piperazine-N'-2-ethane sulphonic acid, Good's buffer

$C_8H_{18}N_2O_4S$

M 238,31 g/mol

mp 234-238 °C

[7365-45-9] • EC No. 230-907-9

WGK 3

### HEPES

**PUFFERAN® CELLPURE® ≥99,5 %**

For cell culture, tissue culture and biotechnology.

**Guarantee analysis:**

Assay (titr.). ....≥99,5 %
Water (KF). ....≤0,2 %
Chloride (Cl). ....≤0,005 %
Sulphate ($SO_4$). ....≤0,01 %
Phosphate ($PO_4$). ....≤0,001 %
Heavy metals (as Pb). ....≤0,0005 %
Arsenic (As). ....≤0,00005 %
Iron (Fe). ....≤0,0003 %
UV-absorption (1 M in $H_2O$):
260 nm. ....≤0,04
280 nm. ....≤0,03
Endotoxins. .... tested
DNases, RNases, Protease. .... none detected

| | | | |
|---|---|---|---|
| **HN77.1** | 50 g | plastic | 28,95 € |
| **HN77.2** | 100 g | plastic | 41,85 € |
| **HN77.3** | 250 g | plastic | 80,10 € |
| **HN77.4** | 500 g | plastic | 141,80 € |
| Original pack 6 x 500 g | | | 134,71/500 g |
| **HN77.5** | 1 kg | plastic | 244,60 € |
| Original pack 6 x 1 kg | | | 232,37/1 kg |

For further information, please see page 1329

### HEPES

**≥99,5 %, BioScience-Grade**

For molecular biology and biotechnology.

**Guarantee analysis:**

Assay. ....≥99,5 %
Solubility (0,1 M in $H_2O$). .... clear, complete
$pK_a$ (at 25 °C). .... 7,45-7,65
UV-absorption (1 M in $H_2O$):
260 nm. ....≤0,02
280 nm. ....≤0,02
405 nm. ....≤0,01
Chloride (Cl). ....≤0,005 %
Sulphate ($SO_4$). ....≤0,01 %
Phosphate ($PO_4$). ....≤0,001 %
Calcium (Ca). ....≤0,003 %
Sodium (Na). ....≤0,005 %
Heavy metals (as Pb). ....≤0,0005 %
DNases, RNases, Protease. ....none detected

| | | | |
|---|---|---|---|
| **6763.1** | 100 g | plastic | 35,40 € |
| **6763.2** | 500 g | plastic | 137,10 € |
| Original pack 6 x 500 g | | | 130,25/500 g |
| **6763.3** | 1 kg | plastic | 227,40 € |
| Original pack 6 x 1 kg | | | 216,03/1 kg |

For further information, please see page 1249

### HEPES

**PUFFERAN® ≥99,5 %, p.a.**

For biochemistry and molecular biology.

**Guarantee analysis:**

Assay (titr.). ....≥99,5 %
Solubility (0,1 M in $H_2O$). .... clear, complete
pH value (5 % in $H_2O$). ....5,0-6,0
Sulphated ash. ....≤0,1 %
Loss on drying (110 °C). ....≤0,5 %
Chloride (Cl). ....≤0,005 %
Phosphate ($PO_4$). ....≤0,01 %
Sulphate ($SO_4$). ....≤0,01 %
Lead (Pb). ....≤0,0005 %
Cadmium (Cd). ....≤0,0005 %
Calcium (Ca). ....≤0,05 %
Iron (Fe). ....≤0,0005 %
Copper (Cu). ....≤0,0005 %
Magnesium (Mg). ....≤0,0005 %
Nickel (Ni). ....≤0,005 %
Heavy metals (as Pb). ....≤0,0005 %
UV-absorption (1 M in $H_2O$, d = 1 cm):
260 nm. ....≤0,05
280 nm. ....≤0,04
405 nm. ....≤0,03

| | | | |
|---|---|---|---|
| **9105.2** | 100 g | plastic | 33,25 € |
| **9105.4** | 500 g | plastic | 136,00 € |
| Original pack 6 x 500 g | | | 129,20/500 g |
| **9105.3** | 1 kg | plastic | 224,70 € |
| Original pack 6 x 1 kg | | | 213,47/1 kg |
| **9105.6** | 2,5 kg | plastic | 450,45 € |
| **9105.5** | 5 kg | plastic | 858,95 € |

For further information, please see page 1268

### HEPES

**PUFFERAN® ≥99,5 %, Buffer Grade**

For all standard applications.

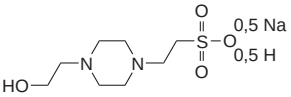
**Guarantee analysis:**

Assay (titr.). ....≥99,5 %
Water (KF). ....≤0,5 %
pH value (5 % in $H_2O$). ....5,0-6,5
Chloride (Cl). ....≤0,05 %
Sulphate ($SO_4$). ....≤0,05 %
Sulphated ash. ....≤0,1 %
Heavy metals (as Pb). ....≤0,001 %

| | | | |
|---|---|---|---|
| **HN78.1** | 100 g | plastic | 27,45 € |
| **HN78.2** | 500 g | plastic | 93,00 € |
| Original pack 6 x 500 g | | | 88,35/500 g |
| **HN78.3** | 1 kg | plastic | 169,35 € |
| Original pack 6 x 1 kg | | | 160,88/1 kg |
| **HN78.4** | 5 kg | plastic | 751,45 € |

For further information, please see page 1268

## HEPES 0,5 Na




### HEPES 0,5 Na

**PUFFERAN® ≥96 %**

N-2-Hydroxyethyl piperazine-N'-2-ethane sulphonic acid 0,5 Na

$C_8H_{17,5}N_2O_4S \cdot 0,5\ Na$

M 249,3 g/mol

[103404-87-1]

WGK 3

**Type analysis:**

Assay (titr.). ....≥96 %
Water (KF). ....≤3,0 %
pH value (1 % solution). ....7,2-7,6
UV-absorption (0,1 M in $H_2O$):
280 nm. ....≤0,03
260 nm. ....≤0,04

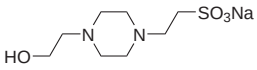
| | | | |
|---|---|---|---|
| **5582.1** | 50 g | plastic | 56,90 € |

For further information, please see page 1268

## HEPES Buffered Saline (tablets)

▶ Roti®fair HBS see p. 2212

## HEPES sodium salt



### HEPES sodium salt

**PUFFERAN® ≥99 %**

N-2-Hydroxyethyl piperazine-N'-2-ethane sulphonic acid sodium salt

$C_8H_{17}N_2SO_4Na$

M 260,3 g/mol

[75277-39-3] • EC No. 278-169-7

WGK 1

**Type analysis:**

Appearance. ..... white powder
Assay (titr., dry substance). ..... ≥99,0 %
Loss on drying. ..... ≤1,5 %
pH value (1 M in $H_2O$). ..... 10,0-12,0
UV-absorption (0,1 M in $H_2O$):
260 nm. ..... ≤0,2
280 nm. ..... ≤0,2

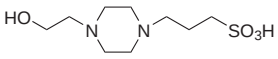
| | | | |
|---|---|---|---|
| **7020.1** | 25 g | plastic | 33,25 € |
| **7020.2** | 100 g | plastic | 104,20 € |

For further information, please see page 1268

## HEPES solution

▶ Roti®-CELL HEPES solution see p. 2207

## HEPPS, EPPS



### HEPPS, EPPS

**PUFFERAN® ≥98 %**

4-(2-Hydroxyethyl)-piperazine-1-propane sulphonic acid

$C_9H_{20}N_2O_4S$

M 252,33 g/mol

mp 231 °C (dec.)

[16052-06-5] • EC No. 240-198-8

WGK 1

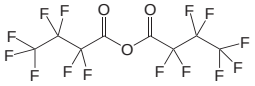
**Type analysis:**

Appearance. ..... white to off-white powder
Assay (titr.). ..... ≥98,0 %
pH value (1 % solution). ..... 5,0-6,5
Loss on drying. ..... ≤1,0 %
UV-absorption (0,1 M in $H_2O$):
260 nm. ..... ≤0,1

| | | | |
|---|---|---|---|
| **9164.1** | 10 g | plastic | 19,60 € |
| **9164.2** | 100 g | plastic | 110,65 € |

For further information, please see page 1268

## Heptafluorobutyric acid anhydride (HFBA)



### Heptafluorobutyric acid anhydride (HFBA)

**≥98 %, for GC**

Acylation reagent

HFBA

$C_8F_{14}O_3$

M 410,06 g/mol

D 1,66 • bp ~110 °C

[336-59-4] • EC No. 206-410-8

UN No. 3265 • ADR 8 III • WGK 2

**Danger** H314

**Type analysis:**

Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **0026.1** | 5 g | glass | 89,80 € |

For further information, please see page 1568

## Heptamethylene glycol

▶ 1,7-Heptanediol see p. 1974

## n-Heptane



n-Methyl hexane

$C_7H_{16}$

M 100,20 g/mol

D 0,68 • bp 98 °C

mp -90,5 °C • flp -4 °C

[142-82-5] • EC No. 205-563-8

UN No. 1206 • ADR 3 II • WGK 2

**Danger**

H225-H304-H400-H410-H315-H336

### n-Heptane

**ROTISOLV® ≥99 %, HPLC**

**Guarantee analysis:**

Assay (GC). ..... ≥99,0 %
Water (KF). ..... ≤0,01 %
Acidity (as $CH_3COOH$). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0005 %
Transmission:
245 nm. ..... ≥98 %
220 nm. ..... ≥80 %
200 nm. ..... ≥20 %
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **6828.1** | 2,5 l | glass | 107,40 € |
| Original pack 4 x 2,5 l | | | 102,03/2,5 l |

For further information, please see page 1590

### n-Heptane

**ROTISOLV® ≥95 %, HPLC**

**Guarantee analysis:**

Assay (GC). ..... ≥95 %
Water (KF). ..... ≤0,005 %
Free acid. ..... ≤0,001 %
Non volatile matter. ..... ≤0,0001 %
Transmission:
255 nm. ..... ≥99 %
220 nm. ..... ≥80 %
205 nm. ..... ≥50 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **7337.2** | 1 l | glass | 46,80 € |
| Original pack 6 x 1 l | | | 44,46/1 l |
| **7337.1** | 2,5 l | glass | 102,05 € |
| Original pack 4 x 2,5 l | | | 96,95/2,5 l |

For further information, please see page 1590

### n-Heptane

**ROTISOLV® ≥99 %, Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Assay (GC). ..... ≥99,0 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,01 %
Free acid (as $CH_3COOH$). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0001 %
GC/FID suitability (as 2-octanol). ..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ..... ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤2 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
GC/ECD volatile impurities (as ethylene dibromide). ..... ≤5 ng/ml
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ..... ≤0,05 mg/l
PAH-test (less than 2 ppb, HPLC). ..... complies
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb

| | | | |
|---|---|---|---|
| **7566.1** | 2,5 l | glass | 101,60 € |
| Original pack 4 x 2,5 l | | | 96,52/2,5 l |

### n-Heptane

**ROTISOLV® ≥99 %, Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC). ..... ≥99 %
Water (KF). ..... ≤0,005 %
Acidity. ..... ≤0,0005 meg/g
Evaporation residue. ..... 0,0005 %
GC/ECD (individual signal as lindan). ..... ≤5 ng/l
GC/PND (individual signal as ethylparathion). ..... ≤10 ng/l

| | | | |
|---|---|---|---|
| **X878.1** | 2,5 l | glass | 99,45 € |
| Original pack 4 x 2,5 l | | | 94,48/2,5 l |

## n-Heptane

**ROTISOLV® ≥99 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC). ≥99 %
Water (KF). ≤0,005 %
Acidity. ≤0,0005 meg/g
Evaporation residue. ≤0,0005 %
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤1,0 ppb
Transmission:
245 nm. ≥98 %
228 nm. ≥90 %
220 nm. ≥80 %
210 nm. ≥50 %
200 nm. ≥10 %

| | | | |
|---|---|---|---|
| **CP78.1** | 2,5 l | glass | 107,00 € |
| Original pack 4 x 2,5 l | | | 101,65/2,5 l |

## n-Heptane

**ROTIPURAN® ≥99 %, p.a.**

**Guarantee analysis:**

Assay (GC). ≥99,0 %
Colour (APHA). ≤10
Water . ≤0,01 %
Acidity. ≤0,0003 meq/g
Thiophene. complies
Calcium (Ca). ≤0,00005 %
Cadmium (Cd). ≤0,000005 %
Cobalt (Co). ≤0,000002 %
Chromium (Cr). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,000002 %
Lead (Pb). ≤0,00001 %
Zinc (Zn). ≤0,00001 %
Sulphur compounds (as S). ≤0,005 %
Evaporation residue. ≤0,001 %
Matter discoloured by $H_2SO_4$. complies

| | | | |
|---|---|---|---|
| **T174.1** | 1 l | glass | 70,45 € |
| Original pack 6 x 1 l | | | 66,93/1 l |
| **T174.2** | 2,5 l | glass | 148,90 € |
| Original pack 4 x 2,5 l | | | 141,46/2,5 l |
| **T174.3** | 5 l | aluminium | 246,20 € |
| Original pack 2 x 5 l | | | 233,89/5 l |

## n-Heptane

**≥99 %, for synthesis**

**Type analysis:**

Appearance. clear, colourless
Assay (GC). ≥99,0 %
Density (15 °C). 0,686-0,690
Aromatic compounds (GC). ≤0,005 %
Evaporation residue. ≤1 mg/100 ml

| | | | |
|---|---|---|---|
| **8654.1** | 1 l | glass | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **8654.3** | 2,5 l | glass | 68,70 € |
| Original pack 4 x 2,5 l | | | 65,27/2,5 l |
| **8654.5** | 5 l | aluminium | 117,20 € |
| Original pack 2 x 5 l | | | 111,34/5 l |
| **8654.2** | 10 l | tinplate | 214,90 € |
| **8654.4** | 25 l | tinplate | 454,20 € |

## n-Heptane

**≥95 %, for synthesis**

**Typ analysis:**

Appearance. clear, colourless
Assay (GC). ≥95 %
Density (15 °C). 0,686-0,690
Aromatic compounds (GC). ≤0,02 %
Evaporation residue. ≤0,002 %

| | | | |
|---|---|---|---|
| **CP46.1** | 1 l | glass | 31,10 € |
| Original pack 6 x 1 l | | | 29,55/1 l |
| **CP46.2** | 2,5 l | glass | 59,70 € |
| Original pack 4 x 2,5 l | | | 56,72/2,5 l |
| **CP46.4** | 5 l | aluminium | 102,05 € |
| Original pack 2 x 5 l | | | 96,95/5 l |
| **CP46.3** | 10 l | tinplate | 188,15 € |
| **CP46.5** | 25 l | tinplate | 368,20 € |

## Heptane (isomers)

### Heptane (isomers)

**≥98,5 %, for synthesis**

$C_7H_{16}$
M 100,21 g/mol
D 0,71 • bp 94-100 °C
flp -4 °C
UN No. 1206 • ADR 3 II • WGK 3

**Danger**

H225-H304-H315-H336-H410

**Type analysis:**

Appearance. clear, colourless
Assay (GC). ≥98,5 %
Density (15 °C). 0,7050-0,7250
n-Heptane. ≥32 %
Methyl cyclohexane (GC). ≤25 %
Benzene. ≤0,001 %
Other aromatic compounds . <0,002 %
Boiling range. 94-100 °C

| | | | |
|---|---|---|---|
| **7725.2** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **7725.3** | 2,5 l | glass | 36,45 € |
| Original pack 4 x 2,5 l | | | 34,63/2,5 l |
| **7725.1** | 10 l | tinplate | 102,70 € |
| **7725.4** | 25 l | tinplate | 198,90 € |

## Heptanedioic acid

▶ Pimelic acid see p. 2153

## 1,7-Heptanediol




### 1,7-Heptanediol

**≥98 %**

Heptamethylene glycol, 1,7-Dihydroxyheptane
$C_7H_{16}O_2$
M 132,20 g/mol
D 0,95 • bp 259 °C
mp 17-19 °C • flp 113 °C
[629-30-1] • EC No. 211-085-0

**Typ analysis:**

Assay (GC). ≥98,0 %
Water (KF). ≤0,5 %
Refractive index $n_D^{20}$. 1,453-1,457

| | | | |
|---|---|---|---|
| **5541.1** | 5 g | glass | 67,65 € |
| **5541.2** | 10 g | glass | 113,85 € |

## Heptane-1-sulphonic acid sodium salt




### Heptane-1-sulphonic acid sodium salt

**≥98 %, for ion pair chromatography**

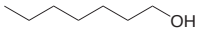
Ion pair reagent for HPLC.
Sodium-1-heptane sulphonate
$C_7H_{15}NaO_3S$
M 202,24 g/mol
mp >300 °C
[22767-50-6] • EC No. 245-210-5
WGK 1

**Guarantee analysis:**

Assay (acidim.). ≥98,0 %
Water. ≤2 %
A 200 nm (0,25 M in water). ≤0,1 AU
A 210 nm (0,25 M in water). ≤0,05 AU
A 220 nm (0,25 M in water). ≤0,04 AU
A 230 nm (0,25 M in water). ≤0,03 AU
A 240 nm (0,25 M in water). ≤0,01 AU
A 250 nm (0,25 M in water). ≤0,01 AU
A 260 nm (0,25 M in water). ≤0,01 AU

| | | | |
|---|---|---|---|
| **KK53.1** | 10 g | glass | 46,15 € |
| **KK53.2** | 25 g | glass | 89,15 € |
| **KK53.3** | 100 g | glass | 267,70 € |

## 1-Heptanol



Heptyl alcohol
$C_7H_{16}O$
M 116,20 g/mol
D ~0,82 • bp 175,8 °C
mp -34,6 °C • flp 70 °C
[111-70-6] • EC No. 203-897-9
WGK 1
**Warning** H302+H312-H319

### 1-Heptanol
**≥99 %, for synthesis**

**Type analysis:**
Assay (GC).....≥99 %
Density (d 20 °C/4 °C).....0,822-0,823

| | | | |
|---|---|---|---|
| **3827.1** | 500 ml | glass | 70,85 € |

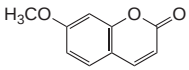
### 1-Heptanol
**ROTICHROM® GC**
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**
Purity (GC).....≥99 %

| | | | |
|---|---|---|---|
| **3173.1** | 1 g | glass | 23,15 € |

## Heptyl alcohol
▶ 1-Heptanol see p. 1975

## Herniarin



7-Methoxycoumarin
$C_{10}H_8O_3$
M 176,17 g/mol
mp 116-118 °C
[531-59-9] • EC No. 208-513-3
WGK 3

### Herniarin
**≥98 %**

**Type analysis:**
Appearance.....white to beige, cryst. powder
Assay (TLC).....≥98 %
Water (KF).....≤1,0 %
Melting temperature.....116-118 °C

| | | | |
|---|---|---|---|
| **7734.1** | 1 g | glass | 28,95 € |

### Herniarin
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC).....≥95,0 %
Residual solvents (GC).....≤1,0 %
Water (KF).....≤1,0 %
Assay (qNMR).....≥93,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

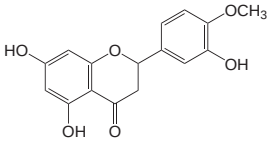
| | | | |
|---|---|---|---|
| **NE47.1** | 10 mg | glass | 510,65 € |

### Herniarin
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC).....≥95,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC47.1** | 50 mg | glass | 224,70 € |

## Hesperetin



3',5,7-Trihydroxy-4'-methoxyflavonone
$C_{16}H_{14}O_6$
M 302,28 g/mol
mp 223-229 °C
Storage temp.: +4 °C
[41001-90-5] • EC No. 208-290-2

### Hesperetin
**≥95 %**

**Type analysis:**
Appearance.....yellowish to brownish powder
Assay (HPLC).....≥95 %

| | | | |
|---|---|---|---|
| **7743.1** | 1 g | glass | 60,10 € |

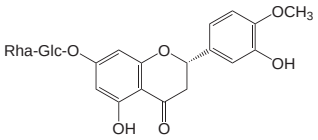
### Hesperetin
**ROTICHROM® HPLC**
Reference substance for HPLC.

**Type analysis:**
Purity (HPLC).....≥99 %

| | | | |
|---|---|---|---|
| **7570.1** | 10 mg | glass | 154,30 € |

## Hesperetin-7-rutinoside
▶ Hesperidin see p. 1975

## Hesperidin



Hesperetin-7-rutinoside
$C_{28}H_{34}O_{15}$
M 610,55 g/mol
mp 250-255 °C
Storage temp.: +4 °C
[520-26-3] • EC No. 208-288-1

### Hesperidin
**~90 %**

**Type analysis:**
Assay (HPLC).....~90 %

| | | | |
|---|---|---|---|
| **9972.2** | 25 g | plastic | 35,40 € |
| **9972.1** | 100 g | plastic | 127,95 € |

### Hesperidin
**ROTICHROM® HPLC**
Reference substance for HPLC.

**Type analysis:**
Purity (HPLC).....≥98 %

| | | | |
|---|---|---|---|
| **7577.1** | 10 mg | glass | 181,70 € |
| **7577.2** | 20 mg | glass | 192,45 € |

### Hesperidin
**ROTICHROM® TLC**
Reference substance for thin layer chromatography.
From *Citrus sinensis.*

| | | | |
|---|---|---|---|
| **5800.1** | 10 mg | glass | 56,90 € |

### Hesperidin
**ROTICHROM® ~CHR**

| | | | |
|---|---|---|---|
| **7737.1** | 10 g | plastic | 40,75 € |

## Heteroauxin
▶ Indolyl 3-acetic acid see p. 2004

## Hexaammonium tungstate hydrate
▶ Ammonium metatungstate hydrate see p. 1736

## Hexachloroplatinum(IV) acid hydrate
▶ Hydrogen hexachloroplatinate(IV) hydrate see p. 1990

## Hexachloroplatinum(IV) acid hexahydrate

### Hexachloroplatinum(IV) acid hexahydrate

**~40 % Pt**
Hydrogen hexachloroplatinate(IV) hexahydrate
$H_2Cl_6Pt \cdot 6\ H_2O$
M 517,88 g/mol
mp 150 °C
[18497-13-7] • EC No. 241-010-7
UN No. 2507 • ADR 8 III • WGK 2

**Danger** H301-H334-H314-H317

**Type analysis:**
Assay (on Pt). ..... ~40 %

| | | | |
|---|---|---|---|
| **9014.1** | 1 g | glass | 110,65 € |
| **9014.2** | 5 g | glass | 439,70 € |

## 1-Hexacosanoic acid

▶ Cerotic acid methyl ester see p. 1822

## n-Hexadecane



### n-Hexadecane

**ROTICHROM® GC**
Reference substance for GC.
$C_{16}H_{34}$
M 226,45 g/mol
D ~0,77 • bp 287 °C
mp 18 °C • flp 135 °C
Storage temp.: +4 °C
[544-76-3] • EC No. 208-878-9
WGK 1

**Danger** H304-EUH066

**Type analysis:**
Purity (GC). ..... ≥97,0 %

| | | | |
|---|---|---|---|
| **9003.1** | 1 g | plastic | 81,20 € |

## Hexadecanoic acid

▶ Palmitic acid see p. 2129

## 1-Hexadecanol

▶ Cetyl alcohol see p. 1823

## 1-Hexadecene



### 1-Hexadecene

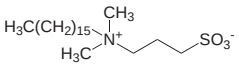
**≥90 %**
Ceten
$C_{16}H_{32}$
M 224,43 g/mol
D 0,78 • bp 274 °C
mp 4 °C • flp 132 °C
[629-73-2] • EC No. 211-105-8
WGK 1

**Danger** H304

**Type analysis:**
Assay (GC). ..... ≥90 %

| | | | |
|---|---|---|---|
| **3834.1** | 500 ml | glass | 73,00 € |

## N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate




### N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate

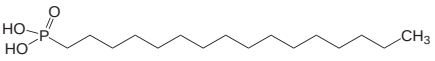
**≥98 %, for biochemistry**
Zwitterionic detergent.
Sulfobetaine-16, SB-16
$C_{21}H_{45}NO_3S$
M 391,7 g/mol
[2281-11-0]
WGK 1

**Warning** H315-H319-H335

**Typ analysis:**
Assay (HPLC). ..... ≥98,0 %
pH value (1 % in $H_2O$). ..... 5,0-8,0
Loss on drying. ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **1823.1** | 5 g | glass | 55,80 € |
| **1823.2** | 25 g | glass | 153,65 € |

## Hexadecylphosphonic acid




### Hexadecylphosphonic acid

Suitable for the production and modification of nanoparticles.
HDPA
$C_{16}H_{35}O_3P$
M 306,42 g/mol
mp 88-93 °C
Storage temp.: +4 °C
[4721-17-9]
WGK 3

**Type analysis:**
Melting point. ..... 88-93 °C

| | | | |
|---|---|---|---|
| **8466.1** | 1 g | glass | 37,55 € |
| **8466.2** | 5 g | glass | 139,65 € |

## Hexadecyl-trimethyl-ammoniumbromide

▶ Cetyltrimethylammonium bromide (CTAB) see p. 1823

## Hexadeuteroacetone

▶ Acetone D6 see p. 1698

## Hexadeuteroethanol

▶ Ethanol D6 see p. 1912

## 2,4-Hexadienoic acid

▶ Sorbic acid see p. 2290

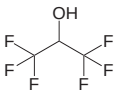
## Hexafluoroisopropanol

▶ 1,1,1,3,3,3-Hexafluoro-2-propanol see p. 1977

## Hexafluoroisopropanol D2

▶ 1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2) see p. 1977

## 1,1,1,3,3,3-Hexafluoro-2-propanol



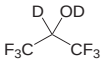
### 1,1,1,3,3,3-Hexafluoro-2-propanol

**≥99 %, for (peptide) synthesis**
HFIPA, HFIP, Hexafluoroisopropanol
$C_3H_2F_6O$
M 168,04 g/mol
D 1,596 • bp 58 °C
mp -4 °C
[920-66-1] • EC No. 213-059-4
UN No. 3265 • ADR 8 II • WGK 1
**Danger** H290-H302+H332-H314

**Typ analysis:**
Assay (GC). ..... ≥99,0 %
Colour (Hazen). ..... ≤10

| | | | |
|---|---|---|---|
| **2473.1** | 10 ml | glass | 38,60 € |
| **2473.2** | 25 ml | glass | 81,20 € |
| **2473.3** | 100 ml | glass | 292,95 € |

## 1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2)



### 1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2)

**99 Atom%D**
For nuclear magnetic resonance spectroscopy.
HFIP-D2, Hexafluoroisopropanol D2
$C_3D_2F_6O$
M 170,05 g/mol
D 1,62 • bp 58 °C
mp -4 °C
[38701-74-5] • EC No. 254-091-9
UN No. 3265 • ADR 8 II • WGK 1
**Danger** H290-H314-H302+H332

**Type analysis:**
Deuterising degree. ..... ≥99 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9909.1** | 1 ml | glass ampoule | 117,20 € |

## Hexahydrobenzene

▶ Cyclohexane see p. 1851

## Hexahydrophenol

▶ Cyclohexanol see p. 1852

## Hexahydropyridine

▶ Piperidine see p. 2154

## Hexahydrothymol

▶ Menthol see p. 2062
▶ DL-Menthol see p. 2062

## 1,2,3,5/4,6-Hexahydroxy-cyclohexane

▶ meso-Inositol see p. 2005

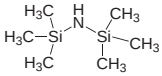
## 3,3',4',5,5',7-Hexahydroxy-flavone

▶ Myricetin see p. 2086

## Hexalin

▶ Cyclohexanol see p. 1852

## 1,1,1,3,3,3-Hexamethyl-disilazane (HMDS)



### 1,1,1,3,3,3-Hexamethyl-disilazane (HMDS)

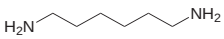
**≥98 %, for GC**
Silylation reagent
HMDS, Bis(trimethylsilyl)-amine
$C_6H_{19}NSi_2$
M 161,40 g/mol
D ~0,77 • bp 126 °C
mp -82 °C • flp 9 °C
[999-97-3] • EC No. 213-668-5
UN No. 3286 • ADR 3 (8) (6.1) II • WGK 1
**Danger**
H225-H302-H311+H331-H314

**Type analysis:**
Appearance. ..... colourless liquid
Assay (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **3840.3** | 10 ml | glass | 13,45 € |
| **3840.1** | 50 ml | glass | 17,75 € |
| **3840.2** | 250 ml | glass | 36,05 € |
| **3840.5** | 500 ml | glass | 48,95 € |
| **3840.4** | 1 l | glass | 85,90 € |
| Original pack 6 x 1 l | | | 81,61/1 l |

For further information, please see page 1568

## Hexamethylene diamine



### Hexamethylene diamine

**≥99,5 %**
1,6-Diaminohexane
$C_6H_{16}N_2$
M 116,21 g/mol
D ~0,84
mp 38-42 °C • flp 80 °C
[124-09-4] • EC No. 204-679-6
UN No. 2280 • ADR 8 III • WGK 1
**Danger** H314-H302+H312-H335

**Type analysis:**
Assay (titr.). ..... ≥99,5 %
Water (KF). ..... ≤0,1 %
We recommend to melt the product in a heating bath prior to use (mp 38-42 °C).

| | | | |
|---|---|---|---|
| **4465.1** | 100 g | glass | 17,10 € |
| **4465.2** | 250 g | glass | 28,95 € |
| **4465.3** | 1 kg | glass | 55,80 € |
| Original pack 6 x 1 kg | | | 53,01/1 kg |

## Hexamethylene pararosaniline chloride

▶ Crystal violet (C.I. 42555) see p. 1849

## Hexamethylene tetramine



Urotropin, Methenamine, Hexamine
$C_6H_{12}N_4$
M 140,19 g/mol
D 1,33
mp ~263 °C (subl.) • flp 250 °C
Solubility: 895 g/l ($H_2O$, 20 °C)
[100-97-0] • EC No. 202-905-8
UN No. 1328 • ADR 4.1 III • WGK 1
**Warning** H228-H317

### Hexamethylene tetramine

**ROTIPURAN® ≥99 %, p.a., ACS**

**Guarantee analysis:**
Assay (acidim.). ..... ≥99,0 %
pH (10 % solution). ..... 8,0-9,5
In $H_2O$ insoluble matter. ..... ≤0,01 %
Loss on drying. ..... ≤2,0 %
Ash content (as $SO_4$). ..... ≤0,05 %
Chloride (Cl). ..... ≤0,002 %
Sulphate ($SO_4$). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,001 %
Aluminium (Al). ..... ≤0,0005 %
Barium (Ba). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Chromium (Cr). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %
Zinc (Zn). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **4366.1** | 100 g | plastic | 16,05 € |
| **4366.2** | 500 g | plastic | 28,50 € |
| Original pack 6 x 500 g | | | 27,08/500 g |
| **4366.3** | 1 kg | plastic | 46,80 € |
| Original pack 6 x 1 kg | | | 44,46/1 kg |
| **4366.4** | 2,5 kg | plastic | 93,00 € |

### Hexamethylene tetramine

**≥99 %, extra pure**

**Type analysis:**
Assay (acidim.). ..... 99,0-100,5 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
Loss on drying. ..... ≤2,0 %
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4484.1** | 500 g | plastic | 25,70 € |
| Original pack 6 x 500 g | | | 24,42/500 g |
| **4484.2** | 1 kg | plastic | 39,25 € |
| Original pack 6 x 1 kg | | | 37,29/1 kg |
| **4484.3** | 2,5 kg | plastic | 79,45 € |

## Hexamine

▶ Hexamethylene tetramine see p. 1977

## Hexanal

▶ Caproic aldehyde see p. 1810

## n-Hexane



1-Methylpentane
$C_6H_{14}$
M 86,18 g/mol
D 0,66 • bp 69 °C
mp -95 °C • flp -26 °C
[110-54-3] • EC No. 203-777-6
UN No. 1208 • ADR 3 II • WGK 2

 **Danger**

H225-H304-H315-H336-H361f-H373-H411

### n-Hexane

**ROTISOLV® HPLC**

**Guarantee analysis:**

Assay (GC). ..... ≥98 %
Water (KF). ..... ≤0,005 %
Free acid. ..... ≤0,001 %
Non volatile matter. ..... ≤0,0003 %
Transmission:
260 nm. ..... ≥99 %
250 nm. ..... ≥98 %
230 nm. ..... ≥95 %
220 nm. ..... ≥85 %
210 nm. ..... ≥50 %
200 nm. ..... ≥25 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **7339.2** | 1 l | glass | 39,70 € |
| Original pack 6 x 1 l | | | 37,72/1 l |
| **7339.1** | 2,5 l | glass | 81,60 € |
| Original pack 4 x 2,5 l | | | 77,52/2,5 l |

For further information, please see page 1590

### n-Hexane

**ROTISOLV® ≥95 %, GC Ultra Grade**

For gaschromatographic residue analysis.

**Guarantee analysis:**

Assay (GC). ..... ≥95 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,005 %
Free acid (as $CH_3COOH$). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0001 %
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤3 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **KK48.1** | 2,5 l | glass | 100,55 € |
| Original pack 4 x 2,5 l | | | 95,52/2,5 l |

### n-Hexane

**ROTISOLV® ≥99 %, Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Assay (GC). ..... ≥99,0 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,005 %
Free acid (as $CH_3COOH$). ..... ≤0,002 %
Evaporation residue. ..... ≤0,0001 %
GC/FID suitability (as 2-octanol). ..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ..... ≤10 ng/l
GC/ECD pesticides (as lindane). ..... ≤2 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ..... ≤0,05 mg/l
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD volatile impurities (as ethylene dibromide). ..... ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). ..... complies
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb

| | | | |
|---|---|---|---|
| **7573.1** | 2,5 l | glass | 118,15 € |
| Original pack 4 x 2,5 l | | | 112,24/2,5 l |

### n-Hexane

**ROTISOLV® ≥99 %, Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC). ..... ≥99,0 %
Water (KF). ..... ≤0,01 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
GC/ECD (individual signal as lindane). ..... ≤5 ng/l
GC/PND (individual signal as ethylparathion). ..... ≤10 ng/l

| | | | |
|---|---|---|---|
| **T861.2** | 1 l | glass | 50,00 € |
| Original pack 6 x 1 l | | | 47,50/1 l |
| **T861.1** | 2,5 l | glass | 117,10 € |
| Original pack 4 x 2,5 l | | | 111,25/2,5 l |

### n-Hexane

**ROTISOLV® ≥97,5 %, Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC). ..... ≥97,5 %
Water (KF). ..... ≤0,02 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
GC/ECD (individual signal as lindane). ..... ≤5 ng/l
GC/PND (individual signal as ethylparathion). ..... ≤10 ng/l

| | | | |
|---|---|---|---|
| **T165.2** | 1 l | glass | 42,90 € |
| Original pack 6 x 1 l | | | 40,76/1 l |
| **T165.1** | 2,5 l | glass | 98,40 € |
| Original pack 4 x 2,5 l | | | 93,48/2,5 l |
| **T165.3** | 4 l | glass | 111,70 € |

### n-Hexane

**ROTISOLV® ≥96 %, Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Assay (GC). ..... ≥96,0 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,005 %
Free acid (as $CH_3COOH$). ..... ≤0,002 %
Evaporation residue. ..... ≤0,0001 %
GC/FID suitability (as 2-octanol). ..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ..... ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤2 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ..... ≤0,05 mg/l
GC/ECD volatile impurities (as ethylene dibromide). ..... ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). ..... complies
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb

| | | | |
|---|---|---|---|
| **7567.1** | 2,5 l | glass | 95,15 € |
| Original pack 4 x 2,5 l | | | 90,39/2,5 l |

### n-Hexane

**ROTISOLV® ≥99 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC). ..... ≥99 %
Water (KF). ..... ≤0,005 %
Acidity. ..... ≤0,005 meq/g
Evaporation residue. ..... ≤0,005 %
Fluorescence (as quinine):
254 nm. ..... ≤1,0 ppb
365 nm. ..... ≤1,0 ppb
Transmission:
245 nm. ..... ≥98 %
225 nm. ..... ≥90 %
217 nm. ..... ≥80 %
210 nm. ..... ≥50 %
195 nm. ..... ≥10 %

| | | | |
|---|---|---|---|
| **T908.1** | 2,5 l | glass | 105,25 € |
| Original pack 4 x 2,5 l | | | 99,99/2,5 l |

### n-Hexane

**ROTIDRY®Sept ≥99 % (≤30 ppm $H_2O$)**

Dried; in a septum bottle

**Guarantee analysis:**

Assay (GC). ..... ≥99 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,003 %
Acidity (as $CH_3COOH$). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **5180.1** | 250 ml | glass | 42,50 € |

### n-Hexane

**ROTIDRY® ≥99 % (≤50 ppm $H_2O$)**

Dried; for analysis and organic synthesis.

**Guarantee analysis:**

Assay (GC). ..... ≥99,0 %
Colour (Hazen). ..... ≤10
Water (KF). ..... ≤0,005 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Filtered through a membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE05.1** | 1 l | glass | 66,55 € |
| Original pack 6 x 1 l | | | 63,22/1 l |

## n-Hexane

**ROTIPURAN® ≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay (GC). ≥99,0 %
Colour (Hazen). ≤10
Water . ≤0,01 %
Alkalinity. ≤0,0002 meq/g
Acidity. ≤0,0002 meq/g
Thiophene. complies
Aromatic compounds (as benzene). ≤0,01 %
Sulphur compounds (as S). ≤0,005 %
Aluminium (Al). ≤0,00005 %
Barium (Ba). ≤0,00001 %
Lead (Pb). ≤0,00001 %
Boron (B). ≤0,000002 %
Cadmium (Cd). ≤0,000005 %
Calcium (Ca). ≤0,00005 %
Chromium (Cr). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Cobalt (Co). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,000002 %
Zinc (Zn). ≤0,00001 %
Tin (Sn). ≤0,00001 %
Evaporation residue. ≤0,001 %
Matter discoloured by $H_2SO_4$ (Hazen). ≤10

| | | | |
|---|---|---|---|
| **4723.1** | 1 l | glass | 74,10 € |
| Original pack 6 x 1 l | | | 70,40/1 l |
| **4723.2** | 2,5 l | glass | 160,20 € |
| Original pack 4 x 2,5 l | | | 152,19/2,5 l |
| **4723.3** | 5 l | aluminium | 299,95 € |
| Original pack 2 x 5 l | | | 284,95/5 l |
| **4723.5** | 10 l | tinplate | 568,70 € |
| **4723.4** | 25 l | tinplate | 1288,95 € |

## n-Hexane

**≥99 %, for synthesis**

**Type analysis:**

Appearance. clear, colourless
Assay (GC). ≥99 %
Density (15 °C). 0,662-0,666
Aromatic compounds (GC). ≤0,001 %
Evaporation residue. ≤0,001 %

| | | | |
|---|---|---|---|
| **CP47.1** | 1 l | glass | 45,05 € |
| Original pack 6 x 1 l | | | 42,80/1 l |
| **CP47.2** | 2,5 l | glass | 98,80 € |
| Original pack 4 x 2,5 l | | | 93,86/2,5 l |
| **CP47.4** | 5 l | aluminium | 177,40 € |
| Original pack 2 x 5 l | | | 168,53/5 l |
| **CP47.3** | 10 l | tinplate | 332,20 € |
| **CP47.5** | 25 l | tinplate | 665,45 € |

## n-Hexane

**≥95 %, for synthesis**

**Type analysis:**

Appearance. clear, colourless
Assay (GC). ≥95 %
Aromatic compounds (GC). ≤0,001 %
Evaporation residue. ≤0,001 %
Density (15 °C). 0,663-0,667

| | | | |
|---|---|---|---|
| **3907.1** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **3907.2** | 2,5 l | glass | 64,40 € |
| Original pack 4 x 2,5 l | | | 61,18/2,5 l |
| **3907.5** | 5 l | aluminium | 110,65 € |
| Original pack 2 x 5 l | | | 105,12/5 l |
| **3907.3** | 10 l | tinplate | 209,65 € |
| **3907.4** | 25 l | tinplate | 428,95 € |

## iso-Hexane

▶ Isohexane see p. 2014

## Hexanedioic acid

▶ Adipic acid see p. 1709

## Hexane (isomers)

### Hexane (isomers)

**≥95 % (isomers), for synthesis**

$C_6H_{14}$
M 86,18 g/mol
D ~0,67 • bp 65-70 °C
flp -26 °C
Solubility: 5,9 g/l ($H_2O$, 20 °C)
UN No. 1208 • ADR 3 II • WGK 2

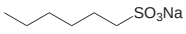
**Danger** H225-H304-H361-H373-H315-H336-H411-EUH066

**Typ analysis:**

Appearance. clear, colourless
Assay (isomers). ≥95,0 %
Boiling range. 65-70 °C
n-Hexane. 48-55 %
Aromatic compounds. ≤0,005 %
Benzene. ≤0,001 %
Sulphur (S). ≤0,0001 %
Density (15 °C). 0,670-0,680
Refractive index $n_D^{20}$. ≥1,3770

| | | | |
|---|---|---|---|
| **7782.1** | 1 l | glass | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **7782.3** | 2,5 l | glass | 35,40 € |
| Original pack 4 x 2,5 l | | | 33,63/2,5 l |
| **7782.2** | 10 l | tinplate | 95,60 € |
| **7782.4** | 25 l | tinplate | 188,15 € |

## Hexane-1-sulphonic acid sodium salt




### Hexane-1-sulphonic acid sodium salt

**≥98 %, for ion pair chromatography**

Ion pair reagent for HPLC.
Sodium-1-hexane sulphonate
$C_6H_{13}NaO_3S$
M 188,22 g/mol
[2832-45-3] • EC No. 220-601-3
WGK 2

**Guarantee analysis:**

Assay (acidim.). ≥98,0 %
Water. ≤2 %
A 200 nm (0,25 M in water). ≤0,1 AU
A 210 nm (0,25 M in water). ≤0,05 AU
A 220 nm (0,25 M in water). ≤0,04 AU
A 230 nm (0,25 M in water). ≤0,03 AU
A 240 nm (0,25 M in water). ≤0,01 AU
A 250 nm (0,25 M in water). ≤0,01 AU
A 260 nm (0,25 M in water). ≤0,01 AU

| | | | |
|---|---|---|---|
| **KK54.1** | 10 g | glass | 46,15 € |
| **KK54.2** | 25 g | glass | 89,15 € |
| **KK54.3** | 100 g | glass | 267,70 € |

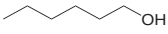
## Hexanoic acid

▶ Caproic acid see p. 1810

## n-Hexanol

▶ 1-Hexanol see p. 1979

## 1-Hexanol




Hexyl alcohol, n-Hexanol
$C_6H_{14}O$
M 102,18 g/mol
D 0,82 • bp 157 °C
mp -45 °C • flp 60 °C
Solubility: 5,9 g/l ($H_2O$, 20 °C)
[111-27-3] • EC No. 203-852-3
UN No. 2282 • ADR 3 III • WGK 1

**Warning** H302-H319-H226

### 1-Hexanol

**≥98 %, for synthesis**

**Type analysis:**

Appearance. colourless, clear liquid
Assay (GC). ≥98 %
Density (20 °C). 0,817-0,821 g/cm³

| | | | |
|---|---|---|---|
| **3847.1** | 1 l | glass | 43,55 € |
| Original pack 6 x 1 l | | | 41,37/1 l |
| **3847.2** | 2,5 l | glass | 95,15 € |
| Original pack 4 x 2,5 l | | | 90,39/2,5 l |

### 1-Hexanol

**ROTICHROM® GC**

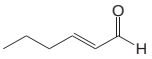
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**

Purity (GC). ≥94 %

| | | | |
|---|---|---|---|
| **3174.1** | 1 g | plastic | 81,20 € |

## trans-Hexen-2-al




### trans-Hexen-2-al

**>96 %**

$C_6H_{10}O$
M 98,12 g/mol
D 0,846 • bp 146 °C
flp 35 °C
[6728-26-3] • EC No. 229-778-1
UN No. 1988 • ADR 3 (6.1) III • WGK 2

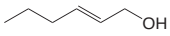
**Danger** H226-H302-H311

**Type analysis:**

Assay (GC). >96 %
Density (20 °C). 0,845-0,847

| | | | |
|---|---|---|---|
| **3757.1** | 25 ml | glass | 65,05 € |

## trans-2-Hexen-1-ol



### trans-2-Hexen-1-ol

**≥97 %**
$C_6H_{12}O$
M 100,16 g/mol
D 0,84 • bp 158-160 °C
flp 54 °C
[928-95-0] • EC No. 213-191-2
UN No. 1993 • ADR 3 III • WGK 2

**Warning** H226

**Type analysis:**

Assay (GC). ..... ≥97 %
Density (d 20 °C/4 °C). ..... 0,842-0,844

| | | | |
|---|---|---|---|
| **3756.1** | 5 ml | glass | 28,50 € |

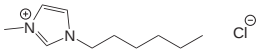
## Hexyl alcohol

▶ 1-Hexanol see p. 1979

## Hexyleneglucol

▶ 2-Methyl-2,4-pentanediol see p. 2076

## 1-Hexyl-3-methyl-imidazolium chloride (HMIM Cl)



### 1-Hexyl-3-methyl-imidazolium chloride (HMIM Cl)

**≥98 %**
Ionic liquid
HMIM Cl
$C_{10}H_{19}ClN_2$
M 202,73 g/mol
D 1,041
mp -75 °C
[171058-17-6]
WGK 3

**Warning** H315-H319

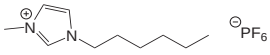
**Type analysis:**

Appearance. ..... yellowish liquid
Assay. ..... ≥98 %
Water (KF). ..... ≤1 %

| | | | |
|---|---|---|---|
| **2064.1** | 25 g | glass | 252,65 € |
| **2064.2** | 100 g | glass | 439,70 € |

Lit.: "**Dynamic Viscosities of a Series of 1-Alkyl-3-methylimidazolium Chloride Ionic Liquids and Their Binary Mixtures with Water at Several Temperatures**" E. Gomez, B. Gonzalez, A. Dominguez, E. Tojo, J. Tojo, *J. Chem. Eng. Data* **2006,** 51, 696-701.
For further information, please see page 1531

## 1-Hexyl-3-methyl-imidazolium-hexafluorophosphate (HMIM $PF_6$)



### 1-Hexyl-3-methyl-imidazolium-hexafluorophosphate (HMIM $PF_6$)

**≥99 %**
Ionic liquid
HMIM $PF_6$
$C_{10}H_{19}F_6N_2P$
M 312,24 g/mol
D 1,298
mp -61 °C
[304680-35-1]
WGK 3

**Warning** H315-H319-H335

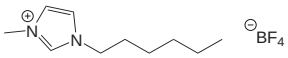
**Type analysis:**

Appearance. ..... yellow to orange liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,025 %
Halogens. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **2069.1** | 25 g | glass | 145,15 € |
| **2069.2** | 100 g | glass | 317,15 € |

Lit.: "**Use of 1-alkyl-3-methylimidazolium hexafluorophosphate room temperature ionic liquids as chelate extraction solvent with 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione**" I. Naoki; D. Mika; K. Hitomi; H. Takaharu, *Talanta* **2005,** 65, 255-260.
"**On the solubilization of water with ethanol in hydrophobic hexafluoro-phosphate ionic liquids**" R. P. Swatloski, A. E. Visser, W. M. Reichert, G. A. Broker, L. M. Farina, J. D. Holbrey, R. D. Rogers, *Green Chem.* **2002,** 4, 81 – 87.
For further information, please see page 1531

## 1-Hexyl-3-methyl-imidazolium-tetrafluoroborate (HMIM $BF_4$)



### 1-Hexyl-3-methyl-imidazolium-tetrafluoroborate (HMIM $BF_4$)

**≥99 %**
Ionic liquid
HMIM $BF_4$
$C_{10}H_{19}BF_4N_2$
M 254,08 g/mol
D 1,148
mp -82 °C
[244193-50-8]
WGK 3

**Warning** H315-H319

**Type analysis:**

Appearance. ..... colourless to yellowish liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,025 %
Halogens. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **2070.1** | 25 g | glass | 145,15 € |
| **2070.2** | 100 g | glass | 295,65 € |

Lit.: "**Activity Coefficients at Infinite Dilution in 1-Alkyl-3-methylimidazolium Tetrafluoroborate Ionic Liquids**" G. M. Foco, S. B. Bottini, N. Quezada, J. C. de la Fuente, Cor J. Peters, *J. Chem. Eng. Data* **2006,** 51, 1088 –1091.
"**Physical and electrochemical properties of 1-alkyl-3-methylimidazolium tetrafluoroborate for electrolyte**" T. Nishida; Y. Tashiro; M. Yamamoto, *J. Fluorine Chem.* **2003,** 120, 135-141.
For further information, please see page 1531

## HFBA

▶ Heptafluorobutyric acid anhydride (HFBA) see p. 1973

## HFIP

▶ 1,1,1,3,3,3-Hexafluoro-2-propanol see p. 1977

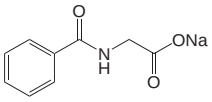
## HFIPA

▶ 1,1,1,3,3,3-Hexafluoro-2-propanol see p. 1977

## HFIP-D2

▶ 1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2) see p. 1977

## Hippuric acid sodium salt hydrate



### Hippuric acid sodium salt hydrate

**≥99 %, cryst.**
N-Benzoylglycine sodium salt
$C_9H_8NNaO_3 \cdot x\ H_2O$
M 201,16 + x $H_2O$ g/mol
[532-94-5] • EC No. 208-548-4
WGK 1

**Type analysis:**

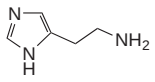
Appearance. ..... white powder
Assay (TLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7507.1** | 25 g | plastic | 93,00 € |

## HIS

▶ L-Histidine see p. 1981

## Histamine dihydrochloride



· 2 HCl

### Histamine dihydrochloride

**≥98,5 %, for biochemistry**
2-(4-Imidazolyl) ethylamine dihydrochloride
$C_5H_9N_3 \cdot 2\ HCl$
M 184,07 g/mol
Storage temp.: +4 °C
[56-92-8] • EC No. 200-298-4
WGK 1

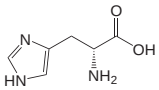
**Danger** H334-H335-H315-H319-H317

**Typ analysis:**

Assay (titr.). ..... ≥98,5 %
Solution (5 % in water). ..... colourless
Loss on drying (105 °C, 3 h). ..... ≤0,5 %
pH value. ..... 2,85-3,60
Sulphated ash. ..... ≤0,1 %
Histidine. ..... ≤1 %
Sulphate ($SO_4$). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4017.1** | 5 g | glass | 31,75 € |
| **4017.2** | 10 g | glass | 52,60 € |
| **4017.3** | 25 g | glass | 103,75 € |

## D-Histidine



### D-Histidine

**≥98 %, for biochemistry**

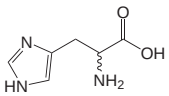
D-3-Imidazol-4-ylalanine, H-D-His-OH
$C_6H_9N_3O_2$
M 155,2 g/mol
Storage temp.: +4 °C
[351-50-8] • EC No. 206-513-8
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in $H_2O$). ..... +38,0° to +39,0°
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7880.1** | 5 g | plastic | 46,15 € |
| **7880.2** | 25 g | plastic | 138,70 € |

## DL-Histidine



### DL-Histidine

**≥98,5 %, for biochemistry**

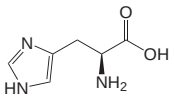
3-Imidazol-4-ylalanine
$C_6H_9N_3O_2$
M 155,15 g/mol
Storage temp.: +4 °C
[4998-57-6] • EC No. 225-660-9
WGK 3

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Identity (IR). ..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8597.1** | 5 g | plastic | 31,10 € |
| **8597.2** | 25 g | plastic | 91,30 € |
| **8597.3** | 100 g | plastic | 295,65 € |

## L-Histidine



L-3-Imidazol-4-yl-alanine, H-L-His-OH, HIS
$C_6H_9N_3O_2$
M 155,16 g/mol
mp 282 °C (dec.)
Solubility: ~32 g/l ($H_2O$, 20 °C)
[71-00-1] • EC No. 200-745-3
WGK 1

### L-Histidine

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤6 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. ..... +12,0° to +12,8°
Foreign amino acids. ..... complies
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1696.1** | 25 g | plastic | 26,35 € |
| **1696.2** | 100 g | plastic | 56,90 € |
| **1696.3** | 500 g | plastic | 233,85 € |
| Original pack 6 x 500 g | | | 222,16/500 g |

### L-Histidine

**≥98,5 %, Ph.Eur., for biochemistry**

**Guarantee analysis:**

Appearance. ..... white cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... clear, colourless
Specific rotation $[\alpha]_D^{20}$. ..... +11,4° to +12,4°
pH value (1 g, 50 ml $H_2O$). ..... 7,0-8,5
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **3852.1** | 25 g | plastic | 17,10 € |
| **3852.3** | 100 g | plastic | 46,80 € |
| **3852.2** | 1 kg | plastic | 352,10 € |
| Original pack 6 x 1 kg | | | 334,50/1 kg |

## L-Histidine hydrochloride monohydrate

4-Imidazolyl-L-alanine
$C_6H_9N_3O_2 \cdot HCl \cdot H_2O$
M 209,63 g/mol
mp 259 °C (dec.)
Solubility: ~170 g/l ($H_2O$, 20 °C)
[5934-29-2] • EC No. 211-438-9
WGK 1

### L-Histidine hydrochloride monohydrate

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Specific rotation $[\alpha]_D^{20}$. ..... +9,2° to +10,6°
Foreign amino acids. ..... complies
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... 18,22-18,68 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Ash content. ..... ≤0,10 %

| | | | |
|---|---|---|---|
| **1697.1** | 25 g | plastic | 22,50 € |
| **1697.2** | 100 g | plastic | 53,65 € |
| **1697.3** | 500 g | plastic | 214,90 € |
| Original pack 6 x 500 g | | | 204,16/500 g |

### L-Histidine hydrochloride monohydrate

**≥98,5 %, Ph.Eur., for biochemistry**

**Guarantee analysis:**

Appearance. ..... white cryst. powder
Assay (dry substance). ..... 98,5-101 %
Identity. ..... complies
Appearance of solution. ..... clear, colourless
Specific rotation $[\alpha]_D^{20}$. ..... +9,2° to 10,6°
pH value ..... 3,0-5,0
Ammonium ($NH_4$). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,03 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Sulphated ash. ..... ≤0,1 %
Water. ..... 7,0-10,0 %

| | | | |
|---|---|---|---|
| **9455.1** | 100 g | plastic | 42,90 € |
| **9455.3** | 250 g | plastic | 90,20 € |
| **9455.2** | 500 g | plastic | 165,05 € |
| Original pack 6 x 500 g | | | 156,80/500 g |

## HMDS

▶ 1,1,1,3,3,3-Hexamethyldisilazane (HMDS) see p. 1977

## $H_2N$-PEG4-Alkyne

▶ $H_2N$-PEG4-Alkyne see p. 2132

## $H_2N$-PEG3-Azide

▶ $H_2N$-PEG3-Azide see p. 2133

## $H_2N$-PEG8-Azide

▶ $H_2N$-PEG8-Azide see p. 2133

## Holmia

▶ Holmium(III) oxide see p. 1982

## Holmium Standards

▶ Holmium ICP Standard Solution see p. 2298
▶ Holmium ICP Standard Solution see p. 2303

## Holmium(III) oxide

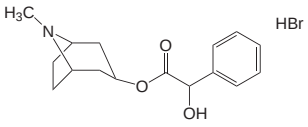
### Holmium(III) oxide

**ROTI®METIC 99,99 % (4N)**
Diholmium trioxide, Holmia
$Ho_2O_3$
M 377,86 g/mol
D 8,4 • bp 3900 °C
mp 2330 °C
[12055-62-8] • EC No. 235-015-3
WGK 1

**Typ analysis:**
Assay (metals basis)..... 99,99 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5338.1** | 10 g | plastic | 223,10 € |
| **5338.2** | 50 g | plastic | 676,20 € |

## DL-Homatropine hydrobromide




### DL-Homatropine hydrobromide

**≥99 %, pure**
Tropine mandelate hydrobromide
$C_{16}H_{21}NO_3 \cdot HBr$
M 356,25 g/mol
mp 214-217 °C (dec.)
[51-56-9] • EC No. 200-105-3
UN No. 1544 • ADR 6.1 III • WGK 3

**Warning** H302+H312+H332

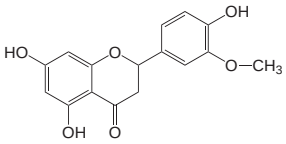
**Type analysis:**
Assay (HPLC)..... ≥99,0 %
pH (5 % in $H_2O$)..... 5,0-6,5
Loss on drying (100 °C, 2 h)..... ≤0,5 %
Sulphated ash..... ≤0,1 %
Melting point (dec.)..... 214-217 °C

| | | | |
|---|---|---|---|
| **7855.1** | 5 g | glass | 67,20 € |

## Homidium bromide

▶ Ethidium bromide see p. 1912
▶ Ethidium bromide solution 1 % see p. 1913

## Homoeriodictyol



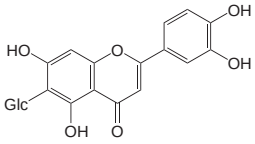

### Homoeriodictyol

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{16}H_{14}O_6$
M 302,27 g/mol
mp 225 °C (dec.)
Storage temp.: +4 °C
[446-71-9] • EC No. 207-173-3

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7585.1** | 10 mg | glass | 181,70 € |

## Homoorientin




### Homoorientin

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Adonis vernalis.*
Isoorientin
$C_{21}H_{20}O_{11}$
M 448,38 g/mol
mp ~245 °C
Storage temp.: +4 °C
[4261-42-1]

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **6002.1** | 5 mg | glass | 235,45 € |

## HO-PEG2-Azide

▶ HO-PEG2-Azide see p. 2132

## Hormodin

▶ Indole-3-butyric acid see p. 2003

## Horseradish peroxidase

▶ Peroxidase see p. 2140

## HOSu

▶ N-Hydroxysuccinimide see p. 1996

## HPLC solvents


| Art. No. | Description | Page |
|---|---|---|
| 7336 | Acetic acid ethyl ester | 1694 |
| 7328 | Acetone | 1697 |
| T195 | Acetonitrile | 1699 |
| 8825 | Acetonitrile | 1699 |
| HN44 | Acetonitrile | 1699 |
| 7330 | Acetonitrile | 1699 |
| CN20 | Acetonitrile | 1699 |
| 6827 | Acetonitrile | 1699 |
| T178 | 1-Butanol | 1794 |
| T175 | tert-Butyl methyl ether | 1797 |
| 7333 | Cyclohexane | 1851 |
| 7334 | Dichloromethane | 1869 |
| 0702 | N,N-Dimethylformamide (DMF) | 1882 |
| 0728 | Dimethyl sulphoxide (DMSO) | 1884 |
| X949 | 1,4-Dioxane | 1886 |
| P076 | Ethanol | 1910 |
| 6828 | n-Heptane | 1973 |
| 7337 | n-Heptane | 1973 |
| 7339 | n-Hexane | 1978 |
| T176 | Isohexane | 2014 |
| 7340 | Isooctane | 2015 |
| X948 | Methanol | 2068 |
| 7342 | Methanol | 2068 |
| KK39 | Methanol | 2068 |
| P717 | Methanol | 2068 |
| CN99 | n-Pentane | 2135 |
| 0731 | Petroleum ether 40-60 °C | 2143 |
| T177 | 1-Propanol | 2179 |
| 7343 | 2-Propanol | 2180 |
| 7344 | Tetrahydrofuran | 2336 |
| 7346 | Toluene | 2347 |
| 7331 | Trichloromethane/Chloroform | 2351 |
| A511 | Water | 2375 |


## HRP

▶ Peroxidase see p. 2140

## HRP detection kit with biotin and streptavidine

▶ Roti®-Strept/HRP-Kit see p. 2234

## HRP substrate

▶ Roti®-Lumin see p. 2221
▶ Roti®-Lumin plus see p. 2221
▶ Roti®-Lumin ultra see p. 2221

## HRP substrate kit

▶ Roti®-DAB Kit see p. 2209

## Hünigs base

▶ N,N-Diisopropylethylamine (DIPEA) see p. 1879

## Humic acid

### Humic acid
**virgin**
[1415-93-6] • EC No. 215-809-6

**Type analysis:**
Assay of humic acid.....~30-40 %
Percentage of moisture.....~45 %
Prepared from the sodium salt of humic acid found in fine earthy brown coal (Kassel brown).

| | | | |
|---|---|---|---|
| **7821.1** | 100 g | plastic | 22,05 € |
| **7821.2** | 500 g | plastic | 31,75 € |
| Original pack 6 x 500 g | | | 30,16/500 g |
| **7821.3** | 1 kg | plastic | 42,50 € |
| Original pack 6 x 1 kg | | | 40,38/1 kg |

## Humic acid sodium salt

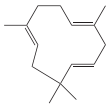
### Humic acid sodium salt
**~45-70 %**
[68131-04-4] • EC No. 268-608-0
WGK 1

**Warning** H315-H319

**Type analysis:**
Assay of humic acid.....~45-70 %
Loss on drying (4 h, 105 °C).....~25 %

| | | | |
|---|---|---|---|
| **7824.1** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **7824.2** | 10 kg | plastic | 160,20 € |
| **7824.4** | 25 kg | plastic | 317,15 € |

## α-Humulene



### α-Humulene
**ROTICHROM® GC**
Reference substance for GC.
$C_{15}H_{24}$
M 204,36 g/mol
D ~0,89 • bp 106-107 °C
flp 90 °C
Storage temp.: +4 °C
[6753-98-6] • EC No. 229-816-7

**Warning** H315-H319-H335

**Type analysis:**
Purity (GC).....≥95 %

| | | | |
|---|---|---|---|
| **9385.1** | 100 mg | plastic | 181,70 € |

## Hyaluronidase

M ~70000 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[37326-33-3] • EC No. 253-464-3
WGK 1

**Danger** H334

### Hyaluronidase
**~500 U/mg, free from salt, lyophilised**
ex ovine testes

**Type analysis:**
Activity.....~500 U/mg

| | | | |
|---|---|---|---|
| **9978.2** | 250 mg | glass | 59,05 € |
| **9978.1** | 1 g | glass | 190,30 € |

### Hyaluronidase
**~300 U/mg, free from salt, lyophilised**
ex ovine testes

**Type analysis:**
Activity.....~300 U/mg

| | | | |
|---|---|---|---|
| **9980.1** | 250 mg | glass | 33,25 € |
| **9980.2** | 1 g | glass | 91,30 € |

For further information, please see page 1277

## Hyamine® 1622-solution (0,004 M)
▶ Benzethonium chloride solution see p. 1766

## Hybridisation buffers
▶ Roti®-Hybri-Quick see p. 2219
▶ Roti®-Stock 20x SSC see p. 2233

## Hydrazinium sulphate

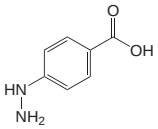
### Hydrazinium sulphate
**≥99 %, p.a., ACS**
Reducing agent; reagent for separation of Po and Te.
Hydrazonium sulphate, Hydrazine sulphate
$H_6N_2O_4S$
M 130,12 g/mol
D 1,37
mp 254 °C (dec.)
Solubility: 30 g/l ($H_2O$, 20 °C)
[10034-93-2] • EC No. 233-110-4
UN No. 3288 • ADR 6.1 II • WGK 3

**Danger**
H301+H311+H331-H350-H400-H410-H317

**Guarantee analysis:**
Assay (iodom.).....≥99,0 %
In $H_2O$ insoluble matter.....≤0,005 %
Ash content (as $SO_4$).....≤0,02 %
Chloride (Cl).....≤0,001 %
Heavy metals (as Pb).....≤0,001 %
Barium (Ba).....≤0,0005 %
Beryllium (Be).....≤0,0005 %
Lead (Pb).....≤0,001 %
Cadmium (Cd).....≤0,0005 %
Cobalt (Co).....≤0,0005 %
Iron (Fe).....≤0,001 %
Indium (In).....≤0,0005 %
Copper (Cu).....≤0,001 %
Manganese (Mn).....≤0,0005 %
Nickel (Ni).....≤0,001 %
Silicon (Si).....≤0,0005 %
Strontium (Sr).....≤0,0005 %

| | | | |
|---|---|---|---|
| **HN96.1** | 100 g | plastic | 19,25 € |
| **HN96.2** | 500 g | plastic | 52,60 € |
| Original pack 6 x 500 g | | | 49,97/500 g |

## 4-Hydrazinobenzoic acid




### 4-Hydrazinobenzoic acid
**≥97 %, for synthesis**
$C_7H_8N_2O_2$
M 152,15 g/mol
mp 216-218 °C
[619-67-0] • EC No. 210-609-5
WGK 3

**Warning** H315-H319-H335

**Type analysis:**
Appearance.....white to yellow-beige powder
Assay.....≥97,0 %
Loss on drying.....≤1,0 %

| | | | |
|---|---|---|---|
| **4539.1** | 10 g | glass | 31,10 € |
| **4539.2** | 50 g | glass | 80,10 € |
| **4539.3** | 100 g | glass | 132,15 € |

## Hydrazonium sulphate
▶ Hydrazinium sulphate see p. 1983

## Hydrobromic acid Ultra-quality

### Hydrobromic acid Ultra-quality

**ROTIPURAN® Ultra 48 %**

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.
The quality for highest demands on purity.

HBr
M 80,91 g/mol
D 1,49 • bp 126 °C
mp ~-11 °C
[10035-10-6] • EC No. 233-114-0
UN No. 1788 • ADR 8 III • WGK 1

**Danger** H314-H335-H290

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 44-49 % |
| Aluminium (Al) | ≤100 ppt |
| Barium (Ba) | ≤100 ppt |
| Beryllium (Be) | ≤100 ppt |
| Lead (Pb) | ≤1 ppt |
| Cadmium (Cd) | ≤100 ppt |
| Cesium (Cs) | ≤10 ppt |
| Calcium (Ca) | ≤100 ppt |
| Cerium (Ce) | ≤10 ppt |
| Chromium (Cr) | ≤100 ppt |
| Dysprosium (Dy) | ≤10 ppt |
| Iron (Fe) | ≤100 ppt |
| Erbium (Er) | ≤10 ppt |
| Europium (Eu) | ≤10 ppt |
| Gadolinium (Gd) | ≤10 ppt |
| Gallium (Ga) | ≤100 ppt |
| Gold (Au) | ≤100 ppt |
| Hafnium (Hf) | ≤10 ppt |
| Holmium (Ho) | ≤10 ppt |
| Indium (In) | ≤10 ppt |
| Potassium (K) | ≤100 ppt |
| Cobalt (Co) | ≤100 ppt |
| Copper (Cu) | ≤100 ppt |
| Lanthanum (La) | ≤10 ppt |
| Lithium (Li) | ≤100 ppt |
| Lutetium (Lu) | ≤10 ppt |
| Magnesium (Mg) | ≤100 ppt |
| Manganese (Mn) | ≤100 ppt |
| Molybdenum (Mo) | ≤100 ppt |
| Sodium (Na) | ≤100 ppt |
| Neodymium (Nd) | ≤10 ppt |
| Nickel (Ni) | ≤100 ppt |
| Niobium (Nb) | ≤10 ppt |
| Palladium (Pd) | ≤100 ppt |
| Platinum (Pt) | ≤100 ppt |
| Praseodymium (Pr) | ≤10 ppt |
| Rhenium (Re) | ≤100 ppt |
| Rhodium (Rh) | ≤100 ppt |
| Rubidium (Rb) | ≤100 ppt |
| Ruthenium (Ru) | ≤100 ppt |
| Samarium (Sm) | ≤10 ppt |
| Scandium (Sc) | ≤100 ppt |
| Silver (Ag) | ≤100 ppt |
| Strontium (Sr) | ≤100 ppt |
| Tellur (Te) | ≤10 ppt |
| Terbium (Tb) | ≤10 ppt |
| Thallium (Tl) | ≤10 ppt |
| Thorium (Th) | ≤1 ppt |
| Thulium (Tm) | ≤10 ppt |
| Titanium (Ti) | ≤100 ppt |
| Uranium (U) | ≤1 ppt |
| Vanadium (V) | ≤100 ppt |
| Bismuth (Bi) | ≤100 ppt |
| Tungsten (W) | ≤100 ppt |
| Ytterbium (Yb) | ≤10 ppt |
| Yttrium (Y) | ≤10 ppt |
| Zinc (Zn) | ≤100 ppt |
| Tin (Sn) | ≤100 ppt |
| Zirconium (Zr) | ≤10 ppt |

| | | | |
|---|---|---|---|
| **HN67.3** | 250 ml | plastic (FEP) | 547,20 € |
| **HN67.1** | 500 ml | plastic (FEP) | 744,45 € |
| **HN67.2** | 1 l | plastic (FEP) | 1149,20 € |
| Original pack 6 x 1 l | | | 1091,74/1 l |
| **HN67.4** | 2 l | plastic (FEP) | 1686,70 € |

For further information, please see page 1665

## Hydrochloric acid in ethanol

▶ HCl-ethanol solution 0,75 % see p. 1969
▶ HCl-ethanol solution 3 % see p. 1969

## Hydrochloric acid Ultra-quality

### Hydrochloric acid Ultra-quality

**ROTIPURAN® Ultra 34 %**

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.

Hydrogen chloride
HCl
M 36,46 g/mol
D 1,18 • bp 85 °C
mp -26 °C
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

**Danger** H314-H290-H335

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 32-35 % |
| Aluminium (Al) | ≤20 ppt |
| Antimony (Sb) | ≤20 ppt |
| Arsenic (As) | ≤50 ppt |
| Barium (Ba) | ≤10 ppt |
| Beryllium (Be) | ≤10 ppt |
| Lead (Pb) | ≤10 ppt |
| Boron (B) | ≤100 ppt |
| Cadmium (Cd) | ≤10 ppt |
| Cesium (Cs) | ≤10 ppt |
| Calcium (Ca) | ≤10 ppt |
| Cerium (Ce) | ≤10 ppt |
| Chromium (Cr) | ≤10 ppt |
| Dysprosium (Dy) | ≤1 ppt |
| Iron (Fe) | ≤10 ppt |
| Erbium (Er) | ≤1 ppt |
| Europium (Eu) | ≤1 ppt |
| Gadolinium (Gd) | ≤1 ppt |
| Gallium (Ga) | ≤10 ppt |
| Gold (Au) | ≤50 ppt |
| Hafnium (Hf) | ≤10 ppt |
| Holmium (Ho) | ≤1 ppt |
| Indium (In) | ≤1 ppt |
| Potassium (K) | ≤10 ppt |
| Cobalt (Co) | ≤10 ppt |
| Copper (Cu) | ≤10 ppt |
| Lanthanum (La) | ≤1 ppt |
| Lithium (Li) | ≤10 ppt |
| Lutetium (Lu) | ≤10 ppt |
| Magnesium (Mg) | ≤10 ppt |
| Manganese (Mn) | ≤10 ppt |
| Molybdenum (Mo) | ≤10 ppt |
| Sodium (Na) | ≤10 ppt |
| Neodymium (Nd) | ≤1 ppt |
| Nickel (Ni) | ≤20 ppt |
| Niobium (Nb) | ≤1 ppt |
| Praseodymium (Pr) | ≤1 ppt |
| Mercury (Hg) | ≤50 ppt |
| Rhenium (Re) | ≤10 ppt |
| Rhodium (Rh) | ≤10 ppt |
| Rubidium (Rb) | ≤10 ppt |
| Ruthenium (Ru) | ≤10 ppt |
| Samarium (Sm) | ≤1 ppt |
| Scandium (Sc) | ≤10 ppt |
| Silver (Ag) | ≤10 ppt |
| Strontium (Sr) | ≤10 ppt |
| Tellur (Te) | ≤1 ppt |
| Terbium (Tb) | ≤1 ppt |
| Thallium (Tl) | ≤10 ppt |
| Thorium (Th) | ≤1 ppt |
| Thulium (Tm) | ≤1 ppt |
| Titanium (Ti) | ≤10 ppt |
| Uranium (U) | ≤1 ppt |
| Vanadium (V) | ≤10 ppt |
| Bismuth (Bi) | ≤10 ppt |
| Tungsten (W) | ≤10 ppt |
| Ytterbium (Yb) | ≤1 ppt |
| Yttrium (Y) | ≤1 ppt |
| Zinc (Zn) | ≤10 ppt |
| Tin (Sn) | ≤20 ppt |
| Zirconium (Zr) | ≤10 ppt |

| | | | |
|---|---|---|---|
| **HN63.1** | 250 ml | plastic (PFA) | 335,30 € |
| **HN63.2** | 500 ml | plastic (PFA) | 499,90 € |
| **HN63.3** | 1 l | plastic (PFA) | 833,15 € |
| Original pack 6 x 1 l | | | 791,49/1 l |
| **HN63.4** | 2 l | plastic (PFA) | 1202,95 € |

For further information, please see page 1665

## Hydrochloric acid Supra-quality

### Hydrochloric acid Supra-quality

**ROTIPURAN® Supra 35 %**

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

Hydrogen chloride
HCl
M 36,46 g/mol
D ~ 1,18 • bp 85 °C
mp -26 °C
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

**Danger** H314-H290-H335

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 34-37 % |
| Colour (APHA) | ≤10 |
| Bromide (Br) | ≤0,001 % |
| Free chlorine ($Cl_2$) | ≤0,00005 % |
| Total Phosphorous (P) | ≤0,000001 % |
| Total Sulfur (S) | ≤0,00003 % |
| Aluminium (Al) | ≤1 ppb |
| Antimony (Sb) | ≤0,5 ppb |
| Arsenic (As) | ≤0,5 ppb |
| Barium (Ba) | ≤0,1 ppb |
| Beryllium (Be) | ≤0,1 ppb |
| Lead (Pb) | ≤0,1 ppb |
| Boron (B) | ≤1 ppb |
| Cadmium (Cd) | ≤0,1 ppb |
| Cesium (Cs) | ≤0,1 ppb |
| Calcium (Ca) | ≤1 ppb |
| Cerium (Ce) | ≤0,1 ppb |
| Chromium (Cr) | ≤0,5 ppb |
| Dysprosium (Dy) | ≤0,1 ppb |
| Iron (Fe) | ≤1 ppb |
| Erbium (Er) | ≤0,1 ppb |
| Europium (Eu) | ≤0,1 ppb |
| Gadolinium (Gd) | ≤0,1 ppb |
| Gallium (Ga) | ≤0,1 ppb |
| Gold (Au) | ≤0,5 ppb |
| Hafnium (Hf) | ≤0,1 ppb |
| Holmium (Ho) | ≤0,1 ppb |
| Indium (In) | ≤0,1 ppb |
| Potassium (K) | ≤1 ppb |
| Cobalt (Co) | ≤0,1 ppb |
| Copper (Cu) | ≤0,5 ppb |
| Lanthanum (La) | ≤0,1 ppb |
| Lithium (Li) | ≤0,1 ppb |
| Lutetium (Lu) | ≤0,1 ppb |
| Magnesium (Mg) | ≤0,5 ppb |
| Manganese (Mn) | ≤0,1 ppb |
| Molybdenum (Mo) | ≤0,1 ppb |
| Sodium (Na) | ≤1 ppb |
| Neodymium (Nd) | ≤0,1 ppb |
| Nickel (Ni) | ≤0,5 ppb |
| Niobium (Nb) | ≤0,1 ppb |
| Praseodymium (Pr) | ≤0,1 ppb |
| Mercury (Hg) | ≤0,1 ppb |
| Rhenium (Re) | ≤0,1 ppb |
| Rhodium (Rh) | ≤0,1 ppb |
| Rubidium (Rb) | ≤0,1 ppb |
| Ruthenium (Ru) | ≤0,1 ppb |
| Samarium (Sm) | ≤0,1 ppb |
| Scandium (Sc) | ≤0,1 ppb |
| Selenium (Se) | ≤1 ppb |
| Silver (Ag) | ≤1 ppb |
| Strontium (Sr) | ≤0,1 ppb |
| Tellur (Te) | ≤0,1 ppb |
| Terbium (Tb) | ≤0,1 ppb |
| Thallium (Tl) | ≤0,1 ppb |

Thorium (Th). ≤0,1 ppb
Thulium (Tm). ≤0,1 ppb
Titanium (Ti). ≤0,5 ppb
Uranium (U). ≤0,1 ppb
Vanadium (V). ≤0,5 ppb
Bismuth (Bi). ≤0,1 ppb
Tungsten (W). ≤0,1 ppb
Ytterbium (Yb). ≤0,1 ppb
Yttrium (Y). ≤0,1 ppb
Zinc (Zn). ≤1 ppb
Tin (Sn). ≤0,5 ppb
Zirconium (Zr). ≤0,1 ppb

| | | | |
|---|---|---|---|
| **HN53.1** | 500 ml | plastic | 70,85 € |
| **HN53.2** | 1 l | plastic | 109,55 € |
| Original pack 6 x 1 l | | | 104,07/1 l |
| **HN53.3** | 2,5 l | plastic | 121,40 € |
| Original pack 4 x 2,5 l | | | 115,33/2,5 l |
| **HN53.4** | 4 l | plastic | 217,70 € |

For further information, please see page 1665

## Hydrochloric acid Supra-quality

### Hydrochloric acid Supra-quality

**ROTIPURAN® Supra 30 %**

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,18 • bp 85 °C
mp -26 °C
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

**Danger** H314-H290-H335

**Guarantee analysis:**

Assay (w/w). 29-31 %
Colour (APHA). ≤10
Ammonium ($NH_4$). ≤0,00005 %
Bromide (Br). ≤0,001 %
Free chlorine ($Cl_2$). ≤0,00005 %
Total Phosphorous (P). ≤0,000001 %
Total Sulfur (S). ≤0,00003 %
Aluminium (Al). ≤1 ppb
Antimony (Sb). ≤0,5 ppb
Arsenic (As). ≤0,5 ppb
Barium (Ba). ≤0,1 ppb
Beryllium (Be). ≤0,1 ppb
Lead (Pb). ≤0,1 ppb
Boron (B). ≤1 ppb
Cadmium (Cd). ≤0,1 ppb
Cesium (Cs). ≤0,1 ppb
Calcium (Ca). ≤1 ppb
Cerium (Ce). ≤0,1 ppb
Chromium (Cr). ≤0,5 ppb
Dysprosium (Dy). ≤0,1 ppb
Iron (Fe). ≤1 ppb
Erbium (Er). ≤0,1 ppb
Europium (Eu). ≤0,1 ppb
Gadolinium (Gd). ≤0,1 ppb
Gallium (Ga). ≤0,1 ppb
Germanium (Ge). ≤1 ppb
Gold (Au). ≤0,5 ppb
Hafnium (Hf). ≤0,1 ppb
Holmium (Ho). ≤0,1 ppb
Indium (In). ≤0,1 ppb
Potassium (K). ≤1 ppb
Cobalt (Co). ≤0,1 ppb
Copper (Cu). ≤0,5 ppb
Lanthanum (La). ≤0,1 ppb
Lithium (Li). ≤0,1 ppb
Lutetium (Lu). ≤0,1 ppb
Magnesium (Mg). ≤0,5 ppb
Manganese (Mn). ≤0,1 ppb
Molybdenum (Mo). ≤0,1 ppb
Sodium (Na). ≤1 ppb
Neodymium (Nd). ≤0,1 ppb
Nickel (Ni). ≤0,5 ppb
Niobium (Nb). ≤0,1 ppb
Praseodymium (Pr). ≤0,1 ppb
Mercury (Hg). ≤0,1 ppb
Rhenium (Re). ≤0,1 ppb
Rhodium (Rh). ≤0,1 ppb
Rubidium (Rb). ≤0,1 ppb
Ruthenium (Ru). ≤0,1 ppb
Samarium (Sm). ≤0,1 ppb
Scandium (Sc). ≤0,1 ppb
Selenium (Se). ≤1 ppb
Silver (Ag). ≤1 ppb
Strontium (Sr). ≤0,1 ppb
Tellur (Te). ≤0,1 ppb
Thallium (Tl). ≤0,1 ppb
Thorium (Th). ≤0,1 ppb
Thulium (Tm). ≤0,1 ppb
Titanium (Ti). ≤0,5 ppb
Uranium (U). ≤0,1 ppb
Vanadium (V). ≤0,5 ppb
Bismuth (Bi). ≤0,1 ppb
Tungsten (W). ≤0,1 ppb
Ytterbium (Yb). ≤0,1 ppb
Yttrium (Y). ≤0,1 ppb
Zinc (Zn). ≤1 ppb
Tin (Sn). ≤0,5 ppb
Zirconium (Zr). ≤0,1 ppb

| | | | |
|---|---|---|---|
| **NE57.2** | 1 l | plastic | 100,55 € |
| Original pack 6 x 1 l | | | 95,52/1 l |
| **NE57.3** | 2,5 l | plastic | 111,30 € |
| Original pack 4 x 2,5 l | | | 105,74/2,5 l |

For further information, please see page 1665

## Hydrochloric acid 37 %

Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,19
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

**Danger** H290-H314-H335

### Hydrochloric acid 37 %

**37 %, VLSI Grade**

**Guarantee analysis:**

Assay. ≥36,5 %
Bead number (≥0,5 µm). ≤250 p/ml
Colour (APHA). ≤10
Free chlorine ($Cl_2$). complies
Ammonium ($NH_4$). ≤0,0001 %
Bromide (Br). ≤0,005 %
Phosphate ($PO_4$). ≤0,00005 %
Sulphate ($SO_4$). ≤0,00005 %
Sulphite ($SO_3$). ≤0,0001 %
Ash content (as $SO_4$). ≤0,0005 %
Aluminium (Al). ≤50 ppb
Antimony (Sb). ≤10 ppb
Arsenic (As). ≤10 ppb
Barium (Ba). ≤10 ppb
Beryllium (Be). ≤10 ppb
Bismuth (Bi). ≤20 ppb
Lead (Pb). ≤10 ppb
Boron (B). ≤20 ppb
Cadmium (Cd). ≤10 ppb
Calcium (Ca). ≤50 ppb
Chromium (Cr). ≤10 ppb
Iron (Fe). ≤50 ppb
Gallium (Ga). ≤10 ppb
Germanium (Ge). ≤10 ppb
Gold (Au). ≤10 ppb
Indium (In). ≤20 ppb
Potassium (K). ≤50 ppb
Cobalt (Co). ≤10 ppb
Copper (Cu). ≤10 ppb
Lithium (Li). ≤10 ppb
Magnesium (Mg). ≤50 ppb
Manganese (Mn). ≤10 ppb
Molybdenum (Mo). ≤10 ppb
Sodium (Na). ≤200 ppb
Nickel (Ni). ≤10 ppb
Platinum (Pt). ≤50 ppb
Mercury (Hg). ≤5 ppb
Silver (Ag). ≤10 ppb
Strontium (Sr). ≤20 ppb
Thallium (Tl). ≤10 ppb
Titanium (Ti). ≤10 ppb
Vanadium (V). ≤10 ppb
Zinc (Zn). ≤50 ppb
Tin (Sn). ≤20 ppb
Zirconium (Zr). ≤10 ppb

| | | | |
|---|---|---|---|
| **9787.1** | 2,5 l | plastic | 44,00 € |
| Original pack 4 x 2,5 l | | | 41,80/2,5 l |

For further information, please see page 1654

### Hydrochloric acid fuming 37 %

**ROTIPURAN® 37 %, p.a., ISO, max. 0,005 ppm Hg**

Dissolving agent for organic and anorganic samples. For determination of mercury.

**Guarantee analysis:**

Assay (acidim.). 36,5-38,0 %
Colour (Hazen). ≤10
Free chlorine (Cl). ≤0,0001 %
Bromide (Br). ≤0,005 %
Sulphate ($SO_4$). ≤0,0001 %
Sulphite ($SO_3$). ≤0,0001 %
Ammonium ($NH_4$). ≤0,0003 %
Mercury (Hg). ≤0,0000005 %
Silver (Ag). ≤0,000005 %
Aluminium (Al). ≤0,00001 %
Arsenic (As). ≤0,000001 %
Gold (Au). ≤0,00001 %
Boron (B). ≤0,00002 %
Barium (Ba). ≤0,000005 %
Beryllium (Be). ≤0,000002 %
Bismuth (Bi). ≤0,000005 %
Calcium (Ca). ≤0,00005 %
Cadmium (Cd). ≤0,000001 %
Cobalt (Co). ≤0,000001 %
Chromium (Cr). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Iron (Fe). ≤0,00002 %
Gallium (Ga). ≤0,000005 %
Germanium (Ge). ≤0,000002 %
Indium (In). ≤0,000005 %
Potassium (K). ≤0,00001 %
Lithium (Li). ≤0,000002 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000001 %
Molybdenum (Mo). ≤0,000001 %
Sodium (Na). ≤0,00005 %
Nickel (Ni). ≤0,000002 %
Lead (Pb). ≤0,000002 %
Platinum (Pt). ≤0,00001 %
Antimony (Sb). ≤0,000001 %
Silicon (Si). ≤0,00001 %
Tin (Sn). ≤0,00001 %
Strontium (Sr). ≤0,000002 %
Titanium (Ti). ≤0,000002 %
Vanadium (V). ≤0,000001 %
Zinc (Zn). ≤0,000005 %
Zirconium (Zr). ≤0,000002 %
Ash content (as $SO_4$). ≤0,0005 %

| | | | |
|---|---|---|---|
| **X942.1** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **X942.2** | 2,5 l | glass | 32,80 € |
| Original pack 4 x 2,5 l | | | 31,16/2,5 l |

H

## Hydrochloric acid fuming 37 %

**ROTIPURAN® 37 %, p.a., ACS, ISO**

Solvent and dissolving agent. For acidifying, neutralisation and regeneration of ion exchangers.

**Guarantee analysis:**

Assay (acidim.)....36,5-38,0 %
Colour (Hazen)....≤10
Free chlorine (Cl)....≤0,00004 %
Ash content (as $SO_4$)....≤0,0005 %
Heavy metals (as Pb)....≤0,0001 %
Phosphate ($PO_4$)....≤0,00005 %
Sulphate ($SO_4$)....≤0,00005 %
Sulphite ($SO_3$)....≤0,00005 %
Aluminium (Al)....≤0,000005 %
Ammonium ($NH_4$)....≤0,0001 %
Arsenic (As)....≤0,000001 %
Barium (Ba)....≤0,000001 %
Beryllium (Be)....≤0,000001 %
Bismuth (Bi)....≤0,000005 %
Lead (Pb)....≤0,000001 %
Boron (B)....≤0,00001 %
Bromide (Br)....≤0,005 %
Cadmium (Cd)....≤0,000001 %
Calcium (Ca)....≤0,00003 %
Chromium (Cr)....≤0,000001 %
Iron (Fe)....≤0,00001 %
Gallium (Ga)....≤0,000005 %
Germanium (Ge)....≤0,000002 %
Gold (Au)....≤0,000005 %
Potassium (K)....≤0,00001 %
Cobalt (Co)....≤0,000001 %
Copper (Cu)....≤0,000001 %
Lithium (Li)....≤0,000001 %
Magnesium (Mg)....≤0,000005 %
Manganese (Mn)....≤0,000001 %
Molybdenum (Mo)....≤0,000001 %
Sodium (Na)....≤0,00005 %
Nickel (Ni)....≤0,000002 %
Platinum (Pt)....≤0,00001 %
Mercury (Hg)....≤0,000001 %
Silver (Ag)....≤0,000002 %
Strontium (Sr)....≤0,000002 %
Thallium (Tl)....≤0,000002 %
Vanadium (V)....≤0,000001 %
Zinc (Zn)....≤0,000005 %
Tin (Sn)....≤0,000005 %
Zirconium (Zr)....≤0,000002 %

| | | | |
|---|---|---|---|
| **4625.1** | 1 l | glass | 20,35 € |
| Original pack 6 x 1 l | | | 19,33/1 l |
| **4625.2** | 2,5 l | glass | 32,15 € |
| Original pack 4 x 2,5 l | | | 30,54/2,5 l |
| **4625.3** | 10 l | plastic | 79,45 € |

## Hydrochloric acid fuming 37 %

**37 %, Ph.Eur.**

**Guarantee analysis:**

Assay (acidim.)....36,5-39,0 %
Identity....complies
Appearance of solution....complies
Sulphate ($SO_4$)....≤0,0005 %
Heavy metals (as Pb)....≤0,0002 %
Ash content (as $SO_4$)....≤0,005 %
Non volatile matter....≤0,01 %

| | | | |
|---|---|---|---|
| **2607.1** | 1 l | glass | 19,25 € |
| Original pack 6 x 1 l | | | 18,29/1 l |
| **2607.2** | 2,5 l | glass | 31,75 € |
| Original pack 4 x 2,5 l | | | 30,16/2,5 l |
| **2607.3** | 10 l | plastic | 69,35 € |
| **2607.4** | 25 l | plastic | 143,55 € |

## Hydrochloric acid 37 %

**37 %, extra pure**

**Type analysis:**

Assay....36,5-38,0 %
Colour (Hazen)....≤10
Density (20 °C)....1,18-1,19
Free chlorine (Cl)....≤0,0001 %
Sulphate ($SO_4$)....≤0,0002 %
Heavy metals (as Pb)....≤0,0002 %
Arsenic (As)....≤0,0001 %
Iron (Fe)....≤0,0001 %
Arsenic (As)....≤0,0001 %
Ash content (as $SO_4$)....≤0,0005 %

| | | | |
|---|---|---|---|
| **9277.1** | 1 l | glass | 18,85 € |
| Original pack 6 x 1 l | | | 17,91/1 l |
| **9277.2** | 2,5 l | glass | 30,65 € |
| Original pack 4 x 2,5 l | | | 29,12/2,5 l |
| **9277.3** | 10 l | plastic | 68,30 € |

## Hydrochloric acid 37 %

**37 %, techn.**

**Type analysis:**

Assay....≥36,5 %
Density (20 °C)....1,183-1,187
Lead (Pb)....≤0,0001 %

| | | | |
|---|---|---|---|
| **7476.1** | 1 l | glass | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |
| **7476.2** | 2,5 l | glass | 21,40 € |
| Original pack 4 x 2,5 l | | | 20,33/2,5 l |
| **7476.3** | 10 l | plastic | 41,40 € |
| **7476.4** | 25 l | plastic | 69,80 € |

## Hydrochloric acid 32 %

Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,16 • bp 85 °C
mp -40 °C
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

**Danger** H314-H290-H335

## Hydrochloric acid 32 %

**ROTIPURAN® ≥32 %, p.a., ISO**

Solvent and dissolving agent.
For neutralisation, regeneration and acidifying of ion exchangers.

**Guarantee analysis:**

Assay (acidim.)....≥32 %
Colour (Hazen)....≤10
Free chlorine (Cl)....≤0,00005 %
Heavy metals (as Pb)....≤0,0001 %
Ash content (as $SO_4$)....≤0,0005 %
Sulphate ($SO_4$)....≤0,0001 %
Sulphite ($SO_3$)....≤0,0001 %
Phosphate ($PO_4$)....≤0,00005 %
Ammonium ($NH_4$)....≤0,0001 %
Aluminium (Al)....≤0,000005 %
Arsenic (As)....≤0,000001 %
Barium (Ba)....≤0,000002 %
Beryllium (Be)....≤0,000002 %
Bismuth (Bi)....≤0,000002 %
Lead (Pb)....≤0,000001 %
Bromide (Br)....≤0,005 %
Cadmium (Cd)....≤0,000001 %
Calcium (Ca)....≤0,00002 %
Chromium (Cr)....≤0,000002 %
Iron (Fe)....≤0,00001 %
Gallium (Ga)....≤0,000005 %
Germanium (Ge)....≤0,000002 %
Gold (Au)....≤0,000005 %
Indium (In)....≤0,000005 %
Potassium (K)....≤0,00001 %
Cobalt (Co)....≤0,000001 %
Copper (Cu)....≤0,000002 %
Lithium (Li)....≤0,000001 %
Magnesium (Mg)....≤0,000005 %
Manganese (Mn)....≤0,000001 %
Molybdenum (Mo)....≤0,000001 %
Sodium (Na)....≤0,00005 %
Nickel (Ni)....≤0,000002 %
Platinum (Pt)....≤0,00001 %
Mercury (Hg)....≤0,000001 %
Silver (Ag)....≤0,000005 %
Strontium (Sr)....≤0,000001 %
Thallium (Tl)....≤0,000002 %
Titanium (Ti)....≤0,000002 %
Vanadium (V)....≤0,000001 %
Zinc (Zn)....≤0,000005 %
Zirconium (Zr)....≤0,000002 %

| | | | |
|---|---|---|---|
| **P074.1** | 1 l | glass | 17,75 € |
| Original pack 6 x 1 l | | | 16,86/1 l |
| **P074.3** | 1 l | plastic | 15,60 € |
| Original pack 6 x 1 l | | | 14,82/1 l |
| **P074.2** | 2,5 l | glass | 30,65 € |
| Original pack 4 x 2,5 l | | | 29,12/2,5 l |
| **P074.4** | 2,5 l | plastic | 28,50 € |
| Original pack 4 x 2,5 l | | | 27,08/2,5 l |

## Hydrochloric acid 32 %

**32 %, extra pure**

**Type analysis:**

Assay....≥32 %
Colour (Hazen)....≤10
Density (d 15 °C/4 °C)....1,159-1,165
Free chlorine (Cl)....≤0,0001 %
Sulphate ($SO_4$)....≤0,0002 %
Heavy metals (as Pb)....≤0,0002 %
Iron (Fe)....≤0,0001 %
Arsenic (As)....≤0,0001 %
Ash content (as $SO_4$)....≤0,0005 %

| | | | |
|---|---|---|---|
| **X896.1** | 1 l | plastic | 14,55 € |
| Original pack 6 x 1 l | | | 13,82/1 l |
| **X896.2** | 2,5 l | plastic | 22,50 € |
| Original pack 4 x 2,5 l | | | 21,38/2,5 l |
| **X896.3** | 10 l | plastic | 58,60 € |

## Hydrochloric acid 30 %

**≥30 %, techn.**

**Type analysis:**

Appearance....clear, yellowish liquid
Assay....≥30 %
Iron (Fe)....≤0,001 %

| | | | |
|---|---|---|---|
| **9280.3** | 1 l | plastic | 13,45 € |
| Original pack 6 x 1 l | | | 12,78/1 l |
| **9280.1** | 10 l | plastic | 36,45 € |
| **9280.2** | 33 kg | plastic | 75,15 € |

## Hydrochloric acid 25 %

Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,12 • bp 107 °C
mp -70 °C
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1
**Danger** H314-H290-H335

### Hydrochloric acid 25 %

**ROTIPURAN® ≥25 %, p.a., ISO**
Solvent, for neutralisation.

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥25 % |
| Colour (Hazen) | ≤10 |
| Free chlorine (Cl) | ≤0,00005 % |
| Heavy metals (as Pb) | ≤0,0001 % |
| Ash content (as $SO_4$) | ≤0,0005 % |
| Sulphate ($SO_4$) | ≤0,0001 % |
| Sulphite ($SO_3$) | ≤0,0001 % |
| Aluminium (Al) | ≤0,000005 % |
| Ammonium ($NH_4$) | ≤0,0001 % |
| Arsenic (As) | ≤0,000001 % |
| Barium (Ba) | ≤0,000002 % |
| Beryllium (Be) | ≤0,000002 % |
| Lead (Pb) | ≤0,000002 % |
| Bromide (Br) | ≤0,005 % |
| Cadmium (Cd) | ≤0,000001 % |
| Calcium (Ca) | ≤0,00005 % |
| Chromium (Cr) | ≤0,000002 % |
| Cobalt (Co) | ≤0,000001 % |
| Iron (Fe) | ≤0,00002 % |
| Germanium (Ge) | ≤0,000005 % |
| Potassium (K) | ≤0,00001 % |
| Copper (Cu) | ≤0,000002 % |
| Lithium (Li) | ≤0,000001 % |
| Magnesium (Mg) | ≤0,00001 % |
| Manganese (Mn) | ≤0,000001 % |
| Molybdenum (Mo) | ≤0,000002 % |
| Sodium (Na) | ≤0,00005 % |
| Nickel (Ni) | ≤0,000002 % |
| Strontium (Sr) | ≤0,000001 % |
| Thallium (Tl) | ≤0,000005 % |
| Titanium (Ti) | ≤0,0001 % |
| Vanadium (V) | ≤0,000001 % |
| Bismuth (Bi) | ≤0,00001 % |
| Zinc (Zn) | ≤0,000005 % |
| Zirconium (Zr) | ≤0,00001 % |

| | | | |
|---|---|---|---|
| **6331.1** | 1 l | glass | 18,20 € |
| Original pack 6 x 1 l | | | 17,29/1 l |
| **6331.3** | 1 l | plastic | 15,60 € |
| Original pack 6 x 1 l | | | 14,82/1 l |
| **6331.2** | 2,5 l | glass | 31,10 € |
| Original pack 4 x 2,5 l | | | 29,55/2,5 l |
| **6331.4** | 2,5 l | plastic | 27,45 € |
| Original pack 4 x 2,5 l | | | 26,08/2,5 l |

### Hydrochloric acid 25 %

**25 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay | ≥25 % |
| Colour (Hazen) | ≤10 |
| Density (d 15 °C/4 °C) | 1,12-1,13 |
| Free chlorine (Cl) | ≤0,0001 % |
| Sulphate ($SO_4$) | ≤0,0002 % |
| Heavy metals (as Pb) | ≤0,0002 % |
| Iron (Fe) | ≤0,0001 % |
| Arsenic (As) | ≤0,0001 % |
| Ash content (as $SO_4$) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **X897.1** | 1 l | plastic | 14,55 € |
| Original pack 6 x 1 l | | | 13,82/1 l |
| **X897.2** | 2,5 l | plastic | 24,65 € |
| Original pack 4 x 2,5 l | | | 23,42/2,5 l |
| **X897.3** | 10 l | plastic | 50,45 € |

### Hydrochloric acid 25 %

**25 %, techn.**

**Type analysis:**

| | |
|---|---|
| Appearance | colourless, light yellowish |
| Assay | 24,0-26,0 % |

| | | | |
|---|---|---|---|
| **0992.4** | 1 l | plastic | 11,75 € |
| Original pack 6 x 1 l | | | 11,16/1 l |
| **0992.1** | 2,5 l | plastic | 21,00 € |
| Original pack 4 x 2,5 l | | | 19,95/2,5 l |
| **0992.2** | 10 l | plastic | 44,00 € |
| **0992.3** | 25 l | plastic | 81,60 € |

## Hydrochloric acid 20 %

### Hydrochloric acid 20 %

**20 %, techn.**
Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,10
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1
**Warning** H290-H335-H315-H319

**Type analysis:**

| | |
|---|---|
| Assay | 19,0-21,0 % |
| Density (20 °C) | 1,0929-1,1032 |
| Iron (Fe) | <0,001 % |

| | | | |
|---|---|---|---|
| **4326.1** | 1 l | plastic | 13,15 € |
| Original pack 6 x 1 l | | | 12,49/1 l |
| **4326.2** | 2,5 l | plastic | 20,35 € |
| Original pack 4 x 2,5 l | | | 19,33/2,5 l |
| **4326.3** | 5 l | plastic | 32,15 € |
| Original pack 2 x 5 l | | | 30,54/5 l |
| **4326.4** | 10 l | plastic | 44,65 € |

## Hydrochloric acid 15 %

### Hydrochloric acid 15 %

**15 %, techn.**
Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,07
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1
**Warning** H290-H335-H315-H319

**Type analysis:**

| | |
|---|---|
| Assay | 14,0-16,0 % |
| Density (20 °C) | 1,0675-1,0776 |
| Iron (Fe) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **4322.1** | 1 l | plastic | 12,05 € |
| Original pack 6 x 1 l | | | 11,45/1 l |
| **4322.2** | 2,5 l | plastic | 18,20 € |
| Original pack 4 x 2,5 l | | | 17,29/2,5 l |
| **4322.3** | 5 l | plastic | 30,00 € |
| Original pack 2 x 5 l | | | 28,50/5 l |
| **4322.4** | 10 l | plastic | 41,40 € |

## Hydrochloric acid 10 %

### Hydrochloric acid 10 %

**10 %, techn.**
Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,05
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1
**Warning** H290-H335-H315-H319

**Type analysis:**

| | |
|---|---|
| Assay | 9,5-10,5 % |
| Density (20 °C) | 1,0450-1,0500 |

| | | | |
|---|---|---|---|
| **0710.1** | 2,5 l | plastic | 20,35 € |
| Original pack 4 x 2,5 l | | | 19,33/2,5 l |
| **0710.2** | 5 l | plastic | 27,85 € |
| Original pack 2 x 5 l | | | 26,46/5 l |
| **0710.3** | 10 l | plastic | 36,45 € |

## Hydrochloric acid 5 %

### Hydrochloric acid 5 %

**5 %, techn.**
Hydrogen chloride
HCl
M 36,46 g/mol
D ~1,02
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III • WGK 1
**Warning** H290

**Type analysis:**

| | |
|---|---|
| Assay | 4,5-5,5 % |
| Density (20 °C) | 1,0205-1,0255 |
| Iron (Fe) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **4328.1** | 1 l | plastic | 11,75 € |
| Original pack 6 x 1 l | | | 11,16/1 l |
| **4328.2** | 2,5 l | plastic | 18,20 € |
| Original pack 4 x 2,5 l | | | 17,29/2,5 l |
| **4328.3** | 5 l | plastic | 27,45 € |
| Original pack 2 x 5 l | | | 26,08/5 l |
| **4328.4** | 10 l | plastic | 35,40 € |

## Hydrochloric acid (0,01 N)

### Hydrochloric acid

**0,01 mol/l - 0,01 N volumetric standard solution**
[7647-01-0] • EC No. 231-595-7

**Type analysis:**

| | |
|---|---|
| Amount-of-substance conc. (20 °C) | 0,01 mol/l ±0,5 % |
| Titer | 0,9950-1,0050 |

| | | | |
|---|---|---|---|
| **N075.1** | 1 l | plastic | 19,25 € |
| Original pack 6 x 1 l | | | 18,29/1 l |

For further information, please see page 1621

## Hydrochloric acid (0,05 N)

### Hydrochloric acid

**0,05 mol/l - 0,05 N volumetric standard solution**

[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III

**Warning** H290

**Type analysis:**
Amount-of-substance conc. (20 °C).....0,05 mol/l ±0,2 %
Titer. .....0,998-1,002

| | | | |
|---|---|---|---|
| **8085.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **8085.2** | 2,5 l | plastic | 34,30 € |
| Original pack 4 x 2,5 l | | | 32,59/2,5 l |
| **8085.3** | 5 l | ROTI®CUBE | 61,20 € |
| Original pack 2 x 5 l | | | 58,14/5 l |

## Hydrochloric acid (0,1 N)

### Hydrochloric acid

**0,1 mol/l - 0,1 N volumetric standard solution**

[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III

**Warning** H290

**Type analysis:**
Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,2 %
Titer. .....0,998-1,002

| | | | |
|---|---|---|---|
| **K024.5** | 500 ml | plastic | 13,90 € |
| **K024.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **K024.2** | 5 l | plastic | 56,45 € |
| Original pack 2 x 5 l | | | 53,63/5 l |
| **K024.3** | 5 l | ROTI®CUBE | 61,20 € |
| Original pack 2 x 5 l | | | 58,14/5 l |
| **K024.4** | 10 l | ROTI®CUBE | 90,20 € |

For further information, please see page 1621

## Hydrochloric acid (0,1 N)

### Hydrochloric acid

**0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.**

[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**
Amount-of-substance conc. (20 °C).....0,1 mol/l
Measurement uncertainty. .....±0,1 %

| | | | |
|---|---|---|---|
| **6789.1** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |

## Hydrochloric acid (0,1 N)

### Hydrochloric acid

**ROTI®VOLUM 0,1 mol/l - 0,1 N**

Ampoule for preparation of 1000 ml volumetric solution.
HCl
M 36,46 g/mol
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**
Amount-of-substance conc. (20 °C). ..0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN61.1** | 1 piece | plastic ampoule | 19,05 € |

For further information, please see page 1623

## Hydrochloric acid (0,2 N)

### Hydrochloric acid

**0,2 mol/l - 0,2 N volumetric standard solution**

[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8.III • WGK 1

**Warning** H290

**Type analysis:**
Amount-of-substance conc. (20 °C). ..0,2 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **4120.1** | 1 l | plastic | 18,20 € |
| Original pack 6 x 1 l | | | 17,29/1 l |

For further information, please see page 1621

## Hydrochloric acid (0,5 N)

### Hydrochloric acid

**0,5 mol/l - 0,5 N volumetric standard solution**

[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III

**Warning** H290

**Type analysis:**
Amount-of-substance conc. (20 °C). ..0,5 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **P708.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **P708.2** | 5 l | plastic | 56,45 € |
| Original pack 2 x 5 l | | | 53,63/5 l |
| **P708.3** | 5 l | ROTI®CUBE | 61,20 € |
| Original pack 2 x 5 l | | | 58,14/5 l |
| **P708.4** | 10 l | ROTI®CUBE | 90,20 € |

For further information, please see page 1621

## Hydrochloric acid (0,5 N)

### Hydrochloric acid

**ROTI®VOLUM 0,5 mol/l - 0,5 N**

Ampoule for preparation of 1000 ml volumetric solution.
HCl
M 36,46 g/mol
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**
Amount-of-substance conc. (20 °C)... 0,5 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN62.1** | 1 piece | plastic ampoule | 19,05 € |

For further information, please see page 1623

## Hydrochloric acid (1 N)

### Hydrochloric acid

**1 mol/l - 1 N volumetric standard solution**

[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**
Amount-of-substance conc. (20 °C)..... 1 mol/l ±0,2 %
Titer.....0,998-1,002

| | | | |
|---|---|---|---|
| **K025.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **K025.2** | 5 l | plastic | 56,45 € |
| Original pack 2 x 5 l | | | 53,63/5 l |
| **K025.3** | 5 l | ROTI®CUBE | 61,20 € |
| Original pack 2 x 5 l | | | 58,14/5 l |
| **K025.4** | 10 l | ROTI®CUBE | 90,20 € |

For further information, please see page 1621

## Hydrochloric acid (1 N)

### Hydrochloric acid

**1 mol/l - 1 N volumetric standard solution, Reag. Ph.Eur.**

[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**
Amount-of-substance conc. (20 °C)..... 1 mol/l
Measurement uncertainty. .....±0,1 %

| | | | |
|---|---|---|---|
| **6792.1** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |

## Hydrochloric acid (1 N)

### Hydrochloric acid

**ROTI®VOLUM 1 mol/l - 1 N**

Ampoule for preparation of 1000 ml volumetric solution.
HCl
M 36,46 g/mol
[7647-01-0] • EC No. 231-595-7
UN No. 1789 • ADR 8 II • WGK 1

**Warning** H290-H335-H315-H319

**Type analysis:**
Amount-of-substance conc. (20 °C)..... 1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN63.1** | 1 piece | plastic ampoule | 19,05 € |

For further information, please see page 1623

## Hydrochloric acid (2 N)

### Hydrochloric acid

**2 mol/l - 2 N volumetric standard solution**

[7647-01-0] • EC No. 231-595-7

UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**

Amount-of-substance conc. (20 °C).....2 mol/l ±0,2 %

Titer. .....0,998-1,002

| | | | |
|---|---|---|---|
| **T134.4** | 500 ml | plastic | 14,95 € |
| **T134.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **T134.2** | 5 l | plastic | 56,45 € |
| Original pack 2 x 5 l | | | 53,63/5 l |
| **T134.3** | 5 l | ROTI®CUBE | 61,20 € |
| Original pack 2 x 5 l | | | 58,14/5 l |

For further information, please see page 1621

## Hydrochloric acid (4 N)

### Hydrochloric acid

**4 mol/l - 4 N volumetric standard solution**

[7647-01-0] • EC No. 231-595-7

UN No. 1789 • ADR 8 II • WGK 1

**Warning** H290-H335-H315-H319

**Type analysis:**

Amount-of-substance conc. (20 °C).....4 mol/l ±0,2 %

Titer. .....0,998-1,002

| | | | |
|---|---|---|---|
| **N076.1** | 1 l | plastic | 30,00 € |
| Original pack 6 x 1 l | | | 28,50/1 l |

For further information, please see page 1621

## Hydrochloric acid (6 N)

### Hydrochloric acid

**6 mol/l - 6 N volumetric standard solution**

[7647-01-0] • EC No. 231-595-7

UN No. 1789 • ADR 8 II • WGK 1

**Warning** H290-H335-H315-H319

**Type analysis:**

Amount-of-substance conc. (20 °C).....6 mol/l ±0,2 %

Titer. .....0,998-1,002

| | | | |
|---|---|---|---|
| **0281.1** | 1 l | plastic | 30,00 € |
| Original pack 6 x 1 l | | | 28,50/1 l |

For further information, please see page 1621

## Hydrochloric acid (10 N)

### Hydrochloric acid

NEW

**10 mol/l - 10 N volumetric standard solution**

[7647-01-0] • EC No. 231-595-7

UN No. 1789 • ADR 8 II • WGK 1

**Danger** H290-H314-H335

**Type analysis:**

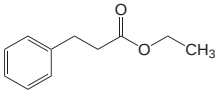
Amount-of-substance conc. (20 °C). ... 10 mol/l ±0,2 %

Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **0226.1** | 1 l | plastic | 96,65 € |
| Original pack 6 x 1 l | | | 91,82/1 l |

For further information, please see page 1621

## Hydrocinnamic acid ethyl ester



### Hydrocinnamic acid ethyl ester

**≥98,5 %**

3-Phenylpropionic acid ethyl ester

$C_{11}H_{14}O_2$

M 178,22 g/mol

D ~1,01

mp ~248 °C

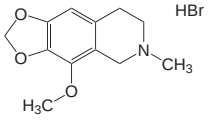
[2021-28-5] • EC No. 217-966-6

**Type analysis:**

Assay (GC)..... ≥98,5 %

| | | | |
|---|---|---|---|
| **7920.1** | 10 ml | glass | 50,00 € |

## Hydrocotarnine hydrobromide



### Hydrocotarnine hydrobromide

**ROTICHROM® ~CHR**

$C_{12}H_{15}NO_3 \cdot HBr$

M 302,18 g/mol

mp ~237 °C

[5985-00-2]

UN No. 1544 • ADR 6.1 II

**Danger** H301

| | | | |
|---|---|---|---|
| **4268.1** | 100 mg | glass | 26,80 € |

## Hydrofluoric acid Ultra-quality

### Hydrofluoric acid Ultra-quality

**ROTIPURAN® Ultra 48 %**

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.

Fluorhydric acid

HF

M 20,01 g/mol • D 1,18 • bp 108 °C • mp -35 °C

[7664-39-3] • EC No. 231-634-8

UN No. 1790 • ADR 8 (6.1) II • WGK 2

**Danger** H300+H310+H330-H314

**Guarantee analysis:**

Assay (w/w).....47-51 %
Total Sulfur (S).....≤0,00001 %
Aluminium (Al).....≤20 ppt
Antimony (Sb).....≤20 ppt
Arsenic (As).....≤50 ppt
Barium (Ba).....≤10 ppt
Beryllium (Be).....≤10 ppt
Lead (Pb).....≤10 ppt
Boron (B).....≤100 ppt
Cadmium (Cd).....≤10 ppt
Cesium (Cs).....≤10 ppt
Calcium (Ca).....≤10 ppt
Cerium (Ce).....≤10 ppt
Chromium (Cr).....≤10 ppt
Dysprosium (Dy).....≤1 ppt
Iron (Fe).....≤10 ppt
Erbium (Er).....≤1 ppt
Europium (Eu).....≤1 ppt
Gadolinium (Gd).....≤1 ppt
Gallium (Ga).....≤10 ppt
Germanium (Ge).....≤10 ppt
Gold (Au).....≤20 ppt
Hafnium (Hf).....≤10 ppt
Holmium (Ho).....≤1 ppt
Indium (In).....≤1 ppt
Potassium (K).....≤10 ppt
Cobalt (Co).....≤10 ppt
Copper (Cu).....≤10 ppt
Lanthanum (La).....≤10 ppt
Lithium (Li).....≤10 ppt
Lutetium (Lu).....≤1 ppt
Magnesium (Mg).....≤10 ppt
Manganese (Mn).....≤10 ppt
Molybdenum (Mo).....≤10 ppt
Sodium (Na).....≤10 ppt
Neodymium (Nd).....≤1 ppt
Nickel (Ni).....≤20 ppt
Niobium (Nb).....≤10 ppt
Palladium (Pd).....≤20 ppt
Platinum (Pt).....≤20 ppt
Praseodymium (Pr).....≤1 ppt
Mercury (Hg).....≤50 ppt
Rhenium (Re).....≤10 ppt
Rhodium (Rh).....≤20 ppt
Rubidium (Rb).....≤20 ppt
Ruthenium (Ru).....≤20 ppt
Samarium (Sm).....≤1 ppt
Scandium (Sc).....≤10 ppt
Silver (Ag).....≤10 ppt
Strontium (Sr).....≤10 ppt
Tellur (Te).....≤1 ppt
Terbium (Tb).....≤1 ppt
Thallium (Tl).....≤10 ppt
Thorium (Th).....≤1 ppt
Thulium (Tm).....≤1 ppt
Titanium (Ti).....≤20 ppt
Uranium (U).....≤1 ppt
Vanadium (V).....≤10 ppt
Bismuth (Bi).....≤10 ppt
Tungsten (W).....≤20 ppt
Ytterbium (Yb).....≤1 ppt
Yttrium (Y).....≤1 ppt
Zinc (Zn).....≤10 ppt
Tin (Sn).....≤20 ppt
Zirconium (Zr).....≤10 ppt

| | | | |
|---|---|---|---|
| **HN64.2** | 250 ml | plastic (PFA) | 439,70 € |
| **HN64.1** | 500 ml | plastic (PFA) | 663,85 € |
| **HN64.3** | 1 l | plastic (PFA) | 1064,25 € |
| Original pack 6 x 1 l | | | 1011,04/1 l |

For further information, please see page 1665

## Hydrofluoric acid Supra-quality

### Hydrofluoric acid Supra-quality

**ROTIPURAN® Supra 48 %**

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

Fluorhydric acid

HF

M 20,01 g/mol

D 1,18 • bp 108 °C

mp -35 °C

[7664-39-3] • EC No. 231-634-8

UN No. 1790 • ADR 8 (6.1) II • WGK 2

**Danger** H300+H310+H330-H314

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 47-51 % |
| Colour (APHA) | ≤10 |
| Hexafluorosilicate ($SiF_6$) | ≤0,002 % |
| Chloride (Cl) | ≤0,0004 % |
| Total Phosphorous (P) | ≤0,000005 % |
| Total Sulfur (S) | ≤0,00001 % |
| Aluminium (Al) | ≤1 ppb |
| Antimony (Sb) | ≤0,2 ppb |
| Arsenic (As) | ≤0,5 ppb |
| Barium (Ba) | ≤0,1 ppb |
| Beryllium (Be) | ≤0,1 ppb |
| Lead (Pb) | ≤0,1 ppb |
| Boron (B) | ≤1 ppb |
| Cadmium (Cd) | ≤0,1 ppb |
| Cesium (Cs) | ≤0,1 ppb |
| Calcium (Ca) | ≤1 ppb |
| Cerium (Ce) | ≤0,1 ppb |
| Chromium (Cr) | ≤1 ppb |
| Dysprosium (Dy) | ≤0,1 ppb |
| Iron (Fe) | ≤1 ppb |
| Erbium (Er) | ≤0,1 ppb |
| Europium (Eu) | ≤0,1 ppb |
| Gadolinium (Gd) | ≤0,1 ppb |
| Gallium (Ga) | ≤0,1 ppb |
| Germanium (Ge) | ≤0,1 ppb |
| Gold (Au) | ≤0,2 ppb |
| Hafnium (Hf) | ≤0,1 ppb |
| Holmium (Ho) | ≤0,1 ppb |
| Indium (In) | ≤0,1 ppb |
| Potassium (K) | ≤1 ppb |
| Cobalt (Co) | ≤0,1 ppb |
| Copper (Cu) | ≤0,5 ppb |
| Lanthanum (La) | ≤0,1 ppb |
| Lithium (Li) | ≤0,1 ppb |
| Lutetium (Lu) | ≤0,1 ppb |
| Magnesium (Mg) | ≤1 ppb |
| Manganese (Mn) | ≤0,1 ppb |
| Molybdenum (Mo) | ≤0,1 ppb |
| Sodium (Na) | ≤1 ppb |
| Neodymium (Nd) | ≤0,1 ppb |
| Nickel (Ni) | ≤0,5 ppb |
| Niobium (Nb) | ≤0,1 ppb |
| Palladium (Pd) | ≤0,2 ppb |
| Platinum (Pt) | ≤0,2 ppb |
| Praseodymium (Pr) | ≤0,1 ppb |
| Mercury (Hg) | ≤1 ppb |
| Rhenium (Re) | ≤0,1 ppb |
| Rhodium (Rh) | ≤0,1 ppb |
| Rubidium (Rb) | ≤0,1 ppb |
| Ruthenium (Ru) | ≤0,1 ppb |
| Samarium (Sm) | ≤0,1 ppb |
| Scandium (Sc) | ≤0,1 ppb |
| Selenium (Se) | ≤1 ppb |
| Silver (Ag) | ≤0,5 ppb |
| Strontium (Sr) | ≤0,1 ppb |
| Tellur (Te) | ≤0,1 ppb |
| Terbium (Tb) | ≤0,1 ppb |
| Thallium (Tl) | ≤0,1 ppb |
| Thorium (Th) | ≤0,1 ppb |
| Thulium (Tm) | ≤0,1 ppb |
| Titanium (Ti) | ≤1 ppb |
| Uranium (U) | ≤0,1 ppb |
| Vanadium (V) | ≤0,1 ppb |
| Bismuth (Bi) | ≤0,1 ppb |
| Tungsten (W) | ≤0,5 ppb |
| Ytterbium (Yb) | ≤0,1 ppb |
| Yttrium (Y) | ≤0,1 ppb |
| Zinc (Zn) | ≤1 ppb |
| Tin (Sn) | ≤0,5 ppb |
| Zirconium (Zr) | ≤0,1 ppb |

| | | | |
|---|---|---|---|
| **HN54.1** | 500 ml | LDPE | 133,20 € |

For further information, please see page 1665

## Hydrogen carboxylic acid


- Formic acid 98 % see p. 1940
- Formic acid 85 % see p. 1941
- Formic acid 45 % see p. 1941


## Hydrogen chloride


- Hydrochloric acid Ultra-quality see p. 1984
- Hydrochloric acid Supra-quality see p. 1984
- Hydrochloric acid 37 % see p. 1985
- Hydrochloric acid 32 % see p. 1986
- Hydrochloric acid 25 % see p. 1987
- Hydrochloric acid 20 % see p. 1987
- Hydrochloric acid 15 % see p. 1987
- Hydrochloric acid 10 % see p. 1987
- Hydrochloric acid 5 % see p. 1987


## Hydrogen hexachloroplatinate(IV) hydrate

### Hydrogen hexachloroplatinate(IV) hydrate

**ROTI®METIC 99,995 % (4N5)**

Chloroplatinic acid hydrate, Hexachloroplatinum(IV) acid hydrate

$H_2PtCl_6 \cdot x\ H_2O$

M 409,79 + x $H_2O$ g/mol

D 2,43

mp 60 °C

[26023-84-7] • EC No. 241-010-7

UN No. 2507 • ADR 8 III • WGK 3

**Danger**

H301-H314-H317-H334-H411

**Type analysis:**

Assay (metals basis) 99,995 %

Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5626.1** | 1 g | plastic | 169,35 € |
| **5626.2** | 5 g | plastic | 783,70 € |

### Hydrogen hexachloroplatinate(IV) hexahydrate


- Hexachloroplatinum(IV) acid hexahydrate see p. 1976


## Hydrogen peroxide Ultra-quality

### Hydrogen peroxide Ultra-quality

**ROTIPURAN® Ultra 31 %**

Extra highpure reagent (ppt quality) for sample preparation in ultra trace analysis.

Perhydrol®

$H_2O_2$

M 34,02 g/mol

D ~1,11 • bp ~107 °C

[7722-84-1] • EC No. 231-765-0

UN No. 2014 • ADR 5.1 (8) II • WGK 1

**Danger** H318-H302

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 30-32 % |
| Aluminium (Al) | ≤50 ppt |
| Antimony (Sb) | ≤10 ppt |
| Arsenic (As) | ≤100 ppt |
| Barium (Ba) | ≤10 ppt |
| Beryllium (Be) | ≤10 ppt |
| Lead (Pb) | ≤10 ppt |
| Boron (B) | ≤100 ppt |
| Cadmium (Cd) | ≤10 ppt |
| Cesium (Cs) | ≤1 ppt |
| Calcium (Ca) | ≤100 ppt |
| Cerium (Ce) | ≤1 ppt |
| Chromium (Cr) | ≤10 ppt |
| Dysprosium (Dy) | ≤1 ppt |
| Iron (Fe) | ≤20 ppt |
| Erbium (Er) | ≤1 ppt |
| Europium (Eu) | ≤1 ppt |
| Gadolinium (Gd) | ≤1 ppt |
| Gallium (Ga) | ≤10 ppt |
| Germanium (Ge) | ≤10 ppt |
| Gold (Au) | ≤10 ppt |
| Hafnium (Hf) | ≤1 ppt |
| Holmium (Ho) | ≤1 ppt |
| Indium (In) | ≤1 ppt |
| Potassium (K) | ≤20 ppt |
| Cobalt (Co) | ≤10 ppt |
| Copper (Cu) | ≤10 ppt |
| Lanthanum (La) | ≤1 ppt |
| Lithium (Li) | ≤10 ppt |
| Lutetium (Lu) | ≤1 ppt |
| Magnesium (Mg) | ≤20 ppt |
| Manganese (Mn) | ≤10 ppt |
| Molybdenum (Mo) | ≤10 ppt |
| Sodium (Na) | ≤50 ppt |
| Neodymium (Nd) | ≤1 ppt |
| Nickel (Ni) | ≤20 ppt |
| Niobium (Nb) | ≤10 ppt |
| Palladium (Pd) | ≤10 ppt |
| Praseodymium (Pr) | ≤1 ppt |
| Mercury (Hg) | ≤50 ppt |
| Rhenium (Re) | ≤10 ppt |
| Rhodium (Rh) | ≤10 ppt |
| Rubidium (Rb) | ≤10 ppt |
| Ruthenium (Ru) | ≤10 ppt |
| Samarium (Sm) | ≤1 ppt |
| Scandium (Sc) | ≤10 ppt |
| Selenium (Se) | ≤100 ppt |
| Silver (Ag) | ≤10 ppt |
| Strontium (Sr) | ≤10 ppt |
| Tantal (Ta) | ≤10 ppt |
| Tellur (Te) | ≤1 ppt |
| Terbium (Tb) | ≤1 ppt |
| Thallium (Tl) | ≤1 ppt |
| Thorium (Th) | ≤1 ppt |
| Thulium (Tm) | ≤1 ppt |
| Titanium (Ti) | ≤20 ppt |
| Uranium (U) | ≤1 ppt |
| Vanadium (V) | ≤10 ppt |
| Bismuth (Bi) | ≤10 ppt |
| Tungsten (W) | ≤20 ppt |
| Ytterbium (Yb) | ≤1 ppt |
| Yttrium (Y) | ≤1 ppt |
| Zinc (Zn) | ≤50 ppt |
| Tin (Sn) | ≤50 ppt |
| Zirconium (Zr) | ≤10 ppt |

| | | | |
|---|---|---|---|
| **HN69.1** | 500 ml | plastic (FEP) | 487,55 € |

For further information, please see page 1665

## Hydrogen peroxide 50 %

### Hydrogen peroxide 50 %

**50 % techn., stab.**

NEW

Oxidant
Perhydrol®
$H_2O_2$
D 1,19 • bp 109 °C
mp -50 °C
[7722-84-1] • EC No. 231-765-0
UN No. 2014 • ADR 5.1 (8) II • WGK 1

**Danger**
H272-H302-H314-H335-H412

**Type analysis:**

Assay.....49,0-50,0 %
Density (20 °C).....1,191-1,195

| | | | |
|---|---|---|---|
| **0034.1** | 500 ml | plastic | 16,70 € |
| **0034.2** | 1 l | plastic | 22,05 € |
| Original pack 6 x 1 l | | | 20,95/1 l |
| **0034.3** | 2,5 l | plastic | 32,80 € |
| Original pack 4 x 2,5 l | | | 31,16/2,5 l |
| **0034.4** | 5 l | plastic | 55,80 € |
| Original pack 2 x 5 l | | | 53,01/5 l |
| **0034.5** | 10 l | plastic | 100,95 € |

## Hydrogen peroxide 35 %

### Hydrogen peroxide 35 %

**pure, stabilised**

Oxidant, bleaching agent
Perhydrol®
$H_2O_2$
M 34,02 g/mol
D ~1,13 • bp 108 °C
[7722-84-1] • EC No. 231-765-0
UN No. 2014 • ADR 5.1 (8) II • WGK 1

**Danger** H318-H335-H315-H302

**Type analysis:**

Assay.....34-36 %
Density (20 °C).....1,127-1,140

| | | | |
|---|---|---|---|
| **9683.4** | 500 ml | plastic | 16,05 € |
| **9683.1** | 1 l | plastic | 21,00 € |
| Original pack 6 x 1 l | | | 19,95/1 l |
| **9683.3** | 2,5 l | plastic | 31,10 € |
| Original pack 4 x 2,5 l | | | 29,55/2,5 l |
| **9683.2** | 10 l | plastic | 77,95 € |

## Hydrogen peroxide 30 %

Perhydrol®
$H_2O_2$
M 34,01 g/mol
D ~1,11 • bp ~107 °C
[7722-84-1] • EC No. 231-765-0
UN No. 2014 • ADR 5.1 (8) II • WGK 1

**Danger** H302-H318

### Hydrogen peroxide 30 %

**30 %, VLSI Grade**

**Guarantee analysis:**

Assay. ..... 30-31 %
Bead number (≥0,5 µm). ..... ≤250 p/ml
Colour (APHA) ..... ≤10
Ammonium ($NH_4$). ..... ≤0,0001 %
Chloride (Cl). ..... ≤0,00005 %
Nitrate ($NO_3$). ..... ≤0,0002 %
Phosphate ($PO_4$). ..... ≤0,00005 %
Sulphate ($SO_4$). ..... ≤0,0001 %
Ash content. ..... ≤0,0005 %
Acidity (as $H_2SO_4$). ..... ≤0,002 %
TOC (Total Organic Carbon). ..... ≤0,002 %
Aluminium (Al). ..... ≤30 ppb
Antimony (Sb). ..... ≤10 ppb
Arsenic (As). ..... ≤10 ppb
Barium (Ba). ..... ≤10 ppb
Beryllium (Be). ..... ≤10 ppb
Bismuth (Bi). ..... ≤20 ppb
Lead (Pb). ..... ≤10 ppb
Boron (B). ..... ≤20 ppb
Cadmium (Cd). ..... ≤10 ppb
Calcium (Ca). ..... ≤50 ppb
Chromium (Cr). ..... ≤10 ppb
Iron (Fe). ..... ≤30 ppb
Gallium (Ga). ..... ≤10 ppb
Gold (Au). ..... ≤20 ppb
Potassium (K). ..... ≤20 ppb
Cobalt (Co). ..... ≤10 ppb
Copper (Cu). ..... ≤10 ppb
Lithium (Li). ..... ≤10 ppb
Magnesium (Mg). ..... ≤20 ppb
Manganese (Mn). ..... ≤10 ppb
Molybdenum (Mo). ..... ≤10 ppb
Sodium (Na). ..... ≤50 ppb
Nickel (Ni). ..... ≤10 ppb
Silver (Ag). ..... ≤10 ppb
Strontium (Sr). ..... ≤10 ppb
Tantal (Ta). ..... ≤20 ppb
Thallium (Tl). ..... ≤20 ppb
Titanium (Ti). ..... ≤10 ppb
Vanadium (V). ..... ≤10 ppb
Zinc (Zn). ..... ≤20 ppb
Tin (Sn). ..... ≤20 ppb
Zirconium (Zr). ..... ≤10 ppb

| | | | |
|---|---|---|---|
| **9790.1** | 2,5 l | plastic | 77,30 € |
| Original pack 4 x 2,5 l | | | 73,44/2,5 l |

For further information, please see page 1654

### Hydrogen peroxide 30 %

**ROTIPURAN® p.a., ISO, stabilised**

**Guarantee analysis:**

Assay (perm.). ..... ≥30 %
Free acid. ..... ≤1 µeq/g
Chloride (Cl). ..... ≤0,00005 %
Phosphate ($PO_4$). ..... ≤0,0005 %
Sulphate ($SO_4$). ..... ≤0,00005 %
Nitrate ($NO_3$). ..... ≤0,00005 %
Aluminium (Al). ..... ≤0,000002 %
Antimony (Sb). ..... ≤0,000002 %
Arsenic (As). ..... ≤0,000002 %
Boron (B). ..... ≤0,000002 %
Cadmium (Cd). ..... ≤0,000002 %
Chromium (Cr). ..... ≤0,000002 %
Gold (Au). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,000002 %
Potassium (K). ..... ≤0,000002 %
Molybdenum (Mo). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Strontium (Sr). ..... ≤0,000002 %
Silver (Ag). ..... ≤0,000002 %
Lead (Pb). ..... ≤0,000002 %
Calcium (Ca). ..... ≤0,000002 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Lithium (Li). ..... ≤0,000002 %
Manganese (Mn). ..... ≤0,000002 %
Sodium (Na). ..... ≤0,000002 %
Titanium (Ti). ..... ≤0,000002 %
Vanadium (V). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,000002 %
Tin (Sn). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,000002 %
Stabilised with phosphate.

| | | | |
|---|---|---|---|
| **8070.2** | 250 ml | plastic | 20,65 € |
| **8070.4** | 500 ml | plastic | 26,80 € |
| **8070.1** | 1 l | plastic | 38,60 € |
| Original pack 6 x 1 l | | | 36,67/1 l |
| **8070.3** | 2,5 l | plastic | 66,55 € |
| Original pack 4 x 2,5 l | | | 63,22/2,5 l |

### Hydrogen peroxide 30 %

**Ph.Eur., stabilised**

**Guarantee analysis:**

Assay.....29,0-31,0 %
Identity. .....complies
Acid react. substances.....complies
Organic stabilizers. .....≤0,05 %
Non volatile matters. .....≤0,2 %

| | | | |
|---|---|---|---|
| **9681.4** | 500 ml | plastic | 16,05 € |
| **9681.1** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **9681.3** | 2,5 l | plastic | 31,10 € |
| Original pack 4 x 2,5 l | | | 29,55/2,5 l |
| **9681.2** | 10 l | plastic | 80,10 € |

### Hydrogen peroxide 30 %

**for synthesis, stab.**

Oxidant, bleaching agent

**Type analysis:**

Assay.....29,0-31,0 %
Relative density (20 °C).....1,107-1,120

| | | | |
|---|---|---|---|
| **CP26.5** | 500 ml | plastic | 14,95 € |
| **CP26.1** | 1 l | plastic | 18,85 € |
| Original pack 6 x 1 l | | | 17,91/1 l |
| **CP26.4** | 2,5 l | plastic | 27,45 € |
| Original pack 4 x 2,5 l | | | 26,08/2,5 l |
| **CP26.2** | 10 l | plastic | 49,35 € |
| **CP26.3** | 25 l | plastic | 99,90 € |

## Hydrogen peroxide as a biocide

▶ Wapersol® 50 % see p. 2374
▶ Hydrogen peroxide 35 % see p. 1991

## Hydrogen tetrachloroaurate(III) hydrate

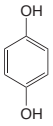
### Hydrogen tetrachloroaurate(III) hydrate

**ROTI®METIC 99,999 % (5N)**
Chloroauric acid hydrate
$HAuCl_4 \cdot x\ H_2O$
M 339,79 + x $H_2O$ g/mol
D 3,9
mp 420 °C
[27988-77-8] • EC No. 240-948-4
UN No. 3260 • ADR 8 III • WGK 3
**Danger** H302-H314-H317

**Type analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5628.1** | 1 g | plastic | 161,15 € |

## Hydroquinone




### Hydroquinone

**≥99,5 %, p.a.**
1,4-Dihydroxybenzene
$C_6H_6O_2$
M 110,11 g/mol
D 1,35 • bp 286 °C
mp 171-175 °C • flp 165 °C
Solubility: 70 g/l ($H_2O$, 25 °C)
[123-31-9] • EC No. 204-617-8
UN No. 3077 • ADR 9 III • WGK 3
**Danger**
H302-H317-H318-H341-H351-H410

**Type analysis:**
Appearance..... fine, colourless crystals
Assay (titr.)..... ≥99,5 %
Iron (Fe)..... ≤0,002 %
Ash..... ≤0,05 %
Heavy metals (as Pb)..... ≤0,002 %
Melting range..... 171-175 °C

| | | | |
|---|---|---|---|
| **3586.1** | 100 g | plastic | 13,15 € |
| **3586.2** | 250 g | plastic | 19,60 € |
| **3586.3** | 1 kg | plastic | 57,95 € |
| Original pack 6 x 1 kg | | | 55,05/1 kg |

## Hydroxyacetaldehyde

▶ Glycolaldehyde see p. 1963

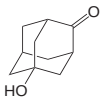
## 1-Hydroxyadamantane

▶ 1-Adamantanol see p. 1708

## 2-Hydroxyadamantane

▶ 2-Adamantanol see p. 1708

## 5-Hydroxy-2-adamantanone




### 5-Hydroxy-2-adamantanone

**≥98 %, for synthesis**
$C_{10}H_{14}O_2$
M 166,22 g/mol
mp >300 °C
[20098-14-0]
WGK 3

**Type analysis:**
Appearance..... white to off-white, cryst. powder
Assay..... ≥98,0 %
Identity..... complies

| | | | |
|---|---|---|---|
| **7628.1** | 1 g | glass | 20,35 € |
| **7628.2** | 5 g | glass | 64,40 € |

## 3-Hydroxy-L-alanin

▶ L-Serine see p. 2248

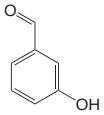
## 2-Hydroxyanisole

▶ Guaiacol see p. 1965

## 8-Hydroxy-1-azanaphthalene-β-D-glucuronide, sodium salt

▶ 8-Hydroxyquinoline-β-D-glucuronic acid, sodium salt see p. 1996

## 3-Hydroxybenzaldehyde




### 3-Hydroxybenzaldehyde

**≥97 %, for synthesis**
3-Formylphenol
$C_7H_6O_2$
M 122,12 g/mol
mp 101-105 °C
[100-83-4] • EC No. 202-892-9
WGK 3
**Warning** H315-H319-H335

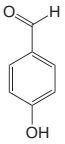
**Type analysis:**
Appearance..... white to off-white, cryst. powder
Assay..... ≥97,0 %
Water..... ≤0,5 %

| | | | |
|---|---|---|---|
| **4493.1** | 50 g | plastic | 24,20 € |
| **4493.2** | 100 g | plastic | 34,30 € |
| **4493.3** | 250 g | plastic | 72,60 € |

## 2-Hydroxybenzaldehyde

▶ Salicylaldehyde see p. 2238

## 4-Hydroxybenzaldehyde




### 4-Hydroxybenzaldehyde

**≥99 %, for synthesis**
4-Formylphenol
$C_7H_6O_2$
M 122,12 g/mol
D 1,13
mp 117 °C • flp 174 °C
Solubility: 13,8 g/l ($H_2O$, 30,5 °C)
[123-08-0] • EC No. 204-599-1
WGK 2
**Warning** H315-H319-H335

**Type analysis:**
Melting point..... 115-118 °C
Assay (GC)..... ≥99,0 %

| | | | |
|---|---|---|---|
| **3870.2** | 50 g | plastic | 18,85 € |
| **3870.1** | 250 g | plastic | 77,30 € |

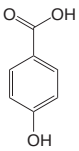
## Hydroxybenzene

▶ Phenol see p. 2145

## 2-Hydroxybenzoic acid

▶ Salicylic acid see p. 2238

## 4-Hydroxybenzoic acid



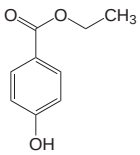

### 4-Hydroxybenzoic acid

**≥99 %, for synthesis**
$C_7H_6O_3$
M 138,12 g/mol
D 1,46
mp ~215 °C
Solubility: 5 g/l ($H_2O$, 20 °C)
[99-96-7] • EC No. 202-804-9
WGK 1
**Warning** H315-H319-H335

**Type analysis:**
Assay (dry substance)..... ≥99,0 %
Melting point..... 214-217 °C

| | | | |
|---|---|---|---|
| **3872.1** | 100 g | plastic | 18,20 € |
| **3872.2** | 500 g | plastic | 39,70 € |
| Original pack 6 x 500 g | | | 37,72/500 g |
| **3872.3** | 1 kg | plastic | 56,90 € |
| Original pack 6 x 1 kg | | | 54,06/1 kg |

## 4-Hydroxybenzoic acid ethyl ester



Ethylparaben, Ethyl-4-hydroxybenzoate
$C_9H_{10}O_3$
M 166,18 g/mol
bp 297 °C (dec.)
mp 115-118 °C
Solubility: 1,7 g/l ($H_2O$, 20 °C)
[120-47-8] • EC No. 204-399-4
WGK 1

### 4-Hydroxybenzoic acid ethyl ester

**≥98 %, Ph.Eur., USP**

**Guarantee analysis:**

Appearance. ..... white powder
Assay (HPLC). ..... 98,0-102,0 %
Identity. ..... complies
Melting point. ..... 115-118 °C
Appearance of solution (10 % in ethanol 96 %). ..... clear, colourless to yellowish
Colour of solution (10 % in ethanol 96 %). ..... complies
Acidity (0,1 M NaOH/0,2 g). ..... complies
Related substances (p-HBA). ..... ≤0,5 %
Related substances (unspecific impurities). ..... ≤0,5 %
Related substances (total). ..... ≤1,0 %
Volatile organic impurities. ..... complies
Residual solvents (ethanol). ..... ≤0,5 %
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **6880.1** | 100 g | plastic | 16,35 € |
| **6880.2** | 250 g | plastic | 28,50 € |
| **6880.3** | 500 g | plastic | 49,35 € |
| Original pack 6 x 500 g | | | 46,88/500 g |
| **6880.4** | 1 kg | plastic | 75,15 € |
| Original pack 6 x 1 kg | | | 71,39/1 kg |

### 4-Hydroxybenzoic acid ethyl ester

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤4,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE07.1** | 100 mg | glass | 729,95 € |

### 4-Hydroxybenzoic acid ethyl ester

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC). ..... ≥90,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC07.1** | 100 mg | glass | 116,00 € |

### 4-Hydroxybenzoic acid ethyl ester

**ROTICHROM® HPLC**

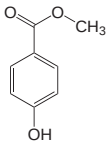
Reference substance for HPLC.

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **4746.1** | 1 g | glass | 30,00 € |

## 4-Hydroxybenzoic acid methyl ester



Methyl-p-hydroxybenzoate, Methylparaben
$C_8H_8O_3$
M 152,15 g/mol
D 1,38 • bp ~275 °C (dec.)
mp 126-127 °C
[99-76-3] • EC No. 202-785-7
WGK 1
H412

### 4-Hydroxybenzoic acid methyl ester

**≥99 %**

**Type analysis:**

Assay (titr.). ..... ≥99 %
Appearance. ..... white to off-white powder

| | | | |
|---|---|---|---|
| **3646.1** | 100 g | plastic | 16,05 € |
| **3646.2** | 250 g | plastic | 22,05 € |
| **3646.3** | 500 g | plastic | 36,45 € |
| Original pack 6 x 500 g | | | 34,63/500 g |
| **3646.4** | 1 kg | plastic | 65,05 € |
| Original pack 6 x 1 kg | | | 61,80/1 kg |

### 4-Hydroxybenzoic acid methyl ester

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC). ..... ≥98,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤2,0 %
Assay (qNMR). ..... ≥95,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE10.1** | 100 mg | glass | 729,95 € |

### 4-Hydroxybenzoic acid methyl ester

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC). ..... ≥91,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC10.1** | 100 mg | glass | 116,00 € |

### 4-Hydroxybenzoic acid methyl ester

**ROTICHROM® HPLC**

Reference substance for HPLC.

**Type analysis:**

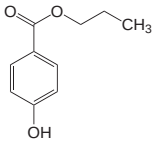
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **4748.1** | 1 g | glass | 31,10 € |

## 2-Hydroxybenzoic acid methyl ester

▶ Salicylic acid methyl ester see p. 2239

## 4-Hydroxybenzoic acid propyl ester



Propylparaben, Propyl 4-hydroxybenzoate
$C_{10}H_{12}O_3$
M 180,21 g/mol
D 1,28 • bp 285-317 °C
mp 96-99 °C • flp 180 °C
[94-13-3] • EC No. 202-307-7
WGK 1

### 4-Hydroxybenzoic acid propyl ester

**≥98 %, Ph.Eur., USP**

**Guarantee analysis:**

Appearance. ..... white powder
Assay (HPLC). ..... 98,0-102,0 %
Identity. ..... complies
Melting point. ..... 96-99 °C
Appearance of solution (10 % in ethanol 96 %). ..... complies
Acidity (0,1 M NaOH/0,2 g). ..... complies
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %
Related substances (p-HBA). ..... ≤0,5 %
Related substances (unspecific impurities). ..... ≤0,5 %
Related substances (total). ..... ≤1,0 %
Volatile organic impurities. ..... complies
Residual solvents (ethanol). ..... ≤0,2 %
Residual solvents (propanol). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6882.1** | 100 g | plastic | 18,20 € |
| **6882.2** | 250 g | plastic | 27,45 € |
| **6882.3** | 500 g | plastic | 47,85 € |
| Original pack 6 x 500 g | | | 45,46/500 g |
| **6882.4** | 1 kg | plastic | 78,40 € |
| Original pack 6 x 1 kg | | | 74,48/1 kg |

## 4-Hydroxybenzoic acid propyl ester

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC)..... ≥97,0 %
Residual solvents (GC)..... ≤1,0 %
Water (KF)..... ≤1,0 %
Assay (qNMR)..... ≥95,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE13.1** | 100 mg | glass | 729,95 € |

## 4-Hydroxybenzoic acid propyl ester

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC)..... ≥90,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC13.1** | 100 mg | glass | 116,00 € |

## 4-Hydroxybenzoic acid propyl ester

**ROTICHROM® HPLC**

Reference substance for HPLC.

**Type analysis:**

Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **4749.1** | 1 g | glass | 30,00 € |

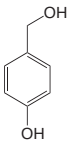
## (S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazoline-4-carboxylic acid

▶ D-Luciferin see p. 2042
▶ D-Luciferin sodium salt see p. 2043

## 10-p-Hydroxybenzoylaucubin

▶ Agnuside see p. 1712

## 4-Hydroxybenzyl alcohol




### 4-Hydroxybenzyl alcohol

**≥99,5 %**
$C_7H_8O_2$
M 124,14 g/mol
mp 114-122 °C
[623-05-2] • EC No. 210-768-0
WGK 1

**Warning** H319

**Type analysis:**

Assay..... ≥99,5 %

| | | | |
|---|---|---|---|
| **6257.1** | 5 g | glass | 37,55 € |

## 2'-Hydroxybenzyl-3-methoxybenzoate-2',4-diglucoside

▶ Leiocarposide see p. 2034

## Hydroxybrasilin

▶ Hematoxylin (C.I. 75290) see p. 1971

## Hydroxybutanedioic acid

▶ D(+)-Malic acid see p. 2052
▶ DL-Malic acid see p. 2053
▶ L(-)-Malic acid see p. 2053

## (2S)-2-Hydroxybut-3-enyl glucosinolate

▶ Epiprogoitrin see p. 1906

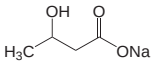
## 2-Hydroxybut-3-enyl glucosinolate potassium salt

▶ Progoitrin see p. 2178

## 4-Hydroxybutyric acid lactone

▶ γ-Butyrolactone see p. 1799

## DL-3-Hydroxybutyric acid sodium salt




### DL-3-Hydroxybutyric acid sodium salt

**≥98 %, for biochemistry**
Sodium 3-hydroxybutyrate, Hydroxybutanoic acid sodium salt
$C_4H_7NaO_3$
M 126,09 g/mol
mp 164 °C
Storage temp.: +4 °C
[150-83-4] • EC No. 205-774-5
WGK 3

**Type analysis:**

Appearance..... white to off-white, cryst. powder
Assay (perchloric acid titration)..... ≥98,0 %
Appearance of solution (10 %, $H_2O$)..... colourless
Water (KF)..... ≤10,0 %

| | | | |
|---|---|---|---|
| **8428.1** | 5 g | plastic | 26,80 € |
| **8428.2** | 10 g | plastic | 45,70 € |
| **8428.3** | 25 g | plastic | 96,65 € |

## 3α-Hydroxy-5ß-cholanic acid

▶ Lithocholic acid see p. 2042

## trans-p-Hydroxycinnamic acid

▶ p-Coumaric acid see p. 1846

## 7-Hydroxycoumarin

▶ Umbelliferone see p. 2365

## 2-Hydroxy-p-cymene

▶ Carvacrol see p. 1815

## 3-Hydroxy-p-cymene

▶ Thymol see p. 2342

## 4-Hydroxy-3,5-dimethoxybenzaldehyde

▶ Syringaldehyde see p. 2327

## 7-Hydroxy-5,6-dimethoxycoumarin

▶ Umckalin see p. 2365

## 2-(2-Hydroxy-3,6-disulpho-1-naphthylazo-(1))-benzenearsonic acid sodium salt

▶ Thorin see p. 2340

## Hydroxyethyl agarose

▶ Agarose Low Melt see p. 1712

## Hydroxyethyl mercaptan

▶ 2-Mercaptoethanol see p. 2063

## N-2-Hydroxyethylpiperazine-N'-2-ethane sulphonic acid

▶ HEPES see p. 1972
▶ HEPES 0,5 Na see p. 1972
▶ HEPES sodium salt see p. 1973

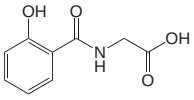
## 4-(2-Hydroxyethyl) piperazine-1-propane sulphonic acid

▶ HEPPS, EPPS see p. 1973

## 1-Hydroxyginkolide A

▶ Ginkgolide B see p. 1951

## o-Hydroxyhippuric acid




### o-Hydroxyhippuric acid

**≥95 %, for biochemistry**
Salicyluric acid
$C_9H_9NO_4$
M 195,18 g/mol
mp 164-169 °C
[487-54-7] • EC No. 207-661-6
WGK 1

**Type analysis:**

Assay..... ≥95,0 %

| | | | |
|---|---|---|---|
| **7511.1** | 1 g | glass | 57,95 € |

## 5-Hydroxy-2-(hydroxymethyl)-4H-pyran-4-one
▶ Kojic acid see p. 2024

## 2-Hydroxy-1-(1-hydroxy-naphthyl-2-azo)-6-nitro-naphthalene 4-sulphonic acid monosodium salt
▶ Eriochrome® black T (C.I. 14645) see p. 1907
▶ Eriochrome® black T (C.I. 14645), trituration see p. 1907

## 2-Hydroxy-1-(2-hydroxy-4-sulfo-1-naphthylazo)-naphthalene-3-carboxylic acid
▶ Calconcarboxylic acid see p. 1807

## (S)-4-Hydroxymandelonitrile-β-D-glucoside
▶ Dhurrin see p. 1866

## 4-Hydroxy-2-mercapto-pyrimidine
▶ 2-Thiouracil see p. 2340

## 4-Hydroxy-3-methoxy-benzaldehyde
▶ Vanillin see p. 2370

## 2-Hydroxy-5-methoxybenzoic acid
▶ 3-Methoxysalicylic acid see p. 2072

## 4-Hydroxy-3-methoxy benzoic acid
▶ Vanillic acid see p. 2370

## 4-Hydroxy-3-methoxycinnamic acid
▶ trans-Ferulic acid see p. 1928

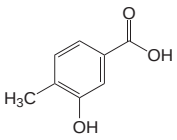
## 7-Hydroxy-6-methoxy-coumarin
▶ Scopoletin see p. 2243

## 7-Hydroxy-4'-methoxy-isoflavone
▶ Formononetin see p. 1942

## 2-Hydroxy-3-methylbenzoic acid
▶ 3-Methylsalicylic acid see p. 2078

## 2-Hydroxy-5-methylbenzoic acid
▶ 5-Methylsalicylic acid see p. 2078

## 3-Hydroxy-4-methylbenzoic acid



### 3-Hydroxy-4-methylbenzoic acid
**≥98 %, for synthesis**
3-Hydroxy-p-toluic acid, 3,4-Cresotic acid
$C_8H_8O_3$
M 152,15 g/mol
mp 207-212 °C
[586-30-1] • EC No. 209-571-2
WGK 3
**Warning** H315-H319-H335

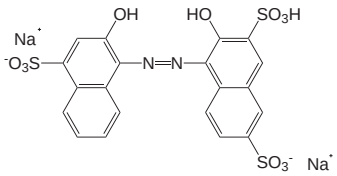
**Type analysis:**
Appearance.....white to off-white, cryst. powder
Assay. ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **4298.1** | 1 g | glass | 31,10 € |
| **4298.2** | 5 g | plastic | 50,45 € |
| **4298.3** | 25 g | plastic | 142,45 € |

## 7-Hydroxy-4-methylcoumarin
▶ 4-Methylumbelliferone see p. 2079

## 1-Hydroxynaphthalene
▶ 1-Naphthol see p. 2088

## Hydroxy naphthol blue disodium salt



### Hydroxy naphthol blue disodium salt
**p.a., ACS**
Indicator, microspcopy
2,2'-Dihydroxy-1,1'-azonaphthalene-3',4,6'-trisulfonic acid disodium salt
$C_{20}H_{12}N_2Na_2O_{11}S_3$
M 598,50 g/mol
mp 274 °C
Solubility: soluble ($H_2O$)
[165660-27-5]
WGK 1

**Guarantee analysis:**
Appearance.....dark blue crystals
Loss on drying. ..... ≤6 %
Suitable for calcium determination. ..... complies

| | | | |
|---|---|---|---|
| **2556.1** | 5 g | glass | 19,25 € |
| **2556.2** | 25 g | glass | 38,60 € |

## 1-Hydroxy-3-nitrobenzene
▶ 3-Nitrophenol see p. 2101

## 1-Hydroxy-4-nitrobenzene
▶ 4-Nitrophenol see p. 2101

## (3α,4β)-3-Hydroxy-olean-12-en-23-acid
▶ α-Boswellic acid see p. 1783

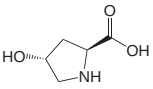
## 4-Hydroxyphenylalanine
▶ D-Tyrosine see p. 2364
▶ DL-Tyrosine see p. 2364
▶ L-Tyrosine see p. 2364

## 2-(4-Hydroxyphenyl)-ethylamine
▶ Tyramine see p. 2363

## 4-Hydroxyphenylethylamine hydrochloride
▶ Tyramine hydrochloride see p. 2363

## 3-Hydroxy-2-phenylpropionic acid
▶ DL-Tropic acid see p. 2359

## L-4-Hydroxyproline



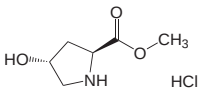
### L-4-Hydroxyproline
**≥98 %, for biochemistry**
$C_5H_9NO_3$
M 131,13 g/mol
mp 274 °C
Solubility: 500 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[51-35-4] • EC No. 200-091-9
WGK 1

**Type analysis:**
Assay. .....≥98,0 %

| | | | |
|---|---|---|---|
| **3893.1** | 5 g | glass | 42,90 € |

H

## L-Hydroxyproline methylester hydrochloride



### L-Hydroxyproline methylester hydrochloride

**≥98 %, for biochemistry**
H-Hyp-OMe · HCl
$C_6H_{11}NO_3 \cdot HCl$
M 181,62 g/mol
Storage temp.: +4 °C
[40216-83-9]
WGK 3

**Type analysis:**
Assay (HPLC)..... ≥98,0 %
Water (KF)..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6662.1** | 500 mg | glass | 12,80 € |
| **6662.2** | 1 g | glass | 18,20 € |
| **6662.3** | 5 g | glass | 38,60 € |

## 1-Hydroxypropane

▶ 1-Propanol see p. 2179

## 2-Hydroxypropane

▶ 2-Propanol see p. 2179

## 2-Hydroxypropionic acid

▶ Lactic acid see p. 2025
▶ DL-Lactic acid see p. 2025
▶ L-Lactic acid see p. 2025

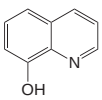
## 6-Hydroxypurin

▶ Hypoxanthine see p. 1999

## 1-Hydroxy-2,5-pyrrolidinedione

▶ N-Hydroxysuccinimide see p. 1996

## 8-Hydroxyquinoline



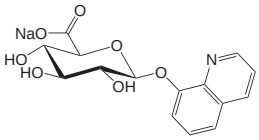
### 8-Hydroxyquinoline

**≥99,5 %, p.a., ACS**
Reagent for magnesium.
Oxine, 8-Quinolinol
$C_9H_7NO$
M 145,16 g/mol
D 1,03 • bp 267 °C
mp 72,5-74 °C
Solubility: 0,5 g/l ($H_2O$, 20 °C)
[148-24-3] • EC No. 205-711-1
WGK 1
**Warning** H302-H412

**Guarantee analysis:**
Assay..... ≥99,5 %
In ethanol insoluble parts..... ≤0,05 %
Melting point..... 72,5-74 °C
Sulphate ($SO_4$)..... ≤0,02 %
Ash content..... ≤0,05 %
Suitability for magnesium determination..... complies

| | | | |
|---|---|---|---|
| **2557.1** | 50 g | glass | 28,95 € |
| **2557.2** | 100 g | glass | 40,75 € |
| **2557.3** | 250 g | glass | 75,15 € |

## 8-Hydroxyquinoline-β-D-glucuronic acid, sodium salt



### 8-Hydroxyquinoline-β-D-glucuronic acid, sodium salt

**≥98 %, for biochemistry**
Substrate for β-glucuronidase.
For detection of *E. coli*.
8-Hydroxy-1-azanaphthalene-β-D-glucuronide, sodium salt
$C_{15}H_{14}NNaO_7$
M 343,27 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[207728-71-0]
WGK 3
**Warning** H315-H319-H335

**Type analysis:**
Appearance..... white to off-white, cryst. powder
Assay (TLC)..... ≥98,0 %
Appearance of solution (5 % in $H_2O$)..... colourless to slightly yellow
Water (KF)..... ≤12,0 %
Specific rotation $[\alpha]_D^{20}$ (1 % in $H_2O$, dry substance)..... -93,0° to -87,0°

| | | | |
|---|---|---|---|
| **8432.1** | 100 mg | glass | 48,95 € |
| **8432.2** | 250 mg | glass | 82,70 € |
| **8432.3** | 500 mg | glass | 138,70 € |

## 12-Hydroxysenecionan-11,16-dione

▶ Senecionine see p. 2245

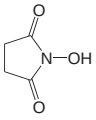
## 12-Hydroxysenecionan-11,16-dione-4-oxide

▶ Senecionine N-oxide see p. 2246

## 2-Hydroxysuccinic acid

▶ D(+)-Malic acid see p. 2052
▶ DL-Malic acid see p. 2053
▶ L(-)-Malic acid see p. 2053

## N-Hydroxysuccinimide



### N-Hydroxysuccinimide

**≥99 %, for synthesis**
Activation agent for carboxylic acids.
Coupling reagent for peptide synthesis.
1-Hydroxy-2,5-pyrrolidinedione, HOSu, NHS
$C_4H_5NO_3$
M 115,09 g/mol
mp 93-100 °C
Solubility: 3 g/l ($H_2O$, 19 °C)
[6066-82-6] • EC No. 228-001-3
WGK 1

**Type analysis:**
Appearance..... white cryst. powder
Assay (HPLC)..... ≥99,0 %
Water (KF)..... ≤2,0 %
Melting range..... 93,0-100,0 °C

| | | | |
|---|---|---|---|
| **9670.1** | 25 g | glass | 24,65 € |
| **9670.2** | 100 g | glass | 61,85 € |
| **9670.3** | 500 g | glass | 252,65 € |
| Original pack 6 x 500 g | | | 240,02/500 g |

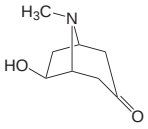
## 2-[5-(2-Hydroxy-5-sulfophenyl)-3-phenyl-1-formazyl]-benzoic acid-monosodium salt

▶ Zincon see p. 2388

## 3-Hydroxy-p-toluic acid

▶ 3-Hydroxy-4-methylbenzoic acid see p. 1995

## 6-Hydroxytropinone



### 6-Hydroxytropinone

**≥98,5 %**
$C_8H_{13}NO_2$
M 155,2 g/mol
mp 122 °C
[5932-53-6] • EC No. 227-677-7

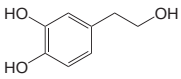
**Type analysis:**
Appearance..... white powder
Assay (titr.)..... ≥98,5 %

| | | | |
|---|---|---|---|
| **6984.1** | 50 mg | glass | 62,90 € |

## 5-Hydroxytryptamine hydrochloride

▶ Serotonin hydrochloride see p. 2248

## Hydroxytyrosol



### Hydroxytyrosol
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Olea europaea*.
3,4-Dihydroxyphenylethanol
$C_8H_{10}O_3$
M 154,17 g/mol
Storage temp.: +4 °C
[10597-60-1]
**Warning** H302

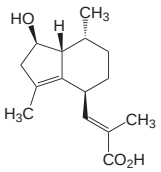
**Type analysis:**
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1153.1** | 25 mg | glass | 263,40 € |

## (3α,4β)-3-Hydroxy-urs-12-en-23-acid
▶ β-Boswellic acid see p. 1783

## 3α-Hydroxy-urs-12-en-11-keto-23-acid
▶ 11-keto-β-Boswellic acid see p. 1784

## Hydroxyvalerenic acid



$C_{15}H_{22}O_3$
M 250,34 g/mol
mp 164,5-165,5 °C
[1619-16-5]

### Hydroxyvalerenic acid
**ROTI®STAR Primary Standard**
Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**
Assay (HPLC)..... ≥90,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤10,0 %
Assay (qNMR)..... ≥80,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE48.1** | 10 mg | glass | 510,65 € |

### Hydroxyvalerenic acid
**ROTICHROM® Working Standard**
Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**
Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC48.1** | 25 mg | glass | 364,45 € |

### Hydroxyvalerenic acid
**with analytical records**
From *Valeriana officinalis*.
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC)..... >99 %
Analytical records: HPLC, TLC, $^1$H- NMR, $^{13}$C- NMR, UV, IR, MS, elementary analysis, melting point

| | | | |
|---|---|---|---|
| **4710.2** | 50 mg | glass | 370,90 € |
| **4710.1** | 100 mg | glass | 654,70 € |

### Hydroxyvalerenic acid
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Valeriana officinalis*.
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **4481.1** | 25 mg | glass | 332,20 € |
| **4481.2** | 50 mg | glass | 547,20 € |
| **4481.3** | 100 mg | glass | 869,70 € |

## Hygromycin B

### Hygromycin B
**>950 µg/mg, for biochemistry**
Aminoglycoside antibiotic.
$C_{20}H_{37}N_3O_{13}$
M 527,53 g/mol
D 1,16
mp 160-180 °C
Storage temp.: +4 °C
[31282-04-9] • EC No. 250-545-5
UN No. 3462 • ADR 6.1 I • WGK 1
**Danger**
H300+H310+H330-H318-H334-H317

**Type analysis:**
Assay (HPLC)..... >90 %
Activity..... >950 µg/mg
Solubility (50 mg/ml, $H_2O$)..... complies

| | | | |
|---|---|---|---|
| **CP13.1** | 250 mg | glass | 58,60 € |
| **CP13.2** | 500 mg | glass | 100,95 € |
| **CP13.3** | 1 g | glass | 177,40 € |
| **CP13.4** | 5 g | glass | 607,40 € |

For further information, please see page 1430

## Hygromycin B solution

$C_{20}H_{37}N_3O_{13}$
M 527,53 g/mol
Storage temp.: +4 °C
[31282-04-9] • EC No. 250-545-5
UN No. 3172 • ADR 6.1 II • WGK 1
**Danger**
H301-H310+H330-H318-H334-H317

### Hygromycin B solution
**CELLPURE® 50 mg/ml, sterile**
Aminoglycoside antibiotic. For cell culture, biochemistry, molecular biology and microbiology.
Aqueous hygromycin B solution

**Type analysis:**
Concentration..... 50 mg/ml
Activity (powder)..... >900 U/mg
Assay (Hygromycin)..... >85 %
Endotoxins..... <10 EU/ml
Sterility..... complies
Suitability for cell cultur..... complies

| | | | |
|---|---|---|---|
| **CP12.1** | 10 ml | plastic | 114,50 € |
| **CP12.2** | 20 ml | plastic | 197,30 € |

For further information, please see page 1430

### Hygromycin B solution
**50 mg/ml, BioScience-Grade, sterile**
Aminoglycoside antibiotic. For cell culture, biochemistry, molecular biology and microbiology. **In a septum bottle.**
Hygromycin B solution **in PBS**

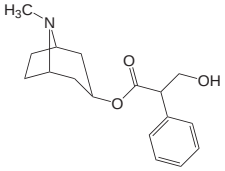
**Type analysis:**
Appearance..... clear, colourless to yellowish
Solvent..... PBS
Concentration..... 50±10 mg/ml
Purity (HPLC)..... ≥90 %
Sterility..... complies

| | | | |
|---|---|---|---|
| **1287.1** | 10 ml | glass | 99,45 € |
| **1287.2** | 20 ml | glass | 150,40 € |

For further information, please see page 1430

## Hymecromone
▶ 4-Methylumbelliferone see p. 2079

## L-Hyoscyamine

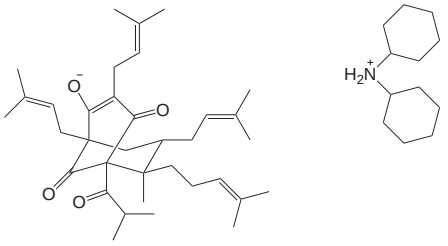


### L-Hyoscyamine
**≥98 %, for biochemistry**
$C_{17}H_{23}NO_3$
M 289,36 g/mol
mp 108,5 °C
[101-31-5] • EC No. 202-933-0
UN No. 1544 • ADR 6.1 I • WGK 3
**Danger** H300+H330

**Type analysis:**
Appearance..... white powder
Assay (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **8914.1** | 1 g | glass | 81,60 € |

## Hyperforin / Adhyperforin Dicyclohexylammonium salt, Mixture 4:1



### Hyperforin / Adhyperforin Dicyclohexylammonium salt, Mixture 4:1

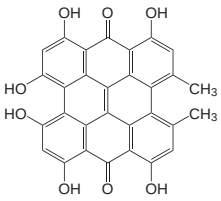
**ROTICHROM® HPLC**

Reference substance for HPLC.
Natural mixture from *Hypericum perforatum.*
$C_{35}H_{51}O_4 \cdot C_{12}H_{24}N$
M 718,11 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[238074-03-8 / 143183-63-5]
WGK 3

**Type analysis:**
Purity (HPLC)..... ≥95 %

| | | | |
|---|---|---|---|
| **6495.1** | 5 mg | glass | 327,90 € |

## Hypericin



$C_{30}H_{16}O_8$
M 504,43 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[548-04-9] • EC No. 208-941-0
UN No. 2811 • ADR 6.1 III • WGK 3

**Danger** H301-H317

### Hypericin

**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤7,0 %
Assay (qNMR)..... ≥75,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE22.1** | 10 mg | glass | 848,20 € |

### Hypericin

**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC)..... ≥75,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC22.1** | 10 mg | glass | 299,95 € |

### Hypericin

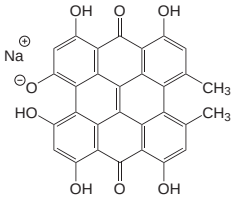
**ROTICHROM® HPLC**

Reference substance for HPLC.

**Type analysis:**
Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **L543.1** | 1 mg | glass | 123,65 € |

## Hypericin sodium salt



### Hypericin sodium salt

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Hypericum perforatum.*
$C_{30}H_{15}O_8Na$
M 526,45 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.

**Warning** H302

**Type analysis:**
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1154.1** | 5 mg | glass | 364,45 € |

## Hypericon oil, extra pure

### Hypericon oil

**extra pure**

Fatty red oil, from *Hypericum perforatum L.*
Oleum Hyperici
D 0,92
flp >250 °C
[68917-49-7] • EC No. 282-026-4
WGK 1

**Type analysis:**
Appearance..... dark red, viscous oil
Extracted with oil..... peanut oil refined
Density..... 0,913-0,925
Iodine value..... 80-105
Acid value..... ≤2
Solidification point..... +3 to +10 °C
Refractive index $n_D^{20}$..... 1,468-1,472
Hypericin content .....0,6-10 mg/100 g
Stabilised with. .....
..... ascorbic acid palmitate, natural Vitamin E

| | | | |
|---|---|---|---|
| **4501.1** | 250 ml | glass | 30,00 € |

## Hypericon oil, pure

### Hypericon oil

**pure**

Hypericum perforatum
D 0,91
flp ~200 °C
[68917-49-7] • EC No. 282-026-4
WGK 1

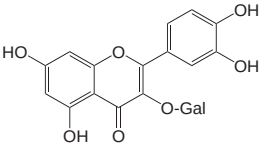
**Type analysis:**
Appearance..... red-brown oil
Solubility in ethanol % vol.....L96: 1:10 v/v turbid
Density (20 °C)..... 0,910-0,915 g/cm$^3$
Refractive index (20 °C).....1,4650-1,4720
Optical rotation (20 °C)..... -1° to 1°

| | | | |
|---|---|---|---|
| **9404.1** | 250 ml | glass | 26,35 € |

## Hyperin

▶ Hyperoside see p. 1998

## Hyperoside



Quercetin-3-galactoside, Hyperin
$C_{21}H_{20}O_{12}$
M 464,39 g/mol
mp 225-227 °C
[482-36-0] • EC No. 207-580-6
WGK 2

**Warning** H302

### Hyperoside

**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤7,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE23.1** | 25 mg | glass | 633,20 € |

### Hyperoside

**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC23.1** | 50 mg | glass | 364,45 € |

## Hyperoside

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Hypericum perforatum.*
Storage temp.: +4 °C

**Type analysis:**

Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **7932.1** | 10 mg | glass | 106,45 € |

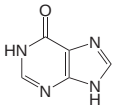
## Hyperoside

**ROTICHROM® TLC**

Reference substance for thin layer chromatography.
From *Hypericum perforatum.*
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **4215.1** | 25 mg | glass | 48,95 € |

## Hypoxanthine



## Hypoxanthine

**≥98 %, for biochemistry**

6-Hydroxypurin, Sarcine
$C_5H_4N_4O$
M 136,11 g/mol
[68-94-0] • EC No. 200-697-3

**Type analysis:**

Appearance. ..... white to light yellowish powder
Assay (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **6416.1** | 5 g | glass | 74,10 € |

## Hypoxanthine-9-β-D-ribofuranoside

▶ Inosine see p. 2005

## IBA

▶ Indole-3-butyric acid see p. 2003

## ICG

▶ Indocyanine green see p. 2003

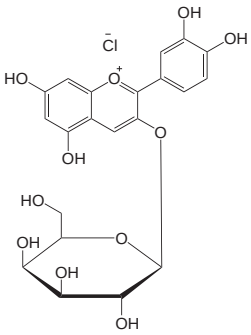
## IC standards

▶ Standards for IC (Ion Chromatography): Anionic Standards 1000 mg/l, ready to use see p. 2310
▶ Standards for IC (Ion Chromatography): Ion Multi-Element Standards for IC see p. 2313

## ICP standards

▶ Standards for ICP-OES: (Inductively Coupled Spectroscopy) Element Standards 1000 mg/l, ready to use see p. 2297
▶ Standards for ICP-OES: (Inductively Coupled Spectroscopy) Element Standards 10000 mg/l, ready to use see p. 2301

## Idaein chloride



## Idaein chloride

**ROTICHROM® HPLC**

Reference substance for HPLC.
Cyanidin-3-galactoside chloride
$C_{21}H_{21}ClO_{11}$
M 484,86 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[27661-36-5]

**Type analysis:**

Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **3967.1** | 5 mg | glass | 311,75 € |

## IMAC columns

▶ Roti®garose-His/Ni Cartridges see p. 2217
▶ Roti®garose-His/Ni Columns see p. 2217
▶ Roti®garose-His/Co Columns see p. 2217

## IMAC matrix/cobalt charged

▶ Roti®garose-His/Co Beads see p. 2217

## IMAC matrix/nickel charged

▶ Roti®garose-His/Ni Beads see p. 2217

## IMAC matrix/Protein A conjugated

▶ Roti®garose-Protein A Beads see p. 2218

## IMDM cell culture medium

▶ Roti®-CELL Iscove's MDM see p. 2207

## Imidazole



Glyoxalin, 1,3-Diaza-2,4-cyclopentadiene
$C_3H_4N_2$
M 68,08 g/mol
bp 256 °C
mp 89-91 °C • flp 145 °C
Solubility: 633 g/l ($H_2O$, 20 °C)
[288-32-4] • EC No. 206-019-2
UN No. 3263 • ADR 8 III • WGK 1

**Danger** H302-H314-H360D

## Imidazole

**PUFFERAN® ≥99 %, p.a., ultra quality**

Biological buffer substance, molecular biology, for titration of aspartic acid and glutamic acid.

**Guarantee analysis:**

Appearance. ..... white crystals
Assay (titr.)..... ≥99,0 %
Water (KF). ..... ≤1,0 %
Arsenic (As). ..... ≤0,0003 %
Barium (Ba)..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,002 %
Cadmium (Cd). ..... ≤0,0005 %
Chromium (Cr). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0005 %
Manganese (Mn)..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %
UV-absorbtion (0,9 % in $H_2O$):
260 nm. ..... ≤0,02

| | | | |
|---|---|---|---|
| **X998.1** | 10 g | plastic | 17,10 € |
| **X998.2** | 50 g | plastic | 45,05 € |
| **X998.3** | 100 g | plastic | 77,30 € |
| **X998.4** | 250 g | plastic | 174,70 € |

For further information, please see page 1268

## Imidazole

**≥99 %**

**Type analysis:**

Assay (GC). ..... ≥99 %
Water . ..... ≤0,2 %
pH value (0,1 M, $H_2O$)..... 9,5-11
Melting point. ..... 88-91 °C

| | | | |
|---|---|---|---|
| **3899.1** | 50 g | plastic | 17,75 € |
| **3899.2** | 250 g | plastic | 47,20 € |
| **3899.3** | 500 g | plastic | 66,15 € |
| Original pack 6 x 500 g | | | 62,84/500 g |
| **3899.4** | 1 kg | plastic | 95,15 € |
| Original pack 6 x 1 kg | | | 90,39/1 kg |

## 3-Imidazol-4-yl-alanine

- D-Histidine see p. 1981
- DL-Histidine see p. 1981
- L-Histidine see p. 1981

## 2-(4-Imidazolyl) ethylamine dihydrochloride

- Histamine dihydrochloride see p. 1980

## 4-Imidazolyl-L-alanine

- L-Histidine hydrochloride monohydrate see p. 1981

## Iminomethanediamine HCl

- Guanidine hydrochloride see p. 1965

## Immersion oil

### Immersion oil

**for microscopy, fluorescence tested**

For use in the space between specimen and objective lens (immersion oil microscopy).

D ~1,03

UN No. 3082 • ADR 9 III • WGK 2

**Warning** H410

**Guarantee analysis:**

Density (d 20 °C/4 °C). ..... 1,0245-1,0265
Refractive index (20 °C)..... 1,5150-1,5170
Viscosity (20 °C). ..... 100-120 mPas
UV-transmission
450 nm..... ≥90 %
400 nm..... ≥78 %
380 nm..... ≥65 %
Fluorescence (as quinine):
365 nm..... ≤1,5 ppm

| | | | |
|---|---|---|---|
| **X899.4** | 15 ml | dropp. bottle | 8,75 € |
| **X899.1** | 50 ml | glass | 14,55 € |
| **X899.2** | 100 ml | glass | 22,05 € |
| **X899.3** | 500 ml | glass | 77,30 € |

For further information, please see page 1477

## Immersion oil

### Immersion oil

**for microscopy**

A viscous solution of natural oils based on oil of cedar wood.

D ~0,99

flp >100 °C

UN No. 3082 • ADR 9 III • WGK 2

**Danger** H304-H411

**Type analysis:**

Appearance. .....clear, yellow-brownish, viscous oil
Density (20 °C). ..... 0,981-0,998
Refractive index (20 °C)..... 1,508-1,525

| | | | |
|---|---|---|---|
| **5789.1** | 50 ml | glass | 10,65 € |
| **5789.3** | 100 ml | glass | 13,90 € |
| **5789.2** | 500 ml | glass | 35,40 € |

For further information, please see page 1477

## Immunochromatography

- RiboFlow® Campylobacter see p. 2198
- RiboFlow® Candida albicans see p. 2199
- RiboFlow® Cosmetics see p. 2199
- RiboFlow® Cronobacter see p. 2199
- RiboFlow® E. coli see p. 2199
- RiboFlow® Enterobacteriaceae see p. 2199
- RiboFlow® Listeria Twin see p. 2199
- RiboFlow® P/En see p. 2199
- RiboFlow® Pseudomonas aeruginosa see p. 2199
- RiboFlow® Salmonella see p. 2199
- RiboFlow® Staphylococcus aureus see p. 2200
- RiboFlow® Vibrio parahaemolyticus see p. 2200

## Indantrionehydrate

- Ninhydrin see p. 2095

## Indicator buffer tablets

### Indicator buffer tablets

**for determination of water hardness with EDTA**

Dissolve one tablet in 100 ml water sample and bring to pH 11 with approx. 1 ml ammonia solution 30 % (Art. CP17).
Titrate with EDTA disodium salt volumetric solution (Art. T136 or T137) from red to green.

WGK 1

**Warning** H317

**Type analysis:**

Suitability as indicator..... complies
Disintegration time (25 °C). ..... 100 s

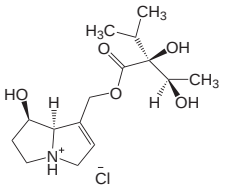
| | | |
|---|---|---|
| **7649.1** | 100 pieces | 19,90 € |
| **7649.2** | 500 pieces | 47,20 € |

## Indicators and Dyes


| Art. No. | Description | Page |
|---|---|---|
| 4002 | Acid blue 93 (C.I. 42780) | 1704 |
| T128 | Acid fuchsin (C.I. 42685) | 1704 |
| 7690 | Acid fuchsin calcium salt (C.I. 42685) | 1705 |
| 0249 | Acridine orange (C.I. 46005) | 1706 |
| 7632 | Acridine orange base (C.I. 46005) | 1706 |
| 7633 | Acridine orange hydrochloride hydrate (C.I. 46005) | 1706 |
| 3082 | Alcian blue 8 GS (C.I. 74240) | 1715 |
| 4476 | Alizarin (C.I. 58000) | 1717 |
| 7634 | Alizarin complexone dihydrate | 1717 |
| 0348 | Alizarin red S (C.I. 58005) | 1717 |
| 5155 | Alkali blue 6B (C.I. 42750) | 1717 |
| 9590 | Amido black 10 B (C.I. 20470) | 1722 |
| KK22 | Arsenazo III | 1752 |
| 5165 | Astra blue FM (C.I. 48048) | 1754 |
| 0319 | Auramine O (C.I. 41000) | 1755 |
| 2670 | Aurin tricarboxylic acid ammonium salt | 1755 |
| CP99 | Azomethine H hydrate | 1759 |
| 7640 | Azure II | 1759 |
| 7642 | Azure II eosinat | 1759 |
| 7636 | Azure A (C.I. 52005) | 1759 |
| 7637 | Azure B (C.I. 52010) | 1759 |
| 7639 | Azure C (C.I. 52002) | 1760 |
| 2674 | Barium diphenylamine sulfonate | 1762 |
| 0316 | Bismarck brown R (C.I. 21010) | 1775 |
| 0313 | Bismarck brown Y (C.I. 21000) | 1775 |
| 9598 | Brilliant blue G 250 (C.I. 42655) | 1784 |
| 3862 | Brilliant blue R 250 (C.I. 42660) | 1784 |
| 5162 | Brilliant cresyl blue (C.I. 51010) | 1784 |
| 0324 | Brilliant green (C.I. 42040) | 1785 |
| 7643 | Brilliant black BN (C.I. 28440) | 1785 |
| 7645 | Brilliant yellow (C.I. 24890) | 1785 |
| 6558 | Bromochlorophenol blue sodium salt | 1787 |
| T115 | Bromocresol green | 1787 |
| 9949 | Bromocresol green indicator solution | 1787 |
| KK18 | Bromocresol green sodium salt | 1788 |
| 0317 | Bromocresol purple | 1788 |
| 9955 | Bromocresol purple indicator solution | 1788 |
| 2555 | Bromocresol purple sodium salt | 1788 |
| T116 | Bromophenol blue | 1789 |
| 9952 | Bromophenol blue indicator solution | 1789 |
| A512 | Bromophenol blue sodium salt | 1789 |
| 6573 | Bromophenol red free acid | 1789 |
| 9956 | Bromophenol red indicator solution | 1789 |
| 6579 | Bromophenol red sodium salt | 1789 |
| T117 | Bromothymol blue | 1790 |
| 9947 | Bromothymol blue indicator solution | 1790 |
| KK19 | Bromothymol blue sodium salt | 1790 |
| KK27 | Bromoxylenol blue | 1790 |
| 7688 | Calcein | 1802 |
| 2676 | Calconcarboxylic acid | 1807 |
| 6859 | Carmine (C.I. 75470) | 1814 |
| 7646 | Celestine blue (C.I. 51050) | 1819 |
| 0347 | Chlorophenol red | 1829 |
| 7647 | Chromotrope® 2B (C.I. 16575) | 1832 |
| 4937 | Chromotrope® 2R (C.I. 16570) | 1832 |
| 7648 | Chromotrope® FB (C.I. 14720) | 1833 |
| KK30 | Chromotropic acid disodium salt dihydrate | 1833 |
| 0322 | Congo red (C.I. 22120) | 1842 |
| 5750 | Cotton blue (C.I. 42780) | 1846 |
| 5160 | m-Cresol purple | 1848 |
| KK15 | o-Cresol red | 1848 |
| 5534 | Cresol red sodium salt | 1848 |
| 7651 | Cresyl violet acetate | 1848 |
| 7652 | Crocein orange G (C.I. 15970) | 1848 |
| T123 | Crystal violet (C.I. 42555) | 1849 |
| 9469 | Curcumin | 1850 |
| 6335 | DAPI | 1856 |
| 6843 | DAPI | 1856 |
| X866 | 2',7'-Dichlorofluorescein | 1869 |
| HN79 | 2,6-Dichlorophenol-indophenol sodium salt hydrate | 1870 |
| 7654 | Diethyl safranine (C.I. 50206) | 1874 |
| 2677 | Dimethylglyoxim | 1883 |
| KK24 | Dimethylglyoxime disodium salt octahydrate | 1883 |
| 9982 | Dimethyl yellow (C.I. 11020) | 1885 |
| 2217 | Dimidium bromide | 1885 |
| 9865 | Diphenylamine | 1887 |
| 2602 | Diphenylamine-4-sulphonic acid sodium salt | 1887 |
| 2696 | 1,5-Diphenylcarbazide | 1887 |
| 2678 | Diphenylcarbazone | 1887 |
| 4153 | 2,2'-Dipyridyl | 1888 |
| 2697 | Dithizone | 1890 |
| 0306 | Eosin B (C.I. 45400) | 1905 |
| 7089 | Eosin Y (C.I. 45380) | 1905 |
| 0112 | Eriochrome® black T (C.I. 14645) | 1907 |
| K860 | Eriochrome® black T (C.I. 14645), trituration | 1907 |
| 7661 | Eriochrome® blue black B (C.I. 14640) | 1907 |
| 7663 | Eriochrome® blue black R (C.I. 15705) | 1907 |
| 0331 | Erythrosine B (C.I. 45430) | 1909 |
| 7870 | Ethidium bromide | 1913 |
| 7664 | Ethyl eosin (C.I. 45386) | 1919 |
| 7667 | Ethyl orange sodium salt | 1921 |

| | | |
|---|---|---|
| 7677 | Ethyl red | 1921 |
| 7680 | Ethyl violet (C.I. 42600) | 1921 |
| 7684 | Evan's blue (C.I. 23860) | 1923 |
| 0301 | Fast Green FCF | 1924 |
| 7685 | Fast sulphon black F (C.I. 26990) | 1924 |
| 7687 | Fat brown RR (C.I. 11285) | 1924 |
| T131 | Ferroin indicator solution | 1928 |
| T132 | Ferroin solution | 1928 |
| 5283 | Fluorescein disodium salt (C.I. 45350) | 1931 |
| 3745 | Fluorescein isothiocyanate Isomer I | 1931 |
| 3256 | Fuchsine basic (C.I. 42510) | 1944 |
| 7691 | Giemsa stain | 1950 |
| 7694 | Guinea green B (C.I. 42085) | 1967 |
| 3816 | Hematoxylin (C.I. 75290) | 1971 |
| 2556 | Hydroxy naphthol blue disodium salt | 1995 |
| 2557 | 8-Hydroxyquinoline | 1996 |
| 7649 | Indicator buffer tablets | 2000 |
| 3903 | Indigo (C.I. 73000) | 2002 |
| 2700 | Indigo carmine (C.I. 73015) | 2002 |
| 5156 | Indigo carmine (C.I. 73015) | 2002 |
| 7695 | Indocyanine green | 2003 |
| 7697 | Janus green B (C.I. 11050) | 2018 |
| 7698 | Jenner Stain | 2019 |
| 7699 | Lacmoid | 2024 |
| 7702 | Leishman stain | 2034 |
| 7703 | Leuco crystal violet | 2036 |
| 7706 | Light green SF (C.I. 42095) | 2036 |
| 7707 | Lissamine green B (C.I. 44090) | 2038 |
| 0248 | Litmus (C.I. 1242) | 2042 |
| 4203 | Luminol | 2043 |
| 7708 | Luminol sodium salt hemihydrate | 2043 |
| 7710 | Malachite green hydrochloride | 2052 |
| 5895 | Malachite green oxalate (C.I. 42000) | 2052 |
| 7713 | Martius yellow (C.I. 10315) | 2058 |
| 4231 | Metal phthaleine | 2066 |
| 7714 | Metanil yellow (C.I. 13065) | 2066 |
| A514 | Methylene blue (C.I. 52015) | 2074 |
| 9953 | Methylene blue indicator solution | 2074 |
| 5159 | Methyl green (C.I. 42590) | 2075 |
| T118 | Methyl orange (C.I. 13025) | 2076 |
| T119 | Methyl orange indicator solution | 2076 |
| T120 | Methyl red (C.I. 13020) | 2078 |
| 2562 | Methyl red hydrochloride (C.I. 13020) | 2078 |
| T121 | Methyl red indicator solution | 2078 |
| 5003 | Methyl red sodium salt (C.I. 13020) | 2078 |
| KK17 | Methylthymol blue sodium salt | 2079 |
| 7715 | Methyl violet 2B (C.I. 42535) | 2080 |
| T125 | Mixed indicator 5 | 2081 |
| 6459 | Morin hydrate | 2083 |
| T124 | Murexide (C.I. 56085) | 2086 |
| 5161 | Naphthol green B (C.I. 10020) | 2088 |
| T122 | Neutral red (C.I. 50040) | 2092 |
| 7716 | Nigrosin, soluble in alcohol (C.I. 50415) | 2095 |
| 7718 | Nigrosin, water soluble (C.I. 50420) | 2095 |
| 4377 | Nile blue A (C.I. 51180) | 2095 |
| 7723 | Nile blue chloride (C.I. 51180) | 2095 |
| 7726 | Nile red | 2095 |
| 4378 | Ninhydrin | 2095 |
| 7727 | Nitrazine yellow (C.I. 14890) | 2096 |
| 2563 | 4-(4-Nitrophenylazo)-resorcinol | 2102 |
| 4421 | p-Nitrotetrazolium blue chloride | 2104 |
| 7728 | Nuclear fast red (C.I. 60760) | 2106 |
| 7729 | Orange II sodium salt (C.I. 15510) | 2124 |
| 7731 | Orange IV sodium salt (C.I. 13080) | 2124 |
| 0318 | Orange G (C.I. 16230) | 2124 |
| 0320 | Orcein | 2125 |
| 7306 | Oxazine 720 perchlorate | 2127 |
| 9113 | 1,10-Phenanthroline monohydrate | 2144 |
| KK21 | 1,10-Phenanthroline hydrochloride monohydrate | 2144 |
| T126 | Phenolphthalein (C.I. 764) | 2145 |
| 8145 | Phenolphthalein indicator solution 0,1 % | 2145 |
| K034 | Phenolphthalein indicator solution 1 % | 2145 |
| T127 | Phenol red | 2145 |
| 2566 | Phenol red sodium salt | 2145 |
| 9858 | *N*-Phenylanthranilic acid | 2147 |
| 4538 | 4-(Phenylazo) diphenylamine | 2147 |
| 5938 | Ponceau S (C.I. 27195) | 2161 |
| CN74 | Propidiumiodide | 2181 |
| KK12 | 1-(2-Pyridylazo)-2-naphthol | 2186 |
| 2564 | 4-(2'-Pyridylazo)-resorcinol | 2186 |
| 2565 | 4-(2'-Pyridylazo)-resorcinol monosodium salt | 2186 |
| 0287 | Pyrogallol red | 2187 |
| 7138 | Quercetin dihydrate (C.I. 75670) | 2189 |
| 7741 | Resorcinol yellow (C.I. 14270) | 2196 |
| 7310 | Rhodamine 575 | 2197 |
| T130 | Rhodamine B (C.I. 45170) | 2198 |
| 3162 | Rose Bengale B (C.I. 45440) | 2201 |
| T129 | Safranin O (C.I. 50240) | 2238 |
| KK25 | Silver diethyldithiocarbamate | 2261 |
| 9370 | Silver nitrate | 2262 |
| 2601 | Sodium diethyldithiocarbamate trihydrate | 2271 |
| HN34 | Sodium nitroprusside dihydrate | 2281 |
| 7709 | Solvent blue 38 (C.I. 74180) | 2288 |
| T133 | Starch 1 % indicator solution | 2315 |
| 7732 | Sudan II (C.I. 12140) | 2320 |
| 4711 | Sudan III (C.I. 26100) | 2320 |
| 0327 | Sudan IV (C.I. 26105) | 2320 |
| 0292 | Sudan black B (C.I. 26150) | 2320 |
| 7733 | Sudan orange G (C.I. 11920) | 2321 |
| 4033 | Sulfobromophthalein disodium salt | 2321 |
| 4119 | 5-Sulphosalicylic acid dihydrate | 2322 |
| 2624 | Tashiro's indicator solution | 2330 |
| 4176 | Tetrazolium blue chloride | 2338 |
| 7736 | Tetrazolium violet | 2338 |
| 4022 | Thiazolyl blue | 2339 |
| 9937 | Thionine (acetate) (C.I. 52000) | 2340 |
| KK34 | Thorin | 2340 |
| KK16 | Thymol blue | 2342 |
| 9954 | Thymol blue indicator solution | 2342 |
| 2606 | Thymol blue sodium salt | 2342 |
| HN97 | Thymolphthalein | 2342 |
| 8152 | Thymolphthalein indicator solution | 2343 |
| 7302 | Tiron | 2344 |
| 7739 | Titan yellow (C.I. 19540) | 2345 |
| 0300 | Toluidine blue O (C.I. 52040) | 2348 |
| KK13 | 2,3,5-Triphenyltetrazolium chloride | 2355 |
| CN76 | Trypan blue (C.I. 23850) | 2359 |
| 7742 | Victoria blue R (C.I. 44040) | 2371 |
| 7744 | Wright's stain | 2378 |
| A513 | Xylene cyanole (C.I. 42135) | 2380 |
| 7746 | Xylenolblue | 2381 |
| 2727 | Xylenol orange tetrasodium salt | 2382 |
| 7747 | Xylidine Ponceau 2R (C.I. 16150) | 2382 |
| KK35 | Xylidyl blue sodium salt | 2382 |
| 5563 | Zincon | 2388 |


## Indicine hydrochloride



### Indicine hydrochloride

**ROTICHROM® HPLC**

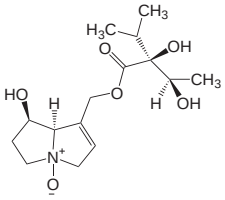
Reference substance for HPLC.
From *Heliotropium indicum.*

$C_{15}H_{26}ClNO_6$
M 335,83 g/mol
Storage temp.: +4 °C
[1195140-94-3]
WGK 3

**Type analysis:**
Purity (HPLC).....≥97,0 %

| | | | |
|---|---|---|---|
| **1960.1** | 10 mg | glass | 364,45 € |

## Indicine N-oxide



### Indicine N-oxide

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Heliotropium indicum.*

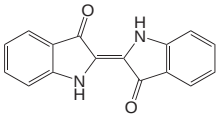
$C_{15}H_{25}NO_6$
M 315,36 g/mol
Storage temp.: +4 °C
[41708-76-3]
WGK 3

**Type analysis:**
Purity (HPLC).....≥96 %

| | | | |
|---|---|---|---|
| **1961.1** | 10 mg | glass | 396,70 € |

I/J

## Indigo (C.I. 73000)



### Indigo (C.I. 73000)

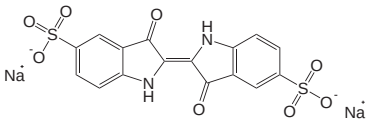
**synth.**
C.I. 73000
$C_{16}H_{10}N_2O_2$
M 262,27 g/mol
mp >300 °C
Solubility: <1 g/l ($H_2O$, 20 °C)
[482-89-3] • EC No. 207-586-9
WGK 1

**Warning** H373

**Type analysis:**
Appearance. ..... violet powder
Maximum absorption. ..... 590-615 nm
Solubility (water). ..... complies
Solubility (EtOH). ..... complies
Loss on drying (110 °C). ..... ≤5,0 %

| | | | |
|---|---|---|---|
| **3903.1** | 50 g | glass | 38,60 € |
| **3903.3** | 100 g | glass | 60,10 € |
| **3903.2** | 500 g | glass | 246,20 € |
| Original pack 6 x 500 g | | | 233,89/500 g |

## Indigo carmine (C.I. 73015)



$C_{16}H_8N_2Na_2O_8S_2$
M 466,36 g/mol
mp >300 °C
Solubility: 10 g/l ($H_2O$, 25 °C)
[860-22-0] • EC No. 212-728-8
WGK 1

**Warning** H302

### Indigo carmine (C.I. 73015)

**≥80 %, p.a.**
For microscopy, Indicator pH 11,5-13,0.

**Guarantee analysis:**
Appearance. ..... dark blue to purple powder
Dye content. ..... ≥80 %
Solubility (1 g/100 ml $H_2O$) ..... complies
Loss on drying. ..... ≤5 %
Heavy metals (as Pb) ..... ≤0,004 %
Arsenic (As). ..... ≤0,0008 %
Cadmium (Cd). ..... ≤0,0001 %
Mercury (Hg) ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **2700.1** | 25 g | glass | 24,20 € |
| **2700.2** | 100 g | glass | 66,55 € |

### Indigo carmine (C.I. 73015)

**for microscopy**
Indicator pH 11,5-13,0

**Typ analysis:**
Absorption max. (in $H_2O$). ..... 596-626 nm
Loss on drying (110 °C) ..... ≤5 %
Suitability for microscopy ..... complies

| | | | |
|---|---|---|---|
| **5156.1** | 10 g | glass | 14,55 € |
| **5156.2** | 25 g | glass | 21,40 € |
| **5156.3** | 100 g | glass | 62,25 € |

## Indium

In
M 114,82 g/mol
D 7,31 • bp 2072 °C
mp 157 °C
[7440-74-6] • EC No. 231-180-0

### Indium shot

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**
Assay (metals basis). ..... 99,999 %
Particle size. ..... 3-6 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5629.1** | 5 g | plastic | 53,65 € |
| **5629.2** | 25 g | plastic | 181,70 € |

### Indium

**>99,97 %, granulated**

**Type analysis:**
Assay. ..... >99,97 %

| | | | |
|---|---|---|---|
| **3906.1** | 10 g | glass | 52,60 € |

### Indium

**99,99 % (4N), foil**
Foil 275 mm long, 50 mm wide, 0,1 mm thick.

**Type analysis:**

| | | | |
|---|---|---|---|
| **9803.1** | 10 g | plastic | 267,70 € |

### Indium Standards


- Indium AAS Standard Solution see p. 2295
- Indium ICP Standard Solution see p. 2298
- Indium ICP Standard Solution see p. 2303


## Indium(III) bromide

### Indium(III) bromide

**ROTI®METIC 99,999 % (5N)**
$InBr_3$
M 354,53 g/mol
D 4,74
mp 420 °C
Solubility: 4140 g/l ($H_2O$, 20 °C)
[13465-09-3] • EC No. 236-692-8
UN No. 3260 • ADR 8 II • WGK 1

**Danger** H314

**Type analysis:**
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5322.1** | 5 g | plastic | 42,90 € |
| **5322.2** | 25 g | plastic | 166,65 € |

## Indium(III) chloride

### Indium(III) chloride

NEW

**≥99,9 %, p.a.**
$InCl_3$
M 221,18 g/mol
D 3,46
mp 586 °C
Solubility: 661 g/l ($H_2O$, 22 °C)
[10025-82-8] • EC No. 233-043-0
UN No. 3260 • ADR 8 • WGK 1

**Danger** H302-H314

**Guarantee analysis:**
Assay. ..... ≥99,9 %
Aluminium (Al) ..... ≤0,0001 %
Bismuth (Bi). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,005 %
Chromium (Cr). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0005 %
Sodium (Na) ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0001 %
Silver (Ag). ..... ≤0,0001 %
Silicon (Si) ..... ≤0,0005 %
Tin (Sn). ..... ≤0,0001 %
Zinc (Zn). ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **0307.1** | 5 g | plastic | 26,80 € |
| **0307.2** | 10 g | plastic | 42,90 € |
| **0307.3** | 25 g | plastic | 85,90 € |
| **0307.4** | 50 g | plastic | 149,45 € |

## Indium(III) nitrate pentahydrate

### Indium(III) nitrate pentahydrate
**ROTI®METIC 99,999 % (5N)**
$In(NO_3)_3 \cdot 5\ H_2O$
M 390,91 g/mol
mp ~100 °C (dec.)
[207398-97-8]
UN No. 1477 • ADR 5.1 II • WGK 1
**Danger** H272-H315-H319

**Type analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5384.1** | 10 g | plastic | 89,80 € |

## Indium(III) oxide

### Indium(III) oxide
**ROTI®METIC 99,999 % (5N)**
$In_2O_3$
M 277,64 g/mol
D 7,2
mp 1913 °C
[1312-43-2] • EC No. 215-193-9

**Type analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5630.1** | 5 g | plastic | 47,20 € |
| **5630.2** | 25 g | plastic | 158,60 € |

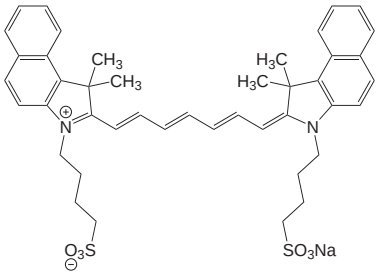
## Indium(III) sulphate

### Indium(III) sulphate
NEW
**≥99,99 %, p.a.**
$In_2(SO_4)_3$
M 517,82 g/mol
D 3,44
mp 600 °C (dec.)
Solubility: 539 g/l ($H_2O$, 20 °C)
[13464-82-9] • EC No. 236-689-1
WGK 1

**Guarantee analysis:**
Assay..... ≥99,99 %
Aluminium (Al). ..... ≤0,0005 %
Bismuth (Bi). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Tin (Sn). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **0314.1** | 5 g | plastic | 26,80 € |
| **0314.2** | 10 g | plastic | 42,90 € |
| **0314.3** | 25 g | plastic | 75,15 € |
| **0314.4** | 50 g | plastic | 138,70 € |

## Indocyanine green



### Indocyanine green
**p.a.**
Cardiogreen, ICG
$C_{43}H_{47}N_2NaO_6S_2$
M 774,98 g/mol
[3599-32-4] • EC No. 222-751-5
WGK 3
**Warning** H315-H319-H335

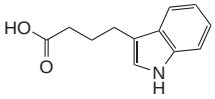
**Type analysis:**
Appearance..... dark green to black powder
Appearance of solution (1 % in $H_2O$). .....
..... clear, dark green
Loss on drying. ..... ≤6 %

| | | | |
|---|---|---|---|
| **7695.1** | 1 g | glass | 35,40 € |
| **7695.2** | 5 g | glass | 149,45 € |
| **7695.3** | 10 g | glass | 278,45 € |

## Indol-3-aldehyde
▶ Indole-3-carboxaldehyde see p. 2003

## Indole-3-acetic acid
▶ Indolyl 3-acetic acid see p. 2004

## Indole-3-butyric acid

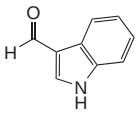


### Indole-3-butyric acid
**≥99 %, for biochemistry**
IBA, Hormodin, 4-(3-Indolyl)butyric acid
$C_{12}H_{13}NO_2$
M 203,24 g/mol
mp ~123 °C
Solubility: 0,25 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[133-32-4] • EC No. 205-101-5
UN No. 2811 • ADR 6.1 III • WGK 1
**Danger** H301-H315-H319-H335

**Typ analysis:**
Assay (HPLC)..... ≥99 %
Water (KF)..... ≤1 %
Arsenic (As)..... ≤0,0003 %
Heavy metals (as Pb). ..... ≤0,001 %
Sulphated ash. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **4143.1** | 5 g | glass | 19,25 € |
| **4143.2** | 25 g | glass | 60,10 € |

## Indole-3-carboxaldehyde

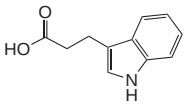


### Indole-3-carboxaldehyde
**≥98 %**
Indol-3-aldehyde, 3-Formylindole
$C_9H_7NO$
M 145,16 g/mol
mp 194-198 °C • flp 240 °C
[487-89-8] • EC No. 207-665-8

**Typ analysis:**
Assay (GC). ..... ≥98,0 %
Solution (1 % in ethanol). .....
..... colourless to light brown, clear
Water (KF). ..... ≤1,0 %
Melting point. ..... 194-198 °C

| | | | |
|---|---|---|---|
| **5538.1** | 25 g | plastic | 50,00 € |
| **5538.2** | 50 g | plastic | 88,70 € |

## Indole-3-propionic acid



### Indole-3-propionic acid
**≥99 %, for biochemistry**
IPA, 3-(3-Indolyl)-propionic acid
$C_{11}H_{11}NO_2$
M 189,22 g/mol
mp ~134 °C
Storage temp.: +4 °C
[830-96-6] • EC No. 212-600-1
WGK 1

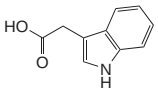
**Typ analysis:**
Assay (titr.)..... ≥99 %
Solution (5 % in ethanol). ..... slightly yellowish, clear
Water (KF). ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4144.1** | 10 g | glass | 38,60 € |
| **4144.2** | 50 g | glass | 127,95 € |

## Indole Reagent
▶ Kovacs' Reagent see p. 2024

## 2,3-Indolinedione
▶ Isatin see p. 2012

## Indolyl 3-acetic acid



### Indolyl 3-acetic acid

**≥99 %, for biochemistry**
Heteroauxin, Indole-3-acetic acid
$C_{10}H_9NO_2$
M 175,19 g/mol
mp 163-170 °C
Storage temp.: +4 °C
[87-51-4] • EC No. 201-748-2
WGK 1

**Type analysis:**

Appearance. ..... light red to light brown powder
Assay (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤0,5 %
Sulphated ash. ..... ≤0,3 %

| | | | |
|---|---|---|---|
| **7280.1** | 5 g | plastic | 18,20 € |
| **7280.2** | 25 g | plastic | 60,10 € |
| **7280.3** | 50 g | plastic | 103,10 € |

## 3-β-Indolylalanine

▶ DL-Tryptophan see p. 2361

## 4-(3-Indolyl)butyric acid

▶ Indole-3-butyric acid see p. 2003

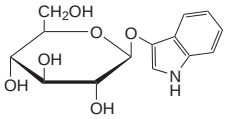
## 3-Indolylmethylglucosinolate potassium salt

▶ Glucobrassicin see p. 1954

## 3-(3-Indolyl)-propionic acid

▶ Indole-3-propionic acid see p. 2003

## 3-Indoxyl-β-D-glucopyranoside



### 3-Indoxyl-β-D-glucopyranoside

**≥99 %, for biochemistry**
Glycosidase substrate
Plant Indican
$C_{14}H_{17}NO_6$
M 295,29 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[487-60-5]

**Typ analysis:**

Assay (HPLC). ..... ≥99 %
Solubility (0,5 % in $H_2O$). ..... colourless, clear
Water (KF). ..... ≤0,5 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in water). ..... -67,5° to -63,5°

| | | | |
|---|---|---|---|
| **4243.1** | 250 mg | glass | 55,80 € |
| **4243.2** | 500 mg | glass | 99,90 € |
| **4243.3** | 1 g | glass | 177,40 € |

## Inermin

▶ (-)-Maackiain see p. 2046

## Infusorial earth

### Infusorial earth

**natural**
For filtration of organic solutions.
Siliceous earth, Diatomaceous earth, Kieselguhr
[61790-53-2] • EC No. 310-127-6

**Type analysis:**

$SiO_2$. ..... ~83,7 %
CaO. ..... ~0,9 %
$Fe_2O_3$. ..... ~2,3 %
$Al_2O_3$. ..... ~5,6 %
Loss on ignition. ..... ~5,0 %

| | | | |
|---|---|---|---|
| **8019.3** | 1 kg | plastic | 17,10 € |
| Original pack 6 x 1 kg | | | 16,25/1 kg |
| **8019.1** | 5 kg | plastic | 37,55 € |
| **8019.2** | 20 kg | plastic | 96,65 € |

## Inhibitor Cocktail Bacteria

### Inhibitor Cocktail Bacteria

**for biochemistry**
Broad range cocktail of protease inhibitors for extracts from bacteria.
Storage temp.: -20 °C •
Transport temp.: room temp.
UN No. 3261 • ADR 8 III • WGK 2
**Danger** H314

**Formulation:**

Appearance. ..... white powder
AEBSF hydrochloride. ..... complies
Bestatin. ..... complies
E-64. ..... complies
EDTA-$Na_2$. ..... complies
Pepstatin A. ..... complies

| | | | |
|---|---|---|---|
| **3758.1** | 1 set | plastic | 95,60 € |

For further information, please see page 1282

## Inhibitor Cocktail BroadRange

### Inhibitor Cocktail BroadRange

**for biochemistry**
Broad range cocktail of protease inhibitors.
Storage temp.: -20 °C •
Transport temp.: room temp.
UN No. 3261 • ADR 8 III • WGK 2
**Danger** H314-H332-H373

**Formulation:**

Appearance. ..... white powder
AEBSF hydrochloride. ..... complies
Aprotinin. ..... complies
E-64. ..... complies
EDTA-$Na_2$. ..... complies
Leupeptin hemisulphate. ..... complies

| | | | |
|---|---|---|---|
| **3749.1** | 1 vial | plastic | 53,65 € |

For further information, please see page 1281

## Inhibitor Cocktail His-tag

### Inhibitor Cocktail His-tag

**ready-to-use, for biochemistry**
Broad range cocktail of protease inhibitors for extraction of His-tagged proteins.
Storage temp.: -20 °C •
Transport temp.: cooled
WGK 2
**Danger** H318-H315

**Formulation:**

Solution. ..... colourless to slightly opaque
AEBSF hydrochloride. ..... complies
Bestatin. ..... complies
E-64. ..... complies
Pepstatin A. ..... complies
Phosphoramidon. ..... complies
Solvent. ..... DMSO

| | | | |
|---|---|---|---|
| **3760.1** | 1 ml | plastic | 94,50 € |

For further information, please see page 1282

## Inhibitor Cocktail Plus

### Inhibitor Cocktail Plus

**ready-to-use, for biochemistry**
Broad range cocktail of protease inhibitors for extracts of mammalian cells or tissue.
Storage temp.: -20 °C •
Transport temp.: cooled
WGK 1
**Warning** H315-H319

**Formulation:**

Solution. ..... colourless to slightly opaque
AEBSF hydrochloride. ..... complies
Aprotinin. ..... complies
Bestatin. ..... complies
E-64. ..... complies
Leupeptin hemisulphate. ..... complies
Pepstatin A. ..... complies
Solvent. ..... DMSO

| | | | |
|---|---|---|---|
| **3751.1** | 1 ml | plastic | 85,90 € |

For further information, please see page 1282

## Inhibitor Cocktail Standard

### Inhibitor Cocktail Standard

**for biochemistry**
General cocktail of protease inhibitors.
Storage temp.: -20 °C •
Transport temp.: room temp.
UN No. 3261 • ADR 8 III • WGK 2
**Danger** H314-H332-H373

**Formulation:**

Appearance. ..... white powder
AEBSF hydrochloride. ..... complies
EDTA-$Na_2$. ..... complies
Pepstatin A. ..... complies
Leupeptin hemisulphate. ..... complies

| | | | |
|---|---|---|---|
| **3743.1** | 1 vial | plastic | 125,25 € |

For further information, please see page 1281

## Inhibitor Cocktail Tissue

### Inhibitor Cocktail Tissue

**for biochemistry**

Cocktail of protease inhibitors for extracts of mammalian cells or tissue.

Storage temp.: -20 °C •

Transport temp.: room temp.

UN No. 3261 • ADR 8 III • WGK 3

**Danger** H314

**Formulation:**

Appearance. ..... white powder
AEBSF hydrochloride. ..... complies
Aprotinin. ..... complies
E-64. ..... complies
Leupeptin hemisulphate. ..... complies

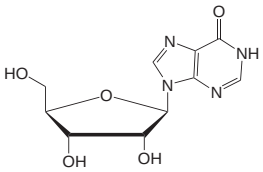
| | | | |
|---|---|---|---|
| **3755.1** | 1 vial | plastic | 46,15 € |

For further information, please see page 1282

## Inhibitors

| Art. No. | Description | Page |
|---|---|---|
| 2931 | AEBSF hydrochloride | 1710 |
| CN71 | 4-Aminobenzamidine dihydrochloride | 1724 |
| 2933 | Antipain dihydrochloride | 1747 |
| A162 | Aprotinin | 1748 |
| 5655 | Bacitracin | 1760 |
| CN38 | Benzamidine hydrochloride monohydrate | 1765 |
| 2937 | Bestatin hydrochloride | 1771 |
| 2935 | E-64 | 1898 |
| 3054 | EGTA | 1903 |
| 8043 | Ethylenediamine tetraacetic acid disodium salt dihydrate | 1917 |
| HN71 | Geldanamycin | 1948 |
| 0716 | Genistein | 1949 |
| 6847 | β-Glycerophosphate disodium salt pentahydrate | 1961 |
| 3758 | Inhibitor Cocktail Bacteria | 2004 |
| 3749 | Inhibitor Cocktail BroadRange | 2004 |
| 3760 | Inhibitor Cocktail His-tag | 2004 |
| 3751 | Inhibitor Cocktail Plus | 2004 |
| 3743 | Inhibitor Cocktail Standard | 2004 |
| 3755 | Inhibitor Cocktail Tissue | 2005 |
| CN33 | Leupeptin hemisulphate | 2036 |
| 0247 | Novobiocin sodium salt | 2105 |
| A154 | Pefabloc® SC-Protease Inhibitor | 2132 |
| 2936 | Pepstatin A | 2137 |
| 6367 | Phenylmethyl sulphonyl fluoride (PMSF) | 1286 |
| HN72 | Radicicol | 2148 |
| 2949 | Trypsin inhibitor | 2360 |
| 5279 | Trypsin inhibitor | 2360 |

## Inosine



### Inosine

**≥98 %, for biochemistry**

9-β-Ribofuranosylhypoxanthine
$C_{10}H_{12}N_4O_5$
M 268,23 g/mol
mp ~215-220 °C
[58-63-9] • EC No. 200-390-4

**Type analysis:**

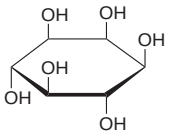
Appearance. ..... white cryst. powder
Assay (dry substance). ..... ≥98,0 %
pH value. ..... 4,8-5,8
Sulphated ash. ..... ≤0,2 %
Heavy metals (as Pb). ..... ≤0,001%
Arsenic (As). ..... ≤0,0001 %
Loss on drying (105 °C, 2 h). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6770.1** | 5 g | glass | 20,65 € |

## myo-Inosit

▶ meso-Inositol see p. 2005

## meso-Inositol



myo-Inosit, myo-Inositol
$C_6H_{12}O_6$
M 180,16 g/mol
mp 223-225 °C
Solubility: 140 g/l ($H_2O$, 25 °C)
[87-89-8] • EC No. 201-781-2
WGK 2

### meso-Inositol

**≥99 %, p.a.**

**Guarantee analysis:**

Assay (HPLC). ..... ≥99,0 %
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,005 %
Arsenic (As). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,001 %
Chromium (Cr). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Sodium (Na). ..... ≤0,005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Ash content (as $SO_4$). ..... ≤0,2 %
Loss on drying (110 °C). ..... ≤0,5 %
Solubility (0,1 g/ml $H_2O$). ..... clear

| | | | |
|---|---|---|---|
| **6329.2** | 10 g | plastic | 24,65 € |
| **6329.1** | 100 g | plastic | 160,20 € |

### meso-Inositol

**≥99 %, for biochemistry**

**Typ analysis:**

Assay (HPLC). ..... ≥99,0 %
Solution (10 % in water). ..... colourless
Loss on drying (3 h, 105 °C, vacuum). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **4191.1** | 50 g | glass | 25,30 € |
| **4191.2** | 100 g | glass | 31,10 € |
| **4191.3** | 250 g | glass | 82,25 € |

## myo-Inositol

▶ meso-Inositol see p. 2005

## Instant-glue CA 221

### Instant-glue CA 221

**liquid**

One component-instant glue made on a cyanoacrylate basis.

[7085-85-0]

WGK 1

**Warning** H315-H319-H335

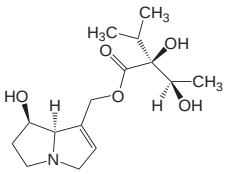
| | | | |
|---|---|---|---|
| **0258.1** | Dispenser bottle 10 ml | | 6,40 € |

For further information, please see page 1142

## INT

▶ Iodonitrotetrazolium chloride see p. 2007

## Intermedine



### Intermedine

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Symphytum.*

$C_{15}H_{25}NO_5$
M 299,36 g/mol
Storage temp.: -20 °C
Transport temp.: room temp.
[10285-06-0]
WGK 1

**Warning** H302

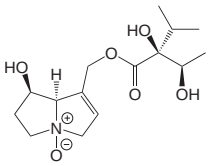
**Type analysis:**

Purity (HPLC). ..... ≥95,0 %

| | | | |
|---|---|---|---|
| **1962.1** | 5 mg | glass | 349,40 € |

I/J

## Intermedine N-oxide



### Intermedine N-oxide
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Symphytum officinale.*
$C_{15}H_{25}NO_6$
M 315,36 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[95462-14-9]
WGK 1
**Warning** H302

**Type analysis:**
Purity (HPLC)..... ≥95 %

| | | | |
|---|---|---|---|
| **8018.1** | 5 mg | glass | 375,20 € |

## Iodate Standards
▶ Iodate IC Standard Solution see p. 2311

## Iodide Standards
▶ Iodide IC Standard Solution see p. 2311

## Iodid-iodate solution (1/64 N)

### Iodid-iodate solution
**1/128 mol $I_2$/l - 1/64 N volumetric standard solution**

**Type analysis:**
Amount-of-substance conc. (20 °C)..... 1/128 mol $I_2$/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **KK65.1** | 1 l | plastic | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |

For further information, please see page 1621

## Iodid-iodate solution (0,1 N)

### Iodid-iodate solution
NEW
**0,05 mol $I_2$/l - 0,1 N volumetric standard solution**
WGK 1

**Type analysis:**
Amount-of-substance conc. (20 °C)..... 0,05 mol $I_2$/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **0228.1** | 1 l | plastic | 28,50 € |
| Original pack 6 x 1 l | | | 27,08/1 l |

For further information, please see page 1621

## Iodine

$I_2$
M 253,81 g/mol
D 4,93 • bp 184,35 °C
mp 113,6 °C
Solubility: 0,34 g/l ($H_2O$, 20 °C)
[7553-56-2] • EC No. 231-442-4
UN No. 3495 • ADR 8 (6.1) III • WGK 2
**Danger** H302+H312+H332-H315-H319-H335-H372-H400

### Iodine
**≥99,8 %, p.a., ACS, resublimated**
Use in iodometry; for iodine compounds.

**Guarantee analysis:**
Assay (iodom.). ..... ≥99,8 %
Chloride and bromide (as Cl)..... ≤0,005 %
Chlorine and bromine (as Cl)..... ≤0,005 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd)..... ≤0,0005 %
Calcium (Ca). ..... ≤0,001 %
Chromium (Cr)..... ≤0,0005 %
Iron (Fe)..... ≤0,005 %
Potassium (K)..... ≤0,005 %
Cobalt (Co)..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,005 %
Nickel (Ni)..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %
Non volatile matter. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **X864.1** | 100 g | glass | 64,40 € |
| **X864.2** | 250 g | glass | 117,20 € |
| **X864.3** | 1 kg | glass | 413,90 € |
| Original pack 6 x 1 kg | | | 393,21/1 kg |

### Iodine
**≥99,5 %, Ph.Eur., resublimated**

**Guarantee analysis:**
Assay. ..... 99,5-100,5 %
Identity..... complies
Chloride and bromide. ..... ≤0,025 %
Non volatile matter. ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **7935.3** | 100 g | glass | 48,30 € |
| **7935.1** | 250 g | glass | 110,65 € |
| **7935.2** | 1 kg | glass | 385,95 € |
| Original pack 6 x 1 kg | | | 366,65/1 kg |

### Iodine
**≥99,5 %, resublimated**

**Type analysis:**
Assay. ..... ≥99,5 %
Chloride (Cl). ..... ≤0,05 %
Non volatile matter. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7335.1** | 250 g | glass | 83,35 € |
| **7335.2** | 500 g | glass | 146,75 € |
| Original pack 6 x 500 g | | | 139,41/500 g |
| **7335.3** | 1 kg | glass | 278,45 € |
| Original pack 6 x 1 kg | | | 264,53/1 kg |
| **7335.4** | 2,5 kg | glass | 557,95 € |

## Iodine eosine
▶ Erythrosine B (C.I. 45430) see p. 1909

## Iodine(V) oxide

### Iodine(V) oxide
**ROTI®METIC 99,99 % (4N)**
Diiodine pentoxide
$I_2O_5$
M 333,81 g/mol
D 4,98
mp ~300 °C (dec.)
[12029-98-0] • EC No. 234-740-2
UN No. 3085 • ADR 5.1 (8) III • WGK 1
**Danger** H272-H314

**Type analysis:**
Assay (metals basis).....99,99 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5364.1** | 5 g | plastic | 39,70 € |
| **5364.2** | 25 g | plastic | 150,00 € |

## Iodine-potassium iodide solution acc. to Lugol

### Iodine-potassium iodide solution acc. to Lugol
**for microscopy**
For Gram staining.
Lugol solution
D 1,122
WGK 2
**Warning** H373

| | | | |
|---|---|---|---|
| **N052.1** | 250 ml | glass | 17,10 € |
| **N052.3** | 500 ml | glass | 24,20 € |
| **N052.2** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |

For further information, please see page 1460

## Iodine solution
▶ Iodine solution (0,1 N) see p. 2006
▶ Iodine solution (0,1 N) see p. 2007
▶ Iodine solution (1 N) see p. 2007
▶ Iodine solution (1 N) see p. 2007
▶ Hanus solution (0,2 N) see p. 1968

## Iodine solution (0,1 N)

### Iodine solution
**0,05 mol $I_2$/l - 0,1 N volumetric standard solution**

**Type analysis:**
Amount-of-substance conc. (20 °C)..... 0,05 mol $I_2$/l ±0,2 %
Titer.....0,998-1,002

| | | | |
|---|---|---|---|
| **K016.1** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **K016.2** | 2,5 l | glass | 68,70 € |
| Original pack 4 x 2,5 l | | | 65,27/2,5 l |

For further information, please see page 1621

## Iodine solution (0,1 N)

### Iodine solution

**0,05 mol $I_2$/l - 0,1 N, volumetric standard solution, Reag. Ph.Eur.**

**Type analysis:**

Amount-of-substance conc. (20 °C).....0,05 mol/l
Measurement uncertainty. .....±0,1 %

| | | | |
|---|---|---|---|
| **6765.1** | 1 l | glass | 41,40 € |
| Original pack 6 x 1 l | | | 39,33/1 l |

## Iodine solution (1 N)

### Iodine solution

**0,5 mol $I_2$/l - 1 N volumetric standard solution**

WGK 2

**Warning** H373

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,5 mol $I_2$/l ±0,2 %
Titer. .....0,998-1,002

| | | | |
|---|---|---|---|
| **X868.1** | 1 l | glass | 103,75 € |
| Original pack 6 x 1 l | | | 98,56/1 l |

For further information, please see page 1621

## Iodine solution (1 N)

### Iodine solution

**0,5 mol $I_2$/l - 1 N, volumetric standard solution, Reag. Ph.Eur.**

WGK 2

**Warning** H373

**Type analysis:**

Amount-of-substance conc. (20 °C).....0,5 mol/l
Measurement uncertainty. .....±0,1 %

| | | | |
|---|---|---|---|
| **6769.1** | 1 l | glass | 107,40 € |
| Original pack 6 x 1 l | | | 102,03/1 l |

## Iodine solution acc. to Wijs

▶ Wijs-solution (0.2 N) see p. 2377

## Iodoform

### Iodoform

**≥99 %, extra pure**

Triiodmethane
$CHI_3$
M 393,73 g/mol
D 4,01 • bp 218 °C
mp ~120 °C
Solubility: 0,1 g/l ($H_2O$, 25 °C)
[75-47-8] • EC No. 200-874-5
WGK 1

**Warning**

H302+H312+H332-H315-H319-H335

**Typ analysis:**

Assay.....≥99,0 %
Appearance of solution. .....complies
Chloride (Cl). .....≤0,02 %
Sulphate ($SO_4$). .....≤0,02 %
Sulphated ash.....≤0,1 %
Loss on drying. .....≤0,5 %
Melting point. .....120-122 °C

| | | | |
|---|---|---|---|
| **4534.2** | 50 g | glass | 32,15 € |
| **4534.3** | 100 g | glass | 56,45 € |
| **4534.1** | 1 kg | glass | 478,40 € |
| Original pack 6 x 1 kg | | | 454,48/1 kg |

## Iodomethane D3



### Iodomethane D3

**99,5 Atom%D, stab. with Cu**

For nuclear magnetic resonance spectroscopy.
Methyliodide D3
$CD_3I$
M 144,96 g/mol
D 2,33 • bp 42 °C
[865-50-9] • EC No. 212-744-5
UN No. 2644 • ADR 6.1 I • WGK 2

**Danger**

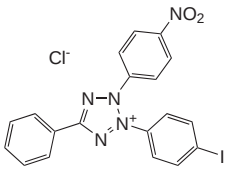
H301+H331-H351-H312-H315-H335

**Guarantee analysis:**

Deuterising degree. ..... ≥99,5 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **HN88.2** | 5 g | glass | 41,95 € |
| **HN88.1** | 25 g | glass | 148,25 € |

## Iodonitrotetrazolium chloride




### Iodonitrotetrazolium chloride

**≥97 %, for biochemistry**

For the determination of dehydrogenase.
2-(4-Iodophenyl)-3-(4-nitrophenyl)-5-phenyl-2H-tetrazolium chloride, p-Iodonitrotetrazolium Violet, INT
$C_{19}H_{13}ClN_5O_2I$
M 505,70 g/mol
mp >240 °C (dec.)
Storage temp.: +4 °C
[146-68-9] • EC No. 205-676-2
WGK 2

**Typ analysis:**

Assay (titr.). ..... ≥97,0 %
Appearance of solution.....yellow to green
Loss on drying. ..... ≤3,0 %

| | | | |
|---|---|---|---|
| **5536.1** | 1 g | glass | 95,15 € |

## p-Iodonitrotetrazolium Violet

▶ Iodonitrotetrazolium chloride see p. 2007

## 2-(4-Iodophenyl)-3-(4-nitrophenyl)-5-phenyl-2H-tetrazolium chloride

▶ Iodonitrotetrazolium chloride see p. 2007

## Ion Exchanger


| Art. No. | Description | Page |
|---|---|---|
| K306 | Amberjet™ | 1722 |
| 0303 | Dowex® 1 X 2 | 1895 |
| 0304 | Dowex® 1 X 2 | 1895 |
| 0309 | Dowex® 1 X 8 | 1895 |
| 0310 | Dowex® 1 X 8 | 1895 |
| 0311 | Dowex® 1 X 8 | 1895 |
| 0312 | Dowex® 1 X 8 | 1895 |
| 6800 | Dowex® 50 W X 2 | 1895 |
| 0334 | Dowex® 50 W X 2 | 1895 |
| N099 | Dowex® 50 W X 2 | 1895 |
| 6821 | Dowex® 50 W X 4 | 1896 |
| 0344 | Dowex® 50 W X 8 | 1896 |
| 0345 | Dowex® 50 W X 8 | 1896 |
| 0346 | Dowex® 50 W X 8 | 1896 |
| 6849 | Ion exchange resin Roti®change 1 x 4 | 2007 |
| 6851 | Ion exchange resin Roti®change 1 x 4 | 2008 |
| 6852 | Ion exchange resin Roti®change 1 x 8 | 2008 |
| 6854 | Ion exchange resin Roti®change 1 x 8 | 2008 |
| 6855 | Ion exchange resin Roti®change 1 x 8 | 2008 |
| 6856 | Ion exchange resin Roti®change 1 x 8 | 2008 |
| 6864 | Ion exchange resin Roti®change 50 W x 4 | 2008 |
| 6865 | Ion exchange resin Roti®change 50 W x 8 | 2008 |
| 6866 | Ion exchange resin Roti®change 50 W x 8 | 2008 |
| 6867 | Ion exchange resin Roti®change 50 W x 8 | 2008 |


## Ion exchange resin Roti®change

### Ion exchange resin Roti®change 1 x 4

**50-100 mesh, analytical grade, $Cl^-$-form**

Highly basic anion exchanger.
WGK 3

**Type analysis:**

Appearance. ..... white to light yellow grain
Particle size (mesh).....50-100
Extractables. ..... <1 mg/g resin
Capacity (eq/l).....≥1,0
Counter ion. ..... $Cl^-$
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

| | | | |
|---|---|---|---|
| **6849.4** | 25 g | Kunst. | 42,90 € |
| **6849.1** | 100 g | plastic | 149,45 € |
| **6849.2** | 250 g | plastic | 306,40 € |
| **6849.3** | 500 g | plastic | 568,70 € |
| Original pack 6 x 500 g | | | 540,27/500 g |

## Ion exchange resin Roti®change 1 x 4

**100-200 mesh, analytical grade, $Cl^-$-form**

Highly basic anion exchanger.
WGK 3

**Type analysis:**

Appearance. ..... white to light yellow grain
Particle size (mesh). ..... 100-200
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... ≥1,0
Counter ion. ..... $Cl^-$
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

| | | | |
|---|---|---|---|
| **6851.4** | 25 g | plastic | 53,65 € |
| **6851.1** | 100 g | plastic | 203,20 € |
| **6851.2** | 250 g | plastic | 428,95 € |
| **6851.3** | 500 g | plastic | 805,20 € |
| Original pack 6 x 500 g | | | 764,94/500 g |

## Ion exchange resin Roti®change 1 x 8

**20-50 mesh, analytical grade, $Cl^-$-form**

Highly basic anion exchanger.
WGK 3

**Type analysis:**

Appearance. ..... white to light yellow grain
Particle size (mesh). ..... 20-50
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... $Cl^-$
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

| | | | |
|---|---|---|---|
| **6852.4** | 25 g | plastic | 26,80 € |
| **6852.1** | 100 g | plastic | 81,60 € |
| **6852.2** | 250 g | plastic | 170,95 € |
| **6852.3** | 500 g | plastic | 310,70 € |
| Original pack 6 x 500 g | | | 295,17/500 g |

## Ion exchange resin Roti®change 1 x 8

**50-100 mesh, analytical grade, $Cl^-$-form**

Highly basic anion exchanger.
WGK 3

**Type analysis:**

Appearance. ..... white to light yellow grain
Particle size (mesh). ..... 50-100
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... $Cl^-$
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

| | | | |
|---|---|---|---|
| **6854.4** | 25 g | plastic | 48,30 € |
| **6854.1** | 100 g | plastic | 170,95 € |
| **6854.2** | 250 g | plastic | 353,70 € |
| **6854.3** | 500 g | plastic | 654,70 € |
| Original pack 6 x 500 g | | | 621,97/500 g |

## Ion exchange resin Roti®change 1 x 8

**100-200 mesh, analytical grade, $Cl^-$-form**

Highly basic anion exchanger.
WGK 3

**Type analysis:**

Appearance. ..... white to light yellow grain
Particle size (mesh). ..... 100-200
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... $Cl^-$
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

| | | | |
|---|---|---|---|
| **6855.4** | 25 g | plastic | 48,30 € |
| **6855.1** | 100 g | plastic | 170,95 € |
| **6855.2** | 250 g | plastic | 353,70 € |
| **6855.3** | 500 g | plastic | 654,70 € |
| Original pack 6 x 500 g | | | 621,97/500 g |

## Ion exchange resin Roti®change 1 x 8

**200-400 mesh, analytical grade, $Cl^-$-form**

Highly basic anion exchanger.
WGK 3

**Type analysis:**

Appearance. ..... white to light yellow grain
Particle size (mesh). ..... 200-400
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... ≥1,2
Counter ion. ..... $Cl^-$
Matrix: Polystyrene - DVB; Active group: Quaternary ammonium compound type I

| | | | |
|---|---|---|---|
| **6856.4** | 25 g | plastic | 51,50 € |
| **6856.1** | 100 g | plastic | 192,45 € |
| **6856.2** | 250 g | plastic | 392,40 € |
| **6856.3** | 500 g | plastic | 740,70 € |
| Original pack 6 x 500 g | | | 703,67/500 g |

## Ion exchange resin Roti®change 50 W x 4

**100-200 mesh, analytical grade, $H^+$-form**

Highly acidic cation exchanger.
WGK 1

**Warning** H319

**Type analysis:**

Appearance. ..... tan to orange-brown grain
Particle size (mesh). ..... 100-200
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... 1,1
Counter ion. ..... $H^+$
Matrix: Polystyrene - DVB; Active group: sulphonate

| | | | |
|---|---|---|---|
| **6864.4** | 25 g | plastic | 48,30 € |
| **6864.1** | 100 g | plastic | 170,95 € |
| **6864.2** | 250 g | plastic | 353,70 € |
| **6864.3** | 500 g | plastic | 654,70 € |
| Original pack 6 x 500 g | | | 621,97/500 g |

## Ion exchange resin Roti®change 50 W x 8

**50-100 mesh, analytical grade, $H^+$-form**

Highly acidic cation exchanger.
WGK 1

**Warning** H319

**Type analysis:**

Appearance. ..... tan to orange-brown grain
Particle size (mesh). ..... 50-100
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... 1,7
Counter ion. ..... $H^+$
Matrix: Polystyrene - DVB; Active group: sulphonate

| | | | |
|---|---|---|---|
| **6865.4** | 25 g | plastic | 62,25 € |
| **6865.1** | 100 g | plastic | 241,90 € |
| **6865.2** | 250 g | plastic | 504,20 € |
| **6865.3** | 500 g | plastic | 934,20 € |
| Original pack 6 x 500 g | | | 887,49/500 g |

## Ion exchange resin Roti®change 50 W x 8

**100-200 mesh, analytical grade, $H^+$-form**

Highly acidic cation exchanger.
WGK 1

**Warning** H319

**Type analysis:**

Appearance. ..... tan to orange-brown grain
Particle size (mesh). ..... 100-200
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... 1,7
Counter ion. ..... $H^+$
Matrix: Polystyrene - DVB; Active group: sulphonate

| | | | |
|---|---|---|---|
| **6866.4** | 25 g | plastic | 53,65 € |
| **6866.1** | 100 g | plastic | 203,20 € |
| **6866.2** | 250 g | plastic | 428,95 € |
| **6866.3** | 500 g | plastic | 783,70 € |
| Original pack 6 x 500 g | | | 744,52/500 g |

## Ion exchange resin Roti®change 50 W x 8

**200-400 mesh, analytical grade, $H^+$-form**

Highly acidic cation exchanger.
WGK 1

**Warning** H319

**Type analysis:**

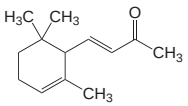
Appearance. ..... tan to orange-brown grain
Particle size (mesh). ..... 200-400
Extractables. ..... <1 mg/g resin
Capacity (eq/l). ..... 1,7
Counter ion. ..... $H^+$
Matrix: Polystyrene - DVB; Active group: sulphonate

| | | | |
|---|---|---|---|
| **6867.4** | 25 g | plastic | 56,90 € |
| **6867.1** | 100 g | plastic | 213,95 € |
| **6867.2** | 250 g | plastic | 456,90 € |
| **6867.3** | 500 g | plastic | 833,15 € |
| Original pack 6 x 500 g | | | 791,49/500 g |

## Ionic Liquids

| Art. No. | Description | Page |
|---|---|---|
| 2010 | 1-Butyl-3-methyl-imidazolium-chloride (BMIM Cl) | 1798 |
| 2012 | 1-Butyl-3-methyl-imidazolium-hexafluorophosphate (BMIM $PF_6$) | 1798 |
| 2014 | 1-Butyl-3-methyl-imidazolium-tetrafluoroborate (BMIM $BF_4$) | 1798 |
| 2015 | 1-Butyl-3-methyl-imidazolium-trifluoromethanesulphonate (BMIM OTf) | 1798 |
| 2021 | 1-Butyl-1-methyl-pyrrolidinium-bis-(trifluoromethylsulphonyl)-imide (BMPyrr BTA) | 1798 |
| 2022 | 1-Butyl-1-methyl-pyrrolidinium-dicyanamide (BMPyrr DCA) | 1798 |
| 2025 | Butyl-trimethyl-ammonium-bis-(trifluoromethylsulphonyl)-imide (N1114 BTA) | 1799 |
| 2028 | Choline-dihydrogenphosphate (Choline DHP) | 1831 |
| 2035 | Ethylammonium-nitrate (EAN) | 1914 |
| 2037 | 1-Ethyl-3-methyl-imidazolium-bromide (EMIM Br) | 1920 |
| 2053 | 1-Ethyl-3-methyl-imidazolium-dicyanamide (EMIM DCA) | 1920 |
| 2054 | 1-Ethyl-3-methyl-imidazolium-ethylsulphate (EMIM $EtOSO_3$) | 1920 |
| 2056 | 1-Ethyl-3-methyl-imidazolium-methanesulphonate (EMIM OMs) | 1920 |
| 2059 | 1-Ethyl-3-methyl-imidazolium-thiocyanate (EMIM SCN) | 1920 |
| 2062 | 1-Ethyl-3-methyl-imidazolium-trifluoromethansulphonate (EMIM OTf) | 1921 |
| 2064 | 1-Hexyl-3-methyl-imidazolium chloride (HMIM Cl) | 1980 |
| 2069 | 1-Hexyl-3-methyl-imidazolium-hexafluorophosphate (HMIM $PF_6$) | 1980 |
| 2070 | 1-Hexyl-3-methyl-imidazolium-tetrafluoroborate (HMIM $BF_4$) | 1980 |
| 2076 | 1-Methyl-3-octyl-imidazolium-hexafluorophosphate (OMIM $PF_6$) | 2076 |
| 2081 | 1-Methyl-3-octyl-imidazolium-tetrafluoroborate (OMIM $BF_4$) | 2076 |
| 2091 | 1-Methyl-3-propyl-imidazolium-iodide (PMIM I) | 2077 |
| 2095 | 1-Methyl-1-propyl-piperidinium-bis-(trifluoromethylsulphonyl)- imide (PMPip BTA) | 2077 |
| 2096 | Triethylsulfonium-bis-(trifluoromethylsulphonyl)-imide (S222 BTA) | 2353 |

## α-Ionone



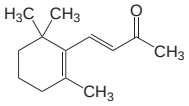
### α-Ionone

**pure**
$C_{13}H_{20}O$
M 192,30 g/mol
D ~0,93
[127-41-3] • EC No. 204-841-6
WGK 2

**Type analysis:**
Appearance. ..... clear, yellowish oil
Density (20 °C). ..... 0,900-0,950 g/cm³
Refractive index (20 °C)..... 1,4900-1,5100
Optical rotation (20 °C). ..... -2° to +2°

| | | | |
|---|---|---|---|
| **3950.1** | 25 ml | glass | 32,15 € |

## β-Ionone



### β-Ionone

**pure**
$C_{13}H_{20}O$
M 192,30 g/mol
D 0,95 • bp 267 °C
mp -35 °C • flp 122 °C
Solubility: insoluble ($H_2O$, 20 °C)
Storage temp.: +4 °C
[79-77-6] • EC No. 201-224-3

**Type analysis:**
Appearance..... clear, yellowish liquid
Relative density (20 °C)..... 0,935-0,955
Refractive index (20 °C). ..... 1,500-1,5300
Optical rotation (20 °C)..... -1° to +1°

| | | | |
|---|---|---|---|
| **3951.1** | 25 ml | glass | 15,60 € |

## Ion Pair Reagents

| Art. No. | Description | Page |
|---|---|---|
| KK50 | Butane-1-sulphonic acid sodium salt | 1794 |
| KK51 | Decane-1-sulphonic acid sodium salt | 1858 |
| KK52 | Dodecane-1-sulphonic acid sodium salt | 1893 |
| KK53 | Heptane-1-sulphonic acid sodium salt | 1974 |
| KK54 | Hexane-1-sulphonic acid sodium salt | 1979 |
| KK55 | Octane-1-sulphonic acid sodium salt | 2108 |
| KK56 | Pentane-1-sulphonic acid sodium salt | 2136 |
| KK57 | Propane-1-sulphonic acid sodium salt | 2179 |

## IPA

▶ Indole-3-propionic acid see p. 2003

## IPA

▶ 2-Propanol see p. 2179
▶ 2-Propanol 70 % see p. 2181

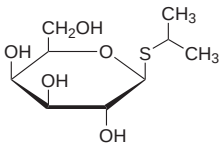
## IPE

▶ Diisopropyl ether see p. 1878

## IPM

▶ Myristic acid isopropyl ester see p. 2087

## IPTG



Isopropyl-β-D-thiogalactopyranoside
$C_9H_{18}O_5S$
M 238,30 g/mol
mp 110-112 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[367-93-1] • EC No. 206-703-0

### IPTG

**≥99 %, BioScience-Grade, dioxane free, animal free**
For molecular biology.

**Guarantee analysis:**
Appearance. ..... off-white cryst. powder
Assay (HPLC). ..... ≥99 %
Water (KF). ..... ≤1,0 %
pH value (5 % in $H_2O$). ..... 5,0-7,0
Solution (5 % in $H_2O$). ..... almost clear, colourless
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$). ..... -34,5° to -28,5°
Dioxane content . ..... none detected
Animal-free. ..... complies

| | | | |
|---|---|---|---|
| **2316.1** | 250 mg | glass | 20,35 € |
| **2316.2** | 1 g | glass | 43,55 € |
| **2316.3** | 5 g | glass | 123,65 € |
| **2316.4** | 25 g | plastic | 418,20 € |
| **2316.5** | 100 g | plastic | 951,40 € |

For further information, please see page 1244

### IPTG

**≥99 %, for biochemistry**

**Guarantee analysis:**
Assay (HPLC). ..... ≥99 %
pH value (5 % in $H_2O$). ..... 5,0-7,0
Water (KF). ..... ≤1 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$). ..... -34,5° to -28,5°
Dioxane content . ..... none detected

| | | | |
|---|---|---|---|
| **CN08.1** | 1 g | glass | 26,35 € |
| **CN08.2** | 5 g | glass | 70,85 € |
| **CN08.3** | 50 g | glass | 499,90 € |
| **CN08.4** | 100 g | glass | 848,20 € |

For further information, please see page 1244

## Iridium Standards

▶ Iridium ICP Standard Solution see p. 2298
▶ Iridium ICP Standard Solution see p. 2303

## Iron granules

### Iron granules
**ROTI®METIC 99,99 % (4N)**
Fe
M 55,8 g/mol
bp 4982 °C
mp 1536 °C
[7439-89-6] • EC No. 231-096-4

**Type analysis:**
Assay (metals basis)..... 99,99 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5631.1** | 5 g | plastic | 41,85 € |
| **5631.2** | 25 g | plastic | 134,40 € |

## Iron

### Iron
**≥99,5 %, p.a., powdered**
Fe
M 55,80 g/mol
D 7,86 • bp 2861 °C
mp 1535 °C
[7439-89-6] • EC No. 231-096-4
UN No. 3089 • ADR 4.1 III

**Danger** H228-H251

**Guarantee analysis:**
Assay..... ≥99,5 %
Carbon (C)..... ≤0,03 %
Oxygen ($O_2$)..... ≤0,25 %
Nitrogen (N)..... ≤0,01 %
Aluminium (Al)..... ≤0,001 %
Arsenic (As)..... ≤0,0002 %
Lead (Pb)..... ≤0,0001 %
Copper (Cu)..... ≤0,001 %
Manganese (Mn)..... ≤0,001 %
Calcium (Ca)..... ≤0,001 %
Chromium (Cr)..... ≤0,002 %
Cobalt (Co)..... ≤0,001 %
Magnesium (Mg)..... ≤0,001 %
Particle size..... ~10 µm

| | | | |
|---|---|---|---|
| **3718.3** | 100 g | plastic | 18,20 € |
| **3718.1** | 250 g | plastic | 33,25 € |
| **3718.4** | 1 kg | plastic | 84,85 € |
| Original pack 6 x 1 kg | | | 80,61/1 kg |
| **3718.2** | 2,5 kg | plastic | 177,40 € |

## Iron, reduced

### Iron, reduced
**≥96 %, powdered, extra pure**
Fe
M 55,80 g/mol
D 7,86 • bp 2861 °C
mp 1535 °C
[7439-89-6] • EC No. 231-096-4

**Type analysis:**
Assay..... ≥96,0 %
Insoluble matter in acid..... ≤1,5 %
Arsenic (As)..... ≤0,001 %
Lead (Pb)..... ≤0,001 %
Mercury (Hg)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **9454.1** | 250 g | plastic | 17,10 € |
| **9454.2** | 1 kg | plastic | 42,90 € |
| Original pack 6 x 1 kg | | | 40,76/1 kg |
| **9454.3** | 2,5 kg | plastic | 81,20 € |

## Iron foil

### Iron foil
NEW
**99,99 % (4N), foil**
Foil 25 mm long, 25 mm wide, 0,25 mm thick.
Fe
M 55,80 g/mol
bp 2861 °C
mp 1535 °C
[7439-89-6] • EC No. 231-096-4

**Type analysis:**
Purity..... 99,99 %

| | | | |
|---|---|---|---|
| **0540.1** | 1 pieces | plastic | 106,35 € |
| **0540.2** | 5 pieces | plastic | 471,95 € |

## Iron wool

### Iron wool
**~97 %**
Steel wool
Fe
M 55,80 g/mol
bp 2861 °C
mp 1535 °C
[7439-89-6] • EC No. 231-096-4

**Type analysis:**
Assay..... ~97 %
Chromium (Cr)..... ≤0,1 %
Carbon (C)..... ≤0,5 %
Copper (Cu)..... ≤0,5 %
Manganese (Mn)..... ≤1,0 %
Molybdenum (Mo)..... ≤0,1 %
Nickel (Ni)..... ≤0,1 %
Phosphorus (P)..... ≤0,1 %
Sulphur (S)..... ≤0,1 %
Silicon (Si)..... ≤0,5 %
Nitrogen (N)..... ≤0,05 %

| | | | |
|---|---|---|---|
| **9588.1** | 100 g | plastic | 11,50 € |
| **9588.2** | 250 g | plastic | 19,60 € |

## Iron Standards
- Iron AAS Standard Solution see p. 2295
- Iron ICP Standard Solution see p. 2298
- Iron ICP Standard Solution see p. 2303

## Iron alum
- Ammonium iron(III) sulphate dodecahydrate see p. 1736

## Iron ammonium alum
- Ammonium iron(III) sulphate dodecahydrate see p. 1736

## Iron(III) ammonium citrate
- Ammonium iron(III) citrate see p. 1735

## Iron ammonium oxalate
- Ammonium iron(III) oxalate trihydrate see p. 1735

## Iron(II) ammonium sulphate
- Ammonium iron(II) sulphate hexahydrate see p. 1736

## Iron(III) ammonium sulphate
- Ammonium iron(III) sulphate dodecahydrate see p. 1736

## Iron(II) chloride hydrate

### Iron(II) chloride hydrate
**≥98 %, extra pure**
Iron dichloride hydrate, Ferrous chloride hydrate
$FeCl_2 \cdot x\ H_2O$
M 126,75 + x $H_2O$ g/mol
D 1,93
mp 105-110 °C
Solubility: 650 g/l ($H_2O$, 25 °C)
EC No. 231-843-4
WGK 1

**Danger** H302-H315-H318

**Type analysis:**
Assay..... ≥98,0 %
Sulphate ($SO_4$)..... ≤0,05 %
Arsenic (As)..... ≤0,001 %
Lead (Pb)..... ≤0,005 %
Copper (Cu)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **8651.1** | 100 g | plastic | 17,10 € |
| **8651.2** | 500 g | plastic | 46,80 € |
| Original pack 6 x 500 g | | | 44,46/500 g |
| **8651.3** | 1 kg | plastic | 70,45 € |
| Original pack 6 x 1 kg | | | 66,93/1 kg |
| **8651.4** | 2,5 kg | plastic | 133,20 € |

## Iron(III) chloride

### Iron(III) chloride
**≥98,5 %, extra pure, anhydrous**
Catalyst
Ferric chloride, Iron trichloride
$FeCl_3$
M 162,2 g/mol
mp 306 °C (dec.)
Solubility: 920 g/l ($H_2O$, 20 °C)
[7705-08-0] • EC No. 231-729-4
UN No. 1773 • ADR 8 III • WGK 1

**Danger** H290-H302-H315-H317-H318

**Type analysis:**
Assay..... ≥98,5 %
Insoluble matter..... ≤0,2 %
Arsenic (As)..... ≤0,001 %
Chromium (Cr)..... ≤0,05 %
Copper (Cu)..... ≤0,01 %
Manganese (Mn)..... ≤0,2 %
Nickel (Ni)..... ≤0,03 %
Lead (Pb)..... ≤0,001 %
Zinc (Zn)..... ≤0,04 %

| | | | |
|---|---|---|---|
| **5192.1** | 250 g | glass | 20,35 € |
| **5192.2** | 500 g | glass | 27,45 € |
| Original pack 6 x 500 g | | | 26,08/500 g |
| **5192.3** | 1 kg | glass | 39,70 € |
| Original pack 6 x 1 kg | | | 37,72/1 kg |

## Iron(III) chloride hexahydrate

Ferric chloride hexahydrate, Iron trichloride hexyhydrate
$FeCl_3 \cdot 6\ H_2O$
M 270,33 g/mol
D 1,82
mp 37 °C
Solubility: 920 g/l ($H_2O$, 20 °C)
[10025-77-1] • EC No. 231-729-4
UN No. 3260 • ADR 8 III • WGK 1
**Danger** H302-H315-H318-H317-H290

### Iron(III) chloride hexahydrate
**≥99 %, p.a.**

**Guarantee analysis:**

| | |
|---|---|
| Assay (iodom.) | ≥99,0 % |
| Phosphorus compounds (as $PO_4$) | ≤0,05 % |
| Iron II (Fe II) | ≤0,005 % |
| Arsenic (As) | ≤0,001 % |
| Copper (Cu) | ≤0,01 % |
| Potassium (K) | ≤0,05 % |
| Lead (Pb) | ≤0,004 % |
| Calcium (Ca) | ≤0,1 % |
| Sodium (Na) | ≤0,1 % |
| Zinc (Zn) | ≤0,007 % |

| | | | |
|---|---|---|---|
| **P742.1** | 250 g | plastic | 27,85 € |
| **P742.2** | 1 kg | plastic | 87,00 € |
| Original pack 6 x 1 kg | | | 82,65/1 kg |
| **P742.5** | 25 kg | plastic | 837,45 € |

### Iron(III) chloride hexahydrate
**≥98 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay (titr.) | ≥98,0 % |
| Insoluble matter | ≤0,05 % |
| Phosphate ($PO_4$) | ≤0,01 % |
| Iron II (Fe II) | ≤0,005 % |
| Arsenic (As) | ≤0,0005 % |
| Lead (Pb) | ≤0,005 % |
| Calcium (Ca) | ≤0,1 % |
| Potassium (K) | ≤0,05 % |
| Copper (Cu) | ≤0,01 % |
| Sodium (Na) | ≤0,1 % |
| Zinc (Zn) | ≤0,01 % |

| | | | |
|---|---|---|---|
| **7119.1** | 1 kg | plastic | 37,55 € |
| Original pack 6 x 1 kg | | | 35,67/1 kg |
| **7119.2** | 2,5 kg | plastic | 73,00 € |
| **7119.5** | 25 kg | plastic | 547,20 € |

### Iron(III) chloride hexahydrate
NEW
**≥98 %, techn.**

**Type analysis:**

| | |
|---|---|
| Assay | ≥98,0 % |
| Iron II (Fe II) | ≤0,01 % |

| | | | |
|---|---|---|---|
| **0617.1** | 1 kg | plastic | 21,40 € |
| Original pack 6 x 1 kg | | | 20,33/1 kg |
| **0617.2** | 2,5 kg | plastic | 42,90 € |
| **0617.3** | 10 kg | plastic | 138,70 € |
| **0617.4** | 25 kg | plastic | 310,70 € |

## Iron(III) chloride solution acc. to Weigert
▶ Hematoxylin solution B acc. to Weigert see p. 1971

## Iron(III) chloride spray solution

### Iron(III) chloride spray solution
**for TLC**
Ready-to-use spray solution for detection of acetylsalicylic acid and paracetamol.
2 g Iron(III) chloride dissolved in 100 ml water.
**Warning** H290-H317-H319

**Type analysis:**

| | |
|---|---|
| TLC-application | complies |

| | | | |
|---|---|---|---|
| **CP34.1** | 100 ml | glass | 36,90 € |

## Iron(III) chloride solution 40 %

### Iron(III) chloride solution 40 %
**40 %**
D ~1,42
[1313-13-9]
UN No. 2582 • ADR 8, III • WGK 1
**Danger** H290-H302-H315-H317-H318

**Type analysis:**

| | |
|---|---|
| Assay (as $FeCl_3$) | 39,0-41,0 % |
| Density | 1,39-1,45 |

| | | | |
|---|---|---|---|
| **7750.1** | 1 l | plastic | 15,60 € |
| Original pack 6 x 1 l | | | 14,82/1 l |
| **7750.2** | 5 l | plastic | 48,95 € |
| Original pack 2 x 5 l | | | 46,50/5 l |
| **7750.3** | 10 l | plastic | 75,15 € |
| **7750.4** | 25 l | plastic | 145,15 € |

## Iron(III) citrate hydrate

### Iron(III) citrate hydrate
**pure**
Ferric citrate
$C_6H_5O_7Fe \cdot x\ H_2O$
M 244,94 + x $H_2O$ g/mol
Solubility: 5 g/l ($H_2O$, 20 °C)
[3522-50-7] • EC No. 222-536-6
WGK 1

**Type analysis:**

| | |
|---|---|
| Assay Fe(III) | 16,5-18,5 % |

| | | | |
|---|---|---|---|
| **9435.1** | 100 g | plastic | 17,10 € |
| **9435.2** | 500 g | plastic | 46,15 € |
| Original pack 6 x 500 g | | | 43,84/500 g |
| **9435.3** | 1 kg | plastic | 78,40 € |
| Original pack 6 x 1 kg | | | 74,48/1 kg |

## Iron dichloride hydrate
▶ Iron(II) chloride hydrate see p. 2010

## Iron(III) EDTA sodium salt trihydrate
▶ Ethylenediamine tetraacetic acid iron(III) sodium salt trihydrate see p. 1917

## Iron(III) nitrate nonahydrate

$Fe(NO_3)_3 \cdot 9\ H_2O$
M 404,0 g/mol
D 1,68 • bp 125 °C (dec.)
mp 47 °C
Solubility: soluble ($H_2O$, 20 °C)
[7782-61-8] • EC No. 233-899-5
UN No. 3260 • ADR 8 II • WGK 1
**Danger** H314

### Iron(III) nitrate nonahydrate
**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,999 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5632.1** | 5 g | plastic | 79,05 € |
| **5632.2** | 25 g | plastic | 299,95 € |

### Iron(III) nitrate nonahydrate
**≥96 %, pure**

**Type analysis:**

| | |
|---|---|
| Assay | ≥96 % |
| Chloride (Cl) | ≤0,01 % |
| Sulphate ($SO_4$) | ≤0,03 % |

| | | | |
|---|---|---|---|
| **CN84.1** | 500 g | plastic | 20,35 € |
| Original pack 6 x 500 g | | | 19,33/500 g |
| **CN84.2** | 1 kg | plastic | 32,80 € |
| Original pack 6 x 1 kg | | | 31,16/1 kg |
| **CN84.3** | 5 kg | plastic | 116,00 € |

## Iron(II) oxalate dihydrate

### Iron(II) oxalate dihydrate
**≥98 %, extra pure**
Ferrous oxalate
$FeC_2O_4 \cdot 2\ H_2O$
M 179,89 g/mol
D 2,3
mp 190 °C (dec.)
Solubility: insoluble ($H_2O$, 20 °C)
[6047-25-2] • EC No. 208-217-4
WGK 1
**Warning** H302+H312

**Type analysis:**

| | |
|---|---|
| Assay | ≥98,0 % |
| Assay Fe(II) | ≥30,5 % |
| Chloride (Cl) | ≤0,05 % |
| Sulphate ($SO_4$) | ≤0,1 % |
| Arsenic (As) | ≤0,0005 % |
| Heavy metals (as Pb) | ≤0,01 % |
| Ash content (800 °C) | 44,0-45,0 % |

| | | | |
|---|---|---|---|
| **9464.1** | 100 g | plastic | 16,70 € |
| **9464.2** | 500 g | plastic | 40,75 € |
| Original pack 6 x 500 g | | | 38,71/500 g |
| **9464.3** | 1 kg | plastic | 69,80 € |
| Original pack 6 x 1 kg | | | 66,31/1 kg |

## Iron(III) oxide

Ferric oxide
$Fe_2O_3$
M 159,69 g/mol
Solubility: insoluble ($H_2O$, 20 °C)
[1309-37-1] • EC No. 215-168-2
**Warning** H315-H319-H335

### Iron(III) oxide
**ROTI®METIC 99,98 % (3N8)**

**Type analysis:**
Assay (metals basis)..... 99,98 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5634.1** | 5 g | plastic | 35,40 € |
| **5634.2** | 25 g | plastic | 111,30 € |

### Iron(III) oxide
**≥96 %, red**

**Guarantee analysis:**
Assay (iodom.)..... ≥96 %
In $H_2O$ insoluble matter..... ≤1 %
Loss on ignition..... ≤0,5 %
Phosphate ($PO_4$)..... ≤0,3 %
Sulphate ($SO_4$)..... ≤0,5 %
Manganese (Mn)..... ≤0,25 %

| | | | |
|---|---|---|---|
| **4463.2** | 100 g | plastic | 20,65 € |
| **4463.1** | 250 g | plastic | 29,60 € |

## Iron(III) phosphate hydrate

### Iron(III) phosphate hydrate
**extra pure**
Ferric orthophosphate
$FePO_4 \cdot x\ H_2O$
M 150,83 + x $H_2O$ g/mol
Solubility: insoluble ($H_2O$, 20 °C)
[10045-86-0] • EC No. 233-149-7
WGK 1

**Type analysis:**
Assay (Fe)..... 26,0-32,0 %
Arsenic (As)..... ≤0,0005 %
Lead (Pb)..... ≤0,0005 %
Mercury (Hg)..... ≤0,0005 %
Loss on ignition (1 h, 800 °C)..... ≤32,5 %

| | | | |
|---|---|---|---|
| **9358.1** | 100 g | plastic | 16,90 € |
| **9358.2** | 500 g | plastic | 45,05 € |
| Original pack 6 x 500 g | | | 42,80/500 g |
| **9358.3** | 1 kg | plastic | 74,75 € |
| Original pack 6 x 1 kg | | | 71,01/1 kg |

## Iron(II) sulphate heptahydrate

Ferrous sulphate heptahydrate
$FeSO_4 \cdot 7\ H_2O$
M 278,02 g/mol
D 1,89
mp >60 °C
Solubility: ~400 g/l ($H_2O$, 20 °C)
[7782-63-0] • EC No. 231-753-5
WGK 1
**Warning** H302-H315-H319

### Iron(II) sulphate heptahydrate
**≥99 %, p.a., ACS**
For the detection of nitrites and nitrates, photography.

**Guarantee analysis:**
Assay (perm.)..... ≥99,0 %
pH value (5 % in water)..... 3,0-4,0
In $H_2O$ insoluble matter..... ≤0,005 %
Total nitrogen (as N)..... ≤0,001 %
Chloride (Cl)..... ≤0,001 %
Phosphate ($PO_4$)..... ≤0,0005 %
Arsenic (As)..... ≤0,00004 %
Cadmium (Cd)..... ≤0,005 %
Calcium (Ca)..... ≤0,005 %
Copper (Cu)..... ≤0,001 %
Potassium (K)..... ≤0,002 %
Manganese (Mn)..... ≤0,03 %
Lead (Pb)..... ≤0,0005 %
Chromium (Cr)..... ≤0,008 %
Iron III (Fe III)..... ≤0,1 %
Magnesium (Mg)..... ≤0,002 %
Sodium (Na)..... ≤0,002 %
Zinc (Zn)..... ≤0,002 %

| | | | |
|---|---|---|---|
| **P015.1** | 500 g | plastic | 24,20 € |
| Original pack 6 x 500 g | | | 22,99/500 g |
| **P015.2** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **P015.3** | 2,5 kg | plastic | 76,25 € |
| **P015.5** | 25 kg | plastic | 493,45 € |

### Iron(II) sulphate heptahydrate
**≥99,5 %, Ph.Eur., USP**

**Guarantee analysis:**
Assay..... 99,5-104,5 %
Identity..... complies
pH value (5 %)..... 3,0-4,0
Chloride (Cl)..... ≤0,02 %
Arsenic (As)..... ≤0,0003 %
Lead (Pb)..... ≤0,0002 %
Chromium (Cr)..... ≤0,005 %
Iron III (Fe III)..... ≤0,3 %
Copper (Cu)..... ≤0,005 %
Manganese (Mn)..... ≤0,1 %
Nickel (Ni)..... ≤0,005 %
Mercury (Hg)..... ≤0,0001 %
Zinc (Zn)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **3722.1** | 1 kg | plastic | 19,90 € |
| Original pack 6 x 1 kg | | | 18,91/1 kg |
| **3722.2** | 5 kg | plastic | 62,25 € |
| **3722.5** | 25 kg | plastic | 212,35 € |

## Iron(III) sulphate hydrate

### Iron(III) sulphate hydrate
**80 %, pure**
Ferric sulphate
$Fe_2(SO_4)_3 \cdot x\ H_2O$
M 399,88 + x $H_2O$ g/mol
D 3,10
mp 480 °C (dec.)
Solubility: 4400 g/l (anhydr., $H_2O$, 20° C)
[15244-10-7] • EC No. 233-072-9
WGK 1
**Danger** H302-H315-H318

**Type analysis:**
Assay (dry substance)..... 78,0-82,0 %
Arsenic (As)..... ≤0,001 %
Lead (Pb)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **0492.1** | 250 g | plastic | 21,40 € |
| **0492.2** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **0492.3** | 1 kg | plastic | 48,30 € |
| Original pack 6 x 1 kg | | | 45,89/1 kg |
| **0492.4** | 2,5 kg | plastic | 95,70 € |

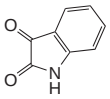
## Iron trichloride

▶ Iron(III) chloride see p. 2010
▶ Iron(III) chloride hexahydrate see p. 2011

## Isatidine

▶ Retrorsine-N-oxide see p. 2197

## Isatin



### Isatin
**≥98 %, for biochemistry**
Reagent for the spectrophotometric determination of thiophene and proline.
2,3-Indolinedione
$C_8H_5NO_2$
M 147,13 g/mol
mp 198-202 °C (dec.) • flp >210 °C
Solubility: 1,9 g/l ($H_2O$, 20 °C)
[91-56-5] • EC No. 202-077-8

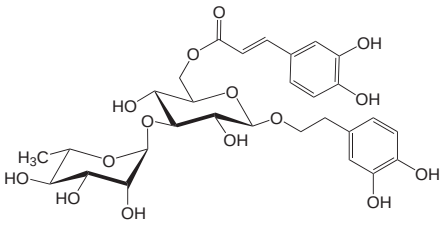
**Typ analysis:**
Appearance..... orange to reddish
Assay (HPLC)..... ≥98 %
Solution (1 % in methanol)..... orange to reddish, clear to almost clear
Water (KF)..... ≤1,0 %
Sulphated ash..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4155.1** | 25 g | glass | 12,40 € |
| **4155.2** | 100 g | glass | 33,90 € |

## Iscove's Modified Dulbecco's Medium

▶ Roti®-CELL Iscove's MDM see p. 2207

## Isoacteoside



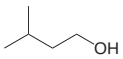
### Isoacteoside
**ROTICHROM® HPLC**
From *Harpagophytum procumbens.*
$C_{29}H_{36}O_{15}$
M 624,60 g/mol
Storage temp.: +4 °C
[61303-13-7]

**Type analysis:**
Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **T896.1** | 20 mg | glass | 385,95 € |

## Isoamyl acetate
▶ Acetic acid isoamyl ester see p. 1695

## Isoamyl alcohol



3-Methyl-1-butanol, iso-Amyl alcohol, Isopentyl alcohol
$C_5H_{12}O$
M 88,15 g/mol
D 0,81 • bp 131-132 °C
mp -117,2 °C • flp 42 °C
Solubility: 30 g/l ($H_2O$, 20 °C)
[123-51-3] • EC No. 204-633-5
UN No. 1105 • ADR 3 III • WGK 1
**Danger** H226-H332-H335-EUH066

### Isoamyl alcohol
**ROTIPURAN® ≥98,5 %, p.a., ACS**

**Guarantee analysis:**
Assay (GC)..... ≥98,5 %
Density (d 20 °C/4 °C)..... 0,809-0,812
Water..... ≤0,15 %
Acidity..... ≤0,002 meq/g
1-Pentanol (GC)..... ≤0,5 %
Acids, ester (as pentyl acetate)..... ≤0,2 %
Carbonylic compounds (as HCHO)..... ≤0,1 %
Calcium (Ca)..... ≤0,00005 %
Cadmium (Cd)..... ≤0,000005 %
Cobalt (Co)..... ≤0,000002 %
Chromium (Cr)..... ≤0,000002 %
Copper (Cu)..... ≤0,000002 %
Iron (Fe)..... ≤0,00001 %
Magnesium (Mg)..... ≤0,00001 %
Manganese (Mn)..... ≤0,000002 %
Nickel (Ni)..... ≤0,000002 %
Lead (Pb)..... ≤0,000001 %
Zinc (Zn)..... ≤0,00001 %
Evaporation residue..... ≤0,003 %

| | | | |
|---|---|---|---|
| **T870.1** | 500 ml | glass | 40,75 € |
| **T870.2** | 1 l | glass | 76,90 € |
| Original pack 6 x 1 l | | | 73,06/1 l |
| **T870.3** | 2,5 l | glass | 169,35 € |
| Original pack 4 x 2,5 l | | | 160,88/2,5 l |

### Isoamyl alcohol
**≥98,5 %, for synthesis**

**Typ analysis:**
Assay (GC)..... ≥98,5 %

| | | | |
|---|---|---|---|
| **8930.1** | 1 l | glass | 47,20 € |
| Original pack 6 x 1 l | | | 44,84/1 l |
| **8930.2** | 2,5 l | glass | 85,90 € |
| Original pack 4 x 2,5 l | | | 81,61/2,5 l |

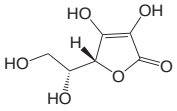
### Isoamyl alcohol
**ROTICHROM® GC**
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**
Purity (GC)..... ≥99 %

| | | | |
|---|---|---|---|
| **4260.1** | 1 g | plastic | 81,20 € |

## Isoamyl caprate
▶ Capric acid isoamyl ester see p. 1810

## D-Isoascorbic acid



### D-Isoascorbic acid
**≥98 %, cryst.**
$C_6H_8O_6$
M 176,13 g/mol
mp 168-172 °C
[89-65-6] • EC No. 201-928-0
WGK 1

**Type analysis:**
Assay (titr.)..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=10 in $H_2O$)..... -19° to -16°

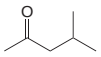
| | | | |
|---|---|---|---|
| **6265.1** | 25 g | plastic | 21,40 € |

## Isobutanol
▶ 2-Methyl-1-propanol see p. 2077

## Isobutyl acetate
▶ Acetic acid isobutyl ester see p. 1696

## Isobutyl alcohol
▶ 2-Methyl-1-propanol see p. 2077

## Isobutyl methylketone



4-Methyl-2-pentanone, MIBK, Isopropylacetone
$C_6H_{12}O$
M 100,16 g/mol
D ~0,80 • bp 116-118 °C
mp -83,5 °C • flp 14 °C
[108-10-1] • EC No. 203-550-1
UN No. 1245 • ADR 3 II • WGK 1
**Danger**
H225-H319-H332-H335-EUH066

### Isobutyl methylketone
NEW
**≥99,5 %, VLSI Grade**

**Guarantee analysis:**
Assay..... ≥99,5 %
Bead number (≥0,5 µm)..... ≤250 p/ml
Water..... ≤0,1 %
Evaporation residue..... ≤0,0005 %
Colour (APHA)..... ≤10
Chloride (Cl)..... ≤0,0001 %
Sulphate ($SO_4$)..... ≤0,00005 %
Aluminium (Al)..... ≤50 ppb
Antimony (Sb)..... ≤10 ppb
Arsenic (As)..... ≤10 ppb
Barium (Ba)..... ≤20 ppb
Beryllium (Be)..... ≤10 ppb
Bismuth (Bi)..... ≤10 ppb
Lead (Pb)..... ≤10 ppb
Boron (B)..... ≤20 ppb
Cadmium (Cd)..... ≤10 ppb
Calcium (Ca)..... ≤50 ppb
Chromium (Cr)..... ≤10 ppb
Iron (Fe)..... ≤50 ppb
Gallium (Ga)..... ≤10 ppb
Gold (Au)..... ≤10 ppb
Potassium (K)..... ≤20 ppb
Cobalt (Co)..... ≤10 ppb
Copper (Cu)..... ≤10 ppb
Lithium (Li)..... ≤10 ppb
Magnesium (Mg)..... ≤20 ppb
Manganese (Mn)..... ≤10 ppb
Molybdenum (Mo)..... ≤10 ppb
Sodium (Na)..... ≤50 ppb
Nickel (Ni)..... ≤10 ppb
Silver (Ag)..... ≤10 ppb
Strontium (Sr)..... ≤10 ppb
Titanium (Ti)..... ≤10 ppb
Vanadium (V)..... ≤10 ppb
Zinc (Zn)..... ≤20 ppb
Tin (Sn)..... ≤10 ppb
Zirconium (Zr)..... ≤10 ppb

| | | | |
|---|---|---|---|
| **0061.1** | 2,5 l | plastic | 74,20 € |
| Original pack 4 x 2,5 l | | | 70,49/2,5 l |

## Isobutyl methylketone

**ROTIPURAN® ≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay (GC). ≥99,0 %
Density (d 20 °C/4 °C). 0,798-0,802
Colour (APHA). ≤15
Water. ≤0,1 %
Acidity. ≤0,002 meq/g
Non volatile matter. ≤0,005 %
Aluminium (Al). ≤0,00005 %
Barium (Ba). ≤0,00001 %
Calcium (Ca). ≤0,00005 %
Cadmium (Cd). ≤0,000005 %
Cobalt (Co). ≤0,000002 %
Chromium (Cr). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,000002 %
Lead (Pb). ≤0,00001 %
Zinc (Zn). ≤0,00001 %

| | | | |
|---|---|---|---|
| **0338.1** | 1 l | glass | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |
| **0338.2** | 2,5 l | glass | 69,80 € |
| Original pack 4 x 2,5 l | | | 66,31/2,5 l |

## Isobutyl methylketone

**≥99 %, for synthesis**

**Type analysis:**

Assay (GC). ≥99 %
Density (d 20 °C/4 °C). 0,798-0,802
Evaporation residue. ≤0,005 %
Water. ≤0,1 %

| | | | |
|---|---|---|---|
| **4371.1** | 1 l | glass | 31,10 € |
| Original pack 6 x 1 l | | | 29,55/1 l |
| **4371.2** | 2,5 l | glass | 60,10 € |
| Original pack 4 x 2,5 l | | | 57,10/2,5 l |

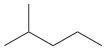
## Isobutyltrimethylmethane

▶ Isooctane see p. 2015

## Isodulcit

▶ L(+)-Rhamnose monohydrate see p. 2197

## Isohexane



iso-Hexane, 2-Methylpentane
$C_6H_{14}$-Isomer
M 86,18 g/mol
D 0,65 • bp 60,3 °C
mp -154 °C • flp -20 °C
[92112-69-1] • EC No. 295-570-2
UN No. 1208 • ADR 3 II • WGK 2
**Danger**
H225-H304-H315-H336-H411

## Isohexane

**ROTISOLV® HPLC**

**Guarantee analysis:**

Assay $C_6H_{14}$-isomers (GC). ≥99,0 %
Isohexane (GC). ≥70 %
n-Hexane (GC). ≤0,5 %
Water (KF). ≤0,005 %
Non volatile matter. ≤0,0002 %

Transmission:
245 nm. ≥98 %
220 nm. ≥80 %
210 nm. ≥60 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **T176.2** | 1 l | glass | 52,60 € |
| Original pack 6 x 1 l | | | 49,97/1 l |
| **T176.1** | 2,5 l | glass | 103,75 € |
| Original pack 4 x 2,5 l | | | 98,56/2,5 l |

For further information, please see page 1590

## Isohexane

**ROTISOLV® ≥96 %, Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Assay $C_6H_{14}$-isomers (GC). ≥96,0 %
Colour (APHA). ≤5
Water (KF). ≤0,005 %
Free acid (as $CH_3COOH$). ≤0,001 %
Evaporation residue. ≤0,0001 %
GC/FID suitability (as 2-octanol). ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤2 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
GC/ECD volatile impurities (as ethylene dibromide). ≤5 ng/ml
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ≤0,05 mg/l
PAH-test (less than 2 ppb, HPLC). complies
Fluorescence (as quinine):
254 nm. ≤1 ppb
365 nm. ≤1 ppb

| | | | |
|---|---|---|---|
| **7576.1** | 2,5 l | glass | 89,80 € |
| Original pack 4 x 2,5 l | | | 85,31/2,5 l |

## Isohexane

**ROTISOLV® ≥99 %, Pestilyse®**

For residue and environmental analysis

**Guarantee analysis:**

Assay $C_6H_{14}$-isomers (GC). ≥99,0 %
Water (KF). ≤0,005 %
Free acid (as $CH_3COOH$). ≤0,002 %
Evaporation residue. ≤0,0002 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

| | | | |
|---|---|---|---|
| **T904.1** | 2,5 l | glass | 87,00 € |
| Original pack 4 x 2,5 l | | | 82,65/2,5 l |

## Isohexane

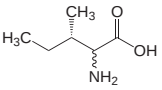
**≥98 %, for synthesis**

**Type analysis:**

Assay. ≥98,0 %
Water (KF). ≤0,01 %

| | | | |
|---|---|---|---|
| **2667.1** | 1 l | glass | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |
| **2667.2** | 2,5 l | glass | 55,40 € |
| Original pack 4 x 2,5 l | | | 52,63/2,5 l |
| **2667.3** | 10 l | tinplate | 177,40 € |

## DL-Isoleucine



## DL-Isoleucine

**≥98,5 %, for biochemistry**

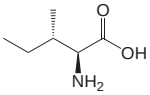
2-Amino-3-methylvaleric acid
$C_6H_{13}NO_2$
M 131,17 g/mol
Storage temp.: +4 °C
[443-79-8] • EC No. 207-139-8
WGK 3

**Type analysis:**

Appearance. white to off-white powder
Assay. ≥98,5 %
Identity (IR). complies
Heavy metals (as Pb). ≤0,001 %
Ash content. ≤0,1 %
Loss on drying. ≤0,5 %

| | | | |
|---|---|---|---|
| **8598.1** | 10 g | plastic | 24,65 € |
| **8598.2** | 50 g | plastic | 91,30 € |
| **8598.3** | 100 g | plastic | 163,95 € |

## L-Isoleucine



(2S,3S)-2-Amino-3-methylvaleric acid
$C_6H_{13}NO_2$
M 131,18 g/mol
mp 168-170 °C (subl.) • flp 284 °C
Solubility: ~40 g/l ($H_2O$, 20 °C)
[73-32-5] • EC No. 200-798-2
WGK 1

## L-Isoleucine

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ≤6,0 E.U./g
Assay. ≥99 %
Loss on drying. ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. +39,5° to +41,5°
Foreign amino acids. complies
Ammonium ($NH_4$). ≤0,02 %
Chloride (Cl). ≤0,02 %
Sulphate ($SO_4$). ≤0,02 %
Heavy metals (as Pb). ≤0,001 %
Iron (Fe). ≤0,001 %

| | | | |
|---|---|---|---|
| **1698.1** | 25 g | plastic | 23,15 € |
| **1698.2** | 100 g | plastic | 56,90 € |
| **1698.3** | 500 g | plastic | 228,45 € |
| Original pack 6 x 500 g | | | 217,03/500 g |

## L-Isoleucine

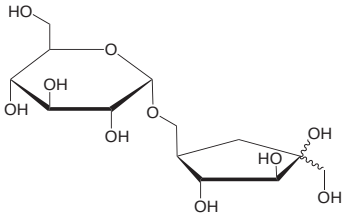
**≥98,5 %, USP, for biochemistry**

**Guarantee analysis:**

Appearance. ..... white cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Specific rotation $[\alpha]_D^{20}$. ..... +39,5° to +41,5°
pH value ..... 5,5-6,5
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **3922.1** | 10 g | glass | 13,90 € |
| **3922.2** | 100 g | plastic | 44,00 € |
| **3922.3** | 1 kg | plastic | 349,40 € |
| Original pack 6 x 1 kg | | | 331,93/1 kg |

## Isomaltulose



## Isomaltulose

**≥99 %, for biochemistry**

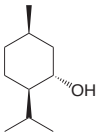
Palatinose®
$C_{12}H_{22}O_{11} \cdot H_2O$
M 350,32 g/mol
mp 122-123 °C
[13718-94-0] • EC No. 237-282-1

**Typ analysis:**

Assay (HPLC). ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **8400.1** | 25 g | plastic | 28,95 € |
| **8400.2** | 100 g | plastic | 81,60 € |

## (+)-Isomenthol



## (+)-Isomenthol

**ROTICHROM® GC**

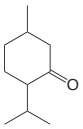
Reference substance for GC.
(1R,3S,4R)-p-Menthan-3-ol
$C_{10}H_{20}O$
M 156,27 g/mol
bp 218-219 °C
mp 77-83 °C
Storage temp.: +4 °C
[23283-97-8] • EC No. 245-554-6
WGK 1

**Type analysis:**

Purity (GC, Isomers). ..... ≥90 %

| | | | |
|---|---|---|---|
| **5422.1** | 50 mg | glass | 461,20 € |

## Isomenthone



## Isomenthone

**ROTICHROM® GC**

Reference substance for GC.
Natural, isolated from oil of peppermint.
$C_{10}H_{18}O$
M 154,24 g/mol
Storage temp.: +4 °C
[491-07-6] • EC No. 207-727-4
WGK 1

**Type analysis:**

Purity (GC). ..... ≥75 %

| | | | |
|---|---|---|---|
| **6458.1** | 1 g | plastic | 81,20 € |

## Isooctane



2,2,4-Trimethylpentane, iso-Octane,
Isobutyltrimethylmethane
$C_8H_{18}$
M 114,23 g/mol
D 0,69 • bp 99 °C
mp -107 °C • flp -12 °C
[540-84-1] • EC No. 208-759-1
UN No. 1262 • ADR 3 II • WGK 2

**Danger**

H225-H304-H400-H410-H315-H336

## Isooctane

**ROTISOLV® HPLC**

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,005 %
Free acid. ..... ≤0,002 %
Non volatile matter. ..... ≤0,0002 %
Layer thickness d = 1 cm water in comparison
Transmission:
>250 nm. ..... ≥99 %
235 nm. ..... ≥95 %
225 nm. ..... ≥80 %
215 nm. ..... ≥50 %
205 nm. ..... ≥10 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **7340.1** | 2,5 l | glass | 103,75 € |
| Original pack 4 x 2,5 l | | | 98,56/2,5 l |

For further information, please see page 1590

## Isooctane

**ROTISOLV® ≥99,7 %, Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Assay (GC). ..... ≥99,7 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,01 %
Free acid (as $CH_3COOH$). ..... ≤0,001 %
Evaporation residue. ..... ≤0,0001 %
GC/FID suitability (as 2-octanol). ..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ..... ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤5 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ..... ≤0,05 mg/l
GC/ECD volatile impurities (as ethylene dibromide). ..... ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). ..... complies
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb

| | | | |
|---|---|---|---|
| **7580.1** | 2,5 l | glass | 107,00 € |
| Original pack 4 x 2,5 l | | | 101,65/2,5 l |

## Isooctane

**ROTISOLV® ≥99,5 %, Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,02 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
GC/ECD (individual signal as lindane). ..... ≤5 ng/l
GC/PND (individual signal as ethylparathion). ..... ≤10 ng/l

| | | | |
|---|---|---|---|
| **T167.1** | 2,5 l | glass | 102,15 € |
| Original pack 4 x 2,5 l | | | 97,04/2,5 l |

## Isooctane

**ROTISOLV® ≥99,8 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC). ..... ≥99,8 %
Water (KF). ..... ≤0,005 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Fluorescence (as quinine):
254 nm. ..... ≤1,0 ppb
365 nm. ..... ≤1,0 ppb
Transmission:
255 nm. ..... ≥98 %
235 nm. ..... ≥90 %
225 nm. ..... ≥80 %
215 nm. ..... ≥50 %
205 nm. ..... ≥10 %

| | | | |
|---|---|---|---|
| **CP80.1** | 2,5 l | glass | 106,35 € |
| Original pack 4 x 2,5 l | | | 101,03/2,5 l |

## Isooctane

**ROTIPURAN® ≥99,5 %, p.a., ACS**

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Colour (APHA). ..... ≤10
Density (d 20 °C/4 °C). ..... 0,692-0,693
Acidity. ..... ≤0,0003 meq/g
Water (KF). ..... ≤0,01 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %
Evaporation residue. ..... ≤0,001 %
Sulphur compounds (as S). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **6889.1** | 1 l | glass | 53,65 € |
| Original pack 6 x 1 l | | | 50,97/1 l |
| **6889.2** | 2,5 l | glass | 114,95 € |
| Original pack 4 x 2,5 l | | | 109,20/2,5 l |

## Isooctane

**≥99,5 %, for synthesis**

**Type analysis:**

Assay (GC). ..... ≥99,5 %
Density (15 °C). ..... 0,694-0,698
Lead (Pb). ..... ≤0,002 %
n-Heptane. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9860.1** | 1 l | glass | 32,15 € |
| Original pack 6 x 1 l | | | 30,54/1 l |
| **9860.3** | 2,5 l | glass | 65,05 € |
| Original pack 4 x 2,5 l | | | 61,80/2,5 l |
| **9860.2** | 10 l | tinplate | 205,90 € |

## Isoorientin

▶ Homoorientin see p. 1982

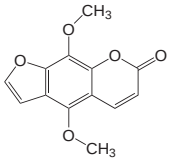
## Isopentane

▶ 2-Methylbutane see p. 2072

## Isopentyl alcohol

▶ Isoamyl alcohol see p. 2013

## Isopimpinellin



## Isopimpinellin

**ROTICHROM® HPLC**

Reference substance for HPLC.
Dimethylpsoralen
$C_{13}H_{10}O_5$
M 246,22 g/mol
mp 147-148 °C
Storage temp.: +4 °C
[482-27-9]
UN No. 2811 • ADR 6.1 II

**Danger** H301+H311-H330

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **8854.1** | 10 mg | glass | 181,70 € |

## Isopropanol

▶ 2-Propanol see p. 2179
▶ 2-Propanol 70 % see p. 2181

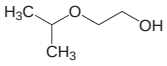
## Isopropanol deuterated

▶ 2-Propanol D1 see p. 2181
▶ 2-Propanol D8 see p. 2181

## Isopropenyl acetate

▶ Acetic acid isopropenyl ester see p. 1696

## 2-Isopropoxyethanol



## 2-Isopropoxyethanol

**≥99 %, pure**

Ethylene glycol monoisopropyl ether, Isopropylglycol
$C_5H_{12}O_2$
M 104,15 g/mol
D 0,90 • bp 145 °C
mp -60 °C • flp 46 °C
[109-59-1] • EC No. 203-685-6
UN No. 3271 • ADR 3 III • WGK 1

**Warning**
H226-H312+H332-H315-H319

**Type analysis:**

Assay. ..... ≥99,0 %
Colour (Hazen). ..... ≤10
Water. ..... ≤0,15 %
Acid content (as $CH_3COOH$). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **8706.1** | 1 l | glass | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **8706.2** | 2,5 l | glass | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |

## Isopropylacetone

▶ Isobutyl methylketone see p. 2013

## Isopropyl alcohol

▶ 2-Propanol see p. 2179
▶ 2-Propanol 70 % see p. 2181

## Isopropyl ether

▶ Diisopropyl ether see p. 1878

## Isopropylglycol

▶ 2-Isopropoxyethanol see p. 2016

## 2-Isopropyl-5-methylphenol

▶ Thymol see p. 2342

## 5-Isopropyl-2-methyl-phenol

▶ Carvacrol see p. 1815

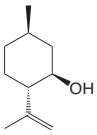
## Isopropyl myristate

▶ Myristic acid isopropyl ester see p. 2087

## Isopropyl-ß-D-thiogalacto-pyranoside

▶ IPTG see p. 2009

## Isopulegol



## Isopulegol

**ROTICHROM® GC**

Reference substance for GC.
p-Menth-8-en-3-ol
$C_{10}H_{18}O$
M 154,25 g/mol
D 0,911 • bp 93 °C
flp 78 °C
Storage temp.: +4 °C
[89-79-2] • EC No. 201-940-6

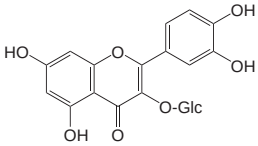
**Warning** H302-H315-H319-H335

**Type analysis:**

Purity (GC, Isomers). ..... ≥99 %

| | | | |
|---|---|---|---|
| **8030.2** | 100 mg | glass | 83,75 € |

## Isoquercitrin



Trifoliin, Quercetin-3-glucoside
$C_{21}H_{20}O_{12}$
M 464,38 g/mol
mp 215-235 °C
[482-35-9] • EC No. 244-488-5
WGK 1

## Isoquercitrin

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤10,0 %
Assay (qNMR). ..... ≥85,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE24.1** | 10 mg | glass | 869,70 € |

## Isoquercitrin

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC). ..... ≥80,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC24.1** | 25 mg | glass | 338,65 € |

## Isoquercitrin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Tiliae officinalis.*
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **7586.1** | 10 mg | glass | 117,75 € |

## Isoquercitrin
**ROTICHROM® TLC**
Reference substance for thin layer chromatography.
From *Tiliae officinalis.*
Storage temp.: +4 °C

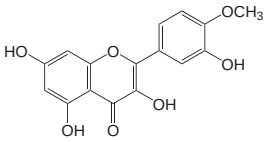
| | | | |
|---|---|---|---|
| **5573.1** | 50 mg | glass | 71,95 € |

## Isoquercitrin
**ROTICHROM® ~CHR**
Storage temp.: +4 °C

**Type analysis:**
Appearance..... yellow powder
Melting range..... 215-235 °C

| | | | |
|---|---|---|---|
| **6527.1** | 250 mg | glass | 203,20 € |

## Isorhamnetin



$C_{16}H_{12}O_7$
M 316,27 g/mol
mp ~305 °C
Storage temp.: +4 °C
[480-19-3] • EC No. 207-545-5

## Isorhamnetin
**ROTICHROM® HPLC**
Reference substance for HPLC.

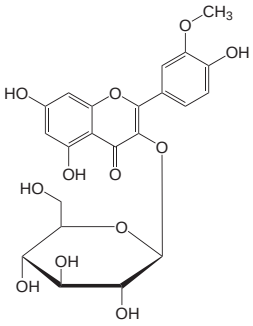
**Type analysis:**
Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **7589.1** | 10 mg | glass | 228,45 € |

## Isorhamnetin
**ROTICHROM® CHR**

| | | | |
|---|---|---|---|
| **6528.1** | 100 mg | glass | 385,95 € |

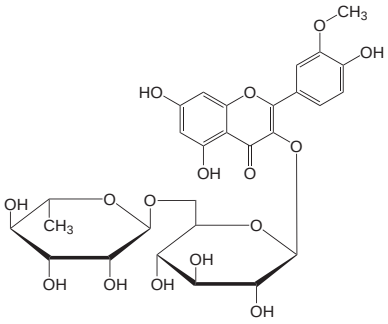
## Isorhamnetin-3-glucoside



## Isorhamnetin-3-glucoside
**ROTICHROM® ~CHR**
$C_{22}H_{22}O_{12}$
M 478,41 g/mol
mp 205-207 °C
[5041-82-7]

| | | | |
|---|---|---|---|
| **9386.2** | 10 mg | glass | 313,40 € |

## Isorhamnetin-3-rutinoside

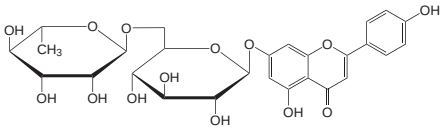


## Isorhamnetin-3-rutinoside
**ROTICHROM® HPLC**
Reference substance for HPLC.
Narcisin
$C_{28}H_{32}O_{16}$
M 624,56 g/mol
mp 173-174 °C
Storage temp.: +4 °C
[604-80-8]

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **9388.2** | 10 mg | glass | 246,20 € |

## Isorhoifolin

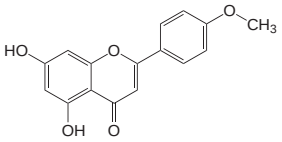


## Isorhoifolin
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{27}H_{30}O_{14}$
M 578,53 g/mol
Storage temp.: +4 °C
[552-57-8] • EC No. 209-015-9

**Type analysis:**
Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **6989.1** | 10 mg | glass | 385,95 € |

## Isosakuranetin

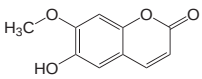


## Isosakuranetin
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{16}H_{14}O_5$
M 286,29 g/mol
mp 193-194 °C
Storage temp.: +4 °C
[480-43-3] • EC No. 207-551-8

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7498.1** | 10 mg | glass | 171,50 € |

## Isoscopoletin

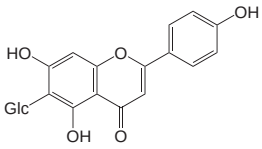


## Isoscopoletin
**ROTICHROM® CHR**
$C_{10}H_8O_4$
M 192,17 g/mol
mp 185 °C
[776-86-3] • EC No. 212-282-4

| | | | |
|---|---|---|---|
| **5883.2** | 10 mg | glass | 174,70 € |

## Isothymol
▶ Carvacrol see p. 1815

## Isovitexin



Saponaretin
$C_{21}H_{20}O_{10}$
M 432,38 g/mol
mp 220-221 °C
[38953-85-4]
WGK 3

### Isovitexin
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤5,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE25.1** | 10 mg | glass | 848,20 € |

### Isovitexin
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC25.1** | 25 mg | glass | 364,45 € |

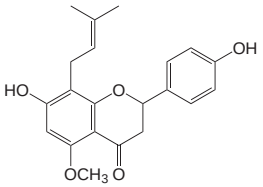
### Isovitexin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Saponaria officinalis.*
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **6412.1** | 5 mg | glass | 228,45 € |

## Isovitexin-7-O-glucoside
▶ Saponarin see p. 2242

## Isoxanthohumol

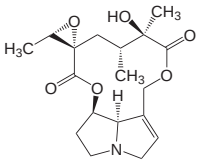


### Isoxanthohumol
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Humulus lupulus.*
$C_{21}H_{22}O_5$
M 354,40 g/mol
Storage temp.: +4 °C
[70872-29-6]
WGK 1

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **2824.1** | 10 mg | glass | 228,45 € |

## Jacobine



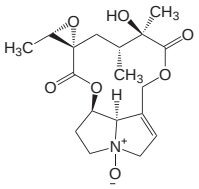
### Jacobine
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Senecio jacobea.*
$C_{18}H_{25}NO_6$
M 351,39 g/mol
mp 218-222 °C
Storage temp.: +4 °C
[6870-67-3]
WGK 1

**Warning** H302

**Type analysis:**
Purity (HPLC)..... ≥98,0 %

| | | | |
|---|---|---|---|
| **1963.1** | 5 mg | glass | 317,15 € |

## Jacobine N-oxide



### Jacobine N-oxide
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Senecio jacobea*
$C_{18}H_{25}NO_7$
M 367,39 g/mol
Storage temp.: +4 °C
WGK 1

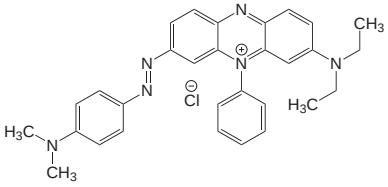
**Warning** H302

**Type analysis:**
Purity (HPLC)..... ≥96,0 %

| | | | |
|---|---|---|---|
| **1970.1** | 5 mg | glass | 327,90 € |

## Jacodin
▶ Seneciphylline see p. 2246

## Janus green B (C.I. 11050)



### Janus green B (C.I. 11050)
**for microscopy**
Oxidized indicator blue, reduced indicator pink
Diazin Green S
$C_{30}H_{31}ClN_6$
M 511,07 g/mol
Solubility: 30 g/l ($H_2O$)
[2869-83-2] • EC No. 220-695-6
WGK 3

**Type analysis:**
Appearance..... dark green to black powder

| | | | |
|---|---|---|---|
| **7697.1** | 5 g | glass | 24,65 € |
| **7697.2** | 25 g | glass | 60,10 € |
| **7697.3** | 100 g | glass | 198,90 € |

For further information, please see page 1464

## Jenner Stain

### Jenner Stain
**for microscopy**

Mixture of eosin, methylene blue, Azure A, B and C

[62851-42-7]

WGK 3

**Type analysis:**

Appearance. ..... dark green to black powder
Appearance of solution (0,1 % in MeOH)..... clear to opaque, dark blue

| | | | |
|---|---|---|---|
| **7698.1** | 5 g | glass | 13,90 € |
| **7698.2** | 25 g | glass | 24,65 € |
| **7698.3** | 100 g | glass | 60,10 € |

For further information, please see page 1464

## Jodine

▶ Iodine see p. 2006

## Jojoba oil

### Jojoba oil
**virgin**

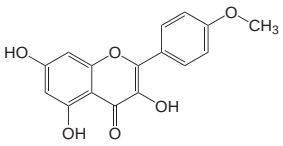
D 0,87 • bp 398 °C
mp ~7 °C • flp >295 °C
[61789-91-1] • EC No. 289-964-3

**Type analysis:**

Appearance. ..... clear, yellow to brown oil
Density (20 °C). .....0,860-0,870 g/cm$^3$
Refractive index (20 °C)..... 1,450-1,470
Optical rotation (20 °C). ..... -2° to +2°

| | | | |
|---|---|---|---|
| **7526.1** | 100 ml | glass | 23,15 € |
| **7526.2** | 1 l | glass | 142,45 € |
| Original pack 6 x 1 l | | | 135,33/1 l |

## Kaempferide




### Kaempferide
**ROTICHROM® HPLC**

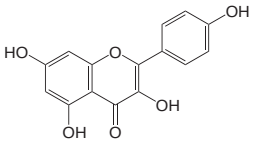
Reference substance for HPLC.
4'-Methoxy-3,5,7-trihydroxyflavone
$C_{16}H_{12}O_6$
M 300,27 g/mol
Storage temp.: +4 °C
[491-54-3] • EC No. 207-738-4

**Type analysis:**

Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7501.1** | 10 mg | glass | 170,95 € |

## Kaempferol




3,4',5,7-Tetrahydroxyflavone, Robigenin, Trifolitin
$C_{15}H_{10}O_6$
M 286,24 g/mol
mp 250-280 °C (dec.)
[520-18-3] • EC No. 208-287-6
WGK 3

**Warning** H315-H319-H335-H341

### Kaempferol
**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC)..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF)..... ≤5,0 %
Assay (qNMR)..... ≥80,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE26.1** | 25 mg | glass | 848,20 € |

### Kaempferol
**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC26.1** | 25 mg | glass | 170,95 € |

### Kaempferol
**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Aesculus hippocastanum.*
Storage temp.: +4 °C

**Type analysis:**

Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **7503.1** | 10 mg | glass | 111,30 € |

### Kaempferol
**ROTICHROM® ~CHR**

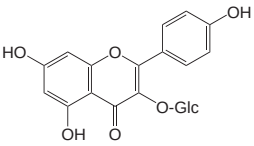
Storage temp.: +4 °C

**Type analysis:**

Appearance..... fine yellow powder
Melting point (dec.)..... 250-280 °C

| | | | |
|---|---|---|---|
| **5859.1** | 500 mg | glass | 244,60 € |

## Kaempferol-3-glucoside




### Kaempferol-3-glucoside
**ROTICHROM® HPLC**

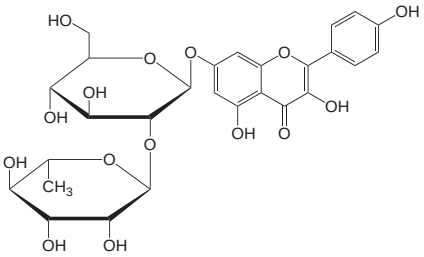
Reference substance for HPLC.
From *Aesculus hippocastanum.*
Astragalin
$C_{21}H_{20}O_{11}$
M 448,39 g/mol
Storage temp.: +4 °C
[480-10-4]

**Type analysis:**

Purity (HPLC).....≥99 %

| | | | |
|---|---|---|---|
| **9321.1** | 5 mg | glass | 228,45 € |

## Kaempferol-7-neohesperidoside



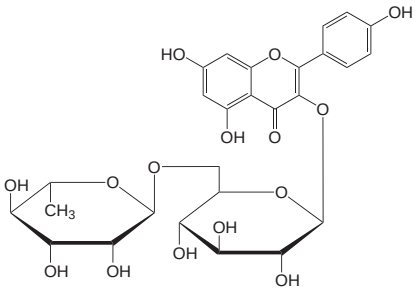

### Kaempferol-7-neohesperidoside
**ROTICHROM® ~CHR**

Kaempferol-7-O-α-L-rhamnosido-D-glucoside
$C_{27}H_{30}O_{15} \cdot x\ H_2O$
M 594,53 + x $H_2O$ g/mol
mp 255-257 °C
[17353-03-6]

**Warning** H302

| | | | |
|---|---|---|---|
| **9467.1** | 10 mg | glass | 149,45 € |

## Kaempferol-3-rhamnosido-glucoside



### Kaempferol-3-rhamnosido-glucoside

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{27}H_{30}O_{15}$
M 594,5 g/mol
Storage temp.: +4 °C
[17650-84-9]

**Warning** H302

**Type analysis:**
Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **4526.1** | 10 mg | glass | 450,45 € |

## Kaempferol-7-O-α-L-rhamnosido-D-glucoside

▶ Kaempferol-7-neohesperidoside see p. 2019

## Kaiser's glycerol gelatine phenol-free

### Kaiser's glycerol gelatine phenol-free

**for microscopy**
Aqueous mounting medium.
D 1,11
WGK 1

**Type analysis:**
Appearance. .... light yellowish coloured, solid medium
Glycerol. ..... 40-45 %
Gelatine. ..... 7-9 %
Refractive index (20 °C)..... 1,44-1,47
Density (20 °C). ..... 1,11

| | | | |
|---|---|---|---|
| **6474.1** | 50 ml | glass | 17,75 € |

For further information, please see page 1476

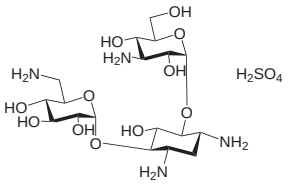
## Kanamycin

▶ Kanamycin sulphate see p. 2020

## Kanamycin-LB Selective Agar

▶ LB-Agar (Lennox) / Kana50 see p. 2031
▶ LB-Agar (Luria/Miller) / Kana50 see p. 2031

## Kanamycin sulphate



### Kanamycin sulphate

**≥750 I.U./mg, for biochemistry**
Bacteriostatic antibiotic
Kanamycin
$C_{18}H_{36}N_4O_{11} \cdot H_2SO_4$
M 582,58 g/mol
mp 250 °C
Storage temp.: +20 °C
[25389-94-0] • EC No. 246-933-9
WGK 1

**Danger** H360D

**Typ analysis:**
Assay. ..... ≥750 I.U./mg
pH value (1 % in $H_2O$, 25 °C)..... 6,5-8,5
Ash content. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ . .....+112° to +123°

| | | | |
|---|---|---|---|
| **T832.1** | 5 g | plastic | 21,40 € |
| **T832.2** | 25 g | plastic | 59,05 € |
| **T832.3** | 50 g | plastic | 97,75 € |
| **T832.4** | 100 g | plastic | 162,90 € |

For further information, please see page 1430

## Kantharidin

▶ Cantharidin see p. 1809

## Kaolin

▶ Bolus see p. 1782

## Karl Fischer Roti®hydroquant C2

### Karl Fischer Roti®hydroquant C2

**2 mg $H_2O$/ml, free of pyridine**
Single-component reagent.
D 1,2
UN No. 1760 • ADR 8 II • WGK 2

**Danger** H314-H332-H360D-H373

**Guarantee analysis:**
Efficiency..... ≥2 mg $H_2O$/ml
at the time of manufacture

| | | | |
|---|---|---|---|
| **T194.1** | 1 l | glass | 96,65 € |
| Original pack 6 x 1 l | | | 91,82/1 l |

For further information, please see page 1634

## Karl Fischer Roti®hydroquant C5

### Karl Fischer Roti®hydroquant C5

**5 mg $H_2O$/ml, free of pyridine**
Single-component reagent.
D 1,2
UN No. 1760 • ADR 8 II • WGK 2

**Danger** H314-H332-H360D-H372

**Guarantee analysis:**
Efficiency. ..... ≥5 mg $H_2O$/ml
at the time of manufacture

| | | | |
|---|---|---|---|
| **T190.1** | 1 l | glass | 104,20 € |
| Original pack 6 x 1 l | | | 98,99/1 l |

For further information, please see page 1634

## Karl Fischer Roti®hydroquant C5 K

### Karl Fischer Roti®hydroquant C5 K

**5 mg $H_2O$/ml, for aldehydes and ketones**
Single-component reagent.
UN No. 1760 • ADR 8 (III) • WGK 2

**Danger** H314-H360D-H372

**Guarantee analysis:**
Efficiency. ..... ≥5 mg $H_2O$/ml
at the time of manufacture

| | | | |
|---|---|---|---|
| **5211.1** | 1 l | glass | 108,50 € |
| Original pack 6 x 1 l | | | 103,08/1 l |

For further information, please see page 1634

## Karl Fischer Roti®hydroquant coulo A

### Karl Fischer Roti®hydroquant coulo A

**for coulometric KF titration**
Anolyte for cells with diaphragm. Use with Karl Fischer Roti®hydroquant coulo CG.
D 1,07 • bp 59 °C
flp 11 °C
UN No. 3286 • ADR 3 (6.1 + 8) II • WGK 3

**Danger** H225-H302-H311+H331-H314-H351-H360D-H370-H372

**Guarantee analysis:**
Application test. .....complies

| | | | |
|---|---|---|---|
| **9957.1** | 500 ml | glass | 75,15 € |

For further information, please see page 1636

## Karl Fischer Roti®hydroquant coulo AG

### Karl Fischer Roti®hydroquant coulo AG

**for coulometric KF titration**

Single-component reagent for cells without diaphragm.

D 0,93 • bp 63 °C

flp 14 °C

UN No. 3286 • ADR 3 (6.1 + 8) II • WGK 1

 **Danger** H225-H301+H311+H331-H314-H360D-H370-H373

**Guarantee analysis:**

Application test. ..... complies

| | | | |
|---|---|---|---|
| **9854.1** | 500 ml | glass | 75,15 € |

For further information, please see page 1636

## Karl Fischer Roti®hydroquant coulo CG

### Karl Fischer Roti®hydroquant coulo CG

**for coulometric KF titration**

Catholyte for cells with diaphragm. Use with Karl Fischer Roti®hydroquant coulo A or coulo Oil.

D 1,06 • bp 63 °C

flp 14 °C

UN No. 1230 • ADR 3 (6.1) II • WGK 1

 **Danger**

H225-H301+H311+H331-H319-H370

**Guarantee analysis:**

Application test. ..... complies

| | | | |
|---|---|---|---|
| **9861.1** | 100 ml | glass | 75,15 € |

For further information, please see page 1636

## Karl Fischer Roti®hydroquant coulo Oil

### Karl Fischer Roti®hydroquant coulo Oil

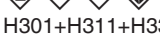
**for coulometric KF titration**

Anolyte for cells with diaphragm. Use with Karl Fischer Roti®hydroquant coulo CG.

D 0,98

flp 8 °C

UN No. 3286 • ADR 3 (6.1 + 8) II • WGK 3

 **Danger** H225-H301+H311+H331-H304-H314-H335-H351-H360D-H370-H372

**Guarantee analysis:**

Application test. ..... complies

| | | | |
|---|---|---|---|
| **9960.1** | 100 ml | glass | 26,80 € |

For further information, please see page 1636

## Karl Fischer methanol

### Karl Fischer methanol Roti®hydroquant D

**dry, for KF titration**

Solvent component

Methanol, Methyl alcohol

$CH_4O$

M 32,04 g/mol

D 0,79 • bp 64,5 °C

flp 11 °C

[67-56-1] • EC No. 200-659-6

UN No. 1230 • ADR 3 (6.1) II • WGK 1

 **Danger**

H225-H301+H311+H331-H370

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %

Water ($H_2O$). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **T193.1** | 1 l | glass | 25,30 € |
| Original pack 6 x 1 l | | | 24,04/1 l |
| **T193.2** | 2,5 l | glass | 48,95 € |
| Original pack 4 x 2,5 l | | | 46,50/2,5 l |

For further information, please see page 1634

## Karl Fischer Roti®hydroquant S

### Karl Fischer Roti®hydroquant S

**for KF titration**

Solvent component.

D 1,09

flp 11 °C

UN No. 3286 • ADR 3 (6.1) (8) II • WGK 1

 **Danger**

H225-H301+H311+H331-H314-H360D-H370

**Guarantee analysis:**

Application test. ..... complies

| | | | |
|---|---|---|---|
| **T192.1** | 1 l | glass | 44,65 € |
| Original pack 6 x 1 l | | | 42,42/1 l |

For further information, please see page 1634

## Karl Fischer Roti®hydroquant S CM

### Karl Fischer Roti®hydroquant S CM

**for KF titration**

Solvent component

For oils and fats

UN No. 1992 • ADR 3 (6.1) III • WGK 3

 **Danger** H226-H302+H312-H315-H319-H331-H351-H360D-H370-H372

**Guarantee analysis:**

Application test. ..... complies

| | | | |
|---|---|---|---|
| **5218.1** | 1 l | glass | 37,55 € |
| Original pack 6 x 1 l | | | 35,67/1 l |

For further information, please see page 1634

## Karl Fischer Roti®hydroquant T

flp 11 °C

UN No. 1992 • ADR 3 (6.1) II • WGK 2

 **Danger**

H225-H301+H311+H331-H370-H373

### Karl Fischer Roti®hydroquant T2

**2 mg $H_2O$/ml, free of pyridine**

Titrant component

Two-components reagent

**Guarantee analysis:**

Efficiency. ..... ≥2 mg $H_2O$/ml at the time of manufacture

| | | | |
|---|---|---|---|
| **X947.1** | 1 l | glass | 51,50 € |
| Original pack 6 x 1 l | | | 48,93/1 l |

For further information, please see page 1634

### Karl Fischer Roti®hydroquant T5

**5 mg $H_2O$/ml, free of pyridine**

Titrant component

Two-components reagent

**Guarantee analysis:**

Efficiency. ..... ≥5 mg $H_2O$/ml at the time of manufacture

| | | | |
|---|---|---|---|
| **T191.1** | 1 l | glass | 45,70 € |
| Original pack 6 x 1 l | | | 43,42/1 l |

For further information, please see page 1634

## Karl Fischer Roti®hydroquant Working Medium K

### Karl Fischer Roti®hydroquant Working Medium K

**for KF titration for aldehydes and ketones**

Solvent component.

Use with Karl Fischer Roti®hydroquant C5 K.

UN No. 2810 • ADR 6.1 I • WGK 3

 **Danger** H300+H310+H330-H315-H319-H351-H361d-H372

**Guarantee analysis:**

Application test. ..... complies

| | | | |
|---|---|---|---|
| **5215.1** | 1 l | glass | 69,35 € |
| Original pack 6 x 1 l | | | 65,88/1 l |

For further information, please see page 1634

## Karl Fischer Roti®hydroquant standard sodium tartrate dihydrate

### Karl Fischer Roti®hydroquant standard sodium tartrate dihydrate

**≥99 %, for KF titration**

Primary standard substance for Karl Fischer titration.

$C_4H_4Na_2O_6 \cdot 2\ H_2O$
M 230,08 g/mol
mp 150 °C
Solubility: 290 g/l ($H_2O$, 20 °C)
[6106-24-7] • EC No. 212-773-3
WGK 1

**Guarantee analysis:**

Assay (perchloric acidim). .....99,0-101,0 %
Loss on drying (150 °C). ..... 15,66 ±0,05 %

| | | | |
|---|---|---|---|
| **5229.1** | 100 g | glass | 37,55 € |

For further information, please see page 1635

## Karl Fischer Roti®hydroquant water standard 1.0

### Karl Fischer Roti®hydroquant water standard 1.0

**1 mg $H_2O$/g**

Water standard for KF coulometry
D 1,02
UN No. 2222 • ADR 3 III • WGK 2

**Warning** H226

**Guarantee analysis:**

Water content. .....1,0 ±0,03 mg $H_2O$/g

| | | | |
|---|---|---|---|
| **9971.1** | 10 x 4 ml | glass | 48,30 € |

For further information, please see page 1635

## Karl Fischer Roti®hydroquant water standard 10.0

### Karl Fischer Roti®hydroquant water standard 10.0

**10 mg $H_2O$/g**

Water standard
UN No. 1993 • ADR 3 (III) • WGK 2

**Danger**

H226-H315-H318-H335-H336

**Guarantee analysis:**

Water content. .....10,0 ±0,1 mg $H_2O$/g

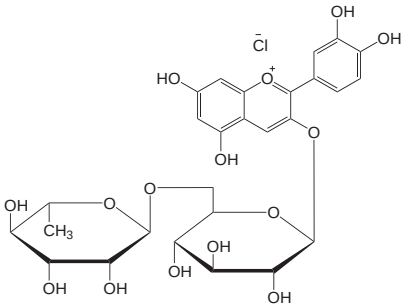
| | | | |
|---|---|---|---|
| **5219.1** | 10 x 10 ml | glass | 59,05 € |

For further information, please see page 1635

## Karmin

▶ Carmine (C.I. 75470) see p. 1814

## Keracyanine chloride



### Keracyanine chloride

**ROTICHROM® HPLC**

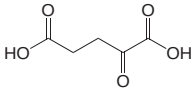
Reference substance for HPLC.
$C_{27}H_{31}ClO_{15}$
M 630,98 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[18719-76-1] • EC No. 242-528-6

**Type analysis:**

Purity (HPLC). ..... ≥96,5 %

| | | | |
|---|---|---|---|
| **6134.2** | 10 mg | glass | 217,70 € |

## α-Ketoglutaric acid



### α-Ketoglutaric acid

**≥99 %, for biochemistry**

2-Oxoglutaric acid
$C_5H_6O_5$
M 146,10 g/mol
mp 113-117 °C
Storage temp.: +4 °C
[328-50-7] • EC No. 206-330-3
WGK 1

**Danger** H318

**Type analysis:**

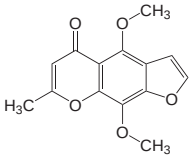
Assay. ..... ≥99,0 %
Heavy metals..... ≤0,001 %
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **5901.1** | 100 g | plastic | 56,90 € |

## α-Ketopropionic acid

▶ Pyruvic acid see p. 2187

## Khellin



### Khellin

**≥98 %, for biochemistry**

From *Amni Visnaga*.
$C_{14}H_{12}O_5$
M 260,24 g/mol
mp 150-153 °C
[82-02-0] • EC No. 201-392-8
UN No. 2811 • ADR 6.1 III

**Danger** H301-H315

**Typ analysis:**

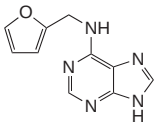
Appearance. .....light yellow powder
Assay (HPLC). .....≥98,0 %
Sulphated ash. .....≤0,1 %
Heavy metals. .....≤0,001 %

| | | | |
|---|---|---|---|
| **5911.1** | 10 g | glass | 46,15 € |
| **5911.2** | 50 g | glass | 180,10 € |

## Kieselguhr

▶ Celite® see p. 1819

## Kinetin



### Kinetin

**≥98 %, for biochemistry**

N6-Furfuryladenine, 6-Furfurylaminopurine
$C_{10}H_9N_5O$
M 215,22 g/mol
mp 269-271 °C (dec.)
Storage temp.: +4 °C
[525-79-1] • EC No. 208-382-2
WGK 1

**Typ analysis:**

Assay (HPLC). .....≥98 %
Solution (1 % in 1 mol/l NaOH).....colourless
Solution (1 % in 1 mol/l HCl).....colourless
Water (KF). .....≤0,5 %

| | | | |
|---|---|---|---|
| **4142.1** | 1 g | glass | 20,35 € |
| **4142.2** | 5 g | glass | 51,50 € |

## King's B Medium (Base)

### King's B Medium (Base)

**DEV, EN ISO 16266:2008, for microbiology**

For confirmation of *Pseudomonas aeruginosa* in water samples.

Application: Use 38 g for 990 ml agar. Add 10 ml glycerol.

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Peptone. ..... 20 g/l
di-Potassium hydrogen phosphate. ..... 1,5 g/l
Magnesium sulphate heptahydrate. ..... 1,5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **CP64.1** | 500 g | plastic | 160,20 € |
| Original pack 6 x 500 g | | | 152,19/500 g |

For further information, please see page 1385

## Kjeldahl tablets antifoam

### Kjeldahl tablets antifoam

**Tablet 1 g**

For determination of nitrogen.

WGK 1

**Type analysis:**

Appearance. ..... white tablets
Composition: $Na_2SO_4$, silicone antifoam

| | | | |
|---|---|---|---|
| **8225.1** | 250 pieces | plastic | 97,75 € |
| **8225.2** | 1000 pieces | plastic | 289,20 € |

For further information, please see page 1643

## Kjeldahl tablets C

### Kjeldahl tablets C

**Tablet 5,1 g**

For determination of nitrogen.

UN No. 3077 • ADR 9 III • WGK 3

**Warning** H319-H411

**Type analysis:**

Appearance. ..... light blue tablets
Composition: $K_2SO_4$, $CuSO_4 \cdot 5\ H_2O$

| | | | |
|---|---|---|---|
| **8241.1** | 250 pieces | plastic | 110,65 € |
| **8241.2** | 1000 pieces | plastic | 332,20 € |

For further information, please see page 1643

## Kjeldahl tablets CK

### Kjeldahl tablets CK

**Tablet 3,9 g**

For determination of nitrogen.

UN No. 3077 • ADR 9 III • WGK 3

**Danger** H318-H410

**Type analysis:**

Appearance. ..... blue tablets
Composition: $K_2SO_4$, $CuSO_4 \cdot 5\ H_2O$

| | | | |
|---|---|---|---|
| **8243.1** | 250 pieces | plastic | 110,65 € |
| **8243.2** | 1000 pieces | plastic | 332,20 € |

For further information, please see page 1643

## Kjeldahl tablets CT

### Kjeldahl tablets CT

**Tablet 5,3 g**

For determination of nitrogen.

UN No. 3077 • ADR 9 III • WGK 3

**Warning** H319-H410

**Type analysis:**

Appearance. ..... light blue tablets
Composition: $K_2SO_4$, $CuSO_4 \cdot 5\ H_2O$, $TiO_2$

| | | | |
|---|---|---|---|
| **9637.1** | 250 pieces | plastic | 110,65 € |
| **9637.2** | 1000 pieces | plastic | 332,20 € |

For further information, please see page 1643

## Kjeldahl tablets CX

### Kjeldahl tablets CX

**Tablet 5,5 g**

For determination of nitrogen.

UN No. 3077 • ADR 9 III • WGK 3

**Danger** H318-H410

**Type analysis:**

Appearance. ..... blue tablets
Composition: $K_2SO_4$, $CuSO_4 \cdot 5\ H_2O$

| | | | |
|---|---|---|---|
| **8236.1** | 250 pieces | plastic | 110,65 € |
| **8236.2** | 1000 pieces | plastic | 332,20 € |

For further information, please see page 1643

## Kjeldahl tablets (free of mercury and selenium)

WGK 2

H412

### Kjeldahl tablets (free of mercury and selenium)

**Tablet 5 g**

For determination of nitrogen.

**Type analysis:**

Appearance. ..... light grey tablets
Composition: $TiO_2$, $CuSO_4$, $K_2SO_4$ and $Na_2SO_4$

| | | | |
|---|---|---|---|
| **HN19.1** | 250 pieces | plastic | 128,90 € |
| **HN19.2** | 1000 pieces | plastic | 450,45 € |

For further information, please see page 1643

### Kjeldahl tablets (free of mercury and selenium)

**Tablet 2,5 g**

For determination of nitrogen.

**Type analysis:**

Appearance. ..... light grey tablets
Composition: $TiO_2$, $CuSO_4$, $K_2SO_4$ and $Na_2SO_4$

| | | | |
|---|---|---|---|
| **HN20.1** | 250 pieces | plastic | 98,80 € |
| **HN20.2** | 1000 pieces | plastic | 310,70 € |

For further information, please see page 1643

## Kjeldahl tablets (Missouri catalyst)

### Kjeldahl tablets (Missouri catalyst)

**Tablet 2,5 g**

For determination of nitrogen.

WGK 2

H412

**Type analysis:**

Appearance. ..... blue tablets
Composition: acc. to Missouri ($K_2SO_4$, $Na_2SO_4$ and $CuSO_4$)

| | | | |
|---|---|---|---|
| **HN22.1** | 250 pieces | plastic | 89,15 € |
| **HN22.2** | 1000 pieces | plastic | 295,65 € |

For further information, please see page 1643

## Kjeldahl tablets ST

### Kjeldahl tablets ST

**Tablet 3,5 g**

For determination of nitrogen.

WGK 1

**Type analysis:**

Appearance. ..... grey tablets
Composition: $K_2SO_4$, Se

| | | | |
|---|---|---|---|
| **9693.1** | 250 pieces | plastic | 110,65 € |
| **9693.2** | 1000 pieces | plastic | 332,20 € |

For further information, please see page 1643

## Kjeldahl tablets TCT

### Kjeldahl tablets TCT

**Tablet 3,71 g**

For determination of nitrogen.

UN No. 3077 • ADR 9 III • WGK 3

**Warning** H319-H410

**Type analysis:**

Appearance. ..... light blue tablets
Composition: $K_2SO_4$, $CuSO_4 \cdot 5\ H_2O$, $TiO_2$

| | | | |
|---|---|---|---|
| **9763.1** | 250 pieces | plastic | 110,65 € |
| **9763.2** | 1000 pieces | plastic | 332,20 € |

For further information, please see page 1643

## Kjeldahl tablets (Wieninger catalyst)

### Kjeldahl tablets (Wieninger catalyst)

**Tablet 2,5 g**

For determination of nitrogen.

WGK 2

H412

**Type analysis:**

Appearance. ..... grey tablets
Composition: acc. to Wieninger ($Na_2SO_4$, $CuSO_4$ and Se)

| | | | |
|---|---|---|---|
| **HN21.1** | 250 pieces | plastic | 100,95 € |
| **HN21.2** | 1000 pieces | plastic | 332,20 € |

For further information, please see page 1643

## Kligler Iron Agar

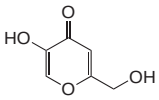
### Kligler Iron Agar
**for microbiology**
For differentiation of gram-negative enterobacteria.
Application: Use 52 g for 1 l agar.
Double Sugar Iron Agar, **KIA**
Storage temp.: +20 °C
WGK 1

**Formulation:**
Peptone mixture..... 20 g/l
Lactose..... 10 g/l
Sodium chloride..... 5 g/l
Glucose..... 1 g/l
Ammonium iron(III) citrate..... 0,5 g/l
Sodium thiosulphate..... 0,5 g/l
Phenol red..... 0,025 g/l
Agar..... 15 g/l
pH value..... 7,4 ±0,2

| | | | |
|---|---|---|---|
| **5758.1** | 500 g | plastic | 85,90 € |
| Original pack 6 x 500 g | | | 81,61/500 g |

For further information, please see page 1386

## Kojic acid



### Kojic acid
**>98 %, for biochemistry**
5-Hydroxy-2-(hydroxymethyl)-4H-pyran-4-one
$C_6H_6O_4$
M 142,11 g/mol
mp 154-158 °C
[501-30-4] • EC No. 207-922-4
WGK 1

**Type analysis:**
Assay (titr.)..... >98,0 %
Melting point..... 154-158 °C

| | | | |
|---|---|---|---|
| **5927.1** | 10 g | glass | 28,50 € |
| **5927.2** | 50 g | glass | 53,25 € |

## Komplexon®
▶ Nitrilotriacetic acid see p. 2098

## Koser Citrate Agar (modified)
▶ Simmons Citrate Agar see p. 2264

## Kovacs' Reagent

### Kovacs' Reagent
**for microbiology**
Media supplement for detection of microbial indole.
100 ml Kovacs' Reagent is sufficient for approx. 2 l medium.
Indole Reagent
Storage temp.: +4 °C
UN No. 2920 • ADR 8 (3) II • WGK 1
**Danger**
H226-H290-H302-H315-H318-H335-H336

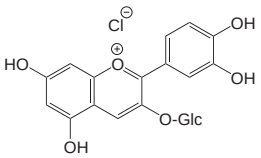
**Type analysis:**
Appearance..... yellowish, clear liquid
4-(Dimethylamino)benzaldehyde..... 50 g/l
1-Butanol..... 75 %
Hydrochloric acid (37 %)..... 25 %
pH value..... >1

| | | | |
|---|---|---|---|
| **2950.1** | 100 ml | glass | 45,05 € |

For further information, please see page 1411

## K-Oxyma
▶ Ethyl cyanoglyxylate-2-oxyme potassium salt (K-Oxyma) see p. 1914

## Kuromanin chloride

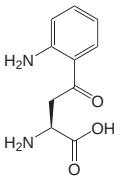


### Kuromanin chloride
**ROTICHROM® HPLC**
Reference substance for HPLC.
Cyanidin-3-O-glucoside
$C_{21}H_{21}ClO_{11}$
M 484,84 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[7084-24-4] • EC No. 230-384-7

**Type analysis:**
Purity (HPLC)..... ≥97 %

| | | | |
|---|---|---|---|
| **6136.2** | 10 mg | glass | 220,95 € |

## L-Kynurenine



### L-Kynurenine
**≥98 %, for biochemistry**
(*S*)-2-Amino-4-(2-aminophenyl)-4-oxo-butanoic acid, (*S*)-Kynurenine
$C_{10}H_{12}N_2O_3$
M 208,22 g/mol
[2922-83-0]
WGK 3

**Type analysis:**
Appearance..... slightly yellow to light yellow powder
Assay (titr.)..... ≥98,0 %
Appearance of solution (50 mg/ml in 0,5 M HCl)..... dark yellow to yellow orange
Water (KF)..... ≤5,0 %

| | | | |
|---|---|---|---|
| **8456.1** | 100 mg | glass | 57,55 € |
| **8456.2** | 250 mg | glass | 107,40 € |
| **8456.3** | 500 mg | glass | 192,45 € |

## (*S*)-Kynurenine
▶ L-Kynurenine see p. 2024

## Lab
▶ Rennin see p. 2195

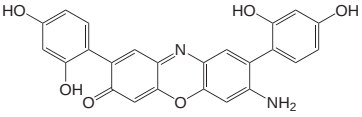
## Label remover

### Label remover
**pure vegetable**
Dipentene
D 0,84 • bp 178 °C
flp 52 °C
UN No. 2319 • ADR 3 III • WGK 3
**Danger**
H226-H304-H315-H317-H410

| | | | |
|---|---|---|---|
| **2958.1** | 1 l | tinplate | 20,10 € |

For further information, please see page 1121

## Lacmoid



### Lacmoid
**p.a.**
Indicator pH 4,4-6,4
Resorcin blue
$C_{24}H_{16}N_2O_6$
M 428,39 g/mol
[42249-61-6] • EC No. 255-736-7
WGK 3
**Warning** H315-H319-H335

**Type analysis:**
Appearance..... dark blue to black powder
Appearance of solution (0,1 % in MeOH)..... opaque, dark blue
pH-transition range..... 4,4 (red)-6,4 (blue)

| | | | |
|---|---|---|---|
| **7699.1** | 5 g | glass | 14,20 € |
| **7699.2** | 25 g | glass | 24,20 € |
| **7699.3** | 100 g | glass | 60,10 € |

## Lacmus
▶ Litmus (C.I. 1242) see p. 4017

## Lactalbumin

### Lactalbumin
**for microbiology**
Storage temp.: +20 °C
[68458-87-7] • EC No. 270-615-9
WGK 3

**Type analysis:**
Total nitrogen..... ≥10 %
Amino nitrogen..... ≥4,8 %
Loss on drying..... ≤6 %
Ash..... ≤15 %
pH (2 % solution)..... 6,5-7,5

| | | | |
|---|---|---|---|
| **7597.1** | 250 g | plastic | 72,60 € |
| **7597.2** | 500 g | plastic | 129,55 € |
| Original pack 6 x 500 g | | | 123,07/500 g |

For further information, please see page 1329

## γ-Lactame

▶ 2-Pyrrolidone see p. 2187

## Lactate Standards

▶ Lactate IC Standard Solution see p. 2311

## Lactate dehydrogenase (LDH)

### Lactate dehydrogenase (LDH)

**≥290 U/mg protein**
From porcine heart, freeze-dried
LDH, LD, Lactic dehydrogenase
Storage temp.: -20 °C •
Transport temp.: room temp.
[9001-60-9] • EC No. 232-617-8
WGK 1

**Type analysis:**

Appearance. ..... white powder
Activity. ..... ≥290 U/mg protein
Pyruvate kinase. ..... ≤0,01 %
Alanine aminotransferase (GPT). ..... ≤0,02 %
Malate dehydrogenase. ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **6060.1** | 0,05 MU | plastic | 123,55 € |

For further information, please see page 1277

## Lactic acid

### Lactic acid

**80 %, of that ≥95 % L(+)-lactic acid**
2-Hydroxypropionic acid, Sarcolactic acid
$C_3H_6O_3$
M 90,1 g/mol
D 1,2
[79-33-4] • EC No. 201-196-2
WGK 1

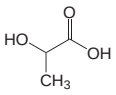
**Danger** H318-H315

**Type analysis:**

Appearance. ..... clear, light, viscous, colourless or pale yellow solution
Assay (GC, isomeres) ..... 79,5-80,5 %, of that ≥95 % L(+)-lactic acid
Colour (APHA). ..... ≤50
Density (20 °C). ..... 1,18-1,20
Sulphated ash. ..... ≤0,1 %
Arsenic (As). ..... ≤0,0001 %
Calcium (Ca). ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %
Heavy metals. ..... ≤0,001 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,002 %
Reducing substances . ..... complies

| | | | |
|---|---|---|---|
| **8460.1** | 1 l | plastic | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **8460.2** | 5 l | plastic | 98,80 € |
| Original pack 2 x 5 l | | | 93,86/5 l |

## DL-Lactic acid



### DL-Lactic acid

**90 %, Ph.Eur., synthetic**
2-Hydroxypropionic acid, Sarcolactic acid
$C_3H_6O_3$
M 90,08 g/mol
D 1,21
mp 17 °C
[598-82-3] • EC No. 209-954-4
WGK 1

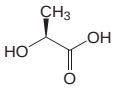
**Danger** H318-H315

**Guarantee analysis:**

Appearance. ..... colourless to light yellowish, syrupy liquid
Assay (acidim.). ..... 88,0-92,0 %
Identity. ..... complies
Relative density (20/20 °C). ..... 1,20-1,21
Miscible. ..... water, alcohol, ether
Appearance of the substance. ..... complies
Citric, oxalic and phosphoric acid. ..... complies
Ether insoluble substances. ..... complies
Sulphated ash. ..... ≤0,1 %
Chloride (Cl). ..... complies
Sulphate ($SO_4$). ..... ≤0,02 %
Calcium (Ca). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Volatile fatty acids. ..... complies
Sugar and other reducing substances. ..... complies

| | | | |
|---|---|---|---|
| **8994.1** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **8994.2** | 2,5 l | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |

## L-Lactic acid



### L-Lactic acid

**≥98 %, for biochemistry**
2-Hydroxypropionic acid, Sarcolactic acid
$C_3H_6O_3$
M 90,08 g/mol
mp 50-54 °C
Storage temp.: +4 °C
[79-33-4] • EC No. 201-196-2
WGK 1

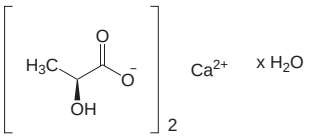
**Danger** H315-H318

**Type analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay (titr.). ..... ≥98,0 %
Appearance of solution (20 %, $H_2O$). ..... colourless to almost colourless
Specific rotation $[\alpha]_D^{20}$ (c=2,5 in 1,5 M NaOH). ..... -15,0° to -13,0°
Magnesium (Mg). ..... ≤0,05 %
Sodium (Na). ..... ≤0,05 %
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8360.1** | 5 g | plastic | 35,40 € |
| **8360.2** | 10 g | plastic | 53,25 € |
| **8360.3** | 25 g | plastic | 107,00 € |

## L(+)-Lactic acid calcium salt hydrate



### L(+)-Lactic acid calcium salt hydrate

**≥98 %**
Calcium L-lactate hydrate
$C_6H_{10}CaO_6 \cdot x\ H_2O$
M 218,23 + x $H_2O$ g/mol
[41372-22-9] • EC No. 248-953-3
WGK 1

**Type analysis:**

Appearance. ..... white powder
Assay (dry substance). ..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in $H_2O$). ..... -4,7° to -3,7°
Contains 4 mol water

| | | | |
|---|---|---|---|
| **8795.1** | 25 g | plastic | 22,05 € |

## L(+)-Lactic acid calcium salt pentahydrate

### L(+)-Lactic acid calcium salt pentahydrate

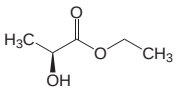
**≥98 %, FCC**
Calcium L-lactate pentahydrate
$C_6H_{10}CaO_6 \cdot 5\ H_2O$
M 308,30 g/mol
[28305-25-1] • EC No. 248-953-3
WGK 1

**Guarantee analysis:**

Appearance. ..... white powder
Assay (dry substance). ..... 98,0-101,0 %
pH value (5 % in $H_2O$). ..... 6,0-8,0
Calcium (Ca). ..... 13,4-14,5 %
Chloride (Cl). ..... ≤0,008 %
Sulphate ($SO_4$). ..... ≤0,04 %
Phosphate ($PO_4$). ..... ≤0,015 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Mg and alkali salts. ..... ≤1,0 %
Reducing sugar. ..... complies
Loss on drying (125 °C). ..... 22,0-27,0 %

| | | | |
|---|---|---|---|
| **4071.2** | 500 g | plastic | 19,60 € |
| Original pack 6 x 500 g | | | 18,62/500 g |
| **4071.1** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |

## L(-)-Lactic acid ethyl ester



Ethyl-(S)-lactate
$C_5H_{10}O_3$
M 118,13 g/mol
D 1,04 • bp 154 °C
mp -25 °C • flp 53 °C
[687-47-8] • EC No. 211-694-1
UN No. 1192 • ADR 3 III • WGK 1
**Danger** H318-H226-H335

### L(-)-Lactic acid ethyl ester

NEW

**≥97 %, VLSI Grade**

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥97 % |
| Bead number (≥0,5 µm) | ≤250 p/ml |
| Water | ≤0,05 % |
| Evaporation residue | ≤0,01 % |
| Acidity | ≤0,1 % |
| Aluminium (Al) | ≤50 ppb |
| Antimony (Sb) | ≤50 ppb |
| Arsenic (As) | ≤50 ppb |
| Lead (Pb) | ≤50 ppb |
| Boron (B) | ≤50 ppb |
| Calcium (Ca) | ≤100 ppb |
| Chromium (Cr) | ≤50 ppb |
| Iron (Fe) | ≤100 ppb |
| Gallium (Ga) | ≤50 ppb |
| Gold (Au) | ≤50 ppb |
| Potassium (K) | ≤100 ppb |
| Cobalt (Co) | ≤50 ppb |
| Copper (Cu) | ≤50 ppb |
| Magnesium (Mg) | ≤100 ppb |
| Manganese (Mn) | ≤50 ppb |
| Sodium (Na) | ≤100 ppb |
| Nickel (Ni) | ≤50 ppb |
| Titanium (Ti) | ≤50 ppb |
| Zinc (Zn) | ≤100 ppb |
| Tin (Sn) | ≤20 ppb |

| | | | |
|---|---|---|---|
| **0036.1** | 2,5 l | plastic | 106,45 € |
| Original pack 4 x 2,5 l | | | 101,13/2,5 l |

### L(-)-Lactic acid ethyl ester

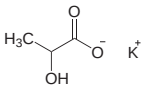
**≥98 %**

**Type analysis:**

| | |
|---|---|
| Assay | ≥98 % |
| Density (20 °C) | 1,029-1,031 |
| Refractive index $n_D^{20}$ | 1,410-1,420 |
| Free acid | ≤0,1 % |
| Water (KF) | ≤0,3 % |
| Colour (APHA) | ≤50 |

| | | | |
|---|---|---|---|
| **5016.1** | 1 l | plastic | 44,00 € |
| Original pack 6 x 1 l | | | 41,80/1 l |
| **5016.2** | 5 l | plastic | 170,95 € |
| Original pack 2 x 5 l | | | 162,40/5 l |

## Lactic acid potassium salt



### Lactic acid potassium salt

**50 %, extra pure**
50 % aqueous solution
$C_3H_5KO_3$
M 128,18 g/mol
[996-31-6] • EC No. 213-631-3
WGK 1

**Type analysis:**

| | |
|---|---|
| Appearance | clear, almost colourless liquid |
| Assay | 49,0-51,0 % |
| pH value (10 % solution) | 5,0-7,0 |
| Relative density (20 °C) | 1,270-1,282 |
| Chloride (Cl) | ≤0,005 % |
| Sulphate ($SO_4$) | ≤0,01 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Calcium (Ca) | ≤0,01 % |
| Iron (Fe) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **7989.2** | 500 g | plastic | 24,65 € |
| Original pack 6 x 500 g | | | 23,42/500 g |
| **7989.1** | 1 kg | plastic | 37,55 € |
| Original pack 6 x 1 kg | | | 35,67/1 kg |
| **7989.3** | 5 kg | plastic | 116,65 € |

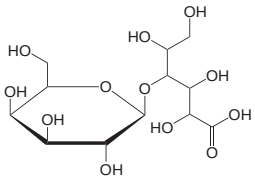
## Lactic dehydrogenase

▶ Lactate dehydrogenase (LDH) see p. 2025

## Lactobacillus Selective Agar acc. to Rogosa

▶ Rogosa Agar see p. 2201

## Lactobionic acid



### Lactobionic acid

**≥98 %**
$C_{12}H_{22}O_{12}$
M 358,30 g/mol
mp 113-118 °C
[96-82-2] • EC No. 202-538-3

**Type analysis:**

| | |
|---|---|
| Assay | ≥98 % |

| | | | |
|---|---|---|---|
| **9242.1** | 10 g | plastic | 35,40 € |

## Lactobiose

▶ α-Lactose monohydrate see p. 2027

## Lactoflavine

▶ Riboflavine see p. 2198

## Lactol

▶ Lactic acid see p. 2025

## Lactophenol blue solution

### Lactophenol blue solution

**for microscopy**
Fungal stain for microbiological material.
UN No. 1760 • ADR 8 II • WGK 2
**Danger**
H302+H312+H332-H314-H341-H373

| | | | |
|---|---|---|---|
| **3097.1** | 100 ml | glass | 25,70 € |

For further information, please see page 1461

## Lactose Broth

### Lactose Broth

**Ph.Eur., for microbiology**
For detection and enumeration of coliform bacteria and for enrichment of *Salmonellae*.
Application: Use 13 g for 1 l broth.
Broth medium D (Ph.Eur. 6.0)
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Gelatin peptone (Pancreas hydrolysate) | 5 g/l |
| Lactose monohydrate | 5 g/l |
| Beef extract | 3 g/l |
| pH value | 6,9 ±0,2 |

| | | | |
|---|---|---|---|
| **X921.1** | 500 g | plastic | 68,70 € |
| Original pack 6 x 500 g | | | 65,27/500 g |

For further information, please see page 1386

## Lactose-Broth (DEV)

### Lactose-Broth (DEV)

**DEV, for microbiology**
For confirmation of *Escherichia coli* in water samples by lactose fermentation.
Application: Use 28 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

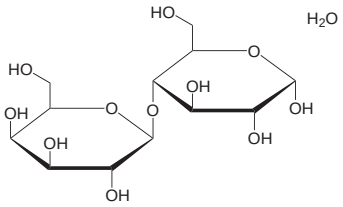
**Guarantee analysis:**

| | |
|---|---|
| Meat peptone | 10 g/l |
| Meat extract | 3 g/l |
| Sodium chloride (NaCl) | 5 g/l |
| Lactose | 10 g/l |
| Bromcresol purple | 0,02 g/l |
| pH value | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **CL76.1** | 500 g | plastic | 90,85 € |
| Original pack 6 x 500 g | | | 86,31/500 g |

For further information, please see page 1386

## α-Lactose monohydrate



Lactobiose
$C_{12}H_{22}O_{11} \cdot H_2O$
M 360,32 g/mol
D 1,525
mp 202 °C
Solubility: 161 g/l ($H_2O$, 20 °C)
[10039-26-6] • EC No. 200-559-2
WGK 1

### α-Lactose monohydrate

**Ph.Eur., for biochemistry**

**Guarantee analysis:**

Appearance. ..... white to off-white, odourless cryst. powder
Appearance of solution. ..... complies
Identity. ..... complies
Acid or alkaline react. substances. ..... complies
Specific rotation $[\alpha]_D^{20}$ (dry substance). ..... +54,4° to +55,9°
Water . ..... 4,5-5,5 %
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %
Heavy metals. ..... ≤0,0005 %
Absorption:
400 nm. ..... ≤0,04
270-300 nm. ..... ≤0,07
210-220 nm. ..... ≤0,25

| | | | |
|---|---|---|---|
| **8921.1** | 1 kg | plastic | 22,05 € |
| Original pack 6 x 1 kg | | | 20,95/1 kg |
| **8921.2** | 5 kg | plastic | 78,40 € |
| **8921.3** | 10 kg | plastic | 134,40 € |
| **8921.5** | 25 kg | plastic | 310,70 € |

### α-Lactose monohydrate

**for microbiology**

**Guarantee analysis:**

Appearance. ..... white to off-white powder
Heavy metals. ..... ≤0,0005 %
Specific rotation $[\alpha]_D^{20}$. ..... +54,4° to +55,9°
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %
Water . ..... 4,5-5,5 %
Absorption:
400 nm. ..... ≤0,04
270-300 nm. ..... ≤0,07
210-220 nm. ..... ≤0,25

| | | | |
|---|---|---|---|
| **6868.1** | 1 kg | plastic | 25,30 € |
| Original pack 6 x 1 kg | | | 24,04/1 kg |
| **6868.2** | 5 kg | plastic | 84,85 € |
| **6868.4** | 10 kg | plastic | 143,55 € |
| **6868.3** | 50 kg | plastic | 536,45 € |

## Lactose Peptone Broth (DEV)

### Lactose Peptone Broth (DEV)

**DEV, for microbiology**

For enrichment and enumeration of coliform bacteria in water samples.
Application: Use 35 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**

Meat peptone. ..... 17 g/l
Soy peptone. ..... 3 g/l
Sodium chloride (NaCl). ..... 5 g/l
Lactose. ..... 10 g/l
Bromcresol purple. ..... 0,02 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **CL77.1** | 500 g | plastic | 109,15 € |
| Original pack 6 x 500 g | | | 103,69/500 g |
| **CL77.2** | 1 kg | plastic | 187,60 € |
| Original pack 6 x 1 kg | | | 178,22/1 kg |

For further information, please see page 1386

## Lactose Sulphite Broth (Base)

### Lactose Sulphite Broth (Base)

**Ph.Eur., for microbiology**

For selective detection and enumeration of *C. perfringens*.
Application: Use 20,3 g for 1 l broth. Prior to use add sodium bisulphite solution and iron(III) ammonium citrate solution (Art. No. 3130.1).
Medium R (Ph.Eur. 6.0)
Storage temp.: +20 °C
WGK 1

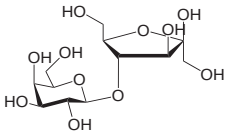
**Guarantee analysis:**

Casein peptone (Pancreas hydrolysate). ..... 5 g/l
Yeast extract. ..... 2,5 g/l
Sodium chloride (NaCl). ..... 2,5 g/l
Lactose monohydrate. ..... 10 g/l
Cystein hydrochloride. ..... 0,3 g/l
pH value. ..... 7,1 ±0,2

| | | | |
|---|---|---|---|
| **AE46.1** | 500 g | plastic | 80,10 € |
| Original pack 6 x 500 g | | | 76,10/500 g |

For further information, please see page 1386

## Lactulose



### Lactulose

**≥99 %, for biochemistry**

4-O-β-D-Galactopyranosyl-D-fructose
$C_{12}H_{22}O_{11}$
M 342,20 g/mol
mp ~169 °C
[4618-18-2] • EC No. 225-027-7

**Type analysis:**

Assay. ..... ≥98 %
Loss on drying. ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$. ..... -50° to -46°

| | | | |
|---|---|---|---|
| **CN98.1** | 10 g | plastic | 25,30 € |
| **CN98.2** | 25 g | plastic | 50,00 € |
| **CN98.3** | 50 g | plastic | 89,15 € |

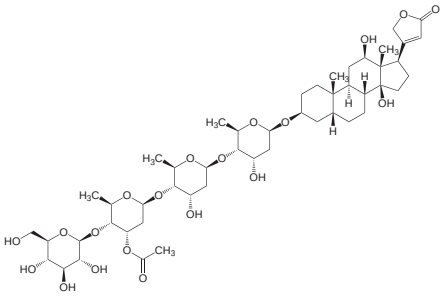
## Laevulose

▶ D(-)-Fructose see p. 1943

## Lambda DNA-Marker

▶ DNA-Marker, not prestained see p. 1890

## Lanatoside C



### Lanatoside C

**ROTICHROM® HPLC**

From *Digitalis lanata*.
$C_{49}H_{76}O_{20}$
M 985,14 g/mol
mp 245-250 °C (dec.)
Storage temp.: +4 °C
[17575-22-3] • EC No. 241-546-1
UN No. 2811 • ADR 6.1 I • WGK 3

**Danger** H301+H311+H331-H373

**Type analysis:**

Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **7321.1** | 50 mg | glass | 134,40 € |

For further information, please see page 1545

## Lanolin

Adeps Lanae anhydricum
D ~0,94
mp 38-50 °C • flp 238 °C
[8006-54-0] • EC No. 232-348-6
WGK 1

### Lanolin

**Ph.Eur., low in pesticides**

Wool fat

**Guarantee analysis:**

Appearance. ..... light yellow to brownish-yellow, viscous matter
Identity. ..... complies
Acid value. ..... ≤1
Saponification value. ..... 90-105
Drop point. ..... 38-44 °C
Water absorption. ..... ≥20 g
Peroxide value. ..... ≤10
Butylated hydroxytoluene. ..... ≤0,01 %
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,15 %
Chloride (Cl). ..... ≤0,015 %
Colour (Gardner). ..... 6-8
Acid or alkaline react. substances. ..... complies
Paraffine. ..... ≤1,0 %
Water soluble, oxidising substances. ..... complies
Organochlorine pesticides (each pesticide). ..... ≤0,000005 %
Other pesticides (each pesticide). ..... ≤0,00005 %
Pesticide residues total. ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **5314.2** | 500 g | plastic | 31,10 € |
| Original pack 6 x 500 g | | | 29,55/500 g |
| **5314.1** | 1 kg | plastic | 49,35 € |
| Original pack 6 x 1 kg | | | 46,88/1 kg |

## Lanolin

**techn.**

**Type analysis:**

Melting point. ..... 38-50 °C
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **5313.2** | 500 g | plastic | 19,60 € |
| Original pack 6 x 500 g | | | 18,62/500 g |
| **5313.1** | 1 kg | plastic | 31,10 € |
| Original pack 6 x 1 kg | | | 29,55/1 kg |

## Lanolin

▶ Lanolin see p. 2027

## Lanolin alcohols

## Lanolin alcohols

**Ph.Eur.**

Lanae alcoholes
D ~0,93
mp ≥56 °C
[8027-33-6] • EC No. 232-430-1
WGK 1

**Guarantee analysis:**

Appearance of solution. ..... complies
Identity. ..... complies
Alkaline reacting substances. ..... complies
Melting temperature. ..... ≥56 °C
Acid value. ..... ≤2,0 mg KOH/g
Hydroxyl value. ..... 120-180 mg KOH/g
Peroxide value. ..... ≤15 meq $O_2$/kg
Saponification value. ..... ≤12 mg KOH/g
Loss on drying. ..... ≤0,5 %
BHT. ..... ≤0,02 %
Ash. ..... ≤0,1 %
Content of cholesterol. ..... ≥30 %
Water capacity. ..... complies

| | | | |
|---|---|---|---|
| **5085.2** | 500 g | plastic | 89,15 € |
| Original pack 6 x 500 g | | | 84,69/500 g |
| **5085.1** | 1 kg | plastic | 158,60 € |
| Original pack 6 x 1 kg | | | 150,67/1 kg |

## Lanoxin

▶ Digoxin see p. 1875

## Lanthanum trichloride

▶ Lanthanum(III) chloride hydrate see p. 2028

## Lanthanum Standards

▶ Lanthanum ICP Standard Solution see p. 2298
▶ Lanthanum ICP Standard Solution see p. 2303

## Lanthanum(III) acetate hydrate

### Lanthanum(III) acetate hydrate

**ROTI®REMETIC 99,9 %**

$La(CH_3CO_2)_3 \cdot x\ H_2O$
M 316,04 + x $H_2O$ g/mol
[25721-92-0] • EC No. 213-034-8
WGK 3

**Type analysis:**

Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7031.1** | 100 g | plastic | 79,45 € |
| **7031.2** | 250 g | plastic | 166,65 € |

## Lanthanum(III) carbonate hydrate

$La_2(CO_3)_3 \cdot x\ H_2O$
M 457,84 + x $H_2O$ g/mol
Solubility: insoluble ($H_2O$, 20 °C)
[54451-24-0] • EC No. 209-599-5
WGK 3

### Lanthanum(III) carbonate hydrate

**ROTI®REMETIC 99,99 %**

**Type analysis:**

Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7182.2** | 100 g | plastic | 188,15 € |

### Lanthanum(III) carbonate hydrate

**ROTI®REMETIC 99,9 %**

**Type analysis:**

Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS): specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7026.2** | 250 g | plastic | 127,95 € |

## Lanthanum(III) chloride hydrate

### Lanthanum(III) chloride hydrate

**ROTI®REMETIC 99,999 %**

Lanthanum trichloride
$LaCl_3 \cdot x\ H_2O$
M 245,26 + x $H_2O$ g/mol
mp 91 °C (dec.)
Solubility: ~957 g ($H_2O$, 25 °C)
[20211-76-1] • EC No. 233-237-5
WGK 3

**Type analysis:**

Assay (TREO*). ..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7184.1** | 25 g | plastic | 67,65 € |

## Lanthanum(III) chloride heptahydrate

### Lanthanum(III) chloride heptahydrate

**≥99,9 % cryst.**

$LaCl_3 \cdot 7\ H_2O$
M 371,37 g/mol
mp 91 °C
[10025-84-0] • EC No. 233-237-5
WGK 1

**Type analysis:**

Assay $La_2O_3$ (TREO). ..... ≥99,9 %
Assay (TREO*). ..... ~43,0 %
Calcium oxide (CaO). ..... ≤0,01 %
Ferric oxide ($Fe_2O_3$). ..... ≤0,002 %
Natriumoxide ($Na_2O$). ..... ≤0,005 %
Total REO impurities. ..... ≤0,1 %
*Total rare earth oxide

| | | | |
|---|---|---|---|
| **3979.1** | 100 g | glass | 64,00 € |

## Lanthanum(III) fluoride

### Lanthanum(III) fluoride

**ROTI®REMETIC 99,9 %**

Lanthanum trifluoride
$LaF_3$
M 195,90 g/mol
bp 2327 °C
mp 1493 °C
Solubility: insoluble ($H_2O$, 20 °C)
[13709-38-1] • EC No. 237-252-8
WGK 3

**Type analysis:**

Assay (TREO*). ..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7028.2** | 50 g | plastic | 177,40 € |

## Lanthanum(III) nitrate hexahydrate

$La(NO_3)_3 \cdot 6\ H_2O$
M 433,01 g/mol
bp 126 °C
Solubility: 1580 g/l ($H_2O$, 25 °C)
[10277-43-7] • EC No. 233-238-0
UN No. 1477 • ADR 5.1 II • WGK 3

**Danger** H272-H318-H410

### Lanthanum(III) nitrate hexahydrate

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**

Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5366.1** | 25 g | plastic | 95,60 € |
| **5366.2** | 100 g | plastic | 239,20 € |

## Lanthanum(III) nitrate hexahydrate

**ROTI®REMETIC 99,999 %**

**Type analysis:**
Assay (TREO*). ..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7019.1** | 25 g | plastic | 54,75 € |
| **7019.2** | 100 g | plastic | 149,45 € |

## Lanthanum(III) nitrate hexahydrate

**ROTI®REMETIC 99,99 %**

**Type analysis:**
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7180.1** | 50 g | plastic | 99,90 € |
| **7180.2** | 250 g | plastic | 321,45 € |

## Lanthanum(III) nitrate hexahydrate

**≥99,99 %, p.a.**

**Type analysis:**
Assay $La_2O_3$ (TREO). ..... ≥99,99 %
Assay (TREO*). ..... ~37,0 %
Total REO impurities. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,002 %
Ferric oxide ($Fe_2O_3$). ..... ≤0,0005 %
Natriumoxide ($Na_2O$). ..... ≤0,001 %
*Total rare earth oxide

| | | | |
|---|---|---|---|
| **8358.2** | 50 g | plastic | 51,10 € |
| **8358.1** | 100 g | plastic | 91,95 € |
| **8358.3** | 250 g | plastic | 196,20 € |

## Lanthanum(III) oxalate

## Lanthanum(III) oxalate

**ROTI®REMETIC 99,999 %**

$La_2(C_2O_4)_3$
M 541,87 g/mol
[537-03-1] • EC No. 208-656-1
WGK 3

**Warning** H302+H312

**Type analysis:**
Assay (TREO*). ..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7191.1** | 25 g | plastic | 50,45 € |
| **7191.2** | 100 g | plastic | 144,60 € |

## Lanthanum(III) oxide

Dilanthanum trioxide
$La_2O_3$
M 325,81 g/mol
bp 3620 °C
mp 2304 °C
[1312-81-8] • EC No. 215-200-5

## Lanthanum(III) oxide

**ROTI®REMETIC 99,999 %**

**Type analysis:**
Assay (TREO*). ..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7410.1** | 25 g | plastic | 66,15 € |
| **7410.2** | 100 g | plastic | 213,95 € |

## Lanthanum(III) oxide

**≥99,99 %, p.a.**

**Type analysis:**
Assay $La_2O_3$ (TREO). ..... ≥99,99 %
Assay (TREO*). ..... ~99,0 %
Calcium oxide (CaO). ..... ≤0,006 %
Chromium oxide ($Cr_2O_3$). ..... ≤0,001 %
Ferric oxide ($Fe_2O_3$). ..... ≤0,0005 %
Cobalt oxide ($Co_3O_4$). ..... ≤0,001 %
Copper oxide (CuO). ..... ≤0,001 %
Nickel oxide (NiO). ..... ≤0,001 %
Total REO impurities. ..... ≤0,005 %
Loss on ignition. ..... ≤1,0 %
*Total rare earth oxide

| | | | |
|---|---|---|---|
| **8373.2** | 50 g | plastic | 31,10 € |
| **8373.1** | 100 g | plastic | 52,15 € |
| **8373.3** | 250 g | plastic | 103,75 € |

## Lanthanum(III) oxide

**for atomic absorption spectroscopy**

| | | | |
|---|---|---|---|
| **3045.1** | 5 g | plastic | 16,05 € |

## Lanthanum(III) phosphate hydrate

## Lanthanum(III) phosphate hydrate

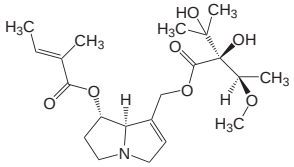
**ROTI®REMETIC 99,99 %**

$LaPO_4 \cdot x\ H_2O$
M 233,88 + x $H_2O$ g/mol
[14913-14-5] • EC No. 237-419-5
WGK 1

**Type analysis:**
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7203.2** | 25 g | plastic | 155,90 € |

## Lasiocarpine



## Lasiocarpine

**ROTICHROM® HPLC**

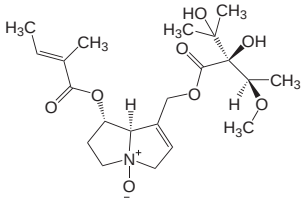
Reference substance for HPLC.
From *Heliotropium.*
7-Angelyleuropine
$C_{21}H_{33}NO_7$
M 441,49 g/mol
mp 90-95 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[303-34-4]
UN No. 1544 • ADR 6.1 III • WGK 1

**Danger** H301

**Type analysis:**
Purity (HPLC). ..... ≥96,0 %

| | | | |
|---|---|---|---|
| **2090.1** | 10 mg | glass | 321,45 € |

## Lasiocarpine N-oxide



## Lasiocarpine N-oxide

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Heliotropium.*
7-Angelyleuropine N-oxide
$C_{21}H_{33}NO_8$
M 427,49 g/mol
mp 116-118 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[127-30-0]
WGK 1

**Warning** H302

**Type analysis:**
Purity (HPLC). ..... ≥96,0 %

| | | | |
|---|---|---|---|
| **2202.1** | 10 mg | glass | 321,45 € |

L

## Lateral Flow Assay

- ▶ RiboFlow® Campylobacter see p. 2198
- ▶ RiboFlow® Candida albicans see p. 2199
- ▶ RiboFlow® Cosmetics see p. 2199
- ▶ RiboFlow® Cronobacter see p. 2199
- ▶ RiboFlow® E. coli see p. 2199
- ▶ RiboFlow® Enterobacteriaceae see p. 2199
- ▶ RiboFlow® Listeria Twin see p. 2199
- ▶ RiboFlow® P/En see p. 2199
- ▶ RiboFlow® Pseudomonas aeruginosa see p. 2199
- ▶ RiboFlow® Salmonella see p. 2199
- ▶ RiboFlow® Staphylococcus aureus see p. 2200
- ▶ RiboFlow® Vibrio parahaemolyticus see p. 2200

## Lauraldehyde

- ▶ Dodecyl aldehyde see p. 1893

## Laurel oil, natural

### Laurel oil

**essential, natural**
Oleum Lauri aetherum
D 0,92
[8002-41-3]
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H341-H351-H226-H317-H411

**Type analysis:**
Appearance. ..... clear yellow to brown oil
Density (20 °C). ..... 0,905-0,929 g/cm³
Refractive index (20 °C)..... 1,465-1,470
Optical rotation (20 °C). ..... -19° to -10°

| | | | |
|---|---|---|---|
| **6609.1** | 100 ml | glass | 64,40 € |

## Laurel oil, artificial

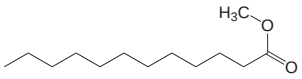
### Laurel oil

**artificial**
Oleum Lauri
D ~0,91
UN No. 1169 • ADR 3 III • WGK 2
**Danger** H226-H315-H317-H318-H341-H351-H304-H411

**Type analysis:**
Appearance. ..... clear, light yellow brownish oil
Relative density (20 °C). ..... 0,890-0,930
Refractive index (20 °C)..... 1,4650-1,4750
Optical rotation (20 °C). ..... -15° to 0°

| | | | |
|---|---|---|---|
| **3314.1** | 250 ml | glass | 47,20 € |

## Lauric acid methyl ester




### Lauric acid methyl ester

**ROTICHROM® GC**
Reference substance for GC.
Methyl laurate, Dodecanoic acid methyl ester
$C_{13}H_{26}O_2$
M 214,35 g/mol
D 0,87 • bp 267 °C
mp 4,8 °C • flp 125 °C
Storage temp.: +4 °C
[111-82-0] • EC No. 203-911-3
WGK 1

**Type analysis:**
Purity (GC). ..... ≥98,5 %

| | | | |
|---|---|---|---|
| **6787.1** | 1 g | plastic | 81,20 € |

## Lauryl alcohol

- ▶ 1-Dodecanol see p. 1893

## Lauryl Sulphate Broth

### Lauryl Sulphate Broth

**ISO 4831:2006, for microbiology**
For enrichment and detection of coliform bacteria in waters.
Application: Use 35,6 g for 1 l broth.
**Flu Broth**
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**
Tryptose. ..... 20 g/l
Lactose. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Potassium phosphate. ..... 2,75 g/l
di-Potassium phosphate. ..... 2,75 g/l
Sodium lauryl sulphate. ..... 0,1 g/l
pH value. ..... 6,8 ±0,2

| | | | |
|---|---|---|---|
| **CL80.1** | 500 g | plastic | 107,00 € |
| Original pack 6 x 500 g | | | 101,65/500 g |

For further information, please see page 1387

## Lauryl sulphate sodium salt

- ▶ SDS see p. 2244
- ▶ Roti®fair SDS 0.5 g see p. 2214
- ▶ Roti®fair 10% SDS see p. 2214

## Lauth's violet

- ▶ Thionine (acetate) (C.I. 52000) see p. 2340

## LB Agar (Lennox)

Storage temp.: +20 °C
WGK 1

### LB Agar (Lennox)

**for molecular biology**
Application: Use 35 g for 1 l agar.

**Formulation:**
Tryptone..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl)..... 5 g/l
Agar-Agar. ..... 15 g/l
pH value..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X965.1** | 500 g | plastic | 72,60 € |
| Original pack 6 x 500 g | | | 68,97/500 g |
| **X965.2** | 1 kg | plastic | 138,70 € |
| Original pack 6 x 1 kg | | | 131,77/1 kg |
| **X965.3** | 2,5 kg | plastic | 317,15 € |

For further information, please see page 1416

### LB-Agar (Lennox), granulated

**granulated, for molecular biology**
Application: Use 35 g for 1 l agar.

**Formulation:**
Tryptone..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl)..... 5 g/l
Agar-Agar. ..... 15 g/l
pH value..... 7,0 ±0,2
Granulation. ..... complies

| | | | |
|---|---|---|---|
| **6671.1** | 500 g | plastic | 95,70 € |
| Original pack 6 x 500 g | | | 90,92/500 g |
| **6671.2** | 1 kg | plastic | 179,55 € |
| Original pack 6 x 1 kg | | | 170,57/1 kg |
| **6671.3** | 2,5 kg | plastic | 388,10 € |

For further information, please see page 1415

### LB Agar (Lennox) vegetal

**for molecular biology, animal-free**
Application: Use 35 g for 1 l agar.

**Formulation:**
Vegetable peptone ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl)..... 5 g/l
Agar-Agar. ..... 15 g/l
pH value..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **0159.1** | 500 g | plastic | 83,75 € |
| Original pack 6 x 500 g | | | 79,56/500 g |
| **0159.2** | 1 kg | plastic | 155,35 € |
| Original pack 6 x 1 kg | | | 147,58/1 kg |

For further information, please see page 1418

## LB-Agar (Lennox) / Amp100

### LB-Agar (Lennox) / Amp100

**for molecular biology**

For preparation of LB agar with 100 µg/ml ampicillin.

Application: Use 35 g for 1 l agar.
Boil for 1 min, do not autoclave.

Ampicillin-LB Selective Agar

Storage temp.: +20 °C

WGK 1

EUH208

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Ampicillin. ..... 0,1 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **8852.1** | 500 g | plastic | 85,90 € |
| Original pack 6 x 500 g | | | 81,61/500 g |
| **8852.2** | 1 kg | plastic | 161,25 € |
| Original pack 6 x 1 kg | | | 153,19/1 kg |
| **8852.3** | 2,5 kg | plastic | 376,25 € |

For further information, please see page 1414

## LB-Agar (Lennox) / Kana50

### LB-Agar (Lennox) / Kana50

**for molecular biology**

For preparation of LB agar with 50 µg/ml kanamycin.

Application: Use 35 g for 1 l agar.
Autoclavable (118 °C, 10 min).

Kanamycin-LB Selective Agar

Storage temp.: +20 °C

WGK 1

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Kanamycin. ..... 0,05 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **8853.1** | 500 g | plastic | 136,00 € |
| Original pack 6 x 500 g | | | 129,20/500 g |
| **8853.2** | 1 kg | plastic | 255,35 € |
| Original pack 6 x 1 kg | | | 242,58/1 kg |

For further information, please see page 1414

## LB Agar (Luria/Miller)

Storage temp.: +20 °C

### LB Agar (Luria/Miller)

**for molecular biology**

Application: Use 40 g for 1 l agar.

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X969.1** | 500 g | plastic | 63,35 € |
| Original pack 6 x 500 g | | | 60,18/500 g |
| **X969.2** | 1 kg | plastic | 116,00 € |
| Original pack 6 x 1 kg | | | 110,20/1 kg |
| **X969.3** | 2,5 kg | plastic | 258,00 € |

For further information, please see page 1416

### LB Agar (Luria/Miller), granulated

**granulated, for molecular biology**

Application: Use 40 g for 1 l agar.

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2
Granulation. ..... complies

| | | | |
|---|---|---|---|
| **6675.1** | 500 g | plastic | 83,85 € |
| Original pack 6 x 500 g | | | 79,66/500 g |
| **6675.2** | 1 kg | plastic | 152,65 € |
| Original pack 6 x 1 kg | | | 145,02/1 kg |
| **6675.3** | 2,5 kg | plastic | 335,40 € |

For further information, please see page 1415

## LB-Agar (Luria/Miller) / Amp100

### LB-Agar (Luria/Miller) / Amp100

**for molecular biology**

For preparation of LB agar with 100 µg/ml ampicillin.

Application: Use 40 g for 1 l agar.
Boil for 1 min, do not autoclave.

Ampicillin-LB Selective Agar

Storage temp.: +20 °C

WGK 1

EUH208

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Ampicillin. ..... 0,1 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **8855.1** | 500 g | plastic | 73,65 € |
| Original pack 6 x 500 g | | | 69,97/500 g |
| **8855.2** | 1 kg | plastic | 137,10 € |
| Original pack 6 x 1 kg | | | 130,25/1 kg |
| **8855.3** | 2,5 kg | plastic | 317,15 € |

For further information, please see page 1414

## LB-Agar (Luria/Miller) / Amp50

### LB-Agar (Luria/Miller) / Amp50

**for molecular biology**

For preparation of LB agar with 50 µg/ml ampicillin.

Application: Use 40 g for 1 l agar.
Boil for 1 min, do not autoclave.

Ampicillin-LB Selective Agar

Storage temp.: +20 °C

WGK 1

EUH208

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Ampicillin. ..... 0,05 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **8858.1** | 500 g | plastic | 77,30 € |
| Original pack 6 x 500 g | | | 73,44/500 g |
| **8858.2** | 1 kg | plastic | 144,60 € |
| Original pack 6 x 1 kg | | | 137,37/1 kg |
| **8858.3** | 2,5 kg | plastic | 332,20 € |

For further information, please see page 1414

## LB-Agar (Luria/Miller) / Chloramph34

### LB-Agar (Luria/Miller) / Chloramph34

**for molecular biology**

For preparation of LB agar with 34 µg/ml chloroamphenicol.

Application: Use 40 g for 1 l agar.
Autoclavable (118 °C, 10 min).

Chloroamphenicol-LB Selective Agar

Storage temp.: +20 °C

WGK 1

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Chloroamphenicol. ..... 0,034 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **8861.1** | 500 g | plastic | 71,95 € |
| Original pack 6 x 500 g | | | 68,35/500 g |
| **8861.2** | 1 kg | plastic | 132,80 € |
| Original pack 6 x 1 kg | | | 126,16/1 kg |
| **8861.3** | 2,5 kg | plastic | 306,40 € |

For further information, please see page 1414

## LB-Agar (Luria/Miller) / Kana50

### LB-Agar (Luria/Miller) / Kana50

**for molecular biology**

For preparation of LB agar with 50 µg/ml kanamycin.

Application: Use 40 g for 1 l agar.
Autoclavable (118 °C, 10 min).

Kanamycin-LB Selective Agar

Storage temp.: +20 °C

WGK 11

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
Kanamycin. ..... 0,05 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **8860.1** | 500 g | plastic | 122,05 € |
| Original pack 6 x 500 g | | | 115,95/500 g |
| **8860.2** | 1 kg | plastic | 224,70 € |
| Original pack 6 x 1 kg | | | 213,47/1 kg |

For further information, please see page 1414

## LB Broth (Lennox)

Storage temp.: +20 °C

WGK 1

### LB Broth (Lennox)

**for molecular biology**

Application: Use 20 g for 1 l broth.

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X964.1** | 500 g | plastic | 58,60 € |
| Original pack 6 x 500 g | | | 55,67/500 g |
| **X964.2** | 1 kg | plastic | 103,75 € |
| Original pack 6 x 1 kg | | | 98,56/1 kg |
| **X964.3** | 2,5 kg | plastic | 239,20 € |
| **X964.4** | 5 kg | plastic | 428,95 € |

For further information, please see page 1416

# LB-Broth

## LB Broth (Lennox), granulated

**granulated, for molecular biology**

Application: Use 20 g for 1 l broth.

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2
Granulation. ..... complies

| | | | |
|---|---|---|---|
| **6669.1** | 500 g | plastic | 86,55 € |
| Original pack 6 x 500 g | | | 82,22/500 g |
| **6669.2** | 1 kg | plastic | 153,20 € |
| Original pack 6 x 1 kg | | | 145,54/1 kg |
| **6669.3** | 2,5 kg | plastic | 342,95 € |
| **6669.4** | 5 kg | plastic | 618,15 € |

For further information, please see page 1415

## LB Broth (Lennox) vegetal

**for molecular biology, animal-free**

Application: Use 20 g for 1 l broth.

**Formulation:**

Vegetable peptone ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **0155.1** | 500 g | plastic | 68,70 € |
| Original pack 6 x 500 g | | | 65,27/500 g |
| **0155.2** | 1 kg | plastic | 122,05 € |
| Original pack 6 x 1 kg | | | 115,95/1 kg |

For further information, please see page 1418

## LB Broth (Luria/Miller)

Storage temp.: +20 °C
WGK 1

## LB Broth (Luria/Miller)

**for molecular biology**

Application: Use 25 g for 1 l broth.

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X968.1** | 500 g | plastic | 52,15 € |
| Original pack 6 x 500 g | | | 49,54/500 g |
| **X968.2** | 1 kg | plastic | 97,30 € |
| Original pack 6 x 1 kg | | | 92,44/1 kg |
| **X968.3** | 2,5 kg | plastic | 209,65 € |
| **X968.4** | 5 kg | plastic | 378,40 € |

For further information, please see page 1416

## LB Broth (Luria/Miller), granulated

**granulated, for molecular biology**

Application: Use 25 g for 1 l broth.

**Formulation:**

Tryptone. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 10 g/l
pH value. ..... 7,0 ±0,2
Granulation. ..... complies

| | | | |
|---|---|---|---|
| **6673.1** | 500 g | plastic | 78,40 € |
| Original pack 6 x 500 g | | | 74,48/500 g |
| **6673.2** | 1 kg | plastic | 147,30 € |
| Original pack 6 x 1 kg | | | 139,94/1 kg |
| **6673.3** | 2,5 kg | plastic | 319,30 € |
| **6673.4** | 5 kg | plastic | 581,60 € |

For further information, please see page 1415

## LCV

▶ Leuco crystal violet see p. 2036

## LD

▶ Lactate dehydrogenase (LDH) see p. 2025

## LDH

▶ Lactate dehydrogenase (LDH) see p. 2025

## Lead

### Lead

**≥99,9 %, granules**

Pb
M 207,21 g/mol
bp 1620 °C
mp 327 °C
[7439-92-1] • EC No. 231-100-4
UN No. 3077 • ADR 9 III

**Danger**
H360Df-H373-H400-H410-H302+H332

**Type analysis:**

Assay. ..... ≥99,9 %
Particle size. ..... ~20 mesh

| | | | |
|---|---|---|---|
| **2734.1** | 50 g | plastic | 40,75 € |
| **2734.2** | 100 g | plastic | 69,35 € |

## Lead Standards

▶ Lead AAS Standard Solution see p. 2295
▶ Lead ICP Standard Solution see p. 2299
▶ Lead ICP Standard Solution see p. 2303

## Lead(II) acetate, basic

### Lead(II) acetate, basic

**≥33 % PbO, p.a., ACS**

For the analysis of sugar acc. Horne.
Lead subacetate, Lead(II) hydroxide acetate
$Pb(CH_3COO)_2 \cdot 2\ Pb(OH)_2$
M 807,72 g/mol
Solubility: soluble ($H_2O$, 20 °C)
[1335-32-6] • EC No. 215-630-3
UN No. 1616 • ADR 6.1 III • WGK 3

**Danger** H351-H360Df-H373-H410

**Guarantee analysis:**

Lead oxide (PbO). ..... ≥33,0 %
Loss on drying. ..... ≤1,5 %
In dilute $CH_3COOH$ insoluble matter . ..... ≤0,02 %
In $H_2O$ insoluble matter. ..... ≤1,0 %
Chloride (Cl). ..... ≤0,003 %
Nitrate ($NO_3$). ..... ≤0,003 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,002 %
Potassium (K). ..... ≤0,02 %
Copper (Cu). ..... ≤0,002 %
Sodium (Na). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **2559.3** | 25 g | plastic | 14,55 € |
| **2559.1** | 500 g | plastic | 37,55 € |
| Original pack 6 x 500 g | | | 35,67/500 g |
| **2559.2** | 1 kg | plastic | 55,80 € |
| Original pack 6 x 1 kg | | | 53,01/1 kg |

## Lead(II) acetate trihydrate

### Lead(II) acetate trihydrate

**≥99,5 %, p.a., ACS, ISO**

Reagent for detection of $H_2S$ and preparation of lead acetate paper.
Sugar of lead
$Pb(CH_3COO)_2 \cdot 3\ H_2O$
M 379,33 g/mol
D 2,55
Solubility: 443 g/l ($H_2O$, 20 °C)
[6080-56-4] • EC No. 206-104-4
UN No. 1616 • ADR 6.1 III • WGK 3

**Danger** H360Df-H373-H400-H410

**Guarantee analysis:**

Assay (compl.). ..... ≥99,5 %
In $CH_3COOH$ insoluble matter. ..... ≤0,005 %
Nitrate and nitrite (as $NO_3$). ..... ≤0,002 %
Chloride (Cl). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,005 %
Copper (Cu). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,005 %
Sodium (Na). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **P739.1** | 500 g | plastic | 79,05 € |
| Original pack 6 x 500 g | | | 75,10/500 g |
| **P739.2** | 1 kg | plastic | 134,40 € |
| Original pack 6 x 1 kg | | | 127,68/1 kg |
| **P739.3** | 2,5 kg | plastic | 282,20 € |

## Lead(II) carbonate

### Lead(II) carbonate

**≥98 %, p.a., ACS**

$PbCO_3$
M 267,20 g/mol
D 6,6
mp 315 °C (dec.)
Solubility: insoluble ($H_2O$)
[598-63-0] • EC No. 209-943-4
UN No. 3077 • ADR 9 III • WGK 3

**Danger**
H302+H332-H360D+H373-H410

**Guarantee analysis:**

| | |
|---|---|
| Assay (compl.) | ≥98,0 % |
| In dilute $CH_3COOH$ insoluble matter | ≤0,02 % |
| Chloride (Cl) | ≤0,002 % |
| Nitrate and nitrite (as $NO_3$) | complies |
| Cadmium (Cd) | ≤0,002 % |
| Calcium (Ca) | ≤0,01 % |
| Iron (Fe) | ≤0,005 % |
| Potassium (K) | ≤0,02 % |
| Sodium (Na) | ≤0,05 % |
| Zinc (Zn) | ≤0,003 % |

| | | | |
|---|---|---|---|
| **2558.1** | 100 g | plastic | 38,20 € |
| **2558.2** | 250 g | plastic | 57,95 € |
| **2558.3** | 500 g | plastic | 92,35 € |
| Original pack 6 x 500 g | | | 87,73/500 g |

## Lead(II) chloride

$PbCl_2$
M 278,1 g/mol
D 5,85 • bp 950 °C
mp 500 °C
Solubility: 10 g/l ($H_2O$, 20 °C)
[7758-95-4] • EC No. 231-845-5
UN No. 2291 • ADR 6.1 III • WGK 3

**Danger** H302+H332-H360Df-H373-H400-H410-EUH201

### Lead(II) chloride

**≥99 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Appearance | very slightly beige powder |
| Assay | ≥99 % |
| Iron (Fe) | ≤0,005 % |
| Copper (Cu) | ≤0,0005 % |
| Water | ≤1 % |

| | | | |
|---|---|---|---|
| **4454.1** | 100 g | plastic | 22,05 € |
| **4454.2** | 500 g | plastic | 66,55 € |
| Original pack 6 x 500 g | | | 63,22/500 g |
| **4454.3** | 1 kg | plastic | 119,90 € |
| Original pack 6 x 1 kg | | | 113,91/1 kg |

### Lead(II) chloride

**≥98 %**

**Type analysis:**

| | |
|---|---|
| Appearance | very slightly beige powder |
| Assay | ≥98 % |
| Water | ≤1 % |

| | | | |
|---|---|---|---|
| **5299.1** | 100 g | plastic | 13,90 € |
| **5299.2** | 500 g | plastic | 41,85 € |
| Original pack 6 x 500 g | | | 39,76/500 g |
| **5299.3** | 1 kg | plastic | 75,15 € |
| Original pack 6 x 1 kg | | | 71,39/1 kg |

## Lead(II) hydroxide acetate

▶ Lead(II) acetate, basic see p. 2032

## Lead(II) nitrate

### Lead(II) nitrate

**≥99 %, p.a., ACS**

$Pb(NO_3)_2$
M 331,21 g/mol
D 4,49
mp 458-459 °C
Solubility: 486 g/l ($H_2O$, 20 °C)
[10099-74-8] • EC No. 233-245-9
UN No. 1469 • ADR 5.1 (6.1) II • WGK 3

**Danger**
H302+H332-H360Df-H372-H410

**Guarantee analysis:**

| | |
|---|---|
| Assay (compl.) | ≥99,0 % |
| Insoluble matter | ≤0,005 % |
| Chloride (Cl) | ≤0,001 % |
| Calcium (Ca) | ≤0,005 % |
| Copper (Cu) | ≤0,0005 % |
| Iron (Fe) | ≤0,0005 % |
| Potassium (K) | 0,005 % |
| Sodium (Na) | ≤0,02 % |

| | | | |
|---|---|---|---|
| **HN32.1** | 100 g | plastic | 18,20 € |
| **HN32.2** | 250 g | plastic | 35,40 € |

## Lead(II) oxide

### Lead(II) oxide

**≥99 %, extra pure**

PbO
M 223,20 g/mol
bp 1470 °C
mp 888 °C
Solubility: 0,017 g/l ($H_2O$, 20 °C)
[1317-36-8] • EC No. 215-267-0
UN No. 2291 • ADR 6.1 III • WGK 3

**Danger** H360Df-H373-H400-H410-H302+H332-EUH201

**Type analysis:**

| | |
|---|---|
| Assay (compl.) | 99,0-100,5 % |
| Chloride (Cl) | ≤0,05 % |
| Nitrate ($NO_3$) | ≤0,05 % |
| Copper (Cu) | ≤0,005 % |
| Iron (Fe) | ≤0,005 % |
| Loss on ignition (700 °C) | ≤0,2 % |
| Insoluble in $CH_3COOH$ | ≤0,2 % |

| | | | |
|---|---|---|---|
| **4456.1** | 250 g | plastic | 24,20 € |

## Lead(IV) oxide

### Lead(IV) oxide

**≥97 %, p.a.**

$PbO_2$
M 239,20 g/mol
D 9,4
mp 290 °C (dec.)
Solubility: 0,14 mg/l ($H_2O$, 25 °C)
[1309-60-0] • EC No. 215-174-5
UN No. 1872 • ADR 5.1 (6.1) III • WGK 3

**Danger** H272-H360Df-H373-H400-H410-H302+H332-EUH201

**Type analysis:**

| | |
|---|---|
| Assay (titr.) | ≥97 % |
| Insoluble matter in acid | ≤0,05 % |
| Loss on drying (105 °C) | ≤0,5 % |
| Chloride (Cl) | ≤0,02 % |
| Sulphate ($SO_4$) | ≤0,1 % |
| Manganese (Mn) | ≤0,002 % |

| | | | |
|---|---|---|---|
| **4479.1** | 100 g | plastic | 61,85 € |

## Lead subacetate

▶ Lead(II) acetate, basic see p. 2032

## Lead(II) sulphate

### Lead(II) sulphate

**≥98 %, extra pure**

$PbSO_4$
M 303,25 g/mol
D 6,2
mp 1170 °C
[7446-14-2] • EC No. 231-198-9
UN No. 3077 • ADR 9 III • WGK 3

**Danger**
H302+H332-H360D+H373-H410

**Type analysis:**

| | |
|---|---|
| Assay | ≥98,0 % |
| Nitrate ($NO_3$) | ≤0,005 % |
| Copper (Cu) | ≤0,005 % |

| | | | |
|---|---|---|---|
| **2560.1** | 100 g | plastic | 24,65 € |
| **2560.2** | 500 g | plastic | 55,80 € |
| Original pack 6 x 500 g | | | 53,01/500 g |
| **2560.3** | 1 kg | plastic | 92,35 € |
| Original pack 6 x 1 kg | | | 87,73/1 kg |

## Lecithin

Phosphatidylcholine
[8002-43-5] • EC No. 232-307-2
WGK 1

### Lecithin

**≥97 %, made from soybeans, GMO-free, for biochemistry**

Fat-free soy-lecithin, made from genetically unmodified plants.

**Guarantee analysis:**

Appearance. ..... light brownish to brown powder
Phospholipids (Px31,5). ..... ≥97,0 %
Lysophosphatidylcholine. ..... ≤10 %
Water. ..... ≤2,0 %
Acid value. ..... ≤35
Peroxide value. ..... ≤5,0
Free fatty acid. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **AE81.1** | 100 g | plastic | 14,95 € |
| **AE81.2** | 250 g | plastic | 24,65 € |
| **AE81.3** | 1 kg | plastic | 64,00 € |
| Original pack 6 x 1 kg | | | 60,80/1 kg |

### Lecithin

**≥97 %, made from soybeans, for biochemistry**

Made from soybeans.

**Guarantee analysis:**

Appearance. ..... pale yellow to light brownish powder
Phospholipids (Px31,5). ..... ≥97,0 %
Lysophosphatidylcholine. ..... ≤3,0 %
Water (KF). ..... ≤2,0 %
Peroxide value. ..... ≤3

| | | | |
|---|---|---|---|
| **9812.1** | 250 g | plastic | 20,65 € |
| **9812.3** | 1 kg | plastic | 51,50 € |
| Original pack 6 x 1 kg | | | 48,93/1 kg |
| **9812.2** | 2,5 kg | plastic | 115,60 € |

### Lecithin

**from eggs, for biochemistry**

Storage temp.: +4 °C

**Guarantee analysis:**

Phosphatidylcholine. ..... ≥57 %
Phosphatidylethanolamine. ..... ≥6 %
Water . ..... ≤2 %
Cholesterol. ..... ≤8 %
Peroxide value. ..... ≤3 meq/kg
Acid value. ..... ≤25 mg KOH/g
Iodine value. ..... ≥65
Iodine colour number . ..... ≤60

| | | | |
|---|---|---|---|
| **7514.1** | 25 g | plastic | 41,40 € |
| **7514.2** | 100 g | plastic | 115,60 € |

## Legionella Acid Buffer

### Legionella Acid Buffer

NEW

**EN ISO 11731-2, sterile, ready-to-use for microbiology**

Sterile acid buffer solution for detection of legionella.

0.2 M HCl/KCl Solution, pH 2.2,
Acid buffer pH 2.2, HCl/KCl-Puffer

Storage temp.: +20 °C •
Transport temp.: +20 °C
WGK 1

**Type analysis:**

pH value. ..... 2,2 ±0,2
Sterility. ..... complies
Appearance. ..... clear, colourless

| | | | |
|---|---|---|---|
| **9979.1** | 1 l | plastic | 37,65 € |
| Original pack 6 x 1 l | | | 35,77/1 l |

For further information, please see page 1411

## Legionella Agar (Base)

### Legionella Agar (Base)

**EN ISO 11731-2, for microbiology**

For selective cultivation of *Legionella.*

Application: Use 2,5 g for 90 ml agar. After autoclaving add 1 vial (10 ml) reconstituted *Legionella* Growth Supplement (Art. No. CL49.1). If required also add 1 ml reconstituted *Legionella* GVCP Supplement (Art. No. CL50.1).

**BCYE Agar** (Base), **GVCP Agar** (Base)

Storage temp.: +20 °C

**Guarantee analysis:**

Yeast extract. ..... 10,0 g/l
Charcoal activated. ..... 2,0 g/l
Agar. ..... 13,0 g/l
pH value. ..... 6,9 ±0,2

| | | | |
|---|---|---|---|
| **CL48.1** | 500 g | plastic | 122,05 € |
| Original pack 6 x 500 g | | | 115,95/500 g |

For further information, please see page 1387

## Legionella Growth Supplement

### Legionella Growth Supplement

**lyophilised**

Growth supplement for isolation of *Legionella.*

One box of 10 vials Legionella Growth Supplement is sufficient for 10 x 100 ml Legionella Agar.

**BCYE additive**

Storage temp.: +4 °C
UN No. 1759 • ADR 8 II • WGK 1

**Danger** H314-H302

**Formulation:**

ACES Buffer. ..... 1,0 g
Potassium hydroxide (KOH). ..... 0,2 g
alpha-Ketoglutarate. ..... 0,1 g
L-Cysteine. ..... 0,04 g
Ferric pyrophosphate. ..... 0,025 g
per vial

| | | | |
|---|---|---|---|
| **CL49.1** | 10 vials | glass | 188,15 € |

For further information, please see page 1407

## Legionella GVPC Supplement

### Legionella GVPC Supplement

**lyophilised**

Media supplement for selective isolation of *Legionella.*

One box of 10 vials Legionella GVPC Supplement is sufficient for 10 x 500 ml Legionella Agar.

Storage temp.: +4 °C
UN No. 2811 • ADR 6.1 III • WGK 2

**Danger**

H301-H360D-H341-H412-EUH208

**Formulation:**

Glycine. ..... 1,5 g
Polymyxin B. ..... ~39 600 IU
Cycloheximide. ..... 0,04 g
Vancomycin. ..... 0,5 mg
per vial

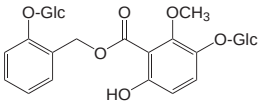
| | | | |
|---|---|---|---|
| **CL50.1** | 10 vials | glass | 181,70 € |

For further information, please see page 1407

## Leibovitz's cell culture medium

▶ Roti®-CELL Leibovitz's L15 see p. 2207

## Leiocarposide




### Leiocarposide

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Solidago virgaurea.*

2'-Hydroxybenzyl-3-methoxybenzoate-2',4-diglucoside
$C_{27}H_{34}O_{16}$
M 614,56 g/mol
Storage temp.: +4 °C
[71953-77-0]
WGK 1

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **2825.1** | 5 mg | glass | 256,95 € |

## Leishman stain

### Leishman stain

**for microscopy**

Mixture of methylen blue, Azure A, B and C Eosin methylene blue acc. to Leishman
mp 79-81 °C
[12627-53-1] • EC No. 235-732-1
WGK 3

**Type analysis:**

Appearance. ..... dark green to black powder
Appearance of solution (0,1 % in MeOH). ... clear, blue
Loss on drying. ..... ≤8 %

| | | | |
|---|---|---|---|
| **7702.1** | 5 g | glass | 14,20 € |
| **7702.2** | 25 g | glass | 24,20 € |
| **7702.3** | 100 g | glass | 60,10 € |

For further information, please see page 1464

## Letheen Agar modified

### Letheen Agar modified

**for microbiology**

For microbiological analyses of cosmetics, and samples containing disinfectants or preservatives.

Application: Use 59,1 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

**Formulation:**

Meat peptone..... 10 g/l
Casein peptone. ..... 10 g/l
Polysorbate 80..... 7 g/l
Sodium chloride..... 5 g/l
Beef extract. ..... 3 g/l
Yeast extract..... 2 g/l
Glucose. ..... 1 g/l
Lecithin. ..... 1 g/l
Sodium bisulfite. ..... 0,1 g/l
Agar. ..... 20 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **5759.1** | 500 g | plastic | 113,45 € |
| Original pack 6 x 500 g | | | 107,78/500 g |

For further information, please see page 1387

## Letheen Broth modified

### Letheen Broth modified

**for microbiology**

For microbiological analyses of cosmetics, and samples containing disinfectants or preservatives.

Application: Use 43,8 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

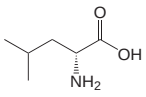
**Formulation:**

Meat peptone..... 20 g/l
Casein peptone. ..... 5 g/l
Polysorbate 80..... 5 g/l
Sodium chloride..... 5 g/l
Beef extract. ..... 5 g/l
Yeast extract..... 2 g/l
Glucose. ..... 1 g/l
Lecithin. ..... 0,7 g/l
Sodium bisulfite. ..... 0,1 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **5761.1** | 500 g | plastic | 102,70 € |
| Original pack 6 x 500 g | | | 97,57/500 g |

For further information, please see page 1387

## D-Leucine



### D-Leucine

**≥99 %, for biochemistry**

*(R)*-2-Amino-4-methylpentanoic acid, H-D-Leu-OH

$C_6H_{13}NO_2$

M 131,2 g/mol

Storage temp.: +4 °C

[328-38-1] • EC No. 206-327-7

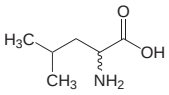
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay..... 99,0-100,5 %
Specific rotation $[\alpha]_D^{20}$ (c=4 in 6 N HCl). ..... -16,9° to -14,9°
Loss on drying. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **7882.1** | 5 g | plastic | 30,00 € |
| **7882.2** | 25 g | plastic | 90,20 € |
| **7882.3** | 100 g | plastic | 271,45 € |

## DL-Leucine



### DL-Leucine

**≥98,5 %, for biochemistry**

2-Amino-4-methylpentanoic acid

$C_6H_{13}NO_2$

M 131,17 g/mol

Storage temp.: +4 °C

[328-39-2] • EC No. 206-328-2

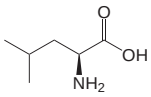
WGK 1

**Type analysis:**

Appearance..... white cryst. powder
Assay. ..... ≥98,5 %
Identity (IR)..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8599.1** | 25 g | plastic | 22,50 € |
| **8599.2** | 50 g | plastic | 38,60 € |
| **8599.3** | 250 g | plastic | 154,30 € |

## L-Leucine



*(S)*-2-Amino-4-methylpentanoic acid, H-L-Leu-OH

$C_6H_{13}NO_2$

M 131,18 g/mol

D 1,29

mp 145-148 °C (subl.)

Solubility: ~24 g/l ($H_2O$, 20 °C)

[61-90-5] • EC No. 200-522-0

WGK 1

### L-Leucine

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. ..... +14,9° to +16,0°
Foreign amino acids. ..... ≤1,0 %
Ammonium ($NH_4$). ..... ≤0,05 %
Chloride (Cl). ..... ≤0,05 %
Sulphate ($SO_4$). ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1699.1** | 25 g | plastic | 19,25 € |
| **1699.2** | 100 g | plastic | 42,90 € |
| **1699.3** | 500 g | plastic | 147,85 € |
| Original pack 6 x 500 g | | | 140,46/500 g |

### L-Leucine

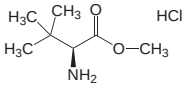
**≥98,5 %, Ph.Eur., USP, for biochemistry**

**Guarantee analysis:**

Appearance. ..... white cryst. powder
Assay. ..... 98,5-101,0 %
Identity. ..... complies
Specific rotation $[\alpha]_D^{20}$. ..... +14,5° to +16,5°
Sulphated ash. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %
Foreign amino acids. ..... complies
Ammonium ($NH_4$). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **3984.1** | 100 g | plastic | 34,30 € |
| **3984.3** | 250 g | plastic | 63,35 € |
| **3984.4** | 500 g | plastic | 110,65 € |
| Original pack 6 x 500 g | | | 105,12/500 g |
| **3984.2** | 1 kg | plastic | 209,10 € |
| Original pack 6 x 1 kg | | | 198,65/1 kg |

## L-tert-Leucine methylester hydrochloride



### L-tert-Leucine methylester hydrochloride

**≥98 %, for biochemistry**

H-L-Tle-OMe · HCl

$C_7H_{15}NO_2 \cdot HCl$

M 181,66 g/mol

mp 183 °C

Storage temp.: +4 °C

[63038-27-7]

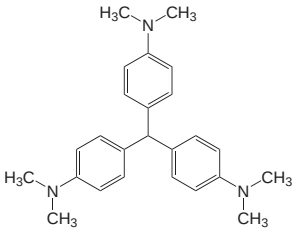
WGK 3

**Type analysis:**

Assay (HPLC). ..... ≥98,0 %
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6664.1** | 500 mg | glass | 32,15 € |
| **6664.2** | 1 g | glass | 48,95 € |

## Leuco crystal violet



### Leuco crystal violet

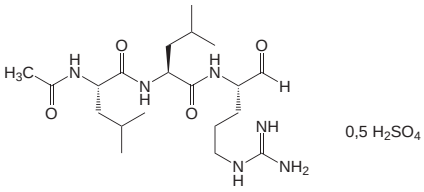
**≥98 %, p.a.**
LCV
$C_{25}H_{31}N_3$
M 373,53 g/mol
mp 175-180 °C
[603-48-5] • EC No. 210-043-9
WGK 3

**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... white to pale lavender powder
Assay. ..... ≥98 %
Loss on drying. ..... ≤2 %
Sulphated ash. ..... ≤1 %

| | | | |
|---|---|---|---|
| **7703.1** | 5 g | glass | 14,20 € |
| **7703.2** | 25 g | glass | 24,20 € |
| **7703.3** | 100 g | glass | 60,10 € |

## Leupeptin hemisulphate



### Leupeptin hemisulphate

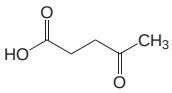
**≥96,5 %, for biochemistry**
Reversible inhibitor of serine- and cysteine proteases.
Acetyl-Leu-Leu-argininal
$C_{20}H_{38}N_6O_4 \cdot 0,5\ H_2SO_4$
M 475,99 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[103476-89-7]
WGK 1

**Type analysis:**
Assay (HPLC). ..... ≥96,5 %
Solution (1 % in $H_2O$). ..... clear

| | | | |
|---|---|---|---|
| **CN33.1** | 10 mg | glass | 45,70 € |
| **CN33.2** | 25 mg | glass | 95,60 € |
| **CN33.3** | 50 mg | glass | 169,35 € |
| **CN33.4** | 100 mg | glass | 310,70 € |

For further information, please see page 1285

## Levulinic acid



### Levulinic acid

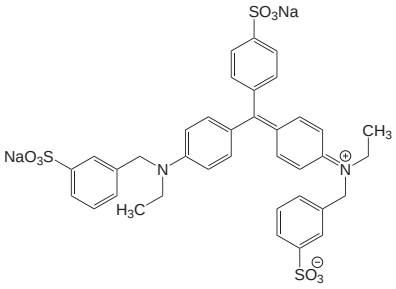
**≥98 %, for synthesis**
4-Oxopentanoic acid, 3-Acetopropionic acid
$C_5H_8O_3$
M 116,12 g/mol
D 1,15 • bp 245-246 °C
mp 30-33 °C • flp 98 °C
[123-76-2] • EC No. 204-649-2
WGK 1

**Warning** H302-H315-H319-H335

**Type analysis:**
Appearance. ..... colourless to yellow-brown
Assay (GC). ..... ≥98,0 %
Heavy metals. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **3976.1** | 50 g | glass | 14,55 € |
| **3976.2** | 500 g | glass | 55,80 € |
| Original pack 6 x 500 g | | | 53,01/500 g |

## Light green SF (C.I. 42095)



### Light green SF (C.I. 42095)

**for microscopy**
Acid green 5
$C_{37}H_{34}N_2Na_2O_9S_3$
M 792,86 g/mol
mp 288 °C (dec.)
[5141-20-8] • EC No. 225-906-5
WGK 1

**Type analysis:**
Appearance. ..... dark purple powder
Assay. ..... ≥80 %
Appearance of solution ($H_2O$). ..... clear, green

| | | | |
|---|---|---|---|
| **7706.1** | 5 g | glass | 19,25 € |
| **7706.2** | 25 g | glass | 43,55 € |
| **7706.3** | 100 g | glass | 134,95 € |

For further information, please see page 1464

## Light green SF yellowish solution

▶ Goldner's staining I see p. 1964

## Lignoceryl alcohol



### Lignoceryl alcohol

**>98 %, for biochemistry**
1-Tetracosanol
$C_{24}H_{50}O$
M 354,64 g/mol
mp 75-77 °C • flp >110 °C
[506-51-4] • EC No. 208-043-9

**Type analysis:**
Assay (GC). ..... >98 %

| | | | |
|---|---|---|---|
| **6029.1** | 250 mg | glass | 364,45 € |

## Lignosulphonic acid calcium salt

### Lignosulphonic acid calcium salt

**≥93 %, powdered**
Calcium lignosulphonate
[8061-52-7]
WGK 1

**Type analysis:**
Assay (dry substance). ..... ≥93 %
pH value (10 % solution). ..... 4,5 ±0,5
Insoluble matter. ..... ≤0,3 %
Calcium (Ca). ..... ~5 %
Reducing sugar. ..... ~6 %
Total sulphur. ..... ~7 %

| | | | |
|---|---|---|---|
| **8208.1** | 1 kg | plastic | 27,45 € |
| Original pack 6 x 1 kg | | | 26,08/1 kg |

## Lignosulphonic acid sodium salt

### Lignosulphonic acid sodium salt

**≥93 %, powdered**
Sodium lignosulphonate
[8061-51-6]
WGK 1

**Type analysis:**
Assay (dry substance). ..... ≥93 %
pH value (10 % solution). ..... 8,0 ±1,0
Insoluble (v/v). ..... ≤0,3 %

| | | | |
|---|---|---|---|
| **8999.1** | 1 kg | plastic | 28,95 € |
| Original pack 6 x 1 kg | | | 27,50/1 kg |

## Ligroin

▶ Petroleum benzine 50-70 see p. 2141

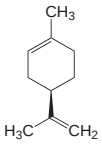
## Lime caustic

▶ Calcium oxide see p. 1806

## Lime salpetre

▶ Calcium nitrate tetrahydrate see p. 1806

## D-(+)-Limonene



(+)-p-Mentha-1,8-diene
$C_{10}H_{16}$
M 136,24 g/mol
D 0,84 • bp 175-178 °C
mp -89 °C • flp 50 °C
Solubility: 14 mg/l ($H_2O$, 25 °C)
Storage temp.: +4 °C
[5989-27-5] • EC No. 227-813-5
UN No. 2052 • ADR 3 III • WGK 3
**Warning**
H226-H400-H410-H315-H317

### D-(+)-Limonene

**Type analysis:**
Appearance. ..... colourless oil
Density (20 °C). ..... 0,836-0,848
Refractive index $n_D^{20}$. ..... 1,468-1,478
Specific rotation $[\alpha]_D^{20}$. ..... +96° to +108°

| | | | |
|---|---|---|---|
| **6722.1** | 500 ml | glass | 34,30 € |

### D-(+)-Limonene
**ROTICHROM® GC**
Reference substance for GC.

**Type analysis:**
Purity (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **5198.2** | 100 mg | glass | 121,40 € |

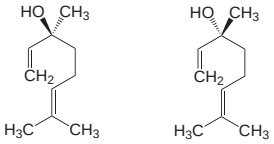
## DL-Limonene

### DL-Limonene
**≥95 %**
Mixture of terpenes
DL-p-Mentha-1,8-diene, Dipentene
$C_{10}H_{16}$
M 136,24 g/mol
D 0,84 • bp 177,6 °C
mp -89 °C • flp 43 °C
Storage temp.: +4 °C
[138-86-3] • EC No. 205-341-0
UN No. 2052 • ADR 3 III • WGK 2
**Warning** H226-H315-H317-H410

**Type analysis:**
Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥95 %
Density (d 20 °C/4 °C). ..... 0,841-0,843

| | | | |
|---|---|---|---|
| **7516.1** | 250 ml | glass | 39,25 € |

## Linalool



$C_{10}H_{18}O$
M 154,25 g/mol
D 0,86 • bp 199 °C
flp 75 °C
Storage temp.: +4 °C
[78-70-6] • EC No. 201-134-4
WGK 1
**Warning** H315-H317-H319

### Linalool
**pure**

**Type analysis:**
Appearance. ..... clear, almost colourless to pale yellow oil
Density (20 °C). ..... 0,855-0,868 g/cm³
Refractive index (20 °C). ..... 1,457-1,468
Optical rotation (20 °C). ..... -1° to +1°

| | | | |
|---|---|---|---|
| **3992.1** | 100 ml | glass | 21,40 € |

### Linalool
**ROTICHROM® GC**
Reference substance for GC.

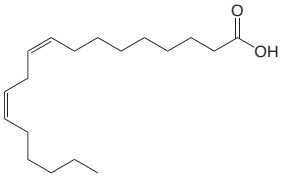
**Type analysis:**
Purity (GC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **5201.2** | 100 mg | glass | 107,40 € |

## Linalylacetate
▶ Acetic acid linalyl ester see p. 1696

## Linarigenin
▶ Acacetin see p. 1690

## Linoleic acid

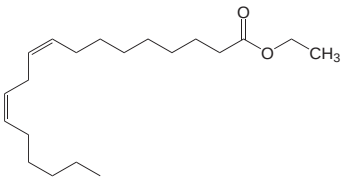


### Linoleic acid
**ROTICHROM® GC**
Reference substance for GC.
$C_{18}H_{32}O_2$
M 280,45 g/mol
D 0,902 • bp 229-230 °C (16 hPa)
mp -12 °C • flp 113 °C
Storage temp.: +4 °C
[60-33-3]
WGK 1

**Type analysis:**
Purity (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **5315.1** | 1 g | glass | 61,20 € |

## Linoleic acid ethyl ester

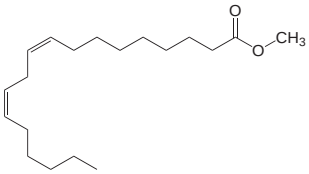


### Linoleic acid ethyl ester
**ROTICHROM® GC**
Reference substance for GC.
$C_{20}H_{36}O_2$
M 308,51 g/mol
D ~0,88 • bp 193 °C
flp 110 °C
Storage temp.: +4 °C
[544-35-4]
WGK 1

**Type analysis:**
Purity (GC). ..... ≥98,5 %

| | | | |
|---|---|---|---|
| **3198.1** | 1 g | glass | 32,15 € |

## Linoleic acid methyl ester



$C_{19}H_{34}O_2$
M 294,48 g/mol
D 0,89
mp -35 °C
Storage temp.: +4 °C
[112-63-0] • EC No. 203-993-0
WGK 1

### Linoleic acid methyl ester
**≥99 %**

**Type analysis:**
Assay (GC). ..... ≥99,0 %

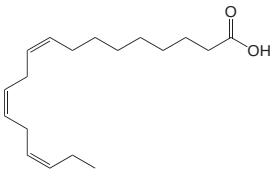
| | | | |
|---|---|---|---|
| **7217.1** | 5 ml | glass | 48,30 € |
| **7217.2** | 50 ml | glass | 403,15 € |

### Linoleic acid methyl ester
**ROTICHROM® GC**
Reference substance for GC.

**Type analysis:**
Purity (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **3199.1** | 1 g | glass | 35,40 € |

## Linolenic acid



9,12,15-Octadecatrienoic acid
$C_{18}H_{30}O_2$
M 278,44 g/mol
D 0,916 • bp 230-232 °C (23 hPa)
mp -10 °C • flp >110 °C
Storage temp.: +4 °C
[463-40-1] • EC No. 207-334-8
WGK 1

### Linolenic acid

**~94 %**
Mixture of isomers.

**Type analysis:**
Assay (GC). ..... ~94 %

| | | | |
|---|---|---|---|
| **6039.1** | 5 ml | glass | 92,35 € |

### Linolenic acid

**ROTICHROM® GC**
Reference substance for GC.
Mixture of isomers.

**Type analysis:**
Purity (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **5320.1** | 1 g | glass | 192,45 € |

## Linseed oil

### Linseed oil

**native, cold pressed**
Oleum lini
D 0,93
[8001-26-1] • EC No. 232-278-6

**Type analysis:**
Appearance. ..... ...clear, gold-yellow or brownish to greenish-yellow oil
Density (20 °C). ..... ~0,931
Water . ..... 0,1 %
Cadmium (Cd). ..... ≤0,00005 %
Refractive index $n_D^{20}$. ..... ~1,480
Acid value. ..... ≤4,5
Peroxide value. ..... ≤15
Iodine value. ..... 160-200
Saponification value. ..... 188-195
Unsaponifiable matter. ..... ≤1,5 %
Fatty acid compound. ..... complies

| | | | |
|---|---|---|---|
| **9338.2** | 500 ml | glass | 26,80 € |
| **9338.1** | 1 l | glass | 40,75 € |
| Original pack 6 x 1 l | | | 38,71/1 l |
| **9338.3** | 2,5 l | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |

### α-Lipoic acid

▶ DL-6,8-Dithiooctanoic acid see p. 1889

### Lipoxidase

▶ Lipoxygenase see p. 2038

## Lipoxygenase

### Lipoxygenase

**≥100 000 U/mg, for biochemistry**
Made from soybeans.
For oxidation of arachidonic acid.
Lipoxidase
M ~108 000 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[9029-60-1] • EC No. 232-853-1
WGK 1

**Type analysis:**
Activity. ..... ≥100 000 U/mg

| | | | |
|---|---|---|---|
| **CN73.1** | 100 mg | glass | 28,95 € |
| **CN73.2** | 500 mg | glass | 94,50 € |
| **CN73.3** | 1 g | glass | 142,90 € |

For further information, please see page 1277

### Liquid medium A

▶ CASO Broth see p. 1817

### Liquid medium D

▶ Lactose Broth see p. 2026

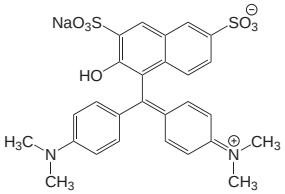
### Liquid medium G

▶ MacConkey Broth see p. 2047

### Liquid medium I

▶ Brilliant Green Tetrathionate Bile Broth see p. 1785

## Lissamine green B (C.I. 44090)



### Lissamine green B (C.I. 44090)

**p.a.**
Woolgreen S, Acid green 50
$C_{27}H_{25}N_2NaO_7S_2$
M 576,62 g/mol
[3087-16-9] • EC No. 221-409-2
WGK 3

**Warning** H302-H315-H319-H335

**Type analysis:**
Appearance. ..... dark red to black powder
Assay. ..... ≥80 %
Appearance of solution (0,1 % in $H_2O$). ..... clear, dark blue to dark green
Arsenic (As). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0001 %
Mercury (Hg). ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **7707.1** | 5 g | glass | 14,20 € |
| **7707.2** | 25 g | glass | 24,20 € |
| **7707.3** | 100 g | glass | 60,10 € |

## Listeria chromogenic Agar (Base)

### Listeria chromogenic Agar (Base)

**ISO 11290:2004, for microbiology**
Selective medium for detection and enumeration of *Listeria monocytogenes*.
Application: Use 70,55 g for 1 l agar. After cooling add 2 vials (10 ml reconstituted) Listeria Chromo Selective Supplement (Art. No. 2947.1) and 2 vials (10 ml each) Listeria Chromo Lipase C Supplement (Art. No. 2948.1).
Storage temp.: +4 °C
WGK 3

**Warning** H315-H319

**Guarantee analysis:**
Meat peptone. ..... 18 g/l
Lithium chloride. ..... 10 g/l
Yeast extract. ..... 10 g/l
Tryptone. ..... 6 g/l
Sodium chloride. ..... 5 g/l
di-Sodium hydrogen phosphate. ..... 2,5 g/l
Glucose. ..... 2 g/l
Sodium pyruvate. ..... 2 g/l
Magnesium glycerophosphate. ..... 1 g/l
Magnesium sulphate. ..... 0,5 g/l
Chromogene Mixture. ..... 0,05 g/l
Agar. ..... 13,5 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **3008.1** | 100 g | plastic | 64,40 € |

For further information, please see page 1387

## Listeria Chromo Lipase C Supplement

### Listeria Chromo Lipase C Supplement

**0,1 g/ml, sterile, ready-to-use**
Media supplement for selective isolation of *Listeria*.
One box of 10 vials Listeria Chromo Lipase C Supplement is sufficient for 10 x 500 ml Listeria chromogenic Agar.
Storage temp.: +4 °C

**Formulation:**
Phospholipase C substrate. ..... 1 g per vial

| | | | |
|---|---|---|---|
| **2948.1** | 10 x 10 ml | glass | 104,20 € |

For further information, please see page 1408

## Listeria Chromo Selective Supplement

### Listeria Chromo Selective Supplement

**lyophilised**
Media supplement for selective isolation of *Listeria*.
One box of 10 vials Listeria Chromo Selective Supplement is sufficient for 10 x 500 ml Listeria chromogenic Agar.
Storage temp.: +4 °C
UN No. 2811 • ADR 6.1 I • WGK 3

**Danger**
H300-H334-H317-H341-H360D-H411

**Formulation:**
Cycloheximide. ..... 0,025 g
Polymyxin B sulphate. ..... 38350 I.U.
Nalidixic acid sodium salt..... 0,01 g
Ceftazidime (Fortam). ..... 0,01 g
per vial

| | | | |
|---|---|---|---|
| **2947.1** | 10 vials | glass | 104,20 € |

For further information, please see page 1408

## Listeria Oxford Supplement

### Listeria Oxford Supplement
**lyophilised**
Media supplement for selective isolation of *Listeria monocytogenes.*
One box of 10 vials Listeria Oxford Supplement is sufficient for 10 x 500 ml Oxford Listeria Agar.
Oxford Supplement
Storage temp.: +4 °C
UN No. 2811 • ADR 6.1 I • WGK 3
**Danger** H300-H341-H360D-H411

**Formulation:**
per vial
Cycloheximide. ..... 200 mg
Colistinsulphate. ..... 10 mg
Fosfomycin. ..... 5 mg
Acryflavine. ..... 2,5 mg
Cefotetan. ..... 1 mg
Acriflavinium hydrochloride..... 2,5 mg

| | | | |
|---|---|---|---|
| **5801.1** | 10 vials | glass | 136,00 € |

For further information, please see page 1408

## Listeria Palcam Supplement

### Listeria Palcam Supplement
**lyophilised**
Media supplement for selective isolation of *Listeria monocytogenes.*
One box of 10 vials Listeria Palcam Supplement is sufficient for 10 x 500 ml Palcam Listeria Agar.
Palcam Supplement
Storage temp.: +4 °C
WGK 1
**Danger** H334-H317

**Formulation:**
Ceftazidime (Fortam). ..... 10 mg
Polymyxin B. ..... 5 mg
Acryflavine. ..... 2,5 mg
per vial

| | | | |
|---|---|---|---|
| **5803.1** | 10 vials | glass | 99,90 € |

For further information, please see page 1408

## Lithium Standards

- Lithium AAS Standard Solution see p. 2295
- Lithium ICP Standard Solution see p. 2299
- Lithium ICP Standard Solution see p. 2303
- Lithium IC Standard Solution see p. 2312


## Lithium ethanoate

- Lithium acetate see p. 2039
- Lithium acetate dihydrate see p. 2039


## Lithium acetate

### Lithium acetate
**>99 %, cryst.**
Lithium ethanoate
Li $CH_3COO$
M 65,98 g/mol
D 1,25
mp 280-285 °C
[546-89-4] • EC No. 208-914-3
WGK 1

**Type analysis:**
Assay. ..... >99,0 %
Water (KF)..... <0,3 %
Chloride (Cl). ..... <0,02 %
Sulphate ($SO_4$). ..... <0,02 %
Sodium (Na). ..... <0,01 %
Potassium (K)..... <0,005 %
Calcium (Ca). ..... <0,02 %
Magnesium (Mg). ..... <0,001 %
Heavy metals..... <0,002 %
Iron (Fe)..... <0,001 %

| | | | |
|---|---|---|---|
| **5447.2** | 100 g | plastic | 28,95 € |
| **5447.1** | 500 g | plastic | 113,85 € |
| Original pack 6 x 500 g | | | 108,16/500 g |

## Lithium acetate dihydrate

### Lithium acetate dihydrate
**≥98 %**
$LiCH_3COO \cdot 2\ H_2O$
M 102,02 g/mol
mp 49-58 °C
Solubility: 290 g/l ($H_2O$, 20 °C)
[6108-17-4] • EC No. 612-081-5
WGK 1

**Type analysis:**
Appearance..... white cryst. powder
Assay. ..... ≥98,0 %
Calcium (Ca). ..... ≤0,01 %
Chloride (Cl). ..... ≤0,05 %
Iron (Fe)..... ≤0,005 %
Sodium (Na). ..... ≤0,05 %
In water insoluble matter..... ≤0,1 %

| | | | |
|---|---|---|---|
| **6713.1** | 50 g | plastic | 14,55 € |
| **6713.2** | 100 g | plastic | 19,90 € |
| **6713.3** | 500 g | plastic | 68,70 € |
| Original pack 6 x 500 g | | | 65,27/500 g |

## Lithium bromide

LiBr
M 86,85 g/mol
D 3,46 • bp ~1300 °C
mp 552 °C
Solubility: 1810 g/l ($H_2O$, 25 °C)
[7550-35-8] • EC No. 231-439-8
WGK 1
**Warning** H302-H315-H317-H319

### Lithium bromide
**ROTI®METIC 99,999 % (5N)**

**Type analysis:**
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5062.1** | 25 g | plastic | 120,95 € |
| **5062.2** | 50 g | plastic | 192,45 € |

### Lithium bromide
**≥99 %, anhydrous**

**Type analysis:**
Appearance. ..... white fine powder
Assay. ..... ≥99,0 %
Chlorine (Cl). ..... ≤0,1 %
Sulphate ($SO_4$). ..... ≤0,05 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,001 %
Sodium (Na). ..... ≤0,1 %
Insoluble matter in acid. ..... ≤0,01 %
Water. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6712.1** | 25 g | plastic | 18,20 € |
| **6712.2** | 100 g | plastic | 31,10 € |
| **6712.3** | 500 g | plastic | 99,90 € |
| Original pack 6 x 500 g | | | 94,91/500 g |

## Lithium carbonate

$Li_2CO_3$
M 73,89 g/mol
D 2,11 • bp 1300 °C
mp 720 °C
Solubility: 13 g/l ($H_2O$, 20 °C)
[554-13-2] • EC No. 209-062-5
WGK 1
**Warning** H302-H319

### Lithium carbonate
**ROTI®METIC 99,999 % (5N)**

**Type analysis:**
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5635.1** | 10 g | plastic | 39,70 € |
| **5635.2** | 25 g | plastic | 69,80 € |
| **5635.3** | 100 g | plastic | 219,85 € |

### Lithium carbonate
**≥99 %, p.a., ACS**
Reagent for microscopy; starting material for other lithium compounds.

**Guarantee analysis:**
Assay (acidim.). ..... ≥99,0 %
In diluted HCl insoluble matter. ..... ≤0,01 %
Chloride (Cl)..... ≤0,005 %
Nitrate ($NO_3$). ..... ≤0,0005 %
Sulphur compounds (as $SO_4$). ..... ≤0,2 %
Heavy metals (as Pb). ..... ≤0,002 %
Iron (Fe). ..... ≤0,002 %
Sodium (Na)..... ≤0,1 %
Potassium (K). ..... ≤0,01 %
Calcium (Ca). ..... ≤0,01 %
Magnesium (Mg). ..... ≤0,01 %
Ammonium ($NH_4$). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **3995.1** | 250 g | plastic | 66,15 € |
| **3995.2** | 500 g | plastic | 117,20 € |
| Original pack 6 x 500 g | | | 111,34/500 g |

## Lithium carbonate

**≥99 %, extra pure**

**Type analysis:**

Assay.....≥99,0 %
Chloride (Cl).....≤0,05 %
Sulphate ($SO_4$).....≤0,1 %
Ferric oxide ($Fe_2O_3$).....≤0,005 %
Insoluble matter.....≤0,05 %
Water.....≤0,5 %
Loss on ignition.....≤1,0 %

| | | | |
|---|---|---|---|
| **7324.1** | 100 g | plastic | 15,60 € |
| **7324.2** | 500 g | plastic | 55,80 € |
| Original pack 6 x 500 g | | | 53,01/500 g |
| **7324.3** | 1 kg | plastic | 100,95 € |
| Original pack 6 x 1 kg | | | 95,90/1 kg |
| **7324.4** | 2,5 kg | plastic | 224,70 € |
| **7324.5** | 5 kg | plastic | 424,65 € |

## Lithium chloride

LiCl
M 42,40 g/mol
D 2,07 • bp 1360 °C
mp 615 °C
Solubility: 830 g/l ($H_2O$, 20 °C)
[7447-41-8] • EC No. 231-212-3
WGK 1

**Warning** H302-H315-H319

## Lithium chloride

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis).....99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5079.1** | 25 g | plastic | 120,95 € |
| **5079.2** | 50 g | plastic | 192,45 € |

## Lithium chloride

**≥99,5 %, p.a., ultra quality**

For molecular biology: used for salt-precipitation of DNA.

**Guarantee analysis:**

Assay.....≥99,5 %
Solubility (8M, solution).....clear, colourless
Sulphate ($SO_4$).....≤0,006 %
Nitrate ($NO_3$).....≤0,001 %
Heavy metals (as Pb).....≤0,002 %
Barium (Ba).....≤0,003 %
Calcium (Ca).....≤0,01 %
Iron (Fe).....≤0,001 %
Potassium (K).....≤0,01 %
Sodium (Na).....≤0,006 %
Loss on drying (105 °C).....≤0,6 %

| | | | |
|---|---|---|---|
| **3739.1** | 250 g | plastic | 49,35 € |
| **3739.2** | 1 kg | plastic | 142,45 € |
| Original pack 6 x 1 kg | | | 135,33/1 kg |

## Lithium chloride

**≥99 %, p.a., ACS**

**Guarantee analysis:**

Appearance.....white cryst. powder
Assay (arg. titr.).....≥99,0 %
Titrable base.....≤0,008 meq/g
Nitrate ($NO_3$).....≤0,001 %
Sulphate ($SO_4$).....≤0,01 %
Barium (Ba).....≤0,003 %
Calcium (Ca).....≤0,01 %
Iron (Fe).....≤0,001 %
Potassium (K).....≤0,01 %
Sodium (Na).....≤0,2 %
Heavy metals.....≤0,002 %
Insoluble matter.....≤0,01 %
Loss on drying (105 °C).....≤1,0 %

| | | | |
|---|---|---|---|
| **6698.1** | 50 g | plastic | 16,05 € |
| **6698.2** | 100 g | plastic | 22,05 € |
| **6698.3** | 500 g | plastic | 69,35 € |
| Original pack 6 x 500 g | | | 65,88/500 g |
| **6698.4** | 1 kg | plastic | 125,70 € |
| Original pack 6 x 1 kg | | | 119,42/1 kg |

## Lithium chloride

**≥99 %, pure**

**Type analysis:**

Assay.....≥99,0 %
Sodium (Na).....~0,1 %
Loss on ignition (400 °C).....≤0,5 %

| | | | |
|---|---|---|---|
| **P007.1** | 250 g | plastic | 22,05 € |
| **P007.2** | 1 kg | plastic | 76,90 € |
| Original pack 6 x 1 kg | | | 73,06/1 kg |
| **P007.3** | 2,5 kg | plastic | 155,90 € |

## tri-Lithium citrate tetrahydrate

## tri-Lithium citrate tetrahydrate

**≥98 %, Ph.Eur.**

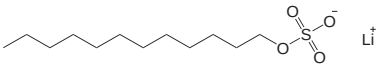
$C_6H_5Li_3O_7 \cdot 4\ H_2O$
M 282,00 g/mol
mp 105 °C
Solubility: 745 g/l ($H_2O$, 25 °C)
[6080-58-6] • EC No. 213-045-8
WGK 1

**Guarantee analysis:**

Appearance.....white to off-white powder
Assay (titr. dry substance).....98,0-102,0 %
Identity.....complies
Appearance of solution (10 %, water).....complies
Acidity/alkalinity.....complies
Reaction with $H_2SO_4$.....complies
Chloride (Cl).....≤0,01 %
Oxalate (as $C_2H_2O_4$).....≤0,03 %
Sulphate ($SO_4$).....≤0,05 %
Heavy metals (as Pb).....≤0,001 %
Water.....24,0-27,0 %

| | | | |
|---|---|---|---|
| **9443.1** | 50 g | plastic | 23,15 € |
| **9443.2** | 100 g | plastic | 34,30 € |
| **9443.3** | 500 g | plastic | 91,95 € |
| Original pack 6 x 500 g | | | 87,35/500 g |

## Lithiumdodecyl sulphate (LDS)



## Lithiumdodecyl sulphate (LDS)

**≥99 %, for biochemistry**

Anionic detergent.
LDS, Lithium lauryl sulphate
$C_{12}H_{25}LiO_4S$
M 272,33 g/mol
[2044-56-6] • EC No. 218-058-2
UN No. 1325 • ADR 4.1 III • WGK 3

**Danger** H228-H318-H315-H335

**Type analysis:**

Assay.....≥99,0 %
Chloride (Cl).....≤0,01 %
Loss on drying.....≤1,0 %
Absorption:
260 nm.....≤0,1
280 nm.....≤0,075

| | | | |
|---|---|---|---|
| **CN25.1** | 10 g | plastic | 27,45 € |
| **CN25.2** | 25 g | plastic | 53,65 € |
| **CN25.3** | 50 g | plastic | 96,65 € |

For further information, please see page 1272

## Lithium fluoride

LiF
M 25,94 g/mol
D 2,64 • bp 1673 °C
mp 848 °C
Solubility: 1,3 g/l ($H_2O$, 25 °C)
[7789-24-4] • EC No. 232-152-0
UN No. 3288 • ADR 6.1 III • WGK 2

**Danger** H301-H315-H319-H335

## Lithium fluoride

**ROTI®METIC 99,99 % (4N)**

**Type analysis:**

Assay (metals basis).....99,99 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5082.1** | 5 g | plastic | 53,65 € |
| **5082.2** | 25 g | plastic | 169,35 € |

## Lithium fluoride

**≥99 %, p.a.**

**Type analysis:**

Appearance.....white powder
Assay.....≥99,0 %
Chloride (Cl).....≤0,1 %
Sulphate ($SO_4$).....≤0,1 %
Aluminium (Al).....≤0,05 %
Barium (Ba).....≤0,005 %
Lead (Pb).....≤0,005 %
Calcium (Ca).....≤0,05 %
Iron (Fe).....≤0,005 %
Potassium (K).....≤0,01 %
Copper (Cu).....≤0,005 %
Magnesium (Mg).....≤0,01 %
Sodium (Na).....≤0,05 %
Zinc (Zn).....≤0,001 %

| | | | |
|---|---|---|---|
| **6715.1** | 25 g | plastic | 19,25 € |
| **6715.2** | 100 g | plastic | 34,30 € |
| **6715.3** | 250 g | plastic | 65,50 € |

## Lithium fluoride

**≥98,5 %**

**Type analysis:**

Appearance. ..... white powder
Assay. ..... ≥98,5 %
Chloride (Cl). ..... ≤0,1 %
Sulphate ($SO_4$). ..... ≤0,1 %
Iron (Fe). ..... ≤0,01 %
Lead (Pb). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **6702.1** | 25 g | plastic | 13,45 € |
| **6702.2** | 100 g | plastic | 25,30 € |
| **6702.3** | 250 g | plastic | 51,10 € |

## Lithium hydroxide

### Lithium hydroxide

**≥95 %, anhydrous**

LiOH
M 23,95 g/mol
mp 462 °C
Solubility: 71 g/l ($H_2O$, 20 °C)
[1310-65-2] • EC No. 215-183-4
UN No. 2680 • ADR 8 II • WGK 1

**Danger** H301-H314

**Type analysis:**

Appearance. ..... white powder
Assay (LiOH). ..... ≥95,0 %
Carbonate (as $Li_2CO_3$). ..... ≤3,0 %
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,1 %
Calcium oxide (CaO). ..... ≤0,1 %
Ferric oxide ($Fe_2O_3$). ..... ≤0,01 %
Sodium hydroxide (NaOH). ..... ≤0,1 %
In water insoluble matter. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **6705.1** | 25 g | plastic | 14,55 € |
| **6705.2** | 100 g | plastic | 29,60 € |
| **6705.3** | 250 g | plastic | 59,70 € |

## Lithium hydroxide monohydrate

### Lithium hydroxide monohydrate

**≥55 % LiOH**

$LiOH \cdot H_2O$
M 41,96 g/mol
D 1,51
mp 462 °C
Solubility: 124 g/l ($H_2O$, 20 °C)
[1310-66-3] • EC No. 215-183-4
UN No. 2680 • ADR 8 II • WGK 1

**Danger** H314-H301+H331

**Type analysis:**

Assay (LiOH). ..... ≥55,0 %
Carbonate (as $Li_2CO_3$). ..... ≤1,0 %
Aluminium (Al). ..... ≤0,03 %
Chloride (Cl). ..... ≤0,05 %
Potassium (K). ..... ≤0,3 %
Iron (Fe). ..... ≤0,001 %
Sodium (Na). ..... ≤0,3 %
Sulphate ($SO_4$). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **3997.1** | 250 g | plastic | 42,90 € |
| **3997.2** | 1 kg | plastic | 127,95 € |
| Original pack 6 x 1 kg | | | 121,55/1 kg |

## Lithium metaborate

### Lithium metaborate

**≥98 %, p.a., ACS, anhydrous**

D 2,18
mp 849 °C
[13453-69-5] • EC No. 236-631-5
WGK 1

**Guarantee analysis:**

Assay (acidim.). ..... 98,0-102,0 %
Insoluble matter. ..... ≤0,01 %
Loss on fusion (950 °C, 15 min). ..... ≤2,0 %
Phosphate ($PO_4$). ..... ≤0,004 %
Aluminium (Al). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,002 %
Potassium (K). ..... ≤0,005 %
Magnesium (Mg). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,005 %
Silicon (Si). ..... ≤0,01 %
Heavy metals. ..... ≤0,001 %
Bulk density. ..... ≥0,25 g/ml

| | | | |
|---|---|---|---|
| **9840.1** | 50 g | plastic | 46,15 € |
| **9840.2** | 100 g | plastic | 80,55 € |

## Lithium nitrate

$LiNO_3$
M 68,95 g/mol
D 2,38 • bp 600 °C (dec.)
mp 253 °C
Solubility: 522 g/l ($H_2O$, 20 °C)
[7790-69-4] • EC No. 232-218-9
UN No. 2722 • ADR 5.1 III • WGK 1

**Danger** H272-H302-H319

### Lithium nitrate

**ROTI®METIC 99,999 % (5N), anhydrous**

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5281.1** | 10 g | plastic | 73,00 € |
| **5281.2** | 25 g | plastic | 145,15 € |

### Lithium nitrate

**≥99,5 %, anhydrous**

**Type analysis:**

Appearance. ..... white hygroscopic powder
Assay. ..... ≥99,5 %
Chlorine (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,02 %
Calcium (Ca). ..... ≤0,01 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Sodium (Na). ..... ≤0,02 %
Water. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6699.1** | 10 g | plastic | 13,90 € |
| **6699.2** | 50 g | plastic | 23,15 € |
| **6699.3** | 250 g | plastic | 60,10 € |
| **6699.4** | 500 g | plastic | 96,65 € |
| Original pack 6 x 500 g | | | 91,82/500 g |

## Lithium stearate

▶ Stearic acid lithium salt see p. 2316

## Lithium sulphate

### Lithium sulphate

**≥99 %, anhydrous**

$Li_2SO_4$
M 109,94 g/mol
mp 859 °C
[10377-48-7] • EC No. 233-820-4
WGK 1

**Warning** H302

**Type analysis:**

Appearance. ..... white cryst. powder
Assay. ..... ≥99,0 %
Calcium (Ca). ..... ≤0,1 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Sodium (Na). ..... ≤0,1 %
Water. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6700.1** | 50 g | plastic | 17,10 € |
| **6700.2** | 100 g | plastic | 25,30 € |
| **6700.3** | 250 g | plastic | 48,95 € |
| **6700.4** | 500 g | plastic | 75,15 € |
| Original pack 6 x 500 g | | | 71,39/500 g |

## Lithium sulphate monohydrate

### Lithium sulphate monohydrate

**≥99 %, p.a.**

$Li_2SO_4 \cdot H_2O$
M 127,95 g/mol
D 2,06
mp 130 °C (dec.)
Solubility: 340 g/l ($H_2O$, 25 °C)
[10102-25-7] • EC No. 233-820-4
WGK 1

**Warning** H302

**Guarantee analysis:**

Assay. ..... ≥99 %
In HCl insoluble matter. ..... ≤0,01 %
Loss on drying (170 °C, 2 h). ..... ≤16,0 %
$Fe_2O_3$. ..... ≤0,005 %
Calcium (Ca). ..... ≤0,02 %
Sodium (Na). ..... ≤0,02 %
Nickel (Ni). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **4393.1** | 250 g | plastic | 42,50 € |
| **4393.2** | 500 g | plastic | 74,10 € |
| Original pack 6 x 500 g | | | 70,40/500 g |
| **4393.3** | 1 kg | plastic | 126,35 € |
| Original pack 6 x 1 kg | | | 120,03/1 kg |

## Lithium tetraborate

### Lithium tetraborate

**≥99 %**
$Li_2B_4O_7$
M 169,12 g/mol
mp 915-919 °C
Solubility: 50 g/l ($H_2O$, 20 °C)
[12007-60-2] • EC No. 234-514-3
WGK 3

**Type analysis:**
Appearance. ..... white cryst. powder
Assay. ..... ≥99,0 %
Sulphate ($SO_4$). ..... ≤0,1 %
Calcium (Ca). ..... ≤0,1 %
Lead (Pb). ..... ≤0,01 %
Iron (Fe). ..... ≤0,01 %
Sodium (Na). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **6706.1** | 25 g | plastic | 16,05 € |
| **6706.2** | 100 g | plastic | 37,10 € |
| **6706.3** | 250 g | plastic | 79,05 € |
| **6706.4** | 500 g | plastic | 146,10 € |
| Original pack 6 x 500 g | | | 138,80/500 g |

## Lithocholic acid

### Lithocholic acid

**≥98 %**
3α-Hydroxy-5β-cholanic acid
$C_{24}H_{40}O_3$
M 376,58 g/mol
mp ~184 °C
[434-13-9] • EC No. 207-099-1

**Type analysis:**
Appearance. ..... white to off-white powder
Assay (dry substance). ..... ≥98 %
Deoxycholic acid (TLC). ..... ≤2 %
Melting point. ..... 182-188 °C
Sulphated ash. ..... ≤0,2 %
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **8147.1** | 5 g | glass | 36,45 € |
| **8147.2** | 10 g | glass | 50,45 € |
| **8147.3** | 25 g | glass | 99,45 € |

## Litmus (C.I. 1242)

### Litmus (C.I. 1242)

**p.a.**
Indicator pH 4,5-8,3
Lacmus
[1393-92-6] • EC No. 215-739-6

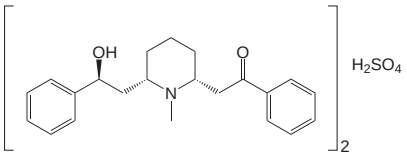
**Type analysis:**
Appearance. ..... bluish-black powder
pH-transition range. ..... 4,5 (red)-8,3 (blue)

| | | | |
|---|---|---|---|
| **0248.1** | 5 g | glass | 12,80 € |
| **0248.2** | 25 g | glass | 33,25 € |

## Litsea

▶ Oil of cubeb see p. 2113

## Lobeline sulphate




### Lobeline sulphate

**ROTICHROM® CHR**
$(C_{22}H_{27}NO_2)_2 \cdot H_2SO_4$
M 773,02 g/mol
mp ~140 °C
[134-64-5] • EC No. 205-151-8
UN No. 1544 • ADR 6.1 III • WGK 1

**Danger** H301

| | | | |
|---|---|---|---|
| **8997.1** | 100 mg | glass | 18,20 € |

## LOEFFLER's methylene blue solution

### LOEFFLER's methylene blue solution

**for microscopy and cell counting**
For visualising nuclei.
Methylene blue solution 0,5 %
WGK 1

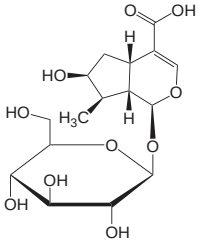
**Warning** H371

**Type analysis:**
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **AE64.1** | 500 ml | glass | 24,65 € |
| **AE64.2** | 1 l | glass | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |
| **AE64.3** | 2,5 l | plastic | 64,00 € |
| Original pack 4 x 2,5 l | | | 60,80/2,5 l |

For further information, please see page 1453

## Loganic acid



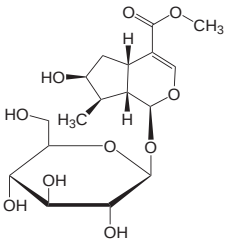

### Loganic acid

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{16}H_{24}O_{10}$
M 376,35 g/mol
Storage temp.: +4 °C
[22255-40-9] • EC No. 244-875-9

**Type analysis:**
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **4158.2** | 20 mg | glass | 235,45 € |

## Loganin




### Loganin

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{17}H_{26}O_{10}$
M 390,40 g/mol
mp ~222 °C
Storage temp.: +4 °C
[18524-94-2] • EC No. 242-398-0

**Type analysis:**
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **4162.1** | 10 mg | glass | 181,70 € |

## β-Longilobin

▶ Retrorsine see p. 2196

## Longilobin

▶ Seneciphylline see p. 2246

## α-Longilobine

▶ Seneciphylline see p. 2246

## D-Luciferin

### D-Luciferin

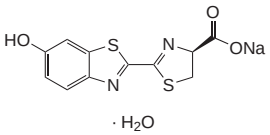
**≥99 %, for biochemisty**
Substrate of Luciferase.
(S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazolin-4-carboxyl acid,
D-Luciferin free acid
$C_{11}H_8N_2O_3S_2$
mp ~202-204 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[2591-17-5]
WGK 1

**Type analysis:**
Assay. ..... ≥99 %
Water. ..... ≤2 %

| | | | |
|---|---|---|---|
| **CN24.1** | 10 mg | glass | 53,65 € |
| **CN24.2** | 25 mg | glass | 110,65 € |
| **CN24.3** | 50 mg | glass | 198,90 € |

For further information, please see page 1293

## D-Luciferin sodium salt



· $H_2O$

### D-Luciferin sodium salt

**≥99 %, for biochemistry**

Luciferase substrate

(S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazoline-4-carboxylic acid sodium salt

$C_{11}H_7N_2O_3S_2Na \cdot H_2O$

M 320,32 g/mol

Solubility: in $H_2O$ soluble

Storage temp.: -20 °C •

Transport temp.: room temp.

[103404-75-7]

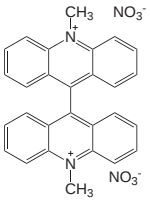
WGK 1

**Type analysis:**

Assay (HPLC). ..... ≥99 %
Solution (1 % in water). ..... yellowish, clear
Water (KF). ..... ≤8 %

| | | | |
|---|---|---|---|
| **4096.1** | 10 mg | glass | 32,15 € |
| **4096.2** | 25 mg | glass | 57,55 € |

## Lucigenin



### Lucigenin

**≥97 %, p.a., for chemiluminescence assays**

N,N'-Dimethyl-9,9'-biacridinium dinitrate, Bis-N-methylacridinium nitrate

$C_{28}H_{22}N_4O_6$

M 510,51 g/mol

mp ~250 °C

[2315-97-1] • EC No. 219-023-4

WGK 2

**Guarantee analysis:**

Assay (HPLC). ..... ≥97,0 %

| | | | |
|---|---|---|---|
| **6272.1** | 500 mg | glass | 101,60 € |

## LuciPac® Pen

### LuciPac® Pen

**Kikkoman for hygiene control**

For testing for the contamination of surfaces by ATP/AMP measurement using Lumitester PD20 and PD30.

Storage temp.: +4 °C

WGK 1

**Guarantee analysis:**

Sterility. ..... complies
Luminescence control. ..... complies

| | | | |
|---|---|---|---|
| **NC59.1** | 20 pieces | Aluminium bag | 96,65 € |
| **NC59.2** | 100 pieces | Aluminium bag | 413,90 € |

For further information, please see page 1357

## LuciPac® Pen Aqua

### LuciPac® Pen Aqua

**Kikkoman for hygiene control**

For testing for the contamination of liquids by ATP/AMP measurement using Lumitester PD20 and PD30.

Storage temp.: +4 °C

WGK 1

**Guarantee analysis:**

Sterility. ..... complies
Luminescence control. ..... complies

| | | | |
|---|---|---|---|
| **NC58.1** | 20 pieces | Aluminium bag | 96,65 € |
| **NC58.2** | 100 pieces | Aluminium bag | 413,90 € |

For further information, please see page 1357

## Luff-Schoorl's solution

### Luff-Schoorl's solution

**for sugar determination**

UN No. 3082 • ADR 9 III • WGK 3

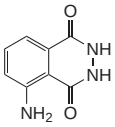
**Warning** H319-H411

| | | | |
|---|---|---|---|
| **X874.1** | 1 l | glass | 31,75 € |
| Original pack 6 x 1 l | | | 30,16/1 l |

## Lugol solution

▶ Iodine-potassium iodide solution acc. to Lugol see p. 2006

## Luminol



### Luminol

**≥95 %, for synthesis**

Fluorescence indicator, peroxidase reagent

3-Aminophthalic hydrazide, 5-Amino-2,3-dihydro-phthalazine-1,4-dione

$C_8H_7N_3O_2$

M 177,16 g/mol

mp ~320 °C

[521-31-3] • EC No. 208-309-4

WGK 1

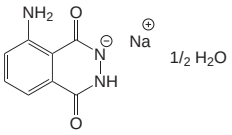
**Warning** H302-H315-H319-H335

**Type analysis:**

Appearance. ..... yellow-green powder
Assay (titr.). ..... ≥95 %
Water (KF). ..... <1 %
Solubility (0,1 % in 0,1 N NaOH). ... completely soluble

| | | | |
|---|---|---|---|
| **4203.1** | 5 g | plastic | 48,95 € |
| **4203.2** | 25 g | plastic | 193,40 € |

## Luminol sodium salt hemihydrate



### Luminol sodium salt hemihydrate

**≥98 %, p.a.**

$C_8H_6N_3NaO_2 \cdot ½ H_2O$

M 199,14 + ½ $H_2O$ g/mol

[206658-90-4]

WGK 3

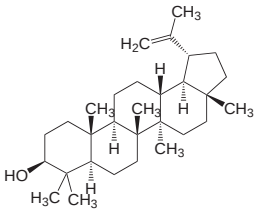
**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... off-white powder
Assay. ..... ≥98 %
Appearance of solution (5 % in $H_2O$). ..... clear, yellow

| | | | |
|---|---|---|---|
| **7708.1** | 1 g | glass | 19,25 € |
| **7708.2** | 5 g | glass | 43,55 € |
| **7708.3** | 10 g | glass | 79,05 € |

## Lupeol



### Lupeol

**ROTICHROM® HPLC**

Reference substance for HPLC.

β-Viscol

$C_{30}H_{50}O$

M 426,70 g/mol

Storage temp.: +4 °C

[545-47-1] • EC No. 208-889-9

**Warning** H302

**Type analysis:**

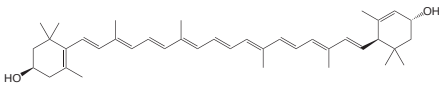
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **8863.2** | 20 mg | glass | 177,40 € |

## Lupeose

▶ Stachyose Hydrate see p. 2292

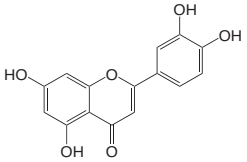
## Lutein



### Lutein
**ROTICHROM® TLC**
Reference substance for thin layer chromatography
Xanthophyll
$C_{40}H_{56}O_2$
M 568,88 g/mol
mp 190 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[127-40-2] • EC No. 204-840-0

| | | | |
|---|---|---|---|
| **5671.1** | 5 mg | glass | 321,45 € |

## Luteolin



3',4',5,7-Tetrahydroxyflavone
$C_{15}H_{10}O_6$
M 286,23 g/mol
mp 326-330 °C
[491-70-3] • EC No. 207-741-0
WGK 1
**Warning** H315-H319-H335

### Luteolin
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC). ..... ≥90,0 %
Residual solvents (GC). ..... ≤10,0 %
Water (KF). ..... ≤4,0 %
Assay (qNMR). ..... ≥80,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE49.1** | 25 mg | glass | 848,20 € |

### Luteolin
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC). ..... ≥80,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

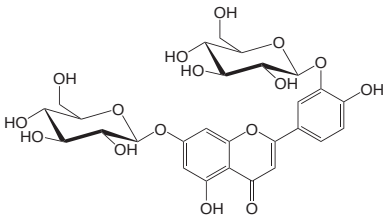
| | | | |
|---|---|---|---|
| **NC49.2** | 25 mg | glass | 209,65 € |

### Luteolin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Reseda luteola*.
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **4546.1** | 10 mg | glass | 134,40 € |

## Luteolin-3',7-diglucoside

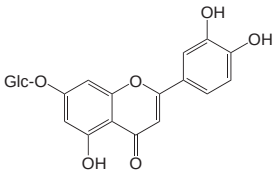


### Luteolin-3',7-diglucoside
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{27}H_{30}O_{16}$
M 610,51 g/mol
Storage temp.: +4 °C
[52187-80-1] • EC No. 257-724-7

**Type analysis:**
Purity (HPLC). ..... ≥96 %

| | | | |
|---|---|---|---|
| **6760.2** | 10 mg | glass | 396,70 € |

## Luteolin-7-glucoside

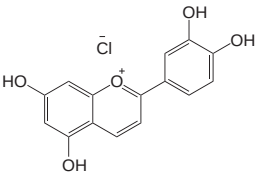


### Luteolin-7-glucoside
**ROTICHROM® HPLC**
Reference substance for HPLC.
Cynaroside
$C_{21}H_{20}O_{11}$
M 448,39 g/mol
Storage temp.: +4 °C
[5373-11-5] • EC No. 226-365-8
WGK 1

**Type analysis:**
Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **4164.1** | 10 mg | glass | 192,45 € |

## Luteolinidin chloride



### Luteolinidin chloride
**ROTICHROM® HPLC**
Reference substance for HPLC.
3',4',5,7-Tetrahydroxyflavylium chloride
$C_{15}H_{11}O_5Cl$
M 306,68 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[1154-78-5]

**Type analysis:**
Purity (HPLC). ..... ≥91 %

| | | | |
|---|---|---|---|
| **9325.1** | 10 mg | plastic | 396,70 € |

## Lutetium Standards

▶ Lutetium ICP Standard Solution see p. 2299
▶ Lutetium ICP Standard Solution see p. 2303

## Lutetium(III) nitrate hydrate

### Lutetium(III) nitrate hydrate
**ROTI®REMETIC 99,99 %**
$Lu(NO_3)_3 \cdot x\ H_2O$
M 360,98 + x $H_2O$ g/mol
[100641-16-5] • EC No. 233-241-7
UN No. 1477 • ADR 5.1 II • WGK 3
**Danger** H272-H315-H319

**Type analysis:**
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7265.1** | 1 g | plastic | 78,40 € |

## Lutetium(III) oxide

$Lu_2O_3$
M 397,93 g/mol
D 9,41 • bp 3980 °C
mp 2427 °C
[12032-20-1] • EC No. 234-764-3
WGK 1
**Warning** H315-H319-H335

### Lutetium(III) oxide
**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**
Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5296.1** | 1 g | plastic | 85,50 € |

## Lutetium(III) oxide

**ROTI®REMETIC 99,99 %**

**Type analysis:**

Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7177.1** | 1 g | plastic | 96,65 € |
| **7177.2** | 5 g | plastic | 321,45 € |

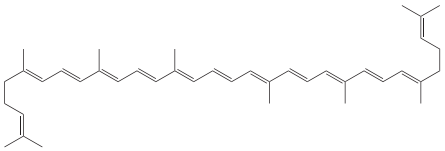
## Lutrol®

▶ Polyethylene glycol see p. 2157

## Luxol® Fast Blue MBSN

▶ Solvent blue 38 (C.I. 74180) see p. 2288

## Lycopene



ψ,ψ-Carotene, all-trans-Lycopene
$C_{40}H_{56}$
M 536,87 g/mol
mp 173 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[502-65-8] • EC No. 207-949-1

### Lycopene

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Solanum lycopersicum.*

**Type analysis:**

Purity (HPLC)..... >90 %

| | | | |
|---|---|---|---|
| **1180.1** | 5 mg | glass | 256,95 € |

### Lycopene

**ROTICHROM® TLC**

Reference substance for thin layer chromatography

| | | | |
|---|---|---|---|
| **5670.1** | 5 mg | glass | 375,20 € |

## Lycopodium

### Lycopodium

**extra pure**

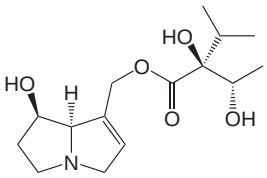
Spores of *Lycopodium clavatum L.*
Club-moss spores
[84082-56-4] • EC No. 282-002-3

**Type analysis:**

Appearance. ..... fine, yellow powder
Identity. ..... complies
Ash content..... ≤3 %

| | | | |
|---|---|---|---|
| **8253.1** | 250 g | plastic | 51,50 € |

## Lycopsamine



### Lycopsamine

**ROTICHROM® HPLC**

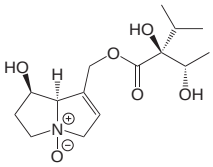
Reference substance for HPLC.
From *Symphytum.*
$C_{15}H_{25}NO_5$
M 299,36 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[10285-07-1]
WGK 1

**Type analysis:**

Purity (HPLC). ..... ≥95,0 %

| | | | |
|---|---|---|---|
| **2208.1** | 5 mg | glass | 332,20 € |

## Lycopsamine N-oxide



### Lycopsamine N-oxide

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Symphythum.*
$C_{15}H_{25}NO_6$
M 315,36 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[95462-15-0]
WGK 1

**Warning** H302

**Type analysis:**

Purity (HPLC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **8022.1** | 5 mg | glass | 375,20 € |

## Lycoricidinol

▶ Narciclasine see p. 2089

## Lymphocyte separation medium

▶ Roti®-Sep 1077 see p. 2232

## Lysine Iron Agar

### Lysine Iron Agar

**for microbiology**

For rapid differentiation of *Enterobacteriaceae,* particularly *Salmonella arizonae.*
Application: Use 33 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

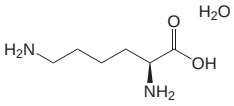
**Formulation:**

L-Lysin. ..... 10 g/l
Gelatine peptone..... 5 g/l
Yeast extract. ..... 3 g/l
Dextrose. ..... 1 g/l
Ammonium iron(III) citrate. ..... 0,5 g/l
Sodium thiosulphate. ..... 0,04 g/l
Bromocresol purple..... 0,02 g/l
Agar. ..... 13,5 g/l
pH value..... 6,7 ±0,2

| | | | |
|---|---|---|---|
| **8322.1** | 500 g | plastic | 171,50 € |
| Original pack 6 x 500 g | | | 162,93/500 g |

For further information, please see page 1388

## L-Lysine monohydrate



$C_6H_{14}N_2O_2 \cdot H_2O$
M 164,21 g/mol
Solubility: 300 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[39665-12-8] • EC No. 200-294-2
WGK 1

### L-Lysine monohydrate

**CELLPURE® ≥98,5 %**

For cell culture and biochemistry.

**Type analysis:**

Assay (dry substance). ..... ≥98,5 %
Endotoxins. ..... ≤6 I.U./g
Specific rotation $[\alpha]_D^{20}$ ..... +25,5° to +27,0°
Water (KF). ..... 10,5-11,5 %
Ammonium ($NH_4$) ..... ≤0,02 %
Chloride (Cl)..... ≤0,05 %
Sulphate ($SO_4$)..... ≤0,02 %
Heavy metals (as Pb)..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **6829.1** | 25 g | plastic | 48,30 € |
| **6829.2** | 100 g | plastic | 88,05 € |
| **6829.3** | 500 g | plastic | 321,45 € |
| Original pack 6 x 500 g | | | 305,38/500 g |

### L-Lysine monohydrate

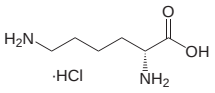
**≥98,5 %, for biochemistry**

**Type analysis:**

Assay (dry substance). ..... 98,5-101,5 %
Specific rotation $[\alpha]_D^{20}$ ..... +25,5° to +27,0°
Water (KF). ..... 10,0-11,5 %
Chloride (Cl)..... ≤0,03 %
Sulphate ($SO_4$)..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4207.1** | 25 g | plastic | 45,05 € |
| **4207.2** | 100 g | plastic | 84,85 € |

## D-Lysine hydrochloride



### D-Lysine hydrochloride

**≥99 %, for biochemistry**

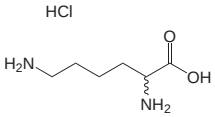
*(R)*-2,6-Diaminohexanoic acid hydrochloride,
H-D-Lys-OH · HCl
$C_6H_{14}N_2O_2 \cdot HCl$
M 182,7 g/mol
Storage temp.: +4 °C
[7274-88-6] • EC No. 230-691-6
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... 99,0-100,5 %
Specific rotation $[\alpha]_D^{20}$ (1 % in 1,6 N HCl). ..... -21,4° to -20,6°
Loss on drying (105 °C, 3 h). ..... ≤0,4 %

| | | | |
|---|---|---|---|
| **7883.1** | 1 g | glass | 24,65 € |
| **7883.2** | 5 g | plastic | 54,75 € |
| **7883.3** | 25 g | plastic | 133,20 € |

## DL-Lysine hydrochloride



### DL-Lysine hydrochloride

**≥98 %, for biochemistry**

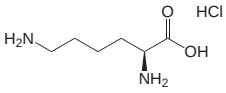
2,6-Diaminohexanoic acid hydrochloride
$C_6H_{14}N_2O_2 \cdot HCl$
M 182,65 g/mol
mp 170 °C
Storage temp.: +4 °C
[70-53-1] • EC No. 200-739-0
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥98 %
Identity (IR). ..... complies
Heavy metals (as Pb). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **8600.1** | 500 mg | glass | 20,35 € |
| **8600.2** | 1 g | glass | 31,75 € |
| **8600.3** | 5 g | plastic | 55,80 € |

## L-Lysine hydrochloride



α,ε-Diamino-N-caproic acid hydrochloride,
*(S)*-2,6-Diaminohexanoic acid hydrochloride,
H-L-Lys-OH · HCl
$C_6H_{15}ClN_2O_2$
M 182,65 g/mol
mp 250-260 °C
Solubility: ~420 g/l ($H_2O$, 20 °C)
[657-27-2] • EC No. 211-519-9
WGK 1

### L-Lysine hydrochloride

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,4 %
Specific rotation $[\alpha]_D^{20}$ (dry substance, 20 °C). ..... 20,7° to 21,5°
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... 19,1-19,5 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,003 %

| | | | |
|---|---|---|---|
| **1700.1** | 25 g | plastic | 15,60 € |
| **1700.2** | 100 g | plastic | 28,50 € |
| **1700.3** | 500 g | plastic | 95,60 € |
| Original pack 6 x 500 g | | | 90,82/500 g |

### L-Lysine hydrochloride

**≥98,5 %, Ph.Eur., USP, JP, for biochemistry**

**Guarantee analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Specific rotation $[\alpha]_D^{20}$ (dry substance, 20 °C). ..... 20,7° to 21,5°
Specific rotation $[\alpha]_D^{25}$ (dry substance, 25 °C). ..... 20,4° to 21,4°
pH value . ..... 5,0-6,0
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... 19,1-19,5 %
Sulphate ($SO_4$). ..... ≤0,02 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... ≤0,2 %
Related substances (total). ..... ≤1,0 %
Loss on drying (3 h, 105 °C). ..... ≤0,4 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9357.1** | 100 g | plastic | 17,75 € |
| **9357.3** | 250 g | plastic | 36,45 € |
| **9357.4** | 500 g | plastic | 63,35 € |
| Original pack 6 x 500 g | | | 60,18/500 g |
| **9357.2** | 1 kg | plastic | 111,70 € |
| Original pack 6 x 1 kg | | | 106,12/1 kg |

### H-L-Lys($N_3$)-OH · HCl

▶ L-Azidolysine hydrochloride see p. 1758

## Lysozyme

### Lysozyme

**≥35000 FIP U/mg, BioScience-Grade, lyophilised**

From chicken egg white, free from albumin.
M ~14000 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[12650-88-3] • EC No. 235-747-3
WGK 1

**Type analysis:**

Appearance. ..... white powder
Activity. ..... ≥35000 FIP U/mg
Assay. ..... ≥95,0 %
pH value. ..... 3,0-3,6
Water content. ..... ≤6,0 %
Ash content. ..... ≤1,5 %
Heavy metals (as Pb). ..... ≤0,001 %
Bioburden (TAMC). ..... ≤100/g

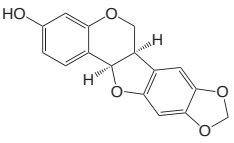
| | | | |
|---|---|---|---|
| **8259.1** | 1 g | glass | 26,80 € |
| **8259.2** | 10 g | glass | 165,05 € |
| **8259.3** | 25 g | glass | 310,70 € |

For further information, please see page 1277

## Lyticase

▶ Zymolyase® 20T see p. 2390
▶ Zymolyase® 100T see p. 2390

## (-)-Maackiain



### (-)-Maackiain

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Baptisia tinctoria*.
Inermin
$C_{16}H_{12}O_5$
M 284,27 g/mol
mp 175-180 °C
Storage temp.: +4 °C
[2035-15-6]
WGK 3

**Type analysis:**

Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **6496.1** | 10 mg | glass | 274,15 € |

M

## MacConkey Agar

### MacConkey Agar

**Ph.Eur., EN ISO 21567, for microbiology**

For selective isolation and identification of enterobacteria from waste water, foods and other samples.

Application: Use 50 g for 1 l agar.

Agar medium H (Ph.Eur. 6.0), MacConkey Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Gelatin peptone (Pancreas hydrolysate)..... 17 g/l
Meat and casein peptone. ..... 3 g/l
Lactose monohydrate. ..... 10 g/l
Bile salt (Cholate). ..... 1,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Neutral red. ..... 0,03 g/l
Crystal Violet..... 0,001 g/l
Agar. ..... 13,5 g/l
pH value. ..... 7,1 ±0,2

| | | | |
|---|---|---|---|
| **X922.1** | 500 g | plastic | 81,20 € |
| Original pack 6 x 500 g | | | 77,14/500 g |
| **X922.2** | 1 kg | plastic | 146,10 € |
| Original pack 6 x 1 kg | | | 138,80/1 kg |

For further information, please see page 1388

## MacConkey Agar, granulated

### MacConkey Agar, granulated

NEW

**granulated, Ph.Eur., for microbiology**

For selective isolation and identification of enterobacteria from waste water, foods and other samples.

Application: Use 49,53 g for 1 l agar.

Agar medium H (Ph.Eur. 6.0), MacConkey Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Gelatin peptone (Pancreas hydrolysate)..... 17 g/l
Meat and casein peptone. ..... 3 g/l
Lactose monohydrate. ..... 10 g/l
Bile salt (Cholate). ..... 1,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Neutral red. ..... 0,03 g/l
Crystal Violet..... 0,001 g/l
Agar. ..... 13,5 g/l
pH value. ..... 7,1 ±0,2

| | | | |
|---|---|---|---|
| **1514.1** | 500 g | plastic | 102,15 € |
| Original pack 6 x 500 g | | | 97,04/500 g |

For further information, please see page 1404

## MacConkey Agar with sorbitol

▶ Sorbitol MacConkey Agar see p. 2291

## MacConkey Broth

### MacConkey Broth

**Ph.Eur., for microbiology**

For detection of coliform bacteria in water, milk and other liquids.

Application: Use 35 g for 1 l broth.

Broth medium G (Ph.Eur. 6.0), MacConkey Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

**Guarantee analysis:**

Gelatin peptone (Pancreas hydrolysate). .....20 g/l
Lactose monohydrate.....10 g/l
Dehydrated ox bile. .....5 g/l
Bromocresol purple. .....0,01 g/l
pH value. ..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **AE47.1** | 500 g | plastic | 80,55 € |
| Original pack 6 x 500 g | | | 76,52/500 g |

For further information, please see page 1388

## Macleyine

▶ Protopine see p. 2183

## Macrogol

▶ Polyethylene glycol see p. 2157

## Madecassoside

### Madecassoside

**ROTICHROM® HPLC**

Reference substance for HPLC.

$C_{48}H_{78}O_{20}$
M 975,17 g/mol
Storage temp.: +4 °C
[34540-22-2] • EC No. 252-076-1

**Type analysis:**

Purity (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **6138.1** | 10 mg | glass | 338,65 € |

## Magenta

▶ Fuchsine basic (C.I. 42510) see p. 1944

## Magnesia burnt

▶ Magnesium oxide see p. 2050

## Magnesia rods

### Magnesia rods

**Ø 1,5 mm x L 140 mm**

Ideal for flame analysis of sodium, etc.
For borax-bead analysis of cobalt.
For bead tests. Ø 1.5 x L 140 mm.

| | | | |
|---|---|---|---|
| **6543.1** | 25 pieces | cardboard | 23,15 € |

## Magnesia scoops

### Magnesia scoops

For annealing and incineration of samples, as well as for the production of oxygen melts for the detection of chromium, manganese etc. and for bead tests. W 9 x L 100 mm.

| | | | |
|---|---|---|---|
| **6537.1** | 25 pieces | cardboard | 20,40 € |

## Magnesium filings

### Magnesium filings

**≥99,9 %, acc. to Grignard, for synthesis**

For synthesis of organometallic compounds. Application in Gringnard reaction.

Mg
M 24,31 g/mol
D 1,75 • bp 1107 °C
mp 651 °C
[7439-95-4] • EC No. 231-104-6
UN No. 1869 • ADR 4.1 III

**Danger** H261-H228

**Type analysis:**

Assay (Mg).....≥99,9 %
Aluminium (Al).....≤0,05 %
Manganese (Mn).....≤0,05 %
Iron (Fe). .....≤0,05 %
Nickel (Ni). .....≤0,001 %
Silicon (Si).....≤0,05 %

| | | | |
|---|---|---|---|
| **AE61.1** | 250 g | tin | 17,75 € |
| **AE61.2** | 500 g | tin | 26,80 € |
| Original pack 6 x 500 g | | | 25,46/500 g |
| **AE61.3** | 1 kg | tin | 43,55 € |
| Original pack 6 x 1 kg | | | 41,37/1 kg |

## Magnesium powder

### Magnesium powder

**≥99,8 %, <75 µm**

Mg
M 24,31 g/mol
D 1,75 • bp 1107 °C
mp 651 °C
[7439-95-4] • EC No. 231-104-6
UN No. 1418 • ADR 4.3 (4.2) II

**Danger** H228-H261-H252

**Type analysis:**

Assay (Mg).....≥99,8 %

| | | | |
|---|---|---|---|
| **CP20.1** | 100 g | plastic | 13,45 € |
| **CP20.2** | 500 g | plastic | 38,60 € |
| Original pack 6 x 500 g | | | 36,67/500 g |

M

## Magnesium ribbon

### Magnesium ribbon

**≥99,5 %, tape**

For the detection of sodium.

A coil with about 25 g, band ~0,2 mm thick, 3 mm wide

Mg
M 24,31 g/mol
D 1,738 • bp 1090 °C
mp 649,5 °C • flp 500 °C
[7439-95-4] • EC No. 231-104-6
UN No. 1869 • ADR 4.1 III

**Danger** H261-H228

**Type analysis:**

Assay (Mg). ..... ≥99,5 %
In HCl insoluble matter. ..... ≤0,05 %
Lead (Pb). ..... ≤0,01 %
Iron (Fe). ..... ≤0,05 %
Copper (Cu). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **4468.1** | 1 roll | box | 100,55 € |

## Magnesium Standards


- Magnesium AAS Standard Solution see p. 2295
- Magnesium ICP Standard Solution see p. 2299
- Magnesium ICP Standard Solution see p. 2303
- Magnesium IC Standard Solution see p. 2312


## Magnesium acetate tetrahydrate

$Mg(CH_3COO)_2 \cdot 4\ H_2O$
M 214,46 g/mol
D 1,454
mp 80 °C
Solubility: 1200 g/l ($H_2O$, 15 °C)
[16674-78-5] • EC No. 205-554-9
WGK 1

### Magnesium acetate tetrahydrate

**≥99,5 %, p.a., ACS**

For the detection of sodium.

**Guarantee analysis:**

Assay (compl.). ..... ≥99,5 %
pH value (5 % solution). ..... 8-9
In $CH_3COOH$ insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Barium (Ba). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,001 %
Strontium (Sr). ..... ≤0,005 %
Cadmium (Cd). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Sodium (Na). ..... ≤0,005 %
Lead (Pb). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P026.1** | 500 g | plastic | 52,15 € |
| Original pack 6 x 500 g | | | 49,54/500 g |
| **P026.2** | 1 kg | plastic | 87,65 € |
| Original pack 6 x 1 kg | | | 83,27/1 kg |

### Magnesium acetate tetrahydrate

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤6,0 E.U./g
Assay (dry substance). ..... ≥99 %
pH value (5 % solution). ..... 7,5-8,5
Chloride (Cl). ..... ≤0,033 %
Sulphate ($SO_4$). ..... ≤0,06 %
Nitrate ($NO_3$). ..... complies
Heavy metals (as Pb). ..... ≤0,004 %
Aluminium (Al). ..... ≤0,0001 %
Calcium (Ca). ..... ≤0,01 %
Potassium (K). ..... ≤0,1 %
Sodium (Na). ..... ≤0,5 %
Easily oxidizable substance.. ..... complies

| | | | |
|---|---|---|---|
| **HN11.1** | 100 g | plastic | 17,10 € |
| **HN11.2** | 500 g | plastic | 46,15 € |
| Original pack 6 x 500 g | | | 43,84/500 g |
| **HN11.3** | 1 kg | plastic | 74,10 € |
| Original pack 6 x 1 kg | | | 70,40/1 kg |

### Magnesium acetate tetrahydrate

**≥98 %, Ph.Eur., extra pure**

For biochemistry.

**Guarantee analysis:**

Assay. ..... 98,0-101,0 %
Identity. ..... complies
pH value (5 % solution). ..... 7,5-8,5
Water ..... 33,0-35,0 %
Chloride (Cl). ..... ≤0,033 %
Sulphate ($SO_4$). ..... ≤0,06 %
Nitrate ($NO_3$). ..... ≤0,0003 %
Aluminium (Al). ..... ≤0,0001 %
Calcium (Ca). ..... ≤0,01 %
Potassium (K). ..... ≤0,1 %
Sodium (Na). ..... ≤0,5 %
Heavy metals (as Pb). ..... ≤0,004 %
Easily oxidizable substance.. ..... complies

| | | | |
|---|---|---|---|
| **0275.1** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **0275.2** | 1 kg | plastic | 37,55 € |
| Original pack 6 x 1 kg | | | 35,67/1 kg |
| **0275.3** | 5 kg | plastic | 139,25 € |

## Magnesium carbonate

### Magnesium carbonate

**Ph.Eur., light**

Magnesia alba
$(MgCO_3)_4\ Mg(OH)_2 \cdot 5\ H_2O$
D 2,16
mp 600 °C (dec.)
[12125-28-9] • EC No. 235-192-7

**Guarantee analysis:**

Appearance. ..... white powder
Appearance of solution. ..... complies
Assay (compl.). ..... 40,0-45,0 %
Identity. ..... complies
Water-soluble content. ..... ≤1,0 %
Substances insoluble in acetic acid. ..... ≤0,05 %
Chloride (Cl). ..... ≤0,07 %
Sulphate ($SO_4$). ..... ≤0,3 %
Arsenic (As). ..... ≤0,0002 %
Calcium (Ca). ..... ≤0,75 %
Iron (Fe). ..... ≤0,04 %
Heavy metals (as Pb). ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **3530.2** | 1 kg | plastic | 28,50 € |
| Original pack 6 x 1 kg | | | 27,08/1 kg |
| **3530.1** | 2,5 kg | cardboard | 39,25 € |

## Magnesium chloride

### Magnesium chloride

**≥98,5 %, anhydrous**

$MgCl_2$
M 95,22 g/mol
D ~2,32 • bp 1412 °C
mp 708 °C
Solubility: 542 g/l ($H_2O$, 20 °C)
[7786-30-3] • EC No. 232-094-6
WGK 1

**Type analysis:**

Assay. ..... ≥98,5 %

| | | | |
|---|---|---|---|
| **KK36.1** | 100 g | plastic | 13,45 € |
| **KK36.2** | 500 g | plastic | 30,00 € |
| Original pack 6 x 500 g | | | 28,50/500 g |
| **KK36.3** | 1 kg | plastic | 50,00 € |
| Original pack 6 x 1 kg | | | 47,50/1 kg |

## Magnesium chloride hexahydrate

$MgCl_2 \cdot 6\ H_2O$
M 203,3 g/mol
D 1,57
mp 117 °C (dec.)
Solubility: 1670 g/l ($H_2O$, 20 °C)
[7791-18-6] • EC No. 232-094-6
WGK 1

### Magnesium chloride hexahydrate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5347.1** | 25 g | plastic | 192,45 € |
| **5347.2** | 100 g | plastic | 568,70 € |

### Magnesium chloride hexahydrate

**≥99 %, p.a., ACS**

Reagent for the detection of phosphate, molecular biology.

**Guarantee analysis:**

Assay (compl.). ..... ≥99,0 %
pH value (5 % in water). ..... 5,0-6,5
In $H_2O$ insoluble matter. ..... ≤0,005 %
Total nitrogen (as N). ..... ≤0,002 %
Phosphate ($PO_4$). ..... ≤0,0005 %
Nitrate ($NO_3$). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,002 %
Ammonium ($NH_4$). ..... ≤0,002 %
Barium (Ba). ..... ≤0,005 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Strontium (Sr). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **2189.2** | 250 g | plastic | 15,60 € |
| **2189.1** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |
| **2189.3** | 2,5 kg | plastic | 55,40 € |
| **2189.5** | 25 kg | plastic | 439,70 € |

## Magnesium chloride hexahydrate

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins ≤3,0 I.U./g
Assay ≥99 %
Appearance of solution clear, colourless
In $H_2O$ insoluble matter ≤0,05 %
Sulphate ($SO_4$) ≤0,01 %
Heavy metals (as Pb) ≤0,0005 %
Aluminium (Al) ≤0,00005 %
Arsenic (As) ≤0,0002 %
Cadmium (Cd) ≤0,0001 %
Calcium (Ca) ≤0,01 %
Iron (Fe) ≤0,0005 %
Potassium (K) ≤0,05 %
Mercury (Hg) ≤0,0001 %

| | | | |
|---|---|---|---|
| **HN03.1** | 250 g | plastic | 19,90 € |
| **HN03.2** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **HN03.3** | 1 kg | plastic | 44,65 € |
| Original pack 6 x 1 kg | | | 42,42/1 kg |
| **HN03.4** | 2,5 kg | plastic | 83,35 € |
| **HN03.5** | 5 kg | plastic | 144,95 € |

## Magnesium chloride hexahydrate

**≥98 %, Ph.Eur.**

**Guarantee analysis:**

Appearance fine, white crystals
Assay 98,0-101,0 %
Identity complies
Water 51,0-55,0 %
Appearance of solution (10 %) clear, colourless
In $H_2O$ insoluble matter ≤0,005 %
Acidity (0,01 M NaOH/0,5 g) ≤0,30 ml
Alkalinity (0,01M HCl/0,5 g) ≤0,30 ml
Sulphate ($SO_4$) ≤0,01 %
Bromide (Br) ≤0,05 %
Heavy metals (as Pb) ≤0,001 %
Aluminium (Al) ≤0,0001 %
Arsenic (As) ≤0,0002 %
Iron (Fe) ≤0,001 %
Calcium (Ca) ≤0,1 %
Barium (Ba) complies
Potassium (K) ≤0,05 %
Mercury (Hg) ≤0,0001 %

| | | | |
|---|---|---|---|
| **A537.4** | 500 g | plastic | 18,85 € |
| Original pack 6 x 500 g | | | 17,91/500 g |
| **A537.1** | 1 kg | plastic | 25,30 € |
| Original pack 6 x 1 kg | | | 24,04/1 kg |
| **A537.5** | 2,5 kg | plastic | 48,95 € |
| **A537.2** | 10 kg | plastic | 153,20 € |
| **A537.3** | 50 kg | cardboard | 665,45 € |

## Magnesium chloride hexahydrate

**techn., flakes**

**Type analysis:**

Appearance white-yellowish flakes
$MgCl_2$ ≥46,5 %
$MgSO_4$ ≤0,6 %
pH value (10 % solution) 5,5-9,0 %
Potassium chloride (KCl) ≤0,8 %
Sodium chloride (NaCl) ≤0,9 %
Iron (Fe) ≤0,0025 %

| | | | |
|---|---|---|---|
| **3532.1** | 1 kg | plastic | 17,10 € |
| Original pack 6 x 1 kg | | | 16,25/1 kg |
| **3532.2** | 10 kg | plastic | 57,95 € |
| **3532.3** | 50 kg | cardboard | 123,65 € |

## Magnesium citrate

### Magnesium citrate

**pure**

Citric acid magnesium salt
$C_6H_6MgO_7$
M 214,43 g/mol
Solubility: 250 g/l ($H_2O$, 100 °C)
[7779-25-1] • EC No. 231-923-9
WGK 1

**Type analysis:**

Assay (Mg) 6,0-8,0 %
pH value (5 %) 3,5-4,0
Sulphate ($SO_4$) ≤1,0 %
Heavy metals (as Pb) ≤0,001 %

| | | | |
|---|---|---|---|
| **9361.1** | 100 g | plastic | 14,95 € |
| **9361.2** | 500 g | plastic | 34,30 € |
| Original pack 6 x 500 g | | | 32,59/500 g |
| **9361.3** | 1 kg | plastic | 52,70 € |
| Original pack 6 x 1 kg | | | 50,07/1 kg |

## Magnesium EDTA disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid magnesium disodium salt dihydrate see p. 1917

## Magnesium hexafluorosilicate hexahydrate

### Magnesium hexafluorosilicate hexahydrate

NEW

**≥98 %, pure**

$MgSiF_6 \cdot 6\ H_2O$
M 274,47 g/mol
D 1,79
mp 120 °C (dec.)
Solubility: 590 g/l ($H_2O$, 20 °C)
[18972-56-0] • EC No. 241-022-2
UN No. 2853 • ADR 6.1 III • WGK 2

**Danger** H301-H318-H412

**Type analysis:**

Assay ≥98,0 %
In water insoluble matter ≤0,5 %

| | | | |
|---|---|---|---|
| **0325.1** | 100 g | plastic | 16,05 € |
| **0325.2** | 500 g | plastic | 26,80 € |
| Original pack 6 x 500 g | | | 25,46/500 g |
| **0325.3** | 1 kg | plastic | 42,90 € |
| Original pack 6 x 1 kg | | | 40,76/1 kg |
| **0325.4** | 2,5 kg | plastic | 85,90 € |

## Magnesium hydrogen phosphate trihydrate

### Magnesium hydrogen phosphate trihydrate

NEW

**≥96 %, pure**

Magnesium phosphate dibasic
$MgHPO_4$
M 174,33 g/mol
D 2,13
mp 550 °C (dec.)
Solubility: 0,25 g/l ($H_2O$, 20 °C)
[7782-75-4] • EC No. 231-823-5
WGK 1

**Type analysis:**

Assay (based on calcinated substance) ≥96,0 %
Arsenic (As) ≤0,001 %
Lead (Pb) ≤0,001 %
Loss on ignition (800 °C) 29,0-36,5 %

| | | | |
|---|---|---|---|
| **0502.1** | 250 g | plastic | 17,10 € |
| **0502.2** | 1 kg | plastic | 42,90 € |
| Original pack 6 x 1 kg | | | 40,76/1 kg |
| **0502.3** | 2,5 kg | plastic | 91,30 € |

M

## Magnesium hydroxide

### Magnesium hydroxide

**≥95 %, Ph.Eur.**
$Mg(OH)_2$
M 58,32 g/mol
D 2,4
mp 350 °C (dec.)
Solubility: 0,009 g/l ($H_2O$, 18 °C)
[1309-42-8] • EC No. 215-170-3

**Guarantee analysis:**

| | |
|---|---|
| Appearance. | white powder |
| Assay (titr.). | 95,0-100,5 % |
| Identity. | complies |
| Appearance of solution. | complies |
| Substances soluble in $H_2O$. | ≤2,0 % |
| In $CH_3COOH$ insoluble matter. | ≤0,1 % |
| Chloride (Cl). | ≤0,1 % |
| Sulphate ($SO_4$). | ≤1,0 % |
| Arsenic (As). | ≤0,0004 % |
| Calcium (Ca). | ≤1,5 % |
| Iron (Fe). | ≤0,07 % |
| Heavy metals (as Pb). | ≤0,003 % |
| Loss on ignition (900 °C). | 29,0-32,5 % |

| | | | |
|---|---|---|---|
| **9453.1** | 100 g | plastic | 14,95 € |
| **9453.2** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **9453.3** | 1 kg | plastic | 46,15 € |
| Original pack 6 x 1 kg | | | 43,84/1 kg |

## Magnesium matrix modifier

▶ Matrix modifier solution Magnesium nitrate see p. 2059

## Magnesium nitrate hexahydrate

$Mg(NO_3)_2 \cdot 6\ H_2O$
M 256,41 g/mol
D 1,46
mp ~89 °C
Solubility: 420 g/l ($H_2O$, 20 °C)
[13446-18-9] • EC No. 233-826-7
UN No. 1474 • ADR 5.1 III • WGK 1

**Danger** H272

### Magnesium nitrate hexahydrate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis). | 99,999 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5420.1** | 10 g | plastic | 48,95 € |
| **5420.2** | 50 g | plastic | 100,55 € |

### Magnesium nitrate hexahydrate

**≥98 %, p.a., ACS**
Oxidant

**Guarantee analysis:**

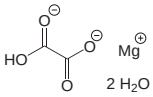
| | |
|---|---|
| Assay (compl.). | 98,0-102,0 % |
| pH value (5 % solution). | 5,0-8,2 |
| In $H_2O$ insoluble matter. | ≤0,003 % |
| Chloride (Cl). | ≤0,001 % |
| Phosphate ($PO_4$). | ≤0,0005 % |
| Sulphate ($SO_4$). | ≤0,002 % |
| Ammonium ($NH_4$). | ≤0,003 % |
| Heavy metals (as Pb). | ≤0,0005 % |
| Arsenic (As). | ≤0,0001 % |
| Aluminium (Al). | ≤0,0005 % |
| Barium (Ba). | ≤0,002 % |
| Calcium (Ca). | ≤0,01 % |
| Cobalt (Co). | ≤0,0005 % |
| Chromium (Cr). | ≤0,0005 % |
| Copper (Cu). | ≤0,0005 % |
| Iron (Fe). | ≤0,0002 % |
| Potassium (K). | ≤0,005 % |
| Manganese (Mn). | ≤0,0005 % |
| Sodium (Na). | ≤0,005 % |
| Strontium (Sr). | ≤0,002 % |
| Nickel (Ni). | ≤0,001 % |

| | | | |
|---|---|---|---|
| **HN31.1** | 500 g | plastic | 35,40 € |
| Original pack 6 x 500 g | | | 33,63/500 g |
| **HN31.2** | 1 kg | plastic | 61,20 € |
| Original pack 6 x 1 kg | | | 58,14/1 kg |
| **HN31.3** | 2,5 kg | plastic | 135,35 € |

## Magnesium nitrate matrix modifier solution

▶ Matrix modifier solution Magnesium nitrate see p. 2059

## Magnesium oxalate dihydrate




### Magnesium oxalate dihydrate

**≥99 %, pure**
Oxalic acid magnesium salt
$MgC_2O_4 \cdot 2\ H_2O$
M 148,35 g/mol
D 2,45
mp 150 °C (dec.)
Solubility: 0,7 g/l ($H_2O$, 20 °C)
[547-66-0] • EC No. 208-932-1
WGK 1

NEW

**Warning** H302+H312

**Type analysis:**

| | |
|---|---|
| Assay. | ≥99,0 % |
| Chloride (Cl). | ≤0,05 % |
| Lead (Pb). | ≤0,005 % |
| Calcium (Ca). | ≤1,0 % |
| Iron (Fe). | ≤0,05 % |

| | | | |
|---|---|---|---|
| **0495.1** | 100 g | plastic | 21,40 € |
| **0495.2** | 500 g | plastic | 59,05 € |
| Original pack 6 x 500 g | | | 56,10/500 g |
| **0495.3** | 1 kg | plastic | 96,65 € |
| Original pack 6 x 1 kg | | | 91,82/1 kg |
| **0495.4** | 2,5 kg | plastic | 213,95 € |

## Magnesium oxide

Magnesia, burnt
MgO
M 40,30 g/mol
D 3,60 • bp 2800 °C
mp 2826 °C
[1309-48-4] • EC No. 215-171-9
WGK 1

### Magnesium oxide

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis). | 99,999 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5639.1** | 10 g | plastic | 105,25 € |
| **5639.2** | 50 g | plastic | 471,95 € |

### Magnesium oxide

**≥98 %, Ph.Eur., light**

**Guarantee analysis:**

| | |
|---|---|
| Appearance. | white, fine powder |
| Assay (based on calcinated substance). | 98,0-100,5 % |
| Identity. | complies |
| Appearance of solution. | complies |
| Soluble substances. | ≤2,0 % |
| Substances insoluble in acetic acid. | ≤0,1 % |
| Chloride (Cl). | ≤0,15 % |
| Sulphate ($SO_4$). | ≤1,0 % |
| Arsenic (As). | ≤0,0004 % |
| Calcium (Ca). | ≤1,5 % |
| Iron (Fe). | ≤0,1 % |
| Heavy metals (as Pb). | ≤0,003 % |
| Loss on ignition (900 °C). | ≤8,0 % |

| | | | |
|---|---|---|---|
| **8280.2** | 500 g | plastic | 19,90 € |
| Original pack 6 x 500 g | | | 18,91/500 g |
| **8280.1** | 1 kg | plastic | 27,85 € |
| Original pack 6 x 1 kg | | | 26,46/1 kg |
| **8280.3** | 5 kg | plastic | 117,20 € |

## Magnesium phosphate dibasic

▶ Magnesium hydrogen phosphate trihydrate see p. 2049

## Magnesium reagent acc. to Mann and Yoe

▶ Xylidyl blue sodium salt see p. 2382

## Magnesium silicate

▶ Florisil® see p. 1930
▶ Talcum see p. 2328

## Magnesium sulphate

### Magnesium sulphate

NEW

**≥99 %, p.a., anhydrous**

$MgSO_4$
M 120,37 g/mol
D 2,66
mp 1124 °C
Solubility: 300 g/l ($H_2O$, 20 °C)
[7487-88-9] • EC No. 231-298-2
WGK 1

**Guarantee analysis:**

Appearance. ..... white to off-white powder
Assay (titr.). ..... ≥99,0 %
Chloride (Cl). ..... ≤0,05 %
Arsenic (As). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **0682.1** | 100 g | plastic | 18,20 € |
| **0682.2** | 500 g | plastic | 40,75 € |
| Original pack 6 x 500 g | | | 38,71/500 g |
| **0682.3** | 1 kg | plastic | 69,80 € |
| Original pack 6 x 1 kg | | | 66,31/1 kg |

## Magnesium sulphate hydrate

### Magnesium sulphate hydrate

**≥99 %, dried, extra pure, DAC**

$MgSO_4 \cdot x\ H_2O$
M 120,4 + x $H_2O$ g/mol
D ~2,45
Solubility: 300 g/l ($H_2O$, 20 °C)
[22189-08-8] • EC No. 231-298-2
WGK 1

**Guarantee analysis:**

Assay (in annealed substances). ..... 99,0-101,0 %
Appearance of solution. ..... complies
Acidity/alkalinity. ..... complies
Chloride (Cl). ..... ≤0,022 %
Arsenic (As). ..... ≤0,0002 %
Calcium (Ca). ..... ≤0,033 %
Iron (Fe). ..... ≤0,0014 %
Heavy metals (as Pb). ..... ≤0,0015 %
Loss on ignition (400 °C). ..... 26,0-32,0 %

| | | | |
|---|---|---|---|
| **0261.1** | 500 g | plastic | 15,30 € |
| Original pack 6 x 500 g | | | 14,54/500 g |
| **0261.2** | 1 kg | plastic | 19,60 € |
| Original pack 6 x 1 kg | | | 18,62/1 kg |
| **0261.3** | 2,5 kg | plastic | 35,40 € |

## Magnesium sulphate heptahydrate

Bitter salt
$MgSO_4 \cdot 7\ H_2O$
M 246,48 g/mol
D 1,67
Solubility: 710 g/l ($H_2O$, 20 °C)
[10034-99-8] • EC No. 231-298-2
WGK 1

### Magnesium sulphate heptahydrate

**≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay (compl.). ..... 99,0-102,0 %
pH value . ..... 5,0-8,2
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,0005 %
Phosphate ($PO_4$). ..... ≤0,001 %
Nitrate ($NO_3$). ..... ≤0,001 %
Ammonium ($NH_4$). ..... ≤0,002 %
Heavy metals. ..... ≤0,0005 %
Arsenic (As). ..... ≤0,00005 %
Copper (Cu). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Sodium (Na). ..... ≤0,005 %
Lead (Pb). ..... ≤0,0005 %
Strontium (Sr). ..... ≤0,005 %
Calcium (Ca). ..... ≤0,004 %
Iron (Fe). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Silicon (Si). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P027.1** | 500 g | plastic | 24,20 € |
| Original pack 6 x 500 g | | | 22,99/500 g |
| **P027.2** | 1 kg | plastic | 38,60 € |
| Original pack 6 x 1 kg | | | 36,67/1 kg |
| **P027.3** | 2,5 kg | plastic | 71,50 € |

### Magnesium sulphate heptahydrate

**≥99 %, Ph.Eur., USP, BP**

**Guarantee analysis:**

Assay (compl., dry substance). ..... 99,0-100,5 %
Identity. ..... complies
pH value (5 % solution). ..... 5,0-9,2
In $H_2O$ insoluble matter. ..... ≤0,025 %
Appearance of solution. ..... complies
Loss on drying (450 °C). ..... 48,0-52,0 %
Acid and alkaline reacting substances. ..... complies
Chloride (Cl). ..... ≤0,014 %
Phosphate ($PO_4$). ..... ≤0,002 %
Ammonium ($NH_4$). ..... ≤0,005 %
Arsenic (As). ..... ≤0,0002 %
Iron (Fe). ..... ≤0,002 %
Heavy metals (as Pb). ..... ≤0,001 %
Selenium (Se). ..... ≤0,003 %
Loss on drying (450 °C). ..... 48,0-52,0 %
Residual solvents. ..... complies

| | | | |
|---|---|---|---|
| **T888.1** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **T888.2** | 1 kg | plastic | 24,65 € |
| Original pack 6 x 1 kg | | | 23,42/1 kg |
| **T888.3** | 5 kg | plastic | 80,55 € |
| **T888.5** | 25 kg | plastic | 289,20 € |

### Magnesium sulphate heptahydrate

**extra pure**

**Type analysis:**

Appearance. ..... cryst.powder
Assay ($MgSO_4$). ..... ≥48 %
KCl, NaCl. ..... ≤0,1 %
$K_2SO_4$, $CaSO_4$ ..... ≤0,1 %
Water. ..... ≥51 %

| | | | |
|---|---|---|---|
| **8283.2** | 1 kg | plastic | 17,10 € |
| Original pack 6 x 1 kg | | | 16,25/1 kg |
| **8283.1** | 2,5 kg | plastic | 26,35 € |
| **8283.3** | 10 kg | plastic | 64,00 € |

## Magneson

▶ 4-(4-Nitrophenylazo)-resorcinol see p. 2102

## Magnetic beads

▶ Roti®-MagBeads see p. 2223

## Mairin

▶ Betulinic acid see p. 1771

## Maize oil

### Maize oil

**Ph.Eur., refined**

Oleum Maydis
D 0,92 • bp 321 °C
[8001-30-7] • EC No. 232-281-2

**Guarantee analysis:**

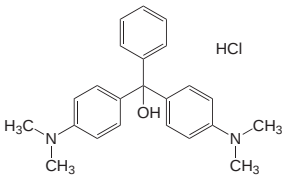
Relative density (20 °C). ..... ~0,920
Refractive index $n_D^{20}$ ..... ~1,474
Acid value. ..... ≤0,5 mg KOH/g
Peroxide value. ..... ≤10 meq $O_2$/kg
Water. ..... ≤0,1 %
Alkaline reacting substances. ..... complies
Unsaponifiable matter. ..... ≤2,8 %
Brassicasterol. ..... ≤0,3 %
GC-fatty acid constituents:
<C 16:0. ..... ≤0,6 %
C 16:0 Palmitic acid. ..... 8,6-16,5 %
C 18:0 Stearic acid. ..... ≤3,3 %
C 18:1 Oleic acid. ..... 20,0-42,2 %
C 18:2 Linoleic acid. ..... 39,4-65,6 %
C 18:3 Linolenic acid. ..... 0,5-1,5 %
C 20:0 Arachidic acid. ..... ≤0,8 %
C 20:1 Gadoleic acid. ..... ≤0,5 %
C 22:0 Behenic acid. ..... ≤0,5 %
Other fatty acids. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6212.1** | 1 l | glass | 34,95 € |
| Original pack 6 x 1 l | | | 33,20/1 l |
| **6212.2** | 2,5 l | glass | 56,90 € |
| Original pack 4 x 2,5 l | | | 54,06/2,5 l |
| **6212.3** | 5 l | plastic | 87,00 € |
| Original pack 2 x 5 l | | | 82,65/5 l |
| **6212.4** | 10 l | plastic | 146,10 € |

## Malachite green G

▶ Brilliant green (C.I. 42040) see p. 1785

## Malachite green hydrochloride



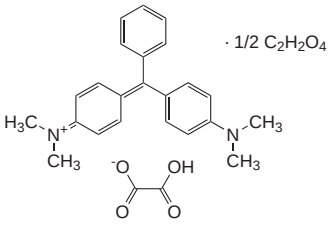
### Malachite green hydrochloride

**p.a.**
Basic green 4
$C_{23}H_{26}N_2O \cdot HCl$
M 382,94 g/mol
[123333-61-9]
UN No. 2811 • ADR 6.1 III • WGK 3
**Danger**
H301-H318-H361-H410

**Type analysis:**
Appearance. ..... green to brownish powder
Appearance of solution (0,1 % in $H_2O$). .. green to blue
Loss on drying. ..... ≤6 %

| | | | |
|---|---|---|---|
| **7710.1** | 5 g | glass | 14,20 € |
| **7710.2** | 25 g | glass | 24,65 € |
| **7710.3** | 100 g | glass | 47,85 € |

## Malachite green oxalate (C.I. 42000)



### Malachite green oxalate (C.I. 42000)

**for microscopy**
Indicator pH 0,0-2,0, for protein analysis.
Basic green 4
$C_{52}H_{54}N_4O_{12}$
M 927,02 g/mol
mp ~159 °C
Solubility: 110 g/l ($H_2O$, 24 °C)
[2437-29-8] • EC No. 219-441-7
UN No. 2811 • ADR 6.1 III • WGK 3
**Danger**
H301-H318-H361d-H410

**Type analysis:**
Dye content. ..... ≥90,0 %
Absorption max. (in $H_2O$). ..... ~614 nm
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **5895.2** | 25 g | glass | 16,05 € |
| **5895.1** | 100 g | glass | 32,15 € |
| **5895.3** | 250 g | glass | 46,15 € |

For further information, please see page 1465

## Malate dehydrogenase (MDH)

### Malate dehydrogenase (MDH)

**≥1250 U/mg protein**
From porcine heart, freeze-dried.
MDH
Storage temp.: -20 °C •
Transport temp.: room temp.
[9001-64-3] • EC No. 232-622-5
WGK 1

**Type analysis:**
Appearance. ..... white powder
Activity. ..... ≥1250 U/mg protein
Alanine aminotransferase (GPT). ..... <0,005 %
Lactate dehydrogenase (LDH). ..... <0,005 %
Aspartate aminotransferase (GOT). ..... <0,005 %

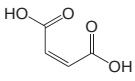
| | | | |
|---|---|---|---|
| **6062.1** | 0,05 MU | glass | 142,45 € |

For further information, please see page 1277

## Maleate Standards

▶ Maleate IC Standard Solution see p. 2311

## Maleic acid



cis-Butenedioic acid, Toxilic acid
$C_4H_4O_4$
M 116,07 g/mol
D 1,59 • bp 160 °C
mp 139-140 °C • flp 127 °C
Solubility: 788 g/l ($H_2O$, 20 °C)
[110-16-7] • EC No. 203-742-5
WGK 1
**Warning**
H302+H312-H315-H319-H317-H335

### Maleic acid

**≥99 %, Ph.Eur., BP**

**Guarantee analysis:**
Assay (acidim., dry substance). ..... 99,0-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
In $H_2O$ insoluble matter. ..... complies
Ash content (as $SO_4$). ..... ≤0,1 %
Fumaric acid. ..... complies
Water ..... ≤1,5 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **K304.1** | 500 g | plastic | 36,45 € |
| Original pack 6 x 500 g | | | 34,63/500 g |
| **K304.2** | 1 kg | plastic | 60,10 € |
| Original pack 6 x 1 kg | | | 57,10/1 kg |

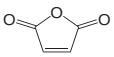
### Maleic acid

**≥99 %, for synthesis**

**Type analysis:**
Assay (acidim.). ..... ≥99 %
Water. ..... ≤0,5 %
Heavy metals (as Pb). ..... ≤0,005 %
Iron (Fe). ..... ≤0,005 %
Sulphated ash. ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **3538.2** | 100 g | plastic | 17,10 € |
| **3538.1** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **3538.3** | 1 kg | plastic | 51,50 € |
| Original pack 6 x 1 kg | | | 48,93/1 kg |
| **3538.4** | 2,5 kg | plastic | 102,05 € |
| **3538.5** | 5 kg | plastic | 160,20 € |

## Maleic anhydride



### Maleic anhydride

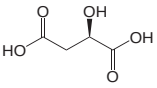
NEW

**≥99,5 %, for synthesis**
2,5-Furandione, cis-Butenedioic anhydride, Maleic acid anhydride
$C_4H_2O_3$
M 98,06 g/mol
D 1,59 • bp 202 °C
mp 51-54° C • flp 103 °C
Solubility: 550 g/l ($H_2O$, 20 °C)
[108-31-6] • EC No. 203-571-6
UN No. 2215 • ADR 8 III • WGK 1
**Danger** H302-H314-H317-H334

**Type analysis:**
Appearance. ..... white pastilles
Assay (titr.). ..... ≥99,5 %
Melting point. ..... 51-54 °C
Maleic acid. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **0975.1** | 250 g | glass | 13,90 € |
| **0975.2** | 1 kg | glass | 24,65 € |
| Original pack 6 x 1 kg | | | 23,42/1 kg |

## D(+)-Malic acid



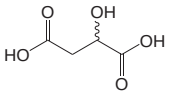
### D(+)-Malic acid

**≥99 %, for biochemistry**
R(+)-2-Hydroxysuccinic acid, D(+)-Hydroxybutanedioic acid
$C_4H_6O_5$
M 134,09 g/mol
mp 101-104 °C
[636-61-3] • EC No. 211-262-2
WGK 1
**Warning** H319

**Type analysis:**
Assay. ..... ≥99,0 %
Melting point. ..... 101-104 °C

| | | | |
|---|---|---|---|
| **8633.1** | 1 g | plastic | 48,95 € |
| **8633.2** | 5 g | plastic | 192,45 € |

## DL-Malic acid



### DL-Malic acid

**≥99 %, for biochemistry**
(±)-2-Hydroxysuccinic acid
$C_4H_6O_5$
M 134,09 g/mol
D 1,60
mp ~130 °C • flp 200 °C
Solubility: ~550 g/l ($H_2O$, 20 °C)
[6915-15-7] • EC No. 230-022-8
WGK 1

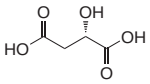
**Warning** H319

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| In $H_2O$ insoluble matter | ≤0,1 % |
| Arsenic (As) | ≤0,0002 % |
| Mercury (Hg) | ≤0,0001 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Fumaric acid | ≤1,0 % |
| Maleic acid | ≤0,05 % |
| Melting point | 127-132 °C |

| | | | |
|---|---|---|---|
| **3034.1** | 250 g | plastic | 14,20 € |
| **3034.2** | 1 kg | plastic | 32,15 € |
| Original pack 6 x 1 kg | | | 30,54/1 kg |

## L(-)-Malic acid



### L(-)-Malic acid

**≥99 %, for biochemistry**
S(-)-2-Hydroxysuccinic acid
$C_4H_6O_5$
M 134,09 g/mol
mp ~103 °C
Solubility: ~160 g/l ($H_2O$, 20 °C)
[97-67-6] • EC No. 202-601-5
WGK 1

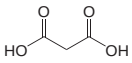
**Warning** H319

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Assay (titr.) | ≥99 % |
| Specific rotation $[\alpha]_D^{20}$ (c=5 in pyridine) | -27° to -31° |
| Melting point | 102-106 °C |
| Heavy metals (as Pb) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **8684.1** | 10 g | plastic | 22,05 € |
| **8684.2** | 50 g | plastic | 63,35 € |

## Malonic acid



### Malonic acid

**≥99 %, for synthesis**
Methanedicarboxylic acid, Propanedioic acid
$C_3H_4O_4$
M 104,06 g/mol
D 1,60
mp 133-136 °C • flp 172 °C
Solubility: 1390 g/l ($H_2O$, 20 °C)
[141-82-2] • EC No. 205-503-0
WGK 1

**Danger** H302-H318

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| Melting point | 133-136 °C |
| Chloride (Cl) | ≤0,05 % |
| Sulphate ($SO_4$) | ≤0,05 % |
| Heavy metals | ≤0,005 % |
| Loss on drying | ≤0,5 % |

| | | | |
|---|---|---|---|
| **9851.1** | 100 g | glass | 15,60 € |
| **9851.2** | 500 g | glass | 55,80 € |
| Original pack 6 x 500 g | | | 53,01/500 g |
| **9851.3** | 1 kg | glass | 99,90 € |
| Original pack 6 x 1 kg | | | 94,91/1 kg |

## Malt extract

Storage temp.: +20 °C
[8002-48-0]

### Malt extract, standard

**powdered, for culture media**

**Type analysis:**

| | |
|---|---|
| Colour | beige |
| Loss on drying | ≤6,0 % |
| Reducing sugar | ≥60,0 % |
| Ash | ≤4,5 % |
| pH value (3 % aqueous solution) | 4,8-5,8 |

| | | | |
|---|---|---|---|
| **X976.1** | 500 g | plastic | 34,95 € |
| Original pack 6 x 500 g | | | 33,20/500 g |
| **X976.2** | 1 kg | plastic | 60,75 € |
| Original pack 6 x 1 kg | | | 57,71/1 kg |

For further information, please see page 1420

### Malt extract, bacteriological

**powdered, for microbiology**
Additive to malt containing culture media and agars.

**Type analysis:**

| | |
|---|---|
| Colour | beige |
| Loss on drying | ≤6 % |
| Maltose | ~70 % |
| Total nitrogen (TN) | ~1,3 % |
| Amino nitrogen | ~0,4 % |
| Sulphated ash | ≤3 % |
| pH value (1,5 % sol.) | 4,5-5,5 |

| | | | |
|---|---|---|---|
| **AE68.1** | 500 g | plastic | 57,95 € |
| Original pack 6 x 500 g | | | 55,05/500 g |

For further information, please see page 1420

## Malt Extract Agar

### Malt Extract Agar

**for microbiology**
For cultivation of fungi and yeasts.
Application: Use 33,6 g for 1 l agar.
Storage temp.: +20 °C

**Formulation:**

| | |
|---|---|
| Malt extract | 12,75 g/l |
| Gelatine peptone | 0,78 g/l |
| Glycerol | 2,35 g/l |
| Dextrine | 2,75 g/l |
| Agar | 15 g/l |
| pH value | 4,7 ±0,2 |

| | | | |
|---|---|---|---|
| **X923.1** | 500 g | plastic | 81,20 € |
| Original pack 6 x 500 g | | | 77,14/500 g |
| **X923.2** | 1 kg | plastic | 146,10 € |
| Original pack 6 x 1 kg | | | 138,80/1 kg |

For further information, please see page 1388

## Malt Extract Broth

### Malt Extract Broth

**for microbiology**
For isolation and enumeration of yeasts and moulds, as well as for sterility testing.
Application: Use 19 g for 1 l broth.
Storage temp.: +20 °C

**Formulation:**

| | |
|---|---|
| Malt extract | 13,0 g/l |
| Gelatine peptone | 5,5 g/l |
| Yeast extract | 0,5 g/l |
| pH value | 4,7 ±0,2 |

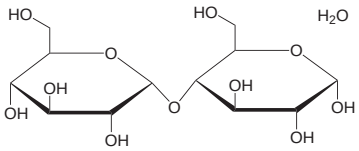
| | | | |
|---|---|---|---|
| **CP75.1** | 500 g | plastic | 87,65 € |
| Original pack 6 x 500 g | | | 83,27/500 g |

For further information, please see page 1388

## Maltobiose

▶ D(+)-Maltose monohydrate see p. 2054

## D(+)-Maltose monohydrate



Maltobiose
$C_{12}H_{22}O_{11} \cdot H_2O$
M 360,32 g/mol
mp ~120 °C (dec.)
Solubility: 1080 g/l ($H_2O$, 20 °C)
[6363-53-7] • EC No. 200-716-5
WGK 1

### D(+)-Maltose monohydrate
**CELLPURE® ≥97 %**
For cell culture and biochemistry.

**Guarantee analysis:**

| | |
|---|---|
| Endotoxins | ≤1,0 E.U./g |
| Appearance | white powder |
| Assay | ≥97,0 % |
| pH value (10 % in $H_2O$) | 4,0-5,5 |
| Water (KF) | 4,5-6,5 % |
| Residue on ignition | ≤0,05 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Ethanol | ≤0,1 % |
| Methanol | ≤0,05 % |

| | | | |
|---|---|---|---|
| **8882.1** | 25 g | plastic | 23,15 € |
| **8882.2** | 100 g | plastic | 52,15 € |
| **8882.3** | 250 g | plastic | 88,05 € |
| **8882.4** | 500 g | plastic | 155,90 € |
| Original pack 6 x 500 g | | | 148,11/500 g |

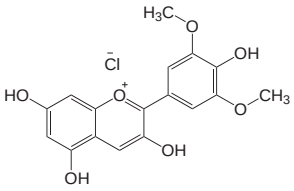
### D(+)-Maltose monohydrate
**≥92 %, for biochemistry**

**Type analysis:**

| | |
|---|---|
| Assay (HPLC, dry substance) | ≥92 % |
| pH value (30 % in water) | 4,0-5,5 |
| Heavy metals (as Pb) | ≤0,001 % |
| Loss on drying (120 °C) | ≤7,0 % |
| Sulphated ash | ≤0,1 % |

| | | | |
|---|---|---|---|
| **8951.1** | 100 g | plastic | 21,40 € |
| **8951.2** | 250 g | plastic | 36,45 € |
| **8951.3** | 500 g | plastic | 65,50 € |
| Original pack 6 x 500 g | | | 62,23/500 g |
| **8951.4** | 1 kg | plastic | 97,75 € |
| Original pack 6 x 1 kg | | | 92,86/1 kg |

## Malvidin chloride



### Malvidin chloride
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Malva silvestris.*
$C_{17}H_{15}ClO_7$
M 366,75 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[643-84-5] • EC No. 211-403-8

**Type analysis:**

| | |
|---|---|
| Purity (HPLC) | ≥97 % |

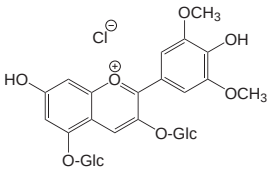
| | | | |
|---|---|---|---|
| **6140.1** | 10 mg | glass | 310,70 € |

### Malvidin-3,5-diglucosid chloride
▶ Malvin chloride see p. 2054

### Malvidin 3-galactoside chloride
▶ Primulin chloride see p. 2177

### Malvidin 3-glucoside chloride
▶ Oenin chloride see p. 2110

## Malvin chloride



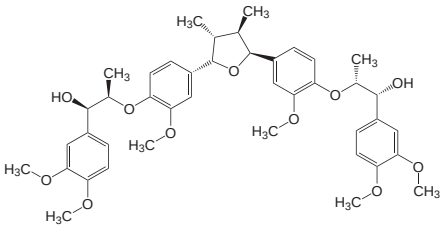
### Malvin chloride
**ROTICHROM® HPLC**
Reference substance for HPLC.
Malvidin 3,5-diglucoside chloride
$C_{29}H_{35}O_{17}Cl$
M 691,04 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[16727-30-3]

**Type analysis:**

| | |
|---|---|
| Purity (HPLC) | ≥95 % |

| | | | |
|---|---|---|---|
| **K013.1** | 10 mg | glass | 249,95 € |

## Manassantin A



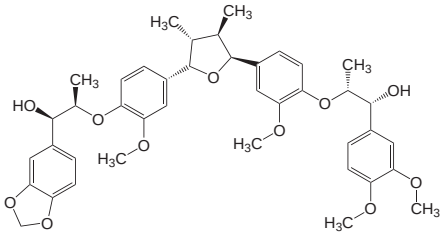
### Manassantin A
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Saururus chinensis.*
$C_{42}H_{52}O_{11}$
M 732,34 g/mol
Storage temp.: +4 °C
[88497-87-4]
WGK 3

**Type analysis:**

| | |
|---|---|
| Purity (HPLC) | ≥98 % |

| | | | |
|---|---|---|---|
| **6497.1** | 10 mg | glass | 396,70 € |

## Manassantin B



### Manassantin B
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Saururus chinensis.*
$C_{41}H_{48}O_{11}$
M 716,30 g/mol
Storage temp.: +4 °C
[88497-88-5]
WGK 3

**Type analysis:**

| | |
|---|---|
| Purity (HPLC) | ≥98 % |

| | | | |
|---|---|---|---|
| **6684.1** | 10 mg | glass | 349,40 € |

### Manchester yellow
▶ Martius yellow (C.I. 10315) see p. 2058

## Manganese flakes

### Manganese flakes
**ROTI®METIC 99,98 % (3N8)**
Mn
M 54,94 g/mol
D 7,3 • bp 2097 °C
mp 1246 °C
[7439-96-5] • EC No. 231-105-1

**Type analysis:**
Assay (metals basis)..... 99,98 %
Thickness. ..... <1,5 mm
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **4509.1** | 25 g | plastic | 87,65 € |
| **4509.2** | 50 g | plastic | 127,95 € |

## Manganese Standards

- ▶ Manganese AAS Standard Solution see p. 2295
- ▶ Manganese ICP Standard Solution see p. 2299
- ▶ Manganese ICP Standard Solution see p. 2303


## Manganese dioxide
▶ Manganese(IV) oxide see p. 2056

## Manganese(II) acetate tetrahydrate

$Mn(CH_3COO)_2 \cdot 4\ H_2O$
M 245,08 g/mol
D 1,59
mp 80 °C
[6156-78-1] • EC No. 211-334-3
WGK 1
**Warning** H315-H319-H335

### Manganese(II) acetate tetrahydrate
**ROTI®METIC 99,999 % (5N)**

**Type analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5641.1** | 5 g | plastic | 56,90 € |
| **5641.2** | 25 g | plastic | 150,00 € |

### Manganese(II) acetate tetrahydrate
**≥99 %, pure**

**Type analysis:**
Assay. ..... ≥99,0 %
pH value (5 % solution). ..... 6,0-8,0
Chloride (Cl). ..... ≤0,002 %
Sulphate ($SO_4$). ..... ≤0,01 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Zinc (Zn)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **0277.1** | 500 g | plastic | 20,65 € |
| Original pack 6 x 500 g | | | 19,62/500 g |
| **0277.2** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **0277.3** | 2,5 kg | plastic | 66,55 € |

## Manganese(II) carbonate

### Manganese(II) carbonate
**≥44 % Mn, p.a.**
$MnCO_3$
M 114,95 g/mol
D 3,12
mp 730 °C (dec.)
Solubility: 0,06 g/l ($H_2O$, 25 °C)
[598-62-9] • EC No. 209-942-9
WGK 1

**Guarantee analysis:**
Assay (Mn). ..... ≥44 %
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,5 %
Manganese dioxide ($MnO_2$). ..... ≤0,5 %
Aluminium (Al). ..... ≤0,005 %
Arsenic (As)..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %
Cadmium (Cd)..... ≤0,001 %
Water..... ≤2,5 %
Particle size:
<75 µm. ..... ≥90 %

| | | | |
|---|---|---|---|
| **9927.1** | 250 g | plastic | 21,00 € |
| **9927.2** | 500 g | plastic | 33,25 € |
| Original pack 6 x 500 g | | | 31,59/500 g |
| **9927.3** | 1 kg | plastic | 55,80 € |
| Original pack 6 x 1 kg | | | 53,01/1 kg |
| **9927.4** | 2,5 kg | plastic | 110,65 € |

## Manganese(II) chloride monohydrate

### Manganese(II) chloride monohydrate
**≥99 %, p.a**
$MnCl_2 \cdot H_2O$
M 143,86 g/mol
[64333-01-3] • EC No. 231-869-6
WGK 2
**Warning** H302

**Guarantee analysis:**
Assay. ..... ≥99,0 %
Insoluble matter. ..... ≤0,005 %
pH value. ..... 4,5-6,0
Water. ..... 12,5-13,5 %
Sulphate ($SO_4$). ..... ≤0,05 %
Barium (Ba). ..... ≤0,05 %
Lead (Pb). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,025 %
Cadmium (Cd). ..... ≤0,0005 %
Chromium (Cr). ..... ≤0,00005 %
Iron (Fe). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,01 %
Nickel (Ni). ..... ≤0,035 %
Mercury (Hg). ..... ≤0,000001 %
Zinc (Zn). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **4320.1** | 100 g | plastic | 13,90 € |
| **4320.2** | 500 g | plastic | 28,50 € |
| Original pack 6 x 500 g | | | 27,08/500 g |
| **4320.3** | 1 kg | plastic | 45,70 € |
| Original pack 6 x 1 kg | | | 43,42/1 kg |
| **4320.4** | 2,5 kg | plastic | 90,20 € |

## Manganese(II) chloride tetrahydrate

$MnCl_2 \cdot 4\ H_2O$
M 197,91 g/mol
D 2,01
mp 58 °C
Solubility: 1980 g/l ($H_2O$, 20 °C)
[13446-34-9] • EC No. 231-869-6
UN No. 3077 • ADR 9 III • WGK 1
**Warning** H302-H411

### Manganese(II) chloride tetrahydrate
**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**
Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5304.1** | 25 g | plastic | 110,20 € |
| **5304.2** | 100 g | plastic | 327,90 € |

## Manganese(II) chloride tetrahydrate

**≥99 %, p.a.**

Analytical reagent

**Guarantee analysis:**

Assay (compl.)....≥99,0 %
pH value (5 % solution)....4,0-6,0
In $H_2O$ insoluble matter....≤0,005 %
Sulphate ($SO_4$)....≤0,02 %
Lead (Pb)....≤0,0005 %
Calcium (Ca)....≤0,001 %
Copper (Cu)....≤0,0005 %
Iron (Fe)....≤0,0005 %
Potassium (K)....≤0,001 %
Magnesium (Mg)....≤0,005 %
Sodium (Na)....≤0,005 %
Nickel (Ni)....≤0,0005 %
Heavy metals (as Pb)....≤0,0005 %
Zinc (Zn)....≤0,001 %
$KMnO_4$ reducing substances (as O)....≤0,0005 %

| | | | |
|---|---|---|---|
| **T881.3** | 100 g | plastic | 16,05 € |
| **T881.1** | 500 g | plastic | 38,60 € |
| Original pack 6 x 500 g | | | 36,67/500 g |
| **T881.2** | 1 kg | plastic | 61,20 € |
| Original pack 6 x 1 kg | | | 58,14/1 kg |

## Manganese(II) chloride tetrahydrate

**≥98 %, extra pure**

**Type analysis:**

Assay....≥98,0 %
In $H_2O$ insoluble matter....≤0,01 %
Sulphate ($SO_4$)....≤0,01 %
Iron (Fe)....≤0,005 %
Heavy metals (as Pb)....≤0,005 %

| | | | |
|---|---|---|---|
| **0276.1** | 500 g | plastic | 22,50 € |
| Original pack 6 x 500 g | | | 21,38/500 g |
| **0276.2** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **0276.3** | 2,5 kg | plastic | 75,15 € |

## Manganese dioxide

▶ Manganese(IV) oxide see p. 2056

## Manganese EDTA disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid manganese disodium salt dihydrate see p. 1917

## Manganese(II) nitrate hydrate

### Manganese(II) nitrate hydrate

**ROTI®METIC 99,995 % (4N5)**

$Mn(NO_3)_2 \cdot x\ H_2O$
M 178,95 + x $H_2O$ g/mol
Solubility: 1610 g/l ($H_2O$, 20 °C)
[15710-66-4]
UN No. 2724 • ADR 5.1 III • WGK 1

**Danger** H272-H315-H319-H335

**Type analysis:**

Assay (metals basis)....99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5392.1** | 10 g | plastic | 95,70 € |
| **5392.2** | 25 g | plastic | 201,05 € |

## Manganese(II) nitrate tetrahydrate

### Manganese(II) nitrate tetrahydrate

**≥98 %, p.a.**

For preparation of manganese oxides.
$Mn(NO_3)_2 \cdot 4\ H_2O$
M 251,01 g/mol
D 1,82 • bp 129 °C
mp 37 °C
Solubility: ~3800 g/l ($H_2O$, 20 °C)
[20694-39-7] • EC No. 233-828-8
UN No. 2724 • ADR 5.1 III • WGK 1

**Danger** H272

**Guarantee analysis:**

Assay (compl.)....≥98 %
In $H_2O$ insoluble matter....≤0,005 %
Chloride (Cl)....≤0,005 %
Sulphate ($SO_4$)....≤0,005 %
Ammonium ($NH_4$)....≤0,05 %
Calcium (Ca)....≤0,005 %
Cadmium (Cd)....≤0,0005 %
Copper (Cu)....≤0,0005 %
Iron (Fe)....≤0,001 %
Potassium (K)....≤0,01 %
Magnesium (Mg)....≤0,005 %
Sodium (Na)....≤0,05 %
Nickel (Ni)....≤0,002 %
Lead (Pb)....≤0,001 %
Zinc (Zn)....≤0,005 %

| | | | |
|---|---|---|---|
| **HN26.1** | 250 g | plastic | 23,15 € |
| **HN26.2** | 500 g | plastic | 39,25 € |
| Original pack 6 x 500 g | | | 37,29/500 g |
| **HN26.3** | 1 kg | plastic | 67,65 € |
| Original pack 6 x 1 kg | | | 64,27/1 kg |
| **HN26.4** | 2,5 kg | plastic | 144,60 € |

## Manganese(IV) oxide

Manganese dioxide
$MnO_2$
M 86,94 g/mol
D 5,08
mp 535 °C (dec.)
[1313-13-9] • EC No. 215-202-6
UN No. 1479 • ADR 5.1 II • WGK 1

**Warning** H302+H332-H373

### Manganese(IV) oxide

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**

Assay (metals basis)....99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5383.1** | 5 g | plastic | 43,55 € |
| **5383.2** | 25 g | plastic | 150,00 € |

### Manganese(IV) oxide

**≥98 %, extra pure**

**Type analysis:**

Assay (compl.)....≥98,0 %
Sulphate ($SO_4$)....≤0,5 %
Iron (Fe)....≤0,5 %
Heavy metals (as Pb)....≤0,005 %

| | | | |
|---|---|---|---|
| **7751.1** | 100 g | glass | 19,90 € |
| **7751.2** | 250 g | glass | 36,05 € |
| **7751.3** | 1 kg | glass | 59,70 € |
| Original pack 6 x 1 kg | | | 56,72/1 kg |
| **7751.4** | 2,5 kg | glass | 124,20 € |

### Manganese(IV) oxide

**>90 %, precipitated, active**

**Type analysis:**

Assay (iodom., dry substance)....>90 %
Oxidation activity....complies

| | | | |
|---|---|---|---|
| **4486.1** | 250 g | glass | 31,75 € |

## Manganese(II) sulphate monohydrate

$MnSO_4 \cdot H_2O$
M 169,02 g/mol
D 2,95
Solubility: 762 g/l ($H_2O$, 20 °C)
[10034-96-5] • EC No. 232-089-9
UN No. 3077 • ADR 9 III • WGK 1

**Danger** H318-H373-H411

### Manganese(II) sulphate monohydrate

**≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay (compl.)....≥99 %
In $H_2O$ insoluble matter....≤0,005 %
Loss on ignition....10,0-12,0 %
Chloride (Cl)....≤0,005 %
Heavy metals (as Pb)....≤0,002 %
Calcium (Ca)....≤0,005 %
Iron (Fe)....≤0,002 %
Potassium (K)....≤0,01 %
Magnesium (Mg)....≤0,005 %
Copper (Cu)....≤0,0005 %
Sodium (Na)....≤0,05 %
Nickel (Ni)....≤0,02 %
Lead (Pb)....≤0,001 %
Zinc (Zn)....≤0,005 %
$KMnO_4$ reducing substances (as O)....≤0,0005 %

| | | | |
|---|---|---|---|
| **4487.1** | 250 g | plastic | 28,95 € |
| **4487.2** | 500 g | plastic | 50,45 € |
| Original pack 6 x 500 g | | | 47,93/500 g |

## Manganese(II) sulphate monohydrate

**≥99 %, Ph.Eur.**

**Guarantee analysis:**

Appearance. ..... light pink cryst. powder
Assay (based on calcinated substance). ..... 99,0-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Chloride (Cl). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %
Zinc (Zn). ..... ≤0,005 %
Loss on ignition (500 °C). ..... 10,0-12,0 %

| | | | |
|---|---|---|---|
| **X890.1** | 500 g | plastic | 60,10 € |
| Original pack 6 x 500 g | | | 57,10/500 g |
| **X890.2** | 1 kg | plastic | 107,40 € |
| Original pack 6 x 1 kg | | | 102,03/1 kg |
| **X890.3** | 2,5 kg | plastic | 235,45 € |

## Manganese(II) sulphate monohydrate

**≥97 %, extra pure**

**Type analysis:**

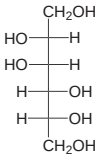
Assay. ..... ≥97,0 %
Arsenic (As). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,002 %
Mercury (Hg). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **7347.1** | 100 g | plastic | 12,40 € |
| **7347.2** | 500 g | plastic | 22,50 € |
| Original pack 6 x 500 g | | | 21,38/500 g |
| **7347.3** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **7347.4** | 2,5 kg | plastic | 71,50 € |

## ManNAc

▶ N-Acetyl-D-mannosamine see p. 1703

## D(-)-Mannitol



D-Mannitol
$C_6H_{14}O_6$
M 182,18 g/mol
mp 165-170 °C
Solubility: ~213 g/l ($H_2O$, 20 °C)
[69-65-8] • EC No. 200-711-8
WGK 1

### D(-)-Mannitol

**CELLPURE® ≥97 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤2,5 E.U./g
Appearance. ..... white to off-white, cryst. powder
Assay. ..... 97,0-102,0 %
Loss on drying (4 h, 105 °C). ..... ≤0,5 %
Melting point. ..... 165-170 °C
Conductivity. ..... ≤20 µS/cm
Heavy metals. ..... ≤0,0005 %
Methanol. ..... ≤0,01 %
Nickel (Ni). ..... ≤0,0001 %
Arsenic (As). ..... ≤0,000015 %

| | | | |
|---|---|---|---|
| **8883.1** | 100 g | plastic | 23,15 € |
| **8883.3** | 250 g | plastic | 46,15 € |
| **8883.2** | 500 g | plastic | 81,60 € |
| Original pack 6 x 500 g | | | 77,52/500 g |

### D(-)-Mannitol

**≥98 %, Ph.Eur., USP, BP, for biochemistry**

For biochemistry.

**Guarantee analysis:**

Appearance. ..... white, fine powder
Assay (HPLC, dry substance). ..... 98,0-101,0 %
Identity. ..... complies
Appearance of solution (10 %, $H_2O$). ..... complies
Lead (Pb). ..... ≤0,00005 %
Nickel (Ni). ..... ≤0,0001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Sulphated ash. ..... ≤0,1 %
Reducing sugar. ..... ≤0,1 %
Related substances. ..... ≤2,0 %
Loss on drying (105 °C). ..... ≤0,3 %
Melting range. ..... 165-169 °C
Conductivity. ..... ≤20 µS/cm
Water. ..... ≤0,5 %
Microbiological assay. ..... complies

| | | | |
|---|---|---|---|
| **4175.1** | 1 kg | plastic | 69,35 € |
| Original pack 6 x 1 kg | | | 65,88/1 kg |
| **4175.2** | 5 kg | plastic | 271,45 € |

## D-Mannitol

▶ D(-)-Mannitol see p. 2057

## Mannitol Egg Yolk Polymyxin Agar (Base)

### Mannitol Egg Yolk Polymyxin Agar (Base)

**for microbiology**

For enumeration and isolation of *Bacillus cereus* in food, acc. to Mossel.

Application: Use 43 g for 1 l agar. After cooling add 100 ml Egg Yolk Emulsion (Art. No. 0402.1) and 2 vials (2x5 ml) reconstituted Bacillus cereus Supplement (Art. No. 4856.1).

Bacillus cereus Selective Agar, **MYP Agar**

Storage temp.: +20 °C
WGK 1

**Formulation:**

Meat peptone. ..... 10 g/l
Sodium chloride. ..... 10 g/l
D-Mannitol. ..... 10 g/l
Beef extract. ..... 1 g/l
Phenol red. ..... 0,025 g/l
Agar. ..... 12 g/l
pH value. ..... 7,1 ±0,2

| | | | |
|---|---|---|---|
| **5765.1** | 500 g | plastic | 97,30 € |
| Original pack 6 x 500 g | | | 92,44/500 g |

For further information, please see page 1389

## Mannitol Salt Agar

### Mannitol Salt Agar

**Ph.Eur., for microbiology**

For isolation of pathogenic *Staphylococci*.

Application: Use 111 g for 1 l agar. Optional: Add egg yolk emulsion (Art. No. 0402.1) to 5 % final concentration.

Chapman Agar, Mannitol Salt Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**

Pancreatic digest of casein. ..... 5 g/l
Peptone (peptic digest of animal tissue). ..... 5 g/l
Beef extract. ..... 1 g/l
Sodium chloride. ..... 75 g/l
D-Mannitol. ..... 10 g/l
Phenol red. ..... 0,025 g/l
Agar. ..... 15 g/l
pH value. ..... 7,4 ±0,2

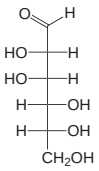
| | | | |
|---|---|---|---|
| **CL81.1** | 500 g | plastic | 62,90 € |
| Original pack 6 x 500 g | | | 59,76/500 g |

For further information, please see page 1389

## L-Mannomethylose

▶ L(+)-Rhamnose monohydrate see p. 2197

## D(+)-Mannose



$C_6H_{12}O_6$
M 180,16 g/mol
mp 125-129 °C
[3458-28-4] • EC No. 222-392-4
WGK 1

### D(+)-Mannose

**CELLPURE® ≥98 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤10 E.U./g
Appearance. ..... white to off-white, cryst. powder
Assay. ..... ≥98,0 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +13,5° to +14,9°
Residue on ignition. ..... ≤0,1 %
Chloride (Cl). ..... ≤0,05 %
Sulphate ($SO_4$). ..... ≤0,05 %
Ethanol. ..... ≤0,5 %
Methanol. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8887.1** | 10 g | plastic | 27,85 € |
| **8887.2** | 25 g | plastic | 53,65 € |
| **8887.3** | 50 g | plastic | 92,35 € |
| **8887.4** | 100 g | plastic | 161,25 € |

M

## D(+)-Mannose

**≥99,5 %, for biochemistry**

**Type analysis:**

Appearance. ..... white to whitish powder
Assay (HPLC). ..... ≥99,5 %
Specific rotation $[\alpha]_D^{20}$ (1 % in $H_2O$, 24 h). ..... +13° to +15°
Water (KF). ..... ≤1,0 %
Melting point. ..... 125-129 °C

| | | | |
|---|---|---|---|
| **4220.1** | 10 g | plastic | 20,65 € |
| **4220.2** | 50 g | plastic | 50,00 € |

## Marble

### Marble

**pieces, ca. 12-16 mm**

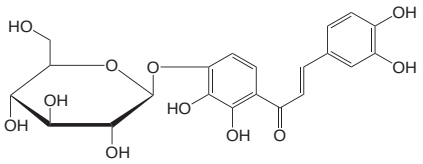
$CaCO_3$
M 100,09 g/mol
[471-34-1] • EC No. 207-439-9

**Type analysis:**

Appearance. ..... coarse, white pieces
Granulation. ..... ~12-16 mm

| | | | |
|---|---|---|---|
| **7098.1** | 2,5 kg | plastic | 18,20 € |

## Marein



### Marein

**ROTICHROM® HPLC**

Reference substance for HPLC.
Okanin-4'-glucoside
$C_{21}H_{22}O_{11}$
M 450,40 g/mol
mp 130-132 °C
Storage temp.: +4 °C
[535-96-6]

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **4171.1** | 5 mg | glass | 278,45 € |

## Marine Broth

### Marine Broth

**for microbiology**

For enumeration and isolation of heterotropic marine bacteria.
Application: Use 40,1 g for 1 l broth. May be slightly opalescent and may present a light precipitation.
Storage temp.: +20 °C
WGK 1

**Formulation:**

Sodium chloride (NaCl). ..... 19,4 g/l
Magnesium chloride. ..... 8,8 g/l
Peptone. ..... 5 g/l
Sodium sulphate ($Na_2SO_4$). ..... 3,24 g/l
Calcium chloride. ..... 1,8 g/l
Yeast extract. ..... 1 g/l
Potassium chloride (KCl). ..... 0,55 g/l
Sodium bicarbonate. ..... 0,16 g/l
Ferric citrate. ..... 0,1 g/l
Potassium bromide. ..... 0,08 g/l
Strontium chloride. ..... 0,034 g/l
Boric acid. ..... 0,022 g/l
Sodium silicate. ..... 0,004 g/l
Sodium fluoride. ..... 0,0024 g/l
Ammonium nitrate. ..... 0,0016 g/l
Disodium phosphate. ..... 0,008 g/l
pH value. ..... 7,6 ±0,2

| | | | |
|---|---|---|---|
| **CP73.1** | 500 g | plastic | 90,85 € |
| Original pack 6 x 500 g | | | 86,31/500 g |

For further information, please see page 1389

## Maritimein

### Maritimein

**ROTICHROM® HPLC**

Reference substance for HPLC.
$C_{21}H_{20}O_{11}$
M 448,39 g/mol
mp 208-214 °C
Storage temp.: +4 °C
[490-54-0] • EC No. 207-712-2
WGK 1

**Type analysis:**

Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **4172.1** | 5 mg | plastic | 397,75 € |

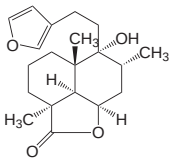
## Markers (DNA-gels)

▶ DNA-Marker, not prestained see p. 1890

## Markers (protein gels)

▶ Roti®-Mark, prestained see p. 2223

## Marrubiin



### Marrubiin

**ROTICHROM® HPLC**

$C_{20}H_{28}O_4$
M 332,42 g/mol
Storage temp.: +4 °C
[465-92-9]
WGK 1

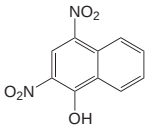
**Warning** H302

**Type analysis:**

Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **3448.2** | 10 mg | glass | 295,65 € |

## Martius yellow (C.I. 10315)



### Martius yellow (C.I. 10315)

**extra pure**

Indicator pH 2,0-3,2
Manchester yellow, Saffron yellow, 2,4-Dinitro-1-naphthol
$C_{10}H_5N_2O_5$
M 234,17 g/mol
mp 138 °C
[605-69-6]
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... yellow to orange powder
Appearance of solution (0,1 % in MeOH). ..... clear, yellow
Loss on drying (1 h, 110 °C). ..... ≤8,0 %

| | | | |
|---|---|---|---|
| **7713.1** | 5 g | glass | 18,85 € |
| **7713.2** | 25 g | glass | 35,40 € |
| **7713.3** | 100 g | glass | 84,85 € |

## Masson-Goldner's trichrome staining kit

### Masson-Goldner's trichrome staining kit

**for microscopy**

Staining kit for visualising connective tissue (Masson-Goldner trichrome staining), incl. instructions for use.

Storage temp.: +20 °C

UN No. 1219 • ADR 3 II • WGK 1

**Danger** H225-H315-H318-H336

**Formulation:**

Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml
Goldner's stain I (Art. No. 3469)..... 500 ml
Goldner's stain II (Art. No. 3470)..... 500 ml
Goldner's stain III (Art. No. 3473)..... 500 ml

| | | | |
|---|---|---|---|
| **3459.1** | 1 kit | glass | 155,90 € |

For further information, please see page 1456

## Master mix Taq DNA polymerase, recombinant


- Roti®-Pol Hot-TaqS Mix (2x) see p. 2229
- Roti®-Pol Hot-TaqS Red-Mix (2x) see p. 2230
- Roti®-Pol TaqS Mix (2x) see p. 2230
- Roti®-Pol TaqS Red-Mix (2x) see p. 2230


## Matrix modifier solution Ammonium dihydrogen phosphate

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

### Ammonium dihydrogen phosphate matrix modifier solution

**20 g/l $NH_4H_2PO_4$ (99,999 %) in 1 % $HNO_3$**

For graphite furnace AAS.

**Type analysis:**

c ($NH_4H_2PO_4$) in 1 % $HNO_3$. ..... 20 g/l ±1 %

| | | | |
|---|---|---|---|
| **5150.1** | 50 ml | plastic | 62,25 € |

### Ammonium dihydrogen phosphate matrix modifier solution

**100 g/l $NH_4H_2PO_4$ (99,999 %) in 1 % $HNO_3$**

For graphite furnace AAS.

**Type analysis:**

c ($NH_4H_2PO_4$) in 1 % $HNO_3$. ..... 100 g/l ±1 %

| | | | |
|---|---|---|---|
| **5148.1** | 50 ml | plastic | 120,95 € |

## Matrix modifier solution Ammonium nitrate

### Ammonium nitrate matrix modifier solution

**50 g/l $NH_4NO_3$ (99,999 %) in $H_2O$**

For graphite furnace AAS.

WGK 1

**Type analysis:**

c ($NH_4NO_3$) in $H_2O$. ..... 50 g/l ±1 %

| | | | |
|---|---|---|---|
| **5145.1** | 50 ml | plastic | 120,95 € |

## Matrix modifier solution Magnesium nitrate

### Magnesium nitrate matrix modifier solution

**10 g/l $Mg(NO_3)_2$ (99,999 %) in $H_2O$**

For graphite furnace AAS.

**Type analysis:**

c ($Mg(NO_3)_2$) in $H_2O$. ..... 10 g/l ±1 %

| | | | |
|---|---|---|---|
| **5140.1** | 50 ml | plastic | 73,00 € |

### Magnesium nitrate matrix modifier solution

**20 g/l $Mg(NO_3)_2$ (99,999 %) in $H_2O$**

For graphite furnace AAS.

**Type analysis:**

c ($Mg(NO_3)_2$) in $H_2O$. ..... 20 g/l ±1 %

| | | | |
|---|---|---|---|
| **5142.1** | 50 ml | plastic | 120,95 € |

## Matrix modifier solution Nickel nitrate

### Nickel nitrate matrix modifier solution

**10 g/l $Ni(NO_3)_2$ (99,999 %) in 1 % $HNO_3$**

UN No. 3264 • ADR 8 III • WGK 2

**Danger** H290-H315-H317-H319-H334-H341-H350i-H360D-H372-H412

**Type analysis:**

c ($Ni(NO_3)_2$) in 1 % $HNO_3$. ..... 10 g/l ±1 %

| | | | |
|---|---|---|---|
| **5146.1** | 50 ml | plastic | 73,00 € |

## Matrix modifier solution Palladium nitrate & Magnesium nitrate

### Palladium nitrate & Magnesium nitrate matrix modifier solution

**2 g/l $Pd(NO_3)_2$ (99,999 %) and 10 g/l $Mg(NO_3)_2$ (99,999 %) in 1 % $HNO_3$**

For graphite furnace AAS.

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c ($Pd(NO_3)_2$) in 1 % $HNO_3$. ..... 2 g/l ±1 %
c ($Mg(NO_3)_2$) in 1 % $HNO_3$. ..... 10 g/l ±1 %

| | | | |
|---|---|---|---|
| **5139.1** | 50 ml | plastic | 165,05 € |

## Matrix modifier solution Palladium nitrate

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

### Palladium nitrate matrix modifier solution

**2 g/l $Pd(NO_3)_2$ (99,999 %) in 1 % $HNO_3$**

For graphite furnace AAS.

**Type analysis:**

c ($Pd(NO_3)_2$) in 1 % $HNO_3$. ..... 2 g/l ±1 %

| | | | |
|---|---|---|---|
| **5143.1** | 50 ml | plastic | 120,95 € |

### Palladium nitrate matrix modifier solution

**5 g/l $Pd(NO_3)_2$ (99,999 %) in 1 % $HNO_3$**

For graphite furnace AAS.

**Type analysis:**

c ($Pd(NO_3)_2$) in 1 % $HNO_3$. ..... 5 g/l ±1 %

| | | | |
|---|---|---|---|
| **5144.1** | 50 ml | plastic | 165,05 € |

### Palladium nitrate matrix modifier solution

**10 g/l $Pd(NO_3)_2$ (99,999 %) in 1 % $HNO_3$**

For graphite furnace AAS.

**Type analysis:**

c ($Pd(NO_3)_2$) in 1 % $HNO_3$. ..... 10 g/l ±1 %

| | | | |
|---|---|---|---|
| **4842.1** | 50 ml | plastic | 274,15 € |

M

## Maximum Recovery Solution

### Maximum Recovery Solution

**DIN 10162, LMBG, DIN EN ISO 6887-1, for microbiology**

For homogenization and dilution of microbiological samples.

Application: Use 9,5 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Sodium chloride. ..... 8,5 g/l
Casein peptone. ..... 1 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **5766.1** | 500 g | plastic | 53,65 € |
| Original pack 6 x 500 g | | | 50,97/500 g |

For further information, please see page 1389

## Mayer's Hem alum solution

▶ Hemalum solution acid acc. to Mayer see p. 1970

## May-Gruenwald's solution

### May-Gruenwald's solution

**for microscopy**

For differential staining of blood smears and cytological specimens.

Eosine methylene blue solution

UN No. 1230 • ADR 3 (6.1) II • WGK 1

**Danger**

H225-H370-H301+H311+H331

**Type analysis:**

Suitability for microscopy (blood smear). ..... complies

| | | | |
|---|---|---|---|
| **T863.1** | 500 ml | plastic | 23,55 € |
| **T863.2** | 1 l | glass | 27,45 € |
| Original pack 6 x 1 l | | | 26,08/1 l |
| **T863.3** | 2,5 l | plastic | 59,05 € |
| Original pack 4 x 2,5 l | | | 56,10/2,5 l |

For further information, please see page 1454

## MBAA

▶ N,N'-Methylene bisacrylamide see p. 2073

## MBTH

▶ 3-Methyl-2-benzothiazolinone hydrazone hydrochloride see p. 2072

## McCoys 5A cell culture medium

▶ Roti®-CELL McCoy's 5A see p. 2207

## McFarland BSS 0,5

### McFarland BSS 0,5

**for microbiology**

Turbidity Standard for adjusting the density of a bacterial suspension.

Turbidity Standard, Barium sulphate suspension

Storage temp.: +20 °C

**Guarantee analysis:**

Turbidity (625 nm, 1 cm cuvette). ..... 0,5 MFU

| | | |
|---|---|---|
| **1307.1** | 1 vial | 26,90 € |

For further information, please see page 1436

## McFarland PMS 0,5

### McFarland PMS 0,5

**for microbiology**

Turbidity Standard for adjusting the density of a bacterial suspension.

Turbidity Standard, Polymer Microparticle Suspension

Storage temp.: +20 °C

**Guarantee analysis:**

Turbidity (625 nm, 1 cm cuvette). ..... 0,5 MFU

| | | |
|---|---|---|
| **1440.1** | 1 vial | 26,90 € |

For further information, please see page 1436

## MCP

▶ m-Cresol purple see p. 1848

## m-CP Agar

### m-CP Agar

**acc. to TWVO 2001, for microbiology**

For isolation and enumeration of *Clostridium perfringens.*

Application: Use 71,1 g for 1 l agar. After autoclaving add 2 vials (4 ml) reconstituted Clostridium perfringens Supplement (Art. No. CL52.1) and other supplements.

Storage temp.: +20 °C

**Guarantee analysis:**

Tryptose. ..... 30 g/l
Yeast extract. ..... 20 g/l
Saccharose. ..... 5 g/l
L-Cysteine hydrochloride. ..... 1 g/l
Magnesium sulphate heptahydrate. ..... 0,1 g/l
Bromocresol purple. ..... 0,04 g/l
Agar. ..... 15 g/l
pH value . ..... 7,6 ±0,2

| | | | |
|---|---|---|---|
| **CL55.1** | 500 g | plastic | 188,70 € |
| Original pack 6 x 500 g | | | 179,27/500 g |

For further information, please see page 1390

## MDH

▶ Malate dehydrogenase (MDH) see p. 2052

## Meat extract

Solubility: 570 g/l ($H_2O$, 20 °C)

Storage temp.: +20 °C

[68990-09-0] • EC No. 273-578-7

WGK 1

### Meat extract

**powder, for nutrient media**

Equates Lab-Lemco™

**Guarantee analysis:**

Total nitrogen (as N). ..... ≥10 %
Loss on drying. ..... ≤6 %
Ash. ..... ≤16 %
pH (2 % solution). ..... 7,0 ±0,5

| | | | |
|---|---|---|---|
| **X975.1** | 500 g | plastic | 123,65 € |
| Original pack 6 x 500 g | | | 117,47/500 g |
| **X975.2** | 1 kg | plastic | 225,65 € |
| Original pack 6 x 1 kg | | | 214,37/1 kg |

For further information, please see page 1419

### Meat extract paste

**paste, for nutrient media**

**Guarantee analysis:**

Dry substance. ..... ≥78 %
Ash (dry substance). ..... ≤30 %
Creatinine content. ..... 6,5-6,9 %
In $H_2O$ insoluble matter. ..... ≤1,5 %
NaCl. ..... ≤7 %
Copper (Cu). ..... ≤0,0006 %
Zinc (Zn). ..... ≤0,0001 %
Microbiological assay. ..... complies

| | | | |
|---|---|---|---|
| **5770.1** | 250 g | plastic | 65,50 € |
| **5770.2** | 1 kg | plastic | 209,65 € |
| Original pack 6 x 1 kg | | | 199,17/1 kg |

For further information, please see page 1419

## Media plates

▶ Roti®-Aquatest Plates see p. 2202
▶ Roti®-ContiPlates see p. 2209

## Medium P

▶ Reinforced Clostridial Medium see p. 2195

## Medium Q

▶ Columbia Agar (Base) see p. 1840
▶ Columbia Agar (Base), granulated see p. 1840

## Medium R

▶ Lactose Sulphite Broth (Base) see p. 2027

## Medium 199 with Earle's salts

▶ Roti®-CELL Medium 199 / Earle's see p. 2207

## m-EI-chromogenic Agar (Base)

### m-EI-chromogenic Agar (Base)

**for microbiology**

For detection and enumeration of *Enterococcus* in water via single step membrane filtration.

Application: Use 71,95 g for 1 l agar.
After autoclaving add 0,24 g nalidixic acid (Art. No. CN32.1) solubilised in water.

Storage temp.: +4 °C
WGK 1

**Warning** H302

**Formulation:**

Yeast extract..... 30 g/l
Sodium chloride..... 15 g/l
Peptone..... 10 g/l
Esculin..... 1 g/l
Chromogene Mixture..... 0,75 g/l
Sodium azide..... 0,15 g/l
Cycloheximide..... 0,05 g/l
Agar..... 15 g/l
pH value..... 7,1 ±0,2

| | | | |
|---|---|---|---|
| **3014.1** | 100 g | plastic | 87,00 € |

For further information, please see page 1395

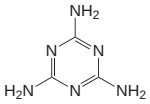
## MEK

▶ 2-Butanone see p. 1795

## Melaleucin

▶ Betulinic acid see p. 1771

## Melamine



### Melamine

**>99 %, for biochemistry**

sym-Triaminotriazine
$C_3H_6N_6$
M 126,12 g/mol
D ~1,57
mp >300 °C (dec.) • flp >280 °C
Solubility: ~3 g/l ($H_2O$, 20 °C)
[108-78-1] • EC No. 203-615-4
WGK 1

**Type analysis:**

Assay..... >99 %

| | | | |
|---|---|---|---|
| **6034.1** | 1 kg | plastic | 31,75 € |
| Original pack 6 x 1 kg | | | 30,16/1 kg |

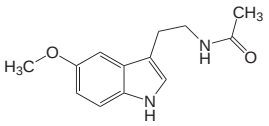
## Melampyrit

▶ Dulcitol see p. 1897

## Melanthigenin

▶ Hederagenin see p. 1970

## Melatonin



### Melatonin

**97 %, for biochemistry**

N-Acetyl-5-methoxytryptamine
$C_{13}H_{16}N_2O_2$
M 232,28 g/mol
mp ~117 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[73-31-4] • EC No. 200-797-7
WGK 2

**Type analysis:**

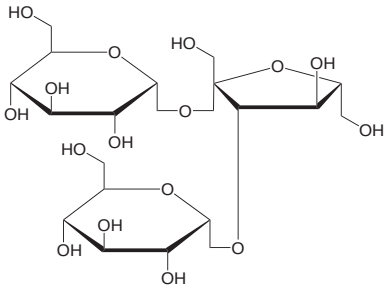
Appearance..... white to light yellowish cryst. powder
Assay (HPLC)..... ≥97 %
Water (KF)..... ≤0,3 %
Sulphated ash..... ≤0,1 %
Heavy metals..... ≤0,002 %

| | | | |
|---|---|---|---|
| **6956.1** | 250 mg | glass | 60,10 € |

## Meletin

▶ Quercetin see p. 2189
▶ Quercetin dihydrate see p. 2189

## D(+)-Melezitose monohydrate



### D(+)-Melezitose monohydrate

**≥99 %, for biochemistry**

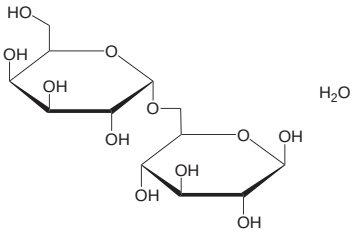
$C_{18}H_{32}O_{16} \cdot H_2O$
M 522,48 g/mol
mp ~155 °C
[597-12-6] • EC No. 209-894-9

**Type analysis:**

Assay (HPLC)..... ≥99,0 %
Loss on drying..... ≤3,5 %
Sulphated ash..... <0,1 %

| | | | |
|---|---|---|---|
| **4222.1** | 2,5 g | glass | 22,05 € |
| **4222.2** | 25 g | plastic | 81,60 € |
| **4222.3** | 50 g | plastic | 149,45 € |
| **4222.4** | 100 g | plastic | 278,45 € |

## D(+)-Melibiose monohydrate



### D(+)-Melibiose monohydrate

**≥99 %, for biochemistry**

$C_{12}H_{22}O_{11} \cdot H_2O$
M 360,32 g/mol
mp 175-185 °C
Solubility: 2500 g/l ($H_2O$, 25 °C)
[66009-10-7] • EC No. 209-568-6

**Type analysis:**

Appearance..... white to yellowish crystals
Assay (HPLC)..... ≥99,0 %
Specific rotation $[\alpha]_D^{20}$..... +133° to +137°
Water (KF)..... ≤6,0 %
Heavy metals (as Pb)..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **4223.1** | 2,5 g | glass | 29,60 € |
| **4223.3** | 10 g | plastic | 73,65 € |
| **4223.2** | 50 g | plastic | 260,70 € |

## Melitose

▶ D(+)-Raffinose pentahydrate see p. 2191

## Melitriose

▶ D(+)-Raffinose pentahydrate see p. 2191

## Melting point standards


| Art. No. | Description | Page |
|---|---|---|
| 9754 | Anthraquinone | 1743 |
| 9722 | Benzoic acid | 1766 |
| 9709 | Benzophenone | 1767 |
| 9739 | Caffeine | 1802 |
| 9752 | Carbazole | 1811 |
| 9712 | p-Nitrotoluene | 2104 |
| 9728 | Phenacetin | 2144 |
| 9731 | Salicylic acid | 2239 |
| 9734 | Sulphanilamide | 2322 |
| 9714 | Vanillin | 2370 |


## MEM-NEAA solution

▶ Roti®-CELL MEM-NEAA solution see p. 2207

## (-)-p-Mentha-1.8-diene

▶ DL-Limonene see p. 2037

## p-Mentha-6,8-dien-2-ol

▶ (-)-Carveol see p. 1815

## (1R,3S,4R)-p-Menthan-3-ol

▶ (+)-Isomenthol see p. 2015

## p-Menthan-3-one

▶ (-)-Menthone see p. 2062

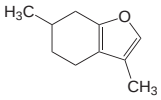
## p-Menth-1-en-8-ol

▶ α-Terpineol see p. 2333

## p-Menth-8-en-3-ol

▶ Isopulegol see p. 2016

## Menthofuran



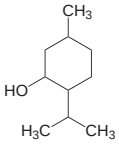
### Menthofuran

**ROTICHROM® GC**
Reference substance for GC.
$C_{10}H_{14}O$
M 150,22 g/mol
D 0,96
flp 76 °C
Storage temp.: +4 °C
[494-90-6] • EC No. 207-795-5
WGK 2

**Type analysis:**
Purity (GC).....≥90 %

| | | | |
|---|---|---|---|
| **5188.1** | 1 g | plastic | 82,70 € |

## Menthol



### Menthol

**chinese**
Hexahydrothymol
$C_{10}H_{20}O$
M 156,27 g/mol
flp >62 °C
[89-78-1] • EC No. 201-939-0
WGK 1

**Danger** H318-H335-H315

**Type analysis:**
Appearance.....white crystals
Specific rotation $[\alpha]_D^{20}$.....-46° to -38°

| | | | |
|---|---|---|---|
| **6725.1** | 250 g | glass | 56,90 € |

## DL-Menthol

### DL-Menthol

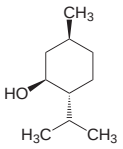
**≥99 %, synth.**
Hexahydrothymol
$C_{10}H_{20}O$
M 156,3 g/mol
D 0,89 • bp 216 °C
mp 30-32 °C • flp 93 °C
[89-78-1] • EC No. 201-939-0
WGK 1

**Danger** H318-H335-H315

**Type analysis:**
Appearance..... colourless to white cryst. mass
Assay (GLC).....≥99 %
Melting point.....30,5-32,0 °C
Specific rotation $[\alpha]_D^{20}$ (in ethanol).....-2° to +2°

| | | | |
|---|---|---|---|
| **8391.1** | 100 g | glass | 28,95 € |

## (+)-Menthol



### (+)-Menthol

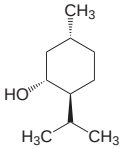
**ROTICHROM® GC**
Reference substance for GC.
$C_{10}H_{20}O$
M 156,27 g/mol
bp ~212 °C
mp 43-44 °C • flp +91 °C
Storage temp.: +4 °C
[15356-60-2] • EC No. 239-387-8
WGK 1

**Danger** H318-H335-H315

**Type analysis:**
Purity (GC).....≥96 %

| | | | |
|---|---|---|---|
| **3855.1** | 1 g | plastic | 81,20 € |

## (-)-Menthol



### (-)-Menthol

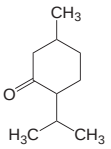
**ROTICHROM® GC**
Reference substance for GC.
$C_{10}H_{20}O$
M 156,27 g/mol
D 0,89 • bp 212 °C
mp 43-45 °C • flp 93 °C
Solubility: 490 mg/l ($H_2O$, 25 °C)
Storage temp.: +4 °C
[2216-51-5] • EC No. 218-690-9
WGK 1

**Danger** H318-H315-H335

**Type analysis:**
Purity (GC).....≥95 %

| | | | |
|---|---|---|---|
| **9061.1** | 1 g | plastic | 81,20 € |

## Menthone



### Menthone

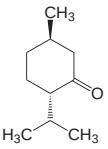
**≥96 %, isomers**
$C_{10}H_{18}O$
M 154,25 g/mol
D 0,90 • bp 207-210 °C
mp -6 °C • flp 69 °C
[10458-14-7] • EC No. 233-944-9
WGK 1

**Danger** H302-H319-H334-H412

**Type analysis:**
Appearance.....clear, very light yellow liquid
Assay (GC).....≥96,0 %

| | | | |
|---|---|---|---|
| **4226.1** | 50 ml | glass | 35,40 € |
| **4226.2** | 250 ml | glass | 110,65 € |

## (-)-Menthone



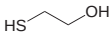
### (-)-Menthone

**≥88 %**
p-Menthan-3-one
$C_{10}H_{18}O$
M 154,25 g/mol
D 0,89 • bp 207-210 °C
mp -6 °C • flp 72 °C
Storage temp.: +4 °C
[14073-97-3] • EC No. 237-926-1

**Type analysis:**
Appearance..... colourless liquid
Assay (GC).....≥88,0 %
Optical rotation (20 °C).....-30° to -20°

| | | | |
|---|---|---|---|
| **6930.1** | 25 ml | glass | 85,90 € |

## 2-Mercaptoethanol



### 2-Mercaptoethanol

**≥99 %, p.a.**
Reducing agent.
Hydroxyethyl mercaptan, Thioglycol
$C_2H_6OS$
M 78,13 g/mol
D 1,12 • bp 154-161 °C
mp -50 °C • flp 73 °C
Storage temp.: +4 °C
[60-24-2] • EC No. 200-464-6
UN No. 2966 • ADR 6.1 II • WGK 3
**Danger** H301+H331-H310-H315-H317-H318-H373-H410

**Type analysis:**
Appearance. ..... colourless to slightly pink liquid
Assay. ..... ≥99 %

| | | | |
|---|---|---|---|
| **4227.3** | 100 ml | glass | 14,55 € |
| **4227.1** | 250 ml | glass | 20,35 € |
| **4227.2** | 1 l | glass | 46,15 € |
| Original pack 6 x 1 l | | | 43,84/1 l |

## β-Mercaptoethanol

▶ 2-Mercaptoethanol see p. 2063

## 2-Mercaptoethylamine hydrochloride

▶ Cysteamine hydrochloride see p. 1853

## Mercurisorb-ROTH®

### Mercurisorb-ROTH®

**contains silver nitrate**
Emergency kit for absorbing and disposing spilled mercury.
UN No. 3260 • ADR 8 II • WGK 3
**Danger** H314-H410

| | | |
|---|---|---|
| **9461.1** | 1 Emergency kit in plastic case | 87,00 € |
| **9461.4** | 1 Emergency kit in carton | 67,95 € |
| **9461.2** | 1 Refill pack Mercurisorb-ROTH® 250 g, plastic | 114,50 € |
| **9461.3** | 1 Refill pack Mercurisorb-ROTH® 1 kg, plastic | 443,90 € |

For further information, please see page 694

## Mercury

Hg
M 200,59 g/mol
D 13,54 • bp 356,7 °C
mp -38,9 °C
[7439-97-6] • EC No. 231-106-7
UN No. 2809 • ADR 8 (6.1) III • WGK 3
**Danger** H330-H360D-H372-H410

### Mercury

**≥99,9995 %, p.a.**

**Guarantee analysis:**
Assay. ..... ≥99,9995 %
Aluminium (Al). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00001 %
Silver (Ag). ..... ≤0,0001 %
Magnesium (Mg). ..... ≤0,00001 %
Copper (Cu). ..... ≤0,00001 %
Tin (Sn). ..... ≤0,00005 %
Nickel (Ni). ..... ≤0,00001 %
Iron (Fe). ..... ≤0,00002 %
Cadmium (Cd). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00005 %

| | | | |
|---|---|---|---|
| **8530.1** | 100 g | glass | 41,85 € |
| **8530.2** | 1 kg | plastic | 203,20 € |
| Original pack 6 x 1 kg | | | 193,04/1 kg |

### Mercury

**≥99,999 %**

**Type analysis:**
Assay. ..... ≥99,999 %

| | | | |
|---|---|---|---|
| **7593.1** | 100 g | glass | 31,10 € |
| **7593.3** | 500 g | glass | 114,50 € |
| Original pack 6 x 500 g | | | 108,78/500 g |
| **7593.2** | 1 kg | plastic | 192,45 € |
| Original pack 6 x 1 kg | | | 182,83/1 kg |

### Mercury

**≥99,9 %**

**Type analysis:**
Assay. ..... ≥99,9 %

| | | | |
|---|---|---|---|
| **7594.2** | 100 g | glass | 27,45 € |
| **7594.1** | 1 kg | plastic | 181,70 € |
| Original pack 6 x 1 kg | | | 172,62/1 kg |

## Mercury standards

▶ Mercury AAS Standard Solution see p. 2295
▶ Mercury ICP Standard Solution see p. 2299
▶ Mercury ICP Standard Solution see p. 2303
▶ Mercury ICP-MS Standard Solution see p. 2308

## Mercury(II) acetate

### Mercury(II) acetate

**≥99 %, p.a., ACS**
Catalyst in org. synthesis.
Mercuric acetate
$Hg(CH_3COO)_2$
M 318,68 g/mol
D 3,27
mp 178-180 °C
Solubility: 400 g/l ($H_2O$, 20 °C)
[1600-27-7] • EC No. 216-491-1
UN No. 1629 • ADR 6.1 II • WGK 3
**Danger**
H300+H310+H330-H373-H400-H410

**Guarantee analysis:**
Assay. ..... ≥99,0 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
Residue after reduction. ..... ≤0,02 %
Chloride (Cl). ..... ≤0,005 %
Nitrate ($NO_3$). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,005 %
Heavy metals (different from Pb). ..... ≤0,002 %
Lead (Pb). ..... ≤0,001 %
Cadmium (Cd). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,001 %
Copper (Cu). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,0005 %
Mercury I (Hg I). ..... ≤0,4 %
Silver (Ag). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **KK05.1** | 50 g | glass | 56,90 € |
| **KK05.2** | 100 g | glass | 101,60 € |

## Mercury(II) bromide

### Mercury(II) bromide

**≥98 %, p.a., ACS**
Mercuric bromide
$HgBr_2$
M 360,4 g/mol
bp 322 °C
mp 237 °C
Solubility: 6 g/l ($H_2O$, 20 °C)
[7789-47-1] • EC No. 232-169-3
UN No. 1634 • ADR 6.1 II • WGK 3
**Danger**
H300+H310+H330-H373-H400-H410

**Guarantee analysis:**
Appearance. ..... white to very faint yellow powder
Assay. ..... ≥98,0 %
Chloride (Cl). ..... ≤0,25 %
Residue after reduction. ..... ≤0,02 %
Insoluble in methanol. ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **6581.1** | 50 g | plastic | 52,60 € |
| **6581.2** | 250 g | plastic | 203,20 € |

M

## Mercury(I) chloride

### Mercury(I) chloride

**≥99,5 %, p.a., ACS**

Calomel, Dimercury dichloride, Mercurous chloride

$Hg_2Cl_2$

M 472,09 g/mol

Solubility: 2,3 mg/l ($H_2O$, 20 °C)

[10112-91-1] • EC No. 233-307-5

UN No. 2025 • ADR 6.1 III • WGK 3

**Danger**

H301-H312-H315-H319-H335-H410

**Guarantee analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥99,5 %
Residue after reduction. ..... ≤0,02 %
Mercuric chloride ($HgCl_2$). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **6601.1** | 50 g | glass | 54,30 € |
| **6601.2** | 100 g | glass | 88,70 € |
| **6601.3** | 500 g | glass | 342,95 € |
| Original pack 6 x 500 g | | | 325,80/500 g |

## Mercury(II) chloride

Sublimate, Mercuric chloride

$HgCl_2$

M 271,50 g/mol

D 5,44 • bp 304 °C

mp 277 °C

Solubility: 550 g/l ($H_2O$, 20 °C)

[7487-94-7] • EC No. 231-299-8

UN No. 1624 • ADR 6.1 II • WGK 3

**Danger**

H300+H310-H314-H341-H361f-H372-H410

### Mercury(II) chloride

**≥99,5 %, p.a., ACS**

Catalyst

**Guarantee analysis:**

Assay (compl.). ..... ≥99,5 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
In $C_2H_5OC_2H_5$ insoluble matter. ..... ≤0,01 %
Residue after reduction. ..... ≤0,02 %
Nitrate ($NO_3$). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,002 %
Potassium (K). ..... ≤0,005 %
Copper (Cu). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **KK04.1** | 50 g | glass | 45,70 € |
| **KK04.2** | 100 g | glass | 82,25 € |

### Mercury(II) chloride

**≥99,5 %, pure**

**Type analysis:**

Appearance. ..... white, cryst. powder
Assay. ..... ≥99,5 %
Iron (Fe). ..... ≤0,002 %
Residue after reduction. ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **7904.1** | 100 g | plastic | 80,10 € |
| **7904.3** | 500 g | plastic | 321,45 € |
| Original pack 6 x 500 g | | | 305,38/500 g |
| **7904.2** | 1 kg | plastic | 590,20 € |
| Original pack 6 x 1 kg | | | 560,69/1 kg |

## Mercury(II) iodide

### Mercury(II) iodide

**≥99 %, p.a., ACS, red**

Mercuric iodide

$HgI_2$

M 454,4 g/mol

bp 350 °C

mp 259 °C

[7774-29-0] • EC No. 231-873-8

UN No. 1638 • ADR 6.1 (II) • WGK 3

**Danger**

H300+H310+H330-H373-H400-H410

**Guarantee analysis:**

Appearance. ..... red powder
Assay (dry substance). ..... ≥99,0 %
Mercury I (Hg I). ..... ≤0,1 %
Solubility in KI solution. ..... complies
Soluble mercury salts (as Hg). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **6590.1** | 50 g | plastic | 50,45 € |
| **6590.2** | 100 g | plastic | 83,75 € |
| **6590.3** | 500 g | plastic | 321,45 € |
| Original pack 6 x 500 g | | | 305,38/500 g |

## Mercury(I) nitrate dihydrate

### Mercury(I) nitrate dihydrate

**≥97 %, p.a.**

Mercurous nitrate

$Hg_2(NO_3)_2 \cdot 2\ H_2O$

M 561,22 g/mol

mp 70 °C (dec.)

[14836-60-3] • EC No. 223-886-4

UN No. 1627 • ADR 6.1 (II) • WGK 3

**Danger**

H300+H310+H330-H373-H400-H410

**Guarantee analysis:**

Appearance. ..... white to yellow cryst. powder
Assay. ..... ≥97,0 %
Insoluble matter. ..... ≤0,005 %
Residue after reduction. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,005 %
Iron (Fe). ..... ≤0,001 %
Mercury (Hg). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6605.1** | 50 g | plastic | 39,25 € |
| **6605.2** | 100 g | plastic | 64,40 € |
| **6605.3** | 500 g | plastic | 284,90 € |
| Original pack 6 x 500 g | | | 270,66/500 g |

## Mercury(II) nitrate monohydrate

### Mercury(II) nitrate monohydrate

**≥98 %, p.a., ACS**

Mercuric nitrate

$Hg(NO_3)_2 \cdot H_2O$

M 342,62 g/mol

mp 77-79 °C

[7783-34-8] • EC No. 233-152-3

UN No. 1625 • ADR 6.1 II • WGK 3

**Danger**

H300+H310+H330-H373-H400-H410

**Guarantee analysis:**

Appearance. ..... white to light yellowish powder
Assay. ..... ≥98,0 %
Residue after reduction. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,002 %
Sulphate ($SO_4$). ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %
Mercury (Hg). ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **6595.1** | 50 g | plastic | 39,70 € |
| **6595.2** | 250 g | plastic | 138,70 € |
| **6595.3** | 1 kg | plastic | 482,70 € |
| Original pack 6 x 1 kg | | | 458,57/1 kg |

## Mercury(II) nitrate solution (0,1 N)

### Mercury(II) nitrate solution

**0,05 mol/l - 0,1 N volumetric standard solution**

Mercuric nitrate solution.

UN No. 1625 • ADR 6.1 II • WGK 2

**Danger**

H301+H311-H330-H373-H412

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... 0,05 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **KK72.1** | 1 l | plastic | 31,75 € |
| Original pack 6 x 1 l | | | 30,16/1 l |

For further information, please see page 1621

## Mercury(II) oxide

### Mercury(II) oxide

**≥99 %, p.a., red**

Mercuric oxide

HgO

M 216,59 g/mol

D 11,14

mp 500 °C (dec.)

[21908-53-2] • EC No. 244-654-7

UN No. 1641 • ADR 6.1 II • WGK 3

**Danger**

H300+H310+H330-H373-H400-H410

**Guarantee analysis:**

Assay. ..... ≥99 %
Chloride (Cl). ..... ≤0,025 %
Sulphate ($SO_4$). ..... ≤0,015 %
Insoluble matter. ..... ≤0,03 %
Total nitrogen (as N). ..... ≤0,005 %
Iron (Fe). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **4470.2** | 25 g | plastic | 42,90 € |
| **4470.1** | 50 g | plastic | 77,30 € |

## Mercury(II) sulphate

### Mercury(II) sulphate

**≥98 %, p.a., ACS**

For determination of COD, catalyst in Kjeldahl determination.

Mercuric sulphate

$HgSO_4$

M 296,65 g/mol

D 6,47

Solubility: 50 mg/l ($H_2O$, 20 °C)

[7783-35-9] • EC No. 231-992-5

UN No. 1645 • ADR 6.1 II • WGK 3

**Danger**

H300+H310+H330-H373-H400-H410

**Type analysis:**

Assay (compl.).....≥98,0 %
Chloride (Cl).....≤0,003 %
Nitrate ($NO_3$).....≤0,005 %
Iron (Fe).....≤0,005 %
Mercury I (Hg I).....≤0,15 %
Residue after reduction.....≤0,02 %

For the preparation of solutions for COD-determination acc. DIN 38403.

| | | | |
|---|---|---|---|
| **T112.1** | 100 g | plastic | 74,10 € |
| **T112.2** | 500 g | plastic | 263,40 € |
| Original pack 6 x 500 g | | | 250,23/500 g |

## Mercury(II) sulphate solution 80 g/l

### Mercury(II) sulphate solution 80 g/l

**in sulphuric acid potassium dichromate standard solution.**
**0,02 mol/l volumetric solution, for determination of COD**

According to DIN 38409 part H41.

Mercuric sulphate solution

UN No. 3289 • ADR 6.1 (8) II • WGK 3

**Danger**

H290-H300+H310+H330-H314-H340-H350-H360FD-H373-H411-EUH203

**Type analysis:**

Titer.....0,998-1,002

| | | | |
|---|---|---|---|
| **X871.1** | 1 l | glass | 62,90 € |
| Original pack 6 x 1 l | | | 59,76/1 l |
| **X871.2** | 2,5 l | glass | 159,00 € |
| Original pack 4 x 2,5 l | | | 151,05/2,5 l |

For further information, please see page 1621

## Mercury(II) thiocyanate

### Mercury(II) thiocyanate

**≥99%, p.a.**

Mercuric sulphocyanate, Mercuric thiocyanate

$Hg(SCN)_2$

M 316,75 g/mol

mp 165 °C (dec.)

Solubility: 0,7 g/l ($H_2O$, 25 °C)

[592-85-8] • EC No. 209-773-0

UN No. 1646 • ADR 6.1 II • WGK 3

**Danger**

H300+H310+H330-H373-H400-H410-EUH032

**Guarantee analysis:**

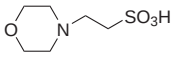
Appearance.....white to slightly yellow powder
Assay.....≥99,0 %
Assay (Hg).....61,7-64,9 %
Sodium (Na).....≤0,01 %
Iron (Fe).....≤0,002 %

| | | | |
|---|---|---|---|
| **6600.1** | 25 g | plastic | 34,30 € |
| **6600.2** | 100 g | plastic | 103,10 € |
| **6600.3** | 500 g | plastic | 439,70 € |
| Original pack 6 x 500 g | | | 417,72/500 g |

## Merthiolate

▶ Sodium ethylmercurithiosalicylate see p. 2272

## MES




2-(N-Morpholino)-ethane sulphonic acid

$C_6H_{13}NO_4S$

M 195,20 g/mol

mp 300 °C

[4432-31-9] • EC No. 224-632-3

WGK 1

### MES

**PUFFERAN® ≥99 %**

**Guarantee analysis:**

Appearance.....white powder
Assay (titr. dry substance).....≥99,0 %
pH value.....2,5-4,0
Loss on drying.....≤1,0 %
Chloride (Cl).....≤0,005 %
Sulphate ($SO_4$).....≤0,005 %
Heavy metals (as Pb).....≤0,001 %
UV-absorption (0,1 M in $H_2O$):
280 nm.....≤0,02
260 nm.....≤0,02

| | | | |
|---|---|---|---|
| **4256.2** | 100 g | plastic | 63,35 € |
| **4256.5** | 250 g | plastic | 137,10 € |
| **4256.3** | 500 g | plastic | 260,70 € |
| Original pack 6 x 500 g | | | 247,67/500 g |
| **4256.4** | 1 kg | plastic | 456,90 € |
| Original pack 6 x 1 kg | | | 434,06/1 kg |

For further information, please see page 1268

### MES

**≥99 %, for biochemistry**

**Type analysis:**

Assay.....≥99 %
pH value.....2,5-4,0
Chloride (Cl).....≤0,01 %
Sulphate ($SO_4$).....≤0,05 %
Loss on drying.....≤1,0 %
Heavy metals (as Pb).....≤0,001 %
UV (0,1 M in $H_2O$) A280 nm.....≤0,02

| | | | |
|---|---|---|---|
| **4259.1** | 50 g | plastic | 32,80 € |
| **4259.2** | 100 g | plastic | 48,95 € |
| **4259.3** | 250 g | plastic | 97,75 € |
| **4259.4** | 500 g | plastic | 170,95 € |
| Original pack 6 x 500 g | | | 162,40/500 g |
| **4259.5** | 1 kg | plastic | 306,40 € |
| Original pack 6 x 1 kg | | | 291,08/1 kg |

For further information, please see page 1268

## MES monohydrate

### MES monohydrate

**PUFFERAN® ≥99,5 %**

2-(N-Morpholino)-ethane sulphonic acid monohydrate

$C_6H_{13}NO_4S \cdot H_2O$

M 213,2 g/mol

mp >300 °C

[145224-94-8] • EC No. 224-632-3

WGK 1

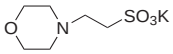
**Guarantee analysis:**

Appearance.....white powder
Assay (titr.).....≥99,5 %
pH value (1 % in $H_2O$).....3,5-4,1
Loss on drying.....7,9-8,9 %
Solubility (0,1 M in $H_2O$).....clear colourless solution
UV-absorption (0,1 M in $H_2O$):
260 nm.....≤0,04
280 nm.....≤0,02

| | | | |
|---|---|---|---|
| **6066.1** | 50 g | plastic | 26,35 € |
| **6066.2** | 100 g | plastic | 43,55 € |
| **6066.3** | 500 g | plastic | 169,35 € |
| Original pack 6 x 500 g | | | 160,88/500 g |
| **6066.4** | 1 kg | plastic | 289,20 € |
| Original pack 6 x 1 kg | | | 274,74/1 kg |

For further information, please see page 1268

## MES potassium salt



### MES potassium salt

**PUFFERAN® ≥99 %**

2-(N-Morpholino)-ethanesulphonic acid potassium salt

$C_6H_{12}KNO_4S$

M 233,3 g/mol

[39946-25-3] • EC No. 224-632-3

WGK 1

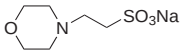
**Guarantee analysis:**

Appearance. ..... white crystals
Assay ..... ≥99 %
pH value (1 % solution) ..... 8,5-9,5
Water (KF) ..... ≤1,0 %
UV-absorption (0,1 M in $H_2O$):
280 nm ..... ≤0,04
260 nm ..... ≤0,05

| | | | |
|---|---|---|---|
| **7033.1** | 25 g | plastic | 31,10 € |
| **7033.2** | 100 g | plastic | 107,40 € |

For further information, please see page 1268

## MES sodium salt



### MES sodium salt

**PUFFERAN® ≥99 %**

2-(N-Morpholino)-ethanesulphonic acid sodium salt

$C_6H_{12}NaNO_4S$

M 217,2 g/mol

[71119-23-8] • EC No. 275-203-2

WGK 1

**Guarantee analysis:**

Assay (titr.) ..... ≥99 %
Loss of drying (140 °C, 30 min) ..... ≤1,0 %
pH value (1 % solution) ..... 8,9-10,1

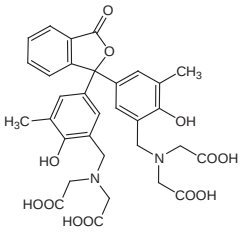
| | | | |
|---|---|---|---|
| **6922.1** | 25 g | plastic | 22,50 € |
| **6922.2** | 100 g | plastic | 83,75 € |

For further information, please see page 1268

## Metal enhancer

▶ DAB Metal Enhancer see p. 1856

## Metal phthaleine



### Metal phthaleine

**p.a.**

Indicator for complexometry.

Phthalein purple, o-Cresolphthalexon, o-Cresolphthalein complexone

$C_{32}H_{32}N_2O_{12}$

M 636,62 g/mol

Solubility: insoluble ($H_2O$, 20 °C)

[2411-89-4] • EC No. 219-318-8

WGK 2

**Type analysis:**

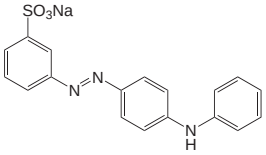
Absorption max. (NaOH 0,1 mol/l) ..... 577-580 nm
Water (KF) ..... ≤10 %
Suitability as indicator for complexometry. .... complies

| | | | |
|---|---|---|---|
| **4231.1** | 1 g | glass | 23,15 € |
| **4231.2** | 5 g | glass | 46,15 € |

## Metals

| Art. No. | Description | Page |
|---|---|---|
| 1980 | Alloy acc. to Wood | 1718 |
| 5577 | Aluminium granulate, ROTI®METIC | 1719 |
| 5280 | Aluminium granulate | 1719 |
| 5285 | Aluminium powder | 1719 |
| 4516 | Antimony shot, ROTI®METIC | 1746 |
| 9258 | Antimony | 1746 |
| 2735 | Bismuth | 1775 |
| 2729 | Calcium | 1802 |
| 5620 | Cobalt powder, ROTI®METIC | 1837 |
| 5621 | Copper pellets, ROTI®METIC | 1842 |
| 2728 | Copper beads | 1842 |
| 8540 | Copper sheet | 1842 |
| 9597 | Copper wool | 1842 |
| 8279 | Copper, nano | 1842 |
| 5386 | Copper powder, ROTI®METIC | 1842 |
| CP21 | Copper powder | 1842 |
| 4507 | Gallium | 1946 |
| 3761 | Gallium | 1946 |
| 5622 | Gold shot, ROTI®METIC | 1964 |
| 5629 | Indium shot, ROTI®METIC | 2002 |
| 3906 | Indium shot | 2002 |
| 9803 | Indium, foil | 2002 |
| 5631 | Iron granules, ROTI®METIC | 2010 |
| 3718 | Iron | 2010 |
| 9454 | Iron, reduced | 2010 |
| 0540 | Iron foil | 2010 |
| 9588 | Iron wool | 2010 |
| 2734 | Lead | 2032 |
| AE61 | Magnesium filings | 2047 |
| CP20 | Magnesium powder | 2047 |
| 4468 | Magnesium ribbon | 2048 |
| 4509 | Manganese flakes, ROTI®METIC | 2055 |
| 8530 | Mercury | 2063 |
| 7593 | Mercury | 2063 |
| 7594 | Mercury | 2063 |
| 5643 | Nickel powder, ROTI®METIC | 2092 |
| CP22 | Nickel powder | 2092 |
| 0529 | Nickel foil | 2092 |
| 0663 | Nickel-aluminium alloy | 2093 |
| 5648 | Palladium powder, ROTI®METIC | 2128 |
| 8408 | Platinum black | 2155 |
| 5654 | Platinum powder, ROTI®METIC | 2156 |
| 0737 | Platinum wire | 2156 |
| 8415 | Platinum wire | 2156 |
| 0803 | Platinum wire | 2156 |
| 4547 | Selenium pellets, ROTI®METIC | 2245 |
| 7605 | Sheets of gold | 2249 |
| 9367 | Sheets of silver | 2249 |
| 8816 | Silver sheet | 2260 |
| 8819 | Silver wire | 2260 |
| 8821 | Silver wire | 2260 |
| 9373 | Silver wool | 2260 |
| 4469 | Sodium | 2265 |
| 5097 | Tin shot, ROTI®METIC | 2343 |
| 4016 | Tin granules | 2343 |
| 2731 | Tin beads | 2343 |
| 9296 | Tin foil | 2343 |
| 9835 | Tungsten | 2362 |
| AE99 | Zinc granule | 2386 |
| 5345 | Zinc shot, ROTI®METIC | 2386 |
| 9524 | Zinc dust | 2386 |

## Metanil yellow (C.I. 13065)



### Metanil yellow (C.I. 13065)

**p.a.**

Indicator pH 1,2-2,7

Acid yellow 36

$C_{18}H_{14}N_3NaO_3S$

M 375,38 g/mol

mp >250 °C

[587-98-4] • EC No. 209-608-2

WGK 3

**Danger** H318-H412

**Type analysis:**

Appearance. ..... yellow to orange powder
Appearance of solution (0,1 % in MeOH). ..... clear, yellow orange
pH-transition range. ..... 1,2 (dark red)-2,7 (yellow)

| | | | |
|---|---|---|---|
| **7714.1** | 5 g | glass | 14,20 € |
| **7714.2** | 25 g | glass | 24,65 € |
| **7714.3** | 100 g | glass | 47,85 € |

## Methacrylic acid methyl ester



### Methacrylic acid methyl ester

**≥99 %, extra pure**

For electron microscopy.
Methyl methacrylate, MMA
$C_5H_8O_2$
M 100,12 g/mol
D 0,94 • bp ~101 °C
mp -48 °C • flp 10 °C
[80-62-6] • EC No. 201-297-1
UN No. 1247 • ADR 3 II • WGK 1

**Danger** H225-H315-H317-H335

**Type analysis:**

Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99 %
Odour. ..... ester like
Acid content. ..... ≤0,005 %
Water (KF). ..... ≤0,01 %
Stabilisation (HPLC). ..... 100 ±10 ppm HQ

| | | | |
|---|---|---|---|
| **4233.1** | 1 l | glass | 27,45 € |
| Original pack 6 x 1 l | | | 26,08/1 l |
| **4233.2** | 2,5 l | glass | 53,65 € |
| Original pack 4 x 2,5 l | | | 50,97/2,5 l |

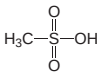
## Methanecarboxylic acid


- ▶ Acetic acid Ultra-quality see p. 1691
- ▶ Acetic acid Supra-quality see p. 1691
- ▶ Acetic acid 100 % see p. 1692
- ▶ Acetic acid 96 % see p. 1692
- ▶ Acetic acid 80 % see p. 1692
- ▶ Acetic acid 60 % see p. 1692
- ▶ Acetic acid 25 % see p. 1693
- ▶ Acetic acid 10 % see p. 1693
- ▶ Acetic acid D1 see p. 1693
- ▶ Acetic acid D4 see p. 1693
- ▶ Acetic acid (1 N) see p. 1693
- ▶ Acetic acid (2 N) see p. 1693


## Methanedicarboxylic acid


- ▶ Malonic acid see p. 2053


## Methanesulphonic acid



Methylsulphonic acid, MSA
$CH_4O_3S$
M 96,10 g/mol
D 1,48 • bp 167 °C (13 mbar)
mp 20 °C • flp 189 °C
[75-75-2] • EC No. 200-898-6
UN No. 2586 • ADR 8 III • WGK 1

**Danger**
H290-H302+H312-H314-H335

### Methanesulphonic acid

**≥99,5 %, for synthesis**

**Type analysis:**

Assay. ..... ≥99,5 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,005 %
Colour (APHA) ..... ≤150
Heavy metals ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **4090.1** | 100 ml | glass | 19,90 € |
| **4090.2** | 250 ml | glass | 30,00 € |
| **4090.3** | 1 l | glass | 79,05 € |
| Original pack 6 x 1 l | | | 75,10/1 l |
| **4090.4** | 2,5 l | glass | 160,20 € |
| Original pack 4 x 2,5 l | | | 152,19/2,5 l |

### Methanesulphonic acid

**70 %, for synthesis**

**Type analysis:**

Assay. ..... 69,5-70,5 %
Colour (APHA) ..... ≤10
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,005 %
Heavy metals ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **4236.1** | 100 ml | glass | 15,60 € |
| **4236.2** | 1 l | glass | 38,60 € |
| Original pack 6 x 1 l | | | 36,67/1 l |
| **4236.3** | 2,5 l | glass | 77,30 € |
| Original pack 4 x 2,5 l | | | 73,44/2,5 l |

## Methanoic acid


- ▶ Formic acid 98 % see p. 1940


## Methanol

Methyl alcohol, Carbinol
$CH_3OH$
M 32,04 g/mol
D 0,79 • bp 64,7 °C
mp -98 °C • flp 11 °C
[67-56-1] • EC No. 200-659-6
UN No. 1230 • ADR 3 (6.1) II • WGK 1

**Danger**
H225-H301+H311+H331-H370

### Methanol

**ROTISOLV® ≥99,98 %, Ultra LC-MS**

**Guarantee analysis:**

Assay (GC). ..... ≥99,98 %
Colour (APHA). ..... ≤5
Water. ..... ≤0,03 %
Free acid (as $CH_3COOH$) ..... ≤0,002 %
Free alkali (as $NH_3$). ..... ≤0,0001 %
Non volatile matter. ..... ≤0,0001 %
Transmission:
260 nm. ..... ≥99 %
230 nm. ..... ≥80 %
220 nm. ..... ≥65 %
210 nm. ..... ≥30 %
Gradient test:
UV-absorption of the greatest eluated peak
220 nm. ..... ≤0,004 AU
235 nm. ..... ≤0,002 AU
Fluorescence (as quinine):
254 nm. ..... ≤0,5 ppb
365 nm. ..... ≤0,3 ppb
Trace impurities:
Aluminium (Al) ..... ≤20 ppb
Calcium (Ca). ..... ≤100 ppb
Iron (Fe). ..... ≤20 ppb
Potassium (K). ..... ≤50 ppb
Magnesium (Mg). ..... ≤20 ppb
Sodium (Na) ..... ≤100 ppb
Filtered through 0,1 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **HN41.1** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **HN41.2** | 2,5 l | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |

### Methanol

**ROTISOLV® ≥99,95 %, LC-MS-Grade**

**Guarantee analysis:**

Assay (GC). ..... ≥99,95 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,03 %
Free acid (as $CH_3COOH$) ..... ≤0,002 %
Free alkali (as $NH_3$). ..... ≤0,0001 %
Non volatile matter. ..... ≤0,0001 %
Transmission:
260 nm. ..... ≥98 %
235 nm. ..... ≥85 %
220 nm. ..... ≥60 %
210 nm. ..... ≥40 %
Gradient test:
UV absorption of the greatest eluated peak
235 nm. ..... ≤0,002 AU
254 nm. ..... ≤0,001 AU
Fluorescence (as quinine):
254 nm. ..... ≤0,5 ppb
365 nm. ..... ≤0,5 ppb
Trace impurities:
Aluminium (Al) ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na) ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE71.1** | 1 l | glass | 28,50 € |
| Original pack 6 x 1 l | | | 27,08/1 l |
| **AE71.2** | 2,5 l | glass | 61,85 € |
| Original pack 4 x 2,5 l | | | 58,76/2,5 l |

## Methanol
**ROTISOLV® HPLC Ultra Gradient Grade**

**Guarantee analysis:**
Assay (GC). ≥99,95 %
Colour (Hazen). ≤10
Water (KF). ≤0,03 %
Free acid (as $CH_3COOH$). ≤0,002 %
Non volatile matter. ≤0,0001 %
Layer thickness d = 1 cm water in comparison
Transmission:
>260 nm. ≥99 %
230 nm. ≥80 %
220 nm. ≥60 %
210 nm. ≥40 %
Gradient test:
UV absorption of the greatest eluated peak
220 nm. ≤0,004 AU
235 nm. ≤0,002 AU
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤0,5 ppb
Suitability for PAH analysis
(HPLC fluorescence detection). complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **X948.1** | 1 l | glass | 24,65 € |
| Original pack 6 x 1 l | | | 23,42/1 l |
| **X948.2** | 2,5 l | glass | 44,00 € |
| Original pack 4 x 2,5 l | | | 41,80/2,5 l |

For further information, please see page 1590

## Methanol
**ROTISOLV® HPLC Gradient Grade**

**Guarantee analysis:**
Assay (GC). ≥99,9 %
Colour (Hazen). ≤10
Water (KF). ≤0,02 %
Free acid. ≤0,001 %
Non volatile matter. ≤0,0002 %
Transmission:
>260 nm. ≥99 %
235 nm. ≥85 %
220 nm. ≥60 %
210 nm. ≥40 %
Gradient test:
UV-absorption of the greatest eluated peak
235 nm. ≤2,0 mAU
254 nm. ≤1,0 mAU
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤0,5 ppb
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **7342.2** | 1 l | glass | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **7342.1** | 2,5 l | glass | 37,55 € |
| Original pack 4 x 2,5 l | | | 35,67/2,5 l |

For further information, please see page 1590

## Methanol
**ROTISOLV® HPLC Gradient**

**Guarantee analysis:**
Assay (GC). ≥99,9 %
Water (KF). ≤0,05 %
Free acid (as $CH_3COOH$). ≤0,002 %
Non volatile matter. ≤0,0003 %
Transmission:
260 nm. ≥98 %
235 nm. ≥85 %
210 nm. ≥30 %
Gradient test:
UV-absorption of the greatest eluated peak.
254 nm. ≤0,005 AU
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **KK39.2** | 2,5 l | glass | 29,60 € |
| Original pack 4 x 2,5 l | | | 28,12/2,5 l |

For further information, please see page 1590

## Methanol
**ROTISOLV® HPLC**

**Guarantee analysis:**
Assay (GC). ≥99,9 %
Water (KF). ≤0,05 %
Free acid. ≤0,002 %
Non volatile matter. ≤0,0003 %
Transmission:
260 nm. ≥99 %
235 nm. ≥85 %
220 nm. ≥60 %
210 nm. ≥30 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **P717.2** | 1 l | glass | 18,50 € |
| Original pack 6 x 1 l | | | 17,58/1 l |
| **P717.1** | 2,5 l | glass | 29,60 € |
| Original pack 4 x 2,5 l | | | 28,12/2,5 l |

For further information, please see page 1590

## Methanol
**ROTISOLV® ≥99,9 %, GC Ultra Grade**
For gaschromatographic residue analysis.

**Guarantee analysis:**
Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,05 %
Free acid (as $CH_3COOH$). ≤0,003 %
Evaporation residue. ≤0,0002 %
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **KK44.1** | 2,5 l | glass | 47,85 € |
| Original pack 4 x 2,5 l | | | 45,46/2,5 l |

## Methanol
**ROTISOLV® ≥99,9 %, Pestilyse® plus**
For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**
Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,05 %
Free acid (as $CH_3COOH$). ≤0,002 %
Free alkali (as $NH_3$). ≤0,0002 %
Evaporation residue. ≤0,0002 %
GC/FID suitability (as 2-octanol). ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤10 ng/l
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ≤0,1 mg/l
GC/ECD volatile impurities (as ethylene dibromide). ≤5 ng/ml
PAH-test (less than 2 ppb, HPLC). complies
Fluorescence (as quinine):
254 nm. ≤0,5 ppb
365 nm. ≤0,5 ppb

| | | | |
|---|---|---|---|
| **7583.1** | 2,5 l | glass | 42,90 € |
| Original pack 4 x 2,5 l | | | 40,76/2,5 l |

## Methanol
**ROTISOLV® ≥99,9 %, Pestilyse®**
For residue and environmental analysis.

**Guarantee analysis:**
Assay (GC). ≥99,9 %
Water (KF). ≤0,1 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

| | | | |
|---|---|---|---|
| **T169.2** | 1 l | glass | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **T169.1** | 2,5 l | glass | 33,25 € |
| Original pack 4 x 2,5 l | | | 31,59/2,5 l |
| **T169.3** | 4 l | glass | 47,85 € |

## Methanol
**ROTISOLV® ≥99,9 %, UV/IR-Grade**
For chromatography and spectroscopy.

**Guarantee analysis:**
Assay (GC). ≥99,9 %
Water (KF). ≤0,02 %
Acidity. ≤0,005 meq/g
Evaporation residue. ≤0,005 %
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤1,0 ppb
Transmission:
260 nm. ≥98 %
242 nm. ≥90 %
232 nm. ≥80 %
220 nm. ≥50 %
207 nm. ≥10 %

| | | | |
|---|---|---|---|
| **T909.1** | 2,5 l | glass | 34,30 € |
| Original pack 4 x 2,5 l | | | 32,59/2,5 l |

## Methanol
**ROTIDRY®Sept ≥99,9 % (≤50 ppm $H_2O$)**
Dried; in a septum bottle

**Guarantee analysis:**
Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,005 %
Acidity (as $CH_3COOH$). ≤0,002 %
Evaporation residue. ≤0,0005 %

| | | | |
|---|---|---|---|
| **5181.1** | 250 ml | glass | 35,40 € |

## Methanol
**ROTIDRY® ≥99,9 % (≤50 ppm $H_2O$)**
Dried; for analysis and organic synthesis.

**Guarantee analysis:**
Assay (GC). ≥99,9 %
Colour (Hazen). ≤10
Water (KF). ≤0,005 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Filtered through a membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE01.1** | 1 l | glass | 30,00 € |
| Original pack 6 x 1 l | | | 28,50/1 l |
| **AE01.2** | 2,5 l | glass | 53,25 € |
| Original pack 4 x 2,5 l | | | 50,59/2,5 l |

## Methanol

**≥99,9 %, Blotting-Grade**

For Western blotting.

**Type analysis:**

Appearance. ..... clear
Assay (GC). ..... ≥99,9 %
Colour (Hazen). ..... ≤10
Water. ..... ≤0,1 %
Evaporation residue. ..... ≤0,0005 %
Benzene (GC). ..... ≤0,0002 %
Ethanol (GC). ..... ≤0,05 %
Acetone. ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,0001 %
Chloride (Cl). ..... ≤0,00005 %
Bismuth (Bi). ..... ≤0,000002 %
Lead (Pb). ..... ≤0,00001 %
Gold (Au). ..... ≤0,000002 %
Molybdenum (Mo). ..... ≤0,000002 %
Silver (Ag). ..... ≤0,000002 %
Platinum (Pt). ..... ≤0,000005 %
Thallium (Tl). ..... ≤0,000002 %

| | | | |
|---|---|---|---|
| **0082.1** | 500 ml | glass | 22,05 € |
| **0082.2** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |
| **0082.3** | 2,5 l | glass | 60,75 € |
| Original pack 4 x 2,5 l | | | 57,71/2,5 l |

## Methanol

**≥99,5 %, VLSI Grade**

**Guarantee analysis:**

Assay. ..... ≥99,5 %
Bead number (≥0,5 µm). ..... ≤250 p/ml
Water. ..... ≤0,1 %
Colour (APHA). ..... ≤10
Alkalinity. ..... 0,5 µeq/g
Acidity. ..... 1 µeq/g
Chloride (Cl). ..... ≤0,00005 %
Nitrate ($NO_3$). ..... ≤0,0001 %
Sulphate ($SO_4$). ..... ≤0,0001 %
Ash content. ..... ≤0,001 %
Aluminium (Al). ..... ≤50 ppb
Antimony (Sb). ..... ≤10 ppb
Arsenic (As). ..... ≤10 ppb
Barium (Ba). ..... ≤10 ppb
Bismuth (Bi). ..... ≤10 ppb
Lead (Pb). ..... ≤10 ppb
Boron (B). ..... ≤10 ppb
Cadmium (Cd). ..... ≤10 ppb
Calcium (Ca). ..... ≤50 ppb
Chromium (Cr). ..... ≤10 ppb
Iron (Fe). ..... ≤50 ppb
Gallium (Ga). ..... ≤10 ppb
Gold (Au). ..... ≤10 ppb
Potassium (K). ..... ≤50 ppb
Cobalt (Co). ..... ≤10 ppb
Copper (Cu). ..... ≤20 ppb
Lithium (Li). ..... ≤10 ppb
Magnesium (Mg). ..... ≤20 ppb
Manganese (Mn). ..... ≤10 ppb
Molybdenum (Mo). ..... ≤10 ppb
Sodium (Na). ..... ≤100 ppb
Nickel (Ni). ..... ≤10 ppb
Silver (Ag). ..... ≤10 ppb
Strontium (Sr). ..... ≤10 ppb
Tantal (Ta). ..... ≤10 ppb
Thallium (Tl). ..... ≤10 ppb
Titanium (Ti). ..... ≤10 ppb
Vanadium (V). ..... ≤10 ppb
Zinc (Zn). ..... ≤100 ppb
Tin (Sn). ..... ≤10 ppb

| | | | |
|---|---|---|---|
| **9785.1** | 2,5 l | plastic | 54,75 € |
| Original pack 4 x 2,5 l | | | 52,01/2,5 l |
| **9785.2** | 5 l | plastic | 98,80 € |
| Original pack 2 x 5 l | | | 93,86/5 l |

For further information, please see page 1654

## Methanol

**ROTIPURAN® ≥99,9 %, p.a., ACS, ISO**

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Colour (Hazen). ..... ≤10
Solubility in $H_2O$. ..... complies
Evaporation residue. ..... ≤0,0005 %
Acidity. ..... ≤0,0002 meq/g
Alkalinity. ..... ≤0,0002 meq/g
Water ..... ≤0,05 %
Density (d 20 °C/20 °C). ..... 0,791-0,793
Ethanol (GC). ..... ≤0,05 %
Acetone. ..... ≤0,001 %
Acetaldehyde. ..... ≤0,001 %
Formaldehyde. ..... ≤0,001 %
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Tin (Sn). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00001 %
Carbonylic compounds (as CO). ..... ≤0,001 %
$KMnO_4$ reducing substances (as O). ..... ≤0,00025 %
Matter discoloured by $H_2SO_4$ (Hazen). ..... complies

| | | | |
|---|---|---|---|
| **4627.1** | 1 l | glass | 25,30 € |
| Original pack 6 x 1 l | | | 24,04/1 l |
| **4627.4** | 1 l | plastic | 23,55 € |
| Original pack 6 x 1 l | | | 22,37/1 l |
| **4627.2** | 2,5 l | glass | 44,00 € |
| Original pack 4 x 2,5 l | | | 41,80/2,5 l |
| **4627.5** | 2,5 l | plastic | 40,75 € |
| Original pack 4 x 2,5 l | | | 38,71/2,5 l |
| **4627.6** | 5 l | plastic | 75,15 € |
| Original pack 2 x 5 l | | | 71,39/5 l |
| **4627.3** | 25 l | tinplate | 160,20 € |

## Methanol

**≥99,5 %, Ph.Eur., extra pure**

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Identity. ..... complies
Absorption. ..... complies
Appearance of solution. ..... complies
Acid react. substances. ..... complies
Density (d 20 °C/20 °C). ..... 0,791-0,793
Refractive index $n_D^{20}$. ..... 1,328-1,330
Reducing substances ..... complies
Water. ..... ≤0,1 %
Benzene (GC). ..... ≤0,0002 %
Related substances (GC). ..... complies
Non volatile matter. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **CP43.1** | 1 l | glass | 19,90 € |
| Original pack 6 x 1 l | | | 18,91/1 l |
| **CP43.2** | 2,5 l | glass | 33,90 € |
| Original pack 4 x 2,5 l | | | 32,21/2,5 l |
| **CP43.3** | 2,5 l | plastic | 29,60 € |
| Original pack 4 x 2,5 l | | | 28,12/2,5 l |
| **CP43.4** | 5 l | plastic | 46,15 € |
| Original pack 2 x 5 l | | | 43,84/5 l |
| **CP43.5** | 10 l | tinplate | 75,15 € |
| **CP43.6** | 25 l | tinplate | 138,70 € |

## Methanol

**≥99 %, for synthesis**

**Type analysis:**

Assay (GC). ..... ≥99 %
Water . ..... ≤0,1 %
Density (20 °C). ..... 0,791-0,793
Evaporation residue. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **8388.1** | 1 l | glass | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |
| **8388.2** | 2,5 l | glass | 30,65 € |
| Original pack 4 x 2,5 l | | | 29,12/2,5 l |
| **8388.5** | 2,5 l | plastic | 25,50 € |
| Original pack 4 x 2,5 l | | | 24,23/2,5 l |
| **8388.6** | 5 l | plastic | 40,35 € |
| Original pack 2 x 5 l | | | 38,33/5 l |
| **8388.3** | 10 l | tinplate | 64,40 € |
| **8388.4** | 25 l | tinplate | 102,70 € |

## Methanol 60 %

## Methanol 60 %

**60 %, for synthesis**

UN No. 1230 • ADR 3 (6.1) II • WGK 1

**Danger**

H225-H301+H311+H331-H370

**Type analysis:**

Assay (MeOH, v/v). ..... 59-61 %
Density (d 20 °C/4 °C). ..... 0,9094-0,9114

| | | | |
|---|---|---|---|
| **9976.1** | 1 l | plastic | 13,90 € |
| Original pack 6 x 1 l | | | 13,21/1 l |
| **9976.2** | 2,5 l | plastic | 21,40 € |
| Original pack 4 x 2,5 l | | | 20,33/2,5 l |
| **9976.3** | 5 l | plastic | 35,40 € |
| Original pack 2 x 5 l | | | 33,63/5 l |
| **9976.4** | 10 l | plastic | 53,65 € |
| **9976.5** | 25 l | plastic | 95,70 € |

## Methanol D1

## Methanol D1

**99,5 Atom%D**

For nuclear magnetic resonance spectroscopy.
Methyl alcohol deuterated
$CH_3OD$
M 33,05 g/mol
D 0,813 • bp 65,5 °C
mp -98 °C • flp 11 °C
[1455-13-6] • EC No. 215-933-0
UN No. 1230 • ADR 3 (6.1) II • WGK 1

**Danger**

H225-H301+H311+H331-H370

**Guarantee analysis:**

Deuterising degree. ..... ≥99,5 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **HN86.1** | 25 ml | glass | 52,60 € |
| **HN86.2** | 100 ml | glass | 188,15 € |

## Methanol D3

### Methanol D3

**99,5 Atom%D**

For nuclear magnetic resonance spectroscopy.
Methyl alcohol deuterated
$CD_3OH$
M 35,07 g/mol
bp 65 °C
mp -98 °C • flp 9 °C
[1849-29-2] • EC No. 217-435-9
UN No. 1230 • ADR 3 II • WGK 1

**Danger**

H225-H301-H311-H331-H370

**Type analysis:**

Deuterising degree. ..... ≥99,5 %
Water (KF, $H_2O+D_2O$). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **9910.1** | 1 ml | glass ampoule | 28,95 € |
| **9910.2** | 5 ml | glass | 92,35 € |

## Methanol D4

Methyl alcohol deuterated
$CD_3OD$
M 36,07 g/mol
D 0,89 • bp 65,5 °C
mp -99 °C • flp 12 °C
[811-98-3] • EC No. 212-378-6
UN No. 1230 • ADR 3 (6.1) II • WGK 1

**Danger**

H225-H301+H311+H331-H370

### Methanol D4

**100 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Type analysis:**

Deuterising degree. ..... ≥99,95 %
Water (KF, $H_2O+D_2O$). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **7918.1** | 10 ml | glass | 123,65 € |
| **7918.2** | 10 x 0,75 ml | glass ampoule | 126,75 € |

### Methanol D4

**99,8 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**

Deuterising degree. ..... ≥99,8 %
Water (KF, $H_2O+D_2O$). ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **AE57.1** | 10 ml | glass | 65,50 € |
| **AE57.4** | 10 ml | septum bottle | 67,65 € |
| **AE57.5** | 25 ml | glass | 149,45 € |
| **AE57.2** | 50 ml | glass | 284,90 € |
| **AE57.3** | 10 x 0,75 ml | glass ampoule | 69,35 € |

## Methanol D4 with TMS (0,03 vol.%)

### Methanol D4 with TMS (0,03 vol.%)

**99,8 Atom%D**

For nuclear magnetic resonance spectroscopy.
$CD_3OD$
M 36,07 g/mol
D 0,89 • bp 65,5 °C
mp -99 °C • flp 12 °C
[811-98-3] • EC No. 212-378-6
UN No. 1230 • ADR 3 (6.1) II • WGK 1

**Danger**

H225-H301+H311+H331-H370

**Type analysis:**

Deuterising degree. ..... ≥99,8 %
Water (KF, $H_2O+D_2O$). ..... ≤0,03 %
Trimethylsilane (TMS). ..... 0,02-0,04 %

| | | | |
|---|---|---|---|
| **7919.1** | 10 ml | glass | 61,20 € |
| **7919.2** | 25 ml | glass | 145,15 € |
| **7919.3** | 10 x 0,75 ml | glass ampoule | 63,35 € |

## Methanol with 0,1 % trifluoroacetic acid

### Methanol with 0,1 % trifluoroacetic acid

**ROTISOLV® ≥99,95 %, LC-MS Grade**

Eluent mixture for high performance liquid chromatography.
Methanol mixture
$CH_3OH$
M 32,04 g/mol
[67-56-1] • EC No. 200-659-6
UN No. 1230 • ADR 3 (6.1) II • WGK 1

**Danger**

H225-H370-H301+H311+H331

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Trifluoroacetic acid (v/v). ..... 0,095-0,105 %
Transmission:
254 nm. ..... ≥90 %
230 nm. ..... ≥35 %
210 nm. ..... ≥5 %
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **CP06.1** | 1 l | glass | 43,55 € |
| Original pack 6 x 1 l | | | 41,37/1 l |

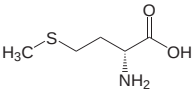
## Methanol for water analysis

▶ Karl Fischer methanol see p. 2021

## Methenamine

▶ Hexamethylene tetramine see p. 1977

## D-Methionine



### D-Methionine

**≥98 %, for biochemistry**

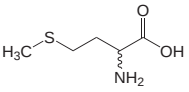
*(R)*-2-Amino-4-methyl-mercapto butyric acid, H-D-Met-OH
$C_5H_{11}NO_2S$
M 149,2 g/mol
Storage temp.: +4 °C
[348-67-4] • EC No. 206-483-6
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... 98,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c= 2 in 6 N HCl). ..... -24° to -22°
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7885.1** | 5 g | plastic | 19,25 € |
| **7885.2** | 25 g | plastic | 57,95 € |
| **7885.3** | 100 g | plastic | 145,15 € |

## DL-Methionine



### DL-Methionine

**≥98 %, for biochemistry**

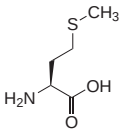
2-Amino-4-methyl-mercapto butyric acid
$C_5H_{11}NO_2S$
M 149,21 g/mol
Storage temp.: +4 °C
[59-51-8] • EC No. 200-432-1
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥98,0 %
Identity (IR). ..... complies
Ash content (as $SO_4$). ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8602.1** | 100 g | plastic | 28,95 € |
| **8602.2** | 500 g | plastic | 116,00 € |
| Original pack 6 x 500 g | | | 110,20/500 g |

## L-Methionine



*(S)*-2-Amino-4-methyl-mercapto butyric acid, H-L-Met-OH
$C_5H_{11}NO_2S$
M 149,21 g/mol
mp ~284 °C
Solubility: ~48 g/l ($H_2O$, 20 °C)
[63-68-3] • EC No. 200-562-9
WGK 1

### L-Methionine
**CELLPURE® ≥99 %**
For cell culture and biochemistry.

**Guarantee analysis:**

| | |
|---|---|
| Endotoxins | ≤6,0 E.U./g |
| Assay | ≥99 % |
| Loss on drying | ≤0,2 % |
| Specific rotation $[\alpha]_D^{20}$ | +23,0° to +24,0° |
| Foreign amino acids | complies |
| Ammonium ($NH_4$) | ≤0,02 % |
| Chloride (Cl) | ≤0,02 % |
| Sulphate ($SO_4$) | ≤0,02 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Arsenic ($As_2O_3$) | ≤0,0001 % |
| Iron (Fe) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **1702.1** | 25 g | plastic | 17,10 € |
| **1702.2** | 100 g | plastic | 35,40 € |
| **1702.3** | 500 g | plastic | 138,70 € |
| Original pack 6 x 500 g | | | 131,77/500 g |

### L-Methionine
**≥99 %, for biochemistry**

**Type analysis:**

| | |
|---|---|
| Appearance | white cryst. powder |
| Assay (dry substance) | 99,0-101,0 % |
| Specific rotation $[\alpha]_D^{20}$ | +23,0° to +24,0° |
| pH value | 5,6-6,1 |
| Chloride (Cl) | ≤0,02 % |
| Sulphate ($SO_4$) | ≤0,02 % |
| Ammonium ($NH_4$) | ≤0,02 % |
| Arsenic ($As_2O_3$) | ≤0,0001 % |
| Iron (Fe) | ≤0,001 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Foreign amino acids | complies |
| Loss on drying | ≤0,2 % |
| Sulphated ash | ≤0,1 % |

| | | | |
|---|---|---|---|
| **9359.1** | 100 g | plastic | 28,95 € |
| **9359.3** | 250 g | plastic | 59,05 € |
| **9359.4** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |
| **9359.2** | 1 kg | plastic | 203,20 € |
| Original pack 6 x 1 kg | | | 193,04/1 kg |

## Methoxsalen
▶ Xanthotoxin see p. 2378

## 4-Methoxybenzaldehyde
▶ 4-Anisaldehyde see p. 1742

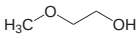
## Methoxybenzene
▶ Anisole see p. 1743

## 4-Methoxybenzoic acid
▶ 4-Anisic acid see p. 1742

## 7-Methoxycoumarin
▶ Herniarin see p. 1975

## Methoxycyclopentane
▶ Cyclopentyl methyl ether see p. 1853

## 2-Methoxyethanol



Ethylene glycol monomethyl ether
$C_3H_8O_2$
M 76,10 g/mol
D 0,96 • bp 123,5-125,5 °C
mp -85,1 °C • flp 37 °C
[109-86-4] • EC No. 203-713-7
UN No. 1188 • ADR 3 III • WGK 2
**Danger**
H360FD-H226-H302+H312+H332

### 2-Methoxyethanol
**ROTIPURAN® ≥99,5 %, p.a., ACS**

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,5 % |
| Density (d 20 °C/20 °C) | 0,965-0,970 |
| Colour (APHA) | ≤10 |
| Water | ≤0,1 % |
| Acidity | ≤0,001 meq/g |
| Calcium (Ca) | ≤0,00005 % |
| Cadmium (Cd) | ≤0,000005 % |
| Cobalt (Co) | ≤0,000002 % |
| Chromium (Cr) | ≤0,000002 % |
| Copper (Cu) | ≤0,000002 % |
| Iron (Fe) | ≤0,00005 % |
| Magnesium (Mg) | ≤0,00001 % |
| Manganese (Mn) | ≤0,000002 % |
| Nickel (Ni) | ≤0,000002 % |
| Lead (Pb) | ≤0,00001 % |
| Zinc (Zn) | ≤0,00001 % |
| Evaporation residue | ≤0,005 % |

| | | | |
|---|---|---|---|
| **CP08.1** | 500 ml | glass | 34,30 € |
| **CP08.2** | 1 l | glass | 59,05 € |
| Original pack 6 x 1 l | | | 56,10/1 l |
| **CP08.3** | 2,5 l | glass | 128,90 € |
| Original pack 4 x 2,5 l | | | 122,46/2,5 l |

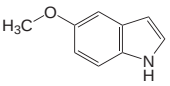
### 2-Methoxyethanol
**≥99 %, for synthesis**

**Type analysis:**

| | |
|---|---|
| Assay (GC) | ≥99 % |
| Water (KF) | ≤0,2 % |
| Density (d 20 °C/4 °C) | 0,964-0,968 |

| | | | |
|---|---|---|---|
| **8892.1** | 1 l | glass | 40,75 € |
| Original pack 6 x 1 l | | | 38,71/1 l |
| **8892.2** | 2,5 l | glass | 71,50 € |
| Original pack 4 x 2,5 l | | | 67,93/2,5 l |

## 5-Methoxyindole



### 5-Methoxyindole
**≥98 %, for synthesis**
$C_9H_9NO$
M 147,18 g/mol
bp 176-178 °C
mp 55-58 °C
[1006-94-6] • EC No. 213-745-3
WGK 1

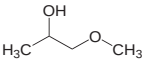
**Type analysis:**

| | |
|---|---|
| Assay | ≥98,0 % |
| Loss on drying (105 °C) | ≤0,5 % |

| | | | |
|---|---|---|---|
| **6546.1** | 1 g | glass | 28,95 € |
| **6546.2** | 5 g | glass | 52,60 € |
| **6546.3** | 25 g | glass | 170,95 € |

## (2-Methoxymethylethoxy) propanol
▶ Dipropylene glycol monomethyl ether see p. 1888

## 1-Methoxy-2-propanol



### 1-Methoxy-2-propanol
**≥99 %, for synthesis**
Propylene glycol methyl ether
$C_4H_{10}O_2$
M 90,12 g/mol
D 0,92 • bp 117-125 °C
mp -97 °C • flp 32 °C
[107-98-2] • EC No. 203-539-1
UN No. 3092 • ADR 3 III • WGK 1
**Warning** H226-H336

**Type analysis:**

| | |
|---|---|
| Appearance | colourless liquid |
| Assay (GC) | ≥99 % |
| Water | ≤0,1 % |
| Density (20 °C) | 0,921-0,927 |
| Refractive index $n_D^{20}$ | 1,4020-1,4040 |

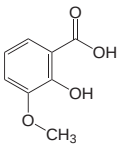
| | | | |
|---|---|---|---|
| **3123.1** | 1 l | glass | 27,45 € |
| Original pack 6 x 1 l | | | 26,08/1 l |
| **3123.2** | 2,5 l | glass | 45,70 € |
| Original pack 4 x 2,5 l | | | 43,42/2,5 l |

## 1-Methoxy-4-propenylbenzene
▶ Anethole see p. 1741

## 1-Methoxy-2-propyl acetate
▶ Propylene glycol methyl ether acetate see p. 2182

## 8-Methoxypsoralen
▶ Xanthotoxin see p. 2378

## 3-Methoxysalicylic acid



### 3-Methoxysalicylic acid

**≥97 %, for synthesis**
2-Hydroxy-5-methoxybenzoic acid
$C_8H_8O_4$
M 168,15 g/mol
mp 147-152 °C
[877-22-5] • EC No. 212-888-9
WGK 3

**Type analysis:**
Appearance. ..... white to brown powder
Assay (titr.). ..... ≥97,0 %

| | | | |
|---|---|---|---|
| **4504.1** | 5 g | glass | 19,60 € |
| **4504.2** | 25 g | glass | 49,35 € |

## 4'-Methoxy-3,5,7-trihydroxyflavone

▶ Kaempferide see p. 2019

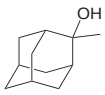
## Methyl acetate

▶ Acetic acid methyl ester see p. 1696

## Methylacetic acid

▶ Propionic acid see p. 2181

## 2-Methyl-2-adamantanol



### 2-Methyl-2-adamantanol

**≥98 %, for synthesis**
$C_{11}H_{18}O$
M 166,26 g/mol
mp 208-215 °C
[702-98-7]
WGK 3

**Type analysis:**
Appearance. ..... white to off-white, cryst. powder
Assay..... ≥98,0 %
Identity..... complies
Sulphated ash..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7630.1** | 1 g | glass | 14,95 € |
| **7630.2** | 5 g | glass | 35,40 € |

## 2-Methylalanine

▶ 2-Aminoisobutyric acid see p. 1726

## Methyl alcohol

▶ Methanol see p. 2067
▶ Karl Fischer methanol see p. 2021

## Methyl alcohol deuterated

▶ Methanol D1 see p. 2069
▶ Methanol D3 see p. 2070
▶ Methanol D4 see p. 2070

## 4-(Methylamino)-phenol sulphate

▶ Metol see p. 2080

## 2-Methylaniline

▶ o-Toluidine see p. 2348

## Methylarecaidin hydrobromide

▶ Arecoline hydrobromide see p. 1750

## Methylated spirit

### Methylated spirit

**ethanol-denatured**
For use as a detergent, as fuel additive or as antifreeze agent.
Spiritus
UN No. 1170 • ADR 3 II

**Danger** H225-H319

| | | |
|---|---|---|
| **AL30.1** | 1 l bottle | 8,00 € |
| **AL30.2** | 10 l canister | 54,75 € |
| **AL30.3** | 20 l canister | 98,80 € |

For further information, please see page 1120

## Methylbenzene

▶ Toluene see p. 2346

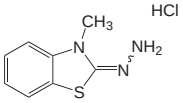
## Methylbenzene deuterated

▶ Toluene D8 see p. 2347

## Methylbenzoate

▶ Benzoic acid methyl ester see p. 1766

## 3-Methyl-2-benzothiazolinone hydrazone hydrochloride



### 3-Methyl-2-benzothiazolinone hydrazone hydrochloride

**≥98 %, p.a.**
Analytical reagent for the qualitative determination of aldehydes.
MBTH
$C_8H_9N_3S \cdot HCl$
M 215,71 g/mol
mp 276-278 °C
[4338-98-1] • EC No. 224-393-5
UN No. 2811 • ADR 6.1 III • WGK 1

**Danger** H301-H319

**Type analysis:**
Assay (HPLC)..... ≥98 %
Loss on drying..... ≤2,0 %

| | | | |
|---|---|---|---|
| **8413.1** | 10 g | glass | 142,45 € |

## Methyl blue

▶ Acid blue 93 (C.I. 42780) see p. 1704
▶ Cotton blue (C.I. 42780) see p. 1846

## 2-Methylbutane



Isopentane, iso-Pentane
$C_5H_{12}$
M 72,15 g/mol
D 0,62 • bp 27,95 °C
mp -158,5 °C • flp -20 °C
[78-78-4] • EC No. 201-142-8
UN No. 1265 • ADR 3 I • WGK 2

**Danger**
H224-H304-H336-H411-EUH066

### 2-Methylbutane

**ROTIPURAN® ≥99,5 %, p.a.**

**Guarantee analysis:**
Assay (GC). ..... ≥99,5 %
Water . ..... ≤0,05 %
Aluminium (Al)..... ≤0,00005 %
Barium (Ba)..... ≤0,00001 %
Bismuth (Bi). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00001 %
Calcium (Ca)..... ≤0,00005 %
Cadmium (Cd). ..... ≤0,000005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Manganese (Mn)..... ≤0,000002 %
Cobalt (Co). ..... ≤0,000002 %
Potassium (K). ..... ≤0,00005 %
Bismuth (Bi). ..... ≤0,00001 %
Copper (Cu). ..... ≤0,000002 %
Lithium (Li). ..... ≤0,00001 %
Magnesium (Mg)..... ≤0,00001 %
Molybdenum (Mo)..... ≤0,00001 %
Sodium (Na)..... ≤0,00005 %
Nickel (Ni). ..... ≤0,000002 %
Strontium (Sr)..... ≤0,00002 %
Zinc (Zn). ..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **3926.1** | 250 ml | glass | 70,45 € |
| **3926.2** | 1 l | glass | 199,85 € |
| Original pack 6 x 1 l | | | 189,86/1 l |

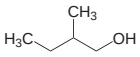
### 2-Methylbutane

**≥99 %, for synthesis**

**Type analysis:**
Assay (GC). ..... ≥99 %
Density (15 °C)..... 0,623-0,627
Aromatic compounds. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **3927.1** | 1 l | glass | 37,55 € |
| Original pack 6 x 1 l | | | 35,67/1 l |
| **3927.2** | 2,5 l | glass | 76,25 € |
| Original pack 4 x 2,5 l | | | 72,44/2,5 l |

## 2-Methyl-1-butanol



2-Methylbutyl alcohol, sec-Butyl carbinol
$C_5H_{12}O$
M 88,15 g/mol
D ~0,82 • bp 127-130 °C
mp -70 °C • flp 42,5 °C
Solubility: 36 g/l ($H_2O$, 20 °C)
[137-32-6] • EC No. 205-289-9
UN No. 1105 • ADR 3 III • WGK 1
**Warning** H226-H332-H335-EUH066

### 2-Methyl-1-butanol
**≥97,5 %, for synthesis**

**Type analysis:**
Assay (GC). ..... ≥97,5 %
Density (d 20 °C/4 °C). ..... 0,816-0,821

| | | | |
|---|---|---|---|
| **4379.1** | 100 ml | glass | 14,95 € |
| **4379.2** | 500 ml | glass | 49,35 € |
| **4379.3** | 1 l | glass | 83,75 € |
| Original pack 6 x 1 l | | | 79,56/1 l |

### 2-Methyl-1-butanol
**ROTICHROM® GC**
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**
Purity (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **9074.1** | 1 g | plastic | 81,20 € |

## 3-Methyl-1-butanol
▶ Isoamyl alcohol see p. 2013

## 3-Methylbutyl acetate
▶ Acetic acid isoamyl ester see p. 1695

## 2-Methylbutyl alcohol
▶ 2-Methyl-1-butanol see p. 2073

## Methyl tert-butyl ether
▶ tert-Butyl methyl ether see p. 1797

## Methyl butyrate
▶ Butyric acid methyl ester see p. 1799

## Methyl caprylate
▶ Caprylic acid methyl ester see p. 1810

## Methyl carbonate
▶ Dimethyl carbonate see p. 1882

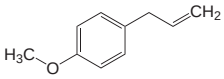
## Methylcellulose

### Methylcellulose
**powdered**
Tylose® 3000 P, MHB, Methylhydroxyethylcellulose
M ~160 000 g/mol
[9032-42-2]
WGK 1

**Type analysis:**
Appearance. ..... powder
Viscosity (Brookfield, 1,9 % sol., 20 °C). ..... 3300-4500 mPa s
Moisture. ..... ≤7,0 %
NaCl. ..... ≤1,5 %
Particle size:
<0,180 mm. ..... ≥90 %
<0,100 mm. ..... ≥25 %

| | | | |
|---|---|---|---|
| **8421.1** | 250 g | plastic | 31,75 € |
| **8421.2** | 1 kg | plastic | 103,75 € |
| Original pack 6 x 1 kg | | | 98,56/1 kg |

## Methylchavicol



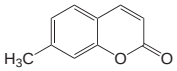
### Methylchavicol
**ROTICHROM® GC**
Reference substance for GC.
Allylanisole, Chavicol methyl ether, Estragole
$C_{10}H_{12}O$
M 148,21 g/mol
D 0,965 • bp 215-216 °C
flp 81 °C
Storage temp.: +4 °C
[140-67-0] • EC No. 205-427-8
WGK 3
**Warning** H302-H315

**Type analysis:**
Purity (GC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **9413.2** | 100 mg | glass | 83,35 € |

## Methyl cinnamate
▶ Cinnamic acid methyl ester see p. 1835

## 7-Methylcoumarin



### 7-Methylcoumarin
**>98 %**
$C_{10}H_8O_2$
M 160,17 g/mol
mp 128-130 °C
[2445-83-2] • EC No. 219-499-3
WGK 1

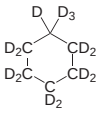
**Type analysis:**
Appearance. ..... white crystals

| | | | |
|---|---|---|---|
| **6149.1** | 1 g | glass | 19,25 € |

## Methyl cyanide
▶ Acetonitrile see p. 1698

## Methyl cyanide deuterated
▶ Acetonitrile D3 see p. 1700

## Methylcyclohexane D14

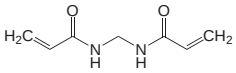


### Methylcyclohexane D14
**99,5 Atom%D**
For nuclear magnetic resonance spectroscopy.
$C_7D_{14}$
M 112,3 g/mol
D 0,88 • bp 101 °C
mp -126 °C • flp -3 °C
[10120-28-2] • EC No. 233-325-3
UN No. 2296 • ADR 3 II • WGK 2
**Danger**
H225-H304-H315-H336-H400-H411

**Type analysis:**
Deuterising degree. ..... ≥99,5 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **9913.1** | 5 ml | glass ampoule | 116,00 € |

## N,N'-Methylene bisacrylamide



### N,N'-Methylene bisacrylamide
**≥98 %, for gel electrophoresis**
Bis, Bisacrylamide, MBAA
$C_7H_{10}N_2O_2$
M 154,17 g/mol
D ~1,23
mp 185 °C (dec.)
Solubility: 3 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[110-26-9] • EC No. 203-750-9
WGK 2
**Warning** H302

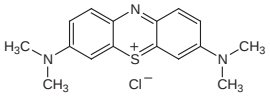
**Type analysis:**
Assay. ..... ≥98 %
Water. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **7867.1** | 50 g | plastic | 30,65 € |
| **7867.2** | 100 g | plastic | 48,30 € |

For further information, please see page 1156

M

## Methylene blue (C.I. 52015)



### Methylene blue (C.I. 52015)

For microscopy and staining of nucleic acids in polyacrylamide gels.
Basic blue 9
$C_{16}H_{18}ClN_3S$
M 319,9 g/mol
Solubility: 40 g/l ($H_2O$, 20 °C)
[61-73-4] • EC No. 200-515-2
WGK 2

**Warning** H302-H412

**Type analysis:**
Maximum absorption. ..... 655-670 nm
Loss on drying (110 °C). ..... ≤18,0 %

| | | | |
|---|---|---|---|
| **A514.1** | 10 g | glass | 19,60 € |
| **A514.2** | 50 g | glass | 46,15 € |
| **A514.3** | 100 g | glass | 75,15 € |

For further information, please see page 1465

## Methylene blue indicator solution

### Methylene blue indicator solution

**0,01 mol/l in water**
WGK 1

| | | | |
|---|---|---|---|
| **9953.1** | 100 ml | glass | 25,70 € |

## Methylene blue solution

▶ Neisser's solution I see p. 2090
▶ LOEFFLER's methylene blue solution see p. 2042

## Methylene blue solution 0,1 %, aqueous

### Methylene blue solution 0,1 %, aqueous

NEW

**for microscopy**
For staining of nuclei.
Gabett solution
Storage temp.: +20 °C
WGK 1

**Type analysis:**
Appearance. ..... blue-violet liquid
Odour. ..... odourless

| | | | |
|---|---|---|---|
| **1433.1** | 250 ml | glass | 17,75 € |
| **1433.2** | 500 ml | glass | 24,65 € |
| **1433.3** | 1 l | glass | 31,75 € |
| Original pack 6 x 1 l | | | 30,16/1 l |

For further information, please see page 1459

## Methylene blue staining concentrate

▶ Roti®-Methylene blue staining concentrate see p. 2224

## Methylene chloride

▶ Dichloromethane see p. 1869

## Methylene chloride D2

▶ Dichloromethane D2 see p. 1870

## Methylene violet 3RAX

▶ Diethyl safranine (C.I. 50206) see p. 1874

## ß-Methylesculetin

▶ Scopoletin see p. 2243

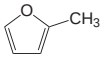
## Methyl ethyl glycol

▶ 1,2-Propanediol see p. 2178

## Methyl ethyl ketone

▶ 2-Butanone see p. 1795

## 2-Methylfuran



### 2-Methylfuran

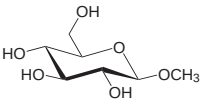
**≥99 %, for synthesis**
Silvan
$C_5H_6O$
M 82,10 g/mol
D 0,91 • bp ~65 °C
mp -89 °C
Solubility: 3 g/l ($H_2O$, 20 °C)
[534-22-5] • EC No. 208-594-5
UN No. 2301 • ADR 3 II • WGK 1

**Danger** H225-H330-H301+H311

**Type analysis:**
Assay. ..... ≥99,0 %
Identity (IR). ..... complies
Density (d 20 °C/4 °C). ..... 0,913-0,916
Furfural. ..... ≤0,5 %
Water. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7470.1** | 100 ml | glass | 20,35 € |
| **7470.2** | 500 ml | glass | 53,65 € |
| **7470.3** | 1 l | glass | 85,90 € |
| Original pack 6 x 1 l | | | 81,61/1 l |
| **7470.4** | 2,5 l | glass | 177,40 € |
| Original pack 4 x 2,5 l | | | 168,53/2,5 l |

## 1-*O*-Methyl-β-D-gluco-pyranoside



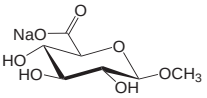
### 1-*O*-Methyl-β-D-gluco-pyranoside

**≥99 %, for biochemistry**
1-*O*-Methyl-glucoside
$C_7H_{14}O_6$
M 194,19 g/mol
Storage temp.: +4 °C
[709-50-2] • EC No. 211-909-9
WGK 3

**Type analysis:**
Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥99,0 %
Appearance of solution (1 % in $H_2O$) ..... colourless
Specific rotation $[\alpha]_D^{20}$ (1 % in $H_2O$, dry substance). ..... -35,0° to -31,0°
Water (KF). ..... ≤6,0 %

| | | | |
|---|---|---|---|
| **8356.1** | 1 g | glass | 26,35 € |
| **8356.2** | 5 g | plastic | 93,45 € |

## 1-*O*-Methyl-β-D-glucuronic acid, sodium salt



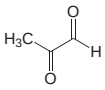
### 1-*O*-Methyl-β-D-glucuronic acid, sodium salt

**≥99 %, for biochemistry**
1-OMe-β-D-GlcA, 1-*O*-Methylglucuronide sodium salt
$C_7H_{11}NaO_7$
M 230,15 g/mol
Storage temp.: +4 °C
WGK 3

**Type analysis:**
Assay (perchloric acid titration). ..... ≥99,0 %
Appearance. ..... white to brownish cryst. powder
Appearance of solution (5 % in $H_2O$) ..... colourless to light brown
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$). ..... -62,0° to -58,0°
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **8407.1** | 250 mg | glass | 48,95 € |
| **8407.2** | 500 mg | glass | 80,10 € |
| **8407.3** | 1 g | glass | 138,70 € |

## Methylglyoxal



### Methylglyoxal

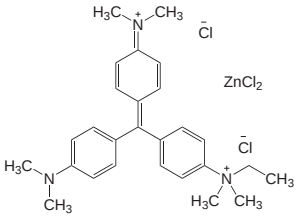
**40 % in water**
Pyruvaldehyde
$C_3H_4O_2$
M 72,06 g/mol
D 1,11 • bp 72 °C
mp -20 °C
Storage temp.: +4 °C
[78-98-8] • EC No. 201-164-8
WGK 1

**Warning** H302-H315-H319-H335

**Type analysis:**
Appearance. ..... yellow to brown liquid
Assay. ..... 35-45 %

| | | | |
|---|---|---|---|
| **6399.1** | 100 ml | glass | 145,15 € |
| **6399.2** | 500 ml | glass | 628,90 € |

## Methyl green (C.I. 42590)



### Methyl green (C.I. 42590)

**for microscopy**
Indicator pH 0,1-2,3
Methyl green zinc chloride double salt,
Ethyl green zinc chloride double salt
$C_{27}H_{35}Cl_2N_3 \cdot ZnCl_2$
M 608,78 g/mol
mp >300 °C
Solubility: 60 g/l ($H_2O$, 20 °C)
[7114-03-6] • EC No. 230-415-4
UN No. 1759 • ADR 8 II • WGK 2

**Danger** H314-H351-H411

**Type analysis:**
Absorption max. (in $H_2O$). ..... 625-635 nm
Loss on drying (110 °C). ..... ≤5 %

| | | | |
|---|---|---|---|
| **5159.1** | 5 g | glass | 21,40 € |
| **5159.2** | 10 g | glass | 34,30 € |
| **5159.3** | 25 g | glass | 67,65 € |

For further information, please see page 1465

## Methyl green zinc chloride double salt

▶ Methyl green (C.I. 42590) see p. 2075

## 1-Methyl hexane

▶ n-Heptane see p. 1973

## Methyl hexane

▶ n-Heptane see p. 1973

## 2-Methyl hydroquinone

▶ Toluhydroquinone see p. 2348

## Methyl-p-hydroxybenzoate

▶ 4-Hydroxybenzoic acid methyl ester see p. 1993

## 1-Methylimidazole



### 1-Methylimidazole

**≥99 %, for synthesis**
N-Methylimidazole
$C_4H_6N_2$
M 82,11 g/mol
D ~1,04 • bp 198 °C
[616-47-7]
UN No. 2922 • ADR 8 (6.1) II • WGK 1

**Danger** H311-H314-H302

**Type analysis:**
Assay (GC). ..... ≥99,0 %
Water. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **N353.1** | 100 ml | glass | 19,60 € |
| **N353.2** | 1 l | glass | 99,45 € |
| Original pack 6 x 1 l | | | 94,48/1 l |

## 3-Methyl-indol

▶ Skatole see p. 2264

## Methyl isobutyl ketone

▶ Isobutyl methylketone see p. 2013

## Methyliodide D3

▶ Iodomethane D3 see p. 2007

## Methyl laurate

▶ Lauric acid methyl ester see p. 2030

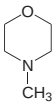
## Methyl methacrylate

▶ Methacrylic acid methyl ester see p. 2067

## 2-Methyl-2-methoxypropane

▶ tert-Butyl methyl ether see p. 1797

## N-Methylmorpholine



### N-Methylmorpholine

**≥99 %, for synthesis**
NMM
$C_5H_{11}NO$
M 101,15 g/mol
D 0,92 • bp 115 °C
mp -65 °C • flp 12,5 °C
[109-02-4] • EC No. 203-640-0
UN No. 2535 • ADR 3 (8) II • WGK 1

**Danger** H225-H302-H314

**Type analysis:**
Assay (GC). ..... ≥99,0 %
Colour number (APHA). ..... ≤50
Water (KF). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **9672.1** | 100 ml | glass | 12,80 € |
| **9672.2** | 250 ml | glass | 21,00 € |
| **9672.3** | 1 l | glass | 49,35 € |
| Original pack 6 x 1 l | | | 46,88/1 l |
| **9672.4** | 2,5 l | glass | 96,65 € |
| Original pack 4 x 2,5 l | | | 91,82/2,5 l |

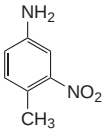
## Methyl myristate

▶ Myristic acid methyl ester see p. 2087

## Methyl nadic anhydride

▶ Glycidether Hardener MNA see p. 1961

## 4-Methyl-3-nitroaniline



### 4-Methyl-3-nitroaniline

**≥99 %, for synthesis**
3-Nitro-p-toluidine, 3-Nitro-4-methylaniline,
4-Amino-2-nitro-toluene
$C_7H_8N_2O_2$
M 152,15 g/mol
mp 77-79 °C
[119-32-4] • EC No. 204-314-0
UN No. 2660 • ADR 6.1 III • WGK 3

**Danger**
H301+H311+H331-H373-H411

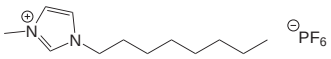
**Type analysis:**
Assay (HPLC). ..... ≥99,0 %
Melting point. ..... 77-79 °C
Loss on drying. ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **5532.1** | 25 g | plastic | 30,00 € |
| **5532.2** | 50 g | plastic | 50,45 € |

## 1-Methyl-4-nitrobenzene

▶ p-Nitrotoluene see p. 2104

## 1-Methyl-3-octyl-imidazolium-hexafluorophosphate (OMIM $PF_6$)



### 1-Methyl-3-octyl-imidazolium-hexafluorophosphate (OMIM $PF_6$)

**>99 %**
Ionic liquid
OMIM $PF_6$
$C_{12}H_{23}F_6N_2P$
M 340,29 g/mol
D 1,237
mp -70 °C
[304680-36-2]
WGK 3

**Warning** H315-H319-H335

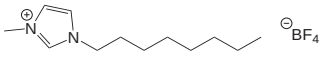
**Type analysis:**

Appearance. ..... yellow to orange liquid
Assay ..... >99 %
Water (KF). ..... <0,025 %
Halogens. ..... <0,01 %

| | | | |
|---|---|---|---|
| **2076.1** | 25 g | glass | 181,70 € |
| **2076.2** | 100 g | glass | 396,70 € |

Lit.: "**Use of 1-alkyl-3-methylimidazolium hexafluorophosphate room temperature ionic liquids as chelate extraction solvent with 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione**" I. Naoki; D. Mika; K. Hitomi; H. Takaharu, *Talanta* **2005,** 65, 255-260.
"**On the solubilization of water with ethanol in hydrophobic hexafluoro-phosphate ionic liquids**" R. P. Swatloski, A. E. Visser, W. M. Reichert, G. A. Broker, L. M. Farina, J. D. Holbrey, R. D. Rogers, *Green Chem.* **2002,** 4, 81 – 87.
For further information, please see page 1531

## 1-Methyl-3-octyl-imidazolium-tetrafluoroborate (OMIM $BF_4$)



### 1-Methyl-3-octyl-imidazolium-tetrafluoroborate (OMIM $BF_4$)

**>99 %**
Ionic liquid
OMIM $BF_4$
$C_{12}H_{23}BF_4N_2$
M 282,13 g/mol
D 1,106
mp -81 °C
[244193-52-0]
WGK 3

**Warning** H315-H319-H335

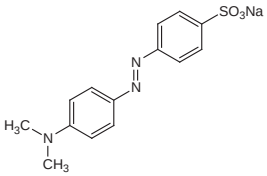
**Type analysis:**

Appearance. ..... yellow to orange liquid
Assay ..... >99 %
Water (KF). ..... <0,025 %
Halogens. ..... <0,01 %

| | | | |
|---|---|---|---|
| **2081.1** | 25 g | glass | 170,95 € |
| **2081.2** | 100 g | glass | 364,45 € |

Lit.: "**Tribological behavior of sialon ceramics sliding against steel lubricated by fluorine-containing oils**" W. Liu, C.Ye, Y. Chen, Z.Ou, D.C. Sun, *Tribology International* **2002,** 35, 503–509.
"**High-pressure phase behavior of the binary ionic liquid system 1-octyl-3-methyl-imidazolium tetrafluoroborate plus carbon dioxide**" K. I. Gutkowski, A.Shariati, C. J.Peters, *J. Supercritical Fluids* **2006,** 39, 187-191.
For further information, please see page 1531

## Methyl orange (C.I. 13025)



### Methyl orange (C.I. 13025)

**ACS, for microscopy**
Indicator pH 3,2-4,4
4-(Dimethylamino)-azobenzene -4'-sulphonic acid sodium salt, Orange III
$C_{14}H_{14}N_3NaO_3S$
M 327,4 g/mol
mp >300 °C
Solubility: 5 g/l ($H_2O$, 20 °C)
[547-58-0] • EC No. 208-925-3
UN No. 3143 • ADR 6.1 III • WGK 1

**Danger** H301

**Guarantee analysis:**

Appearance. ..... orange powder
Appearance of solution. ..... complies
pH-transition range. ..... 3.2 (pink)-4.4 (yellow)
Loss on drying (110 °C). ..... ≤3,0 %

| | | | |
|---|---|---|---|
| **T118.1** | 50 g | glass | 25,70 € |
| **T118.2** | 100 g | glass | 39,25 € |
| **T118.3** | 250 g | glass | 57,95 € |

For further information, please see page 1465

## Methyl orange indicator solution

### Methyl orange indicator solution

**0,1 % in water**

| | | | |
|---|---|---|---|
| **T119.1** | 500 ml | plastic | 19,25 € |

## Methylparaben

▶ 4-Hydroxybenzoic acid methyl ester see p. 1993

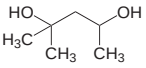
## 1-Methylpentane

▶ n-Hexane see p. 1978

## 2-Methylpentane

▶ Isohexane see p. 2014

## 2-Methyl-2,4-pentanediol



### 2-Methyl-2,4-pentanediol

**≥99 %, for synthesis**
Hexyleneglycol
$C_6H_{14}O_2$
M 118,18 g/mol
D ~0,92 • bp ~196 °C
mp -40 °C • flp ~93 °C
[107-41-5] • EC No. 203-489-0
WGK 1

**Warning** H315-H319

**Type analysis:**

Assay (GC). ..... ≥99 %
Density (20 °C). ..... 0,919-0,925
Colour (Hazen). ..... ≤15
Water (KF). ..... ≤0,2 %
Refractive index (20 °C). ..... 1,4240-1,4300

| | | | |
|---|---|---|---|
| **CN17.1** | 100 ml | plastic | 12,40 € |
| **CN17.2** | 1 l | plastic | 20,65 € |
| Original pack 6 x 1 l | | | 19,62/1 l |
| **CN17.3** | 2,5 l | plastic | 37,55 € |
| Original pack 4 x 2,5 l | | | 35,67/2,5 l |
| **CN17.4** | 10 l | plastic | 102,15 € |

## 4-Methyl-2-pentanone

▶ Isobutyl methylketone see p. 2013

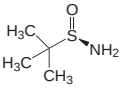
## 3-Methylphenol

▶ m-Cresol see p. 1847

## 3-(4-Methylpiperazinyl-iminomethyl)rifamycin SV

▶ Rifampicin see p. 2201

## (R)-(+)-2-Methyl-2-propanesulfinamide



### (R)-(+)-2-Methyl-2-propanesulfinamide

NEW

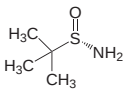
**≥97 %**
Chiral auxiliar
(R)-(+)-tert-Butyl sulfinamide
$C_4H_{11}NOS$
M 121,20 g/mol
mp 103-107 °C
[196929-78-9]
WGK 1

**Type analysis:**

Appearance. ..... white cryst. solid
Assay (HPLC). ..... ≥97 %
Melting point. ..... 103-107 °C

| | | | |
|---|---|---|---|
| **0610.1** | 1 g | glass | 19,25 € |
| **0610.2** | 5 g | glass | 53,65 € |
| **0610.3** | 25 g | glass | 170,95 € |

## (S)-(-)-2-Methyl-2-propanesulfinamide



### (S)-(-)-2-Methyl-2-propanesulfinamide

NEW

**≥98 %**

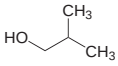
Chiral auxiliar
(S)-(-)-tert-Butyl sulfinamide
$C_4H_{11}NOS$
M 121,20 g/mol
mp 95-101 °C
Storage temp.: +4 °C
[343338-28-3]
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98 %
Enantiomeric purity. ..... ≥98 %
Melting point. ..... 95-101 °C

| | | | |
|---|---|---|---|
| **1442.1** | 1 g | glass | 21,40 € |
| **1442.2** | 5 g | glass | 64,40 € |
| **1442.3** | 25 g | glass | 192,45 € |

## 2-Methyl-1-propanol



Isobutanol, Isobutyl alcohol, iso-Butyl alcohol
$C_4H_{10}O$
M 74,12 g/mol
D 0,80 • bp 108 °C
mp -108 °C • flp 28 °C
Solubility: 100 g/l ($H_2O$, 20 °C)
[78-83-1] • EC No. 201-148-0
UN No. 1212 • ADR 3 III • WGK 1

**Danger**
H318-H226-H335-H336-H315

### 2-Methyl-1-propanol

**ROTIPURAN® ≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay (GC). ..... ≥99 %
Acidity. ..... ≤0,0005 meq/g
Alkalinity. ..... ≤0,0005 meq/g
Colour (APHA). ..... ≤10
In $H_2O$ insoluble matter. ..... complies
Non volatile matter. ..... ≤0,001 %
Matter discoloured by $H_2SO_4$. ..... complies
Water . ..... ≤0,1 %
Butanal (GC). ..... ≤0,01 %
iso-Butanal (GC). ..... ≤0,05 %
Butanone (GC). ..... ≤0,02 %
Peroxides (as $H_2O_2$). ..... ≤0,001 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **6772.1** | 1 l | glass | 48,30 € |
| Original pack 6 x 1 l | | | 45,89/1 l |
| **6772.2** | 2,5 l | glass | 95,60 € |
| Original pack 4 x 2,5 l | | | 90,82/2,5 l |

### 2-Methyl-1-propanol

**≥99 %, for synthesis**

**Type analysis:**

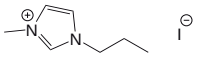
Assay (GC). ..... ≥99,0 %
Density (d 20 °C/4 °C). ..... 0,801-0,802
Water. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **CP09.1** | 1 l | plastic | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |
| **CP09.2** | 2,5 l | plastic | 49,35 € |
| Original pack 4 x 2,5 l | | | 46,88/2,5 l |
| **CP09.3** | 5 l | plastic | 84,40 € |
| Original pack 2 x 5 l | | | 80,18/5 l |

## 2-Methyl-2-propanol

▶ tert-Butanol see p. 1794

## 1-Methyl-3-propyl-imidazolium-iodide (PMIM I)



### 1-Methyl-3-propyl-imidazolium-iodide (PMIM I)

**≥98 %**

Ionic liquid
PMIM I
$C_7H_{13}N_2I$ • M 252,10 g/mol
D 1,542
[119171-18-5]
WGK 3

**Warning** H315-H319-H335

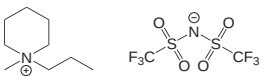
**Type analysis:**

Appearance. ..... yellow to orange liquid
Assay. ..... ≥98 %

| | | | |
|---|---|---|---|
| **2091.1** | 25 g | glass | 155,90 € |
| **2091.2** | 100 g | glass | 310,70 € |

Lit.: "**A Quasi-Solid-State Dye-Sensitized Solar Cell Based on a Sol-Gel Nanocomposite Electrolyte Containing Ionic Liquid**" E. Stathatos, P. Lianos, S. M. Zakeeruddin, P. Liska, M. Graetzel, *Chemistry of Materials* **2003,** 15, 1825-1829.
For further information, please see page 1531

## 1-Methyl-1-propyl-piperidinium-bis-(trifluoromethylsulphonyl)-imide (PMPip BTA)



### 1-Methyl-1-propyl-piperidinium-bis-(trifluoromethylsulphonyl)-imide (PMPip BTA)

**≥99 %**

Ionic liquid
PMPip BTA
$C_{11}H_{20}F_6N_2O_4S_2$ • M 422,41 g/mol
D 1,413 • mp 9 °C
[608140-12-1]
WGK 3

**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... colourless to yellowish liquid
Assay. ..... ≥99 %
Water (KF). ..... ≤0,01 %
Halogens. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **2095.1** | 25 g | glass | 198,90 € |
| **2095.2** | 100 g | glass | 407,45 € |

Lit.: "**Electrochemical Magnesium Deposition and Dissolution with High Efficiency in Ionic Liquid**" Y.NuLi, J. Yang, J. Wang, J. Xu, P. Wang, *Electrochem. Solid-State Lett.* **2005,** 8, C166-C169.
For further information, please see page 1531

## Methyl 3-pyridyl ketone

▶ 3-Acetylpyridine see p. 1704

## N-Methyl-2-pyrrolidone (NMP)



NMP
$C_5H_9NO$
M 99,13 g/mol
D 1,03 • bp 202 °C
mp -24 °C • flp 86 °C
Solubility: 1000 g/l ($H_2O$, 25 °C)
[872-50-4] • EC No. 212-828-1
WGK 1

**Danger** H315-H319-H335-H360D

### N-Methyl-2-pyrrolidone (NMP)

**≥99,8 %, VLSI Grade**

**Guarantee analysis:**

Assay. ..... ≥99,8 %
Bead number (≥0,5 µm). ..... ≤250 p/ml
Water. ..... ≤0,02 %
Free amines. ..... ≤0,005 %
Colour (APHA). ..... ≤25
Chloride (Cl). ..... ≤0,00005 %
Nitrate ($NO_3$). ..... ≤0,00005 %
Phosphate ($PO_4$). ..... ≤0,00005 %
Aluminium (Al). ..... ≤10 ppb
Antimony (Sb). ..... ≤10 ppb
Arsenic (As). ..... ≤10 ppb
Barium (Ba). ..... ≤10 ppb
Beryllium (Be). ..... ≤10 ppb
Bismuth (Bi). ..... ≤10 ppb
Lead (Pb). ..... ≤10 ppb
Boron (B). ..... ≤10 ppb
Cadmium (Cd). ..... ≤10 ppb
Calcium (Ca). ..... ≤10 ppb
Chromium (Cr). ..... ≤10 ppb
Iron (Fe). ..... ≤10 ppb
Gallium (Ga). ..... ≤10 ppb
Gold (Au). ..... ≤10 ppb
Potassium (K). ..... ≤10 ppb
Cobalt (Co). ..... ≤10 ppb
Copper (Cu). ..... ≤10 ppb
Lithium (Li). ..... ≤10 ppb
Magnesium (Mg). ..... ≤10 ppb
Manganese (Mn). ..... ≤10 ppb
Molybdenum (Mo). ..... ≤10 ppb
Sodium (Na). ..... ≤10 ppb
Nickel (Ni). ..... ≤10 ppb
Niobium (Nb). ..... ≤10 ppb
Silver (Ag). ..... ≤5 ppb
Strontium (Sr). ..... ≤10 ppb
Tantal (Ta). ..... ≤10 ppb
Thallium (Tl). ..... ≤10 ppb
Titanium (Ti). ..... ≤10 ppb
Vanadium (V). ..... ≤10 ppb
Zinc (Zn). ..... ≤10 ppb
Tin (Sn). ..... ≤10 ppb
Zirconium (Zr). ..... ≤10 ppb

| | | | |
|---|---|---|---|
| **9786.1** | 2,5 l | plastic | 88,05 € |
| Original pack 4 x 2,5 l | | | 83,65/2,5 l |
| **9786.2** | 5 l | plastic | 153,65 € |
| Original pack 2 x 5 l | | | 145,97/5 l |

For further information, please see page 1654

## N-Methyl-2-pyrrolidone (NMP)

**≥99,8 %, for synthesis**

**Type analysis:**

Assay (GC). ..... ≥99,8 %
Colour (APHA). ..... ≤50
Water . ..... ≤0,05 %
Butyrolactone. ..... ≤0,05 %
Monomethylamine. ..... ≤0,005 %
Dimethyl pyrrolidones, mixture of isomers. ..... ≤0,4 %

| | | | |
|---|---|---|---|
| **4306.1** | 500 ml | glass | 21,40 € |
| **4306.3** | 1 l | glass | 32,15 € |
| Original pack 6 x 1 l | | | 30,54/1 l |
| **4306.2** | 2,5 l | glass | 61,20 € |
| Original pack 4 x 2,5 l | | | 58,14/2,5 l |
| **4306.5** | 25 l | tinplate | 471,95 € |

## N-Methyl-2-pyrrolidone (NMP)

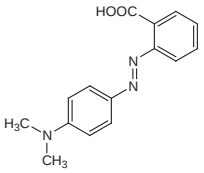
**≥99,8 %, for peptide synthesis**

**Type analysis:**

Assay (GC). ..... ≥99,8 %
Water (KF). ..... ≤0,03 %
Non volatile matter. ..... ≤0,005 %
Free amines. ..... ≤0,001 %
Free acid (as $CH_3COOH$). ..... ≤0,0006 %

| | | | |
|---|---|---|---|
| **P052.1** | 2,5 l | glass | 116,00 € |
| Original pack 4 x 2,5 l | | | 110,20/2,5 l |

## Methyl red (C.I. 13020)



## Methyl red (C.I. 13020)

**p.a., ACS**

Indicator pH 4,2-6,2
2-[(4-Dimethylamino)-phenylazo]-benzoic acid
$C_{15}H_{15}N_3O_2$
M 269,31 g/mol
mp 178-182 °C
Solubility: hardly soluble ($H_2O$, 20 °C)
[493-52-7] • EC No. 207-776-1
WGK 2

**Guarantee analysis:**

Appearance. ..... reddish powder
Appearance of solution. ..... complies
Melting point. ..... 179-182 °C
pH-transition range. ..... 4,2 (pink)-6,2 (yellow)
Loss on drying (110 °C). ..... ≤3,0 %

| | | | |
|---|---|---|---|
| **T120.1** | 10 g | glass | 14,95 € |
| **T120.2** | 25 g | glass | 24,65 € |

## Methyl red hydrochloride (C.I. 13020)

## Methyl red hydrochloride (C.I. 13020)

**p.a.**

Indicator pH 4,2-6,2
2-[(4-Dimethylamino)-phenylazo]-benzoic acid hydrochloride
$C_{15}H_{15}N_3O_2 \cdot HCl$
M 305,77 g/mol
mp 179-182 °C (dec.)
[63451-28-5] • EC No. 264-190-9
WGK 1

**Guarantee analysis:**

Appearance. ..... dark purple cryst. powder
Appearance of solution. ..... complies
pH transition range. ..... 4,2 (red)-6,2 (yellow)

| | | | |
|---|---|---|---|
| **2562.1** | 25 g | glass | 25,70 € |
| **2562.2** | 100 g | glass | 60,10 € |

## Methyl red indicator solution

## Methyl red indicator solution

**0,1 % in ethanol, denatured**

UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225-H319

| | | | |
|---|---|---|---|
| **T121.1** | 250 ml | glass | 26,35 € |

## Methyl red sodium salt (C.I. 13020)

## Methyl red sodium salt (C.I. 13020)

**p.a., soluble in water**

Indicator pH 4,2-6,2
2-[(4-Dimethylamino)-phenylazo]-benzoic acid sodium salt
$C_{15}H_{14}N_3NaO_2$
M 291,29 g/mol
mp >300 °C
Solubility: 800 g/l ($H_2O$, 25 °C)
[845-10-3] • EC No. 212-682-9
WGK 1

**Type analysis:**

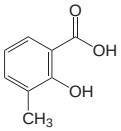
pH-transition range. ..... 4,2 (red)-6,2 (yellow)
Solubility. ..... water-soluble

| | | | |
|---|---|---|---|
| **5003.1** | 25 g | glass | 23,15 € |
| **5003.2** | 100 g | glass | 65,05 € |

## Methyl salicylate

▶ Salicylic acid methyl ester see p. 2239

## 3-Methylsalicylic acid



## 3-Methylsalicylic acid

**≥98,5 %, for synthesis**

2-Hydroxy-3-methylbenzoic acid
$C_8H_8O_3$
M 152,15 g/mol
mp 164-167 °C
[83-40-9] • EC No. 201-473-8
WGK 1

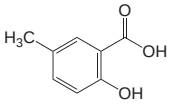
**Danger** H302-H315-H318-H335

**Type analysis:**

Appearance. ..... white to pale pink cryst. powder
Assay. ..... ≥98,5 %

| | | | |
|---|---|---|---|
| **4525.1** | 100 g | glass | 24,65 € |
| **4525.2** | 500 g | glass | 81,60 € |
| Original pack 6 x 500 g | | | 77,52/500 g |

## 5-Methylsalicylic acid



## 5-Methylsalicylic acid

**≥98 %, for synthesis**

2-Hydroxy-5-methylbenzoic acid
$C_8H_8O_3$
M 152,15 g/mol
mp 150-155 °C
[89-56-5] • EC No. 201-981-6
WGK 1

**Type analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay. ..... ≥98,0 %
Ash content. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **6547.1** | 1 g | glass | 33,25 € |
| **6547.2** | 5 g | plastic | 44,65 € |
| **6547.3** | 25 g | plastic | 88,70 € |

## 3-(Methylsulfinyl)propyl glucosinolate potassium salt

▶ Glucoiberin see p. 1954

## 3-(Methylsulphinyl)butyl-glucosinolate potassium salt

▶ Glucoraphanin see p. 1955

## Methylsulphonic acid

▶ Methanesulphonic acid see p. 2067

## Methyl sulphoxide deuterized

▶ Dimethyl sulphoxide D6 see p. 1885

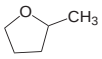
## Methyl tert-butyl ether

▶ tert-Butyl methyl ether see p. 1797

## Methyl tetradecanoate

▶ Myristic acid methyl ester see p. 2087

## 2-Methyltetrahydrofuran



### 2-Methyltetrahydrofuran

**≥99 %, extra pure**
Methyl-THF, Me-THF
$C_5H_{10}O$
M 86,13 g/mol
D 0,86 • bp 78-80 °C
mp -136 °C • flp -12 °C
[96-47-9] • EC No. 202-507-4
UN No. 2536 • ADR 3 II • WGK 2

**Danger** H225-H319-H335-EUH019

**Type analysis:**
Appearance. ..... clear, colourless liquid
Assay (GC). ..... ≥99 %
Water (KF). ..... ≤0,05 %
Density (20 °C). ..... 0,850-0,865
Stabilized with 150-400 ppm BHT

| | | | |
|---|---|---|---|
| **6845.1** | 250 ml | glass | 25,30 € |
| **6845.2** | 500 ml | glass | 41,85 € |
| **6845.3** | 1 l | glass | 56,90 € |
| Original pack 6 x 1 l | | | 54,06/1 l |
| **6845.4** | 2,5 l | glass | 106,45 € |
| Original pack 4 x 2,5 l | | | 101,13/2,5 l |
| **6845.5** | 10 l | tinplate | 364,45 € |

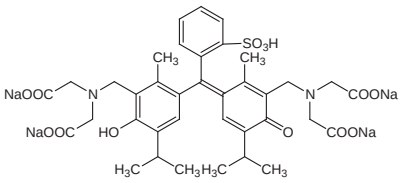
## 7-Methyltheobromine

▶ Caffeine see p. 1802

## 4-Methylthiobutylglucosinolate potassium salt

▶ Glucoerucin see p. 1954

## Methylthymol blue sodium salt



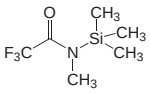
### Methylthymol blue sodium salt

**p.a., ACS**
Indicator for titration of metal ions (complexometry).
$C_{37}H_{40}N_2Na_4O_{13}S$
M 844,76 g/mol
Solubility: 460 g/l ($H_2O$, 20 °C)
[1945-77-3] • EC No. 217-743-3
WGK 2

**Guarantee analysis:**
Clarity of solution (ACS-test). ..... complies
Loss on drying. ..... ≤10,0 %
pH-transition range. ..... 6,5 (yellow)-8,5 (blue)
Suitability as indicator. ..... complies

| | | | |
|---|---|---|---|
| **KK17.1** | 1 g | glass | 14,95 € |
| **KK17.2** | 5 g | glass | 42,90 € |

## N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA)



MSTFA
$C_6H_{12}F_3NOSi$
M 199,25 g/mol
D 1,07 • bp 130-132 °C
mp 98-100 °C • flp 25 °C
[24589-78-4] • EC No. 246-331-6
UN No. 1993 • ADR 3 III • WGK 1

**Warning** H226-H315-H319-H335

### N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA)

**≥99 %, for GC**
Silylation agent
Storage temp.: +4 °C

**Type analysis:**
Assay (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **9933.1** | 10 ml | septum bottle | 93,90 € |

For further information, please see page 1568

### N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA)

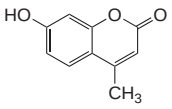
**≥97 %, for GC**
Silylation agent.

**Type analysis:**
Appearance. ..... clear, colourless to yellowish liquid
Assay (GC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **8007.1** | 5 g | glass | 53,65 € |

For further information, please see page 1568

## 4-Methylumbelliferone



### 4-Methylumbelliferone

**≥98 %, for biochemistry**
7-Hydroxy-4-methylcoumarin, Hymecromone, 4-MU
$C_{10}H_8O_3$
M 176,17 g/mol
mp 187-191 °C
[90-33-5] • EC No. 201-986-7
WGK 1

**Warning** H315-H319-H335

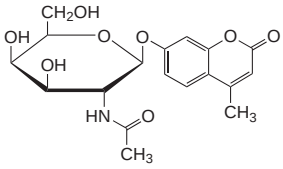
**Type analysis:**
Assay (HPLC). ..... ≥98,0 %
Solution (5 % in ethanol at 50 °C). ..... colourless
Water (KF). ..... ≤1,0 %
Melting point. ..... 187-191 °C

| | | | |
|---|---|---|---|
| **5512.1** | 50 g | plastic | 35,40 € |
| **5512.2** | 100 g | plastic | 59,70 € |

## 4-Methylumbelliferyl-2-acetamido-2-deoxy-β-D-galactopyranoside

▶ 4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide see p. 2079

## 4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide



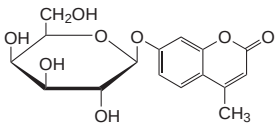
### 4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide

**≥98 %, for biochemistry**
Glycosidase substrate
MU-N-acetyl-β-D-galactosaminide, 4-Methylumbelliferyl-2-acetamido-2-deoxy-β-D-galactopyranoside, 4-MU-β-D-GalNAc
$C_{18}H_{21}NO_8$
M 379,37 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[36476-29-6] • EC No. 253-052-3
WGK 1

**Type analysis:**
Assay (HPLC). ..... ≥98 %
Water (KF). ..... ≤3,0 %
Free 4-methylumbelliferone. ..... ≤0,005 %
Specific rotation $[\alpha]_D^{20}$ (c=0,3 in pyridine). ... -48° to -44°

| | | | |
|---|---|---|---|
| **4083.1** | 100 mg | glass | 41,85 € |
| **4083.2** | 250 mg | glass | 74,10 € |
| **4083.3** | 500 mg | glass | 122,05 € |

## 4-Methylumbelliferyl-β-D-galactopyranoside



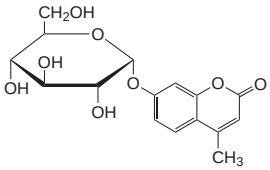
### 4-Methylumbelliferyl-β-D-galactopyranoside

**for biochemistry**
Glycosidase substrate.
MUGalactoside, 4-MU-β-D-Gal
$C_{16}H_{18}O_8$
M 338,32 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[6160-78-7] • EC No. 228-185-5
WGK 1

**Type analysis:**
Solution (0,5 % in DMF). ..... colourless, clear
Water (KF). ..... ≤1 %
4-Methylumbelliferone. ..... ≤0,005 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in pyridine, after 24 h). ..... -66° to -62°

| | | | |
|---|---|---|---|
| **4084.1** | 500 mg | glass | 30,00 € |
| **4084.2** | 1 g | glass | 46,15 € |
| **4084.3** | 5 g | glass | 181,70 € |

## 4-Methylumbelliferyl-α-D-glucopyranoside



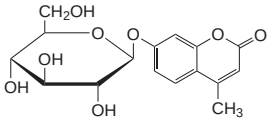
### 4-Methylumbelliferyl-α-D-glucopyranoside

**≥99 %, for biochemistry**
Glycosidase substrate
4-MU-α-D-Glc
$C_{16}H_{18}O_8$
M 338,32 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[17833-43-1] • EC No. 241-794-0
WGK 1

**Type analysis:**
Assay (TLC)..... ≥99,0 %
Solubility (4 % in pyridine)... colorless to slightly yellow
Water (KF)..... 4-6 %
4-Methylumbelliferone..... ≤0,001 %
Specific rotation $[\alpha]_D^{20}$ (c=0,8 in pyridine)..... +155° to +161°

| | | | |
|---|---|---|---|
| **4086.1** | 100 mg | glass | 42,90 € |
| **4086.2** | 250 mg | glass | 81,60 € |

## 4-Methylumbelliferyl-β-D-glucopyranoside



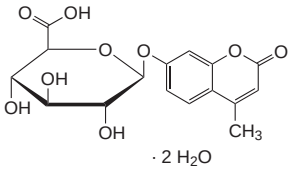
### 4-Methylumbelliferyl-β-D-glucopyranoside

**≥99 %, for biochemistry**
Glycosidase substrate.
MUGlucoside, 4-MU-β-D-Glc
$C_{16}H_{18}O_8$
M 338,32 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[18997-57-4] • EC No. 242-736-7
WGK 1

**Type analysis:**
Assay (TLC)..... ≥99 %
Solution (3 % in water/acetone 1:2). .. colourless, clear
Water (KF)..... ≤2 %
4-Methylumbelliferone..... ≤0,001 %
Specific rotation $[\alpha]_D^{20}$ (c=0,3 in water)..... -102° to -98°

| | | | |
|---|---|---|---|
| **4093.1** | 500 mg | glass | 42,90 € |
| **4093.2** | 1 g | glass | 73,00 € |
| **4093.3** | 2,5 g | glass | 143,55 € |

## 4-Methylumbelliferyl-β-D-glucuronide dihydrate



### 4-Methylumbelliferyl-β-D-glucuronide dihydrate

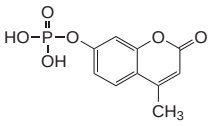
**≥99 %, p.a.**
Substrate for β-glucuronidase.
For detection of *E. coli*.
MUG
$C_{16}H_{16}O_9 \cdot 2\ H_2O$
M 388,33 g/mol
mp 102 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[6160-80-1] • EC No. 228-186-0

**Type analysis:**
Assay (titr.)..... ≥99,0 %
Water (KF)..... ≤10,2 %
Free 4-methylumbelliferone..... ≤0,0025 %

| | | | |
|---|---|---|---|
| **6394.1** | 50 mg | glass | 23,15 € |
| **6394.2** | 250 mg | glass | 63,35 € |
| **6394.3** | 1 g | glass | 196,20 € |

For further information, please see page 1289

## 4-Methylumbelliferyl phosphate



### 4-Methylumbelliferyl phosphate

**≥99 %, for biochemistry**
Phosphatase substrate.
4-MUP phos, free acid
$C_{10}H_9O_6P$
M 256,15 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[3368-04-5] • EC No. 222-137-7
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Assay (titr.)..... ≥99 %
Solution (1 % in $H_2O$)..... colourless, clear
Water (KF)..... ≤0,5 %
4-Methylumbelliferone..... ≤0,01 %

| | | | |
|---|---|---|---|
| **4103.1** | 250 mg | glass | 33,90 € |
| **4103.2** | 1 g | glass | 99,90 € |

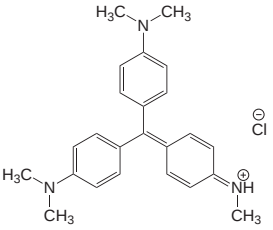
## 5-Methyluracil

▶ Thymine see p. 2342

## Methyl-valerate

▶ n-Valeric acid methyl ester see p. 2368

## Methyl violet 2B (C.I. 42535)



### Methyl violet 2B (C.I. 42535)

**for microscopy**
Basic violet
$C_{24}H_{28}N_3Cl$
M 393,96 g/mol
mp 137 °C (dec.)
[8004-87-3]
UN No. 3077 • ADR 9 III • WGK 3

**Warning** H302-H410

**Type analysis:**
Appearance..... green cryst. powder
Loss on drying..... ≤5,0 %

| | | | |
|---|---|---|---|
| **7715.1** | 5 g | glass | 14,20 € |
| **7715.2** | 25 g | glass | 24,65 € |
| **7715.3** | 100 g | glass | 47,85 € |

For further information, please see page 1465

## Methyl violet 10B

▶ Crystal violet (C.I. 42555) see p. 1849

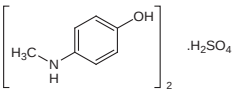
## Methyl yellow

▶ Dimethyl yellow (C.I. 11020) see p. 1885

## 7-Methylquercetin

▶ Rhamnetin see p. 2197

## Metol



### Metol

**≥99 %, Photo**
4-Methylaminophenol sulphate
$C_{14}H_{20}N_2O_6S$
M 344,39 g/mol
mp 260 °C (dec.)
Solubility: ~48 g/l ($H_2O$, 15 °C)
[55-55-0] • EC No. 200-237-1
UN No. 3077 • ADR 9 III • WGK 3

**Warning**
H373-H400-H410-H302-H317

**Type analysis:**
Assay (cerim.)..... ≥99 %
pH value (5 % in $H_2O$, 20 °C)..... 3,5-4,5
Substances soluble in ether..... ≤0,2 %
Chloride (Cl)..... ≤0,01 %
Iron (Fe)..... ≤0,005 %
Heavy metals (as Pb)..... ≤0,001 %
p-Aminophenol..... ≤2,5 %
Sulphated ash..... ≤0,1 %
Loss on drying..... ≤0,3 %
N,N-Dimethyl p-phenylene diammonium sulphate..... complies

| | | | |
|---|---|---|---|
| **4315.1** | 100 g | plastic | 40,75 € |
| **4315.2** | 500 g | plastic | 153,20 € |
| Original pack 6 x 500 g | | | 145,54/500 g |

## MIBK

▶ Isobutyl methylketone see p. 2013

## Milk sugar

▶ α-Lactose monohydrate see p. 2027

## Mineral Oil

### Mineral Oil

**for molecular biology**

For overlaying PCR and other enzymatic reactions.

D 0,84 • bp >200 °C

flp >115 °C

[8042-47-5] • EC No. 232-455-8

WGK 1

H413

**Type analysis:**

Colour. ..... clear, colourless
Density (25 °C). ..... 0,818-0,880
Viscosity (40 °C). ..... ≤33,5 cSt
Readily carbonizable substances. ..... complies
Solid paraffin. ..... complies
Suitable for PCR. ..... complies

| | | | |
|---|---|---|---|
| **HP50.1** | 10 ml | glass | 13,90 € |
| **HP50.4** | 15 ml | dropp. bottle | 23,15 € |
| **HP50.2** | 50 ml | plastic | 27,85 € |
| **HP50.3** | 250 ml | plastic | 83,35 € |

For further information, please see page 1263

## Minimum Essential Medium acc. to Eagle, Alpha modification

▶ Roti®-CELL Eagle's MEM-Alpha see p. 2205

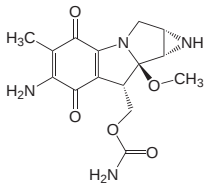
## Minimum Essential Medium acc. to Eagle with Earle's salts

▶ Roti®-CELL Eagle's MEM / Earle's see p. 2206

## Minimum Essential Medium acc. to Eagle with Hanks' salts

▶ Roti®-CELL Eagle's MEM / Hanks' see p. 2206

## Mitomycin C



### Mitomycin C

**≥98 %, for biochemistry**

Mitosis inhibitor

$C_{15}H_{18}N_4O_5$

M 334,30 g/mol

mp >360 °C

Storage temp.: +4 °C

[50-07-7] • EC No. 200-008-6

UN No. 3462 • ADR 6.1 II • WGK 3

**Danger** H300-H351

**Type analysis:**

Assay. ..... ≥98 %

| | | | |
|---|---|---|---|
| **4150.1** | 2 mg | glass | 78,40 € |

For further information, please see page 1430

## Mixed bed ion exchangers

▶ Amberjet™ see p. 1722

## Mixed indicator 5

### Mixed indicator 5

**for ammonia titration**

UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225

| | | | |
|---|---|---|---|
| **T125.1** | 250 ml | glass | 55,80 € |

## MMA

▶ Methacrylic acid methyl ester see p. 2067

## Mohr's salt

▶ Ammonium iron(II) sulphate hexahydrate see p. 1736

## Molecular sieves

Storage temp.: +20 °C

[1318-02-1] • EC No. 215-283-8

### Molecular sieve 3 Å

**activated, under argon**

Suitable for PolyGen® Synthesizer, 3 Å.

| | | | |
|---|---|---|---|
| **N893.1** | 100 ml | glass | 12,40 € |

For further information, please see page 1492

### Molecular sieve 3 Å

**0,3 nm, type 564, pearls**

Metal-aluminium silicates for drying, cleaning or separating of liquids and gases. Spheres ∅ 1,6-2,5 mm.

**Type analysis:**

$H_2O$ ads. capacity (10 % R.H./25 °C). ..... ≥15,5 %
Loss on ignition. ..... ≤2,5 %
Globe diameter. ..... 1,6-2,5 mm
Crush strength. ..... ≥15 N

| | | | |
|---|---|---|---|
| **8487.1** | 250 g | glass | 27,45 € |
| **8487.2** | 750 g | glass | 61,85 € |
| **8487.3** | 2,5 kg | plastic | 160,75 € |

For further information, please see page 1680

### Molecular sieve 3 Å

**0,3 nm, type 562 C, pearls**

Metal-aluminium silicates for drying, cleaning or separating of liquids and gases. Spheres ∅ 2,5-5,0 mm.

**Type analysis:**

$H_2O$ ads. capacity (10 % R.H./25 °C). ..... ≥15,5 %
Loss on ignition. ..... ≤2,5 %
Globe diameter. ..... 2,5-5,0 mm
Crush strength. ..... ≥50 N

| | | | |
|---|---|---|---|
| **P729.1** | 250 g | glass | 27,45 € |
| **P729.2** | 750 g | glass | 61,85 € |
| **P729.3** | 2,5 kg | plastic | 160,75 € |

For further information, please see page 1680

### Molecular sieve 4 Å

**0,4 nm, type 514, pearls**

Metal-aluminium silicates for drying, cleaning or separating of liquids and gases. Spheres ∅ 1,6-2,5 mm.

**Type analysis:**

$H_2O$ ads. capacity (10 % R.H./25 °C). ..... ≥17,5 %
Loss on ignition. ..... ≤3,0 %
Globe diameter. ..... 1,6-2,5 mm
Crush strength. ..... ≥20 N

| | | | |
|---|---|---|---|
| **8471.1** | 250 g | glass | 30,00 € |
| **8471.2** | 750 g | glass | 63,35 € |
| **8471.3** | 2,5 kg | plastic | 166,65 € |

For further information, please see page 1680

### Molecular sieve 5 Å

**0,5 nm, type 522, pearls**

Metal-aluminium silicates for drying, cleaning or separating of liquids and gases. Spheres ∅ 1,6-2,5 mm.

**Type analysis:**

$H_2O$ ads. capacity (10 % R.H./25 °C). ..... ≥17,0 %
Water content. ..... ≤0,9 %
Globe diameter. ..... 1,6-2,5 mm
Crush strength. ..... ≥25 N

| | | | |
|---|---|---|---|
| **8475.1** | 250 g | glass | 30,00 € |
| **8475.2** | 750 g | glass | 63,35 € |
| **8475.3** | 2,5 kg | plastic | 166,65 € |

For further information, please see page 1680

### Molecular sieve 10 Å

**1,0 nm, type 544, pearls**

Metal-aluminium silicates for drying, cleaning or separating of liquids and gases. Spheres ∅ 1,6-2,5 mm.

**Type analysis:**

$H_2O$ ads. capacity (10 % R.H./25 °C). ..... ≥17,0 %
Water content. ..... ≤0,8 %
Globe diameter. ..... 1,6-2,5 mm
Crush strength. ..... ≥35 N

| | | | |
|---|---|---|---|
| **8483.1** | 250 g | glass | 30,00 € |
| **8483.2** | 750 g | glass | 63,35 € |
| **8483.3** | 2,5 kg | plastic | 166,65 € |

For further information, please see page 1680

## Molybdenum Standards


- ▶ Molybdenum AAS Standard Solution see p. 2295
- ▶ Molybdenum ICP Standard Solution see p. 2299
- ▶ Molybdenum ICP Standard Solution see p. 2303


## Molybdenum(VI) oxide

Molybdenum trioxide, Molybdic anhydride
$MoO_3$
M 143,94 g/mol
D 4,7 • bp 1155 °C
mp 795 °C
Solubility: 0,5 g/l ($H_2O$, 28 °C)
[1313-27-5] • EC No. 215-204-7
WGK 1

**Warning** H319-H335-H351

### Molybdenum(VI) oxide

**ROTI®METIC 99,98 % (3N8)**

**Type analysis:**

Assay (metals basis)..... 99,98 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **4548.1** | 5 g | plastic | 47,85 € |
| **4548.2** | 10 g | plastic | 79,45 € |

### Molybdenum(VI) oxide

**≥99,5 %, p.a.**

NEW

**Type analysis:**

Assay (as $MoO_3$)..... ≥99,5 %
Ammonium ($NH_4$)..... ≤0,01 %
Chloride (Cl)..... ≤0,005 %
Nitrate ($NO_3$)..... ≤0,01 %
Phosphate ($PO_4$)..... ≤0,0005 %
Sulphate ($SO_4$)..... ≤0,02 %
Lead (Pb)..... ≤0,001 %
Cadmium (Cd)..... ≤0,001 %
Iron (Fe)..... ≤0,005 %
Potassium oxide ($K_2O$)..... ≤0,025 %
Silicate ($SiO_2$)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **0142.1** | 50 g | plastic | 17,10 € |
| **0142.2** | 250 g | plastic | 42,90 € |
| **0142.3** | 500 g | plastic | 75,15 € |
| Original pack 6 x 500 g | | | 71,39/500 g |
| **0142.4** | 1 kg | plastic | 138,70 € |
| Original pack 6 x 1 kg | | | 131,77/1 kg |

## Molybdenum trioxide

▶ Molybdenum(VI) oxide see p. 2082

## Molybdate-Reagent

### Molybdate-Reagent

**For determination of total phosphate**

UN No. 3264 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

Suitability for determination of phosphate..... complies
Composition: Ammonium heptamolybdate tetrahydrate, Potassium antimony(III) tartrate, Sulphuric acid, Water distilled

| | | | |
|---|---|---|---|
| **2442.1** | 1 l | plastic | 51,10 € |
| Original pack 6 x 1 l | | | 48,55/1 l |

## Molybdatophosphoric acid hydrate

### Molybdatophosphoric acid hydrate

**≥99,0 %, p.a., ACS**

Staining reagent for TLC, biochemical analysis, microscopy.
Phosphormolybdic acid
$H_3[P(Mo_3O_{10})_4] \cdot x\ H_2O$
M 1825,25 + x $H_2O$ g/mol
mp 78-90 °C
Solubility: easily soluble ($H_2O$, 20 °C)
Storage temp.: +4 °C
[51429-74-4] • EC No. 234-713-5
UN No. 3260 • ADR 8 II • WGK 1

**Danger** H314

**Guarantee analysis:**

Appearance..... yellow to orange-yellow crystals
Assay..... ≥99,0 %
Water..... 22,0-25,0 %
Chloride (Cl)..... ≤0,005 %
Sulphate ($SO_4$)..... ≤0,01 %
Ammonium ($NH_4$)..... ≤0,003 %
In $H_2O$ insoluble matter..... ≤0,01 %
Heavy metals (as Pb)..... ≤0,005 %
Calcium (Ca)..... ≤0,02 %
Iron (Fe)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **4440.1** | 25 g | glass | 37,55 € |
| **4440.2** | 50 g | glass | 57,95 € |
| **4440.3** | 100 g | glass | 103,10 € |

## Molybdatophosphoric acid spray solution

### Molybdatophosphoric acid spray solution

**for TLC**

Ready-to-use spray solution for detection of reducing compound lipids, fatty acids and steroids.
4 g Molybdatophosphoric acid dissolved in 100 ml ethanol.
UN No. 3316 • ADR 9 II • WGK 1

**Danger** H225-H315-H318

**Type analysis:**

TLC-application..... complies

| | | | |
|---|---|---|---|
| **CP31.1** | 100 ml | glass | 37,50 € |

## Molybdic acid

### Molybdic acid

**>85 %, p.a., ACS**

$H_2MoO_4$
M 161,96 g/mol
mp 300 °C
[7782-91-4] • EC No. 231-970-5
WGK 1

**Warning** H319-H335-H373

**Guarantee analysis:**

Assay (based on $MoO_3$)..... >85,0 %
In $NH_4OH$ insoluble matter..... ≤0,01 %
Chloride (Cl)..... ≤0,002 %
Phosphate ($PO_4$)..... ≤0,0005 %
Sulphate ($SO_4$)..... ≤0,2 %
Heavy metals (as Pb)..... ≤0,003 %
Arsenate, phosphate and silicate (as $SiO_2$)... ≤0,001 %

| | | | |
|---|---|---|---|
| **2722.1** | 100 g | plastic | 45,05 € |
| **2722.2** | 250 g | plastic | 89,80 € |
| **2722.3** | 500 g | plastic | 149,45 € |
| Original pack 6 x 500 g | | | 141,98/500 g |

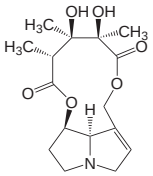
## Monoammonium glycyrrhizinate

▶ Glycyrrhizic acid ammonium salt hydrate see p. 1963

## Monochlorobenzene

▶ Chlorobenzene see p. 1826

## Monocrotaline




### Monocrotaline

**≥99 %**

Crotaline
$C_{16}H_{23}NO_6$
M 325,35 g/mol
mp 202-203 °C
Storage temp.: +4 °C
[315-22-0]
UN No. 1544 • ADR 6.1 III • WGK 3

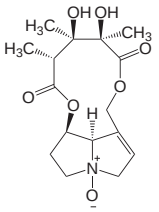
**Danger** H301-H351

**Type analysis:**

Appearance..... white powder
Assay (HPLC)..... ≥99,0 %
Melting point..... 197-202 °C

| | | | |
|---|---|---|---|
| **3418.1** | 500 mg | glass | 295,65 € |

## Monocrotaline N-oxide



### Monocrotaline N-oxide

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Crotalaria.*

$C_{16}H_{23}NO_7$
M 341,36 g/mol
mp 134-138 °C
Storage temp.: +4 °C
[35337-98-5]
UN No. 1544 • ADR 6.1 III • WGK 3

**Danger** H301

**Type analysis:**

Purity (HPLC)..... ≥98,0 %

| | | | |
|---|---|---|---|
| **2249.1** | 10 mg | glass | 396,70 € |

## Monoethanolamine

▶ Ethanolamine see p. 1912

## Monoethylene glycol

▶ Ethylene glycol see p. 1918

## Monomethylthionin

▶ Azure C (C.I. 52002) see p. 1760

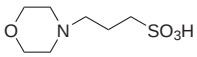
## Monopotassium phosphate

▶ Potassium dihydrogen phosphate see p. 2166

## Monorhein

▶ Rhein see p. 2197

## MOPS



### MOPS

**PUFFERAN® ≥99,5 %**

3-(N-Morpholino) propane sulphonic acid
$C_7H_{15}NO_4S$
M 209,27 g/mol
mp 277-281 °C
Solubility: 1440 g/l ($H_2O$, 20 °C)
[1132-61-2] • EC No. 214-478-5
WGK 1

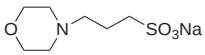
**Guarantee analysis:**

Assay (dry substance)..... ≥99,5 %
pH value (10 % in water)..... 3,0-5,0
$pK_a$ (at 25 °C)..... 7,0-7,4
Loss on drying (110 °C)..... ≤1,0 %
UV-absorption (1 M in $H_2O$ ):
260 nm..... ≤0,05

| | | | |
|---|---|---|---|
| **6979.2** | 250 g | plastic | 74,10 € |
| **6979.4** | 500 g | plastic | 127,40 € |
| Original pack 6 x 500 g | | | 121,03/500 g |
| **6979.3** | 1 kg | plastic | 244,60 € |
| Original pack 6 x 1 kg | | | 232,37/1 kg |
| **6979.5** | 2,5 kg | plastic | 521,40 € |

For further information, please see page 1268

## MOPS sodium salt



### MOPS sodium salt

**PUFFERAN® ≥99 %**

3-(N-Morpholino)-propane sulphonic acid sodium salt
$C_7H_{14}NaNO_4S$
M 231,2 g/mol
[71119-22-7]
WGK 1

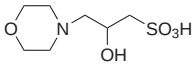
**Guarantee analysis:**

Assay (titr. dry substance)..... ≥99,0 %
Loss on drying..... ≤3,0 %
pH value (1 M, $H_2O$)..... 10,0-12,0
UV-absorption (0,1 M in $H_2O$):
260 nm..... ≤0,1
280 nm..... ≤0,1

| | | | |
|---|---|---|---|
| **6927.1** | 25 g | plastic | 27,85 € |
| **6927.2** | 100 g | plastic | 84,85 € |

For further information, please see page 1268

## MOPSO



### MOPSO

**PUFFERAN® ≥99 %**

3-(N-Morpholino)-2-hydroxypropane sulphonic acid
$C_7H_{15}NO_5S$
M 225,27 g/mol
mp 280 °C
[68399-77-9] • EC No. 269-989-6
WGK 1

**Warning** H315-H319-H335

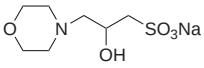
**Guarantee analysis:**

Assay (titr.)..... ≥99,0 %
Solubility (10 % in $H_2O$)..... clear
Loss on drying..... ≤1,0 %
Absorption:
260 nm..... ≤0,04
280 nm..... ≤0,04

| | | | |
|---|---|---|---|
| **7117.1** | 25 g | plastic | 31,10 € |
| **7117.2** | 100 g | plastic | 94,50 € |
| **7117.3** | 1 kg | plastic | 697,70 € |
| Original pack 6 x 1 kg | | | 662,82/1 kg |

For further information, please see page 1268

## MOPSO sodium salt



### MOPSO sodium salt

**PUFFERAN® ≥98 %**

3-(N-Morpholino)-2-hydroxypropane sulphonic acid sodium salt
$C_7H_{14}NaNO_5S$
M 247,28 g/mol
[79803-73-9]

**Type analysis:**

Assay (titr.)..... ≥98 %
Water (KF)..... ≤1,0 %
pH value (1 % solution)..... 8,9-9,7
UV-absorption (5 % in $H_2O$):
280 nm..... ≤0,05
260 nm..... ≤0,06

| | | | |
|---|---|---|---|
| **7101.1** | 25 g | plastic | 37,55 € |
| **7101.2** | 100 g | plastic | 120,30 € |

For further information, please see page 1268

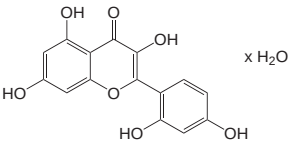
## Mordant Black 3

▶ Eriochrome® blue black B (C.I. 14640) see p. 1907

## Mordant Black 17

▶ Eriochrome® blue black R (C.I. 15705) see p. 1907

## Morin hydrate



### Morin hydrate

**for microscopy**

Fluorescence indicator.
2',3,4',5,7-Pentahydroxyflavone
$C_{15}H_{10}O_7 \cdot x\ H_2O$
M 302,24 + x $H_2O$ g/mol
mp ~295 °C
[654055-01-3] • EC No. 207-542-9
WGK 2

**Warning** H315-H319-H335

**Type analysis:**

Appearance..... powder
Reagent for:..... Al, Be, Zn, Ga, In, Sc
Fluorescence indicator

| | | | |
|---|---|---|---|
| **6459.1** | 5 g | plastic | 103,75 € |
| **6459.2** | 50 g | plastic | 783,70 € |

M

## Morpholine



### Morpholine

**≥99 %, for synthesis**

1,4-Oxazinane, Tetrahydro-1,4-oxazine
$C_4H_9NO$
M 87,12 g/mol
D 1,00 • bp 128-130 °C
mp -5 °C • flp 32 °C
[110-91-8] • EC No. 203-815-1
UN No. 2054 • ADR 8 (3) I • WGK 1

**Danger**

H226-H302-H311+H331-H314-EUH208

**Type analysis:**

Assay (GC). ..... ≥99,0 %
Water (KF). ..... ≤0,3 %
2-Methoxyethanol (GC). ..... <0,3 %
1,2-Ethanediamine (GC). ..... ≤0,3 %
Ethylmorpholine (GC). ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **9691.1** | 100 ml | glass | 13,45 € |
| **9691.2** | 500 ml | glass | 19,25 € |
| **9691.3** | 1 l | glass | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |
| **9691.4** | 2,5 l | glass | 45,05 € |
| Original pack 4 x 2,5 l | | | 42,80/2,5 l |
| **9691.5** | 10 l | PE/steel | 149,45 € |

## 2-(N-Morpholino)-ethane sulphonic acid


▶ MES see p. 2065
▶ MES monohydrate see p. 2065
▶ MES potassium salt see p. 2066
▶ MES sodium salt see p. 2066


## 3-(N-Morpholino)-2-hydroxypropane sulphonic acid


▶ MOPSO see p. 2083
▶ MOPSO sodium salt see p. 2083


## 3-(N-Morpholino)-propane sulphonic acid


▶ MOPS see p. 2083
▶ MOPS sodium salt see p. 2083


## Mossel EE Broth

### Mossel EE Broth

**Ph.Eur., for microbiology**

For selective enrichment of enterobacteria in foods, particularly *Salmonella* and Coliforms.

Application: Use 45 g for 1 l broth.

Enriched broth medium E (Ph.Eur. 6.0), Enterobacteria enrichment broth-Mossel (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Pancreas hydrolysate made from gelatin. ..... 10 g/l
Glucose monohydrate. ..... 5 g/l
Dehydrated ox bile. ..... 20 g/l
Potassium dihydrogen phosphate. ..... 2 g/l
di-Sodium hydrogenphosphate dihydrate. ..... 8 g/l
Brilliant green. ..... 0,015 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **AE65.1** | 500 g | plastic | 174,70 € |
| Original pack 6 x 500 g | | | 165,97/500 g |

For further information, please see page 1390

## Mowiol®4-88

### Mowiol®4-88

**granulated**

Aqueous mounting medium in histology.

Polyvinyl alcohol
$(-CH_2CHOH-)_n$
M ~31,000 g/mol
D ~1,27
mp ~300 °C • flp ~113 °C
[9002-89-5]
WGK 1

**Type analysis:**

Appearance. ..... colourless to light yellow granules
Viscosity (4 %, $H_2O$, 20 °C). ..... 3,0-5,0 mPas
Degree of hydrolysis, Mol.- %. ..... 86,7-88,7
Ester value (mg KOH/g). ..... 130-150
Residual acetate. ..... 10,0-11,6 %
Ash content (as $Na_2O$). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **0713.1** | 50 g | plastic | 11,75 € |
| **0713.2** | 100 g | plastic | 17,10 € |

For further information, please see page 1476

## MRSA Cefoxitin Supplement

### MRSA Cefoxitin Supplement

**lyophilised**

Media supplement for selective detection of methicillin resistent *Staphylococcus aureus*.

One box of 10 vials MRSA Cefoxitin Supplement is sufficient for 10 x 500 ml MRSA chromogenic Agar.

Storage temp.: +4 °C

**Formulation:**

Cefoxitin. ..... 0,002 g per vial

| | | | |
|---|---|---|---|
| **2975.1** | 10 vials | glass | 72,60 € |

For further information, please see page 1409

## MRSA chromogenic Agar (Base)

### MRSA chromogenic Agar (Base)

**for microbiology**

For detection of methicillin resistant staphylococci.

Application: Use 103,4 g for 1 l agar. Do not overheat! After cooling add 2 vials (10 ml) reconstituted MRSA Cefoxitin Supplement (Art. No. 2975.1).

Storage temp.: +4 °C

WGK 1

**Formulation:**

Nutrients. ..... 78 g/l
Peptone. ..... 11 g/l
Chromogene Mixture. ..... 1,9 g/l
Agar. ..... 12,5 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **3026.1** | 100 g | plastic | 75,15 € |

For further information, please see page 1390

## MRS Agar

### MRS Agar

**for microbiology**

For cultivation of lactobacilli. According to deMan, Rogosa and Sharpe.

Application: Use 62 g for 1 l agar.

Storage temp.: +4 °C

WGK 1

**Formulation:**

Peptone. ..... 10 g/l
Yeast extract. ..... 4 g/l
Beef extract. ..... 8 g/l
Glucose. ..... 20 g/l
Dipotassium phosphate. ..... 2 g/l
Sodium acetate. ..... 5 g/l
Ammonium citrate. ..... 2 g/l
Magnesium sulphate ($MgSO_4$). ..... 0,2 g/l
Manganese sulphate. ..... 0,05 g/l
Polysorbate 80. ..... 1 g/l
Agar. ..... 10 g/l
pH value. ..... 6,2 ±0,2

| | | | |
|---|---|---|---|
| **X924.1** | 500 g | plastic | 76,25 € |
| Original pack 6 x 500 g | | | 72,44/500 g |
| **X924.2** | 1 kg | plastic | 132,80 € |
| Original pack 6 x 1 kg | | | 126,16/1 kg |

For further information, please see page 1391

## MRS Agar pH 5.7

### MRS Agar pH 5.7

**ISO 15214, for microbiology**

For cultivation of pH sensitive lactobacilli from foods and feeding stuff. According to deMan, Rogosa and Sharpe.

Application: Use 64 g for 1 l agar.

Storage temp.: +4 °C

WGK 1

**Guarantee analysis:**

Casein peptone. ..... 10 g/l
Yeast extract. ..... 4 g/l
Beef extract. ..... 10 g/l
Glucose. ..... 20 g/l
Dipotassium phosphate. ..... 2 g/l
Sodium acetate. ..... 5 g/l
Triammonium citrate. ..... 2 g/l
Magnesium sulphate heptahydrate. ..... 0,20 g/l
Mangansulphate tetrahydrate. ..... 0,05 g/l
Polysorbate 80. ..... 1,08 g/l
Agar. ..... 10 g/l
pH value. ..... 5,7 ±0,1

| | | | |
|---|---|---|---|
| **HP65.1** | 500 g | plastic | 83,35 € |
| Original pack 6 x 500 g | | | 79,18/500 g |

For further information, please see page 1391

## MRS Broth

### MRS Broth

**for microbiology**

For cultivation of lactobacilli.
According to deMan, Rogosa and Sharpe.

Application: Use 52 g for 1 l broth.

Storage temp.: +4 °C

WGK 1

**Formulation:**

Peptone. ..... 10 g/l
Yeast extract. ..... 4 g/l
Beef extract. ..... 8 g/l
Glucose. ..... 20 g/l
Dipotassium phosphate. ..... 2 g/l
Sodium acetate. ..... 5 g/l
Ammonium citrate. ..... 2 g/l
Magnesium sulphate ($MgSO_4$) ..... 0,2 g/l
Manganese sulphate. ..... 0,05 g/l
Polysorbate 80. ..... 1 g/l
pH value. ..... 6,2 ±0,2

| | | | |
|---|---|---|---|
| **X925.1** | 500 g | plastic | 72,60 € |
| Original pack 6 x 500 g | | | 68,97/500 g |
| **X925.2** | 1 kg | plastic | 122,05 € |
| Original pack 6 x 1 kg | | | 115,95/1 kg |
| **X925.3** | 2,5 kg | plastic | 260,70 € |

For further information, please see page 1391

## MRS Broth pH 5.7

### MRS Broth pH 5.7

**ISO 15214, for microbiology**

For cultivation of pH sensitive lactobacilli from foods and feeding stuff. According to deMan, Rogosa and Sharpe.

Application: Use 54 g for 1 l broth.

Storage temp.: +4 °C

WGK 1

**Guarantee analysis:**

Casein peptone. ..... 10 g/l
Yeast extract. ..... 4 g/l
Beef extract. ..... 10 g/l
Glucose. ..... 20 g/l
Dipotassium phosphate. ..... 2 g/l
Sodium acetate. ..... 5 g/l
Triammonium citrate. ..... 2 g/l
Magnesium sulphate heptahydrate. ..... 0,20 g/l
Mangansulphate tetrahydrate. ..... 0,05 g/l
Polysorbate 80. ..... 1,08 g/l
pH value. ..... 5,7 ±0,1

| | | | |
|---|---|---|---|
| **HP64.1** | 500 g | plastic | 76,90 € |
| Original pack 6 x 500 g | | | 73,06/500 g |

For further information, please see page 1391

## MSA

▶ Methanesulphonic acid see p. 2067

## MSTFA

▶ N-Methyl-N-(trimethylsilyl)-trifluoroacetamide (MSTFA) see p. 2079

## MTAB

▶ Tetradecyltrimethylammonium bromide (MTAB) see p. 2336

## MTBE

▶ tert-Butyl methyl ether see p. 1797

## MTT

▶ Thiazolyl blue see p. 2339

## 4-MU

▶ 4-Methylumbelliferone see p. 2079

## MU-N-acetyl-β-D-galactosaminide

▶ 4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide see p. 2079

## Mucin

### Mucin

**75-95 %, for biochemistry**

Isolated from porcine stomach lining.

Storage temp.: +4 °C

[91053-71-3] • EC No. 282-357-4

**Type analysis:**

Assay. ..... 75,0-95,0 %
Sulphated ash. ..... <7,0 %
Total nitrogen. ..... 7,5-9,9 %
Nitrogen (in alcoholic extract). ..... 7,0-9,9 %
pH value (2 %, water). ..... 3,0-6,5
Loss on drying. ..... ≤6,0 %
Viscosity (rel. to $H_2O$). ..... ≥2,0 %

| | | | |
|---|---|---|---|
| **8494.1** | 100 g | plastic | 55,80 € |

## Mueller Hinton Agar

### Mueller Hinton Agar

**for microbiology**

For testing of organism susceptibility to antimicrobial agents by disk diffusion method. Also for cultivation of *Neisseria*.

Application: Use 38 g for 1 l agar.
Slightly opalescent.

Storage temp.: +20 °C

**Formulation:**

Beef Infusion. ..... 2 g/l
Casein peptone (acidic hydrolysate). ..... 17,5 g/l
Corn starch. ..... 1,5 g/l
Agar. ..... 17 g/l
pH value. ..... 7,4 ±0,2

| | | | |
|---|---|---|---|
| **X926.1** | 500 g | plastic | 92,35 € |
| Original pack 6 x 500 g | | | 87,73/500 g |

For further information, please see page 1392

## Mueller Hinton Broth

### Mueller Hinton Broth

**for microbiology**

For cultivation of microorganisms and for antibiotic-sensitivity testing.

Application: Use 21 g for 1 l broth.
Slightly opalescent.

Storage temp.: +20 °C

WGK 1

**Formulation:**

Beef Infusion. ..... 2 g/l
Casein peptone (acidic hydrolysate). ..... 17,5 g/l
Corn starch. ..... 1,5 g/l
pH value. ..... 7,4 ±0,2

| | | | |
|---|---|---|---|
| **X927.1** | 500 g | plastic | 120,95 € |
| Original pack 6 x 500 g | | | 114,90/500 g |

For further information, please see page 1392

## Mueller Kauffmann Broth (Base)

### Mueller Kauffmann Broth (Base)

**for microbiology**

For selective enrichment of *Salmonella* from meat and other foods.

Application: Use 82 g for 1 l broth. Add iodine and brilliant green.

Tetrathionate Broth, Tetrathionate Enrichment Broth

Storage temp.: +20 °C

WGK 1

**Formulation:**

Sodium thiosulphate. ..... 40,7 g/l
Calcium carbonate. ..... 25 g/l
Dehydrated ox bile. ..... 4,75 g/l
Sodium chloride (NaCl). ..... 4,5 g/l
Meat peptone. ..... 4,5 g/l
Yeast extract. ..... 1,8 g/l
Meat extract. ..... 0,9 g/l
pH value. ..... 7,6 ±0,2

| | | | |
|---|---|---|---|
| **8323.1** | 500 g | plastic | 82,70 € |
| Original pack 6 x 500 g | | | 78,57/500 g |

For further information, please see page 1392

## MUG

▶ 4-Methylumbelliferyl-β-D-glucuronide dihydrate see p. 2080

## 4-MU-β-D-GalNAc

▶ 4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide see p. 2079

## 4-MU-β-D-Gal

▶ 4-Methylumbelliferyl-β-D-galactopyranoside see p. 2079

## MUGalactoside

▶ 4-Methylumbelliferyl-β-D-galactopyranoside see p. 2079

## 4-MU-α-D-Glc

▶ 4-Methylumbelliferyl-α-D-glucopyranoside see p. 2080

## 4-MU-β-D-Glc

▶ 4-Methylumbelliferyl-β-D-glucopyranoside see p. 2080

## MUGlucoside

▶ 4-Methylumbelliferyl-β-D-glucopyranoside see p. 2080

## MultiTag-Protein

### MultiTag-Protein

**0,1 mg/ml, affinity purified**

Recombinant protein with His-tag, GST-tag, Myc- and DYKDDDDK anchor sequence.

**Recommended application:** 100 ng / lane (Western blotting), dilution 1:100 (ELISA)

M 31,6 g/mol

Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**

Concentration. ..... 0,09-0,11 mg/ml
Appearance. ..... clear, colourless liquid
Host. ..... E. coli BL21 (DE3)
PAGE (12 % PAA). ..... complies
Western Blot. ..... complies

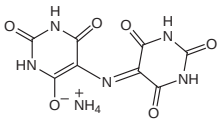
| | | | |
|---|---|---|---|
| **3999.1** | 100 µl | plastic | 241,90 € |

For further information, please see page 1319

## 4-MUP phos, free acid

▶ 4-Methylumbelliferyl phosphate see p. 2080

## Murexide (C.I. 56085)



### Murexide (C.I. 56085)

**ACS, for complexometry**

Indicator
Ammonium purpurate
$C_8H_8N_6O_6$
M 284,19 g/mol
Solubility: 1 g/l ($H_2O$, 20 °C)
[3051-09-0] • EC No. 221-266-6
WGK 2

**Guarantee analysis:**

Loss on drying. ..... ≤2,0 %
Sulphated ash. ..... ≤1,0 %
Suitability as indicator for complexometry. ..... complies

| | | | |
|---|---|---|---|
| **T124.1** | 5 g | glass | 24,65 € |
| **T124.2** | 25 g | glass | 57,95 € |
| **T124.3** | 50 g | glass | 95,60 € |

## Musculamine

▶ Spermine see p. 2291

## Musk oil

### Musk oil

**artificial**

D 1,0
WGK 2

⚠ **Warning** H412-H317

**Type analysis:**

Appearance. ..... clear, colourless to light yellowish oil
Relative density (20 °C). ..... 1,000-1,100
Refractive index (20 °C). ..... 1,4500-1,4600
Optical rotation (20 °C). ..... -2° to +2°

| | | | |
|---|---|---|---|
| **3364.1** | 100 ml | glass | 39,70 € |

## Mycoplasm eradication solution

▶ Roti®-CELL Myco-Free see p. 2207

## Mycose

▶ D(+)-Trehalose dihydrate see p. 2349

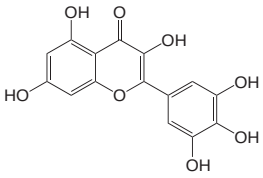
## Mycostatin

▶ Nystatin dihydrate see p. 2107

## MYP Agar

▶ Mannitol Egg Yolk Polymyxin Agar (Base) see p. 2057

## Myricetin



3,3',4',5,5',7-Hexahydroxyflavone, Cannabiscetin
$C_{15}H_{10}O_8$
M 318,24 g/mol
mp >300 °C
Storage temp.: +4 °C
[529-44-2] • EC No. 208-463-2

### Myricetin

**≥95 %**

**Type analysis:**

Assay (HPLC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **6461.1** | 25 mg | glass | 30,00 € |

### Myricetin

**ROTICHROM® HPLC**

Reference substance for HPLC.

**Type analysis:**

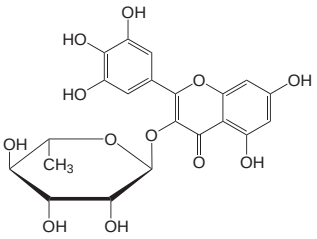
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **4187.1** | 10 mg | glass | 228,45 € |

## Myricetin-3-rhamnoside

▶ Myricitrin see p. 2086

## Myricitrin



### Myricitrin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Myrica cerifera*.

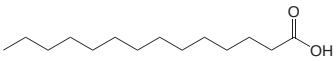
Myricetin-3-rhamnoside
$C_{21}H_{20}O_{12}$
Storage temp.: +4 °C
[17912-87-7] • EC No. 241-856-7

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **9391.1** | 10 mg | glass | 192,45 € |

## Myristic acid



### Myristic acid

**≥98 %, for biochemistry**

Tetradecanoic acid
$C_{14}H_{28}O_2$
M 228,38 g/mol
bp 326 °C
mp ~53 °C • flp >160 °C
Solubility: ~1 mg/l ($H_2O$, 25 °C)
Storage temp.: +4 °C
[544-63-8] • EC No. 208-875-2

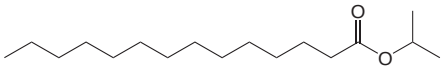
⚠ **Warning** H315

**Type analysis:**

Assay (GC). ..... 98-100 %
Acid value (mg KOH/g). ..... 244-248

| | | | |
|---|---|---|---|
| **6469.2** | 100 g | plastic | 12,40 € |
| **6469.3** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **6469.1** | 1 kg | plastic | 48,30 € |
| Original pack 6 x 1 kg | | | 45,89/1 kg |

## Myristic acid isopropyl ester



### Myristic acid isopropyl ester

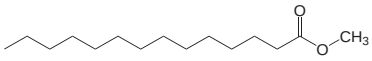
**≥92 %, extra pure**
Isopropyl myristate, IPM
$C_{17}H_{32}O_2$
M 270,46 g/mol
D 0,85 • bp 140 °C (3 mbar)
mp 1 °C • flp >150 °C
Solubility: <0,05 mg/l ($H_2O$, 20 °C)
[110-27-0] • EC No. 203-751-4

**Type analysis:**

| | |
|---|---|
| Assay | ≥92 % |
| Saponification value | 205-211 |
| Iodine value | ≤0,5 |
| Acid value | ≤0,1 |
| Viscosity | 5-6 mPa s |
| Relative density (20 °C) | 0,850-0,855 |
| Refractive index $n_D^{20}$ | 1,4335-1,4355 |

| | | | |
|---|---|---|---|
| **5527.1** | 500 ml | glass | 34,30 € |

## Myristic acid methyl ester



### Myristic acid methyl ester

**≥99 %**
Methyl myristate, Methyl tetradecanoate
$C_{15}H_{30}O_2$
M 242,40 g/mol
D 0,867 • bp 161-163 °C (17,3 hPa)
mp 17-19 °C • flp 112 °C
[124-10-7] • EC No. 204-680-1
WGK 1

**Type analysis:**

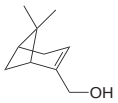
| | |
|---|---|
| Assay (GC, area %) | ≥99 % |

| | | | |
|---|---|---|---|
| **3753.1** | 50 ml | glass | 35,40 € |

## Myristyltrimethylammonium bromide

▶ Tetradecyltrimethylammonium bromide (MTAB) see p. 2336

## (1R)-(-)-Myrtenol



### (1R)-(-)-Myrtenol

**≥95 %**
$C_{10}H_{16}O$
M 152,24 g/mol
D 0,95 • bp 221-222 °C
[19894-97-4] • EC No. 243-409-1
WGK 1

**Type analysis:**

| | |
|---|---|
| Assay (GC) | ≥95,0 % |
| Specific rotation $[\alpha]_D^{20}$ | -53° to -49° |
| Refractive index (20 °C) | 1,494-1,498 |

| | | | |
|---|---|---|---|
| **7123.1** | 10 ml | glass | 46,15 € |

## Myrtillin

▶ Delphinidin 3-glucoside chloride see p. 1859

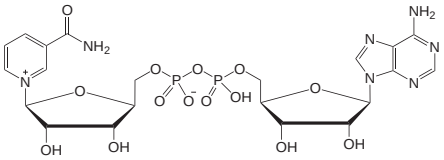
## NAA

▶ 1-Naphthyl acetic acid see p. 2089

## NAC

▶ N-Acetyl-L-cysteine see p. 1702

## NAD



### NAD

**≥97,5 %, for biochemistry**
NAD free acid, β-Nicotinamide adenine dinucleotide, DPN, Coenzyme I, β-NAD.
$C_{21}H_{27}N_7O_{14}P_2$
M 663,4 g/mol
Storage temp.: +4 °C
[53-84-9] • EC No. 200-184-4
WGK 1

**Type analysis:**

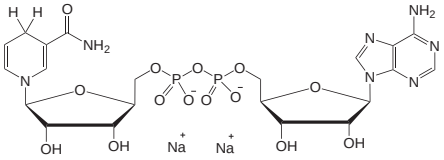
| | |
|---|---|
| Assay (encym., dry substance) | ≥97,5 % |
| Water (KF) | ≤3,5 % |
| UV-absorption: | |
| $A_{280}/A_{260}$ | 0,20-0,24 |
| $A_{250}/A_{260}$ | 0,81-0,85 |

| | | | |
|---|---|---|---|
| **AE11.1** | 1 g | glass | 29,60 € |
| **AE11.2** | 5 g | glass | 117,75 € |
| **AE11.3** | 10 g | glass | 205,90 € |

## NAD free acid

▶ NAD see p. 2087

## NADH disodium salt



### NADH disodium salt

**≥98 %, for biochemistry**
NADH-$Na_2$, β-Nicotinamide adenine dinucleotide disodium salt, DPNH$_2$-$Na_2$
$C_{21}H_{27}N_7O_{14}P_2Na_2$
M 709,4 g/mol
mp 140-142 °C
Storage temp.: +4 °C
[606-68-8] • EC No. 210-123-3
WGK 1

**Type analysis:**

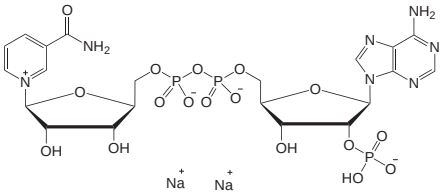
| | |
|---|---|
| Assay (encym., dry substance) | ≥98 % |
| Water (KF) | ≤6,0 % |
| UV-absorption: | |
| $A_{260}/A_{340}$ | ≤2,40 |
| $A_{260}/A_{240}$ | 1,57-2,17 |

| | | | |
|---|---|---|---|
| **AE12.1** | 1 g | glass | 44,00 € |
| **AE12.2** | 5 g | glass | 195,15 € |
| **AE12.3** | 10 g | glass | 353,70 € |

## NADH-$Na_2$

▶ NADH disodium salt see p. 2087

## NADP disodium salt



### NADP disodium salt

**≥97 %, for biochemistry**
NADP-$Na_2$, β-Nicotinamide adenine dinucleotide phosphate disodium salt.
$C_{21}H_{26}N_7O_{17}P_3Na_2$
M 787,4 g/mol
Storage temp.: +4 °C
[24292-60-2] • EC No. 246-129-8
WGK 1

**Type analysis:**

| | |
|---|---|
| Assay (encym., dry substance) | ≥97 % |
| Water (KF) | ≤6,0 % |
| UV-absorption: | |
| $A_{360}$ ($H_2O$) | ≤0,6 |
| $A_{340}$ (c=0,01 mg/l buffer, pH 7,0) | ≤0,005 |

| | | | |
|---|---|---|---|
| **AE13.1** | 250 mg | glass | 35,40 € |
| **AE13.2** | 500 mg | glass | 64,00 € |
| **AE13.3** | 1 g | glass | 120,95 € |

N

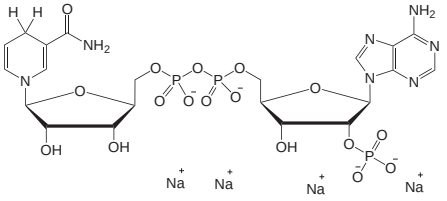
## $NADP\text{-}Na_2$

▶ NADP disodium salt see p. 2087

## $NADPH\text{-}Na_4$

▶ NADPH tetrasodium salt see p. 2088

## NADPH tetrasodium salt



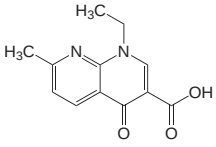
### NADPH tetrasodium salt

**≥97 %, for biochemistry**
$NADPH\text{-}Na_4$, β-Nicotinamide adenine dinucleotide phosphate tetrasodium salt.
$C_{21}H_{26}N_7O_{17}P_3Na_4$
M 833,4 g/mol
Storage temp.: +4 °C
[2646-71-1] • EC No. 220-163-3
WGK 1

**Type analysis:**
Assay (encym., dry substance)..... ≥97 %
Water (KF)..... ≤6,0 %
UV-absorption:
$A_{260}/A_{340}$..... 2,32-2,65

| | | | |
|---|---|---|---|
| **AE14.1** | 100 mg | glass | 80,55 € |
| **AE14.2** | 250 mg | glass | 180,10 € |
| **AE14.3** | 500 mg | glass | 317,15 € |

## Nalidixic acid



### Nalidixic acid

**≥99 %, for biochemistry**
Quinolon antibiotic
1,4-Dihydro-1-ethyl-7-methyl-1,8-naphthyridin-4-on-3-carbolic acid
$C_{12}H_{12}N_2O_3$
M 232,23 g/mol
mp 228-230 °C
Solubility: 0,1 g/l ($H_2O$, 23 °C)
[389-08-2] • EC No. 206-864-7
WGK 1
**Danger** H334-H317

**Type analysis:**
Assay (HPLC, dry substance)..... ≥99 %
Sulphated ash..... ≤0,1 %
Heavy metals..... ≤0,002 %
Loss on drying..... ≤0,5 %

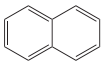
| | | | |
|---|---|---|---|
| **CN32.1** | 10 g | plastic | 17,10 € |
| **CN32.2** | 25 g | plastic | 32,80 € |
| **CN32.3** | 100 g | plastic | 99,90 € |

For further information, please see page 1431

## Nanoparticles

| Art. No. | Description | Page |
|---|---|---|
| 8250 | Aluminium oxide, nano | 1721 |
| 8256 | Cadmium telluride, λ max. 510 ±5 nm | 2188 |
| 8257 | Cadmium telluride, λ max. 570 ±5 nm | 2188 |
| 8258 | Cadmium telluride, λ max. 610 ±5 nm | 2188 |
| 8260 | Cadmium telluride, λ max. 710 ±5 nm | 2188 |
| 8261 | Cadmium telluride, λ max. 780 ±5 nm | 2188 |
| 8279 | Copper, nano | 1842 |
| 8251 | Copper(II) oxide, nano | 1845 |
| 8254 | Titanium(IV) oxide, nano | 2345 |
| 8278 | Zinc oxide, nano | 2388 |
| 8255 | Zirconium(IV) oxide, nano | 2389 |
| 8609 | Zn-Cu-In-S/ZnS | 2188 |
| 8610 | Zn-Cu-In-S/ZnS | 2188 |
| 8618 | Zn-Cu-In-S/ZnS | 2188 |
| 8614 | Zn-Cu-In-S/ZnS | 2188 |
| 8616 | Zn-Cu-In-S/ZnS | 2188 |
| 8615 | Zn-Cu-In-S/ZnS | 2188 |

## Naphthalene



### Naphthalene

**≥99 %**
$C_{10}H_8$
M 128,17 g/mol
bp 218 °C
mp 79-82 °C • flp 80 °C
Solubility: 0,03 g/l ($H_2O$, 25 °C)
[91-20-3] • EC No. 202-049-5
UN No. 1334 • ADR 4.1 III • WGK 3
**Warning**
H228-H302-H351-H410

**Type analysis:**
Assay..... ≥99,0 %
Melting point..... 79-81 °C

| | | | |
|---|---|---|---|
| **6714.1** | 100 g | plastic | 13,90 € |
| **6714.2** | 500 g | plastic | 30,00 € |
| Original pack 6 x 500 g | | | 28,50/500 g |
| **6714.3** | 1 kg | plastic | 49,35 € |
| Original pack 6 x 1 kg | | | 46,88/1 kg |
| **6714.4** | 2,5 kg | plastic | 89,80 € |
| **6714.5** | 5 kg | plastic | 142,45 € |

## 1-Naphthaleneacetic acid

▶ 1-Naphthyl acetic acid see p. 2089

## 1-Naphthol



### 1-Naphthol

**≥99,5 %, p.a.**
Reagent for carbohydrates.
α-Naphthol, 1-Hydroxynaphthalene
$C_{10}H_8O$
M 144,17 g/mol
D 1,28 • bp ~288 °C
mp 94-97 °C • flp 125 °C
Solubility: 0,1 g/l ($H_2O$, 20 °C)
[90-15-3] • EC No. 201-969-4
UN No. 2811 • ADR 6.1 III • WGK 1
**Danger**
H318-H302+H312-H335-H315

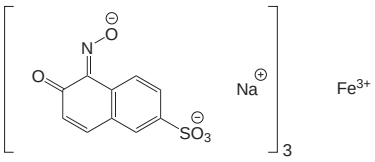
**Guarantee analysis:**
Assay (GC)..... ≥99,5 %
Sulphated ash..... ≤0,05 %
Chloride (Cl)..... ≤0,005 %
Iron (Fe)..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,001 %
Water (KF)..... ≤0,2 %

| | | | |
|---|---|---|---|
| **KK14.1** | 50 g | glass | 23,55 € |
| **KK14.2** | 100 g | glass | 36,05 € |

## Naphthol blue black

▶ Amido Black 10 B (C.I. 20470) see p. 1722

## Naphthol green B (C.I. 10020)



### Naphthol green B (C.I. 10020)

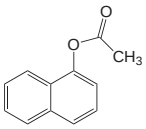
**for microscopy**
Acid green 1
$(C_{10}H_5NNaO_5S)_3Fe$
M 878,47 g/mol
Solubility: 160 g/l ($H_2O$, 20 °C)
[19381-50-1] • EC No. 243-010-2
WGK 1

**Type analysis:**
Appearance..... dark green powder
Absorption max. (in $H_2O$)..... 710-720 nm
Loss on drying (110 °C)..... ≤15 %

| | | | |
|---|---|---|---|
| **5161.1** | 25 g | glass | 19,25 € |
| **5161.2** | 100 g | glass | 46,15 € |

For further information, please see page 1465

## α-Naphthyl acetate



### α-Naphthyl acetate

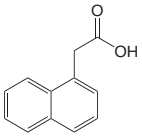
**≥99 %**
For determination of esterase.
$C_{12}H_{10}O_2$
M 186,21 g/mol
mp ~45 °C
Storage temp.: +4 °C
[830-81-9] • EC No. 212-599-8
WGK 1

**Danger** H318

**Type analysis:**
Appearance. ..... off-white, fine crystals
Assay (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **8509.1** | 25 g | plastic | 117,20 € |

## 1-Naphthyl acetic acid



### 1-Naphthyl acetic acid

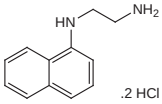
**≥99 %, p.a.**
1-Naphthaleneacetic acid, NAA
$C_{12}H_{10}O_2$
M 186,21 g/mol
mp ~130 °C
Solubility: 0,42 g/l ($H_2O$, 20 °C)
[86-87-3] • EC No. 201-705-8
WGK 2

**Warning** H302-H319

**Type analysis:**
Appearance. ..... white to off-white powder
Assay (acidim., titr.). ..... ≥99,0 %
Melting point. ..... 127-132 °C

| | | | |
|---|---|---|---|
| **4343.2** | 25 g | plastic | 19,90 € |
| **4343.1** | 100 g | plastic | 64,00 € |

## N-(1-Naphthyl)-ethylenediamine dihydrochloride



### N-(1-Naphthyl)-ethylenediamine dihydrochloride

**≥99 %, p.a.**
For the detection of sulphonamide and the determination of nitrite.
$C_{12}H_{14}N_2 \cdot 2\ HCl$
M 259,18 g/mol
mp 188-190 °C
[1465-25-4] • EC No. 215-981-2
WGK 2

**Warning** H315-H319-H335

**Guarantee analysis:**
Assay (dry substance). ..... ≥99 %
Loss on drying. ..... ≤5,0 %
Appearance of solution. ..... nearly clear, colourless to yellowish
Suitability for the detection of sulphonamide. ..... complies

| | | | |
|---|---|---|---|
| **4342.2** | 10 g | glass | 34,30 € |
| **4342.1** | 25 g | glass | 82,70 € |
| **4342.3** | 50 g | glass | 138,70 € |

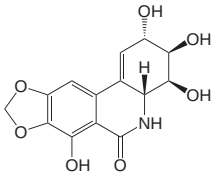
## Naramycin A

▶ Cycloheximide see p. 1852

## Narangetol

▶ Naringenin see p. 2089

## Narciclasine



### Narciclasine

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Narcissus pseudonarcissus.*
Lycoricidinol
$C_{14}H_{13}NO_7$
M 307,26 g/mol
Storage temp.: +4 °C
[29477-83-6]
UN No. 1544 • ADR 6.1 II • WGK 3

**Danger** H302-H340

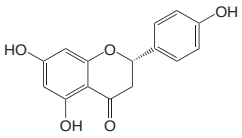
**Type analysis:**
Purity (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **6689.1** | 10 mg | glass | 418,20 € |

## Narcisin

▶ Isorhamnetin-3-rutinoside see p. 2017

## Naringenin



Narangetol, Pelarginadon,
4',5,7-Trihydroxyflavan
$C_{15}H_{12}O_5$
M 272,26 g/mol
mp 247-250 °C
Storage temp.: +4 °C
[480-41-1] • EC No. 207-550-2

**Warning** H302

### Naringenin

**≥95 %, for biochemistry**

**Guarantee analysis:**
Appearance. ..... cryst. powder
Assay (HPLC). ..... ≥95,0 %
Loss on drying. ..... ≤2 %

| | | | |
|---|---|---|---|
| **8524.1** | 2,5 g | glass | 70,45 € |

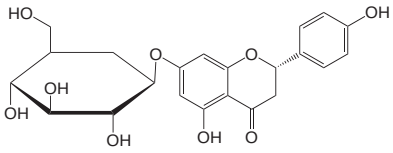
### Naringenin

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Citrus paradisi.*

**Type analysis:**
Purity (HPLC). ..... >98 %

| | | | |
|---|---|---|---|
| **1186.1** | 50 mg | glass | 439,70 € |

## Naringenin-7-glucoside



### Naringenin-7-glucoside

**ROTICHROM® HPLC**
Reference substance for HPLC.
Prunin
$C_{21}H_{22}O_{10}$
M 434,4 g/mol
mp 150-170 °C
Storage temp.: +4 °C
[529-55-5] • EC No. 208-464-8

**Warning** H302

**Type analysis:**
Purity (HPLC). ..... ≥99 %

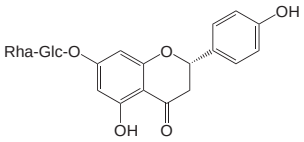
| | | | |
|---|---|---|---|
| **8865.1** | 10 mg | glass | 170,95 € |

N

## Naringenin-7-O-rutinoside

▶ Narirutin see p. 2090

## Naringin




$C_{27}H_{32}O_{14}$
M 580,53 g/mol
mp 171 °C
Storage temp.: +4 °C
[10236-47-2] • EC No. 233-566-4

### Naringin

**≥98 %**

**Type analysis:**

Appearance..... light yellow, cryst. powder
Assay (HPLC)..... ≥98 %
Heavy metals (as Pb)..... ≤0,001 %
Arsenic (As)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **6481.1** | 10 g | plastic | 27,85 € |
| **6481.2** | 50 g | plastic | 88,05 € |
| **6481.3** | 100 g | plastic | 160,20 € |

### Naringin

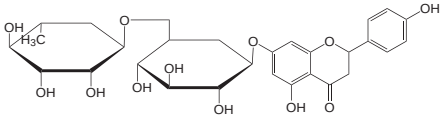
**ROTICHROM® HPLC**
Reference substance for HPLC.

**Type analysis:**

Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **4200.1** | 10 mg | glass | 149,45 € |

## Narirutin




### Narirutin

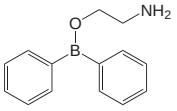
**ROTICHROM® HPLC**
Reference substance for HPLC.
Naringenin-7-O-rutinoside
$C_{27}H_{32}O_{14}$
M 580,61 g/mol
Storage temp.: +4 °C
[14259-46-2] • EC No. 238-138-0

**Type analysis:**

Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **5185.2** | 10 mg | glass | 295,65 € |

## Natural product reagent A




### Natural product reagent A

**≥98 %, p.a.**
Biochemical analytical reagent for determination of flavonoids and vegetable acids.
Diphenylboric acid β-aminoethyl ester complex
$C_{14}H_{16}BNO$
M 225,10 g/mol
mp ~191 °C
Storage temp.: +4 °C
[524-95-8]
WGK 3

**Warning** H315-H319-H335

**Type analysis:**

Appearance..... white cryst. powder
Assay..... ≥98 %
Melting point..... 190-194 °C

| | | | |
|---|---|---|---|
| **9920.1** | 5 g | plastic | 56,90 € |
| **9920.2** | 25 g | plastic | 154,30 € |
| **9920.3** | 50 g | plastic | 267,70 € |

For further information, please see page 1580

## Natural Red 28

▶ Orcein see p. 2125

## NBD-chloride

▶ 4-Chloro-7-nitro-benzofurazan see p. 1829

## NBS

▶ N-Bromosuccinimide see p. 1789

## NBT

▶ p-Nitrotetrazolium blue chloride see p. 2104

## NDF solution (neutral detergent solution)

### NDF solution (neutral detergent solution)

**for determination of neutral detergent fibre (NDF)**
Acc. to VDLUFA method book, volume 3.
D 1,02
WGK 2

**Danger** H360FD

| | | | |
|---|---|---|---|
| **9943.1** | 1 l | plastic | 100,95 € |
| Original pack 6 x 1 l | | | 95,90/1 l |

## Neisser's solution I

### Neisser's solution I

**for microscopy**
Solution for diphtheria staining acc. to Neisser.
Neisser's solution Ia, Methylene blue solution 0,1 %
WGK 1

| | | | |
|---|---|---|---|
| **3463.1** | 100 ml | glass | 19,25 € |
| **3463.2** | 500 ml | glass | 36,45 € |

## Neisser's solution Ia

▶ Neisser's solution I see p. 2090

## Neisser's solution Ib

▶ Neisser's solution II see p. 2090

## Neisser's solution II

### Neisser's solution II

**for microscopy**
Solution for diphtheria staining acc. to Neisser.
Neisser's solution Ib, Crystal violet solution
WGK 2

**Warning** H302-H371-H412

| | | | |
|---|---|---|---|
| **3464.1** | 100 ml | glass | 19,25 € |
| **3464.2** | 500 ml | glass | 36,45 € |

## Neisser's solution III

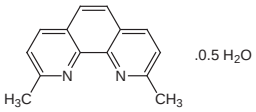
### Neisser's solution III

**for microscopy**
Solution for diphtheria staining acc. to Neisser.
Neisser's solution II, Chrysoidine solution 0,3 %
WGK 1

**Warning** H302-H371-H412

| | | | |
|---|---|---|---|
| **3466.1** | 100 ml | glass | 19,25 € |
| **3466.2** | 500 ml | glass | 36,45 € |

## Neocuproine hemihydrate




### Neocuproine hemihydrate

**≥99 %, p.a.**
Reagent for copper.
2,9-Dimethyl-1,10-phenanthroline
$C_{14}H_{12}N_2 \cdot 0,5\ H_2O$
M 217,27 g/mol
mp 159-164 °C
[34302-69-7] • EC No. 207-601-9
WGK 3

**Guarantee analysis:**

Assay.....≥99,0 %
Sulphated ash.....≤0,1 %
Solution (10 % in methanol)..... clear, max. 150 APHA
Suitability for determination of copper.....complies

| | | | |
|---|---|---|---|
| **KK32.1** | 1 g | glass | 21,00 € |
| **KK32.2** | 5 g | glass | 72,60 € |

## Neodymium Standards

▶ Neodymium ICP Standard Solution see p. 2299
▶ Neodymium ICP Standard Solution see p. 2304

## Neodymium(III) acetate hydrate

### Neodymium(III) acetate hydrate

**ROTI®REMETIC 99,9 %**
$Nd(CH_3CO_2)_3 \cdot x\ H_2O$
M 321,37 + x $H_2O$ g/mol
[6192-13-8] • EC No. 228-244-5
WGK 3

**Type analysis:**

Assay (TREO*)..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7107.1** | 50 g | plastic | 91,30 € |
| **7107.2** | 100 g | plastic | 155,90 € |

## Neodymium(III) carbonate hydrate

### Neodymium(III) carbonate hydrate

**ROTI®REMETIC 99,9 %**
$Nd_2(CO_3)_3 \cdot x\ H_2O$
M 468,51 + x $H_2O$ g/mol
[38245-38-4] • EC No. 227-579-4
WGK 2

**Type analysis:**

Assay (TREO*)..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7103.2** | 50 g | plastic | 112,35 € |

## Neodymium(III) nitrate hexahydrate

### Neodymium(III) nitrate hexahydrate

**ROTI®REMETIC 99,9 %**
$Nd(NO_3)_3 \cdot 6\ H_2O$
M 438,35 g/mol
Solubility: 1520 g/l ($H_2O$, 25 °C)
[16454-60-7] • EC No. 233-153-9
UN No. 1477 • ADR 5.1 III • WGK 3

**Danger** H272

**Type analysis:**

Assay (TREO*)..... 99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7097.1** | 25 g | plastic | 66,55 € |
| **7097.2** | 100 g | plastic | 153,20 € |

## Neodymium(III) oxide

### Neodymium(III) oxide

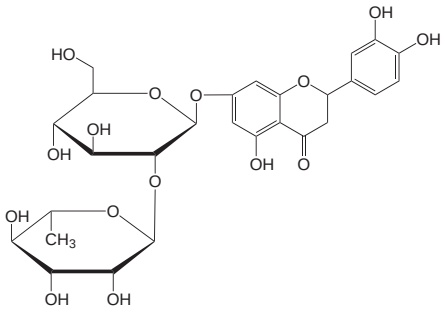
**ROTI®REMETIC 99,999 %**
Dineodym trioxide
$Nd_2O_3$
M 336,48 g/mol
bp 3760 °C
mp 2233 °C
Solubility: insoluble ($H_2O$, 20 °C)
[1313-97-9] • EC No. 215-214-1
WGK 1

**Type analysis:**

Assay (TREO*)..... 99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7092.1** | 5 g | plastic | 55,80 € |
| **7092.2** | 25 g | plastic | 220,40 € |

## Neoeriocitrin




### Neoeriocitrin

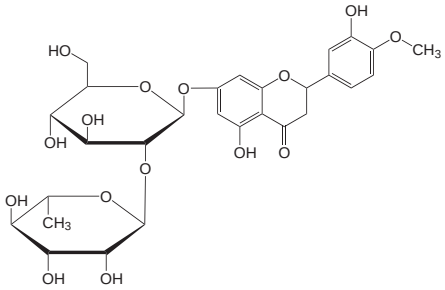
**ROTICHROM® HPLC**
Reference substance for HPLC.
Eriodictyol-7-neohesperidoside
$C_{27}H_{32}O_{15}$
M 596,54 g/mol
Storage temp.: +4 °C
[13241-32-2] • EC No. 236-215-3

**Type analysis:**

Purity (HPLC).....≥99 %

| | | | |
|---|---|---|---|
| **4206.1** | 10 mg | glass | 332,20 € |

## Neohesperidin




### Neohesperidin

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{28}H_{34}O_{15}$
M 610,56 g/mol
Storage temp.: +4 °C
[13241-33-3] • EC No. 236-216-9

**Type analysis:**

Purity (HPLC).....≥99 %

| | | | |
|---|---|---|---|
| **6767.1** | 10 mg | glass | 255,35 € |

N

## Neomycin sulphate

### Neomycin sulphate

**≥600 I.U./mg, for biochemistry**

Inhibitor for protein biosynthesis, aminoglycoside antibiotic.

$C_{23}H_{46}N_6O_{13} \cdot 3\ H_2SO_4$

Storage temp.: +4 °C

[1405-10-3] • EC No. 215-773-1

WGK 1

**Danger** H317-H334

**Type analysis:**

Assay (microbiol. activity). .....≥600 I.U./mg
Specific rotation $[\alpha]_D^{20}$. ..... +53,0° to +59,0°
pH value (10 % in $H_2O$).....5,0-7,5
Sulphated ash.....≤1,0 %
Water content. .....≤8,0 %

| | | | |
|---|---|---|---|
| **8668.1** | 10 g | plastic | 14,20 € |
| **8668.2** | 100 g | plastic | 64,40 € |

For further information, please see page 1431

## Neopentyl glycol

▶ 2,2-Dimethyl-1,3-propanediol see p. 1884

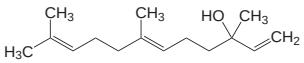
## NEP

▶ N-Ethyl-2-pyrrolidone (NEP) see p. 1921

## Neptune black

▶ Sudan black B (C.I. 26150) see p. 2320

## trans-Nerolidol



### trans-Nerolidol

**ROTICHROM® GC**

Reference substance for GC.

$C_{15}H_{26}O$

M 222,37 g/mol

flp 113 °C

Storage temp.: +4 °C

[40716-66-3] • EC No. 255-053-4

WGK 1

**Type analysis:**

Purity (GC).....≥89 %

| | | | |
|---|---|---|---|
| **6703.1** | 1 g | plastic | 81,20 € |

## Nessler's Reagent

### Nessler's Reagent

**For determination of ammonium**

Potassium tetraiodomercurate(II), Potassium mercuric iodide

$K_2[HgI_4]$

D 1,16

[7783-33-7] • EC No. 231-990-4

UN No. 2922 • ADR 8(6.1) I • WGK 2

**Danger**

H290-H301+H311-H314-H330-H373-H412

**Type analysis:**

Suitability for determination of ammonium..... complies

| | | | |
|---|---|---|---|
| **8132.1** | 100 ml | plastic | 31,75 € |

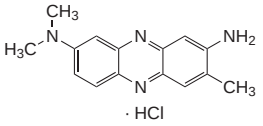
## Neuridine

▶ Spermine see p. 2291

## Neutral acriflavine

▶ Trypaflavine see p. 2359

## Neutral red (C.I. 50040)



### Neutral red (C.I. 50040)

**p.a.**

Indicator pH 6,8-8,0

Toluylene red

$C_{15}H_{17}ClN_4$

M 288,78 g/mol

Solubility: 50 g/l ($H_2O$, 25 °C)

[553-24-2] • EC No. 209-035-8

WGK 1

**Type analysis:**

pH-transition range..... 6,8 (red)-8,0 (orange-yellow)
Absorption max. (ethanol 50 %). ..... 538-544 nm
Loss on drying (135 °C)..... ≤12 %

| | | | |
|---|---|---|---|
| **T122.2** | 1 g | glass | 21,40 € |
| **T122.1** | 10 g | glass | 54,75 € |
| **T122.3** | 25 g | glass | 107,40 € |

For further information, please see page 1465

## NHS

▶ N-Hydroxysuccinimide see p. 1996

## NHS-PEG5-Alkyne

▶ NHS-PEG5-Alkyne see p. 2132

## NHS-PEG4-Azide

▶ NHS-PEG4-Azide see p. 2133

## Niacin

▶ Nicotinic acid see p. 2094

## Nickel powder

Ni

M 58,71 g/mol

D 8,90 • bp 2832 °C

mp 1453 °C

[7440-02-0] • EC No. 231-111-4

WGK 2

**Danger** H372-H351-H317-H412

### Nickel powder

**ROTI®METIC 99,995 % (4N5)**

Catalyst

**Type analysis:**

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5643.1** | 25 g | plastic | 75,15 € |
| **5643.2** | 100 g | plastic | 239,20 € |

### Nickel powder

**≥99 %, <63 µm**

Catalyst

**Type analysis:**

Assay (Ni). .....≥99 %

| | | | |
|---|---|---|---|
| **CP22.1** | 100 g | plastic | 28,95 € |

## Nickel foil

### Nickel foil

NEW

**99,99 % (4N), foil**

Foil 50 mm long, 25 mm wide, 0,25 mm thick.

Ni

M 58,71 g/mol

D 8,90 • bp 2832 °C

mp 1453 °C

[7440-02-0] • EC No. 231-111-4

WGK 2

**Danger** H317-H351-H372

**Type analysis:**

Purity.....99,99 %

| | | | |
|---|---|---|---|
| **0529.1** | 1 piece | plastic | 91,30 € |
| **0529.2** | 5 pieces | plastic | 418,20 € |

## Nickel Standards

▶ Nickel AAS Standard Solution see p. 2295
▶ Nickel ICP Standard Solution see p. 2299
▶ Nickel ICP Standard Solution see p. 2304

## Nickel agarose beads

▶ Roti®garose-His/Ni Beads see p. 2217

## Nickel-aluminium alloy

### Nickel-aluminium alloy

**50/50 % Ni/Al powder, for synthesis**

NEW

For the production of Raney® nickel.

Aluminium-nickel alloy
Ni:Al
D 4,3
mp ~1460 °C
Solubility: insoluble ($H_2O$)
[12635-29-9]
UN No. 1396 • ADR 4.3 III • WGK 2

**Danger**
H261-H317-H351-H372-H412

**Guarantee analysis:**

Appearance. ..... grey to grey black cryst. powder
Aluminium (Al). ..... 47,0-52,0 %
Nickel (Ni). ..... 48,0-53,0 %
Particle size. ..... 100-160 mesh

| | | | |
|---|---|---|---|
| **0663.1** | 50 g | plastic | 17,10 € |
| **0663.2** | 250 g | plastic | 75,15 € |
| **0663.3** | 500 g | plastic | 134,40 € |
| Original pack 6 x 500 g | | | 127,68/500 g |

## Nickel(II) bromide hydrate

### Nickel(II) bromide hydrate

**pure**

$NiBr_2 \cdot x\ H_2O$
M 218,51 + x $H_2O$ g/mol
mp 300 °C (dec.)
[207569-11-7]
UN No. 3077 • ADR 9 III • WGK 3

**Danger**
H317-H334-H341-H350-H360D-H372-H410

**Type analysis:**

Appearance. ..... yellow to green crystals
Nickel (Ni). ..... 19,0-23,0 %

| | | | |
|---|---|---|---|
| **8680.2** | 25 g | plastic | 67,65 € |

## Nickel charged IMAC columns

▶ Roti®garose-His/Ni Cartridges see p. 2217
▶ Roti®garose-His/Ni Columns see p. 2217

## Nickel(II) chloride hexahydrate

Nickelous chloride
$NiCl_2 \cdot 6\ H_2O$
M 237,70 g/mol
D 1,92
mp 140 °C (dec.)
Solubility: 553 g/l ($H_2O$, 20 °C)
[7791-20-0] • EC No. 231-743-0
UN No. 3288 • ADR 6.1 III • WGK 3

**Danger** H301+H331-H315-H317-H334-H341-H350i-H360D-H372-H410

### Nickel(II) chloride hexahydrate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5373.1** | 50 g | plastic | 321,45 € |

### Nickel(II) chloride hexahydrate

**≥98 %, p.a.**

**Guarantee analysis:**

Assay (compl.). ..... ≥98 %
pH value (5 % solution). ..... ≥3,0
In $H_2O$ insoluble matter. ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,02 %
Lead (Pb). ..... ≤0,003 %
Sodium (Na). ..... ≤0,05 %
Cadmium (Cd). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,001%
Potassium (K). ..... ≤0,01 %
Cobalt (Co). ..... ≤0,01 %
Copper (Cu). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **4489.1** | 100 g | plastic | 44,00 € |
| **4489.2** | 250 g | plastic | 93,00 € |

### Nickel(II) chloride hexahydrate

**≥97 %, extra pure**

**Type analysis:**

Assay. ..... ≥97,0 %
Arsenic (As). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Insoluble matter. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **7312.1** | 250 g | plastic | 21,40 € |
| **7312.2** | 500 g | plastic | 36,45 € |
| Original pack 6 x 500 g | | | 34,63/500 g |
| **7312.3** | 1 kg | plastic | 64,40 € |
| Original pack 6 x 1 kg | | | 61,18/1 kg |
| **7312.4** | 2,5 kg | plastic | 138,70 € |

## Nickel matrix modifier

▶ Nickel nitrate matrix modifier solution see p. 2059

## Nickel monoxide

▶ Nickel(II) oxide see p. 2094

## Nickel(II) nitrate hexahydrate

Nickelous nitrate
$Ni(NO_3)_2 \cdot 6\ H_2O$
M 290,81 g/mol
bp 136 °C
mp 56,7 °C
Solubility: 940 g/l ($H_2O$, 20 °C)
[13478-00-7] • EC No. 236-068-5
UN No. 2725 • ADR 5.1 III • WGK 3

**Danger** H272-H334-H341-H350i-H360D-H372-H318-H410-H302+H332-H315-H317

### Nickel(II) nitrate hexahydrate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5387.1** | 100 g | plastic | 220,40 € |
| **5387.2** | 500 g | plastic | 729,95 € |
| Original pack 6 x 500 g | | | 693,45/500 g |

### Nickel(II) nitrate hexahydrate

**≥99 %, p.a.**

For manufacturing of Ni/Cd batteries.

**Guarantee analysis:**

Assay (compl.). ..... ≥99 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,002 %
Sulphate ($SO_4$). ..... ≤0,01 %
Ammonium ($NH_4$). ..... ≤0,5 %
Lead (Pb). ..... ≤0,003 %
Cadmium (Cd). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,1 %
Iron (Fe). ..... ≤0,002 %
Cobalt (Co). ..... ≤0,001 %
Copper (Cu). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **4395.1** | 100 g | plastic | 26,80 € |
| **4395.2** | 250 g | plastic | 55,80 € |
| **4395.3** | 500 g | plastic | 101,60 € |
| Original pack 6 x 500 g | | | 96,52/500 g |

### Nickel(II) nitrate hexahydrate

NEW

**≥98 %, extra pure**

**Type analysis:**

Assay. ..... ≥98,0 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,001 %
Iron (Fe). ..... ≤0,005 %
Copper (Cu). ..... ≤0,005 %
pH (5 % $H_2O$, 25 °C). ..... 4,0-6,5

| | | | |
|---|---|---|---|
| **0337.1** | 100 g | plastic | 17,10 € |
| **0337.2** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **0337.3** | 1 kg | plastic | 57,95 € |
| Original pack 6 x 1 kg | | | 55,05/1 kg |
| **0337.4** | 2,5 kg | plastic | 127,95 € |

N

## Nickel nitrate matrix modifier solution

▶ Matrix modifier solution Nickel nitrate see p. 2059

## Nickelous chloride

▶ Nickel(II) chloride hexahydrate see p. 2093

## Nickel(II) oxide

Nickel monoxide, Oxonickel
NiO
M 74,69 g/mol
D 6,72
mp 1955 °C
Solubility: insoluble
[1313-99-1] • EC No. 215-215-7
WGK 1

**Danger** H317-H350i-H372-H413

### Nickel(II) oxide

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5388.1** | 50 g | plastic | 224,70 € |
| **5388.2** | 100 g | plastic | 403,15 € |

### Nickel(II) oxide

**≥78 % Ni, p.a., green, 325 mesh**

**Guarantee analysis:**

Appearance..... green powder
Assay (Ni)..... ≥78 %
Aluminium (Al)..... ≤0,05 %
Iron (Fe)..... ≤0,1 %
Cobalt (Co)..... ≤0,1 %
Copper (Cu)..... ≤0,05 %
Manganese (Mn)..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9996.1** | 100 g | plastic | 21,40 € |
| **9996.2** | 500 g | plastic | 64,40 € |
| Original pack 6 x 500 g | | | 61,18/500 g |
| **9996.3** | 1 kg | plastic | 106,45 € |
| Original pack 6 x 1 kg | | | 101,13/1 kg |

### Nickel(II) oxide

**≥75 % Ni, p.a., black, 400 mesh**

**Guarantee analysis:**

Appearance..... black powder
Assay (Ni)..... ≥75,0 %
Iron (Fe)..... ≤0,01 %
Cobalt (Co)..... ≤0,05 %
Copper (Cu)..... ≤0,01 %
Manganese (Mn)..... ≤0,01 %
Particle size:
<37 µm..... ≥99 %

| | | | |
|---|---|---|---|
| **9925.1** | 100 g | plastic | 21,40 € |
| **9925.2** | 500 g | plastic | 64,40 € |
| Original pack 6 x 500 g | | | 61,18/500 g |
| **9925.3** | 1 kg | plastic | 106,45 € |
| Original pack 6 x 1 kg | | | 101,13/1 kg |

## Nickel(II) sulphate hexahydrate

$NiSO_4 \cdot 6\ H_2O$
M 262,86 g/mol
D 2,07
mp >100 °C (dec.)
Solubility: 650 g/l ($H_2O$, 20 °C)
[10101-97-0] • EC No. 232-104-9
UN No. 3077 • ADR 9 III • WGK 3

**Danger** H302+H332-H315-H334-H317-H341-H350i-H360D-H372-H400-H410

### Nickel(II) sulphate hexahydrate

**≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay (compl.)..... ≥99,0 %
In $H_2O$ insoluble matter..... ≤0,005 %
Total nitrogen (as N)..... ≤0,002 %
Chloride (Cl)..... ≤0,001 %
Lead (Pb)..... ≤0,002 %
Calcium (Ca)..... ≤0,005 %
Iron (Fe)..... ≤0,001 %
Potassium (K)..... ≤0,01 %
Cobalt (Co)..... ≤0,002 %
Copper (Cu)..... ≤0,002 %
Magnesium (Mg)..... ≤0,005 %
Manganese (Mn)..... ≤0,002 %
Sodium (Na)..... ≤0,05 %
Zinc (Zn)..... ≤0,002 %

| | | | |
|---|---|---|---|
| **T111.1** | 250 g | plastic | 66,55 € |
| **T111.2** | 1 kg | plastic | 231,15 € |
| Original pack 6 x 1 kg | | | 219,59/1 kg |

### Nickel(II) sulphate hexahydrate

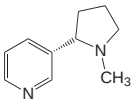
**≥98 %, extra pure**

**Type analysis:**

Assay..... ≥98,0 %
Lead (Pb)..... ≤0,001 %
Iron (Fe)..... ≤0,001 %
Copper (Cu)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **7322.1** | 250 g | plastic | 24,65 € |
| **7322.2** | 500 g | plastic | 35,40 € |
| Original pack 6 x 500 g | | | 33,63/500 g |
| **7322.3** | 1 kg | plastic | 60,10 € |
| Original pack 6 x 1 kg | | | 57,10/1 kg |
| **7322.4** | 2,5 kg | plastic | 119,90 € |

## (-)-Nicotine




### (-)-Nicotine

**≥99 %, for biochemistry**

$C_{10}H_{14}N_2$
M 162,24 g/mol
D 1,01 • bp 247 °C
mp -79 °C • flp 101 °C
[54-11-5] • EC No. 200-193-3
UN No. 1654 • ADR 6.1 II • WGK 3

**Danger** H301-H310-H410

**Type analysis:**

Assay (GC)..... ≥99 %
Specific rotation $[\alpha]_D^{20}$..... -168° to -164°

| | | | |
|---|---|---|---|
| **8746.1** | 10 g | glass | 27,85 € |

## β-Nicotine amide adenine dinucleotide

▶ NAD see p. 2087

## β-Nicotine amide adenine dinucleotide disodium salt

▶ NADH disodium salt see p. 2087

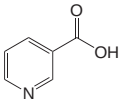
## β-Nicotine amide adenine dinucleotide phosphate disodium salt

▶ NADP disodium salt see p. 2087

## β-Nicotine amide adenine dinucleotide phosphate tetrasodium salt

▶ NADPH tetrasodium salt see p. 2088

## Nicotinic acid




### Nicotinic acid

**≥99 %, for biochemistry**

3-Pyridinecarboxylic acid, Niacin, Vitamin $B_3$
$C_6H_5NO_2$
M 123,11 g/mol
D 1,47
mp 236 °C • flp 193 °C
Solubility: 18 g/l ($H_2O$, 20 °C)
[59-67-6] • EC No. 200-441-0
WGK 1

**Warning** H319

**Type analysis:**

Appearance..... white, cryst. powder
Assay (titr. dry substance)..... 99,5-100,5 %
Chloride (Cl)..... ≤0,02 %
Sulphate ($SO_4$)..... ≤0,02 %
Heavy metals (as Pb)..... ≤0,002 %
Loss on drying (105 °C)..... ≤1,0 %
Sulphated ash..... ≤0,1 %
Melting temperature..... 234-240 °C

| | | | |
|---|---|---|---|
| **3815.1** | 100 g | plastic | 31,75 € |
| **3815.2** | 250 g | plastic | 64,00 € |

## Nigrosin, soluble in alcohol (C.I. 50415)

### Nigrosin, soluble in alcohol (C.I. 50415)

**extra pure**
[11099-03-9]
WGK 3

**Type analysis:**
Appearance. ..... black powder

| | | | |
|---|---|---|---|
| **7716.1** | 5 g | glass | 13,90 € |
| **7716.2** | 25 g | glass | 24,65 € |
| **7716.3** | 100 g | glass | 48,95 € |

## Nigrosin, water soluble (C.I. 50420)

### Nigrosin, water soluble (C.I. 50420)

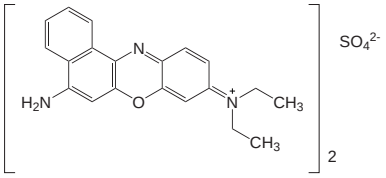
**for microscopy**
Acid black 2
[8005-03-6]
WGK 3

**Type analysis:**
Appearance. ..... black powder
Appearance of solution (0,1 % in $H_2O$). ..... black to purple

| | | | |
|---|---|---|---|
| **7718.1** | 25 g | glass | 13,90 € |
| **7718.2** | 100 g | glass | 35,40 € |

For further information, please see page 1466

## Nile blue A (C.I. 51180)



### Nile blue A (C.I. 51180)

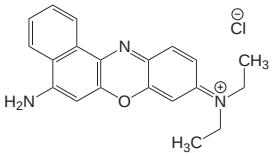
**~80 %**
Nile blue sulphate
$C_{40}H_{40}N_6O_6S$
M 732,84 g/mol
mp >300 °C (dec.)
Solubility: ~50 g/l ($H_2O$, 25 °C)
[3625-57-8] • EC No. 222-832-5
WGK 2

**Type analysis:**
Appearance. ..... dark green powder
Dye content. ..... ~80 %
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **4377.2** | 5 g | glass | 17,10 € |
| **4377.1** | 10 g | glass | 28,95 € |
| **4377.3** | 25 g | glass | 46,15 € |

For further information, please see page 1466

## Nile blue chloride (C.I. 51180)



### Nile blue chloride (C.I. 51180)

**extra pure**
Indicator pH 9,4-11,0
$C_{20}H_{20}ClN_3O$
M 353,85 g/mol
[2381-85-3]
WGK 3

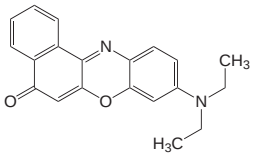
**Type analysis:**
Appearance..... dark green to black powder
Solubility (0,2 % in $H_2O$). ..... complies
Loss on drying (1 h, 110 °C). ..... ≤10 %

| | | | |
|---|---|---|---|
| **7723.1** | 5 g | glass | 24,65 € |
| **7723.2** | 25 g | glass | 72,60 € |
| **7723.3** | 100 g | glass | 177,40 € |

## Nile blue sulphate

▶ Nile blue A (C.I. 51180) see p. 2095

## Nile red



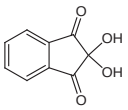
### Nile red

**extra pure**
Fluorescent dye
$C_{20}H_{18}N_2O_2$
M 318,38 g/mol
mp 203-205 °C
[7385-67-3]
WGK 3

**Type analysis:**
Appearance..... brown to green cryst. powder

| | | | |
|---|---|---|---|
| **7726.1** | 1 g | glass | 35,40 € |
| **7726.2** | 5 g | glass | 145,15 € |
| **7726.3** | 10 g | glass | 241,90 € |

## Ninhydrin



### Ninhydrin

**≥99 %, p.a., ACS**
For the detection of amino acids.
2,2-Dihydroxyindane-1,3-dione, Indanetrione hydrate
$C_9H_6O_4$
M 178,15 g/mol
mp ~250 °C (dec.)
Solubility: 20 g/l ($H_2O$, 20 °C)
[485-47-2] • EC No. 207-618-1
WGK 1

**Warning** H302-H315-H319-H335

**Guarantee analysis:**
Appearance. ..... yellowish crystals or cryst. powder
Assay. ..... ≥99,0 %
Solubility (0,1 g/10 ml $H_2O$). ..... conforms to ACS
Loss on drying (105 °C). ..... ≤11,0 %
Melting point. ..... conforms to ACS
Sensitivity..... conforms to ACS
Application: 0,1 % in ethanol for determination of amino acids in chromatography.

| | | | |
|---|---|---|---|
| **4378.1** | 25 g | glass | 38,60 € |
| **4378.2** | 100 g | glass | 99,90 € |
| **4378.3** | 500 g | glass | 364,45 € |
| Original pack 6 x 500 g | | | 346,23/500 g |

For further information, please see page 1580

## Ninhydrin spray solution

### Ninhydrin spray solution

**for TLC**
Ready-to-use spray solution for detection of amino acids, amines and amino sugars.
0,5 g Ninhydrin dissolved in 100 ml ethanol.
UN No. 1993 • ADR 3 II • WGK 1

**Danger** H225

**Type analysis:**
TLC-application..... complies

| | | | |
|---|---|---|---|
| **CP30.1** | 100 ml | glass | 36,90 € |

## Niobium Standards

▶ Niobium ICP Standard Solution see p. 2299
▶ Niobium ICP Standard Solution see p. 2304

N

## Niobium(V) oxide

### Niobium(V) oxide

**≥99,9 %**

$Nb_2O_5$

M 265,81 g/mol

D 4,55

Solubility: insoluble ($H_2O$, 20 °C)

[1313-96-8] • EC No. 215-213-6

**Type analysis:**

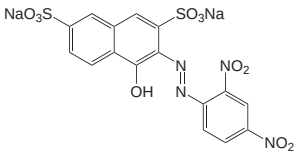
| | |
|---|---|
| Appearance | white powder |
| Assay | ≥99,9 % |
| Loss on ignition | ≤0,4 % |
| Iron (Fe) | ≤0,003 % |
| Nickel (Ni) | ≤0,002 % |
| Silicon (Si) | ≤0,003 % |
| Tantal (Ta) | ≤0,015 % |
| Titanium (Ti) | ≤0,0002 % |
| Tungsten (W) | ≤0,0005 % |
| Zirconium (Zr) | ≤0,0002 % |

| | | | |
|---|---|---|---|
| **4381.1** | 50 g | plastic | 99,45 € |
| **4381.2** | 250 g | plastic | 439,70 € |

## Nitrate Standards

▶ Nitrate IC Standard Solution see p. 2311

## Nitrazine yellow (C.I. 14890)




### Nitrazine yellow (C.I. 14890)

**p.a.**

Indicator pH 6,0-7,2

$C_{16}H_8N_4Na_2O_{11}S_2$

M 542,36 g/mol

mp >250 °C

[5423-07-4]

WGK 3

**Type analysis:**

| | |
|---|---|
| Appearance | brown to orange powder |
| Appearance of solution (0,1 % in $H_2O$) | clear, yellow to brown |
| pH-transition range | 6,0 (yellow)-7,2 (blue) |

| | | | |
|---|---|---|---|
| **7727.1** | 1 g | glass | 16,05 € |
| **7727.2** | 5 g | glass | 57,95 € |
| **7727.3** | 10 g | glass | 105,25 € |

## Nitric acid Ultra-quality

### Nitric acid Ultra-quality

**ROTIPURAN® Ultra 69 %**

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.

$HNO_3$

M 63,01 g/mol • D 1,41 • bp 120 °C

[7697-37-2] • EC No. 231-714-2

UN No. 2031 • ADR 8 (5.1) II • WGK 1

**Danger** H272-H290-H314-EUH071

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 67-69 % |
| Aluminium (Al) | ≤20 ppt |
| Antimony (Sb) | ≤10 ppt |
| Arsenic (As) | ≤20 ppt |
| Barium (Ba) | ≤10 ppt |
| Beryllium (Be) | ≤10 ppt |
| Lead (Pb) | ≤10 ppt |
| Boron (B) | ≤10 ppt |
| Cadmium (Cd) | ≤10 ppt |
| Cesium (Cs) | ≤10 ppt |
| Calcium (Ca) | ≤10 ppt |
| Cerium (Ce) | ≤10 ppt |
| Chromium (Cr) | ≤10 ppt |
| Dysprosium (Dy) | ≤1 ppt |
| Iron (Fe) | ≤10 ppt |
| Erbium (Er) | ≤1 ppt |
| Europium (Eu) | ≤1 ppt |
| Gadolinium (Gd) | ≤1 ppt |
| Gallium (Ga) | ≤10 ppt |
| Germanium (Ge) | ≤10 ppt |
| Gold (Au) | ≤20 ppt |
| Hafnium (Hf) | ≤10 ppt |
| Holmium (Ho) | ≤1 ppt |
| Indium (In) | ≤1 ppt |
| Potassium (K) | ≤10 ppt |
| Cobalt (Co) | ≤10 ppt |
| Copper (Cu) | ≤10 ppt |
| Lanthanum (La) | ≤1 ppt |
| Lithium (Li) | ≤10 ppt |
| Lutetium (Lu) | ≤1 ppt |
| Magnesium (Mg) | ≤10 ppt |
| Manganese (Mn) | ≤10 ppt |
| Molybdenum (Mo) | ≤10 ppt |
| Sodium (Na) | ≤10 ppt |
| Neodymium (Nd) | ≤1 ppt |
| Nickel (Ni) | ≤20 ppt |
| Niobium (Nb) | ≤1 ppt |
| Palladium (Pd) | ≤20 ppt |
| Platinum (Pt) | ≤20 ppt |
| Praseodymium (Pr) | ≤1 ppt |
| Mercury (Hg) | ≤50 ppt. |
| Rhenium (Re) | ≤10 ppt |
| Rhodium (Rh) | ≤10 ppt |
| Rubidium (Rb) | ≤10 ppt |
| Ruthenium (Ru) | ≤20 ppt |
| Samarium (Sm) | ≤1 ppt |
| Scandium (Sc) | ≤10 ppt |
| Silver (Ag) | ≤10 ppt |
| Strontium (Sr) | ≤10 ppt |
| Tellur (Te) | ≤1 ppt |
| Terbium (Tb) | ≤1 ppt |
| Thallium (Tl) | ≤10 ppt |
| Thorium (Th) | ≤1 ppt |
| Thulium (Tm) | ≤1 ppt |
| Titanium (Ti) | ≤10 ppt |
| Uranium (U) | ≤1 ppt |
| Vanadium (V) | ≤10 ppt |
| Bismuth (Bi) | ≤10 ppt |
| Tungsten (W) | ≤10 ppt |
| Ytterbium (Yb) | ≤1 ppt |
| Yttrium (Y) | ≤1 ppt |
| Zinc (Zn) | ≤10 ppt |
| Tin (Sn) | ≤20 ppt |
| Zirconium (Zr) | ≤10 ppt |

| | | | |
|---|---|---|---|
| **HN60.1** | 250 ml | plastic (FEP) | 356,80 € |
| **HN60.2** | 500 ml | plastic (FEP) | 489,15 € |
| **HN60.3** | 1 l | plastic (FEP) | 790,15 € |
| Original pack 6 x 1 l | | | 750,64/1 l |
| **HN60.4** | 2 l | plastic (FEP) | 1209,40 € |

For further information, please see page 1665

## Nitric acid Supra-quality

### Nitric acid Supra-quality

**ROTIPURAN® Supra 69 %**

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

$HNO_3$

M 63,01 g/mol • D 1,41 • bp 120 °C

[7697-37-2] • EC No. 231-714-2

UN No. 2031 • ADR 8 (5.1) II • WGK 1

**Danger** H272-H290-H314-EUH071

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 67-69 % |
| Colour (APHA) | ≤10 |
| Chloride (Cl) | ≤0,00002 % |
| Total Phosphorous (P) | ≤0,000001 % |
| Total Sulfur (S) | ≤0,00003 % |
| Aluminium (Al) | ≤1 ppb |
| Antimony (Sb) | ≤0,5 ppb |
| Arsenic (As) | ≤0,5 ppb |
| Barium (Ba) | ≤0,1 ppb |
| Beryllium (Be) | ≤0,1 ppb |
| Lead (Pb) | ≤0,1 ppb |
| Boron (B) | ≤1 ppb |
| Cadmium (Cd) | ≤0,5 ppb |
| Cesium (Cs) | ≤0,1 ppb |
| Calcium (Ca) | ≤1 ppb |
| Cerium (Ce) | ≤0,1 ppb |
| Chromium (Cr) | ≤1 ppb |
| Dysprosium (Dy) | ≤0,1 ppb |
| Iron (Fe) | ≤1 ppb |
| Erbium (Er) | ≤0,1 ppb |
| Europium (Eu) | ≤0,1 ppb |
| Gadolinium (Gd) | ≤0,1 ppb |
| Gallium (Ga) | ≤0,1 ppb |
| Germanium (Ge) | ≤0,1 ppb |
| Gold (Au) | ≤0,1 ppb |
| Hafnium (Hf) | ≤0,1 ppb |
| Holmium (Ho) | ≤0,1 ppb |
| Indium (In) | ≤0,1 ppb |
| Potassium (K) | ≤1 ppb |
| Cobalt (Co) | ≤0,5 ppb |
| Copper (Cu) | ≤0,5 ppb |
| Lanthanum (La) | ≤0,1 ppb |
| Lithium (Li) | ≤0,1 ppb |
| Lutetium (Lu) | ≤0,1 ppb |
| Magnesium (Mg) | ≤1 ppb |
| Manganese (Mn) | ≤0,1 ppb |
| Molybdenum (Mo) | ≤0,1 ppb |
| Sodium (Na) | ≤1 ppb |
| Neodymium (Nd) | ≤0,1 ppb |
| Nickel (Ni) | ≤0,5 ppb |
| Niobium (Nb) | ≤0,1 ppb |
| Palladium (Pd) | ≤0,5 ppb |
| Platinum (Pt) | ≤0,5 ppb |
| Praseodymium (Pr) | ≤0,1 ppb |
| Mercury (Hg) | ≤0,1 ppb |
| Rhenium (Re) | ≤0,1 ppb |
| Rhodium (Rh) | ≤0,5 ppb |
| Rubidium (Rb) | ≤0,1 ppb |
| Ruthenium (Ru) | ≤0,5 ppb |
| Samarium (Sm) | ≤0,1 ppb |
| Scandium (Sc) | ≤0,1 ppb |
| Selenium (Se) | ≤1 ppb |
| Silver (Ag) | ≤0,1 ppb |
| Strontium (Sr) | ≤0,1 ppb |
| Tellur (Te) | ≤0,1 ppb |
| Terbium (Tb) | ≤0,1 ppb |
| Thallium (Tl) | ≤0,1 ppb |
| Thorium (Th) | ≤0,1 ppb |
| Thulium (Tm) | ≤0,1 ppb |
| Titanium (Ti) | ≤0,5 ppb |
| Uranium (U) | ≤0,1 ppb |
| Vanadium (V) | ≤0,5 ppb |
| Bismuth (Bi) | ≤0,1 ppb |
| Tungsten (W) | ≤0,1 ppb |
| Ytterbium (Yb) | ≤0,1 ppb |
| Yttrium (Y) | ≤0,1 ppb |
| Zinc (Zn) | ≤0,5 ppb |
| Tin (Sn) | ≤0,5 ppb |
| Zirconium (Zr) | ≤0,1 ppb |

| | | | |
|---|---|---|---|
| **HN50.1** | 500 ml | plastic | 71,95 € |
| **HN50.2** | 1 l | plastic | 118,15 € |
| Original pack 6 x 1 l | | | 112,24/1 l |
| **HN50.3** | 2,5 l | plastic | 128,90 € |
| Original pack 4 x 2,5 l | | | 122,46/2,5 l |

For further information, please see page 1665

## Nitric acid 68 %

### Nitric acid 68 %

**68 %, extra pure**

$HNO_3$
M 63,0 g/mol
D 1,41
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8(5.1) II • WGK 1

**Danger** H272-H290-H314-EUH071

**Type analysis:**

| | |
|---|---|
| Assay | 67,5-68,5 % |
| Chloride (Cl) | ≤0,001 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Lead (Pb) | ≤0,0005 % |
| Iron (Fe) | ≤0,0005 % |
| Ash content | ≤0,005 % |

| | | | |
|---|---|---|---|
| **2616.1** | 250 ml | glass | 13,90 € |
| **2616.2** | 1 l | glass | 24,65 € |
| Original pack 6 x 1 l | | | 23,42/1 l |
| **2616.3** | 2,5 l | glass | 39,70 € |
| Original pack 4 x 2,5 l | | | 37,72/2,5 l |

## Nitric acid 65 %

$HNO_3$
M 63,0 g/mol
D 1,3-1,4
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 (5.1) II • WGK 1

**Danger** H272-H290-H314-EUH071

### Nitric acid 65 %

**ROTIPURAN® 65 %, p.a., ISO, max. 0,005 ppm Hg**

Dissolving agent for organic and anorganic samples. For determination of mercury.

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥65 % |
| Chloride (Cl) | ≤0,00005 % |
| Sulphate ($SO_4$) | ≤0,0002 % |
| Phosphate ($PO_4$) | ≤0,0001 % |
| Mercury (Hg) | ≤0,0000005 % |
| Silver (Ag) | ≤0,000002 % |
| Aluminium (Al) | ≤0,000005 % |
| Arsenic (As) | ≤0,000001 % |
| Barium (Ba) | ≤0,000002 % |
| Beryllium (Be) | ≤0,000002 % |
| Calcium (Ca) | ≤0,00005 % |
| Cadmium (Cd) | ≤0,000001 % |
| Cobalt (Co) | ≤0,000002 % |
| Chromium (Cr) | ≤0,00001 % |
| Copper (Cu) | ≤0,000001 % |
| Iron (Fe) | ≤0,00002 % |
| Potassium (K) | ≤0,00001 % |
| Lithium (Li) | ≤0,000002 % |
| Magnesium (Mg) | ≤0,00001 % |
| Manganese (Mn) | ≤0,000001 % |
| Sodium (Na) | ≤0,00005 % |
| Nickel (Ni) | ≤0,000005 % |
| Lead (Pb) | ≤0,000002 % |
| Strontium (Sr) | ≤0,000002 % |
| Zinc (Zn) | ≤0,000005 % |
| Ash content (as $SO_4$) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **X943.1** | 1 l | glass | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |
| **X943.2** | 2,5 l | glass | 60,10 € |
| Original pack 4 x 2,5 l | | | 57,10/2,5 l |

### Nitric acid 65 %

**ROTIPURAN® ≥65 %, p.a., ISO**

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥65,0 % |
| Heavy metals (as Pb) | ≤0,0002 % |
| Test with dithizone | complies |
| Ash content (as $SO_4$) | ≤0,0005 % |
| Chloride (Cl) | ≤0,00005 % |
| Sulphate ($SO_4$) | ≤0,00005 % |
| Phosphate ($PO_4$) | ≤0,00005 % |
| Silver (Ag) | ≤0,000001 % |
| Aluminium (Al) | ≤0,000005 % |
| Arsenic (As) | ≤0,000001 % |
| Barium (Ba) | ≤0,000001 % |
| Beryllium (Be) | ≤0,000001 % |
| Bismuth (Bi) | ≤0,00001 % |
| Calcium (Ca) | ≤0,00001 % |
| Cadmium (Cd) | ≤0,000001 % |
| Cobalt (Co) | ≤0,000001 % |
| Chromium (Cr) | ≤0,000002 % |
| Copper (Cu) | ≤0,000001 % |
| Iron (Fe) | ≤0,00001 % |
| Germanium (Ge) | ≤0,000005 % |
| Potassium (K) | ≤0,00001 % |
| Lithium (Li) | ≤0,000001 % |
| Magnesium (Mg) | ≤0,00001 % |
| Manganese (Mn) | ≤0,000001 % |
| Molybdenum (Mo) | ≤0,000002 % |
| Sodium (Na) | ≤0,00005 % |
| Nickel (Ni) | ≤0,000002 % |
| Lead (Pb) | ≤0,000001 % |
| Titanium (Ti) | ≤0,00001 % |
| Thallium (Tl) | ≤0,000005 % |
| Vanadium (V) | ≤0,000001 % |
| Zinc (Zn) | ≤0,000005 % |
| Zirconium (Zr) | ≤0,00001 % |

| | | | |
|---|---|---|---|
| **4989.3** | 250 ml | glass | 18,85 € |
| **4989.1** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |
| **4989.2** | 2,5 l | glass | 57,95 € |
| Original pack 4 x 2,5 l | | | 55,05/2,5 l |

### Nitric acid 65 %

**65 %, pure**

**Type analysis:**

| | |
|---|---|
| Assay | 64,0-66,0 % |
| Density (20 °C) | 1,386-1,395 |

| | | | |
|---|---|---|---|
| **X898.1** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **X898.2** | 2,5 l | glass | 38,60 € |
| Original pack 4 x 2,5 l | | | 36,67/2,5 l |

## Nitric acid 60 %

### Nitric acid 60 %

**60 %, pure**

$HNO_3$
M 63,0 g/mol
D 1,36
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

| | |
|---|---|
| Assay | 59,0-61,0 % |
| Chloride (Cl) | ≤0,001 % |
| Iron (Fe) | ≤0,0005 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Evaporation residue | ≤0,01 % |

| | | | |
|---|---|---|---|
| **6745.1** | 1 l | glass | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **6745.5** | 2,5 l | glass | 33,25 € |
| Original pack 4 x 2,5 l | | | 31,59/2,5 l |

## Nitric acid 53 %

### Nitric acid 53 %

**53 %, pure**

$HNO_3$
M 63,0 g/mol
D 1,3-1,4
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

| | |
|---|---|
| Assay | 51,5-54,5 % |
| Density (20 °C) | 1,3219-1,3336 |
| Chloride (Cl) | ≤0,001 % |
| Iron (Fe) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **9274.1** | 1 l | glass | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **9274.2** | 10 l | plastic | 66,55 € |

## Nitric acid 40 %

### Nitric acid 40 %

**40 %, pure**

$HNO_3$
M 63,0 g/mol
D 1,25
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

| | |
|---|---|
| Assay | 39,0-41,0 % |
| Chloride (Cl) | ≤0,001 % |
| Iron (Fe) | ≤0,0005 % |
| Ash | ≤0,005 % |

| | | | |
|---|---|---|---|
| **6748.1** | 1 l | glass | 18,85 € |
| Original pack 6 x 1 l | | | 17,91/1 l |
| **6748.2** | 5 l | plastic | 47,20 € |
| Original pack 2 x 5 l | | | 44,84/5 l |
| **6748.3** | 10 l | plastic | 59,05 € |
| **6748.4** | 25 l | plastic | 113,45 € |

## Nitric acid 25 %

### Nitric acid 25 %

**25 %, pure**

$HNO_3$
M 63,0 g/mol
D ~1,15
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

| | |
|---|---|
| Assay | 24,0-26,0 % |
| Density (20 °C) | 1,1404-1,1534 |
| Chloride (Cl) | ≤0,001 % |
| Iron (Fe) | ≤0,0005 % |
| Ash content | ≤0,005 % |

| | | | |
|---|---|---|---|
| **4339.1** | 1 l | plastic | 16,70 € |
| Original pack 6 x 1 l | | | 15,87/1 l |
| **4339.2** | 5 l | plastic | 42,90 € |
| Original pack 2 x 5 l | | | 40,76/5 l |
| **4339.3** | 10 l | plastic | 57,95 € |
| **4339.4** | 25 l | plastic | 110,65 € |

## Nitric acid 20 %

### Nitric acid 20 %

**20 %, pure**

$HNO_3$
M 63,0 g/mol
D ~1,12
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

Assay.....19,0-21,0 %
Density (20 °C).....1,1088-1,1213
Chloride (Cl).....≤0,0005 %
Iron (Fe).....≤0,0003 %
Ash content.....≤0,003 %

| | | | |
|---|---|---|---|
| **4337.1** | 1 l | plastic | 17,10 € |
| Original pack 6 x 1 l | | | 16,25/1 l |
| **4337.2** | 2,5 l | plastic | 24,20 € |
| Original pack 4 x 2,5 l | | | 22,99/2,5 l |
| **4337.3** | 5 l | plastic | 37,55 € |
| Original pack 2 x 5 l | | | 35,67/5 l |
| **4337.4** | 10 l | plastic | 48,95 € |

## Nitric acid (0,1 N)

### Nitric acid

**0,1 mol/l - 0,1 N volumetric standard solution**

**Type analysis:**

Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,2 %
Titer.....0,998-1,002

| | | | |
|---|---|---|---|
| **KK73.1** | 1 l | plastic | 18,50 € |
| Original pack 6 x 1 l | | | 17,58/1 l |

For further information, please see page 1621

## Nitric acid (1 N)

### Nitric acid

**1 mol/l - 1 N volumetric standard solution**

$HNO_3$
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

Amount-of-substance conc. (20 °C).....1 mol/l ±0,2 %
Titer.....0,998-1,002

| | | | |
|---|---|---|---|
| **N070.1** | 1 l | glass | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |

For further information, please see page 1621

## Nitric acid (1 N)

### Nitric acid

**ROTI®VOLUM 1 mol/l - 1 N**

Ampoule for preparation of 1000 ml volumetric solution.
$HNO_3$
M 63,0 g/mol
[7697-37-2] • EC No. 2317142
UN No. 2031 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

Amount-of-substance conc. (20 °C).....1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN60.1** | 1 piece | plastic ampoule | 22,25 € |

For further information, please see page 1623

## Nitric acid (2 N)

### Nitric acid

**2 mol/l - 2 N volumetric standard solution**

$HNO_3$
[7697-37-2] • EC No. 231-714-2
UN No. 2031 • ADR 8 II • WGK 1

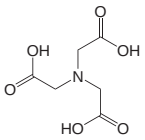
**Danger** H290-H314-EUH071

**Type analysis:**

Amount-of-substance conc. (20 °C).....2 mol/l ±0,2 %
Titer.....0,9980-1,0020

| | | | |
|---|---|---|---|
| **9887.1** | 500 ml | plastic | 23,55 € |
| **9887.2** | 1 l | plastic | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |

## Nitrilotriacetic acid




Tri-(carboxymethyl)amine, Komplexon®
$C_6H_9NO_6$
M 191,14 g/mol
mp 242 °C (dec.) • flp 100 °C
Solubility: 1,28 g/l ($H_2O$, 22 °C)
[139-13-9] • EC No. 205-355-7
WGK 2

**Warning** H351-H302-H319

### Nitrilotriacetic acid

**≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay (titr. NaOH).....≥99,0 %
Appearance of solution.....clear, colorless
Ash content (as $SO_4$).....≤0,1 %
Loss on drying.....≤0,1 %
Chloride (Cl).....≤0,01 %
Lead (Pb).....≤0,0005 %
Cadmium (Cd).....≤0,0005 %
Calcium (Ca).....≤0,001 %
Chromium (Cr).....≤0,0005 %
Iron (Fe).....≤0,0007 %
Potassium (K).....≤0,005 %
Cobalt (Co).....≤0,0005 %
Copper (Cu).....≤0,0005 %
Magnesium (Mg).....≤0,0005 %
Manganese (Mn).....≤0,0005 %
Sodium (Na).....≤0,05 %
Nickel (Ni).....≤0,0005 %
Zinc (Zn).....≤0,0005 %

| | | | |
|---|---|---|---|
| **4384.1** | 100 g | plastic | 66,55 € |

### Nitrilotriacetic acid

**≥99 %, extra pure**

**Type analysis:**

Assay.....≥99,0 %
Chloride (Cl).....≤0,01 %
Iron (Fe).....≤0,005 %
Heavy metals.....≤0,001 %
Sulphated ash.....≤0,1 %

| | | | |
|---|---|---|---|
| **8653.1** | 100 g | plastic | 21,40 € |
| **8653.2** | 500 g | plastic | 66,55 € |
| Original pack 6 x 500 g | | | 63,22/500 g |
| **8653.3** | 1 kg | plastic | 123,65 € |
| Original pack 6 x 1 kg | | | 117,47/1 kg |

## Nitrilotriacetic acid trisodium salt monohydrate

### Nitrilotriacetic acid trisodium salt monohydrate

**≥99 %, extra pure**

Sodium nitrilotriacetate tribasic monohydrate, NTA-3 Na
$C_6H_6NO_6Na_3 \cdot H_2O$
M 275,10 g/mol
D 1,77
mp >340 °C (dec.)
Solubility: 457 g/l ($H_2O$, 20 °C)
[18662-53-8] • EC No. 225-768-6
WGK 2

**Warning** H302-H319-H351

**Type analysis:**

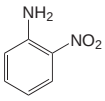
Assay.....≥99,0 %
pH (2 % solution).....10,5-11,5
Iron (Fe).....≤0,001 %
Heavy metals (as Pb).....≤0,001 %
Water.....6,0-7,0 %

| | | | |
|---|---|---|---|
| **8242.1** | 100 g | plastic | 19,90 € |
| **8242.2** | 500 g | plastic | 55,80 € |
| Original pack 6 x 500 g | | | 53,01/500 g |
| **8242.3** | 1 kg | plastic | 89,15 € |
| Original pack 6 x 1 kg | | | 84,69/1 kg |
| **8242.4** | 2,5 kg | plastic | 203,20 € |

## Nitrite Standards

▶ Nitrite IC Standard Solution see p. 2311

## 2-Nitroaniline



### 2-Nitroaniline

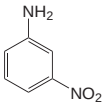
**≥98 %, for synthesis**
*o*-Nitroaniline, 1-Amino-2-nitrobenzene
$C_6H_6N_2O_2$
M 138,12 g/mol
D 1,42 • bp 284 °C
mp 68-71 °C • flp 167 °C
Solubility: 1,1 g/l ($H_2O$, 20 °C)
[88-74-4] • EC No. 201-855-4
UN No. 1661 • ADR 6.1 (II) • WGK 3

**Danger** H301-H311-H330-H373-H412

**Type analysis:**
Assay.....≥98,0 %
Melting point. .....68-71 °C

| | | | |
|---|---|---|---|
| **9878.1** | 100 g | plastic | 16,70 € |
| **9878.2** | 500 g | plastic | 39,25 € |
| Original pack 6 x 500 g | | | 37,29/500 g |
| **9878.3** | 1 kg | plastic | 61,20 € |
| Original pack 6 x 1 kg | | | 58,14/1 kg |

## 3-Nitroaniline



### 3-Nitroaniline

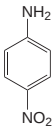
**≥99 %, for synthesis**
*m*-Nitroaniline, 1-Amino-3-nitrobenzene
$C_6H_6N_2O_2$
M 138,12 g/mol
D 0,90 • bp 306 °C
mp 109-112 °C • flp 196 °C
Solubility: 1,25 g/l ($H_2O$, 25 °C)
[99-09-2] • EC No. 202-729-1
UN No. 1661 • ADR 6.1 (II) • WGK 3

**Danger** H301-H311-H331-H373-H412

**Type analysis:**
Assay.....≥99,0 %
Melting point. .....109-112 °C

| | | | |
|---|---|---|---|
| **9867.1** | 100 g | plastic | 18,85 € |
| **9867.2** | 500 g | plastic | 50,45 € |
| Original pack 6 x 500 g | | | 47,93/500 g |
| **9867.3** | 1 kg | plastic | 83,35 € |
| Original pack 6 x 1 kg | | | 79,18/1 kg |

## 4-Nitroaniline



### 4-Nitroaniline

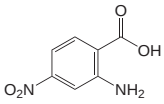
**≥98,5 %, for synthesis**
*p*-Nitroaniline, 1-Amino-4-nitrobenzene
$C_6H_6N_2O_2$
M 138,12 g/mol
D 1,44 • bp 336 °C
mp 146-149 °C • flp 199-213 °C
Solubility: 0,5 g/l ($H_2O$, 25 °C)
[100-01-6] • EC No. 202-810-1
UN No. 1661 • ADR 6.1 (II) • WGK 3

**Danger**
H301+H311+H331-H373-H412

**Type analysis:**
Assay. .....≥98,5 %
Melting point. .....146-149 °C
Sulphated ash. .....≤0,05 %

| | | | |
|---|---|---|---|
| **9850.1** | 100 g | plastic | 22,05 € |
| **9850.2** | 500 g | plastic | 44,65 € |
| Original pack 6 x 500 g | | | 42,42/500 g |
| **9850.3** | 1 kg | plastic | 80,55 € |
| Original pack 6 x 1 kg | | | 76,52/1 kg |

## 4-Nitroanthranilic acid



### 4-Nitroanthranilic acid

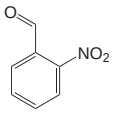
**≥98 %, for synthesis**
$C_7H_6N_2O_4$
M 182,13 g/mol
mp 269-272 °C
[619-17-0] • EC No. 210-583-5
WGK 3

**Warning** H315-H319-H335

**Type analysis:**
Appearance.....orange powder
Assay (titr.). .....≥98,0 %
Loss on drying. .....≤0,5 %

| | | | |
|---|---|---|---|
| **4543.1** | 1 g | glass | 44,65 € |
| **4543.2** | 5 g | glass | 86,55 € |

## 2-Nitrobenzaldehyde



### 2-Nitrobenzaldehyde

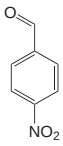
**≥98 %, for synthesis**
o-Nitrobenzaldehyde
$C_7H_5NO_3$
M 151,12 g/mol
mp 41-46 °C
[552-89-6] • EC No. 209-025-3
WGK 2

**Warning** H315-H319-H335

**Type analysis:**
Appearance. .....
..... yellow to light gold cryst. powder or pieces
Assay. .....≥98,0 %
Loss on drying.....≤0,5 %

| | | | |
|---|---|---|---|
| **4224.1** | 25 g | plastic | 32,15 € |
| **4224.2** | 100 g | plastic | 62,90 € |
| **4224.3** | 250 g | plastic | 110,65 € |

## 4-Nitrobenzaldehyde



### 4-Nitrobenzaldehyde

**≥98 %, for synthesis**
p-Nitrobenzaldehyde
$C_7H_5NO_3$
M 151,12 g/mol
mp 102-106 °C
[555-16-8] • EC No. 209-084-5
WGK 2

**Warning** H315-H319-H335

**Type analysis:**
Appearance. .....yellow to light gold cryst. powder
Assay. .....≥98,0 %
Loss on drying.....≤1,0 %

| | | | |
|---|---|---|---|
| **5667.1** | 25 g | plastic | 25,30 € |
| **5667.2** | 100 g | plastic | 49,35 € |
| **5667.3** | 250 g | plastic | 91,95 € |

## Nitrobenzene



### Nitrobenzene

**≥99 %, for synthesis**

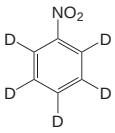
$C_6H_5NO_2$
M 123,11 g/mol
D 1,20 • bp 205-210 °C
mp 5-6 °C • flp 88 °C
Solubility: 1,9 g/l ($H_2O$, 20 °C)
[98-95-3] • EC No. 202-716-0
UN No. 1662 • ADR 6.1 II • WGK 3

**Danger**
H301+H311+H331-H351-H360F-H372-H412

**Type analysis:**
Assay (GC)..... ≥99 %
Density (d 20 °C/4 °C)..... 1,201-1,205
Freezing point..... 5-6 °C

| | | | |
|---|---|---|---|
| **4394.2** | 500 ml | glass | 33,25 € |
| **4394.1** | 1 l | glass | 55,40 € |
| Original pack 6 x 1 l | | | 52,63/1 l |

## Nitrobenzene D5



### Nitrobenzene D5

**99,5 Atom%D**

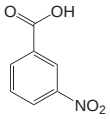
For nuclear magnetic resonance spectroscopy.
$C_6D_5NO_2$
M 128,15 g/mol
D 1,253 • bp 211 °C
mp 6 °C • flp 87 °C
[4165-60-0] • EC No. 224-014-3
UN No. 1662 • ADR 6.1 II • WGK 3

**Danger**
H301+H311+H331-H351-H360F-H372-H412

**Type analysis:**
Deuterising degree..... ≥99,5 %
Water (KF, $H_2O$+$D_2O$)..... ≤0,03 %

| | | | |
|---|---|---|---|
| **9914.1** | 5 ml | glass | 63,45 € |
| **9914.2** | 10 ml | glass | 106,45 € |

## 3-Nitrobenzoic acid



NEW

### 3-Nitrobenzoic acid

**≥99 %, for synthesis**

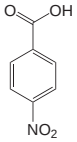
m-Nitrobenzoic acid, meta-Nitrobenzoic acid
$C_7H_5NO_4$
M 167,12 g/mol
D 1,49
mp 140-143 °C • flp 190 °C
Solubility: 3 g/l ($H_2O$, 25 °C)
[121-92-6] • EC No. 204-508-5
WGK 1

**Warning** H302-H319

**Type analysis:**
Assay (HPLC)..... ≥99,0 %
Melting point..... 140-143 °C
Water (KF)..... ≤0,5 %

| | | | |
|---|---|---|---|
| **0445.1** | 100 g | plastic | 13,90 € |
| **0445.2** | 500 g | plastic | 42,90 € |
| Original pack 6 x 500 g | | | 40,76/500 g |
| **0445.3** | 1 kg | plastic | 77,30 € |
| Original pack 6 x 1 kg | | | 73,44/1 kg |

## 4-Nitrobenzoic acid



NEW

### 4-Nitrobenzoic acid

**≥99,5 %**

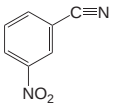
p-Nitrobenzoic acid, para-Nitrobenzoic acid
$C_7H_5NO_4$
M 167,12 g/mol
D 1,61
mp 239-242 °C • flp 237 °C
Solubility: 0,42 g/l ($H_2O$, 20 °C)
[62-23-7] • EC No. 200-526-2
WGK 1

**Warning** H302-H319

**Type analysis:**
Assay (acidim.)..... ≥99,5 %
Melting point..... 239-242 °C
Water (KF)..... ≤0,5 %
Ash content..... ≤0,01 %
Iron (Fe)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **0450.1** | 100 g | plastic | 13,90 € |
| **0450.2** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **0450.3** | 1 kg | plastic | 53,65 € |
| Original pack 6 x 1 kg | | | 50,97/1 kg |

## 3-Nitrobenzonitrile



### 3-Nitrobenzonitrile

**≥98 %, for synthesis**

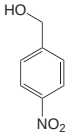
3-Cyano-1-nitrobenzene
$C_7H_4N_2O_2$
M 148,12 g/mol
mp 115-117 °C
[619-24-9] • EC No. 210-587-7
WGK 2

**Warning** H302+H312+H332-H412

**Type analysis:**
Appearance..... pale yellow cryst. powder
Assay..... ≥98,0 %
Loss on drying..... ≤0,5 %

| | | | |
|---|---|---|---|
| **4530.1** | 25 g | glass | 45,05 € |
| **4530.2** | 100 g | glass | 95,15 € |

## 4-Nitrobenzylalcohol



### 4-Nitrobenzylalcohol

**≥99 %, for synthesis**

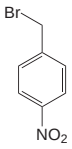
$C_7H_7NO_3$
M 153,14 g/mol
bp 185 °C
mp 93-96 °C
[619-73-8] • EC No. 210-611-6
WGK 1

**Type analysis:**
Appearance..... pale yellow cryst. powder
Assay..... ≥99,0 %
Loss on drying..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6522.1** | 25 g | glass | 30,00 € |
| **6522.2** | 100 g | glass | 60,10 € |
| **6522.3** | 250 g | glass | 107,40 € |

N

## 4-Nitrobenzyl bromide



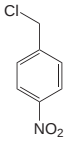

### 4-Nitrobenzyl bromide

**≥99 %, for synthesis**
α-Bromo-4-nitrotoluene
$C_7H_6NO_2Br$
M 216,03 g/mol
mp 96-100 °C
[100-11-8] • EC No. 202-820-6
UN No. 3261 • ADR 8 II • WGK 3
**Danger** H314-H335

**Type analysis:**
Appearance. ..... off-white to light yellow to beige cryst. powder
Assay. ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **5680.1** | 25 g | glass | 26,35 € |
| **5680.2** | 100 g | glass | 50,45 € |
| **5680.3** | 250 g | glass | 92,35 € |

## 4-Nitrobenzyl chloride




### 4-Nitrobenzyl chloride

**≥98 %, for synthesis**
α-Chloro-4-nitrotoluene
$C_7H_6NO_2Cl$
M 171,58 g/mol
mp 70-73 °C
[100-14-1] • EC No. 202-822-7
UN No. 3261 • ADR 8 II • WGK 3
**Danger** H302-H314

**Type analysis:**
Appearance. ..... off-white to light yellow cryst. powder
Assay. ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **5697.1** | 10 g | glass | 17,10 € |
| **5697.2** | 50 g | glass | 37,55 € |

## Nitro-BT

▶ p-Nitrotetrazolium blue chloride see p. 2104

## Nitromethane



$CH_3NO_2$
M 61,04 g/mol
D 1,14 • bp 101,2 °C
mp -29,2 °C • flp 36 °C
Solubility: 105 g/l ($H_2O$, 20 °C)
[75-52-5] • EC No. 200-876-6
UN No. 1261 • ADR 3 II • WGK 2
**Warning** H226-H302

### Nitromethane

**≥98,5 %, for synthesis**

**Type analysis:**
Assay (GC). ..... ≥98,5 %
Colour (APHA). ..... ≤20
Water ..... ≤0,1 %
Acidity (as $CH_3COOH$). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4406.1** | 500 ml | glass | 28,95 € |

### Nitromethane

**≥97 %**

**Type analysis:**
Assay. ..... ≥97,0 %

| | | | |
|---|---|---|---|
| **5173.1** | 1 l | glass | 41,85 € |
| Original pack 6 x 1 l | | | 39,76/1 l |

## Nitromethane D3

### Nitromethane D3

**99 Atom%D**
For nuclear magnetic resonance spectroscopy.
$CD_3NO_2$
M 64,06 g/mol
D ~1,19 • bp 100 °C
mp -29,2 °C • flp 36 °C
[13031-32-8] • EC No. 235-892-2
UN No. 1261 • ADR 3 II • WGK 1
**Warning** H226-H302

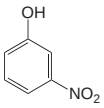
**Guarantee analysis:**
Deuterising degree. ..... ≥99 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **HN91.2** | 5 ml | glass | 63,45 € |
| **HN91.1** | 10 ml | glass | 107,40 € |

## 3-Nitro-4-methylaniline

▶ 4-Methyl-3-nitroaniline see p. 2075

## 3-Nitrophenol



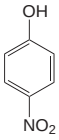

### 3-Nitrophenol

**≥99 %, for synthesis**
Indicator pH 6,8-8,6
1-Hydroxy-3-nitrobenzene
$C_6H_5NO_3$
M 139,11 g/mol
mp 96-98 °C
[554-84-7] • EC No. 209-073-5
UN No. 1663 • ADR 6.1 III • WGK 2
**Warning** H302-H319

**Type analysis:**
Appearance. ..... yellow to tan cryst. powder
Assay. ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %
pH-transition range. ..... 6,8 (colourless)-8,6 (yellow)

| | | | |
|---|---|---|---|
| **4533.1** | 25 g | glass | 53,25 € |
| **4533.2** | 100 g | glass | 131,70 € |
| **4533.3** | 250 g | glass | 295,65 € |

## 4-Nitrophenol




### 4-Nitrophenol

**≥99 %, for synthesis**
1-Hydroxy-4-nitrobenzene
$C_6H_5NO_3$
M 139,11 g/mol
bp 279 °C
mp 112-115 °C
[100-02-7] • EC No. 202-811-7
UN No. 1663 • ADR 6.1 III • WGK 2
**Danger** H301-H312+H332-H373

**Type analysis:**
Appearance. ..... white to yellow cryst. powder
Assay. ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **6524.1** | 25 g | glass | 12,80 € |
| **6524.2** | 100 g | glass | 20,35 € |
| **6524.3** | 500 g | glass | 47,20 € |
| Original pack 6 x 500 g | | | 44,84/500 g |

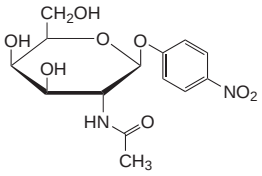
## p-Nitrophenyl-2-acetamido-2-deoxy-β-D-galactoside

▶ 4-Nitrophenyl-N-acetyl-β-D-galactosaminide see p. 2102

## 4-Nitrophenyl-2-acetamido-2-deoxy-β-D-glucosaminide

▶ 4-Nitrophenyl-N-acetyl-β-D-glucosaminide see p. 2102

## 4-Nitrophenyl-N-acetyl-β-D-galactosaminide



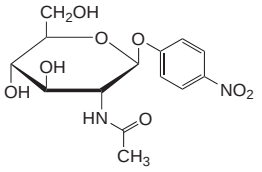
### 4-Nitrophenyl-N-acetyl-β-D-galactosaminide

**≥98 %, for biochemistry**
Glycosidase substrate
p-Nitrophenyl-2-acetamido-2-deoxy-β-D-galactoside, PNP-β-D-GalNAc
$C_{14}H_{18}N_2O_8$
M 342,31 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[14948-96-0] • EC No. 239-024-3
WGK 1

**Type analysis:**
Assay (TLC).....≥98 %
Solution (0,5 % in DMF/water 1:1). .....nearly colourless, clear
Solution (5 % in DMF).....yellow to greenish yellow, clear
Water (KF). .....≤6,0 %
p-Nitrophenol.....≤0,1 %
Specific rotation $[\alpha]_D^{20}$ (c=0,1 in water).....+19,0° ±2°

| | | | |
|---|---|---|---|
| **4058.1** | 250 mg | glass | 70,85 € |
| **4058.2** | 500 mg | glass | 121,40 € |

## 4-Nitrophenyl-N-acetyl-β-D-glucosaminide



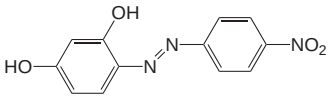
### 4-Nitrophenyl-N-acetyl-β-D-glucosaminide

**≥99 %, for biochemistry**
Glycosidase substrate
4-Nitrophenyl-2-acetamido-2-deoxy-β-D-glucosaminide, PNAG, PNP-β-D-GlcNAc
$C_{14}H_{18}N_2O_8$
M 342,31 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[3459-18-5] • EC No. 222-398-7
WGK 1

**Type analysis:**
Assay (TLC).....≥99 %
Solution (0,5 % in water, gently warmed).....colourless, clear
Water (KF). .....≤0,5 %
p-Nitrophenol.....≤0,1 %
Specific rotation $[\alpha]_D^{20}$ (c=0,5 in water).....-16,0° ±1,0°

| | | | |
|---|---|---|---|
| **4062.1** | 100 mg | glass | 26,35 € |
| **4062.2** | 500 mg | glass | 74,75 € |
| **4062.3** | 1 g | glass | 143,55 € |

## 4-(4-Nitrophenylazo)-resorcinol



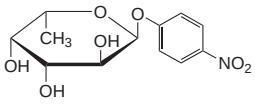
### 4-(4-Nitrophenylazo)-resorcinol

**p.a.**
Metal indicator, pH indicator 11,0-13,0
Magneson, Azo violet
$C_{12}H_9N_3O_4$
M 259,22 g/mol
mp 185 °C (dec.)
Solubility: insoluble ($H_2O$, 20 °C)
[74-39-5] • EC No. 200-808-5
WGK 1

**Guarantee analysis:**
Appearance.....red-orange powder
Absorption max. ($CH_3OH$).....~432 nm
pH transition range. .....11,0 (yellow)-13,0 (violet)

| | | | |
|---|---|---|---|
| **2563.1** | 10 g | glass | 25,70 € |
| **2563.2** | 25 g | glass | 38,60 € |

## 4-Nitrophenyl-α-L-fucopyranoside



### 4-Nitrophenyl-α-L-fucopyranoside

**≥98 %, for biochemisty**
Glycosidase substrate
p-Nitrophenyl-α-L-fucoside, PNP-α-L-Fuc
$C_{12}H_{15}NO_7$
M 285,26 g/mol
mp ~195 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[10231-84-2] • EC No. 233-553-3
WGK 1

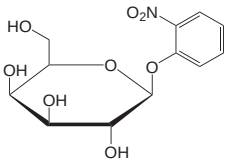
**Type analysis:**
Assay (TLC). .....≥98 %
Water (KF).....≤1,0 %
p-Nitrophenol. .....≤0,1 %
Specific rotation $[\alpha]_D^{20}$ (c=0,2 in ethanol).....-245,0° ±2°

| | | | |
|---|---|---|---|
| **4018.1** | 100 mg | glass | 57,55 € |
| **4018.2** | 250 mg | glass | 113,45 € |

## p-Nitrophenyl-α-L-fucoside

▶ 4-Nitrophenyl-α-L-fucopyranoside
see p. 2102

## 2-Nitrophenyl-β-D-galactopyranoside



### 2-Nitrophenyl-β-D-galactopyranoside

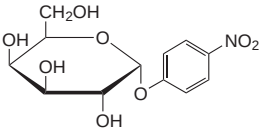
**≥99 %, for biochemistry**
Substrate of β-galactosidase.
ONPG, ortho-Nitrophenyl-β-D-galactopyranoside
$C_{12}H_{15}NO_8$
M 301,23 g/mol
mp 189-192 °C
Storage temp.: +4 °C
[369-07-3] • EC No. 206-716-1
WGK 1

**Warning** H335

**Type analysis:**
Assay. .....≥99 %
Water. .....≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$). .....-67° to -71°

| | | | |
|---|---|---|---|
| **CN22.1** | 5 g | glass | 31,75 € |
| **CN22.2** | 10 g | glass | 54,30 € |

## 4-Nitrophenyl-α-D-galactopyranoside



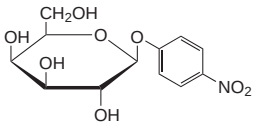
### 4-Nitrophenyl-α-D-galactopyranoside

**for biochemistry**
Glycosidase substrate
p-Nitrophenyl-α-D-galactoside, PNP-α-D-Gal, PNPG
$C_{12}H_{15}NO_8$
M 301,26 g/mol
mp 161-169 °C
Storage temp.: +4 °C
[7493-95-0] • EC No. 231-343-6
WGK 1

**Type analysis:**
Identity (TLC). .....complies
Solution (5 % in $H_2O$). .. colourless to nearly colourless
Water (KF). .....≤1,0 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in water).....+242° to +248°

| | | | |
|---|---|---|---|
| **4063.1** | 100 mg | glass | 20,35 € |
| **4063.2** | 500 mg | glass | 46,80 € |
| **4063.3** | 1 g | glass | 74,75 € |

## 4-Nitrophenyl-β-D-galactopyranoside



### 4-Nitrophenyl-β-D-galactopyranoside

**≥98 %, for biochemistry**

Glycosidase substrate

p-Nitrophenyl-β-D-galactoside, PNPG, PNP-β-D-Gal

$C_{12}H_{15}NO_8$

M 301,26 g/mol

mp ~180 °C

Storage temp.: -20 °C •

Transport temp.: room temp.

[3150-24-1] • EC No. 221-584-5

WGK 1

**Type analysis:**

Assay (HPLC)..... ≥98 %

Solution (1 % in $H_2O$)..... clear, colourless to slightly yellowish

Water (KF)..... ≤7,0 %

p-Nitrophenol..... ≤0,05 %

Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$)..... -84° ±2°

| | | | |
|---|---|---|---|
| **4081.1** | 1 g | glass | 31,75 € |
| **4081.2** | 2,5 g | glass | 74,75 € |
| **4081.3** | 5 g | glass | 134,30 € |

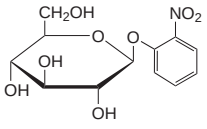
## p-Nitrophenyl-α-D-galactoside

▶ 4-Nitrophenyl-α-D-galactopyranoside see p. 2102

## p-Nitrophenyl-β-D-galactoside

▶ 4-Nitrophenyl-β-D-galactopyranoside see p. 2103

## 2-Nitrophenyl-β-D-glucopyranoside



### 2-Nitrophenyl-β-D-glucopyranoside

**≥99 %, for biochemistry**

Glycosidase substrate

o-Nitrophenyl-β-D-glucoside, ONP-β-D-Glc

$C_{12}H_{15}NO_8$

M 301,26 g/mol

mp ~143 °C

Storage temp.: -20 °C •

Transport temp.: room temp.

[2816-24-2] • EC No. 220-568-5

WGK 1

**Type analysis:**

Assay (HPLC)..... ≥99 %

Solution (5 % in methanol)..... clear, colourless to light yellowish

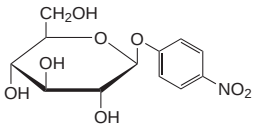
Water (KF)..... ≤0,5 %

o-Nitrophenol..... ≤0,05 %

Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$)..... -105° ±2°

| | | | |
|---|---|---|---|
| **4077.1** | 500 mg | glass | 39,70 € |
| **4077.2** | 1 g | glass | 66,55 € |

## 4-Nitrophenyl-β-D-glucopyranoside



### 4-Nitrophenyl-β-D-glucopyranoside

**≥99 %, for biochemistry**

Glycosidase substrate

p-Nitrophenyl-β-D-glucoside, PNP-β-D-Glc

$C_{12}H_{15}NO_8$

M 301,26 g/mol

mp 161-167 °C

Storage temp.: -20 °C •

Transport temp.: room temp.

[2492-87-7] • EC No. 219-661-3

WGK 1

**Type analysis:**

Assay (HPLC)..... ≥99 %

Solution (1 % in $H_2O$)..... colourless

Water (KF)..... ≤6,0 %

p-Nitrophenol..... ≤0,05 %

Spec. rotation $[\alpha]_D^{20}$ (c=1 in water, dry substance)..... -109° to -105°

| | | | |
|---|---|---|---|
| **4082.1** | 500 mg | glass | 36,45 € |
| **4082.2** | 1 g | glass | 61,85 € |
| **4082.3** | 5 g | glass | 246,20 € |

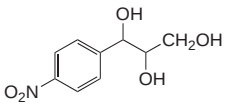
## o-Nitrophenyl-β-D-glucoside

▶ 2-Nitrophenyl-β-D-glucopyranoside see p. 2103

## p-Nitrophenyl-β-D-glucoside

▶ 4-Nitrophenyl-β-D-glucopyranoside see p. 2103

## 4-Nitrophenylglycerol



### 4-Nitrophenylglycerol

**>98 %, for biochemistry**

1-(4-Nitrophenyl)-1,2,3-propanetriol

$C_9H_{11}O_5N$

M 213,19 g/mol

mp 95-101 °C

[2207-68-3] • EC No. 218-624-9

**Warning** H315-H319-H335

**Type analysis:**

Appearance..... white to yellow crystals

Assay..... >98 %

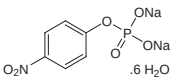
Melting point..... 98-101 °C

| | | | |
|---|---|---|---|
| **9240.1** | 250 mg | glass | 64,40 € |
| **9240.2** | 1 g | glass | 149,45 € |

## p-Nitrophenyl phosphate

▶ Roti®fair pNPP 5mg see p. 2214
▶ Roti®fair pNPP 20mg see p. 2214

## 4-Nitrophenyl phosphate disodium salt hexahydrate



### 4-Nitrophenyl phosphate disodium salt hexahydrate

**≥99 %, p.a.**

Substrate for alkaline phosphatase, particularly for ELISA.

p-Nitrophenyl phosphate, pNPP

$C_6H_4NNa_2O_6P \cdot 6\ H_2O$

M 371,12 g/mol

mp ~300 °C

Storage temp.: +4 °C

[4264-83-9] • EC No. 224-246-5

**Guarantee analysis:**

Assay (HPLC)..... ≥99,0 %

Solution (5 % in $H_2O$)..... clear, colourless to yellow

Free 4-nitrophenol..... ≤0,01 %

| | | | |
|---|---|---|---|
| **4165.1** | 2,5 g | glass | 15,60 € |

For further information, please see page 1289

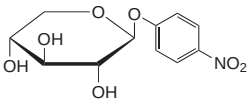
## 1-(4-Nitrophenyl)-1,2,3-propanetriol

▶ 4-Nitrophenylglycerol see p. 2103

## p-Nitrophenyl-β-D-xylopyranoside

▶ 4-Nitrophenyl-β-D-xyloside see p. 2103

## 4-Nitrophenyl-β-D-xyloside



### 4-Nitrophenyl-β-D-xyloside

**≥99 %, for biochemistry**

Glycosidase substrate

p-Nitrophenyl-β-D-xylopyranoside, PNP-β-D-Xyl, PNPX

$C_{11}H_{13}NO_7$

M 271,23 g/mol

mp ~160 °C

Storage temp.: -20 °C •

Transport temp.: room temp.

[2001-96-9] • EC No. 217-897-1

WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (TLC)..... ≥99 %

Solution (1 % in $H_2O$)..... colourless

Water (KF)..... ≤1 %

p-Nitrophenol..... ≤0,05 %

Specific rotation $[\alpha]_D^{20}$ (c=0,4 in $H_2O$)..... -57° to -53°

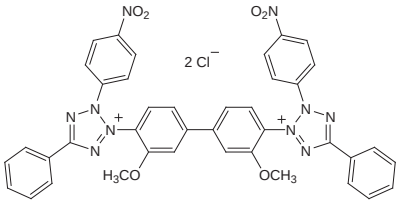
| | | | |
|---|---|---|---|
| **4079.1** | 100 mg | glass | 25,70 € |
| **4079.2** | 500 mg | glass | 78,40 € |
| **4079.3** | 1 g | glass | 142,45 € |

N

## Nitroprusside sodium

▶ Sodium nitroprusside dihydrate see p. 2281

## p-Nitrotetrazolium blue chloride




### p-Nitrotetrazolium blue chloride

**≥98 %, p.a.**
Nitro-BT, NBT, Nitroblue tetrazolium chloride
$C_{40}H_{30}Cl_2N_{10}O_6$
M 817,65 g/mol
mp 205 °C
Storage temp.: +4 °C
[298-83-9] • EC No. 206-067-4
WGK 2

**Type analysis:**
Assay (NT).....≥98 %
Water (KF).....≤5,0 %

| | | | |
|---|---|---|---|
| **4421.1** | 100 mg | glass | 17,10 € |
| **4421.2** | 500 mg | glass | 42,90 € |
| **4421.3** | 1 g | glass | 81,60 € |
| **4421.4** | 5 g | glass | 295,65 € |

For further information, please see page 1289

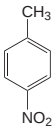
## Nitro thinner

### Nitro thinner

**tech.**
D 0,830 • bp 57-132 °C
mp <-95 °C • flp -18 °C
UN No. 1993 • ADR 3 II • WGK 2
**Danger** H225-H304-H315-H318-H335-H336-H361d-H373-EUH066

| | | | |
|---|---|---|---|
| **3036.5** | 1 l | tinplate | 14,20 € |
| Original pack 6 x 1 l | | | 13,49/1 l |
| **3036.3** | 10 l | tinplate | 74,75 € |
| **3036.4** | 25 l | tinplate | 137,10 € |

## p-Nitrotoluene




### p-Nitrotoluene

**ROTI®CALIPURE Melting point standard 52-54 °C**
1-Methyl-4-nitrobenzene
$C_7H_7NO_2$
M 137,14 g/mol
bp 239 °C
mp 52-54 °C • flp 106 °C
[99-99-0] • EC No. 202-808-0
UN No. 3446 • ADR 6.1 II • WGK 3
**Danger**
H301+H311+H331-H373-H411

**Type analysis:**
Meniscus formation.....52-54 °C
Complete liquefaction.....52-54 °C

| | | | |
|---|---|---|---|
| **9712.1** | 1 g | glass | 30,00 € |

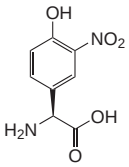
## 3-Nitro-p-toluidine

▶ 4-Methyl-3-nitroaniline see p. 2075

## H-3-Nitro-Tyr-OH

▶ 3-Nitro-L-tyrosine see p. 2104

## 3-Nitro-L-tyrosine




### 3-Nitro-L-tyrosine

**≥98 %, for biochemistry**
H-3-Nitro-Tyr-OH
$C_9H_{10}N_2O_5$
M 226,19 g/mol
mp 233-235 °C
[621-44-3] • EC No. 210-688-6
WGK 1

**Type analysis:**
Assay (titr.).....≥98,0 %
Solution (5 % in 1 N HCl).....slightly yellow, clear
Water (KF).....≤0,5 %

| | | | |
|---|---|---|---|
| **5275.1** | 5 g | plastic | 57,95 € |
| **5275.2** | 10 g | plastic | 103,10 € |

## NMM

▶ N-Methylmorpholine see p. 2075

## NMP

▶ N-Methyl-2-pyrrolidone (NMP) see p. 2077

## NMR solvents

▶ Deuterated Compounds see p. 1862

## n-Nonane



### n-Nonane

**≥99 %, for synthesis**
$C_9H_{20}$
M 128,26 g/mol
D 0,72 • bp 151 °C
mp -53 °C • flp 31 °C
[111-84-2] • EC No. 203-913-4
UN No. 1920 • ADR 3 III • WGK 3
**Danger**
H226-H304-H315-H319-H332-H336-H410

**Type analysis:**
Appearance.....clear, colourless liquid
Assay (GC).....≥99,0 %

| | | | |
|---|---|---|---|
| **4310.2** | 100 ml | glass | 23,15 € |
| **4310.1** | 250 ml | glass | 42,90 € |
| **4310.3** | 500 ml | glass | 69,35 € |
| **4310.4** | 1 l | glass | 115,60 € |
| Original pack 6 x 1 l | | | 109,82/1 l |

## Nonanedioic acid

▶ Azelaic acid see p. 1756

## Nonanoic acid

▶ Pelargonic acid see p. 2133

## Non-essential amino acids

▶ Roti®-CELL MEM-NEAA solution see p. 2207

## Non-ionic polymer of saccharose

▶ Ficoll® 400 see p. 1928

## Nonivamide

▶ Pelargonic acid vanillylamide see p. 2133

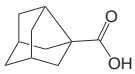
## Nonylvanylamide

▶ Pelargonic acid vanillylamide see p. 2133

## NOP

▶ N-Octyl-2-pyrrolidone (NOP) see p. 2109

## 3-Noradamantanecarboxylic acid



### 3-Noradamantanecarboxylic acid

**≥99 %, for synthesis**
$C_{10}H_{14}O_2$
M 166,22 g/mol
mp 102-107 °C
[16200-53-6]
WGK 3

**Type analysis:**
Appearance. ..... white, cryst. powder
Assay (GC). ..... ≥99,0 %
Identity (GC). ..... complies
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7631.1** | 1 g | glass | 21,40 € |
| **7631.2** | 5 g | glass | 64,40 € |

## 2,5-Norbornadiene



### 2,5-Norbornadiene

**~97 %**
Bicyclo-[2,2,1]-hepta-2,5-diene
$C_7H_8$
M 92,14 g/mol
D 0,91 • bp 90 °C
mp -20 °C • flp -11 °C
[121-46-0] • EC No. 204-472-0
UN No. 2251 • ADR 3 II • WGK 2
**Danger** H225

**Type analysis:**
Assay (GC). ..... ~97 %

| | | | |
|---|---|---|---|
| **3201.1** | 50 ml | glass | 72,60 € |

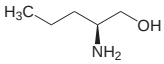
## Norgine

▶ Alginic acid see p. 1716

## Norkanugin

▶ Robinetin see p. 2201

## L-Norvalinol



### L-Norvalinol

**≥98 %, for biochemistry**
(S)-(+)-2-Amino-1-pentanol
$C_5H_{13}NO$
M 103,16 g/mol
bp 137 °C
mp 44 °C
Storage temp.: +4 °C
[22724-81-8]
WGK 1
**Warning** H315-H319-H335

**Type analysis:**
Assay (GC). ..... ≥98,0 %
Water (KF). ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **6663.1** | 500 mg | glass | 32,15 € |
| **6663.2** | 1 g | glass | 49,35 € |

## Nourseothricin dihydrogen sulphate

### Nourseothricin dihydrogen sulphate

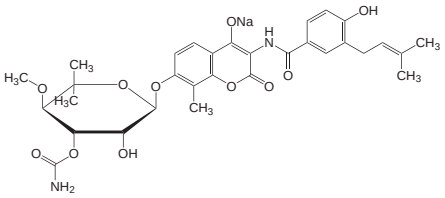
**≥85 %, for biochemistry and microbiology**
Broad-band antibiotic and antimycotic of viruses, bacteria and fungi.
Streptothricine
Storage temp.: +4 °C
[96736-11-7]
WGK 1
**Warning** H302-H315-H319-H335

**Type analysis:**
Appearance. ..... beige powder
Streptothricine D, F. ..... ≥85 %
Streptothricine C, E. ..... <15 %
Ash. ..... ≤3,0 %
Packed under argon.

| | | | |
|---|---|---|---|
| **3011.1** | 25 mg | plastic | 41,85 € |
| **3011.2** | 100 mg | plastic | 97,30 € |
| **3011.3** | 1 g | plastic | 499,90 € |

For further information, please see page 1431

## Novobiocin sodium salt



### Novobiocin sodium salt

**≥850 µg/mg, for biochemistry**
Bacteriostatic antibiotic, HSP90 inhibitor.
$C_{31}H_{35}N_2NaO_{11}$
M 634,62 g/mol
Storage temp.: +4 °C
[1476-53-5] • EC No. 216-023-6
WGK 1
**Warning** H319-H317

**Type analysis:**
Activity. ..... ≥850 µg/mg
Specific rotation $[\alpha]_D^{20}$ (dry substance). ..... -58° to -50°
pH value (2,5 % in $H_2O$). ..... 6,5-8,5
Sulphated ash. ..... ≤12,0 %
Water. ..... ≤6,0 %

| | | | |
|---|---|---|---|
| **0247.1** | 1 g | glass | 28,95 € |
| **0247.2** | 5 g | glass | 115,60 € |
| **0247.3** | 10 g | glass | 160,20 € |

For further information, please see page 1431

## NTA-3 Na

▶ Nitrilotriacetic acid trisodium salt monohydrate see p. 2098

## NTP-set

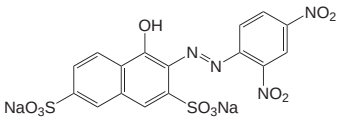
### NTP-set

**≥99 %, ATP, CTP, GTP, UTP**
NTP-Set, consisting of the single nucleotide solutions: ATP, CTP, GTP, UTP.
Concentration: 100 mM per NTP.
Ribonucleoside triphosphate-set
Storage temp.: -20 °C •
Transport temp.: cooled
WGK 1

| | | | |
|---|---|---|---|
| **K049.1** | 4 x 25 µmol (250 µl), 100 mM | plastic | 127,95 € |
| **K049.2** | 5 x 4 x 25 µmol (250 µl), 100 mM | plastic | 424,65 € |

For further information, please see page 1261

## Nuclear fast red (C.I. 60760)




### Nuclear fast red (C.I. 60760)

**for microscopy**

$C_{14}H_8NNaO_7S$
M 357,28 g/mol
[6409-77-4] • EC No. 229-088-0
WGK 3

**Type analysis:**

Appearance. .....dark red to brown powder
Appearance of solution (0,1 % in $H_2O$). ..... dark red

| | | | |
|---|---|---|---|
| **7728.1** | 1 g | glass | 24,20 € |
| **7728.2** | 5 g | glass | 71,50 € |
| **7728.3** | 10 g | glass | 118,15 € |

For further information, please see page 1466

## Nuclear fast red aluminium sulphate solution

### Nuclear fast red aluminium sulphate solution

**for microscopy**

For visualising nuclei e.g. during Elastica Staining.
WGK 1

**Danger** H318

| | | | |
|---|---|---|---|
| **N069.1** | 500 ml | glass | 32,15 € |

For further information, please see page 1454

## Nucleic Acid Removal


- DNA AWAY® see p. 1890
- RNase AWAY® see p. 2201
- Roti® Nucleic Acid-free see p. 2225
- Roti® Nucleic Acid-free eXtra see p. 2225


## Nucleotides / Nucleosides


| Art. No. | Description | Page |
|---|---|---|
| 6122 | Adenosine | 1709 |
| HN35 | Adenosin-5'-triphosphate disodium salt (ATP) | 1709 |
| K054 | ATP | 1754 |
| K045 | ATP solution | 1754 |
| 1047 | Biotin-11-dUTP | 1774 |
| 3243 | 5-Bromo-2'-deoxyuridine | 1788 |
| 7801 | C8-Alkyne-dCTP | 1807 |
| 7799 | C8-Alkyne-dUTP | 1807 |
| K057 | CTP | 1849 |
| K048 | CTP solution | 1849 |
| 0717 | Cytidine | 1855 |
| K050 | dATP | 1857 |
| K035 | dATP solution | 1857 |
| K053 | dCTP | 1857 |
| K038 | dCTP solution | 1857 |
| K040 | ddATP solution | 1857 |
| K043 | ddCTP solution | 1857 |
| K042 | ddGTP solution | 1857 |
| K044 | ddNTP-Set | 1857 |
| K041 | ddTTP solution | 1857 |
| K052 | dGTP | 1866 |
| K037 | dGTP solution | 1866 |
| P732 | dITP solution | 1890 |
| K039 | dNTP-Set 1 | 1892 |
| 0178 | dNTP-Set 1 (pH 7) | 1893 |
| L540 | dNTP-Set 2 | 1893 |
| P731 | dNTP-Set 3 | 1893 |
| K051 | dTTP | 1897 |
| K036 | dTTP solution | 1897 |
| L539 | dUTP solution | 1897 |
| 7845 | 5-Ethynyl-2'-deoxyuridine (EdU) | 1913 |
| 7802 | 5-Ethynyl-dUTP | 1921 |
| 7848 | 5-Ethynyl uridine (EU) | 1922 |
| 1048 | Fluorescein-12-dUTP | 1931 |
| K056 | GTP | 1965 |
| K047 | GTP solution | 1965 |
| 0715 | Guanosine | 1967 |
| K049 | NTP-set | 2105 |
| 1049 | Rhodamine-12-dUTP | 2198 |
| L541 | Roti®-Mix PCR 1 | 2225 |
| L542 | Roti®-Mix PCR 2 | 2225 |
| L785 | Roti®-Mix PCR 3 | 2225 |
| 0179 | Roti®-Mix PCR 3 (pH 7) | 2225 |
| L786 | Roti®-Mix PCR 4 | 2225 |
| 3005 | Thymidine | 2341 |
| 0714 | Uridine | 2367 |
| K055 | UTP | 2367 |
| K046 | UTP solution | 2368 |


## Nutrient Agar

Storage temp.: +20 °C

### Nutrient Agar

**EN ISO 6579, ISO 10273, for microbiology**

For cultivation of non-fastidious microorganisms.
Application: Use 23 g for 1 l agar.

**Guarantee analysis:**

Gelatine peptone. ..... 5 g/l
Beef extract. ..... 3 g/l
Agar. ..... 15 g/l
pH value. ..... 6,8 ±0,2

| | | | |
|---|---|---|---|
| **X928.1** | 500 g | plastic | 88,70 € |
| Original pack 6 x 500 g | | | 84,27/500 g |
| **X928.2** | 1 kg | plastic | 155,90 € |
| Original pack 6 x 1 kg | | | 148,11/1 kg |

For further information, please see page 1392

### Nutrient Agar (DEV/ISO)

**DEV, EN ISO 16266:2008, for microbiology**

For confirmation of *Pseudomonas aeruginosa* in water samples.
Application: Use 28 g for 1 l agar.

**Guarantee analysis:**

Peptone. ..... 5 g/l
Meat extract. ..... 1 g/l
Yeast extract. ..... 2 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,4 ±0,2

| | | | |
|---|---|---|---|
| **CP66.1** | 500 g | plastic | 111,30 € |
| Original pack 6 x 500 g | | | 105,74/500 g |

For further information, please see page 1392

### Nutrient Agar (DEV)

**DEV, DIN 38 411, for microbiology**

For biochemical analysis of *E.coli* and Coliforms in water samples and other sample material.
Application: Use 43 g for 1 l agar.

**Guarantee analysis:**

Meat peptone. ..... 10 g/l
Meat extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 18 g/l
pH value. ..... 7,3 ±0,2

| | | | |
|---|---|---|---|
| **CL02.1** | 500 g | plastic | 102,15 € |
| Original pack 6 x 500 g | | | 97,04/500 g |
| **CL02.2** | 1 kg | plastic | 182,75 € |
| Original pack 6 x 1 kg | | | 173,61/1 kg |

For further information, please see page 1392

## Nutrient Broth

### Nutrient Broth

**for microbiology**

For cultivation of non-fastidious microorganisms.
Application: Use 8 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

**Formulation:**

Beef extract. ..... 3 g/l
Gelatine peptone. ..... 5 g/l
pH value. ..... 6,8 ±0,2

| | | | |
|---|---|---|---|
| **X929.1** | 500 g | plastic | 76,25 € |
| Original pack 6 x 500 g | | | 72,44/500 g |
| **X929.2** | 1 kg | plastic | 134,40 € |
| Original pack 6 x 1 kg | | | 127,68/1 kg |

For further information, please see page 1392

## Nutrient Media Additives for Cell Biology


| Art. No. | Description | Page |
|---|---|---|
| 9165 | Roti®-CELL Bicarbonate solution | 2204 |
| 9124 | Roti®-CELL DPBS | 2205 |
| 9130 | Roti®-CELL 10x DPBS | 2205 |
| 9131 | Roti®-CELL DPBS | 2205 |
| 9135 | Roti®-CELL DPBS/EDTA | 2205 |
| 9155 | Roti®-CELL Glucose solution | 2206 |
| 9183 | Roti®-CELL Glutamine solution | 2206 |
| 9117 | Roti®-CELL Hanks' BSS | 2206 |
| 9118 | Roti®-CELL Hanks' BSS | 2206 |
| 9119 | Roti®-CELL Hanks' BSS | 2206 |
| 9122 | Roti®-CELL Hanks' BSS | 2206 |
| 9157 | Roti®-CELL HEPES solution | 2207 |
| 9185 | Roti®-CELL MEM-NEAA solution | 2207 |
| 9830 | Roti®-CELL Myco-Free | 2207 |
| 9143 | Roti®-CELL PBS | 2207 |
| 9150 | Roti®-CELL 10x PBS | 2207 |
| 9152 | Roti®-CELL PBS/EDTA | 2208 |
| 9182 | Roti®-CELL Pyruvate solution | 2208 |
| 9186 | Roti®-CELL Water | 2208 |

## Nutrient Media for Cell Biology

| Art. No. | Description | Page |
|---|---|---|
| 9031 | Roti®-CELL DMEM : F12 | 2204 |
| 9005 | Roti®-CELL DMEM High Glucose | 2204 |
| 9006 | Roti®-CELL DMEM High Glucose | 2204 |
| 9007 | Roti®-CELL DMEM High Glucose | 2204 |
| 9010 | Roti®-CELL DMEM High Glucose | 2204 |
| 9011 | Roti®-CELL DMEM High Glucose | 2205 |
| 9019 | Roti®-CELL DMEM High Glucose | 2205 |
| 9023 | Roti®-CELL DMEM High Glucose | 2205 |
| 9027 | Roti®-CELL DMEM Low Glucose | 2205 |
| 9030 | Roti®-CELL DMEM Low Glucose | 2205 |
| 9058 | Roti®-CELL Eagle's MEM-Alpha | 2205 |
| 9082 | Roti®-CELL Eagle's MEM-Alpha | 2205 |
| 9044 | Roti®-CELL Eagle's MEM / Earle's | 2206 |
| 9047 | Roti®-CELL Eagle's MEM / Earle's | 2206 |
| 9048 | Roti®-CELL Eagle's MEM / Earle's | 2206 |
| 9049 | Roti®-CELL Eagle's MEM / Earle's | 2206 |
| 9056 | Roti®-CELL Eagle's MEM / Hanks' | 2206 |
| 9108 | Roti®-CELL Ham's F12 | 2206 |
| 9033 | Roti®-CELL Iscove's MDM | 2207 |
| 9035 | Roti®-CELL Iscove's MDM | 2207 |
| 9109 | Roti®-CELL Leibovitz's L15 | 2207 |
| 9111 | Roti®-CELL McCoy's 5A | 2207 |
| 9112 | Roti®-CELL Medium 199 / Earle's | 2207 |
| 9085 | Roti®-CELL RPMI-1640 | 2208 |
| 9086 | Roti®-CELL RPMI-1640 | 2208 |
| 9091 | Roti®-CELL RPMI-1640 | 2208 |
| 9093 | Roti®-CELL RPMI-1640 | 2208 |
| 9094 | Roti®-CELL RPMI-1640 | 2208 |
| 9099 | Roti®-CELL RPMI-1640 | 2208 |
| 9104 | Roti®-CELL RPMI-1640 | 2208 |
| 9114 | Roti®-CELL TC100 | 2208 |
| 9116 | Roti®-CELL William's E | 2208 |

## Nystatin dihydrate

### Nystatin dihydrate

**≥4400 I.U./mg, for biochemistry**

Broad-range fungizide, polyene.
Mycostatin, Fungicidin
$C_{47}H_{75}NO_{17} \cdot 2\ H_2O$
M 962,14 g/mol
Storage temp.: +4 °C
[1400-61-9] • EC No. 215-749-0
WGK 1

**Type analysis:**

Activity. ..... ≥4400 I.U./mg
pH value (3 % aqueous solution). ..... 6,0-8,0
Loss on drying. ..... ≤5,0 %

| | | | |
|---|---|---|---|
| **0241.1** | 5 g | glass | 35,40 € |
| **0241.2** | 10 g | glass | 60,10 € |

For further information, please see page 1431

## NZamine

### NZamine

**for molecular biology**

Component of nutrition media for molecular biological assays, particularly LB Broth.
Storage temp.: +20 °C

**Guarantee analysis:**

Total nitrogen. ..... ≥10 %
Amino nitrogen. ..... ≥3,9 %
Loss on drying. ..... ≤6 %
Ash. ..... ≤15 %
pH value (2 % solution). ..... 7,0 ±0,5

| | | | |
|---|---|---|---|
| **CP76.2** | 250 g | plastic | 45,70 € |
| **CP76.1** | 500 g | plastic | 72,60 € |
| Original pack 6 x 500 g | | | 68,97/500 g |

For further information, please see page 1421

## NZCYM Broth

### NZCYM Broth

**for molecular biology**

Application: Use 22 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

**Formulation:**

Casein, enzymatically digested. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Casamino Acids. ..... 1 g/l
Magnesium sulphate ($MgSO_4$), anhydrous..... 0,98 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X974.1** | 500 g | plastic | 59,05 € |
| Original pack 6 x 500 g | | | 56,10/500 g |

For further information, please see page 1417

## NZYM Broth

### NZYM Broth

**for molecular biology**

Application: Use 21 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

**Formulation:**

Casein, enzymatically digested. ..... 10 g/l
Yeast extract. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Magnesium sulphate ($MgSO_4$), anhydrous..... 0,98 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X973.1** | 500 g | plastic | 59,05 € |
| Original pack 6 x 500 g | | | 56,10/500 g |

For further information, please see page 1417

## $N_\alpha$-Carbobenzyloxy-L-phenylalanine

▶ Z-L-Phenylalanine see p. 2390

## Octaacetyl-α-D-cellobiose

▶ α-D-Cellobiose octaacetate see p. 1821

## Octacedyl modified silica - endcapped

▶ Silica gel 60 modified phases see p. 2251

## Octacosane

### Octacosane

**≥98 %**

$C_{28}H_{58}$
M 394,74 g/mol
mp 61-62 °C
[630-02-4] • EC No. 211-125-7

**Type analysis:**

Assay (GC). ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **4441.1** | 5 g | glass | 42,50 € |

## n-Octadecane

### n-Octadecane

**ROTICHROM® GC**

Reference substance for GC.
$C_{18}H_{38}$
M 254,50 g/mol
D 0,78 • bp 317 °C
mp 28-30 °C • flp 154 °C
Storage temp.: +4 °C
[593-45-3] • EC No. 209-790-3
WGK 1

**Type analysis:**

Purity (GC). ..... ≥98,5 %

| | | | |
|---|---|---|---|
| **9059.1** | 1 g | plastic | 81,20 € |

## 1-Octadecanol

▶ Stearyl alcohol see p. 2316

## 9,12,15-Octadecatrienoic acid

▶ Linolenic acid see p. 2038

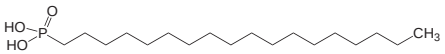
## cis-9-Octadecenoic acid

▶ Oleic acid see p. 2122

## Octadecyl-modified silica gel

▶ Silica gel $C_{18}$ see p. 2252

## Octadecylphosphonic acid



### Octadecylphosphonic acid

Suitable for the production and modification of nanoparticles.
ODPA
$C_{18}H_{39}O_3P$
M 334,47 g/mol
mp 95-100 °C
Storage temp.: +4 °C
[4724-47-4]
WGK 3

**Type analysis:**
Melting point. ..... 95-100 °C

| | | | |
|---|---|---|---|
| **8468.1** | 1 g | glass | 38,20 € |
| **8468.2** | 5 g | glass | 138,70 € |

## Octadeutero tetrahydrofurane

▶ Tetrahydrofuran D8 see p. 2337

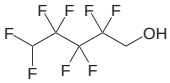
## 5-(Octa-1,7-diynyl)-5'-*O*-triphosphate-2'-deoxycytidine

▶ C8-Alkyne-dCTP see p. 1807

## 5-(Octa-1,7-diynyl)-5'-*O*-triphosphate-2'-deoxyuridine

▶ C8-Alkyne-dUTP see p. 1807

## 2,2,3,3,4,4,5,5-Octafluoro-1-pentanol



### 2,2,3,3,4,4,5,5-Octafluoro-1-pentanol

**≥99,5 %**
OFP, 1H,1H,5H-Perfluoropentanol
$C_5H_4F_8O$
M 232,07 g/mol
D 1,67 • bp 140-142 °C
mp ≥120 °C • flp 75 °C
[355-80-6] • EC No. 206-593-4
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... clear colourless liquid
Assay (GC). ..... ≥99,5 %
Water (KF). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7297.1** | 10 ml | glass | 17,10 € |
| **7297.2** | 100 ml | glass | 88,05 € |

## 4,4,4',4',5,5,5',5'-Octamethyl-2,2'-bi-(1,3,2-dioxaborolane)

▶ Bis(pinacolato)diboron see p. 1776

## Octamethylene glycol

▶ 1,8-Octanediol see p. 2108

## iso-Octane

▶ Isooctane see p. 2015

## n-Octane



### n-Octane

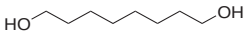
**≥99 %, for synthesis**
$C_8H_{18}$
M 114,22 g/mol
D 0,703 • bp 125-127 °C
mp -57 °C • flp 13 °C
[111-65-9] • EC No. 203-892-1
UN No. 1262 • ADR 3 II • WGK 2

**Danger**
H225-H304-H315-H336-H410

**Type analysis:**
Appearance. ..... clear, colourless liquid
Assay. ..... ≥99,0 %
Density (15 °C). ..... 0,706-0,710
Aromatic compounds. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **8753.1** | 100 ml | glass | 23,15 € |
| **8753.2** | 500 ml | glass | 57,95 € |
| **8753.3** | 1 l | glass | 104,20 € |
| Original pack 6 x 1 l | | | 98,99/1 l |
| **8753.4** | 2,5 l | glass | 204,15 € |
| Original pack 4 x 2,5 l | | | 193,94/2,5 l |

## 1,8-Octanediol



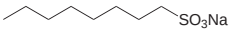
### 1,8-Octanediol

**≥98 %**
Octamethylene glycol
$C_8H_{18}O_2$
M 146,23 g/mol
bp 274 °C
mp 63 °C • flp 148 °C
[629-41-4] • EC No. 211-090-8
WGK 1

**Type analysis:**
Assay (GC). ..... ≥98,0 %
Water (KF). ..... ≤1,0 %
Melting point. ..... 59-61 °C

| | | | |
|---|---|---|---|
| **5273.1** | 25 g | plastic | 18,85 € |
| **5273.2** | 50 g | plastic | 31,10 € |

## Octane-1-sulphonic acid sodium salt



### Octane-1-sulphonic acid sodium salt

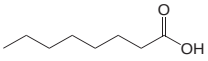
**≥98 %, for ion pair chromatography**
Ion pair reagent for HPLC.
Sodium-1-octane sulphonate
$C_8H_{17}NaO_3S$
M 216,27 g/mol
[5324-84-5] • EC No. 226-195-4
WGK 2

**Warning** H315-H319-H335

**Guarantee analysis:**
Assay (acidim.). ..... ≥98,0 %
Water. ..... ≤2 %
A 200 nm (0,25 M in water). ..... ≤0,1 AU
A 210 nm (0,25 M in water). ..... ≤0,05 AU
A 220 nm (0,25 M in water). ..... ≤0,03 AU
A 230 nm (0,25 M in water). ..... ≤0,02 AU
A 240 nm (0,25 M in water). ..... ≤0,01 AU
A 250 nm (0,25 M in water). ..... ≤0,01 AU
A 260 nm (0,25 M in water). ..... ≤0,01 AU

| | | | |
|---|---|---|---|
| **KK55.1** | 10 g | glass | 46,15 € |
| **KK55.2** | 25 g | glass | 89,15 € |
| **KK55.3** | 100 g | glass | 267,70 € |

## Octanoic acid



### Octanoic acid

**≥99,5 %, for synthesis**
Caprylic acid
$C_8H_{16}O_2$
M 144,21 g/mol
D 0,91 • bp 237 °C
mp 12-16 °C • flp 127 °C
[124-07-2] • EC No. 204-677-5
UN No. 3265 • ADR 8, III • WGK 1

**Danger** H314-H412

**Type analysis:**
Assay. ..... ≥99,5 %
Water. ..... ≤0,2 %
Melting point. ..... 12-16 °C

| | | | |
|---|---|---|---|
| **2613.1** | 100 ml | glass | 13,90 € |
| **2613.2** | 500 ml | glass | 23,15 € |
| **2613.3** | 1 l | glass | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |
| **2613.4** | 2,5 l | glass | 60,10 € |
| Original pack 4 x 2,5 l | | | 57,10/2,5 l |

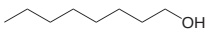
## n-Octanoic acid

▶ Caprylic acid see p. 1810

## Octanoic acid methylester

▶ Caprylic acid methyl ester see p. 1810

## 1-Octanol



Caprylic alcohol, n-Octyl alcohol
$C_8H_{18}O$
M 130,23 g/mol
D 0,82 • bp 194,4 °C
mp -16,3 °C • flp 81 °C
Solubility: 0,3 g/l ($H_2O$, 20 °C)
[111-87-5] • EC No. 203-917-6
WGK 1

**Warning** H319-H412

### 1-Octanol

**≥99 %, for synthesis**

**Type analysis:**

Assay (GC). ..... ≥99,0 %
Density (d 20 °C/4 °C). ..... 0,824-0,826
Water. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4439.1** | 100 ml | glass | 14,55 € |
| **4439.2** | 500 ml | glass | 24,65 € |
| **4439.3** | 1 l | glass | 37,55 € |
| Original pack 6 x 1 l | | | 35,67/1 l |

### 1-Octanol

**ROTICHROM® GC**

Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**

Purity (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **3182.1** | 1 g | plastic | 81,20 € |

## OCT Embedding Matrix

### OCT Embedding Matrix

**for histology**

Embedding medium for frozen tissue sections.
Storage temp.: +20 °C
WGK 1

**Type analysis:**

Appearance. ..... viscous, colourless liquid
Spec. gravity. ..... 1,032-1,040
Micro examination. ..... free of undissolved matter
Film. ..... hazy

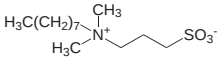
| | | | |
|---|---|---|---|
| **6478.1** | 125 ml | plastic | 24,65 € |
| **6478.2** | 3 x 125 ml | plastic | 67,20 € |

For further information, please see page 1451

## n-Octylalcohol

▶ 1-Octanol see p. 2109

## N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate



### N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate

**≥98 %, for biochemistry**

Zwitterionic detergent
Sulfobetaine-8, SB-8
$C_{13}H_{29}NO_3S$
M 279,4 g/mol
[15178-76-4]
WGK 1

**Warning** H315-H319-H335

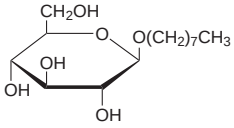
**Type analysis:**

Assay (HPLC). ..... ≥98,0 %
Loss on drying. ..... ≤2,0 %
Ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **1800.1** | 5 g | glass | 51,10 € |
| **1800.2** | 25 g | glass | 137,10 € |

For further information, please see page 1274

## n-Octyl-β-D-glucopyranoside (OGP)



### n-Octyl-β-D-glucopyranoside (OGP)

**≥99 %, for biochemistry**

Non-ionic detergent.
OGP, Octylglucoside
$C_{14}H_{28}O_6$
M 292,38 g/mol
mp 98-103 °C
Storage temp.: +4 °C
[29836-26-8] • EC No. 249-887-8
WGK 1

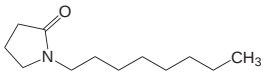
**Type analysis:**

Assay. ..... ≥99 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in $H_2O$). ..... -35° to -31°

| | | | |
|---|---|---|---|
| **CN23.1** | 1 g | glass | 26,80 € |
| **CN23.2** | 5 g | glass | 96,65 € |
| **CN23.3** | 10 g | glass | 160,20 € |

For further information, please see page 1272

## N-Octyl-2-pyrrolidone (NOP)



### N-Octyl-2-pyrrolidone (NOP)

**≥99 %, for synthesis**

NOP, 1-Octyl-2-pyrrolidone
$C_{12}H_{23}NO$
M 197,32 g/mol
D 0,92 • bp 306 °C
mp -26 °C • flp 142 °C
[2687-94-7] • EC No. 403-700-8
UN No. 3267 • ADR 8 II • WGK 2

**Danger** H314-H411

**Type analysis:**

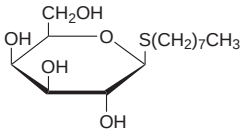
Assay (GC). ..... ≥99,0 %
Water. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **0358.1** | 100 ml | glass | 21,40 € |
| **0358.2** | 500 ml | plastic | 48,30 € |
| **0358.3** | 1 l | plastic | 75,15 € |
| Original pack 6 x 1 l | | | 71,39/1 l |
| **0358.4** | 2,5 l | plastic | 138,70 € |
| Original pack 4 x 2,5 l | | | 131,77/2,5 l |

## n-Octyl-1-thio-β-D-Gal

▶ n-Octyl-β-D-thiogalactopyranoside see p. 2109

## n-Octyl-β-D-thiogalacto-pyranoside



### n-Octyl-β-D-thiogalacto-pyranoside

**≥98 %, for biochemistry**

Non-ionic detergent.
Octyl-β-D-thiogalactoside, n-Octyl-1-thio-β-D-Gal
$C_{14}H_{28}O_5S$
M 308,44 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[42891-16-7]
WGK 1

**Type analysis:**

Assay (GC). ..... ≥98,0 %
Solution (5 % in methanol). ..... colourless, clear
Water (KF). ..... ≤2 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in methanol). ..... -35° to -31°

| | | | |
|---|---|---|---|
| **4133.1** | 500 mg | glass | 52,15 € |
| **4133.2** | 1 g | glass | 89,15 € |

For further information, please see page 1272

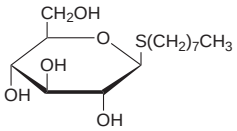
## Octyl-β-D-thiogalactoside

▶ n-Octyl-β-D-thiogalactopyranoside see p. 2109

## n-Octyl-1-thio-β-D-Glc

▶ n-Octyl-β-D-thioglucopyranoside see p. 2110

## n-Octyl-β-D-thiogluco-pyranoside



### n-Octyl-β-D-thiogluco-pyranoside

**≥95 %, for biochemistry**
Non-ionic detergent.
Octyl-β-D-thioglucoside, n-Octyl-1-thio-β-D-Glc
$C_{14}H_{28}O_5S$
M 308,44 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[85618-21-9]
WGK 1

**Type analysis:**
Assay (GC). ..... ≥95 %
Solution (5 % in methanol). .....
..... colourless, clear to slightly turbid
Water (KF). ..... ≤4 %
Spec. rotation $[\alpha]_D^{20}$ (c=1 in ethanol). ..... -49° ±2°

| | | | |
|---|---|---|---|
| **4139.3** | 500 mg | glass | 35,40 € |
| **4139.1** | 1 g | glass | 54,75 € |
| **4139.2** | 5 g | glass | 203,20 € |

For further information, please see page 1272

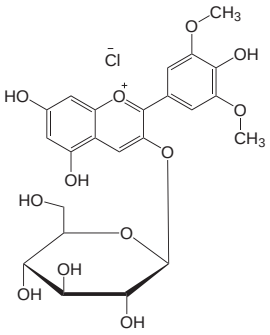
## Octyl-β-D-thioglucoside

▶ n-Octyl-β-D-thioglucopyranoside see p. 2110

## ODPA

▶ Octadecylphosphonic acid see p. 2108

## Oenin chloride



### Oenin chloride

**ROTICHROM® HPLC**
Reference substance for HPLC.
Malvidin-3-glucoside chloride
$C_{23}H_{25}O_{12}Cl$
M 528,87 g/mol
Storage temp.: +4 °C
[7228-78-6]

**Type analysis:**
Purity (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **K030.1** | 5 mg | glass | 306,40 € |

## OFP

▶ 2,2,3,3,4,4,5,5-Octafluoro-1-pentanol see p. 2108

## Oil of angelica

### Oil of angelica roots

**hungarian, natural**
Oleum Angelicae e seminis
D ~0,9
flp 44-48 °C
[8015-64-3] • EC No. 283-871-1
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H411-H317

**Type analysis:**
Appearance..... clear, yellowish to brownish oil
Density (20 °C). ..... 0,850-0,880 g/cm³
Refractive index (20 °C). ..... 1,473-1,487
Optical rotation (20 °C). ..... 0° to +46°

| | | | |
|---|---|---|---|
| **6587.1** | 10 ml | glass | 67,20 € |

## Oil of anise, natural

### Oil of anise

**natural**
Oleum Anisi
mp ~17 °C • flp 98 °C
[84650-59-9] • EC No. 283-518-1
UN No. 3082 • ADR 9 III • WGK 2
**Warning** H317-H411-H341-H351

**Type analysis:**
Appearance..... clear, almost colourless to yellow oil
Relative density (20 °C)..... 0,979-0,990
Refractive index (20 °C). ..... 1,553-1,556

| | | | |
|---|---|---|---|
| **7036.1** | 100 ml | glass | 32,15 € |

## Oil of anise, artificial

### Oil of anise

**artificial**
Oleum Anisi
flp 46 °C
UN No. 1169 • ADR 3 III • WGK 3
**Danger** H304-H341-H351-H226-H400-H410-H315-H317

**Type analysis:**
Appearance....clear almost colourless to pale yellow oil
Density (20 °C)..... 0,880-0,920 g/cm³
Refractive index (20 °C). ..... 1,49-1,50
Optical rotation (20 °C)..... +0° to +30°

| | | | |
|---|---|---|---|
| **3278.2** | 100 ml | glass | 14,95 € |
| **3278.1** | 500 ml | glass | 44,65 € |

## Oil of balm

### Oil of balm

**natural**
Oleum Melissae indicum
D ~0,9 • bp ~220 °C
flp 63 °C
[91771-61-8] • EC No. 294-954-7
UN No. 3082 • ADR 9 III • WGK 2
**Danger**
H318-H317-H315-H304-H411

**Type analysis:**
Appearance. ..... clear, colourless to yellowish oil
Density (20 °C)..... 0,880-0,896 g/cm³
Refractive index (20 °C). ..... 1,4630-1,4750
Optical rotation (20 °C)..... -4° to +1°

| | | | |
|---|---|---|---|
| **6507.1** | 100 ml | glass | 18,20 € |

## Oil of basil

### Oil of basil

**natural**
Oleum Basilici
bp ~215 °C
flp 74 °C
[84775-71-3] • EC No. 283-900-8
WGK 2
**Warning**
H302-H317-H341-H351-H412

**Type analysis:**
Appearance. ..... clear yellow to brownish oil
Density (20 °C)..... 0,920-0,960 g/cm³
Refractive index (20 °C). ..... 1,495-1,515
Optical rotation (20 °C)..... -10° to 0°

| | | | |
|---|---|---|---|
| **7039.1** | 25 ml | glass | 46,15 € |

## Oil of bergamot, natural

### Oil of bergamot
**natural**
Oleum Bergamottae
D 0,88
flp 58 °C
[8007-75-8] • EC No. 289-612-9
UN No. 1169 • ADR 3 III • WGK 3
 **Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. .... clear, green-yellow to green-amber oil
Relative density (20 °C). ..... 0,870-0,880
Refractive index (20 °C)..... 1,464-1,468
Optical rotation (20 °C). ..... +15° to +35°

| | | | |
|---|---|---|---|
| **6501.1** | 50 ml | glass | 33,25 € |

## Oil of bergamot, artificial

### Oil of bergamot
**artificial**
Oleum Bergamottae
D 0,88
flp 58 °C
UN No. 1993 • ADR 3 III • WGK 3
 **Danger** H304-H226-H400-H410-H315-H319-H317-H335

**Type analysis:**
Appearance. ..... clear, green-yellow oil
Density (20 °C). ..... 0,875-0,885 g/cm³
Refractive index (20 °C)..... 1,450-1,470
Optical rotation (20 °C). ..... +20° to +40°

| | | | |
|---|---|---|---|
| **3282.2** | 100 ml | glass | 23,15 € |
| **3282.1** | 250 ml | glass | 38,60 € |

## Oil of cajeput

### Oil of cajeput
**natural**
Oleum Cajeput
D ~0,92
flp 48 °C
[85480-37-1] • EC No. 287-316-4
UN No. 1169 • ADR 3 III • WGK 2
 **Danger**
H304-H226-H317-H411

**Type analysis:**
Appearance. ..... clear, colourless to yellow oil
Density (20 °C). ..... 0,910-0,925 g/cm³
Refractive index (20 °C)..... 1,462-1,472
Optical rotation (20 °C). ..... -5° to 0°
1,8-Cineole. ..... 50-70 %
α-Terpineol. ..... 5-15 %

| | | | |
|---|---|---|---|
| **6105.1** | 100 ml | glass | 26,35 € |
| **6105.2** | 500 ml | glass | 65,50 € |

## Oil of camphor

### Oil of camphor
**light**
Oleum Camphorae
D 0,89
flp 53 °C
[8008-51-3] • EC No. 294-760-2
UN No. 1130 • ADR 3 III • WGK 3
 **Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear, pale yellow to yellowish to brownish oil
Density (20 °C). ..... 0,870-0,920 g/cm³
Refractive index (20 °C). ..... 1,460-1,470
Optical rotation (20 °C). ..... +5° to +15°

| | | | |
|---|---|---|---|
| **3357.1** | 1 l | glass | 55,80 € |
| Original pack 6 x 1 l | | | 53,01/1 l |

## Oil of caraway, natural

### Oil of caraway
**natural**
Oleum Carvi
D ~0,95
flp 53 °C
[8000-42-8] • EC No. 288-921-6
UN No. 1169 • ADR 3 III • WGK 3
 **Danger**
H304-H226-H400-H410-H312-H315-H317

**Type analysis:**
Appearance. ..... clear, almost colourless to light yellowish oil
Solubility in ethanol % vol. ... L96: 1:1 v/v clear soluble
Miscible. ..... ethanol 90 %, ether
Relative density (20 °C). ..... 0,920-0,980
Refractive index (20 °C). ..... 1,484-1,490
Optical rotation (20 °C). ..... +65° to +81°

| | | | |
|---|---|---|---|
| **7050.1** | 25 ml | glass | 20,35 € |

## Oil of caraway, artificial

### Oil of caraway
**artificial**
Oleum Carvi
D ~0,87
UN No. 1993 • ADR 3 III • WGK 3
 **Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear, yellowish to brownish oil
Relative density (20 °C). ..... 0,850-0,890
Refractive index (20 °C). ..... 1,470-1,480
Optical rotation (20 °C). ..... +65° to +95°

| | | | |
|---|---|---|---|
| **3307.1** | 250 ml | glass | 36,05 € |

## Oil of cassia

### Oil of cassia
**natural, chinese**
Oleum Cassiae
D ~1,06
[8007-80-5] • EC No. 284-635-0
WGK 2
**Warning** H312-H315-H317

**Type analysis:**
Appearance. ..... clear, yellow to brown oil
Relative density (20 °C). ..... 1,052-1,070
Refractive index (20 °C). ..... 1,600-1,614
Optical rotation (20 °C). ..... -1° to +1°

| | | | |
|---|---|---|---|
| **6593.1** | 100 ml | glass | 39,70 € |

## Oil of cedar leaf, pure

### Oil of cedar leaf
**pure**
Oleum Foliorum cedri
D ~0,91
flp 48 °C
[8007-20-3] • EC No. 290-370-1
UN No. 1169 • ADR 3 III • WGK 2
 **Danger**
H304-H226-H302-H317-H411

**Type analysis:**
Appearance. ..... yellow to brown oil
Density (20 °C). ..... 0,900-0,940 g/cm³
Refractive index (20 °C). ..... 1,450-1,470
Optical rotation (20 °C). ..... -14° to -4°

| | | | |
|---|---|---|---|
| **6594.1** | 100 ml | glass | 79,05 € |

## Oil of cedar leaf, artificial

### Oil of cedar leaf
**artificial**
Oleum Foliorum cedri
D ~0,91
flp 51 °C
UN No. 1993 • ADR 3 III • WGK 2
 **Danger**
H304-H226-H302-H317-H411

**Type analysis:**
Appearance. ..... clear, yellowish to brownish oil
Density (20 °C). ..... 0,880-0,920 g/cm³
Refractive index (20 °C). ..... 1,4640-1,4740
Optical rotation (20 °C). ..... +5° to +15°

| | | | |
|---|---|---|---|
| **3291.2** | 50 ml | glass | 19,90 € |
| **3291.1** | 250 ml | glass | 57,95 € |

## Oil of cedar wood

### Oil of cedar wood
**for microscopy**
Oleum Ligni cedri
D 0,99 • bp 279 °C
flp 110-113 °C
UN No. 3082 • ADR 9 III • WGK 2
**Danger** H304-H410

**Type analysis:**
Appearance....yellow to brownish, translucent, viscous
Solubility in ether. ..... 1:1
Solubility in toluene. ..... 1:1
Solubility in chloroform. ..... 1:1
Odour. ..... characteristic
Density (20 °C). ..... 0,985-0,998
Refractive index $n_D^{20}$. ..... 1,51-1,525

| | | | |
|---|---|---|---|
| **5308.1** | 100 ml | glass | 15,60 € |
| **5308.2** | 250 ml | glass | 23,15 € |
| **5308.3** | 500 ml | glass | 40,75 € |

For further information, please see page 1474

## Oil of celery

### Oil of celery
Oleum Apii, from seeds
Apium graveolens oil
D 0,89
flp 56 °C
[89997-35-3] • EC No. 289-668-4
UN No. 1169 • ADR 3 III • WGK 3
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear, light yellow-brownish oil
Relative density (20 °C). ..... 0,880-0,905
Refractive index (20 °C)..... 1,4780-1,4860
Optical rotation (20 °C). ..... +50° to +70°

| | | | |
|---|---|---|---|
| **7040.2** | 5 ml | glass | 23,15 € |
| **7040.1** | 25 ml | glass | 57,95 € |

## Oil of cembra pine

### Oil of cembra pine
**pure**
Oleum Cembrae
D ~0,86
[92202-04-5] • EC No. 296-036-1
UN No. 1272 • ADR 3 III • WGK 3
**Danger**
H226-H315-H319-H317-H304-H410

**Type analysis:**
Appearance. ..... clear, light yellowish oil
Density (20 °C). ..... 0,850-0,890 g/cm³
Refractive index (20 °C)..... 1,4700-1,4800
Optical rotation (20 °C). ..... -15° to -5°

| | | | |
|---|---|---|---|
| **4208.2** | 25 ml | glass | 17,10 € |
| **4208.1** | 100 ml | glass | 44,00 € |

## Oil of chamomile, blue

### Oil of chamomile
**blue**
Oleum Chamomillae
D 0,94
flp 63 °C
[8002-66-2] • EC No. 282-006-5
WGK 1
H412

**Typ analysis:**
Appearance. ..... blue oil
Density (20 °C). ..... 0,922-0,964 g/cm³

| | | | |
|---|---|---|---|
| **6504.1** | 10 ml | glass | 67,20 € |

## Oil of chamomile, natural

### Oil of chamomile
**roman, natural**
Oleum Chamomillae romanae
D ~0,90
flp 70 °C
[84649-86-5] • EC No. 283-467-5
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H317-H411

**Type analysis:**
Appearance. ..... clear, yellowish oil
Relative density (20 °C). ..... 0,890-0,930
Refractive index (20 °C). ..... 1,440-1,455
Optical rotation (20 °C). ..... -5° to +5°

| | | | |
|---|---|---|---|
| **3354.1** | 5 ml | glass | 39,25 € |

## Oil of chamomile, artificial

### Oil of chamomile
**artificial**
Oleum Chamomillae
D 0,94
flp 51 °C
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H400-H410-H315-H319-H317

**Typ analysis:**
Appearance. ..... clear, blue to green oil
Density (20 °C). ..... 0,900-1,000 g/cm³
Refractive index (20 °C). ..... 1,500-1,520
Optical rotation (20 °C). ..... -10° to 0°

| | | | |
|---|---|---|---|
| **3305.1** | 50 ml | glass | 54,75 € |

## Oil of cinnamon, natural

### Oil of cinnamon
**natural**
Oleum Cinnamomi ceylanici
D ~1,03
flp 80 °C
WGK 2
**Danger**
H304-H312-H315-H319-H317-H412

**Type analysis:**
Appearance. ..... clear, yellowish to yellow-brownish oil
Density (20 °C)..... 1,000-1,050 g/cm³
Refractive index (20 °C). ..... 1,570-1,590
Optical rotation (20 °C)..... -2° to +2°

| | | | |
|---|---|---|---|
| **A432.2** | 10 ml | glass | 17,10 € |
| **A432.1** | 50 ml | glass | 57,55 € |

## Oil of cinnamon, artificial

### Oil of cinnamon
**artificial**
Oleum Cinnamomi ceylanici
D ~1,03
flp 63 °C
WGK 2
**Danger**
H304-H312-H315-H317-H319-H412

**Type analysis:**
Appearance. .... clear, light yellow to medium yellow oil
Density (20 °C)..... 1,020-1,040 g/cm³
Refractive index (20 °C). ..... 1,590-1,596
Optical rotation (20 °C)..... -1° to +1°

| | | | |
|---|---|---|---|
| **6512.1** | 50 ml | glass | 28,95 € |

## Oil of citronella, natural

### Oil of citronella
**natural**
Oleum Citronellae
D 0,89
flp 63 °C
[91771-61-8] • EC No. 294-954-7
UN No. 3082 • ADR 9 III • WGK 2
**Danger**
H318-H317-H315-H411-H304

**Type analysis:**
Appearance. ... clear, colourless to yellow-brownish oil
Density (20 °C)..... 0,881-0,895 g/cm³
Refractive index (20 °C). ..... 1,4630-1,4750
Optical rotation (20 °C)..... -4° to +1°

| | | | |
|---|---|---|---|
| **6502.1** | 250 ml | glass | 39,70 € |

## Oil of citronella, artificial

### Oil of citronella
**artificial**
Oleum Citronellae
D 0,89 • bp ~180 °C
flp 53 °C
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H318-H226-H400-H410-H317-H315

**Type analysis:**
Appearance. ..... clear, yellowish to brownish oil
Density (20 °C). .....0850-0,900 g/cm³
Refractive index $n_D^{20}$. ..... 1,4650-1,4750
Optical rotation (20 °C). ..... +30° to +50°

| | | | |
|---|---|---|---|
| **3292.1** | 500 ml | glass | 33,25 € |

## Oil of clary-sage

### Oil of clary-sage
**natural**
Oleum Salviae sclareae
[84775-83-7] • EC No. 283-911-8
WGK 1
**Warning** H315-H317-H412

**Type analysis:**
Appearance. .....clear, light yellow oil
Density (20 °C). .....0,890-0,920 g/cm³
Refractive index (20 °C)..... 1,456-1,468
Optical rotation (20 °C). ..... -20° to -5°

| | | | |
|---|---|---|---|
| **3355.1** | 25 ml | glass | 43,55 € |

## Oil of cloves

### Oil of cloves
**≥80 %, DAB, natural**
Oleum Caryophyllorum
D 1,05
flp 117 °C
[8000-34-8] • EC No. 284-638-7
WGK 2
**Danger**
H302+H312-H304-H317-H319-H412

**Guarantee analysis:**
Appearance. ..... clear, colourless to yellow oil
Assay (phenol/acetyleugenol). ..... ≥80 %
Identity. ..... complies
Foreign phenols. ..... complies
Water-soluble content..... complies
Foreign ester..... complies
Solubility (EtOH). ..... complies
Relative density (20 °C). ..... 1,030-1,055
Refractive index (20 °C)..... 1,5280-1,5370
Optical rotation (20 °C). ..... -2° to 0°
Acid and alkaline reacting substances..... complies
Fatty oils, resinified volatile oils..... complies
Halogen compounds. ..... complies

| | | | |
|---|---|---|---|
| **8662.1** | 250 ml | glass | 37,10 € |
| **8662.2** | 1 l | glass | 117,20 € |
| Original pack 6 x 1 l | | | 111,34/1 l |

## Oil of coriander

### Oil of coriander
**natural**
Oleum Coriandri
D 0,87 • bp 193 °C
flp 59 °C
[8008-52-4] • EC No. 283-880-0
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H315-H317-H411

**Type analysis:**
Appearance..... clear, colourless to light yellowish oil
Relative density (20 °C)..... 0,860-0,880
Refractive index (20 °C). ..... 1,4620-1,4700
Optical rotation (20 °C)..... +7° to +13°

| | | | |
|---|---|---|---|
| **7052.1** | 25 ml | glass | 22,05 € |

## Oil of cubeb

### Oil of cubeb
**natural**
Litsea, Oleum Cubebarum
D 0,89
[90063-59-5] • EC No. 290-018-7
UN No. 3082 • ADR 9 III • WGK 2
**Danger** H304-H315-H317-H411

**Type analysis:**
Appearance.. clear, yellowish to yellowish-brownish oil
Density (20 °C). ..... 0,850-0,900 g/cm³
Refractive index (20 °C). ..... 1,4750-1,4850
Optical rotation (20 °C)..... +5° to +20°

| | | | |
|---|---|---|---|
| **6608.1** | 100 ml | glass | 26,35 € |

## Oil of cypress

### Oil of cypress
**french, natural**
Oleum Cupressi
D 0,87
flp 41 °C
[8013-86-3] • EC No. 283-626-9
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H400-H410-H317

**Guarantee analysis:**
Appearance..... clear, yellow to brown oil
Density (20 °C). ..... 0,850-0,890 g/cm³
Refractive index (20 °C). ..... 1,450-1,480
Optical rotation (20 °C)..... +10° to +30°

| | | | |
|---|---|---|---|
| **6596.1** | 100 ml | glass | 44,65 € |

## Oil of dill herb, natural purity

### Oil of dill herb
**natural purity**
Oleum Anethi e herba
D ~0,90
flp 53 °C
[8006-75-5] • EC No. 289-790-8
UN No. 1169 • ADR 3 III • WGK 3
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear, yellow to brown oil
Density (20 °C)..... 0,880-0,920 g/cm³
Refractive index (20 °C)..... 1,4800-1,4900
Optical rotation (20 °C)..... +70° to +90°

| | | | |
|---|---|---|---|
| **6597.1** | 100 ml | glass | 46,15 € |

## Oil of dill seed

### Oil of dill seed
**extra pure**
Oleum Anethi e seminis
D 0,90
flp 56 °C
[8006-75-5] • EC No. 289-790-8
UN No. 1169 • ADR 3 III • WGK 3
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear colourless to yellowish oil
Density (20 °C)..... 0,895-0,925 g/cm³
Refractive index (20 °C)..... 1,481-1,492
Optical rotation (20 °C)..... +70° to +80°

| | | | |
|---|---|---|---|
| **3352.1** | 100 ml | glass | 43,55 € |

## Oil of estragon

### Oil of estragon
**pure**
Oleum Dracunculi
D 0,95
[90131-45-6] • EC No. 290-356-5
UN No. 3082 • ADR 9 III • WGK 2
**Danger**
H304-H302-H317-H341-H351-H411-EUH066

**Type analysis:**
Appearance. .... clear light yellow green to brownish oil
Relative density (20 °C). .....0,920-0,980
Refractive index (20 °C). .....1,510-1,520
Optical rotation (20 °C)..... 0° to +10°

| | | | |
|---|---|---|---|
| **6602.1** | 50 ml | glass | 75,15 € |

O/P

## Oil of eucalyptus, Ph.Eur.

### Oil of eucalyptus
**>70 %, Ph.Eur.**
Oleum Eucalypti
D 0,92
flp 47 °C
[8000-48-4] • EC No. 283-406-2
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H226-H317-H304-H411

**Guarantee analysis:**
Appearance. .....clear, colourless to light yellow oil
Identity. .....complies
Solubility in ethanol % vol.. ...L70: 1:5 v/v clear soluble
Relative density (20 °C). .....0,906-0,927
Refractive index (20 °C)..... 1,4580-1,4700
Optical rotation (20 °C). ..... +0° to +10°
Aldehydes..... ≤2,0 ml
Chromatographic profile. .....complies
1,8-Cineole. .....≥70 %

| | | | |
|---|---|---|---|
| **5337.1** | 100 ml | glass | 22,05 € |
| **5337.2** | 500 ml | glass | 85,90 € |

## Oil of eucalyptus, artificial

### Oil of eucalyptus
**artificial**
Oleum Eucalypti artificiale
D 0,88
flp 31 °C
UN No. 1169 • ADR 3 III • WGK 3
**Danger**
H304-H226-H317-H410-H315-H319

**Type analysis:**
Appearance. .....
.....clear, colourless to yellowish to yellow oil
Density (20 °C). .....0,850-0,900 g/cm³
Refractive index (20 °C)..... 1,4650-1,4750
Optical rotation (20 °C). ..... +5° to +15°

| | | | |
|---|---|---|---|
| **3297.2** | 500 ml | glass | 28,95 € |
| **3297.1** | 1 l | glass | 44,65 € |
| Original pack 6 x 1 l | | | 42,42/1 l |

## Oil of evening primrose

### Oil of evening primrose
**refined**
Oleum Oenotherae
[90028-66-3] • EC No. 289-859-2

**Type analysis:**
Appearance. .....clear, yellowish to yellow oil
Density (20 °C). .....0,920-0,930
Refractive index $n_D^{20}$. .....1,475-1,480

| | | | |
|---|---|---|---|
| **3691.1** | 50 ml | glass | 14,95 € |
| **3691.2** | 500 ml | glass | 67,20 € |

## Oil of fennel

### Oil of fennel
**artificial**
Oleum Foeniculi
D ~0,89
UN No. 1993 • ADR 3 III • WGK 3
**Danger** H304-H341-H351-
H226-H400-H410-H315-H317

**Type analysis:**
Appearance..... clear, yellowish to yellow-brownish oil
Density (20 °C). .....0,871-0,921 g/cm³
Refractive index (20 °C). ..... 1,480-1,500
Optical rotation (20 °C). .....+5° to +20°

| | | | |
|---|---|---|---|
| **3299.2** | 100 ml | glass | 17,10 € |
| **3299.1** | 500 ml | glass | 44,65 € |

## Oil of fir needles

### Oil of fir needles
**artificial**
Oleum Pini
UN No. 1993 • ADR 3 III • WGK 3
**Danger**
H304-H226-H400-H410-H315-H319-H317

**Type analysis:**
Appearance.... clear, almost colourless to yellowish oil
Miscible. .....ethanol 96 %
Density (20 °C). .....0,850-0,900 g/cm³
Refractive index (20 °C). ..... 1,465-1,475
Optical rotation (20 °C). ..... -35° to -15°

| | | | |
|---|---|---|---|
| **3301.1** | 500 ml | glass | 32,15 € |

## Oil of gardensage

### Oil of gardensage
**natural, Dalmat.**
Oleum Salviae
D ~0,92
flp 47 °C
[8022-56-8] • EC No. 282-025-9
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H371-H226-H302-H317-H411

**Type analysis:**
Appearance.....clear, pale yellow to green-yellowish oil
Density (20 °C). .....0,905-0,925 g/cm³
Refractive index (20 °C). ..... 1,457-1,473
Optical rotation (20 °C). .....-3° to +15°

| | | | |
|---|---|---|---|
| **7075.1** | 50 ml | glass | 26,35 € |

## Oil of garlic

### Oil of garlic
**natural**
Oleum Allii sativi
D 1,05
Storage temp.: +4 °C
[8008-99-9] • EC No. 232-371-1
UN No. 1197 • ADR 3 III • WGK 2
**Warning**
H226-H302-H317-H304-H412

**Type analysis:**
Appearance. ..... clear, yellow to brown oil
Density (20 °C)..... 1,050-1,200 g/cm³
Refractive index (20 °C). .....1,570-1,590

| | | | |
|---|---|---|---|
| **3540.2** | 50 ml | glass | 64,40 € |
| **3540.1** | 100 ml | glass | 117,20 € |

## Oil of geranium, natural

### Oil of geranium
**natural**
Oleum Geranii
D 0,91
flp 90 °C
[90082-51-2] • EC No. 290-140-0
UN No. 3082 • ADR 9 III • WGK 2
**Danger**
H304-H318-H317-H315-H411

**Type analysis:**
Appearance. ..... clear, colourless to brown oil
Density (20 °C)..... 0,870-0,910 g/cm³
Refractive index (20 °C). .....1,460-1,470
Optical rotation (20 °C)..... -10° to +10°

| | | | |
|---|---|---|---|
| **7054.1** | 25 ml | glass | 23,15 € |

## Oil of grapefruit

### Oil of grapefruit
**natural**
D ~0,85
flp 50 °C
[8016-20-4] • EC No. 289-904-6
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... yellow-brown oil
Density (20 °C).....0,846-0,864
Refractive index $n_D^{20}$.....1,470-1,482
Rotation $[\alpha]_D^{20}$..... +90,0° to +104,0°
Aldehyde (calc. as decanal). .....0,8-1,6 %

| | | | |
|---|---|---|---|
| **6718.1** | 250 ml | glass | 70,85 € |

## Oil of juniper

### Oil of juniper
**pure**
Oleum Juniperi e baccis
D ~0,87
flp 39 °C
[73049-62-4] • EC No. 283-268-3
UN No. 1169 • ADR 3 III • WGK 3
**Danger**
H304-H226-H411-H317-EUH066

**Type analysis:**
Appearance. ..... clear, colourless-yellowish oil
Solubility in ethanol % vol.. ..... L90: 1:10 v/v clear, light turbid
Miscible. ..... abs. ethanol, ether, chloroform
Relative density (20 °C). ..... 0,856-0,876
Refractive index (20 °C)..... 1,4720-1,4840
Optical rotation (20 °C). ..... -15° to -1°

| | | | |
|---|---|---|---|
| **7059.1** | 25 ml | glass | 28,50 € |

## Oil of juniper wood

### Oil of juniper wood
**natural**
Oleum Juniperi e ligno
D ~0,87
flp 36 °C
[84603-69-0] • EC No. 283-268-3
UN No. 1993 • ADR 3 III • WGK 3
**Danger**
H226-H304-H315-H317-H410

**Type analysis:**
Appearance. ..... clear, colourless to yellowish oil
Relative density (20 °C). ..... 0,8400-0,8800
Refractive index (20 °C)..... 1,4650-1,4750
Optical rotation (20 °C). ..... -12° to -2°

| | | | |
|---|---|---|---|
| **7057.1** | 25 ml | glass | 19,90 € |

## Oil of lavandin

### Oil of lavandin
**french**
Lavendula hybrida
D 0,91
[8022-15-9] • EC No. 294-470-6
WGK 1
**Danger** H304-H315-H317-H412

**Type analysis:**
Appearance. ..... clear, pale yellow oil
Relative density (20 °C). ..... 0,87-0,91
Refractive index (20 °C)..... 1,455-1,465
Optical rotation (20 °C). ..... -10° to -2°

| | | | |
|---|---|---|---|
| **6603.1** | 100 ml | glass | 30,00 € |

## Oil of lavender, DAB

### Oil of lavender
**DAB**
Oleum Lavandulae
D ~0,88
flp 53 °C
[90063-37-9] • EC No. 289-995-2
WGK 2
**Danger** H304-H315-H317-H412

**Guarantee analysis:**
Appearance..... clear, colourless to light yellowish oil
Identity..... complies
Solubility (EtOH)..... complies
Relative density (20 °C)..... 0,876-0,894
Refractive index (20 °C). ..... 1,457-1,464
Optical rotation (20 °C)..... -11° to -3°
Water-soluble content. ..... complies
Acid value..... ≤2,0
Fatty oils, resinified volatile oils. ..... complies
Foreign ester. ..... complies

| | | | |
|---|---|---|---|
| **5443.1** | 100 ml | glass | 39,70 € |
| **5443.2** | 1 l | glass | 223,50 € |
| Original pack 6 x 1 l | | | 212,33/1 l |

## Oil of lavender, artificial

### Oil of lavender
**artificial**
Oleum Lavendulae
D 0,88
flp 53 °C
WGK 2
**Danger** H304-H315-H317-H319-H412

**Type analysis:**
Appearance..... clear, pale yellow oil
Density (20 °C). ..... 0,870-0,910 g/cm³
Refractive index (20 °C). ..... 1,4600-1,4700
Optical rotation (20 °C)..... -5° to +5°

| | | | |
|---|---|---|---|
| **3367.1** | 250 ml | glass | 49,35 € |

## Oil of lemon, natural

### Oil of lemon
**natural**
Oleum Citri
D ~0,85
flp 48 °C
[8008-56-8] • EC No. 284-515-8
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance..... clear, yellow oil
Solubility in ethanol % vol.. ..... L96: 1:1
Relative density (20 °C)..... 0,848-0,854
Refractive index (20 °C). ..... 1,470-1,4770
Optical rotation (20 °C)..... +55° to +65°

| | | | |
|---|---|---|---|
| **5213.1** | 100 ml | glass | 29,60 € |

## Oil of lemon, italian

### Oil of lemon
**italian**
Oleum Citri
D 0,85 • bp 175 °C
flp 48 °C
[8008-56-8] • EC No. 284-515-8
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... yellow oil
Refractive index $n_D^{20}$..... 1,468-1,480
Density (20 °C)..... 0,845-0,865
Specific rotation $[\alpha]_D^{20}$..... +58° to +70°

| | | | |
|---|---|---|---|
| **3797.2** | 50 ml | glass | 52,60 € |
| **3797.1** | 100 ml | glass | 96,65 € |

## Oil of lemon, artificial

### Oil of lemon
**artificial**
Oleum Citri
D ~0,85
flp 48 °C
UN No. 1993 • ADR 3 III • WGK 3
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. .... clear, light yellow to medium yellow oil
Density (20 °C)..... 0,840-0,860 g/cm³
Refractive index (20 °C). ..... 1,4710-1,4760
Optical rotation (20 °C)..... +55° to +75°

| | | | |
|---|---|---|---|
| **3346.1** | 500 ml | glass | 43,55 € |

## Oil of lemon, low in terpenes

### Oil of lemon
**low in terpenes**
Oleum Citri
D 0,88
mp 228 °C • flp 58 °C
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear, yellowish oil
Miscible..... ethanol 96 %
Density (20 °C)..... 0,860-0,890 g/cm³
Refractive index (20 °C). ..... 1,475-1,485
Optical rotation (20 °C)..... +30° to +50°

| | | | |
|---|---|---|---|
| **6625.1** | 50 ml | glass | 60,10 € |

## Oil of lemon-grass

### Oil of lemon-grass
**natural purity**
Cochin, Oleum Lemon-grass
D 0,9
flp 73 °C
[8007-02-1] • EC No. 295-161-9
UN No. 3082 • ADR 9 III • WGK 2
**Warning** H315-H317-H411-H319

**Guarantee analysis:**
Appearance. .... clear, light yellow to medium yellow oil
Relative density (20 °C). ..... 0,880-0,920
Refractive index (20 °C)..... 1,480-1,490
Optical rotation (20 °C). ..... -5° to +5°

| | | | |
|---|---|---|---|
| **6606.1** | 100 ml | glass | 26,35 € |

## Oil of lime

### Oil of lime
**natural**
Oleum Limettae, Lime oil
D 0,86
UN No. 1993 • ADR 3 III • WGK 2
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Density (20 °C). ..... 0,855-0,870
Refractive index (20 °C)..... 1,470-1,482
Optical rotation (20 °C). ..... +30° to +40°

| | | | |
|---|---|---|---|
| **6721.1** | 50 ml | glass | 24,65 € |

## Oil of lovage

### Oil of lovage
**pure**
Oleum Levistici
D 0,97
flp 63 °C
[8016-31-7] • EC No. 284-292-7
WGK 2
**Danger** H317-H341-H351-H304-H412

**Type analysis:**
Appearance. ..... clear, yellowish to brownish oil
Solubility in ethanol % vol.. .....
..... L80: 1:4 v/v almost clear sol.
Relative density (20 °C). ..... 0,970-1,030
Refractive index (20 °C)..... 1,5050-1,5350
Optical rotation (20 °C). ..... +5° to +25°

| | | | |
|---|---|---|---|
| **6607.1** | 10 ml | glass | 103,75 € |

## Oil of mandarin

### Oil of mandarin
**italian**
Oleum Mandarinae
D 0,85
[84929-38-4] • EC No. 284-521-0
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Relative density (20 °C)..... 0,840-0,860
Refractive index (20 °C). ..... 1,470-1,480
Optical rotation (20 °C)..... +70° to +80°

| | | | |
|---|---|---|---|
| **3796.1** | 100 ml | glass | 46,15 € |

## Oil of mint

Oleum Menthae arvensis
D ~0,9
flp ~80 °C
[90063-97-1] • EC No. 290-058-5
UN No. 3082 • ADR 9 III • WGK 2
**Warning** H315-H317-H411

### Oil of mint
**China, raw**

**Type analysis:**
Appearance..... pale oil
Density (20 °C). ..... 0,885-0,905
Refractive index $n_D^{20}$. ..... 1,450-1,470
Specific rotation $[\alpha]_D^{20}$. ..... -25° to -15°

| | | | |
|---|---|---|---|
| **6730.2** | 50 ml | glass | 17,10 € |
| **6730.1** | 250 ml | glass | 52,15 € |

### Oil of mint
**Japan, natural**

**Type analysis:**
Appearance.....
.....clear, colourless-yellow to green-yellow oil
Density (20 °C). ..... 0,888-0,910 g/cm³
Refractive index (20 °C). ..... 1,456-1,470
Optical rotation (20 °C). ..... -34° to -16°

| | | | |
|---|---|---|---|
| **6731.2** | 50 ml | glass | 19,90 € |
| **6731.1** | 250 ml | glass | 52,15 € |

### Oil of mint
**rectified twice**

**Type analysis:**
Appearance..... colourless to slightly yellow oil
Refractive index $n_D^{20}$. ..... 1,458-1,465
Optical rotation $[\alpha]_D^{20}$..... -23° to -16°
Density (20 °C). ..... 0,895-0,905

| | | | |
|---|---|---|---|
| **6732.1** | 50 ml | glass | 23,15 € |
| **6732.2** | 250 ml | glass | 55,80 € |

## Oil of mint

▶ Oil of peppermint italian see p. 2118

## Oil of niaouli

### Oil of niaouli
**natural**
Melaleuca viridiflora
D 0,92 • bp 175 °C
mp ~7-8 °C • flp 46 °C
[8014-68-4] • EC No. 310-217-5
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H315-H317-H411

**Type analysis:**
Appearance. ..... clear, yellowish oil
Density (20 °C)..... 0,904-0,925 g/cm³
Refractive index (20 °C). ..... 1,4630-1,4720
Optical rotation (20 °C)..... -4° to +1°

| | | | |
|---|---|---|---|
| **6610.1** | 100 ml | glass | 31,10 € |

## Oil of nutmeg

### Oil of nutmeg
**volatile**
Oleum Myristicae aethereum
D 0,89 • bp 165 °C
flp 36 °C
Solubility: 1,07 mg/l ($H_2O$, 25 °C)
[8008-45-5] • EC No. 282-013-3
UN No. 1169 • ADR 3 III • WGK 3
**Danger**
H350-H304-H341-H226-H400-H410-H317

**Type analysis:**
Appearance. ..... clear, colorless to yellow oil
Density (20 °C)..... 0,885-0,920 g/cm³
Refractive index (20 °C). ..... 1,475-1,489
Optical rotation (20 °C)..... +8° to +18°

| | | | |
|---|---|---|---|
| **7064.1** | 50 ml | glass | 28,95 € |

## Oil of orange, bitter

### Oil of orange
**bitter, italian**
Oleum Aurantii amari
[68916-04-1] • EC No. 232-433-8
UN No. 1169 • ADR 3 III • WGK 3
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear, yellow to brownish oil
Density (20 °C)..... 0,840-0,860 g/cm³
Refractive index (20 °C). ..... 1,470-1,480
Optical rotation (20 °C)..... +85° to +95°

| | | | |
|---|---|---|---|
| **6509.1** | 100 ml | glass | 37,55 € |

## Oil of orange, Brazil

### Oil of orange
**Brazil**
Oleum Aurantii, with analysis.
D 0,85 • bp 175 °C
flp 50 °C
[8028-48-6] • EC No. 232-433-8
UN No. 1169 • ADR 3 III • WGK 3
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Relative density (20 °C). ..... 0,840-0,850
Refractive index (20 °C)..... 1,468-1,478
Optical rotation (20 °C). ..... +95° to +101°

| | | | |
|---|---|---|---|
| **3803.1** | 100 ml | glass | 64,40 € |

## Oil of orange, Florida

### Oil of orange
**Florida**
From orange peel, cold-pressed.
[8028-48-6] • EC No. 232-433-8
UN No. 1169 • ADR 3 III • WGK 3
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Specific rotation $[\alpha]_D^{20}$. ..... +92° to +102°
Refractive index $n_D^{20}$. ..... 1,468-1,480
Aldehydes (as decanal). ..... 1,2-1,8 %

| | | | |
|---|---|---|---|
| **6728.2** | 250 ml | glass | 23,15 € |
| **6728.3** | 500 ml | glass | 38,60 € |
| **6728.1** | 1 l | glass | 62,25 € |
| Original pack 6 x 1 l | | | 59,14/1 l |

## Oil of orange, sweet

### Oil of orange
**sweet, natural**
Oleum Aurantii dulcis
[8008-57-9] • EC No. 232-433-8
UN No. 1993 • ADR 3 III • WGK 3
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear, yellowish to brownish oil
Relative density (20 °C). ..... 0,840-0,860
Refractive index (20 °C)..... 1,4680-1,4760
Optical rotation (20 °C). ..... +75° to +100°

| | | | |
|---|---|---|---|
| **6611.1** | 100 ml | glass | 45,05 € |

## Oil of orange flowers artificial

### Oil of orange flowers
**artificial**
Oleum Neroli
D 0,87
flp 70 °C
[84929-31-7] • EC No. 284-515-8
UN No. 3082 • ADR 9 III • WGK 3
**Danger**
H304-H400-H410-H315-H317

**Type analysis:**
Appearance..... clear, yellow to brownish oil
Density (20 °C). ..... 0,860-0,920 g/cm³
Refractive index (20 °C). ..... 1,460-1,480

| | | | |
|---|---|---|---|
| **3323.1** | 50 ml | glass | 64,40 € |

## Oil of origanum

### Oil of origanum
**natural**
Oleum Origani cretici
D 0,915
flp 66 °C
[84012-24-8] • EC No. 281-670-3
WGK 2
**Danger**
H302+H312-H304-H315-H317-H412

**Type analysis:**
Appearance..... clear, yellow to red-brown oil
Density (20 °C). ..... 0,915-0,975 g/cm³
Refractive index (20 °C). ..... 1,500-1,520
Optical rotation (20 °C). ..... -5° to +1°

| | | | |
|---|---|---|---|
| **6612.2** | 25 ml | glass | 22,05 € |
| **6612.1** | 100 ml | glass | 56,90 € |

## Oil of palmarosa

### Oil of palmarosa
**east indian**
Oleum Palmae rosae
D 0,89
[8014-19-5] • EC No. 283-461-2
WGK 1
**Danger** H318-H317-H315-H412

**Guarantee analysis:**
Appearance..... clear, yellow to brown oil
Density (20 °C). ..... 0,880-0,900 g/cm³
Refractive index (20 °C). ..... 1,465-1,475
Optical rotation (20 °C). ..... -5° to +3°

| | | | |
|---|---|---|---|
| **6613.2** | 25 ml | glass | 23,15 € |
| **6613.1** | 100 ml | glass | 45,05 € |

## Oil of parsley

### Oil of parsley
**french**
Oleum Petroselini
D ~1,06
flp 52 °C
[8000-68-8] • EC No. 281-677-1
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H304-H226-H315-H317-H411

**Type analysis:**
Appearance. ..... clear, yellow to yellow brown greenish oil
Relative density (20 °C). ..... 1,037-1,095
Refractive index (20 °C). ..... 1,492-1,522
Optical rotation (20 °C)..... -9° to -4°

| | | | |
|---|---|---|---|
| **7072.1** | 10 ml | glass | 23,15 € |

## Oil of patchouli

### Oil of patchouli
**artificial**
Oleum Patchouli
D 0,92
flp >100 °C
[8014-09-3] • EC No. 282-493-4

**Type analysis:**
Appearance. ..... clear medium to dark brown oil
Density (20 °C)..... 0,955-0,980 g/cm³
Refractive index (20 °C). ..... 1,505-1,515
Optical rotation (20 °C)..... -60° to -30°

| | | | |
|---|---|---|---|
| **6511.2** | 25 ml | glass | 22,05 € |
| **6511.1** | 100 ml | glass | 56,45 € |

## Oil of pepper

### Oil of pepper
**natural**
Oleum Piperis
D 0,89
[84929-41-9] • EC No. 284-524-7
UN No. 1169 • ADR 3 III • WGK 3
**Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear, yellow to yellow-brownish oil
Miscible..... abs. ethanol
Relative density (20 °C). ..... 0,864-0,915
Refractive index (20 °C). ..... 1,4700-1,4900
Optical rotation (20 °C)..... -23° to -1°

| | | | |
|---|---|---|---|
| **6616.2** | 25 ml | glass | 32,80 € |
| **6616.1** | 100 ml | glass | 90,85 € |

O/P

## Oil of peppermint, pure

### Oil of peppermint
**pure**
Oleum Menthae piperitae
D 0,91
flp 80 °C
[8006-90-4] • EC No. 282-015-4
UN No. 3082 • ADR 9 III • WGK 3
**Danger**
H315-H317-H318-H335-H411

**Type analysis:**
Appearance. ..... colourless to light yellowish oil
Density (20 °C). ..... 0,898-0,908
Refractive index (20 °C)..... 1,455-1,465
Optical rotation (20 °C). ..... -30° to -20°

| | | | |
|---|---|---|---|
| **9318.1** | 50 ml | glass | 23,15 € |

## Oil of peppermint italian

### Oil of peppermint italian
**pure**
Oleum Menthae piperitae
D 0,91
flp 62 °C
[8006-90-4] • EC No. 282-015-4
UN No. 3082 • ADR 9 III • WGK 1
**Danger** H304-H315-H317-H411

**Type analysis:**
Appearance. ..... colourless to yellow oil
Relative density (20 °C). ..... 0,900-0,916
Refractive index (20 °C)..... 1,4570-1,4670
Optical rotation (20 °C). ..... -30° to -10°
Acid value. ..... ≤1,4

| | | | |
|---|---|---|---|
| **7063.1** | 25 ml | glass | 28,50 € |

## Oil of peppermint Kennewick, USA

### Oil of peppermint Kennewick, USA
**natural**
Oleum Menthae piperitae
D 0,91
UN No. 3082 • ADR 9 III • WGK 3
**Danger**
H315-H317-H318-H335-H411

**Type analysis:**
Density (20 °C). ..... 0,890-0,920
Refractive index (20 °C)..... 1,454-1,470
Optical rotation (20 °C). ..... -30° to -14°

| | | | |
|---|---|---|---|
| **3777.1** | 100 ml | glass | 30,00 € |

## Oil of peppermint, artificial

### Oil of peppermint
**artificial**
Oleum Menthae piperitae
[68917-18-0] • EC No. 290-058-5
UN No. 1169 • ADR 3 III • WGK 2
**Warning**
H226-H302-H315-H317-H411

**Type analysis:**
Appearance..... clear, yellowish to light brownish oil
Density (20 °C). ..... 0,850-0,900 g/cm³
Refractive index (20 °C). ..... 1,4600-1,4800
Optical rotation (20 °C). ..... +10° to +25°

| | | | |
|---|---|---|---|
| **3329.2** | 100 ml | glass | 17,10 € |
| **3329.1** | 500 ml | glass | 44,00 € |

## Oil of petitgrain

### Oil of petitgrain
**south american**
Oleum Petitgrain americ.
D 0,87 • bp 156 °C
[8014-17-3] • EC No. 277-143-2
UN No. 3082 • ADR 9 III • WGK 2
**Warning** H315-H317-H412

**Type analysis:**
Appearance..... clear, yellow to yellow brownish oil
Density (20 °C). ..... 0,870-0,910 g/cm³
Refractive index (20 °C). ..... 1,455-1,495
Optical rotation (20 °C). ..... -5° to +10°

| | | | |
|---|---|---|---|
| **6614.1** | 100 ml | glass | 44,65 € |

## Oil of rose, bulgarian, natural

### Oil of rose
**bulgarian, natural**
Oleum Rosae
D 0,86
flp 59 °C
[90106-38-0] • EC No. 290-260-3
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H226-H315-H318-H317-H341-H351-H411

**Type analysis:**
Appearance..... yellowish oil
Density (20 °C). ..... 0,847-0,877 g/cm³
Refractive index (20 °C). ..... 1,447-1,467
Optical rotation (20 °C). ..... -4° to -1°

| | | | |
|---|---|---|---|
| **5733.1** | 1 ml | glass | 44,00 € |
| **5733.2** | 10 ml | glass | 274,15 € |

## Oil of rose, artificial

### Oil of rose
**artificial**
Oleum Rosae
D 0,89
flp 90 °C
UN No. 3082 • ADR 9 III • WGK 2
**Danger**
H304-H341-H351-H318-H317-H315-H411

**Type analysis:**
Appearance.clear, pale yellow to yellowish to brownish oil
Density (20 °C)..... 0,860-0,920 g/cm³
Refractive index (20 °C). ..... 1,4700-1,4800
Optical rotation (20 °C)..... -2° to +2°

| | | | |
|---|---|---|---|
| **4092.1** | 10 ml | glass | 26,35 € |

## Oil of rosemary, spanish

### Oil of rosemary
**spanish**
Oleum Rosmarini
D 0,91
flp 38 °C
UN No. 1993 • ADR 3 III • WGK 3
**Danger**
H226-H317-H371-H304-H400-H410

**Type analysis:**
Appearance. ..... clear, colourless to pale yellow oil
Density (20 °C)..... 0,891-0,917 g/cm³
Refractive index (20 °C). ..... 1,4650-1,4750
Optical rotation (20 °C)..... -5° to +15°

| | | | |
|---|---|---|---|
| **6514.1** | 100 ml | glass | 27,85 € |

## Oil of rosemary, morrocan

### Oil of rosemary
**morrocan**
Oleum Rosmarini
D 0,91
flp 40 °C
[8000-25-7] • EC No. 283-291-9
UN No. 1169 • ADR 3 III • WGK 2
**Danger**
H226-H304-H315-H317-H410

**Type analysis:**
Appearance. ..... clear, colourless to pale yellow oil
Relative density (20 °C). ..... 0,891-0,917
Refractive index (20 °C). ..... 1,4650-1,4750
Optical rotation (20 °C)..... -5° to +15°

| | | | |
|---|---|---|---|
| **3764.1** | 100 ml | glass | 24,65 € |

## Oil of rosemary, artificial

### Oil of rosemary
**artificial**
Oleum Rosmarini
D 0,91
flp 35 °C
UN No. 1992 • ADR 3 (6.1) III • WGK 3
 **Danger**
H304-H371-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear, light yellow oil
Density (20 °C). ..... 0,890-0,920 g/cm³
Refractive index (20 °C)..... 1,4650-1,4750
Optical rotation (20 °C). ..... -10° to +10°

| | | | |
|---|---|---|---|
| **3336.2** | 100 ml | glass | 17,10 € |
| **3336.1** | 500 ml | glass | 44,00 € |

## Oil of rose-wood

### Oil of rose-wood
**nature identical**
Oleum Ligni Rhodii
D 0,90
[8015-77-8] • EC No. 281-093-7
WGK 1
 **Warning** H315-H317-H412

**Type analysis:**
Appearance. .. clear, pale yellow to yellow-brownish oil
Relative density (20 °C). ..... 0,850-0,900
Refractive index (20 °C)..... 1,460-1,490
Optical rotation (20 °C). ..... -20° to 0°

| | | | |
|---|---|---|---|
| **3275.2** | 50 ml | glass | 34,95 € |
| **3275.1** | 100 ml | glass | 64,40 € |

## Oil of sandal-wood

D 0,97 • bp 276 °C
flp >100 °C
[84787-70-2] • EC No. 284-111-1
WGK 2

### Oil of sandal-wood
**west indian**
Oleum Santali

**Type analysis:**
Appearance. ..... clear, yellowish to brownish oil
Relative density (20 °C). ..... 0,935-0,975
Refractive index (20 °C)..... 1,5000-1,5150
Optical rotation (20 °C). ..... +10° to +35°

| | | | |
|---|---|---|---|
| **6620.2** | 25 ml | glass | 17,10 € |
| **6620.1** | 100 ml | glass | 44,00 € |

### Oil of sandal-wood
**artificial**
Oleum Ligni Santali artificiale

**Type analysis:**
Appearance..... clear, yellowish oil
Miscible. ..... ethanol 96 %
Density (20 °C). ..... 0,950-1,000 g/cm³
Refractive index (20 °C). ..... 1,500-1,510
Optical rotation (20 °C). ..... -5° to +5°

| | | | |
|---|---|---|---|
| **3341.2** | 50 ml | glass | 19,90 € |
| **3341.1** | 250 ml | glass | 52,15 € |

## Oil of Scotch pine needles, natural

### Oil of Scotch pine needles
**natural**
Oleum Pini silvestris
D 0,88
[84012-35-1] • EC No. 281-679-2
UN No. 1272 • ADR 3 III • WGK 3
 **Danger**
H304-H226-H400-H410-H317

**Type analysis:**
Appearance..... clear, colourless to light yellow oil
Density (20 °C). ..... 0,855-0,875 g/cm³
Refractive index (20 °C). ..... 1,465-1,480
Optical rotation (20 °C). ..... -30° to -9°

| | | | |
|---|---|---|---|
| **7073.1** | 100 ml | glass | 30,00 € |

## Oil of Scotch pine needles, artificial

### Oil of Scotch pine needles
**artificial**
Oleum Pini silvestris
D 0,88
UN No. 1993 • ADR 3 III • WGK 3
 **Danger**
H304-H226-H400-H410-H315-H319-H317

**Type analysis:**
Appearance..... clear, light yellowish oil
Density (20 °C). ..... 0,855-0,885 g/cm³
Refractive index (20 °C). ..... 1,4700-1,4850
Optical rotation (20 °C). ..... -25° to -5°

| | | | |
|---|---|---|---|
| **3306.2** | 250 ml | glass | 23,15 € |
| **3306.1** | 500 ml | glass | 42,90 € |

## Oil of silver fir

### Oil of silver fir
**artificial**
Oleum Abietis
D 0,90
UN No. 1993 • ADR 3 III • WGK 3
 **Danger**
H304-H226-H400-H410-H315-H319-H317

**Type analysis:**
Appearance. ... clear, almost colourless to yellowish to brownish oil
Relative density (20 °C). ..... 0,850-0,900
Refractive index (20 °C). ..... 1,4700-1,4800
Optical rotation (20 °C)..... -70° to -30°

| | | | |
|---|---|---|---|
| **3295.1** | 250 ml | glass | 30,00 € |

## Oil of silver fir cones

### Oil of silver fir cones
**natural**
Oleum Templini
D 0,88
[90028-76-5]
UN No. 1272 • ADR 3 III • WGK 3
 **Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear, yellow to brown oil
Density (20 °C)..... 0,840-0,880 g/cm³
Refractive index (20 °C). ..... 1,470-1,480
Optical rotation (20 °C)..... -90° to -50°

| | | | |
|---|---|---|---|
| **6598.1** | 100 ml | glass | 51,50 € |

## Oil of silver fir needles

### Oil of silver fir needles
**natural**
Oleum Abietis
D 0,86
flp 37 °C
[8021-27-0]
UN No. 1272 • ADR 3 III • WGK 3
 **Danger**
H304-H226-H400-H410-H315-H317

**Type analysis:**
Appearance. ..... clear, light yellow-brownish oil
Density (20 °C)..... 0,850-0,890 g/cm³
Refractive index (20 °C). ..... 1,465-1,475
Optical rotation (20 °C)..... -60° to -30°

| | | | |
|---|---|---|---|
| **3353.1** | 100 ml | glass | 39,70 € |

## Oil of spike

### Oil of spike
**natural pure**
Oleum Spicae
D ~0,893
flp 58 °C
[84837-04-7] • EC No. 284-290-6
UN No. 1169 • ADR 3 III • WGK 2
 **Warning**
H226-H371-H315-H317-H411

**Type analysis:**
Appearance. .....clear, light yellow oil
Density (20 °C). .....0,893-0,909 g/cm³
Refractive index (20 °C)..... 1,4630-1,4680
Optical rotation (20 °C). ..... -5° to +5°

| | | | |
|---|---|---|---|
| **7079.1** | 50 ml | glass | 27,45 € |

## Oil of sweet almond

### Oil of sweet almond
**refined**
Oleum Amygdalae dulcis
D 0,91
[8007-69-0]
WGK 1

**Type analysis:**
Appearance. ..... clear, yellow liquid
Relative density (20 °C). ..... ~0,916
Acid value (mg KOH/g). ..... ≤1,0
Peroxide value. ..... ≤5 meq $O_2$/kg
Unsaponifiable matter..... ≤1,0 %

| | | | |
|---|---|---|---|
| **9342.1** | 1 l | glass | 39,70 € |
| Original pack 6 x 1 l | | | 37,72/1 l |
| **9342.3** | 2,5 l | glass | 81,60 € |
| Original pack 4 x 2,5 l | | | 77,52/2,5 l |
| **9342.2** | 10 l | tinplate | 246,20 € |

## Oil of tansy

### Oil of tansy
**pure**
Oleum Tanaceti
D 0,94
flp 59 °C
[84961-64-8] • EC No. 284-653-9
UN No. 1169 • ADR 3 III • WGK 2
 **Warning** H226-H302-H411

**Type analysis:**
Appearance. ..... clear, yellow to brown oil
Relative density (20 °C). .....0,910-0,950 g/cm³
Refractive index (20 °C)..... 1,450-1,470
Optical rotation (20 °C). ..... +40° to +70°

| | | | |
|---|---|---|---|
| **7081.2** | 5 ml | glass | 17,10 € |
| **7081.1** | 25 ml | glass | 44,00 € |

## Oil of tea tree

### Oil of tea tree
**australian, natural**
Melaleuca alternifolia aetheroleum
D 0,89
flp 53 °C
[85085-48-9] • EC No. 285-377-1
UN No. 1169 • ADR 3 III • WGK 2
 **Danger**
H304-H226-H302-H315-H317-H411

**Type analysis:**
Appearance..... clear, colourless to light yellowish oil
Relative density (20 °C)..... 0,885-0,906
Refractive index (20 °C). ..... 1,475-1,482
Optical rotation (20 °C)..... +0° to +15°

| | | | |
|---|---|---|---|
| **K032.1** | 50 ml | glass | 26,35 € |

## Oil of theobroma

### Oil of theobroma
**pure, filtered twice**
Oleum Cacao
D 0,96
mp 30-34 °C
[8002-31-1] • EC No. 310-127-6

**Type analysis:**
Appearance.....light yellow pellets
Refractive index (40 °C). ..... 1,456-1,459
Melting point..... 30-34 °C
Saponification value. ..... 192-198
Iodine value..... 33-42

| | | | |
|---|---|---|---|
| **3515.2** | 100 g | plastic | 17,10 € |
| **3515.1** | 500 g | plastic | 44,65 € |
| Original pack 6 x 500 g | | | 42,42/500 g |

## Oil of thyme, natural

### Oil of thyme
**natural**
ex *Thymus serpyllum*
D ~0,92
flp 53 °C
[84776-98-7] • EC No. 284-023-3
UN No. 2924 • ADR 3 (8) III • WGK 2
 **Danger**
H304-H314-H226-H302-H317-H411

**Type analysis:**
Appearance.....clear, brown oil
Relative density (20 °C)..... 0,880-0,940
Refractive index (20 °C). ..... 1,480-1,500
Optical rotation (20 °C)..... -10° to +1°

| | | | |
|---|---|---|---|
| **K500.1** | 50 ml | glass | 40,35 € |

## Oil of thyme, natural/nature-identical

### Oil of thyme
**natural/nature-identical**
Oleum Thymi
D ~0,9
flp 58 °C
UN No. 2924 • ADR 3 (8) III • WGK 3
 **Danger**
H304-H314-H226-H302-H317-H335-H411

**Type analysis:**
Appearance. .....clear, yellowish to red-brownish oil
Miscible..... ethanol 96 %
Density (20 °C)..... 0,915-0,935 g/cm³
Refractive index (20 °C)..... 1,490-1,505
Optical rotation (20 °C)..... -10° to 0°

| | | | |
|---|---|---|---|
| **6513.1** | 100 ml | glass | 22,05 € |

## Oil of turpentine

### Oil of turpentine
**rect., DAB**
D 0,86 • bp 154-170 °C
mp -55 °C • flp 35 °C
[8006-64-2] • EC No. 232-350-7
UN No. 1299 • ADR 3 III • WGK 2
 **Danger** H304-H226-H302+H312+H332-H315-H319-H317-H411

**Guarantee analysis:**
Relative density (20 °C). .....0,856-0,867
Solubility. .....L90: 1,5:10,5
Optical rotation (20 °C)..... -40° to +48°
Refractive index $n_D^{20}$..... 1,467-1,478
Non volatile matter. .....≤1,0 %
Water-soluble content. .....complies
Heavy metals. .....complies
Fatty oils, resinified volatile oils. .....complies
Foreign ester..... complies
Halogen compounds..... complies
Acid react. substances..... complies
Boiling behaviour. ..... complies
Pine oil. ..... complies
Halogen-containing impurities..... complies
Acid reacting impurities..... complies

| | | | |
|---|---|---|---|
| **T139.1** | 1 l | glass | 67,20 € |
| Original pack 6 x 1 l | | | 63,84/1 l |
| **T139.2** | 2,5 l | glass | 138,70 € |
| Original pack 4 x 2,5 l | | | 131,77/2,5 l |
| **T139.3** | 10 l | tinplate | 428,95 € |

## Oil of valerian

### Oil of valerian
**polish**
Oleum Valerianae
D ~0,97
flp 84 °C
[8057-49-6] • EC No. 232-501-7
UN No. 3082 • ADR 9 III • WGK 2
**Danger** H304-H317-H411

**Type analysis:**
Appearance. ..... clear, yellowish to brownish oil
Density (20 °C). .....0,890-0,990 g/cm³
Refractive index (20 °C)..... 1,4700-1,4800
Optical rotation (20 °C). ..... -30° to -10°

| | | | |
|---|---|---|---|
| **6588.2** | 10 ml | glass | 46,15 € |
| **6588.3** | 25 ml | glass | 99,90 € |
| **6588.1** | 50 ml | glass | 177,40 € |

## Oil of valerian, artificial

### Oil of valerian
**artificial**
Oleum Valerianae artificiale
D ~0,97
flp 85 °C
UN No. 3082 • ADR 9 III • WGK 3
**Warning**
H302+H332-H315-H319-H317-H411

**Type analysis:**
Appearance. ..... clear yellowish to brownish oil
Miscible. ..... Ethanol 96 %
Relative density (20 °C). .....0,950-1,050
Refractive index (20 °C)..... 1,5000-1,5200
Optical rotation (20 °C). ..... -20° to 0°

| | | | |
|---|---|---|---|
| **3279.1** | 100 ml | glass | 32,15 € |

## Oil of vetiver

### Oil of vetiver
**natural**
Oleum Vetiverae
D ~1,02
flp 88 °C
[8016-96-4] • EC No. 282-490-8
WGK 2

**Type analysis:**
Appearance. .....clear brownish oil
Density (20 °C). .....0,980-1,040 g/cm³
Refractive index (20 °C)..... 1,515-1,535
Optical rotation (20 °C). ..... +10° to +30°

| | | | |
|---|---|---|---|
| **6622.2** | 10 ml | glass | 17,10 € |
| **6622.1** | 50 ml | glass | 44,00 € |

## Oil of wintergreen

### Oil of wintergreen
**artificial**
Main constituent: methyl salicylate
Oleum Gaultheriae
flp >100 °C
WGK 1
**Warning** H302-H315-H319-H335

**Type analysis:**
Appearance.....clear, yellowish to brownish oil
Density (20 °C). ..... 1,181-1,188 g/cm³
Refractive index (20 °C). ..... 1,530-1,540
Optical rotation (20 °C). .....-0,5° to +0,5°

| | | | |
|---|---|---|---|
| **7053.1** | 100 ml | glass | 32,15 € |

## Oil of wormwood

### Oil of wormwood
**natural**
Oleum Absinthii
[8008-93-3] • EC No. 284-503-2
WGK 3
**Warning** H302-H317-H412

**Type analysis:**
Appearance.....clear green to brown oil
Density (20 °C). ..... 0,850-0,950 g/cm³
Refractive index (20 °C). ..... 1,465-1,485

| | | | |
|---|---|---|---|
| **6909.1** | 10 ml | glass | 21,00 € |

## Oil of ylang-ylang, natural

### Oil of ylang-ylang
**Comoren, natural**
Oleum Anonae
D 0,95
[8006-81-3] • EC No. 281-092-1
WGK 2
**Danger** H304-H315-H317-H412

**Type analysis:**
Appearance.....clear yellow to brown oil
Density (20 °C). ..... 0,940-0,980 g/cm³
Refractive index (20 °C). ..... 1,495-1,515
Optical rotation (20 °C). ..... -50° to -20°

| | | | |
|---|---|---|---|
| **6624.2** | 25 ml | glass | 33,25 € |
| **6624.1** | 100 ml | glass | 117,20 € |

## Oil of ylang-ylang, artificial

### Oil of ylang-ylang
**artificial**
Oleum Anonae
D 0,95
UN No. 3082 • ADR 9 III • WGK 2
**Danger**
H304-H315-H317-H318-H411

**Type analysis:**
Appearance. ..... clear yellow to brown oil
Density (20 °C)..... 0,940-0,980 g/cm³
Refractive index (20 °C). ..... 1,5000-1,5200
Optical rotation (20 °C)..... -20° to 0°

| | | | |
|---|---|---|---|
| **3343.2** | 50 ml | glass | 17,10 € |
| **3343.1** | 250 ml | glass | 57,95 € |

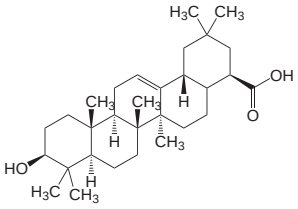
## Oil soluble red A
▶ Rhodamine B (C.I. 45170) see p. 2198

## Oil standards
▶ Standards for Determination of the Hydrocarbon Oil Index see p. 2314

## Okanin-4'-glucoside
▶ Marein see p. 2058

## Oleanol
▶ Oleanolic acid see p. 2121

## Oleanolic acid



Oleanol, Caryophyllin
$C_{30}H_{48}O_3$
M 456,71 g/mol
mp 306-308 °C
[508-02-1] • EC No. 208-081-6

### Oleanolic acid
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC). .....≥95,0 %
Residual solvents (GC). .....≤1,0 %
Water (KF). .....≤4,0 %
Assay (qNMR). .....≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE50.1** | 10 mg | glass | 568,70 € |

## Oleanolic acid

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC).....≥85,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC50.1** | 50 mg | glass | 267,70 € |

## Oleanolic acid

**ROTICHROM® HPLC**

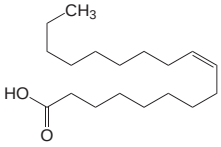
Reference substance for HPLC.
Storage temp.: +4 °C

**Type analysis:**

Purity (HPLC).....≥99 %

| | | | |
|---|---|---|---|
| **7402.2** | 20 mg | glass | 155,90 € |

## Oleic acid



cis-9-Octadecenoic acid
$C_{18}H_{34}O_2$
M 282,47 g/mol
D 0,9 • bp 360 °C
mp 17 °C • flp 189 °C
Storage temp.: +4 °C
[112-80-1] • EC No. 204-007-1
WGK 1

## Oleic acid

**≥99%, natural**

**Type analysis:**

Assay (GC).....≥99 %

| | | | |
|---|---|---|---|
| **7213.1** | 5 ml | glass | 33,25 € |
| **7213.2** | 50 ml | glass | 229,95 € |

## Oleic acid

**ROTICHROM® GC**

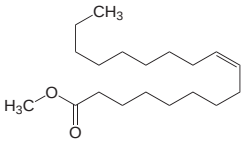
Reference substance for GC.

**Type analysis:**

Purity (GC).....≥99 %

| | | | |
|---|---|---|---|
| **5362.1** | 1 g | glass | 36,45 € |

## Oleic acid methyl ester



## Oleic acid methyl ester

**ROTICHROM® GC**

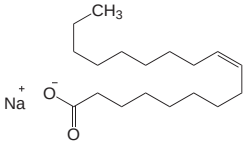
Reference substance for GC.
Methyl oleate
$C_{19}H_{36}O_2$
M 296,50 g/mol
D 0,879 • bp 202-210 °C (20 hPa)
mp -20 °C • flp 113 °C
Storage temp.: +4 °C
[112-62-9] • EC No. 203-992-5
WGK 1

**Type analysis:**

Purity (GC).....≥99 %

| | | | |
|---|---|---|---|
| **3186.1** | 1 g | glass | 32,80 € |

## Oleic acid sodium salt



## Oleic acid sodium salt

**~90 %**

Sodium oleate
$C_{18}H_{33}NaO_2$
M 304,47 g/mol
[143-19-1] • EC No. 205-591-0
WGK 1

**Type analysis:**

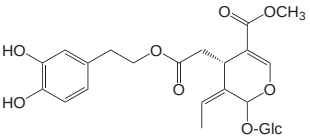
Appearance.....white to yellowish
Total fatty acids.....88,0-92,0 %
Moisture.....1,0-4,0 %
Free NaOH.....0,2-0,6 %

| | | | |
|---|---|---|---|
| **8856.1** | 500 g | plastic | 35,40 € |
| Original pack 6 x 500 g | | | 33,63/500 g |

## Oleoside-1-methylester

▶ Elenolic acid glucoside see p. 1903

## Oleuropein



$C_{25}H_{32}O_{13}$
M 540,53 g/mol
mp 89-90 °C
[32619-42-4] • EC No. 251-129-6

## Oleuropein

**≥90 %**

**Type analysis:**

Appearance.....powder, coloured like ivory
Assay.....≥90 %

| | | | |
|---|---|---|---|
| **7018.2** | 1 g | glass | 478,40 € |

## Oleuropein

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Olea europaea.*
Storage temp.: +4 °C

**Type analysis:**

Purity (HPLC).....>98 %

| | | | |
|---|---|---|---|
| **1191.1** | 20 mg | glass | 274,15 € |

## Oligo Click S-488

## Oligo Click S-488

**ROTI®kit for DNA labelling**

For DNA labeling assays.
Storage temp.: see below, room temp./-20 °C •
Transport temp.: cooled
UN No. 1120 • ADR 3 III • WGK 3

**Warning** H226-H319-H335

**Components:**

6-FAM-Azide.....1 mg
Activator.....10 µl
Reactor S.....7 x 2,5 mg
Solvent.....1 ml
*Store at -20 °C (6-FAM-Azide, Activator); room temp. (Reactor S, Solvent)*

| | | | |
|---|---|---|---|
| **7766.1** | 1 kit | cardboard | 134,30 € |

## Oligo Click M-488

### Oligo Click M-488

**ROTI®kit for DNA labelling**

For DNA labeling assays.

Storage temp.: see below, room temp./-20 °C •
Transport temp.: cooled
UN No. 1120 • ADR 3 III • WGK 3

**Warning** H226-H319-H335

**Components:**

6-FAM-Azide. ..... 1 mg
Activator. ..... 20 µl
Reactor M. ..... 7 x 5 mg
Solvent. ..... 1 ml
*Store at -20 °C (6-FAM-Azide, Activator); room temp. (Reactor M, Solvent)*

| | | | |
|---|---|---|---|
| **7767.1** | 1 kit | cardboard | 138,70 € |

## Oligo Click S-555

### Oligo Click S-555

**ROTI®kit for DNA labelling**

For DNA labeling assays.

Storage temp.: see below, room temp./-20 °C •
Transport temp.: cooled
WGK 3

**Warning** H319-H335

**Components:**

5-TAMRA-Azide. ..... 1 mg
Activator. ..... 10 µl
Reactor S. ..... 7 x 2,5 mg
Solvent. ..... 1 ml
*Store at -20 °C (5-TAMRA-Azide, Activator); room temp. (Reactor S, Solvent)*

| | | | |
|---|---|---|---|
| **7769.1** | 1 kit | cardboard | 149,45 € |

## Oligo Click M-555

### Oligo Click M-555

**ROTI®kit for DNA labelling**

For DNA labeling assays.

Storage temp.: see below, room temp./-20 °C •
Transport temp.: cooled
WGK 3

**Warning** H319-H335

**Components:**

5-TAMRA-Azide. ..... 1 mg
Activator. ..... 20 µl
Reactor M. ..... 7 x 5 mg
Solvent. ..... 1 ml
*Store at -20 °C (5-TAMRA-Azide, Activator); room temp.(Reactor M, Solvent)*

| | | | |
|---|---|---|---|
| **7770.1** | 1 kit | cardboard | 155,90 € |

## Oligo Click S-Biotin

### Oligo Click S-Biotin

**ROTI®kit for DNA labelling**

For DNA labeling assays.

Storage temp.: see below, room temp./-20 °C •
Transport temp.: cooled
WGK 3

**Warning** H319-H335

**Components:**

Biotin Azide. ..... 1 mg
Activator. ..... 10 µl
Reactor S. ..... 7 x 2,5 mg
Solvent. ..... 1 ml
*Store at -20 °C (Biotin Azide, Activator); room temp. (Reactor S, Solvent)*

| | | | |
|---|---|---|---|
| **7771.1** | 1 kit | cardboard | 111,30 € |

## Oligo Click M-Biotin

### Oligo Click M-Biotin

**ROTI®kit for DNA labelling**

For DNA labeling assays.

Storage temp.: see below, room temp./-20 °C •
Transport temp.: cooled
WGK 3

**Warning** H319-H335

**Components:**

Biotin Azide. ..... 1 mg
Activator. ..... 20 µl
Reactor M. ..... 7 x 5 mg
Solvent. ..... 1 ml
*Store at -20 °C (Biotin Azide, Activator); room temp. (Reactor M, Solvent)*

| | | | |
|---|---|---|---|
| **7772.1** | 1 kit | cardboard | 116,00 € |

## Oligo Click S Reload

### Oligo Click S Reload

**ROTI®kit for DNA labelling**

For DNA labeling assays.

Storage temp.: see below, room temp./-20 °C •
Transport temp.: cooled
UN No. 1120 • ADR 3 III • WGK 3

**Warning** H226-H319

**Components:**

Activator. ..... 35 µl
Reactor S. ..... 9 x 2,5 mg
*Store at -20 °C (Activator); room temp. (Reactor S)*

| | | | |
|---|---|---|---|
| **7764.1** | 1 kit | cardboard | 61,85 € |

## Oligo Click M Reload

### Oligo Click M Reload

**ROTI®kit for DNA labelling**

For DNA labeling assays.

Storage temp.: see below, room temp./-20 °C •
Transport temp.: cooled
WGK 3

**Warning** H319

**Components:**

Activator. ..... 50 µl
Reactor M. ..... 9 x 5 mg
*Store at -20 °C (Activator); room temp. (Reactor M)*

| | | | |
|---|---|---|---|
| **7765.1** | 1 kit | cardboard | 76,90 € |

## Olive oil

### Olive oil

**Ph.Eur., virgin**

Oleum Olivarum
D 0,91
[8001-25-0] • EC No. 232-277-0

**Guarantee analysis:**

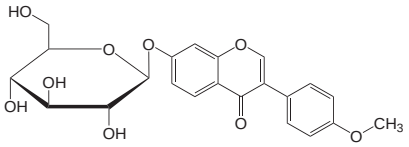
Identity. ..... complies
Relative density. ..... ~0,913
Absorption. ..... complies
Acid value. ..... ≤2,0
Peroxide value. ..... ≤20
Unsaponifiable matter. ..... ≤1,5 %
Water. ..... ≤0,1 %
Campesterol. ..... ≤4,0 %
Cholesterol. ..... ≤0,5 %
delta-7-Stigmastenol. ..... ≤0,5 %
Other sterols. ..... ≥93,0 %
Sesame oil. ..... not existing
GC-fatty acid constituents:
C <16 Saturated fatty acid. ..... ≤0,1 %
C 16:0 Palmitic acid. ..... 7,5-20,0 %
C 16:1 Palmitoleic acid. ..... ≤3,5 %
C 18:0 Stearic acid. ..... 0,5-5,0 %
C 18:1 Oleic acid. ..... 56,0-85,0 %
C 18:2 Linoleic acid. ..... 3,5-20,0 %
C 18:3 Linolenic acid. ..... ≤1,2 %
C 20:0 Arachidic acid. ..... ≤0,7 %
C 20:1 Eicosenoic acid. ..... ≤0,4 %
C 22:0 Behenic acid. ..... ≤0,2 %
C 24:0 Lignoceric acid. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **8873.1** | 500 ml | glass | 24,65 € |
| **8873.2** | 2,5 l | glass | 83,35 € |
| Original pack 4 x 2,5 l | | | 79,18/2,5 l |

## 1-OMe-β-D-GlcA

▶ 1-*O*-Methyl-β-D-glucuronic acid, sodium salt see p. 2074

## Ononin



### Ononin
**ROTICHROM® HPLC**
Reference substance for HPLC.
Formononetin-7-O-glucoside
$C_{22}H_{22}O_9$
M 430,43 g/mol
Storage temp.: +4 °C
[486-62-4]

**Type analysis:**
Purity (HPLC)..... ≥99 %

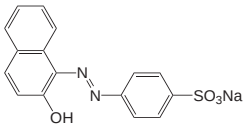
| | | | |
|---|---|---|---|
| **9411.1** | 5 mg | plastic | 284,90 € |

## ONPG
▶ 2-Nitrophenyl-β-D-galactopyranoside see p. 2102

## ONP-β-D-Glc
▶ 2-Nitrophenyl-β-D-glucopyranoside see p. 2103

## OPA
▶ o-Phthaldialdehyde see p. 2152

## Orange II sodium salt (C.I. 15510)



### Orange II sodium salt (C.I. 15510)
**for microscopy**
Indicator pH 7,4-8,6 and pH 10,2-11,8
Acid orange 7
$C_{16}H_{11}N_2NaO_4S$
M 350,33 g/mol
mp >300 °C
[633-96-5] • EC No. 211-199-0
WGK 3

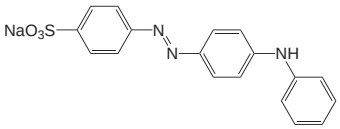
**Type analysis:**
Appearance. ..... orange to brown powder
pH-transition range. ..... 7,4 (amber)-8,6 (orange)
pH-transition range. ..... 10,2 (orange)-11,8 (red)

| | | | |
|---|---|---|---|
| **7729.1** | 5 g | glass | 14,20 € |
| **7729.2** | 25 g | glass | 24,65 € |
| **7729.3** | 100 g | glass | 59,05 € |

For further information, please see page 1466

## Orange III
▶ Methyl orange (C.I. 13025) see p. 2076

## Orange IV sodium salt (C.I. 13080)



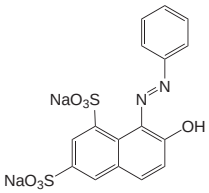
### Orange IV sodium salt (C.I. 13080)
**for microscopy**
Indicator pH 1,2-2,7
Tropaeolin OO
$C_{18}H_{14}N_3NaO_3S$
M 375,39 g/mol
mp >300 °C
[554-73-4] • EC No. 209-071-4
WGK 3

**Type analysis:**
Appearance..... orange powder
pH-transition range..... 1,2 (red)-2,7 (yellow)

| | | | |
|---|---|---|---|
| **7731.1** | 5 g | glass | 14,20 € |
| **7731.2** | 25 g | glass | 24,65 € |
| **7731.3** | 100 g | glass | 59,05 € |

For further information, please see page 1466

## Orange G (C.I. 16230)



### Orange G (C.I. 16230)
**for microscopy and electrophoresis**
Acid orange 10
$C_{16}H_{10}N_2Na_2O_7S_2$
M 452,37 g/mol
Solubility: 70 g/l ($H_2O$, 20 °C)
[1936-15-8] • EC No. 217-705-6
WGK 2

**Type analysis:**
Appearance..... orange powder
Maximum absorption..... ≥440 nm
Loss on drying..... ≤10 %

| | | | |
|---|---|---|---|
| **0318.1** | 10 g | glass | 13,45 € |
| **0318.2** | 25 g | glass | 19,25 € |
| **0318.3** | 100 g | glass | 45,70 € |

For further information, please see page 1466

## Orange Serum Agar

### Orange Serum Agar
**for microbiology**
For isolation, detection and enumeration of acid-tolerant pathogens in fruit juices and fruit juice concentrates, particularly citrus products.
Application: Use 40 g for 1 l agar.
Storage temp.: +20 °C
UN No. 3077 • ADR 9 III • WGK 1
**Warning** H315-H317-H411-EUH208

**Formulation:**
Casein peptone..... 10 g/l
Orange extract. ..... 5 g/l
Glucose..... 4 g/l
Potassium phosphate. ..... 3 g/l
Yeast extract. ..... 3 g/l
Agar. ..... 15 g/l
pH value..... 5,5 ±0,2

| | | | |
|---|---|---|---|
| **HP09.1** | 500 g | plastic | 165,05 € |
| Original pack 6 x 500 g | | | 156,80/500 g |

For further information, please see page 1393

## Orange Serum Agar, granulated

### Orange Serum Agar, granulated
NEW
**granulated, for microbiology**
For isolation, detection and enumeration of acid-tolerant pathogens in fruit juices and fruit juice concentrates, particularly citrus products.
Application: Use 45,5 g for 1 l agar.
Storage temp.: +20 °C
UN No. 3077 • ADR 9 III • WGK 3
**Warning** H315-H317-H411

**Formulation:**
Casein peptone..... 10 g/l
Orange extract. ..... 9 g/l
Glucose..... 4 g/l
Potassium phosphate. ..... 2,5 g/l
Yeast extract. ..... 3 g/l
Agar. ..... 17 g/l
pH value..... 5,5 ±0,2

| | | | |
|---|---|---|---|
| **1520.1** | 500 g | plastic | 193,50 € |
| Original pack 6 x 500 g | | | 183,83/500 g |

For further information, please see page 1404

## Orange terpenes

### Orange terpenes
**pure**
Natural solvent
D 0,84
flp 52 °C
UN No. 2319 • ADR 3 III • WGK 3
**Warning**
H226-H304-H315-H317-H410

**Type analysis:**
Appearance. ..... colourless oil
Density (20 °C)..... 0,836-0,850
Specific rotation $[\alpha]_D^{20}$..... +96° to +105°
Refractive index $n_D^{20}$..... 1,468-1,478

| | | | |
|---|---|---|---|
| **3098.1** | 2,5 l | glass | 56,90 € |
| Original pack 4 x 2,5 l | | | 54,06/2,5 l |

## Orcein

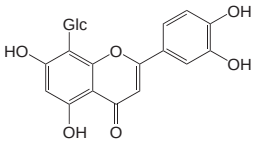
### Orcein
**for microscopy**
Natural red 28
[1400-62-0] • EC No. 215-750-6
WGK 2

**Type analysis:**
Absorption max. (NaOH 0,01 mol/l). ..... 575-580 nm
Specific extinction E 1 %/1 cm. ..... >500

| | | | |
|---|---|---|---|
| **0320.1** | 25 g | plastic | 353,70 € |

For further information, please see page 1466

## Orientin



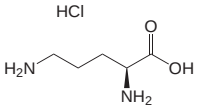

### Orientin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Adonis vernalis.*
$C_{21}H_{20}O_{11}$
M 448,38 g/mol
Storage temp.: +4 °C
[28608-75-5]

**Type analysis:**
Purity (HPLC) ..... ≥99 %

| | | | |
|---|---|---|---|
| **6151.1** | 5 mg | glass | 256,95 € |

## Orientosid
▶ Vitexin see p. 2372

## L-Ornithine monohydrochloride




L(+)-2,5-Diamino valeric acid hydrochloride
$C_5H_{12}N_2O_2 \cdot HCl$
M 168,62 g/mol
mp 245 °C
Solubility: ~100 g/l ($H_2O$, 20 °C)
[3184-13-2] • EC No. 221-678-6

### L-Ornithine monohydrochloride
**CELLPURE® ≥99 %**
For cell culture and biochemistry.

**Guarantee analysis:**
Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,2 %
Specific rotation $[\alpha]_D^{20}$. ..... +23,3° to +25,0°
Foreign amino acids. ..... complies
Ammonium ($NH_4$). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1703.1** | 25 g | plastic | 23,15 € |
| **1703.2** | 100 g | plastic | 53,65 € |
| **1703.3** | 500 g | plastic | 209,65 € |
| Original pack 6 x 500 g | | | 199,17/500 g |

### L-Ornithine monohydrochloride
**≥99 %, for biochemistry**

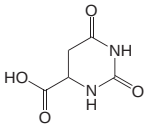
**Type analysis:**
Appearance. ..... white cryst. powder
Assay (dry substance). ..... 99,0-101,0 %
Appearance of solution. ..... clear, colourless
Specific rotation $[\alpha]_D^{20}$. ..... +23,3° to +25,0°
pH value . ..... 5,0-6,0
Ammonium ($NH_4$). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,02 %
Arsenic ($As_2O_3$). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **T204.1** | 25 g | plastic | 14,55 € |
| **T204.2** | 100 g | plastic | 37,55 € |
| **T204.3** | 500 g | plastic | 134,40 € |
| Original pack 6 x 500 g | | | 127,68/500 g |

## H-D-Orn($N_3$)-OH · HCl
▶ D-Azidoornithine hydrochloride see p. 1758

## H-L-Orn($N_3$)-OH · HCl
▶ L-Azidoornithine hydrochloride see p. 1758

## Orotic acid




### Orotic acid
**≥99 %, anhydrous**
Uracil-6-carboxylic acid
$C_5H_4N_2O_4$
M 156,10 g/mol
mp 345-346 °C
[65-86-1] • EC No. 200-619-8
**Warning** H302-H315-H319-H335

**Type analysis:**
Assay. ..... ≥99,0 %
Heavy metals (as Pb). ..... ≤0,002 %
Sulphated ash. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6820.2** | 25 g | plastic | 33,25 € |
| **6820.1** | 100 g | plastic | 71,95 € |

## Orotic acid Monohydrate

### Orotic acid Monohydrate
**≥96,5 %**
Uracilacid-6-carboxylic acid
$C_5H_4N_2O_4 \cdot H_2O$
M 174,11 g/mol
mp >334 °C
[50887-69-9] • EC No. 200-619-8
**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥99,0 %
Water. ..... ≤12,0 %

| | | | |
|---|---|---|---|
| **7285.1** | 10 g | plastic | 17,75 € |
| **7285.2** | 50 g | plastic | 35,40 € |
| **7285.3** | 250 g | plastic | 107,40 € |

## Orthophosphoric acid
▶ ortho-Phosphoric acid 85 % see p. 2150
▶ ortho-Phosphoric acid 75 % see p. 2150
▶ ortho-Phosphoric acid 50 % see p. 2151
▶ ortho-Phosphoric acid 40 % see p. 2151
▶ ortho-Phosphoric acid 25 % see p. 2151
▶ ortho-Phosphoric acid D3, 85 % solution in $D_2O$ see p. 2151
▶ ortho-Phosphoric acid (0,3 N) see p. 2151
▶ ortho-Phosphoric acid (0,5 N) see p. 2151
▶ ortho-Phosphoric acid (3 N) see p. 2151

## Orthotungstic acid
▶ Tungstic acid see p. 2362

## Osmium Standards
▶ Osmium ICP Standard Solution see p. 2299

## Osmium(IV) ammonium chloride
▶ Ammonium hexachloroosmate (IV) see p. 1733

## Osmic acid
▶ Osmium tetraoxide see p. 2126

## Osmium(VIII) oxide
▶ Osmium tetraoxide see p. 2126

O/P

## Osmium tetraoxide

### Osmium tetraoxide

**≥99,95 %, p.a., for electron microscopy**
In sealed off glass ampoules.
Osmium(VIII) oxide, Osmic acid
$OsO_4$
M 254,20 g/mol
D 4,9 • bp 130 °C
mp 40 °C
Solubility: 65 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[20816-12-0] • EC No. 244-058-7
UN No. 2471 • ADR 6.1 I • WGK 2
**Danger** H300+H310+H330-H314

**Guarantee analysis:**

| | |
|---|---|
| Appearance. | pale yellow crystals |
| Assay. | ≥99,95 % |
| Osmium (Os). | 74-76 % |
| Aluminium (Al). | ≤0,001 % |
| Calcium (Ca). | ≤0,001 % |
| Lead (Pb). | ≤0,001 % |
| Sodium (Na). | ≤0,001 % |
| Nickel (Ni). | ≤0,001 % |
| Non volatile matter. | ≤0,02 % |

| | | | |
|---|---|---|---|
| **8371.1** | 100 mg | glass | 40,75 € |
| **8371.2** | 500 mg | glass | 98,80 € |
| **8371.3** | 1 g | glass | 152,55 € |

For further information, please see page 1449

## Osmium tetraoxide solution

$OsO_4$
D 1,0
Storage temp.: +4 °C
[20816-12-0] • EC No. 244-058-7
UN No. 3287 • ADR 6.1 II • WGK 1
**Danger**
H301+H331-H310-H315-H318

### Osmium tetraoxide solution 2 %

**for electron microscopy**
In sealed off glass ampoules.

**Type analysis:**

| | |
|---|---|
| Assay ($OsO_4$) | ~2 % in water |

| | | | |
|---|---|---|---|
| **7436.1** | 5 ml | glass | 37,55 € |

For further information, please see page 1449

### Osmium tetraoxide solution 4 %

**for electron microscopy**
In sealed off glass ampoules.

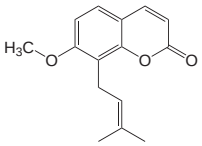
**Type analysis:**

| | |
|---|---|
| Assay ($OsO_4$) | ~4 % in water |

| | | | |
|---|---|---|---|
| **8088.1** | 5 ml | glass | 56,45 € |

For further information, please see page 1449

## Osthol



$C_{15}H_{16}O_3$
M 244,28 g/mol
[484-12-8]
WGK 3

### Osthol

**ROTI®STAR Primary Standard**

**Type analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥95,0 % |
| Residual solvents (GC). | ≤1,0 % |
| Water (KF) | ≤1,0 % |
| Assay (qNMR). | ≥95,0 % |

Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE51.1** | 10 mg | glass | 848,20 € |

### Osthol

**ROTICHROM® Working Standard**

**Type analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥90,0 % |
| Identity | complies |

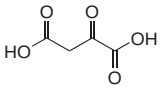
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC51.1** | 50 mg | glass | 224,70 € |

## Ouabin octahydrate

▶ g-Strophanthin see p. 2318

## Oxalacetic acid



### Oxalacetic acid

**≥98 %, for biochemistry**
2-Oxosuccinic acid
$C_4H_4O_5$
M 132,07 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[328-42-7] • EC No. 206-329-8
UN No. 3261 • ADR 8 III • WGK 2
**Danger** H314

**Type analysis:**

| | |
|---|---|
| Assay (titr.). | ≥98,0 % |
| Solution (10 % in water) | colourless to almost colourless |
| Water (KF) | ≤2,0 % |
| Sulphated ash. | ≤0,1 % |

| | | | |
|---|---|---|---|
| **4032.1** | 5 g | glass | 31,10 € |
| **4032.2** | 10 g | glass | 52,60 € |
| **4032.3** | 25 g | glass | 110,65 € |

## Oxalane

▶ Tetrahydrofuran see p. 2336

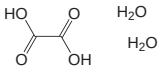
## Oxalate Standards

▶ Oxalate IC Standard Solution see p. 2311

## Oxaldehyde

▶ Glyoxal see p. 1964

## Oxalic acid dihydrate



Ethanedioic acid
$C_2H_2O_4 \cdot 2\ H_2O$
M 126,07 g/mol
D 1,65 • bp 149-160 °C (dec.)
mp 101 °C
Solubility: 95 g/l ($H_2O$, 20 °C)
[6153-56-6] • EC No. 205-634-3
WGK 1
**Warning** H302+H312

### Oxalic acid dihydrate

**≥99,5 %, p.a., ACS, ISO**
Titrimetric standard substance in manganometry.

**Guarantee analysis:**

| | |
|---|---|
| Assay (perm.) | ≥99,5 % |
| In $H_2O$ insoluble matter. | ≤0,005 % |
| Ash content (as $SO_4$). | ≤0,01 % |
| Reaction with $H_2SO_4$. | complies |
| Total nitrogen (as N). | ≤0,001 % |
| Chloride (Cl) | ≤0,0005 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Lead (Pb). | ≤0,0005 % |
| Calcium (Ca). | ≤0,001 % |
| Iron (Fe). | ≤0,0002 % |
| Copper (Cu). | ≤0,0005 % |
| Magnesium (Mg). | ≤0,001 % |
| Nickel (Ni). | ≤0,0005 % |
| Heavy metals. | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **T113.1** | 500 g | plastic | 31,10 € |
| Original pack 6 x 500 g | | | 29,55/500 g |
| **T113.2** | 1 kg | plastic | 51,50 € |
| Original pack 6 x 1 kg | | | 48,93/1 kg |
| **T113.3** | 2,5 kg | plastic | 118,15 € |

### Oxalic acid dihydrate

**≥99 %, cryst.**

**Type analysis:**

| | |
|---|---|
| Appearance. | white, crystal. powder |
| Assay. | ≥99,0 % |
| Ash content. | ≤0,03 % |

| | | | |
|---|---|---|---|
| **8879.1** | 1 kg | plastic | 20,35 € |
| Original pack 6 x 1 kg | | | 19,33/1 kg |
| **8879.3** | 5 kg | plastic | 67,20 € |
| **8879.2** | 10 kg | plastic | 126,35 € |

## Oxalic acid ammonium salt monohydrate

▶ di-Ammonium oxalate monohydrate see p. 1737

## Oxalic acid calcium salt monohydrate

▶ Calcium oxalate monohydrate see p. 1806

## Oxalic acid magnesium salt

▶ Magnesium oxalate dihydrate see p. 2050

## Oxalic acid di-potassium salt monohydrate

▶ di-Potassium oxalate monohydrate see p. 2173

## Oxalic acid disodium salt

▶ di-Sodium oxalate see p. 2282

## Oxalic acid solution (0,1 N)

### Oxalic acid solution

**0,05 mol/l - 0,1 N volumetric standard solution**

EC No. 205-634-3

WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,05 mol/l ±0,2 %

Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **CN35.1** | 1 l | plastic | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |

For further information, please see page 1621

## Oxalic acid solution (0,1 N)

### Oxalic acid solution

**ROTI®VOLUM 0,05 mol/l - 0,1 N**

Ampoule for preparation of 1000 ml volumetric solution.

$C_2H_2O_4 \cdot 2\ H_2O$

M 126,07 g/mol

[6153-56-6] • EC No. 205-634-3

WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,05 mol/l ±0,2 %

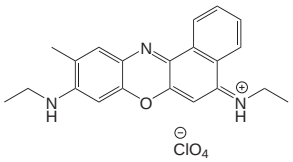
| | | | |
|---|---|---|---|
| **CN59.1** | 1 piece | plastic ampoule | 19,05 € |

For further information, please see page 1623

## Oxazine 170 perchlorate

▶ Oxazine 720 perchlorate see p. 2127

## Oxazine 720 perchlorate



### Oxazine 720 perchlorate

**≥96 %**

Laser and scintillation dye

Oxazine 170 perchlorate

$C_{21}H_{22}N_3O \cdot ClO_4$

M 431,88 g/mol

mp 298-300 °C

Solubility: insoluble ($H_2O$, 20 °C)

[62669-60-7] • EC No. 263-682-0

UN No. 2811 • ADR 6.1 II • WGK 3

**Danger** H301

**Type analysis:**

Appearance..... dark-green cryst. powder

Assay (HPLC)..... ≥96 %

Maximum absorption..... 626 ±1 nm (EtOH)

| | | | |
|---|---|---|---|
| **7306.1** | 100 mg | glass | 24,20 € |
| **7306.2** | 500 mg | glass | 48,30 € |
| **7306.3** | 1 g | glass | 72,60 € |

## Ox Bile, bacteriological

### Ox Bile, bacteriological

**for microbiology**

Storage temp.: +20 °C

[8008-63-7] • EC No. 232-369-0

WGK 1

**Type analysis:**

Cholic acid..... ≥45 %

Loss on drying..... ≤6 %

pH (2 % solution)..... 6,0-8,5

Solubility (2 % solution)..... clear

| | | | |
|---|---|---|---|
| **7595.1** | 250 g | plastic | 120,95 € |
| **7595.2** | 500 g | plastic | 213,95 € |
| Original pack 6 x 500 g | | | 203,25/500 g |

For further information, please see page 1421

## Oxford Agar

▶ Oxford Listeria Agar (Base) see p. 2127

## Oxford Listeria Agar (Base)

### Oxford Listeria Agar (Base)

**ISO 11290-1, for microbiology**

Selective medium for detection of *Listeria monocytogenes.*

Application: Use 55,5 g for 1 l agar. After cooling add 2 vials (2 x 2 ml) reconstituted Listeria Oxford Supplement (Art. No. 5801.1).

Oxford Agar

Storage temp.: +20 °C

WGK 3

**Warning** H302-H315-H319

**Guarantee analysis:**

Peptone mixture..... 23 g/l

Sodium chloride..... 5 g/l

Starch..... 1 g/l

Lithium chloride..... 15 g/l

Esculin..... 1 g/l

Ammonium iron(III) citrate..... 0,5 g/l

Agar..... 10 g/l

pH value..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **5767.1** | 500 g | plastic | 154,30 € |
| Original pack 6 x 500 g | | | 146,59/500 g |

For further information, please see page 1393

## Oxford Supplement

▶ Listeria Oxford Supplement see p. 2039

## Oxidation reagent

### Oxidation reagent

**for DNA-Synthesis with ABI™ and PolyGen® Synthesizer**

Iodine/water/pyridine/tetrahydrofuran-mixture. 0,05 M iodine.

D 0,8 • bp ~65 °C

flp -21 °C

UN No. 1993 • ADR 3 II • WGK 2

**Danger**

H225-H315-H319-H335-H351-H373-EUH019

| | | | |
|---|---|---|---|
| **2254.1** | 200 ml | glass | 27,45 € |
| **2254.2** | 450 ml | glass | 50,45 € |
| **2254.3** | 2,5 l | glass | 213,95 € |
| Original pack 4 x 2,5 l | | | 203,25/2,5 l |

For further information, please see page 1493

## Oxidation-Reagent, Fast

▶ Fast Oxidation reagent see p. 1924

## Oxine

▶ 8-Hydroxyquinoline see p. 1996

## 2-Oxoglutaric acid

▶ α-Ketoglutaric acid see p. 2022

## 5-(2-Oxo-hexahydro-thieno-[3,4-d]imidazol-6-yl)-pentanoic acid (3-azido-propyl)-amide

▶ Biotin-Azide see p. 1774

## 5-((3aS,4S,6aR)-2-oxohexahydro-1*H*-thieno[3,4-d]-imidazol-4-yl)-N-(3,6,9,12-tetraoxapentadec-14-yn-1-yl)-pentanamide

▶ Biotin-PEG4-Alkyne see p. 1774

## Oxonickel

▶ Nickel(II) oxide see p. 4065

## 4-Oxopentanoic acid

▶ Levulinic acid see p. 4011

## 2-Oxopropanoic acid

▶ Pyruvic acid see p. 2187

## 2-Oxosuccinic acid

▶ Oxalacetic acid see p. 4095

## 5'-Oxyfisetin

▶ Robinetin see p. 2201

## Oxyma Pure

▶ Ethyl(hydroxyimino)cyanoacetate (Oxyma Pure) see p. 1920

## PABA

▶ 4-Aminobenzoic acid see p. 1724

## PAGE gel solutions

▶ Rotiphorese® Gel solution 30 % see p. 2227
▶ Rotiphorese® Gel solution 40 % see p. 2227

## PAGE ready-made gels

▶ Roti®-PAGE gels ready-to-use see p. 2226

## Palatinose®

▶ Isomaltulose see p. 2015

## Palcam Agar

▶ Palcam Listeria Agar (Base) see p. 2128

## Palcam Listeria Agar (Base)

### Palcam Listeria Agar (Base)

**ISO 11290-1, for microbiology**

Differential medium for detection of *Listeria ssp.*, particularly *L. monocytogenes.*

Application: Use 68,8 g for 1 l agar. After cooling add 2 vials (2x2 ml) reconstituted Listeria Palcam Supplement (Art. No. 5803.1).

**Palcam Agar**

Storage temp.: +20 °C

WGK 3

**Warning** H315-H319

**Guarantee analysis:**

| | |
|---|---|
| Peptone mixture. | 23 g/l |
| Sodium chloride. | 5 g/l |
| Starch. | 1 g/l |
| Lithium chloride. | 15 g/l |
| D-Mannitol. | 10 g/l |
| Yeast extract. | 3 g/l |
| Esculin. | 0,8 g/l |
| Glucose. | 0,5 g/l |
| Phenol red. | 0,08 g/l |
| Ammonium iron(III) citrate. | 0,5 g/l |
| Agar. | 10 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **5768.1** | 500 g | plastic | 142,45 € |
| Original pack 6 x 500 g | | | 135,33/500 g |

For further information, please see page 1393

## Palcam Supplement

▶ Listeria Palcam Supplement see p. 2039

## Palladium powder

### Palladium powder

**ROTI®METIC 99,999 % (5N)**

Pd

M 106,42 g/mol

D 12,02 • bp 2963 °C

mp 1555 °C

[7440-05-3] • EC No. 231-115-6

UN No. 3089 • ADR 4.1 II

**Danger** H228-H315-H319-H335

**Type analysis:**

Assay (metals basis). 99,999 %

Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5648.1** | 1 g | plastic | 209,65 € |

## Palladium Standards

▶ Palladium AAS Standard Solution see p. 2295
▶ Palladium ICP Standard Solution see p. 2299
▶ Palladium ICP Standard Solution see p. 2304

## Palladium (10 %) on activated carbon

### Palladium (10 %) on activated carbon

NEW

**10 % Pd/C with approx. 60 % water**

Catalyst

Pd/C 10 %

bp 2963 °C

mp 1554 °C

[7440-05-03] • EC No. 231-115-6

**Warning** H315-H319

**Type analysis:**

| | |
|---|---|
| Appearance. | black wet powder |
| Assay (Pd). | ≥10 % |
| Water. | 50-70 % |
| Specific surface. | 900-1300 $m^2/g$ |
| Mean particle sizing. | 30,0 µm |
| Aluminium (Al). | ≤0,05 % |
| Copper (Cu). | ≤0,01 % |
| Iron (Fe). | ≤0,01 % |
| Magnesium (Mg). | ≤0,05 % |
| Manganese (Mn). | ≤0,01 % |
| Tin (Sn). | ≤0,05 % |

Store under inert gas.

| | | | |
|---|---|---|---|
| **1446.1** | 1 g | glass | 21,40 € |
| **1446.2** | 2,5 g | glass | 42,90 € |
| **1446.3** | 5 g | glass | 75,15 € |

## Palladium(II) chloride

### Palladium(II) chloride

**ROTI®METIC 99,999 % (5N)**

$PdCl_2$

M 177,31 g/mol

D 4,0

mp 590 °C (subl.)

[7647-10-1] • EC No. 231-596-2

WGK 1

**Warning** H315-H317-H319

**Type analysis:**

Assay (metals basis). 99,999 %

Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5653.1** | 1 g | plastic | 127,95 € |
| **5653.2** | 5 g | plastic | 547,20 € |

## Palladium & Magnesium matrix modifier

▶ Palladium nitrate & Magnesium nitrate matrix modifier solution see p. 2059

## Palladium matrix modifier

▶ Matrix modifier solution Palladium nitrate see p. 2059

## Palladium monoxide

▶ Palladium(II) oxide see p. 2129

## Palladium(II) nitrate dihydrate

### Palladium(II) nitrate dihydrate

**~40 % Pd**

$Pd(NO_3)_2 \cdot 2\ H_2O$

M 266,44 g/mol

[32916-07-7] • EC No. 233-265-8

UN No. 3085 • ADR 5.1 (8) II • WGK 3

**Danger**

H272-H301-H314-H400-H410

**Type analysis:**

Palladium (Pd).....39,9-42,0 %
Lead (Pb).....≤0,01 %
Calcium (Ca).....≤0,005 %
Iron (Fe).....≤0,02 %
Gold (Au).....≤0,02 %
Copper (Cu).....≤0,005 %
Magnesium (Mg).....≤0,005 %
Silver (Ag).....≤0,005 %
Silicon (Si).....≤0,005 %

| | | | |
|---|---|---|---|
| **9026.1** | 1 g | glass | 75,15 € |
| **9026.2** | 10 g | glass | 600,95 € |

## Palladium nitrate & Magnesium nitrate matrix modifier solution

▶ Matrix modifier solution Palladium nitrate & Magnesium nitrate see p. 2059

## Palladium(II) oxide

### Palladium(II) oxide

**ROTI®METIC 99,995 % (4N5)**

Palladium monoxide

PdO

M 122,42 g/mol

D 8,3

mp 750 °C (dec.)

[1314-08-5] • EC No. 215-218-3

WGK 1

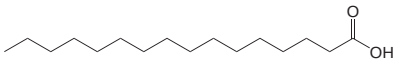
**Warning** H315-H319-H335

**Type analysis:**

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5393.1** | 1 g | plastic | 160,20 € |
| **5393.2** | 5 g | plastic | 591,25 € |

## Palmitic acid



### Palmitic acid

**≥98 %, extra pure**

Hexadecanoic acid

$C_{16}H_{32}O_2$

M 256,43 g/mol

D 0,85 • bp 351 °C

mp 61-63 °C • flp >160 °C

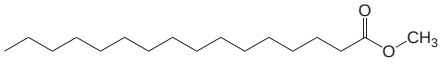
[57-10-3] • EC No. 200-312-9

**Type analysis:**

Appearance.....white fatty tablets
Assay.....≥98,0 %
Iodine value.....≤0,8
Acid value.....217-221
Melting point.....61-63 °C

| | | | |
|---|---|---|---|
| **5907.3** | 500 g | plastic | 20,35 € |
| Original pack 6 x 500 g | | | 19,33/500 g |
| **5907.1** | 1 kg | plastic | 28,50 € |
| Original pack 6 x 1 kg | | | 27,08/1 kg |
| **5907.2** | 5 kg | plastic | 99,90 € |

## Palmitic acid methyl ester



### Palmitic acid methyl ester

**≥97 %**

Methyl palmitate

$C_{17}H_{34}O_2$

M 270,46 g/mol

D 0,85 • bp 185 °C (10 mbar)

flp >113 °C

[112-39-0] • EC No. 203-966-3

WGK 1

**Type analysis:**

Assay (GC).....≥97 %

| | | | |
|---|---|---|---|
| **4459.1** | 25 g | glass | 19,25 € |
| **4459.2** | 100 g | glass | 34,30 € |
| **4459.3** | 500 g | glass | 94,10 € |
| Original pack 6 x 500 g | | | 89,40/500 g |

## PAN

▶ 1-(2-Pyridylazo)-2-naphthol see p. 2186

## Panoptical fast staining kit

### Panoptical fast staining kit

**for microscopy**

Staining kit for fast oversight staining of blood smears and other cytological preparations (modified method acc. to Pappenheim), incl. instructions for use.

Pappenheim fast staining

Storage temp.: +20 °C

UN No. 1230 • ADR 3 II • WGK 1

**Danger**

H225-H301+H311+H331-H370

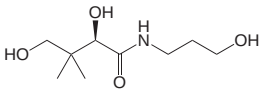
**Formulation:**

Panoptical fast staining solution 1 (Art. No. 8934)
Panoptical fast staining solution 2 (Art. No. 8935)
Panoptical fast staining solution, fixatif (Art. No. 8939)
Contents of this kit may not be bought separately.

| | | | |
|---|---|---|---|
| **6487.1** | 1 kit (3 x 250 ml) | plastic | 76,90 € |
| **6487.2** | 1 kit (3 x 500 ml) | plastic | 138,70 € |

For further information, please see page 1454

## D-Panthenol



### D-Panthenol

**≥98 %**

D-Pantothenyl alcohol

$C_9H_{19}NO_4$

M 205,26 g/mol

D 1,2 • bp 66-69 °C

Storage temp.: +4 °C

[81-13-0] • EC No. 201-327-3

**Type analysis:**

Assay (titr.).....≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in $H_2O$).....+29° to +31,5°
3-Aminopropanol.....≤1,0 %
Heavy metals.....≤0,002 %
Ash content.....≤0,1 %

| | | | |
|---|---|---|---|
| **4170.1** | 10 ml | glass | 34,30 € |
| **4170.2** | 100 ml | glass | 54,75 € |

## D(+)-Pantothenic acid calcium salt

▶ Calcium D(+)-pantothenate see p. 1807

## D-Pantothenyl alcohol

▶ D-Panthenol see p. 2129

## Papain

### Papain
**>30 000 USP-U/mg, for biochemistry**
Made from *Carica papaya*.
Storage temp.: +4 °C
[9001-73-4] • EC No. 232-627-2
WGK 1
**Danger** H334-H335-H315-H319

**Type analysis:**
Identity. ..... complies
Activity (casein, pH 6,0, 40 °C). .... >30 000 USP-U/mg
pH value (2 % in $H_2O$). ..... 4,8-6,2
Loss on drying. ..... <5 %

| | | | |
|---|---|---|---|
| **8933.1** | 25 g | plastic | 50,00 € |
| **8933.2** | 100 g | plastic | 138,70 € |

For further information, please see page 1277

## Papanicolaou solution 1

▶ Hematoxylin solution acc. to Harris see p. 1971

## Papanicolaou-orange solution 2a (OG 6)

### Papanicolaou-orange solution 2a (OG 6)
**for microscopy**
UN No. 1170 • ADR 3 II • WGK 1
**Danger** H225

**Type analysis:**
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **T867.1** | 500 ml | glass | 23,55 € |
| **T867.2** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **T867.3** | 2,5 l | plastic | 74,10 € |
| Original pack 4 x 2,5 l | | | 70,40/2,5 l |

For further information, please see page 1455

## Papanicolaou solution 2b Orange II solution

### Papanicolaou solution 2b Orange II solution
**for microscopy**
UN No. 1230 • ADR 3 (6.1) II • WGK 1
**Danger**
H225-H301+H311+H331-H370-H319

**Type analysis:**
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **AE62.1** | 500 ml | glass | 32,15 € |
| **AE62.2** | 1 l | glass | 40,75 € |
| Original pack 6 x 1 l | | | 38,71/1 l |
| **AE62.3** | 2,5 l | plastic | 76,25 € |
| Original pack 4 x 2,5 l | | | 72,44/2,5 l |

For further information, please see page 1459

## Papanicolaou polychrome solution 3a (EA31)

### Papanicolaou polychrome solution 3a (EA31)
**for microscopy**
UN No. 1230 • ADR 3 (6.1) II • WGK 1
**Danger**
H225-H301+H311+H331-H370-H319

**Type analysis:**
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **AE63.1** | 500 ml | glass | 26,35 € |
| **AE63.2** | 1 l | glass | 39,25 € |
| Original pack 6 x 1 l | | | 37,29/1 l |
| **AE63.3** | 2,5 l | plastic | 84,85 € |
| Original pack 4 x 2,5 l | | | 80,61/2,5 l |

For further information, please see page 1459

## Papanicolaou polychrome solution 3b (EA 50)

### Papanicolaou polychrome solution 3b (EA 50)
**for microscopy**
UN No. 1230 • ADR 3 (6.1) II • WGK 1
**Danger**
H225-H301+H311+H331-H370-H319

**Type analysis:**
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **T866.1** | 500 ml | glass | 27,85 € |
| **T866.2** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **T866.3** | 2,5 l | plastic | 79,05 € |
| Original pack 4 x 2,5 l | | | 75,10/2,5 l |

For further information, please see page 1459

## PAP fast staining kit

### PAP fast staining kit
**for microscopy**
Staining kit for fast staining of cytological smears (fast staining acc. to Papanicolaou), incl. instructions for use.
Storage temp.: +20 °C
UN No. 1987 • ADR 3 II • WGK 2
**Danger** H225-H302+H312+H332-H319-H370-H373-EUH208

**Formulation:**
PAP fast staining, solution 1 (Art. No. 9197)
PAP fast staining, solution 2 (Art. No. 9199)
Contents of this kit may not be bought separately.

| | | | |
|---|---|---|---|
| **9195.1** | 2 x 250 ml | plastic | 59,05 € |
| **9195.2** | 2 x 500 ml | plastic | 90,85 € |

For further information, please see page 1459

## Pappenheim fast staining

▶ Panoptical fast staining kit see p. 2129

## PAR

▶ 4-(2'-Pyridylazo)-resorcinol see p. 2186

## Paraffin 50-52 °C

### Paraffin 50-52 °C
**extra pure, for histology**
D 0,9 • bp >350 °C
mp 50-52 °C • flp 220 °C
[8002-74-2] • EC No. 232-315-6

**Type analysis:**
Appearance. ..... pastilles
Solidification point. ..... 50-52 °C

| | | | |
|---|---|---|---|
| **CN48.1** | 500 g | plastic | 20,65 € |
| Original pack 6 x 500 g | | | 19,62/500 g |
| **CN48.2** | 1 kg | plastic | 31,75 € |
| Original pack 6 x 1 kg | | | 30,16/1 kg |

For further information, please see page 1450

## Paraffin 52-54 °C

### Paraffin 52-54 °C
**extra pure, for histology**
D 0,9 • bp >300 °C
mp 52-54 °C • flp 220 °C
[8002-74-2] • EC No. 232-315-6

**Type analysis:**
Appearance. ..... pastilles
Solidification point. ..... 52-54 °C

| | | | |
|---|---|---|---|
| **CN49.1** | 500 g | plastic | 20,35 € |
| Original pack 6 x 500 g | | | 19,33/500 g |
| **CN49.2** | 1 kg | plastic | 31,75 € |
| Original pack 6 x 1 kg | | | 30,16/1 kg |

For further information, please see page 1450

## Paraffin 52-54 °C

▶ Granopent® "P" see p. 1964

## Paraffin in droplets

▶ Roti®-Plast see p. 2229
▶ Paraplast® see p. 2131

## Paraffin oil high viscosity

### Paraffin oil high viscosity
**Ph.Eur., DAB, high viscosity**
D 0,88 • bp ≥375 °C
flp 221 °C
[8042-47-5] • EC No. 232-455-8

**Guarantee analysis:**
Identity. ..... complies
Density (20 °C). ..... 0,867-0,882
Viscosity (20 °C). ..... 220-260 $mm^2/s$
Refractive index $n_D^{20}$. ..... 1,478-1,481
Conforms in all points to the corresponding pharmacopeia.

| | | | |
|---|---|---|---|
| **8904.1** | 1 l | plastic | 24,65 € |
| Original pack 6 x 1 l | | | 23,42/1 l |
| **8904.2** | 10 l | plastic | 138,70 € |

## Paraffin oil low viscosity

### Paraffin oil low viscosity

**Ph.Eur., DAB, low viscosity**
D 0,85 • bp 300 °C
flp 221 °C
[8042-47-5] • EC No. 232-455-8

**Danger** H304

**Guarantee analysis:**
Identity. ..... complies
Density (20 °C). ..... 0,842-0,853
Viscosity (20 °C). ..... 34-42 $mm^2/s$
Refractive index $n_D^{20}$. ..... 1,462-1,472
Conforms in all points to the corresponding pharmacopeia.

| | | | |
|---|---|---|---|
| **9190.1** | 1 l | plastic | 24,65 € |
| Original pack 6 x 1 l | | | 23,42/1 l |
| **9190.2** | 10 l | plastic | 142,45 € |

## Paraformaldehyde

### Paraformaldehyde

**extra pure, DAC**
Fixative
Polyoxymethylene
$(CH_2O)_n$
D ~1,3
mp ~130 °C • flp ~70 °C
Storage temp.: +4-15 °C
[30525-89-4] • EC No. 200-001-8
UN No. 2213 • ADR 4.1 III • WGK 2

**Warning** H228-H351-H302+H332-H315-H319-H317-H335

**Guarantee analysis:**
Assay (acidim.). ..... 95,0-100,5 %
In $NH_4OH$ insoluble matter. ..... complies
Ash content (as $SO_4$). ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,001 %
Acid or alkaline react. substances. ..... complies

| | | | |
|---|---|---|---|
| **0335.1** | 250 g | plastic | 14,55 € |
| **0335.2** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **0335.3** | 1 kg | plastic | 23,15 € |
| Original pack 6 x 1 kg | | | 21,99/1 kg |
| **0335.4** | 5 kg | plastic | 87,65 € |

For further information, please see page 1447

## Paraloid™ B-72

### Paraloid™ B-72

Clear, light-resistant thermoplastic acrylic resin for conserving samples. Also ideal for coating and sealing wood, stone, metals and other materials.
WGK 1

| | | | |
|---|---|---|---|
| **9639.1** | 1 kg | plastic | 60,75 € |
| **9639.2** | 5 kg | plastic | 174,70 € |

For further information, please see page 1141

## Paraplast®

### Paraplast®

**for histology, in pellets**
Tissue embedding medium composed of highly purified paraffin containing complex elastomers with regulated molecular weights.
**Melting point: 56 °C**
D 0,8 • bp >371 °C
flp 199 °C

**Type analysis:**
Appearance. ..... pellets
Melting point. ..... 56 °C

| | | | |
|---|---|---|---|
| **X880.1** | 1 kg | paper bag | 16,70 € |
| Original pack 6 x 1 kg | | | 15,87/1 kg |
| **X880.3** | 3 x 1 kg | paper bag | 45,70 € |
| **X880.2** | 8 x 1 kg | paper bag | 110,65 € |

For further information, please see page 1450

## Paraplast PLUS®

### Paraplast PLUS®

**for histology, in pellets**
Tissue embedding medium composed of highly purified paraffin containing complex elastomers with regulated molecular weights and an addition of DMSO for large and difficult-to-infiltrate tissue samples.
**Melting point: 56 °C**
D 0,8 • bp 316 °C
flp 199 °C

**Type analysis:**
Appearance. ..... pellets
Melting point. ..... 56 °C

| | | | |
|---|---|---|---|
| **X881.1** | 1 kg | paper bag | 19,25 € |
| **X881.3** | 3 x 1 kg | paper bag | 54,75 € |
| **X881.2** | 8 x 1 kg | paper bag | 117,20 € |

For further information, please see page 2131

## Paraplast X-TRA®

### Paraplast X-TRA®

**for histology, in pellets**
Tissue embedding medium composed of polymers with low molecular weights and highly purified paraffin for large and difficult-to-infiltrate tissue samples.
**Melting point: 52 °C**
flp 204 °C

**Type analysis:**
Appearance. ..... pellets
Melting point. ..... 52 °C

| | | | |
|---|---|---|---|
| **X882.1** | 1 kg | paper bag | 20,35 € |
| **X882.2** | 8 x 1 kg | paper bag | 138,70 € |

For further information, please see page 1450

## Paratoluolsulphonic acid

▶ p-Toluenesulphonic acid monohydrate see p. 2348

## Parietin

▶ Physcion see p. 2153

## PAR monosodium salt

▶ 4-(2'-Pyridylazo)-resorcinol monosodium salt see p. 2186

## PAS staining kit

### PAS staining kit

**for microscopy**
Staining kit for Periodic Acid Schiff (PAS) staining, incl. instructions for use.
Storage temp.: +4 °C
WGK 1

**Danger** H302-H315-H319-H350

**Formulation:**
Periodic acid solution 1 % (Art. No. HP00). ..... 500 ml
Schiff´s reagent (Art. No. X900). ..... 500 ml
Hemalum solution acid acc. to Mayer (Art. No. T865). ..... 500 ml

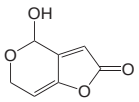
| | | | |
|---|---|---|---|
| **HP01.1** | 1 kit | glass | 84,85 € |

For further information, please see page 1457

## Patton and Reeder's Reagent

▶ Calconcarboxylic acid see p. 1807

## Patulin




### Patulin

**≥98 %**
Claviformin
$C_7H_6O_4$
M 154,13 g/mol
mp 110-111 °C
Storage temp.: +4 °C
[149-29-1] • EC No. 205-735-2
UN No. 2811 • ADR 6.1 II • WGK 2

**Danger** H300+H310+H330-H351

**Type analysis:**
Appearance. ..... white powder
Assay (TLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **6970.2** | 5 mg | plastic | 456,90 € |

## PBS

▶ Roti®-CELL PBS see p. 2207

## PBS powder

▶ Roti®-PreMix PBS see p. 2230

## PBS powder (pouch)

▶ Roti®fair PBS 7.4 see p. 2213
▶ Roti®fair 10x PBS 7.4 see p. 2214

## 10 x PBS ready-to-use solution

▶ Roti®-Stock 10x PBS see p. 2233

## PBS (tablet)

- Roti®fair PBS 7.2 see p. 2213
- Roti®fair PBS 7.4 see p. 2213
- Roti®fair PBS potassium-free 7.4 see p. 2214

## 10 x PBST ready-to-use solution

- Roti®-Stock 10x PBST see p. 2233

## PBST powder

- Roti®-PreMix PBST see p. 2231

## PBST (tablet)

- Roti®fair PBST 7.4 see p. 2214

## PCA

- Plate Count Agar see p. 2155
- Plate Count Agar, granulated see p. 2155

## Pd/C 10 %

- Palladium (10 %) on activated carbon see p. 2128

## $Pd(PPh_3)_4$

- Tetrakis(triphenylphosphine)palladium(0) see p. 2337

## Peanut oil

### Peanut oil

**refined**
D 0,91
[8002-03-7] • EC No. 232-296-4

**Type analysis:**
Refractive index $n_D^{20}$ ..... 1,468-1,472

| | | | |
|---|---|---|---|
| **9332.2** | 500 ml | glass | 17,10 € |
| **9332.1** | 1 l | glass | 25,70 € |
| Original pack 6 x 1 l | | | 24,42/1 l |
| **9332.3** | 2,5 l | glass | 44,00 € |
| Original pack 4 x 2,5 l | | | 41,80/2,5 l |

## Pectin A

### Pectin A

**for biochemistry, natural**
From apples.
Dry extract, Apple pectin extract
[9000-69-5] • EC No. 232-553-0

**Type analysis:**
Appearance. ..... red-brown flakes/needles
Odour. ..... fruity, light sour
Content (pectin). ..... ≥20 %
Solubility. ..... colloidal solution in water
Loss on drying (105 °C, 2 h). ..... ≤10 %
Sulphur dioxide ($SO_2$). ..... ≤500 mg/kg

| | | | |
|---|---|---|---|
| **4510.1** | 1 kg | plastic | 68,70 € |
| Original pack 6 x 1 kg | | | 65,27/1 kg |
| **4510.2** | 5 kg | cardboard | 271,45 € |

## Pectin C

### Pectin C

**for biochemistry**
From citrus fruits.
Degree of esterification ~70 %
[9000-69-5]

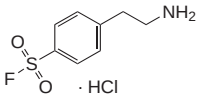
**Type analysis:**
Appearance. ..... powder, coloured like ivory
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Solubility. ..... good
Water content. ..... ≤12 %
Degree of esterification. ..... ≥69 %
pH value . ..... 2,5-3,5

| | | | |
|---|---|---|---|
| **8911.1** | 100 g | plastic | 19,25 € |
| **8911.2** | 1 kg | plastic | 121,40 € |
| Original pack 6 x 1 kg | | | 115,33/1 kg |

## Pectinose

- L(+)-Arabinose see p. 1749

## Pefabloc® SC-Protease Inhibitor



### Pefabloc® SC-Protease Inhibitor

**≥95 %, for biochemistry**
Irreversible inhibitor of serine proteases.
4-(2-Aminoethyl)-benzylsulphonyl fluoride hydrochloride
$C_8H_{10}NSO_2F \cdot HCl$
M 239,7 g/mol
mp 175-177 °C
Solubility: 10 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[30827-99-7]
UN No. 3261 • ADR 8 III • WGK 3
**Danger** H314

**Type analysis:**
Assay (HPLC) ..... ≥95 %

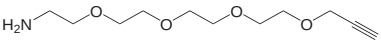
| | | | |
|---|---|---|---|
| **A154.1** | 100 mg | glass | 68,30 € |
| **A154.2** | 500 mg | glass | 284,90 € |
| **A154.3** | 1 g | glass | 499,90 € |

For further information, please see page 1286

## PEG

- Polyethylene glycol see p. 2157

## $H_2N$-PEG4-Alkyne



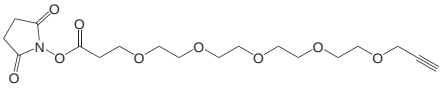
### $H_2N$-PEG4-Alkyne

**≥90 %**
Linker
3,6,9,12-Tetraoxapentadec-14-yn-1-amine
$C_{11}H_{21}NO_4$
M 231,29 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
[1013921-36-2]
WGK 3

**Type analysis:**
Appearance. ..... slightly orange oil (RT), grey solid (-20 °C)
Assay (NMR). ..... ≥90 %
Solubility. ..... DMSO, DMF, $CH_2Cl_2$, $CHCl_3$, THF, $H_2O$

| | | | |
|---|---|---|---|
| **7840.1** | 5 mg | plastic | 67,20 € |
| **7840.2** | 10 mg | plastic | 117,20 € |

## NHS-PEG5-Alkyne



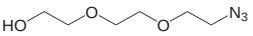
### NHS-PEG5-Alkyne

**≥90 %**
Linker
2,5-Dioxopyrrolidin-1-yl-4,7,10,13,16-pentaoxanonadec-18-ynoate
$C_{18}H_{27}NO_9$
M 401,41 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
WGK 3

**Type analysis:**
Appearance. ..... slightly orange oil
Assay (NMR). ..... ≥90 %
Solubility. ..... DMSO, DMF, $CH_2Cl_2$, $CHCl_3$, THF, $H_2O$

| | | | |
|---|---|---|---|
| **7838.1** | 5 mg | plastic | 65,50 € |
| **7838.2** | 10 mg | plastic | 116,65 € |

## HO-PEG2-Azide



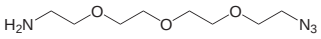
### HO-PEG2-Azide

**≥90 %**
Linker
2-[2-(2-Azidoethoxy)ethoxy]ethanol
$C_6H_{13}N_3O_3$
M 175,19 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
[86520-52-7]
WGK 3

**Type analysis:**
Appearance. ..... yellowish liquid
Assay (NMR). ..... ≥90 %

| | | | |
|---|---|---|---|
| **7828.1** | 5 mg | plastic | 41,85 € |
| **7828.2** | 10 mg | plastic | 66,55 € |

## $H_2N$-PEG3-Azide



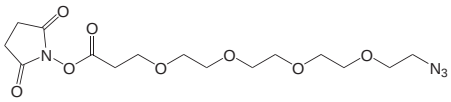
### $H_2N$-PEG3-Azide

**≥90 %**
Linker
11-Azido-3,6,9-trioxaundecan-1-amine
$C_8H_{18}N_4O_3$
M 218,25 g/mol
Storage temp.: +4 °C •
Transport temp.: cooled
[134179-38-7]
UN No. 2735 • ADR 8 III • WGK 3
**Danger** H314

**Type analysis:**
Appearance. ..... colourless liquid
Assay (GC). ..... ≥90 %

| | | | |
|---|---|---|---|
| **7830.1** | 5 mg | plastic | 41,85 € |
| **7830.2** | 10 mg | plastic | 66,55 € |

## NHS-PEG4-Azide



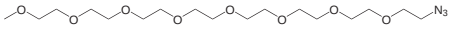
### NHS-PEG4-Azide

**≥90 %**
Linker
15-Azido-4,7,10,13-tetraoxapentadecanoic acid succinimidyl ester
$C_{15}H_{24}N_4O_8$
M 388,37 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
[944251-24-5]
WGK 3

**Type analysis:**
Appearance. ..... colourless viscous liquid
Assay (NMR). ..... ≥90 %
Solubility. ..... DMSO, DMF, $CH_2Cl_2$

| | | | |
|---|---|---|---|
| **7823.1** | 5 mg | plastic | 64,00 € |
| **7823.2** | 10 mg | plastic | 93,00 € |
| **7823.3** | 50 mg | plastic | 321,45 € |
| **7823.4** | 100 mg | plastic | 611,70 € |

## PEG8-Azide



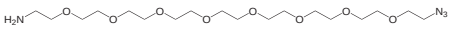
### PEG8-Azide

**≥95 %**
*O*-(2-Azidoethyl)-*O'*-methylheptaethylene glycole
$C_{17}H_{35}N_3O_8$
Storage temp.: -20 °C •
Transport temp.: cooled
[869718-80-9]
WGK 3

**Type analysis:**
Appearance..... colourless viscous liquid
Assay (HPLC)..... ≥95 %

| | | | |
|---|---|---|---|
| **7826.1** | 5 mg | plastic | 61,85 € |
| **7826.2** | 10 mg | plastic | 91,30 € |

## $H_2N$-PEG8-Azide



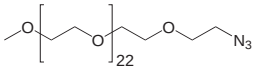
### $H_2N$-PEG8-Azide

**≥90 %**
Linker
26-Azido-3,6,9,12,15,18,21,24-octaoxahexacosan-1-amine
$C_{18}H_{38}N_4O_8$
M 438,52 g/mol
Storage temp.: +4 °C •
Transport temp.: cooled
[857891-82-8]
WGK 3

**Type analysis:**
Appearance..... yellowish liquid
Assay. ..... ≥90 %

| | | | |
|---|---|---|---|
| **7829.1** | 5 mg | plastic | 41,85 € |
| **7829.2** | 10 mg | plastic | 66,55 € |

## PEG24-Azide



### PEG24-Azide

**≥90 %**
73-Azido-2,5,8,11,14,17,20,23,26,29,32,35,38,41,44,47,50,53,56,59,62,65,68,71-tetracosaoxatriheptacontane
$C_{49}H_{99}N_3O_{24}$
M 1114,32 g/mol
Storage temp.: +4 °C •
Transport temp.: cooled
[89485-61-0]
WGK 3

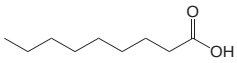
**Type analysis:**
Appearance..... white solid
Assay (HPLC)..... ≥90 %

| | | | |
|---|---|---|---|
| **7825.1** | 5 mg | plastic | 61,85 € |
| **7825.2** | 10 mg | plastic | 91,30 € |

## Pelarginadon

▶ Naringenin see p. 2089

## Pelargonic acid



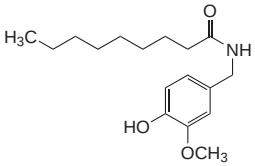
### Pelargonic acid

**≥97 %**
Nonanoic acid
$C_9H_{18}O_2$
M 158,24 g/mol
D 0,90 • bp 254 °C
mp 12 °C • flp 133 °C
Solubility: 0,3 g/l ($H_2O$, 25 °C)
[112-05-0] • EC No. 203-931-2
UN No. 3265 • ADR 8 III • WGK 1
**Danger** H314

**Type analysis:**
Assay (GC). ..... ≥97,0 %

| | | | |
|---|---|---|---|
| **7015.1** | 50 ml | glass | 34,30 € |

## Pelargonic acid vanillylamide



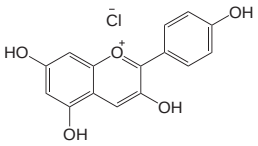
### Pelargonic acid vanillylamide

**≥97 %**
Nonylvanylamide, Nonivamide, so called synth. Capsaicin
$C_{17}H_{27}NO_3$
M 293,41 g/mol
mp 52-56°C
[2444-46-4] • EC No. 219-484-1
WGK 2
**Warning** H315-H319-H317-H335

**Type analysis:**
Assay (HPLC). ..... ≥97 %
Loss on drying..... ≤1,0 %
Heavy metals. ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **4462.1** | 10 g | glass | 33,25 € |
| **4462.2** | 50 g | glass | 126,35 € |

## Pelargonidin chloride



$C_{15}H_{11}O_5Cl$
M 306,70 g/mol
mp ~350 °C
Storage temp.: +4 °C
[134-04-3] • EC No. 205-127-7

### Pelargonidin chloride
**ROTICHROM® HPLC**
Reference substance for HPLC.

**Type analysis:**
Purity (HPLC)..... ≥99 %

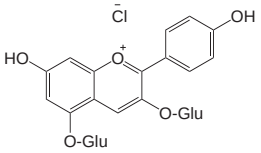
| | | | |
|---|---|---|---|
| **4541.1** | 10 mg | glass | 310,70 € |

### Pelargonidin chloride
**ROTICHROM® ~CHR**

| | | | |
|---|---|---|---|
| **6853.1** | 25 mg | glass | 91,95 € |

## Pelargonidin chloride 3-glucoside
▶ Callistephin (chloride) see p. 1808

## Pelargonidin 3,5-diglucoside chloride

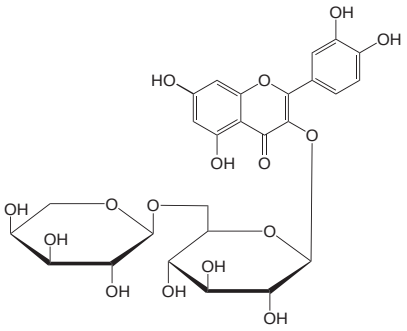


### Pelargonidin 3,5-diglucoside chloride
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Pelargonium zonale.*
Pelargonin chloride, Salvinin
$C_{27}H_{31}O_{15}Cl$
M 630,97 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[17334-58-6]
WGK 1

**Type analysis:**
Purity (HPLC)..... ≥97 %

| | | | |
|---|---|---|---|
| **1646.1** | 5 mg | glass | 274,15 € |

## Peltatoside

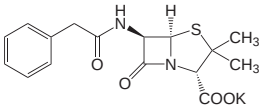


### Peltatoside
**ROTICHROM® HPLC**
Reference substance for HPLC.
Quercetin-3-arabinoglucoside
$C_{26}H_{28}O_{16}$
M 596,50 g/mol
mp 202 °C
Storage temp.: +4 °C
[23284-18-6] • EC No. 245-555-1

**Type analysis:**
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7406.1** | 10 mg | glass | 310,70 € |

## Penicillin G potassium salt



Benzylpenicillin potassium salt
$C_{16}H_{17}KN_2O_4S$
M 372,48 g/mol
mp ~215 °C
Storage temp.: +4 °C
[113-98-4] • EC No. 204-038-0
WGK 1

**Danger** H334-H317

### Penicillin G potassium salt
**CELLPURE® ≥1550 U/mg**
β-Lactam antibiotic.
For cell culture and biochemistry.

**Type analysis:**
Endotoxins. ..... ≤0,25 I.U./mg
Activity. ..... ≥1550 U/mg
Assay. ..... 96,0-101,0 %
pH value. ..... 5,5-7,5
Specific rotation $[\alpha]_D^{20}$. ..... +270° to +300°
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **HP49.1** | 1 g | plastic | 19,60 € |
| **HP49.2** | 10 g | plastic | 37,10 € |
| **HP49.3** | 25 g | plastic | 73,00 € |

For further information, please see page 1432

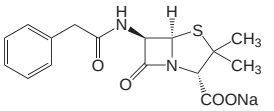
### Penicillin G potassium salt
**~1600 U/mg, for biochemistry**
β-Lactam antibiotic

**Type analysis:**
Activity. ..... ~1600 U/mg
Assay. ..... 96,0-101,0 %
pH value. ..... 5,0-7,5
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **CN29.1** | 10 g | plastic | 19,60 € |
| **CN29.2** | 25 g | plastic | 30,00 € |
| **CN29.3** | 100 g | plastic | 80,10 € |

For further information, please see page 1432

## Penicillin G sodium salt



Benzylpenicillin sodium salt
$C_{16}H_{17}N_2NaO_4S$
M 356,37 g/mol
mp ~215 °C
Storage temp.: +4 °C
[69-57-8] • EC No. 200-710-2
WGK 1

**Danger** H334-H317

### Penicillin G sodium salt
**CELLPURE® ≥1550 U/mg**
β-Lactam antibiotic.
For cell culture and biochemistry.

**Type analysis:**
Endotoxins. ..... ≤0,25 I.U./mg
Activity. ..... ≥1550 U/mg
Assay. ..... 96,0-101,0 %
pH value. ..... 5,5-7,5
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **HP48.1** | 1 g | plastic | 16,05 € |
| **HP48.2** | 10 g | plastic | 33,25 € |
| **HP48.3** | 25 g | plastic | 65,50 € |

For further information, please see page 1432

### Penicillin G sodium salt
**≥96 %, for biochemistry**
β-Lactam antibiotic

**Type analysis:**
Assay. ..... 96,0-102,0 %
pH value. ..... 5,5-7,5
Specific rotation $[\alpha]_D^{20}$. ..... +285° to +310°
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **CN28.1** | 10 g | plastic | 17,75 € |
| **CN28.2** | 25 g | plastic | 29,60 € |
| **CN28.3** | 100 g | plastic | 83,35 € |

For further information, please see page 1432

## Pen/Strep-PreMix

### Pen/Strep-PreMix
**CELLPURE®**

For elimination and prevention of bacterial contamination in cell culture.

WGK 2

**Danger** H334-H302-H361d-H317

**Guarantee analysis:**

Penicillin G sodium salt. ..... 312,5 mg/vial
Streptomycin. ..... 0,5 g/vial
Sodium chloride. ..... 0,45 g/vial
Endotoxins. ..... ≤210 I.U./vial
pH value (stock solution in water). ..... 5,5 ±0,2

| | | | |
|---|---|---|---|
| **HP10.1** | powder mix for 100 ml | plastic | 60,75 € |

For further information, please see page 1432

## Pentaerythritol



### Pentaerythritol
**≥98 %, for synthesis**

2,2-Bis(hydroxymethyl)-1,3-propanediol
$C_5H_{12}O_4$
M 136,15 g/mol
D 1,39 • bp 276 °C (30 mbar)
mp 255-261 °C • flp 150 °C
Solubility: 72 g/l ($H_2O$, 25 °C)
[115-77-5] • EC No. 204-104-9
WGK 1

**Type analysis:**

Assay. ..... ≥98 %
Melting range. ..... 255-261 °C

| | | | |
|---|---|---|---|
| **7522.2** | 100 g | plastic | 17,75 € |
| **7522.1** | 500 g | plastic | 53,65 € |
| Original pack 6 x 500 g | | | 50,97/500 g |

## trans-3,3',4',5,7-Pentahydroxy-flavan

▶ DL-Catechin hydrate see p. 1818

## 2',3,4',5,7-Pentahydroxyflavone

▶ Morin hydrate see p. 2083

## 3',4',5,6,7-Pentamethoxy-flavone

▶ Sinensetin see p. 2264

## 1-Pentanal

▶ n-Valeraldehyde see p. 2368

## iso-Pentane

▶ 2-Methylbutane see p. 2072

## n-Pentane



1,3-Dimethylpropane, Diethylmethane
$C_5H_{12}$
M 72,15 g/mol
D 0,63 • bp ~36 °C
mp -129,7 °C • flp -48 °C
[109-66-0] • EC No. 203-692-4
UN No. 1265 • ADR 3 II • WGK 2

**Danger**

H225-H304-H336-H411-EUH066

### n-Pentane
**ROTISOLV® HPLC**

**Guarantee analysis:**

Assay (GC). ..... ≥99 %
Water (KF). ..... ≤0,005 %
Free acid (as $CH_3COOH$). ..... ≤0,002 %
Non volatile matter. ..... ≤0,0003 %
Transmission:
270 nm. ..... ≥99 %
220 nm. ..... ≥90 %
200 nm. ..... ≥40 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **CN99.1** | 1 l | glass | 63,35 € |
| Original pack 6 x 1 l | | | 60,18/1 l |
| **CN99.2** | 2,5 l | glass | 136,45 € |
| Original pack 4 x 2,5 l | | | 129,63/2,5 l |

For further information, please see page 1590

### n-Pentane
**ROTISOLV® ≥99 %, GC Ultra Grade**

For gaschromatographic residue analysis.

**Guarantee analysis:**

Assay (GC). ..... ≥99 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,005 %
Free acid (as $CH_3COOH$). ..... ≤0,005 %
Evaporation residue. ..... ≤0,0001 %
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤3 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
PAH-test (less than 2 ppb, HPLC). ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **KK45.1** | 2,5 l | glass | 202,65 € |
| Original pack 4 x 2,5 l | | | 192,52/2,5 l |

### n-Pentane
**ROTISOLV® ≥99 %, Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Assay (GC). ..... ≥99,0 %
Colour (APHA). ..... ≤5
Water (KF). ..... ≤0,005 %
Free acid (as $CH_3COOH$). ..... ≤0,002 %
Evaporation residue. ..... ≤0,0001 %
GC/FID suitability (as 2-octanol). ..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide). ..... ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤5 ng/l
GC/NPD pesticides (as parathion). ..... ≤5 ng/l
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ..... ≤0,05 mg/l
GC/ECD volatile impurities (as ethylene dibromide). ..... ≤5 ng/ml
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb

| | | | |
|---|---|---|---|
| **7587.1** | 2,5 l | glass | 118,80 € |
| Original pack 4 x 2,5 l | | | 112,86/2,5 l |

### n-Pentane
**ROTISOLV® ≥99 %, Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC). ..... ≥99 %
Water (KF). ..... ≤0,01 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
GC/ECD (individual signal as lindane). ..... ≤5 ng/l
GC/PND (individual signal as ethylparathion). ..... ≤10 ng/l

| | | | |
|---|---|---|---|
| **T903.2** | 1 l | glass | 51,10 € |
| Original pack 6 x 1 l | | | 48,55/1 l |
| **T903.1** | 2,5 l | glass | 100,95 € |
| Original pack 4 x 2,5 l | | | 95,90/2,5 l |

### n-Pentane
**ROTISOLV® ≥99 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC). ..... ≥99 %
Water (KF). ..... ≤0,01 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Transmission:
240 nm. ..... ≥98 %
230 nm. ..... ≥95 %
220 nm. ..... ≥85 %
210 nm. ..... ≥60 %
200 nm. ..... ≥20 %

| | | | |
|---|---|---|---|
| **4443.1** | 2,5 l | glass | 107,40 € |
| Original pack 4 x 2,5 l | | | 102,03/2,5 l |

### n-Pentane
**ROTIPURAN® ≥99 %, p.a.**

**Guarantee analysis:**

Assay (GC). ..... ≥99,0 %
Water (KF). ..... ≤0,01 %
Sulphur (as S). ..... ≤0,005 %
Evaporation residue. ..... ≤0,001 %
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Boron (B). ..... ≤0,000002 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Iron (Fe). ..... ≤0,00001 %
Chromium (Cr). ..... ≤0,000002 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %
Tin (Sn). ..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **4978.1** | 1 l | glass | 49,35 € |
| Original pack 6 x 1 l | | | 46,88/1 l |
| **4978.2** | 2,5 l | glass | 102,70 € |
| Original pack 4 x 2,5 l | | | 97,57/2,5 l |

## n-Pentane

**≥99 %, for synthesis**

**Type analysis:**

Assay (GC). ..... ≥99,0 %
Density (15 °C). ..... 0,629-0,633
Aromatic compounds (GC). ..... ≤0,001 %
Evaporation residue. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **8720.1** | 1 l | glass | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |
| **8720.3** | 2,5 l | glass | 71,50 € |
| Original pack 4 x 2,5 l | | | 67,93/2,5 l |
| **8720.4** | 5 l | aluminium | 126,35 € |
| Original pack 2 x 5 l | | | 120,03/5 l |
| **8720.2** | 10 l | tinplate | 241,90 € |
| **8720.5** | 25 l | tinplate | 536,45 € |

## n-Pentane

**≥95 %, extra pure**

**Type analysis:**

Assay (GC). ..... ≥95,0 %
Density (15 °C). ..... 0,6250-0,6380
Isopentane. ..... ≤3,0 %
Cyclopentane. ..... ≤1,0 %
2,2-Dimethylbutane. ..... ≤1,0 %
n-Hexane. ..... ≤0,4 %
Benzene. ..... ≤0,002 %
Total sulphur. ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **3747.1** | 1 l | glass | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **3747.3** | 2,5 l | glass | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |
| **3747.2** | 10 l | tinplate | 96,65 € |
| **3747.4** | 25 l | tinplate | 190,85 € |

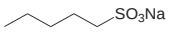
## Pentanedial

▶ Glutaraldehyde 50 % see p. 1959

## Pentane-2,4-dione

▶ Acetyl acetone see p. 1701

## Pentane-1-sulphonic acid sodium salt




### Pentane-1-sulphonic acid sodium salt

**≥98 %, for ion pair chromatography**

Ion pair reagent for HPLC.
Sodium-1-pentane sulphonate
$C_5H_{11}NaO_3S$
M 174,20 g/mol
[22767-49-3] • EC No. 245-208-4
WGK 3

**Guarantee analysis:**

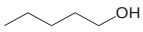
Assay (acidim.). ..... ≥98,0 %
Water. ..... ≤2 %
Absorption:
A 200 nm (0,25 M in water). ..... ≤0,1 AU
A 210 nm (0,25 M in water). ..... ≤0,05 AU
A 220 nm (0,25 M in water). ..... ≤0,04 AU
A 230 nm (0,25 M in water). ..... ≤0,03 AU
A 240 nm (0,25 M in water). ..... ≤0,01 AU
A 250 nm (0,25 M in water). ..... ≤0,01 AU
A 260 nm (0,25 M in water). ..... ≤0,01 AU

| | | | |
|---|---|---|---|
| **KK56.1** | 10 g | glass | 46,15 € |
| **KK56.2** | 25 g | glass | 89,15 € |
| **KK56.3** | 100 g | glass | 267,70 € |

## Pentanoic acid

▶ n-Valeric acid see p. 2368

## 1-Pentanol




n-Amyl alcohol, 1-Pentyl alcohol, n-Butyl carbinol
$C_5H_{12}O$
M 88,15 g/mol
D 0,81 • bp 137,8 °C
mp -78,5 °C • flp 43 °C
Solubility: 22 g/l ($H_2O$, 20 °C)
[71-41-0] • EC No. 200-752-1
UN No. 1105 • ADR 3 III • WGK 1

**Warning** H226-H332-H315-H335

### 1-Pentanol

**~98 %, for synthesis**

**Type analysis:**

Assay (GC). ..... ~98 %
Density (20 °C). ..... 0,810-0,830
Refractive index $n_D^{20}$. ..... 1,4090-1,4120

| | | | |
|---|---|---|---|
| **8949.2** | 500 ml | glass | 25,30 € |
| **8949.1** | 1 l | glass | 41,85 € |
| Original pack 6 x 1 l | | | 39,76/1 l |

### 1-Pentanol

**ROTICHROM® GC**

Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**

Purity (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **9077.1** | 1 g | plastic | 81,20 € |

## 3-Pentanone

▶ Diethylketone see p. 1874

## 4-Pentenylglucosinolate potassium salt

▶ Glucobrassicanapin see p. 1954

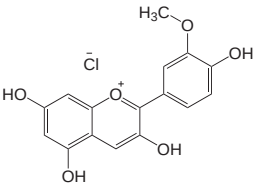
## Pentetic acid

▶ Diethylene triamine pentaacetic acid see p. 1873

## 1-Pentyl alcohol

▶ 1-Pentanol see p. 2136

## Peonidin chloride




### Peonidin chloride

**ROTICHROM® HPLC**

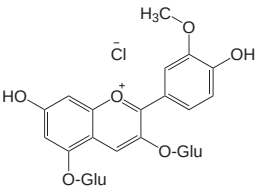
Reference substance for HPLC.
$C_{16}H_{13}O_6Cl$
M 336,71 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[134-01-0] • EC No. 205-125-6

**Type analysis:**

Purity (HPLC). ..... ≥98,5 %

| | | | |
|---|---|---|---|
| **4540.1** | 5 mg | glass | 306,40 € |

## Peonidin 3,5-diglucoside chloride




### Peonidin 3,5-diglucoside chloride

**ROTICHROM® HPLC**

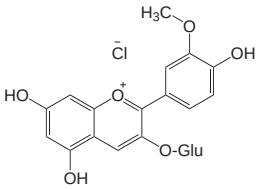
Reference substance for HPLC.
From *Rosa Centifolia.*
Peonine
$C_{28}H_{33}O_{16}Cl$
M 661,01 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[132-37-6]
WGK 1

**Type analysis:**

Purity (HPLC). ..... ≥96 %

| | | | |
|---|---|---|---|
| **1413.1** | 10 mg | glass | 407,45 € |

## Peonidin 3-glucoside chloride



### Peonidin 3-glucoside chloride

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Vitis vinifera.*
$C_{22}H_{23}O_{11}Cl$
M 498,85 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[6906-39-4]
WGK 1

**Type analysis:**
Purity (HPLC)..... ≥97 %

| | | | |
|---|---|---|---|
| **1619.1** | 5 mg | glass | 289,20 € |

## Peonine

▶ Peonidin 3,5-diglucoside chloride see p. 2136

## PEP-3 Na

▶ Phosphoenolpyruvic acid, trisodium salt heptahydrate see p. 2149

## Pepsin

M 35000 g/mol
Storage temp.: +4 °C
[9001-75-6] • EC No. 232-629-3
WGK 1

**Danger** H334-H335-H315-H319

### Pepsin

**≥2000 FIP-U/g, for biochemistry**

From porcine gastric mucosa.
For detection of trichina in meat.

**Guarantee analysis:**
Appearance..... white to cream-coloured, cryst. or amorphous powder
Specific activity..... ≥2000 FIP-U/g
pH value (1 % in $H_2O$)..... 3,0-5,0
Loss on drying..... ≤5,0 %

| | | | |
|---|---|---|---|
| **KK38.1** | 50 g | plastic | 56,90 € |
| **KK38.2** | 100 g | plastic | 91,30 € |
| **KK38.3** | 250 g | plastic | 188,15 € |
| **KK38.4** | 1 kg | plastic | 665,45 € |
| Original pack 6 x 1 kg | | | 632,18/1 kg |

For further information, please see page 1278

### Pepsin

**≥0,5 Ph.Eur.-U/mg, for biochemistry**

Isolated from pigs stomach.

**Type analysis:**
Assay..... ≥0,5 Ph.Eur.-E/mg
Identity..... complies
Loss on drying..... <5,0 %

| | | | |
|---|---|---|---|
| **0230.1** | 25 g | glass | 25,30 € |
| **0230.2** | 50 g | glass | 40,75 € |

## Pepstatin A

### Pepstatin A

**≥98 %, for biochemistry**

Inhibitor of acidic/aspartic proteases.
Iva-Val-Val-Sta-Ala-Sta
$C_{34}H_{63}N_5O_9$
M 685,91 g/mol
mp 233 °C (dec.)
Storage temp.: -20 °C •
Transport temp.: room temp.
[26305-03-3] • EC No. 247-600-0
WGK 1

**Type analysis:**
Appearance..... white powder
Assay (HPLC)..... ≥98 %
Specific rotation $[\alpha]_D^{20}$ (c=0,5 in methanol)...-97° to -89°

| | | | |
|---|---|---|---|
| **2936.1** | 5 mg | plastic | 30,00 € |
| **2936.2** | 25 mg | plastic | 88,05 € |
| **2936.3** | 100 mg | plastic | 276,85 € |

For further information, please see page 1286

## Peptide Synthesis, reagents for

▶ Reagents for Peptide Synthesis see p. 2194

## Peptone ex casein

### Peptone ex casein

**tryptic digest, for microbiology**

Solubility: 800 g/l ($H_2O$, 20 °C)
Storage temp.: +20 °C
[91079-40-2] • EC No. 293-428-4
WGK 1

**Type analysis:**
Total nitrogen..... ≥12,5 %
Amino nitrogen..... ≥3,0 %
Loss on drying..... ≤6 %
Ash..... ≤16 %
pH value ..... 6,5-7,5

| | | | |
|---|---|---|---|
| **8986.1** | 500 g | plastic | 76,90 € |
| Original pack 6 x 500 g | | | 73,06/500 g |
| **8986.2** | 1 kg | plastic | 137,10 € |
| Original pack 6 x 1 kg | | | 130,25/1 kg |
| **8986.3** | 2,5 kg | plastic | 304,80 € |
| **8986.4** | 5 kg | plastic | 536,45 € |

For further information, please see page 1421

## Peptone ex casein, pancreatic digest

▶ Tryptone/Peptone ex casein see p. 2360

## Peptone ex gelatin

### Peptone ex gelatin

**pancreatic digest, for microbiology**

Solubility: 550 g/l ($H_2O$, 20 °C)
Storage temp.: +20 °C
[91079-43-5] • EC No. 293-431-0
WGK 1

**Type analysis:**
Total nitrogen..... ≥10 %
Amino nitrogen..... ≥2,7 %
Loss on drying..... ≤6 %
Ash..... ≤15 %
pH value (2 % solution)..... 7,0 ±0,5

| | | | |
|---|---|---|---|
| **HP99.1** | 500 g | plastic | 69,35 € |
| Original pack 6 x 500 g | | | 65,88/500 g |

For further information, please see page 1421

## Peptone ex meat

### Peptone ex meat

**peptic digest, for microbiology**

Solubility: 1500 g/l ($H_2O$, 20 °C)
Storage temp.: +20 °C
[91079-38-8] • EC No. 293-426-3
WGK 3

**Type analysis:**
Total nitrogen..... ≥12,0 %
Amino nitrogen..... 2,0-3,1 %
Loss on drying..... ≤5 %
Ash..... ≤20 %
pH value ..... 6,5-7,5
Solubility (2 % solution)..... clear

| | | | |
|---|---|---|---|
| **2366.1** | 250 g | plastic | 55,40 € |
| **2366.3** | 500 g | plastic | 103,10 € |
| Original pack 6 x 500 g | | | 97,95/500 g |
| **2366.2** | 1 kg | plastic | 193,50 € |
| Original pack 6 x 1 kg | | | 183,83/1 kg |
| **2366.4** | 2,5 kg | plastic | 381,65 € |

For further information, please see page 1421

## Peptone ex pea

### Peptone ex pea

NEW

**for microbiology**

Storage temp.: +20 °C
WGK 1

**Type analysis:**
Total nitrogen..... ≥12 %
Amino nitrogen..... ≥3,8 %
Loss on drying..... ≤6 %
Ash..... ≤16 %
pH value (5 % solution)..... 6,7-7,7

| | | | |
|---|---|---|---|
| **2122.1** | 250 g | plastic | 63,45 € |
| **2122.2** | 500 g | plastic | 117,20 € |
| Original pack 6 x 500 g | | | 111,34/500 g |

For further information, please see page 1422

## Peptone ex soya

Solubility: 2200 g/l ($H_2O$, 20 °C)
Storage temp.: +20 °C
[91079-46-8] • EC No. 293-434-7
WGK 1

### Peptone ex soya (animal-free/GMO-free)

**animal-free and GMO-free, papainic digest, for microbiology**

**Type analysis:**

Total nitrogen.....≥7 %
Amino nitrogen.....≥2,2 %
Loss on drying.....≤6 %
Animal-free.....complies
GMO-free.....complies
pH value (5 % solution).....6,5-7,5

| | | | |
|---|---|---|---|
| **2832.1** | 250 g | plastic | 55,40 € |
| **2832.2** | 500 g | plastic | 90,85 € |
| Original pack 6 x 500 g | | | 86,31/500 g |
| **2832.3** | 1 kg | plastic | 166,65 € |
| Original pack 6 x 1 kg | | | 158,32/1 kg |

For further information, please see page 1422

### Peptone ex soya

**papainic digest, for microbiology**

**Type analysis:**

Total nitrogen.....≥9,0 %
Amino nitrogen.....≥2,5 %
Loss on drying.....≤6 %
Ash.....≤21,0 %
pH value (5 % solution).....6,5-7,5

| | | | |
|---|---|---|---|
| **2365.1** | 250 g | plastic | 38,60 € |
| **2365.3** | 500 g | plastic | 64,40 € |
| Original pack 6 x 500 g | | | 61,18/500 g |
| **2365.2** | 1 kg | plastic | 124,60 € |
| Original pack 6 x 1 kg | | | 118,37/1 kg |
| **2365.4** | 2,5 kg | plastic | 231,70 € |

For further information, please see page 1421

## Peptone Water, buffered

Storage temp.: +20 °C
WGK 1

### Peptone Water, buffered

**Ph.Eur., for microbiology**

For dilution and homogenisation of samples during microbiological analysis of food. Sodium peptone buffer solution (Ph.Eur. 6.0), Buffered Sodium Chloride-Peptone Solution (Ph.Eur. 6.3, 7.0, 8.0 and 9.0).

Application: Use 16,1 g for 1 l broth.

**Guarantee analysis:**

Potassium hydrogen phosphate*..... 3,6 g/l
di-Sodium hydrogen phosphate dihydrate*..... 7,2 g/l
Sodium chloride (NaCl). ..... 4,3 g/l
Casein peptone (Pancreas hydrolysate)..... 1,0 g/l
pH value. ..... 7,0 ±0,2
*equivalent to 0,067 M phosphate

| | | | |
|---|---|---|---|
| **AE67.1** | 500 g | plastic | 64,00 € |
| Original pack 6 x 500 g | | | 60,80/500 g |
| **AE67.2** | 1 kg | plastic | 109,15 € |
| Original pack 6 x 1 kg | | | 103,69/1 kg |

For further information, please see page 1394

### Peptone Water, buffered

**EN ISO 6887, EN ISO 6579, ISO 22964, EN ISO 19250, for microbiology**

Diluent for homogenisation of food samples and for sample preparation for microbiological analysis.

Application: Use 20 g for 1 l broth.

**Guarantee analysis:**

Pancreatic digest of casein.....10 g/l
Sodium chloride (NaCl). .....5 g/l
Disodium phosphate. .....3,5 g/l
Potassium phosphate.....1,5 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X917.1** | 500 g | plastic | 54,75 € |
| Original pack 6 x 500 g | | | 52,01/500 g |
| **X917.2** | 1 kg | plastic | 98,40 € |
| Original pack 6 x 1 kg | | | 93,48/1 kg |
| **X917.3** | 2,5 kg | plastic | 201,60 € |

For further information, please see page 1394

### Peptone water, buffered, granulated

**granulated, EN ISO 6887, EN ISO 6579, ISO 22964, EN ISO 19250, for microbiology**

Diluent for homogenisation of food samples and for sample preparation for microbiological analysis.

Application: Use 20 g for 1 l broth.

**Guarantee analysis:**

Pancreatic digest of casein.....10 g/l
Sodium chloride (NaCl). .....5 g/l
Disodium phosphate. .....3,5 g/l
Potassium phosphate.....1,5 g/l
pH value. ..... 7,0 ±0,2
Granulation..... complies

| | | | |
|---|---|---|---|
| **6680.1** | 500 g | plastic | 81,60 € |
| Original pack 6 x 500 g | | | 77,52/500 g |
| **6680.2** | 1 kg | plastic | 145,15 € |
| Original pack 6 x 1 kg | | | 137,89/1 kg |

For further information, please see page 1394

## Perchlorate Standards

▶ Perchlorate IC Standard Solution see p. 2311

## Perchloric acid Ultra-quality

### Perchloric acid Ultra-quality

**ROTIPURAN® Ultra 70 %**

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.
The quality for highest demands on purity.

$HClO_4$
M 100,46 g/mol
D 1,688 • bp 198 °C
mp -18 °C
[7601-90-3] • EC No. 231-512-4
UN No. 1873 • ADR 5.1 (8) I • WGK 1

**Danger** H271-H314-H290

**Guarantee analysis:**

Assay (w/w).....65-71 %
Aluminium (Al).....≤100 ppt
Antimony (Sb).....≤100 ppt
Arsenic (As).....≤100 ppt
Barium (Ba).....≤100 ppt
Beryllium (Be).....≤100 ppt
Lead (Pb).....≤10 ppt
Cadmium (Cd).....≤10 ppt
Cesium (Cs).....≤10 ppt
Calcium (Ca).....≤100 ppt
Cerium (Ce).....≤10 ppt
Dysprosium (Dy).....≤10 ppt
Iron (Fe).....≤100 ppt
Erbium (Er).....≤10 ppt
Europium (Eu).....≤10 ppt
Gadolinium (Gd).....≤10 ppt
Gallium (Ga).....≤10 ppt
Holmium (Ho).....≤10 ppt
Indium (In).....≤10 ppt
Potassium (K).....≤100 ppt
Cobalt (Co).....≤100 ppt
Copper (Cu).....≤100 ppt
Lanthanum (La).....≤10 ppt
Lithium (Li).....≤100 ppt
Lutetium (Lu).....≤10 ppt
Magnesium (Mg).....≤100 ppt
Manganese (Mn).....≤100 ppt
Molybdenum (Mo).....≤100 ppt
Sodium (Na).....≤100 ppt
Neodymium (Nd).....≤10 ppt
Nickel (Ni).....≤100 ppt
Palladium (Pd).....≤10 ppt
Platinum (Pt).....≤100 ppt
Praseodymium (Pr).....≤10 ppt
Rhodium (Rh).....≤10 ppt
Rubidium (Rb).....≤10 ppt
Samarium (Sm).....≤10 ppt
Scandium (Sc).....≤100 ppt
Silver (Ag).....≤100 ppt
Strontium (Sr).....≤100 ppt
Tellur (Te).....≤10 ppt
Terbium (Tb).....≤10 ppt
Thallium (Tl).....≤100 ppt
Thorium (Th).....≤10 ppt
Thulium (Tm).....≤10 ppt
Titanium (Ti).....≤100 ppt
Uranium (U).....≤10 ppt
Vanadium (V).....≤100 ppt
Bismuth (Bi).....≤10 ppt
Ytterbium (Yb).....≤10 ppt
Yttrium (Y).....≤10 ppt
Zinc (Zn).....≤100 ppt
Tin (Sn).....≤100 ppt
Zirconium (Zr).....≤100 ppt

| | | | |
|---|---|---|---|
| **HN61.2** | 250 ml | plastic (FEP) | 439,70 € |
| **HN61.1** | 500 ml | plastic (FEP) | 607,40 € |
| **HN61.3** | 1 l | plastic (FEP) | 998,70 € |
| Original pack 6 x 1 l | | | 948,77/1 l |
| **HN61.4** | 2 l | plastic (FEP) | 1579,20 € |

For further information, please see page 1665

## Perchloric acid Supra-quality

### Perchloric acid Supra-quality

**ROTIPURAN® Supra 70 %**

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

$HClO_4$
M 100,46 g/mol
D 1,688 • bp 198 °C
mp -18 °C
[7601-90-3] • EC No. 231-512-4
UN No. 1873 • ADR 5.1 (8) I • WGK 1

**Danger** H271-H314-H290

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 65-71 % |
| Colour (APHA) | ≤10 |
| Aluminium (Al) | ≤1 ppb |
| Antimony (Sb) | ≤0,5 ppb |
| Arsenic (As) | ≤0,5 ppb |
| Barium (Ba) | ≤1 ppb |
| Beryllium (Be) | ≤0,5 ppb |
| Lead (Pb) | ≤1 ppb |
| Cadmium (Cd) | ≤1 ppb |
| Cesium (Cs) | ≤0,5 ppb |
| Calcium (Ca) | ≤1 ppb |
| Cerium (Ce) | ≤0,5 ppb |
| Dysprosium (Dy) | ≤0,5 ppb |
| Iron (Fe) | ≤1 ppb |
| Erbium (Er) | ≤0,5 ppb |
| Europium (Eu) | ≤0,5 ppb |
| Gadolinium (Gd) | ≤0,5 ppb |
| Gallium (Ga) | ≤0,5 ppb |
| Gold (Au) | ≤0,5 ppb |
| Holmium (Ho) | ≤0,5 ppb |
| Indium (In) | ≤0,5 ppb |
| Potassium (K) | ≤1 ppb |
| Cobalt (Co) | ≤0,5 ppb |
| Copper (Cu) | ≤0,5 ppb |
| Lanthanum (La) | ≤0,5 ppb |
| Lithium (Li) | ≤0,5 ppb |
| Lutetium (Lu) | ≤0,5 ppb |
| Magnesium (Mg) | ≤1 ppb |
| Manganese (Mn) | ≤1 ppb |
| Molybdenum (Mo) | ≤0,5 ppb |
| Sodium (Na) | ≤1 ppb |
| Neodymium (Nd) | ≤0,5 ppb |
| Nickel (Ni) | ≤1 ppb |
| Palladium (Pd) | ≤0,5 ppb |
| Platinum (Pt) | ≤0,5 ppb |
| Praseodymium (Pr) | ≤0,5 ppb |
| Rhodium (Rh) | ≤0,5 ppb |
| Rubidium (Rb) | ≤0,5 ppb |
| Samarium (Sm) | ≤0,5 ppb |
| Scandium (Sc) | ≤0,5 ppb |
| Silver (Ag) | ≤1 ppb |
| Strontium (Sr) | ≤0,5 ppb |
| Tellur (Te) | ≤0,5 ppb |
| Terbium (Tb) | ≤0,5 ppb |
| Thallium (Tl) | ≤0,5 ppb |
| Thorium (Th) | ≤1 ppb |
| Thulium (Tm) | ≤0,5 ppb |
| Titanium (Ti) | ≤1 ppb |
| Uranium (U) | ≤0,5 ppb |
| Vanadium (V) | ≤0,5 ppb |
| Bismuth (Bi) | ≤0,5 ppb |
| Ytterbium (Yb) | ≤0,5 ppb |
| Yttrium (Y) | ≤0,5 ppb |
| Zinc (Zn) | ≤1 ppb |
| Tin (Sn) | ≤1 ppb |
| Zirconium (Zr) | ≤0,5 ppb |

| | | | |
|---|---|---|---|
| **HN51.1** | 500 ml | glass PVC coated | 160,20 € |
| **HN51.3** | 1 l | glass PVC coated | 256,95 € |
| Original pack 6 x 1 l | | | 244,10/1 l |
| **HN51.4** | 2,5 l | glass PVC coated | 389,05 € |
| Original pack 4 x 2,5 l | | | 369,60/2,5 l |

For further information, please see page 1665

## Perchloric acid 70 %

### Perchloric acid 70 %

NEW

**ROTIPURAN® 70 %, p.a.**

$HClO_4$
M 100,46 g/mol
D 1,688 • bp 198 °C
mp -18 °C
[7601-90-3] • EC No. 231-512-4
UN No. 1873 • ADR 5.1 (8) I • WGK 1

**Danger** H271-H290-H314

**Guarantee analysis:**

| | |
|---|---|
| Assay | 69-72 % |
| Free chlorine ($Cl_2$) | ≤0,0005 % |
| Ash content (as $SO_4$) | ≤0,005 % |
| Total nitrogen (as N) | ≤0,001 % |
| Chloride (Cl) | ≤0,0005 % |
| Sulphate ($SO_4$) | ≤0,001 % |
| Barium (Ba) | ≤0,0001 % |
| Beryllium (Be) | ≤0,0001 % |
| Lead (Pb) | ≤0,0001 % |
| Cadmium (Cd) | ≤0,0001 % |
| Calcium (Ca) | ≤0,0001 % |
| Kobalt (Co) | ≤0,0001 % |
| Iron (Fe) | ≤0,0001 % |
| Potassium (K) | ≤0,0001 % |
| Copper (Cu) | ≤0,0001 % |
| Manganese (Mn) | ≤0,0001 % |
| Nickel (Ni) | ≤0,0001 % |
| Silver (Ag) | ≤0,0001 % |
| Strontium (Sr) | ≤0,0001 % |
| Zinc (Zn) | ≤0,0001 % |

| | | | |
|---|---|---|---|
| **9216.1** | 500 ml | glass | 67,20 € |
| **9216.2** | 1 l | glass | 111,70 € |
| Original pack 6 x 1 l | | | 106,12/1 l |

## Perchloric acid 0,1 N

### Perchloric acid

**0,1 mol/l - 0,1 N volumetric standard solution**

In anhydrous acetic acid.
$HClO_4$
M 100,46 g/mol
flp 40 °C
UN No. 2789 • ADR 8 (3) II • WGK 1

**Danger** H226-H290-H314

**Type analysis:**

| | |
|---|---|
| Amount-of-substance conc. (20 °C) | 0,1 mol/l ±0,2 % |
| Titer | 0,998-1,002 |

| | | | |
|---|---|---|---|
| **K023.1** | 1 l | glass | 79,05 € |
| Original pack 6 x 1 l | | | 75,10/1 l |

For further information, please see page 1621

## Perchloric acid 0,1 N

### Perchloric acid

**0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.**

In anhydrous acetic acid.
$HClO_4$
M 100,46 g/mol
flp 40 °C
UN No. 2789 • ADR 8 (3) II • WGK 1

**Danger** H226-H290-H314

**Type analysis:**

| | |
|---|---|
| Amount-of-substance conc. (20 °C) | 0,1 mol/l |
| Measurement uncertainty | ±0,2 % |

| | | | |
|---|---|---|---|
| **9525.1** | 1 l | plastic | 81,20 € |
| Original pack 6 x 1 l | | | 77,14/1 l |

For further information, please see page 1623

## Perchloroethylene

▶ Tetrachloroethylene see p. 2335

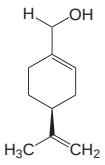
## 1H,1H,5H-Perfluoropentanol

▶ 2,2,3,3,4,4,5,5-Octafluoro-1-pentanol see p. 2108

## Perhydrosqualene

▶ Squalane see p. 2292

## (-)- Perillic alcohol




### (-)- Perillic alcohol

**~96 %**

(-)-p-Mentha-1,8-diene-7-ol
$C_{10}H_{16}O$
M 152,24 g/mol
D 0,96 • bp 119-122 °C (15 hPa)
flp >110 °C
[536-59-4] • EC No. 208-639-9
WGK 2

**Warning** H315-H319-H335

**Type analysis:**

| | |
|---|---|
| Assay | ~96 % |

| | | | |
|---|---|---|---|
| **7135.1** | 5 ml | glass | 87,65 € |

O/P

## Periodic acid

$H_5IO_6$
M 227,94 g/mol
mp 122 °C
Solubility: 2430 g/l ($H_2O$, 20 °C)
[10450-60-9] • EC No. 233-937-0
UN No. 3085 • ADR 5.1 (8) I • WGK 1
**Danger** H271-H314

### Periodic acid

**≥99 %, p.a.**
Pulping agent for organic substances.

**Guarantee analysis:**

| | |
|---|---|
| Assay (iodom.) | ≥99,0 % |
| Chloride, chlorate, bromide, bromate (as Cl) | ≤0,02 % |
| Iodide (I) | ≤0,001 % |
| Iodic acid ($HIO_3$) | ≤1 % |
| Nitrate ($NO_3$) | ≤0,01 % |
| Sulphate ($SO_4$) | ≤0,01 % |
| Iron (Fe) | ≤0,01 % |

| | | | |
|---|---|---|---|
| **3257.1** | 100 g | glass | 68,30 € |
| **3257.2** | 500 g | glass | 235,45 € |
| Original pack 6 x 500 g | | | 223,68/500 g |

### Periodic acid

**≥99 %, for synthesis**

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| Insoluble matter | ≤0,01 % |

| | | | |
|---|---|---|---|
| **2612.1** | 50 g | glass | 32,15 € |
| **2612.2** | 100 g | glass | 49,35 € |
| **2612.3** | 500 g | glass | 192,45 € |
| Original pack 6 x 500 g | | | 182,83/500 g |

## Periodic acid solution 1 %

### Periodic acid solution 1 %

**for microscopy**
For hydrolysis of carbohydrates, e.g. in PAS reaction (Periodic Acid Schiff reaction).
$H_5IO_6 + H_2O$
[10450-60-9]
**Warning** H315-H319

**Type analysis:**

| | |
|---|---|
| Assay ($H_5IO_6$) | 1 % in water |

| | | | |
|---|---|---|---|
| **HP00.1** | 500 ml | glass | 39,70 € |

For further information, please see page 1457

## Peroxidase

### Peroxidase

**≥250 U/mg material**
From horseradish, freeze-dried
HRP, Horseradish peroxidase
Storage temp.: -20 °C •
Transport temp.: room temp.
[9003-99-0] • EC No. 232-668-6
WGK 1
**Danger** H317-H334

**Type analysis:**

| | |
|---|---|
| Appearance | brown powder |
| Activity | ≥250 U/mg material |
| RZ ($E_{403}/E_{275}$) | >3,0 |

| | | | |
|---|---|---|---|
| **6055.1** | 0,05 g | plastic | 117,20 € |

For further information, please see page 1278

## Peru-Balm

### Peru-Balm

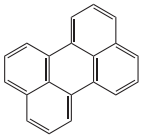
**natural**
Balsamum Peruvianum, Balsam of Peru
D 1,14
[8007-00-9] • EC No. 232-352-8
UN No. 3082 • ADR 9 III • WGK 2
**Danger** H315-H317-H411

**Type analysis:**

| | |
|---|---|
| Appearance | viscous, dark-brown to yellow-brown liquid |
| Assay (ester) | 45,0-70,0 % |
| Density (20 °C) | 1,140-1,170 |

| | | | |
|---|---|---|---|
| **6809.1** | 100 ml | glass | 17,75 € |

## Perylene



### Perylene

**≥99 %**
Dibenz[de,kl]anthracen
$C_{20}H_{12}$
M 252,32 g/mol
mp 275-279 °C
[198-55-0] • EC No. 205-900-9
WGK 2

**Type analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥99,0 % |
| Melting point | 275-279 °C |

| | | | |
|---|---|---|---|
| **5272.1** | 1 g | glass | 30,65 € |
| **5272.2** | 5 g | plastic | 112,90 € |

## Petroleum 132-175 °C

### Petroleum 132-175 °C

**special fraction 132-175 °C**
D 0,77 • bp 132-175 °C
flp 23 °C
[64742-82-1] • EC No. 265-185-4
UN No. 1300 • ADR 3 III • WGK 2
**Danger**
H304-H226-H336-H411-EUH066

**Type analysis:**

| | |
|---|---|
| Boiling range: | |
| Lower value | ≥132 °C |
| Upper value | ≤175 °C |
| Colour (Hazen) | ≤20 |
| Aromatic compounds | 17-23 % |
| Flash point | ≥23 °C |

| | | | |
|---|---|---|---|
| **5661.1** | 1 l | glass | 22,50 € |
| Original pack 6 x 1 l | | | 21,38/1 l |
| **5661.2** | 10 l | tinplate | 93,45 € |

## Petroleum 180-230 °C

### Petroleum 180-230 °C

**special fraction 180-230 °C**
D 0,799 • bp 180-230 °C
flp 61 °C
[64742-81-0] • EC No. 232-366-4
UN No. 3082 • ADR 9 III • WGK 2
**Danger** H304-H372-H411-EUH066

**Type analysis:**

| | |
|---|---|
| Appearance | clearly liquid |
| Boiling range: | |
| Lower value | ≥180 °C |
| Upper value | ≤230 °C |
| Colour number (Saybolt) | +30 |
| Flash point | ≥62 °C |

| | | | |
|---|---|---|---|
| **9015.1** | 1 l | glass | 22,05 € |
| Original pack 6 x 1 l | | | 20,95/1 l |
| **9015.2** | 10 l | tinplate | 104,85 € |

## Petroleum 180-250 °C

### Petroleum 180-250 °C

**boilling range 180-250 °C**
D 0,795
flp 61 °C
[64742-81-0] • EC No. 232-366-4
UN No. 3082 • ADR 9 III • WGK 2
**Danger** H315-H336-H304-H411

**Type analysis:**

| | |
|---|---|
| Boiling range | 180-250 °C |
| Flash point | ≥61 °C |
| Density | ~0,795 |

| | | | |
|---|---|---|---|
| **5149.1** | 1 l | glass | 17,10 € |
| Original pack 6 x 1 l | | | 16,25/1 l |
| **5149.3** | 10 l | tinplate | 77,30 € |

## Petroleum benzine 30-50

### Petroleum benzine 30-50

**extra pure**

Gasoline, Petroleum ether
D ~0,63 • bp 30-50 °C
flp -31 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 I • WGK 3

 **Danger**

H224-H304-H315-H336-H411

**Type analysis:**

Boiling range..... 30-50 °C
Benzene (GC)..... ≤0,02 %
Density (15 °C)..... 0,625-0,636

| | | | |
|---|---|---|---|
| **3523.1** | 1 l | glass | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |
| **3523.3** | 2,5 l | glass | 46,15 € |
| Original pack 4 x 2,5 l | | | 43,84/2,5 l |
| **3523.4** | 5 l | aluminium | 87,00 € |
| Original pack 2 x 5 l | | | 82,65/5 l |
| **3523.2** | 10 l | tinplate | 154,30 € |

## Petroleum benzine 30-75

### Petroleum benzine 30-75

**extra pure**

Gasoline, Ligroin
D ~0665 • bp 30-75 °C
flp -21 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 2

 **Danger**

H225-H315-H336-H304-H411

**Type analysis:**

Boiling range..... 30-75 °C
Aromatic compounds..... <0,02 %
Benzene..... <0,01 %
n-Hexane..... <5,0 %
Density (15 °C)..... 0,650-0,680
Refractive index $n_D^{20}$..... 1,3670-1,3770

| | | | |
|---|---|---|---|
| **8961.1** | 1 l | glass | 22,50 € |
| Original pack 6 x 1 l | | | 21,38/1 l |
| **8961.3** | 2,5 l | glass | 38,60 € |
| Original pack 4 x 2,5 l | | | 36,67/2,5 l |
| **8961.4** | 5 l | aluminium | 68,70 € |
| Original pack 2 x 5 l | | | 65,27/5 l |
| **8961.2** | 10 l | tinplate | 110,20 € |

## Petroleum benzine 40-60

### Petroleum benzine 40-60

**extra pure**

Gasoline, Petroleum ether
D ~0,65 • bp 40-60 °C
flp -45 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 1

 **Danger**

H225-H304-H315-H336-H411

**Type analysis:**

Boiling range..... 40-60 °C
Aromatic compounds (GC)..... ≤0,01 %
Evaporation residue..... ≤0,002 %
Density (15 °C)..... 0,647-0,654

| | | | |
|---|---|---|---|
| **9320.4** | 500 ml | glass | 21,00 € |
| **9320.1** | 1 l | glass | 26,35 € |
| Original pack 6 x 1 l | | | 25,03/1 l |
| **9320.5** | 2,5 l | glass | 45,05 € |
| Original pack 4 x 2,5 l | | | 42,80/2,5 l |
| **9320.3** | 5 l | aluminium | 88,05 € |
| Original pack 2 x 5 l | | | 83,65/5 l |
| **9320.2** | 10 l | tinplate | 138,70 € |

## Petroleum benzine 40-65

### Petroleum benzine 40-65

**extra pure**

Gasoline, Petroleum ether, white spirit
D ~0,65 • bp 40-65 °C
flp -43 °C
[64742-49-0] • EC No. 931-254-9
UN No. 3295 • ADR 3 II • WGK 2

 **Danger**

H225-H304-H336-H411

**Type analysis:**

Boiling range..... 40-65 °C
Benzene..... ≤0,001 %
n-Hexane..... ≤2 %
Density (15 °C)..... 0,645-0,660

| | | | |
|---|---|---|---|
| **8573.1** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **8573.2** | 2,5 l | glass | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |
| **8573.3** | 5 l | aluminium | 77,95 € |
| Original pack 2 x 5 l | | | 74,05/5 l |
| **8573.4** | 10 l | tinplate | 120,95 € |
| **8573.5** | 25 l | tinplate | 220,40 € |

## Petroleum benzine 40-80

### Petroleum benzine 40-80

**extra pure**

Petroleum ether, Petroleum benzine, Gasoline
D ~0,66 • bp 40-80 °C
flp -20 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 3

 **Danger**

H225-H304-H361f-H373-H315-H336-H411

**Type analysis:**

Boiling range..... 40-80 °C
Aromatic compounds (GC)..... ≤0,01 %
Density (15 °C)..... 0,650-0,670

| | | | |
|---|---|---|---|
| **CP48.1** | 1 l | glass | 26,70 € |
| Original pack 6 x 1 l | | | 25,37/1 l |
| **CP48.4** | 2,5 l | glass | 46,80 € |
| Original pack 4 x 2,5 l | | | 44,46/2,5 l |
| **CP48.2** | 5 l | aluminium | 90,20 € |
| Original pack 2 x 5 l | | | 85,69/5 l |
| **CP48.3** | 10 l | tinplate | 149,45 € |

## Petroleum benzine 50-70

### Petroleum benzine 50-70

**extra pure**

Petroleum ether, Petroleum benzine, Gasoline
D ~0,665 • bp 50-70 °C
flp -20 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 3

 **Danger**

H225-H304-H361f-H373-H315-H336-H411

**Type analysis:**

Boiling range..... 50-70 °C
Aromatic compounds (GC)..... ≤0,01 %
Density (15 °C)..... 0,660-0,675

| | | | |
|---|---|---|---|
| **0969.1** | 1 l | glass | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |
| **0969.4** | 2,5 l | glass | 52,60 € |
| Original pack 4 x 2,5 l | | | 49,97/2,5 l |
| **0969.5** | 5 l | aluminium | 99,45 € |
| Original pack 2 x 5 l | | | 94,48/5 l |
| **0969.2** | 10 l | tin plate | 188,15 € |
| **0969.3** | 25 l | tin plate | 353,70 € |

## Petroleum benzine 60-70

### Petroleum benzine 60-70

**extra pure**
Gasoline
D ~0,675 • bp 60-70 °C
flp -25 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 3

 **Danger**

H225-H304-H361f-H373-H315-H336-H411

**Type analysis:**

Boiling range..... 60-70 °C
Aromatic compounds (GC)..... ≤0,01 %
Density (15 °C)..... 0,670-0,680

| | | | |
|---|---|---|---|
| **9735.1** | 1 l | glass | 25,70 € |
| Original pack 6 x 1 l | | | 24,42/1 l |
| **9735.4** | 2,5 l | glass | 44,00 € |
| Original pack 4 x 2,5 l | | | 41,80/2,5 l |
| **9735.5** | 5 l | aluminium | 83,75 € |
| Original pack 2 x 5 l | | | 79,56/5 l |
| **9735.2** | 10 l | tinplate | 149,45 € |
| **9735.3** | 20 l | tinplate | 229,55 € |

## Petroleum benzine 60-95

### Petroleum benzine 60-95

**extra pure**
Gasoline, Petroleum ether
D ~0,69 • bp 60-95 °C
flp <0 °C
UN No. 3295 • ADR 3 II • WGK 3

 **Danger**

H225-H304-H336-H411-H315

**Type analysis:**

Boiling range..... 60-95 °C
Benzene (GC)..... ≤0,005 %
Aromatic compounds (GC)..... ≤0,01 %
n-Hexane..... ≤5,0 %
Density (15 °C)..... 0,675-0,711

| | | | |
|---|---|---|---|
| **8575.1** | 1 l | glass | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **8575.2** | 2,5 l | glass | 35,40 € |
| Original pack 4 x 2,5 l | | | 33,63/2,5 l |
| **8575.3** | 5 l | aluminium | 67,20 € |
| Original pack 2 x 5 l | | | 63,84/5 l |
| **8575.4** | 10 l | tinplate | 107,40 € |
| **8575.5** | 25 l | tinplate | 192,45 € |

## Petroleum benzine 63-80

### Petroleum benzine 63-80

**extra pure**
Gasoline, special boiling point gasoline
D ~0,675 • bp 63-80 °C
flp -30 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 3

 **Danger**

H225-H304-H361f-H373-H315-H336-H411

**Type analysis:**

Boiling range..... 63-80 °C
Aromatic compounds (GC)..... ≤0,01 %
Density (15 °C)..... 0,660-0,680

| | | | |
|---|---|---|---|
| **5649.1** | 1 l | glass | 26,35 € |
| Original pack 6 x 1 l | | | 25,03/1 l |
| **5649.3** | 2,5 l | glass | 47,20 € |
| Original pack 4 x 2,5 l | | | 44,84/2,5 l |
| **5649.4** | 5 l | aluminium | 88,05 € |
| Original pack 2 x 5 l | | | 83,65/5 l |
| **5649.2** | 10 l | tinplate | 154,30 € |

## Petroleum benzine 80-110

### Petroleum benzine 80-110

**extra pure**
Gasoline, dry cleaning gasoline
D ~0,72 • bp 80-110 °C
flp -14 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 1

 **Danger**

H225-H304-H315-H336-H411

**Type analysis:**

Boiling range..... 80-110 °C
Aromatic compounds..... ≤0,005 %
Benzene..... ≤0,001 %
n-Hexane..... ≤5 %
Density (15 °C)..... 0,710-0,730

| | | | |
|---|---|---|---|
| **3259.1** | 1 l | glass | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **3259.3** | 2,5 l | glass | 37,10 € |
| Original pack 4 x 2,5 l | | | 35,25/2,5 l |
| **3259.4** | 5 l | aluminium | 70,45 € |
| Original pack 2 x 5 l | | | 66,93/5 l |
| **3259.2** | 10 l | tinplate | 117,20 € |

## Petroleum benzine 100-140

### Petroleum benzine 100-140

**extra pure**
Gasoline, special boiling point gasoline
D ~0,73 • bp 100-140 °C
flp -2 °C
[64742-49-0] • EC No. 265-151-9
UN No. 1268 • ADR 3 II • WGK 3

 **Danger**

H225-H304-H315-H336-H361f-H411

**Type analysis:**

Appearance..... clear, colourless
Boiling range..... 100-140 °C
Aromatic compounds..... ≤0,01 %
Benzene..... ≤0,001 %
Density (15 °C)..... 0,720-0,740

| | | | |
|---|---|---|---|
| **9675.1** | 1 l | glass | 18,50 € |
| Original pack 6 x 1 l | | | 17,58/1 l |
| **9675.4** | 2,5 l | glass | 28,95 € |
| Original pack 4 x 2,5 l | | | 27,50/2,5 l |
| **9675.5** | 5 l | aluminium | 53,65 € |
| Original pack 2 x 5 l | | | 50,97/5 l |
| **9675.2** | 10 l | tinplate | 91,95 € |
| **9675.3** | 25 l | tinplate | 180,10 € |

## Petroleum benzine 135-180

### Petroleum benzine 135-180

**extra pure**
Gasoline, Petroleum ether, white spirit
D ~0,775 • bp 135-180 °C
flp >23 °C
UN No. 3295 • ADR 3 III • WGK 3

 **Danger**

H226-H304-H336-H372-H410-EUH066

**Type analysis:**

Boiling range..... 135-180 °C
Density (15 °C)..... 0,770-0,785
Refractive index (20 °C)..... 1,4260-1,4350

| | | | |
|---|---|---|---|
| **8576.1** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **8576.2** | 2,5 l | glass | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |
| **8576.3** | 5 l | aluminium | 77,95 € |
| Original pack 2 x 5 l | | | 74,05/5 l |
| **8576.4** | 10 l | tinplate | 120,95 € |

## Petroleum benzine 145-200

### Petroleum benzine 145-200

**extra pure**

Gasoline, Petroleum ether, white spirit, kerosene
D ~0,785 • bp 145-200 °C
flp >30 °C
[64742-82-1] • EC No. 919-446-0
UN No. 3295 • ADR 3 III • WGK 3

**Danger**
H226-H304-H336-H372-H410-EUH066

**Type analysis:**

Boiling range..... 145-200 °C
Benzene (GC)..... ≤0,01 %
Density (15 °C). ..... 0,780-0,798

| | | | |
|---|---|---|---|
| **8577.1** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **8577.2** | 2,5 l | glass | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |
| **8577.3** | 5 l | aluminium | 77,95 € |
| Original pack 2 x 5 l | | | 74,05/5 l |
| **8577.4** | 10 l | tinplate | 120,95 € |

## Petroleum benzine 180-220

### Petroleum benzine 180-220

**extra pure**

Gasoline, Petroleum ether, white spirit, kerosene
D ~0,79 • bp 180-220 °C
flp >61 °C
WGK 1

**Danger** H304-EUH066

**Type analysis:**

Boiling range..... 180-220 °C
Aromatic compounds..... ≤0,4 %
Density (15 °C). ..... 0,770-0,815

| | | | |
|---|---|---|---|
| **8579.1** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **8579.2** | 2,5 l | glass | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |
| **8579.3** | 5 l | aluminium | 77,95 € |
| Original pack 2 x 5 l | | | 74,05/5 l |
| **8579.4** | 10 l | tinplate | 120,95 € |

## Petroleum benzine 190-245

### Petroleum benzine 190-245

**extra pure**

Gasoline, Petroleum ether, white spirit
D ~0,80 • bp 190-245 °C
flp >70 °C
WGK 1

**Danger** H304-EUH066

**Type analysis:**

Boiling range. ..... 190-245 °C
Aromatic compounds. ..... ≤0,2 %
Density (15 °C). ..... 0,780-0,820

| | | | |
|---|---|---|---|
| **8580.1** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **8580.2** | 2,5 l | glass | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |
| **8580.3** | 5 l | aluminium | 77,95 € |
| Original pack 2 x 5 l | | | 74,05/5 l |
| **8580.4** | 10 l | tinplate | 120,95 € |

## Petroleum benzine 235-265

### Petroleum benzine 235-265

**extra pure**

Gasoline, Petroleum ether, white spirit
D ~0,82 • bp 235-265 °C
flp >100 °C
WGK 3

**Danger** H304-EUH066

**Type analysis:**

Boiling range. ..... 235-265 °C
Aromatic compounds. ..... ≤0,5 %
Density (15 °C). ..... ~0,82

| | | | |
|---|---|---|---|
| **8590.1** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **8590.2** | 2,5 l | glass | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |
| **8590.3** | 5 l | aluminium | 77,95 € |
| Original pack 2 x 5 l | | | 74,05/5 l |
| **8590.4** | 10 l | tinplate | 120,95 € |

## Petroleum Ether (Petroleum Benzine, Boiling Range 30-80 °C)


| Art. No. | Description | Page |
|---|---|---|
| 3523 | Petroleum benzine 30-50 | 2141 |
| 8961 | Petroleum benzine 30-75 | 2141 |
| 9320 | Petroleum benzine 40-60 | 2141 |
| 8573 | Petroleum benzine 40-65 | 2141 |
| CP48 | Petroleum benzine 40-80 | 2141 |
| 0969 | Petroleum benzine 50-70 | 2141 |
| 9735 | Petroleum benzine 60-70 | 2142 |
| 5649 | Petroleum benzine 63-80 | 2142 |


## Petroleum ether 40-60 °C

Petroleum benzine
D 0,65 • bp 40-60 °C
[64742-49-0] • EC No. 265-151-9
UN No. 3295 • ADR 3 II • WGK 2

**Danger**
H225-H304-H315-H336-H411

### Petroleum ether 40-60 °C

NEW

**ROTISOLV® HPLC**

**Guarantee analysis:**

Boiling range. ..... 40-60 °C
Water (KF). ..... ≤0,005 %
Acidity (as $CH_3COOH$). ..... ≤0,002 %
Evaporation residue. ..... ≤0,0005 %
Transmission:
270 nm. ..... ≥98 %
220 nm. ..... ≥75 %
200 nm. ..... ≥10 %
Filtered through a 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **0731.1** | 2,5 l | glass | 64,40 € |
| Original pack 4 x 2,5 l | | | 61,18/2,5 l |

### Petroleum ether 40-60 °C

**ROTISOLV® Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Boiling range. ..... 40-60 °C
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,005 %
Free acid (as $CH_3COOH$)..... ≤0,002 %
Evaporation residue. ..... ≤0,0003 %
GC/FID suitability (as 2-octanol). ..... ≤10 ng/ml
GC/ECD suitability (as heptachloro epoxide)...≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane)..... ≤5 ng/l
GC/ECD pesticides (as lindane). ..... ≤5 ng/l
GC/NPD pesticides (as parathion). ..... ≤10 ng/l
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ..... ≤0,05 mg/l
PAH-test (less than 2 ppb, HPLC)..... complies
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb

| | | | |
|---|---|---|---|
| **7588.1** | 2,5 l | glass | 69,35 € |
| Original pack 4 x 2,5 l | | | 65,88/2,5 l |

### Petroleum ether 40-60 °C

**ROTISOLV® Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Boiling range. ..... 40-60 °C
Water (KF). ..... ≤0,02 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0001 %
GC/ECD (individual signal as lindane). ..... ≤5 ng/l
GC/PND (individual signal as ethylparathion). ..... ≤10 ng/l

| | | | |
|---|---|---|---|
| **T170.2** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **T170.1** | 2,5 l | glass | 69,35 € |
| Original pack 4 x 2,5 l | | | 65,88/2,5 l |
| **T170.3** | 4 l | glass | 95,60 € |

## Petroleum ether 40-60 °C

**ROTIPURAN® p.a., ACS, ISO**

**Guarantee analysis**

Boiling range..... 40-60 °C
Density (d 20 °C/4 °C). ..... 0,640-0,655
Colour (APHA). ..... ≤10
Acidity. ..... ≤0,0003 meq/g
Water . ..... ≤0,015 %
Aromatic compounds (as $C_6H_6$)..... ≤0,025 %
Sulphur compounds (as $CS_2$). ..... ≤0,005 %
Evaporation residue. ..... ≤0,001 %
Lead (Pb). ..... ≤0,00001 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Magnesium (Mg)..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Zinc (Zn). ..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **T173.1** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **T173.2** | 2,5 l | glass | 62,90 € |
| Original pack 4 x 2,5 l | | | 59,76/2,5 l |
| **T173.3** | 5 l | aluminium | 104,85 € |
| Original pack 2 x 5 l | | | 99,61/5 l |
| **T173.5** | 25 l | tinplate | 330,60 € |

## Petroleum ether 40-60 °C

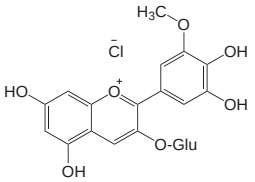
**DAB, extra pure**

**Guarantee analysis:**

Appearance. ..... clear, colourless liquid
Identity. ..... complies
Relative density (20/20 °C). ..... 0,642-0,656
Boiling range (40-60 °C). ..... ≥75 Vol. %
Benzene (UV). ..... ≤0,001 Vol. %
n-Hexane (GC). ..... ≤2,0 Vol. %
Tetraethyl lead. ..... complies
Reaction with $H_2SO_4$..... complies
Non volatile matter. ..... ≤0,001 %
Evaporation residue. ..... ≤0,001 %
Reducing substances, incl. sulphur comp..... complies
Acid or alkaline react. substances. ..... complies
Foreign odour, non volatile matter. ..... complies

| | | | |
|---|---|---|---|
| **CP44.1** | 1 l | glass | 27,85 € |
| Original pack 6 x 1 l | | | 26,46/1 l |
| **CP44.2** | 2,5 l | glass | 52,60 € |
| Original pack 4 x 2,5 l | | | 49,97/2,5 l |
| **CP44.3** | 5 l | aluminium | 95,15 € |
| Original pack 2 x 5 l | | | 90,39/5 l |
| **CP44.4** | 10 l | tinplate | 156,85 € |

## Petunidin 3-glucoside chloride



**Petunidin 3-glucoside chloride**

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Vitis vinifera.*
$C_{22}H_{23}O_{12}Cl$
M 514,85 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[6988-81-4]
WGK 1

**Type analysis:**

Purity (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **1469.1** | 5 mg | glass | 278,45 € |

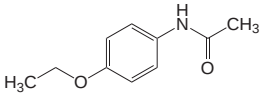
## Pfu DNA polymerase, recombinant

▶ Roti®-Pol ProofRead see p. 2230

## PGDA

▶ Propylene glycol diacetate see p. 2182

## Phenacetin



**Phenacetin**

**ROTI®CALIPURE Melting point standard 133-135 °C**

N-(4-Ethoxyphenyl)acetamide
$C_{10}H_{13}NO_2$
M 179,22 g/mol
mp 133-135 °C
[62-44-2] • EC No. 200-533-0
WGK 3

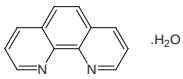
**Danger** H302-H350

**Type analysis:**

Meniscus formation. ..... 133-135 °C
Complete liquefaction..... 133-135 °C

| | | | |
|---|---|---|---|
| **9728.1** | 1 g | glass | 30,00 € |

## 1,10-Phenanthroline monohydrate



**1,10-Phenanthroline monohydrate**

**≥99 %, p.a., ACS**

Redox indicator
$C_{12}H_8N_2 \cdot H_2O$
M 198,23 g/mol
mp 93-94 °C
Solubility: 3,3 g/l ($H_2O$, 20 °C)
[5144-89-8] • EC No. 200-629-2
UN No. 2811 • ADR 6.1 III • WGK 3

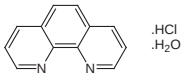
**Danger** H301-H400-H410

**Guarantee analysis:**

Assay (dry substance). ..... ≥99,0 %
Solubility in ethanol. ..... clear, colourless
Melting point. ..... ≥98 °C
Suitability as indicator. ..... complies
Suitability for determination of iron. ..... complies
1,10- Phenanthroline forms sparingly soluble complex compounds with a lot of heavy metal ions, and so it is suitable for their quantitative determination. The iron(II)-complex ("Ferroin") is usable as redox indicator.

| | | | |
|---|---|---|---|
| **9113.2** | 5 g | glass | 27,85 € |
| **9113.3** | 25 g | glass | 99,90 € |
| **9113.1** | 50 g | glass | 186,55 € |

## 1,10-Phenanthroline hydrochloride monohydrate



**1,10-Phenanthroline hydrochloride monohydrate**

**≥99 %, p.a.**

Redox indicator, reagent for Iron(II).
o-Phenanthroline hydrochloride monohydrate
$C_{12}H_8N_2 \cdot HCl \cdot H_2O$
M 234,69 g/mol
mp 215-220 °C (dec.)
[3829-86-5] • EC No. 223-325-1
UN No. 2811 • ADR 6.1 III • WGK 3

**Danger** H301-H400-H410

**Guarantee analysis:**

Assay (acidim.). ..... ≥99,0 %
Sulphated ash. ..... ≤0,2 %
Water. ..... ≤8,5 %
Suitability for determination of iron. ..... complies

| | | | |
|---|---|---|---|
| **KK21.1** | 5 g | glass | 26,35 € |
| **KK21.2** | 10 g | glass | 45,05 € |
| **KK21.3** | 50 g | glass | 191,90 € |

## o-Phenanthroline hydrochloride monohydrate

▶ 1,10-Phenanthroline hydrochloride monohydrate see p. 2144

## 1,10-Phenanthrolin iron(II) salt solution

▶ Ferroin see p. 1928

## Phenethyl-3,4-dihydroxycinnamate

▶ Caffeic acid phenethyl ester see p. 1802

## Phenol



Carbolic acid, Hydroxybenzene
$C_6H_6O$
M 94,11 g/mol
D 1,06 • bp 181,8 °C
mp 40,8 °C • flp 81 °C
Solubility: 84 g/l ($H_2O$, 20 °C)
[108-95-2] • EC No. 203-632-7
UN No. 1671 • ADR 6.1 II • WGK 2

**Danger**
H301+H311+H331-H314-H341-H373-H411

### Phenol

**≥99,5 %, p.a., detached crystals**

**Guarantee analysis:**

| | |
|---|---|
| Appearance. | white crystals |
| Assay (GC). | ≥99,5 % |
| Water (KF). | ≤0,5 % |
| Chloride (Cl). | ≤0,0005 % |
| Sulphur (S). | ≤0,0002 % |
| Iron (Fe). | ≤0,0001 % |
| Non volatile matter. | ≤0,01 % |
| Solidification point. | ≤40,6 °C |

| | | | |
|---|---|---|---|
| **0040.1** | 250 g | plastic | 30,00 € |
| **0040.2** | 1 kg | plastic | 87,00 € |
| Original pack 6 x 1 kg | | | 82,65/1 kg |

### Phenol

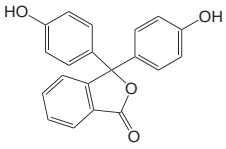
**≥99 %, Ph.Eur., cryst.**

**Type analysis:**

| | |
|---|---|
| Assay. | 99,0-100,5 % |
| Identity. | complies |
| Water (KF). | ≤0,5 % |
| Appearance of solution. | complies |
| Acid react. substances. | complies |
| Non volatile matter. | ≤0,05 % |
| Solidification point. | ≥39,5 °C |

| | | | |
|---|---|---|---|
| **3215.2** | 500 g | glass | 46,80 € |
| Original pack 6 x 500 g | | | 44,46/500 g |
| **3215.1** | 1 kg | glass | 85,90 € |
| Original pack 6 x 1 kg | | | 81,61/1 kg |

## Phenolphthalein (C.I. 764)



### Phenolphthalein (C.I. 764)

**≥99 %, p.a.**
Indicator pH 8,0-10,0
$C_{20}H_{14}O_4$
M 318,33 g/mol
D 1,30
mp 258-263 °C
Solubility: 92 mg/l ($H_2O$, 20 °C)
[77-09-8] • EC No. 201-004-7
WGK 3

**Danger** H341-H350-H361f

**Type analysis:**

| | |
|---|---|
| Appearance. | white to yellowish powder |
| pH-transition range. | 8,0 (colourless)-10,0 (red-violet) |
| Assay (HPLC). | ≥99,0 % |
| Absorption max. (buffer, pH 9,8). | 551-554 nm |
| Loss on drying (105 °C). | ≤1,0 % |

| | | | |
|---|---|---|---|
| **T126.2** | 50 g | plastic | 17,10 € |
| **T126.1** | 100 g | plastic | 23,15 € |
| **T126.3** | 500 g | plastic | 62,25 € |
| Original pack 6 x 500 g | | | 59,14/500 g |

## Phenolphthalein indicator solution 0,1 %

### Phenolphthalein indicator solution 0,1 %

**0,1 % in ethanol 90 %, denatured**
D 0,82 • bp 78 °C
mp -114 °C • flp 12 °C
UN No. 1170 • ADR 3 II

**Danger** H225-H319

| | | | |
|---|---|---|---|
| **8145.1** | 250 ml | glass | 19,90 € |
| **8145.2** | 500 ml | glass | 26,35 € |

## Phenolphthalein indicator solution 1 %

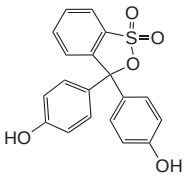
### Phenolphthalein indicator solution 1 %

**1 % in ethanol 90 %, denatured**
D 0,82 • bp 78 °C
mp -114 °C • flp 12 °C
UN No. 1170 • ADR 3 II • WGK 3

**Danger** H225-H319-H341-H350

| | | | |
|---|---|---|---|
| **K034.1** | 250 ml | glass | 21,00 € |
| **K034.2** | 500 ml | glass | 27,85 € |
| **K034.3** | 1 l | glass | 37,55 € |
| Original pack 6 x 1 l | | | 35,67/1 l |

## Phenol red



### Phenol red

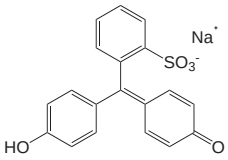
**p.a., ACS**
Indicator pH 6,5-8,2
Phenolsulphonphthalein
$C_{19}H_{14}O_5S$
M 354,38 g/mol
mp >300 °C
Solubility: 0,77 g/l ($H_2O$, 100 °C)
[143-74-8] • EC No. 205-609-7
WGK 2

**Guarantee analysis:**

| | |
|---|---|
| pH-transition range. | 6,5 (yellow)-8,2 (red) |
| Loss on drying (110 °C). | ≤5,0 % |
| Appearance of solution (ACS). | complies |

| | | | |
|---|---|---|---|
| **T127.1** | 5 g | glass | 14,95 € |
| **T127.2** | 25 g | glass | 34,30 € |
| **T127.3** | 100 g | glass | 93,00 € |

## Phenol red sodium salt



### Phenol red sodium salt

**p.a., ACS**
Indicator pH 6,8-8,2
Phenolsulphonphthalein sodium salt
$C_{19}H_{13}NaO_5S$
M 376,36 g/mol
mp 285 °C
Solubility: 100 g/l ($H_2O$, 20 °C)
[34487-61-1] • EC No. 252-057-8
WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Appearance. | dark red to brownish-red powder |
| Appearance of solution (ACS). | complies |
| Loss on drying. | ≤5 % |
| pH transition range. | 6,8 (yellow)-8,2 (red) |

| | | | |
|---|---|---|---|
| **2566.1** | 5 g | glass | 21,00 € |
| **2566.2** | 25 g | glass | 47,20 € |

## Phenol solutions

▶ Roti®-Aqua-Phenol see p. 2226
▶ Roti®-Aqua-P/C/I see p. 2226
▶ Roti®-Phenol see p. 2226
▶ Roti®-Phenol/Chloroform/Isoamyl alcohol see p. 2226

## Phenolsulphonphthalein

▶ Phenol red see p. 2145

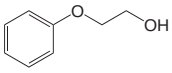
## Phenolsulphonphthalein sodium salt

▶ Phenol red sodium salt see p. 2145

## Phenoltetrabromophthalein disulfonic acid disodium salt

▶ Sulfobromophthalein disodium salt see p. 2321

## 2-Phenoxyethanol



Ethylene glycol monophenyl ether
$C_8H_{10}O_2$
M 138,17 g/mol
D 1,11 • bp 242 °C
mp ~13 °C • flp 121 °C
Solubility: 24 g/l ($H_2O$, 20 °C)
[122-99-6] • EC No. 204-589-7
WGK 1

**Warning** H302-H319

### 2-Phenoxyethanol

**≥99 %, for synthesis**

**Type analysis:**

Assay (GLC). ≥99,0 %
Colour (APHA). ≤10
Water. ≤0,1 %

| | | | |
|---|---|---|---|
| **4348.1** | 250 ml | glass | 23,15 € |
| **4348.2** | 1 l | glass | 46,15 € |
| Original pack 6 x 1 l | | | 43,84/1 l |
| **4348.3** | 10 l | tinplate | 231,15 € |

### 2-Phenoxyethanol

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (GC). ≥95,0 %
Residual solvents (GC). ≤1,0 %
Water (KF). ≤1,0 %
Assay (qNMR). ≥95,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE12.1** | 250 mg | glass | 805,20 € |

### 2-Phenoxyethanol

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (GC). ≥90,0 %
Identity. complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC12.1** | 250 µl | glass | 116,00 € |

## Phenylacetylenecarboxylic acid

▶ Phenylpropiolic acid see p. 2148

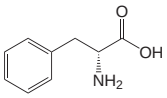
## 3-Phenylacrolein

▶ Cinnamaldehyde see p. 1834

## Cbz-(L)-Phenylalanine

▶ Z-L-Phenylalanine see p. 2390

## D-Phenylalanine



### D-Phenylalanine

**≥98,5 %, for biochemistry**

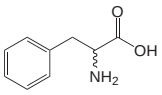
*(R)*-2-Amino-3-phenylpropionic acid,
H-D-Phe-OH
$C_9H_{11}NO_2$
M 165,2 g/mol
Storage temp.: +4 °C
[673-06-3] • EC No. 211-603-5
WGK 1

**Type analysis:**

Appearance. white to off-white powder
Assay. 98,5-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$). +33,0° to +35,0°
Loss on drying. ≤0,2 %

| | | | |
|---|---|---|---|
| **7886.1** | 5 g | plastic | 21,40 € |
| **7886.2** | 25 g | plastic | 65,05 € |
| **7886.3** | 100 g | plastic | 160,20 € |

## DL-Phenylalanine



### DL-Phenylalanine

**≥98,5 %, for biochemistry**

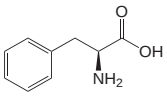
2-Amino-3-phenylpropionic acid
$C_9H_{11}NO_2$
M 165,19 g/mol
Storage temp.: +4 °C
[150-30-1] • EC No. 205-756-7
WGK 1

**Type analysis:**

Appearance. white cryst. powder
Assay. ≥98,5 %
Identity (IR). complies
Heavy metals (as Pb). ≤0,002 %
Ash content. ≤0,1 %
Loss on drying. ≤0,5 %

| | | | |
|---|---|---|---|
| **8603.1** | 25 g | plastic | 21,40 € |
| **8603.2** | 100 g | plastic | 59,05 € |
| **8603.3** | 250 g | plastic | 123,65 € |

## L-Phenylalanine



*(S)*-2-Amino-3-phenylpropionic acid,
H-L-Phe-OH
$C_9H_{11}NO_2$
M 165,19 g/mol
mp 275-283 °C (dec.)
Solubility: ~27 g/l ($H_2O$, 20 °C)
[63-91-2] • EC No. 200-568-1
WGK 1

### L-Phenylalanine

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ≤6,0 E.U./g
Assay. ≥99 %
Loss on drying. ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. -35,5° to -33°
Foreign amino acids. ≤0,5 %
Ammonium ($NH_4$). ≤0,02 %
Chloride (Cl). ≤0,02 %
Sulphate ($SO_4$). ≤0,03 %
Heavy metals (as Pb). ≤0,001 %
Iron (Fe). ≤0,001 %

| | | | |
|---|---|---|---|
| **1709.1** | 25 g | plastic | 19,60 € |
| **1709.2** | 100 g | plastic | 44,00 € |
| **1709.3** | 500 g | plastic | 170,95 € |
| Original pack 6 x 500 g | | | 162,40/500 g |

### L-Phenylalanine

**≥98,5 %, Ph.Eur., for biochemistry**

**Guarantee analysis:**

Appearance. white cryst. powder
Assay. 98,5-101,0 %
Identity. complies
Appearance of solution. complies
Specific rotation $[\alpha]_D^{20}$. -35,5° to -33°
Chloride (Cl). ≤0,02 %
Sulphate ($SO_4$). ≤0,03 %
Ammonium ($NH_4$). ≤0,02 %
Iron (Fe). ≤0,001 %
Heavy metals (as Pb). ≤0,001 %
Foreign amino acids. complies
Loss on drying. ≤0,5 %
Sulphated ash. ≤0,1 %

| | | | |
|---|---|---|---|
| **4491.3** | 25 g | plastic | 13,90 € |
| **4491.1** | 100 g | plastic | 38,60 € |
| **4491.4** | 250 g | plastic | 77,30 € |
| **4491.2** | 1 kg | plastic | 274,15 € |
| Original pack 6 x 1 kg | | | 260,44/1 kg |

## 3-Phenylallyl alcohol

▶ Cinnamyl alcohol see p. 1835

## Phenylamine

▶ Aniline see p. 1742

## Phenylamine hydrochloride

▶ Aniline hydrochloride see p. 1742

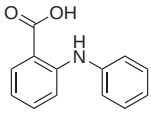
## 2-(Phenylamino)benzoic acid

▶ *N*-Phenylanthranilic acid see p. 2147

## *N*-Phenylaniline

▶ Diphenylamine see p. 1887

## *N*-Phenylanthranilic acid



### *N*-Phenylanthranilic acid

**≥97 %, p.a.**

2-(Phenylamino)benzoic acid, Diphenylamine-2-carboxylic acid, DpC, o-Anilobenzoic acid, Fenamic acid

$C_{13}H_{11}NO_2$

M 213,24 g/mol

mp 182-185 °C

[91-40-7] • EC No. 202-066-8

WGK 1

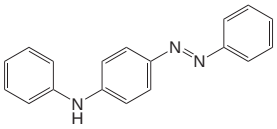
**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... yellow powder
Assay (titr.). ..... ≥97,0 %
Melting point. ..... 182-185 °C
Ash content. ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **9858.1** | 25 g | plastic | 22,05 € |
| **9858.2** | 50 g | plastic | 38,60 € |
| **9858.3** | 100 g | plastic | 66,55 € |

## 4-(Phenylazo) diphenylamine



### 4-(Phenylazo) diphenylamine

**≥97 %, p.a.**

Indicator pH 1,2-2,5; for microscopy

4-Anilinoazobenzene, N-Phenyl-4-phenylazoaniline

$C_{18}H_{15}N_3$

M 273,34 g/mol

mp 89-91 °C

[101-75-7] • EC No. 202-972-3

WGK 3

**Guarantee analysis:**

Appearance. ..... orange to orange-brown powder
Assay. ..... ≥97,0 %
Absorption max. (in EtOH). ..... ~411 nm
pH-transition range. ..... 1,2 (red)-2,5 (yellow)

| | | | |
|---|---|---|---|
| **4538.1** | 5 g | glass | 32,15 € |
| **4538.2** | 25 g | glass | 85,90 € |

## *N*-Phenylbenzenamine

▶ Diphenylamine see p. 1887

## 1-Phenyl-1,3-butadione

▶ Benzoylacetone see p. 1768

## Phenyl carbinol

▶ Benzyl alcohol see p. 1769

## Phenyl carbonate

▶ Diphenyl carbonate see p. 1888

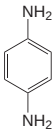
## Phenyl chloride

▶ Chlorobenzene see p. 1826

## 1-Phenyldodecane

▶ Dodecylbenzene see p. 1894

## 1,4-Phenylenediamine



### 1,4-Phenylenediamine

**≥99 %**

1,4-Diaminobenzene

$C_6H_8N_2$

M 108,14 g/mol

D 1,14

mp 140 °C • flp 156 °C

Solubility: 47 g/l ($H_2O$, 25 °C)

[106-50-3] • EC No. 203-404-7

UN No. 1673 • ADR 6.1 III • WGK 3

**Danger**

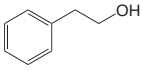
H301+H311+H331-H400-H410-H319-H317

**Type analysis:**

Appearance. ..... pink to brown crystals
Assay (GC). ..... ≥99,0 %
Melting point. ..... ≥138 °C

| | | | |
|---|---|---|---|
| **4499.2** | 50 g | glass | 23,55 € |
| **4499.1** | 100 g | glass | 35,40 € |
| **4499.3** | 250 g | glass | 53,65 € |

## 2-Phenylethanol



### 2-Phenylethanol

**≥99 %, for synthesis**

Benzyl carbinol, β-Phenethyl alcohol

$C_8H_{10}O$

M 122,17 g/mol

D 1,02 • bp 219 °C

mp -27 °C • flp 102 °C

Solubility: 20 g/l ($H_2O$, 20 °C)

[60-12-8] • EC No. 200-456-2

WGK 1

**Warning** H302-H319

**Type analysis:**

Assay (GC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **4422.1** | 5 ml | glass | 10,65 € |
| **4422.2** | 250 ml | glass | 16,35 € |
| **4422.3** | 1 l | glass | 44,00 € |
| Original pack 6 x 1 l | | | 41,80/1 l |

## Phenylethanolamine

▶ 2-Amino-1-phenylethanol see p. 1727

## β-Phenethyl alcohol

▶ 2-Phenylethanol see p. 2147

## Phenylethylene

▶ Styrene see p. 2319

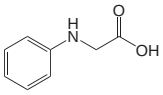
## Phenylethylglucosinolate potassium salt

▶ Gluconasturtiin see p. 1954

## Phenylformic acid

▶ Benzoic acid see p. 1766

## N-Phenylglycine



### N-Phenylglycine

**≥97 %, for biochemistry**

Anilinoacetic acid

$C_8H_9NO_2$

M 151,17 g/mol

mp 121-123 °C

[103-01-5] • EC No. 203-070-2

WGK 1

**Type analysis:**

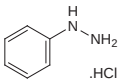
Assay (titr.). ..... ≥97 %

| | | | |
|---|---|---|---|
| **5939.1** | 10 g | plastic | 57,95 € |

## 2-Phenylhydracrylic acid

▶ DL-Tropic acid see p. 2359

## Phenylhydrazine hydrochloride



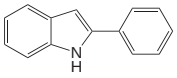
### Phenylhydrazine hydrochloride

**≥99 %, p.a.**
Reagent for detection of sugar.
$C_6H_8N_2 \cdot HCl$
M 144,61 g/mol
mp >245 °C (dec.)
Solubility: ~50 g/l ($H_2O$, 20 °C)
[59-88-1] • EC No. 200-444-7
UN No. 2811 • ADR 6.1 III • WGK 3
**Danger** H301+H311+H331-H350-H372-H341-H400-H315-H319-H317

**Guarantee analysis:**
Assay (titr.). ..... ≥99,0 %
Sulphated ash..... ≤0,05 %

| | | | |
|---|---|---|---|
| **KK20.1** | 25 g | glass | 19,25 € |
| **KK20.2** | 100 g | glass | 51,10 € |
| **KK20.3** | 250 g | glass | 113,45 € |

## 2-Phenylindole



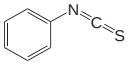
### 2-Phenylindole

**≥94,5 %**
α-Phenylindole
$C_{14}H_{11}N$
M 193,25 g/mol
mp 188-190 °C
[948-65-2] • EC No. 213-436-3
WGK 3
**Danger** H315-H318-H335

**Type analysis:**
Appearance. ..... pale yellow powder
Assay..... ≥94,5 %

| | | | |
|---|---|---|---|
| **6279.1** | 50 g | plastic | 46,15 € |

## Phenyl isothiocyanate



### Phenyl isothiocyanate

**≥99 %, for biochemistry**
$C_7H_5NS$
M 135,17 g/mol
D 1,13 • bp 221 °C
mp -21 °C • flp 87 °C
[103-72-0] • EC No. 203-138-1
UN No. 2927 • ADR 6.1 (8) II • WGK 3
**Danger** H301+H311+H331-H314

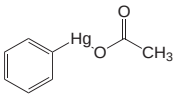
**Type analysis:**
Appearance.....colourless to pale yellow liquid
Assay (GC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7296.1** | 25 ml | glass | 21,40 € |
| **7296.2** | 100 ml | glass | 46,80 € |
| **7296.3** | 500 ml | glass | 192,45 € |

## Phenyl ketone

▶ Benzophenone see p. 1767

## Phenyl mercuric acetate



### Phenyl mercuric acetate

**≥98 %, extra pure**
Acetoxyphenyl mercury
$C_8H_8HgO_2$
M 336,74 g/mol
mp 149-153 °C
Solubility: 2 g/l ($H_2O$, 20 °C)
[62-38-4] • EC No. 200-532-5
UN No. 1674 • ADR 6.1 (II) • WGK 3
**Danger**
H301-H314-H372-H400-H410

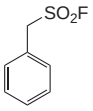
**Type analysis:**
Appearance..... white cryst. powder
Assay. ..... ≥98,0 %
Identity..... complies
Mercuric salts and heavy metals. ..... complies
Volatile organic impurities..... complies
Polymercurated benzene compounds. ..... ≤1,5 %
Ash content. ..... ≤0,2 %
Sensitive to light

| | | | |
|---|---|---|---|
| **6626.1** | 50 g | glass | 81,20 € |
| **6626.2** | 250 g | glass | 342,95 € |

## Phenylmethanol

▶ Benzyl alcohol see p. 1769

## Phenylmethyl sulphonyl fluoride (PMSF)



### Phenylmethyl sulphonyl fluoride (PMSF)

**≥99 %, for biochemistry**
Irreversible inhibitor of serine- and cysteine proteases.
α-Toluene sulphonyl fluoride, PMSF
$C_7H_7FO_2S$
M 174,2 g/mol
mp 92-94 °C
[329-98-6] • EC No. 206-350-2
UN No. 2928 • ADR 6.1 (8) II • WGK 2
**Danger** H301-H314

**Type analysis:**
Appearance. .....colourless crystals
Assay (GC). .....≥99 %
Identity (Raman). .....complies
Melting point. .....91-95 °C
Solubility in ethanol. .....complies
Solubility in methanol. .....complies

| | | | |
|---|---|---|---|
| **6367.1** | 5 g | plastic | 30,00 € |
| **6367.2** | 25 g | plastic | 99,90 € |
| **6367.3** | 100 g | plastic | 284,35 € |
| **6367.4** | 348 mg, in 30 ml glass bottle | | 14,20 € |

For further information, please see 1286

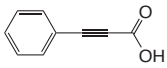
## 3-Phenyl-2-propen-1-ol

▶ Cinnamyl alcohol see p. 1835

## 3-Phenyl-2-propenal

▶ Cinnamaldehyde see p. 1834

## Phenylpropiolic acid



### Phenylpropiolic acid

**≥98 %**
Phenylacetylenecarboxylic acid
$C_9H_6O_2$
M 146,15 g/mol
mp 134-138 °C
[637-44-5] • EC No. 211-285-8
WGK 1
**Warning** H315-H319-H335

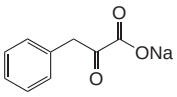
**Type analysis:**
Assay (titr.).....≥98,0 %
Water (KF). .....≤1,0 %
Melting point. .....134-138 °C

| | | | |
|---|---|---|---|
| **5271.1** | 5 g | plastic | 42,90 € |
| **5271.2** | 25 g | plastic | 155,90 € |

## 3-Phenylpropionic acid ethyl ester

▶ Hydrocinnamic acid ethyl ester see p. 1989

## Phenylpyruvic acid sodium salt



### Phenylpyruvic acid sodium salt

**≥98 %**
Sodium phenylpyruvate
$C_9H_7NaO_3$
M 186,14 g/mol
[114-76-1] • EC No. 204-053-2

**Type analysis:**
Assay (nonaqueous titration). ..... ≥98,0 %
Water. ..... 7,0-10,0 %

| | | | |
|---|---|---|---|
| **9246.1** | 5 g | glass | 126,35 € |

## H-D-Phe(4-$N_3$)-OH

▶ D-4-Azidophenylalanine see p. 1758

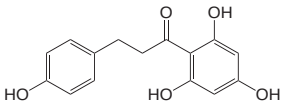
## H-L-Phe(4-$N_3$)-OH

▶ L-4-Azidophenylalanine see p. 1758

## pH-Indicators

▶ Indicators and Dyes see p. 2000

## Phloretin



### Phloretin

**ROTICHROM® HPLC**
Reference substance for HPLC.
Phloretol
$C_{15}H_{14}O_5$
M 274,26 g/mol
mp ~260 °C
[60-82-2] • EC No. 200-488-7

**Type analysis:**
Purity (HPLC) ..... ≥99 %

| | | | |
|---|---|---|---|
| **7051.3** | 20 mg | glass | 132,80 € |

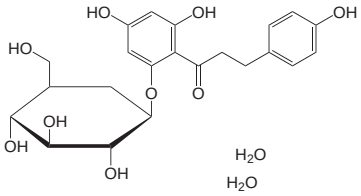
## Phloretol

▶ Phloretin see p. 2149

## Phloridzin

▶ Phlorizin dihydrate see p. 2149

## Phlorizin dihydrate



### Phlorizin dihydrate

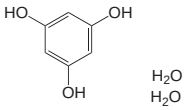
**≥98 %, for biochemistry**
Phloridzin
$C_{21}H_{24}O_{10} \cdot 2\ H_2O$
M 472,41 g/mol
mp ~110 °C
Storage temp.: +4 °C
[7061-54-3] • EC No. 200-487-1

**Warning** H315-H319-H335

**Type analysis:**
Assay (HPLC) ..... ≥98 %
Loss on drying. ..... ≤5,0 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4196.1** | 2,5 g | glass | 46,15 € |
| **4196.2** | 10 g | plastic | 141,40 € |
| **4196.3** | 100 g | plastic | 858,95 € |

## Phloroglucinol dihydrate



### Phloroglucinol dihydrate

**≥98 %**
1,3,5-Trihydroxybenzene
$C_6H_6O_3 \cdot 2\ H_2O$
M 162,14 g/mol
mp 221 °C
[6099-90-7] • EC No. 203-611-2
WGK 2

**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... white to yellow powder
Assay. ..... ≥98 %

| | | | |
|---|---|---|---|
| **7662.1** | 50 g | plastic | 64,40 € |

For further information, please see page 1442

## Phos-α-D-Gal

▶ α-D-Galactose-1-phosphate dipotassium salt pentahydrate see p. 1945

## Phosphate Standards

▶ Phosphate IC Standard Solution see p. 2312

## Phosphatase, alkaline

▶ Alkaline phosphatase see p. 1717

## Phosphate buffered formaldehyde

▶ Roti®-Histofix 4 % see p. 2218

## Phosphate buffered saline

▶ Roti®-CELL PBS see p. 2207
▶ Roti®fair PBS 7.2 see p. 2213
▶ Roti®fair PBS 7.4 see p. 2213
▶ Roti®fair PBS 7.4 see p. 2213
▶ Roti®fair 10x PBS 7.4 see p. 2214
▶ Roti®fair PBS potassium-free 7.4 see p. 2214
▶ Roti®-PreMix PBS see p. 2230

## Phosphate buffered saline with Tween

▶ Roti®fair PBST 7.4 see p. 2214
▶ Roti®-PreMix PBST see p. 2231

## Phosphate matrix modifier

▶ Matrix modifier solution
Ammonium dihydrogen phosphate see p. 2059

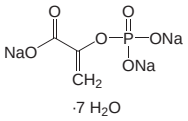
## Phosphatidylcholine

▶ Lecithin see p. 2034

## Phosphine ligands

| Art. No. | Description | Page |
|---|---|---|
| 2040 | (R)-BINAP | 1772 |
| 1845 | (rac)-BINAP | 1772 |
| 1950 | (S)-BINAP | 1772 |
| 1911 | SPhos | 2292 |
| 2058 | Xantphos | 2379 |
| 1445 | XPhos | 2380 |

## Phosphoenolpyruvic acid, trisodium salt heptahydrate



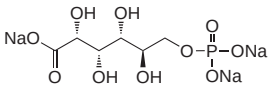
### Phosphoenolpyruvic acid, trisodium salt heptahydrate

**≥97 %, for biochemistry**
PEP-3 Na
$C_3H_2Na_3O_6P \cdot 7\ H_2O$
M 360,09 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[5541-93-5] • EC No. 226-906-8
WGK 3

**Type analysis:**
Appearance. ..... white to off-white, cryst. powder
Assay (perchloric acid titration, dry substance) ..... ≥97,0 %
Identity (IR). ..... complies
Appearance of solution (5 % in $H_2O$) ..... colourless

| | | | |
|---|---|---|---|
| **8397.1** | 100 mg | glass | 29,60 € |
| **8397.2** | 250 mg | glass | 40,75 € |
| **8397.3** | 500 mg | glass | 61,20 € |

## 6-Phosphogluconic acid trisodium salt dihydrate



### 6-Phosphogluconic acid trisodium salt dihydrate

**≥98 %, for biochemistry**

D-Gluconate-6-phosphate trisodium salt
$C_6H_{14}O_{12}PNa_3$
M 378,11 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[57775-17-4] • EC No. 258-543-6
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (titr.). ..... ≥98 %
Solution (5 % in $H_2O$). ..... colourless, clear
Water (KF). ..... 8-12 %

| | | | |
|---|---|---|---|
| **4167.1** | 250 mg | glass | 103,75 € |
| **4167.2** | 500 mg | glass | 177,40 € |

## Phosphomolybdic acid

▶ Molybdatophosphoric acid hydrate
see p. 2082

## Phosphoramidite

| Art. No. | Description | Page |
|---|---|---|
| K921 | Adenosine-BCE-phosphoramidite | 1709 |
| K922 | Cytidine-BCE-phosphoramidite | 1855 |
| K923 | Guanosine-BCE-phosphoramidite | 1967 |
| K924 | Thymidine-BCE-phosphoramidite | 2342 |

## meta-Phosphoric acid

### meta-Phosphoric acid

**p.a., pieces (hyaline)**

Reagent for protein, vitamines, urea and glucose.

Stabilised with sodium metaphosphate
$(NaPO_3)_n$
$(HPO_3)_n$
D ~2,0 • bp ~600 °C
mp 200-250 °C
[37267-86-0] • EC No. 253-433-4
UN No. 3453 • ADR 8 III • WGK 1

**Danger** H314

**Guarantee analysis:**

Assay ($HPO_3$). ..... 40-50 %
Assay ($NaPO_3$). ..... 50-60 %
Chloride (Cl). ..... ≤0,001 %
Nitrate ($NO_3$). ..... ≤0,001 %
reducing substances (as $H_3PO_3$). ..... ≤0,02 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **CN91.1** | 100 g | plastic | 30,00 € |
| **CN91.2** | 250 g | plastic | 59,05 € |
| **CN91.3** | 500 g | plastic | 107,00 € |
| Original pack 6 x 500 g | | | 101,65/500 g |
| **CN91.4** | 1 kg | plastic | 193,40 € |
| Original pack 6 x 1 kg | | | 183,73/1 kg |

## ortho-Phosphoric acid 85 %

$H_3PO_4$
M 98,00 g/mol
D ~1,71
[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

**Danger** H290-H314

### ortho-Phosphoric acid 85 %

**85 %, VLSI Grade**

**Guarantee analysis:**

Assay. ..... 84-86 %
Bead number (≥0,5 µm). ..... ≤250 p/ml
Colour (APHA). ..... ≤10
Chloride (Cl). ..... ≤0,0001 %
Fluoride (F). ..... ≤0,0005 %
Nitrate ($NO_3$). ..... ≤0,0001 %
Sulphate ($SO_4$). ..... ≤0,0005 %
Insoluble matter. ..... ≤0,001 %
$KMnO_4$ reducing substances. ..... complies
Aluminium (Al). ..... ≤200 ppb
Antimony (Sb). ..... ≤2000 ppb
Arsenic (As). ..... ≤200 ppb
Lead (Pb). ..... ≤100 ppb
Cadmium (Cd). ..... ≤200 ppb
Calcium (Ca). ..... ≤300 ppb
Chromium (Cr). ..... ≤100 ppb
Iron (Fe). ..... ≤1000 ppb
Potassium (K). ..... ≤200 ppb
Cobalt (Co). ..... ≤300 ppb
Copper (Cu). ..... ≤100 ppb
Lithium (Li). ..... ≤50 ppb
Magnesium (Mg). ..... ≤100 ppb
Manganese (Mn). ..... ≤50 ppb
Sodium (Na). ..... ≤1000 ppb
Nickel (Ni). ..... ≤200 ppb
Strontium (Sr). ..... ≤200 ppb
Zinc (Zn). ..... ≤1000 ppb

| | | | |
|---|---|---|---|
| **9788.1** | 2,5 l | plastic | 142,90 € |
| Original pack 4 x 2,5 l | | | 135,76/2,5 l |

### ortho-Phosphoric acid 85 %

**ROTIPURAN® ≥85 %, p.a., ISO**

**Guarantee analysis:**

Assay (acidim.). ..... ≥85 %
Colour (APHA). ..... ≤10
Heavy metals (as Pb). ..... ≤0,001 %
Volatile acids (as $CH_3COOH$). ..... ≤0,001 %
$KMnO_4$ reducing substances (as O). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,0003 %
Nitrate ($NO_3$). ..... ≤0,0005 %
Sulphate ($SO_4$). ..... ≤0,003 %
Arsenic (As). ..... ≤0,0001 %
Antimony (Sb). ..... ≤0,002 %
Lead (Pb). ..... ≤0,0001 %
Cadmium (Cd). ..... ≤0,0001 %
Calcium (Ca). ..... ≤0,001 %
Chromium (Cr). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,0005 %
Cobalt (Co). ..... ≤0,0001 %
Copper (Cu). ..... ≤0,0001 %
Magnesium (Mg). ..... ≤0,001 %
Manganese (Mn). ..... ≤0,00005 %
Sodium (Na). ..... ≤0,025 %
Nickel (Ni). ..... ≤0,0001 %
Zinc (Zn). ..... ≤0,0002 %

| | | | |
|---|---|---|---|
| **6366.1** | 1 l | plastic | 62,25 € |
| Original pack 6 x 1 l | | | 59,14/1 l |
| **6366.2** | 2,5 l | plastic | 127,40 € |
| Original pack 4 x 2,5 l | | | 121,03/2,5 l |

### ortho-Phosphoric acid 85 %

**85 %, Ph.Eur.**

**Guarantee analysis:**

Assay (acidim.). ..... 85,0-88,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Substances precipitated by $NH_4OH$. ..... complies
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,01 %
Hypophosphorous acid, phosphorous acid. ..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0002 %
Iron (Fe). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **2608.1** | 1 l | plastic | 40,75 € |
| Original pack 6 x 1 l | | | 38,71/1 l |
| **2608.2** | 2,5 l | plastic | 73,00 € |
| Original pack 4 x 2,5 l | | | 69,35/2,5 l |
| **2608.3** | 5 l | plastic | 112,90 € |
| Original pack 2 x 5 l | | | 107,26/5 l |
| **2608.4** | 10 l | plastic | 190,85 € |

### ortho-Phosphoric acid 85 %

**85 %, extra pure**

**Type analysis:**

Assay. ..... 84,0-86,0 %
Density (20 °C). ..... 1,6780-1,700
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Cadmium (Cd). ..... ≤0,0001 %
Copper (Cu). ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **9079.1** | 1 l | plastic | 38,60 € |
| Original pack 6 x 1 l | | | 36,67/1 l |
| **9079.2** | 2,5 l | plastic | 69,35 € |
| Original pack 4 x 2,5 l | | | 65,88/2,5 l |
| **9079.3** | 10 l | plastic | 145,15 € |

## ortho-Phosphoric acid 75 %

### ortho-Phosphoric acid 75 %

**75 %, extra pure**

$H_3PO_4$
M 98,0 g/mol
D ~1,58
[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

**Danger** H290-H314

**Type analysis:**

Assay. ..... 74,0-76,0 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,00005 %
Cadmium (Cd). ..... ≤0,00002 %
Iron (Fe). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,0002 %
Mercury (Hg). ..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **2614.1** | 1 l | plastic | 24,65 € |
| Original pack 6 x 1 l | | | 23,42/1 l |
| **2614.2** | 2,5 l | plastic | 42,90 € |
| Original pack 4 x 2,5 l | | | 40,76/2,5 l |
| **2614.3** | 5 l | plastic | 80,55 € |
| Original pack 2 x 5 l | | | 76,52/5 l |
| **2614.4** | 10 l | plastic | 122,05 € |

## ortho-Phosphoric acid 50 %

### ortho-Phosphoric acid 50 %

**50 %, extra pure**

$H_3PO_4$
M 98,00 g/mol
D ~1,33
[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

**Danger** H314-H290

**Type analysis:**

Assay.....49,0-51,0 %
Density (20 °C).....1,3250-1,3460
Chloride (Cl).....≤0,005 %
Iron (Fe).....≤0,001 %
Arsenic (As).....≤0,0001 %

| | | | |
|---|---|---|---|
| **4336.1** | 1 l | plastic | 22,05 € |
| Original pack 6 x 1 l | | | 20,95/1 l |
| **4336.2** | 2,5 l | plastic | 39,25 € |
| Original pack 4 x 2,5 l | | | 37,29/2,5 l |
| **4336.3** | 5 l | plastic | 70,45 € |
| Original pack 2 x 5 l | | | 66,93/5 l |
| **4336.4** | 10 l | plastic | 115,60 € |

## ortho-Phosphoric acid 40 %

### ortho-Phosphoric acid 40 %

**40 %, extra pure**

$H_3PO_4$
M 98,00 g/mol
D ~1,25
[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

**Danger** H314-H290

**Type analysis:**

Assay.....39,0-41,0 %
Density (20 °C).....1,2468-1,2622
Chloride (Cl).....≤0,002 %
Iron (Fe).....≤0,001 %
Arsenic (As).....≤0,0001 %
Heavy metals (as Pb).....≤0,0005 %

| | | | |
|---|---|---|---|
| **4334.1** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **4334.2** | 2,5 l | plastic | 38,60 € |
| Original pack 4 x 2,5 l | | | 36,67/2,5 l |
| **4334.3** | 5 l | plastic | 69,80 € |
| Original pack 2 x 5 l | | | 66,31/5 l |
| **4334.4** | 10 l | plastic | 112,90 € |

## ortho-Phosphoric acid 25 %

### ortho-Phosphoric acid 25 %

**25 %, extra pure**

$H_3PO_4$
M 98,00 g/mol
D ~1,15
[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

**Danger** H314-H290

**Type analysis:**

Assay.....24,0-26,0 %
Density (20 °C).....1,1395-1,1529
Chloride (Cl).....≤0,005 %
Sulphate ($SO_4$).....≤0,05 %
Iron (Fe).....≤0,002 %
Arsenic (As).....≤0,0001 %

| | | | |
|---|---|---|---|
| **4332.1** | 1 l | plastic | 19,25 € |
| Original pack 6 x 1 l | | | 18,29/1 l |
| **4332.2** | 2,5 l | plastic | 34,30 € |
| Original pack 4 x 2,5 l | | | 32,59/2,5 l |
| **4332.3** | 5 l | plastic | 60,10 € |
| Original pack 2 x 5 l | | | 57,10/5 l |
| **4332.4** | 10 l | plastic | 93,00 € |

## ortho-Phosphoric acid (0,3 N)

### ortho-Phosphoric acid

**0,1 mol/l - 0,3 N volumetric standard solution**

[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**

Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,3 %
Titer.....0,997-1,003

| | | | |
|---|---|---|---|
| **8089.1** | 1 l | plastic | 49,35 € |
| Original pack 6 x 1 l | | | 46,88/1 l |

## ortho-Phosphoric acid (0,5 N)

### ortho-Phosphoric acid

**1/6 mol/l - 0,5 N volumetric standard solution**

[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**

Amount-of-substance conc. (20 °C)....1/6 mol/l ±0,3 %
Titer.....0,997-1,003

| | | | |
|---|---|---|---|
| **8091.1** | 1 l | plastic | 49,35 € |
| Original pack 6 x 1 l | | | 46,88/1 l |

## ortho-Phosphoric acid (3 N)

### ortho-Phosphoric acid

**1 mol/l - 3 N volumetric standard solution**

[7664-38-2] • EC No. 231-633-2
UN No. 1805 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 1 mol/l ±0,3 %
Titer.....0,997-1,003

| | | | |
|---|---|---|---|
| **8141.1** | 1 l | plastic | 49,35 € |
| Original pack 6 x 1 l | | | 46,88/1 l |

## ortho-Phosphoric acid D3, 85 % solution in $D_2O$

### ortho-Phosphoric acid D3, 85 % solution in $D_2O$

**99 Atom%D**

For nuclear magnetic resonance spectroscopy.
$D_3PO_4$
M 101,2 g/mol
D 1,74
[14335-33-2]
UN No. 1805 • ADR 8 III • WGK 1

**Danger** H290-H314-H318

**Type analysis:**

Deuterising degree.....≥99 %
Assay (titr.).....≥85 %

| | | | |
|---|---|---|---|
| **9915.1** | 10 ml | glass ampoule | 46,80 € |
| **9915.2** | 25 ml | glass | 102,05 € |

## Phosphoric anhydride

▶ Phosphorus pentoxide see p. 2152

## Phosphorous acid

### Phosphorous acid

**≥98 %, cryst.**

$H_3PO_3$
M 82,0 g/mol
D 1,65 • bp >180 °C (dec.)
mp 73 °C
[13598-36-2] • EC No. 237-066-7
UN No. 2834 • ADR 8 III • WGK 1

**Danger** H302-H314

**Type analysis:**

Assay.....≥98,0 %
Chloride (Cl).....≤0,01 %
Sulphate ($SO_4$).....≤0,008 %
Iron (Fe).....≤0,005 %

| | | | |
|---|---|---|---|
| **2620.1** | 100 g | glass | 17,10 € |
| **2620.2** | 500 g | glass | 27,45 € |
| Original pack 6 x 500 g | | | 26,08/500 g |
| **2620.3** | 1 kg | glass | 39,70 € |
| Original pack 6 x 1 kg | | | 37,72/1 kg |

O/P

## Phosphor(V) oxid

▶ Phosphorus pentoxide see p. 2152

## Phosphorus Standards

▶ Phosphor AAS Standard Solution see p. 2295
▶ Phosphorus ICP Standard Solution see p. 2299
▶ Phosphorus ICP Standard Solution see p. 2304

## Phosphorus pentoxide

### Phosphorus pentoxide

**≥99 %, powdered**
Drying agent
Phosphorus(V) oxide, Phosphoric anhydride, Diphosphorous pentoxide
$P_2O_5$
M 141,94 g/mol
D 2,30 • bp 591 °C
mp 340-360 °C
[1314-56-3] • EC No. 215-236-1
UN No. 1807 • ADR 8 II • WGK 1
**Danger** H314-EUH014

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Assay | ≥99,0 % |
| Heavy metals (as Pb) | ≤0,02 % |
| Arsenic (As) | ≤0,015 % |
| Iron (Fe) | ≤0,005 % |

| | | | |
|---|---|---|---|
| **9076.1** | 500 g | plastic | 23,55 € |
| Original pack 6 x 500 g | | | 22,37/500 g |
| **9076.2** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **9076.3** | 2,5 kg | plastic | 76,25 € |

## Phosphotungstic acid hydrate

### Phosphotungstic acid hydrate

**p.a., cryst.**
Tungstophosphoric acid
$H_3PO_4 \cdot 12\ WO_3 \cdot x\ H_2O$
M 2880,17 + x $H_2O$ g/mol
mp 95 °C
[12501-23-4] • EC No. 215-682-7
UN No. 3260 • ADR 8 II • WGK 1
**Danger** H314

**Guarantee analysis:**

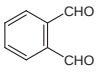
| | |
|---|---|
| Chloride (Cl) | ≤0,03 % |
| Sulphate ($SO_4$) | ≤0,02 % |
| Ammonium ($NH_4$) | ≤0,005 % |
| Nitrate ($NO_3$) | ≤0,005 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Iron (Fe) | ≤0,002 % |

| | | | |
|---|---|---|---|
| **2635.1** | 50 g | glass | 44,65 € |
| **2635.2** | 100 g | glass | 71,95 € |
| **2635.3** | 250 g | glass | 155,90 € |
| **2635.4** | 500 g | glass | 289,20 € |
| Original pack 6 x 500 g | | | 274,74/500 g |

## Phosphotungstic acid-Orange G solution

▶ Goldner's staining I see p. 1964

## o-Phthaldialdehyde




### o-Phthaldialdehyde

**≥99 %, for synthesis**
Benzene-1,2-dialdehyde, OPA
$C_8H_6O_2$
M 134,14 g/mol
D 1,13
mp 54-58 °C • flp 132 °C
Solubility: 53 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[643-79-8] • EC No. 211-402-2
UN No. 2923 • ADR 8 (6.1) II • WGK 3
**Danger** H301-H314-H317-H410

**Type analysis:**

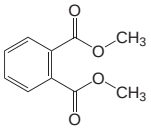
| | |
|---|---|
| Assay (GC) | ≥99,0 % |
| Melting range | 54-58 °C |

| | | | |
|---|---|---|---|
| **5980.1** | 25 g | plastic | 112,35 € |

## Phthalein purple

▶ Metal phthaleine see p. 2066

## Phthalic acid dimethyl ester




### Phthalic acid dimethyl ester

**≥99 %, for synthesis**
Transparent liquid
Dimethyl phthalate, DMP
$C_{10}H_{10}O_4$
M 194,19 g/mol
D 1,19 • bp 283 °C
mp 6 °C • flp 150 °C
Solubility: <0,1 g/l ($H_2O$, 20 °C)
[131-11-3] • EC No. 205-011-6
WGK 1

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| Density (20 °C) | 1,189-1,198 |
| Refractive index $n_D^{20}$ | 1,514-1,516 |

| | | | |
|---|---|---|---|
| **4576.1** | 1 l | glass | 41,40 € |
| Original pack 6 x 1 l | | | 39,33/1 l |
| **4576.2** | 2,5 l | glass | 84,40 € |
| Original pack 4 x 2,5 l | | | 80,18/2,5 l |

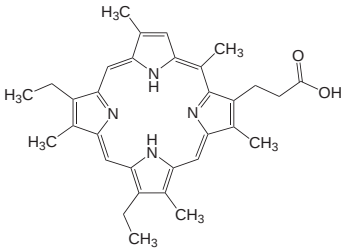
## Phthalic acid monopotassium salt

▶ Potassium hydrogen phthalate see p. 2169

## Phytomenadione

▶ Vitamin $K_1$ see p. 2372

## Phylloporphyrin




### Phylloporphyrin

**≥90 %**
$C_{32}H_{36}N_4O_2$
M 508,85 g/mol
[13939-70-3] • EC No. 237-719-6

**Type analysis:**

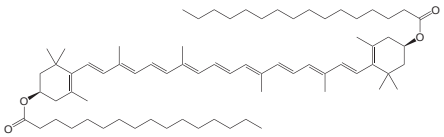
| | |
|---|---|
| Assay (TLC) | ≥90 % |

| | | | |
|---|---|---|---|
| **9084.1** | 10 mg | glass | 213,95 € |

## Phylloquinone

▶ Vitamin $K_1$ see p. 2372

## Physalien

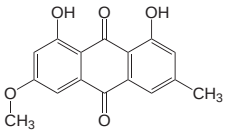



### Physalien

**ROTICHROM® TLC**
Reference substance for thin layer chromatography.
$C_{72}H_{116}O_4$
M 1045,41 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[144-67-2] • EC No. 205-635-9

| | | | |
|---|---|---|---|
| **5673.1** | 5 mg | plastic | 235,45 € |

## Physcion



Parietin, 1,8-Dihydroxy-3-methoxy-6-methyl-anthraquinone
$C_{16}H_{12}O_5$
M 284,27 g/mol
mp 209-210 °C
Storage temp.: +4 °C
[521-61-9] • EC No. 208-315-7
WGK 1

**Warning** H315-H319-H335

### Physcion
**ROTICHROM® HPLC**
Reference substance for HPLC.

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7412.2** | 20 mg | plastic | 213,95 € |

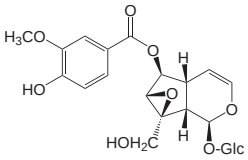
## Phytohistol® plus

### Phytohistol® plus
**for microscopy**
Botanical mounting medium based on sugar.
**Application:** Drop on slide, add specimen. When free from air bubbles place cover slip.
D 1,11
WGK 1

**Type analysis:**
Appearance. ..... yellow to brownish, viscous liquid
Refractive index (20 °C)..... 1,42-1,44

| | | | |
|---|---|---|---|
| **6471.1** | 15 ml | dropp. bottle | 21,00 € |
| **6471.2** | 50 ml | plastic | 55,40 € |

## Picrosid II



### Picrosid II
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Picrorhiza kurroa.*
6-Vanilloylcatalpol
$C_{23}H_{28}O_{13}$
M 512,47 g/mol
Storage temp.: +4 °C
[39012-20-9] • EC No. 254-247-6

**Warning** H302

**Type analysis:**
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1197.1** | 20 mg | glass | 241,90 € |

## Picrotoxin

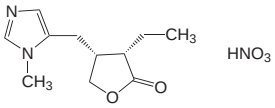
### Picrotoxin
**≥97,5 %**
$C_{30}H_{34}O_{13}$
M 602,57 g/mol
mp 200-202 °C
[124-87-8] • EC No. 204-716-6
UN No. 3462 • ADR 6.1 II • WGK 2

**Danger** H300

**Type analysis:**
Assay (TLC). ..... ≥97,5 %

| | | | |
|---|---|---|---|
| **7093.1** | 1 g | glass | 117,20 € |

## Pilocarpin nitrate



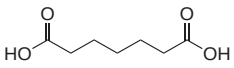
### Pilocarpin nitrate
**≥98,5 %, extra pure**
$C_{11}H_{17}N_3O_5$
M 271,27 g/mol
mp 169-173 °C
[148-72-1] • EC No. 205-723-7
UN No. 2811 • ADR 6.1 I • WGK 3

**Danger** H300+H330

**Type analysis:**
Assay (titr.). ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +80,0° to +84,0°

| | | | |
|---|---|---|---|
| **7523.1** | 1 g | glass | 145,15 € |

## Pimelic acid



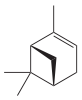
### Pimelic acid
**≥99 %**
Heptanedioic acid
$C_7H_{12}O_4$
M 160,17 g/mol
bp 212 °C (13 hPa)
mp 104-106 °C
Solubility: 50 g/l ($H_2O$, 20 °C)
[111-16-0] • EC No. 203-840-8
WGK 1

**Warning** H319

**Type analysis:**
Assay (titr.). ..... ≥99,0 %
Solution (10 % in methanol)..... colourless, clear
Water (KF)..... ≤0,5 %
Melting point..... 104-106 °C

| | | | |
|---|---|---|---|
| **5270.1** | 25 g | plastic | 30,00 € |
| **5270.2** | 50 g | plastic | 44,00 € |

## (-)-α-Pinene



2-Pinene
$C_{10}H_{16}$
M 136,24 g/mol
D 0,86 • bp 155-156 °C
mp -62 °C • flp 32 °C
Storage temp.: +4 °C
[7785-26-4] • EC No. 232-077-3
UN No. 2368 • ADR 3 III • WGK 3

**Danger**
H226-H304-H315-H317-H410

### (-)-α-Pinene
**≥98 %, for synthesis**

**Type analysis:**
Appearance. ..... clear, colourless liquid
Assay. ..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$. ..... -45° to -35°

| | | | |
|---|---|---|---|
| **5647.1** | 100 ml | glass | 31,10 € |

### (-)-α-Pinene
**ROTICHROM® GC**
Reference substance for GC.

**Type analysis:**
Purity (GC). ..... ≥95,0 %

| | | | |
|---|---|---|---|
| **5170.2** | 100 mg | glass | 82,70 € |

## DL-α-Pinene

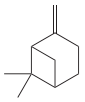
### DL-α-Pinene
**ROTICHROM® GC**
Reference substance for GC.
DL-2-Pinene
D ~0,858 • bp ~155-156 °C
flp 32 °C
Storage temp.: +4 °C
[80-56-8] • EC No. 201-291-9
UN No. 2368 • ADR 3 III • WGK 3

**Danger**
H226-H304-H315-H317-H410

**Type analysis:**
Purity (GC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **3858.1** | 1 g | plastic | 81,20 € |

## β-Pinene



$C_{10}H_{16}$
M 136,24 g/mol
D ~0,87 • bp ~165 °C
mp -61 °C • flp 36 °C
[18172-67-3] • EC No. 204-872-5
UN No. 2319 • ADR 3 III • WGK 3
**Danger**
H226-H304-H315-H317-H410

### β-Pinene
**pure**

**Type analysis:**
Appearance. ..... clear, colourless to light yellowish oil
Density (20 °C). ..... 0,860-0,880 g/cm³
Refractive index (20 °C)..... 1,4700-1,4800
Optical rotation (20 °C). ..... -25° to -15°

| | | | |
|---|---|---|---|
| **7106.1** | 250 ml | glass | 23,15 € |

### β-Pinene
**ROTICHROM® GC**
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**
Purity (GC)..... ≥90 %

| | | | |
|---|---|---|---|
| **5172.1** | 1 g | plastic | 78,40 € |

## 2,5-Piperazinedione
▶ Glycine anhydride see p. 1962

## Piperazine-N,N'-bis(2-ethanesulphonic acid)
▶ PIPES see p. 2154
▶ PIPES monosodium salt see p. 2155
▶ PIPES 1,5 Na see p. 2155
▶ PIPES disodium salt see p. 2155

## Piperazine-N',N'-bis(2-hydroxypropane sulphonic acid)
▶ POPSO see p. 2161
▶ POPSO 1,5 Na see p. 2161

## Piperidine



Hexahydropyridine
$C_5H_{11}N$
M 85,15 g/mol
D 0,86 • bp 106 °C
mp -10 °C • flp 16 °C
[110-89-4] • EC No. 203-813-0
UN No. 2401 • ADR 8 (3) I • WGK 1
**Danger**
H225-H302-H311+H331-H314

### Piperidine
**≥99,5 %, for peptide synthesis**

**Type analysis:**
Assay. ..... ≥99,5 %
Water (KF)..... ≤0,1 %
Evaporation residue. ..... ≤0,001 %
Lead (Pb). ..... ≤0,00001 %
Iron (Fe)..... ≤0,00001 %
Magnesium (Mg). ..... ≤0,00001 %
Zinc (Zn)..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **A122.1** | 200 ml | glass | 32,15 € |
| **A122.2** | 500 ml | glass | 57,95 € |
| **A122.3** | 1 l | glass | 95,60 € |
| Original pack 6 x 1 l | | | 90,82/1 l |
| **A122.4** | 2,5 l | glass | 166,65 € |
| Original pack 4 x 2,5 l | | | 158,32/2,5 l |

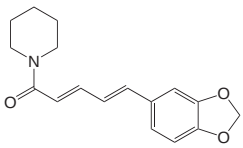
### Piperidine
**≥99 %, for synthesis**

NEW

**Type analysis:**
Assay (GC)..... ≥99 %
Water (KF)..... ≤0,5 %
Pyridine (GC)..... ≤0,5 %
Density (20 °C). ..... 0,859-0,867 g/cm³

| | | | |
|---|---|---|---|
| **0976.1** | 250 ml | glass | 21,00 € |
| **0976.2** | 1 l | glass | 53,65 € |
| Original pack 6 x 1 l | | | 50,97/1 l |
| **0976.3** | 2,5 l | glass | 107,40 € |
| Original pack 4 x 2,5 l | | | 102,03/2,5 l |

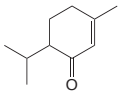
## Piperine



### Piperine
**ROTICHROM® ~CHR**
1-Piperoylpiperidine
$C_{17}H_{19}NO_3$
M 285,35 g/mol
mp 127-130 °C
Solubility: 0,04 g/l ($H_2O$, 18 °C)
[94-62-2] • EC No. 202-348-0
UN No. 3077 • ADR 9 III • WGK 2
**Warning** H302-H411

| | | | |
|---|---|---|---|
| **7099.1** | 5 g | glass | 85,90 € |

## Piperitone



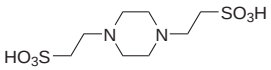
### Piperitone
**ROTICHROM® GC**
Reference substance for GC.
$C_{10}H_{16}O$
M 152,24 g/mol
D ~0,93 • bp 233 °C
Storage temp.: +4 °C
[89-81-6] • EC No. 201-942-7
WGK 1

**Type analysis:**
Purity (GC). ..... ≥96 %

| | | | |
|---|---|---|---|
| **5174.1** | 1 g | plastic | 81,20 € |

## 1-Piperoylpiperidin
▶ Piperine see p. 2154

## PIPES



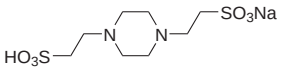
### PIPES
**PUFFERAN® ≥99 %**
Piperazine-N,N'-bis-(2-ethanesulphonic acid)
$C_8H_{18}N_2O_6S_2$
M 302,37 g/mol
mp >300 °C
[5625-37-6] • EC No. 227-057-6
WGK 1

**Guarantee analysis:**
Appearance. ..... white powder
Assay (titr.)..... ≥99 %
Water. ..... ≤1,0 %
Solubility (0,5 M in 1 M NaOH)..... clear, soluble
UV-Absorption (0,1 M in 1 M NaOH):
280 nm. ..... ≤0,1
260 nm. ..... ≤0,1

| | | | |
|---|---|---|---|
| **9156.1** | 25 g | plastic | 19,25 € |
| **9156.2** | 100 g | plastic | 55,40 € |
| **9156.3** | 250 g | plastic | 120,95 € |
| **9156.4** | 500 g | plastic | 205,90 € |
| Original pack 6 x 500 g | | | 195,61/500 g |

For further information, please see page 1268

## PIPES monosodium salt



### PIPES monosodium salt

**PUFFERAN® ≥97 %**

Piperazine-N,N'-bis(2-ethanesulphonic acid) monosodium salt monohydrate

$C_8H_{17}NaN_2O_6S_2$

M 324,35 g/mol

[10010-67-0] • EC No. 233-005-3

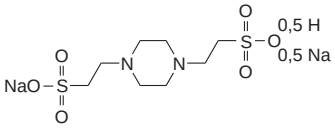
**Guarantee analysis:**

Assay ..... ≥97,0 %
Water (KF) ..... ≤3,0 %
Solubility (1% in $H_2O$) ..... clear, soluble
pH value (1 % in $H_2O$) ..... 4,0-5,0
UV-Absorbtion (1 % in $H_2O$):
280 nm ..... ≤0,04
260 nm ..... ≤0,05

| | | | |
|---|---|---|---|
| **9153.1** | 25 g | plastic | 35,40 € |

For further information, please see page 1268

## PIPES 1,5 Na



### PIPES 1,5 Na

**PUFFERAN® ≥96 %**

Piperazine-N,N'-bis(2-ethanesulphonic acid) 1,5 Na

$C_8H_{16,5}N_2O_6S_2Na_{1,5}$

M 335,3 g/mol

[100037-69-2]

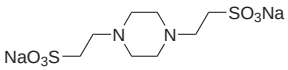
**Type analysis:**

Assay (titr.) ..... ≥96 %
Water (KF) ..... ≤4,0 %
pH value (1 % solution) ..... 6,5-7,1
UV-absorption (10 % in $H_2O$):
280 nm ..... ≤0,05
260 nm ..... ≤0,05

| | | | |
|---|---|---|---|
| **5583.1** | 50 g | plastic | 67,65 € |
| **5583.2** | 250 g | plastic | 278,45 € |

For further information, please see page 1268

## PIPES disodium salt



### PIPES disodium salt

**PUFFERAN® ≥99 %**

Piperazine-N,N'-bis(2-ethanesulphonic acid) disodium salt

$C_8H_{16}Na_2N_2O_6S_2$

M 364,3 g/mol

[76836-02-7]

WGK 1

**Type analysis:**

Appearance ..... white powder
Assay (titr.) ..... ≥99,0 %
Solubility (0,1 M in $H_2O$) ..... colourless
$pK_a$ (at 25 °C) ..... 6,5-6,9
Water ($H_2O$) ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **7109.2** | 100 g | plastic | 123,65 € |

For further information, please see page 1268

## Plant culture agar

▶ Agar-Agar, plant see p. 1710

## Plant Growth Regulators

| Art. No. | Description | Page |
|---|---|---|
| 5552 | 6-Benzylaminopurine | 1769 |
| 7464 | Gibberellic acid | 1950 |
| 4143 | Indole-3-butyric acid | 2003 |
| 4144 | Indole-3-propionic acid | 2003 |
| 7280 | Indolyl 3-acetic acid | 2004 |
| 4142 | Kinetin | 2022 |
| 8379 | Putrescin | 2184 |
| 4141 | Putrescin dihydrochloride | 2184 |
| 8367 | Serotonin hydrochloride | 2248 |
| 7161 | Spermidine | 2291 |
| 7162 | Spermine | 2291 |

## Plant Indican

▶ 3-Indoxyl-β-D-glucopyranoside see p. 2004

## Plasmides

Storage temp.: -20 °C •
Transport temp.: room temp.
WGK 1

### Plasmid DNA pUC19

High-purity plasmid-DNA of pUC19 (pUC19c, Acc. No. L09137) with a overall length of 2686 base pairs. Lyophilised.

| | | | |
|---|---|---|---|
| **X911.1** | 50 µg | plastic | 48,95 € |

For further information, please see page 1243

### Plasmid DNA pBR322

High-purity plasmid-DNA of pBR322 (Acc. No. V01119) with a overall lenght of 4361 base pairs. Lyophilised.

| | | | |
|---|---|---|---|
| **X912.1** | 50 µg | plastic | 57,95 € |

For further information, please see page 1243

## Plate Count Agar

Storage temp.: +20 °C

### Plate Count Agar

**APHA, ISO 4833:2003, for microbiology**

For enumeration of the aerobic microbial flora in milk, foods and other material.

Application: Use 23,5 g for 1 l agar.

**Guarantee analysis:**

Casein peptone ..... 5 g/l
Yeast extract. ..... 2,5 g/l
Glucose ..... 1 g/l
Agar ..... 15 g/l
pH value ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X930.1** | 500 g | plastic | 84,40 € |
| Original pack 6 x 500 g | | | 80,18/500 g |
| **X930.2** | 1 kg | plastic | 157,50 € |
| Original pack 6 x 1 kg | | | 149,63/1 kg |
| **X930.3** | 2,5 kg | plastic | 321,45 € |

For further information, please see page 1394

### Plate Count Agar with Powdered Milk

**APHA, DIN 10192, LMBG, IDF, for microbiology**

For enumeration of microorganisms in milk and dairy derivatives.

Application: Use 24,5 g for 1 l agar.

**Guarantee analysis:**

Tryptone (Peptone from Casein) ..... 5 g/l
Yeast extract. ..... 2,5 g/l
Glucose ..... 1 g/l
Skimmed Milk Powder. ..... 1 g/l
Agar. ..... 15 g/l
pH value ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **HP08.1** | 500 g | plastic | 95,15 € |
| Original pack 6 x 500 g | | | 90,39/500 g |

For further information, please see page 1395

## Plate Count Agar, granulated

### Plate Count Agar, granulated

NEW

**granulated, for microbiology**

For enumeration of the aerobic microbial flora in milk, foods and other material.

Application: Use 23,5 g for 1 l agar.

PCA

Storage temp.: +20 °C

WGK 1

**Formulation:**

Casein peptone ..... 5 g/l
Yeast extract. ..... 2,5 g/l
Glucose ..... 1 g/l
Agar. ..... 15 g/l
pH value ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **1521.1** | 500 g | plastic | 111,80 € |
| Original pack 6 x 500 g | | | 106,21/500 g |

For further information, please see page 1405

## Platinum black

### Platinum black

**98,2-98,7 %**

Platinummoor

Pt

D 21,45 • bp 3827 °C

mp 1772 °C

[7440-06-4] • EC No. 231-116-1

UN No. 3089 • ADR 4.1 III

**Danger** H228

**Type analysis:**

Appearance ..... black, fine powder

| | | | |
|---|---|---|---|
| **8408.1** | 250 mg | glass | 42,90 € |
| **8408.2** | 1 g | glass | 149,45 € |

O/P

## Platinum powder

### Platinum powder
**ROTI®METIC 99,999 % (5N)**
Pt
M 195,08 g/mol
D 21,45 • bp 3827 °C
mp 1768 °C
[7440-06-4] • EC No. 231-116-1
UN No. 3089 • ADR 4.1 III
**Danger** H228

**Type analysis:**
Assay (metals basis)..... 99,999 %
Particle size. ..... ~18 mesh
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5654.1** | 1 g | plastic | 407,45 € |

## Platinum wire

Pt
D 21,45 • bp 3827 °C
mp 1772 °C
[7440-06-4] • EC No. 231-116-1

### Platinum wire
NEW
**≥99,95 %, Ø 0,2 mm**

**Type analysis:**
Assay..... ≥99,95 %
Diameter. ..... 0,2 mm

| | | | |
|---|---|---|---|
| **0737.1** | 25 cm | plastic | 80,55 € |
| **0737.2** | 50 cm | plastic | 149,45 € |
| **0737.3** | 1 m | plastic | 278,45 € |

### Platinum wire
**≥99,9 %, Ø 0,3 mm**

**Type analysis:**
Assay..... ≥99,9 %
Diameter. ..... 0,3 mm

| | | | |
|---|---|---|---|
| **8415.1** | 10 cm | plastic | 72,60 € |
| **8415.2** | 50 cm | plastic | 241,90 € |

### Platinum wire
NEW
**≥99,95 %, Ø 0,5 mm**

**Typanalyse:**
Assay..... ≥99,95 %
Diameter. ..... 0,5 mm

| | | | |
|---|---|---|---|
| **0803.1** | 5 cm | plastic | 75,15 € |
| **0803.2** | 10 cm | plastic | 134,40 € |
| **0803.3** | 25 cm | plastic | 310,70 € |

## Platinum Standards

▶ Platinum AAS Standard Solution see p. 2295
▶ Platinum ICP Standard Solution see p. 2299


## Platinummoor
▶ Platinum black see p. 2155

## Plexit® 55 Röhm, acryl-resin

### Plexit® 55 Röhm, acryl-resin
for embedding, liquid
flp 10 °C
[80-62-6]
UN No. 1866 • ADR 3 II • WGK 2
**Danger** H225-H315-H317-H335

| | | |
|---|---|---|
| **2490.1** | 1 l resin and 10 g catalyst | 50,00 € |
| **2490.2** | 2,5 l resin and 25 g catalyst | 96,25 € |

For further information, please see page 1143

## Plexit® 55 Röhm, catalyst 22 N

### Plexit® 55 Röhm, catalyst 22 N
**liquid**
For use with Plexit® 55 Röhm, acryl-resin
flp 180 °C
[77-90-7]
WGK 2

| | | | |
|---|---|---|---|
| **2494.1** | 50 g | glass | 9,60 € |
| **2494.2** | 250 g | glass | 18,50 € |

For further information, please see page 1143

## Plexit® 55 Röhm, thinner 30

### Plexit® 55 Röhm, thinner 30
**liquid**
For use with Plexit® 55 Röhm, acryl-resin
flp 10 °C
[80-62-6]
UN No. 1247 • ADR 3 II • WGK 1
**Danger** H225-H315-H317-H335

| | | | |
|---|---|---|---|
| **2498.1** | 1 l | glass | 41,85 € |
| Original pack 6 x 1 l | | | 39,76/1 l |

For further information, please see page 1143

## PMA
▶ Propylene glycol methyl ether acetate see p. 2182

## PMSF
▶ Phenylmethyl sulphonyl fluoride (PMSF) see p. 2148

## PNAG
▶ 4-Nitrophenyl-N-acetyl-β-D-glucosaminide see p. 2102

## PNP-α-L-Fuc
▶ 4-Nitrophenyl-α-L-fucopyranoside see p. 2102

## PNPG
▶ 4-Nitrophenyl-α-D-galactopyranoside see p. 2102

## PNP-α-D-Gal
▶ 4-Nitrophenyl-α-D-galactopyranoside see p. 2102

## PNP-β-D-Gal
▶ 4-Nitrophenyl-β-D-galactopyranoside see p. 2103

## PNP-β-D-GalNAc
▶ 4-Nitrophenyl-N-acetyl-β-D-galactosaminide see p. 2102

## PNP-β-D-Glc
▶ 4-Nitrophenyl-β-D-glucopyranoside see p. 2103

## PNP-β-D-GlcNAc
▶ 4-Nitrophenyl-N-acetyl-β-D-glucosaminide see p. 2102

## PNPX
▶ 4-Nitrophenyl-β-D-xyloside see p. 2103

## PNP-β-D-Xyl
▶ 4-Nitrophenyl-β-D-xyloside see p. 2103

## pNPP (tablet)

▶ Roti®fair pNPP 5mg see p. 2214
▶ Roti®fair pNPP 20mg see p. 2214


## Podophyllin

### Podophyllin
**powdered**
From *Podophyllum emodii*
Storage temp.: +4 °C
[9000-55-9] • EC No. 232-546-2
UN No. 2811 • ADR 6.1 II • WGK 3
**Danger**
H300+H310+H330-H314-H360D

**Type analysis:**
Appearance. ..... brown powder
Origin. ..... *Podophyllum emodii*
Identity:
Test A. ..... conforms to USP
Test B. ..... conforms to USP

| | | | |
|---|---|---|---|
| **7525.1** | 5 g | plastic | 125,25 € |

## Polyacrylamide

### Polyacrylamide

**pure**

Flocculating agent, usable in a wide pH range.
$(C_3H_5NO)_n$
M ~15 Mio. g/mol
[9003-05-8]
WGK 2

**Type analysis:**

Insoluble matter. ..... ≤0,5 %
Solids..... ≥87 %

| | | | |
|---|---|---|---|
| **3048.1** | 500 g | plastic | 44,00 € |
| Original pack 6 x 500 g | | | 41,80/500 g |
| **3048.2** | 2,5 kg | plastic | 155,90 € |

## Polyamide

### Polyamide

**for column chromatography**

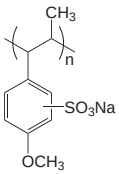
Particle size 0,05-0,16 mm.
Excellent for purification of plant extracts.
Polyamide 6
[63428-84-2]

**Guarantee analysis:**

Appearance. ..... white powder
Particle-size distribution:
>0,315 mm. ..... ≤15 %
pH value ..... 5,5-7,5
Water ..... <5 %
Ash content..... <0,3 %

| | | | |
|---|---|---|---|
| **9620.2** | 100 g | plastic | 59,90 € |
| **9620.1** | 250 g | plastic | 127,50 € |

## Polyanetholesulphonic acid, sodium salt




### Polyanetholesulphonic acid, sodium salt

**for biochemistry**

Sodium polyanetholesulfonate, SPS
$(C_{10}H_{11}NaO_4S)_n$
[55963-78-5]
WGK 3

**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... cream to light brown, amorphous powder
Appearance of solution (20 %, $H_2O$)....yellow to brown
Acetone (GC)..... ≤0,2 %
Ethanol (GC)..... ≤0,2 %
Calcium (Ca)..... ≤0,1 %
Water (KF). ..... 8,0-15,0 %

| | | | |
|---|---|---|---|
| **8369.1** | 5 g | glass | 30,00 € |
| **8369.2** | 25 g | glass | 115,60 € |

## Polyarabinic acid

▶ Arabic acid see p. 1748

## Polydimethyl siloxane

▶ Silicone oil M-series see p. 2258

## Polyethylene glycol 200

### Polyethylene glycol 200

**ROTIPURAN® Ph.Eur.**

Type 200 (liquid), PEG 200, Polyglycol, Polyoxyethylene
M 190-210 g/mol
D 1,12 • bp >250 °C
mp -50 °C • flp 200 °C
[25322-68-3] • EC No. 500-038-2
WGK 1

**Guarantee analysis:**

Appearance (20 °C)..... liquid, clear
Identity..... complies
Average molar mass.....190-210 g/mol
Colour count (APHA, 25 % in $H_2O$)..... ≤30
Hydroxyl value.....534-591 mg KOH/g
pH value (5 % in $H_2O$). ..... 5,0-7,5
Water (KF)..... ≤1,0 %
Viscosity (20 °C)..... 60-67 mPa s
Heavy metals (as Pb). ..... ≤0,0005 %
Ethylene and diethylene glycol. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %
Dioxane. ..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde. ..... ≤0,003 %
Acid reacting substances (0,1 M NaOH / 5 g)...≤0,1 ml
Reducing substances ..... complies

| | | | |
|---|---|---|---|
| **2631.1** | 1 l | plastic | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **2631.2** | 5 l | plastic | 135,35 € |
| Original pack 2 x 5 l | | | 128,58/5 l |

## Polyethylene glycol 300

### Polyethylene glycol 300

**ROTIPURAN® Ph.Eur.**

Type 300 (liquid), PEG 300, Polyglycol, Polyoxyethylene
M 285-315 g/mol
D 1,12 • bp >250 °C
mp -15 / -10 °C • flp 220 °C
[25322-68-3] • EC No. 500-038-2
WGK 1

**Guarantee analysis:**

Appearance (20 °C)..... liquid, clear
Identity..... complies
Average molar mass.....285-315 g/mol
Colour count (APHA, 25 % in $H_2O$)..... ≤15
Hydroxyl value.....356-394 mg KOH/g
pH value (5 % in $H_2O$). ..... 5,0-7,0
Water (KF)..... ≤1,0 %
Viscosity (20 °C)..... 88-96 mPa s
Heavy metals (as Pb). ..... ≤0,0005 %
Ethylene and diethylene glycol. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %
Dioxane. ..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde. ..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)...≤0,1 ml
Reducing substances ..... complies

| | | | |
|---|---|---|---|
| **2632.1** | 1 l | plastic | 31,10 € |
| Original pack 6 x 1 l | | | 29,55/1 l |
| **2632.2** | 5 l | plastic | 109,55 € |
| Original pack 2 x 5 l | | | 104,07/5 l |

## Polyethylene glycol 400

### Polyethylene glycol 400

**ROTIPURAN® Ph.Eur.**

Type 400 (liquid), PEG 400, Polyglycol, Polyoxyethylene
M 380-420 g/mol
D 1,12
flp 240 °C
[25322-68-3] • EC No. 500-038-2
WGK 1

**Guarantee analysis:**

Appearance (20 °C). ..... liquid, clear
Identity. ..... complies
Average molar mass. ..... 380-420 g/mol
Appearance of solution (25 % in $H_2O$)..... complies
Hydroxyl value. ..... 267-295 mg KOH/g
pH value (10 % in $H_2O$). ..... 4,5-7,0
Water. ..... ≤1,0 %
Viscosity (20 °C). ..... 105-130 mPa s
Heavy metals (as Pb). ..... ≤0,0005 %
Ethylene and diethylene glycol. ..... ≤0,25 %
Sulphated ash. ..... ≤0,1 %
Dioxane. ..... ≤0,001 %
Ethylene oxide. ..... ≤0,0001 %
Formaldehyde. ..... ≤0,003 %
Acid/alkaline reac. substances (0,1 M NaOH / 5 g)..... complies
Reducing substances ..... complies

| | | | |
|---|---|---|---|
| **0144.1** | 1 l | plastic | 25,70 € |
| Original pack 6 x 1 l | | | 24,42/1 l |
| **0144.2** | 5 l | plastic | 90,20 € |
| Original pack 2 x 5 l | | | 85,69/5 l |
| **0144.3** | 25 kg | plastic | 304,80 € |

## Polyethylene glycol 600

### Polyethylene glycol 600

**ROTIPURAN® Ph.Eur.**

Type 600 (liquid), PEG 600, Polyglycol, Polyoxyethylene
M 570-630 g/mol
D 1,12
mp 17-22 °C • flp 260 °C
[25322-68-3] • EC No. 500-038-2
WGK 1

**Guarantee analysis:**

Appearance (30 °C). ..... liquid, clear
Identity. ..... complies
Average molar mass. ..... 570-630 g/mol
Colour count (APHA, 25 % in $H_2O$). ..... ≤15
Hydroxyl value. ..... 178-197 mg KOH/g
Solidification point. ..... 17-22 °C
pH value (5 % in $H_2O$). ..... 5,0-7,5
Water (KF). ..... ≤1,0 %
Viscosity (20 °C, 50 % in $H_2O$). ..... 17-18 mPa s
Heavy metals (as Pb). ..... ≤0,0005 %
Ethylene and diethylene glycol. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %
Dioxane. ..... ≤0,0001 %
Ethylene oxide. ..... ≤0,0001 %
Formaldehyde. ..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g). . ≤0,1 ml
Reducing substances ..... complies

| | | | |
|---|---|---|---|
| **2633.1** | 1 l | plastic | 32,15 € |
| Original pack 6 x 1 l | | | 30,54/1 l |
| **2633.2** | 5 l | plastic | 117,20 € |
| Original pack 2 x 5 l | | | 111,34/5 l |

O/P

## Polyethylene glycol 1000

### Polyethylene glycol 1000

**ROTIPURAN® Ph.Eur.**

Type 1000 (solid), PEG 1000, Polyglycol, Polyoxyethylene

M 950-1050 g/mol

bp >250 °C

mp 35-40 °C • flp 270 °C

[25322-68-3] • EC No. 500-038-2

WGK 1

**Guarantee analysis:**

Appearance (20 °C)..... wax like
Identity..... complies
Average molar mass..... 950-1050 g/mol
Colour count (APHA, 25 % in $H_2O$)..... ≤30
Hydroxyl value..... 107-118 mg KOH/g
Solidifying point..... 35-40 °C
pH value (5 %, water)..... 5,0-7,5
Water (KF)..... ≤1,0 %
Viscosity (20 °C, 50 % in $H_2O$)..... 24-28 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Ethylene and diethylene glycol..... ≤0,2 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g).. ≤0,1 ml
Reducing substances ..... complies

| | | | |
|---|---|---|---|
| **0150.3** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **0150.1** | 1 kg | plastic | 31,10 € |
| Original pack 6 x 1 kg | | | 29,55/1 kg |
| **0150.2** | 5 kg | plastic | 109,55 € |

## Polyethylene glycol 1500

### Polyethylene glycol 1500

**ROTIPURAN® Ph.Eur.**

Type 1500 (solid), PEG 1500, Polyglycol, Polyoxyethylene

M 1400-1600 g/mol

D 1,21 • bp >250 °C

mp 44-48 °C • flp 270 °C

[25322-68-3] • EC No. 500-038-2

WGK 1

**Guarantee analysis:**

Appearance (20 °C)..... solid, scaly
Identity..... complies
Average molar mass..... 1400-1600 g/mol
Colour count (APHA, 25 % in $H_2O$)..... ≤30
Hydroxyl value..... 70-80 mg KOH/g
Solidifying point..... 44-48 °C
pH value (5 % in $H_2O$)..... 5,0-7,5
Water (KF)..... ≤1,0 %
Viscosity (20 °C, 50 % in $H_2O$)..... 36-42 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Ethylene and diethylene glycol..... ≤0,20 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)...≤0,1 ml
Reducing substances ..... complies

| | | | |
|---|---|---|---|
| **0152.3** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **0152.1** | 1 kg | plastic | 31,10 € |
| Original pack 6 x 1 kg | | | 29,55/1 kg |
| **0152.2** | 5 kg | plastic | 109,55 € |

## Polyethylene glycol 2000

### Polyethylene glycol 2000

**ROTIPURAN® Ph.Eur.**

Type 2000 (solid), PEG 2000, Polyglycol, Polyoxyethylene

M 1800-2200 g/mol

D 1,21

mp 48-52 °C • flp 270 °C

[25322-68-3] • EC No. 500-038-2

WGK 1

**Guarantee analysis:**

Appearance (20 °C)..... solid, scaly
Identity..... complies
Average molar mass..... 1800-2200 g/mol
Colour count (APHA, 25 % in $H_2O$)..... ≤30
Hydroxyl value..... 51-62 mg KOH/g
Solidifying point..... 48-52 °C
pH value (5 % in $H_2O$)..... 5,0-7,5
Water (KF)..... ≤1,0 %
Viscosity (20 °C, 50 % in $H_2O$)..... 50-58 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Ethylene and diethylene glycol..... ≤0,25 %
Sulphated ash..... ≤0,1 %
Dioxane content (GC)..... ≤0,0001 %
Ethylene oxide (GC)..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)...≤0,1 ml
Reducing substances ..... complies

| | | | |
|---|---|---|---|
| **0154.3** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **0154.1** | 1 kg | plastic | 31,10 € |
| Original pack 6 x 1 kg | | | 29,55/1 kg |
| **0154.2** | 5 kg | plastic | 109,55 € |

## Polyethylene glycol 4000

### Polyethylene glycol 4000

**ROTIPURAN® Ph.Eur.**

Type 4000 (solid), PEG 4000, Polyglycol, Polyoxyethylene

M 3500-4500 g/mol

mp 53-58 °C • flp 270 °C

[25322-68-3] • EC No. 500-038-2

WGK 1

**Guarantee analysis:**

Appearance (20 °C)..... solid, scaly
Identity..... complies
Colour count (APHA, 25 % in $H_2O$)..... ≤30
Hydroxyl value..... 25-30 mg KOH/g
Average molar mass..... 3700-4400 g/mol
Solidifying point..... 53-58 °C
pH value (5 % in $H_2O$)..... 5,0-7,5
Water..... ≤1,0 %
Viscosity (20 °C, 50 % in $H_2O$)..... 114-142 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Ethylene and diethylene glycol..... ≤0,2 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)...≤0,1 ml
Reducing substances ..... complies

| | | | |
|---|---|---|---|
| **0156.3** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **0156.1** | 1 kg | plastic | 32,15 € |
| Original pack 6 x 1 kg | | | 30,54/1 kg |
| **0156.2** | 5 kg | plastic | 117,20 € |

## Polyethylene glycol 6000

### Polyethylene glycol 6000

**ROTIPURAN® Ph.Eur.**

For biochemical applications and molecular biology.

Type 6000 (powdery), PEG 6000, Polyglycol, Polyoxyethylene

M 5000-7000 g/mol

mp 55-60 °C • flp 270 °C

[25322-68-3] • EC No. 500-038-2

WGK 1

**Guarantee analysis:**

Appearance..... powdered
Identity..... complies
Colour count (APHA, 25 % in $H_2O$)..... ≤30
Hydroxyl value..... 17-20 mg KOH/g
Average molar mass..... 5600-6600 g/mol
Solidifying point..... 55-60 °C
pH value (5 % in $H_2O$)..... 5,0-7,0
Water (KF)..... ≤1,0 %
Viscosity (20 °C, 50 % in $H_2O$)..... 210-262 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)..≤0,1 ml
Reducing substances ..... complies

| | | | |
|---|---|---|---|
| **0158.4** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **0158.1** | 1 kg | plastic | 32,15 € |
| Original pack 6 x 1 kg | | | 30,54/1 kg |
| **0158.2** | 5 kg | plastic | 117,20 € |
| **0158.3** | 50 kg | plastic | 858,95 € |

## Polyethylene glycol 8000

### Polyethylene glycol 8000

**ROTIPURAN® Ph.Eur.**

For biochemical applications and molecular biology.

Type 8000 (solid), PEG 8000, Polyglycol, Polyoxyethylene

M 7300-9000 g/mol

mp 55-61 °C • flp 270 °C

[25322-68-3] • EC No. 500-038-2

WGK 1

**Guarantee analysis:**

Appearance..... solid, scaled
Identity..... complies
Average molar mass..... 7300-9000 g/mol
Colour count (APHA, 25 % in $H_2O$)..... ≤30
Hydroxyl value..... 12-16 mg KOH/g
Solidifying point..... 56-61 °C
pH value (5 % in $H_2O$)..... 5,0-7,5
Water (KF)..... ≤1,0 %
Viscosity (20 °C, 50 % in $H_2O$)..... 290-450 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)..≤0,1 ml
Reducing substances ..... complies

| | | | |
|---|---|---|---|
| **0263.1** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **0263.2** | 1 kg | plastic | 31,10 € |
| Original pack 6 x 1 kg | | | 29,55/1 kg |
| **0263.3** | 5 kg | plastic | 109,55 € |

## Polyethylene glycol 10000

### Polyethylene glycol 10000

**ROTIPURAN® Ph.Eur.**

Type 10000 (solid), PEG 10000, Polyglycol, Polyoxyethylene

M 9000-11250 g/mol

D 1,12

mp 55-62 °C • flp 265 °C

[25322-68-3] • EC No. 500-038-2

WGK 1

**Guarantee analysis:**

Appearance (20 °C)..... solid, scaled
Appearance of solution (25 % in $H_2O$)..... clear
Identity..... complies
Average molar mass..... 9000-11250 g/mol
Colour count (APHA, 25 % in $H_2O$)..... ≤30
Hydroxyl value..... 10-12 mg KOH/g
pH value (5 % in $H_2O$)..... 4,5-7,5
Melting point..... 55-62 °C
Water (KF)..... ≤1,0 %
Viscosity (20 °C, 50 % in $H_2O$)..... 550-750 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,003 %
Acid reacting substances (0,1 M NaOH / 5 g).. ≤0,1 ml
Reducing substances . ..... complies

| | | | |
|---|---|---|---|
| **2634.1** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **2634.2** | 1 kg | plastic | 32,15 € |
| Original pack 6 x 1 kg | | | 30,54/1 kg |
| **2634.3** | 5 kg | plastic | 117,20 € |

## Polyethylene glycol 20000

### Polyethylene glycol 20000

**ROTIPURAN® Ph.Eur.**

Type 20000 (solid), PEG 20000, Polyglycol, Polyoxyethylene

M ~20000 g/mol

mp >57 °C • flp 260 °C

[25322-68-3] • EC No. 500-038-2

WGK 1

**Guarantee analysis:**

Appearance (20 °C)..... solid, scales
Identity..... complies
Average molar mass..... ≥16000 g/mol
Colour count (APHA, 25 % in $H_2O$)..... ≤30
Hydroxyl value..... ≤7 mg KOH/g
Solidifying point..... ≥57 °C
pH value (5 % in $H_2O$)..... 4,5-7,5
Water (KF)..... ≤1,0 %
Viscosity (20 °C, 50 % in $H_2O$)..... 2700-3500 mPa s
Heavy metals (as Pb)..... ≤0,0005 %
Sulphated ash..... ≤0,1 %
Dioxane..... ≤0,0001 %
Ethylene oxide..... ≤0,0001 %
Formaldehyde..... ≤0,0015 %
Acid reacting substances (0,1 M NaOH / 5 g)... ≤0,1 ml
Reducing substances . ..... complies

| | | | |
|---|---|---|---|
| **0165.3** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **0165.1** | 1 kg | plastic | 32,15 € |
| Original pack 6 x 1 kg | | | 30,54/1 kg |
| **0165.2** | 5 kg | plastic | 117,20 € |

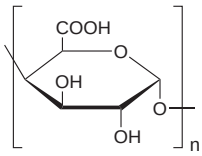
## Polyethylene glycol alkylphenyl ether

▶ Triton® X 100 see p. 2359

## Polyethylene oxide

▶ Polyethylene glycol see p. 2157

## Polygalacturonic acid




### Polygalacturonic acid

**≥85 %**

$(C_6H_8O_6)_n$

M ~25000 g/mol

mp 60 °C

[25990-10-7] • EC No. 205-676-2

**Guarantee analysis:**

Assay (titr.)..... ≥85,0 %
Loss on drying..... ≤10,0 %
pH value (1 % in $H_2O$)..... 2,5-3,5
Sulphated ash..... ≤2,0 %
Heavy metals (as Pb)..... ≤0,004 %

| | | | |
|---|---|---|---|
| **5269.1** | 25 g | plastic | 24,65 € |
| **5269.2** | 100 g | plastic | 67,20 € |

## Polyglycol

▶ Polyethylene glycol see p. 2157

## Polymerase (thermostable)

▶ Roti®-Pol Hot-TaqUltra see p. 2229
▶ Roti®-Pol Hot-TaqHY see p. 2229
▶ Roti®-Pol Hot-TaqS see p. 2229
▶ Roti®-Pol Hot-TaqS Mix (2x) see p. 2229
▶ Roti®-Pol Hot-TaqS Red-Mix (2x) see p. 2230
▶ Roti®-Pol ProofRead see p. 2230
▶ Roti®-Pol TaqUltra see p. 2230
▶ Roti®-Pol TaqHY see p. 2230
▶ Roti®-Pol TaqS see p. 2230
▶ Roti®-Pol TaqS Mix (2x) see p. 2230
▶ Roti®-Pol TaqS Red-Mix (2x) see p. 2230

## Polymer microparticle suspension

▶ McFarland BSS 0,5 see p. 2060
▶ McFarland PMS 0,5 see p. 2060

## Polymyxin B sulphate

### Polymyxin B sulphate

**≥80 %, for biochemistry**

Bacteriostatic antibiotic, peptide antibiotic

Aerosporin

$C_{55}H_{96}N_{16}O_{13} \cdot 2\ H_2SO_4$

M 1385,63 g/mol

Storage temp.: +4 °C

[1405-20-5] • EC No. 215-774-7

WGK 1

**Warning** H302

**Guarantee analysis:**

Assay (HPLC)..... ≥80 %
pH value (2 % in $H_2O$)..... 5,0-7,0
Specific rotation $[\alpha]_D^{20}$ (2 % in $H_2O$)..... -90° to -78°
Sulphate ($SO_4$)..... 15,5-17,5 %
Sulphated ash..... ≤0,75 %
Loss on drying..... ≤5,0 %

| | | | |
|---|---|---|---|
| **0235.1** | 1 g | glass | 47,20 € |
| **0235.2** | 5 g | glass | 192,45 € |
| **0235.3** | 10 g | glass | 342,95 € |

For further information, please see page 1433

## Polymyxin $E_1$-disulphate

▶ Colistinsulphate see p. 1840

## Polyoxyethylene

▶ Polyethylene glycol see p. 2157

## Polyoxyethylene-20-sorbitan monolaurate

▶ Tween® 20 see p. 2363

## Polyoxyethylene-40-sorbitan monooleate

▶ Tween® 80 see p. 2363

## Polyoxyethylene-40-sorbitan monopalmitate

▶ Tween® 40 see p. 2363

## Polyoxyethylene-60-sorbitan monostearate

▶ Tween® 60 see p. 2363

## Polyoxymethylene

▶ Paraformaldehyde see p. 2131

## Polypeptone

### Polypeptone
**for microbiology**
Storage temp.: +20 °C
WGK 1

**Type analysis:**
Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,7 %
Loss on drying. .....≤6 %
Ash. .....≤15 %
pH (2 % solution). .....6,5-7,5

| | | | |
|---|---|---|---|
| **2903.1** | 250 g | plastic | 50,45 € |
| **2903.2** | 500 g | plastic | 95,60 € |
| Original pack 6 x 500 g | | | 90,82/500 g |
| **2903.3** | 1 kg | plastic | 174,70 € |
| Original pack 6 x 1 kg | | | 165,97/1 kg |

For further information, please see page 1422

## Polyphenylethylene
▶ Polystyrene see p. 2160

## Polysorbate
▶ Tween® 20 see p. 2363
▶ Tween® 40 see p. 2363
▶ Tween® 60 see p. 2363
▶ Tween® 80 see p. 2363

## Polystyrene

### Polystyrene
**granulated**
M ~320 000 g/mol
D ~1,05
[9003-53-6] • EC No. 500-008-9

**Type analysis:**
Appearance. ..... colourless granules
Density (DIN 53479). ..... 1,05
Vicat softening point. ..... 85 °C

| | | | |
|---|---|---|---|
| **9151.1** | 1 kg | plastic | 26,35 € |
| Original pack 6 x 1 kg | | | 25,03/1 kg |

## Polysucrose 400

### Polysucrose 400
**BioScience-Grade, for molecular biology and biochemistry**
For density gradient centrifugation during cell separation and isolation of cell organelles.
Sucrose polymer, Sucrose-epichlorhydrin copolymer
$(C_{12}H_{22}O_{11})_n$ x $(C_3H_5ClO)_n$
M 450000 ±100000 g/mol
Storage temp.: +20 °C
[26873-85-8]

**Type analysis:**
Appearance. .....white powder
Loss on drying. .....≤5 %
Specific optical rotation $[\alpha]_D^{20}$. ..... +53° to +59°
Intrinsic viscosity (20 °C). .....0,14-0,20
pH value (10 % in $H_2O$).....7,0-9,0
Sulphated ash.....≤0,3 %
Chloride (Cl). .....≤500 ppm

| | | | |
|---|---|---|---|
| **4668.1** | 10 g | plastic | 27,85 € |
| **4668.2** | 25 g | plastic | 64,40 € |
| **4668.3** | 100 g | plastic | 213,95 € |

For further information, please see page 1239

## Polysucrose solution
▶ Roti®-Sep 1077 see p. 2232

## Polyvidon
▶ Polyvinylpyrrolidone K 12 see p. 2160
▶ Polyvinylpyrrolidone K 25 see p. 2160
▶ Polyvinylpyrrolidone K 30 see p. 2160
▶ Polyvinylpyrrolidone K 90 see p. 2161

## Polyvinyl acetate

### Polyvinyl acetate
**extra pure**
D 1,18
mp 96-102 °C
[9003-20-7]
WGK 1

**Type analysis:**
Softening point. .....119 °C
Viscosity (10 % in ethyl acetate)..... 3,5-5,0 mPa s
Density. ..... 1,18 ±0,01
Acid value.....<0,5 mg KOH/g
Molecular weight. ..... 55000-70000

| | | | |
|---|---|---|---|
| **9154.1** | 1 kg | plastic | 56,90 € |
| Original pack 6 x 1 kg | | | 54,06/1 kg |

## Polyvinyl alcohol
▶ Mowiol®4-88 see p. 2084

## Polyvinylbenzene
▶ Polystyrene see p. 2160

## Polyvinyl chloride

### Polyvinyl chloride
**powdered**
PVC
M 30000-40000 g/mol
D 1,4

**Type analysis:**
Appearance..... white to off-white powder
K-value. ..... 42 ±1
Chlorine (Cl). ..... 47,5 % ±0,6 %
Volatile parts..... <1,0 %
Viscosity (20 % in MEK). .....28 ±5 mPa s

| | | | |
|---|---|---|---|
| **9163.1** | 250 g | plastic | 25,70 € |
| **9163.2** | 1 kg | plastic | 64,40 € |
| Original pack 6 x 1 kg | | | 61,18/1 kg |

## Polyvinylpyrrolidone K 12

### Polyvinylpyrrolidone K 12
**CELLPURE®**
PVP, Polyvidone, Povidon
$(C_6H_9NO)_n$
M 2000-3000 g/mol
Solubility: >800 g/l ($H_2O$, 23 °C)
[9003-39-8]
WGK 1

**Type analysis:**
Endotoxins. .....tested
Appearance..... white to off-white powder
K-value. ..... 10,2-13,8
Nitrogen content (N). ..... 11,5-12,8 %
Identity (IR). ..... complies
Clearness (5 % in $H_2O$). ..... clear
Water (KF). .....≤5,0 %
Sulphated ash. .....≤0,1 %
pH value (5 % in $H_2O$). .....3,0-5,0
Vinylpyrrolidone (HPLC). .....≤0,001 %
2-Pyrrolidone (HPLC).....≤3,0 %
Heavy metals. .....≤0,001 %
Aldehyde.....≤0,05 %
Hydrazine.....≤0,0001 %
Peroxides (as $H_2O_2$).....≤0,04 %

| | | | |
|---|---|---|---|
| **7598.1** | 100 g | plastic | 24,20 € |
| **7598.2** | 500 g | plastic | 96,65 € |
| Original pack 6 x 500 g | | | 91,82/500 g |

## Polyvinylpyrrolidone K 25

### Polyvinylpyrrolidone K 25
**extra pure**
PVP, Polyvidone, Povidon
$(C_6H_9NO)_n$
M ~24000 g/mol
[9003-39-8]
WGK 1

**Type analysis:**
Appearance. .....white powder
K-value.....22,5-27,0
Nitrogen content (N).....11,5-12,8 %
Clearness (5 % in $H_2O$). ..... clear
Water (KF). .....≤5,0 %
Sulphated ash. .....≤0,1 %
pH value (5 % in $H_2O$). .....3,0-5,0
Vinylpyrrolidone (HPLC). .....≤0,001 %
Heavy metals. .....≤0,001 %
Aldehyde.....≤0,05 %
Hydrazine.....≤0,0001 %
Peroxides (as $H_2O_2$).....≤0,04 %

| | | | |
|---|---|---|---|
| **4606.1** | 100 g | plastic | 20,35 € |
| **4606.2** | 500 g | plastic | 57,95 € |
| Original pack 6 x 500 g | | | 55,05/500 g |

## Polyvinylpyrrolidone K 30

### Polyvinylpyrrolidone K 30
**extra pure**
Molecularbiology
PVP, Polyvidone, Povidon
$(C_6H_9NO)_n$
M ~40000 g/mol
[9003-39-8]
WGK 1

**Type analysis:**
Appearance. .....white powder
K-value.....27,0-32,4
Nitrogen content (N).....11,5-12,8 %
Clearness (5 % in $H_2O$). ..... clear
Water (KF). .....≤5,0 %
Sulphated ash. .....≤0,1 %
pH value (5 % in $H_2O$). .....3,0-5,0
Vinylpyrrolidone (HPLC). .....≤0,001 %
Heavy metals. .....≤0,001 %
Aldehyde.....≤0,05 %
Hydrazine.....≤0,0001 %
Peroxides (as $H_2O_2$).....≤0,04 %

| | | | |
|---|---|---|---|
| **4607.1** | 100 g | plastic | 22,05 € |
| **4607.2** | 500 g | plastic | 72,60 € |
| Original pack 6 x 500 g | | | 68,97/500 g |

## Polyvinylpyrrolidone K 90

### Polyvinylpyrrolidone K 90

**extra pure**

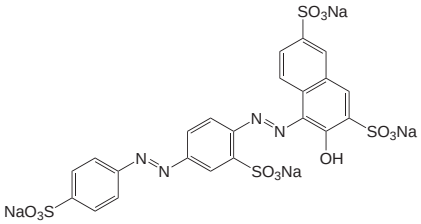
Molecularbiology
PVP, Polyvidone, Povidon
$(C_6H_9NO)_n$
M ~360000 g/mol
[9003-39-8]
WGK 1

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| K-value | 81,0-97,2 |
| Nitrogen content (N) | 11,5-12,8 % |
| Clearness (5 % in $H_2O$) | clear |
| Water (KF) | ≤5,0 % |
| pH value (5 % in $H_2O$) | 4,0-7,0 |
| Vinylpyrrolidone (HPLC) | ≤0,001 % |
| Heavy metals | ≤0,001 % |
| Aldehydes | ≤0,05 % |
| Hydrazine | ≤0,0001 % |
| Peroxides (as $H_2O_2$) | ≤0,04 % |

| | | | |
|---|---|---|---|
| **CP15.1** | 100 g | plastic | 22,05 € |
| **CP15.2** | 500 g | plastic | 72,60 € |
| Original pack 6 x 500 g | | | 68,97/500 g |

## Ponceau S (C.I. 27195)




### Ponceau S (C.I. 27195)

**for histology and electrophoresis**

For reversible protein staining on membranes and for microscopy.
Scarlet red
$C_{22}H_{12}N_4Na_4O_{13}S_4$
M 760,56 g/mol
Solubility: 10 g/l ($H_2O$, 20 °C)
[6226-79-5] • EC No. 228-319-2
WGK 3

**Warning** H315-H319-H335

**Type analysis:**

| | |
|---|---|
| Absorption max. (in $H_2O$) | 517-523 nm |
| Specific extinction E 1 %/1 cm | >460 |
| Loss on drying (110 °C) | ≤10 % |

| | | | |
|---|---|---|---|
| **5938.2** | 10 g | glass | 25,70 € |
| **5938.1** | 25 g | glass | 52,15 € |

For further information, please see page 1466

## Ponceau de Xylidine

▶ Xylidine Ponceau 2R (C.I. 16150) see p. 2382

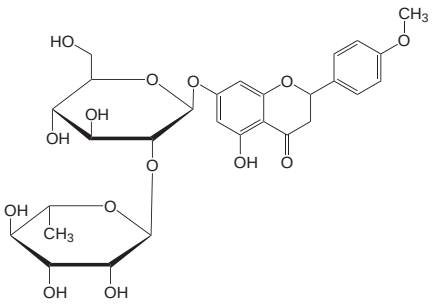
## Ponceau-Fuchsin solution

▶ Goldner's staining I see p. 1964

## Ponceau 4G

▶ Crocein orange G (C.I. 15970) see p. 1848

## Poncirin




### Poncirin

**ROTICHROM® HPLC**

Reference substance for HPLC.
$C_{28}H_{34}O_{14}$
M 594,56 g/mol
Storage temp.: +4 °C
[14941-08-3] • EC No. 239-020-1

**Type analysis:**

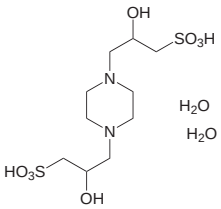
| | |
|---|---|
| Purity (HPLC) | ≥97 % |

| | | | |
|---|---|---|---|
| **7413.1** | 10 mg | plastic | 241,90 € |

## POPOP

▶ 1,4-Bis[2-(5-phenyloxazolyl)]-benzene see p. 1776

## POPSO




### POPSO

**PUFFERAN® ≥99 %**

Piperazine-N,N'-bis(2-hydroxypropane sulphonic acid)
$C_{10}H_{22}N_2O_8S_2 \cdot 2\ H_2O$
M 398,5 g/mol
mp 320 °C
[68189-43-5] • EC No. 269-199-1

**Type analysis:**

| | |
|---|---|
| Assay (titr.) | ≥99 % |
| Water (KF) | ~9,0 % |

| | | | |
|---|---|---|---|
| **6632.1** | 25 g | plastic | 38,60 € |
| **6632.2** | 100 g | plastic | 122,05 € |

For further information, please see page 1268

## POPSO 1,5 Na

### POPSO 1,5 Na

**PUFFERAN® ≥99 %**

Piperazine-N,N'-bis(2-hydroxypropane sulphonic acid) 1,5 Na
$C_{20}H_{41}N_4Na_3O_{16}S_4$
M 790,79 g/mol
[108321-08-0]

**Type analysis:**

| | |
|---|---|
| Assay (titr. dry substance) | ≥99,0 % |
| Water (KF) | ≤1,0 % |
| pH value (1 % solution) | 7,9-8,5 |
| UV-absorption (0,1 M in $H_2O$): | |
| 280 nm | ≤0,04 |
| 260 nm | ≤0,06 |

| | | | |
|---|---|---|---|
| **6965.1** | 25 g | plastic | 59,70 € |
| **6965.2** | 100 g | plastic | 181,70 € |

For further information, please see page 1268

## Potash

▶ Potassium carbonate see p. 2163

## Potassium Standards

▶ Potassium AAS Standard Solution see p. 2295
▶ Potassium ICP Standard Solution see p. 2299
▶ Potassium ICP Standard Solution see p. 2304
▶ Potassium IC Standard Solution see p. 2312

## Potassium hydrogen tartrate

### Potassium hydrogen tartrate

**≥99,5 %, extra pure**

Cream of tartar, Potassium acid tartrate, Potassium bitartrate
$C_4H_5KO_6$
M 188,18 g/mol
D 1,95
mp ~250 °C (dec.)
Solubility: ~6 g/l ($H_2O$, 20 °C)
[868-14-4] • EC No. 212-769-1
WGK 1

**Type analysis:**

| | |
|---|---|
| Assay (acidim., dry substance) | ≥99,5 % |
| Specific rotation $[\alpha]_D^{20}$ (dry substance) | +8,0° to +9,2° |
| Oxalic acid ($C_2H_2O_4$) | ≤0,05 % |
| Chloride (Cl) | ≤0,05 % |
| Sulphate ($SO_4$) | ≤0,05 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Loss on drying (105 °C) | ≤0,5 % |

| | | | |
|---|---|---|---|
| **8645.1** | 100 g | plastic | 12,40 € |
| **8645.2** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **8645.3** | 1 kg | plastic | 46,80 € |
| Original pack 6 x 1 kg | | | 44,46/1 kg |

## Potassium acetate

$K(CH_3COO)$
M 98,15 g/mol
D 1,57
mp 292 °C • flp >250 °C
Solubility: 2530 g/l ($H_2O$, 20 °C)
[127-08-2] • EC No. 204-822-2
WGK 1

### Potassium acetate

**≥99 %, p.a.**
Buffer substance, molecular biology

**Guarantee analysis:**

Assay (perchloric acid titration)..... ≥99,0 %
In $H_2O$ insoluble matter..... ≤0,005 %
pH value (5 % solution)..... 6,5-9,0
Nitrogen compounds (as N)..... ≤0,001 %
Phosphate ($PO_4$)..... ≤0,005 %
Chloride (Cl)..... ≤0,002 %
Sulphate ($SO_4$)..... ≤0,005 %
Arsenic (As)..... ≤0,0001 %
Lead (Pb)..... ≤0,0005 %
Cadmium (Cd)..... ≤0,0005 %
Calcium (Ca)..... ≤0,005 %
Iron (Fe)..... ≤0,0005 %
Cobalt (Co)..... ≤0,0005 %
Copper (Cu)..... ≤0,0005 %
Magnesium (Mg)..... ≤0,005 %
Sodium (Na)..... ≤0,25 %
Nickel (Ni)..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **T874.1** | 500 g | plastic | 34,30 € |
| Original pack 6 x 500 g | | | 32,59/500 g |
| **T874.2** | 1 kg | plastic | 52,60 € |
| Original pack 6 x 1 kg | | | 49,97/1 kg |
| **T874.3** | 2,5 kg | plastic | 101,60 € |
| **T874.5** | 25 kg | plastic | 686,95 € |

For further information, please see page 1269

### Potassium acetate

**CELLPURE® ≥99 %**
For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins..... ≤6,0 E.U./g
Assay (dry substance)..... ≥99 %
Appearance of solution..... complies
pH value (5 % solution)..... 7,5-9,0
Chloride (Cl)..... ≤0,02 %
Sulphate ($SO_4$)..... ≤0,02 %
Heavy metals (as Pb)..... ≤0,0004 %
Iron (Fe)..... ≤0,002 %
Sodium (Na)..... ≤0,5 %
Reducing substances..... complies
Loss on drying (105 °C)..... ≤3,0 %

| | | | |
|---|---|---|---|
| **HN10.1** | 250 g | plastic | 22,80 € |
| **HN10.2** | 500 g | plastic | 36,05 € |
| Original pack 6 x 500 g | | | 34,25/500 g |
| **HN10.3** | 1 kg | plastic | 55,80 € |
| Original pack 6 x 1 kg | | | 53,01/1 kg |
| **HN10.4** | 2,5 kg | plastic | 121,40 € |

### Potassium acetate

**≥99 %, Ph.Eur., BP**
Buffer substance, molecular biology

**Guarantee analysis:**

Assay (perchloric acid titration, dry substance)..... 99,0-101,0 %
Identity..... complies
Appearance of solution..... complies
pH value (5 % in water)..... 7,5-9,0
Chloride (Cl)..... ≤0,02 %
Sulphate ($SO_4$)..... ≤0,02 %
Heavy metals (as Pb)..... ≤0,0004 %
Iron (Fe)..... ≤0,002 %
Sodium (Na)..... ≤0,5 %
Reducing substances..... complies
Loss on drying (105 °C)..... ≤3,0 %

| | | | |
|---|---|---|---|
| **4986.1** | 1 kg | plastic | 40,75 € |
| Original pack 6 x 1 kg | | | 38,71/1 kg |
| **4986.2** | 5 kg | plastic | 115,60 € |
| **4986.5** | 25 kg | plastic | 450,45 € |

## Potassium acid tartrate

▶ Potassium hydrogen tartrate see p. 2161

## Potassium alum

▶ Potassium aluminium sulphate dodecahydrate see p. 2162

## Potassium aluminium sulphate dodecahydrate

Aluminium potassium sulphate, Potassium Alum
$KAl(SO_4)_2 \cdot 12\ H_2O$
M 474,39 g/mol
D 1,73
mp ~92 °C
Solubility: 139 g/l ($H_2O$, 20 °C)
[7784-24-9] • EC No. 233-141-3
WGK 1

### Potassium aluminium sulphate dodecahydrate

**≥98 %, p.a., ACS**

**Guarantee analysis:**

Assay (compl.)..... 98,0-102,0 %
pH value (5 % in water)..... ≥3,0
In $H_2O$ insoluble matter..... ≤0,005 %
Chloride (Cl)..... ≤0,0005 %
Phosphate ($PO_4$)..... ≤0,0005 %
Ammonium ($NH_4$)..... ≤0,005 %
Arsenic (As)..... ≤0,0002 %
Lead (Pb)..... ≤0,0005 %
Cadmium (Cd)..... ≤0,0005 %
Chromium (Cr)..... ≤0,0005 %
Iron (Fe)..... ≤0,0005 %
Cobalt (Co)..... ≤0,0005 %
Copper (Cu)..... ≤0,0005 %
Manganese (Mn)..... ≤0,0005 %
Sodium (Na)..... ≤0,02 %
Nickel (Ni)..... ≤0,0005 %
Heavy metals (as Pb)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **P724.2** | 500 g | plastic | 25,70 € |
| Original pack 6 x 500 g | | | 24,42/500 g |
| **P724.1** | 1 kg | plastic | 45,70 € |
| Original pack 6 x 1 kg | | | 43,42/1 kg |
| **P724.3** | 2,5 kg | plastic | 96,25 € |

### Potassium aluminium sulphate dodecahydrate

**≥99 %, Ph.Eur.**

**Guarantee analysis:**

Appearance..... fine, white crystals
Assay..... 99,0-100,5 %
Identity..... complies
Loss on drying..... 43-46 %
Appearance of solution..... complies
pH value (10 % in $H_2O$)..... 3,0-3,5
Ammonium ($NH_4$)..... ≤0,2 %
Iron (Fe)..... ≤0,01 %
Heavy metals (as Pb)..... ≤0,002 %
Arsenic (As)..... ≤0,0003 %

| | | | |
|---|---|---|---|
| **CN78.1** | 500 g | plastic | 19,25 € |
| Original pack 6 x 500 g | | | 18,29/500 g |
| **CN78.2** | 1 kg | plastic | 27,85 € |
| Original pack 6 x 1 kg | | | 26,46/1 kg |
| **CN78.3** | 5 kg | plastic | 99,90 € |

### Potassium aluminium sulphate dodecahydrate

**≥98 %**

**Type analysis:**

Assay..... ≥98,0 %
pH value (10 % in $H_2O$)..... 3,0-3,5
Iron (Fe)..... ≤0,02 %
Lead (Pb)..... ≤0,03 %
Insoluble matter..... ≤0,01 %

| | | | |
|---|---|---|---|
| **8896.1** | 1 kg | plastic | 16,05 € |
| Original pack 6 x 1 kg | | | 15,25/1 kg |
| **8896.2** | 5 kg | plastic | 40,75 € |
| **8896.3** | 10 kg | plastic | 71,50 € |
| **8896.4** | 25 kg | plastic | 160,20 € |

## Potassium bicarbonate

▶ Potassium hydrogen carbonate see p. 2168

## Potassium bichromate

▶ Potassium dichromate see p. 2165

## Potassium biphosphate

▶ Potassium dihydrogen phosphate see p. 2166

## Potassium biphthalate

▶ Potassium hydrogen phthalate see p. 2169

## Potassium bisulphate

▶ Potassium hydrogen sulphate see p. 2169

## Potassium bitartrate

▶ Potassium hydrogen tartrate see p. 2161

## Potassium bromate

### Potassium bromate

**≥99,8%, p.a., ACS, ISO**

Standard substance for oxidimetric titrations, powerful bromination reagent.

$KBrO_3$
M 167,01 g/mol
mp 409-413 °C
Solubility: 69 g/l ($H_2O$, 20 °C)
[7758-01-2] • EC No. 231-829-8
UN No. 1484 • ADR 5.1 II • WGK 2

**Danger** H271-H301-H350

**Guarantee analysis:**

Assay (iodom.)....≥99,8 %
In $H_2O$ insoluble matter....≤0,003 %
pH value (5 % in $H_2O$)....5,0-9,0
Loss on drying (150 °C)....≤0,1 %
Total nitrogen (N)....≤0,001 %
Bromide (Br)....≤0,02 %
Sulphate ($SO_4$)....≤0,005 %
Cadmium (Cd)....≤0,0005 %
Calcium (Ca)....≤0,005 %
Iron (Fe)....≤0,0005 %
Sodium (Na)....≤0,01 %
Nickel (Ni)....≤0,0005 %
Zinc (Zn)....≤0,0005 %
Heavy metals (as Pb)....≤0,0005 %

| | | | |
|---|---|---|---|
| **4396.1** | 100 g | plastic | 46,15 € |
| **4396.2** | 250 g | plastic | 103,75 € |
| **4396.3** | 500 g | plastic | 186,55 € |
| Original pack 6 x 500 g | | | 177,22/500 g |

## Potassium bromide

KBr
M 119,00 g/mol
D 2,75 • bp 1435 °C
mp 730 °C
Solubility: 650 g/l ($H_2O$, 20 °C)
[7758-02-3] • EC No. 231-830-3
WGK 1

**Warning** H319

### Potassium bromide

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**

Assay (metals basis)....99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5064.1** | 10 g | plastic | 103,75 € |
| **5064.2** | 50 g | plastic | 354,75 € |

### Potassium bromide

**≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay (arg.)....≥99,0 %
In $H_2O$ insoluble matter....≤0,005 %
pH value (5 % solution)....5,0-8,8
Bromate ($BrO_3$)....≤0,001 %
Chloride (Cl)....≤0,2 %
Iodate ($IO_3$)....≤0,001 %
Iodide (I)....≤0,001 %
Sulphate ($SO_4$)....≤0,005 %
Total nitrogen (as N)....≤0,005 %
Heavy metals (as Pb)....≤0,0005 %
Barium (Ba)....≤0,002 %
Calcium (Ca)....≤0,002 %
Iron (Fe)....≤0,0005 %
Magnesium (Mg)....≤0,001 %
Sodium (Na)....≤0,02 %

| | | | |
|---|---|---|---|
| **A137.1** | 100 g | plastic | 20,65 € |
| **A137.2** | 500 g | plastic | 39,25 € |
| Original pack 6 x 500 g | | | 37,29/500 g |
| **A137.3** | 1 kg | plastic | 69,35 € |
| Original pack 6 x 1 kg | | | 65,88/1 kg |

### Potassium bromide

**≥98 %, Ph.Eur.**

**Guarantee analysis:**

Assay (arg., dry substance)....98,5-101,0 %
Identity....complies
Appearance of solution....complies
Acid or alkaline react. substances....complies
Loss on drying (105 °C)....≤1,0 %
Chloride (Cl)....≤0,6 %
Sulphate ($SO_4$)....≤0,01 %
Iodide (I)....complies
Bromate ($BrO_3$)....complies
Heavy metals (as Pb)....≤0,001 %
Iron (Fe)....≤0,002 %
Mg and alkaline-earth metals (as Ca)....≤0,02 %

| | | | |
|---|---|---|---|
| **9252.1** | 250 g | plastic | 35,40 € |
| **9252.2** | 1 kg | plastic | 91,95 € |
| Original pack 6 x 1 kg | | | 87,35/1 kg |

### Potassium bromide

**for IR spectrometry**

Embedding reagent for the manufacture of KBr pellets.

**Typ analysis:**

Suitability for IR spectrometry....complies

| | | | |
|---|---|---|---|
| **CP19.2** | 50 g | plastic | 36,05 € |
| **CP19.1** | 100 g | plastic | 61,20 € |

## Potassium bromide bromate solution

▶ Bromide bromate solution (0,1 N) see p. 1786

## Potassium bromide solution (0,1 N)

### Potassium bromide solution

**0,1 mol/l - 0,1 N volumetric standard solution**

**Type analysis:**

Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,5 %
Titer....0,995-1,005

| | | | |
|---|---|---|---|
| **8130.1** | 1 l | plastic | 69,80 € |
| Original pack 6 x 1 l | | | 66,31/1 l |

## Potassium carbonate

Potash
$K_2CO_3$
M 138,21 g/mol
D 2,43
mp 891 °C
Solubility: 1120 g/l ($H_2O$, 20 °C)
[584-08-7] • EC No. 209-529-3
WGK 1

**Warning** H315-H319-H335

### Potassium carbonate

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**

Assay (metals basis)....99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5335.1** | 10 g | plastic | 46,15 € |
| **5335.2** | 50 g | plastic | 146,10 € |

### Potassium carbonate

**≥99 %, p.a., ACS**

Drying agent, disintegrating agent

**Guarantee analysis:**

Assay (acidim., dry substance)....≥99,0 %
In $H_2O$ insoluble matter....≤0,005 %
Loss on drying (300 °C)....≤1,0 %
Nitrogen compounds (as N)....≤0,001 %
Sulphur compounds (as $SO_4$)....≤0,003 %
Chloride (Cl)....≤0,002 %
Phosphate ($PO_4$)....≤0,001 %
Aluminium (Al)....≤0,001 %
Arsenic (As)....≤0,0001 %
Lead (Pb)....≤0,0005 %
Calcium (Ca)....≤0,002 %
Iron (Fe)....≤0,0005 %
Copper (Cu)....≤0,0005 %
Magnesium (Mg)....≤0,002 %
Sodium (Na)....≤0,02 %
Nickel (Ni)....≤0,0005 %
Heavy metals (as Pb)....≤0,0005 %

| | | | |
|---|---|---|---|
| **P743.1** | 500 g | plastic | 26,35 € |
| Original pack 6 x 500 g | | | 25,03/500 g |
| **P743.2** | 1 kg | plastic | 40,75 € |
| Original pack 6 x 1 kg | | | 38,71/1 kg |
| **P743.3** | 2,5 kg | plastic | 88,70 € |

## Potassium carbonate

**≥99 %, Ph.Eur.**

**Guarantee analysis:**

Appearance. ..... white to off-white powder
Assay (dry substance). ..... 99,0-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,001 %
Loss on drying (120 °C). ..... ≤5,0 %

| | | | |
|---|---|---|---|
| **X894.1** | 500 g | plastic | 17,10 € |
| Original pack 6 x 500 g | | | 16,25/500 g |
| **X894.2** | 1 kg | plastic | 25,30 € |
| Original pack 6 x 1 kg | | | 24,04/1 kg |
| **X894.3** | 2,5 kg | plastic | 53,65 € |

## Potassium carbonate

**≥98 %**

**Type analysis:**

Assay ($K_2CO_3$). ..... ≥98,0 %
Sodium (Na). ..... ≤0,25 %

| | | | |
|---|---|---|---|
| **7956.1** | 1 kg | plastic | 17,75 € |
| Original pack 6 x 1 kg | | | 16,86/1 kg |
| **7956.2** | 5 kg | plastic | 62,25 € |
| **7956.5** | 25 kg | plastic | 203,20 € |

## Potassium chlorate

$KClO_3$
M 122,55 g/mol
D 2,32 • bp 400 °C (dec.)
mp 368 °C
Solubility: ~73 g/l ($H_2O$, 20 °C)
[3811-04-9] • EC No. 223-289-7
UN No. 1485 • ADR 5.1 II • WGK 2

**Danger** H271-H302+H332-H411

## Potassium chlorate

**≥99 %, p.a., ACS**

Oxidant

**Guarantee analysis:**

Assay. ..... ≥99,0 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Bromate ($BrO_3$). ..... ≤0,015 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,002 %
Heavy metals (as Pb). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,002 %
Iron (Fe). ..... ≤0,0003 %
Magnesium (Mg). ..... ≤0,002 %
Sodium (Na). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **HN27.1** | 100 g | plastic | 15,30 € |
| **HN27.2** | 250 g | plastic | 23,15 € |
| **HN27.3** | 500 g | plastic | 35,40 € |
| Original pack 6 x 500 g | | | 33,63/500 g |

## Potassium chlorate

**≥99,7 % cryst.**

Oxidation reagent

**Type analysis:**

Appearance. ..... white
Assay. ..... ≥99,7 %
Water content. ..... ≤0,05 %
Insoluble matter. ..... ≤0,45 %
The parameter 'Insoluble' consider insoluble contents of the anti-caking agent.

| | | | |
|---|---|---|---|
| **7959.1** | 1 kg | tin plate | 32,15 € |
| Original pack 6 x 1 kg | | | 30,54/1 kg |
| **7959.2** | 5 kg | tin plate | 116,00 € |

## Potassium chloride

KCl
M 74,56 g/mol
D 1,984 • bp 1413 °C
mp 770 °C
Solubility: 330 g/l ($H_2O$, 20 °C)
[7447-40-7] • EC No. 231-211-8
WGK 1

## Potassium chloride

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**

Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5346.1** | 25 g | plastic | 74,10 € |
| **5346.2** | 100 g | plastic | 214,50 € |

## Potassium chloride

**≥99,5 %, p.a., ACS, ISO**

Reagent for buffer solutions, for molecular biology.

**Guarantee analysis:**

Assay (arg.). ..... 99,5-100,5 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
pH value (5 % solution). ..... 5,4-8,0
Bromide (Br). ..... complies
Iodide (I). ..... ≤0,002 %
Phosphate ($PO_4$). ..... ≤0,0005 %
Sulphate ($SO_4$). ..... ≤0,001 %
Chlorate and nitrate (as $NO_3$). ..... ≤0,003 %
Total nitrogen (as N). ..... ≤0,001 %
Loss on drying (150 °C). ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,0005 %
Barium (Ba). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,002 %
Cadmium (Cd). ..... ≤0,0005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0002 %
Magnesium (Mg). ..... ≤0,001 %
Sodium (Na). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,002 %
Lead (Pb). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **6781.3** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **6781.1** | 1 kg | plastic | 25,30 € |
| Original pack 6 x 1 kg | | | 24,04/1 kg |
| **6781.2** | 5 kg | plastic | 100,95 € |
| **6781.5** | 25 kg | plastic | 385,95 € |

## Potassium chloride

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤3,0 I.U./g
Assay (dry substance). ..... ≥99 %
Appearance of solution. ..... complies
Loss on drying. ..... ≤0,5 %
Bromide (Br). ..... ≤0,1 %
Iodide (I). ..... complies
Sulphate ($SO_4$). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,0005 %
Aluminium (Al). ..... ≤0,00002 %
Arsenic (As). ..... ≤0,0002 %
Iron (Fe). ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **HN02.1** | 250 g | plastic | 16,05 € |
| **HN02.2** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **HN02.3** | 1 kg | plastic | 33,90 € |
| Original pack 6 x 1 kg | | | 32,21/1 kg |
| **HN02.4** | 2,5 kg | plastic | 63,35 € |

## Potassium chloride

**≥99 %, Ph.Eur., USP, BP**

**Guarantee analysis:**

Assay (dry substance). ..... 99,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
Loss on drying (105 °C). ..... ≤1,0 %
Free acid, free alkali. ..... complies
Volatile organic impurities. ..... complies
Bromide (Br). ..... ≤0,1 %
Iodide (I). ..... complies
Iodide (I). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,03 %
Barium (Ba). ..... complies
Iron (Fe). ..... ≤0,002 %
Sodium (Na). ..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Calcium, Magnesium. ..... complies
Magnesium, alkaline-earth metals (as Ca). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **P017.2** | 500 g | plastic | 17,10 € |
| Original pack 6 x 500 g | | | 16,25/500 g |
| **P017.1** | 1 kg | plastic | 24,65 € |
| Original pack 6 x 1 kg | | | 23,42/1 kg |
| **P017.3** | 5 kg | plastic | 69,35 € |
| **P017.5** | 25 kg | plastic | 321,45 € |

## Potassium chloride powder (pouch)

▶ Roti®fair 1M KCl see p. 2212
▶ Roti®fair 3M KCl see p. 2212

## Potassium chloride solution (0,2 N)

### Potassium chloride solution

**0,2 mol/l - 0,2 N volumetric standard solution**

[7447-40-7] • EC No. 231-211-8

WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C)....0,2 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **4117.1** | 1 l | plastic | 25,70 € |
| Original pack 6 x 1 l | | | 24,42/1 l |

For further information, please see page 1622

## Potassium chloride solution (3 N)

### Potassium chloride solution

**3 mol/l - 3 N volumetric standard solution**

Storage solution for pH-electrodes

D 1,131

[7447-40-7] • EC No. 231-211-8

WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C).....3 mol/l ±0,2 %

Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **T138.1** | 250 ml | glass | 18,85 € |

For further information, please see page 1622

## Potassium chloride solution (3 N) with AgCl

### Potassium chloride solution

**3 mol/l - 3 N volumetric standard solution, saturated with AgCl**

Storage solution for pH-electrodes

D 1,12

WGK 1

H412

**Type analysis:**

Amount-of-substance conc. (20 °C).....3 mol/l ±0,2 %

Titer. ..... 0,9980-1,0020

| | | | |
|---|---|---|---|
| **9880.1** | 250 ml | plastic | 22,40 € |
| **9880.2** | 1 l | plastic | 38,20 € |
| Original pack 6 x 1 l | | | 36,29/1 l |

## Potassium chromate

### Potassium chromate

**≥99 %, p.a., ACS**

Indicator for argentometry.

Chromic acid potassium salt

$K_2CrO_4$

M 194,21 g/mol

D 2,73 • bp 1000 °C

mp 985 °C

Solubility: 630 g/l ($H_2O$, 20 °C)

[7789-00-6] • EC No. 232-140-5

UN No. 3288 • ADR 6.1 III • WGK 3

**Danger** H340-H350i-H400-H410-H315-H319-H317-H335

**Guarantee analysis:**

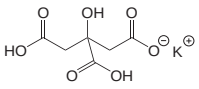
Assay (iodom.). ..... ≥99 %
pH value (5 % solution). ..... 9,0-9,8
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,005 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,002 %
Lead (Pb). ..... ≤0,005 %
Sodium (Na). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **HN33.1** | 100 g | plastic | 36,45 € |
| **HN33.2** | 250 g | plastic | 68,70 € |
| **HN33.3** | 500 g | plastic | 119,90 € |
| Original pack 6 x 500 g | | | 113,91/500 g |
| **HN33.4** | 1 kg | plastic | 206,95 € |
| Original pack 6 x 1 kg | | | 196,60/1 kg |

## Potassium chromium(III) sulphate

▶ Chromium(III) potassium sulphate dodecahydrate see p. 1832

## mono-Potassium citrate



NEW

### mono-Potassium citrate

**≥99 %, pure, anhydrous**

Citric acid monopotassium salt, Potassium dihydrogen citrate

$C_6H_7KO_7$

M 230,21 g/mol

Solubility: 200 g/l ($H_2O$, 20°C)

[866-83-1] • EC No. 212-753-4

WGK 1

**Type analysis:**

Assay (dry substance). ..... ≥99,0 %
pH value (1 % in $H_2O$). ..... 3,5-4,0
Oxalate (as $C_2H_2O_4$). ..... ≤0,01 %
Arsenic (As). ..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %
Mercury (Hg). ..... ≤0,001 %
Loss on drying (180 °C, 4h). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **0481.1** | 250 g | plastic | 26,80 € |
| **0481.2** | 500 g | plastic | 45,05 € |
| Original pack 6 x 500 g | | | 42,80/500 g |
| **0481.3** | 1 kg | plastic | 80,55 € |
| Original pack 6 x 1 kg | | | 76,52/1 kg |
| **0481.4** | 2,5 kg | plastic | 170,95 € |

## tri-Potassium citrate monohydrate

### tri-Potassium citrate monohydrate

**≥99 %, Ph.Eur., USP**

Citric acid potassium salt

$C_6H_5K_3O_7 \cdot H_2O$

M 324,4 g/mol

D 1,98

Solubility: 1670 g/l ($H_2O$, 25 °C)

[6100-05-6] • EC No. 212-755-5

WGK 1

**Guarantee analysis:**

Appearance. ..... white crystals
Assay (dry substance). ..... 99,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
pH value (5 % solution). ..... 7,5-9,0
Alkalinity/acidity. ..... complies
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,015 %
Oxalate (as $C_2H_2O_4$). ..... ≤0,01 %
Tartrate ($C_4H_4O_6$). ..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0001 %
Sodium (Na). ..... ≤0,3 %
Mercury (Hg). ..... ≤0,0001 %
Water (KF). ..... 4,0-7,0 %
Loss on drying (180 °C, 4h). ..... 4,0-6,0 %
Reaction with $H_2SO_4$. ..... complies

| | | | |
|---|---|---|---|
| **X888.1** | 500 g | plastic | 19,60 € |
| Original pack 6 x 500 g | | | 18,62/500 g |
| **X888.2** | 1 kg | plastic | 28,95 € |
| Original pack 6 x 1 kg | | | 27,50/1 kg |
| **X888.3** | 2,5 kg | plastic | 57,55 € |

## Potassium dichromate

Potassium bichromate, Potassium pyrochromate

$K_2Cr_2O_7$

M 294,18 g/mol

D 2,68 • bp 500 °C

mp 398 °C

Solubility: 130 g/l ($H_2O$, 20 °C)

[7778-50-9] • EC No. 231-906-6

UN No. 3086 • ADR 6.1 (5.1) II • WGK 3

**Danger**

H272-H301-H330-H334-H340-H350-H335-H360FD-H372-H314-H312-H317-H410

### Potassium dichromate

**≥99,5 %, p.a., ACS, ISO**

Strong oxidizing agent for oxidative disintegration.Titrimetric standard substance in oxidimetry and iodometry.

**Guarantee analysis:**

Assay (iodom.). ..... ≥99,5 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Loss on drying (105 °C). ..... ≤0,05 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,005 %
Lead (Pb). ..... ≤0,005 %
Calcium (Ca). ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Sodium (Na). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **P744.3** | 100 g | plastic | 26,35 € |
| **P744.1** | 500 g | plastic | 95,15 € |
| Original pack 6 x 500 g | | | 90,39/500 g |
| **P744.2** | 1 kg | plastic | 160,75 € |
| Original pack 6 x 1 kg | | | 152,71/1 kg |

O/P

## Potassium dichromate

**≥99,5 % cryst.**

**Typ analysis:**

Appearance. ..... orange crystals
Assay ($K_2Cr_2O_7$). ..... ≥99,5 %
In water insoluble matter. ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,02 %
Sodium (Na). ..... ≤0,3 %

| | | | |
|---|---|---|---|
| **7953.3** | 100 g | plastic | 17,10 € |
| **7953.1** | 1 kg | plastic | 90,85 € |
| Original pack 6 x 1 kg | | | 86,31/1 kg |
| **7953.2** | 5 kg | plastic | 353,70 € |

## Potassium dichromate solution (0,1 N)

## Potassium dichromate solution

**1/60 mol/l - 0.1 N volumetric standard solution**

[7778-50-9]
UN No. 3082 • ADR 9 III • WGK 3

**Danger**
H332-H340-H350-H360FD-H412-EUH208

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... 1/60 mol/l ±0,2 %
Titer. ..... 0,9980-1,0020

| | | | |
|---|---|---|---|
| **P722.1** | 1 l | glass | 26,35 € |
| Original pack 6 x 1 l | | | 25,03/1 l |

For further information, please see page 1622

## Potassium dichromate solution (0,12 N)

## Potassium dichromate solution

**0,02 mol/l - 0,12 N volumetric standard solution, for determination of COD**

According to DIN 38409 part H41 and H43.
[7778-50-9]
WGK 3

**Danger**
H340-H350-H360FD-H332-H412-EUH208

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... 0,02 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **P720.1** | 1 l | plastic | 25,30 € |
| Original pack 6 x 1 l | | | 24,04/1 l |

For further information, please see page 1622

## Potassium dichromate solution (0,25 N)

## Potassium dichromate solution

**1/24 mol/l - 0,25 N volumetric standard solution for determination of COD**

bp ~100 °C
mp ~0 °C
UN No. 3082 • ADR 9 III • WGK 3

**Danger** H332-H340-H350-H360FD-H373-H412-EUH208

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... 1/24 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **P721.1** | 1 l | glass | 30,00 € |
| Original pack 6 x 1 l | | | 28,50/1 l |

For further information, please see page 1622

## Potassium dicyanoaurate

## Potassium dicyanoaurate

**extra pure**

Gold potassium cyanide
$K[Au(CN)_2]$
M 288,10 g/mol
[13967-50-5] • EC No. 237-748-4
UN No. 1588 • ADR 6.1 I • WGK 3

**Danger**
H300+H310+H330-H400-H410-EUH032

**Type analysis:**

Au assay ..... 68,20 % ±0,1 %
Iron (Fe) ..... ≤0,0001 %
Sodium (Na) ..... ≤0,04 %
Silver (Ag) ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **3959.1** | 1 g | glass | 103,75 € |

## Potassium dihydrogen phosphate

Potassium phosphate, Potassium biphosphate
$KH_2PO_4$
M 136,09 g/mol
D 2,34
mp ~253 °C
Solubility: 222 g/l ($H_2O$, 20 °C)
[7778-77-0] • EC No. 231-913-4
WGK 1

## Potassium dihydrogen phosphate

**≥99 %, p.a., ACS**

Reagent for phosphate, buffer, molecular biology.

**Guarantee analysis:**

Assay (acidim.) ..... ≥99,0 %
pH value (5 % in $H_2O$) ..... 4,2-4,5
In $H_2O$ insoluble matter. ..... ≤0,01 %
Loss on drying (105 °C) ..... ≤0,2 %
Total nitrogen (as N) ..... ≤0,001 %
Chloride (Cl) ..... ≤0,0005 %
Sulphate ($SO_4$) ..... ≤0,003 %
Heavy metals ..... ≤0,001 %
Iron (Fe) ..... ≤0,001 %
Arsenic (As) ..... ≤0,0002 %
Lead (Pb) ..... ≤0,0005 %
Copper (Cu) ..... ≤0,0005 %
Calcium (Ca) ..... ≤0,005 %
Cadmium (Cd) ..... ≤0,0005 %
Cobalt (Co) ..... ≤0,0005 %
Magnesium (Mg) ..... ≤0,0005 %
Manganese (Mn) ..... ≤0,0005 %
Sodium (Na) ..... ≤0,005 %
Nickel (Ni) ..... ≤0,0005 %
Zinc (Zn) ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **3904.2** | 250 g | plastic | 18,20 € |
| **3904.1** | 1 kg | plastic | 52,60 € |
| Original pack 6 x 1 kg | | | 49,97/1 kg |
| **3904.3** | 5 kg | plastic | 209,65 € |
| **3904.5** | 25 kg | plastic | 912,70 € |

## Potassium dihydrogen phosphate

**≥98 %, Ph.Eur., USP, BP**

**Guarantee analysis:**

Assay (acidimetric, dry substance). ..... 98,0-100,5 %
Identity. ..... complies
pH value (5 % in $H_2O$). ..... 4,2-4,5
Appearance of solution. ..... complies
In $H_2O$ insoluble matter. ..... ≤0,2 %
Loss on drying (130 °C). ..... ≤1,0 %
Volatile organic impurities. ..... complies
Reducing substances ..... complies
Chloride (Cl) ..... ≤0,02 %
Fluoride (F). ..... ≤0,001 %
Sulphate ($SO_4$) ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,0025 %
Copper (Cu). ..... ≤0,025 %
Lead (Pb). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P018.1** | 500 g | plastic | 20,35 € |
| Original pack 6 x 500 g | | | 19,33/500 g |
| **P018.2** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **P018.3** | 5 kg | plastic | 137,10 € |
| **P018.5** | 25 kg | plastic | 471,95 € |

## Potassium disulphite

Potassium pyrosulphite,
Potassium metabisulphite
$K_2S_2O_5$
M 222,33 g/mol
D 2,34
mp 150 °C (dec.)
Solubility: 450 g/l ($H_2O$, 20 °C)
[16731-55-8] • EC No. 240-795-3
WGK 1

**Danger** H318-H335-EUH031

## Potassium disulphite

**≥96 %, p.a.**

Reducing agent, bleaching agent

**Guarantee analysis:**

Assay (iodom.) ..... ≥96 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chloride (Cl) ..... ≤0,005 %
Phosphate ($PO_4$) ..... ≤0,0002 %
Thiosulphate. ..... ≤0,05 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **P019.1** | 500 g | plastic | 24,20 € |
| Original pack 6 x 500 g | | | 22,99/500 g |
| **P019.2** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **P019.3** | 5 kg | plastic | 139,25 € |

## Potassium disulphite

**≥96 %, powdered**

**Type analysis:**

Assay ≥96 %
pH value (10 % solution) 3,8-4,8
Arsenic (As) ≤0,0001 %
Lead (Pb) ≤0,0001 %
Iron (Fe) ≤0,0005 %
Copper (Cu) ≤0,0001 %
Heavy metals (as Pb) ≤0,001 %
Selenium (Se) ≤0,0001 %
Zinc (Zn) ≤0,0001 %

| | | | |
|---|---|---|---|
| **7995.1** | 1 kg | plastic | 25,30 € |
| Original pack 6 x 1 kg | | | 24,04/1 kg |
| **7995.3** | 2,5 kg | plastic | 45,70 € |
| **7995.2** | 10 kg | plastic | 145,15 € |

## Potassium ferricyanide

▶ Potassium hexacyanoferrate(III) see p. 2168

## Potassium ferrocyanide

▶ Potassium hexacyanoferrate(II) trihydrate see p. 2167

## Potassium ferrocyanide trihydrate

▶ Potassium hexacyanoferrate(II) trihydrate see p. 2167

## Potassium fluoride

KF
M 58,10 g/mol
D 2,48 • bp 1500 °C
mp 860 °C
Solubility: 485 g/l ($H_2O$, 20 °C)
[7789-23-3] • EC No. 232-151-5
UN No. 1812 • ADR 6.1 III • WGK 1

**Danger** H301+H311+H331-H318

### Potassium fluoride

**ROTI®METIC 99,99 % (4N)**

**Type analysis:**

Assay (metals basis) 99,99 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5656.1** | 5 g | plastic | 52,15 € |
| **5656.2** | 25 g | plastic | 181,70 € |

### Potassium fluoride

**≥99 %, p.a.**

For fluorination of organic compounds.

**Guaratee analysis:**

Assay ≥99 %
Free acid (as HF) ≤0,01 %
Free alkali (as $K_2CO_3$) ≤0,01 %
Chloride (Cl) ≤0,005 %
Sulphate ($SO_4$) ≤0,02 %
Hexafluorosilicate (as $K_2SiF_6$) ≤0,1 %
Cadmium (Cd) ≤0,0005 %
Cobalt (Co) ≤0,0005 %
Copper (Cu) ≤0,0005 %
Iron (Fe) ≤0,0005 %
Nickel (Ni) ≤0,0005 %
Lead (Pb) ≤0,0005 %
Zinc (Zn) ≤0,0005 %

| | | | |
|---|---|---|---|
| **CN83.1** | 100 g | plastic | 17,10 € |
| **CN83.2** | 250 g | plastic | 28,50 € |
| **CN83.3** | 500 g | plastic | 52,15 € |
| Original pack 6 x 500 g | | | 49,54/500 g |
| **CN83.4** | 1 kg | plastic | 88,70 € |
| Original pack 6 x 1 kg | | | 84,27/1 kg |

### Potassium fluoride

**≥99 %, cryst.**

**Typ analysis:**

Assay ≥99,0 %
Hexafluorosilicate (as $K_2SiF_6$) ≤0,2 %
Loss on drying ≤0,5 %
Free acid (as HF) ≤0,5 %
Chloride (Cl) ≤0,05 %
Iron (Fe) ≤0,005 %
Heavy metals ≤0,005 %

| | | | |
|---|---|---|---|
| **2617.1** | 250 g | plastic | 18,85 € |
| **2617.2** | 500 g | plastic | 30,00 € |
| Original pack 6 x 500 g | | | 28,50/500 g |
| **2617.3** | 1 kg | plastic | 50,45 € |
| Original pack 6 x 1 kg | | | 47,93/1 kg |
| **2617.4** | 2,5 kg | plastic | 103,75 € |

## Potassium formate



### Potassium formate

NEW

**≥98 %, for synthesis**

Formic acid potassium salt
$HCO_2K$
M 84,12 g/mol
D 1,91
mp 165-168 °C
Solubility: 2500 g/l (20 °C, $H_2O$)
[590-29-4] • EC No. 209-677-9
WGK 1

**Type analysis:**

Appearance colourless crystals
Assay (titr.) ≥98,0 %
pH (5 % in $H_2O$) 6,0-8,5

| | | | |
|---|---|---|---|
| **0980.1** | 250 g | plastic | 21,40 € |
| **0980.2** | 1 kg | plastic | 59,05 € |
| Original pack 6 x 1 kg | | | 56,10/1 kg |

## Potassium gluconate

▶ Gluconic acid potassium salt see p. 1955

## Potassium hexacyanoferrate(II) trihydrate

Potassium ferrocyanide,
Yellow prussiate of potash
$K_4[Fe(CN)_6] \cdot 3\ H_2O$
M 422,41 g/mol
D 1,85
mp ~70 °C
Solubility: 289 g/l ($H_2O$, 20 °C)
[14459-95-1] • EC No. 237-722-2
WGK 2
H412

### Potassium hexacyanoferrate(II) trihydrate

**≥99 %, p.a., ACS, ISO**

Reagent for the determination of Fe, Cu, Zn, protein. Preparation of Berlin blue.

**Guarantee analysis:**

Assay (perm.) 99,0-102,0 %
In $H_2O$ insoluble matter. ≤0,005 %
Chloride (Cl) ≤0,01 %
Sulphate ($SO_4$) ≤0,005 %
Lead (Pb) ≤0,002 %
Cadmium (Cd) ≤0,0005 %
Copper (Cu) ≤0,002 %
Sodium (Na) ≤0,02 %
Free alkali ≤0,002 %

| | | | |
|---|---|---|---|
| **P745.1** | 500 g | plastic | 90,20 € |
| Original pack 6 x 500 g | | | 85,69/500 g |
| **P745.2** | 1 kg | plastic | 160,20 € |
| Original pack 6 x 1 kg | | | 152,19/1 kg |
| **P745.3** | 2,5 kg | plastic | 342,95 € |

### Potassium hexacyanoferrate(II) trihydrate

**>99 % cryst.**

**Type analysis:**

Appearance pale yellow crystals
Assay >99,0 %
Chloride (Cl) <0,3 %
Sulphate ($SO_4$) <0,1 %
In $H_2O$ insoluble matter. <0,01 %

| | | | |
|---|---|---|---|
| **7974.1** | 250 g | plastic | 17,10 € |
| **7974.2** | 1 kg | plastic | 41,85 € |
| Original pack 6 x 1 kg | | | 39,76/1 kg |
| **7974.3** | 5 kg | plastic | 155,90 € |

## Potassium hexacyanoferrate(II) solution

▶ Carrez solution II see p. 1815

## Potassium hexacyanoferrate(III)

Potassium ferricyanide, Red prussiate of potash
$K_3[Fe(CN)_6]$
M 329,25 g/mol
D 1,89
Solubility: 464 g/l ($H_2O$, 20 °C)
[13746-66-2] • EC No. 237-323-3
WGK 2
EUH032

### Potassium hexacyanoferrate(III)

**≥99 %, p.a., ACS**

Oxidizing agent in organic synthesis. Reagent for the determination to Co, Zn and alkaloids.

**Guarantee analysis:**

Assay (iodom.)..... ≥99,0 %
In $H_2O$ insoluble matter..... ≤0,005 %
Hexacyanoferrate (II) $[Fe(CN)_6]$ ..... ≤0,05 %
Chloride (Cl)..... ≤0,01 %
Sulphate ($SO_4$)..... ≤0,01 %

| | | | |
|---|---|---|---|
| **P746.3** | 100 g | plastic | 21,75 € |
| **P746.1** | 500 g | plastic | 69,80 € |
| Original pack 6 x 500 g | | | 66,31/500 g |
| **P746.2** | 1 kg | plastic | 126,35 € |
| Original pack 6 x 1 kg | | | 120,03/1 kg |

### Potassium hexacyanoferrate(III)

**≥99 %, techn.**

**Type analysis:**

Appearance..... ruby crystals
Assay..... ≥99,0 %
Potassium hexacyanoferrate(II) trihydrate..... ≤0,5 %
In $H_2O$ insoluble matter..... ≤0,1 %
Chloride (as KCl)..... ≤0,3 %

| | | | |
|---|---|---|---|
| **7971.3** | 500 g | plastic | 25,70 € |
| Original pack 6 x 500 g | | | 24,42/500 g |
| **7971.1** | 1 kg | plastic | 42,90 € |
| Original pack 6 x 1 kg | | | 40,76/1 kg |
| **7971.2** | 5 kg | plastic | 160,75 € |

## Potassium oxide hydrate

▶ Potassium hydroxide see p. 2170

## Potassium hydrogen carbonate

Potassium bicarbonate
$KHCO_3$
M 100,12 g/mol
D 2,17
Solubility: 333 g/l ($H_2O$, 20 °C)
[298-14-6] • EC No. 206-059-0
WGK 1

### Potassium hydrogen carbonate

**≥99,5 %, p.a.**

Neutralizing agent

**Guarantee analysis:**

Assay (acidim.)..... 99,5-101,0 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Nitrogen compounds (as N). ..... ≤0,0005 %
Sulphur compounds (as $SO_4$)..... ≤0,003 %
Chloride (Cl)..... ≤0,001 %
Phosphate ($PO_4$). ..... ≤0,0005 %
Arsenic (As)..... ≤0,00004 %
Aluminium (Al)..... ≤0,001 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd)..... ≤0,0005 %
Calcium (Ca). ..... ≤0,001 %
Iron (Fe)..... ≤0,0005 %
Cobalt (Co)..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,001 %
Manganese (Mn). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,03 %
Nickel (Ni)..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P748.1** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **P748.2** | 1 kg | plastic | 49,35 € |
| Original pack 6 x 1 kg | | | 46,88/1 kg |
| **P748.3** | 2,5 kg | plastic | 110,65 € |

### Potassium hydrogen carbonate

**≥99 %, Ph.Eur.**

**Guarantee analysis:**

Appearance..... white cryst. powder
Assay. ..... 99,0-101,0 %
Identity..... complies
Appearance of solution..... complies
pH value (5 % solution). ..... ≤8,6
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,015 %
Ammonium ($NH_4$). ..... ≤0,002 %
Heavy metals (as Pb). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,001 %
Iron (Fe)..... ≤0,002 %
Sodium (Na). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **X887.1** | 500 g | plastic | 17,10 € |
| Original pack 6 x 500 g | | | 16,25/500 g |
| **X887.2** | 1 kg | plastic | 24,65 € |
| Original pack 6 x 1 kg | | | 23,42/1 kg |
| **X887.3** | 2,5 kg | plastic | 49,35 € |

### Potassium hydrogen carbonate

**≥99 %, extra pure**

**Type analysis:**

Assay (dry substance)..... ≥99,0 %
Arsenic (As)..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Mercury (Hg). ..... ≤0,0001 %
Loss on drying. ..... ≤0,25 %

| | | | |
|---|---|---|---|
| **9437.1** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **9437.2** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |
| **9437.3** | 2,5 kg | plastic | 64,40 € |

## Potassium hydrogen citrate

▶ mono-Potassium citrate see p. 2165

## di-Potassium hydrogen phosphate

Dipotassium hydrogen phosphate,
Potassium phosphate, dibasic
$K_2HPO_4$
M 174,18 g/mol
D 2,44
Solubility: 1600 g/l ($H_2O$, 20 °C)
[7758-11-4] • EC No. 231-834-5
WGK 1

### di-Potassium hydrogen phosphate

**ROTI®METIC 99,99 % (4N), anhydrous**

**Type analysis:**

Assay (metals basis)..... 99,99 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5066.1** | 25 g | plastic | 160,20 € |

### di-Potassium hydrogen phosphate

**≥99 %, p.a., anhydrous**

Buffer substance, molecular biology

**Guarantee analysis:**

Assay (acidim.). ..... ≥99,0 %
pH value (5 % solution). ..... 8,5-9,6
In $H_2O$ insoluble matter. ..... ≤0,005 %
Loss on drying (105 °C). ..... ≤1,0 %
Nitrogen compounds (as N). ..... ≤0,002 %
Chloride (Cl)..... ≤0,005 %
Sulphate ($SO_4$)..... ≤0,01 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,001 %
Cadmium (Cd). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,001 %
Cobalt (Co). ..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,005 %
Manganese (Mn). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,001 %
Zinc (Zn). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **P749.1** | 500 g | plastic | 27,85 € |
| Original pack 6 x 500 g | | | 26,46/500 g |
| **P749.2** | 1 kg | plastic | 50,45 € |
| Original pack 6 x 1 kg | | | 47,93/1 kg |
| **P749.3** | 2,5 kg | plastic | 101,60 € |
| **P749.5** | 25 kg | plastic | 815,95 € |

For further information, please see page 1269

### di-Potassium hydrogen phosphate

**≥98 %, Ph.Eur., BP, anhydrous**

**Guarantee analysis:**

Assay (acidim., dry substance). ..... 98,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
In $H_2O$ insoluble matter. ..... ≤0,01 %
pH value (5 % solution). ..... 8,5-9,6
Loss on drying (130 °C). ..... ≤1,0 %
Chloride (Cl)..... ≤0,02 %
Fluoride (F). ..... ≤0,001 %
Sulphate ($SO_4$)..... ≤0,05 %
Arsenic (As). ..... ≤0,0002 %
Lead (Pb). ..... ≤0,001 %

Iron (Fe). ≤0,001 %
Copper (Cu). ≤0,025 %
Nickel (Ni). ≤0,0025 %
Heavy metals (as Pb). ≤0,001 %
Potassium dihydrogen phosphate. complies
$KMnO_4$ reducing substances (as O). complies

| | | | |
|---|---|---|---|
| **T875.1** | 500 g | plastic | 26,80 € |
| Original pack 6 x 500 g | | | 25,46/500 g |
| **T875.2** | 1 kg | plastic | 42,90 € |
| Original pack 6 x 1 kg | | | 40,76/1 kg |
| **T875.3** | 5 kg | plastic | 180,10 € |

## di-Potassium hydrogen phosphate

**≥98 %, anhydrous**

**Typ analysis:**

Assay (acidim.). 98,0-100,5 %
pH value (5 % solution). 8,5-9,6
Sulphate ($SO_4$). ≤0,05 %
Chloride (Cl). ≤0,02 %
Arsenic (As). ≤0,0002 %
Iron (Fe). ≤0,001 %
Heavy metals (as Pb). ≤0,001 %
Loss on drying (130 °C). ≤1,0 %

| | | | |
|---|---|---|---|
| **6875.2** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **6875.1** | 1 kg | plastic | 36,05 € |
| Original pack 6 x 1 kg | | | 34,25/1 kg |
| **6875.3** | 5 kg | plastic | 143,55 € |

## di-Potassium hydrogen phosphate trihydrate

## di-Potassium hydrogen phosphate trihydrate

**≥99 %, p.a.**

Buffer substance
Dipotassium hydrogen phosphate trihydrate
$K_2HPO_4 \cdot 3\ H_2O$
M 228,23 g/mol
Solubility: easily soluble ($H_2O$, 20 °C)
[16788-57-1] • EC No. 231-834-5
WGK 1

**Typ analysis:**

Assay ($K_2HPO_4 \cdot 3\ H_2O$). ≥99 %
pH value (5 % solution). 9,1-9,3
In $H_2O$ insoluble matter. ≤0,005 %
Chloride (Cl). ≤0,001 %
Sulphate ($SO_4$). ≤0,005 %
Total nitrogen (as N). ≤0,001 %
Heavy metals (as Pb). ≤0,001 %
Arsenic (As). ≤0,00005 %
Lead (Pb). ≤0,0005 %
Calcium (Ca). ≤0,005 %
Iron (Fe). ≤0,0005 %
Copper (Cu). ≤0,001 %
Magnesium (Mg). ≤0,005 %
Sodium (Na). ≤0,1 %
Nickel (Ni). ≤0,0005 %

| | | | |
|---|---|---|---|
| **6878.2** | 250 g | plastic | 19,90 € |
| **6878.1** | 1 kg | plastic | 46,80 € |
| Original pack 6 x 1 kg | | | 44,46/1 kg |
| **6878.3** | 2,5 kg | plastic | 94,50 € |

## Potassium hydrogen phthalate

## Potassium hydrogen phthalate

**≥99,5 %, p.a., ISO**

Buffer substance and titrimetric standard substance for alkalimetry.
Potassium biphthalate,
Phthalic acid potassium salt
$C_8H_5KO_4$
M 204,23 g/mol
D 1,64
mp 295-300 °C
Solubility: 80 g/l ($H_2O$, 20 °C)
[877-24-7] • EC No. 212-889-4
WGK 1

**Guarantee analysis:**

Assay (acidim.). ≥99,5 %
In $H_2O$ insoluble matter. ≤0,003 %
Loss on drying (110 °C). ≤0,05 %
Nitrogen compounds (as N). ≤0,001 %
Sulphur compounds (as S). ≤0,002 %
Chloride (Cl). ≤0,002 %
Lead (Pb). ≤0,0005 %
Cadmium (Cd). ≤0,0005 %
Calcium (Ca). ≤0,001 %
Chromium (Cr). ≤0,001 %
Iron (Fe). ≤0,0005 %
Cobalt (Co). ≤0,0005 %
Copper (Cu). ≤0,0005 %
Magnesium (Mg). ≤0,001 %
Manganese (Mn). ≤0,0005 %
Sodium (Na). ≤0,01 %
Nickel (Ni). ≤0,0005 %
Zinc (Zn). ≤0,0005 %
Heavy metals (as Pb). ≤0,0005 %

| | | | |
|---|---|---|---|
| **P750.1** | 500 g | plastic | 50,00 € |
| Original pack 6 x 500 g | | | 47,50/500 g |
| **P750.2** | 1 kg | plastic | 87,00 € |
| Original pack 6 x 1 kg | | | 82,65/1 kg |
| **P750.3** | 2,5 kg | plastic | 185,45 € |

## Potassium hydrogen phthalate solution

## Potassium hydrogen phthalate solution

**200 mg COD/l (0,170 g $C_8H_5KO_4$/l)**

For determination of COD; DIN 38409-41:1980, DEV H41; DIN 38409-44:1992, DEV H44
UN No. 3264 • ADR 8 III

**Warning** H290

| | | | |
|---|---|---|---|
| **2055.1** | 250 ml | plastic | 45,05 € |
| **2055.2** | 500 ml | plastic | 56,90 € |

## Potassium hydrogen sulphate

Potassium bisulphate
$KHSO_4$
M 136,17 g/mol
D 2,32
Solubility: 490 g/l ($H_2O$, 20 °C)
[7646-93-7] • EC No. 231-594-1
UN No. 2509 • ADR 8 II • WGK 1

**Danger** H314-H335

## Potassium hydrogen sulphate

**≥98 %, p.a.**

For disintegration of ores and silicates, detection of acetate. Cleaning of Pt crucibles.

**Guarantee analysis:**

Assay (acidim.). ≥98 %
In $NH_4OH$ insoluble matter. ≤0,01 %
Chloride (Cl). ≤0,001 %
Phosphate ($PO_4$). ≤0,001 %
Nitrate ($NO_3$). ≤0,001 %
Arsenic (As). ≤0,0001 %
Lead (Pb). ≤0,001 %
Iron (Fe). ≤0,001 %
Calcium (Ca). ≤0,005 %
Copper (Cu). ≤0,001 %
Magnesium (Mg). ≤0,005 %
Nickel (Ni). ≤0,001 %

| | | | |
|---|---|---|---|
| **P020.1** | 500 g | plastic | 29,60 € |
| Original pack 6 x 500 g | | | 28,12/500 g |
| **P020.2** | 1 kg | plastic | 52,15 € |
| Original pack 6 x 1 kg | | | 49,54/1 kg |
| **P020.3** | 2,5 kg | plastic | 111,70 € |

## Potassium hydrogen sulphate

**≥99 %, extra pure**

**Typ analysis:**

Assay (acidim.). ≥99 %
In $H_2O$ insoluble matter. ≤0,05 %
Chloride (Cl). ≤0,002 %
Ammonium ($NH_4$). ≤0,002 %
Heavy metals (as Pb). ≤0,002 %
Aluminium (Al). ≤0,002 %
Calcium (Ca). ≤0,01 %
Iron (Fe). ≤0,002 %

| | | | |
|---|---|---|---|
| **X989.1** | 500 g | plastic | 18,85 € |
| Original pack 6 x 500 g | | | 17,91/500 g |
| **X989.2** | 1 kg | plastic | 31,10 € |
| Original pack 6 x 1 kg | | | 29,55/1 kg |
| **X989.3** | 2,5 kg | plastic | 57,95 € |

## Potassium hydroxide

KOH
M 56,11 g/mol
D 2,04 • bp 1327 °C
mp 360 °C
Solubility: 1130 g/l ($H_2O$, 20 °C)
[1310-58-3] • EC No. 215-181-3
UN No. 1813 • ADR 8 II • WGK 1
**Danger** H314-H290-H302

### Potassium hydroxide

**ROTI®METIC 99,98 % (3N8)**

**Type analysis:**
Assay (metals basis)..... 99,98 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5658.1** | 100 g | plastic | 109,15 € |

### Potassium hydroxide

**≥85 %, p.a., pellets**
Reagent for the preparation of potassium hydroxide solution. Filled under protective gas.

**Guarantee analysis:**
Assay (as KOH)..... ≥85 %
Carbonate (as $K_2CO_3$)..... ≤0,5 %
Sodium (as NaOH)..... ≤1,0 %
Chloride (Cl)..... ≤0,005 %
Sulphate ($SO_4$)..... ≤0,001 %
Phosphate ($PO_4$)..... ≤0,0005 %
Nitrogen (N)..... ≤0,0005 %
Arsenic (As)..... ≤0,00005 %
Iron (Fe)..... ≤0,0005 %
Nickel (Ni)..... ≤0,001 %
Heavy metals (as Pb)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **6751.3** | 250 g | plastic | 16,05 € |
| **6751.1** | 1 kg | plastic | 26,35 € |
| Original pack 6 x 1 kg | | | 25,03/1 kg |
| **6751.2** | 5 kg | plastic | 91,30 € |
| **6751.5** | 25 kg | plastic | 278,45 € |

### Potassium hydroxide

**≥85 %, Ph.Eur., pellets**
Filled under protective gas.

**Guarantee analysis:**
Assay (acidim.)..... 85,0-100,5 %
Identity..... complies
Appearance of solution..... complies
Carbonate (as $K_2CO_3$)..... ≤1,0 %
Chloride (Cl)..... ≤0,005 %
Phosphate ($PO_4$)..... ≤0,002 %
Sulphate ($SO_4$)..... ≤0,005 %
Heavy metals (as Pb)..... ≤0,001 %
Aluminium (Al)..... ≤0,002 %
Calcium (Ca)..... ≤0,005 %
Iron (Fe)..... ≤0,001 %
Sodium (Na)..... ≤1,0 %
Lead (Pb)..... ≤0,001 %
Arsenic (As)..... ≤0,0001 %
Copper (Cu)..... ≤0,001 %
Magnesium (Mg)..... ≤0,005 %
Nickel (Ni)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **P747.1** | 500 g | plastic | 20,65 € |
| Original pack 6 x 500 g | | | 19,62/500 g |
| **P747.2** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **P747.3** | 5 kg | plastic | 131,70 € |

### Potassium hydroxide

**≥85 %, in flakes**
Filled under protective gas.

**Type analysis:**
Assay (KOH)..... ≥85 %
Carbonate (as $K_2CO_3$)..... ≤1,0 %
Chloride (Cl)..... ≤0,01 %
Iron (Fe)..... ≤0,003 %

| | | | |
|---|---|---|---|
| **7986.1** | 1 kg | plastic | 24,20 € |
| Original pack 6 x 1 kg | | | 22,99/1 kg |
| **7986.3** | 2,5 kg | plastic | 42,50 € |
| **7986.2** | 10 kg | plastic | 115,60 € |
| **7986.5** | 25 kg | plastic | 217,70 € |

## Potassium hydroxide solution 50 %

### Potassium hydroxide solution 50 %

**50 %, extra pure**
KOH
M 56,11 g/mol
bp >100 °C
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1
**Danger** H314-H290-H302

**Type analysis:**
Assay (KOH)..... 49,0-51,0 %
Carbonate ($CO_3$)..... ≤0,5 %
Chloride (Cl)..... ≤0,01 %
Sodium hydroxide (NaOH)..... ≤1 %
Iron (Fe)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **7949.1** | 1 l | plastic | 19,60 € |
| Original pack 6 x 1 l | | | 18,62/1 l |
| **7949.2** | 10 l | plastic | 78,40 € |

## Potassium hydroxide solution 45 %

### Potassium hydroxide solution 45 %

**45 %, extra pure**
KOH
M 56,11 g/mol
D 1,45 • bp >100 °C
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1
**Danger** H314-H290-H302

**Type analysis:**
Assay (KOH)..... 44-46 %
Carbonate ($CO_3$)..... ≤0,5 %
Chloride (Cl)..... ≤0,01 %
Sodium hydroxide (NaOH)..... ≤1 %
Iron (Fe)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **0995.1** | 1 l | plastic | 17,75 € |
| Original pack 6 x 1 l | | | 16,86/1 l |
| **0995.2** | 2,5 l | plastic | 25,30 € |
| Original pack 4 x 2,5 l | | | 24,04/2,5 l |
| **0995.3** | 10 l | plastic | 60,75 € |

## Potassium hydroxide solution 20 %

### Potassium hydroxide solution 20 %

**20 %, pure**
KOH
M 56,11 g/mol
D ~1,19
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1
**Danger** H314-H290-H302

**Type analysis:**
Appearance..... clear, colourless
Assay (KOH)..... 19,0-21,0 %
Density (20 °C)..... 1,177-1,196

| | | | |
|---|---|---|---|
| **4330.1** | 1 l | plastic | 16,70 € |
| Original pack 6 x 1 l | | | 15,87/1 l |
| **4330.2** | 2,5 l | plastic | 24,20 € |
| Original pack 4 x 2,5 l | | | 22,99/2,5 l |
| **4330.3** | 5 l | plastic | 40,75 € |
| Original pack 2 x 5 l | | | 38,71/5 l |
| **4330.4** | 10 l | plastic | 56,90 € |

## Potassium hydroxide solution (0,1 N)

### Potassium hydroxide solution

**0,1 mol/l - 0,1 N volumetric standard solution**
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 III
**Warning** H290-H315-H319

**Type analysis:**
Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **K018.1** | 1 l | plastic | 22,05 € |
| Original pack 6 x 1 l | | | 20,95/1 l |
| **K018.2** | 5 l | plastic | 59,05 € |
| Original pack 2 x 5 l | | | 56,10/5 l |
| **K018.3** | 5 l | ROTI®CUBE | 62,25 € |
| Original pack 2 x 5 l | | | 59,14/5 l |

For further information, please see page 1622

## Potassium hydroxide solution (0,1 N)

### Potassium hydroxide solution

**ROTI®VOLUM 0,1 mol/l - 0,1 N**
Ampoule for preparation of 1000 ml volumetric solution.
KOH
M 56,11 g/mol
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1
**Danger** H314-H290

**Type analysis:**
Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN53.1** | 1 piece | plastic ampoule | 19,05 € |

For further information, please see page 1623

## Potassium hydroxide solution (0,5 N)

### Potassium hydroxide solution

**0,5 mol/l - 0,5 N volumetric standard solution**

[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II

**Danger** H314-H290

**Type analysis:**
Amount-of-substance conc. (20 °C)....0,5 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **N071.1** | 1 l | plastic | 22,05 € |
| Original pack 6 x 1 l | | | 20,95/1 l |
| **N071.2** | 5 l | plastic | 59,05 € |
| Original pack 2 x 5 l | | | 56,10/5 l |
| **N071.3** | 5 l | ROTI®CUBE | 62,25 € |
| Original pack 2 x 5 l | | | 59,14/5 l |

For further information, please see page 1622

## Potassium hydroxide solution (1 N)

### Potassium hydroxide solution

**1 mol/l - 1 N volumetric standard solution**

[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1

**Danger** H290-H314

**Type analysis:**
Amount-of-substance conc. (20 °C).....1 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **K017.1** | 1 l | plastic | 22,05 € |
| Original pack 6 x 1 l | | | 20,95/1 l |
| **K017.2** | 5 l | plastic | 59,05 € |
| Original pack 2 x 5 l | | | 56,10/5 l |
| **K017.3** | 5 l | ROTI®CUBE | 62,25 € |
| Original pack 2 x 5 l | | | 59,14/5 l |

For further information, please see page 1622

## Potassium hydroxide solution (1 N)

### Potassium hydroxide solution

**1 mol/l - 1 N volumetric standard solution, Reag. Ph.Eur.**

KOH
M 56,11 g/mol
[1310-58-3] • EC No. 215-181-3
UN No. 1814 • ADR 8 II • WGK 1

**Danger** H290-H314

**Type analysis:**
Amount-of-substance conc. (20 °C).....1 mol/l
Measurement uncertainty. ..... ±0,1 %

| | | | |
|---|---|---|---|
| **9522.1** | 1 l | plastic | 43,55 € |
| Original pack 6 x 1 l | | | 41,37/1 l |

## Potassium hydroxide solution in ethanol (0,1 N)

### Potassium hydroxide solution in ethanol

**0,1 mol/l - 0,1 N volumetric standard solution**

D 0,83 • bp >78 °C
flp 13 °C
UN No. 2924 • ADR 3 (8) II • WGK 1

**Danger** H225-H315-H319-H290

**Type analysis:**
Amount-of-substance conc. (20 °C). .. 0,1 mol/l ±0,4 %
Titer. ..... 0,996-1,004
Discolouration (yellow) is possible, but it has no effect on the usability.

| | | | |
|---|---|---|---|
| **P706.1** | 1 l | glass | 39,25 € |
| Original pack 6 x 1 l | | | 37,29/1 l |

For further information, please see page 1622

## Potassium hydroxide solution in ethanol (0,5 N)

### Potassium hydroxide solution in ethanol

**0,5 mol/l - 0,5 N volumetric standard solution**

D 0,84 • bp 78 °C
flp 13 °C
UN No. 2924 • ADR 3 (8) II • WGK 1

**Danger** H225-H290-H314

**Type analysis:**
Amount-of-substance conc. (20 °C). .. 0,5 mol/l ±0,4 %
Titer. ..... 0,996-1,004
Discolouration (yellow) is possible, but it has no effect on the usability.

| | | | |
|---|---|---|---|
| **P707.1** | 1 l | glass | 56,45 € |
| Original pack 6 x 1 l | | | 53,63/1 l |

For further information, please see page 1622

## Potassium hydroxide solution in isopropanol (0,1 N)

### Potassium hydroxide solution in isopropanol

**0,1 mol/l - 0,1 N volumetric standard solution**

For determination of neutralisation number acc. to DIN 51558 part 1.
D 0,79 • bp 82 °C
flp 13 °C
UN No. 2924 • ADR 3(8) II • WGK 1

**Danger**
H225-H315-H319-H336-H290

**Type analysis:**
Amount-of-substance conc. (20 °C). .. 0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **KK68.1** | 1 l | glass | 50,45 € |
| Original pack 6 x 1 l | | | 47,93/1 l |

For further information, please see page 1622

## Potassium hydroxide solution in methanol (0,1 N)

### Potassium hydroxide solution in methanol

**0,1 mol/l - 0,1 N volumetric standard solution**

D 0,81 • bp 64 °C
flp 11 °C
UN No. 3286 • ADR 3 (6.1) (8) II • WGK 1

**Danger** H225-H301+H311+H331-H315-H319-H370-H290

**Type analysis:**
Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **KK66.1** | 1 l | glass | 31,75 € |
| Original pack 6 x 1 l | | | 30,16/1 l |

For further information, please see page 1622

## Potassium hydroxide solution in methanol (0,5 N)

### Potassium hydroxide solution in methanol

**0,5 mol/l - 0,5 N volumetric standard solution**

D 0,84 • bp 64 °C
flp <21 °C
UN No. 3286 • ADR 3 (6.1) (8) II • WGK 1

**Danger**
H225-H290-H301+H311+H331-H314-H370

**Type analysis:**
Amount-of-substance conc. (20 °C)... 0,5 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **KK67.1** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |

For further information, please see page 1622

## Potassium iodate

$KIO_3$
M 214,00 g/mol
D 3,93
mp 560 °C
Solubility: ~92 g/l ($H_2O$, 25 °C)
[7758-05-6] • EC No. 231-831-9
UN No. 1479 • ADR 5.1 II • WGK 1

**Danger** H272-H318

### Potassium iodate

**≥99,4 %, p.a., ACS**

Titrimetric standard substance in iodometry and in determination of morpholine.

**Guarantee analysis:**
Assay (iodom.). ..... 99,4-100,4 %
pH value (5 % solution). ..... 5,0-8,0
In $H_2O$ insoluble matter. ..... ≤0,005 %
Nitrogen compounds (as N). ..... ≤0,005 %
Bromide and chloride (as Cl)..... ≤0,01 %
Sulphate ($SO_4$)..... ≤0,005 %
Iodide (I). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Sodium (Na)..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P751.1** | 100 g | plastic | 37,55 € |
| **P751.2** | 250 g | plastic | 80,10 € |

O/P

## Potassium iodate

**≥99 %, extra pure**

**Type analysis:**

Appearance. ..... white crystals
Assay (dry substance). ..... ≥99,0 %
pH value (5 % solution). ..... 5,0-8,0
Chlorate (as Cl) ..... ≤0,01 %
Iodide (I). ..... ≤0,002 %
Loss on drying. ..... ≤0,5 %
Arsenic (As). ..... ≤0,0002 %
Lead (Pb). ..... ≤0,0004 %
Cadmium (Cd). ..... ≤0,001 %
Mercury (Hg) ..... ≤0,00001 %

| | | | |
|---|---|---|---|
| **5301.1** | 100 g | plastic | 25,30 € |
| **5301.2** | 500 g | plastic | 102,70 € |
| Original pack 6 x 500 g | | | 97,57/500 g |
| **5301.3** | 1 kg | plastic | 188,15 € |
| Original pack 6 x 1 kg | | | 178,74/1 kg |
| **5301.4** | 2,5 kg | plastic | 439,70 € |

## Potassium iodide

KI
M 166,01 g/mol
D 3,13 • bp 1330 °C
mp 723 °C
Solubility: 1430 g/l ($H_2O$, 20 °C)
[7681-11-0] • EC No. 231-659-4
WGK 1

## Potassium iodide

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis) ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5067.1** | 25 g | plastic | 119,90 € |

## Potassium iodide

**≥99,5 %, p.a., ISO**

Reagent used in iodometry and for the preparation of iodine-starch paper.

**Guarantee analysis:**

Assay (dry substance). ..... ≥99,5 %
pH value (5 % solution). ..... 6,0-8,0
Loss on drying (105 °C). ..... ≤0,2 %
Chloride and bromide (as Cl). ..... ≤0,01 %
Iodate ($IO_3$). ..... ≤0,0003 %
Phosphate ($PO_4$) ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,005 %
Heavy metals (as Pb) ..... ≤0,0005 %
Barium (Ba). ..... ≤0,001 %
Calcium (Ca) ..... ≤0,002 %
Iron (Fe). ..... ≤0,0003 %
Magnesium (Mg) ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **6750.1** | 250 g | glass | 82,25 € |
| **6750.3** | 500 g | glass | 142,45 € |
| Original pack 6 x 500 g | | | 135,33/500 g |
| **6750.2** | 1 kg | glass | 256,95 € |
| Original pack 6 x 1 kg | | | 244,10/1 kg |

## Potassium iodide

**≥99 %, Ph.Eur., BP, USP**

**Guarantee analysis:**

Appearance. ..... white, cryst. powder
Assay. ..... 99,0-100,5 %
Appearance of solution. ..... complies
Alkaline reacting substances. ..... complies
Iodate ($IO_3$). ..... complies
Sulphate ($SO_4$). ..... ≤0,015 %
Thiosulphate ($S_2O_3$). ..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,002 %
Loss on drying (105 °C). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **8491.1** | 250 g | glass | 64,40 € |
| **8491.3** | 500 g | glass | 111,30 € |
| Original pack 6 x 500 g | | | 105,74/500 g |
| **8491.2** | 1 kg | glass | 209,55 € |
| Original pack 6 x 1 kg | | | 199,07/1 kg |

## Potassium iodide

NEW

**≥99 %, extra pure**

**Type analysis:**

Assay (dry substance). ..... ≥99,0 %
Sulphate ($SO_4$). ..... ≤0,05 %
Iron (Fe). ..... ≤0,005 %
Heavy metals. ..... ≤0,005 %
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **0323.1** | 100 g | glass | 21,40 € |
| **0323.2** | 500 g | glass | 69,80 € |
| Original pack 6 x 500 g | | | 66,31/500 g |
| **0323.3** | 1 kg | glass | 127,95 € |
| Original pack 6 x 1 kg | | | 121,55/1 kg |

## Potassium iodide solution

## Potassium iodide solution

**10 %, p.a.**

M 166,00 g/mol
D 1,08
WGK 1

**Type analysis:**

Assay (mass %). ..... ~10 %

| | | | |
|---|---|---|---|
| **8121.1** | 1 l | plastic | 46,15 € |
| Original pack 6 x 1 l | | | 43,84/1 l |

## Potassium lactate

▶ Lactic acid potassium salt see p. 2026

## Potassium metabisulphite

▶ Potassium disulphite see p. 2166

## Potassium meta periodate

▶ Potassium periodate see p. 2173

## Potassium myronate

▶ Sinigrin monohydrate see p. 2264

## Potassium nitrate

$KNO_3$
M 101,11 g/mol
mp 334 °C
Solubility: 320 g/l ($H_2O$, 20 °C)
[7757-79-1] • EC No. 231-818-8
UN No. 1486 • ADR 5.1 III • WGK 1

**Danger** H272

## Potassium nitrate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5659.1** | 10 g | plastic | 52,60 € |
| **5659.2** | 50 g | plastic | 161,25 € |

## Potassium nitrate

**≥99 %, p.a., ISO**

Reagent for the oxidative disintegration of anorganic and organic samples.

**Guarantee analysis:**

Assay (titr. NaOH). ..... ≥99,0 %
pH value (5 % in water). ..... 5-8
In $H_2O$ insoluble matter. ..... ≤0,005 %
Ammonium ($NH_4$). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,001 %
Phosphate ($PO_4$). ..... ≤0,0005 %
Nitrite ($NO_2$). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,003 %
Iodate ($IO_3$). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,002 %
Sodium (Na). ..... ≤0,02 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,0003 %

| | | | |
|---|---|---|---|
| **P021.1** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **P021.2** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **P021.3** | 2,5 kg | plastic | 67,20 € |

## Potassium nitrate

**≥99 %, Ph.Eur., BP**

**Guarantee analysis:**

Assay (acidim., dry substance). ..... ≥99,0 %
Identity. ..... complies
pH (5 % in $H_2O$). ..... 4,5-8,5
Appearance of solution. ..... complies
In $H_2O$ insoluble matter. ..... ≤0,025 %
Loss on drying (105 °C). ..... ≤0,5 %
Residual solvents. ..... complies
Acid or alkaline react. substances. ..... complies
Reducible substances. ..... complies
Chloride (Cl). ..... ≤0,002 %
Phosphate ($PO_4$). ..... ≤0,003 %
Sulphate ($SO_4$). ..... ≤0,01 %
Ammonium ($NH_4$). ..... ≤0,005 %
Arsenic (As). ..... ≤0,0002 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,001 %
Copper (Cu). ..... ≤0,003 %
Magnesium (Mg). ..... ≤0,005 %
Sodium (Na). ..... ≤0,1 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4397.1** | 500 g | plastic | 19,25 € |
| Original pack 6 x 500 g | | | 18,29/500 g |
| **4397.2** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |
| **4397.3** | 5 kg | plastic | 115,60 € |

## Potassium nitrate

**≥99 %**

**Type analysis:**

Assay ($KNO_3$). ..... ≥99,0 %
Loss on drying (1 h, 110 °C). ..... ≤0,2 %
Chloride (Cl). ..... ≤0,03 %
Insoluble matter. ..... ≤0,035 %
Anticaking agent. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8001.1** | 500 g | plastic | 14,95 € |
| Original pack 6 x 500 g | | | 14,20/500 g |
| **8001.3** | 1 kg | plastic | 22,05 € |
| Original pack 6 x 1 kg | | | 20,95/1 kg |
| **8001.2** | 2,5 kg | plastic | 40,35 € |

## Potassium nitrate solution (1 N)

## Potassium nitrate solution

**1 mol/l - 1 N volumetric standard solution**

D 1,06
WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 1 mol/l ±0,2 %
Titer. ..... 0,9980-1,0020

| | | | |
|---|---|---|---|
| **9898.1** | 500 ml | plastic | 31,10 € |
| **9898.2** | 1 l | plastic | 54,75 € |
| Original pack 6 x 1 l | | | 52,01/1 l |

## Potassium oxalate

▶ di-Potassium oxalate monohydrate
see p. 2173

## di-Potassium oxalate monohydrate

Oxalic acid di-potassium salt monohydrate
$C_2K_2O_4 \cdot H_2O$
M 184,24 g/mol
D 2,13
Solubility: ~360 g/l ($H_2O$, 20 °C)
[6487-48-5] • EC No. 209-506-8
WGK 1

**Warning** H302+H312

## di-Potassium oxalate monohydrate

**≥98,5 %, p.a., ACS**

For determination of Manganese.

**Guarantee analysis:**

Assay (perm.). ..... 98,5-101,0 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
Neutrality. ..... complies
Chloride (Cl). ..... ≤0,002 %
Sulphate ($SO_4$). ..... ≤0,01 %
Ammonium ($NH_4$). ..... ≤0,002 %
Dark coloured substance with $H_2SO_4$. ..... complies
Heavy metals (as Pb). ..... ≤0,002 %
Iron (Fe). ..... ≤0,001 %
Sodium (Na). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **HN38.1** | 250 g | plastic | 28,50 € |
| **HN38.2** | 500 g | plastic | 46,80 € |
| Original pack 6 x 500 g | | | 44,46/500 g |
| **HN38.3** | 1 kg | plastic | 83,35 € |
| Original pack 6 x 1 kg | | | 79,18/1 kg |

## di-Potassium oxalate monohydrate

**≥98 %, extra pure**

**Typ analysis:**

Appearance..... white cryst. powder
Assay ($C_2K_2O_4 \cdot H_2O$)..... ≥98,0 %
Identity..... complies
Acidity/alkalinity..... complies
Sulphate ($SO_4$). ..... ≤0,6 %
Chloride (Cl). ..... ≤0,035 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4264.3** | 500 g | plastic | 19,60 € |
| Original pack 6 x 500 g | | | 18,62/500 g |
| **4264.1** | 1 kg | plastic | 31,75 € |
| Original pack 6 x 1 kg | | | 30,16/1 kg |
| **4264.4** | 5 kg | plastic | 117,20 € |
| **4264.2** | 10 kg | plastic | 214,90 € |

## Potassium periodate

## Potassium periodate

**≥99,8 %, p.a., ACS**

Potassium meta periodate
$KIO_4$
M 230,00 g/mol
D 3,62
mp 582 °C (dec.)
Solubility: 4,2 g/l ($H_2O$, 20 °C)
[7790-21-8] • EC No. 232-196-0
UN No. 1479 • ADR 5.1. II • WGK 1

**Danger** H272-H315-H319-H335

**Guarantee analysis:**

Assay (dry substance)..... 99,8-100,3 %
Solubility..... complies
Other halogens (as Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,01 %
Manganese (Mn). ..... ≤0,0001 %
Loss on drying. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **2588.1** | 25 g | plastic | 27,45 € |
| **2588.2** | 100 g | plastic | 64,40 € |
| **2588.3** | 500 g | plastic | 241,90 € |
| Original pack 6 x 500 g | | | 229,81/500 g |

## Potassium permanganate

Permanganic acid potassium salt
$KMnO_4$
M 158,04 g/mol
D 2,70
mp >240 °C
Solubility: 64 g/l ($H_2O$, 20 °C)
[7722-64-7] • EC No. 231-760-3
UN No. 1490 • ADR 5.1 II • WGK 3

**Danger** H272-H400-H410-H302

## Potassium permanganate

**≥99 %, p.a., ACS, max. 0,005 ppm Hg**

For determination of mercury.

**Guarantee analysis:**

Assay. ..... ≥99,0 %
In $H_2O$ insoluble matter. ..... ≤0,2 %
Total nitrogen (as N)..... ≤0,005 %
Chloride, chlorate (as Cl)..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,02 %
Mercury (Hg). ..... ≤0,000005 %

| | | | |
|---|---|---|---|
| **KK08.1** | 500 g | plastic | 42,50 € |
| Original pack 6 x 500 g | | | 40,38/500 g |
| **KK08.2** | 1 kg | plastic | 64,40 € |
| Original pack 6 x 1 kg | | | 61,18/1 kg |

## Potassium permanganate

**≥99 %, p.a., ACS**

Oxidizing agent, volumetric solution in manganometry.

**Guarantee analysis:**

Assay (iodom.). ..... ≥99,0 %
In $H_2O$ insoluble matter. ..... ≤0,2 %
Chloride, chlorate (as Cl). ..... ≤0,005 %
Nitrogen compounds (as N). ..... ≤0,005 %
Sulphate ($SO_4$)..... ≤0,02 %

| | | | |
|---|---|---|---|
| **P752.1** | 500 g | plastic | 39,25 € |
| Original pack 6 x 500 g | | | 37,29/500 g |
| **P752.2** | 1 kg | plastic | 59,05 € |
| Original pack 6 x 1 kg | | | 56,10/1 kg |
| **P752.3** | 2,5 kg | plastic | 105,25 € |

## Potassium permanganate

**≥99 %, Ph.Eur., BP, USP**

**Guarantee analysis:**

Assay (iodom.). ..... 99,0-100,5 %
Appearance of solution. ..... complies
In $H_2O$ insoluble matter. ..... ≤0,2 %
Chloride (Cl)..... ≤0,02 %
Sulphate ($SO_4$)..... ≤0,05 %
Loss on drying (105 °C). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8004.1** | 250 g | plastic | 23,15 € |
| **8004.2** | 1 kg | plastic | 56,45 € |
| Original pack 6 x 1 kg | | | 53,63/1 kg |
| **8004.3** | 5 kg | plastic | 163,30 € |

## Potassium permanganate solution (0,1 N)

## Potassium permanganate solution

**0,02 mol/l - 0,1 N volumetric standard solution**

D 1,002 • bp ~100 °C
mp ~0 °C
[7722-64-7] • EC No. 231-760-3
UN No. 3082 • ADR 9 III • WGK 3

H411

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,02 mol/l ±0,2 %
Titer..... 0,998-1,002

| | | | |
|---|---|---|---|
| **K019.1** | 1 l | glass | 23,55 € |
| Original pack 6 x 1 l | | | 22,37/1 l |

For further information, please see page 1622

## Potassium permanganate solution (0,1 N)

### Potassium permanganate solution

**0,02 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.**

$KMnO_4$
M 158,04 g/mol
UN No. 3082 • ADR 9 III • WGK 3

H411

**Type analysis:**
Amount-of-substance conc. (20 °C)..... 0,02 mol/l
Measurement uncertainty. ..... ±0,1 %

| | | | |
|---|---|---|---|
| **9523.1** | 1 l | glass | 42,50 € |
| Original pack 6 x 1 l | | | 40,38/1 l |

## Potassium permanganate solution (0,5 N)

### Potassium permanganate solution

**0,1 mol/l - 0,5 N volumetric standard solution**

UN No. 3082 • ADR 9 III • WGK 3

H411

**Type analysis:**
Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **KK69.1** | 1 l | glass | 27,45 € |
| Original pack 6 x 1 l | | | 26,08/1 l |

For further information, please see page 1622

## Potassium peroxodisulphate

▶ Potassium persulphate see p. 2174

## Potassium persulphate

Potassium peroxodisulphate
$K_2S_2O_8$
M 270,32 g/mol
D 2,48
mp 100 °C (dec.)
Solubility: 52 g/l ($H_2O$, 20 °C)
[7727-21-1] • EC No. 231-781-8
UN No. 1492 • ADR 5.1 III • WGK 1

**Danger**
H334-H272-H302-H335-H315-H319-H317

### Potassium persulphate

**ROTI®METIC 99,99 % (4N)**

**Type analysis:**
Assay (metals basis)..... 99,99 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5325.1** | 5 g | plastic | 44,65 € |
| **5325.2** | 25 g | plastic | 166,65 € |

### Potassium persulphate

**≥99 %, extra pure**

**Type analysis:**
Assay. ..... ≥99,0 %
Iron (Fe)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **6795.2** | 500 g | plastic | 24,20 € |
| Original pack 6 x 500 g | | | 22,99/500 g |
| **6795.1** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **6795.3** | 5 kg | plastic | 93,45 € |

## sec. Potassium phosphate

▶ di-Potassium hydrogen phosphate see p. 2168

## Potassium phosphate, dibasic

▶ di-Potassium hydrogen phosphate see p. 2168

## Potassium phosphate monobasic

▶ Potassium dihydrogen phosphate see p. 2166

## Potassium platinum(II) chloride

▶ Potassium tetrachloroplatinate(II) see p. 2176

## Potassium polysulphide

### Potassium polysulphide

**≥42 %, extra pure**

Potassium sulphide, Sulphurated potash
$K_2S_x$
D 1,65
mp 200-250 °C • flp >200 °C
Solubility: 500 g/l ($H_2O$, 20 °C)
[37199-66-9] • EC No. 253-390-1
UN No. 3262 • ADR 8 II • WGK 2

**Danger** H314-H400-EUH031

**Type analysis:**
Appearance...buff-coloured or yellow-green fragments
Assay ($K_2S$)..... 42-44 %
Total nitrogen (as N)..... ~0,01 %
In water insoluble matter..... ~1,0 %
Size of fragments. ..... ~5-60 mm

| | | | |
|---|---|---|---|
| **8010.2** | 500 g | plastic | 44,65 € |
| Original pack 6 x 500 g | | | 42,42/500 g |
| **8010.1** | 1 kg | plastic | 79,05 € |
| Original pack 6 x 1 kg | | | 75,10/1 kg |
| **8010.3** | 2,5 kg | plastic | 170,95 € |

## Potassium pyrochromat

▶ Potassium dichromate see p. 2165

## Potassium pyrosulphite

▶ Potassium disulphite see p. 2166

## Potassium rhodanide

▶ Potassium thiocyanate see p. 2176

## Potassium sodium tartrate solution

▶ Fehling's solution II see p. 1927

## Potassium sodium tartrate tetrahydrate

Seignette salt
$C_4H_4KNaO_6 \cdot 4\ H_2O$
M 282,22 g/mol
mp 70-80 °C
Solubility: 630 g/l ($H_2O$, 20 °C)
[6381-59-5] • EC No. 205-698-2
WGK 1

### Potassium sodium tartrate tetrahydrate

**≥99 %, p.a., ACS, ISO**

Used as a constituent of Fehling's solution.

**Guarantee analysis:**
Assay (perchloric acid titration)..... ≥99 %
pH value (5 % in water). ..... 6,5-8,5
In $H_2O$ insoluble matter. ..... ≤0,003 %
Chloride (Cl)..... ≤0,0005 %
Sulphate ($SO_4$)..... ≤0,005 %
Phosphate ($PO_4$)..... ≤0,001 %
Ammonium ($NH_4$)..... ≤0,002 %
Arsenic (As). ..... ≤0,00002 %
Lead (Pb). ..... ≤0,0002 %
Calcium (Ca). ..... ≤0,002 %
Iron (Fe). ..... ≤0,0002 %
Copper (Cu). ..... ≤0,0002 %
Magnesium (Mg). ..... ≤0,002 %
Nickel (Ni). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **8087.2** | 500 g | plastic | 39,70 € |
| Original pack 6 x 500 g | | | 37,72/500 g |
| **8087.1** | 1 kg | plastic | 65,05 € |
| Original pack 6 x 1 kg | | | 61,80/1 kg |
| **8087.3** | 2,5 kg | plastic | 142,45 € |

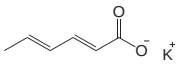
### Potassium sodium tartrate tetrahydrate

**≥99 %, USP**

**Guarantee analysis:**
Assay (dry substance). ..... 99,0-102,0 %
Identity. ..... complies
Water (KF). ..... 21,0-27,0 %
Loss on drying (150 °C). ..... 21,0-26,0 %
pH value (1 % solution). ..... 6,5-8,5
Ammonia ($NH_3$)..... complies
Alkalinity..... complies
Oxalate (as oxalic acid)..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Mercury (Hg). ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **7998.3** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **7998.1** | 1 kg | plastic | 52,15 € |
| Original pack 6 x 1 kg | | | 49,54/1 kg |
| **7998.2** | 5 kg | plastic | 177,95 € |

## Potassium sorbate



Sorbic acid potassium salt
$C_6H_7KO_2$
M 150,22 g/mol
mp 210 °C (dec.)
[24634-61-5] • EC No. 246-376-1
WGK 1

**Warning** H315-H319

### Potassium sorbate
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤1,0 %
Water (KF)..... ≤2,0 %
Assay (qNMR)..... ≥95,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE09.1** | 100 mg | glass | 729,95 € |

### Potassium sorbate
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC09.1** | 100 mg | glass | 116,00 € |

## Potassium sulphate

$K_2SO_4$
M 174,27 g/mol
D 2,662 • bp 1689 °C
mp 1069 °C
Solubility: 111 g/l ($H_2O$, 20 °C)
[7778-80-5] • EC No. 231-915-5
WGK 1

### Potassium sulphate
**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**
Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5071.1** | 10 g | plastic | 88,70 € |

### Potassium sulphate
**≥99 %, p.a., ACS, ISO**
For raising the boiling point.

**Guarantee analysis:**
Assay..... ≥99,0 %
pH value (5 % in water)..... 5,5-8,0
In $H_2O$ insoluble matter..... ≤0,005 %
Total nitrogen (as N)..... ≤0,0005 %
Chloride (Cl)..... ≤0,0005 %
Phosphate ($PO_4$)..... ≤0,0005 %
Heavy metals (as Pb)..... ≤0,0005 %
Arsenic (As)..... ≤0,0001 %
Calcium (Ca)..... ≤0,005 %
Copper (Cu)..... ≤0,0005 %
Iron (Fe)..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %
Cadmium (Cd)..... ≤0,0005 %
Magnesium (Mg)..... ≤0,002 %
Sodium (Na)..... ≤0,02 %
Lead (Pb)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P022.1** | 500 g | plastic | 38,60 € |
| Original pack 6 x 500 g | | | 36,67/500 g |
| **P022.2** | 1 kg | plastic | 64,40 € |
| Original pack 6 x 1 kg | | | 61,18/1 kg |
| **P022.3** | 2,5 kg | plastic | 145,15 € |

### Potassium sulphate
**≥99 %, Ph.Eur.**

**Guarantee analysis:**
Assay (dry substance)..... 99,0-100,5 %
Identity..... complies
Loss on drying..... ≤0,5 %
Appearance of solution..... complies
Acidity/alkalinity..... complies
pH value (5 %, water)..... 6,0-7,5
Chloride (Cl)..... ≤0,004 %
Heavy metals (as Pb)..... ≤0,001 %
Arsenic (As)..... ≤0,0002 %
Lead (Pb)..... ≤0,0002 %
Calcium (Ca)..... ≤0,02 %
Iron (Fe)..... ≤0,001 %
Magnesium (Mg)..... ≤0,002 %
Sodium (Na)..... ≤0,1 %
Mercury (Hg)..... ≤0,0001 %
Selenium (Se)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **CN79.1** | 500 g | plastic | 19,60 € |
| Original pack 6 x 500 g | | | 18,62/500 g |
| **CN79.2** | 1 kg | plastic | 26,35 € |
| Original pack 6 x 1 kg | | | 25,03/1 kg |
| **CN79.3** | 5 kg | plastic | 92,35 € |

### Potassium sulphate
**≥98 % cryst.**

**Type analysis:**
Assay..... ≥98,0 %
Chloride (Cl)..... ~0,1 %
Calcium (Ca)..... ~0,02 %
Magnesium (Mg)..... ~0,02 %

| | | | |
|---|---|---|---|
| **X889.1** | 500 g | plastic | 13,45 € |
| Original pack 6 x 500 g | | | 12,78/500 g |
| **X889.2** | 1 kg | plastic | 18,85 € |
| Original pack 6 x 1 kg | | | 17,91/1 kg |
| **X889.3** | 2,5 kg | plastic | 32,15 € |
| **X889.5** | 25 kg | plastic | 223,10 € |

## Potassium sulphide
▶ Potassium polysulphide see p. 2174

## Potassium sulphocyanide
▶ Potassium thiocyanate see p. 2176

## Potassium tetraborate tetrahydrate

### Potassium tetraborate tetrahydrate
**≥99,5 %, cryst.**
$K_2B_4O_7 \cdot 4\ H_2O$
M 305,50 g/mol
mp 100 °C
Solubility: 158 g/l ($H_2O$, 20 °C)
[12045-78-2] • EC No. 215-575-5
WGK 1

**Danger** H360FD

**Type analysis:**
Assay..... ≥99,5 %
Chloride (Cl)..... ≤0,002 %
Sulphate ($SO_4$)..... ≤0,005 %
Iron (Fe)..... ≤0,0007 %

| | | | |
|---|---|---|---|
| **2615.1** | 250 g | plastic | 22,05 € |
| **2615.2** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **2615.3** | 1 kg | plastic | 52,60 € |
| Original pack 6 x 1 kg | | | 49,97/1 kg |

## Potassium tetrachloroaurate(III)

### Potassium tetrachloroaurate(III)
**ROTI®METIC 99,995 % (4N5)**
$KAuCl_4$
M 377,88 g/mol
mp >300 °C
Solubility: 10 g/l ($H_2O$, 20 °C)
[13682-61-6] • EC No. 237-190-1
WGK 1

**Warning** H315-H319-H335

**Typ analysis:**
Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5114.1** | 1 g | plastic | 232,10 € |
| **5114.2** | 5 g | plastic | 978,25 € |

O/P

## Potassium tetrachloroplatinate(II)

### Potassium tetrachloroplatinate(II)

**ROTI®METIC 99,95 % (3N5)**
Potassium platinum(II) chloride
$K_2PtCl_4$
M 415,09 g/mol
D 3,38
mp 250 °C
[10025-99-7] • EC No. 233-050-9
UN No. 3288 • ADR 6.1 II • WGK 3


**Danger**

H301-H315-H317-H318-H334

**Type analysis:**
Assay (metals basis)..... 99,95 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5660.1** | 1 g | plastic | 232,10 € |

## Potassium tetraiodomercurate(II)

▶ Nessler's Reagent see p. 2092

## Potassium tetraoxalate

▶ Buffer solution pH 1,679 ±0,03 (25 °C) see p. 1791

## Potassium thiocyanate

### Potassium thiocyanate

**≥98,5 %, p.a., ACS**
Reagent for the detection of iron(III)-ions.
Potassium rhodanide, Potassium sulphocyanide
KSCN
M 97,18 g/mol
D 1,89
mp 175 °C
Solubility: 2170 g/l ($H_2O$, 20 °C)
[333-20-0] • EC No. 206-370-1
WGK 1


**Warning**

H302+H312+H332-H412-EUH032

**Guarantee analysis:**
Assay (arg.). ..... ≥98,5 %
pH value (5 % solution)..... 5,3-8,7
In $H_2O$ insoluble matter..... ≤0,005 %
Iodine consuming substances (I). ..... complies
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,005 %
Ammonium ($NH_4$). ..... ≤0,003 %
Iron (Fe)..... ≤0,0002 %
Sodium (Na). ..... ≤0,005 %
Heavy metals (as Pb)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P753.1** | 500 g | plastic | 76,90 € |
| Original pack 6 x 500 g | | | 73,06/500 g |
| **P753.2** | 1 kg | plastic | 134,40 € |
| Original pack 6 x 1 kg | | | 127,68/1 kg |
| **P753.3** | 2,5 kg | plastic | 309,10 € |

## Potassium thiocyanate solution (1 N)

### Potassium thiocyanate solution

**1 mol/l - 1 N volumetric standard solution**
D 1,05
WGK 1
EUH031

**Type analysis:**
Amount-of-substance conc. (20 °C). ..... 1 mol/l ±0,2 %
Titer. ..... 0,9980-1,0020

| | | | |
|---|---|---|---|
| **9899.1** | 1 l | plastic | 44,65 € |
| Original pack 6 x 1 l | | | 42,42/1 l |

## Potato Extract Glucose Agar

### Potato Extract Glucose Agar

**Ph.Eur., for microbiology**
For cultivation and identification of yeasts and moulds.
Application: Use 39 g for 1 l agar.
Slightly opalescent.
Potato Dextrose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), PDA
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**
Potato infusion..... 4 g/l
Glucose..... 20 g/l
Agar..... 15 g/l
pH value. ..... 5,6 ±0,2

| | | | |
|---|---|---|---|
| **X931.1** | 500 g | plastic | 96,25 € |
| Original pack 6 x 500 g | | | 91,44/500 g |
| **X931.2** | 1 kg | plastic | 170,95 € |
| Original pack 6 x 1 kg | | | 162,40/1 kg |
| **X931.3** | 2,5 kg | plastic | 396,70 € |

For further information, please see page 1395

## Potato Extract Glucose Broth

### Potato Extract Glucose Broth

**for microbiology**
For identification, cultivation and enumeration of yeasts and moulds.
Application: Use 26,5 g for 1 l broth.
Slightly opalescent.
Storage temp.: +20 °C
WGK 1

**Formulation:**
Potato infusion..... 6,5 g/l
Glucose..... 20 g/l
pH value. ..... 5,6 ±0,2

| | | | |
|---|---|---|---|
| **CP74.1** | 500 g | plastic | 66,55 € |
| Original pack 6 x 500 g | | | 63,22/500 g |
| **CP74.2** | 1 kg | plastic | 121,40 € |
| Original pack 6 x 1 kg | | | 115,33/1 kg |

For further informations, please see page 1395

## Potato starch

▶ Dextrin see p. 1865

## Povidon

▶ Polyvinylpyrrolidone K 12 see p. 2160
▶ Polyvinylpyrrolidone K 25 see p. 2160
▶ Polyvinylpyrrolidone K 30 see p. 2160
▶ Polyvinylpyrrolidone K 90 see p. 2161

## Powdered milk

### Powdered milk

**blotting grade, powdered, low fat**
BLOTTO reagent
[68514-61-4] • EC No. 271-045-3

**Type analysis:**
Water . ..... ≤4,0 %
Fat..... ≤1,0 %
Ash..... ≤8,5 %
Lactose. ..... 45,0-54,0 %
Protein. ..... 33,0-40,0 %
pH value ..... 6,4-6,7

| | | | |
|---|---|---|---|
| **T145.1** | 250 g | plastic | 14,20 € |
| **T145.2** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **T145.3** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **T145.5** | 2,5 kg | plastic | 75,15 € |
| **T145.4** | 5 kg | plastic | 139,65 € |

## $PPh_3$

▶ Triphenylphosphine see p. 2355

## PPO

▶ 2,5-Diphenyloxazole see p. 1888

## Praseodymium Standards

▶ Praseodymium ICP Standard Solution see p. 2300
▶ Praseodymium ICP Standard Solution see p. 2304

## Praseodymium(III) carbonate octahydrate

### Praseodymium(III) carbonate octahydrate

**ROTI®REMETIC 99 %**
$Pr_2(CO_3)_3 \cdot 8\ H_2O$
M 605,96 g/mol
[14948-62-0] • EC No. 227-578-9
WGK 3

**Type analysis:**
Assay (TREO*). ..... 99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7090.1** | 5 g | plastic | 55,80 € |
| **7090.2** | 25 g | plastic | 133,85 € |

## Praseodymium(III,IV) oxide

### Praseodymium(III,IV) oxide
**ROTI®REMETIC 99,99 %**
$Pr_6O_{11}$
M 1021,44 g/mol
bp 4200 °C
mp 2500 °C
Solubility: insoluble ($H_2O$, 20 °C)
[12037-29-5] • EC No. 234-857-9
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7087.1** | 1 g | plastic | 22,40 € |
| **7087.2** | 5 g | plastic | 90,20 € |

## Precipitation reagents (DNA)

- Roti®-PinkDNA see p. 2229
- Glycogen see p. 1963


## Preston Agar

- Campylobacter Selective Agar (Base) see p. 1808


## Preston Supplement

- Campylobacter Preston Supplement see p. 1808


## Primary Antibody

| Art. No. | Description | Page |
|---|---|---|
| 4665 | Anti DYKDDDDK pAB | 1744 |
| 4664 | Anti DYKDDDDK Serum | 1744 |
| 3998 | Anti GST pAB | 1744 |
| 3994 | Anti GST Serum | 1744 |
| 3894 | Anti His-HRP | 1744 |
| 3742 | Anti His pAB | 1744 |
| 3735 | Anti His Serum | 1744 |
| 4667 | Anti Myc pAB | 1744 |
| 4666 | Anti Myc Serum | 1745 |

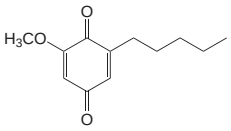
## Primary Standards

| Art. No. | Description | Page |
|---|---|---|
| NE36 | Acetoxyvalerenic acid | 1701 |
| NE33 | Acteoside | 1707 |
| NE37 | Apigenin | 1747 |
| NE19 | Apigenin-7-glucoside | 1748 |
| NE38 | p-Arbutin | 1750 |
| NE00 | L(+)-Ascorbic acid | 1752 |
| NE01 | Benzaldehyde | 1764 |
| NE03 | Benzoic acid | 1766 |
| NE11 | Benzoic acid sodium salt | 1767 |
| NE02 | Benzyl alcohol | 1769 |
| NE20 | Bilobalid | 1772 |
| NE04 | Butylated hydroxyanisole | 1796 |
| NE05 | Butylated hydroxytoluene | 1797 |
| NE08 | Caffeic acid | 1802 |
| NE39 | Casticin | 1817 |
| NE06 | Chlorogenic acid | 1828 |
| NE55 | (+)-Dihydroquercetin | 1875 |
| NE52 | 3,4-Dihydroxybenzoic acid | 1877 |
| NE40 | Echinacoside | 1899 |
| NE41 | (-)-Epicatechin | 1906 |
| NE42 | Eriocitrin | 1907 |
| NE43 | Ginkgolide A | 1951 |
| NE44 | Ginsenoside Rb1 | 1952 |
| NE45 | Ginsenoside Re | 1952 |
| NE62 | Ginsenoside Rg1 | 1953 |
| NE21 | Harpagoside | 1968 |
| NE46 | Hederacoside C | 1969 |
| NE47 | Herniarin | 1975 |
| NE07 | 4-Hydroxybenzoic acid ethyl ester | 1993 |
| NE10 | 4-Hydroxybenzoic acid methyl ester | 1993 |
| NE13 | 4-Hydroxybenzoic acid propyl ester | 1994 |
| NE48 | Hydroxyvalerenic acid | 1997 |
| NE22 | Hypericin | 1998 |
| NE23 | Hyperoside | 1998 |
| NE24 | Isoquercitrin | 2016 |
| NE25 | Isovitexin | 2018 |
| NE26 | Kaempferol | 2019 |
| NE49 | Luteolin | 2044 |
| NE50 | Oleanolic acid | 2121 |
| NE51 | Osthol | 2126 |
| NE12 | 2-Phenoxyethanol | 2146 |
| NE09 | Potassium sorbate | 2175 |
| NE27 | Quercetin dihydrate | 2189 |
| NE28 | Quercetin-3-O-ß-Glucuronide | 2190 |
| NE29 | Quercitrin | 2190 |
| NE30 | Rosmarinic acid | 2202 |
| NE14 | Rutin trihydrate | 2236 |
| NE53 | Sennoside A | 2247 |
| NE54 | Sennoside B | 2247 |
| NE31 | Silybin | 2263 |
| NE15 | Sorbic acid | 2290 |
| NE16 | DL-α-Tocopherol | 2346 |
| NE18 | RRR-α-Tocopherol | 2346 |
| NE17 | DL-α-Tocopherol acetate | 2346 |
| NE32 | Valerenic acid | 2368 |
| NE56 | Vitexin | 2372 |
| NE34 | Vitexin-2''-O-rhamnoside | 2373 |
| NE35 | Xanthohumol | 2378 |

## Primer

- Roth Hexanucleotide Random-Primer Mix see p. 2202
- Roth poly d(T)$_{12-18}$ Primer see p. 2202
- Roth Random-Primer kits for RAPD-PCR see p. 2202


## Primin



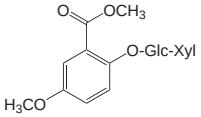
### Primin
**with analytical records**
Synthetic
$C_{12}H_{16}O_3$
M 208,26 g/mol
mp 77-79 °C
Storage temp.: +4 °C
[15121-94-5]
WGK 1

**Danger**
H334-H302+H312+H332-H317

**Type analysis:**
Purity (HPLC). ..... >99 %
Analytical records: HPLC, TLC, $^1$H- NMR, $^{13}$C- NMR, UV, IR, MS, Melting point, Elemental analysis.

| | | | |
|---|---|---|---|
| **T898.1** | 20 mg | glass | 482,70 € |

## Primulaverin



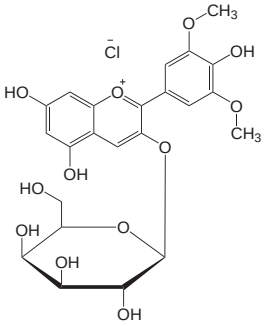
### Primulaverin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Primula veris.*
$C_{20}H_{28}O_{13}$
M 476,43 g/mol
Storage temp.: +4 °C
[154-61-0]

**Warning** H302

**Type analysis:**
Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **1201.1** | 10 mg | glass | 284,90 € |

## Primulin chloride

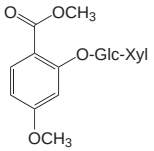


### Primulin chloride
**ROTICHROM® HPLC**
From *Vitis vinifera*
Malvidin 3-galactoside chloride
$C_{23}H_{25}O_{12}Cl$
M 528,87 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[30113-37-2]

**Type analysis:**
Purity (HPLC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **K014.1** | 5 mg | plastic | 579,45 € |

## Primverin



### Primverin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Primula veris.*

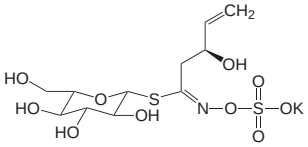
$C_{20}H_{28}O_{13}$
M 476,43 g/mol
Storage temp.: +4 °C
[154-60-9]

**Warning** H302

**Type analysis:**
Purity (HPLC)..... >99 %

| | | | |
|---|---|---|---|
| **1203.1** | 10 mg | glass | 284,90 € |

## Progoitrin



### Progoitrin

**ROTICHROM® HPLC**

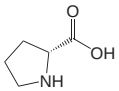
Reference substance for HPLC.
From *Brassica napus.*

2-Hydroxybut-3-enyl glucosinolate potassium salt
$C_{11}H_{18}KNO_{10}S_2$
M 427,48 g/mol
Storage temp.: +4 °C
[585-95-5]
WGK 1

**Type analysis:**
Purity (HPLC)..... ≥97,0 %

| | | | |
|---|---|---|---|
| **2436.1** | 10 mg | glass | 241,90 € |

## D-Proline



### D-Proline

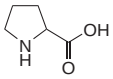
**≥98,5 %, for biochemistry**

*(R)*-Pyrrolidine-2-carboxylic acid, H-D-Pro-OH
$C_5H_9NO_2$
M 115,1 g/mol
Storage temp.: +4 °C
[344-25-2] • EC No. 206-452-7
WGK 1

**Type analysis:**
Appearance..... white to off-white powder
Assay..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (c=4 in $H_2O$)..... +84,5° to +86,5°
Loss on drying..... ≤0,2 %

| | | | |
|---|---|---|---|
| **7888.1** | 1 g | glass | 24,65 € |
| **7888.2** | 5 g | plastic | 72,60 € |
| **7888.3** | 25 g | plastic | 192,45 € |

## DL-Proline



### DL-Proline

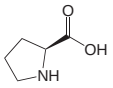
**≥99 %, for biochemistry**

Pyrrolidine-2-carboxylic acid
$C_5H_9NO_2$
M 115,13 g/mol
mp 208-210 °C (dec.)
[609-36-9] • EC No. 210-189-3
WGK 1

**Type analysis:**
Assay (titr.)..... ≥99,0 %
Solution (5 % in $H_2O$)..... colourless, clear
Water (KF)..... ≤0,5 %
pH value (1 % in $H_2O$)..... 5,5-6,9
Heavy metals (as Pb)..... ≤0,002 %

| | | | |
|---|---|---|---|
| **5267.1** | 5 g | plastic | 25,30 € |
| **5267.2** | 10 g | plastic | 45,05 € |
| **5267.3** | 25 g | plastic | 88,05 € |

## L-Proline



*(S)*-Pyrrolidine-2-carboxylic acid, H-L-Pro-OH
$C_5H_9NO_2$
M 115,13 g/mol
Solubility: 1500 g/l ($H_2O$, 20 °C)
[147-85-3] • EC No. 205-702-2
WGK 1

### L-Proline

**CELLPURE® ≥98,5 %**

For cell culture and biochemistry.

**Guarantee analysis:**
Endotoxins..... ≤6,0 E.U./g
Assay..... ≥98,5 %
Loss on drying..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$..... -86,0° to -84,0°
Ammonium ($NH_4$)..... ≤0,02 %
Chloride (Cl)..... ≤0,02 %
Sulphate ($SO_4$)..... ≤0,03 %
Elemental impurities..... complies
Iron (Fe)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1713.1** | 25 g | plastic | 20,65 € |
| **1713.2** | 100 g | plastic | 44,00 € |
| **1713.3** | 500 g | plastic | 165,05 € |
| Original pack 6 x 500 g | | | 156,80/500 g |

### L-Proline

**≥98,5 %, Ph.Eur., for biochemistry**

**Guarantee analysis:**
Appearance.....
..white to off-white cryst. powder or colourless crystals
Assay (dry substance)..... 98,5-101,0 %
Identity..... complies
Appearance of solution..... complies
Specific rotation $[\alpha]_D^{20}$..... -86° to -84°
Ammonium ($NH_4$)..... ≤0,02 %
Chloride (Cl)..... ≤0,02 %
Sulphate ($SO_4$)..... ≤0,03 %
Iron (Fe)..... ≤0,001 %
Elemental impurities..... complies
Residual solvents..... complies
Foreign amino acids..... ≤0,5 %
Loss on drying..... ≤0,5 %
Sulphated ash..... ≤0,1 %

| | | | |
|---|---|---|---|
| **T205.1** | 25 g | plastic | 16,05 € |
| **T205.2** | 100 g | plastic | 31,75 € |
| **T205.3** | 500 g | plastic | 122,05 € |
| Original pack 6 x 500 g | | | 115,95/500 g |

## 1,2-Propanediol



### 1,2-Propanediol

**≥99,5 %, for synthesis**

Propyleneglycol, Methyl ethyl glycol
$C_3H_8O_2$
M 76,10 g/mol
D ~1,04 • bp 188 °C
mp -59 °C • flp 99 °C
[57-55-6] • EC No. 200-338-0
WGK 1

**Type analysis:**
Assay (GC)..... ≥99,5 %
Density (d 20 °C/20 °C)..... 1,035-1,040
Water..... ≤0,2 %
Chloride (Cl)..... ≤0,007 %
Sulphate ($SO_4$)..... ≤0,006 %
Heavy metals (as Pb)..... ≤0,0005 %
Arsenic (As)..... ≤0,0003 %

| | | | |
|---|---|---|---|
| **0340.1** | 1 l | plastic | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **0340.2** | 2,5 l | plastic | 44,65 € |
| Original pack 4 x 2,5 l | | | 42,42/2,5 l |
| **0340.3** | 5 l | plastic | 81,60 € |
| Original pack 2 x 5 l | | | 77,52/5 l |

## Propanedioic acid

▶ Malonic acid see p. 2053

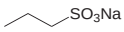
## 1,2-Propanediol cyclic carbonate

▶ Propylene carbonate see p. 2182

## 1,2-Propanediol diacetate

▶ Propylene glycol diacetate see p. 2182

## Propane-1-sulphonic acid sodium salt



### Propane-1-sulphonic acid sodium salt

**≥98 %, for ion pair chromatography**

Ion pair reagent for HPLC.
Sodium-1-propane sulphonate
$C_3H_7NaO_3S$
M 146,14 g/mol
[14533-63-2] • EC No. 238-564-7
WGK 2

**Guarantee analysis:**

Assay (acidim.).....≥98,0 %
Water.....≤2 %
A 200 nm (0,005 M in water).....≤0,05 AU
A 210 nm (0,005 M in water).....≤0,03 AU
A 220 nm (0,005 M in water).....≤0,02 AU
A 230 nm (0,005 M in water).....≤0,02 AU
A 250 nm (0,005 M in water).....≤0,01 AU
A 260 nm (0,005 M in water).....≤0,01 AU

| | | | |
|---|---|---|---|
| **KK57.1** | 10 g | glass | 53,65 € |
| **KK57.2** | 25 g | glass | 105,90 € |
| **KK57.3** | 100 g | glass | 327,90 € |

## 1,2,3-Propanetriol

▶ Glycerol see p. 1960

## Propanoic acid

▶ Propionic acid see p. 2181

## n-Propanol

▶ 1-Propanol see p. 2179

## 1-Propanol



n-Propanol, 1-Hydroxypropane, n-Propylalcohol
$C_3H_8O$
M 60,1 g/mol
D ~0,8 • bp 95,5-97,5 °C
mp -127 °C • flp 15 °C
[71-23-8] • EC No. 200-746-9
UN No. 1274 • ADR 3 II • WGK 1

 **Danger** H225-H318-H336

### 1-Propanol

**ROTISOLV® HPLC**

**Guarantee analysis:**

Assay (GC).....≥99,5 %
Water (KF).....≤0,05 %
Acidity.....≤0,002 meq/g
Non volatile matter.....≤0,0003 %
Transmission:
300 nm.....≥99 %
290 nm.....≥98 %
250 nm.....≥90 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **T177.1** | 2,5 l | glass | 117,20 € |
| Original pack 4 x 2,5 l | | | 111,34/2,5 l |

### 1-Propanol

**ROTIPURAN® ≥99,5 %, p.a.**

**Guarantee analysis:**

Assay (GC).....≥99,5 %
Water (KF).....≤0,05 %
Density (d 20 °C/20 °C).....0,802-0,806
Acetone (GC).....≤0,01 %
Ethanol (GC).....≤0,05 %
Methanol (GC).....≤0,05 %
2-Propanol (GC).....≤0,05 %
Propionaldehyde (GC).....≤0,01 %
Evaporation residue.....≤0,001 %
Lead (Pb).....≤0,00001 %
Cadmium (Cd).....≤0,000005 %
Calcium (Ca).....≤0,00005 %
Chromium (Cr).....≤0,000002 %
Iron (Fe).....≤0,00001 %
Cobalt (Co).....≤0,000002 %
Copper (Cu).....≤0,000002 %
Magnesium (Mg).....≤0,00001 %
Manganese (Mn).....≤0,000002 %
Nickel (Ni).....≤0,000002 %
Zinc (Zn).....≤0,00001 %

| | | | |
|---|---|---|---|
| **6776.1** | 1 l | glass | 52,60 € |
| Original pack 6 x 1 l | | | 49,97/1 l |
| **6776.2** | 2,5 l | glass | 105,90 € |
| Original pack 4 x 2,5 l | | | 100,61/2,5 l |

### 1-Propanol

**≥99,5 %, for synthesis**

**Type analysis:**

Assay (GC).....≥99,5 %
Colour (APHA).....≤10
Water (KF).....≤0,1 %
Density (20 °C).....0,803-0,805

| | | | |
|---|---|---|---|
| **9169.1** | 1 l | glass | 25,30 € |
| Original pack 6 x 1 l | | | 24,04/1 l |
| **9169.2** | 2,5 l | glass | 45,05 € |
| Original pack 4 x 2,5 l | | | 42,80/2,5 l |
| **9169.3** | 10 l | tinplate | 115,60 € |
| **9169.4** | 25 l | tinplate | 208,05 € |

### 1-Propanol

**ROTICHROM® GC**

Reference substance for GC.

**Type analysis:**

Purity (GC).....≥99 %

| | | | |
|---|---|---|---|
| **4916.1** | 1 g | glass | 24,65 € |

## 2-Propanol



Isopropanol, Isopropyl alcohol,
Dimethyl carbinol, IPA, 2-Hydroxypropane
$C_3H_8O$
M 60,10 g/mol
D 0,78 • bp ~82 °C
mp -90 °C • flp 12 °C
[67-63-0] • EC No. 200-661-7
UN No. 1219 • ADR 3 II • WGK 1

 **Danger** H225-H319-H336

### 2-Propanol

**ROTISOLV® ≥99,95 %, Ultra LC-MS**

NEW

**Guarantee analysis:**

Assay (GC).....≥99,95 %
Colour (APHA).....≤5
Water (KF).....≤0,05 %
Acidity (as $CH_3COOH$).....≤0,001 %
Alkalinity (as $NH_3$).....≤0,0001 %
Evaporation residue.....≤0,0001 %
Transmission:
250 nm.....≥99 %
230 nm.....≥90 %
220 nm.....≥80 %
Gradient test:
UV-absorption of the greatest eluated peak.
235 nm.....≤0,001 AU
254 nm.....≤0,001 AU
Fluorescence (as quinine):
254 nm.....≤0,5 ppb
365 nm.....≤0,5 ppb
Trace impurities:
Aluminium (Al).....≤20 ppb
Calcium (Ca).....≤50 ppb
Iron (Fe).....≤20 ppb
Potassium (K).....≤50 ppb
Magnesium (Mg).....≤20 ppb
Sodium (Na).....≤50 ppb
Filtered through 0,1 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **0733.1** | 1 l | glass | 53,65 € |
| Original pack 6 x 1 l | | | 50,97/1 l |
| **0733.2** | 2,5 l | glass | 95,70 € |
| Original pack 4 x 2,5 l | | | 90,92/2,5 l |

### 2-Propanol

**ROTISOLV® ≥99,95 %, LC-MS Grade**

**Guarantee analysis:**

Assay (GC).....≥99,95 %
Colour (APHA).....≤5
Water (KF).....≤0,05 %
Free acid (as $CH_3COOH$).....≤0,001 %
Free alkali (as $NH_3$).....≤0,0005 %
Non volatile matter.....≤0,0001 %
Transmission:
260 nm.....≥98 %
220 nm.....≥60 %
210 nm.....≥30 %
Gradient test:
UV-absorption of the greatest eluated peak.
254 nm.....≤0,001 AU
Fluorescence (as quinine):
254 nm.....≤0,5 ppb
365 nm.....≤0,5 ppb
Trace impurities:
Aluminium (Al).....≤0,05 ppm
Calcium (Ca).....≤0,05 ppm
Iron (Fe).....≤0,05 ppm.
Potassium (K).....≤0,05 ppm
Magnesium (Mg).....≤0,05 ppm
Sodium (Na).....≤0,05 ppm
LC-MS suitability test.....complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE73.1** | 1 l | glass | 38,20 € |
| Original pack 6 x 1 l | | | 36,29/1 l |
| **AE73.2** | 2,5 l | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |

## 2-Propanol

**ROTISOLV® HPLC**

**Guarantee analysis:**

Assay (GC). ≥99,9 %
Water (KF). ≤0,05 %
Free acid. ≤0,001 %
Non volatile matter. ≤0,0001 %
Transmission:
255 nm. ≥99 %
240 nm. ≥90 %
210 nm. ≥40 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **7343.2** | 1 l | glass | 32,15 € |
| Original pack 6 x 1 l | | | 30,54/1 l |
| **7343.1** | 2,5 l | glass | 67,65 € |
| Original pack 4 x 2,5 l | | | 64,27/2,5 l |

For further information, please see page 1590

## 2-Propanol

**ROTISOLV® ≥99,9 %, Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Assay (GC). ≥99,9 %
Colour (APHA). ≤10
Water (KF). ≤0,03 %
Free acid (as $CH_3COOH$). ≤0,001 %
Free alkali (as $NH_3$). ≤0,0001 %
Evaporation residue. ≤0,0003 %
GC/ECD suitability (as heptachloro epoxide). ≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane). ≤5 ng/l
GC/ECD pesticides (as lindane). ≤5 ng/l
GC/NPD pesticides (as parathion). ≤10 ng/l
PAH-test (less than 2 ppb, HPLC). complies
Oil index (any hydrocarbon $C_{10}$-$C_{40}$). ≤0,1 mg/l
Fluorescence (as quinine):
254 nm. ≤1 ppb
365 nm. ≤1 ppb
Transmission:
220 nm. ≥80 %

| | | | |
|---|---|---|---|
| **7590.1** | 2,5 l | glass | 52,15 € |
| Original pack 4 x 2,5 l | | | 49,54/2,5 l |

## 2-Propanol

**ROTISOLV® ≥99,8 %, Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC). ≥99,8 %
Water (KF). ≤0,1 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
GC/ECD (individual signal as lindane). ≤5 ng/l
GC/PND (individual signal as ethylparathion). ≤10 ng/l

| | | | |
|---|---|---|---|
| **T902.1** | 2,5 l | glass | 51,50 € |
| Original pack 4 x 2,5 l | | | 48,93/2,5 l |

## 2-Propanol

**ROTISOLV® ≥99,9 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC). ≥99,9 %
Water (KF). ≤0,05 %
Acidity. ≤0,0005 meq/g
Evaporation residue. ≤0,0005 %
Fluorescence (as quinine):
254 nm. ≤1,0 ppb
365 nm. ≤1,0 ppb
Transmission:
260 nm. ≥98 %
242 nm. ≥90 %
232 nm. ≥80 %
217 nm. ≥50 %
207 nm. ≥10 %

| | | | |
|---|---|---|---|
| **T910.1** | 2,5 l | glass | 69,80 € |
| Original pack 4 x 2,5 l | | | 66,31/2,5 l |

## 2-Propanol

**≥99,9 %, VLSI Grade**

**Guarantee analysis:**

Assay. ≥99,9 %
Bead number (≥0,5 µm). ≤250 p/ml
Water. ≤0,1 %
Alkalinity. 0,1 µeq/g
Acidity. 0,2 µeq/g
Colour (APHA). ≤10
Chloride (Cl). ≤0,0001 %
Nitrate ($NO_3$). ≤0,0001 %
Sulphate ($SO_4$). ≤0,0001 %
Sulphite ($SO_3$). ≤0,0001 %
Ash content. ≤0,0005 %
Aluminium (Al). ≤20 ppb
Antimony (Sb). ≤10 ppb
Arsenic (As). ≤10 ppb
Barium (Ba). ≤20 ppb
Bismuth (Bi). ≤10 ppb
Lead (Pb). ≤10 ppb
Boron (B). ≤20 ppb
Cadmium (Cd). ≤10 ppb
Calcium (Ca). ≤50 ppb
Chromium (Cr). ≤10 ppb
Iron (Fe). ≤50 ppb
Gallium (Ga). ≤10 ppb
Gold (Au). ≤20 ppb
Potassium (K). ≤20 ppb
Cobalt (Co). ≤10 ppb
Copper (Cu). ≤10 ppb
Lithium (Li). ≤10 ppb
Magnesium (Mg). ≤50 ppb
Manganese (Mn). ≤10 ppb
Molybdenum (Mo). ≤10 ppb
Sodium (Na). ≤50 ppb
Nickel (Ni). ≤10 ppb
Silver (Ag). ≤10 ppb
Strontium (Sr). ≤20 ppb
Titanium (Ti). ≤10 ppb
Vanadium (V). ≤10 ppb
Zinc (Zn). ≤20 ppb
Tin (Sn). ≤10 ppb

| | | | |
|---|---|---|---|
| **9781.1** | 2,5 l | plastic | 66,55 € |
| Original pack 4 x 2,5 l | | | 63,22/2,5 l |
| **9781.2** | 5 l | plastic | 110,20 € |
| Original pack 2 x 5 l | | | 104,69/5 l |

## 2-Propanol

**ROTIPURAN® ≥99,8 %, p.a., ACS, ISO**

**Guarantee analysis:**

Assay (GC). ≥99,8 %
Colour (Hazen). ≤10
Acidity. ≤0,0001 meq/g
Solubility in $H_2O$. complies
Density (d 20 °C/4 °C). 0,784-0,787
Water. ≤0,05 %
Acetone (GC). ≤0,01 %
Ethanol (GC). ≤0,01 %
Methanol (GC). ≤0,01 %
Evaporation residue. ≤0,001 %
Carbonylic compounds (as CO). ≤0,002 %
Matter discoloured by $H_2SO_4$ (Hazen). ≤10
Aluminium (Al). ≤0,00005 %
Barium (Ba). ≤0,00001 %
Lead (Pb). ≤0,00001 %
Boron (B). ≤0,000002 %
Cadmium (Cd). ≤0,000005 %
Calcium (Ca). ≤0,00005 %
Chromium (Cr). ≤0,000002 %
Iron (Fe). ≤0,00001 %
Cobalt (Co). ≤0,000002 %
Copper (Cu). ≤0,000002 %
Magnesium (Mg). ≤0,00001 %
Manganese (Mn). ≤0,000002 %
Nickel (Ni). ≤0,000002 %
Zinc (Zn). ≤0,00001 %
Tin (Sn). ≤0,00001 %

| | | | |
|---|---|---|---|
| **6752.1** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **6752.3** | 1 l | plastic | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **6752.2** | 2,5 l | glass | 54,75 € |
| Original pack 4 x 2,5 l | | | 52,01/2,5 l |
| **6752.4** | 2,5 l | plastic | 52,60 € |
| Original pack 4 x 2,5 l | | | 49,97/2,5 l |
| **6752.5** | 5 l | plastic | 81,60 € |
| Original pack 2 x 5 l | | | 77,52/5 l |
| **6752.6** | 25 l | tinplate | 238,15 € |

## 2-Propanol

**≥99,5 %, Ph.Eur., extra pure**

**Guarantee analysis:**

Assay (GC). ≥99,5 %
Identity. complies
Appearance. complies
Acid or alkaline react. substances. complies
Density (d 20 °C/20 °C). 0,785-0,789
Refractive index $n_D^{20}$. 1,376-1,379
Water (KF). ≤0,5 %
Benzene (UV). ≤0,0002 %
Benzene and related substances. complies
Peroxides. complies
Evaporation residue. ≤0,002 %

| | | | |
|---|---|---|---|
| **CP41.1** | 1 l | glass | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **CP41.2** | 2,5 l | glass | 44,00 € |
| Original pack 4 x 2,5 l | | | 41,80/2,5 l |
| **CP41.3** | 2,5 l | plastic | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |
| **CP41.4** | 5 l | plastic | 63,35 € |
| Original pack 2 x 5 l | | | 60,18/5 l |
| **CP41.5** | 10 l | tinplate | 103,10 € |
| **CP41.6** | 25 l | tinplate | 177,40 € |

## 2-Propanol

**≥99,5 %, for synthesis**

**Type analysis:**

Assay (GC). ≥99,5 %
Colour (Hazen). ≤10
Water . ≤0,1 %
Density (20 °C). 0,784-0,787 g/cm³
Acid (as $CH_3COOH$). ≤0,002 %
Refractive index $n_D^{20}$. 1,376-1,379

| | | | |
|---|---|---|---|
| **9866.1** | 1 l | glass | 17,10 € |
| Original pack 6 x 1 l | | | 16,25/1 l |
| **9866.2** | 2,5 l | glass | 41,40 € |
| Original pack 4 x 2,5 l | | | 39,33/2,5 l |
| **9866.5** | 2,5 l | plastic | 38,60 € |
| Original pack 4 x 2,5 l | | | 36,67/2,5 l |
| **9866.6** | 5 l | plastic | 55,80 € |
| Original pack 2 x 5 l | | | 53,01/5 l |
| **9866.3** | 10 l | tinplate | 85,90 € |
| **9866.4** | 25 l | tinplate | 170,95 € |

## 2-Propanol 70 %

### 2-Propanol 70 %

**70 %, pure**

Isopropanol, Isopropyl alcohol, Dimethyl carbinol, IPA, 2-Hydroxypropane

$C_3H_8O$

M 60,10 g/mol

D ~0,87 • bp ~82 °C

flp +12 °C

[67-63-0] • EC No. 200-661-7

UN No. 1219 • ADR 3 II • WGK 1

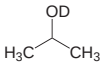
**Danger** H225-H319-H336

**Type analysis:**

Assay (V/V).....~70 %
Density (20 °C).....0,869-0,875 g/cm³
Refractive index (20 °C).....1,371-1,375

| | | | |
|---|---|---|---|
| **CN09.1** | 1 l | plastic | 16,05 € |
| Original pack 6 x 1 l | | | 15,25/1 l |
| **CN09.2** | 2,5 l | plastic | 25,30 € |
| Original pack 4 x 2,5 l | | | 24,04/2,5 l |
| **CN09.3** | 5 l | plastic | 39,25 € |
| Original pack 2 x 5 l | | | 37,29/5 l |
| **CN09.4** | 10 l | plastic | 56,90 € |
| **CN09.5** | 25 l | plastic | 124,60 € |

## 2-Propanol D1



### 2-Propanol D1

**98 Atom%D**

For nuclear magnetic resonance spectroscopy.

Isopropanol D1

$(CH_3)_2CHOD$

M 61,10 g/mol

D 0,80 • bp 82 °C

mp -89 °C • flp 23 °C

[3979-51-9] • EC No. 223-616-3

UN No. 1219 • ADR 3 II • WGK 1

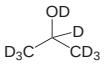
**Danger** H225-H319-H336

**Type analysis:**

Deuterising degree.....≥98 %
Water (KF, $H_2O+D_2O$).....≤0,5 %

| | | | |
|---|---|---|---|
| **9917.1** | 25 ml | glass | 113,85 € |

## 2-Propanol D8



### 2-Propanol D8

**99,5 Atom%D**

For nuclear magnetic resonance spectroscopy.

Isopropanol D8

$C_3D_8O$

M 68,16 g/mol

D 0,89 • bp 82 °C

mp -89 °C • flp 23 °C

[22739-76-0] • EC No. 245-189-2

UN No. 1219 • ADR 3 II • WGK 1

**Danger** H225-H319-H336

**Type analysis:**

Deuterising degree.....≥99,5 %
Water (KF, $H_2O+D_2O$).....≤0,05 %

| | | | |
|---|---|---|---|
| **9919.1** | 5 ml | glass | 107,40 € |

### 2-Propanone

▶ Acetone see p. 1697

### Propenamide

▶ Acrylamide see p. 1706

### 2-Propenamide

▶ Acrylamide see p. 1706

### trans-Propene-1,2,3-tricarboxylic acid

▶ trans-Aconitic acid see p. 1706

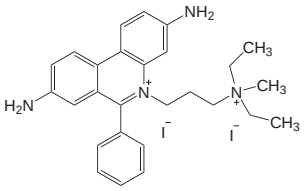
### 1,2,3-Propenetricarboxylic acid

▶ trans-Aconitic acid see p. 1706

### p-Propenylanisole

▶ Anethole see p. 1741

## Propidiumiodide



### Propidiumiodide

**≥95 %, p.a.**

For fluorescence staining of DNA.

3,8-Diamino-5-(3-diethylaminopropyl)-6-phenyl-phenanthridinium iodide methiodide

$C_{27}H_{34}I_2N_4$

M 668,4 g/mol

Storage temp.: +4 °C

[25535-16-4] • EC No. 247-081-0

WGK 1

**Warning** H315-H319-H335-H341

**Type analysis:**

Assay (HPLC).....≥95 %

| | | | |
|---|---|---|---|
| **CN74.1** | 25 mg | glass | 67,20 € |
| **CN74.2** | 50 mg | glass | 117,20 € |
| **CN74.3** | 100 mg | glass | 209,65 € |

For further information, please see page 1472

### Propionate Standards

▶ Propionate IC Standard Solution see p. 2312

### Propione

▶ Diethylketone see p. 1874

## Propionic acid



### Propionic acid

**≥99,5 %, for synthesis**

Methylacetic acid

$C_3H_6O_2$

M 74,08 g/mol

D 0,99 • bp 141-142 °C

mp -20 °C • flp 52 °C

Solubility: 370 g/l ($H_2O$, 20 °C)

[79-09-4] • EC No. 201-176-3

UN No. 3463 • ADR 8 (3) II • WGK 1

**Danger** H226-H314-H335

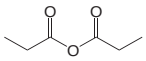
**Type analysis:**

Assay.....≥99,5 %
Colour (APHA).....≤10
Water.....≤0,15 %

| | | | |
|---|---|---|---|
| **6026.2** | 500 ml | glass | 14,95 € |
| **6026.1** | 1 l | glass | 22,05 € |
| Original pack 6 x 1 l | | | 20,95/1 l |
| **6026.3** | 2,5 l | glass | 40,35 € |
| Original pack 4 x 2,5 l | | | 38,33/2,5 l |

For further information, please see page 1447

## Propionic anhydride



### Propionic anhydride

**≥98,5 %, for synthesis**
Propanoic anhydride
$C_6H_{10}O_3$
M 130,14 g/mol
D 1,02 • bp 167 °C
mp -45 °C
[123-62-6] • EC No. 204-638-2
UN No. 2496 • ADR 8 III • WGK 1
**Danger** H314

**Type analysis:**
Assay.....≥98,5 %
Identity (IR).....complies
Acetic anhydride ($(CH_3CO)_2O$).....<0,05 %

| | | | |
|---|---|---|---|
| **7432.1** | 100 ml | glass | 14,20 € |
| **7432.2** | 500 ml | glass | 32,15 € |
| **7432.3** | 1 l | glass | 52,60 € |
| Original pack 6 x 1 l | | | 49,97/1 l |
| **7432.4** | 2,5 l | glass | 112,35 € |
| Original pack 4 x 2,5 l | | | 106,73/2,5 l |

## n-Propyl alcohol

▶ 1-Propanol see p. 2179

## Propyl bromide



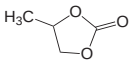
### Propyl bromide

**≥98 %**
Bromopropane
$C_3H_7Br$
M 123,01 g/mol
D 1,35 • bp 71 °C
mp -108 °C • flp -10 °C
[106-94-5] • EC No. 203-445-0
UN No. 2344 • ADR 3 II • WGK 2
**Danger**
H225-H360FD-H373-H315-H319-H335-H336

**Type analysis:**
Appearance.....colourless liquid
Assay (GC).....≥98 %
Refractive index $n_D^{20}$.....1,432-1,436

| | | | |
|---|---|---|---|
| **4631.1** | 100 ml | glass | 37,10 € |

## Propylene carbonate



### Propylene carbonate

**≥99,7 %**
1,2-Propanediol cyclic carbonate
$C_4H_6O_3$
M 102,09 g/mol
D 1,21 • bp 243 °C
mp -49 °C • flp 132 °C
Solubility: 240 g/l ($H_2O$, 20 °C)
[108-32-7] • EC No. 203-572-1
WGK 1
**Warning** H319

**Type analysis:**
Appearance.....colourless liquid
Assay (GC).....≥99,7 %
Water.....≤0,1 %
Colour (Hazen).....≤10

| | | | |
|---|---|---|---|
| **5022.2** | 100 ml | glass | 13,45 € |
| **5022.1** | 250 ml | glass | 22,05 € |
| **5022.3** | 1 l | glass | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **5022.4** | 2,5 l | glass | 60,10 € |
| Original pack 4 x 2,5 l | | | 57,10/2,5 l |

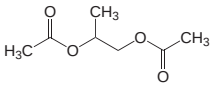
## (±)-1,2-Propylene carbonate

▶ Propylene carbonate see p. 2182

## Propylene glycol

▶ 1,2-Propanediol see p. 2178

## Propylene glycol diacetate



### Propylene glycol diacetate

**≥99 %, pure**
1,2-Propanediol diacetate, PGDA
$C_7H_{12}O_4$
M 160,17 g/mol
D 1,05 • bp 191 °C
mp -75 °C • flp 86 °C
[623-84-7] • EC No. 210-817-6
WGK 1

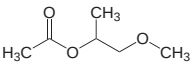
**Type analysis:**
Assay.....≥99,0 %
Colour (Hazen).....≤20
Density (d 20 °C/20 °C).....1,055-1,060

| | | | |
|---|---|---|---|
| **7657.1** | 1 l | plastic | 41,40 € |
| Original pack 6 x 1 l | | | 39,33/1 l |
| **7657.2** | 2,5 l | plastic | 80,10 € |
| Original pack 4 x 2,5 l | | | 76,10/2,5 l |

## Propylene glycol methyl ether

▶ 1-Methoxy-2-propanol see p. 2071

## Propylene glycol methyl ether acetate



### Propylene glycol methyl ether acetate

**≥99 %, pure**
1-Methoxy-2-propyl acetate, PMA
$C_6H_{12}O_3$
M 132,16 g/mol
D 0,97 • bp 146 °C
mp -67 °C • flp 45 °C
[108-65-6] • EC No. 203-603-9
UN No. 3272 • ADR 3 III • WGK 1
**Warning** H226

**Type analysis:**
Assay (GC).....≥99,0 %
Colour (Hazen).....≤10
2-Methoxy-1-propyl acetate.....≤0,3 %

| | | | |
|---|---|---|---|
| **7966.1** | 1 l | glass | 41,40 € |
| Original pack 6 x 1 l | | | 39,33/1 l |
| **7966.2** | 2,5 l | glass | 80,10 € |
| Original pack 4 x 2,5 l | | | 76,10/2,5 l |

## Propyl 4-hydroxybenzoate

▶ 4-Hydroxybenzoic acid propyl ester see p. 1993

## Propylparaben

▶ 4-Hydroxybenzoic acid propyl ester see p. 1993

## Protaminsulphate

▶ Salmine sulphate see p. 2239

## Protective Groups

| Art. No. | Description | Page |
|---|---|---|
| 4483 | Acetic acid anhydride | 1693 |
| 7456 | Benzoyl chloride | 1768 |
| 6985 | Di-*tert*-butyl dicarbonate ($Boc_2O$) | 1868 |
| 9671 | 4,4'-Dimethoxytrityl chloride (DMT-Cl) | 1880 |
| 2201 | 9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl) | 1930 |
| 2338 | Trimethylchlorosilane (TMCS) | 2354 |
| 1444 | 2-(Trimethylsilyl)ethoxymethyl chloride | 2355 |

## Proteicolor®

▶ Silver nitrate see p. 2261

## Protein A affinity columns

▶ Roti®garose-Protein A MINI columns see p. 2218

## Protein A agarose beads

▶ Roti®garose-Protein A Beads see p. 2218

## Proteinase K

### Proteinase K

**lyophil., ≥30 mAnson U/mg**

Isolated from fungi (*Tritirachium album*).

**Art. No. 7528.3:** A stock solution with a concentration of 20 mg/ml can be prepared directly by adding 25 ml buffer or water.

Storage temp.: +4 °C

[39450-01-6] • EC No. 254-457-8

WGK 1

**Danger** H315-H319-H334-H317-H335

**Guarantee analysis:**

Activity (Hemoglobin, 37 °C).....≥30 U/mg
DNases, RNases. ..... not detected
Endonucleases. ..... not detected

| | | | |
|---|---|---|---|
| **7528.1** | 100 mg | glass | 90,20 € |
| **7528.5** | 250 mg | glass | 172,00 € |
| **7528.2** | 500 mg | glass | 306,40 € |
| **7528.3** | 500 mg (in a 30 ml glass bottle) | | 342,95 € |
| **7528.4** | 1 g | glass | 514,95 € |
| **7528.6** | 5 g | glass | 2031,75 € |

For further information, please see page 1278

## Protein glycerol

### Protein glycerol

**for microscopy**

For fixing and stretching of the cuts.

WGK 1

**Type analysis:**

Appearance. ..turbic, colourless to light yellow solution

| | | | |
|---|---|---|---|
| **P049.1** | 100 ml | glass | 17,10 € |

For further information, please see page 1450

## Protein Marker

▶ Roti®-Mark, prestained see p. 2223

## Proteose Peptone

### Proteose Peptone

**for microbiology**

Rich component of microbiological nutrition media, particularly used for production of toxins and vaccines. From enzymatic digestion of animal tissue.

Storage temp.: +20 °C

[91079-38-8] • EC No. 293-426-3

WGK 3

**Guarantee analysis:**

Total nitrogen.....≥10 %
Amino nitrogen. .....≥3,4 %
Loss on drying. .....≤6 %
Ash. .....≤10 %
pH value (2 % solution).....7,0 ±0,5

| | | | |
|---|---|---|---|
| **HP32.1** | 500 g | plastic | 90,85 € |
| Original pack 6 x 500 g | | | 86,31/500 g |

For further information, please see page 1422

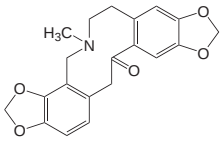
## Protocatechualdehyde

▶ 3,4-Dihydroxybenzaldehyde see p. 1876

## Protocatechuic acid

▶ 3,4-Dihydroxybenzoic acid see p. 1877

## Protopine



### Protopine

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Chelidonium majus.*

Fumarine, Biflorine, Macleyine

$C_{20}H_{19}NO_5$

M 353,37 g/mol

mp 198-203 °C

Storage temp.: +4 °C

[130-86-9]

UN No. 1544 • ADR 6.1 III • WGK 3

**Warning** H302

**Type analysis:**

Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **6690.1** | 10 mg | glass | 256,95 € |

## Prunetol

▶ Genistein see p. 1949

## Prunin

▶ Naringenin-7-glucoside see p. 2089

## PSA

▶ Silica gel 60 modified phases see p. 2251

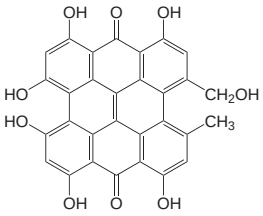
## Pseudocef

▶ Cefsulodin sodium salt see p. 1819

## Pseudocumene

▶ 1,2,4-Trimethylbenzene see p. 2354

## Pseudohypericin



### Pseudohypericin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Hypericum perforatum.*

$C_{30}H_{18}O_9$

M 520,43 g/mol

Storage temp.: +4 °C

[55954-61-5]

WGK 2

**Type analysis:**

Purity (HPLC).....≥97 %

| | | | |
|---|---|---|---|
| **2846.1** | 5 mg | glass | 521,40 € |

## Pseudomonas chromogenic Agar

### Pseudomonas chromogenic Agar

**for microbiology**

For detection and isolation of *Pseudomonas*.

Application: Use 37 g for 1 l agar.
Do not overheat!

Storage temp.: +4 °C

**Formulation:**

Nutrients. ..... 14 g/l
Peptone. ..... 10 g/l
Chromogene Mixture. ..... 1 g/l
Bromothymol blue. ..... 0,02 g/l
Agar. ..... 12 g/l
pH value. .....7,2 ±0,2

| | | | |
|---|---|---|---|
| **3075.1** | 100 g | plastic | 114,50 € |

For further information, please see page 1395

## Pseudomonas Selective Agar (Base)

### Pseudomonas Selective Agar (Base)

**DEV, EN ISO 16266:2008, for microbiology**

For determination and enumeration of *Pseudomonas aeruginosa* from water samples by membrane filtration method.

Application: Use 50,6 g for 990 ml agar.
Add 10 ml glycerol.

**CN Agar**

Storage temp.: +20 °C

UN No. 3077 • ADR 9 III • WGK 3

**Warning** H400

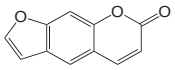
**Guarantee analysis:**

Gelatine peptone..... 16 g/l
Casein hydrolysed. ..... 10 g/l
Anhydrous potassium sulphate. ..... 10 g/l
Anhydrous magnesium chloride..... 1,4 g/l
Cetrimide. ..... 0,2 g/l
Nalidixic acid..... 0,015 g/l
Agar. ..... 13 g/l
pH value. .....7,1 ±0,2

| | | | |
|---|---|---|---|
| **CP67.1** | 500 g | plastic | 138,70 € |
| Original pack 6 x 500 g | | | 131,77/500 g |

For further information, please see page 1395

## Psoralen



### Psoralen

**ROTICHROM® HPLC**
Reference substance for HPLC.
7-*H*-Furo[3,2-g]benzopyran-7-one
$C_{11}H_6O_3$
M 186,16 g/mol
mp ~165 °C
Storage temp.: +4 °C
[66-97-7] • EC No. 200-639-7
WGK 1

**Warning** H302-H315-H319-H335

**Type analysis:**
Purity (HPLC)..... ≥98,5 %

| | | | |
|---|---|---|---|
| **7415.1** | 10 mg | glass | 166,65 € |

## Pteroyl glutamic acid

▶ Folic acid see p. 1939

## PTFE paste

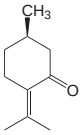
### PTFE paste

Paste for sealing and gliding.
May be used at temperatures up to 300 °C

| | | | |
|---|---|---|---|
| **0124.1** | 100 g | plastic | 128,50 € |

For further information, please see page 1140

## (+)-Pulegone



### (+)-Pulegone

**ROTICHROM® GC**
Reference substance for GC.
$C_{10}H_{16}O$
M 152,24 g/mol
D ~0,936 • bp 224 °C
mp <25 °C • flp 82 °C
Storage temp.: +4 °C
[89-82-7] • EC No. 201-943-2
WGK 2

**Warning** H302

**Type analysis:**
Purity (GC)..... ≥98 %

| | | | |
|---|---|---|---|
| **5168.2** | 100 mg | glass | 117,20 € |

## Pumice stone

### Pumice stone

**finely granulated <0,5 mm**
Bulk density 350-900 g/l
[1332-09-8] • EC No. 215-108-5

| | | | |
|---|---|---|---|
| **5832.2** | 1 kg | plastic | 18,20 € |
| Original pack 6 x 1 kg | | | 17,29/1 kg |
| **5832.1** | 2,5 kg | plastic | 29,60 € |

## Purification solution for surfaces

▶ DNA AWAY® see p. 1890
▶ RNase AWAY® see p. 2201
▶ Roti® Nucleic Acid-free see p. 2225
▶ Roti® Nucleic Acid-free eXtra see p. 2225

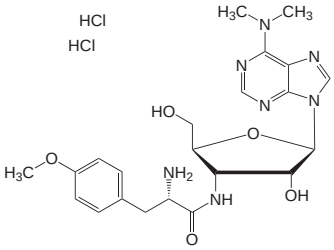
## Purimycin

▶ Puromycin dihydrochloride see p. 2184

## 1H-Purine-6-amine

▶ Adenine see p. 1708

## Puromycin dihydrochloride



### Puromycin dihydrochloride

**≥99 %, for biochemistry**
Inhibitor of proteine biosynthesis, aminonucleoside antibiotic.
Purimycin
$C_{22}H_{29}N_7O_5 \cdot 2$ HCl
M 544,44 g/mol
mp ~178 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[58-58-2] • EC No. 200-387-8

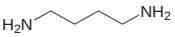
**Warning** H302

**Type analysis:**
Assay (HPLC)..... ≥99,0 %
Solubility (50 mg/ml, $H_2O$)..... clear, colourless to light yellow solution
Melting point..... 165-185 °C

| | | | |
|---|---|---|---|
| **0240.1** | 5 mg | glass | 19,25 € |
| **0240.2** | 10 mg | glass | 30,65 € |
| **0240.3** | 25 mg | glass | 67,65 € |
| **0240.4** | 50 mg | glass | 123,65 € |

For further information, please see page 1433

## Putrescin



### Putrescin

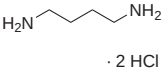
**≥99 %, for biochemistry**
1,4-Diaminobutane, Tetramethylenediamine
$C_4H_{12}N_2$
M 88,15 g/mol
D 0,874
mp 26 °C • flp 64 °C
[110-60-1] • EC No. 203-782-3
UN No. 2923 • ADR 8 (6.1) II • WGK 1

**Danger**
H290-H302+H312-H331-H314

**Type analysis:**
Appearance..... colourless liquid or white solid
Assay (GC)..... ≥99,0 %
Water (KF)..... ≤1,0 %

| | | | |
|---|---|---|---|
| **8379.1** | 25 g | glass | 21,40 € |
| **8379.2** | 100 g | glass | 42,50 € |
| **8379.3** | 500 g | glass | 131,70 € |
| Original pack 6 x 500 g | | | 125,12/500 g |

## Putrescin dihydrochloride



· 2 HCl

### Putrescin dihydrochloride

**≥97 %, for biochemistry**
1,4-Diaminobutane dihydrochloride, Tetramethylenediamine dihydrochloride
$C_4H_{12}N_2 \cdot 2$ HCl
M 161,08 g/mol
[333-93-7] • EC No. 206-375-9
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Assay (titr.)..... ≥97 %
Solution (10 % in water)..... colourless, clear
Water (KF)..... ≤2 %
Loss on drying (3 h, 105 °C, vacuum)..... ≤3 %
pH value (10 % in $H_2O$)..... 4,0-7,0
Heavy metals (as Pb)..... ≤0,002 %

| | | | |
|---|---|---|---|
| **4141.1** | 10 g | glass | 24,65 € |
| **4141.2** | 25 g | glass | 48,95 € |
| **4141.3** | 50 g | glass | 85,90 € |

## PVA

▶ Mowiol®4-88 see p. 2084

## PVC

▶ Polyvinyl chloride see p. 2160

## PVP

▶ Polyvinylpyrrolidone K 12 see p. 2160
▶ Polyvinylpyrrolidone K 25 see p. 2160
▶ Polyvinylpyrrolidone K 30 see p. 2160
▶ Polyvinylpyrrolidone K 90 see p. 2161

## PyBOP®

▶ Benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBOP®) see p. 1768

## PyBrOP®

▶ Bromo-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBrOP®) see p. 1790

## PyClock®

▶ 6-Chloro-benzotriazole-1-yl-oxy-tris-pyrrolidinophosphonium hexafluorophosphate (PyClock®) see p. 1827

## PyOxim

▶ (Ethylcyano(hydroxyimino)-acetato-$O_2$)tri-1-pyrrolidinylphosphonium hexafluorophosphate (PyOxim) see p. 1915

## Pyracidosorb-ROTH®

### Pyracidosorb-ROTH®

For neutralizing acids.
WGK 1

**Warning** H319

| | | | |
|---|---|---|---|
| **0411.1** | 5 kg | plastic | 42,90 € |

For further information, please see page 693

## Pyridine



$C_5H_5N$
M 79,10 g/mol
D 0,98 • bp ~115 °C
mp -42 °C • flp 17 °C
[110-86-1] • EC No. 203-809-9
UN No. 1282 • ADR 3 II • WGK 2

**Danger**
H225-H302+H312+H332-H315-H319

### Pyridine

**ROTIPURAN® ≥99,5 %, p.a., ACS**

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,5 % |
| Water | ≤0,1 % |
| Piperidine (GC) | ≤0,01 % |
| 2-Methylpyridine (GC) | ≤0,1 % |
| Evaporation residue | ≤0,001 % |
| $KMnO_4$ reducing substances (as O) | ≤0,0005 % |
| Chloride (Cl) | ≤0,001 % |
| Sulphate ($SO_4$) | ≤0,001 % |
| Aluminium (Al) | ≤0,00005 % |
| Ammonia ($NH_3$) | ≤0,002 % |
| Barium (Ba) | ≤0,00001 % |
| Lead (Pb) | ≤0,00001 % |
| Boron (B) | ≤0,000002 % |
| Cadmium (Cd) | ≤0,000005 % |
| Calcium (Ca) | ≤0,00005 % |
| Chromium (Cr) | ≤0,000002 % |
| Iron (Fe) | ≤0,00001 % |
| Cobalt (Co) | ≤0,000002 % |
| Copper (Cu) | ≤0,000002 % |
| Magnesium (Mg) | ≤0,00001 % |
| Manganese (Mn) | ≤0,000002 % |
| Nickel (Ni) | ≤0,000002 % |
| Zinc (Zn) | ≤0,00001 % |
| Tin (Sn) | ≤0,00001 % |

| | | | |
|---|---|---|---|
| **9729.3** | 500 ml | glass | 63,35 € |
| **9729.1** | 1 l | glass | 117,20 € |
| Original pack 6 x 1 l | | | 111,34/1 l |
| **9729.2** | 2,5 l | glass | 252,65 € |
| Original pack 4 x 2,5 l | | | 240,02/2,5 l |

For further information, please see page 1269

### Pyridine

**≥99 %, for synthesis**

**Type analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,0 % |
| Water | ≤0,1 % |
| Evaporation residue | ≤0,01 % |

| | | | |
|---|---|---|---|
| **CP07.1** | 500 ml | glass | 33,25 € |
| **CP07.2** | 1 l | glass | 66,15 € |
| Original pack 6 x 1 l | | | 62,84/1 l |
| **CP07.3** | 2,5 l | glass | 134,40 € |
| Original pack 4 x 2,5 l | | | 127,68/2,5 l |

## Pyridine D5

$C_5D_5N$
M 84,13 g/mol
D 1,05 • bp 114 °C
mp -41 °C • flp 20 °C
[7291-22-7] • EC No. 230-720-2
UN No. 1282 • ADR 3 II • WGK 2

**Danger**
H225-H302+H312+H332-H315-H319

### Pyridine D5

**99,8 Atom%D**
For nuclear magnetic resonance spectroscopy.

**Type analysis:**

| | |
|---|---|
| Deuterising degree | ≥99,8 % |
| Water (KF, $H_2O+D_2O$) | ≤0,03 % |

| | | | |
|---|---|---|---|
| **7922.1** | 10 ml | glass | 126,75 € |
| **7922.2** | 10 x 0,75 ml | glass ampoule | 128,90 € |

### Pyridine D5

**99,5 Atom%D**
For nuclear magnetic resonance spectroscopy.

**Type analysis:**

| | |
|---|---|
| Deuterising degree | ≥99,5 % |
| Water (KF, $H_2O+D_2O$) | ≤0,05 % |

| | | | |
|---|---|---|---|
| **CP94.1** | 10 ml | glass | 96,65 € |
| **CP94.2** | 10 ml | septum bottle | 99,90 € |
| **CP94.3** | 10 x 0,75 ml | glass ampoule | 102,05 € |

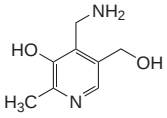
## 3-Pyridine carboxylic acid

▶ Nicotinic acid see p. 2094

## 1-(3-Pyridinyl)-ethanone

▶ 3-Acetylpyridine see p. 1704

## Pyridoxamine dihydrochloride




· 2 HCl

### Pyridoxamine dihydrochloride

**≥99 %**
4-(Aminomethyl)-5-hydroxy-6-methyl-3-pyridinemethanol dihydrochloride
$C_8H_{14}Cl_2N_2O_2$
M 241,12 g/mol
mp 223-229 °C (dec.)
[524-36-7] • EC No. 208-357-6
WGK 1

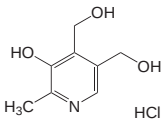
**Warning** H315-H319-H335

**Type analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥99,0 % |
| Solution (10 % in $H_2O$) | colourless |
| Water (KF) | ≤8,0 % |
| Melting point | 223-229 °C |

| | | | |
|---|---|---|---|
| **5254.1** | 1 g | glass | 50,45 € |
| **5254.2** | 5 g | plastic | 213,95 € |

## Pyridoxine hydrochloride




### Pyridoxine hydrochloride

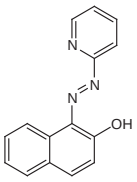
**≥99 %, for biochemistry**
Vitamin $B_6$-hydrochloride, Adermine hydrochloride
$C_8H_{12}ClNO_3$
M 205,6 g/mol
[58-56-0] • EC No. 200-386-2
WGK 1

**Type analysis:**

| | |
|---|---|
| Appearance | white to off-white, cryst. powder |
| Assay (titr. dry substance) | 99,0-101,0 % |
| pH value (5 % in $H_2O$) | 2,4-3,0 |
| Related substances | complies |
| Loss on drying | ≤0,5 % |
| Heavy metals | ≤0,002 % |
| Sulphated ash | ≤0,1 % |

| | | | |
|---|---|---|---|
| **T914.1** | 50 g | plastic | 28,95 € |
| **T914.2** | 100 g | plastic | 49,35 € |

## 1-(2-Pyridylazo)-2-naphthol



### 1-(2-Pyridylazo)-2-naphthol

**≥98 %, p.a., ACS**
For titration of metal ions.
PAN
$C_{15}H_{11}N_3O$
M 249,27 g/mol
mp 128-143 °C
Solubility: insoluble ($H_2O$, 20 °C)
[85-85-8] • EC No. 201-637-9
WGK 3

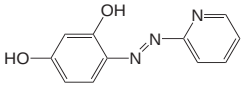
**Warning** H315-H319-H335

**Guarantee analysis:**

Assay..... ≥98,0 %
Melting point. ..... 128-143 °C
Loss on drying (110 °C). ..... ≤5,0 %
Suitability as indicator for complexometry..... complies

| | | | |
|---|---|---|---|
| **KK12.1** | 1 g | glass | 18,85 € |
| **KK12.2** | 5 g | glass | 64,00 € |

## 4-(2'-Pyridylazo)-resorcinol



### 4-(2'-Pyridylazo)-resorcinol

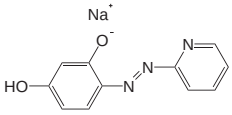
**p.a., ACS**
Metal indicator
PAR
$C_{11}H_9N_3O_2$
M 215,21 g/mol
mp 188 °C
[1141-59-9] • EC No. 214-528-6
WGK 1

**Guarantee analysis:**

Appearance. ..... orange powder
Appearance of solution (ACS). ..... complies
Loss on drying. ..... ≤5 %
Suitability as indicator for complexometry..... complies

| | | | |
|---|---|---|---|
| **2564.1** | 5 g | glass | 78,40 € |
| **2564.2** | 25 g | glass | 282,20 € |

## 4-(2'-Pyridylazo)-resorcinol monosodium salt



### 4-(2'-Pyridylazo)-resorcinol monosodium salt

**p.a., ACS**
Metal indicator
PAR monosodium salt
$C_{11}H_8N_3NaO_2$
M 237,21 g/mol
Solubility: 38 g/l ($H_2O$, 20 °C)
[16593-81-0] • EC No. 236-339-8
WGK 1

**Guarantee analysis:**

Appearance..... dark orange to brown cryst. powder
Appearance of solution (ACS). ..... complies
Loss on drying. ..... ≤10 %
Suitability as indicator for complexometry. .... complies

| | | | |
|---|---|---|---|
| **2565.1** | 5 g | glass | 85,90 € |
| **2565.2** | 25 g | glass | 321,45 € |

## Pyrocatechol



### Pyrocatechol

**>99 %, for biochemistry**
1,2-Dihydroxybenzene
$C_6H_6O_2$
M 110,11 g/mol
D 1,37 • bp 246 °C
mp 105 °C • flp 127 °C
Solubility: 430 g/l ($H_2O$, 20 °C)
[120-80-9] • EC No. 204-427-5
UN No. 2811 • ADR 6.1 III • WGK 2

**Danger**
H301+H311-H315-H318-H341

**Type analysis:**

Assay (GC, area %)..... ≥99 %
Melting range. ..... 103-105 °C

| | | | |
|---|---|---|---|
| **4249.1** | 25 g | glass | 19,60 € |

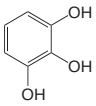
## Pyrocatechol-3,5-disulfonic acid disodium salt

▶ Tiron see p. 2344

## Pyrogallic acid

▶ Pyrogallol see p. 2186

## Pyrogallol



Pyrogallic acid, 1,2,3-Trihydroxybenzene
$C_6H_6O_3$
M 126,11 g/mol
mp ~134 °C
Solubility: 400 g/l ($H_2O$, 25 °C)
[87-66-1] • EC No. 201-762-9
WGK 2

**Warning**
H341-H302+H312+H332-H412

### Pyrogallol

**ROTIPURAN® ≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay. ..... ≥99 %
Melting point. ..... 131-135 °C
Insoluble matter. ..... ≤0,01 %
Ash content (as $SO_4$). ..... ≤0,005 %
Chloride (Cl)..... ≤0,001 %
Sulphate ($SO_4$)..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,001 %
Copper (Cu). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **4364.1** | 50 g | glass | 38,60 € |
| **4364.2** | 100 g | glass | 62,25 € |
| **4364.3** | 250 g | glass | 127,95 € |
| **4364.4** | 1 kg | glass | 461,20 € |
| Original pack 6 x 1 kg | | | 438,14/1 kg |

### Pyrogallol

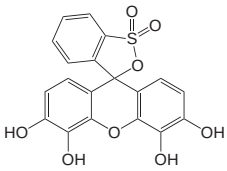
**≥98 %**

**Type analysis:**

Assay (HPLC). ..... ≥98 %
Ash content. ..... ≤0,05 %
Melting point. ..... 131-135 °C

| | | | |
|---|---|---|---|
| **3963.2** | 50 g | glass | 25,70 € |
| **3963.1** | 100 g | glass | 46,80 € |
| **3963.3** | 250 g | glass | 91,95 € |
| **3963.4** | 1 kg | glass | 332,20 € |
| Original pack 6 x 1 kg | | | 315,59/1 kg |

## Pyrogallol red



### Pyrogallol red

**p.a.**
Indicator for metal titration
Pyrogallol sulphonic phthalein, Sulfogallein
$C_{19}H_{12}O_8S$
M 400,36 g/mol
mp >300 °C
[32638-88-3] • EC No. 251-134-3
WGK 3

**Type analysis:**
Sulphated ash..... <0,5 %
Solubility (10 mg/ml in 1 M $NH_4OH$)..... dark, purple solution
Absorption max. (in EtOH)..... 475-515 nm
Suitability as indicator..... complies

| | | | |
|---|---|---|---|
| **0287.1** | 1 g | glass | 24,65 € |
| **0287.2** | 5 g | glass | 47,85 € |

## Pyrogallol sulphonic phthalein

▶ Pyrogallol red see p. 2187

## Pyrogenous silicic acid

▶ Aerosil® see p. 1710

## Pyrrodiazole

▶ 1,2,4-Triazole see p. 2349

## Pyrrolidine-2-carboxylic acid

▶ D-Proline see p. 2178
▶ DL-Proline see p. 2178
▶ L-Proline see p. 2178

## 2-Pyrrolidone



### 2-Pyrrolidone

**≥99,5 %, for synthesis**
γ-Butyrolactame, γ-Lactame
$C_4H_7NO$
M 85,11 g/mol
D 1,11 • bp 250 °C
mp 25,5 °C • flp 138 °C
[616-45-5] • EC No. 210-483-1
WGK 1

**Warning** H319

**Type analysis:**
Assay (GC)..... ≥99,5 %
Colour (APHA)..... ≤50
1,4-Butanediol..... ≤0,1 %
Butyrolactone..... ≤0,1 %
Water (KF)..... ≤0,1 %

| | | | |
|---|---|---|---|
| **8779.1** | 500 ml | plastic | 33,25 € |
| **8779.2** | 1 l | plastic | 53,65 € |
| Original pack 6 x 1 l | | | 50,97/1 l |
| **8779.3** | 2,5 l | plastic | 107,40 € |
| Original pack 4 x 2,5 l | | | 102,03/2,5 l |
| **8779.4** | 5 l | plastic | 206,95 € |
| Original pack 2 x 5 l | | | 196,60/5 l |

## Pyrrolizidine Alkaloids

| Art. No. | Description | Page |
|---|---|---|
| 7975 | 7-O-Acetylintermedine | 1703 |
| 7980 | 7-O-Acetylintermedine N-oxide | 1703 |
| 7992 | Echimidine | 1898 |
| 8011 | Echimidine N-oxide | 1898 |
| 1657 | (Z)-Erucifoline | 1908 |
| 1664 | (Z)-Erucifoline N-oxide | 1908 |
| 1676 | Europine hydrochloride | 1923 |
| 1687 | Europine-N-oxide | 1923 |
| 1929 | Heliotrine | 1970 |
| 1944 | Heliotrine N-oxide | 1970 |
| 1960 | Indicine hydrochloride | 2001 |
| 1961 | Indicine N-oxide | 2001 |
| 1962 | Intermedine | 2005 |
| 8018 | Intermedine N-oxide | 2006 |
| 1963 | Jacobine | 2018 |
| 1970 | Jacobine N-oxide | 2018 |
| 2090 | Lasiocarpine | 2029 |
| 2202 | Lasiocarpine N-oxide | 2029 |
| 2208 | Lycopsamine | 2045 |
| 8022 | Lycopsamine N-oxide | 2045 |
| 3418 | Monocrotaline | 2082 |
| 2249 | Monocrotaline N-oxide | 2083 |
| 1213 | Retrorsine | 2196 |
| 6733 | Retrorsine-N-oxide | 2197 |
| 2261 | Senecionine | 2245 |
| 6734 | Senecionine N-oxide | 2246 |
| 6414 | Seneciphylline | 2246 |
| 1214 | Seneciphylline | 2246 |
| 6735 | Seneciphylline N-oxide | 2246 |
| 2209 | Senecivernine | 2246 |
| 2215 | Senecivernine N-oxide | 2246 |
| 4934 | Senkirkine | 2246 |

## 1H-Pyrrolo[2,3-b]pyridine

▶ 7-Azaindole see p. 1756

## Pyruvaldehyde

▶ Methylglyoxal see p. 2075

## Pyruvate solution

▶ Roti®-CELL Pyruvate solution see p. 2208

## Pyruvic acid



### Pyruvic acid

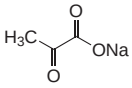
**≥98 %**
α-Ketopropionic acid, 2-Oxopropanoic acid
$C_3H_4O_3$
M 88,06 g/mol
D 1,27
mp 12 °C • flp 82 °C
Storage temp.: +4 °C
[127-17-3] • EC No. 204-824-3
UN No. 3265 • ADR 8 III • WGK 1

**Danger** H314

**Type analysis:**
Assay (titr.)..... ≥98 %

| | | | |
|---|---|---|---|
| **8788.1** | 25 ml | glass | 28,95 € |

## Pyruvic acid sodium salt



### Pyruvic acid sodium salt

**≥99 %, for biochemistry**
Sodium pyruvate
$C_3H_3NaO_3$
M 110,04 g/mol
[113-24-6] • EC No. 204-024-4
WGK 1

**Type analysis:**
Appearance..... white to off-white powder
Assay..... ≥99 %
Heavy metals..... ≤0,01 %
Loss on drying..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8793.1** | 25 g | plastic | 17,75 € |
| **8793.2** | 250 g | plastic | 82,25 € |

## Quantum Dots, hydrophilic

CdTe
mp 2150-2200 °C
Storage temp.: +4 °C
[1306-25-8] • EC No. 215-149-9
UN No. 3077 • ADR 9 III • WGK 3
**Warning**
H302+H312+H332-H400-H410

### Cadmium telluride
**ROTI®nanoMETIC λ max. 510 ±5 nm**

**Type analysis:**
Fluorescence λ max.. ..... 505-515 nm

| | | | |
|---|---|---|---|
| **8256.1** | 5 mg | glass | 63,35 € |
| **8256.2** | 10 mg | glass | 100,95 € |

### Cadmium telluride
**ROTI®nanoMETIC λ max. 570 ±5 nm**

**Type analysis:**
Fluorescence λ max.. ..... 565-575 nm

| | | | |
|---|---|---|---|
| **8257.1** | 5 mg | glass | 63,35 € |
| **8257.2** | 10 mg | glass | 100,95 € |

### Cadmium telluride
**ROTI®nanoMETIC λ max. 610 ±5 nm**

**Type analysis:**
Fluorescence λ max.. ..... 605-615 nm

| | | | |
|---|---|---|---|
| **8258.1** | 5 mg | glass | 63,35 € |
| **8258.2** | 10 mg | glass | 100,95 € |

### Cadmium telluride
**ROTI®nanoMETIC λ max. 710 ±5 nm**

**Type analysis:**
Fluorescence λ max.. ..... 705-715 nm

| | | | |
|---|---|---|---|
| **8260.1** | 5 mg | glass | 63,35 € |
| **8260.2** | 10 mg | glass | 100,95 € |

### Cadmium telluride
**ROTI®nanoMETIC λ max. 780 ±5 nm**

**Type analysis:**
Fluorescence λ max.. ..... 775-785 nm

| | | | |
|---|---|---|---|
| **8261.1** | 5 mg | glass | 63,35 € |
| **8261.2** | 10 mg | glass | 100,95 € |

## Quantum Dots, hydrophobic

Storage temp.: +4 °C
WGK 1
**Warning**
H302+H332-H315-H319-H335-EUH032

### Zn-Cu-In-S/ZnS
**ROTI®nanoMETIC Cd-free, λ max. 530 ±15 nm**

Cd-free

**Type analysis:**
Fluorescence λ max.. ..... 515-545 nm

| | | | |
|---|---|---|---|
| **8609.1** | 5 mg | glass | 50,45 € |
| **8609.2** | 10 mg | glass | 75,15 € |

### Zn-Cu-In-S/ZnS
**ROTI®nanoMETIC Cd-free, λ max. 560 ±15 nm**

Cd-free

**Type analysis:**
Fluorescence λ max.. ..... 545-575 nm

| | | | |
|---|---|---|---|
| **8610.1** | 5 mg | glass | 50,45 € |
| **8610.2** | 10 mg | glass | 75,15 € |

### Zn-Cu-In-S/ZnS
**ROTI®nanoMETIC Cd-free, λ max. 590 ±15 nm**

Cd-free

**Type analysis:**
Fluorescence λ max.. ..... 575-605 nm

| | | | |
|---|---|---|---|
| **8618.1** | 5 mg | glass | 50,45 € |
| **8618.2** | 10 mg | glass | 75,15 € |

### Zn-Cu-In-S/ZnS
**ROTI®nanoMETIC Cd-free, λ max. 610 ±15 nm**

Cd-free

**Type analysis:**
Fluorescence λ max.. ..... 595-625 nm

| | | | |
|---|---|---|---|
| **8614.1** | 5 mg | glass | 50,45 € |
| **8614.2** | 10 mg | glass | 75,15 € |

### Zn-Cu-In-S/ZnS
**ROTI®nanoMETIC Cd-free, λ max. 650 ±15 nm**

Cd-free

**Type analysis:**
Fluorescence λ max.. ..... 635-665 nm

| | | | |
|---|---|---|---|
| **8616.1** | 5 mg | glass | 50,45 € |
| **8616.2** | 10 mg | glass | 75,15 € |

### Zn-Cu-In-S/ZnS
**ROTI®nanoMETIC Cd-free, λ max. 700 ±15 nm**

Cd-free

**Type analysis:**
Fluorescence λ max.. ..... 685-715 nm

| | | | |
|---|---|---|---|
| **8615.1** | 5 mg | glass | 50,45 € |
| **8615.2** | 10 mg | glass | 75,15 € |

## Quarz

Sea sand
$SiO_2$
M 60,08 g/mol
D 2,65 • bp 2230 °C
mp 1710 °C
[14808-60-7] • EC No. 238-878-4

### Quarz
**>99 % powdered, <125 µm**
Resistant to chemicals (except very strong alkalis).
**Danger** H372

**Type analysis:**
Assay. ..... >99 %
$Al_2O_3$. ..... 0,3 %
$Fe_2O_3$. ..... 0,05 %
CaO + MgO. ..... 0,1 %
$Na_2O + K_2O$. ..... 0,2 %
Loss on ignition. ..... 0,25 %
Particle size:
>125 µm. ..... 0,1 %
>100 µm. ..... 0,5 %
>63 µm. ..... 1-3 %
>40 µm. ..... 12 %

| | | | |
|---|---|---|---|
| **4651.2** | 500 g | plastic | 17,10 € |
| Original pack 6 x 500 g | | | 16,25/500 g |
| **4651.1** | 1 kg | plastic | 23,15 € |
| Original pack 6 x 1 kg | | | 21,99/1 kg |
| **4651.3** | 5 kg | plastic | 52,15 € |

### Quarz
**fine, cryst., 0,4-0,8 mm**
Filtration aids

| | | | |
|---|---|---|---|
| **7897.1** | 2,5 kg | plastic | 19,25 € |
| **7897.2** | 20 kg | plastic | 59,05 € |

### Quarz
**cryst., 0,6-1,3 mm**
Filtration aids

| | | | |
|---|---|---|---|
| **7898.1** | 2,5 kg | plastic | 20,65 € |
| **7898.2** | 20 kg | plastic | 61,20 € |

### Quarz
▶ Sea sand see p. 2244

## Quarz wool

### Quarz wool
**chemically pure**
Ideal for elementary analysis or as a final stopper in chromatography columns; filter aid.
Fibre size 5 to 30 µm.

| | | | |
|---|---|---|---|
| **9208.1** | 10 g | plastic | 21,40 € |
| **9208.2** | 100 g | plastic | 138,70 € |
| **9208.3** | 250 g | plastic | 295,10 € |

## QuEChERS Mixtures

WGK 1

### QuEChERS Extraction Mix I

**CHROMABOND® Citrate mix**

For pesticide residue analysis in food.

**Formulation:**

Magnesium sulphate anhydrous. ..... 4 g
Sodium chloride. ..... 1 g
di-Sodium hydrogen citrate 1,5-hydrate. ..... 0,5 g
tri-Sodium citrate dihydrate. ..... 1 g

| | | | |
|---|---|---|---|
| **4867.1** | 50 x 15 ml | plastic | 150,00 € |

For further information, please see page 1609

### QuEChERS Extraction Mix II

**CHROMABOND® Acetate mix**

For pesticide residue analysis in food.

**Formulation:**

Magnesium sulphate anhydrous. ..... 6 g
Sodium acetate. ..... 1,5 g

| | | | |
|---|---|---|---|
| **4868.1** | 50 x 15 ml | plastic | 150,00 € |

For further information, please see page 1609

### QuEChERS Clean-up Mix III

**CHROMABOND® Diamino mix**

For pesticide residue analysis in food.

**Formulation:**

Magnesium sulphate anhydrous. ..... 0,9 g
CHROMABOND® Diamino. ..... 0,15 g

| | | | |
|---|---|---|---|
| **4870.1** | 50 x 15 ml | plastic | 99,90 € |

For further information, please see page 1609

### QuEChERS Clean-up Mix IV

**CHROMABOND® Diamino/Carbon mix**

For pesticide residue analysis in food.

**Formulation:**

Magnesium sulphate anhydrous. ..... 0,9 g
CHROMABOND® Diamino. ..... 0,15 g
CHROMABOND® Carbon. ..... 0,015 g

| | | | |
|---|---|---|---|
| **4871.1** | 50 x 15 ml | plastic | 99,90 € |

For further information, please see page 1609

### QuEChERS Clean-up Mix V

**CHROMABOND® Diamino/Carbon mix**

For pesticide residue analysis in food.

**Formulation:**

Magnesium sulphate anhydrous. ..... 0,9 g
CHROMABOND® Diamino. ..... 0,15 g
CHROMABOND® Carbon. ..... 0,045 g

| | | | |
|---|---|---|---|
| **4875.1** | 50 x 15 ml | plastic | 99,90 € |

For further information, please see page 1609

### QuEChERS Clean-up Mix VI

**CHROMABOND® Diamino/$C_{18}$ ec mix**

For pesticide residue analysis in food.

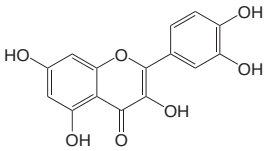
**Formulation:**

Magnesium sulphate anhydrous. ..... 0,9 g
CHROMABOND® Diamino. ..... 0,15 g
CHROMABOND® $C_{18}$ ec. ..... 0,15 g

| | | | |
|---|---|---|---|
| **4877.1** | 50 x 15 ml | plastic | 99,90 € |

For further information, please see page 1609

## Quercetin



### Quercetin

**with analytical records**

Synthetical from Rutin.
Sophoretin, Meletin
$C_{15}H_{10}O_7$
M 302,24 g/mol
Storage temp.: +4 °C
[117-39-5] • EC No. 204-187-1
UN No. 2811 • ADR 6.1 III • WGK 1

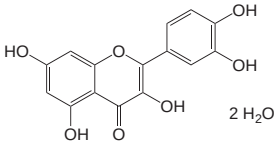
**Danger** H301

**Type analysis:**

Purity (HPLC). ..... >99 %
**Analytical records:** HPLC, TLC, $^1$H-NMR, $^{13}$C-NMR, UV, IR, MS, melting point.

| | | | |
|---|---|---|---|
| **1210.1** | 50 mg | glass | 471,95 € |

## Quercetin dihydrate



Sophoretin, Meletin
$C_{15}H_{10}O_7 \cdot 2\ H_2O$
M 338,27 g/mol
bp 314 °C (dec.)
mp 305-310 °C
[6151-25-3] • EC No. 204-187-1
UN No. 2811 • ADR 6.1 III • WGK 2

**Danger** H301-H341

### Quercetin dihydrate (C.I. 75670)

**≥98 %**

Storage temp.: +4 °C

**Type analysis:**

Appearance. ..... yellow-brown powder
Assay. ..... ≥98 %

| | | | |
|---|---|---|---|
| **7138.1** | 25 g | plastic | 50,00 € |
| **7138.2** | 100 g | plastic | 160,20 € |

### Quercetin dihydrate (C.I. 75670)

**≥95 %**

Storage temp.: +4 °C

**Type analysis:**

Assay (HPLC). ..... ≥95,0 %
Water (KF). ..... ≤12 %

| | | | |
|---|---|---|---|
| **2629.1** | 25 g | plastic | 38,60 € |
| **2629.2** | 50 g | plastic | 69,80 € |
| **2629.3** | 100 g | plastic | 127,95 € |

### Quercetin dihydrate

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC). ..... ≥95,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤15,0 %
Assay (qNMR). ..... ≥85,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE27.1** | 50 mg | glass | 729,95 € |

### Quercetin dihydrate

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC). ..... ≥80,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC27.1** | 100 mg | glass | 236,50 € |

### Quercetin dihydrate

**ROTICHROM® HPLC**

Reference substance for HPLC.
Synthetic, from rutin.
Storage temp.: +4 °C

**Type analysis:**

Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **7417.1** | 10 mg | glass | 104,20 € |

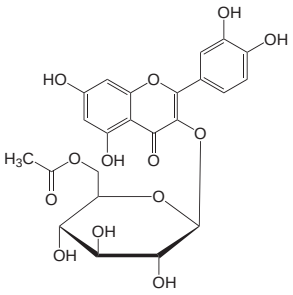
## Quercetin-3-arabinoglucoside

▶ Peltatoside see p. 2134

## Quercetin-3-galactoside

▶ Hyperoside see p. 1998

## Quercetin-3-O-glucose-6''-acetate



### Quercetin-3-O-glucose-6''-acetate

**ROTICHROM® ~CHR**

$C_{23}H_{22}O_{13}$
M 506,42 g/mol
[54542-51-7]
WGK 1

| | | | |
|---|---|---|---|
| **9419.1** | 10 mg | glass | 306,40 € |

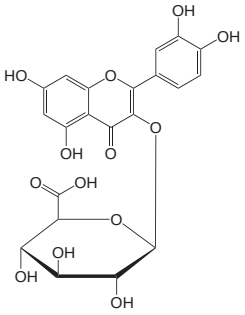
## Quercetin-3-glucoside

▶ Isoquercitrin see p. 2016

## Quercetin-4'-glucoside

▶ Spiraeoside see p. 2292

## Quercetin-3-O-ß-Glucuronide



$C_{21}H_{18}O_{13}$
M 478,37 g/mol
[22688-79-5]
WGK 1

### Quercetin-3-O-ß-Glucuronide

**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC)..... ≥90,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤8,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE28.1** | 25 mg | glass | 1073,95 € |

### Quercetin-3-O-ß-Glucuronide

**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC28.1** | 50 mg | Glas | 289,20 € |

## Quercetin-4'-methyl ether

▶ Tamarixetin see p. 2328

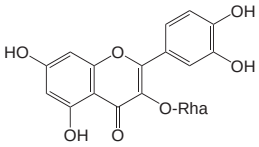
## Quercetin-3-rhamnoside

▶ Quercitrin see p. 2190

## Quercetin-3-rutinoside

▶ Rutin trihydrate see p. 2236

## Quercitrin



Quercetin-3-rhamnoside
$C_{21}H_{20}O_{11}$
M 448,39 g/mol
[522-12-3] • EC No. 208-322-5
WGK 1

### Quercitrin

**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤7,0 %
Water (KF)..... ≤10,0 %
Assay (qNMR)..... ≥80,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE29.1** | 25 mg | glass | 848,20 € |

### Quercitrin

**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC)..... ≥70,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC29.2** | 50 mg | glass | 353,70 € |

### Quercitrin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Aesculus hippocastanum.*
Storage temp.: +4 °C

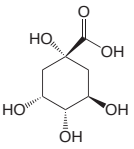
**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **9417.1** | 10 mg | glass | 198,90 € |

## Quicklime

▶ Calcium oxide see p. 1806

## (-)-Quinic acid



### (-)-Quinic acid

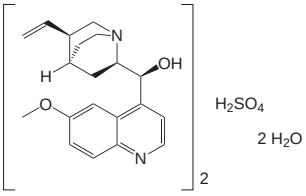
**≥98 %**

For resolutions of racemates for synthesis.
$C_7H_{12}O_6$
M 192,17 g/mol
mp ~160 °C
[77-95-2] • EC No. 201-072-8
WGK 1

**Type analysis:**
Assay (acidim.)..... ≥98 %
Melting range..... 160-165 °C
Specific rotation $[\alpha]_D^{20}$ (c=10 in $H_2O$)..... -44° to -42°

| | | | |
|---|---|---|---|
| **8835.1** | 25 g | plastic | 90,20 € |
| **8835.2** | 100 g | plastic | 289,20 € |

## Quinidine sulphate dihydrate



### Quinidine sulphate dihydrate

**≥99 %**

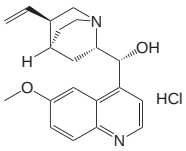
$(C_{20}H_{24}N_2O_2)_2 \cdot H_2SO_4 \cdot 2\ H_2O$
M 782,96 g/mol
bp 212-214 °C
[6591-63-5] • EC No. 200-046-3
WGK 1

**Warning** H302-H317

**Type analysis:**
Assay..... ≥99,0 %
pH value..... 6,0-6,8
Specific rotation $[\alpha]_D^{20}$..... +275° to +290°
Loss on drying..... ≤5,0 %

| | | | |
|---|---|---|---|
| **3348.1** | 10 g | glass | 32,15 € |

## Quinine hydrochloride dihydrate



### Quinine hydrochloride dihydrate

**ROTICHROM® CHR**

$C_{20}H_{25}ClN_2O_2 \cdot 2\ H_2O$
M 396,92 g/mol
mp 115 °C (dec.) • flp 122 °C
Solubility: 62,5 g/l ($H_2O$, 20 °C)
[6119-47-7] • EC No. 231-437-7
WGK 1

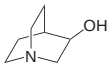
**Danger** H334-H302-H317

| | | | |
|---|---|---|---|
| **6225.1** | 25 g | plastic | 42,90 € |

## 8-Quinolinol

▶ 8-Hydroxyquinoline see p. 1996

## (R)-3-Quinuclidinol



### (R)-3-Quinuclidinol

**≥99 %**

Chiral building block
$C_7H_{13}NO$
M 127,19 g/mol
[25333-42-0] • EC No. 246-857-6
UN No. 3263 • ADR 8 II • WGK 3

**Danger** H314

**Type analysis:**

Appearance. ..... white to off-white solid
Assay (GC). ..... ≥99 %
Enantiomeric excess (GC).... ≤1 % (S)-3-Quinuclidinol

| | | | |
|---|---|---|---|
| **7483.1** | 1 g | glass | 17,10 € |
| **7483.2** | 5 g | glass | 59,05 € |
| **7483.3** | 10 g | glass | 107,40 € |

## R2A-Agar

### R2A-Agar

**Ph.Eur., for microbiology**

For enumeration of heterotrophic bacteria from water samples.
Application: Use 18,1 g for 1 l agar.
Agar medium S (Ph.Eur. 6.0), Reasoner's 2A Agar
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**

Yeast extract. ..... 0,5 g/l
Peptone. ..... 0,5 g/l
Casein hydrolysed. ..... 0,5 g/l
Glucose. ..... 0,5 g/l
Starch. ..... 0,5 g/l
di-Potassium hydrogen phosphate. ..... 0,3 g/l
Magnesium sulphate ($MgSO_4$). ..... 0,024 g/l
Sodium pyruvate. ..... 0,3 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **CL01.1** | 500 g | plastic | 136,00 € |
| Original pack 6 x 500 g | | | 129,20/500 g |

For further information, please see page 1396

## R2A-Agar, granulated

### R2A-Agar, granulated

NEW

**granulated, Ph.Eur., for microbiology**

For enumeration of heterotrophic bacteria from water samples.
Application: Use 18,1 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**

Yeast extract. ..... 0,5 g/l
Peptone. ..... 0,5 g/l
Casein hydrolysed. ..... 0,5 g/l
Glucose. ..... 0,5 g/l
Starch. ..... 0,5 g/l
di-Potassium hydrogen phosphate. ..... 0,3 g/l
Magnesium sulphate ($MgSO_4$). ..... 0,024 g/l
Sodium pyruvate. ..... 0,3 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **1523.1** | 500 g | plastic | 172,00 € |
| Original pack 6 x 500 g | | | 163,40/500 g |

For further information, please see page 1405

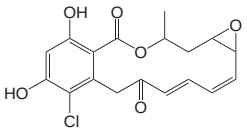
## Rabbit Plasma Fibrinogen Supplement

▶ RPF Supplement see p. 2235

## Racemic acid

▶ DL-Tartaric acid see p. 2329

## Radicicol



### Radicicol

**≥98 %, for biochemistry**

Strong HSP90 inhibitor, macrolactone antibiotic. Binds specifically to the heat shock protein HSP90.
$C_{18}H_{17}ClO_6$
M 364,79 g/mol
mp ~207 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[12772-57-5]
UN No. 2811 • ADR 6.1 III • WGK 1

**Danger** H301-H315-H319-H335

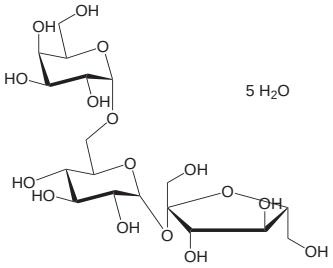
**Type analysis:**

Assay (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **HN72.1** | 1 mg | glass | 94,50 € |
| **HN72.2** | 5 mg | glass | 381,65 € |
| **HN72.3** | 10 mg | glass | 600,95 € |

For further information, please see page 1286

## D(+)-Raffinose pentahydrate



### D(+)-Raffinose pentahydrate

**≥98 %, for biochemistry**

Melitose, Melitriose
$C_{18}H_{32}O_{16} \cdot 5\ H_2O$
M 594,5 g/mol
mp 78-82 °C
[512-69-6] • EC No. 208-146-9
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,0 %
Water (KF). ..... ≤16 %
Specific rotation $[\alpha]_D^{20}$ (1 % in $H_2O$). ..... +103° to +107°
Heavy metals (as Pb). ..... ≤0,001 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **5241.1** | 10 g | plastic | 35,40 € |
| **5241.4** | 25 g | plastic | 55,80 € |
| **5241.2** | 50 g | plastic | 92,35 € |
| **5241.3** | 100 g | plastic | 145,15 € |

Q/R

## Rappaport Vassiliadis Broth

### Rappaport Vassiliadis Broth

**Ph.Eur., for microbiology**

For selective enrichment of *Salmonellae* in foods, water- and other samples.

Application: Use 27,1 g for 1 l broth.

R10 Broth, Rappaport Vassiliadis *Salmonella* Enrichment Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), RVS Broth

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Anhydrous magnesium chloride. ..... 13,58 g/l
Sodium chloride (NaCl). ..... 8,0 g/l
Soy peptone. ..... 4,5 g/l
Potassium dihydrogen phosphate. ..... 0,6 g/l
di-Potassium hydrogen phosphate. ..... 0,4 g/l
Malachite green . ..... 0,036 g/l
pH value. ..... 5,2 ±0,2

| | | | |
|---|---|---|---|
| **CL03.1** | 500 g | plastic | 94,10 € |
| Original pack 6 x 500 g | | | 89,40/500 g |

For further information, please see page 1396

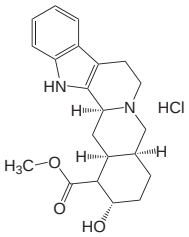
## Raubasine

▶ Ajmalicine see p. 1713

## Rauhimbine

▶ Corynanthine see p. 1846

## Rauwolscine hydrochloride




### Rauwolscine hydrochloride

**ROTICHROM® ~CHR**

α-Yohimbine hydrochloride

$C_{21}H_{26}N_2O_3 \cdot HCl$

M 390,91 g/mol

mp 270-280 °C

[6211-32-1] • EC No. 228-279-6

UN No. 1544 • ADR 6.1 III • WGK 1

**Danger** H301

| | | | |
|---|---|---|---|
| **7144.1** | 100 mg | glass | 17,75 € |
| **7144.2** | 1 g | glass | 100,55 € |

## RBC Agar

▶ Bengal Red Agar (with chloroamphenicol) see p. 1764

## RBS® 25

### RBS® 25

**concentrated liquid, pH 13**

For manual, automatic and ultrasonic bath cleaning.

D 1,094

UN No. 3266 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH031

**Type analysis:**

Dry residue. ..... 11,2-12,8 %

| | | | |
|---|---|---|---|
| **AL89.1** | 5 l | plastic | 59,75 € |

For further information, please see page 1104

## RBS® 35

### RBS® 35

**concentrated liquid, pH 12,9**

For manual or automatic cleaning.

D 1,09

UN No. 1824 • ADR 8 III

**Danger** H290-H314-EUH031

**Type analysis:**

Dry residue. ..... 8,8-10,8 %

| | | | |
|---|---|---|---|
| **9238.1** | 1 l | plastic | 16,40 € |
| **9238.2** | 5 l | plastic | 67,90 € |
| **9238.4** | 20 kg | plastic | 192,80 € |

For further information, please see page 1104

## RBS® 50

### RBS® 50

**concentrated liquid, pH 13,6**

Universal cleaner

D 1,244

UN No. 3266 • ADR 8 II • WGK 1

**Danger** H290-H314

**Type analysis:**

Dry residue. ..... 23,5-27,5 %

| | | | |
|---|---|---|---|
| **9232.1** | 1 l | plastic | 21,35 € |
| **9232.2** | 5 l | plastic | 95,15 € |
| **9232.4** | 20 kg | plastic | 268,40 € |

For further information, please see page 1104

## RBS® A 375

### RBS® A 375

**pH ~1**

Liquid, acidic pre-rinse and neutralisation agent for automatic dishwashers.

D 1,14

WGK 1

**Danger** H315-H318

**Type analysis:**

Dry residue. ..... 27,0-30,0 %

| | | | |
|---|---|---|---|
| **TK44.1** | 5 l | plastic | 44,35 € |

For further information, please see page 1107

## RBS® B 210 T

### RBS® B 210 T

**pH 9,7**

Mildly alkaline detergent for dishwashers.

D 1,178

WGK 2

**Danger** H318

**Type analysis:**

Dry residue. ..... 22,5-25,0 %

| | | | |
|---|---|---|---|
| **KC19.1** | 5 l | plastic | 61,25 € |

For further information, please see page 1107

## RBS® IND 470

### RBS® IND 470

**Alkaline liquid cleaning concentrate, pH 14,0**

D 1,06

UN No. 1814 • ADR 8 II • WGK 2

**Danger** H290-H314

**Type analysis:**

Dry residue. ..... 15,8-16,8 %

| | | | |
|---|---|---|---|
| **TA00.1** | 5 l | plastic | 51,15 € |
| **TA00.2** | 20 kg | plastic | 154,85 € |

For further information, please see page 1105

## RBS® NA 2

### RBS® NA 2

**concentrated liquid pH 1**

For prewash and neutralisation in lab washing systems.

D 1,378

UN No. 1805 • ADR 8 III • WGK 1

**Danger** H290-H314

**Type analysis:**

Dry residue. ..... 53,0-58,0 %

| | | | |
|---|---|---|---|
| **AL93.1** | 5 l | plastic | 55,45 € |

For further information, please see page 1107

## RBS® Neutral T

### RBS® Neutral T

**concentrated liquid, pH 6,3**

For manual or automatic cleaning of sensitive objects.

D 1,072

WGK 1

**Danger** H318

**Type analysis:**

Dry residue. ..... 12,5-13,5 %

| | | | |
|---|---|---|---|
| **0180.1** | 1 l | plastic | 16,75 € |
| **0180.2** | 5 l | plastic | 64,10 € |
| **0180.4** | 20 kg | plastic | 198,20 € |

For further information, please see page 1104

## RBS® pF T

### RBS® pF T

**concentrated liquid, pH 13,1**

Phosphates-free detergent for manual and automatic cleaning.

D 1,072

UN No. 1824 • ADR 8 III

**Danger** H290-H314

**Type analysis:**

Dry residue. ..... 12,8-13,8 %

| | | | |
|---|---|---|---|
| **9243.1** | 1 l | plastic | 16,20 € |
| **9243.2** | 5 l | plastic | 67,55 € |
| **9243.4** | 20 kg | plastic | 217,00 € |

For further information, please see page 1105

## RBS® R 60

### RBS® R 60

**concentrated liquid, pH 1,3**

For secondary cleaning and neutralisation in lab washing systems.

D 1,016

UN No. 2924 • ADR 3 III • WGK 1

**Warning**

H226-H290-H315-H319-H412

**Type analysis:**

Dry residue. ..... 30,0-33,0 %

| | | | |
|---|---|---|---|
| **AL94.1** | 5 l | plastic | 55,45 € |

For further information, please see page 1107

## RBS® R 60 pF

### RBS® R 60 pF

**concentrated liquid, pH ~1**

For secondary cleaning and neutralisation in lab washing systems, phosphate free.

D 1,013

UN No. 1987 • ADR 3 III • WGK 1

**Warning** H226-H315-H319-H412

**Type analysis:**

Dry residue. ..... 31,0-34,0 %

| | | | |
|---|---|---|---|
| **AL96.1** | 5 l | plastic | 67,05 € |

For further information, please see page 1107

## RBS® Solid

### RBS® Solid

**pH (3 g/l) ~11**

Powder-based, alkaline high-performance detergent for laboratory dishwashers.

D 1,03

UN No. 1759 • ADR 8 II

**Danger**

H290-H332-H314-H335-H411-EUH031

**Type analysis:**

Dry residue. ..... 95,0-99,0 %

| | | | |
|---|---|---|---|
| **5715.1** | 5 kg | plastic | 55,15 € |

For further information, please see page 1106

## RBS® A 285 SOLID pF

### RBS® A 285 SOLID pF

NEW

**pH (3 g/l) ~11**

Powder-based, alkaline high-performance detergent for laboratory dishwashers.

WGK 1

**Danger** H315-H318-H335

| | | | |
|---|---|---|---|
| **HNY8.1** | 4,5 kg | plastic | 49,35 € |

For further information, please see page 1106

## RBS® T 105

### RBS® T 105

**Alkaline liquid cleaning concentrate, pH 13,3**

D 1,12

WGK 1

**Warning** H319

**Type analysis:**

Dry residue. ..... 16,5-18,5 %

| | | | |
|---|---|---|---|
| **PY99.1** | 5 l | plastic | 37,15 € |

For further information, please see page 1106

## RBS® T 115

### RBS® T 115

**Alkaline, liquid cleaning concentrate**

UN No. 1824 • ADR 8 III

**Danger** H290-H314

**Type analysis:**

Dry residue. ..... 12,8-13,8 %

| | | | |
|---|---|---|---|
| **LY18.1** | 5 l | plastic | 39,00 € |

For further information, please see page 1105

## RBS® T 230

### RBS® T 230

**Neutral, liquid cleaning concentrate**

WGK 1

**Danger** H318

**Type analysis:**

Dry residue. ..... 12,5-13,5 %

| | | | |
|---|---|---|---|
| **LY17.1** | 5 l | plastic | 36,85 € |

For further information, please see page 1106

## RBS® T 305

### RBS® T 305

**concentrated liquid, pH 1,0**

For cleaning in immersion baths and ultrasonic baths.

D 1,4

UN No. 1805 • ADR 8 III • WGK 2

**Danger** H290-H314

**Type analysis:**

Dry residue. ..... 64,0-68,0 %

| | | | |
|---|---|---|---|
| **KT39.1** | 5 l | plastic | 48,15 € |

For further information, please see page 1106

## RCM

▶ Reinforced Clostridial Medium see p. 2195

## Ready-made gels

▶ Roti®-PAGE gels ready-to-use see p. 2226

## Ready-made media

▶ Compact Dry see p. 1840
▶ Roti®-Aquatest Plates see p. 2202
▶ Roti®-ContiPlates see p. 2209
▶ Roti®-DipSlides see p. 2209

## Ready-made Media


| Art. No. | Description | Page |
|---|---|---|
| 4827 | Compact Dry CF | 1840 |
| 4826 | Compact Dry EC | 1840 |
| 4828 | Compact Dry ETB | 1840 |
| 4817 | Compact Dry SL | 1841 |
| 4816 | Compact Dry TC | 1841 |
| 1070 | Compact Dry X-BC | 1841 |
| 1087 | Compact Dry X-SA | 1841 |
| 4818 | Compact Dry YM | 1841 |
| 9646 | Roti®-Aquatest Plate Cetr | 2202 |
| 9641 | Roti®-Aquatest Plate Colichrom | 2202 |
| 9649 | Roti®-Aquatest Plate m-CP | 2202 |
| 9640 | Roti®-Aquatest Plate PCA | 2203 |
| 9644 | Roti®-Aquatest Plate R2A | 2203 |
| 9643 | Roti®-Aquatest Plate Sab4 | 2203 |
| 9650 | Roti®-Aquatest Plate Staph | 2203 |
| 9648 | Roti®-Aquatest Plate Strep | 2203 |
| 9642 | Roti®-Aquatest Plate YE | 2203 |
| 9630 | Roti®-ContiPlate PCA | 2209 |
| 9632 | Roti®-ContiPlate RBC | 2209 |
| 9633 | Roti®-ContiPlate Sab4plus | 2209 |
| 9634 | Roti®-ContiPlate TSA-Letheen | 2209 |
| 9631 | Roti®-ContiPlate VRBD | 2209 |
| 3934 | Roti®-DipSlide CASO-TTC/RBCenr | 2209 |
| 2957 | Roti®-DipSlide CLED/MacCon | 2209 |
| 8023 | Roti®-DipSlide D/Eneutral | 2210 |
| 8045 | Roti®-DipSlide MacCon/Cetr | 2210 |
| 2837 | Roti®-DipSlide Nutrient-TTC | 2210 |
| 2927 | Roti®-DipSlide PCA | 2210 |
| 2493 | Roti®-DipSlide PCA/Legionella | 2210 |
| 2926 | Roti®-DipSlide PCA/RBCplus | 2210 |
| 8715 | Roti®-DipSlide PCA/TSA-Letheen | 2210 |
| 2925 | Roti®-DipSlide PCA/VRB | 2210 |
| 2924 | Roti®-DipSlide PCA/VRBD | 2211 |
| 2956 | Roti®-DipSlide Sab4plus | 2211 |
| 2954 | Roti®-DipSlide VRBD | 2211 |


## Ready-made primers

▶ Roth Hexanucleotide Random-Primer Mix see p. 2202
▶ Roth poly d(T)$_{12-18}$ Primer see p. 2202
▶ Roth Random-Primer kits for RAPD-PCR see p. 2202

## Ready-made Reagents (pouches)

| Art. No. | Description | Page |
|---|---|---|
| 1011 | Roti®fair BSC | 2211 |
| 1026 | Roti®fair BSC | 2211 |
| 1031 | Roti®fair 0.5M EDTA | 2211 |
| 1030 | Roti®fair 20% Glucose | 2212 |
| 1032 | Roti®fair Glycine 3.0 | 2212 |
| 1034 | Roti®fair 1M KCl | 2212 |
| 1035 | Roti®fair 3M KCl | 2212 |
| 1195 | Roti®fair Na-Acetate 5.2 | 2212 |
| 1071 | Roti®fair 3M NaCl | 2212 |
| 1079 | Roti®fair 5M NaCl | 2212 |
| 1090 | Roti®fair 0.02M Na-Phosphate 7.0 | 2213 |
| 1094 | Roti®fair 0.02M Na-Phosphate 7.0 | 2213 |
| 1095 | Roti®fair 1M Na-Phosphate 6.5 | 2213 |
| 1097 | Roti®fair 1M Na-Phosphate 7.2 | 2213 |
| 1101 | Roti®fair PBS 7.4 | 2213 |
| 1102 | Roti®fair PBS 7.4 | 2213 |
| 1103 | Roti®fair PBS 7.4 | 2213 |
| 1104 | Roti®fair PBS 7.4 | 2213 |
| 1105 | Roti®fair 10x PBS 7.4 | 2214 |
| 1157 | Roti®fair 10% SDS | 2214 |
| 1249 | Roti®fair SDS-PAGE | 2215 |
| 1250 | Roti®fair SDS-PAGE | 2215 |
| 1232 | Roti®fair 20x SSC | 2215 |
| 1234 | Roti®fair 50x TAE | 2215 |
| 1240 | Roti®fair 50x TAE | 2215 |
| 1241 | Roti®fair 1x TBE | 2215 |
| 1242 | Roti®fair 5x TBE | 2215 |
| 1243 | Roti®fair 10x TBE | 2215 |
| 1245 | Roti®fair TBS 8.0 | 2215 |
| 1247 | Roti®fair 10x TBS 8.0 | 2216 |
| 1268 | Roti®fair 10x TE | 2216 |
| 1269 | Roti®fair TG-Western | 2216 |
| 1276 | Roti®fair TG-Western | 2216 |
| 1251 | Roti®fair 1M Tris 7.4 | 2216 |
| 1260 | Roti®fair 1M Tris 8.0 | 2216 |
| 1261 | Roti®fair 1M Tris 8.3 | 2216 |

## Ready-made Reagents (tablets)

| Art. No. | Description | Page |
|---|---|---|
| 1005 | Roti®fair BBS | 2211 |
| 1027 | Roti®fair CBB | 2211 |
| 1033 | Roti®fair HBS | 2212 |
| 1053 | Roti®fair 0.9% NaCl | 2212 |
| 1067 | Roti®fair 0.9% NaCl | 2212 |
| 1106 | Roti®fair PBS 7.2 | 2213 |
| 1107 | Roti®fair PBS 7.4 | 2213 |
| 1108 | Roti®fair PBS 7.4 | 2213 |
| 1111 | Roti®fair PBS 7.4 | 2213 |
| 1112 | Roti®fair PBS 7.4 | 2214 |
| 1113 | Roti®fair PBS potassium-free 7.4 | 2214 |
| 1114 | Roti®fair PBS potassium-free 7.4 | 2214 |
| 1115 | Roti®fair PBST 7.4 | 2214 |
| 1116 | Roti®fair PBST 7.4 | 2214 |
| 1117 | Roti®fair pNPP 5mg | 2214 |
| 1128 | Roti®fair pNPP 20mg | 2214 |
| 1156 | Roti®fair SDS 0.5g | 2214 |
| 1233 | Roti®fair SSPE | 2215 |
| 1244 | Roti®fair TBS 7.6 | 2215 |
| 1248 | Roti®fair TBST 7.6 | 2216 |

## Ready-made Solutions

| Art. No. | Description | Page |
|---|---|---|
| 3130 | Ammonium iron(III) citrate solution | 1735 |
| 0509 | Antibody Diluent clear | 1746 |
| 0070 | Antibody Diluent green | 1746 |
| 1096 | Compact Dry Dilution Rack MRD | 1841 |
| 4823 | Compact Dry Dilution Rack | 1841 |
| 6484 | Decalcifier soft | 1858 |
| 6483 | Decalcifier standard | 1858 |
| CP11 | Geneticin disulphate (G418)-solution, CELLPURE® | 1949 |
| 2039 | Geneticin disulphate (G418)-solution | 1949 |
| HN09 | Gentamycin sulphate solution, CELLPURE® | 1949 |
| 2475 | Gentamycin sulphate solution | 1949 |
| 9465 | Guanidine hydrochloride solution | 1966 |
| 9969 | HCl-ethanol solution 0,75 % | 1969 |
| 6477 | HCl-ethanol solution 3 % | 1969 |
| CP12 | Hygromycin B solution, CELLPURE® | 1997 |
| 1287 | Hygromycin B solution | 1997 |
| 2950 | Kovacs' Reagent | 2024 |
| 9979 | Legionella Acid Buffer | 2034 |
| P049 | Protein glycerol | 2183 |
| X985 | Roti®-Aqua-P/C/I | 2226 |
| A980 | Roti®-Aqua-Phenol | 2226 |
| A151 | Roti®-Block | 2203 |
| L509 | Roti®-Blot 1 | 2203 |
| X984 | Roti®-C/I | 2204 |
| A538 | Roticlear® | 2209 |
| CL85 | Roti®-Fix spray fixative | 2217 |
| 9330 | Roti®-Free Slide Enhancer | 2217 |
| 3337 | Roti®-Free Stripping Buffer 2.2 plus | 2217 |
| 3319 | Roti®-Free Stripping Buffer 2.0 | 2217 |
| 0083 | Roti®-Free Stripping Buffer | 2217 |
| P087 | Roti®-Histofix 4 % | 2218 |
| 3105 | Roti®-Histofix 4 %, prefilled containers | 2218 |
| 2213 | Roti®-Histofix 4,5 % | 2218 |
| 8244 | Roti®-Histofix 4,5 %, prefilled containers | 2219 |
| A146 | Roti®-Histofix 10 % | 2219 |
| 8907 | Roti®-Histofix ECO Plus | 2219 |
| 6640 | Roti®-Histol | 2219 |
| A981 | Roti®-Hybri-Quick | 2219 |
| T144 | Roti®-ImmunoBlock | 2219 |
| AN91 | Roti®-Liquid Barrier Marker, colourless | 2220 |
| AN92 | Roti®-Liquid Barrier Marker, red | 2220 |
| 3734 | Roti®-Lumin ultra | 2221 |
| 3692 | Roti®-Lumin plus | 2221 |
| P078 | Roti®-Lumin | 2221 |
| K880 | Roti®-Nanoquant | 2225 |
| HP69 | Roti® Nucleic Acid-free | 2225 |
| 1312 | Roti® Nucleic Acid-free eXtra | 2225 |
| 0038 | Roti®-Phenol | 2226 |
| A156 | Roti®-Phenol/Chloroform/Isoamyl alcohol | 2226 |
| 8996 | Rotiphorese®-PAGE Matrix Buffer plus | 2228 |
| HP54 | Roti®-PinkDNA | 2229 |
| K015 | Roti®-Quant | 2231 |
| 0120 | Roti®-Quant universal | 2231 |
| 0642 | Roti®-Sep 1077, CELLPURE® | 2232 |
| 1058 | Roti®-Stock 10x PBS | 2233 |
| 1059 | Roti®-Stock 10x PBST | 2233 |
| 1057 | Roti®-Stock 20 % SDS | 2233 |
| 1054 | Roti®-Stock 20x SSC | 2233 |
| 1060 | Roti®-Stock 10x TBS | 2233 |
| 1061 | Roti®-Stock 10x TBST | 2233 |
| 1052 | Roti®-Stock 100x TE | 2233 |
| 0016 | Rotiszint® eco plus | 2234 |
| 7735 | Rotitest®-Annexin V | 2234 |
| 0069 | Rotitest® Vital | 2234 |
| P043 | Roti®-Transform | 2235 |
| 9319 | Roti®ZOL RNA | 2235 |
| 9211 | Signal Enhancer Western/ELISA Set | 2249 |
| 9213 | Signal Enhancer Western/ELISA-1 | 2249 |
| 9214 | Signal Enhancer Western/ELISA-2 | 2249 |
| T143 | Water | 2376 |

## Ready made solutions, others


- Cell Culture Ready-made Solutions see p. 1820
- Cell Culture Media see p. 1820
- Embedding- / Inclusion Media see p. 1904
- Staining Solutions for Histology / Microscopy see p. 2293
- Formaldehyde Solutions, Phosphate Buffered see p. 1940
- Gel Staining Solutions and Kits see p. 1948
- Gel Media and Additives see p. 1948
- Gel Loading Buffer see p. 1948
- Gel Running Buffer see p. 1948
- Nucleotides / Nucleosides see p. 2106


## Reagents for water analysis


- Karl Fischer Roti®hydroquant C2 see p. 2020
- Karl Fischer Roti®hydroquant S see p. 2021
- Karl Fischer Roti®hydroquant T see p. 2021
- Karl Fischer methanol see p. 2021
- Karl Fischer Roti®hydroquant C5 K see p. 2020
- Karl Fischer Roti®hydroquant coulo A see p. 2020
- Karl Fischer Roti®hydroquant coulo AG see p. 2021
- Karl Fischer Roti®hydroquant coulo CG see p. 2021
- Karl Fischer Roti®hydroquant coulo Oil see p. 2021


## Reagents for Peptide Synthesis

| Art. No. | Description | Page |
|---|---|---|
| 4483 | Acetic acid anhydride | 1693 |
| 4380 | Acetonitrile | 1700 |
| 2131 | O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HATU) | 1755 |
| 2148 | O-(7-Azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TATU) | 1755 |
| 2168 | Benzotriazole-1-yl-oxy-tris-(dimethyl-amino)-phosphonium hexafluorophosphate (BOP) | 1767 |
| 2178 | Benzotriazole-1-yl-oxy-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBOP®) | 1768 |
| 2132 | O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HBTU) | 1768 |
| 2140 | O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TBTU) | 1768 |
| 6907 | Boc-L-Alanine | 1778 |
| 6914 | Boc-L-Arginine hydrochloride monohydrate | 1778 |
| 6915 | Boc-L-Asparagine | 1779 |
| 8846 | Boc-L-Aspartic acid-(OBenzyl) | 1779 |
| 6917 | Boc-L-Glutamic acid | 1779 |
| 6916 | Boc-L-Glutamine | 1779 |
| 6918 | Boc-Glycine | 1779 |
| 6920 | Boc-L-Histidine | 1780 |
| 6921 | Boc-L-Hydroxyproline | 1780 |
| 6923 | Boc-L-Isoleucine hemihydrate | 1780 |

| | | |
|---|---|---|
| 6924 | Boc-L-Leucine monohydrate | 1780 |
| 6942 | Boc-L-tert-Leucine | 1780 |
| 6926 | Boc-L-Lysine | 1781 |
| 6928 | Boc-L-Methionine | 1781 |
| 6931 | Boc-L-Phenylalanine | 1781 |
| 6932 | Boc-L-Proline | 1781 |
| 6933 | Boc-L-Serine | 1781 |
| 6935 | Boc-L-Threonine | 1781 |
| 6945 | Boc-L-Tryptophan | 1782 |
| 6949 | Boc-L-Tyrosine | 1782 |
| 6950 | Boc-L-Valine | 1782 |
| 2200 | Bromo-tris-pyrrolidino-phosphonium hexafluorophosphate (PyBrOP®) | 1790 |
| 6992 | 1,1'-Carbonyldiimidazole (CDI) | 1812 |
| 6636 | Cbz-Cyclohexyl-L-glycine | 1818 |
| 2112 | O-(1H-6-Chlorobenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate (HCTU) | 1827 |
| 6893 | 4-((6-Chloro-1H-benzo{d}[1,2,3]triazol-1-yloxy)(dimethylamino)methylene)-morpholin-4-ium hexafluorophosphate (HDMC) | 1827 |
| 2123 | 6-Chloro-benzotriazole-1-yl-oxy-tris-pyrrolidinophosphonium hexafluorophosphate (PyClock®) | 1827 |
| 6890 | O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TCTU) | 1827 |
| 7405 | 2-Chlorotrityl chloride resin | 1830 |
| 2100 | 1-[(1-(Cyano-2-ethoxy-2-oxo-ethylideneaminooxy) dimethylamino-morpholino)] uronium hexafluoro-phosphate (COMU®) | 1850 |
| 6985 | Di-*tert*-butyl dicarbonate ($Boc_2O$) | 1868 |
| P089 | Dichloromethane | 1870 |
| 4193 | N,N'-Dicyclohexylcarbodiimide (DCC) | 1870 |
| 2103 | 3-(Diethoxy-phosphoryloxy)-1,2,3-benzotriazin-4-(3H)-one (DEPBT) | 1871 |
| 6981 | *N,N'*-Diisopropylcarbodiimide (DIC) | 1878 |
| 2474 | N,N-Diisopropylethylamine (DIPEA) | 1879 |
| 3617 | N,N-Dimethylacetamide (DMA) | 1880 |
| 6888 | 1-[(Dimethylamino)(morpholino)-methylene]-1H-[1,2,3]triazolo-[4,5-b]pyridine-1-ium 3-oxide hexafluorophosphate (HDMA) | 1881 |
| 6988 | 4-(Dimethylamino)pyridine (DMAP) | 1881 |
| A529 | N,N-Dimethylformamide (DMF) | 1883 |
| 2110 | N,N'-Disuccinimidyl carbonate (DSC) | 1889 |
| 2125 | O-[(Ethoxycarbonyl)cyanomethylen-amino]-N,N,N',N'-tetramethyluronium tetrafluoroborate (TOTU) | 1913 |
| 6891 | Ethyl cyanoglyxylate-2-oxyme potassium salt (K-Oxyma) | 1914 |
| 2120 | (Ethylcyano(hydroxyimino)-acetato-$O_2$) tri-1-pyrrolidinylphosphonium hexafluorophosphate (PyOxim) | 1915 |
| 2156 | 1-Ethyl-3-(3-dimethylaminopropyl)-carbodiimide hydrochloride (EDC-HCl) | 1915 |
| 2118 | Ethyl(hydroxyimino)cyanoacetate (Oxyma Pure) | 1920 |
| 2201 | 9-Fluorenylmethoxycarbonyl chloride (Fmoc-Cl) | 1930 |
| 6646 | Fmoc-L-Alanine monohydrate | 1932 |
| 7400 | Fmoc-8-Amino-3,6-dioxaoctanoic acid | 1932 |
| 6896 | Fmoc-L-Arginine | 1932 |
| 8833 | Fmoc-L-Arginine-(Pbf) | 1932 |
| 6897 | Fmoc-L-Asparagine | 1933 |
| 9652 | Fmoc-L-Asparagine-(Trityl) | 1933 |
| 6641 | Fmoc-L-Aspartic acid-(OAllyl) | 1933 |
| 9654 | Fmoc-L-Aspartic acid-(OtBu) | 1933 |
| 7369 | Fmoc-L-β-Azidoalanine | 1933 |
| 7363 | Fmoc-L-γ-Azidohomoalanine | 1933 |
| 7357 | Fmoc-L-Azidolysine | 1934 |
| 7362 | Fmoc-L-Azidoornithine | 1934 |
| 7485 | Fmoc-L-4-Azidophenylalanine | 1934 |
| 7367 | Fmoc-L-4-Azidoproline (2S,4R) | 1934 |
| 8842 | Fmoc-L-Cysteine-(Acetamidomethyl) | 1934 |
| 8841 | Fmoc-L-Cysteine-(Trityl) | 1934 |
| 9655 | Fmoc-L-Glutamic acid-(OtBu) monohydrate | 1935 |
| 6898 | Fmoc-L-Glutamine | 1935 |
| 9653 | Fmoc-L-Glutamine-(Trityl) | 1935 |
| 6899 | Fmoc-Glycine | 1935 |
| 8843 | Fmoc-L-Histidine-(Trityl) | 1935 |
| 6647 | Fmoc-L-Isoleucine | 1936 |
| 6654 | Fmoc-L-Leucine | 1936 |
| 6900 | Fmoc-L-Lysine | 1936 |
| 8840 | Fmoc-L-Lysine-(Boc) | 1936 |
| 6656 | Fmoc-L-Methionine | 1936 |
| 6658 | Fmoc-L-Phenylalanine | 1937 |
| 6659 | Fmoc-L-Proline | 1937 |
| 7491 | Fmoc-L-Propargylglycine | 1937 |
| 6901 | Fmoc-L-Serine monohydrate | 1937 |
| 9666 | Fmoc-L-Serine-(tBu) | 1937 |
| 9659 | Fmoc-L-Threonine-(tBu) | 1938 |
| 6903 | Fmoc-L-Tryptophan | 1938 |
| 9668 | Fmoc-L-Tryptophan-(Boc) | 1938 |
| 6906 | Fmoc-L-Tyrosine | 1938 |
| 9669 | Fmoc-L-Tyrosine-(tBu) | 1938 |
| 6660 | Fmoc-L-Valine | 1938 |
| 6665 | N-Formyl-L-Leucine | 1942 |
| 2473 | 1,1,1,3,3,3-Hexafluoro-2-propanol | 1977 |
| 6662 | L-Hydroxyproline methylester hydrochloride | 1996 |
| 9670 | N-Hydroxysuccinimide | 1996 |
| 6664 | L-tert-Leucine methylester hydrochloride | 2035 |
| P052 | N-Methyl-2-pyrrolidone (NMP) | 2078 |
| 7840 | $H_2N$-PEG4-Alkyne | 2132 |
| 7838 | NHS-PEG5-Alkyne | 2132 |
| 7830 | $H_2N$-PEG3-Azide | 2133 |
| 7829 | $H_2N$-PEG8-Azide | 2133 |
| 7823 | NHS-PEG4-Azide | 2133 |
| A122 | Piperidine | 2154 |
| 7515 | Rink amide resin | 2201 |
| 7408 | Sieber amide resin | 2249 |
| 2130 | O-(N-Succinimidyl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TSTU) | 2320 |
| P088 | Trifluoroacetic acid (TFA) | 2353 |
| 7506 | Wang resin | 2374 |
| 3478 | Water | 2376 |


## Reasoner's 2A Agar


▶ R2A-Agar see p. 2191
▶ R2A-Agar, granulated see p. 2191


## Red prussiate of potash


▶ Potassium hexacyanoferrate(III) see p. 2168


## Reinecke salt monohydrate

### Reinecke salt monohydrate

**≥93%, p.a., ACS**

Ammonium tetrathiocyanato-diamminechromate(III) monohydrate

$NH_4[Cr(SCN)_4(NH_3)_2] \cdot H_2O$

M 354,45 g/mol

mp 268-272 °C (dec.)

[13573-17-6] • EC No. 237-003-3

WGK 3

**Warning** H302+H312+H332-H315-H319-H335-H412-EUH032

**Guarantee analysis:**

Appearance. ..... red-brown to purple powder
Assay. ..... ≥93,0 %
In diluted HCl insoluble matter. ..... ≤0,05 %
Sensitivity. ..... complies

| | | | |
|---|---|---|---|
| **6629.1** | 25 g | glass | 57,95 € |
| **6629.2** | 100 g | glass | 169,35 € |

## Reinforced Clostridial Medium

### Reinforced Clostridial Medium

**Ph.Eur., for microbiology**

For enrichment and enumeration of *Clostridiae* and other anaerobes from foods and other specimens.

Application: Use 38 g for 1 l broth.

Medium P (Ph.Eur. 6.0), Reinforced Medium for *Clostridia* (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), **RCM**

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Beef extract. ..... 10 g/l
Peptone. ..... 10 g/l
Yeast extract. ..... 3 g/l
Soluble starch. ..... 1 g/l
Glucose monohydrate. ..... 5 g/l
Cystein hydrochloride. ..... 0,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Sodium acetate. ..... 3 g/l
Agar. ..... 0,5 g/l
pH value. ..... 6,8 ±0,2

| | | | |
|---|---|---|---|
| **AE66.1** | 500 g | plastic | 103,75 € |
| Original pack 6 x 500 g | | | 98,56/500 g |


For further information, please see page 1396


## Renardin


▶ Senkirkine see p. 2246


## Rennase


▶ Rennin see p. 2195


## Rennin

### Rennin

**for biochemistry**

Chymosin, rennase, lab

M ~31000 g/mol

Storage temp.: +4 °C

[9001-98-3] • EC No. 232-645-0

WGK 1

**Danger** H334-H335-H315-H319

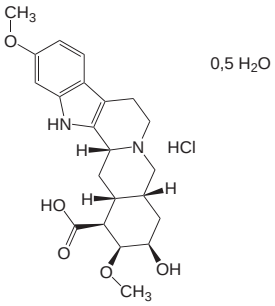
**Type analysis:**

Appearance. ..... light brown, saline powder
Odour. ..... typical odour of rennin
Chymosin. ..... ≥95 %
Pepsin. ..... ≤5 %
Rennet strength. ..... ≥800 IMCU/g
Preserved with benzoic acid.
From the fourth calf stomach.

| | | | |
|---|---|---|---|
| **8178.1** | 50 g | plastic | 58,60 € |

Q/R

## Reserpic acid hydrochloride hemihydrate



### Reserpic acid hydrochloride hemihydrate

**ROTICHROM® ~CHR**

$C_{22}H_{28}N_2O_5 \cdot HCl \cdot 0,5\ H_2O$
M 445,91 g/mol
mp 259-265 °C
UN No. 1544 • ADR 6.1 III • WGK 1

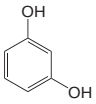
**Danger** H301

| | | | |
|---|---|---|---|
| **4295.1** | 100 mg | glass | 45,05 € |

## Resorcin blue

▶ Lacmoid see p. 2024

## Resorcinol



### Resorcinol

**≥99 %, for biochemistry**

Reagent on alkaloids, aldehydes and invert sugar.
1,3-Dihydroxybenzene, 1,3-Benzenediol
$C_6H_6O_2$
M 110,11 g/mol
bp 281 °C
mp 109-111 °C • flp 127 °C
Solubility: 1400 g/l ($H_2O$, 20 °C)
[108-46-3] • EC No. 203-585-2
UN No. 2876 • ADR 6.1 III • WGK 2

**Warning** H400-H302-H315-H319

**Type analysis:**

Assay.....≥99,0 %
In $H_2O$ insoluble matter.....≤0,01 %
Melting range.....109-111 °C
Loss on drying.....≤1,0 %

| | | | |
|---|---|---|---|
| **5727.1** | 100 g | plastic | 20,65 € |
| **5727.2** | 500 g | plastic | 53,25 € |
| Original pack 6 x 500 g | | | 50,59/500 g |
| **5727.3** | 1 kg | plastic | 92,35 € |
| Original pack 6 x 1 kg | | | 87,73/1 kg |
| **5727.4** | 2,5 kg | plastic | 198,90 € |

## Resorcinol

▶ Resorcinol see p. 2196

## Resorcinol-Fuchsine-solution acc. to Weigert

### Resorcinol-Fuchsine-solution acc. to Weigert

**for microscopy**

For visualising elastic fibres.
WEIGERT'S Resorcinol-Fuchsine-solution
UN No. 1993 • ADR 3 II • WGK 1

**Danger** H225-H302+H312+H332-H319-H317-H370-H336

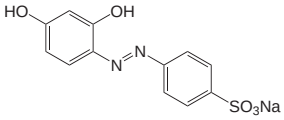
**Type analysis:**

Suitability for microscopy (tissue section)..... complies

| | | | |
|---|---|---|---|
| **X877.1** | 500 ml | glass | 33,25 € |
| **X877.2** | 1 l | glass | 56,45 € |
| Original pack 6 x 1 l | | | 53,63/1 l |
| **X877.3** | 2,5 l | plastic | 115,60 € |
| Original pack 4 x 2,5 l | | | 109,82/2,5 l |

For further information, please see page 1454

## Resorcinol yellow (C.I. 14270)



### Resorcinol yellow (C.I. 14270)

**extra pure**

Indicator pH 11,0-12,7
Tropaeolin O sodium salt
$C_{12}H_9NaN_2O_5S$
M 316,27 g/mol
mp >300 °C
[547-57-9]
WGK 3

**Type analysis:**

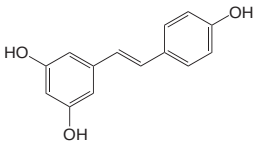
Appearance..... dark orange to rust colored powder
Appearance of solution (10 mg/ml in 1 N $NH_3$).....clear, red brown
pH-transition range.....11,0 (yellow)-12,7 (red)

| | | | |
|---|---|---|---|
| **7741.1** | 5 g | glass | 13,90 € |
| **7741.2** | 25 g | glass | 24,20 € |
| **7741.3** | 100 g | glass | 60,10 € |

## Resorcinophthalein sodium

▶ Fluorescein disodium salt see p. 1931

## Resveratrol



### Resveratrol

**≥98 %**

trans-3,4',5-Trihydroxystilbene
$C_{14}H_{12}O_3$
M 228,25 g/mol
Storage temp.: +4 °C
[501-36-0]

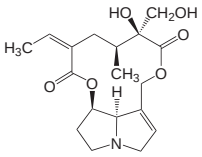
**Warning** H319

**Type analysis:**

Appearance.....white powder
Assay (HPLC, dry substance).....≥98,0 %
Loss on drying.....≤7,0 %

| | | | |
|---|---|---|---|
| **N811.1** | 500 mg | glass | 46,15 € |
| **N811.2** | 1 g | glass | 75,15 € |
| **N811.3** | 5 g | glass | 160,20 € |

## Retrorsine



### Retrorsine

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Senecio retrorsus.*
β-Longilobine,
12,18-Dihydroxysenecionan-11,16-dion
$C_{18}H_{25}NO_6$
M 351,40 g/mol
Storage temp.: +4 °C
[480-54-6]
UN No. 1544 • ADR 6.1 II • WGK 1

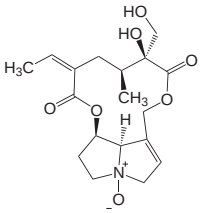
**Danger** H300+H330-H311

**Type analysis:**

Purity (HPLC).....>98 %

| | | | |
|---|---|---|---|
| **1213.1** | 20 mg | glass | 267,70 € |

## Retrorsine-N-oxide



### Retrorsine-N-oxide

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Senecio retrorsus.*

12,18-Dihydroxysenecionan-11,16-dione-4-oxide, Isatidine

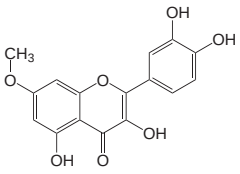
$C_{18}H_{25}NO_7$
M 367,40 g/mol
mp 140-144 °C
Storage temp.: +4 °C
[15503-86-3]
UN No. 1544 • ADR 6.1 II • WGK 1

**Danger** H300-H373

**Type analysis:**
Purity (HPLC)..... ≥97 %

| | | | |
|---|---|---|---|
| **6733.1** | 10 mg | glass | 274,15 € |

## Rhamnetin



### Rhamnetin

**ROTICHROM® HPLC**

Reference substance for HPLC.
7-Methylquercetin, β-Rhamnocitrin

$C_{16}H_{12}O_7$
M 316,27 g/mol
Storage temp.: +4 °C
[90-19-7] • EC No. 201-974-1

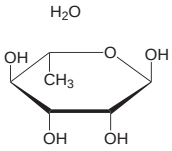
**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7418.1** | 10 mg | glass | 224,70 € |

## β-Rhamnocitrin

▶ Rhamnetin see p. 2197

## L(+)-Rhamnose monohydrate



### L(+)-Rhamnose monohydrate

**≥98 %, for biochemistry**

Isodulcit, L-Mannomethylose

$C_6H_{12}O_5 \cdot H_2O$
M 182,17 g/mol
mp 88-94 °C
[3615-41-6] • EC No. 222-793-4
WGK 1

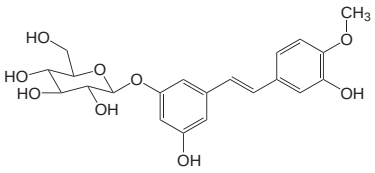
**Type analysis:**
Assay (HPLC)..... ≥98,0 %
Water (KF)..... 9,0-11,0 %
Melting point..... 88-94 °C
Specific rotation $[\alpha]_D^{20}$ (c=5 in $H_2O$). .....+7,7° to +8,9°

| | | | |
|---|---|---|---|
| **4655.1** | 5 g | glass | 30,65 € |
| **4655.2** | 25 g | plastic | 83,35 € |

## Rhamnoxanthine

▶ Frangulin (A+B) see p. 1942

## Rhaponticin



Rhapontin
$C_{21}H_{24}O_9$
M 420,40 g/mol
mp 233-237 °C
Storage temp.: +4 °C
[155-58-8] • EC No. 205-845-0
WGK 1

### Rhaponticin

**ROTICHROM® TLC**

Reference substance for thin layer chromatography.

| | | | |
|---|---|---|---|
| **5804.1** | 100 mg | glass | 56,90 € |

### Rhaponticin

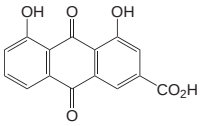
**ROTICHROM® ~CHR**

| | | | |
|---|---|---|---|
| **7152.1** | 1 g | glass | 44,00 € |

## Rhapontin

▶ Rhaponticin see p. 2197

## Rhein



Cassic acid, Monorhein
$C_{15}H_8O_6$
M 284,23 g/mol
mp 321-324 °C
Storage temp.: +4 °C
[478-43-3] • EC No. 207-521-4
WGK 1

**Warning** H315-H319-H335

### Rhein

**ROTICHROM® HPLC**

Reference substance for HPLC.

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7419.1** | 10 mg | glass | 192,45 € |

### Rhein

**ROTICHROM® CHR**

| | | | |
|---|---|---|---|
| **8868.1** | 50 mg | glass | 55,80 € |

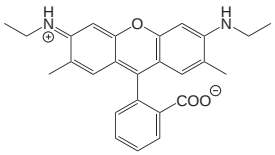
## Rhenium Standards

▶ Rhenium ICP Standard Solution see p. 2300
▶ Rhenium ICP Standard Solution see p. 2304

## Rhinanthin

▶ Aucubin see p. 1755

## Rhodamine 575



### Rhodamine 575

**≥98 %**

Laser and scintillation dye
Rhodamine 19

$C_{26}H_{26}N_2O_3$
M 414,51 g/mol
mp 313-317 °C
Solubility: insoluble ($H_2O$, 20 °C)
[25152-49-2] • EC No. 246-666-8
WGK 3

**Type analysis:**
Appearance. ..... Coralred cryst. powder
Assay (HPLC). ..... ≥98 %
Maximum absorption. ..... 518 ±2 nm (MeOH)

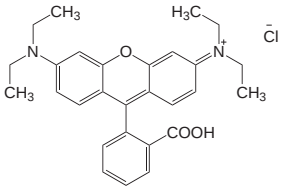
| | | | |
|---|---|---|---|
| **7310.1** | 100 mg | glass | 24,20 € |
| **7310.2** | 500 mg | glass | 41,85 € |

Q/R

## Rhodamine 19

▶ Rhodamine 575 see p. 2197

## Rhodamine B (C.I. 45170)



### Rhodamine B (C.I. 45170)

**for microscopy**

Oil-soluble red A, Safraniline, Rosaceine
$C_{28}H_{31}ClN_2O_3$
M 479,02 g/mol
D 1,31
mp 199-201 °C
Solubility: 15 g/l ($H_2O$, 20 °C)
[81-88-9] • EC No. 201-383-9
WGK 1

**Danger** H318-H412

**Type analysis:**

Dye content. ..... ~80 %
Maximum absorption. ..... 540-560 nm
Loss on drying (60 °C). ..... ≤5,0 %

| | | | |
|---|---|---|---|
| **T130.1** | 25 g | glass | 32,80 € |

## Rhodamine B-spray solution

### Rhodamine B-spray solution

**for TLC**

Ready-to-use spray solution for detection of lipids.
0,1 g Rhodamine B dissolved in 100 ml ethanol.
UN No. 1170 • ADR 3 II • WGK 2

**Danger** H225-H319

**Type analysis:**

TLC-application. ..... complies

| | | | |
|---|---|---|---|
| **CP37.1** | 100 ml | glass | 36,90 € |

## Rhodamine-12-dUTP

### Rhodamine-12-dUTP

**≥95 %, 1 mM solution**

For non-radioactive, enzymatic labelling of DNA.
Rhodamine-6-carboxyaminocaproyl-[5-(3-aminoallyl)-2'-desoxyuridine-5'-triphosphate]
$C_{39}H_{41}N_6O_{19}P_3$
M 990,7 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled

| | | | |
|---|---|---|---|
| **1049.1** | 25 nmol (25 µl) | plastic | 181,70 € |
| **1049.2** | 50 nmol (50 µl) | plastic | 310,70 € |

For further information, please see page 1260

## Rhodium Standards

▶ Rhodium ICP Standard Solution see p. 2300

## Rhodium(III) ammonium chloride

▶ Ammonium hexachlororhodate(III) see p. 1733

## Rhodium(III) chloride hydrate

### Rhodium(III) chloride hydrate

**ROTI®METIC 99,95 % (3N5)**

Rhodium trichloride hydrate
$RhCl_3 \cdot x\ H_2O$
M 209,26 + x $H_2O$ g/mol
[20765-98-4] • EC No. 233-165-4
WGK 1

**Danger** H302-H318

**Type analysis:**

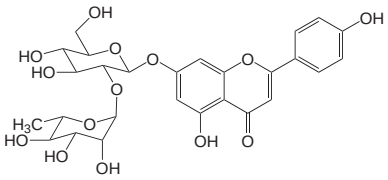
Assay (metals basis). ..... 99,95 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5668.1** | 1 g | plastic | 504,20 € |

## Rhodium trichloride hydrate

▶ Rhodium(III) chloride hydrate see p. 2198

## Rhoifolin



Apigenin-7-rhamnoglucoside
$C_{27}H_{30}O_{14}$
M 578,54 g/mol
mp 190-200 °C
Storage temp.: +4 °C
[17306-46-6] • EC No. 241-335-4

### Rhoifolin

**ROTICHROM® HPLC**

Reference substance for HPLC.

**Type analysis:**

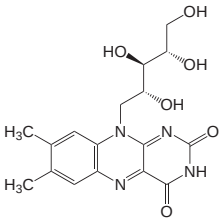
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7420.1** | 25 mg | glass | 428,95 € |

## Ribitol

▶ Adonitol see p. 1709

## Riboflavine



### Riboflavine

**≥97 %, Ph.Eur., for biochemistry**

Lactoflavine, Vitamin $B_2$
$C_{17}H_{20}N_4O_6$
M 376,37 g/mol
mp ~280 °C
[83-88-5] • EC No. 201-507-1
WGK 1

**Guarantee analysis:**

Appearance. .....yellow to orange-yellow cryst. powder
Assay (UV-absorption, dry substance)....97,0-103,0 %
Specific rotation $[\alpha]_D^{20}$ (0,5 % in 0,05 N NaOH). .....
.....-135° to -115°
Absorption.....complies
Sulphated ash. .....≤0,1 %
Loss on drying (105 °C). .....≤1,5 %
Related substances. .....complies

| | | | |
|---|---|---|---|
| **9607.1** | 25 g | plastic | 30,00 € |

## Riboflavine-5'-adenosinediphosphate disodium salt

▶ Flavine-adenine-dinucleotide disodium salt (FAD) see p. 1929

## RiboFlow® Campylobacter

### RiboFlow® Campylobacter

**SY-LAB ready-to-use, for microbiology**

For the confirmation of thermophilic *Campylobacter* colonies.
Biomolecular rapid test, Lateral Flow Assay, Immunochromatography
Storage temp.: +20 °C

**Danger** H314-H360FD

**Components:**

Solution A..... 2 ml
Solution B..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes..... 4 x 6 pieces

| | | | |
|---|---|---|---|
| **9885.1** | 24 tests | | 274,15 € |

For further information, please see page 1412

## RiboFlow® Candida albicans

### RiboFlow® Candida albicans

**SY-LAB ready-to-use, for microbiology**

For detection of *Candida albicans.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

**Components:**

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

| | | |
|---|---|---|
| **9893.1** | 24 tests | 255,85 € |

For further information, please see page 1412

## RiboFlow® Cosmetics

### RiboFlow® Cosmetics

**SY-LAB ready-to-use, for microbiology**

Combi test for 4 target organisms each - for detection and differentiation of *E. coli, Ps. aeruginosa, S. aureus, C. albicans.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

**Danger** H314-H360FD

**Components:**

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes 2 ml. ..... 8 pieces
RiboFlow® test cassettes. ..... 6 sets of 4 tests

| | | |
|---|---|---|
| **9894.1** | 6 x 4 tests | 197,30 € |

For further information, please see page 1412

## RiboFlow® Cronobacter

### RiboFlow® Cronobacter

**SY-LAB ready-to-use, for microbiology**

For detection of *Cronobacter* spp.

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

**Danger** H314-H360FD

**Components:**

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

| | | |
|---|---|---|
| **9882.1** | 24 tests | 214,90 € |

For further information, please see page 1412

## RiboFlow® E. coli

### RiboFlow® E. coli

**SY-LAB ready-to-use, for microbiology**

For detection of *E. coli.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

**Danger** H314-H360FD

**Components:**

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

| | | |
|---|---|---|
| **9891.1** | 24 tests | 255,85 € |

For further information, please see page 1412

## RiboFlow® Enterobacteriaceae

### RiboFlow® Enterobacteriaceae

**SY-LAB ready-to-use, for microbiology**

For detection of enterobacteria.

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

**Danger** H314-H360FD

**Components:**

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

| | | |
|---|---|---|
| **9890.1** | 24 tests | 255,85 € |

For further information, please see page 1412

## RiboFlow® Listeria Twin

### RiboFlow® Listeria Twin

**SY-LAB ready-to-use, for microbiology**

For detection and differentiation of *Listeria* spp. and *Listeria monocytogenes.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

**Danger** H314-H360FD

**Components:**

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

| | | |
|---|---|---|
| **9884.1** | 24 tests | 364,45 € |

For further information, please see page 1412

## RiboFlow® P/En

### RiboFlow® P/En

**SY-LAB ready-to-use, for microbiology**

For detection and differentiation of *Pseudomonas* spp. and *Enterobacteriaceae.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

**Danger** H314-H360FD

**Components:**

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

| | | |
|---|---|---|
| **9895.1** | 24 tests | 255,85 € |

For further information, please see page 1412

## RiboFlow® Pseudomonas aeruginosa

### RiboFlow® Pseudomonas aeruginosa

**SY-LAB ready-to-use, for microbiology**

For detection of *Pseudomonas aeruginosa.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

**Components:**

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

| | | |
|---|---|---|
| **9892.1** | 24 tests | 255,85 € |

For further information, please see page 1412

## RiboFlow® Salmonella

### RiboFlow® Salmonella

**SY-LAB ready-to-use, for microbiology**

For detection of *Salmonella* spp.

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

**Danger** H314-H360FD

**Components:**

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 x 2 ml
RiboExtract. ..... 6 ml
Reaction tubes. ..... 50 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

| | | |
|---|---|---|
| **9881.1** | 24 tests | 267,70 € |

For further information, please see page 1412

## RiboFlow® Staphylococcus aureus

### RiboFlow® Staphylococcus aureus

**SY-LAB ready-to-use, for microbiology**

For detection of *Staphylococcus aureus.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

**Danger** H314-H360FD

**Components:**

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

| | | |
|---|---|---|
| **9889.1** | 24 tests | 255,85 € |

For further information, please see page 1412

## RiboFlow® Vibrio parahaemolyticus

### RiboFlow® Vibrio parahaemolyticus

**SY-LAB ready-to-use, for microbiology**

For the confirmation of *Vibrio parahaemolyticus.*

Biomolecular rapid test, Lateral Flow Assay, Immunochromatography

Storage temp.: +20 °C

**Danger** H314-H360FD

**Components:**

Solution A. ..... 2 ml
Solution B. ..... 1 ml
Solution C. ..... 2 ml
Reaction tubes. ..... 30 pieces
RiboFlow® test cassettes. ..... 4 x 6 pieces

| | | |
|---|---|---|
| **9888.1** | 24 tests | 289,20 € |

For further information, please see page 1412

## D(-)-Ribofuranose

▶ D(-)-Ribose see p. 2200

## D-Ribofuranose 5-phosphate disodium salt

▶ D-Ribose-5-phosphate disodium salt see p. 2200

## 9-β-D-Ribofuranosyladenine

▶ Adenosine see p. 1709

## Ribonuclease

### Ribonuclease

**>70 U/mg (Kunitz), free from salt and protease**

Purified by chromatography, for biochemistry.

RNase

Storage temp.: -20 °C •

Transport temp.: room temp.

[9001-99-4] • EC No. 232-646-6

WGK 1

**Type analysis:**

Appearance. ..... white, freeze-dried powder
Activity (Kunitz). ..... >70 U/mg

| | | | |
|---|---|---|---|
| **7164.1** | 100 mg | glass | 30,00 € |
| **7164.2** | 1 g | glass | 196,20 € |

For further information, please see page 1240

## Ribonuclease A

### Ribonuclease A

**90 U/mg (Kunitz), BioScience-Grade, free from salt**

Acc. to Hirs, extracted from bovine pancreas.

RNase A

M ~13 700 g/mol

Storage temp.: -20 °C •

Transport temp.: room temp.

[9001-99-4] • EC No. 232-646-6

WGK 1

**Type analysis:**

Appearance. ..... white, freeze-dried powder
Assay (IEC, Amberlit CG50). ..... >95 %
Solubility (2 mg/ml, $H_2O$). ..... clear, soluble
Activity (Kunitz). ..... ~90 U/mg
DNAse. ..... none detected
Protease. ..... none detected

| | | | |
|---|---|---|---|
| **7156.1** | 100 mg | glass | 72,60 € |
| **7156.2** | 500 mg | glass | 321,45 € |
| **7156.3** | 1 g | glass | 525,70 € |

For further information, please see page 1240

## Ribonucleic acid sodium salt

### Ribonucleic acid sodium salt

**for biochemistry**

Sodium nucleinate

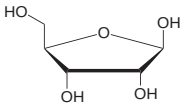
Storage temp.: +4 °C

**Type analysis:**

Appearance. ..... yellowish powder

| | | | |
|---|---|---|---|
| **4362.1** | 25 g | plastic | 38,60 € |

## D(-)-Ribose




### D(-)-Ribose

**≥98 %, for biochemistry**

D(-)-Ribofuranose

$C_5H_{10}O_5$

M 150,13 g/mol

D 0,80

mp 90-95 °C

Storage temp.: +4 °C

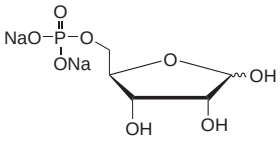
[50-69-1] • EC No. 200-059-4

**Type analysis:**

Appearance. ... colourless to light yellow, cryst.powder
Assay (HPLC, dry substance). ..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$. ..... -18° to -22°
Loss on drying. ..... ≤3,0 %
Heavy metals. ..... ≤0,001 %
Sulphated ash. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **7168.1** | 10 g | plastic | 19,90 € |
| **7168.3** | 25 g | plastic | 38,60 € |
| **7168.2** | 100 g | plastic | 99,90 € |

## D-Ribose-5-phosphate disodium salt




### D-Ribose-5-phosphate disodium salt

**≥85 %, for biochemistry**

D-Ribofuranose 5-phosphate disodium salt, R-5-P-Na2

$C_5H_9Na_2O_8P$

M 274,08 g/mol

Storage temp.: -20 °C •

Transport temp.: room temp.

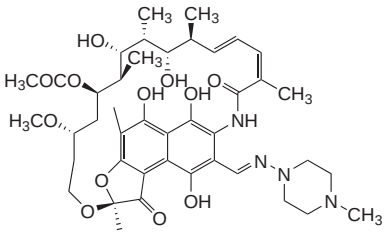
[18265-46-8] • EC No. 242-140-7

**Type analysis:**

Assay (titr.). ..... ≥85,0 %
Solution (5 % in $H_2O$). ..... colourless to light yellow
Water (KF). ..... ≤15,0 %
pH value (1 % in $H_2O$). ..... 6,5-7,5
Heavy metals (as Pb). ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **5253.1** | 250 mg | glass | 49,35 € |
| **5253.2** | 1 g | glass | 150,40 € |

## Rifampicin



### Rifampicin

**≥90 %, for biochemistry**

Bacteriostatic antibiotic

**Art. No. 4163.3:** A stock solution with a concentration of 100 mg/ml can be prepared directly by adding 5 ml chloroform or DMSO.

3-(4-Methylpiperazinyliminomethyl)rifamycin SV

$C_{43}H_{58}N_4O_{12}$

M 822,94 g/mol

Storage temp.: +4 °C

[13292-46-1] • EC No. 236-312-0

WGK 1

**Warning** H302-H315-H319-H335

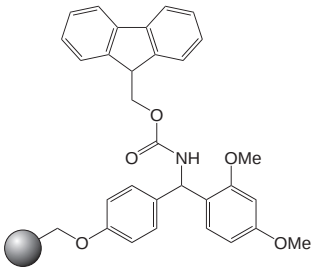
**Type analysis:**

Assay (HPLC)..... ≥90 %
Solution (5% in chloroform)..... orange to dark brown
Loss on drying (80 °C, vacuum)..... ≤2 %
Sulphated ash..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4163.1** | 500 mg | glass | 31,10 € |
| **4163.3** | 500 mg (in a 10 ml glass bottle) | | 38,60 € |
| **4163.2** | 1 g | glass | 53,65 € |

For further information, please see page 1433

## Rink amide resin



### Rink amide resin

**100-200 mesh, 1 % DVB**

For peptide synthesis

4-(2',4'-Dimethoxyphenyl-Fmoc-aminomethyl)phenoxy resin

WGK 1

**Type analysis:**

Appearance..... white to slightly yellow beads
Loading..... 0,3-0,8 mmol/g
Identity (IR)..... complies
Swelling..... 4,0-7,0 ml/g (DMF, 24 h)
Swelling..... 4,5-8,5 ml/g ($CH_2Cl_2$, 24 h)
Kaiser test..... negative
Loss on drying..... ≤2 %

| | | | |
|---|---|---|---|
| **7515.1** | 1 g | glass | 34,30 € |
| **7515.2** | 5 g | plastic | 142,45 € |

## RNA-isolation kit

▶ Roti®-Quick kit see p. 2232

## RNA isolation reagent

▶ Roti®ZOL RNA see p. 2235

## RNase

▶ Ribonuclease A see p. 2200
▶ Ribonuclease see p. 2200

## RNase AWAY®

### RNase AWAY®

**ready-to-use solution for removal of RNAse-contaminations**

**Warning** H315-H319

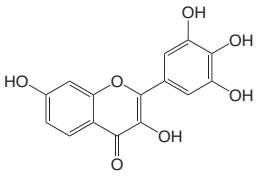
| | | | |
|---|---|---|---|
| **A998.1** | 250 ml | plastic | 48,30 € |
| **A998.4** | 475 ml | spray bottle | 74,75 € |
| **A998.2** | 1 l | plastic | 100,55 € |
| Original pack 6 x 1 l | | | 95,52/1 l |
| **A998.3** | 4 l | plastic | 188,15 € |

For further information, please see page 1253

## Robigenin

▶ Kaempferol see p. 2019

## Robinetin



### Robinetin

**ROTICHROM® HPLC**

Reference substance for HPLC.

Norkanugin, 5'-Oxyfisetin

$C_{15}H_{10}O_7$

M 302,23 g/mol

mp ~300 °C

Storage temp.: +4 °C

[490-31-3] • EC No. 207-709-6

**Type analysis:**

Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **7421.1** | 10 mg | glass | 224,70 € |

## Rogosa Agar

### Rogosa Agar

**for microbiology**

For selective cultivation of lactobacilli.

Application: Use 75 g for 1 l agar.

Lactobacillus Selective Agar acc. to Rogosa

Storage temp.: +20 °C

WGK 1

**Formulation:**

Sodium acetate..... 15 g/l
Tryptone..... 10 g/l
Dextrose..... 10 g/l
Potassium phosphate..... 6 g/l
Yeast extract..... 5 g/l
Sucrose..... 5 g/l
Arabinose..... 5 g/l
Ammonium citrate..... 2 g/l
Polysorbate 80..... 1 g/l
Magnesium sulphate ($MgSO_4$)..... 0,57 g/l
Manganese sulphate..... 0,12 g/l
Iron sulphate..... 0,03 g/l
Agar..... 15 g/l
pH value..... 5,4 ±0,2

| | | | |
|---|---|---|---|
| **8329.1** | 500 g | plastic | 138,70 € |
| Original pack 6 x 500 g | | | 131,77/500 g |

For further information, please see page 1396

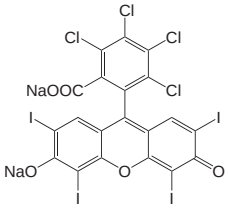
## Rongalit®

▶ Sodium formaldehyde sulphoxylate see p. 2273

## Rosaceine

▶ Rhodamine B (C.I. 45170) see p. 2198

## Rose Bengale B (C.I. 45440)



### Rose Bengale B (C.I. 45440)

**for microscopy**

4,5,6,7-Tetrachloro-2',4',5',7'-tetraiodofluorescein-dipotassium salt

$C_{20}H_2Cl_4I_4Na_2O_5$

M 1017,65 g/mol

Solubility: 1 g/l ($H_2O$, 20 °C)

[632-69-9] • EC No. 211-183-3

WGK 2

**Type analysis:**

Maximum absorption..... 540-555 nm
Loss on drying (110 °C)..... ≤5 %

| | | | |
|---|---|---|---|
| **3162.1** | 50 g | plastic | 93,00 € |

For further information, please see page 1472

## Rose-Gal

▶ 6-Chloro-3-indoxyl-β-D-galactopyranoside see p. 1828

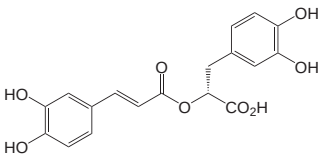
## Rose-Glucuro CHAsalt

▶ 6-Chloro-3-indoxyl-β-D-glucuronic acid cyclohexylammonium salt see p. 1828

## Rose-Phos p-toluidine salt

▶ 6-Chloro-3-indoxyl phosphate p-toluidine salt see p. 1828

## Rosmarinic acid




$C_{18}H_{16}O_8$
M 360,34 g/mol
D 0,91
mp ~170 °C
[20283-92-5]

### Rosmarinic acid

**ROTI®STAR Primary Standard**
Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**
Assay (HPLC)..... ≥85,0 %
Residual solvents (GC)..... ≤2,0 %
Water (KF)..... ≤5,0 %
Assay (qNMR)..... ≥80,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE30.1** | 50 mg | glass | 966,45 € |

### Rosmarinic acid

**ROTICHROM® Working Standard**
Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**
Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC30.1** | 100 mg | glass | 295,65 € |

### Rosmarinic acid

**ROTICHROM® HPLC**
Reference substance for HPLC.
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **N816.1** | 10 mg | glass | 161,25 € |

### Rosmarinic acid

**ROTICHROM® ~CHR**
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **A558.1** | 100 mg | glass | 241,90 € |

## Roth Hexanucleotide Random-Primer Mix

### Roth Hexanucleotide Random-Primer Mix

**HPLC-purified, lyophilised**
For random priming during probe generation or during total genome-amplification.
$N_6$ mix (N for A, G, C, T). 10 $OD_{260}$ units.
Storage temp.: -20 °C •
Transport temp.: room temp.

| | | |
|---|---|---|
| **HP28.1** | 1 kit | 67,65 € |

For further information, please see page 1263

## Roth poly d(T)$_{12-18}$ Primer

### Roth poly d(T)$_{12-18}$ Primer

**HPLC-purified, lyophilised**
For sequence unspecific priming during reverse transcription.
Mix of d(T) 12 to 18mers. 5 $OD_{260}$ units.
Storage temp.: -20 °C •
Transport temp.: room temp.

| | | |
|---|---|---|
| **HP27.1** | 1 kit | 51,10 € |

For further information, please see page 1263

## Roth Random-Primer kits for RAPD-PCR

### Roth Random-Primer kits for RAPD-PCR

20 x 10mer/kit. 2.0 $OD_{260}$ units per primer, aliquoted in 2 vials each. Desalted and lyophilised.
Storage temp.: -20 °C •
Transport temp.: room temp.

| | | | |
|---|---|---|---|
| **HP22.1** | 1 kit | Kit A | 198,90 € |
| **HP23.1** | 1 kit | Kit B | 198,90 € |
| **HP24.1** | 1 kit | Kit C | 198,90 € |
| **HP25.1** | 1 kit | Kit D | 198,90 € |

For further information, please see page 1263

## Roti®-Aqua-P/C/I

▶ Roti®-Phenol/Chloroform/Isoamyl alcohol see p. 2226

## Roti®-Aqua-Phenol

▶ Roti®-Phenol see p. 2226

## Roti®-Aquatest Plates

Storage temp.: +4-15 °C •
Transport temp.: cooled

### Roti®-Aquatest Plate Cetr

**Ph.Eur., ready-to-use, sterile, for microbiology**
For isolation of *Pseudomonas aeruginosa*.
UN No. 3077 • ADR 9 III • WGK 3
**Warning** H400

**Formulation:**
Gelatin peptone (Pancreas hydrolysate)..... 20 g/l
Magnesium chloride..... 1,4 g/l
Potassium sulphate..... 10 g/l
Cetrimide..... 0,3 g/l
Glycerol..... 10 ml/l
Agar..... 13,6 g/l
pH value..... 7,2 ±0,2
Colour..... opaque white
Growth of test strains..... complies
Diameter..... 55 mm

| | | | |
|---|---|---|---|
| **9646.1** | 30 pieces | box | 47,85 € |

For further information, please see page 1370

### Roti®-Aquatest Plate Colichrom

**ready-to-use, sterile, for microbiology**
For detection and enumeration of *E. coli* and other coliforms.
WGK 1

**Formulation:**
Sodium chloride (NaCl)..... 5 g/l
Casein, enzymatically digested..... 3 g/l
di-Sodium hydrogen phosphate..... 2,7 g/l
Sodium dihydrogen phosphate ..... 2,2 g/l
Sodium pyruvate..... 1 g/l
Tryptophane..... 1 g/l
Sorbitol..... 1 g/l
Chromogene Mixture..... 0,4 g/l
Sodium heptadecyl sulphate (Tergitol-7)..... 0,15 g/l
Vancomycin..... 0,005 g/l
Cefsulodin..... 0,005 g/l
Agar..... 13 g/l
pH value..... 6,8 ±0,2
Colour..... amber
Growth of test strains..... complies
Diameter..... 55 mm

| | | | |
|---|---|---|---|
| **9641.1** | 30 pieces | box | 115,60 € |

For further information, please see page 1369

### Roti®-Aquatest Plate m-CP

**TWVO 2001, ready-to-use, sterile, for microbiology**
For enumeration of *Clostridium perfringens*.
WGK 1

**Formulation:**
Saccharose..... 5 g/l
L-Cysteine hydrochloride..... 1 g/l
Magnesium sulphate heptahydrate..... 0,1 g/l
Iron(III)-chloride hexahydrate solution 4,5 %..... 2 ml
Bromocresol purple..... 0,04 g/l
Chromogene Mixture..... 0,16 g/l
D-Cycloserine..... 0,4 g/l
Polymyxin B sulphate..... 0,025 g/l
Tryptose..... 30 g/l
Yeast extract..... 20 g/l
Agar..... 15 g/l
pH value..... 7,6 ±0,2
Colour..... purple
Growth of test strains..... complies
Diameter..... 55 mm

| | | | |
|---|---|---|---|
| **9649.1** | 30 pieces | box | 54,75 € |

For further information, please see page 1371

## Roti®-Aquatest Plate PCA

**APHA, ISO 4833, ready-to-use, sterile, for microbiology**

For enumeration of the aerobic microbial flora.
WGK 1

**Formulation:**

| | |
|---|---|
| Casein peptone | 5 g/l |
| Yeast extract | 2,5 g/l |
| Glucose | 1 g/l |
| Agar | 14 g/l |
| pH value | 7,0 ±0,2 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9640.1** | 30 pieces | box | 47,85 € |

For further information, please see page 1369

## Roti®-Aquatest Plate R2A

**Ph.Eur., ready-to-use, sterile, for microbiology**

For enumeration of heterotrophic bacteria.
WGK 1

**Formulation:**

| | |
|---|---|
| Yeast extract | 0,5 g/l |
| Peptone | 0,5 g/l |
| Casein hydrolysed | 0,5 g/l |
| Glucose | 0,5 g/l |
| Starch | 0,5 g/l |
| di-Potassium hydrogen phosphate | 0,3 g/l |
| Magnesium sulphate ($MgSO_4$) | 0,024 g/l |
| Sodium pyruvate | 0,3 g/l |
| Agar | 15 g/l |
| pH value | 7,2 ±0,2 |
| Colour | amber |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9644.1** | 30 pieces | box | 47,85 € |

For further information, please see page 1370

## Roti®-Aquatest Plate Sab4

**Ph.Eur., ready-to-use, sterile, for microbiology**

For cultivation of yeasts and fungi.
WGK 1

**Formulation:**

| | |
|---|---|
| Glucose | 40 g/l |
| Meat and casein peptone | 10 g/l |
| Agar | 15 g/l |
| pH value | 5,6 ±0,2 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9643.1** | 30 pieces | box | 47,85 € |

For further information, please see page 1370

## Roti®-Aquatest Plate Staph

**Ph.Eur., ready-to-use, sterile, for microbiology**

For isolation of pathogenic staphylococci.
WGK 2

**Formulation:**

| | |
|---|---|
| Pancreatic digest of casein | 5 g/l |
| Peptone (peptic digest of animal tissue) | 5 g/l |
| Beef extract | 1 g/l |
| Sodium chloride (NaCl) | 75 g/l |
| D-Mannitol | 10 g/l |
| Phenol red | 0,025 g/l |
| Agar | 15 g/l |
| pH value | 7,4 ±0,2 |
| Colour | red |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9650.1** | 30 pieces | box | 47,85 € |

For further information, please see page 1371

## Roti®-Aquatest Plate Strep

**DEV, ISO 7899-2, ready-to-use, sterile, for microbiology**

For enumeration of intestinal streptococci.
WGK 2

**Warning** H312-H412-EUH032

**Formulation:**

| | |
|---|---|
| di-Potassium hydrogen phosphate | 4 g/l |
| Sodium azide | 0,4 g/l |
| Tetrazolium chloride (TTC) | 0,1 g/l |
| Tryptose | 20 g/l |
| Yeast extract | 5 g/l |
| Glucose | 2 g/l |
| Agar | 12 g/l |
| pH value | 7,2 ±0,1 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9648.1** | 30 pieces | box | 54,75 € |

For further information, please see page 1371

## Roti®-Aquatest Plate YE

**DEV, ISO 6222, ready-to-use, sterile, for microbiology**

For enumeration of microorganisms in general, e.g. bacteria, moulds or yeast.
WGK 1

**Formulation:**

| | |
|---|---|
| Tryptone | 6 g/l |
| Yeast extract | 3 g/l |
| Agar | 15 g/l |
| pH value | 7,2 ±0,2 |
| Colour | amber, slightly opalescent |
| Growth of test strains | complies |
| Diameter | 55 mm |

| | | | |
|---|---|---|---|
| **9642.1** | 30 pieces | box | 47,85 € |

For further information, please see page 1370

## Roti®-Black N

### Roti®-Black N

**silver staining kit for DNA-polyacrylamide gels**

UN No. 3316 • ADR 9 II • WGK 3

**Danger** H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

| | | |
|---|---|---|
| **N769.1** | for 10 gels of max. 10 ml gel volume | 92,35 € |
| **N769.2** | for 10 gels of max. 40 ml gel volume | 155,90 € |

For further information, please see page 1185

## Roti®-Black NSeq

### Roti®-Black NSeq

**silver staining kit for sequencing gels**

UN No. 3316 • ADR 9 II • WGK 3

**Danger** H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

| | | |
|---|---|---|
| **P081.1** | for 10 gels of max. 48 ml gel volume | 135,35 € |

For further information, please see page 1185

## Roti®-Black P

### Roti®-Black P

**silver staining kit for proteins**

UN No. 3316 • ADR 9 II • WGK 3

**Danger** H272-H301+H311+H331-H314-H317-H341-H350-H370-H410

| | | |
|---|---|---|
| **L533.1** | for 10 gels of 10 ml vol. each | 75,15 € |
| **L533.2** | for 10 gels of 40 ml vol. each | 90,85 € |

For further information, please see page 1184

## Roti®-Bleach

### Roti®-Bleach

**decolorisation kit for silver staining**

Storage temp.: +20 °C
WGK 2

| | | |
|---|---|---|
| **N766.1** | for 10 gels with 10 ml or 5 gels with 40 ml vol. each | 59,70 € |

For further information, please see page 1184

## Roti®-Block

### Roti®-Block

**ready-to-use, 10x conc.**

Protein free blocking solution.
Contains Tween® 20.
D 1,086
Storage temp.: +20 °C
WGK 1

| | | | |
|---|---|---|---|
| **A151.1** | 250 ml | glass | 48,95 € |
| **A151.4** | 500 ml | glass | 82,25 € |
| **A151.2** | 1 l | glass | 149,45 € |
| Original pack 6 x 1 l | | | 141,98/1 l |
| **A151.3** | 2,5 l | glass | 278,45 € |
| Original pack 4 x 2,5 l | | | 264,53/2,5 l |

For further information, please see page 1317

## Roti®-Blot 1

### Roti®-Blot 1

**Discontinuous transfer buffer for semi dry blotting.**

Storage temp.: +20 °C
WGK 1

**Warning** H315-H319

| | | | |
|---|---|---|---|
| **L509.1** | 1 Set | glass | 98,80 € |

For further information, please see page 1225

## Roti®-Blot A

### Roti®-Blot A

**anode buffer to Roti®-Blot 1, 10x conc.**

Storage temp.: +20 °C

WGK 1

**Warning** H315-H319

| | | | |
|---|---|---|---|
| **L510.1** | 1 l | glass | 59,70 € |
| Original pack 6 x 1 l | | | 56,72/1 l |

For further information, please see page 1225

## Roti®-Blot K

### Roti®-Blot K

**cathode buffer to Roti®-Blot 1, 10x conc.**

Storage temp.: +20 °C

WGK 1

| | | | |
|---|---|---|---|
| **L511.1** | 1 l | glass | 61,85 € |
| Original pack 6 x 1 l | | | 58,76/1 l |

For further information, please see page 1225

## Roti®-Blue

### Roti®-Blue

**5x concentrated**

Colloidal Coomassie staining solution for protein gels.

1 l concentrate is sufficient for 50 mini gels.

Storage temp.: +20 °C

WGK 1

**Type analysis:**

Appearance. ..... dark blue, colloidal solution
pH value. ..... 1-4

| | | | |
|---|---|---|---|
| **A152.2** | 250 ml | plastic | 30,65 € |
| **A152.1** | 1 l | plastic | 88,70 € |
| Original pack 6 x 1 l | | | 84,27/1 l |

For further information, please see page 1183

## Roti®-Blue quick

### Roti®-Blue quick

**ready-to-use 1x conc. solution**

Solution for rapid, sensitive staining of protein gels.

1 l solution is sufficient for approx. 40 mini gels.

Storage temp.: +4 °C

WGK 1

| | | | |
|---|---|---|---|
| **4829.1** | 250 ml | glass | 64,40 € |
| **4829.2** | 1 l | glass | 220,40 € |
| Original pack 6 x 1 l | | | 209,38/1 l |

For further information, please see page 1182

## Roti®-C/I

### Roti®-C/I

**for extraction of nucleic acids**

Chloroform/Isoamyl alcohol at a ratio of 24:1.

Storage temp.: +20 °C

UN No. 1888 • ADR 6.1 III • WGK 3

**Danger**

H331-H372-H351-H361d-H302-H315-H319

| | | | |
|---|---|---|---|
| **X984.3** | 100 ml | glass | 11,00 € |
| **X984.1** | 250 ml | glass | 16,70 € |
| **X984.2** | 500 ml | glass | 25,70 € |

For further information, please see page 1227

## Roti®-CELL Bicarbonate solution

### Roti®-CELL Bicarbonate solution

**CELLPURE® sterile, 7,5 %**

For cell culture

Sodium bicarbonate solution in water

**Type analysis:**

Sodium bicarbonate. ..... 7,5 %
pH value. ..... 7,5-8,1
Osmolality. ..... 266-354 mOsm/kg
Endotoxins. ..... <1,0 EU/ml
Toxicity . ..... none detected
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9165.1** | 100 ml | plastic | 12,80 € |

For further information, please see page 1327

## Roti®-CELL DMEM : F12

### Roti®-CELL DMEM : F12

**CELLPURE® ready-to-use, sterile, with glutamine, with pyruvate, with HEPES**

Medium for analysis of hormones and growth factors in cell culture.

Dulbecco's Modified Eagle Medium + Ham's F12 medium (1:1)

Storage temp.: +4 °C

**Type analysis:**

Glucose. ..... 3,15 g/l
HEPES. ..... 15 mM
pH value. ..... 7,0-7,4
Osmolality. ..... 286-356 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9031.1** | 500 ml | plastic | 15,60 € |

For further information, please see page 1324

## Roti®-CELL DMEM High Glucose

Dulbecco's Modified Eagle Medium

Storage temp.: +4 °C

### Roti®-CELL DMEM High Glucose

**CELLPURE® ready-to-use, sterile, with glutamine, with pyruvate**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

Glucose. ..... 4,5 g/l
L-Glutamine. ..... complies
pH value. ..... 7,0-7,4
Osmolality. ..... 324-352 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9005.1** | 500 ml | plastic | 12,80 € |

For further information, please see page 1324

### Roti®-CELL DMEM High Glucose

**CELLPURE® ready-to-use, sterile, with glutamine, w/o pyruvate**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

Glucose. ..... 4,5 g/l
L-Glutamine. ..... complies
pH value. ..... 7,0-7,4
Osmolality. ..... 318-360 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9006.1** | 500 ml | plastic | 12,80 € |

For further information, please see page 1324

### Roti®-CELL DMEM High Glucose

**CELLPURE® ready-to-use, sterile, with stable glutamine, with pyruvate**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

Glucose. ..... 4,5 g/l
L-Glutamine, stable. ..... complies
pH value. ..... 7,0-7,4
Osmolality. ..... 324-352 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9007.1** | 500 ml | plastic | 13,90 € |

For further information, please see page 1324

### Roti®-CELL DMEM High Glucose

**CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

Glucose. ..... 4,5 g/l
pH value. ..... 7,0-7,4
Osmolality. ..... 324-352 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9010.1** | 500 ml | plastic | 12,80 € |

For further information, please see page 1324 2205

## Roti®-CELL DMEM High Glucose

**CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate, with HEPES**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

Glucose. ..... 4,5 g/l
HEPES. ..... 25 mM
pH value. ..... 7,0-7,4
Osmolality. ..... 321-351 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9011.1** | 500 ml | plastic | 16,70 € |

For further information, please see page 1324

## Roti®-CELL DMEM High Glucose

**CELLPURE® ready-to-use, sterile, w/o glutamine, w/o pyruvate**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

Glucose. ..... 4,5 g/l
pH value. ..... 7,0-7,4
Osmolality. ..... 318-360 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9019.1** | 500 ml | plastic | 12,80 € |

For further information, please see page 1324

## Roti®-CELL DMEM High Glucose

**CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate, w/o phenol red**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

Glucose. ..... 4,5 g/l
pH value. ..... 7,0-7,4
Osmolality. ..... 324-352 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9023.1** | 500 ml | plastic | 19,25 € |

For further information, please see page 1324

# Roti®-CELL DMEM Low Glucose

Dulbecco's Modified Eagle Medium
Storage temp.: +4 °C

## Roti®-CELL DMEM Low Glucose

**CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate**

Medium for culturing of adherent mammalian cell lines.

**Type analysis:**

Glucose. ..... 1,0 g/l
pH value. ..... 7,0-7,4
Osmolality. ..... 306-346 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9027.1** | 500 ml | plastic | 12,80 € |

For further information, please see page 1324

## Roti®-CELL DMEM Low Glucose

**CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate, with HEPES**

Medium for culturing of adherent mammalian cell lines.

**Type analysis:**

Glucose. ..... 1,0 g/l
HEPES. ..... 25 mM
pH value. ..... 7,0-7,4
Osmolality. ..... 300-326 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9030.1** | 500 ml | plastic | 16,05 € |

For further information, please see page 1324

# Roti®-CELL DPBS

Phosphate buffered saline acc. to Dulbecco, DPBS

## Roti®-CELL DPBS

**CELLPURE® ready-to-use, sterile, w/o Ca/Mg**

Balanced salt solution for cell culture

**Type analysis:**

pH value. ..... 7,3-7,7
Osmolality. ..... 271-287 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9124.1** | 500 ml | plastic | 13,15 € |
| **9124.2** | 1 l | plastic | 19,90 € |
| Original pack 6 x 1 l | | | 18,91/1 l |

For further information, please see page 1328

## Roti®-CELL 10x DPBS

**CELLPURE® sterile, w/o Ca/Mg**

Balanced salt solution for cell culture
10x ready-made solution

**Type analysis:**

pH value. ..... 7,3-7,7
Osmolality. ..... 271-287 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9130.1** | 500 ml | plastic | 17,75 € |
| **9130.2** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |

For further information, please see page 1328

## Roti®-CELL DPBS

**CELLPURE® ready-to-use, sterile, with Ca/Mg**

Balanced salt solution for cell culture

**Type analysis:**

pH value. ..... 6,9-7,2
Osmolality. ..... 275-292 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9131.1** | 500 ml | plastic | 13,15 € |
| **9131.2** | 1 l | plastic | 19,90 € |
| Original pack 6 x 1 l | | | 18,91/1 l |

For further information, please see page 1328

# Roti®-CELL DPBS/EDTA

## Roti®-CELL DPBS/EDTA

**CELLPURE® sterile, 0,02 % EDTA (Versene®), w/o Ca/Mg**

Balanced salt solution with EDTA for cell culture.
EDTA solution in DPBS

**Type analysis:**

EDTA (Versene®). ..... 0,02 %
pH value. ..... 7,0-7,5
Osmolality. ..... 275-291 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9135.1** | 100 ml | plastic | 15,60 € |

For further information, please see page 1334

# Roti®-CELL Eagle's MEM-Alpha

Minimum Essential Medium acc. to Eagle, Alpha modification
Storage temp.: +4 °C

## Roti®-CELL Eagle's MEM-Alpha

**CELLPURE® ready-to-use, sterile, w/o glutamine, w/o nucleosides**

Medium for culturing of bone marrow and amniotic cells.

**Type analysis:**

Alpha modification. ..... complies
pH value. ..... 6,9-7,3
Osmolality. ..... 281-317 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9058.1** | 500 ml | plastic | 14,95 € |

For further information, please see page 1325

## Roti®-CELL Eagle's MEM-Alpha

**CELLPURE® ready-to-use, sterile, with stable glutamine, with nucleosides**

Medium for culturing of bone marrow and amniotic cells.

**Type analysis:**

L-Glutamine, stable. ..... complies
Alpha modification. ..... complies
Ribonucleosides. ..... complies
Deoxyribonucleosides. ..... complies
pH value. ..... 6,7-7,3
Osmolality. ..... 285-315 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9082.1** | 500 ml | plastic | 27,85 € |

For further information, please see page 1325

## Roti®-CELL Eagle's MEM / Earle's

Minimum Essential Medium acc. to Eagle with Earle's salts

Storage temp.: +4 °C

### Roti®-CELL Eagle's MEM / Earle's

**CELLPURE® ready-to-use, sterile, with glutamine**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

L-Glutamine. ..... complies
Salts acc. to Earle. ..... complies
pH value. ..... 6,9-7,3
Osmolality. ..... 280-308 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9044.1** | 500 ml | plastic | 13,90 € |

For further information, please see page 1325

### Roti®-CELL Eagle's MEM / Earle's

**CELLPURE® ready-to-use, sterile, w/o glutamine**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

Salts acc. to Earle. ..... complies
pH value. ..... 6,7-7,3
Osmolality. ..... 285-301 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9047.1** | 500 ml | plastic | 12,80 € |

For further information, please see page 1325

### Roti®-CELL Eagle's MEM / Earle's

**CELLPURE® ready-to-use, sterile, w/o glutamine, with HEPES**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

HEPES. ..... 25 mM
Salts acc. to Earle. ..... complies
pH value. ..... 6,8-7,3
Osmolality. ..... 284-305 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9048.1** | 500 ml | plastic | 14,95 € |

For further information, please see page 1325

### Roti®-CELL Eagle's MEM / Earle's

**CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate, with NEAA**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

Salts acc. to Earle. ..... complies
Non essential amino acids. ..... complies
pH value. ..... 7,0-7,3
Osmolality. ..... 287-303 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9049.1** | 500 ml | plastic | 14,95 € |

For further information, please see page 1325

## Roti®-CELL Eagle's MEM / Hanks'

### Roti®-CELL Eagle's MEM / Hanks'

**CELLPURE® ready-to-use, sterile, w/o glutamine**

Medium for a wide range of mammalian cell culture applications.

Minimum Essential Medium acc. to Eagle with Hanks' salts

Storage temp.: +4 °C

**Type analysis:**

Salts acc. to Hanks. ..... complies
pH value. ..... 6,9-7,4
Osmolality. ..... 286-307 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9056.1** | 500 ml | plastic | 16,05 € |

For further information, please see page 1325

## Roti®-CELL Glucose solution

### Roti®-CELL Glucose solution

**CELLPURE® sterile, 100 mg/ml**

For cell culture

Glucose solution in water

**Type analysis:**

Glucose. ..... 100 g/l
Endotoxins. ..... tested
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9155.1** | 100 ml | plastic | 28,50 € |

For further information, please see page 1327

## Roti®-CELL Glutamine solution

### Roti®-CELL Glutamine solution

**CELLPURE® sterile, 200 mM**

Temperature-stable. For cell culture

Alanyl-L-glutamine solution in 145 mM NaCl

**Type analysis:**

Glutamin, stable. ..... 200 mM
pH value. ..... 5,58-6,78
Osmolality. ..... 423-499 mOsm/kg
Endotoxins. ..... <1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9183.1** | 100 ml | plastic | 16,70 € |

For further information, please see page 1327

## Roti®-CELL Ham's F12

### Roti®-CELL Ham's F12

**CELLPURE® ready-to-use, sterile, with glutamine, with pyruvate**

Medium for culturing of a variety of mammalian- and hybridoma cells, especially CHO cells.

Ham's F12 cell culture medium

Storage temp.: +4 °C

**Type analysis:**

L-Glutamine. ..... complies
pH value. ..... 7,0-7,4
Osmolality. ..... 286-305 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9108.1** | 500 ml | plastic | 14,55 € |

For further information, please see page 1326

## Roti®-CELL Hanks' BSS

Hanks' salt solution, HBSS

### Roti®-CELL Hanks' BSS

**CELLPURE® ready-to-use, sterile, w/o Ca/Mg, w/o phenol red**

Balanced salt solution for cell culture

**Type analysis:**

Glucose. ..... 1,0 g/l
pH value. ..... 7,1-7,5
Osmolality. ..... 270-286 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9117.1** | 500 ml | plastic | 11,30 € |

For further information, please see page 1328

### Roti®-CELL Hanks' BSS

**CELLPURE® ready-to-use, sterile, w/o Ca/Mg, with phenol red**

Balanced salt solution for cell culture

**Type analysis:**

Glucose. ..... 1,0 g/l
pH value. ..... 7,1-7,5
Osmolality. ..... 270-286 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9118.1** | 500 ml | plastic | 11,75 € |

For further information, please see page 1328

### Roti®-CELL Hanks' BSS

**CELLPURE® ready-to-use, sterile, with Ca/Mg, w/o phenol red**

Balanced salt solution for cell culture

**Type analysis:**

Glucose. ..... 1,0 g/l
pH value. ..... 7,0-7,4
Osmolality. ..... 274-290 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9119.1** | 500 ml | plastic | 11,30 € |

For further information, please see page 1328

### Roti®-CELL Hanks' BSS

**CELLPURE® ready-to-use, sterile, with Ca/Mg, with phenol red**

Balanced salt solution for cell culture

**Type analysis:**

Glucose. ..... 1,0 g/l
pH value. ..... 7,1-7,4
Osmolality. ..... 277-299 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9122.1** | 500 ml | plastic | 15,60 € |

For further information, please see page 1328

## Roti®-CELL HEPES solution

### Roti®-CELL HEPES solution

**CELLPURE® sterile, 1 M**

For cell culture

HEPES solution in 145 mM NaCl

**Type analysis:**

HEPES. ..... 1 M
pH value. ..... 6,98-7,3
Osmolality. ..... 265-341 mOsm/kg
Toxicity . ..... none detected
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9157.1** | 100 ml | plastic | 22,50 € |

For further information, please see page 1327

## Roti®-CELL Iscove's MDM

Iscove's Modified Dulbecco's Medium

Storage temp.: +4 °C

### Roti®-CELL Iscove's MDM

**CELLPURE® ready-to-use, sterile, with glutamine, with pyruvate, with HEPES**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

Glucose. ..... 4,5 g/l
L-Glutamine. ..... complies
HEPES. ..... 25 mM
pH value. ..... 6,95-7,15
Osmolality. ..... 275-305 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9033.1** | 500 ml | plastic | 16,70 € |

For further information, please see page 1324

### Roti®-CELL Iscove's MDM

**CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate, with HEPES**

Medium for a wide range of mammalian cell culture applications.

**Type analysis:**

Glucose. ..... 4,5 g/l
HEPES. ..... 25 mM
pH value. ..... 6,95-7,15
Osmolality. ..... 275-305 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9035.1** | 500 ml | plastic | 16,70 € |

For further information, please see page 1324

## Roti®-CELL Leibovitz's L15

### Roti®-CELL Leibovitz's L15

**CELLPURE® ready-to-use, sterile, w/o glutamine, with galactose**

Medium for culture of mammalian cells without $CO_2$ atmosphere.

Leibovitz's cell culture medium

Storage temp.: +4 °C

**Type analysis:**

Galactose. ..... 0,9 g/l
pH value. ..... 7,3-7,75
Osmolality. ..... 309-332 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9109.1** | 500 ml | plastic | 23,15 € |

For further information, please see page 1326

## Roti®-CELL McCoy's 5A

### Roti®-CELL McCoy's 5A

**CELLPURE® ready-to-use, sterile, with glutamine**

Medium for culturing of a variety of mammalian cell lines and primary cells.

McCoys 5A cell culture medium

Storage temp.: +4 °C

**Type analysis:**

L-Glutamine. ..... complies
pH value. ..... 6,9-7,2
Osmolality. ..... 290-307 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9111.1** | 500 ml | plastic | 21,40 € |

For further information, please see page 1326

## Roti®-CELL Medium 199 / Earle's

### Roti®-CELL Medium 199 / Earle's

**CELLPURE® ready-to-use, sterile, with glutamine, with HEPES**

Medium for cell culture in virology and vaccine production.

Medium 199 with Earle's salts

Storage temp.: +4 °C

**Type analysis:**

L-Glutamine. ..... complies
HEPES. ..... 25 mM
Salts acc. to Earle. ..... complies
pH value. ..... 6,9-7,3
Osmolality. ..... 294-333 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9112.1** | 500 ml | plastic | 18,85 € |

For further information, please see page 1326

## Roti®-CELL MEM-NEAA solution

### Roti®-CELL MEM-NEAA solution

**CELLPURE® sterile, 100x conc., 10 mM each**

For cell culture

Non essential amino acids, solution in water

Storage temp.: +4 °C

**Type analysis:**

L-Alanine. ..... 0,89 g/l
L-Asparagine. ..... 1,321 g/l
L-Aspartic acid. ..... 1,33 g/l
L-Glutamic acid. ..... 1,47 g/l
Glycine. ..... 0,75 g/l
L-Proline. ..... 1,15 g/l
L-Serine. ..... 1,05 g/l
pH value. ..... 2,15-3,35
Osmolality. ..... 72-105 mOsm/kg
Endotoxins. ..... <1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9185.1** | 100 ml | plastic | 16,70 € |

For further information, please see page 1327

## Roti®-CELL Myco-Free

### Roti®-CELL Myco-Free

**CELLPURE® 50x conc., ready-to-use, sterile**

For elimination of mycoplasm contamination in cell culture.

One bottle of 100 ml is sufficient for approx. 300 applications.

Mycoplasm eradication solution

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 3

**Guarantee analysis:**

Appearance of solution. ..... clear, colourless
pH value. ..... 4,0-4,5
Osmolality. ..... 280-340
Endotoxins. ..... <10 EU/ml
Sterility. ..... complies
Toxicity ..... none detected

| | | | |
|---|---|---|---|
| **9830.1** | 100 ml | plastic | 220,40 € |

For further information, please see page 1331

## Roti®-CELL PBS

Phosphate buffered saline, PBS without Ca/Mg

### Roti®-CELL PBS

**CELLPURE® ready-to-use, sterile**

Balanced salt solution for cell culture

**Type analysis:**

pH value. ..... 7,3-7,5
Osmolality. ..... 287-309 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9143.1** | 500 ml | plastic | 12,40 € |
| **9143.2** | 1 l | plastic | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |

For further information, please see page 1330

### Roti®-CELL 10x PBS

**CELLPURE® sterile**

Balanced salt solution for cell culture

10x ready-made solution

**Type analysis:**

pH value. ..... 7,3-7,5
Osmolality. ..... 287-309 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Toxicity ..... none detected
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9150.1** | 1 l | plastic | 18,85 € |
| Original pack 6 x 1 l | | | 17,91/1 l |

For further information, please see page 1330

## Roti®-CELL PBS/EDTA

### Roti®-CELL PBS/EDTA

**CELLPURE® sterile, 0,046 % EDTA**

Balanced salt solution with EDTA for cell culture.

EDTA solution in PBS

**Type analysis:**

EDTA. ..... 0,046 %
pH value. ..... 7,4-7,6
Osmolality. ..... 290-320 mOsm/kg
Endotoxins. ..... ≤0,25 EU/ml
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9152.1** | 500 ml | plastic | 11,75 € |

For further information, please see page 1334

## Roti®-CELL Pyruvate solution

### Roti®-CELL Pyruvate solution

**CELLPURE® sterile, 100 mM**

For cell culture

Sodium pyruvate solution in water

Storage temp.: +4 °C

**Type analysis:**

Sodium pyruvate. ..... 100 mM
Osmolality. ..... 178-198 mOsm/kg
Endotoxins. ..... <1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9182.1** | 100 ml | plastic | 10,25 € |

For further information, please see page 1327

## Roti®-CELL RPMI-1640

RPMI cell culture medium

Storage temp.: +4 °C

### Roti®-CELL RPMI-1640

**CELLPURE® ready-to-use, sterile, with glutamine**

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

**Type analysis:**

L-Glutamine. ..... complies
pH value. ..... 6,9-7,3
Osmolality. ..... 271-295 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9085.1** | 500 ml | plastic | 12,80 € |

For further information, please see page 1325

### Roti®-CELL RPMI-1640

**CELLPURE® ready-to-use, sterile, with glutamine, with HEPES**

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

**Type analysis:**

L-Glutamine. ..... complies
HEPES. ..... 25 mM
pH value. ..... 7,1-7,4
Osmolality. ..... 271-315 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9086.1** | 500 ml | plastic | 14,55 € |

For further information, please see page 1325

### Roti®-CELL RPMI-1640

**CELLPURE® ready-to-use, sterile, with stable glutamine**

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

**Type analysis:**

L-Glutamine, stable. ..... complies
pH value. ..... 6,9-7,3
Osmolality. ..... 271-295 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9091.1** | 500 ml | plastic | 13,90 € |

For further information, please see page 1325

### Roti®-CELL RPMI-1640

**CELLPURE® ready-to-use, sterile, with stable glutamine, with HEPES**

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

**Type analysis:**

L-Glutamine, stable. ..... complies
HEPES. ..... 25 mM
pH value. ..... 7,1-7,5
Osmolality. ..... 271-315 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9093.1** | 500 ml | plastic | 16,05 € |

For further information, please see page 1325

### Roti®-CELL RPMI-1640

**CELLPURE® ready-to-use, sterile, with glutamine, w/o glucose**

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

**Type analysis:**

L-Glutamine. ..... complies
pH value. ..... 6,9-7,3
Osmolality. ..... 260-282 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9094.1** | 500 ml | plastic | 52,60 € |

For further information, please see page 1325

### Roti®-CELL RPMI-1640

**CELLPURE® ready-to-use, sterile, w/o glutamine**

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

**Type analysis:**

pH value. ..... 6,9-7,4
Osmolality. ..... 270-293 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9099.1** | 500 ml | plastic | 12,40 € |

For further information, please see page 1325

### Roti®-CELL RPMI-1640

**CELLPURE® ready-to-use, sterile, w/o glutamine, w/o phenol red**

Medium for a wide range of mammalian cell culture applications, mainly of leucocytes

**Type analysis:**

pH value. ..... 6,9-7,4
Osmolality. ..... 270-293 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9104.1** | 500 ml | plastic | 16,05 € |

For further information, please see page 1325

## Roti®-CELL TC100

### Roti®-CELL TC100

**CELLPURE® ready-to-use, sterile, with glutamine**

Medium for culture of Sf9 cells.

TC100 cell culture medium; BML-TC/100

Storage temp.: +4 °C

**Type analysis:**

L-Glutamine. ..... complies
pH value. ..... 6,1-6,7
Osmolality. ..... 332-368 mOsm/kg
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9114.1** | 500 ml | plastic | 26,35 € |

For further information, please see page 1326

## Roti®-CELL Water

### Roti®-CELL Water

**CELLPURE® sterile, USP**

For cell culture

**Type analysis:**

Particulate matter. ..... complies
Conductivity. ..... complies
Oxidizable substances. ..... complies
Endotoxins. ..... <0,25 EU/ml
Sterility. ..... complies

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9186.1** | 500 ml | plastic | 9,60 € |
| **9186.2** | 1 l | plastic | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |

## Roti®-CELL William's E

### Roti®-CELL William's E

**CELLPURE® ready-to-use, sterile, w/o glutamine, with pyruvate**

Medium for long-term culturing of adult, primary liver epithelial cells.

William's E cell culture medium

Storage temp.: +4 °C

**Type analysis:**

Pyruvate. ..... complies
pH value. ..... 7,0-7,4
Osmolality. ..... 290-318 mOsm/kg
Endotoxins. ..... ≤1,0 EU/ml
Sterility. ..... complies

| | | | |
|---|---|---|---|
| **9116.1** | 500 ml | plastic | 21,40 € |

For further information, please see page 1326

## Roticlear®

### Roticlear®

**for histology**

Clearing agent of aliphatic hydrocarbons, practically free from aromatic compounds.
For dewaxing of histological sections.
Alternative product for xylene.

D 0,755 • bp 135-170 °C
mp -60 °C • flp >23 °C
[64742-48-9] • EC No. 265-150-3
UN No. 3295 • ADR 3 III • WGK 1



**Danger**

H226-H304-H336-H412-EUH066

**Type analysis:**
Density (15 °C). ..... 0,7460-0,7638
Colour (Hazen). ..... <10
Flash point. ..... >23 °C
Boiling range. ..... 130-170 °C
Aromatic compounds. ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **A538.1** | 1 l | glass | 16,05 € |
| Original pack 6 x 1 l | | | 15,25/1 l |
| **A538.5** | 2,5 l | glass | 30,00 € |
| Original pack 4 x 2,5 l | | | 28,50/2,5 l |
| **A538.2** | 10 l | tinplate | 88,70 € |
| **A538.3** | 25 l | tinplate | 177,40 € |
| **A538.4** | 200 l | barrel | 751,45 € |

For further information, please see page 1440

## Roti®-ContiPlates

Storage temp.: +4-15 °C •
Transport temp.: cooled

### Roti®-ContiPlate PCA

**ready-to-use, sterile, for microbiology**

For total germ count on surfaces.
WGK 1

**Formulation:**
Casein peptone ..... 5 g/l
Yeast extract. ..... 2,5 g/l
Glucose. ..... 1 g/l
Agar. ..... 15 g/l
pH value. ..... 7,0 ±0,2
Colour. ..... amber, slightly opalescent
Growth of test strains. ..... complies
Diameter. ..... 60 mm

| | | | |
|---|---|---|---|
| **9630.1** | 30 pieces | box | 61,30 € |

For further information, please see page 1368

### Roti®-ContiPlate RBC

**ready-to-use, sterile, for microbiology**

For counting yeasts and moulds on surfaces.
WGK 3

**Danger** H318

**Formulation:**
Glucose. ..... 10 g/l
Peptone. ..... 5 g/l
Potassium phosphate. ..... 1 g/l
Magnesium sulphate ($MgSO_4$) ..... 0,5 g/l
Chloroamphenicol. ..... 0,1 g/l
Bengal red. ..... 0,05 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,2
Colour. ..... intense pink
Growth of test strains. ..... complies
Diameter. ..... 60 mm

| | | | |
|---|---|---|---|
| **9632.1** | 30 pieces | box | 61,30 € |

For further information, please see page 1368

### Roti®-ContiPlate Sab4plus

**ready-to-use, sterile, for microbiology**

For selective detection of yeasts and pathogenic fungi on surfaces.
WGK 3

**Formulation:**
Glucose. ..... 40 g/l
Meat and casein peptone. ..... 10 g/l
Chloroamphenicol. ..... 0,5 g/l
Agar. ..... 15 g/l
pH value. ..... 5,6 ±0,2
Colour. ..... amber, slightly opalescent
Growth of test strains. ..... complies
Diameter. ..... 60 mm

| | | | |
|---|---|---|---|
| **9633.1** | 30 pieces | box | 61,30 € |

For further information, please see page 1368

### Roti®-ContiPlate TSA-Letheen

**ready-to-use, sterile, for microbiology**

For detection of microorganisms on disinfected surfaces.
WGK 2

**Warning** H319

**Formulation:**
Pancreatic digest of casein ..... 15 g/l
Soy peptone (papain hydrolysate) ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Lecithin. ..... 1,0 g/l
Polysorbate 80. ..... 5 g/l
Triton® X-100. ..... 1,0 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,2
Colour. ..... amber, slightly opalescent
Growth of test strains. ..... complies
Diameter. ..... 60 mm

| | | | |
|---|---|---|---|
| **9634.1** | 30 pieces | box | 61,30 € |

For further information, please see page 1368

### Roti®-ContiPlate VRBD

**ready-to-use, sterile, for microbiology**

For detection of enterobacteria on surfaces.
WGK 1

**Formulation:**
Glucose monohydrate. ..... 10 g/l
Gelatine peptone. ..... 7 g/l
Sodium chloride (NaCl). ..... 5 g/l
Yeast extract. ..... 3 g/l
Bile salts. ..... 1,5 g/l
Neutral red. ..... 0,03 g/l
Crystal Violet. ..... 0,002 g/l
Agar. ..... 13 g/l
pH value. ..... 7,4 ±0,2
Colour. ..... purple-red
Growth of test strains. ..... complies
Diameter. ..... 60 mm

| | | | |
|---|---|---|---|
| **9631.1** | 30 pieces | box | 61,30 € |

For further information, please see page 1367

## Roti®-DAB Kit

### Roti®-DAB Kit

**for immunochemistry**

Substrate kit for detection of HRP activity on blot membranes and slides.
One kit is sufficient for staining of approx. 44 minigel blot membranes or 500 slides.
DAB substrate kit, HRP substrate kit
Storage temp.: +4 °C •
Transport temp.: cooled
WGK 1

**Danger**
H302-H341-H351-H360D-H373

**Type analysis:**
Application test (Blotting) ..... complies
RNAse. ..... ≤1 ppb
DNAse. ..... ≤1 ppm

| | | | |
|---|---|---|---|
| **9202.1** | 1 kit | cardboard | 181,70 € |

For further information, please see page 1288

## Roti®-DipSlides

Storage temp.: +4-15 °C •
Transport temp.: cooled

### Roti®-DipSlide CASO-TTC/ RBCenr

**ready-to-use, sterile, for microbiology**

For total germ count and for detection of yeasts and moulds in solution or on surface. Suitable for analysis of water-mixable cooling lubricants, air conditions, water-soluble paint, and cosmetics.

**Formulation:**
Agar side 1 (CASO-TTC):
Caseine peptone ..... 15 g/l
Soja peptone. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
TTC. ..... 0,02 g/l
Agar. ..... 15 g/l
pH value. ..... 7,3
Colour. ..... amber, slightly opalescent
Growth of test strains. ..... complies
Agar side 2 (RBCenr):
Meat peptone. ..... 5 g/l
Casein peptone. ..... 5 g/l
Glucose. ..... 40 g/l
Bengal red. ..... 0,05 g/l
Trimethoprim. ..... 0,03 g/l
Gentamycin. ..... 0,03 g/l
Agar. ..... 15 g/l
pH-value. ..... 7,2
Colour. ..... intense pink
Growth of test strains. ..... complies

| | | | |
|---|---|---|---|
| **3934.1** | 20 pieces | box | 61,85 € |

For further information, please see page 1363

### Roti®-DipSlide CLED/MacCon

**ready-to-use, sterile, for microbiology**

For detection of bacteria of the urinary tract and of enterobacteria/Coliforms in liquids or on surfaces.

**Formulation:**
Agar side 1 (CLED):
Casein peptone. ..... 4 g/l
Gelatine peptone. ..... 4 g/l
Beef extract. ..... 3 g/l
Lactose. ..... 10 g/l
L-Cystine. ..... 0,128 g/l
Bromothymol blue. ..... 0,02 g/l
Agar. ..... 15 g/l
pH value. ..... 7,3
Colour. ..... green
Growth of test strains. ..... complies
Agar side 2 (MacCon):
Gelatin peptone (Pancreas hydrolysate). ..... 17 g/l
Meat and casein peptone. ..... 3 g/l
Lactose monohydrate. ..... 10 g/l
Bile salt (Cholate). ..... 1,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Neutral red. ..... 0,03 g/l
Crystal Violet. ..... 0,001 g/l
Agar. ..... 13,5 g/l
pH-value. ..... 7,1
Colour. ..... violet-red
Growth of test strains. ..... complies

| | | | |
|---|---|---|---|
| **2957.1** | 20 slides | box | 61,85 € |

For further information, please see page 1365

# Roti-DipSlides

## Roti®-DipSlide D/Eneutral

**ready-to-use, sterile, for microbiology**

For total germ count on surface after disinfection. For hygiene monitoring. Contains 5 neutralizers.

WGK 1

**Formulation:**

Agar both sides (D/Eneutral):

| | |
|---|---|
| Dextrose. | 10 g/l |
| Lecithin. | 7 g/l |
| Sodium thiosulphate. | 6 g/l |
| Casein peptone. | 5 g/l |
| Polysorbate 80. | 5 g/l |
| Yeast extract. | 2,5 g/l |
| Sodium bisulfite. | 2,5 g/l |
| Sodium thioglycolate. | 1 g/l |
| Bromocresol purple. | 0,02 g/l |
| Agar. | 15 g/l |
| pH value. | 7,6 ±0,2 |
| Colour. | purple |
| Growth of test strains. | complies |

| | | | |
|---|---|---|---|
| **8023.1** | 20 slides | box | 61,85 € |

For further information, please see page 1361

## Roti®-DipSlide MacCon/Cetr

**ready-to-use, sterile, for microbiology**

For detection of enterobacteria like salmonellae or shigellae and pseudomonads in liquids or on surfaces.

WGK 1

**Formulation:**

Agar side 1 (MacCon):

| | |
|---|---|
| Gelatine peptone. | 17,0 g/l |
| Meat and casein peptone. | 3,0 g/l |
| Lactose monohydrate. | 10,0 g/l |
| Sodium chloride (NaCl). | 5,0 g/l |
| Bile salt (Cholate). | 1,5 g/l |
| Neutral red. | 0,03 g/l |
| Crystal Violet. | 0,001 g/l |
| Agar. | 13,5 g/l |
| pH value. | 7,1 ± 0,2 |
| Colour. | violet-red |
| Growth of test strains. | complies |

Agar side 2 (Cetr):

| | |
|---|---|
| Pancreas hydrolysate made from gelatin. | 20,0 g/l |
| Magnesium chloride. | 1,4 g/l |
| Potassium sulphate. | 10,0 g/l |
| Cetrimide. | 0,3 g/l |
| Agar. | 13,6 g/l |
| pH-value. | 7,2 ±0,2 |
| Colour. | opaque white |
| Growth of test strains. | complies |

| | | | |
|---|---|---|---|
| **8045.1** | 20 slides | box | 61,85 € |

For further information, please see page 1365

## Roti®-DipSlide Nutrient-TTC

**ready-to-use, sterile, for microbiology**

For total germ count in liquids or on surfaces.

**Formulation:**

Agar side 1 (Nutrient):

| | |
|---|---|
| Meat peptone | 5 g/l |
| Meat extract. | 3 g/l |
| Agar. | 12 g/l |
| pH value. | 7,0 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |

Agar side 2 (Nutrient-TTC):

| | |
|---|---|
| Meat peptone | 5 g/l |
| Meat extract. | 3 g/l |
| TTC. | 0,05 g/l |
| Agar. | 12 g/l |
| pH-value. | 7,0 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |

| | | | |
|---|---|---|---|
| **2837.1** | 20 pieces | box | 61,85 € |

For further information, please see page 1364

## Roti®-DipSlide PCA

**ready-to-use, sterile, for microbiology**

For total germ count in liquids or on surfaces.

**Formulation:**

Agar both sides (PCA):

| | |
|---|---|
| Casein peptone . | 5 g/l |
| Yeast extract. | 2,5 g/l |
| Glucose. | 1 g/l |
| Agar. | 15 g/l |
| pH value. | 7,0 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |

| | | | |
|---|---|---|---|
| **2927.1** | 20 slides | box | 61,85 € |

For further information, please see page 1364

## Roti®-DipSlide PCA/Legionella

**ready-to-use, sterile, for microbiology**

For total germ count and for detection of legionells in solution or on surface.

**Formulation:**

Agar side 1 (PCA):

| | |
|---|---|
| Casein peptone . | 5 g/l |
| Yeast extract. | 2,5 g/l |
| Glucose. | 1 g/l |
| Agar. | 15 g/l |
| pH value. | 7,0 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |

Agar side 2 (Legionella):

| | |
|---|---|
| Yeast extract. | 10 g/l |
| Charcoal activated. | 2 g/l |
| GVPC selective additive. | complies |
| Growth additive. | complies |
| Agar. | 13 g/l |
| pH-value. | 6,9 |
| Colour. | black |
| Growth of test strains. | complies |

| | | | |
|---|---|---|---|
| **2493.1** | 20 pieces | box | 61,85 € |

For further information, please see page 1362

## Roti®-DipSlide PCA/RBCplus

**ready-to-use, sterile, for microbiology**

For total germ count and for detection of yeasts and moulds in liquids or on surfaces.

**Formulation:**

Agar side 1 (PCA):

| | |
|---|---|
| Casein peptone . | 5 g/l |
| Yeast extract. | 2,5 g/l |
| Glucose. | 1 g/l |
| Agar. | 15 g/l |
| pH value. | 7,0 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |

Agar side 2 (RBCplus):

| | |
|---|---|
| Peptone. | 5 g/l |
| Glucose. | 10 g/l |
| Potassium phosphate. | 1 g/l |
| Magnesium sulphate ($MgSO_4$). | 0,5 g/l |
| Chloroamphenicol. | 0,1 g/l |
| Bengal red. | 0,05 g/l |
| Agar. | 15 g/l |
| pH-value. | 7,2 |
| Colour. | intense pink |
| Growth of test strains. | complies |

| | | | |
|---|---|---|---|
| **2926.1** | 20 slides | box | 61,85 € |

For further information, please see page 1363

## Roti®-DipSlide PCA/TSA-Letheen

**ready-to-use, sterile, for microbiology**

For total germ count in liquids or on surfaces. Suitable for analysis of cosmetics and of preservative containing products or after disinfection. Contains two neutralizers.

WGK 2

**Warning** H319

**Formulation:**

Agar side 1 (PCA):

| | |
|---|---|
| Casein peptone . | 5,0 g/l |
| Glucose. | 1,0 g/l |
| Yeast extract. | 2,5 g/l |
| Agar. | 15,0 g/l |
| pH value. | 7,0 ± 0,2 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |

Agar side 2 (TSA-Letheen):

| | |
|---|---|
| Pancreatic digest of casein. | 15,0 g/l |
| Soy peptone (papain hydrolysate). | 5,0 g/l |
| Sodium chloride (NaCl). | 5,0 g/l |
| Triton® X-100. | 1,0 g/l |
| Lecithin. | 1,0 g/l |
| Polysorbate 80. | 5 g/l |
| Agar. | 15,0 |
| pH-value. | 7,2 ±0,2 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |

| | | | |
|---|---|---|---|
| **8715.1** | 20 slides | box | 61,85 € |

For further information, please see page 1362

## Roti®-DipSlide PCA/VRB

**ready-to-use, sterile, for microbiology**

For total germ count and for detection of Coliforms in liquids or on surfaces.

**Formulation:**

Agar side 1 (PCA):

| | |
|---|---|
| Casein peptone . | 5 g/l |
| Yeast extract. | 2,5 g/l |
| Glucose. | 1 g/l |
| Agar. | 15 g/l |
| pH value. | 7,0 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |

Agar side 2 (VRB):

| | |
|---|---|
| Yeast extract. | 3 g/l |
| Pancreas hydrolysate made from gelatin. | 7 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Bile salts. | 1,5 g/l |
| Lactose. | 10 g/l |
| Neutral red. | 0,03 g/l |
| Crystal Violet. | 0,002 g/l |
| Agar. | 15 g/l |
| pH-value. | 7,4 |
| Colour. | purple-red |
| Growth of test strains. | complies |

| | | | |
|---|---|---|---|
| **2925.1** | 20 slides | box | 61,85 € |

For further information, please see page 1366

## Roti®-DipSlide PCA/VRBD

**ready-to-use, sterile, for microbiology**

For total germ count and for detection of enterobacteria in liquids or on surfaces.

**Formulation:**

Agar side 1 (PCA):

| | |
|---|---|
| Casein peptone . | 5 g/l |
| Yeast extract. | 2,5 g/l |
| Glucose. | 1 g/l |
| Agar. | 15 g/l |
| pH value. | 7,0 |
| Colour. | amber, slightly opalescent |
| Growth of test strains. | complies |

Agar side 2 (VRBD):
Yeast extract. ... 3 g/l
Pancreas hydrolysate made from gelatin. ... 7 g/l
Sodium chloride (NaCl). ... 5 g/l
Bile salts. ... 1,5 g/l
Glucose monohydrate. ... 10 g/l
Neutral red. ... 0,03 g/l
Crystal Violet ... 0,002 g/l
Agar. ... 15 g/l
pH-value. ... 7,4
Colour. ... purple-red
Growth of test strains. ... complies

| | | | |
|---|---|---|---|
| **2924.1** | 20 slides | box | 61,85 € |

For further information, please see page 1366

## Roti®-DipSlide Sab4plus

**ready-to-use, sterile, for microbiology**

For detection of yeasts and moulds in liquids or on surfaces.

**Formulation:**

Agar both sides (Sab4plus):
Meat and casein peptone. ... 10 g/l
Glucose. ... 40 g/l
Chloroamphenicol. ... 0,5 g/l
Agar. ... 15 g/l
pH value. ... 5,6
Colour. ... amber, slightly opalescent
Growth of test strains. ... complies

| | | | |
|---|---|---|---|
| **2956.1** | 20 slides | box | 61,85 € |

For further information, please see page 1364

## Roti®-DipSlide VRBD

**ready-to-use, sterile, for microbiology**

For detection of enterobacteria in liquids or on surfaces.

**Formulation:**

Agar both sides (VRBD):
Yeast extract. ... 3 g/l
Pancreas hydrolysate made from gelatin. ... 7 g/l
Sodium chloride (NaCl). ... 5 g/l
Bile salts. ... 1,5 g/l
Glucose monohydrate. ... 10 g/l
Neutral red. ... 0,03 g/l
Crystal Violet ... 0,002 g/l
Agar. ... 15 g/l
pH value. ... 7,4
Colour. ... purple-red
Growth of test strains. ... complies

| | | | |
|---|---|---|---|
| **2954.1** | 20 slides | box | 61,85 € |

For further information, please see page 1366

## ROTIDRY®Sept Dried Solvents in a Septum Bottle

| Art. No. | Description | Page |
|---|---|---|
| 5175 | Acetonitrile | 1699 |
| 5176 | Dichloromethane | 1869 |
| 5177 | Diethyl ether | 1873 |
| 5179 | Dimethyl sulphoxide (DMSO) | 1884 |
| 5180 | n-Hexane | 1978 |
| 5181 | Methanol | 2068 |
| 5182 | Tetrahydrofuran | 2336 |
| 5191 | Toluene | 2347 |

## ROTIDRY® Dry Solvents

| Art. No. | Description | Page |
|---|---|---|
| 4424 | Acetic acid ethyl ester | 1695 |
| AE00 | Acetonitrile | 1699 |
| AE03 | Dichloromethane | 1869 |
| AE04 | Diethyl ether | 1873 |
| AE02 | Dimethyl sulphoxide (DMSO) | 1884 |
| 4429 | 1,4-Dioxane | 1886 |
| AE05 | n-Hexane | 1978 |
| AE01 | Methanol | 2068 |
| AE07 | Tetrahydrofuran | 2336 |
| AE06 | Toluene | 2347 |
| 4423 | Trichloromethane/Chloroform | 2351 |

## Roti®fair BBS

### Roti®fair BBS

**for 500 ml/tablet, for biochemistry and molecular biology**

Coating of ELISA plates and blocking supplement.

1x BBS solution is prepared by solubilization of 1 tablet in 500 ml highly pure water.

Borate Buffered Saline (tablets)

WGK 1

**Danger** H360FD

**Composition:**

Prepared 1x BBS solution contains: 0,15 M NaCl, 10 mM borate buffer, pH-value 8,2 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1005.1** | 100 tablets | plastic | 255,35 € |

For further information, please see page 1311

## Roti®fair BSC

BSC buffer powder (pouch),
Buffered Sodium Citrate
WGK 1

### Roti®fair BSC

**for 100 ml pouch, for cell biology**

Buffer solution for isolation of blood cells.

0,109 M BSC solution is prepared by dissolution of 1 pouch in 100 ml highly pure water.

**Formulation:**

Prepared BSC solution contains: 0,109 M (3,2 %) buffered Na-citrate, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **1011.1** | 10 pouches | box | 88,70 € |

For further information, please see page 1335

### Roti®fair BSC

**for 1000 ml pouch, for cell biology**

Buffer solution for isolation of blood cells.

0,109 M BSC solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

**Formulation:**

Prepared BSC solution contains: 0,109 M (3,2 %) buffered Na-citrate, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **1026.1** | 5 pouches | box | 136,00 € |

For further information, please see page 1335

## Roti®fair CBB

### Roti®fair CBB

**for 100 ml/tablet, for biochemistry and molecular biology**

Coating of microtiter plates and tubes for immunoassays.

1x CBB solution is prepared by dissolution of 1 tablet in 100 ml highly pure water.

Carbonate bicarbonate buffer (tablets)

WGK 1

**Warning** H319

**Formulation:**

Prepared 1x CBB solution contains: 50 mM sodium carbonate bicarbonate buffer, pH-value 9,6 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1027.1** | 8 tablets | blister | 37,55 € |
| **1027.2** | 24 tablets | blister | 69,35 € |
| **1027.3** | 100 tablets | plastic | 110,20 € |

For further information, please see page 1322

## Roti®fair 0.5M EDTA

### Roti®fair 0.5M EDTA

**for 500 ml/pouch, for applications in Life Science in general**

For preparation of bioanalytical solutions, anticoagulant.

0,5 M EDTA solution is prepared by dissolution of 1 pouch in 500 ml highly pure water.

EDTA powder (pouch), Ethylenediamine tetraacetic acid

WGK 2

**Warning** H332-H373

**Formulation:**

Prepared solution contains: 0,5 M EDTA, pH value 8,0 ±0,05, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **1031.1** | 5 pouches | box | 252,65 € |

For further information, please see page 1335

## Roti®fair 20% Glucose

### Roti®fair 20% Glucose

**for 1000 ml/pouch, for microbiology and biochemistry**

For preparation of nutrient media and solutions for enzymatics.

20 % glucose solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Glucose powder (pouch), D(+)-Glucose, Dextrose, Blood sugar

WGK 1

**Formulation:**

Prepared solution contains: 20 % glucose, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1030.1** | 5 pouches | box | 162,90 € |

For further information, please see page 1265

## Roti®fair Glycine 3.0

### Roti®fair Glycine 3.0

**for 1000 ml/pouch, for biochemistry**

For preparation of buffer solutions with acidic pH and elution buffer in affinity chromatography.

0,1 M glycine solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Glycine powder (pouch)

WGK 1

**Formulation:**

Prepared solution contains: 0,1 M glycine-HCl, pH value 3,0 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1032.1** | 10 pouches | box | 97,75 € |

For further information, please see page 1265

## Roti®fair HBS

### Roti®fair HBS

**for 500 ml/tablet, for biochemistry and cell biology**

General buffer base and for calcium phosphate mediated transfection.

1x HBS solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

HEPES Buffered Saline (tablets)

WGK 1

**Composition:**

Prepared 1x HBS solution contains: 10 mM HEPES, 0,15 M NaCl, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1033.1** | 12 tablets | blister | 62,25 € |
| **1033.2** | 100 tablets | plastic | 260,70 € |

For further information, please see page 1265

## Roti®fair 1M KCl

### Roti®fair 1M KCl

**for 1000 ml/pouch, for biochemistry and molecular biology**

For preparation of salt solutions and buffer concoctions.

1 M KCl solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Potassium chloride powder (pouch)

WGK 1

**Formulation:**

Prepared solution contains: 1 M KCl, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1034.1** | 10 pouches | box | 169,35 € |

For further information, please see page 1265

## Roti®fair 3M KCl

### Roti®fair 3M KCl

**for 1000 ml/pouch, for biochemistry and molecular biology**

For preparation of salt solutions and buffer concoctions.

3 M KCl solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Potassium chloride powder (pouch)

WGK 1

**Formulation:**

Prepared solution contains: 3 M KCl, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1035.1** | 5 pouch | box | 145,15 € |

For further information, please see page 1265

## Roti®fair Na-Acetate 5.2

### Roti®fair Na-Acetate 5.2

NEW

**for 1000 ml/pouch, for molecular biology**

For isolation of nucleic acids.

3 M sodium acetate solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Sodium acetate powder (pouch)

**Formulation:**

Prepared solution contains: 3 M sodium acetate, pH value 5,2 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1195.1** | 5 pouches | box | 284,90 € |

For further information, please see page 1265

## Roti®fair 0.9% NaCl

Sodium chloride (tablet)

WGK 1

### Roti®fair 0.9% NaCl

**for 100 ml/tablet, for biochemistry and molecular biology**

For preparation of salt solutions and buffer concoctions.

0,9 % NaCl solution is prepared by dissolution of 1 tablet in 100 ml highly pure water respectively.

**Formulation:**

Prepared solution contains: 0,9 % NaCl, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **1053.1** | 100 tablets | plastic | 54,75 € |

For further information, please see page 1265

### Roti®fair 0.9% NaCl

**for 1000 ml/tablet, for biochemistry and molecular biology**

For preparation of salt solutions and buffer concoctions.

0,9 % NaCl solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water respectively.

**Formulation:**

Prepared solution contains: 0,9 % NaCl, when prepared in deionized or distilled water.

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **1067.1** | 10 tablets | blister | 49,35 € |
| **1067.2** | 100 tablets | plastic | 114,50 € |

For further information, please see page 1265

## Roti®fair 3M NaCl

### Roti®fair 3M NaCl

**for 1000 ml/pouch, for biochemistry and molecular biology**

For preparation of salt solutions and buffer concoctions.

3 M NaCl solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Sodium chloride powder (pouch)

WGK 1

**Formulation:**

Prepared solution contains: 3 M NaCl, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1071.1** | 5 pouch | box | 77,95 € |

For further information, please see page 1265

## Roti®fair 5M NaCl

### Roti®fair 5M NaCl

**for 1000 ml/pouch, for biochemistry and molecular biology**

For preparation of salt solutions and buffer concoctions.

5 M NaCl solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Sodium chloride powder (pouch)

WGK 1

**Formulation:**

Prepared solution contains: 5 M NaCl, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1079.1** | 5 pouch | box | 90,85 € |

For further information, please see page 1265

## Roti®fair 0.02M Na-Phosphate 7.0

WGK 1

### Roti®fair 0.02M Na-Phosphate 7.0

**for 1000 ml/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

0,02 M sodium phosphate solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water. Sodium phosphate powder (pouch)

**Formulation:**
Prepared solution contains: 20 mM sodium phosphate, pH-value 7,0 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1090.1** | 10 pouches | box | 89,15 € |

For further information, please see page 1265

## Roti®fair 0.02M Na-Phosphate 7.0

**for 5000 ml/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

0,02 M sodium phosphate solution is prepared by dissolution of 1 pouch in 5000 ml highly pure water.

**Formulation:**
Prepared solution contains: 20 mM sodium phosphate, pH-value 7,0 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1094.1** | 10 pouches | box | 256,95 € |

For further information, please see page 1265

## Roti®fair 1M Na-Phosphate 6.5

### Roti®fair 1M Na-Phosphate 6.5

**for 1000 ml/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1 M sodium phosphate solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Sodium phosphate powder (pouch)

WGK 1

**Formulation:**
Prepared solution contains: 1 M sodium phosphate, pH-value 6,5 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1095.1** | 10 pouches | box | 241,90 € |

For further information, please see page 1265

## Roti®fair 1M Na-Phosphate 7.2

### Roti®fair 1M Na-Phosphate 7.2

**for 1000 ml/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1 M sodium phosphate solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Sodium phosphate powder (pouch)

WGK 1

**Formulation:**
Prepared solution contains: 1 M sodium phosphate, pH-value 7,2 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1097.1** | 10 pouches | box | 241,90 € |

For further information, please see page 1265

## Roti®fair PBS 7.2

### Roti®fair PBS 7.2

**for 1000 ml/tablet, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

PBS (tablet), Phosphate buffered saline

WGK 1

**Formulation:**
Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,2 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1106.1** | 10 tablets | blister | 74,10 € |
| **1106.2** | 100 tablets | plastic | 353,70 € |

For further information, please see page 1265

## Roti®fair PBS 7.4

PBS powder (pouch), Phosphate buffered saline

WGK 1

### Roti®fair PBS 7.4

**for 10 l/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 pouch in 10 litre highly pure water.

**Formulation:**
Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1101.1** | 1 pouch | box | 39,25 € |

For further information, please see page 1265

### Roti®fair PBS 7.4

**for 25 l/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 pouch in 25 litre highly pure water.

**Formulation:**
Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1102.1** | 1 pouch | box | 79,05 € |

For further information, please see page 1265

### Roti®fair PBS 7.4

**for 50 l/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 pouch in 50 litre highly pure water.

**Formulation:**
Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1103.1** | 1 pouch | box | 121,40 € |

For further information, please see page 1265

### Roti®fair PBS 7.4

**for 100 l/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 pouch in 100 litre highly pure water.

**Formulation:**
Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1104.1** | 1 pouch | box | 196,20 € |

For further information, please see page 1265

## Roti®fair PBS 7.4

PBS (tablet), Phosphate buffered saline

WGK 1

### Roti®fair PBS 7.4

**for 100 ml/tablet, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 100 ml highly pure water.

**Formulation:**
Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1107.1** | 100 tablets | plastic | 56,90 € |

For further information, please see page 1265

### Roti®fair PBS 7.4

**for 200 ml/tablet, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 200 ml highly pure water.

**Formulation:**
Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1108.1** | 100 tablets | plastic | 93,45 € |

For further information, please see page 1265

### Roti®fair PBS 7.4

**for 500 ml/tablet, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

**Formulation:**
Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1111.1** | 12 tablets | blister | 50,00 € |
| **1111.2** | 100 tablets | plastic | 198,90 € |

For further information, please see page 1265

## Roti®fair PBS 7.4

**for 1000 ml/tablet, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

**Formulation:**

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1112.1** | 10 tablets | blister | 73,65 € |
| **1112.2** | 100 tablets | plastic | 353,70 € |

For further information, please see page 1265

## Roti®fair 10x PBS 7.4

## Roti®fair 10x PBS 7.4

**for 1000 ml/pouch, for biochemistry and molecular biology**

Concentrated general solution for assays in molecular biology and biochemistry.

10x PBS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

PBS powder (pouch), Phosphate buffered saline

**Formulation:**

Prepared 10x PBS solution contains: 1,4 M NaCl, 27 mM KCl, 0,1 M phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1105.1** | 5 pouches | box | 96,65 € |

For further information, please see page 1265

## Roti®fair PBS potassium-free 7.4

PBS (tablet), Phosphate buffered saline
WGK 1

## Roti®fair PBS potassium-free 7.4

**for 1000 ml/tablet, for biochemistry and molecular biology**

Potassium-free, general solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

**Formulation:**

Prepared 1x PBS solution contains: 0,14 M NaCl, 10 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1113.1** | 10 tablets | blister | 73,65 € |
| **1113.2** | 100 tablets | plastic | 353,70 € |

For further information, please see page 1266

## Roti®fair PBS potassium-free 7.4

**for 1000 ml/tablet, high-phosphate, for biochemistry and molecular biology**

Potassium-free, high-phosphate general solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

**Formulation:**

Prepared 1x PBS solution contains: 0,15 M NaCl, 20 mM phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1114.1** | 100 tablets | plastic | 403,15 € |

For further information, please see page 1266

## Roti®fair PBST 7.4

PBST (tablet), Phosphate buffered saline with Tween
WGK 1

## Roti®fair PBST 7.4

**for 500 ml/tablet, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBST solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

**Formulation:**

Prepared 1x PBST solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, 0,05 % Tween® 20, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1115.1** | 12 tablets | blister | 63,35 € |
| **1115.2** | 100 tablets | plastic | 256,95 € |

For further information, please see page 1266

## Roti®fair PBST 7.4

**for 1000 ml/tablet, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBST solution is prepared by dissolution of 1 tablet in 1000 ml highly pure water.

**Formulation:**

Prepared 1x PBST solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, 0,05 % Tween® 20, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1116.1** | 10 tablets | blister | 82,25 € |
| **1116.2** | 100 tablets | plastic | 396,70 € |

For further information, please see page 1266

## Roti®fair pNPP 5mg

## Roti®fair pNPP 5mg

**5 mg/tablet, for biochemistry**

For preparation of pNPP substrate solution for alkaline phosphatase.

0,1 % pNPP solution (1 mg/ml) is prepared by dissolution of 1 tablet in 5 ml substrate buffer.

pNPP (tablet), p-Nitrophenyl phosphate

Storage temp.: -20 °C

WGK 1

**Formulation:**

Prepared solution contains 1 mg/ml pNPP, when 1 tablet is dissolved in 5 ml substrate buffer or deionized, or distilled, water.

| | | | |
|---|---|---|---|
| **1117.1** | 24 tablets | blister | 90,85 € |
| **1117.2** | 100 tablets | plastic | 134,40 € |

For further information, please see page 1266

## Roti®fair pNPP 20mg

## Roti®fair pNPP 20mg

**20 mg/tablet, for biochemistry**

For preparation of pNPP substrate solution for alkaline phosphatase.

0,1 % pNPP solution (1 mg/ml) is prepared by dissolution of 1 tablet in 20 ml substrate buffer.

pNPP (tablet), p-Nitrophenyl phosphate

Storage temp.: -20 °C

WGK 1

**Formulation:**

Prepared solution contains 1 mg/ml pNPP, when 1 tablet is dissolved in 20 ml substrate buffer or deionized, or distilled, water.

| | | | |
|---|---|---|---|
| **1128.1** | 24 tablets | blister | 97,30 € |
| **1128.2** | 100 tablets | plastic | 349,40 € |

For further information, please see page 1266

## Roti®fair SDS 0.5g

## Roti®fair SDS 0.5g

**0,5 g/tablet, for biochemistry, molecular biology and electrophoresis**

Anionic detergent for preparation of bioanalytical solutions.

10 % SDS solution is prepared by dissolution of 1 tablet in 5 ml highly pure water. Concentrations of 0,05-20 % may be prepared.

SDS (tablet), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

UN No. 1325 • ADR 4.1 III • WGK 2

**Danger**

H228-H302+H332-H315-H318-H335-H412

**Formulation:**

Prepared solution contains when prepared in deionized or distilled water: SDS in favoured concentration, dependent on the amount of water used.

| | | | |
|---|---|---|---|
| **1156.1** | 50 tablets | plastic | 46,80 € |

For further information, please see page 1266

## Roti®fair 10% SDS

## Roti®fair 10% SDS

**for 1000 ml/pouch, for biochemistry, molecular biology and electrophoresis**

Anionic detergent for preparation of bioanalytical solutions.

10 % SDS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

SDS powder (pouch), Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS

UN No. 1325 • ADR 4.1 III • WGK 2

**Danger**

H228-H302+H332-H315-H318-H335-H412

**Formulation:**

Prepared solution contains: 10 % SDS, pH value 3,0 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1157.1** | 5 pouches | box | 596,65 € |

For further information, please see page 1266

## Roti®fair SDS-PAGE

SDS-PAGE powder (pouch),
Tris-glycine-SDS buffer
WGK 2

**Warning** H315-H319-H335

### Roti®fair SDS-PAGE

**for 1000 ml/pouch, for electrophoresis**

Buffer for protein electrophoresis.

1x SDS-PAGE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

**Formulation:**

Prepared 1x SDS-PAGE solution contains: 25 mM Tris, 0,192 M glycine, 0,1 % SDS, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1249.1** | 10 pouches | box | 89,15 € |

For further information, please see page 1266

### Roti®fair SDS-PAGE

**for 5000 ml/pouch, for electrophoresis**

Buffer for protein electrophoresis.

1x SDS-PAGE solution is prepared by dissolution of 1 pouch in 5000 ml highly pure water.

**Formulation:**

Prepared 1x SDS-PAGE solution contains: 25 mM Tris, 0,192 M glycine, 0,1 % SDS, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1250.1** | 10 pouches | box | 188,15 € |

For further information, please see page 1266

## Roti®fair 20x SSC

### Roti®fair 20x SSC

**for 1000 ml/pouch, for molecular biology**

Concentrated buffer solution for Southern- and Northern transfer.

20x SSC solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

SSC buffer powder (pouch),
Sodium sodium citrate
WGK 1

**Formulation:**

Prepared 20x SSC solution contains: 3,0 M NaCl, 0,3 M Na-Citrat, pH-value 7,0 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1232.1** | 5 pouches | box | 153,20 € |

For further information, please see page 1266

## Roti®fair SSPE

### Roti®fair SSPE

**for 200 ml/tablet, for molecular biology**

Buffer solution for DNA- and RNA hybridisation.

1x SSPE solution is prepared by dissolution of 1 tablet in 200 ml highly pure water.

Sodium sodium phosphate EDTA,
SSPE buffer (tablets)
WGK 1

**Formulation:**

Prepared 1x SSPE solution contains: 0,15 M NaCl, 1 mM EDTA, 10 mM Na-phosphate, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1233.1** | 100 tablets | plastic | 99,90 € |

For further information, please see page 1266

## Roti®fair 50x TAE

TAE powder (pouch)
WGK 2

**Warning** H315-H319-H335

### Roti®fair 50x TAE

**for 500 ml/pouch, for electrophoresis**

Buffer concentrate for DNA electrophoresis.

50x TAE solution is prepared by dissolution of 1 pouch in 500 ml highly pure water.

**Formulation:**

Prepared 50x TAE solution contains: 2 M Tris acetate, 50 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1234.1** | 5 pouches | box | 396,70 € |

For further information, please see page 1266

### Roti®fair 50x TAE

**for 1000 ml/pouch, for electrophoresis**

Buffer concentrate for DNA electrophoresis.

50x TAE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

**Formulation:**

Prepared 50x TAE solution contains: 2 M Tris acetate, 50 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1240.1** | 5 pouches | box | 708,45 € |

For further information, please see page 1266

## Roti®fair 1x TBE

### Roti®fair 1x TBE

**for 1000 ml/pouch, for electrophoresis**

Buffer for DNA electrophoresis.

1x TBE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TBE powder (pouch)
WGK 2

**Danger** H315-H319-H335-H360FD

**Formulation:**

Prepared 1x TBE solution contains: 89 mM Tris-Borat, 2 mM EDTA, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1241.1** | 10 pouches | box | 77,95 € |

For further information, please see page 1266

## Roti®fair 5x TBE

### Roti®fair 5x TBE

**for 1000 ml/pouch, for electrophoresis**

Buffer concentrate for DNA electrophoresis.

5x TBE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TBE powder (pouch)
WGK 2

**Danger** H315-H319-H335-H360FD

**Formulation:**

Prepared 5x TBE solution contains: 0,445 M Tris borate, 10 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1242.1** | 10 pouches | box | 169,35 € |

For further information, please see page 1266

## Roti®fair 10x TBE

### Roti®fair 10x TBE

**for 1000 ml/pouch, for electrophoresis**

Buffer concentrate for DNA electrophoresis.

10x TBE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TBE powder (pouch)
WGK 2

**Danger** H315-H319-H335-H360FD

**Formulation:**

Prepared 10x TBE solution contains: 0,89 M Tris borate, 20 mM EDTA , pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1243.1** | 10 pouches | box | 278,45 € |

For further information, please see page 1266

## Roti®fair TBS 7.6

### Roti®fair TBS 7.6

**for 500 ml/tablet, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

TBS (tablet), Tris buffered saline
WGK 1

**Warning** H315-H319-H335

**Formulation:**

Prepared 1x TBS solution contains: 0,15 M NaCl, 50 mM Tris-HCl, pH-value 7,6 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1244.1** | 10 tablets | blister | 54,75 € |
| **1244.2** | 100 tablets | plastic | 263,40 € |

For further information, please see page 1266

## Roti®fair TBS 8.0

### Roti®fair TBS 8.0

**for 1000 ml/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x TBS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TBS powder (pouch), Tris buffered saline
WGK 1

**Warning** H315-H319-H335

**Formulation:**

Prepared 1x TBS solution contains: 0,138 M NaCl, 2,7 mM KCl, 50 mM Tris-HCl, pH-value 8,0 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1245.1** | 10 pouches | box | 97,30 € |

For further information, please see page 1266

## Roti®fair 10x TBS 8.0

### Roti®fair 10x TBS 8.0

**for 1000 ml/pouch, for biochemistry and molecular biology**

Concentrated general solution for assays in molecular biology and biochemistry.

10x TBS solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TBS powder (pouch), Tris buffered saline

WGK 1

**Warning** H315-H319-H335

**Formulation:**

Prepared 10x TBS solution contains: 1,38 M NaCl, 27 mM KCl, 0,5 M Tris-HCl, pH-value 8,0 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1247.1** | 10 pouches | box | 643,95 € |

For further information, please see page 1266

## Roti®fair TBST 7.6

### Roti®fair TBST 7.6

**for 500 ml/tablet, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x TBST solution is prepared by dissolution of 1 tablet in 500 ml highly pure water.

TBST (tablet), Tris buffered saline with Tween

WGK 1

**Warning** H315-H319-H335

**Formulation:**

Prepared 1x TBST solution contains: 0,15 M NaCl, 50 mM Tris-HCl, 0,05 % Tween® 20, pH-value 7,6 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1248.1** | 10 tablets | blister | 65,05 € |
| **1248.2** | 100 tablets | plastic | 306,40 € |

For further information, please see page 1266

## Roti®fair 10x TE

### Roti®fair 10x TE

**for 1000 ml/pouch, for molecular biology**

Concentrated buffer solution for solubilisation and dilution of nucleic acids.

1x TE solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

TE buffer powder (pouch), Tris EDTA

WGK 2

**Warning** H315-H319-H335-H373

**Formulation:**

Prepared 10x TE solution contains: 0,1 M Tris-HCl, 10 mM EDTA, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1268.1** | 10 pouches | box | 213,95 € |

For further information, please see page 1266

## Roti®fair TG-Western

TG buffer powder (pouch), Tris-glycine buffer

WGK 1

**Warning** H315-H319-H335

### Roti®fair TG-Western

**for 1000 ml/pouch, for electrophoresis**

Buffer for protein electrophoresis and transfer.

1x TG-Western solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

**Formulation:**

Prepared 1x TG-Western solution contains: 25 mM Tris, 0,192 M glycine, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1269.1** | 10 pouches | box | 81,20 € |

For further information, please see page 1266

### Roti®fair TG-Western

**for 5000 ml/pouch, for electrophoresis**

Buffer for protein electrophoresis and transfer.

1x TG-Western solution is prepared by dissolution of 1 pouch in 5000 ml highly pure water.

**Formulation:**

Prepared 1x TG-Western solution contains: 25 mM Tris, 0,192 M glycine, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1276.1** | 10 pouches | box | 170,95 € |

For further information, please see page 1266

## Roti®fair 1M Tris 7.4

### Roti®fair 1M Tris 7.4

**for 1000 ml/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1 M Tris solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Tris powder (pouch)

WGK 1

**Warning** H315-H319-H335

**Formulation:**

Prepared solution contains: 1 M Tris, pH-value 7,4 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1251.1** | 10 pouches | box | 375,20 € |

For further information, please see page 1266

## Roti®fair 1M Tris 8.0

### Roti®fair 1M Tris 8.0

**for 1000 ml/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1 M Tris solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Tris powder (pouch)

WGK 1

**Warning** H315-H319-H335

**Formulation:**

Prepared solution contains: 1 M Tris, pH-value 8,0 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1260.1** | 10 pouches | box | 375,20 € |

For further information, please see page 1266

## Roti®fair 1M Tris 8.3

### Roti®fair 1M Tris 8.3

**for 1000 ml/pouch, for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1 M Tris solution is prepared by dissolution of 1 pouch in 1000 ml highly pure water.

Tris powder (pouch)

WGK 1

**Warning** H315-H319-H335

**Formulation:**

Prepared solution contains: 1 M Tris, pH-value 8,3 ±0,05, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **1261.1** | 10 pouches | box | 375,20 € |

For further information, please see page 1266

## Roti®-Fect

### Roti®-Fect

**CELLPURE® for transfection**

Reagent for liposoma-mediated transfection of eukaryotic cells.

Approx. 400 assays per ml in 24wells. Dependent on the cell line used.

Storage temp.: +4 °C

WGK 1

| | | | |
|---|---|---|---|
| **P001.1** | 0,2 ml | plastic | 69,80 € |
| **P001.2** | 0,5 ml | plastic | 155,90 € |
| **P001.3** | 1 ml | plastic | 244,60 € |
| **P001.4** | 5 x 1 ml | plastic | 1063,20 € |

For further information, please see page 1337

## Roti®-Fect Plus

### Roti®-Fect Plus

**CELLPURE® for transfection**

Reagent for transfection of all eukaryotic cells in culture, particularly suited for hard-to-transfect cell lines.

Approx. 500 assays per ml in 24wells. Dependent on the cell line used.

Storage temp.: +4 °C

WGK 1

| | | | |
|---|---|---|---|
| **CL21.1** | 0,2 ml | plastic | 92,35 € |
| **CL21.2** | 1 ml | plastic | 342,95 € |

For further information, please see page 1337

## Roti®-Fect RNAi Kit

### Roti®-Fect RNAi Kit

**CELLPURE® for transfection**

Reagent for transfection of mammalian cells with siRNA and miRNA, for efficient gene silencing.

Approx. 250 assays per ml in 24wells. Dependend on the cell line used.

Storage temp.: -20 °C •

Transport temp.: room temp.

| | | | |
|---|---|---|---|
| **3129.1** | 1 mini set | plastic | 103,75 € |
| **3129.2** | 1 set | plastic | 364,45 € |

For further information, please see page 1336

## Roti®-Fix spray fixative

### Roti®-Fix spray fixative

**for cytology**

For fixation of samples from cytological material.

UN No. 1993 • ADR 3 II • WGK 1

**Danger** H225

**Type analysis:**

Alcoholic solution of ethanol and 2-propanol

| | | | |
|---|---|---|---|
| **CL85.1** | 100 ml | spray bottle | 16,05 € |

For further information, please see page 1448

## Rotifluid®

### Rotifluid®

Fine mechanic oil. Liquid lubricant for fine mechanical instruments. Excellent price quality.

D 0,88

WGK 1

| | | | |
|---|---|---|---|
| **1264.1** | 200 ml | spray bottle plastic | 8,50 € |
| **1266.1** | 1 l | plastic | 19,90 € |
| Original pack 6 x 1 l | | | 18,91/1 l |

For further information, please see page 1140

## Roti®-Free Slide Enhancer

### Roti®-Free Slide Enhancer

**10x conc., BioScience-Grade**

Concentrated buffer for enhancement of detection signals in immunohistochemistry and *in situ* hybridization.

One bottle with 500 ml is sufficient for approx. 500 slides.

Storage temp.: +20 °C

WGK 2

**Type analysis:**

pH value (1x sol.)..... 6,9-7,1
RNAse..... ≤2 ppb
DNAse..... ≤0,2 ppm

| | | | |
|---|---|---|---|
| **9330.1** | 500 ml | plastic | 198,90 € |

## Roti®-Free Stripping Buffer 2.2 plus

### Roti®-Free Stripping Buffer 2.2 plus

**ready-to-use**

Premixed buffer for efficient stripping of Western-Blot membranes after Chemoluminescence detection, even with hard-to-remove antibodies.

Storage temp.: +20 °C

WGK 1

| | | | |
|---|---|---|---|
| **3337.1** | 250 ml | glass | 46,80 € |
| **3337.2** | 1 l | glass | 117,20 € |
| Original pack 6 x 1 l | | | 111,34/1 l |

For further information, please see page 1323

## Roti®-Free Stripping Buffer 2.0

### Roti®-Free Stripping Buffer 2.0

**ready-to-use**

Premixed buffer for gentle stripping of Western-Blot membranes after Chemoluminescence detection.

Storage temp.: +20 °C

WGK 1

**Warning** H319

| | | | |
|---|---|---|---|
| **3319.1** | 250 ml | glass | 40,75 € |
| **3319.2** | 1 l | glass | 105,90 € |
| Original pack 6 x 1 l | | | 100,61/1 l |

For further information, please see page 1323

## Roti®-Free Stripping Buffer

### Roti®-Free Stripping Buffer

**ready-to-use**

Premixed buffer for stripping of Western-Blot membranes.

Storage temp.: +20 °C

WGK 2

**Warning** H317-H319-H412

| | | | |
|---|---|---|---|
| **0083.2** | 250 ml | glass | 19,25 € |
| **0083.1** | 1 l | glass | 57,55 € |
| Original pack 6 x 1 l | | | 54,67/1 l |
| **0083.3** | 2,5 l | glass | 102,70 € |
| Original pack 4 x 2,5 l | | | 97,57/2,5 l |

For further information, please see page 1322

## Roti®garose-His/Co

Storage temp.: +4 °C

UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225

### Roti®garose-His/Co Beads

**for biochemistry**

For isolation of His-tagged proteins by affinity chromatography.

Agarose beads for affinity chromatography, IMAC matrix/cobalt charged

**Type analysis:**

Particle size..... 50-150 µm
Beads (cross-linked agarose)..... 6 %
Ligand..... IDA
Metal ion..... cobalt
Binding capacity (DHAK-6xHis)..... 135 mg/ml
Activating agent..... Epichlorohydrin
Stabilizer..... 20 % ethanol

| | | | |
|---|---|---|---|
| **1235.1** | 25 ml | plastic | 274,15 € |
| **1235.2** | 100 ml | plastic | 736,40 € |

For further information, please see page 1305

### Roti®garose-His/Co Columns

**for biochemistry**

For isolation of His-tagged proteins by affinity chromatography.

Affinity chromatography colums/cobalt charged, IMAC columns

**Type analysis:**

Particle size..... 50-150 µm
Beads (cross-linked agarose)..... 6 %
Ligand..... IDA
Metal ion..... cobalt
Binding capacity (DHAK-6xHis)..... 135 mg/ml
Activating agent..... Epichlorohydrin
Stabilizer..... 20 % ethanol

| | | | |
|---|---|---|---|
| **1267.1** | 8 x 1 ml | | 235,45 € |
| **1267.2** | 5 x 5 ml | | 611,70 € |

For further information, please see page 1305

## Roti®garose-His/Ni

Storage temp.: +4 °C

UN No. 1170 • ADR 3 III • WGK 1

**Danger** H225

### Roti®garose-His/Ni Beads

**for biochemistry**

For isolation of His-tagged proteins by affinity chromatography.

Agarose beads for affinity chromatography, IMAC matrix/nickel charged

**Type analysis:**

Particle size..... 50-150 µm
Beads (cross-linked agarose)..... 6 %
Ligand..... IDA
Metal ion..... nickel
Binding capacity (DHAK-6xHis)..... 117 mg/ml
Activating agent..... Epichlorohydrin
Stabilizer..... 20 % ethanol

| | | | |
|---|---|---|---|
| **1308.1** | 25 ml | plastic | 274,15 € |
| **1308.2** | 100 ml | plastic | 736,40 € |

For further information, please see page 1304

### Roti®garose-His/Ni Cartridges

**for biochemistry**

For isolation of His-tagged proteins by high pressure affinity chromatography.

Affinity chromatography colums/nickel charged, IMAC columns

**Type analysis:**

Particle size..... 20-50 µm
Beads (cross-linked agarose)..... 6 %
Ligand..... IDA
Metal ion..... nickel
Binding capacity (DHAK-6xHis)..... 110 mg/ml
Stabilizer..... 20 % ethanol

| | | | |
|---|---|---|---|
| **1318.1** | 1 x 5 ml | | 155,90 € |
| **1318.2** | 5 x 5 ml | | 762,20 € |

For further information, please see page 1304

### Roti®garose-His/Ni Columns

**for biochemistry**

For isolation of His-tagged proteins by affinity chromatography.

Affinity chromatography colums/nickel charged, IMAC columns

**Type analysis:**

Particle size..... 50-150 µm
Beads (cross-linked agarose)..... 6 %
Ligand..... IDA
Metal ion..... nickel
Binding capacity (DHAK-6xHis)..... 117 mg/ml
Activating agent..... Epichlorohydrin
Stabilizer..... 20 % ethanol

| | | | |
|---|---|---|---|
| **1314.1** | 8 x 1 ml | | 235,45 € |
| **1314.2** | 5 x 5 ml | | 611,70 € |

For further information, please see page 1305

## Roti®garose-Protein A

Storage temp.: +4 °C
UN No. 1170 • ADR 3 II • WGK 1
**Danger** H225

### Roti®garose-Protein A Beads

**for biochemistry**

For purification of immunoglobulins by affinity chromatography.

Agarose beads for affinity chromatography, IMAC matrix/Protein A conjugated

**Type analysis:**

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 4 %
Ligand. ..... recombinant protein A
Chemical bonding. ..... covalent
Ligand density (Protein A). ..... ca. 3 mg/ml
Binding capacity (humane IgG). ..... ca. 25 mg/ml
Stabilizer. ..... 20 % ethanol

| | | | |
|---|---|---|---|
| **1278.1** | 5 ml | plastic | 557,95 € |
| **1278.2** | 25 ml | plastic | 1890,95 € |

For further information, please see page 1306

### Roti®garose-Protein A MAXI columns

**for biochemistry**

For purification of immunoglobulins by affinity chromatography.

Affinity chromatography columns/protein A conjugated

**Type analysis:**

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 4 %
Ligand. ..... recombinant protein A
Chemical bonding. ..... covalent
Ligand density (Protein A). ..... ca. 3 mg/ml
Binding capacity (humane IgG). ..... ca. 25 mg/ml
Stabilizer. ..... 20 % ethanol

| | | | |
|---|---|---|---|
| **4070.1** | 1 x 5 ml | | 676,20 € |

For further information, please see page 1308

### Roti®garose-Protein A MIDI columns

**for biochemistry**

For purification of immunoglobulins by affinity chromatography.

Affinity chromatography columns/protein A conjugated

**Type analysis:**

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 4 %
Ligand. ..... recombinant protein A
Chemical bonding. ..... covalent
Ligand density (Protein A). ..... ca. 3 mg/ml
Binding capacity (humane IgG). ..... ca. 25 mg/ml
Stabilizer. ..... 20 % ethanol

| | | | |
|---|---|---|---|
| **4066.1** | 1 x 1 ml | | 274,15 € |

For further information, please see page 1307

### Roti®garose-Protein A MINI columns

**for biochemistry**

For purification of immunoglobulins by affinity chromatography.

Affinity chromatography columns/protein A conjugated

**Type analysis:**

Particle size. ..... 50-150 µm
Beads (cross-linked agarose). ..... 4 %
Ligand. ..... recombinant protein A
Chemical bonding. ..... covalent
Ligand density (Protein A). ..... ca. 3 mg/ml
Binding capacity (humane IgG). ..... ca. 25 mg/ml
Stabilizer. ..... 20 % ethanol

| | | | |
|---|---|---|---|
| **4065.1** | 5 x 100 µl | | 299,95 € |

For further information, please see page 1307

## Roti®-GelStain

### Roti®-GelStain

**Fluorescent staining, ready-to-use, for electrophoresis**

For non-toxic fluorescent staining of nucleic acids in agarose gels.

1 ml is sufficient for staining of approx. 600 minigels (with 30 ml agarose each).

Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **3865.1** | 1 ml | plastic | 91,30 € |
| **3865.2** | 5 x 1 ml | plastic | 413,90 € |

For further information, please see page 1186

## Roti®-GelStain Red

### Roti®-GelStain Red

NEW

**for electrophoresis**

Red fluorescent staining reagent for non-toxic staining of nucleic acids in agarose gels and polyacrylamide gels.

Alternative for ethidium bromide, Ethidium bromide substitute

Storage temp.: +4 °C
WGK 2

**Type analysis:**

Appearance. ..... red, transparent liquid, no precipitation
Staining of DNA in agarose gels. ..... complies
Staining of DNA in PA gels. ..... complies

| | | | |
|---|---|---|---|
| **0984.1** | 1 ml | plastic | 97,85 € |
| **0984.2** | 1 x 5 ml | plastic | 440,75 € |

For further information, please see page 1186

## Roti®-Histofix 4 %

### Roti®-Histofix 4 %

**acid free (pH 7), phosphate-buffered formaldehyde solution 4 %**

Fixative for histology, stabilised with methanol.

bp 100 °C
Storage temp.: +15-25 °C
WGK 2

**Danger** H350-H341-H302-H317

**Type analysis:**

Appearance. ..... clear, colourless solution
Assay (formaldehyde). ..... 4,0 %
pH value . ..... 7,0 ±0,5
Stabilised with methanol

| | | | |
|---|---|---|---|
| **P087.4** | 500 ml | plastic | 9,90 € |
| **P087.6** | 1 l | plastic | 12,05 € |
| Original pack 6 x 1 l | | | 11,45/1 l |
| **P087.5** | 2,5 l | plastic | 16,70 € |
| Original pack 4 x 2,5 l | | | 15,87/2,5 l |
| **P087.3** | 5 l | plastic | 26,35 € |
| Original pack 2 x 5 l | | | 25,03/5 l |
| **P087.1** | 10 l | plastic | 48,30 € |
| **P087.2** | 30 l | plastic | 126,35 € |

For further information, please see page 1446

## Roti®-Histofix 4 %, prefilled containers

### Roti®-Histofix 4 %, prefilled containers

**acid free (pH 7), phosphate-buffered formaldehyde solution 4 %**

Fixative for histology, prefilled in screw cap containers. Stabilised with methanol.

Storage temp.: +15-25 °C
WGK 2

**Danger** H350-H341-H302-H317

**Type analysis:**

Appearance. ..... clear, colourless liquid
Assay (formaldehyde). ..... 4,0 %
pH value. ..... 7,0 ±0,5
Stabilised with methanol

| | | | |
|---|---|---|---|
| **3105.1** | 100 x 10 ml (in 20 ml-container) | cardboard | 81,20 € |
| **3105.2** | 54 x 50 ml (in 100 ml-container) | cardboard | 55,40 € |

For further information, please see page 1446

## Roti®-Histofix 4,5 %

### Roti®-Histofix 4,5 %

**acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 %**

Fixative for histology, stabilised with methanol.

D 1,019
Storage temp.: +15-25 °C
WGK 2

**Danger** H302-H317-H341-H350

**Type analysis:**

Appearance. ..... clear, colourless solution
Assay (formaldehyde). ..... 4,5 %
pH value . ..... 7,0 ±0,5
Stabilised with methanol.

| | | | |
|---|---|---|---|
| **2213.4** | 500 ml | plastic | 10,65 € |
| **2213.6** | 1 l | plastic | 12,05 € |
| Original pack 6 x 1 l | | | 11,45/1 l |
| **2213.5** | 2,5 l | plastic | 18,85 € |
| Original pack 4 x 2,5 l | | | 17,91/2,5 l |
| **2213.3** | 5 l | plastic | 27,85 € |
| Original pack 2 x 5 l | | | 26,46/5 l |
| **2213.1** | 10 l | plastic | 50,00 € |
| **2213.2** | 30 l | plastic | 124,20 € |

For further information, please see page 1446

## Roti®-Histofix 4,5 %, prefilled containers

### Roti®-Histofix 4,5 %, prefilled containers

**acid free (pH 7), phosphate-buffered formaldehyde solution 4,5 %**

Fixative for histology, prefilled in screw cap containers. Stabilised with methanol.
Storage temp.: +15-25 °C
WGK 2

**Danger** H302-H317-H341-H350

**Type analysis:**

Appearance. ..... clear, colourless liquid
Assay (formaldehyde)..... 4,0-5,0 %
pH value. ..... 7,2 ±0,2
Stabilised with methanol

| | | | |
|---|---|---|---|
| **8244.1** | 100 x 10 ml (in 20 ml container) | cardboard | 79,45 € |
| **8244.2** | 54 x 50 ml (in 100 ml container) | cardboard | 55,80 € |
| **8244.3** | 32 x 100 ml (in 180 ml container) | cardboard | 52,15 € |

For further information, please see page 1446

## Roti®-Histofix 10 %

### Roti®-Histofix 10 %

**acid free (pH 7), phosphate-buffered formaldehyde solution 10 %**

Fixative for histology, stabilised with methanol.
D 1,042
Storage temp.: +15-25 °C
WGK 2

**Danger** H302+H312-H315-H317-H319-H335-H341-H350-H371

**Type analysis:**

Appearance. ..... clear, colourless solution
Assay (formaldehyde)..... 10 %
pH value. ..... 7,0 ±0,5
Stabilised with methanol

| | | | |
|---|---|---|---|
| **A146.4** | 500 ml | plastic | 12,05 € |
| **A146.6** | 1 l | plastic | 14,55 € |
| Original pack 6 x 1 l | | | 13,82/1 l |
| **A146.5** | 2,5 l | plastic | 25,30 € |
| Original pack 4 x 2,5 l | | | 24,04/2,5 l |
| **A146.3** | 5 l | plastic | 42,50 € |
| Original pack 2 x 5 l | | | 40,38/5 l |
| **A146.1** | 10 l | plastic | 67,65 € |
| **A146.2** | 30 l | plastic | 166,65 € |

For further information, please see page 1446

## Roti®-Histofix ECO Plus

### Roti®-Histofix ECO Plus

**Fixing agent without formalin**

For fixing of histological and immunochemical specimens. Formalin substitute.
D 1,015 • bp >100 °C
mp <0 °C
Storage temp.: +20 °C
WGK 1

Formalin-free, non-toxic reddish solution. For fixing of histological specimens. Pleasantly aromatic odour. Forrmalin substitute.

| | | | |
|---|---|---|---|
| **8907.1** | 500 ml | plastic | 14,95 € |
| **8907.2** | 2,5 l | plastic | 45,70 € |
| Original pack 4 x 2,5 l | | | 43,42/2,5 l |
| **8907.3** | 5 l | plastic | 85,50 € |
| Original pack 2 x 5 l | | | 81,23/5 l |

For further information, please see page 1445

## Roti®-Histokitt

### Roti®-Histokitt

**mounting medium, for histology**
**Compatible with Roti®-Histol (Art. No. 6640).**

D 0,945
UN No. 1866 • ADR 3 III • WGK 2

**Danger**
H225-H304-H361d-H373-H315-H336

**Type analysis:**

Appearance..... clear, viscous liquid
Identity..... complies
Refractive index $n_D^{20}$. ..... 1,4930-1,4960

| | | | |
|---|---|---|---|
| **6638.1** | 100 ml | glass | 12,80 € |
| **6638.2** | 500 ml | glass | 35,40 € |

For further information, please see page 1473

## Roti®-Histokitt II

### Roti®-Histokitt II

**mounting medium, for histology**
**Compatible with xylene (e.g. Art. No. 9713).**

D 0,95
UN No. 1307 • ADR 3 III • WGK 2

**Danger** H226-H302+H332-H304-H315-H319-H335-H373-EUH208

**Type analysis:**

Appearance..... clear, viscous liquid
Density (d 20 °C/4 °C). ..... 0,95
Viscosity (20 °C)..... 250-450 mPa s

| | | | |
|---|---|---|---|
| **T160.1** | 100 ml | glass | 13,15 € |
| **T160.2** | 500 ml | glass | 36,05 € |

For further information, please see page 1473

## Roti®-Histol

### Roti®-Histol

**for histology**

Clearing agent on base of limonene.
For dewaxing of histological sections.
Alternative product for xylene.
D 0,84 • bp 177 °C
flp 50 °C
UN No. 2319 • ADR 3 III • WGK 3

**Danger**
H226-H304-H315-H317-H410

**Type analysis:**

Density (20 °C)..... 0,836-0,848
Refractive index $n_D^{20}$..... 1,468-1,478
Flash point. ..... 50 °C

| | | | |
|---|---|---|---|
| **6640.1** | 1 l | glass | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |
| **6640.4** | 2,5 l | glass | 55,80 € |
| Original pack 4 x 2,5 l | | | 53,01/2,5 l |
| **6640.5** | 5 l | aluminium | 93,00 € |
| Original pack 2 x 5 l | | | 88,35/5 l |
| **6640.2** | 10 l | tinplate | 165,05 € |
| **6640.3** | 22 kg | tinplate | 392,40 € |

For further information, please see page 1439

## Roti®-Hybri-Quick

### Roti®-Hybri-Quick

**BioScience-Grade, ready-to-use, for molecular biology**

Ready-made buffer for DNA- and RNA hybridisation.
D 1,034
WGK 2

| | | | |
|---|---|---|---|
| **A981.1** | 1 l | glass | 50,00 € |
| Original pack 6 x 1 l | | | 47,50/1 l |
| **A981.2** | 2,5 l | glass | 90,20 € |
| Original pack 4 x 2,5 l | | | 85,69/2,5 l |

For further information, please see page 1245

## Roti®-ImmunoBlock

### Roti®-ImmunoBlock

**ready-to-use, 10x conc.**

Protein free blocking reagent for immunocytological assays. Without detergent.
Storage temp.: +20 °C
WGK 1

| | | | |
|---|---|---|---|
| **T144.1** | 250 ml | glass | 45,05 € |

For further information, please see page 1346

Q/R

# Roti-Insectofect

## Roti®-Insectofect

### Roti®-Insectofect

**CELLPURE® for transfection**

For transfection of insect cells in culture.
Approx. 1000 assays per ml in 24wells.
Storage temp.: +4 °C
WGK 1

| | | | |
|---|---|---|---|
| **AE29.1** | 0,5 ml | plastic | 134,40 € |
| **AE29.2** | 1 ml | plastic | 203,20 € |

For further information, please see page 1338

## ROTI® Kits


| Art. No. | Description | Page |
|---|---|---|
| 7773 | EdU Click-488 | 1901 |
| 7775 | EdU Click-555 | 1901 |
| 7776 | EdU Click-594 | 1901 |
| 7777 | EdU Click-647 | 1901 |
| 7779 | EdU Click FC-488 | 1901 |
| 7780 | EdU Click FC-555 | 1901 |
| 7781 | EdU Click FC-594 | 1902 |
| 7783 | EdU Click FC-647 | 1902 |
| 7786 | EdU Click HTS 2-488 | 1902 |
| 7787 | EdU Click HTS 4-488 | 1902 |
| 7788 | EdU Click HTS 20-488 | 1902 |
| 7789 | EdU Click HTS 2-555 | 1902 |
| 7791 | EdU Click HTS 4-555 | 1902 |
| 7792 | EdU Click HTS 20-555 | 1902 |
| HP02 | Gram staining kit | 1964 |
| 9194 | H&E fast staining kit | 1970 |
| 3459 | Masson-Goldner's trichrome staining kit | 2059 |
| 7766 | Oligo Click S-488 | 2122 |
| 7767 | Oligo Click M-488 | 2123 |
| 7769 | Oligo Click S-555 | 2123 |
| 7770 | Oligo Click M-555 | 2123 |
| 7771 | Oligo Click S-Biotin | 2123 |
| 7772 | Oligo Click M-Biotin | 2123 |
| 7764 | Oligo Click S Reload | 2123 |
| 7765 | Oligo Click M Reload | 2123 |
| 6487 | Panoptical fast staining kit | 2129 |
| 9195 | PAP fast staining kit | 2130 |
| HP01 | PAS staining kit | 2131 |
| N769 | Roti®-Black N | 2203 |
| P081 | Roti®-Black NSeq | 2203 |
| L533 | Roti®-Black P | 2203 |
| N766 | Roti®-Bleach | 2203 |
| L509 | Roti®-Blot 1 | 2203 |
| 9202 | Roti®-DAB Kit | 2209 |
| 3129 | Roti®-Fect RNAi Kit | 2216 |
| 3734 | Roti®-Lumin ultra | 2221 |
| 3692 | Roti®-Lumin plus | 2221 |
| P078 | Roti®-Lumin | 2221 |
| 0947 | Roti®-Mark WESTERN Set | 2224 |
| A431 | Rotiphorese® DNA sequencing system | 2228 |
| 8620 | Roti®-Prep Blood Genomic DNA MINI | 2231 |
| 8510 | Roti®-Prep Gel Extraction | 2231 |
| 8472 | Roti®-Prep Genomic DNA MINI | 2231 |
| 8503 | Roti®-Prep PCR Purification | 2231 |
| HP29 | Roti®-Prep Plasmid MINI | 2231 |
| 8546 | Roti®-Prep Plasmid MINI-XL | 2231 |
| 8485 | Roti®-Prep RNA MINI | 2231 |
| 8547 | Roti®-Prep Viral RNA/DNA MINI | 2231 |
| 0120 | Roti®-Quant universal | 2231 |
| 9206 | Roti®-Strept/HRP-Kit | 2234 |
| 7735 | Rotitest®-Annexin V | 2234 |
| P043 | Roti®-Transform | 2235 |


## Roti®-Liquid Barrier Marker, colourless

### Roti®-Liquid Barrier Marker, colourless

For immunology, histology and molecular biology. Glass bottle with brush.
**For use** with aqueous liquids and solvents as ethanol or acetone.
**Also available: Roti®-Liquid Barrier Marker, red (Art. No. AN92)** for use without solvents.
UN No. 1268 • ADR 3 II • WGK 3

**Danger**
H225-H304-H315-H336-H411

| | | | |
|---|---|---|---|
| **AN91.1** | 10 ml | glass | 32,80 € |
| **AN91.2** | 5 x 10 ml | glass | 127,95 € |

For further information, please see page 1474

## Roti®-Liquid Barrier Marker, red

### Roti®-Liquid Barrier Marker, red

For immunology, histology and molecular biology. Glass bottle with brush.
**For use** with aqueous liquids only.
The red dye is not solvent resistant.
**Also available: Roti®-Liquid Barrier Marker, colourless (Art. No. AN91)** for use with solvents.
UN No. 1268 • ADR 3 II • WGK 3

**Danger**
H225-H304-H315-H336-H411

| | | | |
|---|---|---|---|
| **AN92.1** | 10 ml | glass | 32,80 € |
| **AN92.2** | 5 x 10 ml | glass | 127,95 € |

For further information, please see page 1474

## Roti®-Load 1

### Roti®-Load 1

**reducing, 4x conc.**

Protein gel loading buffer, modified formulation acc. to Laemmli.
D 1,172
Storage temp.: +15-25 °C
UN No. 2810 • ADR 6.1 III • WGK 3

**Danger** H302+H332-H311-H315-H317-H318-H373-H411

**Type analysis:**
Appearance..... dark blue, clear solution
pH value (1x sol.). ..... 6,6-7,2

| | | | |
|---|---|---|---|
| **K929.1** | 10 ml | glass | 17,75 € |
| **K929.2** | 4 x 10 ml | glass | 51,10 € |
| **K929.3** | 10 x 10 ml | glass | 117,20 € |

For further information, please see page 1168

## Roti®-Load 2

### Roti®-Load 2

**non reducing, 4x conc.**

Protein gel loading buffer, modified formulation acc. to Laemmli. For protein complexes, secondary structures, and for native gels.
D 1,158
Storage temp.: +20 °C
WGK 2

**Type analysis:**
Appearance. ..... dark blue, clear solution
pH value (1x sol.). .....6,7-7,2

| | | | |
|---|---|---|---|
| **K930.1** | 10 ml | glass | 14,95 € |

For further information, please see page 1168

## Roti®-Load 3 (LDS)

### Roti®-Load 3 (LDS)

**non reducing, 4x conc.**

Protein gel loading buffer for ready-made gels and cooled gels.
Storage temp.: +20 °C
WGK 1

**Warning** H315-H319

**Type analysis:**
Appearance. .....green-blue, clear solution
pH value (1x sol.). .....7,7 ±0,1

| | | | |
|---|---|---|---|
| **3359.1** | 10 ml | glass | 20,35 € |

For further information, please see page 1168

## Roti®-Load DNA

Storage temp.: -20 °C
Transport temp.: room temp.
WGK 1

### Roti®-Load DNA (with ficoll)

**6x conc. gel loading buffer, DNase-free**

For DNA gel electrophoresis of small DNA amounts, produces especially sharp bands.

| | | | |
|---|---|---|---|
| **X905.1** | 5 x 1,8 ml | plastic | 41,85 € |

For further information, please see page 1169

### Roti®-Load DNA (with saccharose)

**6x conc. gel loading buffer, DNase-free**

For DNA gel electrophoresis of big sample volumes. For big fragments.

| | | | |
|---|---|---|---|
| **T847.1** | 5 x 1,0 ml | plastic | 61,85 € |

For further information, please see page 1169

### Roti®-Load DNA (with glycerol)

**6x conc. gel loading buffer, DNase-free**

For DNA gel electrophoresis of routine gels.

| | | | |
|---|---|---|---|
| **X904.1** | 5 x 1,8 ml | plastic | 38,20 € |

For further information, please see page 1169

## Roti®-Load DNA 1x (with glycerol)

**1x conc. gel loading buffer, ready-to-use, DNase-free**

For DNA gel electrophoresis of routine gels, excellent for resolubilisation of DNA pellets.

| | | | |
|---|---|---|---|
| **0100.1** | 5 x 1,0 ml | plastic | 34,30 € |

For further information, please see page 1169

## Roti®-Load DNA short-run (with glycerol)

**6x conc. gel loading buffer, DNase-free**

For high-throughput DNA-electrophoresis and short separation distance. For fast gels.

| | | | |
|---|---|---|---|
| **0095.1** | 5 x 1,8 ml | plastic | 41,40 € |

For further information, please see page 1169

## Roti®-Load DNA short-run 1x (with glycerol)

**1x conc. gel loading buffer, ready-to-use, DNase-free**

For high-throughput DNA-electrophoresis and short separation distance. Especially suitable for resolubilisation of pelleted DNA. For fast gels.

| | | | |
|---|---|---|---|
| **0099.1** | 5 x 1,0 ml | plastic | 34,30 € |

For further information, please see page 1169

## Roti®-Load DNA small (with glycerol)

**6x conc. gel loading buffer, DNase-free**

For DNA gel electrophoresis of small or very big fragments.

| | | | |
|---|---|---|---|
| **HP03.1** | 5 x 1,8 ml | plastic | 44,00 € |

For further information, please see page 1169

## Roti®-Load DNA orange 1 (with glycerol)

**6x conc. gel loading buffer, DNase-free**

For DNA gel electrophoresis, optimised for very short separation distances and small fragments. Suitable for high concentrated or High Resolution agarose.

| | | | |
|---|---|---|---|
| **HP04.1** | 5 x 1,8 ml | plastic | 48,95 € |

For further information, please see page 1169

## Roti®-Load DNA-orange 2 (with glycerol)

**6x conc. gel loading buffer, DNase-free**

For DNA gel electrophoresis, suitable for mixtures of small and big fragments.

| | | | |
|---|---|---|---|
| **HP05.1** | 5 x 1,8 ml | plastic | 48,95 € |

For further information, please see page 1169

## Roti®-Load DNA-tricolor (with glycerol)

**6x conc. gel loading buffer, DNase-free**

For DNA gel electrophoresis, suitable for a broad range of fragments.

| | | | |
|---|---|---|---|
| **HP06.1** | 5 x 1,8 ml | plastic | 48,95 € |

For further information, please see page 1169

# Roti®-Load DNAstain

Storage temp.: -20 °C •
Transport temp.: room temp.
WGK 3

## Roti®-Load DNAstain 1

**6x conc. gel loading buffer, ready-to-use, DNAse-free**

DNA-gel loading buffer with fluorescent DNA-dye EvaGreen®. For fragments >500 bp.
1 ml is sufficient for running and staining of approx. 500 lanes.

| | | | |
|---|---|---|---|
| **5783.1** | 1,0 ml | plastic | 36,45 € |
| **5783.2** | 5 x 1,0 ml | plastic | 110,65 € |

For further information, please see page 1169

## Roti®-Load DNAstain 2

**6x conc. gel loading buffer, ready-to-use, DNAse-free**

DNA-gel loading buffer with fluorescent DNA-dye EvaGreen®. For fragments of 100-2000 bp.
1 ml is sufficient for running and staining of approx. 500 lanes.

| | | | |
|---|---|---|---|
| **5784.1** | 1,0 ml | plastic | 36,45 € |
| **5784.2** | 5 x 1,0 ml | plastic | 110,65 € |

For further information, please see page 1169

## Roti®-Load DNAstain 3

**6x conc. gel loading buffer, ready-to-use, DNAse-free**

DNA-gel loading buffer with fluorescent DNA-dye EvaGreen®. For fragments <500 bp.
1 ml is sufficient for running and staining of approx. 500 lanes.

| | | | |
|---|---|---|---|
| **6472.1** | 1 ml | plastic | 36,45 € |
| **6472.2** | 5 x 1,0 ml | plastic | 110,65 € |

For further information, please see page 1169

# Roti®-Load RNA

## Roti®-Load RNA

**1,3x conc. gel loading buffer, RNase-free**

For RNA gel electrophoresis.
Storage temp.: -20 °C •
Transport temp.: room temp.
WGK 2

**Danger** H302-H315-H317-H319-H341-H350-H360FD-H373

| | | | |
|---|---|---|---|
| **T848.1** | 2 x 0,5 ml | plastic | 60,10 € |

For further information, please see page 1169

# Roti®-Lumin ultra

## Roti®-Lumin ultra

**ready-to-use, spray**

Superior chemoluminescence substrate for HRP-mediated Western-Blot detection systems.
HRP substrate
Storage temp.: +4 °C •
Transport temp.: cooled

**Type analysis:**

Solution 1. ..... colourless to light yellow, clear
Solution 2. ..... colourless
Light emission after 0, 5, 30 minutes (RLU). ..complies

| | | | |
|---|---|---|---|
| **3734.1** | 1 mini kit (spray) | | 231,15 € |
| **3734.2** | 1 kit (spray) | | 934,20 € |

For further information, please see page 1290

# Roti®-Lumin plus

## Roti®-Lumin plus

**ready-to-use, spray**

Highly efficient chemoluminescence substrate for HRP-mediated Western-Blot detection systems.
HRP substrate
Storage temp.: +4 °C •
Transport temp.: cooled

**Type analysis:**

Solution 1. ..... colourless to light yellow, clear
Solution 2. ..... colourless
Light emission after 5 and 30 minutes (RLU). ..... .....complies

| | | | |
|---|---|---|---|
| **3692.1** | 1 mini kit (spray) | | 130,65 € |
| **3692.2** | 1 kit (spray) | | 267,70 € |
| **3692.3** | 1 kit (bottles) | | 435,40 € |

For further information, please see page 1290

# Roti®-Lumin

## Roti®-Lumin

**ready-to-use**

Chemoluminescence substrate for peroxidase mediated detection systems.
HRP substrate
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **P078.2** | 1 mini kit | plastic | 70,45 € |
| **P078.1** | 1 kit | plastic | 252,65 € |

For further information, please see page 1291

# Roti®lyte Carrier Ampholyte

Storage temp.: +4 °C
WGK 1

## Roti®lyte pH 3-5

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).
Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance. ..... clear solution
Content (w/v) ..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C) ..... 3,7-4,3
Conductivity (2,0 % in $H_2O$, 20 °C) ....0,10-0,30 mS/cm
pH Range ..... 3,0 ±0,5 to 5,1 ±0,5
pH gradient performed. ..... min. 70 %

| | | | |
|---|---|---|---|
| **5834.1** | 10 ml | glass | 202,65 € |
| **5834.2** | 25 ml | glass | 450,45 € |

For further information, please see page 1165

## Roti®lyte pH 3-6

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance. ..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C)..... 4,6-5,4
Conductivity (2,0 % in $H_2O$, 20 °C). ..0,05-0,50 mS/cm
pH Range. ..... 3,3 ±0,3 to 6,2 ±0,5
pH gradient performed..... min. 70 %

| | | | |
|---|---|---|---|
| **5835.1** | 10 ml | glass | 192,45 € |
| **5835.2** | 25 ml | glass | 428,95 € |

For further information, please see page 1165

## Roti®lyte pH 3-7

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance. ..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C)..... 4,5-5,5
Conductivity (2,0 % in $H_2O$, 20 °C). ..0,20-0,70 mS/cm
pH Range. ..... 3,3 ±0,3 to 7,0 ±0,5
pH gradient performed..... min. 70 %

| | | | |
|---|---|---|---|
| **5839.1** | 10 ml | glass | 192,45 € |
| **5839.2** | 25 ml | glass | 428,95 € |

For further information, please see page 1165

## Roti®lyte pH 3-10

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance. ..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C)..... 6,6-7,4
Conductivity (2,5 % in $H_2O$, 20 °C). ..0,20-0,90 mS/cm
pH Range. ..... 3,3 ±0,3 to 10,0 ±0,6
pH gradient performed..... min. 60 %

| | | | |
|---|---|---|---|
| **5841.1** | 10 ml | glass | 181,70 € |
| **5841.2** | 25 ml | glass | 375,20 € |

For further information, please see page 1165

## Roti®lyte pH 4-6

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance. ..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C)..... 4,8-5,6
Conductivity (2,0 % in $H_2O$, 20 °C). ..0,10-0,20 mS/cm
pH Range. ..... 4,0 ±0,5 to 6,1 ±0,5
pH gradient performed..... min. 60 %

| | | | |
|---|---|---|---|
| **5845.1** | 10 ml | glass | 202,65 € |
| **5845.2** | 25 ml | glass | 450,45 € |

For further information, please see page 1165

## Roti®lyte pH 4-7

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C). ..... 5,8-6,2
Conductivity (2,5 % in $H_2O$, 20 °C). ..... 0,1-0,2 mS/cm
pH Range. .....4,0 ±0,2 to 7,0 ±0,2
pH gradient performed. .....min. 70 %

| | | | |
|---|---|---|---|
| **5850.1** | 10 ml | glass | 192,45 € |
| **5850.2** | 25 ml | glass | 428,95 € |

For further information, please see page 1165

## Roti®lyte pH 5-6

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance..... clear solution
Content (w/v). ..... 40 %
pH-value (2.0 % in $H_2O$, 20 °C). ..... 5,3-5,7
Conductivity (2,0 % in $H_2O$, 20 °C)... 0,05-0,50 mS/cm
pH Range. .....5,3 ±0,3 to 6,2 ±0,5
pH gradient performed. .....min. 70 %

| | | | |
|---|---|---|---|
| **5851.1** | 10 ml | glass | 202,65 € |
| **5851.2** | 25 ml | glass | 450,45 € |

For further information, please see page 1165

## Roti®lyte pH 5-7

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C). ..... 5,8-6,6
Conductivity (2,5 % in $H_2O$, 20 °C). ..... 0,1-0,2 mS/cm
pH Range. .....5,0 ±0,5 to 7,1 ±0,5
pH gradient performed. .....min. 60 %

| | | | |
|---|---|---|---|
| **5856.1** | 10 ml | glass | 202,65 € |
| **5856.2** | 25 ml | glass | 450,45 € |

For further information, please see page 1165

## Roti®lyte pH 5-8

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance. ..... clear solution
Content (w/v)..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C)..... 6,2-7,0
Conductivity (2,5 % in $H_2O$, 20 °C)..... 0,1-0,5 mS/cm
pH Range..... 5,0 ±0,5 to 8,0 ±0,6
pH gradient performed. ..... min. 70 %

| | | | |
|---|---|---|---|
| **5857.1** | 10 ml | glass | 192,45 € |
| **5857.2** | 25 ml | glass | 428,95 € |

For further information, please see page 1165

## Roti®lyte pH 6-7

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3 % to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance. ..... clear solution
Content (w/v)..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C)..... 6,2-7,0
Conductivity (2,5 % in $H_2O$, 20 °C)..... 0,1-0,2 mS/cm
pH Range..... 6,0 ±0,2 to 7,0 ±0,2
pH gradient performed. ..... min. 70 %

| | | | |
|---|---|---|---|
| **5858.1** | 10 ml | glass | 202,65 € |
| **5858.2** | 25 ml | glass | 450,45 € |

For further information, please see page 1165

## Roti®lyte pH 6-8

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance. ..... clear solution
Content (w/v)..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C)..... 7,2-8,0
Conductivity (2,5 % in $H_2O$, 20 °C)....0,15-0,55 mS/cm
pH Range..... 6,2 ±0,4 to 8,0 ±0,5
pH gradient performed. ..... min. 60 %

| | | | |
|---|---|---|---|
| **5860.1** | 10 ml | glass | 202,65 € |
| **5860.2** | 25 ml | glass | 450,45 € |

For further information, please see page 1165

## Roti®lyte pH 7-9

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance. ..... clear solution
Content (w/v)..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C)..... 7,6-8,1
Conductivity (2,0 % in $H_2O$, 20 °C)....0,20-0,90 mS/cm
pH Range..... 7,0 ±0,3 to 9,0 ±0,3
pH gradient performed. ..... min. 70 %

| | | | |
|---|---|---|---|
| **5861.1** | 10 ml | glass | 202,65 € |
| **5861.2** | 25 ml | Glas | 450,45 € |

For further information, please see page 1165

## Roti®lyte pH 8-10

**40 % solution in water, sterile filtered (0,2 µm)**

Carrier ampholytes for isoelectric focussing (IEF).

Added in 3-5 % working concentration to acrylamide- or agarose gel solution.

**Type analysis:**

Appearance. ..... clear solution
Content (w/v). ..... 40 %
pH-value (2,5 % in $H_2O$, 20 °C)..... 7,8-9,2
Conductivity (2,5 % in $H_2O$, 20 °C). ..0,10-0,40 mS/cm
pH Range. ..... 7,5 ±0,5 to 9,5 ±0,6
pH gradient performed..... min. 60 %

| | | | |
|---|---|---|---|
| **5864.1** | 10 ml | glass | 202,65 € |
| **5864.2** | 25 ml | glass | 450,45 € |

For further information, please see page 1165

## Roti®-MagBeads

Storage temp.: +4 °C

## Roti®-MagBeads COOH

**10 mg/ml, for biochemistry and molecular biology**

Activated magnetic silica gel beads for covalent coupling of chosen ligands.

**Type analysis:**

Concentration. ..... 10 ±0,5 mg/ml
Size distribution. ..... 0,7-1,4 µm
Mean particle sizing (CI90 %). ..... 1,0 ±0,05 µm
Bead number. ..... 6-12 x $10^9$ Beads/ml
Magnetic iron content. ..... ≥50 %
Suspension in PBS (pH 7,4); 0,05 % sodium azide

| | | | |
|---|---|---|---|
| **HP58.2** | 50 µl | plastic | 12,80 € |
| **HP58.1** | 2 ml | plastic | 89,15 € |

For further information, please see page 1299

## Roti®-MagBeads DNA

**20 mg/ml, ready-to-use, DNAse- and DNA-free, for molecular biology**

Magnetic silica gel beads for isolation of genomic DNA.

**Type analysis:**

Concentration. ..... 20 ±1 mg/ml
Size distribution. ..... 0,7-2,5 µm
Mean particle sizing. ..... 1,2 ±0,1µm
Bead number. ..... 0,6-2 x $10^{10}$ Beads/ml
Magnetic iron content. ..... ≥50 %
DNA binding capacity (whole blood). .....
..... ~2 µg/100 µg Beads
Suspension in ultrapure water (*aqua ad injectabila*) with 0,05 % sodium azide.

| | | | |
|---|---|---|---|
| **2787.2** | 50 µl | plastic | 14,20 € |
| **2787.1** | 2 ml | plastic | 129,55 € |

For further information, please see page 1228

## Roti®-MagBeads Protein A

**10 mg/ml, ready-to-use, for biochemistry**

Magnetic silica gel beads for binding and isolation of immunoglobulins.

**Type analysis:**

Concentration. ..... 10 ±0,5 mg/ml
Size distribution. ..... 0,7-1,4 µm
Mean particle sizing (CI90 %). ..... 1,0 ±0,05 µm
Bead number. ..... 6-12 x $10^9$ Beads/ml
Magnetic iron content. ..... ≥50 %
Suspension in PBS (pH 7,4); 0,05 % sodium azide

| | | | |
|---|---|---|---|
| **HP59.2** | 50 µl | plastic | 17,75 € |
| **HP59.1** | 1 ml | plastic | 181,70 € |

For further information, please see page 1299

## Roti®-MagBeads Protein G

**10 mg/ml, ready-to-use, for biochemistry**

Magnetic silica gel beads for binding and isolation of immunoglobulins.

**Type analysis:**

Concentration. ..... 10 ±0,5 mg/ml
Size distribution. ..... 0,7-1,4 µm
Mean particle sizing (CI90 %). ..... 1,0 ±0,05 µm
Bead number. ..... 6-12 x $10^9$ Beads/ml
Magnetic iron content. ..... ≥50 %
Suspension in PBS (pH 7,4); 0,05 % sodium azide

| | | | |
|---|---|---|---|
| **HP60.2** | 50 µl | plastic | 17,75 € |
| **HP60.1** | 1 ml | plastic | 181,70 € |

For further information, please see page 1299

## Roti®-MagBeads Streptavidin

**10 mg/ml, ready-to-use, for biochemistry**

Magnetic silica gel beads for isolation of biotin-coupled biomolecules.

**Type analysis:**

Concentration. ..... 10 ±0,5 mg/ml
Size distribution. ..... 0,7-1,4 µm
Mean particle sizing (CI90 %). ..... 1,0 ±0,05 µm
Bead number. ..... 6-12 x $10^9$ Beads/ml
Magnetic iron content. ..... ≥50 %
Biotin binding capacity. ..... 3-7 nMol/mg
Suspension in PBS (pH 7,4); 0,05 % Tween® 20; 0,05 % sodium azide

| | | | |
|---|---|---|---|
| **HP57.2** | 50 µl | plastic | 19,90 € |
| **HP57.3** | 1 ml | plastic | 213,95 € |
| **HP57.1** | 2 ml | plastic | 370,90 € |

For further information, please see page 1299

## Roti®-Mark, not prestained

Storage temp.: -20 °C •
Transport temp.: room temp.
WGK 1

## Roti®-Mark 10-150

**Protein marker, not prestained**
**Size range: 10-150 kD**
**Number of protein bands: 8**
**Number of lanes/ml: approx. 200 (mini gels)**

⚠ **Warning** H319

| | | | |
|---|---|---|---|
| **T850.2** | 100 µl | plastic | 51,50 € |
| **T850.1** | 500 µl | plastic | 116,65 € |

For further information, please see page 1172

## Roti®-Mark 10-150 PLUS

**Protein marker with additional prestained protein**
**Size range: 10-150 kD**
**Number of protein bands: 9**
**Number of lanes/ml: approx. 200 (mini gels)**

⚠ **Warning** H319

| | | | |
|---|---|---|---|
| **X879.2** | 100 µl | plastic | 57,55 € |
| **X879.1** | 500 µl | plastic | 145,15 € |

For further information, please see page 1172

## Roti®-Mark PETIT

**Protein marker, not prestained**
**Size range: 3,5-40 kD**
**Number of protein bands: 7**
**Number of lanes/ml: approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **9299.1** | 100 µl | plastic | 61,85 € |
| **9299.2** | 500 µl | plastic | 180,10 € |

For further information, please see page 1172

## Roti®-Mark STANDARD

**Protein marker, not prestained**
**Size range: 14-212 kD**
**Number of protein bands: 7**
**Number of lanes/ml: approx. 200 (mini gels)**

⚠ **Warning** H319

| | | | |
|---|---|---|---|
| **T851.3** | 200 µl | plastic | 34,30 € |
| **T851.1** | 1 ml | plastic | 96,65 € |
| **T851.2** | 4 x 1 ml | plastic | 342,95 € |

For further information, please see page 1172

## Roti®-Mark WESTERN-Marker

**Protein marker, not prestained**
**Size range: 10-120 kD**
**Number of protein bands: 8**
**Number of lanes/ml: approx. 200 (mini gels)**

⚠ **Warning** H319

| | | | |
|---|---|---|---|
| **0948.1** | 500 µl | plastic | 192,45 € |

For further information, please see page 1173

## Roti®-Mark, prestained

Storage temp.: -20 °C •
Transport temp.: room temp.
WGK 1

## Roti®-Mark PRESTAINED

**Protein marker, prestained**
**Size range: 17-245 kD**
**Number of protein bands: 7**
**Number of lanes/ml: approx. 200 (mini gels)**

⚠ **Warning** H319

| | | | |
|---|---|---|---|
| **T852.3** | 100 µl | plastic | 57,95 € |
| **T852.1** | 250 µl | plastic | 96,65 € |
| **T852.2** | 4 x 250 µl | plastic | 342,95 € |

For further information, please see page 1171

## Roti®-Mark BICOLOR

**Protein marker, prestained**
**Size range: 17-245 kD**
**Number of protein bands: 9**
**Number of lanes/ml: approx. 200 (mini gels)**

⚠ **Warning** H319

| | | | |
|---|---|---|---|
| **2806.1** | 100 µl | plastic | 60,10 € |
| **2806.2** | 250 µl | plastic | 107,40 € |

## Roti®-Mark BI-PINK

**Protein marker, prestained**
**Size range: 10-175 kD**
**Number of protein bands: 11**
**Number of lanes/ml: approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **8269.1** | 500 µl | plastic | 166,10 € |

For further information, please see page 1171

## Roti®-Mark TRICOLOR

**Protein marker, prestained**
**Size range: 10-245 kD**
**Number of protein bands: 12**
**Number of lanes/ml: approx. 200 (mini gels)**

| | | | |
|---|---|---|---|
| **8271.1** | 500 µl | plastic | 166,10 € |

For further information, please see page 1171

## Roti®-Mark WESTERN HRP Conjugate

## Roti®-Mark WESTERN HRP Conjugate

**0,2 mg/ml**

For HRP mediated detection of Roti®-Mark WESTERN Marker.
Storage temp.: -20 °C •
Transport temp.: room temp.
WGK 1

| | | | |
|---|---|---|---|
| **0949.1** | 500 µl | glass | 196,20 € |

For further information, please see page 1317

## Roti®-Mark WESTERN Set

## Roti®-Mark WESTERN Set

**Set of protein marker and antibody for gel and Western-Blot**
**Size range: 10-120 kD**
**Number of protein bands: 8**
**Number of lanes: approx. 100 or 10 (mini gels)**
Storage temp.: -20 °C •
Transport temp.: room temp.
WGK 1

**Warning** H319

| | | | |
|---|---|---|---|
| **0947.2** | 1 mini kit | plastic | 40,75 € |
| **0947.1** | 1 kit | plastic | 321,45 € |

For further information, please see page 1316

## Roti®-Methylene blue staining concentrate

## Roti®-Methylene blue staining concentrate

For reversible staining of DNA in agarose gels, 200x concentrate.
12 ml Roti®-methylene blue staining concentrate is sufficient for more than 50 mini gels.
Storage temp.: +4 °C
UN No. 1170 • ADR 3 III • WGK 2

**Warning** H226-H319

| | | | |
|---|---|---|---|
| **0648.1** | 3 ml | plastic | 36,45 € |
| **0648.2** | 12 ml | plastic | 110,20 € |

For further information, please see page 1185

## ROTI®METIC, High-Purity Metals and Metal Compounds


| Art. No. | Description | Page |
|---|---|---|
| 5577 | Aluminium granulate | 1719 |
| 5368 | Aluminium chloride hexahydrate | 1720 |
| 5395 | Aluminium fluoride | 1720 |
| 5567 | Aluminium nitrate nonahydrate | 1720 |
| 5575 | Aluminium oxide | 1721 |
| 5050 | Ammonium chloride | 1731 |
| 5580 | Ammonium dihydrogen phosphate | 1732 |
| 5585 | Ammonium hexachloroosmate (IV) | 1733 |
| 5586 | Ammonium hexachlororhodate(III) | 1733 |
| 5587 | Ammonium hexafluorosilicate | 1733 |
| 5589 | Ammonium hexafluorotitanate(IV) | 1733 |
| 5363 | Ammonium hydrogen fluoride | 1734 |
| 5596 | di-Ammonium hydrogen phosphate | 1734 |
| 5591 | Ammonium molybdate(VI) | 1736 |
| 5590 | Ammonium monovanadate | 1737 |
| 5606 | Ammonium sulphate | 1738 |
| 5396 | Ammonium tetraborate tetrahydrate | 1739 |
| 5608 | Ammonium tetrathiomolybdate | 1739 |
| 5397 | Ammonium tetrathiotungstate | 1739 |
| 4516 | Antimony shot | 1746 |
| 5321 | Barium carbonate | 1761 |
| 5051 | Barium chloride | 1761 |
| 5115 | Barium chloride dihydrate | 1761 |
| 5055 | Barium fluoride | 1762 |
| 5609 | Barium hydroxide hydrate | 1762 |
| 5138 | Barium nitrate | 1763 |
| 5612 | Beryllium acetate basic | 1770 |
| 5614 | Boric acid | 1782 |
| 5247 | Cadmium acetate | 1800 |
| 5618 | Caesium carbonate | 1800 |
| 5061 | Caesium chloride | 1801 |
| 4505 | Caesium nitrate | 1801 |
| 5616 | Calcium carbonate | 1803 |
| 5056 | Calcium chloride hydrate | 1804 |
| 5617 | Calcium hydroxide | 1805 |
| 5058 | Calcium nitrate hydrate | 1806 |
| 5312 | Cerium(III) nitrate hexahydrate | 1821 |
| 5372 | Cerium(III) acetate hydrate | 1821 |
| 5603 | Cerium(III) sulphate | 1822 |
| 5601 | Cerium(III) sulphate octahydrate | 1822 |
| 5619 | Chromium(III) nitrate nonahydrate | 1832 |
| 4498 | Chromium(III) oxide | 1832 |
| 5620 | Cobalt powder | 1837 |
| 5291 | Cobalt(II) nitrate hexahydrate | 1838 |
| 5326 | Cobalt(II) sulphate hydrate | 1838 |
| 5621 | Copper pellets | 1842 |
| 5386 | Copper powder | 1842 |
| 5379 | Copper(I) chloride | 1843 |
| 5300 | Copper(I) iodide | 1844 |
| 5394 | Europium(III) oxide | 1923 |
| 4507 | Gallium | 1946 |
| 5548 | Gallium(III) nitrate hydrate | 1946 |
| 5377 | Gallium(III) oxide | 1946 |
| 5622 | Gold shot | 1964 |
| 5338 | Holmium(III) oxide | 1982 |
| 5626 | Hydrogen hexachloroplatinate(IV) hydrate | 1990 |
| 5628 | Hydrogen tetrachloroaurate(III) hydrate | 1992 |
| 5629 | Indium shot | 2002 |
| 5322 | Indium(III) bromide | 2002 |
| 5384 | Indium(III) nitrate pentahydrate | 2003 |
| 5630 | Indium(III) oxide | 2003 |
| 5364 | Iodine(V) oxide | 2006 |
| 5631 | Iron granules | 2010 |
| 5632 | Iron(III) nitrate nonahydrate | 2011 |
| 5634 | Iron(III) oxide | 2012 |
| 5366 | Lanthanum(III) nitrate hexahydrate | 2028 |
| 5062 | Lithium bromide | 2039 |
| 5635 | Lithium carbonate | 2039 |
| 5079 | Lithium chloride | 2040 |
| 5082 | Lithium fluoride | 2040 |
| 5281 | Lithium nitrate | 2041 |
| 5296 | Lutetium(III) oxide | 2044 |
| 5347 | Magnesium chloride hexahydrate | 2048 |
| 5420 | Magnesium nitrate hexahydrate | 2050 |
| 5639 | Magnesium oxide | 2050 |
| 4509 | Manganese flakes | 2055 |
| 5641 | Manganese(II) acetate tetrahydrate | 2055 |
| 5304 | Manganese(II) chloride tetrahydrate | 2055 |
| 5392 | Manganese(II) nitrate hydrate | 2056 |
| 5383 | Manganese(IV) oxide | 2056 |
| 4548 | Molybdenum(VI) oxide | 2082 |
| 5643 | Nickel powder | 2092 |
| 5373 | Nickel(II) chloride hexahydrate | 2093 |
| 5387 | Nickel(II) nitrate hexahydrate | 2093 |
| 5388 | Nickel(II) oxide | 2094 |
| 5648 | Palladium powder | 2128 |
| 5653 | Palladium(II) chloride | 2128 |
| 5393 | Palladium(II) oxide | 2129 |
| 5654 | Platinum powder | 2156 |
| 5064 | Potassium bromide | 2163 |
| 5335 | Potassium carbonate | 2163 |
| 5346 | Potassium chloride | 2164 |
| 5656 | Potassium fluoride | 2167 |
| 5066 | di-Potassium hydrogen phosphate | 2168 |
| 5658 | Potassium hydroxide | 2170 |
| 5067 | Potassium iodide | 2172 |
| 5659 | Potassium nitrate | 2172 |
| 5325 | Potassium persulphate | 2174 |
| 5071 | Potassium sulphate | 2175 |
| 5114 | Potassium tetrachloroaurate(III) | 2175 |
| 5660 | Potassium tetrachloroplatinate(II) | 2176 |
| 5668 | Rhodium(III) chloride hydrate | 2198 |
| 5679 | Rubidium chloride | 2235 |
| 5293 | Rubidium nitrate | 2236 |
| 5686 | Ruthenium(III) chloride | 2236 |
| 5735 | Scandium(III) oxide | 2242 |
| 4547 | Selenium pellets | 2245 |
| 5324 | Selenium(IV) oxide | 2245 |
| 5738 | Silicon dioxide | 2257 |
| 5739 | Silver bromide | 2261 |
| 5302 | Silver chloride | 2261 |
| 4500 | Silver nitrate | 2261 |
| 5065 | Silver nitrite | 2263 |
| 5380 | Sodium acetate | 2265 |
| 5086 | Sodium bromide | 2267 |
| 5740 | Sodium carbonate | 2267 |
| 5741 | Sodium chloride | 2269 |
| 4503 | Sodium fluoride | 2273 |
| 5742 | Sodium nitrate | 2281 |
| 5076 | Sodium sulphate | 2284 |
| 5376 | Strontium carbonate | 2317 |
| 5078 | Strontium nitrate | 2318 |
| 5745 | Tellurium(IV) oxide | 2331 |
| 5746 | Tetraammineplatinum(II) nitrate | 2333 |
| 5097 | Tin shot | 2343 |
| 5747 | Titanium(IV) oxide | 2345 |
| 5399 | Tungsten(VI) oxide | 2362 |
| 5370 | Vanadium(V) oxide | 2369 |
| 5749 | Ytterbium(III) chloride hexahydrate | 2384 |
| 5303 | Ytterbium(III) oxide | 2384 |
| 5751 | Yttrium(III) oxide | 2385 |
| 5345 | Zinc shot | 2386 |
| 5421 | Zinc oxide | 2388 |
| 4502 | Zirconyl chloride octahydrate | 2389 |
| 5415 | Zirconyl nitrate hydrate | 2389 |

## Roti®-Mix PCR

Storage temp.: -20 °C
Transport temp.: cooled

### Roti®-Mix PCR 1

**2 mM (per dNTP) dATP, dTTP, dGTP, dCTP**
Roti®-Mix PCR 1, nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 2 mM per dNTP.

| | | | |
|---|---|---|---|
| **L541.1** | 1 ml | plastic | 24,20 € |
| **L541.2** | 5 x 1 ml | plastic | 94,50 € |

For further information, please see page 1259

### Roti®-Mix PCR 2

**2 mM (per dNTP) dATP, dUTP, dGTP, dCTP**
Roti®-Mix PCR 2, nucleotide-mixture containing dATP, dUTP, dGTP, dCTP.
Concentration: 2 mM per dNTP.

| | | | |
|---|---|---|---|
| **L542.1** | 1 ml | plastic | 24,20 € |
| **L542.2** | 5 x 1 ml | plastic | 94,50 € |

For further information, please see page 1259

### Roti®-Mix PCR 3

**10 mM (per dNTP) dATP, dTTP, dGTP, dCTP**
Roti®-Mix PCR 3, nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 10 mM per dNTP.

| | | | |
|---|---|---|---|
| **L785.1** | 0,2 ml | plastic | 24,20 € |
| **L785.2** | 5 x 0,2 ml | plastic | 94,50 € |
| **L785.3** | 5 x 1 ml | plastic | 392,40 € |

For further information, please see page 1259

### Roti®-Mix PCR 3 (pH 7)

**10 mM (pro dNTP) dATP, dTTP, dGTP, dCTP**
Roti®-Mix PCR 3 (pH 7), nucleotide-mixture containing dATP, dTTP, dGTP, dCTP.
Concentration: 10 mM per dNTP, **pH 7,0 ±0,1**

| | | | |
|---|---|---|---|
| **0179.1** | 0,2 ml | plastic | 24,20 € |
| **0179.2** | 5 x 0,2 ml | plastic | 94,50 € |

For further information, please see page 1259

### Roti®-Mix PCR 4

**10 mM (per dNTP) dATP, dUTP, dGTP, dCTP**
Roti®-Mix PCR 4, nucleotide-mixture containing dATP, dUTP,dGTP, dCTP.
Concentration: 10 mM per dNTP.

| | | | |
|---|---|---|---|
| **L786.1** | 0,2 ml | plastic | 24,20 € |
| **L786.2** | 5 x 0,2 ml | plastic | 94,50 € |

For further information, please see page 1259

## Roti®-Mount

### Roti®-Mount

**Mountant for microscopy, free from xylene and toluene.**
**Compatible with Roticlear® (Art. No. A538) and n-Butyl acetate (Art. No. P036).**
D 0,88 • bp 110-130 °C
mp <-17 °C • flp 17,8 °C
UN No. 1993 • ADR 3 II • WGK 3
**Danger**
H225-H304-H372-H411-EUH066

**Type analysis:**
Appearance.colourless to light yellowish, viscous liquid
Viscosity (20 °C)..... 1000-1200 mPas
Refractive index (20 °C). ..... 1,43-1,46
Density (20 °C). ..... 0,850-900

| | | | |
|---|---|---|---|
| **HP68.1** | 100 ml | glass | 20,35 € |
| **HP68.2** | 500 ml | glass | 61,85 € |

For further information, please see page 1474

## Roti®-Mount Aqua

### Roti®-Mount Aqua

**for microscopy**
Aqueous mounting medium
D 1,05-1,18
Storage temp.: +4 °C
WGK 1

**Type analysis:**
Appearance..... colourless, viscous liquid
Viscosity (20 °C)..... 170-220 mPas
Refractive index (20 °C). ..... 1,440-1,465
Density (20 °C). ..... 1,05-1,18 g/cm³

| | | | |
|---|---|---|---|
| **2848.1** | 15 ml | dropp. bottle | 21,40 € |
| **2848.2** | 50 ml | glass | 39,25 € |

For further information, please see page 1475

## Roti®-Mount FluorCare

Storage temp.: +4 °C
WGK 1

### Roti®-Mount FluorCare

**for fluorescence microscopy**
Aqueous mounting medium with antifading effect.

**Type analysis:**
Appearance.....clear, viscous liquid
Viscosity (20 °C)..... 170-220 mPas
Refractive index (20 °C). ..... 1,44-1,465
Density (20 °C). ..... 1,05-1,18

| | | | |
|---|---|---|---|
| **HP19.1** | 15 ml | dropp. bottle | 55,40 € |

For further information, please see page 1475

### Roti®-Mount FluorCare DAPI

**for fluorescence microscopy**
Aqueous mounting medium with antifading effect. Contains DAPI for counterstaining.

**Type analysis:**
Appearance.....clear, viscous liquid
Viscosity (20 °C)..... 170-220 mPas
Refractive index (20 °C). ..... 1,44-1,465
Density (20 °C). ..... 1,05-1,18

| | | | |
|---|---|---|---|
| **HP20.1** | 15 ml | dropp. bottle | 67,65 € |

For further information, please see page 1475

### Roti®-Mount FluorCare PI

**for fluorescence microscopy**
Aqueous mounting medium with antifading effect. Contains propidiumiodide (PI) for counterstaining.

**Type analysis:**
Appearance. ..... viscous, slightly reddish liquid
Viscosity (20 °C). .....170-220 mPas
Refractive index (20 °C).....1,44-1,465
Density (20 °C).....1,05-1,18

| | | | |
|---|---|---|---|
| **HP21.1** | 15 ml | dropp. bottle | 67,65 € |

For further information, please see page 1475

## Roti®-Nanoquant

### Roti®-Nanoquant

**5x conc.**
For protein quantitation acc. to Bradford, for extremely small protein amounts.
D 1,371
Storage temp.: +4 °C
UN No. 2920 • ADR 8 (3) II • WGK 1
**Danger** H226-H314-H290

| | | | |
|---|---|---|---|
| **K880.2** | 50 ml | plastic | 14,95 € |
| **K880.3** | 200 ml | plastic | 45,05 € |
| **K880.1** | 500 ml | plastic | 89,80 € |

For further information, please see page 1313

## Roti® Nucleic Acid-free

### Roti® Nucleic Acid-free

**ready-to-use solution for removal of nucleic acid contaminations from surfaces**
**Warning** H315-H319

| | | | |
|---|---|---|---|
| **HP69.1** | 500 ml | spray bottle | 69,35 € |
| **HP69.2** | 1 l | plastic | 92,35 € |
| Original pack 6 x 1 l | | | 87,73/1 l |
| **HP69.3** | 2,5 l | plastic | 205,90 € |
| Original pack 4 x 2,5 l | | | 195,61/2,5 l |

For further information, please see page 1252

## Roti® Nucleic Acid-free eXtra

### Roti® Nucleic Acid-free eXtra

NEW

**ready-to-use**
Gentle solution for removal of nucleic acid contaminations from surfaces.
D 1,0

**Type analysis:**
Appearance. ..... clear, colourless
Efficiency (strand breakage test).....complies
Efficiency (PCR).....complies

| | | | |
|---|---|---|---|
| **1312.1** | 500 ml | plastic | 67,20 € |
| **1312.2** | 1 l | plastic | 98,90 € |
| Original pack 6 x 1 l | | | 93,96/1 l |
| **1312.3** | 2,5 l | plastic | 225,75 € |
| Original pack 4 x 2,5 l | | | 214,46/2,5 l |
| **1312.4** | 500 ml | spray bottle | 69,35 € |

For further information, please see page 1252

## Roti®-PAGE gels ready-to-use

Storage temp.: +4 °C •
Transport temp.: cooled
WGK 1

### Roti®-PAGE 10 %

**ready-to-use, 9 x 10 cm, 10 % polyacrylamide, 10 wells**

Precast mini gels with 10 % polyacrylamide, for rapid and easy gel electrophoresis of proteins of 25 to 200 kD.

**Gel parameters:**

Gel plates 9 x 10 cm (l x w), gel size 7,1 x 8,3 cm (l x w), gel thickness 1 mm, 10 wells, separation gel 10 % polyacrylamide, stacking gel 4 % polyacrylamide, buffer system Tris/Glycine. Does not contain SDS. Package contains Tris/Glycin buffer with 0.02 % sodium azide.

| | | | |
|---|---|---|---|
| **2838.1** | 2 gels | plastic | 42,50 € |
| **2838.2** | 10 gels | plastic | 179,45 € |

For further information, please see page 1152

### Roti®-PAGE 10 %

**ready-to-use, 10 x 10 cm, 10 % polyacrylamide, 10 wells**

Precast mini gels with 10 % polyacrylamide, for rapid and easy gel electrophoresis of proteins of 25 to 200 kD.

**Gel parameters:**

Gel plates 10 x 10 cm (l x w), gel size 8,1 x 8,3 cm (l x w), gel thickness 1 mm, 10 wells, separation gel 10 % polyacrylamide, stacking gel 4 % polyacrylamide, buffer system Tris/Glycine. Does not contain SDS. Package contains Tris/Glycin buffer with 0.02 % sodium azide.

| | | | |
|---|---|---|---|
| **2839.1** | 2 gels | plastic | 42,50 € |
| **2839.2** | 10 gels | plastic | 179,45 € |

For further information, please see page 1152

### Roti®-PAGE 12 %

**ready-to-use, 9 x 10 cm, 12 % polyacrylamide, 10 wells**

Precast mini gels with 12 % polyacrylamide, for rapid and easy gel electrophoresis of proteins of 20 to 100 kD.

**Gel parameters:**

Gel plates 9 x 10 cm (l x w), gel size 7,1 x 8,3 cm (l x w), gel thickness 1 mm, 10 wells, separation gel 12 % polyacrylamide, stacking gel 4 % polyacrylamide, buffer system Tris/Glycine. Does not contain SDS. Package contains Tris/Glycin buffer with 0.02 % sodium azide.

| | | | |
|---|---|---|---|
| **2840.1** | 2 gels | plastic | 42,50 € |
| **2840.2** | 10 gels | plastic | 179,45 € |

For further information, please see page 1152

### Roti®-PAGE 12 %

**ready-to-use, 10 x 10 cm, 12 % polyacrylamide, 10 wells**

Precast mini gels with 12 % polyacrylamide, for rapid and easy gel electrophoresis of proteins of 20 to 100 kD.

**Gel parameters:**

Gel plates 10 x 10 cm (l x w), gel size 8,1 x 8,3 cm (l x w), gel thickness 1 mm, 10 wells, separation gel 12 % polyacrylamide, stacking gel 4 % polyacrylamide, buffer system Tris/Glycine. Does not contain SDS. Package contains Tris/Glycin buffer with 0.02 % sodium azide.

| | | | |
|---|---|---|---|
| **2841.1** | 2 gels | plastic | 42,50 € |
| **2841.2** | 10 gels | plastic | 179,45 € |

For further information, please see page 1152

### Roti®-PAGE Gradient (4-20 %)

**ready-to-use, 9 x 10 cm, 4-20 % polyacrylamide, 10 wells**

Precast mini gels with 4-20 % polyacrylamide gradient, for rapid and easy gel electrophoresis of proteins of 5 to 200 kD.

**Gel parameters:**

Gel plates 9 x 10 cm (l x w), gel size 7,1 x 8,3 cm (l x w), gel thickness 1 mm, 10 wells, separation gel 4-20 % polyacrylamide gradient, stacking gel 4 % polyacrylamide, buffer system Tris/Glycine. Does not contain SDS. Package contains Tris/Glycin buffer with 0.02 % sodium azide.

| | | | |
|---|---|---|---|
| **2842.1** | 2 gels | plastic | 42,50 € |
| **2842.2** | 10 gels | plastic | 179,45 € |

For further information, please see page 1152

### Roti®-PAGE Gradient (4-20 %)

**ready-to-use, 10 x 10 cm, 4-20 % polyacrylamide, 10 wells**

Precast mini gels with 4-20 % polyacrylamide gradient, for rapid and easy gel electrophoresis of proteins of 5 to 200 kD.

**Gel parameters:**

Gel plates 10 x 10 cm (l x w), gel size 8,1 x 8,3 cm (l x w), gel thickness 1 mm, 10 wells, separation gel 4-20 % polyacrylamide gradient, stacking gel 4 % polyacrylamide, buffer system Tris/Glycine. Does not contain SDS. Package contains Tris/Glycin buffer with 0.02 % sodium azide.

| | | | |
|---|---|---|---|
| **2843.1** | 2 gels | plastic | 42,50 € |
| **2843.2** | 10 gels | plastic | 179,45 € |

For further information, please see page 1152

### Roti®-PAGE Gradient (4-20 %)

**ready-to-use, 9 x 10 cm, 4-20 % polyacrylamide, 12 wells**

Precast mini gels with 4-20 % polyacrylamide gradient, for rapid and easy gel electrophoresis of proteins of 5 to 200 kD.

**Gel parameters:**

Gel plates 9 x 10 cm (l x w), gel size 7,1 x 8,3 cm (l x w), gel thickness 1 mm, 12 wells, separation gel 4-20 % polyacrylamide gradient, stacking gel 4 % polyacrylamide, buffer system Tris/Glycine. Does not contain SDS. Package contains Tris/Glycin buffer with 0.02 % sodium azide.

| | | | |
|---|---|---|---|
| **2844.1** | 2 gels | plastic | 42,50 € |
| **2844.2** | 10 gels | plastic | 179,45 € |

For further information, please see page 1152

### Roti®-PAGE Gradient (4-20 %)

**ready-to-use, 10 x 10 cm, 4-20 % polyacrylamide, 12 wells**

Precast mini gels with 4-20 % polyacrylamide gradient, for rapid and easy gel electrophoresis of proteins of 5 to 200 kD.

**Gel parameters:**

Gel plates 10 x 10 cm (l x w), gel size 8,1 x 8,3 cm (l x w), gel thickness 1 mm, 12 wells, separation gel 4-20 % polyacrylamide gradient, stacking gel 4 % polyacrylamide, buffer system Tris/Glycine. Does not contain SDS. Package contains Tris/Glycin buffer with 0.02 % sodium azide.

| | | | |
|---|---|---|---|
| **2845.1** | 2 gels | plastic | 42,50 € |
| **2845.2** | 10 gels | plastic | 179,45 € |

For further information, please see page 1152

## Roti®-Phenol

D 1,06
Storage temp.: +4 °C
UN No. 2821 • ADR 6.1 III • WGK 2

 **Danger**
H301+H311+H331-H314-H341-H373-H411

### Roti®-Aqua-Phenol

**for RNA extraction**

Redistilled, in water saturated phenol, pH 4,5-5.

Draw solution from lower phase.
Do not shake before use!

| | | | |
|---|---|---|---|
| **A980.2** | 100 ml | glass | 21,40 € |
| **A980.1** | 250 ml | glass | 41,85 € |
| **A980.3** | 500 ml | glass | 62,90 € |

For further information, please see page 1227

### Roti®-Phenol

**for extraction of nucleic acids**

Redistilled, in TE buffer equilibrated phenol, pH 7,5-8,0.

Draw solution from lower phase.
Do not shake before use!

| | | | |
|---|---|---|---|
| **0038.1** | 100 ml | glass | 25,70 € |
| **0038.2** | 250 ml | glass | 50,45 € |
| **0038.3** | 500 ml | glass | 76,90 € |

For further information, please see page 1227

## Roti®-Phenol/Chloroform/ Isoamyl alcohol

Storage temp.: +4 °C
UN No. 2821 • ADR 6.1 II • WGK 3

 **Danger** H301+H331-H312-H314-H341-H351-H361d-H372-H411

### Roti®-Aqua-P/C/I

**for RNA extraction**

Redistilled, in water saturated phenol, chloroform and isoamyl alcohol at a ratio of 25:24:1, pH 4,5-5.

| | | | |
|---|---|---|---|
| **X985.3** | 100 ml | glass | 27,85 € |
| **X985.1** | 250 ml | glass | 48,95 € |
| **X985.2** | 500 ml | glass | 74,10 € |

For further information, please see page 1227

### Roti®-Phenol/Chloroform/ Isoamyl alcohol

**for extraction of nucleic acids**

Redistilled, in TE-buffer equilibrated phenol, chloroform and isoamyl alcohol at a ratio of 25:24:1, pH 7,5-8,0.

Draw solution from lower phase.
Do not shake before use!

| | | | |
|---|---|---|---|
| **A156.3** | 100 ml | glass | 36,05 € |
| **A156.1** | 250 ml | glass | 71,95 € |
| **A156.2** | 500 ml | glass | 119,90 € |

For further information, please see page 1227

## Rotiphorese® Blue R

### Rotiphorese® Blue R

**Brillant Blue R concentrate**

For Coomassie staining of protein gels.

600 ml concentrate are sufficient for approx. 12 mini gels.

D 0,826

flp 11 °C

UN No. 3286 • ADR 3 (6.1) (8) II • WGK 1

**Danger**

H225-H370-H315-H319-H311+H331+H301

| | | | |
|---|---|---|---|
| **3074.1** | 600 ml | glass | 31,10 € |

For further information, please see page 1183

## Rotiphorese® Gel solution 30 %

D 1,024

Storage temp.: +8 °C

WGK 3

**Danger** H302-H315-H317-H319-H340-H350-H361f-H372

### Rotiphorese® Gel 30 (37,5:1)

**ready-to-use, gas stabilised, aqueous 30 % acrylamide and bisacrylamide stock solution at a ratio of 37,5:1**

For preparation of protein gels in electrophoresis.

| | | | |
|---|---|---|---|
| **3029.3** | 250 ml | glass | 24,20 € |
| **3029.2** | 500 ml | glass | 37,55 € |
| **3029.1** | 1 l | glass | 64,00 € |
| Original pack 6 x 1 l | | | 60,80/1 l |

For further information, please see page 1153

### Rotiphorese® NF-Acrylamide/ Bis-solution 30 % (29:1)

**ready-to-use, gas stabilised, aqueous 30 % acrylamide and bisacrylamide stock solution at a ratio of 29:1, fluorescence free**

Made from 4x cristallised acrylamide. Tested for automatic sequencers.

| | | | |
|---|---|---|---|
| **A124.1** | 250 ml | glass | 46,15 € |
| **A124.2** | 1 l | glass | 141,40 € |
| Original pack 6 x 1 l | | | 134,33/1 l |

For further information, please see page 1154

## Rotiphorese® Gel solution 40 %

D 1,03

Storage temp.: +8 °C

WGK 3

**Danger** H302+H332-H315-H317-H319-H340-H350-H361f-H372

### Rotiphorese® Gel 40 (19:1)

**ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 19:1**

Ideal for the preparation of sequencing gels and other DNA gels used for separating small DNA fragments.

| | | | |
|---|---|---|---|
| **3030.2** | 250 ml | glass | 30,65 € |
| **3030.1** | 1 l | glass | 74,10 € |
| Original pack 6 x 1 l | | | 70,40/1 l |

For further information, please see page 1153

### Rotiphorese® Gel 40 (29:1)

**ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 29:1**

For preparation of protein- or DNA gels. Particularly ideal for the analysis of protein/DNA interactions, or peptides.

| | | | |
|---|---|---|---|
| **A515.2** | 250 ml | glass | 32,80 € |
| **A515.1** | 1 l | glass | 79,45 € |
| Original pack 6 x 1 l | | | 75,48/1 l |

For further information, please see page 1153

### Rotiphorese® Gel 40 (37,5:1)

**ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 37,5:1**

For preparation of protein gels.

| | | | |
|---|---|---|---|
| **T802.2** | 250 ml | glass | 29,60 € |
| **T802.1** | 1 l | glass | 70,85 € |
| Original pack 6 x 1 l | | | 67,31/1 l |

For further information, please see page 1153

### Rotiphorese® NF-Acrylamide/ Bis-solution 40 % (19:1)

**ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 19:1, fluorescence free**

Made from 4x cristallised acrylamide. Tested for automatic sequencers.

| | | | |
|---|---|---|---|
| **A516.1** | 250 ml | glass | 47,85 € |

For further information, please see page 1154

### Rotiphorese® NF-Acrylamide/ Bis-solution 40 % (29:1)

**ready-to-use, gas stabilised, aqueous 40 % acrylamide and bisacrylamide stock solution at a ratio of 29:1, fluorescence free**

Made from 4x cristallised acrylamide. Tested for automatic sequencers.

| | | | |
|---|---|---|---|
| **A121.1** | 250 ml | glass | 38,60 € |

For further information, please see page 1154

## Rotiphorese® Gel A

### Rotiphorese® Gel A

**30 % acrylamide solution**

D 1,023

Storage temp.: +8 °C

WGK 3

**Danger** H302-H315-H319-H317-H340-H350-H361f-H372

| | | | |
|---|---|---|---|
| **3037.2** | 250 ml | glass | 21,00 € |
| **3037.1** | 1 l | glass | 51,50 € |
| Original pack 6 x 1 l | | | 48,93/1 l |

For further information, please see page 1154

## Rotiphorese® Gel A

### Rotiphorese® Gel A-40

**40 % acrylamide solution**

D 1,031

Storage temp.: +8 °C

WGK 3

**Danger** H302+H332-H315-H319-H317-H340-H350-H361f-H372

| | | | |
|---|---|---|---|
| **7748.1** | 250 ml | glass | 27,85 € |
| **7748.2** | 1 l | glass | 66,15 € |
| Original pack 6 x 1 l | | | 62,84/1 l |

For further information, please see page 1154

## Rotiphorese® Gel B

### Rotiphorese® Gel B

**2 % bisacrylamide solution**

D 1,001

Storage temp.: +8 °C

| | | | |
|---|---|---|---|
| **3039.2** | 250 ml | glass | 19,60 € |
| **3039.1** | 1 l | glass | 45,70 € |
| Original pack 6 x 1 l | | | 43,42/1 l |

For further information, please see page 1154

## Rotiphorese® NF 10 x TBE Buffer

### Rotiphorese® NF 10 x TBE Buffer

Ready-to-use 10x TBE-buffer for preparing sequencing gels, also tested and optimised as running buffer in electrophoresis for automatic sequencers, fluorescence-free.

D 1,061

Storage temp.: +20 °C

WGK 1

**Warning** H315-H319

| | | | |
|---|---|---|---|
| **A118.1** | 2,5 l | glass | 96,65 € |
| Original pack 4 x 2,5 l | | | 91,82/2,5 l |

For further information, please see page 1166

## Rotiphorese® NF-Urea

### Rotiphorese® NF-Urea

**tested for automatic sequencers, fluorescence free**

$CH_4N_2O$

M 60,06 g/mol

mp 132-134 °C

Storage temp.: +4 °C

[57-13-6]

WGK 1

| | | | |
|---|---|---|---|
| **A120.1** | 1 kg | plastic | 63,35 € |
| Original pack 6 x 1 kg | | | 60,18/1 kg |

For further information, please see page 1156

## Rotiphorese®-PAGE Matrix Buffer plus

### Rotiphorese®-PAGE Matrix Buffer plus

**4x concentrated SDS-PAGE matrix buffer, for electrophoresis**

Ready-made buffer solution for pouring of optimized SDS-PAGE gels.

One bottle of 250 ml is sufficient for pouring of approx. 100 mini gels.

SDS-Page buffer, Gel matrix buffer

Storage temp.: +4 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

pH value. ..... 6,9-7,1
Stability test. ..... complies

| | | | |
|---|---|---|---|
| **8996.1** | 250 ml | plastic | 110,65 € |

For further information, please see page 1157

## Rotiphorese® 10x SDS-PAGE

### Rotiphorese® 10x SDS-PAGE

10x concentrated SDS-PAGE running buffer, for electrophoresis.

Tris-glycine-SDS buffer

D 1,06

WGK 1

**Composition:**

0,25 M TRIS; 1,92 M Glycine
1 % (g/v) SDS; distilled, deionized water

| | | | |
|---|---|---|---|
| **3060.3** | 2,5 l | glass | 66,55 € |
| Original pack 4 x 2,5 l | | | 63,22/2,5 l |
| **3060.2** | 5 l | plastic | 94,50 € |
| Original pack 2 x 5 l | | | 89,78/5 l |
| **3060.1** | 1 l | glass | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |

For further information, please see page 1166

## Rotiphorese® DNA sequencing system

### Rotiphorese® DNA sequencing system

Set of ready-to-use solutions for preparation of DNA sequencing gels.

Storage temp.: +4-15 °C

UN No. 3426 • ADR 6.1 III • WGK 3

**Danger** H340-H350-H372-H361f-H302-H315-H319-H317

| | | | |
|---|---|---|---|
| **A431.1** | 1 kit | glass | 104,85 € |

For further information, please see page 1155

## Rotiphorese® Sequencing gel concentrate

### Rotiphorese® Sequencing gel concentrate

Ready-to-use solution (19:1) for the preparation of gels containing 0-20 % monomer, for electrophoresis.

Also part of the DNA sequencing system (Art. No. A431.1).

D 1,140 • bp 100 °C

Storage temp.: +4-15 °C

WGK 3

**Danger** H302-H315-H319-H317-H340-H350-H361f-H372

**Formulation:**

Acrylamide. ..... 237,5 g
Methylenebisacrylamide ..... 12,5 g
Urea. ..... 500 g
per 1 l

| | | | |
|---|---|---|---|
| **3043.2** | 100 ml | glass | 13,15 € |
| **3043.1** | 1 l | glass | 57,95 € |
| Original pack 6 x 1 l | | | 55,05/1 l |

For further information, please see page 1155

## Rotiphorese® Sequencing gel diluent

### Rotiphorese® Sequencing gel diluent

50 % (g/v; 8,3 M) solution of urea in water for diluting Rotiphorese® Sequencing gel concentrate.

Also part of the DNA sequencing system (Art. No. A431.1).

D 1,120

Storage temp.: +4-15 °C

WGK 1

| | | | |
|---|---|---|---|
| **3047.1** | 1 l | glass | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |

For further information, please see page 1155

## Rotiphorese® Sequencing gel buffer concentrate

### Rotiphorese® Sequencing gel buffer concentrate

50 % (g/v; 8,3 M) solution of urea in 10x TBE (1 M Tris-borate, 20 mM EDTA buffer, pH 8,3), for electrophoresis.

Also part of the DNA sequencing system (Art. No. A431.1).

D 1,185

Storage temp.: +4-15 °C

WGK 1

**Warning** H315-H319

| | | | |
|---|---|---|---|
| **3050.1** | 250 ml | glass | 24,20 € |

For further information, please see page 1155

## Rotiphorese® 10x TAE Buffer

Storage temp.: +20 °C

WGK 1

### Rotiphorese® 10x TAE Buffer

Buffer concentrate for DNA electrophoresis.

**Composition:**

0,4 M TRIS-acetate
0,01 M EDTA
distilled, deionized water

| | | | |
|---|---|---|---|
| **T845.1** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |
| **T845.2** | 5 l | plastic | 68,70 € |
| Original pack 2 x 5 l | | | 65,27/5 l |

For further information, please see page 1166

### Rotiphorese® 10x TAE Buffer *light*

**with reduced EDTA concentration**

Buffer concentrate for DNA electrophoresis, ideal for DNA elution gels or in-gel-applications.

| | | | |
|---|---|---|---|
| **0122.1** | 1 l | glass | 25,70 € |
| Original pack 6 x 1 l | | | 24,42/1 l |

For further information, please see page 1166

## Rotiphorese® 50x TAE Buffer

### Rotiphorese® 50x TAE Buffer

Buffer concentrate for DNA electrophoresis.

Storage temp.: +20 °C

WGK 1

**Warning** H315-H319-H335

| | | | |
|---|---|---|---|
| **CL86.1** | 1 l | glass | 57,55 € |
| Original pack 6 x 1 l | | | 54,67/1 l |
| **CL86.3** | 2,5 l | glass | 110,65 € |
| Original pack 4 x 2,5 l | | | 105,12/2,5 l |
| **CL86.2** | 5 l | plastic | 169,35 € |
| Original pack 2 x 5 l | | | 160,88/5 l |

For further information, please see page 1166

## Rotiphorese® 10x TBE Buffer

### Rotiphorese® 10x TBE Buffer

**10-times concentrated buffer**

Ideal for preparation of sequencing gels and as running buffer in electrophoresis.

D 1,067

Storage temp.: +20 °C

WGK 1

**Danger** H315-H319-H360FD

**Composition:**

1,0 M TRIS-borate (pH 8,3), 20 mM EDTA
distilled, deionized water

| | | | |
|---|---|---|---|
| **3061.1** | 1 l | glass | 27,45 € |
| Original pack 6 x 1 l | | | 26,08/1 l |
| **3061.3** | 2,5 l | glass | 55,40 € |
| Original pack 4 x 2,5 l | | | 52,63/2,5 l |
| **3061.2** | 5 l | plastic | 85,90 € |
| Original pack 2 x 5 l | | | 81,61/5 l |

For further information, please see page 1166

## Roti®-PinkDNA

### Roti®-PinkDNA

**for molecular biology**

Synthetic co-precipitant with dye for efficient precipitation of nucleic acids.

Storage temp.: +4 °C

WGK 1

**Guarantee analysis:**

Linear Polyacrylamide. ..... 5 mg/ml
DNA/RNA. ..... free
Dye. ..... complies

| | | | |
|---|---|---|---|
| **HP54.1** | 0,5 ml | plastic | 40,75 € |
| **HP54.2** | 1,5 ml | plastic | 115,60 € |
| **HP54.3** | 3 ml | plastic | 206,95 € |

For further information, please see page 1241

## Roti®-Plast

### Roti®-Plast

**100 % paraffin, for histology**

**Melting range: 54-56 °C**

D 0,8 • bp 371 °C

flp >199 °C

[8002-74-2] • EC No. 232-315-6

**Type analysis:**

Appearance. ..... white pastilles
Solidification point..... 54-56 °C

| | | | |
|---|---|---|---|
| **6642.1** | 1 kg | plastic | 17,10 € |
| Original pack 6 x 1 kg | | | 16,25/1 kg |
| **6642.5** | 2,5 kg | plastic | 31,10 € |
| **6642.2** | 10 kg | plastic | 105,90 € |
| **6642.6** | 20 kg | plastic | 175,80 € |

For further information, please see page 1449

## Roti®-Plast with DMSO

### Roti®-Plast with DMSO

**paraffin, for histology**

**Melting range: 56-58 °C**

D 0,9

flp >100 °C

**Type analysis:**

Appearance. ..... white droplets
Solidification point..... 56-58 °C

| | | | |
|---|---|---|---|
| **6643.1** | 1 kg | cardboard | 22,05 € |
| Original pack 6 x 1 kg | | | 20,95/1 kg |
| **6643.2** | 2 kg | plastic | 37,10 € |
| **6643.3** | 20 x 1 kg | cardboard | 327,90 € |

For further information, please see page 1449

## Roti-Plasticlean®

### Roti-Plasticlean®

**plastic cleaner with antistatic effect, pH 9**

D 0,98 • bp 82 °C

UN No. 1987 • ADR 3 III

**Warning** H226-H319

| | | | |
|---|---|---|---|
| **1953.1** | 500 ml | plastic | 20,35 € |

For further information, please see page 1121

## Roti®-Pol Hot-TaqUltra

### Roti®-Pol Hot-TaqUltra

NEW

**5 U/µl, DNA-free**

For hot start PCR amplifications, particularly of bacterial DNA.

Taq DNA polymerase, recombinant, hot start polymerase, antibody-blocked

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

Purity (enzyme). ..... ≥98 %
Enzyme activity. ..... 5 U/µl
Endonuclease activity..... none detected
Exonuclease activity..... none detected
Suitability for PCR (400 bp). ..... complies
Suitability for PCR (3 kb). ..... complies
Bacterial DNA (enzyme)..... none detected
Selective specificity in PCR. ..... complies
Hot start functionality. ..... complies
Stability (in storage buffer)..... complies
For research use only.
Not approved for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9350.1** | 200 U | plastic | 149,45 € |
| **9350.2** | 1000 U | plastic | 733,15 € |

For further information, please see page 1256

## Roti®-Pol Hot-TaqHY

### Roti®-Pol Hot-TaqHY

NEW

**5 U/µl**

For rapid high yield hot start PCR amplifications.

Taq DNA polymerase, recombinant, modified high yield hot start polymerase, antibody-blocked

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

Purity (enzyme). ..... ≥98 %
Enzyme activity. ..... 5 U/µl
Endonuclease activity..... none detected
Exonuclease activity..... none detected
Suitability for PCR (400 bp). ..... complies
Suitability for PCR (3 kb). ..... complies
Suitability for PCR (5 kb). ..... complies
Selective specificity in PCR. ..... complies
Hot start functionality. ..... complies
Stability (in storage buffer)..... complies
For research use only.
Not approved for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9346.1** | 200 U | plastic | 67,65 € |
| **9346.2** | 1000 U | plastic | 320,35 € |

For further information, please see page 1256

## Roti®-Pol Hot-TaqS

### Roti®-Pol Hot-TaqS

NEW

**5 U/µl**

For hot start PCR amplifications.

Taq DNA polymerase, recombinant, hot start polymerase, antibody-blocked

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

Purity (enzyme). ..... ≥98 %
Enzyme activity. ..... 5 U/µl
Endonuclease activity. ..... none detected
Exonuclease activity. ..... none detected
Suitability for PCR (400 bp)..... complies
Suitability for PCR (3 kb). ..... complies
Suitability for PCR (5 kb). ..... complies
Selective specificity in PCR..... complies
Hot start functionality. ..... complies
Stability (in storage buffer). ..... complies
For research use only.
Not approved for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9245.1** | 200 U | plastic | 60,20 € |
| **9245.2** | 1000 U | plastic | 287,05 € |

For further information, please see page 1256

## Roti®-Pol Hot-TaqS Mix (2x)

### Roti®-Pol Hot-TaqS Mix (2x)

NEW

**ready-to-use, 2x conc.**

Taq master mix for hot start PCR amplifications.

Optimized for reactions of 25 µl volume.

Master mix Taq DNA polymerase, recombinant, hot start master mix, antibody-blocked

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

Appearance. ..... colourless
Endonuclease activity. ..... none detected
Exonuclease activity. ..... none detected
Suitability for PCR (400 bp)..... complies
Suitability for PCR (3 kb). ..... complies
Suitability for PCR (5 kb). ..... complies
Selective specificity in PCR..... complies
For research use only.
Not approved for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9248.1** | 200 reactions | plastic | 64,50 € |
| **9248.2** | 1000 reactions | plastic | 301,00 € |

For further information, please see page 1256

Q/R

## Roti®-Pol Hot-TaqS Red-Mix (2x)

### Roti®-Pol Hot-TaqS Red-Mix (2x)

NEW

**ready-to-use, 2x conc.**

Taq master mix for hot start PCR amplifications followed by direct gel-loading.

Optimized for reactions of 25 µl volume.

Master mix Taq DNA polymerase, recombinant, hot start master mix, antibody-blocked, ready-to-load

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

Appearance. ..... red
Endonuclease activity. ..... none detected
Exonuclease activity. ..... none detected
Suitability for PCR (400 bp). ..... complies
Suitability for PCR (3 kb). ..... complies
Suitability for PCR (5 kb). ..... complies
Selective specificity in PCR. ..... complies
For research use only.
Not approved for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9256.1** | 200 reactions | plastic | 68,80 € |
| **9256.2** | 1000 reactions | plastic | 318,20 € |

For further information, please see page 1256

## Roti®-Pol ProofRead

### Roti®-Pol ProofRead

NEW

**5 U/µl**

For high fidelity PCR amplifications.

*Pfu*-Taq DNA polymerase, recombinant, high fidelity, proof reading polymerase

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

Purity (enzyme). ..... ≥98 %
Enzyme activity. ..... 5 U/µl
Endonuclease activity. ..... none detected
Exonuclease activity. ..... none detected
Suitability for PCR (400 bp). ..... complies
Suitability for PCR (3 kb). ..... complies
Selective specificity in PCR. ..... complies
Stability (in storage buffer). ..... complies
For research use only.
Not approved for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9344.1** | 200 U | plastic | 77,40 € |
| **9344.2** | 1000 U | plastic | 365,50 € |

For further information, please see page 1256

## Roti®-Pol TaqHY

### Roti®-Pol TaqHY

NEW

**5 U/µl**

For rapid high yield PCR amplifications.

Taq DNA polymerase, recombinant, modified high yield polymerase

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

Purity (enzyme). ..... ≥98 %
Enzyme activity. ..... 5 U/µl
Endonuclease activity. ..... none detected
Exonuclease activity. ..... none detected
Suitability for PCR (400 bp). ..... complies
Suitability for PCR (3 kb). ..... complies
Selective specificity in PCR. ..... complies
Stability (in storage buffer). ..... complies
For research use only.
Not approved for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9345.1** | 500 U | plastic | 66,55 € |
| **9345.2** | 2500 U | plastic | 318,20 € |

For further information, please see page 1256

## Roti®-Pol TaqS

### Roti®-Pol TaqS

NEW

**5 U/µl**

For all standard PCR amplifications.

Taq DNA polymerase, recombinant

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

Purity (enzyme). ..... ≥98 %
Enzyme activity. ..... 5 U/µl
Endonuclease activity. ..... none detected
Exonuclease activity. ..... none detected
Suitability for PCR (400 bp). ..... complies
Suitability for PCR (3 kb). ..... complies
Selective specificity in PCR. ..... complies
Stability (in storage buffer). ..... complies
For research use only.
Not approved for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9223.1** | 500 U | plastic | 60,10 € |
| **9223.2** | 2500 U | plastic | 284,90 € |

For further information, please see page 2230

## Roti®-Pol TaqS Mix (2x)

### Roti®-Pol TaqS Mix (2x)

NEW

**ready-to-use, 2x conc.**

Taq master mix for all standard PCR amplifications.

Optimized for reactions of 25 µl volume.

Master mix Taq DNA polymerase, recombinant

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

Appearance. ..... colourless
Endonuclease activity. ..... none detected
Exonuclease activity. ..... none detected
Suitability for PCR (400 bp). ..... complies
Suitability for PCR (3 kb). ..... complies
Selective specificity in PCR. ..... complies
For research use only. Not approved for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9239.1** | 200 reactions | plastic | 43,00 € |
| **9239.2** | 1000 reactions | plastic | 172,00 € |

For further information, please see page 1256

## Roti®-Pol TaqS Red-Mix (2x)

### Roti®-Pol TaqS Red-Mix (2x)

NEW

**ready-to-use, 2x conc.**

Taq master mix for standard PCR amplifications followed by direct gel-loading.

Optimized for reactions of 25 µl volume.

Master mix Taq DNA polymerase, recombinant, ready-to-load

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

Appearance. ..... red
Endonuclease activity. ..... none detected
Exonuclease activity. ..... none detected
Suitability for PCR (400 bp). ..... complies
Suitability for PCR (3 kb). ..... complies
Selective specificity in PCR. ..... complies
For research use only.
Not approved for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9241.1** | 200 reactions | plastic | 47,30 € |
| **9241.2** | 1000 reactions | plastic | 186,00 € |

For further information, please see page 1256

## Roti®-Pol TaqUltra

### Roti®-Pol TaqUltra

NEW

**5 U/µl, DNA-free**

For PCR amplifications, particularly of bacterial DNA.

Taq DNA polymerase, recombinant

Storage temp.: -20 °C •

Transport temp.: cooled

WGK 1

**Type analysis:**

Purity (enzyme). ..... ≥98 %
Enzyme activity. ..... 5 U/µl
Endonuclease activity. ..... none detected
Exonuclease activity. ..... none detected
Suitability for PCR (400 bp). ..... complies
Suitability for PCR (3 kb). ..... complies
Bacterial DNA (enzyme). ..... none detected
Selective specificity in PCR. ..... complies
Stability (in storage buffer). ..... complies
For research use only. Not approved for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **9347.1** | 200 U | plastic | 143,00 € |
| **9347.2** | 1000 U | plastic | 698,75 € |

For further information, please see page 1256

## Roti®-PreMix PBS

### Roti®-PreMix PBS

NEW

**for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 9.55 g/l in highly pure water.

PBS powder, Phosphate buffered saline

WGK 1

**Formulation:**

Prepared 1x PBS solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, pH-value 7,4 ±0,2, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **0890.1** | 250 g | plastic | 74,20 € |
| **0890.2** | 1,25 kg | plastic | 204,25 € |

For further information, please see page 1320

## Roti®-PreMix PBST

### Roti®-PreMix PBST

NEW

**for biochemistry and molecular biology**

General solution for assays in molecular biology and biochemistry.

1x PBS solution is prepared by dissolution of 10.05 g/l in highly pure water.

WGK 1

**Formulation:**

Prepared 1x PBST solution contains: 0,14 M NaCl, 2,7 mM KCl, 10 mM phosphate, 0,05 % Tween® 20, pH-value 7,4 ±0,2, when prepared in deionized or distilled water.

| | | | |
|---|---|---|---|
| **0987.1** | 250 g | plastic | 74,20 € |
| **0987.2** | 1,25 kg | plastic | 204,25 € |

For further information, please see page 1320

## Roti®-Prep Blood Genomic DNA MINI

### Roti®-Prep Blood Genomic DNA MINI

**for molecular biology**

For isolation of DNA from whole blood

Storage temp.: +20 °C

UN No. 3316 • ADR 9 II • WGK 2

**Danger** H225-H317-H319-H315-H334-H335-H336-H400

| | | |
|---|---|---|
| **8620.1** | 10 prep. | 34,30 € |
| **8620.2** | 50 prep. | 130,65 € |
| **8620.3** | 250 prep. | 514,95 € |

For further information, please see page 1230

## Roti®-Prep Gel Extraction

### Roti®-Prep Gel Extraction

**for molecular biology**

For DNA extraction from agarose gels.

Storage temp.: +20 °C

UN No. 3316 • ADR 9 III • WGK 2

**Warning** H290-H302+H312+H332-H315-H319-H412-EUH032

| | | |
|---|---|---|
| **8510.1** | 10 prep. | 20,35 € |
| **8510.2** | 50 prep. | 75,15 € |
| **8510.3** | 250 prep. | 292,95 € |

For further information, please see page 1233

## Roti®-Prep Genomic DNA MINI

### Roti®-Prep Genomic DNA MINI

**for molecular biology**

For isolation of genomic DNA from tissues, rodent tails, FFPE tissues, buccal swabs, cell cultures.

Storage temp.: +20 °C

UN No. 3316 • ADR 9 II • WGK 2

**Danger** H225-H315-H317-H318-H334-H335-H336-H411

| | | |
|---|---|---|
| **8472.1** | 10 prep. | 38,60 € |
| **8472.2** | 50 prep. | 145,15 € |
| **8472.3** | 250 prep. | 568,70 € |

For further information, please see page 1230

## Roti®-Prep PCR Purification

### Roti®-Prep PCR Purification

**for molecular biology**

For concentration and purification of PCR products.

Storage temp.: +20 °C

UN No. 3316 • ADR 9 II • WGK 1

**Danger** H225-H319-H336

| | | |
|---|---|---|
| **8503.1** | 10 prep. | 20,35 € |
| **8503.2** | 50 prep. | 75,15 € |
| **8503.3** | 250 prep. | 292,95 € |

For further information, please see page 1233

## Roti®-Prep Plasmid MINI

### Roti®-Prep Plasmid MINI

**for molecular biology**

For fast and easy isolation of plasmid and cosmid DNA from recombinant bacteria.

Storage temp.: +20 °C

UN No. 1760 • ADR 8 II • WGK 1

**Danger** H290-H302-H314

| | | |
|---|---|---|
| **HP29.4** | 10 prep. | 30,00 € |
| **HP29.1** | 50 prep. | 69,80 € |
| **HP29.2** | 250 prep. | 267,70 € |

For further information, please see page 1229

## Roti®-Prep Plasmid MINI-XL

### Roti®-Prep Plasmid MINI-XL

**for molecular biology**

For easy isolation of plasmids from up to 15 ml bacterial culture.

Storage temp.: +20 °C

UN No. 3316 • ADR 9 II • WGK 1

**Danger** H225-H290-H302-H315-H318-H336

| | | |
|---|---|---|
| **8546.1** | 10 prep. | 25,30 € |
| **8546.2** | 50 prep. | 90,85 € |
| **8546.3** | 250 prep. | 342,95 € |

For further information, please see page 1229

## Roti®-Prep RNA MINI

### Roti®-Prep RNA MINI

**for molecular biology**

For RNA isolation from eukaryotic cells, tissues, bacteria, biopsies.

Storage temp.: +20 °C

WGK 1

**Warning** H302+H312-H412-EUH032

| | | |
|---|---|---|
| **8485.1** | 10 prep. | 55,80 € |
| **8485.2** | 50 prep. | 213,95 € |
| **8485.3** | 250 prep. | 843,90 € |

For further information, please see page 1231

## Roti®-Prep Viral RNA/DNA MINI

### Roti®-Prep Viral RNA/DNA MINI

**for molecular biology**

For isolation of viral DNA and RNA

Storage temp.: +20 °C

UN No. 3316 • ADR 9 II • WGK 2

**Danger** H225-H315-H317-H319-H334-H335-H336-H411-EUH032

| | | |
|---|---|---|
| **8547.1** | 50 prep. | 213,95 € |

For further information, please see page 1232

## Roti®-Quant

### Roti®-Quant

**5x conc.**

For protein quantitation acc. to Bradford.

D 1,37

Storage temp.: +4 °C

UN No. 2920 • ADR 8 (3) II • WGK 1

**Danger** H226-H290-H314

| | | | |
|---|---|---|---|
| **K015.2** | 50 ml | plastic | 14,55 € |
| **K015.3** | 200 ml | plastic | 46,80 € |
| **K015.1** | 500 ml | plastic | 93,00 € |

For further information, please see page 1312

## Roti®-Quant universal

### Roti®-Quant universal

For protein quantitation (PCA enhanced Biuret reaction). High tolerance against detergents, salts and alcohols.

D 1,37

Storage temp.: +20 °C

UN No. 3082 • ADR 9 III • WGK 2

**Danger** H315-H318-H411

| | | |
|---|---|---|
| **0120.2** | 1 kit (200 assays) | 86,55 € |
| **0120.1** | 1 kit (500 assays) | 181,70 € |

For further information, please see page 1314

## Roti®-Quick kit

### Roti®-Quick kit

**for molecular biology**

For RNA-isolation from cells and tissues.

The Roti®-Quick Kit is sufficient for 20 isolations from 0,2 g tissue each.

Storage temp.: +4 °C

UN No. 1992 • ADR 3 (6.1) II • WGK 3

 **Danger** H225-H314-H301+ H311-H330-H341-H351-H373-H336-H412-EUH032

| | | | |
|---|---|---|---|
| **A979.1** | 1 kit | cardboard | 87,65 € |

For further information, please see page 1232

## ROTI®REMETIC Rare Earth Metal Inorganic Compounds

| Art. No. | Description | Page |
|---|---|---|
| 7084 | Cerium(III) acetate hydrate | 1821 |
| 7049 | Cerium(III) nitrate hexahydrate | 1822 |
| 7067 | Cerium(III) oxalate hydrate | 1822 |
| 7042 | Cerium(IV) oxide | 1822 |
| 7145 | Dysprosium(III) oxide | 1897 |
| 7160 | Erbium(III) oxide | 1907 |
| 7127 | Europium(III) oxide | 1923 |
| 7187 | Europium(III) oxide | 1923 |
| 7189 | Gadolinium(III) oxide | 1945 |
| 7136 | Gadolinium(III) oxide | 1945 |
| 7031 | Lanthanum(III) acetate hydrate | 2028 |
| 7026 | Lanthanum(III) carbonate hydrate | 2028 |
| 7184 | Lanthanum(III) chloride hydrate | 2028 |
| 7028 | Lanthanum(III) fluoride | 2028 |
| 7019 | Lanthanum(III) nitrate hexahydrate | 2029 |
| 7180 | Lanthanum(III) nitrate hexahydrate | 2029 |
| 7191 | Lanthanum(III) oxalate | 2029 |
| 7410 | Lanthanum(III) oxide | 2029 |
| 7203 | Lanthanum(III) phosphate hydrate | 2029 |
| 7265 | Lutetium(III) nitrate hydrate | 2044 |
| 7177 | Lutetium(III) oxide | 2045 |
| 7107 | Neodymium(III) acetate hydrate | 2091 |
| 7103 | Neodymium(III) carbonate hydrate | 2091 |
| 7097 | Neodymium(III) nitrate hexahydrate | 2091 |
| 7092 | Neodymium(III) oxide | 2091 |
| 7090 | Praseodymium(III) carbonate octahydrate | 2176 |
| 7087 | Praseodymium(III,IV) oxide | 2177 |
| 7120 | Samarium(III) carbonate hydrate | 2241 |
| 7108 | Samarium(III) oxide | 2241 |
| 7186 | Samarium(III) oxide | 2241 |
| 7011 | Scandium(III) oxide | 2242 |
| 7282 | Thulium(III) nitrate pentahydrate | 2341 |
| 7353 | Ytterbium(III) oxide | 2385 |
| 7284 | Yttrium(III) carbonate hydrate | 2385 |
| 7352 | Yttrium(III) oxide | 2385 |

## Roti®-Seal

### Roti®-Seal

**for microscopy**

Aqueous cover slip sealant.

Melt on a water bath (50-55 °C) prior to use.

D 1,05

mp 45 °C

WGK 1

**Type analysis:**

Appearance..... yellowish, clear, solid medium
Refractive index (20 °C). ..... 1,366-1,367
Density. ..... 1,045-1,055
Melting point..... 40-45 °C

| | | | |
|---|---|---|---|
| **6473.1** | 20 ml | glass | 11,75 € |

For further information, please see page 1478

## Roti®-Sep 1077

### Roti®-Sep 1077

**CELLPURE® for density gradient centrifugation**

Polysucrose based medium for separation of lymphocytes from whole blood.

Polysucrose solution, lymphocyte separation medium

M ~400000 g/mol

D 1,077

Storage temp.: +4 °C

WGK 1

**Danger** H317-H334

**Type analysis:**

Appearance of solution.....clear, colourless
Density. .....1,077 ± 0,001 g/ml
pH value. ..... 7,15±0,35
Osmolality. ..... 315 ±25 mOsm/kg
Sterility. ..... complies
Endotoxins. .....<0,1 E.U./ml
Suitability for cell cultur..... complies

| | | | |
|---|---|---|---|
| **0642.1** | 100 ml | plastic | 42,50 € |
| **0642.2** | 500 ml | plastic | 115,60 € |

For further information, please see page 1335

## Rotisol®

### Rotisol®

**≥99 %**

Universal alcoholic solvent

D ~0,79 • bp 56-80 °C

flp 12 °C

UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225-H319-EUH066

**Type analysis:**

Appearance..... clear, colourless liquid
Assay (EtOH). ..... ≥99 %
Methyl ethyl ketone (MEK). ..... ~1 %
Acetone..... ~5 %
Methanol. ..... ≤0,1 %
Aldehyde content (as acetaldehyde ). ..... ≤0,003 %
Sum of other impurities..... ≤0,03 %
Acid content (as $CH_3COOH$)..... ≤0,001 %
Evaporation residue. ..... ≤0,003 %

| | | | |
|---|---|---|---|
| **7917.3** | 1 l | glass | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **7917.1** | 2,5 l | glass | 34,10 € |
| Original pack 4 x 2,5 l | | | 32,40/2,5 l |
| **7917.2** | 25 l | tinplate | 189,10 € |

For further information, please see page 1121

## ROTISOLV® GC Ultra Grade

| Art. No. | Description | Page |
|---|---|---|
| KK42 | Acetic acid ethyl ester | 1695 |
| KK40 | Acetone | 1697 |
| KK41 | Cyclohexane | 1851 |
| KK47 | Dichloromethane | 1869 |
| KK48 | n-Hexane | 1978 |
| KK44 | Methanol | 2068 |
| KK45 | n-Pentane | 2135 |
| KK46 | Toluene | 2347 |

## ROTISOLV® Headspace Grade

| Art. No. | Description | Page |
|---|---|---|
| HN45 | N,N-Dimethylacetamide (DMA) | 1880 |
| HN46 | N,N-Dimethylformamide (DMF) | 1882 |
| HN48 | 1,3-Dimethyl-2-imidazolidinone (DMI) | 1883 |
| HN47 | Dimethyl sulphoxide (DMSO) | 1884 |

## ROTISOLV® HPLC Grade

| Art. No. | Description | Page |
|---|---|---|
| 7336 | Acetic acid ethyl ester | 1694 |
| 7328 | Acetone | 1697 |
| T195 | Acetonitrile | 1699 |
| 8825 | Acetonitrile | 1699 |
| HN44 | Acetonitrile | 1699 |
| 7330 | Acetonitrile | 1699 |
| CN20 | Acetonitrile | 1699 |
| 6827 | Acetonitrile | 1699 |
| T178 | 1-Butanol | 1794 |
| T175 | tert-Butyl methyl ether | 1797 |
| 7333 | Cyclohexane | 1851 |
| 7334 | Dichloromethane | 1869 |
| 0702 | N,N-Dimethylformamide (DMF) | 1882 |
| 0728 | Dimethyl sulphoxide (DMSO) | 1884 |
| X949 | 1,4-Dioxane | 1886 |
| P076 | Ethanol | 1910 |
| 6828 | n-Heptane | 1973 |
| 7337 | n-Heptane | 1973 |
| 7339 | n-Hexane | 1978 |
| T176 | Isohexane | 2014 |
| 7340 | Isooctane | 2015 |
| X948 | Methanol | 2068 |
| 7342 | Methanol | 2068 |
| KK39 | Methanol | 2068 |
| P717 | Methanol | 2068 |
| CN99 | n-Pentane | 2135 |
| 0731 | Petroleum ether 40-60 °C | 2143 |
| T177 | 1-Propanol | 2179 |
| 7343 | 2-Propanol | 2180 |
| 7344 | Tetrahydrofuran | 2336 |
| 7346 | Toluene | 2347 |
| 7331 | Trichloromethane/Chloroform | 2351 |
| A511 | Water | 2375 |

## ROTISOLV® LC-MS Eluent Mixtures

| Art. No. | Description | Page |
|---|---|---|
| CP00 | Acetonitrile with 0,1 % formic acid | 1700 |
| CP01 | Acetonitrile with 0,1 % Acetic acid | 1700 |
| CP02 | Acetonitrile with 0,1 % trifluoroacetic acid | 1700 |
| CP06 | Methanol with 0,1 % trifluoroacetic acid | 2070 |
| CP03 | Water with 0,1 % formic acid | 2376 |
| CP05 | Water with 0,1 % trifluoroacetic acid | 2376 |

## ROTISOLV® LC-MS Grade

| Art. No. | Description | Page |
|---|---|---|
| AE69 | Acetic acid ethyl ester | 1694 |
| AE70 | Acetonitrile | 1698 |
| AE71 | Methanol | 2067 |
| AE73 | 2-Propanol | 2179 |
| AE72 | Water | 2375 |

## ROTISOLV® Pestilyse®

| Art. No. | Description | Page |
|---|---|---|
| T164 | Acetic acid ethyl ester | 1695 |
| T161 | Acetone | 1697 |
| T168 | Acetonitrile | 1699 |
| T163 | Cyclohexane | 1851 |
| T162 | Dichloromethane | 1869 |
| T900 | Diethyl ether | 1873 |
| X878 | n-Heptane | 1973 |
| T861 | n-Hexane | 1978 |
| T165 | n-Hexane | 1978 |
| T904 | Isohexane | 2014 |
| T167 | Isooctane | 2015 |
| T169 | Methanol | 2068 |
| T903 | n-Pentane | 2135 |
| T170 | Petroleum ether 40-60 °C | 2143 |
| T902 | 2-Propanol | 2180 |
| T166 | Toluene | 2347 |
| T901 | Trichloromethane/Chloroform | 2351 |
| T905 | Water | 2375 |

## ROTISOLV® Pestilyse® plus

| Art. No. | Description | Page |
|---|---|---|
| 7565 | Acetic acid ethyl ester | 1695 |
| 7535 | Acetone | 1697 |
| 7542 | Cyclohexane | 1851 |
| 7562 | Dichloromethane | 1869 |
| 7566 | n-Heptane | 1973 |
| 7573 | n-Hexane | 1978 |
| 7567 | n-Hexane | 1978 |
| 7576 | Isohexane | 2014 |
| 7580 | Isooctane | 2015 |
| 7583 | Methanol | 2068 |
| 7587 | n-Pentane | 2135 |
| 7588 | Petroleum ether 40-60 °C | 2143 |
| 7590 | 2-Propanol | 2180 |
| 7591 | Toluene | 2347 |
| 7554 | Trichloromethane/Chloroform | 2351 |

## ROTISOLV® Ultra LC-MS

| Art. No. | Description | Page |
|---|---|---|
| HN40 | Acetonitrile | 1698 |
| HN41 | Methanol | 2067 |
| 0733 | 2-Propanol | 2179 |
| 0739 | Tetrahydrofuran | 2336 |
| HN43 | Water | 2375 |

## ROTISOLV® UV/IR Grade

| Art. No. | Description | Page |
|---|---|---|
| 4442 | Acetic acid ethyl ester | 1695 |
| T906 | Acetone | 1697 |
| T907 | Acetonitrile | 1699 |
| CP81 | Cyclohexane | 1851 |
| 4433 | Dichloromethane | 1869 |
| CP79 | N,N-Dimethylformamide (DMF) | 1882 |
| CP78 | n-Heptane | 1974 |
| T908 | n-Hexane | 1978 |
| CP80 | Isooctane | 2015 |
| T909 | Methanol | 2068 |
| 4443 | n-Pentane | 2135 |
| T910 | 2-Propanol | 2180 |
| CP83 | Tetrachloroethylene | 2335 |
| CP82 | Tetrahydrofuran | 2336 |
| 4445 | Toluene | 2347 |
| 4432 | Trichloromethane/Chloroform | 2351 |

## Roti®-Stock 10x PBS

### Roti®-Stock 10x PBS

**BioScience-Grade, ready-to-use, filtered and steam sterilised**

For protein biochemistry, cytology, and molecular biology.

PBS 10x ready-to-use solution

WGK 1

**Composition:**

1.37 M NaCl, 27 mM KCl, 100 mM $Na_2HPO_4$, 20 mM $KH_2PO_4$ in deionised water, pH-value 7.4, 0.2 µm filtered and steam sterilised

| | | | |
|---|---|---|---|
| **1058.1** | 1 l | glass | 115,60 € |
| Original pack 6 x 1 l | | | 109,82/1 l |

For further information, please see page 1314

## Roti®-Stock 10x PBST

### Roti®-Stock 10x PBST

**BioScience-Grade, ready-to-use, filtered and steam sterilised**

For protein biochemistry, cytology, and molecular biology.

PBST 10x ready-to-use solution

bp 100 °C

WGK 1

**Composition:**

1,37 M NaCl, 27 mM KCl, 100 mM $Na_2HPO_4$, 20 mM $KH_2PO_4$, 0,5 % Tween® 20 in deionised water, pH value 7,4, 0,2 µm filtered and steam sterilised

| | | | |
|---|---|---|---|
| **1059.1** | 1 l | glass | 120,95 € |
| Original pack 6 x 1 l | | | 114,90/1 l |

## Roti®-Stock 20 % SDS

### Roti®-Stock 20 % SDS

**BioScience-Grade, ready-to-use, 0,2 µm filtered**

For molecular biology and electrophoresis.

SDS 20 % ready-to-use solution

WGK 2

**Danger** H318-H315-H335

**Composition:**

20 % SDS in deionised water, 0,2 µm filtered

| | | | |
|---|---|---|---|
| **1057.1** | 1 l | glass | 138,70 € |
| Original pack 6 x 1 l | | | 131,77/1 l |

For further information, please see page 1272

## Roti®-Stock 20x SSC

### Roti®-Stock 20x SSC

**BioScience-Grade, ready-to-use, steam sterilised**

For molecular biology.

SSC 20x ready-to-use solution

WGK 1

**Composition:**

3 M NaCl, 300 mM sodium citrate in deionised water, pH-value 7.0, steam sterilised

| | | | |
|---|---|---|---|
| **1054.1** | 1 l | glass | 66,55 € |
| Original pack 6 x 1 l | | | 63,22/1 l |

For further information, please see page 1225

## Roti®-Stock 10x TBS

### Roti®-Stock 10x TBS

**BioScience-Grade, ready-to-use, filtered and steam sterilised**

For protein biochemistry, cytology, and molecular biology.

TBS 10x ready-to-use solution

WGK 1

**Composition:**

1.5 M NaCl, 30 mM KCl, 250 mM Tris in deionised water, pH value 7.4, 0.2 µm filtered and steam sterilised

| | | | |
|---|---|---|---|
| **1060.1** | 1 l | glass | 120,95 € |
| Original pack 6 x 1 l | | | 114,90/1 l |

## Roti®-Stock 10x TBST

### Roti®-Stock 10x TBST

**BioScience-Grade, ready-to-use, filtered and steam sterilised**

For protein biochemistry, cytology, and molecular biology.

TBST 10x ready-to-use solution

WGK 1

**Composition:**

1.5 M NaCl, 30 mM KCl, 250 mM Tris, 0.5 % Tween® 20 in deionised water, pH value 7.4, 0.2 µm filtered and steam sterilised

| | | | |
|---|---|---|---|
| **1061.1** | 1 l | glass | 120,95 € |
| Original pack 6 x 1 l | | | 114,90/1 l |

## Roti®-Stock 100x TE

### Roti®-Stock 100x TE

**BioScience-Grade, ready-to-use, steam sterilised**

For molecular biology.

TE 100x ready-to-use solution

WGK 1

**Warning** H315-H319

**Composition:**

1 M Tris (pH 8,0), 100 mM EDTA (pH 8,0) in deionised water, steam sterilised

| | | | |
|---|---|---|---|
| **1052.1** | 1 l | glass | 81,60 € |
| Original pack 6 x 1 l | | | 77,52/1 l |

For further information, please see page 1250

## Roti®-Store cryo vials

Storage temp.: +4 °C
WGK 1

### Roti®-Store cryo vials

Sterile. Suitable for freezing all types of microorganisms, including recombinant bacteria.

| | | |
|---|---|---|
| **P730.3** | 5 vials, with 25 glass globules each | 12,90 € |
| **P730.1** | 50 vials, with 25 glass globules each | 106,45 € |
| **P730.2** | 250 vials, with 25 glass globules each | 499,90 € |

For further information, please see page 1435

### Roti®-Store yeast cryo vials

Sterile. Ideal for freezing yeast and monocellular moulds.

| | | |
|---|---|---|
| **X983.1** | 50 cryo vials, with 25 glass globules each | 132,15 € |

For further information, please see page 1435

## Roti®-Strept/HRP-Kit

### Roti®-Strept/HRP-Kit

**for immunochemistry**

HRP-kit for highly sensitive detection of biotinylated molecules on slides.
One kit is sufficient for incubation of approx. 200 slides.
HRP detection kit with biotin and streptavidine
Storage temp.: +4 °C • Transport temp.: cooled
WGK 1
EUH208

**Type analysis:**

Application test (Blotting). ..... complies

| | | | |
|---|---|---|---|
| **9206.1** | 1 kit | cardboard | 321,45 € |

For further information, please see page 1318

## Rotiszint® eco plus

### Rotiszint® eco plus

**LSC-universal cocktail**

For hydrophilic and lipophilic samples.
D 0,96 • bp 290 °C
mp -47 °C • flp 148 °C
UN No. 3082 • ADR 9 III • WGK 2

**Danger** H318-H315-H412-H302

| | | | |
|---|---|---|---|
| **0016.4** | 100 ml | glass | 18,20 € |
| **0016.3** | 5 l | plastic | 261,80 € |
| Original pack 2 x 5 l | | | 248,71/5 l |

For further information, please see page 1311

## Rotitest®-Annexin V

### Rotitest®-Annexin V

**Rotitest® Bio Analysis**

For detection and enumeration of apoptotic cells and simultaneous differentiation from necrosis.
1 set is sufficient for analysis of 50 samples of $10^5$ cells each
Annexin-FITC conjugate, Apoptosis detection Kit
Storage temp.: +4 °C
WGK 3

**Type analysis:**

Appearance (test solution). ..... colourless to yellowish
Appearance PI solution. ..... orange to red
Dye content. ..... complies
Appearance Binding Buffer. ..... colourless
pH value Binding Buffer. ..... 7,3-7,5

| | | |
|---|---|---|
| **7735.1** | 50 assays | 209,65 € |

For further information, please see page 1343

## Rotitest® Coliform

### Rotitest® Coliform

**Rotitest® Bio Analysis**

Detection system for exclusion, or affirmation, of contamination by coliforms.
Suitable for testing of any surface.
Storage temp.: +20 °C
WGK 1

**Type analysis:**

Appearance (nutrient medium). ..... red-brown
Sterility test. ..... complies
Growth of bacterial test strains. ..... complies

| | | |
|---|---|---|
| **4806.1** | 25 swabs | 126,35 € |

For further information, please see page 1355

## Rotitest® Listeria

### Rotitest® Listeria

**Rotitest® Bio Analysis**

Detection system for exclusion, or affirmation, of contamination by listeriae.
Suitable for testing of any surface.
Storage temp.: +20 °C
WGK 1

**Type analysis:**

Appearance (nutrient medium). ..... brown
Sterility test. ..... complies
Growth of bacterial test strains. ..... complies

| | | |
|---|---|---|
| **4805.1** | 25 swabs | 126,35 € |

For further information, please see page 1355

## Rotitest® Oxidase strips

### Rotitest® Oxidase strips

**Rotitest® Bio Analysis**

Rapid test system for detection of cytochrome oxidase in microorganisms.
Storage temp.: +4 °C

**Type analysis:**

Paper colour. ..... white
Labelling reaction area. ..... green
Colour shift to blue. ..... complies
Colour shift test germs. ..... complies

| | | | |
|---|---|---|---|
| **8469.1** | 100 pieces | tube | 35,40 € |

For further information, please see page 1411

## Rotitest® Phosphatase paper

### Rotitest® Phosphatase paper

**Rotitest® Bio Analysis**

For detection of phosphatase in Milk.
Storage temp.: +4 °C

**Type analysis:**

Paper colour. ..... white
Colour shift to yellow. ..... complies
Sensitivity. ..... complies

| | | |
|---|---|---|
| **8470.1** | 10 pieces | 20,35 € |

For further information, please see page 1358

## Rotitest® Protein

### Rotitest® Protein

**Rotitest® Bio Analysis**

Protein detection system for rapid control of surfaces after the cleaning process.
Suitable for testing of any surface.
Protein quick test
Storage temp.: +20 °C
UN No. 1170 • ADR 3, III • WGK 1

**Warning** H226

**Type analysis:**

Appearance (test solution). ..... yellow-orange
Turbidity. ..... transparent
Test (milk protein). ..... complies

| | | |
|---|---|---|
| **4803.1** | 20 swabs | 90,20 € |

## Rotitest® Vital

### Rotitest® Vital

**Rotitest® Bio Analysis**

Colorimetric test solution for evaluation of cell proliferation and -viability.
1 ml is sufficient for enumeration of 100 cell samples.
Non-cytotoxic cell proliferation test solution.
Storage temp.: +4 °C
WGK 2

**Type analysis:**

Appearance (test solution). ..... red
Turbidity. ..... transparent
Absorption. ..... complies

| | | | |
|---|---|---|---|
| **0069.3** | 1 ml | plastic | 60,75 € |
| **0069.1** | 5 ml | plastic | 170,95 € |
| **0069.2** | 4 x 5 ml | plastic | 521,40 € |

For further information, please see page 1339

## Rotitherm® H 250

### Rotitherm® H 250

Silicone oil for heating baths.
D 1,03
mp -55 °C
WGK 1

| | | | |
|---|---|---|---|
| **1670.1** | 1 l | plastic | 127,95 € |
| **1670.2** | 10 l | plastic | 1073,95 € |

For further information, please see page 1147

## Rotitherm® M 220

### Rotitherm® M 220

Silicone oil for heating baths. Brown.
D 0,97
WGK 1

| | | | |
|---|---|---|---|
| **0991.1** | 1 l | plastic | 44,00 € |

For further information, please see page 1147

## Rotitherm® M 150

### Rotitherm® M 150

Silicone oil for heating baths.
D 1,00
WGK 1

| | | | |
|---|---|---|---|
| **0990.1** | 1 l | plastic | 32,15 € |
| **0990.2** | 5 l | plastic | 139,25 € |
| Original pack 2 x 5 l | | | 132,29/5 l |

For further information, please see page 1147

## Rotitherm® K + H

### Rotitherm® K + H

Heat transfer fluid for cooling and heating baths. Due to the low pour point, Rotitherm® K+H can also be used as a coolant. Can be mixed with water in any ratio. No susceptibility to water hardness. Mixtures with 10-30 % proportion of water can be used up to -55 °C. Does not form build-up even when heated and can easily be removed using water.
Modified polyglycol ether
D 1,15 • bp 200 °C
flp >290 °C
WGK 1

**Type analysis:**

Density (23 °C). ..... 1,13-1,17 g/cm³
Viscosity (23 °C). ..... 220-280 mm²/s
Pour point. ..... <-39 °C
Flash point. ..... >290 °C
Autoignition temperature. ..... ~390 °C
Water. ..... <0,5 %

| | | | |
|---|---|---|---|
| **7143.1** | 1 l | plastic | 37,55 € |
| Original pack 6 x 1 l | | | 35,67/1 l |
| **7143.2** | 5 l | plastic | 137,10 € |
| Original pack 2 x 5 l | | | 130,25/5 l |

For further information, please see page 1147

## Roti®-Transform

### Roti®-Transform

Sterile. For preparation of competent *E. coli*.
Storage temp.: -20 °C •
Transport temp.: room temp.
WGK 1

| | | | |
|---|---|---|---|
| **P043.1** | 1 kit | | 61,20 € |

For further information, please see page 1436

## Roti®VOLUM volumetric solutions in ampoules

▶ Chapter Anorganic and Analytical Reagents see p. 1623

## ROTI®VOLUM Volumetric Solutions in Ampoules

| Art. No. | Description | Page |
|---|---|---|
| CN50 | Ammonium thiocyanate solution (0,1 N) | 1740 |
| CN52 | EDTA disodium salt solution (0,01 N) | 1900 |
| CN51 | EDTA disodium salt solution (0,1 N) | 1900 |
| CN61 | Hydrochloric acid (0,1 N) | 1988 |
| CN62 | Hydrochloric acid (0,5 N) | 1988 |
| CN63 | Hydrochloric acid (1 N) | 1988 |
| CN60 | Nitric acid (1 N) | 2098 |
| CN59 | Oxalic acid solution (0,1 N) | 2127 |
| CN53 | Potassium hydroxide solution (0,1 N) | 2170 |
| CN66 | Silver nitrate solution (0,1 N) | 2262 |
| CN67 | Sodium chloride solution (0,1 N) | 2270 |
| CN56 | Sodium hydroxide solution (0,1 N) | 2277 |
| CN57 | Sodium hydroxide solution (0,5 N) | 2278 |
| CN58 | Sodium hydroxide solution (1 N) | 2279 |
| CN55 | Sodium thiosulphate solution (0,1 N) | 2287 |
| CN64 | Sulphuric acid (0,1 N) | 2326 |
| CN65 | Sulphuric acid (1 N) | 2326 |

## Roti®ZOL RNA

### Roti®ZOL RNA

**for molecular biology**

Ready-made solution with green dye for isolation of total RNA
1 ml Roti®ZOL RNA is used for RNA isolation from 100 mg tissue or $10^7$ cells, respectively.
RNA isolation reagent
Storage temp.: +4 °C
UN No. 1760 • ADR 8 II • WGK 2

**Danger** H290-H302+H312+H332-H314-H341-H373-EUH032

**Type analysis:**

Colour. ..... green
pH value (25 °C). ..... 4,1-4,7

| | | | |
|---|---|---|---|
| **9319.1** | 100 ml | plastic | 224,70 € |
| **9319.2** | 200 ml | plastic | 392,40 € |

## RPF Supplement

### RPF Supplement

**lyophilised**

Media supplement for identification and enumeration of *Staphylococcus aureus.*
One box of 10 vials RPF Supplement is sufficient for 10x 100 ml Baird Parker Agar.
Rabbit Plasma Fibrinogen Supplement
Storage temp.: +4 °C
WGK 1

**Warning** H302+H312+H332

**Formulation:**

Rabbit plasma. ..... 2,5 ml
Bovine fibrinogen. ..... 380 mg
Trypsin inhibitor. ..... 2,5 mg
Potassium tellurite. ..... 2,5 mg
per vial

| | | | |
|---|---|---|---|
| **6064.1** | 10 vials | glass | 407,45 € |

For further information, please see page 1409

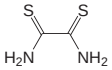
## RPMI cell culture medium

▶ Roti®-CELL RPMI-1640 see p. 2208

## R-5-P-Na$_2$

▶ D-Ribose-5-phosphate disodium salt see p. 2200

## Rubeanic acid spray solution



### Rubeanic acid spray solution

**for TLC**

Ready-to-use spray solution for detection of heavy metal ions.
0,2 g Rubeanic acid dissolved in 100 ml ethanol.
UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225

**Type analysis:**

TLC-application. ..... complies

| | | | |
|---|---|---|---|
| **CP32.1** | 100 ml | glass | 36,90 € |

## Rubidium Standards

▶ Rubidium ICP Standard Solution see p. 2300
▶ Rubidium ICP Standard Solution see p. 2304

## Rubidium chloride

RbCl
M 120,92 g/mol
D 2,76 • bp 1390 °C
mp 715 °C
Solubility: 910 g/l ($H_2O$, 20 °C)
[7791-11-9] • EC No. 232-240-9
WGK 1

### Rubidium chloride

**ROTI®METIC 99,98 % (3N8)**

**Type analysis:**

Assay (metals basis). ..... 99,98 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5679.1** | 5 g | plastic | 209,65 € |
| **5679.2** | 10 g | plastic | 349,40 € |

## Rubidium chloride

**≥99 %, p.a.**

**Guarantee analysis:**

Appearance. ..... white powder
Assay. ..... ≥99 %
Aluminium (Al). ..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,001 %
Cesium (Cs). ..... ≤0,05 %
Iron (Fe). ..... ≤0,005 %
Potassium (K). ..... ≤0,02 %
Sodium (Na). ..... ≤0,001 %
Magnesium (Mg). ..... ≤0,001 %
Lithium (Li). ..... ≤0,001 %
Silicon (Si). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4471.2** | 5 g | plastic | 36,05 € |
| **4471.1** | 10 g | plastic | 62,25 € |
| **4471.3** | 25 g | plastic | 131,70 € |
| **4471.4** | 50 g | plastic | 241,90 € |

## Rubidium nitrate

## Rubidium nitrate

**ROTI®METIC 99,99 % (4N)**

$RbNO_3$
M 147,47 g/mol
D 3,11
mp 310 °C (dec.)
Solubility: 650 g/l ($H_2O$, 20 °C)
[13126-12-0] • EC No. 236-06-1
UN No. 1477 • ADR 5.1 II • WGK 1

**Danger** H272-H315-H319-H335

**Type analysis:**

Assay (metals basis). ..... 99,99 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5293.1** | 5 g | plastic | 149,45 € |
| **5293.2** | 25 g | plastic | 643,95 € |

## Ruthenium Standards

▶ Ruthenium ICP Standard Solution see p. 2300
▶ Ruthenium ICP Standard Solution see p. 2304

## Ruthenium(III) chloride

Ruthenium trichloride
$RuCl_3$
M 207,43 g/mol
D 3,11
mp >500 °C
[10049-08-8] • EC No. 233-167-5
UN No. 3260 • ADR 8 II • WGK 2

**Danger** H314-H302-H412

## Ruthenium(III) chloride

**ROTI®METIC 99,9 % (3N), anhydrous**

**Type analysis:**

Assay (metals basis). ..... 99,9 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5686.1** | 1 g | plastic | 88,70 € |
| **5686.2** | 5 g | plastic | 385,95 € |

## Ruthenium(III) chloride

**pure, anhydrous**

**Type analysis:**

Assay (Ru). ..... ≥48 %

| | | | |
|---|---|---|---|
| **4659.1** | 1 g | glass | 53,65 € |

## Ruthenium(III) chloride hydrate

## Ruthenium(III) chloride hydrate

**pure**

Contains 10-15 % water.
$RuCl_3 \cdot x\ H_2O$
M 207,43 + x $H_2O$ g/mol
[14898-67-0] • EC No. 233-167-5
UN No. 3260 • ADR 8 II • WGK 2

**Danger** H314-H302

**Type analysis:**

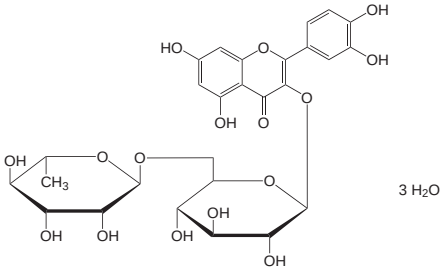
Assay (Ru). ..... 40,0-43,0 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,01 %
Sodium (Na). ..... ≤0,01 %
Palladium (Pd). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **7910.1** | 1 g | glass | 70,45 € |

## Ruthenium trichloride

▶ Ruthenium(III) chloride see p. 2236

## Rutin trihydrate




Rutoside, Quercetin-3-rutinoside, Sophorin
$C_{27}H_{30}O_{16} \cdot 3\ H_2O$
M 664,58 g/mol
mp ~210 °C
[250249-75-3] • EC No. 205-814-1
WGK 3

## Rutin trihydrate

**≥95 %, Ph.Eur.**

**Guarantee analysis:**

Appearance. ..... yellow to yellow green cryst. powder
Assay (titr. dry substance). ..... 95,0-101,0 %
Identity. ..... complies
Water (KF). ..... 7,5-9,5 %
Insoluble matter. ..... ≤3,0 %
Absorption (450-800 nm). ..... ≤0,1
Sulphated ash. ..... ≤0,1 %
Related substances. ..... complies

| | | | |
|---|---|---|---|
| **5154.1** | 25 g | plastic | 27,45 € |
| **5154.2** | 100 g | plastic | 83,75 € |

## Rutin trihydrate

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC). ..... ≥90,0 %
Residual solvents (GC). ..... ≤1,0 %
Water (KF). ..... ≤10,0 %
Assay (qNMR). ..... ≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE14.1** | 50 mg | glass | 510,65 € |

## Rutin trihydrate

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC). ..... ≥85,0 %
Identity. ..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC14.1** | 100 mg | glass | 116,00 € |

## Rutin trihydrate

**ROTICHROM® HPLC**

Reference substance for HPLC.

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7422.2** | 50 mg | glass | 181,70 € |

## Rutinosyl-7-iso-sakuranetin

▶ Didymin see p. 1871

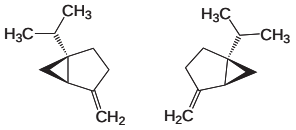
## Rutoside

▶ Rutin trihydrate see p. 2236

## RVS Broth

▶ Rappaport Vassiliadis Broth see p. 2192

## Sabinene




## Sabinene

**ROTICHROM® GC**

Reference substance for GC.
$C_{10}H_{16}$
M 136,23 g/mol
bp 163-165 °C
Storage temp.: +4 °C
[3387-41-5] • EC No. 222-212-4
UN No. 1993 • ADR 3 III • WGK 3

**Warning** H226

**Type analysis:**

Purity (GC). ..... ≥98,5 %

| | | | |
|---|---|---|---|
| **7188.2** | 100 mg | glass | 138,70 € |

## Sabouraud 2 % Glucose Agar

### Sabouraud 2 % Glucose Agar

**for microbiology**

Selective agar for taxonomic analysis of pathogenic fungi.

Application: Use 47 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

**Formulation:**

Meat and casein peptone. ..... 10 g/l
Glucose. ..... 20 g/l
Agar. ..... 17 g/l
pH value. ..... 5,6 ±0,2

| | | | |
|---|---|---|---|
| **AE22.1** | 500 g | plastic | 77,30 € |
| Original pack 6 x 500 g | | | 73,44/500 g |

For further information, please see page 1396

## Sabouraud 2 % Glucose Broth

### Sabouraud 2 % Glucose Broth

**Ph.Eur., for microbiology**

Selective media for taxonomic analysis of pathogenic fungi.

Application: Use 30 g for 1 l broth.

Sabouraud Dextrose Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

**Guarantee analysis:**

Meat and casein peptone. ..... 10 g/l
Glucose. ..... 20 g/l
pH value. ..... 5,6 ±0,2

| | | | |
|---|---|---|---|
| **AE23.1** | 500 g | plastic | 65,50 € |
| Original pack 6 x 500 g | | | 62,23/500 g |

For further information, please see page 1396

## Sabouraud 2 % Glucose Broth, granulated

### Sabouraud 2 % Glucose Broth, granulated

NEW

**granulated, Ph.Eur., for microbiology**

Selective media for taxonomic analysis of pathogenic fungi.

Application: Use 30 g for 1 l broth.

Sabouraud Dextrose Broth (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Meat and casein peptone. ..... 10 g/l
Glucose. ..... 20 g/l
pH value. ..... 5,7 ±0,2

| | | | |
|---|---|---|---|
| **1508.1** | 500 g | plastic | 82,80 € |
| Original pack 6 x 500 g | | | 78,66/500 g |

For further information, please see page 1405

## Sabouraud 4 % Glucose Agar

### Sabouraud 4 % Glucose Agar

**Ph.Eur., for microbiology**

For isolation, differentiation and cultivation of yeasts and fungi.

Application: Use 65 g for 1 l agar.

Agar medium C (Ph.Eur. 6.0), Sabouraud Dextrose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Meat and casein peptone. ..... 10 g/l
Glucose monohydrate. ..... 40 g/l
Agar. ..... 15 g/l
pH value. ..... 5,6 ±0,2

| | | | |
|---|---|---|---|
| **X932.1** | 500 g | plastic | 66,15 € |
| Original pack 6 x 500 g | | | 62,84/500 g |
| **X932.2** | 1 kg | plastic | 118,80 € |
| Original pack 6 x 1 kg | | | 112,86/1 kg |

For further information, please see page 1397

## Sabouraud 4 % Glucose Agar (with chloroamphenicol)

### Sabouraud 4 % Glucose Agar (with chloroamphenicol)

**Ph.Eur., for microbiology**

Selective agar for cultivation and isolation of yeasts and pathogenic fungi.

Application: Use 65 g for 1 l agar.

Agar medium C with chloroamphenicol (Ph.Eur. 6.0)

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Meat and casein peptone. ..... 10 g/l
Glucose monohydrate. ..... 40 g/l
Chloroamphenicol. ..... 0,05 g/l
Agar. ..... 15 g/l
pH value. ..... 5,6 ±0,2

| | | | |
|---|---|---|---|
| **AE48.1** | 500 g | plastic | 83,75 € |
| Original pack 6 x 500 g | | | 79,56/500 g |

For further information, please see page 1397

## Sabouraud 4 % Glucose Agar (with chloroamphenicol)

### Sabouraud 4 % Glucose Agar (with chloroamphenicol)

**for microbiology**

For selective isolation of yeasts and pathogenic fungi.

Application: Use 65,5 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

**Formulation:**

Meat and casein peptone. ..... 10 g/l
Glucose. ..... 40 g/l
Chloroamphenicol. ..... 0,5 g/l
Agar. ..... 15 g/l
pH value. ..... 5,6 ±0,2

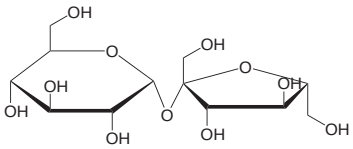
| | | | |
|---|---|---|---|
| **X933.1** | 500 g | plastic | 74,75 € |
| Original pack 6 x 500 g | | | 71,01/500 g |

For further information, please see page 1397

## Saccharin sodium salt

▶ o-Benzoic sulphimide sodium salt see p. 1767

## D(+)-Saccharose



D-Sucrose
$C_{12}H_{22}O_{11}$
M 342,30 g/mol
mp 185-187 °C
Solubility: ~1970 g/l ($H_2O$, 15 °C)
[57-50-1] • EC No. 200-334-9
WGK 1

### D(+)-Saccharose

**CELLPURE®**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤1,5 E.U./g
Appearance. ..... white to off-white powder
Loss on drying (3 h, 105 °C) ..... ≤0,1 %
Specific rotation $[\alpha]_D^{20}$ (c=26 in $H_2O$) ..... +66,3° to +67,0°
Conductivity. ..... ≤35 µS/cm
Sulphite ($SO_3$). ..... ≤0,001 %
Ethanol. ..... ≤0,1 %
Methanol. ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **8890.1** | 50 g | plastic | 17,10 € |
| **8890.2** | 100 g | plastic | 25,70 € |
| **8890.3** | 250 g | plastic | 46,15 € |
| **8890.4** | 500 g | plastic | 87,00 € |
| Original pack 6 x 500 g | | | 82,65/500 g |

### D(+)-Saccharose

**≥99,5 %, p.a.**

For microbiology and molecular biology.

**Guarantee analysis:**

Assay. ..... ≥99,5 %
Invert sugar. ..... ≤0,04 %
Loss on drying ..... ≤0,1 %
Sulfite (as $SO_2$). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,005 %
Arsenic (As). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00005 %
Cadmium (Cd). ..... ≤0,00001 %
Chromium (Cr). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0005 %
Manganese (Mn). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,0005 %
Mercury (Hg). ..... ≤0,000005 %
Zinc (Zn). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **4621.1** | 1 kg | plastic | 19,90 € |
| Original pack 6 x 1 kg | | | 18,91/1 kg |
| **4621.2** | 5 kg | plastic | 83,75 € |
| **4621.3** | 10 kg | plastic | 106,35 € |
| **4621.5** | 25 kg | plastic | 192,45 € |

S

## D(+)-Saccharose

**≥99,5 %, Ph.Eur.**

For density gradient centrifugation;
for biochemical applications.

**Guarantee analysis:**

Appearance of solution. ..... complies
Assay. ..... ≥99,5 %
Identity. ..... complies
Conductivity. ..... ≤35 µS/cm
Colour. ..... ≤45
Reducing sugar. ..... complies
Specific rotation $[\alpha]_D^{20}$. ..... +66,3° to +67,0°
Loss on drying (105 °C). ..... ≤0,1 %
Sulfite (as $SO_2$). ..... complies

| | | | |
|---|---|---|---|
| **4661.1** | 1 kg | plastic | 19,60 € |
| Original pack 6 x 1 kg | | | 18,62/1 kg |
| **4661.2** | 5 kg | plastic | 79,05 € |
| **4661.4** | 10 kg | plastic | 96,65 € |
| **4661.3** | 50 kg | cardboard | 310,70 € |

For further information, please see page 1644

## D(+)-Saccharose

**≥99,7 %, powdered**

**Type analysis:**

Appearance. ..... fine white powder
Assay. ..... ≥99,7 %
Water (KF). ..... 0,06 %
Reducing substances (invert sugar). ..... ≤0,04 %
Melting point. ..... 185-187 °C
Grain size 80 % under 100 µm

| | | | |
|---|---|---|---|
| **9286.1** | 1 kg | plastic | 18,20 € |
| Original pack 6 x 1 kg | | | 17,29/1 kg |
| **9286.2** | 5 kg | plastic | 64,40 € |

## D(+)-Saccharose

**≥99,5 %, RNase/DNase free**

Reagent for density gradient centrifugation.

**Guarantee analysis:**

Assay. ..... ≥99,5 %

| | | | |
|---|---|---|---|
| **9097.1** | 1 kg | plastic | 36,05 € |
| Original pack 6 x 1 kg | | | 34,25/1 kg |
| **9097.2** | 5 kg | plastic | 153,65 € |

For further information, please see page 1239

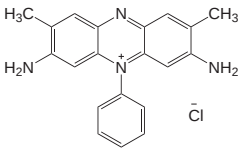
## Saffron yellow

▶ Martius yellow (C.I. 10315) see p. 2058

## Safraniline

▶ Rhodamine B (C.I. 45170) see p. 2198

## Safranin O (C.I. 50240)



### Safranin O (C.I. 50240)

**for microscopy**

Safranin T
$C_{20}H_{19}ClN_4$
M 350,85 g/mol
Solubility: 50 g/l ($H_2O$, 20 °C)
[477-73-6] • EC No. 207-518-8
WGK 2

**Warning** H315-H319

**Type analysis:**

Absorption max. (ethanol 50 %). ..... 530-534 nm
Loss on drying (110 °C). ..... ≤15 %

| | | | |
|---|---|---|---|
| **T129.1** | 10 g | glass | 40,75 € |

For further information, please see page 1466

## Safranin solution

### Safranin solution

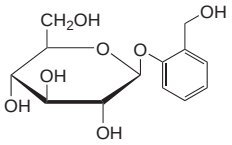
**for Gram staining**

[477-73-6] • EC No. 207-518-8
WGK 2

| | | | |
|---|---|---|---|
| **CN01.1** | 500 ml | glass | 32,15 € |

For further information, please see page 1460

## D(-)-Salicin



### D(-)-Salicin

**≥90 %, for biochemistry**

Saligenin-β-D-glucopyranoside, Salicoside
$C_{13}H_{18}O_7$
M 286,27 g/mol
mp 198-200 °C
Solubility: 250 g/l ($H_2O$, 60 °C)
[138-52-3] • EC No. 205-331-6

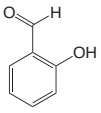
**Warning** H317

**Type analysis:**

Appearance. ..... white powder
Assay (HPLC). ..... ≥90 %
Specific rotation $[\alpha]_D^{20}$ (in $H_2O$). ..... -62,5° ±2°
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7192.1** | 5 g | plastic | 28,95 € |
| **7192.2** | 50 g | plastic | 177,40 € |

## Salicylaldehyde



### Salicylaldehyde

**≥99 %, for synthesis**

2-Hydroxybenzaldehyde
$C_7H_6O_2$
M 122,12 g/mol
D ~1,16 • bp 197 °C
mp -7 °C • flp 79 °C
Solubility: 14 g/l ($H_2O$, 20 °C)
[90-02-8] • EC No. 201-961-0
WGK 2

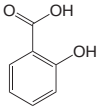
**Warning** H302-H315-H319

**Type analysis:**

Assay (GC). ..... ≥99 %
Density (d 20 °C/4 °C). ..... 1,165-1,167

| | | | |
|---|---|---|---|
| **4662.1** | 100 ml | glass | 22,05 € |

## Salicylic acid



2-Hydroxybenzoic acid
$C_7H_6O_3$
M 138,12 g/mol
D 1,44 • bp 336 °C
mp 158-161 °C • flp 157 °C
Solubility: ~2 g/l ($H_2O$, 20 °C)
[69-72-7] • EC No. 200-712-3
WGK 1

**Danger** H318-H302

### Salicylic acid

**≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay. ..... ≥99,0 %
Melting point. ..... 158-161 °C
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,003 %
Heavy metals (as Pb). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0002 %
Matter discoloured by $H_2SO_4$. ..... complies
Ash content. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **2723.1** | 250 g | plastic | 26,35 € |
| **2723.2** | 500 g | plastic | 37,55 € |
| Original pack 6 x 500 g | | | 35,67/500 g |
| **2723.3** | 1 kg | plastic | 60,10 € |
| Original pack 6 x 1 kg | | | 57,10/1 kg |

## Salicylic acid

**≥99 %, Ph.Eur.**

**Guarantee analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay. ..... 99,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... clear, colourless
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,02 %
Sulphated ash. ..... ≤0,1 %
Heavy metals. ..... ≤0,002 %
Related substances:
Water (KF). ..... ≤0,5 %
4-Hydroxybenzoic acid. ..... ≤0,1 %
4-Hydroxyisophthalic acid. ..... ≤0,05 %
Phenol. ..... ≤0,02 %
Any other impurities. ..... ≤0,05 %
Sum of all impurities. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **8626.1** | 250 g | plastic | 20,35 € |
| **8626.2** | 1 kg | plastic | 57,95 € |
| Original pack 6 x 1 kg | | | 55,05/1 kg |
| **8626.3** | 2,5 kg | plastic | 93,00 € |

## Salicylic acid

**≥99 %, for biochemistry**

**Type analysis:**

Assay (dry substance). ..... 99,0-100,5 %
Water (KF). ..... ≤0,5 %
Colour number (Hazen). ..... ≤30
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,002 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9268.2** | 500 g | plastic | 32,80 € |
| Original pack 6 x 500 g | | | 31,16/500 g |
| **9268.1** | 1 kg | plastic | 55,80 € |
| Original pack 6 x 1 kg | | | 53,01/1 kg |
| **9268.3** | 2,5 kg | plastic | 82,25 € |

## Salicylic acid

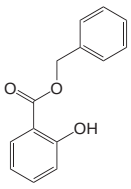
**ROTI®CALIPURE Melting point standard 158-160 °C**

**Type analysis:**

Meniscus formation. ..... 158-160 °C
Complete liquefaction. ..... 158-160 °C

| | | | |
|---|---|---|---|
| **9731.1** | 1 g | glass | 30,00 € |

## Salicylic acid benzyl ester



## Salicylic acid benzyl ester

**≥99 %**

Benzyl salicylate
$C_{14}H_{12}O_3$
M 228,24 g/mol
D ~1,18
flp 180 °C
[118-58-1] • EC No. 204-262-9
WGK 2

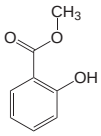
**Warning** H315-H319-H335

**Type analysis:**

Assay (GC). ..... ≥99,0 %
Refractive index $n_D^{20}$. ..... 1,580-1,582

| | | | |
|---|---|---|---|
| **4184.1** | 100 ml | glass | 37,55 € |

## Salicylic acid methyl ester



Methyl salicylate, 2-Hydroxybenzoic acid methyl ester
$C_8H_8O_3$
M 152,15 g/mol
D 1,18 • bp 223 °C
mp -8 °C • flp 101 °C
Solubility: 0,74 g/l ($H_2O$, 30 °C)
[119-36-8] • EC No. 204-317-7
WGK 1

**Warning** H302-H315-H319-H335

## Salicylic acid methyl ester

**≥99 %**

**Type analysis:**

Appearance.... clear, almost colourless to yellowish oil
Assay. ..... ≥99 %
Miscible. ..... ethanol 96 %
Density (20 °C). ..... 1,180-1,186 g/cm³
Refractive index (20 °C). ..... 1,5350-1,5380
Optical rotation (20 °C). ..... -1° to +1°

| | | | |
|---|---|---|---|
| **4529.1** | 250 ml | glass | 26,35 € |

## Salicylic acid methyl ester

**ROTICHROM® GC**

Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**

Purity (GC). ..... ≥95 %

| | | | |
|---|---|---|---|
| **3704.1** | 1 g | plastic | 81,20 € |

## Salicylic acid sodium salt

▶ Sodium salicylate see p. 2283

## 5-Salicylsulphonic acid

▶ 5-Sulphosalicylic acid dihydrate see p. 2322

## Salicyluric acid

▶ o-Hydroxyhippuric acid see p. 1994

## Saligenin-β-D-glucopyranoside

▶ D(-)-Salicin see p. 2238

## Salmiac

▶ Ammonium chloride see p. 1731

## Salmiac salt

▶ Ammonium chloride see p. 1731

## Salmiac solution

▶ Ammonia solution Ultra-quality see p. 1728
▶ Ammonia solution Supra-quality see p. 1728
▶ Ammonia solution 32 % see p. 1728
▶ Ammonia solution 30 % see p. 1728
▶ Ammonia solution 25 % see p. 1729
▶ Ammonia solution 15 % see p. 1729

## Salmine sulphate

### Salmine sulphate

**for biochemistry**

From salmon sperm.
Protamine sulphate
M ~9000 g/mol
[53597-25-4]

**Type analysis:**

Appearance. ..... white to light yellowish powder
Loss on drying. ..... ≤5,0 %
Nitrogen (N). ..... 22-26 %
Sulphate ($SO_4$). ..... 16-21 %

| | | | |
|---|---|---|---|
| **7194.1** | 5 g | plastic | 117,20 € |

## Salmonella chromogenic Agar

### Salmonella chromogenic Agar

**for microbiology**

For isolation of *Salmonella* from foods, waters and other samples.
Application: Use 37,1 g for 1 l agar.
Storage temp.: +4 °C
WGK 1

**Formulation:**

Sodium citrate. ..... 8,5 g/l
Casein peptone. ..... 5 g/l
Beef extract. ..... 5 g/l
Chromogene Mixture. ..... 5,81 g/l
Agar. ..... 12,8 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **CL46.2** | 100 g | plastic | 142,90 € |
| **CL46.1** | 575 g | plastic | 473,00 € |

For further information, please see page 1397

## Salmonella-Shigella Agar

### Salmonella-Shigella Agar

**for microbiology**

For isolation of pathogenic enterobacteria, especially *Salmonella* and *Shigella*.
Application: Use 60 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

**Formulation:**

Beef extract. ..... 5 g/l
Peptone mixture. ..... 5 g/l
Lactose. ..... 10 g/l
Ferric citrate. ..... 1 g/l
Bile salts. ..... 8,5 g/l
Sodium citrate. ..... 8,5 g/l
Sodium thiosulphate. ..... 8,5 g/l
Brilliant green. ..... 0,0003 g/l
Neutral red. ..... 0,025 g/l
Agar. ..... 13,5 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X934.1** | 500 g | plastic | 59,70 € |
| Original pack 6 x 500 g | | | 56,72/500 g |

For further information, please see page 1397

## Salmon Sperm DNA sodium salt

### Salmon Sperm DNA sodium salt

**ex salmon testes**

Deoxyribonucleic acid sodium salt,
DNA from salmon sperm

Storage temp.: +4 °C

[9007-49-2]

**Guarantee analysis:**

Appearance. .....off-white to light brown powder
Solution (10 % in $H_2O$ at 40 °C). ..... colourless to slightly yellow
Loss on drying. .....≤12,0 %
Sodium (dry substance).....≥5,8 %
Phosphorus (dry substance).....≥8,1 %
Nitrogen (dry substance). .....≥14,3 %
Maximum absorption. ..... 258-262 nm
UV-Absorption (0,001 % in phosphate buffer pH 7)..... ≥0,155 AU

| | | | |
|---|---|---|---|
| **5434.1** | 5 g | plastic | 27,45 € |
| **5434.2** | 10 g | plastic | 42,90 € |

For further information, please see page 1246

## Salts for Analysis

| Art. No. | Description | Page |
|---|---|---|
| X862 | Aluminium ammonium sulphate dodecahydrate | 1720 |
| CN85 | Aluminium nitrate nonahydrate | 1720 |
| 5340 | Aluminium sulphate hexadecahydrate | 1721 |
| 7869 | Ammonium acetate | 1730 |
| HN14 | Ammonium bromide | 1730 |
| CP98 | Ammonium carbonate | 1730 |
| 4386 | Ammonium cerium(IV) sulphate dihydrate | 1731 |
| K298 | Ammonium chloride | 1731 |
| P727 | Ammonium dihydrogen phosphate | 1732 |
| 6549 | Ammonium fluoride | 1732 |
| 3666 | Ammonium heptamolybdate tetrahydrate | 1732 |
| T871 | Ammonium hydrogen carbonate | 1733 |
| P735 | di-Ammonium hydrogen citrate | 1734 |
| P736 | di-Ammonium hydrogen phosphate | 1734 |
| 5485 | Ammonium hydrogen sulphate | 1735 |
| 9818 | Ammonium iodide | 1735 |
| P728 | Ammonium iron(II) sulphate hexahydrate | 1736 |
| P734 | Ammonium iron(III) sulphate dodecahydrate | 1736 |
| 0742 | Ammonium metatungstate hydrate | 1736 |
| 4232 | Ammonium monovanadate | 1737 |
| K299 | Ammonium nitrate | 1737 |
| P737 | di-Ammonium oxalate monohydrate | 1737 |
| 9592 | Ammonium peroxydisulphate | 1738 |
| 3746 | Ammonium sulphate | 1738 |
| 4477 | Ammonium thiocyanate | 1739 |
| 9819 | Antimony(III) chloride | 1747 |
| 9826 | Antimony(III) oxide | 1747 |
| 2553 | Barium acetate | 1761 |
| P008 | Barium carbonate | 1761 |
| 4453 | Barium chloride dihydrate | 1762 |
| P009 | Barium hydroxide octahydrate | 1762 |
| 4387 | Barium nitrate | 1763 |
| 4447 | Bismuth(III) nitrate | 1775 |
| 2554 | Bismuth(III) nitrate pentahydrate | 1776 |
| 6555 | Bismuth(III) oxide | 1776 |
| KK06 | Cadmium acetate dihydrate | 1800 |
| 4482 | Cadmium sulphate hydrate | 1800 |
| 6873 | Caesium carbonate | 1801 |
| 8627 | Caesium chloride | 1801 |
| 9355 | Caesium sulphate | 1801 |
| P011 | Calcium acetate monohydrate | 1803 |
| P012 | Calcium carbonate | 1803 |
| 5239 | Calcium chloride dihydrate | 1804 |
| T886 | Calcium chloride hexahydrate | 1804 |
| P740 | Calcium nitrate tetrahydrate | 1806 |
| P741 | Calcium sulphate dihydrate | 1807 |
| HN28 | Cerium(IV) ammonium nitrate | 1821 |
| HN18 | Cerium(III) nitrate hexahydrate | 1822 |
| 9837 | Cerium(IV) oxide | 1822 |
| P014 | Cerium(IV) sulphate tetrahydrate | 1822 |
| 9832 | Chromium(III) chloride hexahydrate | 1831 |
| 8773 | Chromium(III) nitrate nonahydrate | 1832 |
| 4389 | Chromium(III) potassium sulphate dodecahydrate | 1832 |
| HN29 | Cobalt(II) acetate tetrahydrate | 1837 |
| T889 | Cobalt(II) chloride hexahydrate | 1837 |
| HN16 | Cobalt(II) nitrate hexahydrate | 1838 |
| 9834 | Cobalt(II,III) oxide | 1838 |
| 4390 | Cobalt(II) sulphate heptahydrate | 1838 |
| HN30 | Copper(II) acetate monohydrate | 1843 |
| 4391 | Copper(I) chloride | 1843 |
| CN82 | Copper(II) chloride dihydrate | 1843 |
| P754 | Copper(II) nitrate trihydrate | 1844 |
| 4467 | Copper(II) oxide | 1845 |
| P023 | Copper(II) sulphate | 1845 |
| P024 | Copper(II) sulphate pentahydrate | 1845 |
| 3053 | Ethylenediamine tetraacetic acid dipotassium salt dihydrate | 1916 |
| 8043 | Ethylenediamine tetraacetic acid disodium salt dihydrate | 1916 |
| CP87 | Ethylenediamine tetraacetic acid tetrasodium salt tetrahydrate | 1918 |
| HN96 | Hydrazinium sulphate | 1983 |
| 0307 | Indium(III) chloride | 2002 |
| 0314 | Indium(III) sulphate | 2003 |
| P742 | Iron(III) chloride hexahydrate | 2011 |
| P015 | Iron(II) sulphate heptahydrate | 2012 |
| 8358 | Lanthanum(III) nitrate hexahydrate | 2029 |
| 8373 | Lanthanum(III) oxide | 2029 |
| 2559 | Lead(II) acetate, basic | 2032 |
| P739 | Lead(II) acetate trihydrate | 2032 |
| 2558 | Lead(II) carbonate | 2033 |
| HN32 | Lead(II) nitrate | 2033 |
| 4479 | Lead(IV) oxide | 2033 |
| 3995 | Lithium carbonate | 2039 |
| 3739 | Lithium chloride | 2040 |
| 6698 | Lithium chloride | 2040 |
| 6715 | Lithium fluoride | 2040 |
| 9840 | Lithium metaborate | 2041 |
| 4393 | Lithium sulphate monohydrate | 2041 |
| P026 | Magnesium acetate tetrahydrate | 2048 |
| 2189 | Magnesium chloride hexahydrate | 2049 |
| HN31 | Magnesium nitrate hexahydrate | 2050 |
| 0682 | Magnesium sulphate | 2051 |
| P027 | Magnesium sulphate heptahydrate | 2051 |
| 9927 | Manganese(II) carbonate | 2055 |
| 4320 | Manganese(II) chloride monohydrate | 2055 |
| T881 | Manganese(II) chloride tetrahydrate | 2056 |
| HN26 | Manganese(II) nitrate tetrahydrate | 2056 |
| 4487 | Manganese(II) sulphate monohydrate | 2056 |
| KK05 | Mercury(II) acetate | 2063 |
| 6581 | Mercury(II) bromide | 2063 |
| KK04 | Mercury(II) chloride | 2064 |
| 6601 | Mercury(I) chloride | 2064 |
| 6590 | Mercury(II) iodide | 2064 |
| 6605 | Mercury(I) nitrate dihydrate | 2064 |
| 6595 | Mercury(II) nitrate monohydrate | 2064 |
| 4470 | Mercury(II) oxide | 2064 |
| T112 | Mercury(II) sulphate | 2065 |
| 6600 | Mercury(II) thiocyanate | 2065 |
| 0142 | Molybdenum(VI) oxide | 2082 |
| 4489 | Nickel(II) chloride hexahydrate | 2093 |
| 4395 | Nickel(II) nitrate hexahydrate | 2093 |
| 9996 | Nickel(II) oxide | 2094 |
| 9925 | Nickel(II) oxide | 2094 |
| T111 | Nickel(II) sulphate hexahydrate | 2094 |
| 8371 | Osmium tetraoxide | 2126 |
| T874 | Potassium acetate | 2162 |
| P724 | Potassium aluminium sulphate dodecahydrate | 2162 |
| 4396 | Potassium bromate | 2163 |
| A137 | Potassium bromide | 2163 |
| P743 | Potassium carbonate | 2163 |
| HN27 | Potassium chlorate | 2164 |
| 6781 | Potassium chloride | 2164 |
| HN33 | Potassium chromate | 2165 |
| P744 | Potassium dichromate | 2165 |
| 3904 | Potassium dihydrogen phosphate | 2166 |
| P019 | Potassium disulphite | 2167 |
| CN83 | Potassium fluoride | 2167 |
| P745 | Potassium hexacyanoferrate(II) trihydrate | 2167 |
| P746 | Potassium hexacyanoferrate(III) | 2168 |
| P748 | Potassium hydrogen carbonate | 2168 |
| P749 | di-Potassium hydrogen phosphate | 2168 |
| 6878 | di-Potassium hydrogen phosphate trihydrate | 2169 |
| P750 | Potassium hydrogen phthalate | 2169 |
| P020 | Potassium hydrogen sulphate | 2169 |
| P751 | Potassium iodate | 2171 |
| 6750 | Potassium iodide | 2172 |
| P021 | Potassium nitrate | 2172 |
| HN38 | di-Potassium oxalate monohydrate | 2173 |
| 2588 | Potassium periodate | 2173 |
| KK08 | Potassium permanganate | 2173 |
| P752 | Potassium permanganate | 2173 |
| 8087 | Potassium sodium tartrate tetrahydrate | 2174 |
| P022 | Potassium sulphate | 2175 |
| P753 | Potassium thiocyanate | 2176 |
| 6629 | Reinecke salt monohydrate | 2195 |
| 4471 | Rubidium chloride | 2236 |
| KK25 | Silver diethyldithiocarbamate | 2261 |
| 6874 | Silver nitrate | 2261 |
| 7908 | Silver nitrate | 2261 |
| 5309 | Silver oxide | 2263 |
| 6791 | Silver sulphate | 2263 |
| 6773 | Sodium acetate | 2265 |
| 6779 | Sodium acetate trihydrate | 2266 |
| T882 | Sodium ammonium hydrogen phosphate tetrahydrate | 2266 |
| K305 | Sodium azide | 2266 |
| 4401 | Sodium bismuthate | 2267 |
| HN15 | Sodium bromide | 2267 |
| A135 | Sodium carbonate | 2268 |
| 2597 | Sodium carbonate monohydrate | 2268 |
| K303 | Sodium carbonate decahydrate | 2268 |
| 3957 | Sodium chloride | 2269 |
| 3580 | tri-Sodium citrate dihydrate | 2270 |
| 2601 | Sodium diethyldithiocarbamate trihydrate | 2271 |
| K300 | Sodium dihydrogen phosphate monohydrate | 2271 |
| T879 | Sodium dihydrogen phosphate dihydrate | 2272 |
| T883 | tetra-Sodium diphosphate decahydrate | 2272 |
| P756 | Sodium fluoride | 2273 |
| 4404 | Sodium formate | 2273 |
| 4409 | Sodium hexanitrocobaltate(III) | 2273 |
| 6885 | Sodium hydrogen carbonate | 2274 |
| P030 | di-Sodium hydrogen phosphate | 2274 |

| | | |
|---|---|---|
| 4984 | di-Sodium hydrogen phosphate dihydrate | 2275 |
| X987 | di-Sodium hydrogen phosphate heptahydrate | 2275 |
| T106 | di-Sodium hydrogen phosphate dodecahydrate | 2275 |
| HN17 | Sodium iodate | 2279 |
| A134 | Sodium iodide | 2279 |
| P755 | Sodium metabisulphite | 2280 |
| 0274 | Sodium molybdate dihydrate | 2280 |
| A136 | Sodium nitrate | 2281 |
| 4411 | Sodium nitrite | 2281 |
| HN34 | Sodium nitroprusside dihydrate | 2281 |
| HN39 | di-Sodium oxalate | 2282 |
| 2603 | Sodium periodate | 2282 |
| 4412 | Sodium peroxide | 2282 |
| T107 | tri-Sodium phosphate dodecahydrate | 2283 |
| CP39 | Sodium salicylate | 2283 |
| 8560 | Sodium sulphate | 2284 |
| 0966 | Sodium sulphate | 2284 |
| T108 | Sodium sulphate decahydrate | 2284 |
| P033 | Sodium sulphite | 2285 |
| T110 | di-Sodium tartrate dihydrate | 2285 |
| T880 | di-Sodium tetraborate decahydrate | 2285 |
| 4385 | Sodium tetraphenyl borate | 2286 |
| 2724 | Sodium thiocyanate | 2286 |
| HN25 | Sodium thiosulphate | 2286 |
| P034 | Sodium thiosulphate pentahydrate | 2286 |
| 2604 | Sodium tungstate dihydrate | 2287 |
| 4473 | Strontium chloride hexahydrate | 2317 |
| 4413 | Strontium nitrate | 2318 |
| 0321 | Tellurium(IV) oxide | 2331 |
| 0689 | Tetrachloroauric(III) acid trihydrate | 2334 |
| 3867 | Tetrachloroauric(III) acid trihydrate | 2334 |
| KK07 | Tin(II) chloride dihydrate | 2343 |
| 4977 | Tin(II) chloride dihydrate | 2344 |
| 9929 | Tin(IV) oxide | 2344 |
| 4382 | Tin(II) sulphate | 2344 |
| 0747 | Tungstic acid | 2362 |
| P035 | Zinc acetate dihydrate | 2386 |
| 9839 | Zinc iodide | 2387 |
| 6634 | Zinc nitrate hexahydrate | 2387 |
| T114 | Zinc oxide | 2388 |
| K301 | Zinc sulphate heptahydrate | 2389 |
| T887 | Zinc chloride | 2387 |


## Salts in Pharmacopoeia Quality


| Art. No. | Description | Page |
|---|---|---|
| CP88 | Aluminium chloride hexahydrate | 1720 |
| P726 | Ammonium chloride | 1731 |
| 7094 | Ammonium hydrogen carbonate | 1733 |
| 4266 | di-Ammonium oxalate monohydrate | 1737 |
| 6551 | Bismuth subcarbonate | 1776 |
| 6552 | Bismuth subsalicylate | 1776 |
| 0260 | Calcium acetate hydrate | 1803 |
| P013 | Calcium carbonate | 1803 |
| T885 | Calcium chloride dihydrate | 1804 |
| CP89 | Calcium chloride hexahydrate | 1804 |
| HN70 | Calcium hydrogen phosphate dihydrate | 1805 |
| 8450 | Calcium hydroxyphosphate | 1806 |
| 0256 | Calcium sulphate dihydrate | 1807 |
| CP86 | Copper(II) sulphate | 1845 |
| P025 | Copper(II) sulphate pentahydrate | 1845 |
| 6506 | Ethylenediamine tetraacetic acid calcium disodium salt dihydrate | 1916 |
| X986 | Ethylenediamine tetraacetic acid disodium salt dihydrate | 1917 |
| 3722 | Iron(II) sulphate heptahydrate | 2012 |
| 9443 | tri-Lithium citrate tetrahydrate | 2040 |
| 0275 | Magnesium acetate tetrahydrate | 2048 |
| 3530 | Magnesium carbonate | 2048 |
| A537 | Magnesium chloride hexahydrate | 2049 |
| 9453 | Magnesium hydroxide | 2050 |
| 8280 | Magnesium oxide | 2050 |
| T888 | Magnesium sulphate heptahydrate | 2051 |
| X890 | Manganese(II) sulphate monohydrate | 2057 |
| 4986 | Potassium acetate | 2162 |
| CN78 | Potassium aluminium sulphate dodecahydrate | 2162 |
| 9252 | Potassium bromide | 2163 |
| X894 | Potassium carbonate | 2164 |
| P017 | Potassium chloride | 2164 |
| X888 | tri-Potassium citrate monohydrate | 2165 |
| P018 | Potassium dihydrogen phosphate | 2166 |
| X887 | Potassium hydrogen carbonate | 2168 |
| T875 | di-Potassium hydrogen phosphate | 2169 |
| 8491 | Potassium iodide | 2172 |
| 4397 | Potassium nitrate | 2172 |
| 8004 | Potassium permanganate | 2173 |
| 7998 | Potassium sodium tartrate tetrahydrate | 2174 |
| CN79 | Potassium sulphate | 2175 |
| 9370 | Silver nitrate | 2262 |
| 3856 | Sodium acetate trihydrate | 2266 |
| P028 | Sodium carbonate | 2268 |
| 8566 | Sodium carbonate decahydrate | 2268 |
| P029 | Sodium chloride | 2269 |
| 4088 | tri-Sodium citrate dihydrate | 2271 |
| T878 | Sodium dihydrogen phosphate monohydrate | 2272 |
| 2370 | Sodium dihydrogen phosphate dihydrate | 2272 |
| 8551 | Sodium hydrogen carbonate | 2274 |
| T876 | di-Sodium hydrogen phosphate | 2274 |
| T877 | di-Sodium hydrogen phosphate dihydrate | 2275 |
| N350 | di-Sodium hydrogen phosphate dodecahydrate | 2275 |
| 8783 | Sodium iodide | 2280 |
| P032 | Sodium sulphate | 2284 |
| X892 | Sodium sulphate decahydrate | 2285 |
| CN07 | di-Sodium tetraborate decahydrate | 2286 |
| T109 | Sodium thiosulphate pentahydrate | 2286 |
| X893 | Zinc acetate dihydrate | 2386 |
| T884 | Zinc sulphate heptahydrate | 2389 |
| 5297 | Zinc oxide | 2388 |


## Salvinin

▶ Pelargonidin 3,5-diglucoside chloride see p. 2134

## Samarium Standards

▶ Samarium ICP Standard Solution see p. 2300
▶ Samarium ICP Standard Solution see p. 2304

## Samarium(III) carbonate hydrate

### Samarium(III) carbonate hydrate

**ROTI®REMETIC 99,98 %**

$Sm_2(CO_3)_3 \cdot x\ H_2O$
M 480,75 + x $H_2O$ g/mol
[38245-37-3] • EC No. 227-581-5
WGK 3

**Type analysis:**
Assay (TREO*). .....99,98 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7120.1** | 10 g | plastic | 85,90 € |
| **7120.2** | 50 g | plastic | 289,20 € |

## Samarium(III) oxide

Samarium trioxide, Samaria
$Sm_2O_3$
M 348,72 g/mol
bp 3780 °C
mp 2269 °C
Solubility: insoluble ($H_2O$, 20 °C)
[12060-58-1] • EC No. 235-043-6
WGK 1

### Samarium(III) oxide

**ROTI®REMETIC 99,95 %**

**Type analysis:**
Assay (TREO*). .....99,95 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7108.1** | 5 g | plastic | 44,00 € |
| **7108.2** | 25 g | plastic | 94,50 € |

### Samarium(III) oxide

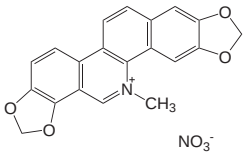
**ROTI®REMETIC 99,9 %**

**Type analysis:**
Assay (TREO*). .....99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7186.1** | 10 g | plastic | 24,65 € |
| **7186.3** | 100 g | plastic | 177,40 € |

S

## Sanguinarine nitrate

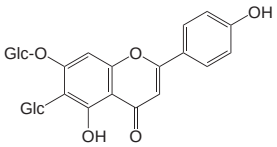


### Sanguinarine nitrate
**ROTICHROM® ~CHR**
$C_{20}H_{14}N_2O_7$
M 394,33 g/mol
[4752-86-7] • EC No. 225-276-1
UN No. 1544 • ADR 6.1 III • WGK 3
**Danger** H301

| | | | |
|---|---|---|---|
| **7200.2** | 10 mg | glass | 278,45 € |

## Saponaretin
▶ Isovitexin see p. 2018

## Saponarin



### Saponarin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Saponaria officinalis.*
Isovitexin-7-O-glucoside
$C_{27}H_{30}O_{16}$
M 610,54 g/mol
Storage temp.: +4 °C
[20310-89-8]

**Type analysis:**
Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **6413.1** | 5 mg | plastic | 198,90 € |

## Saponin
[8047-15-2] • EC No. 232-462-6
WGK 2
**Warning** H319-H335

### Saponin
**DAB**
From quillaja bark. Special quality for hemolysis.

**Guarantee analysis:**
Appearance. ..... whitish to pale yellow powder
Identity. ..... complies
Extinction (5 %, water). ..... ≤0,4
pH value (5 %, water). ..... 4,0-7,0
Density (5 %, water)..... 1,01-1,02
Turbidity (5 %, water)..... ≤30 TE/F
Lather value (5 %, water). ..... 6-17
Surface tension (20 °C, 1 ‰ sol.)..... 35-55 dyn/cm

| | | | |
|---|---|---|---|
| **9622.1** | 100 g | plastic | 53,65 € |

### Saponin
**free of tannic acid**
From quillaja bark. Sapagonin content 8,5 %.
Main aglycone: quilliac acid.

**Type analysis:**
Appearance..... whitish to pale yellow powder
Extinction..... ≤0,4
pH value (5 %, water). ..... 4,0-7,0
Density (5 %, water). ..... 1,01-1,02

| | | | |
|---|---|---|---|
| **6857.1** | 100 g | plastic | 42,90 € |

### Saponin
**pure**

**Type analysis:**
Appearance.....whitish to light yellow powder

| | | | |
|---|---|---|---|
| **4185.1** | 100 g | plastic | 32,15 € |

## Sarcine
▶ Hypoxanthine see p. 1999

## Sarcolactic acid
▶ Lactic acid see p. 2025
▶ DL-Lactic acid see p. 2025
▶ L-Lactic acid see p. 2025

## SB-8
▶ N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 2109

## SB-10
▶ N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 1859

## SB-12
▶ N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 1894

## SB-14
▶ N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 2335

## SB-16
▶ N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 1976

## Scandium Standards
▶ Scandium AAS Standard Solution see p. 2295
▶ Scandium ICP Standard Solution see p. 2300

## Scandium(III) oxide

Scandium oxide
$Sc_2O_3$
M 137,91 g/mol
D 3,86
mp 2485 °C
[12060-08-1] • EC No. 235-042-0
WGK 1

### Scandium(III) oxide
**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**
Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5735.1** | 1 g | plastic | 149,45 € |

### Scandium(III) oxide
**ROTI®REMETIC 99,999 %**

**Type analysis:**
Assay (TREO*). .....99,999 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7011.1** | 1 g | plastic | 127,95 € |
| **7011.2** | 5 g | plastic | 364,45 € |

## Scandium oxide
▶ Scandium(III) oxide see p. 2242

## Scarlet red
▶ Sudan IV (C.I. 26105) see p. 2320

## Schaedler Agar

### Schaedler Agar
**for microbiology**
For recovery and cultivation of anaerobic microorganisms.
Application: Use 41,9 g for 1 l agar.
Storage temp.: +20 °C
WGK 2

**Formulation:**
Casein peptone..... 5,66 g/l
Soy peptone..... 1 g/l
Sodium chloride. ..... 1,66 g/l
Dipotassium hydrogen phosphate. ..... 0,83 g/l
Peptone mixture. ..... 5 g/l
Yeast extract. ..... 5 g/l
Glucose..... 5,83 g/l
Tris (hydroxymethyl aminomethane). ..... 3 g/l
L-Cystine..... 0,4 g/l
Hemin. ..... 0,01 g/l
Agar. ..... 13,5 g/l
pH value..... 7,6 ±0,2

| | | | |
|---|---|---|---|
| **5771.1** | 500 g | plastic | 123,10 € |
| Original pack 6 x 500 g | | | 116,95/500 g |

For further information, please see page 1398

## Schaedler Broth

### Schaedler Broth
**for microbiology**

For enrichment and cultivation of anaerobic microorganisms.

Application: Use 28,4 g for 1 l broth.

Storage temp.: +20 °C

WGK 2

**Warning** H315-H319

**Formulation:**

Casein peptone. ..... 5,66 g/l
Soy peptone. ..... 1 g/l
Sodium chloride. ..... 1,66 g/l
Dipotassium hydrogen phosphate. ..... 0,83 g/l
Peptone mixture. ..... 5 g/l
Yeast extract. ..... 5 g/l
Glucose. ..... 5,83 g/l
Tris (hydroxymethyl aminomethane). ..... 3 g/l
L-Cystine. ..... 0,4 g/l
Hemin. ..... 0,01 g/l
pH value. ..... 7,6 ±0,2

| | | | |
|---|---|---|---|
| **5772.1** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |

For further information, please see page 1398

## Schiff's reagent

Fuchsine sulphurous acid

WGK 1

**Danger** H350

### Schiff's reagent
**on aldehyde**

For the detection of aldehydes in the range of ppm.

| | | | |
|---|---|---|---|
| **N057.1** | 250 ml | glass | 28,95 € |

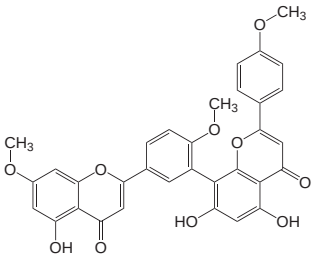
### Schiff's reagent
**for microscopy**

Staining reagent for detection of carbohydrates (PAS reaction).

| | | | |
|---|---|---|---|
| **X900.1** | 500 ml | glass | 22,50 € |
| **X900.2** | 1 l | glass | 30,00 € |
| Original pack 6 x 1 l | | | 28,50/1 l |

For further information, please see page 1457

## Sciadopitysin



### Sciadopitysin
**ROTICHROM® HPLC**

Reference substance for HPLC.

$C_{33}H_{24}O_{10}$

M 580,54 g/mol

Storage temp.: +4 °C

[521-34-6] • EC No. 208-311-5

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **9410.1** | 5 mg | plastic | 213,95 € |

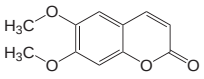
## Scintillation cocktail

▶ Rotiszint® eco plus see p. 2234

## Scintillation Products

| Art. No. | Description | Page |
|---|---|---|
| 3210 | 1,4-Bis[2-(5-phenyloxazolyl)]-benzene | 1776 |
| 7029 | Dimethyl sulphoxide | 1884 |
| 3689 | 2,5-Diphenyloxazole | 1888 |
| 0016 | Rotiszint® eco plus | 2234 |
| 3107 | Toluene | 2347 |
| 6683 | Triton X 100 | 2359 |

## Scoparone



### Scoparone
**≥97,5 %**

Esculetin dimethyl ether, 6,7-Dimethoxycoumarin

$C_{11}H_{10}O_4$

M 206,18 g/mol

mp ~145 °C

[120-08-1] • EC No. 204-369-0

UN No. 2811 • ADR 6.1 III • WGK 1

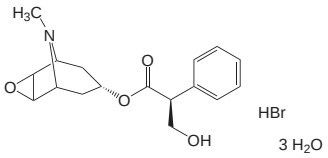
**Danger** H301-H319

**Type analysis:**

Assay. ..... ≥97,5 %

| | | | |
|---|---|---|---|
| **7494.1** | 500 mg | glass | 217,70 € |

## Scopolamine hydrobromide trihydrate



### Scopolamine hydrobromide trihydrate
**≥98 %**

$C_{17}H_{22}BrNO_4 \cdot 3\ H_2O$

M 438,31 g/mol

[6533-68-2]

UN No. 1544 • ADR 6.1 I • WGK 3

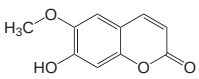
**Danger** H300+H310+H330

**Type analysis:**

Assay (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **7153.1** | 1 g | glass | 112,90 € |

## Scopoletin



### Scopoletin
**≥98%**

β-Methylesculetin, Gelseminic acid, Chrysatropic acid, 7-Hydroxy-6-methoxy-coumarin

$C_{10}H_8O_4$

M 192,16 g/mol

mp 202-204 °C

[92-61-5] • EC No. 202-171-9

WGK 2

**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... pale yellow powder
Assay (HPLC). ..... ≥98 %
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **7210.3** | 50 mg | glass | 83,35 € |
| **7210.1** | 100 mg | glass | 132,80 € |
| **7210.2** | 1 g | glass | 1069,65 € |

## SDS

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS
$C_{12}H_{25}NaO_4S$
M 288,38 g/mol
mp 204-207 °C • flp >100 °C
Solubility: ~150 g/l ($H_2O$, 20 °C)
[151-21-3] • EC No. 205-788-1
UN No. 1325 • ADR 4.1 III • WGK 2

**Danger**
H228-H302+H332-H315-H318-H335-H412

### SDS

**≥99,5 %, Blotting-Grade**
For Western- and Southern blotting.

**Type analysis:**
Appearance. ..... white cryst. powder
Assay (titr.). ..... ≥99,5 %
Water (KF). ..... ≤1,0 %
pH value (10 % in water). ..... 5,0-7,0
Solubility (10 % in $H_2O$). ..... clear, colourless
Chloride (Cl). ..... ≤0,025 %
Heavy metals (as Pb). ..... ≤0,0005 %
Absorption:
260 nm. ..... ≤0,06
280 nm. ..... ≤0,04

| | | | |
|---|---|---|---|
| **0183.1** | 100 g | plastic | 48,30 € |
| **0183.2** | 250 g | plastic | 101,60 € |
| **0183.3** | 500 g | plastic | 165,45 € |
| Original pack 6 x 500 g | | | 157,18/500 g |

### SDS ultra pure

**≥99,5 %, for electrophoresis, biochemistry and molecular biology**
Anionic detergent.

**Guarantee analysis:**
Assay (titr.). ..... ≥99,5 %
pH value (10 % in water). ..... 5,0-7,0
Water (KF). ..... ≤1,0 %
Chloride (Cl). ..... ≤0,025 %
Heavy metals (as Pb). ..... ≤0,0005 %
Absorption:
260 nm. ..... ≤0,06
280 nm. ..... ≤0,04

| | | | |
|---|---|---|---|
| **2326.1** | 100 g | plastic | 39,25 € |
| **2326.4** | 250 g | plastic | 82,70 € |
| **2326.2** | 500 g | plastic | 150,40 € |
| Original pack 6 x 500 g | | | 142,88/500 g |
| **2326.3** | 500 g (in 2,5 l glass bottle for prep. of a 20 % sol.) | glass | 156,45 € |
| **2326.5** | 1 kg | plastic | 257,90 € |
| Original pack 6 x 1 kg | | | 245,01/1 kg |

### SDS / Sodium lauryl sulphate

**≥99 %, for biochemistry**
Anionic detergent; active substance for studies with surfactants.

**Guarantee analysis:**
Appearance. ..... white powder
Assay (GC). ..... ≥99 %
pH value (1 % in $H_2O$). ..... 7,5-10,5
Absorption (10 %, water, 1 cm):
260 nm. ..... ≤1,5
280 nm. ..... ≤1,0
Solubility (10 % in $H_2O$). ..... clear, ≤50 Hazen

| | | | |
|---|---|---|---|
| **4360.1** | 250 g | plastic | 24,20 € |
| **4360.2** | 1 kg | plastic | 66,15 € |
| Original pack 6 x 1 kg | | | 62,84/1 kg |

### SDS / Sodium lauryl sulphate

**≥95 %**
Active substance for studies with surfactants.

**Guarantee analysis:**
Appearance. ..... white to yellowish powder
Assay. ..... ≥95 %
Water (KF). ..... ≤5,0 %
Unsulphated Matter. ..... ≤4,0 %
Heavy metals (as Pb). ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **5136.1** | 1 kg | plastic | 50,45 € |
| Original pack 6 x 1 kg | | | 47,93/1 kg |
| **5136.2** | 5 kg | cardboard | 161,25 € |

### 20 % SDS Ready-to-use solution

▶ Roti®-Stock 20 % SDS see p. 2233

### SDS-Page buffer

▶ Rotiphorese® 10x SDS-PAGE see p. 2228
▶ Rotiphorese®-PAGE Matrix Buffer plus see p. 2228

### SDS-PAGE powder (pouch)

▶ Roti®fair SDS-PAGE see p. 2215

## SDS Pellets

Sodium dodecyl sulphate, Sodium lauryl sulphate, Dodecyl sulphate sodium salt, Lauryl sulphate sodium salt, SLS
$C_{12}H_{25}NaO_4S$
M 288,38 g/mol
mp 204-207 °C • flp >100 °C
Solubility: ~150 g/l ($H_2O$, 20 °C)
[151-21-3] • EC No. 205-788-1
WGK 2

**Danger** H302-H315-H318-H412

### SDS Pellets

**≥99,5 %, Rotiphorese®-Grade, for electrophoresis**
Anionic detergent

**Guarantee analysis:**
Appearance. ..... white rods
Assay (titration). ..... ≥99,5 %
pH value (10 % in water). ..... 6,5-9
Water (KF). ..... ≤1,0 %
UV-absorption (20 % in $H_2O$):
410 nm. ..... ≤0,1
Solubility (10 % in $H_2O$). ..... clear, colourless
Colour count (APHA, 10 % in $H_2O$). ..... ≤10
Turbidity (10 %, water). ..... ≤2,5 NTU
Chloride (Cl). ..... ≤0,01 %
Lead (Pb). ..... ≤0,0002 %

| | | | |
|---|---|---|---|
| **8029.1** | 100 g | plastic | 26,35 € |
| **8029.2** | 250 g | plastic | 52,60 € |
| **8029.3** | 500 g | plastic | 91,30 € |
| Original pack 6 x 500 g | | | 86,74/500 g |
| **8029.4** | 1 kg | plastic | 170,95 € |
| Original pack 6 x 1 kg | | | 162,40/1 kg |

For further information, please see page 1274

### SDS Pellets

**≥99 %, for biochemistry**
Anionic detergent.

**Guarantee analysis:**
Appearance. ..... white to off-white pellets
Assay (GC). ..... ≥99 %
pH value (1 % in $H_2O$). ..... 7,5-10,5
UV-absorption (10 % in $H_2O$):
260 nm. ..... ≤1,5
280 nm. ..... ≤1,0
Solubility (10 % in $H_2O$). ..... clear, ≤50 Hazen

| | | | |
|---|---|---|---|
| **CN30.1** | 250 g | plastic | 26,35 € |
| **CN30.2** | 500 g | plastic | 41,85 € |
| Original pack 6 x 500 g | | | 39,76/500 g |
| **CN30.3** | 1 kg | plastic | 67,20 € |
| Original pack 6 x 1 kg | | | 63,84/1 kg |
| **CN30.4** | 2,5 kg | plastic | 121,40 € |

### SDS powder (pouch)

▶ Roti®fair 10% SDS see p. 2214

### SDS (tablet)

▶ Roti®fair SDS 0.5g see p. 2214

## Sea sand

$SiO_2$
bp 2230 °C
mp 1710 °C
[14808-60-7] • EC No. 238-878-4

### Sea sand

**p.a., purified by acid and calcinated**
Filtration aids

**Guarantee analysis:**
Acid soluble iron (Fe). ..... ≤0,01 %
Loss on ignition (900 °C). ..... ≤0,05 %
Substances soluble in HCl . ..... ≤0,2 %
Chloride (Cl). ..... ≤0,005 %
Particle size (0,1-0,315 mm). ..... ≥90 %

| | | | |
|---|---|---|---|
| **4309.2** | 500 g | plastic | 52,60 € |
| Original pack 6 x 500 g | | | 49,97/500 g |
| **4309.1** | 1 kg | plastic | 92,35 € |
| Original pack 6 x 1 kg | | | 87,73/1 kg |
| **4309.3** | 2,5 kg | plastic | 155,90 € |
| **4309.4** | 5 kg | plastic | 299,95 € |
| **4309.5** | 10 kg | plastic | 557,95 € |

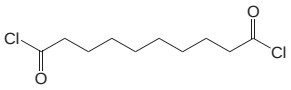
### Sea sand

**extra pure, purified by acid**
Filtration aids

**Type analysis:**
Acid soluble iron (Fe). ..... ≤0,01 %
Loss on ignition (800 °C). ..... ≤0,5 %
Substances soluble in HCl . ..... ≤0,5 %
Chloride (Cl). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **8441.3** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **8441.1** | 1 kg | plastic | 46,15 € |
| Original pack 6 x 1 kg | | | 43,84/1 kg |
| **8441.4** | 2,5 kg | plastic | 93,45 € |
| **8441.2** | 5 kg | plastic | 179,45 € |
| **8441.5** | 10 kg | plastic | 332,20 € |
| **8441.6** | 25 kg | plastic | 751,45 € |

## Sebacic acid dichloride



### Sebacic acid dichloride

**≥98 %**
Sebacoyl chloride
$C_{10}H_{16}Cl_2O_2$
M 239,14 g/mol
D ~1,12 • bp 161 °C (19 hPa)
mp -5 °C • flp 113 °C
[111-19-3] • EC No. 203-843-4
UN No. 3265 • ADR 8 II • WGK 2
**Danger** H302-H314-H335

**Type analysis:**
Assay.....≥98,0 %

| | | | |
|---|---|---|---|
| **4472.2** | 10 ml | glass | 24,65 € |
| **4472.1** | 50 ml | glass | 74,10 € |
| **4472.3** | 250 ml | glass | 232,10 € |

## Sebacoyl chloride

▶ Sebacic acid dichloride see p. 2245

## Secondary Antibody

| Art. No. | Description | Page |
|---|---|---|
| 4754 | Anti Human-AP | 1745 |
| 4755 | Anti Human-FITC | 1745 |
| 4753 | Anti Human-HRP | 1745 |
| 4760 | Anti Mouse-AP | 1745 |
| 4761 | Anti Mouse-FITC | 1745 |
| 4759 | Anti Mouse-HRP | 1745 |
| 4751 | Anti Rabbit-AP | 1745 |
| 4752 | Anti Rabbit-FITC | 1745 |
| 4750 | Anti Rabbit-HRP | 1746 |
| 4763 | Anti Rat-AP | 1746 |
| 4764 | Anti Rat-FITC | 1746 |
| 4762 | Anti Rat-HRP | 1746 |

## Seignette salt

▶ Potassium sodium tartrate tetrahydrate see p. 2174

## Sekuroka® Decon-Bags

### Sekuroka® Decon-Bags

Absorber bags for removing ethidium bromide from liquids.
[7440-44-0]

| | | |
|---|---|---|
| **T856.2** | 10 Bags | 30,00 € |
| **T856.1** | 50 Bags | 126,35 € |
| **T856.3** | 250 Bags | 536,45 € |

For further information, please see page 1188

## Selenium pellets

### Selenium pellets

**ROTI®METIC 99,999 % (5N)**
Se
M 78,96 g/mol
D ~4,35 • bp 685 °C
mp 217 °C
[7782-49-2] • EC No. 231-957-4
UN No. 3288 • ADR 6.1 III • WGK 2
**Danger** H301+H331-H373-H413

**Type analysis:**
Assay (metals basis). ..... 99,999 %
Particle size. ..... ~3-6 mm
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **4547.1** | 10 g | plastic | 46,15 € |
| **4547.2** | 50 g | plastic | 170,95 € |

## Selenium Standards

▶ Selenium AAS Standard Solution see p. 2295
▶ Selenium ICP Standard Solution see p. 2304
▶ Selenium ICP Standard Solution see p. 2300

## Selenium dioxide

▶ Selenium(IV) oxide see p. 2245

## Selenium(IV) oxide

### Selenium(IV) oxide

**ROTI®METIC 99,999 % (5N)**
Selenium dioxide
$SeO_2$
M 110,96 g/mol
D 3,95
mp 315 °C (subl.)
Solubility: 2640 g/l ($H_2O$, 20 °C)
[7446-08-4] • EC No. 231-194-7
UN No. 3283 • ADR 6.1 III • WGK 2
**Danger** H301+H331-H373-H410

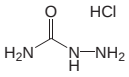
**Type analysis:**
Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5324.1** | 10 g | glass | 134,40 € |

## SEM-chloride

▶ 2-(Trimethylsilyl)ethoxymethyl chloride see p. 2355

## Semicarbazide hydrochloride



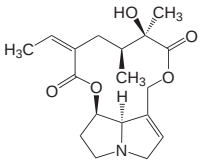
### Semicarbazide hydrochloride

**≥98 %, p.a.**
Reagent for aldehydes and ketones.
N-Aminourea hydrochloride
$CH_5N_3O \cdot HCl$
M 111,53 g/mol
mp 175-177 °C (dec.)
[563-41-7] • EC No. 209-247-0
UN No. 2811 • ADR 6.1 III • WGK 3
**Danger** H301-H315-H319

**Guarantee analysis:**
Assay. .....≥98,0 %
Solution (10 % in water). .....colourless
Loss on drying (105 °C). .....≤6,0 %

| | | | |
|---|---|---|---|
| **4681.1** | 100 g | plastic | 32,15 € |
| **4681.2** | 500 g | plastic | 115,60 € |
| Original pack 6 x 500 g | | | 109,82/500 g |

## Senecionine



### Senecionine

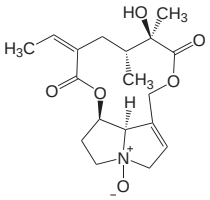
**ROTICHROM® GC**
Reference substance for GC.
Aureine, 12-Hydroxysenecionan-11,16-dione
$C_{18}H_{25}NO_5$
M 335,17 g/mol
mp 232-233 °C
Storage temp.: +4 °C
[130-01-8]
UN No. 1544 • ADR 6.1 III
**Danger** H301+H311+H331-H373

**Type analysis:**
Purity (GC). .....≥96 %

| | | | |
|---|---|---|---|
| **2261.1** | 10 mg | glass | 112,80 € |

S

## Senecionine N-oxide



### Senecionine N-oxide

**ROTICHROM® HPLC**

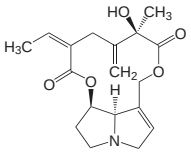
Reference substance for HPLC.
From *Senecio vulgaris.*
12-Hydroxysenecionan-11,16-dione-4-oxide
$C_{18}H_{25}NO_6$
M 351,39 g/mol
Storage temp.: +4 °C
[13268-67-2]
UN No. 1544 • ADR 6.1 III • WGK 1

**Danger** H301-H373

**Type analysis:**
Purity (HPLC)..... ≥95 %

| | | | |
|---|---|---|---|
| **6734.1** | 10 mg | glass | 428,95 € |

## Seneciphylline



Jacodine, α-Longilobine, 13,19-Didehydro-12-hydroxysenecionan-11,16-dione
$C_{18}H_{23}NO_5$
M 333,38 g/mol
Storage temp.: +4 °C
[480-81-9]
UN No. 1544 • ADR 6.1 III • WGK 3

**Danger** H301+H311+H331-H373

### Seneciphylline

**≥94 %**

**Type analysis:**
Assay..... ≥94 %

| | | | |
|---|---|---|---|
| **6414.1** | 10 mg | glass | 84,40 € |

### Seneciphylline

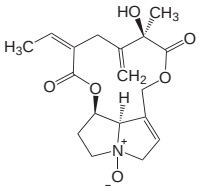
**with analytical records**

From *Senecio vulgaris*.

**Type analysis:**
Purity (HPLC)..... >99 %
**Analytical records:** HPLC, TLC, $^{1}$H-NMR, $^{13}$C-NMR, UV, IR, MS, melting point.

| | | | |
|---|---|---|---|
| **1214.1** | 20 mg | glass | 489,15 € |

## Seneciphylline N-oxide



### Seneciphylline N-oxide

**ROTICHROM® HPLC**

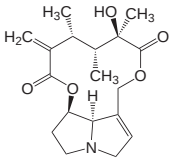
Reference substance for HPLC.
From *Senecio vulgaris.*
$C_{18}H_{23}NO_6$
M 349,37 g/mol
Storage temp.: +4 °C
[38710-26-6]
UN No. 1544 • ADR 6.1 III • WGK 1

**Danger** H301-H373

**Type analysis:**
Purity (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **6735.1** | 10 mg | glass | 478,40 € |

## Senecivernine



### Senecivernine

**ROTICHROM® HPLC**

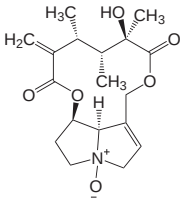
Reference substance for HPLC.
From *Senecio inaequidens.*
$C_{18}H_{25}NO_5$
M 335,39 g/mol
mp 103-108 °C
Storage temp.: +4 °C
[72755-25-0]
WGK 1

**Warning** H302

**Type analysis:**
Purity (HPLC). ..... ≥95,0 %

| | | | |
|---|---|---|---|
| **2209.1** | 5 mg | glass | 289,20 € |

## Senecivernine N-oxide



### Senecivernine N-oxide

**ROTICHROM® HPLC**

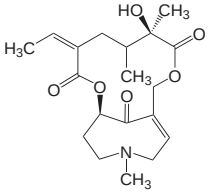
Reference substance for HPLC.
From *Senecio naequidens.*
$C_{18}H_{25}NO_6$
M 351,39 g/mol
Storage temp.: +4 °C
WGK 1

**Warning** H302

**Type analysis:**
Purity (HPLC)..... ≥95,0 %

| | | | |
|---|---|---|---|
| **2215.1** | 5 mg | glass | 310,70 € |

## Senkirkine



### Senkirkine

**ROTICHROM® HPLC**

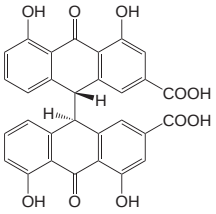
Reference substance for HPLC.
Renardin
$C_{19}H_{27}NO_6$
M 365,4 g/mol
mp 197,5-198 °C
Storage temp.: +4 °C
[6882-01-5]
UN No. 1544 • ADR 6.1 II

**Danger** H301+H311+H331-H373

**Type analysis:**
Purity (HPLC)..... ≥95 %

| | | | |
|---|---|---|---|
| **4934.1** | 10 mg | glass | 342,95 € |

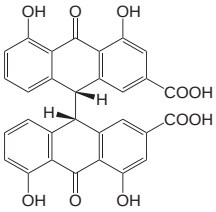
## Sennidine A



### Sennidine A
**ROTICHROM® ~CHR**
$C_{30}H_{18}O_{10}$
M 538,46 g/mol
Storage temp.: +4 °C
[641-12-3] • EC No. 211-371-5
WGK 1
**Warning** H302

| | | | |
|---|---|---|---|
| **7012.1** | 10 mg | glass | 213,95 € |

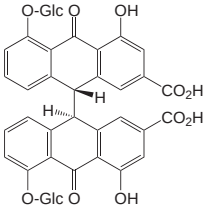
## Sennidine B



### Sennidine B
**ROTICHROM® ~CHR**
$C_{30}H_{18}O_{10}$
M 538,46 g/mol
Storage temp.: +4 °C
[517-44-2] • EC No. 208-239-4
WGK 1
**Warning** H302

| | | | |
|---|---|---|---|
| **7016.1** | 10 mg | glass | 267,70 € |

## Sennoside A



$C_{42}H_{38}O_{20}$
M 862,72 g/mol
[81-27-6] • EC No. 201-339-9
WGK 3

### Sennoside A
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC).....≥80,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤5,0 %
Assay (qNMR).....≥75,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE53.1** | 50 mg | glass | 1009,45 € |

### Sennoside A
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC).....≥75,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC53.1** | 50 mg | glass | 349,40 € |

### Sennoside A
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Cassia angustifolia.*
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC).....>98 %

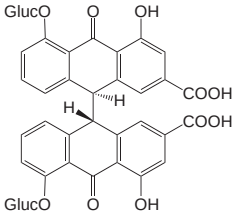
| | | | |
|---|---|---|---|
| **7423.1** | 10 mg | glass | 126,75 € |

### Sennoside A
**ROTICHROM® ~CHR**
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **9349.1** | 100 mg | glass | 428,95 € |

## Sennoside A'
▶ Sennoside A1 see p. 2247

## Sennoside A1

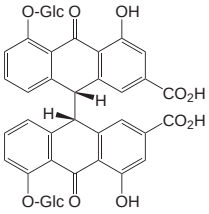


### Sennoside A1
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Cassia angustifolia.*
Sennoside G, Sennoside A'
$C_{42}H_{38}O_{20}$
M 862,72 g/mol
Storage temp.: +4 °C
[66575-30-2]
WGK 3

**Type analysis:**
Purity (HPLC).....≥95 %

| | | | |
|---|---|---|---|
| **6693.1** | 10 mg | glass | 289,20 € |

## Sennoside B



$C_{42}H_{38}O_{20}$
M 862,72 g/mol
mp 200 °C
[128-57-4] • EC No. 204-895-0
WGK 1

### Sennoside B
**≥90 %**
Storage temp.: +4 °C

**Type analysis:**
Appearance.....yellowish powder
Assay.....≥90 %

| | | | |
|---|---|---|---|
| **9352.1** | 100 mg | glass | 381,65 € |

### Sennoside B
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC).....≥85,0 %
Residual solvents (GC).....≤2,0 %
Water (KF).....≤7,0 %
Assay (qNMR).....≥80,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE54.1** | 50 mg | glass | 1009,45 € |

### Sennoside B
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC).....≥80,0 %
Identity.....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC54.1** | 50 mg | glass | 392,40 € |

### Sennoside B
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Cassia angustifolia.*
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC).....≥98 %

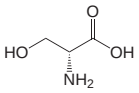
| | | | |
|---|---|---|---|
| **7424.1** | 10 mg | glass | 198,90 € |

## Sennoside G
▶ Sennoside A1 see p. 2247

## Sequencing gel solutions

▶ Rotiphorese® DNA sequencing system see p. 2228

## D-Serine



### D-Serine

**≥99 %, for biochemistry**

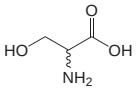
$C_3H_7NO_3$
M 105,09 g/mol
mp 215-225 °C (dec.)
Solubility: 360 g/l ($H_2O$, 20 °C)
[312-84-5] • EC No. 206-229-4
WGK 1

**Type analysis:**

Appearance. ..... white, cryst. powder
Assay. ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **7531.2** | 1 g | glass | 17,75 € |
| **7531.1** | 5 g | plastic | 24,65 € |
| **7531.3** | 25 g | plastic | 95,60 € |

## DL-Serine



### DL-Serine

**≥99 %, for biochemistry**

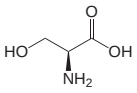
$C_3H_7NO_3$
M 105,09 g/mol
Storage temp.: +4 °C
[302-84-1] • EC No. 206-130-6
WGK 1

**Type analysis:**

Appearance. ..... white cryst. powder
Assay. ..... ≥99,0 %
Identity (IR). ..... complies
Heavy metals (as Pb). ..... ≤0,001 %
Ash content. ..... ≤0,1 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8606.1** | 100 g | plastic | 45,05 € |
| **8606.2** | 500 g | plastic | 192,45 € |
| Original pack 6 x 500 g | | | 182,83/500 g |

## L-Serine



3-Hydroxy-L-alanine
$C_3H_7NO_3$
M 105,09 g/mol
Solubility: ~270 g/l ($H_2O$, 20 °C)
[56-45-1] • EC No. 200-274-3
WGK 1

### L-Serine

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... +14,0° to +16,0°
Foreign amino acids. ..... complies
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1714.1** | 25 g | plastic | 25,30 € |
| **1714.2** | 100 g | plastic | 61,20 € |
| **1714.3** | 500 g | plastic | 246,20 € |
| Original pack 6 x 500 g | | | 233,89/500 g |

### L-Serine

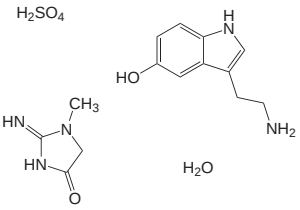
**≥98,5 %, Ph.Eur.**

**Guarantee analysis:**

Appearance. ..... white, cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Specific rotation $[\alpha]_D^{20}$. ..... +14,0° to +16,0°
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,03 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4682.1** | 100 g | plastic | 45,05 € |
| **4682.3** | 250 g | plastic | 85,90 € |
| **4682.4** | 500 g | plastic | 160,20 € |
| Original pack 6 x 500 g | | | 152,19/500 g |
| **4682.2** | 1 kg | plastic | 278,45 € |
| Original pack 6 x 1 kg | | | 264,53/1 kg |

## Serotonin creatinine sulphate monohydrate



### Serotonin creatinine sulphate monohydrate

**≥99 %, for biochemistry**

$C_{14}H_{21}N_5O_6S \cdot H_2O$
M 405,44 g/mol
mp 218-222°C (dec.)
Storage temp.: +4 °C
[971-74-4] • EC No. 213-539-3
WGK 1

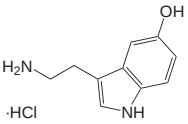
**Warning** H361-H302+H312+H332

**Type analysis:**

Assay (titr.). ..... ≥99,0 %
Melting point (dec.). ..... 218-222 °C
Water (KF). ..... 3,4-5,4 %

| | | | |
|---|---|---|---|
| **8385.1** | 1 g | glass | 121,40 € |

## Serotonin hydrochloride



### Serotonin hydrochloride

**≥98 %, for biochemistry**

5-Hydroxytryptamine hydrochloride,
3-(2-Aminoethyl)-5-hydroxyindole hydrochloride
$C_{10}H_{12}N_2O \cdot HCl$
M 212,68 g/mol
mp 171 °C
Storage temp.: +4 °C
[153-98-0] • EC No. 244-464-4
UN No. 2811 • ADR 6.1 III • WGK 3

**Danger** H301

**Type analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay (arg.). ..... ≥98,0 %
Appearance of solution (1 % in MeOH). ..... colourless
Loss on drying (3 h, 115 °C, vacuum). ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **8367.1** | 100 mg | glass | 19,25 € |
| **8367.2** | 1 g | glass | 35,40 € |
| **8367.3** | 5 g | glass | 138,70 € |

## Sheets of gold

### Sheets of gold
**22 carat, block of 25 sheets 80 x 80 mm**
[7440-57-5] • EC No. 231-165-9

| | | |
|---|---|---|
| **7605.1** | 1 piece (25 sheets) | 109,55 € |

## Sheets of silver

### Sheets of silver
**thickness 4 µm,**
**block of 25 sheets 95 x 95 mm**
[7440-22-4] • EC No. 231-131-3

| | | |
|---|---|---|
| **9367.1** | 1 piece (25 sheets) | 37,30 € |

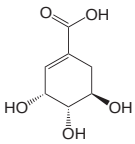
## Shellac

### Shellac
**orange lamella**
mp 65-80 °C
[9000-59-3] • EC No. 232-549-9

**Type analysis:**
Appearance. ..... orange-coloured lamella
Acid value (mg KOH/g). ..... 60-75
Melting point. ..... 65-80 °C
Loss on drying. ..... ≤2 %
Wax. ..... ≤5,5 %

| | | | |
|---|---|---|---|
| **9298.2** | 100 g | plastic | 17,10 € |
| **9298.3** | 500 g | plastic | 50,00 € |
| Original pack 6 x 500 g | | | 47,50/500 g |
| **9298.1** | 1 kg | plastic | 84,40 € |
| Original pack 6 x 1 kg | | | 80,18/1 kg |

## Shikimic acid



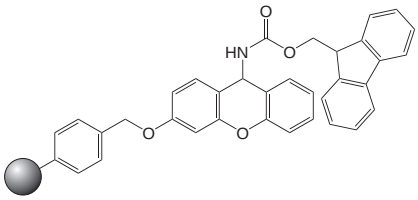
### Shikimic acid
**≥98 %, for biochemistry**
$C_7H_{10}O_5$
M 174,15 g/mol
mp 190°C
Solubility: 180 g/l ($H_2O$, 20 °C)
[138-59-0] • EC No. 205-334-2

**Type analysis:**
Appearance. ..... white powder
Assay (HPLC). ..... ≥98 %
Loss on drying. ..... ≤5 %

| | | | |
|---|---|---|---|
| **7305.2** | 250 mg | glass | 23,15 € |
| **7305.1** | 1 g | glass | 79,05 € |

## Sialic acid
▶ N-Acetylneuraminic acid see p. 1704

## Sieber amide resin



### Sieber amide resin
**100-200 mesh**
For peptide synthesis
9-Fmoc-amino-xanthen-3-yloxy-Merrifield resin
Storage temp.: +4 °C
WGK 3

**Type analysis:**
Appearance. ..... white to slightly brown powder
Loading. ..... 0,5-0,8 mmol/g
Swelling. ..... 5-6 ml/g (DMF, 24 h)

| | | | |
|---|---|---|---|
| **7408.1** | 1 g | glass | 89,15 € |
| **7408.2** | 5 g | plastic | 360,15 € |

## Signal Enhancer Western/ ELISA

Enhancer solution
Storage temp.: +4 °C •
Transport temp.: cooled

### Signal Enhancer Western/ ELISA Set
**for immunochemistry**
For enhancement of immunochemical detection signals on blot membranes and in ELISA.
One set with 250 ml each is sufficient for optimization of approx. 25 minigel blots.

**Type analysis:**
Application test (ELISA). ..... complies

| | | | |
|---|---|---|---|
| **9211.2** | 1 Mini-Set | plastic | 137,10 € |
| **9211.1** | 1 Set | plastic | 403,15 € |

For further information, please see page 1326

### Signal Enhancer Western/ ELISA-1
**for immunochemistry**
For optimisation of primary antibody binding in immunochemical assays.
One bottle with 250 ml is sufficient for approx. 25 assays.

**Type analysis:**
Application test (ELISA). ..... complies

| | | | |
|---|---|---|---|
| **9213.1** | 250 ml | plastic | 231,15 € |

For further information, please see page 1326

### Signal Enhancer Western/ ELISA-2
**for immunochemistry**
For optimisation of binding of secondary and labelled antibodies in immunochemical assays.
One bottle with 250 ml is sufficient for approx. 25 assays.

**Type analysis:**
Application test (ELISA). ..... complies

| | | | |
|---|---|---|---|
| **9214.1** | 250 ml | plastic | 231,15 € |

For further information, please see page 1326

## Silica acid, amorphous
▶ Silica gel 22 Grade 12 see p. 2249
▶ Silica gel 35 see p. 2250
▶ Silica gel 60 see p. 2250
▶ Silica gel 150 see p. 2253
▶ Silica gel 250 see p. 2254
▶ Silica gel 500 see p. 2254
▶ Silica gel 1000 see p. 2255
▶ Silica gel 1500 see p. 2255
▶ Silica gel 2500 see p. 2256
▶ Silica gel 4500 see p. 2256

## Silica gel 22 Grade 12

### Silica gel 22 Grade 12
**0,07-0,21 mm (200-70 mesh)**
For column chromatography.
Silicic acid amorphous, Siliciumdioxide
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

**Type analysis:**
Appearance. ..... white powder
Pore volume ($N_2$). ..... ≤0,55 ml/g
Specific surface. ..... ≥600 $m^2/g$
Loss on drying. ..... ≤5,0 %
pH value (5 % in $H_2O$). ..... ≥3,0
Volatile parts (950 °C). ..... ≤10,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,03 %
$Na_2O$ content (dry substance). ..... ≤0,3 %
$SO_4$ content. ..... ≤0,4 %
Particle-size distribution:
>30 mesh. ..... ≤6,0 %
> 70 mesh. ..... ≥50,0 %
>140 mesh. ..... ≥85,0 %
<200 mesh. ..... ≤6,0 %
>200 mesh. ..... ≥94,0 %
Adsorptive capacity:
80 % rel. humidity, 25 °C. ..... ≥31,0 %
Bulk density. ..... 640-800 g/l

| | | | |
|---|---|---|---|
| **9698.1** | 250 g | plastic | 49,35 € |
| **9698.2** | 500 g | plastic | 75,15 € |
| Original pack 6 x 500 g | | | 71,39/500 g |
| **9698.3** | 1 kg | plastic | 132,15 € |
| Original pack 6 x 1 kg | | | 125,54/1 kg |
| **9698.4** | 2,5 kg | plastic | 256,95 € |

S

## Silica gel 35

Silicic acid amorphous, Siliciumdioxide
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

### Silica gel 35

NEW

**0,01-0,014 mm**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume ($N_2$). ..... 0,5-0,7 ml/g
Specific surface (BET). ..... ≥550 $m^2$/g
pH value (5 % in $H_2O$). ..... 4,5-6,5
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content (dry substance). ..... ≤0,10 %
Particle size:
d10. ..... ≥5,5 µm
d50. ..... 10,0-14,0 µm
d90. ..... ≤23,0 µm

| | | | |
|---|---|---|---|
| **0380.1** | 250 g | plastic | 42,90 € |
| **0380.2** | 500 g | plastic | 70,85 € |
| Original pack 6 x 500 g | | | 67,31/500 g |
| **0380.3** | 1 kg | plastic | 127,95 € |
| Original pack 6 x 1 kg | | | 121,55/1 kg |
| **0380.4** | 2,5 kg | plastic | 267,70 € |

### Silica gel 35

**0,04-0,063 mm (400-230 mesh)**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 29-40 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume ($N_2$). ..... 0,5-0,7 ml/g
Specific surface. ..... ≥550 $m^2$/g
pH. ..... 4,5-6,5
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... 23,4-41,1 µm
d50. ..... 48,2-65,3 µm
d90. ..... 75,5-96,0 µm

| | | | |
|---|---|---|---|
| **5400.1** | 250 g | plastic | 40,35 € |
| **5400.2** | 500 g | plastic | 70,85 € |
| Original pack 6 x 500 g | | | 67,31/500 g |
| **5400.3** | 1 kg | plastic | 113,85 € |
| Original pack 6 x 1 kg | | | 108,16/1 kg |
| **5400.4** | 2,5 kg | plastic | 225,65 € |

## Silica gel 60

Silicic acid amorphous, Siliciumdioxide
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

### Silica gel 60

**1,0-3,0 mm**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6,0 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2$/g
pH value. ..... 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
<1,0 mm. ..... ≤5,0 %
>3,15 mm. ..... ≤5,0 %
>3,55 mm. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **9833.1** | 250 g | plastic | 36,45 € |
| **9833.2** | 500 g | plastic | 67,20 € |
| Original pack 6 x 500 g | | | 63,84/500 g |
| **9833.3** | 1 kg | plastic | 117,20 € |
| Original pack 6 x 1 kg | | | 111,34/1 kg |
| **9833.4** | 2,5 kg | plastic | 209,65 € |

### Silica gel 60

**0,006-0,035 mm**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6,0 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2$/g
pH value. ..... 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
>6,4 µm. ..... ≥98,0 %
>10,1 µm. ..... ≥90,0 %
>40,3 µm. ..... ≤10,0 %

| | | | |
|---|---|---|---|
| **9779.1** | 250 g | plastic | 32,15 € |
| **9779.2** | 500 g | plastic | 53,25 € |
| Original pack 6 x 500 g | | | 50,59/500 g |
| **9779.3** | 1 kg | plastic | 94,50 € |
| Original pack 6 x 1 kg | | | 89,78/1 kg |
| **9779.4** | 2,5 kg | plastic | 165,05 € |

### Silica gel 60 Grade 710 NW

**0,010-0,014 mm**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (200 °C). ..... ≤8,5 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2$/g
pH value. ..... 6,5-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... ≥5,5 µm
d50. ..... 10,0-14,0 µm
d90. ..... ≤23,0 µm

| | | | |
|---|---|---|---|
| **9859.1** | 25 g | plastic | 44,65 € |
| **9859.2** | 50 g | plastic | 77,95 € |
| **9859.3** | 100 g | plastic | 143,55 € |

### Silica gel 60

**0,016-0,024 mm**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Loss on drying (160 °C). ..... 3,0-9,0 %
Pore volume ($H_2O$). ..... 0,8-1,0 ml/g
Specific surface (BET). ..... 500-600 $m^2$/g
pH value (5 % in $H_2O$). ..... 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,1 %
Particle-size distribution:
d20. ..... ≥13,0 µm
d50. ..... 23,0-28,0 µm
d90. ..... ≤46,0 µm

| | | | |
|---|---|---|---|
| **9817.1** | 250 g | plastic | 67,65 € |
| **9817.2** | 500 g | plastic | 123,10 € |
| Original pack 6 x 500 g | | | 116,95/500 g |
| **9817.3** | 1 kg | plastic | 224,70 € |
| Original pack 6 x 1 kg | | | 213,47/1 kg |
| **9817.4** | 2,5 kg | plastic | 504,20 € |

### Silica gel 60

**0,02-0,045 mm**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2$/g
pH value. ..... 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
>16,0 µm. ..... ≥98 %
>20,2 µm. ..... ≥90 %
>64,0 µm. ..... ≤4 %

| | | | |
|---|---|---|---|
| **0712.1** | 250 g | plastic | 27,45 € |
| **0712.2** | 500 g | plastic | 41,85 € |
| Original pack 6 x 500 g | | | 39,76/500 g |
| **0712.4** | 1 kg | plastic | 70,85 € |
| Original pack 6 x 1 kg | | | 67,31/1 kg |
| **0712.3** | 2,5 kg | plastic | 158,60 € |

## Silica gel 60

**0,03-0,2 mm**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 550-600 $m^2/g$
pH value ..... 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... >30 µm
d90. ..... <250 µm

| | | | |
|---|---|---|---|
| **P090.1** | 500 g | plastic | 33,25 € |
| Original pack 6 x 500 g | | | 31,59/500 g |
| **P090.2** | 1 kg | plastic | 57,95 € |
| Original pack 6 x 1 kg | | | 55,05/1 kg |
| **P090.3** | 2,5 kg | plastic | 138,70 € |
| **P090.4** | 5 kg | plastic | 209,65 € |
| **P090.5** | 25 kg | plastic | 600,95 € |

## Silica gel 60

**0,035-0,07 mm (400-220 mesh)**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
pH. ..... 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
>20,2 µm. ..... ≥99,0 %
>32,0 µm. ..... ≥87,0 %
>80,7 µm. ..... ≤3,0 %

| | | | |
|---|---|---|---|
| **5401.1** | 250 g | plastic | 27,85 € |
| **5401.2** | 500 g | plastic | 44,65 € |
| Original pack 6 x 500 g | | | 42,42/500 g |
| **5401.3** | 1 kg | plastic | 73,00 € |
| Original pack 6 x 1 kg | | | 69,35/1 kg |
| **5401.4** | 2,5 kg | plastic | 165,05 € |

## Silica gel 60

**0,04-0,063 mm (400-230 mesh)**

For column chromatography.
Suitable for flash chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6,0 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
pH value ..... 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... 23,4-41,1 µm
d50. ..... 48,2-65,3 µm
d90. ..... 75,5-96,0 µm

| | | | |
|---|---|---|---|
| **P091.1** | 250 g | plastic | 29,60 € |
| **P091.2** | 1 kg | plastic | 82,25 € |
| Original pack 6 x 1 kg | | | 78,14/1 kg |
| **P091.3** | 2,5 kg | plastic | 188,15 € |
| **P091.4** | 5 kg | plastic | 276,85 € |
| **P091.5** | 25 kg | plastic | 923,45 € |

## Silica gel 60

**0,07-0,2 mm**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6,0 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
pH value (5 % in $H_2O$). ..... 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
>0,063 mm. ..... ≥98,0 %
>0,200 mm. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **9820.1** | 250 g | plastic | 26,80 € |
| **9820.2** | 500 g | plastic | 44,65 € |
| Original pack 6 x 500 g | | | 42,42/500 g |
| **9820.3** | 1 kg | plastic | 67,20 € |
| Original pack 6 x 1 kg | | | 63,84/1 kg |
| **9820.4** | 2,5 kg | plastic | 110,65 € |

## Silica gel 60

NEW

**0,09-0,13 mm**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6 %
pH value (5 % in $H_2O$). ..... 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content (dry substance). ..... ≤0,10 %
Particle size (µm):
>63. ..... ≥99,0 %
>90. ..... ≥90,0 %
>150. ..... ≤3,0 %

| | | | |
|---|---|---|---|
| **0399.1** | 250 g | plastic | 37,55 € |
| **0399.2** | 500 g | plastic | 64,40 € |
| Original pack 6 x 500 g | | | 61,18/500 g |
| **0399.3** | 1 kg | plastic | 117,20 € |
| Original pack 6 x 1 kg | | | 111,34/1 kg |
| **0399.4** | 2,5 kg | plastic | 235,45 € |

## Silica gel 60

**0,2-0,5 mm**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6 %
Pore volume. ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
pH value. ..... 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
<200µm. ..... ≤10 %
>500 µm. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **CN18.1** | 500 g | plastic | 39,25 € |
| Original pack 6 x 500 g | | | 37,29/500 g |
| **CN18.2** | 1 kg | plastic | 66,15 € |
| Original pack 6 x 1 kg | | | 62,84/1 kg |
| **CN18.3** | 2,5 kg | plastic | 149,45 € |

## Silica gel 60

**0,8-1,2 mm**

For column chromatography.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Loss on drying (160 °C). ..... ≤6,0 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
pH value (5 % in $H_2O$). ..... 6,0-8,0
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,1 %
Particle-size distribution:
<0,63 mm. ..... ≤0,5 %
<0,8 mm. ..... ≤20,0 %
>1,25 mm. ..... ≤5,0 %

| | | | |
|---|---|---|---|
| **9828.1** | 250 g | plastic | 28,95 € |
| **9828.2** | 500 g | plastic | 51,50 € |
| Original pack 6 x 500 g | | | 48,93/500 g |
| **9828.3** | 1 kg | plastic | 78,40 € |
| Original pack 6 x 1 kg | | | 74,48/1 kg |
| **9828.4** | 2,5 kg | plastic | 132,80 € |

## Silica gel 60 modified phases

$SiO_2$
[7631-86-9] • EC No. 231-545-4

## Silica gel 60 amino

NEW

**0,010-0,014 mm**

For liquid chromatography.
Normal or reversed-phase separations.
Silica gel $NH_2$

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
Carbon content. ..... ~4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... ≥5,5 µm
d50. ..... 10,0-14,0 µm
d90. ..... ≤23,0 µm

| | | | |
|---|---|---|---|
| **0600.1** | 10 g | plastic | 42,90 € |
| **0600.2** | 50 g | plastic | 149,45 € |
| **0600.3** | 100 g | plastic | 267,70 € |

S

## Silica gel amino

**0,035-0,07 mm (400-220 mesh)**

For liquid chromatography.
Normal or reversed-phase separations.
Silica gel $NH_2$

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Carbon content. ..... ~4 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
d50. ..... 47,0-60,0 µm
<31 µm. ..... ≤17,0 %
<200 mesh. ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **5475.1** | 50 g | glass | 149,45 € |
| **5475.2** | 100 g | glass | 267,70 € |
| **5475.3** | 250 g | glass | 600,95 € |

## Silica gel $C_{18}$

**0,01-0,014 mm**

For liquid chromatography.
Reversed-phase separations.
Octadecyl-modified silica gel - endcapped

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Carbon content. ..... 5-7 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... ≥5,5 µm
d50. ..... 10,0-14,0 µm
d90. ..... ≤23,0 µm

| | | | |
|---|---|---|---|
| **5509.1** | 50 g | glass | 138,70 € |
| **5509.2** | 100 g | glass | 256,95 € |
| **5509.3** | 250 g | glass | 547,20 € |

## Silica gel $C_{18}$

**0,035-0,07 mm (400-220 mesh)**

For liquid chromatography.
Reversed-phase separations.
Octadecyl-modified silica gel - endcapped

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Carbon content. ..... ~17 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
d50. ..... 47,0-60,0 µm
<31 µm. ..... ≤17,0 %
<200 mesh. ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **5504.1** | 50 g | glass | 106,45 € |
| **5504.2** | 100 g | glass | 203,20 € |
| **5504.3** | 250 g | glass | 428,95 € |

## Silica gel 60 $C_{18}$ ec

**0,045 mm**

For SPE and QuEChERS method
Octacedyl modified silica - endcapped

**Type analysis:**

Mean pore diameter. ..... 60 Å
Mean particle size. ..... 45 µm
Capacity (mg caffein/g sorbent). ..... ≥90
Loss on ignition. ..... ≤23 %

| | | | |
|---|---|---|---|
| **6070.1** | 10 g | glass | 56,90 € |
| **6070.2** | 25 g | glass | 115,00 € |

For further information, please see page 1610

## Silica gel cyano

**0,01-0,014 mm**

For liquid chromatography.
Normal or reversed-phase separations.
Silica gel CN - endcapped

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
Carbon content. ..... ~5 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... ≥5,5 µm
d50. ..... 10,0-14,0 µm
d90. ..... ≤23,0 µm

| | | | |
|---|---|---|---|
| **5531.1** | 50 g | glass | 170,95 € |
| **5531.2** | 100 g | glass | 299,95 € |
| **5531.3** | 250 g | glass | 654,70 € |

## Silica gel cyano

**0,035-0,07 mm (400-220 mesh)**

For liquid chromatography.
Normal or reversed-phase separations.
Silica gel CN - endcapped

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Carbon content. ..... ~5 %
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
$SO_4$ content. ..... ≤0,10 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
Particle-size distribution:
d50. ..... 47,0-60,0 µm
<31 µm. ..... ≤17,0 %
<200 mesh. ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **5499.1** | 50 g | glass | 156,85 € |
| **5499.2** | 100 g | glass | 278,45 € |
| **5499.3** | 250 g | glass | 622,45 € |

## Silica gel 60 diamino

**0,045 mm**

For the QuEChERS method.
Aminopropylmodified silica gel for pesticide residue analysis in food.
Aminopropyl-modified silica gel, PSA

**Type analysis:**

Mean pore diameter. ..... 55-75 Å
Mean particle size. ..... 20-50 µm
Capacity (mg caffein/g sorbent). ..... ≥15
Loss on ignition. ..... ≤15 %

| | | | |
|---|---|---|---|
| **4878.1** | 10 g | glass | 78,90 € |
| **4878.2** | 25 g | glass | 169,00 € |

For further information, please see page 1610

## Silica gel diol

NEW

**0,010-0,014 mm**

For liquid chromatography.
Normal or reversed-phase separations.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
Carbon content. ..... ~6,5 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
d10. ..... ≥5,5 µm
d50. ..... 10,0-14,0 µm
d90. ..... ≤23,0 µm

| | | | |
|---|---|---|---|
| **0567.1** | 10 g | plastic | 42,90 € |
| **0567.2** | 50 g | plastic | 149,45 € |
| **0567.3** | 100 g | plastic | 267,70 € |

## Silica gel diol

**0,035-0,07 mm (400-220 mesh)**

For liquid chromatography.
Normal or reversed-phase separations.

**Type analysis:**

Appearance. ..... white powder
Pore diameter. ..... 53-80 Å
Pore volume ($N_2$). ..... 0,8-1,0 ml/g
Specific surface. ..... 500-600 $m^2/g$
Carbon content. ..... ~6,5 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content. ..... ≤0,10 %
Particle-size distribution:
d50. ..... 47,0-60,0 µm
<31 µm. ..... ≤17,0 %
<200 mesh. ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **5458.1** | 50 g | glass | 150,40 € |
| **5458.2** | 100 g | glass | 278,45 € |
| **5458.3** | 250 g | glass | 600,95 € |

## Silica gel 60 G

### Silica gel 60 G
**for TLC (with gypsum)**
For preparation of TLC plates.
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

**Type analysis:**
Loss on drying. ..... <9 %
Calcium sulphate ($CaSO_4$) ..... 11-15 %
pH value. ..... 5,5-7,5
Pore volume ..... 0,65-0,85 ml/g
Specific surface. ..... 350-450 $m^2/g$

| | | | |
|---|---|---|---|
| **CN44.3** | 250 g | plastic | 29,90 € |
| **CN44.1** | 500 g | plastic | 52,90 € |
| Original pack 6 x 500 g | | | 50,26/500 g |
| **CN44.2** | 1 kg | plastic | 88,90 € |
| Original pack 6 x 1 kg | | | 84,46/1 kg |

For further information, please see page 1579

## Silica gel 60 G/$F_{254}$

### Silica gel 60 G/$F_{254}$
**for TLC (with gypsum)**
For preparation of TLC plates.
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

**Type analysis:**
Particle size. ..... 2-55 µm
Calcium sulphate ($CaSO_4$) ..... 11-15 %
pH value (5 % suspension). ..... 5,5-7,5
Pore volume ..... 0,65-0,85 ml/g
Specific surface. ..... 350-450 $m^2/g$

| | | | |
|---|---|---|---|
| **CN45.3** | 250 g | plastic | 31,90 € |
| **CN45.1** | 500 g | plastic | 59,90 € |
| Original pack 6 x 500 g | | | 56,91/500 g |
| **CN45.2** | 1 kg | plastic | 109,50 € |
| Original pack 6 x 1 kg | | | 104,03/1 kg |

For further information, please see page 1579

## Silica gel 60 P/$F_{254}$

### Silica gel 60 P/$F_{254}$
**for preparative TLC**
For preparation of TLC plates.
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

**Type analysis:**
Particle size. ..... 0-40 µm
Loss on drying. ..... <9 %
pH value (5 % suspension). ..... 5,5-7,5
Pore volume ..... 0,65-0,85 ml/g
Specific surface. ..... 450-650 $m^2/g$

| | | | |
|---|---|---|---|
| **CN47.3** | 250 g | plastic | 31,50 € |
| **CN47.1** | 500 g | plastic | 53,90 € |
| Original pack 6 x 500 g | | | 51,21/500 g |
| **CN47.2** | 1 kg | plastic | 90,50 € |
| Original pack 6 x 1 kg | | | 85,98/1 kg |

For further information, please see page 1579

## Silica gel 150

Silicic acid amorphous, Siliciumdioxide
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

### Silica gel 150
NEW
**0,01-0,014 mm**
For column chromatography.

**Type analysis:**
Appearance ..... white powder
Pore diameter ..... 118-182 Å
Loss on drying (160 °C) ..... ≤6 %
Pore volume ($N_2$) ..... ≥1,05 ml/g
Specific surface (BET) ..... 285-365 $m^2/g$
pH value (5 % in $H_2O$) ..... 6,0-8,0
Volatile parts (950 °C) ..... ≤13,0 %
$SiO_2$ content (dry substance) ..... ≥99,3 %
$Fe_2O_3$ content (dry substance) ..... ≤0,014 %
$Na_2O$ content (dry substance) ..... ≤0,15 %
$SO_4$ content (dry substance) ..... ≤0,10 %
Particle size:
d10 ..... ≥5,5 µm
d50 ..... 10,0-14,0 µm
d90 ..... ≤23,0 µm

| | | | |
|---|---|---|---|
| **0405.1** | 100 g | plastic | 26,80 € |
| **0405.2** | 250 g | plastic | 48,30 € |
| **0405.3** | 500 g | plastic | 85,90 € |
| Original pack 6 x 500 g | | | 81,61/500 g |
| **0405.4** | 1 kg | plastic | 149,45 € |
| Original pack 6 x 1 kg | | | 141,98/1 kg |
| **0405.5** | 2,5 kg | plastic | 299,95 € |

### Silica gel 150
NEW
**0,016-0,024 mm**
For column chromatography.

**Type analysis:**
Appearance ..... white powder
Loss on drying (160 °C) ..... ≤6 %
Pore volume ($H_2O$) ..... ≥1,05 ml/g
Specific surface (BET) ..... 285-355 $m^2/g$
pH value (5 % in $H_2O$) ..... 6,0-8,0
Volatile parts (950 °C) ..... ≤13,0 %
$SiO_2$ content (dry substance) ..... ≥99,3 %
$Fe_2O_3$ content (dry substance) ..... ≤0,014 %
$Na_2O$ content (dry substance) ..... ≤0,15 %
$SO_4$ content (dry substance) ..... ≤0,10 %
Particle size:
d20 ..... ≥13,0 µm
d50 ..... 25,0-30,0 µm
d90 ..... ≤52,0 µm

| | | | |
|---|---|---|---|
| **0430.1** | 100 g | plastic | 32,15 € |
| **0430.2** | 250 g | plastic | 59,05 € |
| **0430.3** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |
| **0430.4** | 1 kg | plastic | 192,45 € |
| Original pack 6 x 1 kg | | | 182,83/1 kg |

### Silica gel 150
NEW
**0,03-0,2 mm**
For column chromatography.

**Type analysis:**
Appearance ..... white powder
Pore diameter ..... 118-182 Å
Loss on drying (160 °C) ..... ≤6 %
Pore volume ($H_2O$) ..... 1,05-1,30 ml/g
Specific surface (BET) ..... 285-355 $m^2/g$
pH value (5 % in $H_2O$) ..... 6,0-8,0
Volatile parts (950 °C) ..... ≤13,0 %
$SiO_2$ content (dry substance) ..... ≥99,3 %
$Fe_2O_3$ content (dry substance) ..... ≤0,014 %
$Na_2O$ content (dry substance) ..... ≤0,15 %
$SO_4$ content (dry substance) ..... ≤0,10 %
Particle size:
d10 ..... ≥30,0 µm
d90 ..... ≤250,0 µm

| | | | |
|---|---|---|---|
| **0448.1** | 250 g | plastic | 25,70 € |
| **0448.2** | 500 g | plastic | 37,55 € |
| Original pack 6 x 500 g | | | 35,67/500 g |
| **0448.3** | 1 kg | plastic | 64,40 € |
| Original pack 6 x 1 kg | | | 61,18/1 kg |
| **0448.4** | 2,5 kg | plastic | 127,95 € |

### Silica gel 150
**0,035-0,07 mm (400-220 mesh)**
For column chromatography.

**Type analysis:**
Appearance ..... white powder
Pore diameter ..... ~150 Å
Loss on drying (160 °C) ..... ≤6 %
Pore volume ($H_2O$) ..... ≥1,05 ml/g
Specific surface ..... 285-355 $m^2/g$
pH ..... 6,0-8,0
Volatile parts (950 °C) ..... ≤13,0 %
$SiO_2$ content (dry substance) ..... ≥99,3 %
$Fe_2O_3$ content (dry substance) ..... ≤0,014 %
$Na_2O$ content (dry substance) ..... ≤0,15 %
$SO_4$ content ..... ≤0,10 %
Particle-size distribution:
>32,0 µm ..... ≥90,0 %
>80,7 µm ..... ≤5,0 %

| | | | |
|---|---|---|---|
| **5402.1** | 250 g | plastic | 27,45 € |
| **5402.2** | 500 g | plastic | 41,85 € |
| Original pack 6 x 500 g | | | 39,76/500 g |
| **5402.3** | 1 kg | plastic | 64,40 € |
| Original pack 6 x 1 kg | | | 61,18/1 kg |
| **5402.4** | 2,5 kg | plastic | 142,45 € |

### Silica gel 150
**0,07-0,2 mm (220-70 mesh)**
For column chromatography.

**Type analysis:**
Appearance ..... white powder
Pore diameter ..... ~150 Å
Loss on drying (160 °C) ..... ≤6 %
Specific surface ..... 285-355 $m^2/g$
pH ..... 6,0-8,0
Volatile parts (950 °C) ..... ≤13,0 %
$SiO_2$ content (dry substance) ..... ≥99,3 %
$Fe_2O_3$ content (dry substance) ..... ≤0,014 %
$Na_2O$ content (dry substance) ..... ≤0,15 %
$SO_4$ content ..... ≤0,10 %
Particle-size distribution:
d10 ..... >80 µm
d50 ..... 130-170 µm
d90 ..... <250 µm

| | | | |
|---|---|---|---|
| **5403.1** | 250 g | plastic | 27,45 € |
| **5403.2** | 500 g | plastic | 41,85 € |
| Original pack 6 x 500 g | | | 39,76/500 g |
| **5403.3** | 1 kg | plastic | 64,40 € |
| Original pack 6 x 1 kg | | | 61,18/1 kg |
| **5403.4** | 2,5 kg | plastic | 142,45 € |

## Silica gel 150

**0,1-0,3 mm**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Pore diameter | 118-182 Å |
| Loss on drying (160 °C) | ≤6 % |
| Pore volume ($H_2O$) | ≥1,05 ml/g |
| pH value (5 % in $H_2O$) | 6,0-8,0 |
| Volatile parts (950 °C) | ≤13,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content (dry substance) | ≤0,10 % |
| Particle size (µm): | |
| <100 | ≤3,0 % |
| >315 | ≤1,5 % |
| >500 | 0 % |

| | | | |
|---|---|---|---|
| **0473.1** | 250 g | plastic | 32,15 € |
| **0473.2** | 500 g | plastic | 59,05 € |
| Original pack 6 x 500 g | | | 56,10/500 g |
| **0473.3** | 1 kg | plastic | 99,45 € |
| Original pack 6 x 1 kg | | | 94,48/1 kg |
| **0473.4** | 2,5 kg | plastic | 192,45 € |

## Silica gel 150

**0,315-0,5 mm**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Pore diameter | 118-182 Å |
| Loss on drying (160 °C) | ≤6 % |
| Pore volume ($H_2O$) | ≥1,05 ml/g |
| Specific surface (BET) | 285-355 $m^2/g$ |
| pH value (5 % in $H_2O$) | 6,0-8,0 |
| Volatile parts (950 °C) | ≤13,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content (dry substance) | ≤0,10 % |
| Particle size (µm): | |
| <100 | ≤1,0 % |
| <250 | ≤2,0 % |
| <315 | ≤40,0 % |
| >500 | ≤1,0 % |

| | | | |
|---|---|---|---|
| **0485.1** | 250 g | plastic | 32,15 € |
| **0485.2** | 500 g | plastic | 56,90 € |
| Original pack 6 x 500 g | | | 54,06/500 g |
| **0485.3** | 1 kg | plastic | 95,70 € |
| Original pack 6 x 1 kg | | | 90,92/1 kg |
| **0485.4** | 2,5 kg | plastic | 192,45 € |

## Silica gel 150

**0,6-1,4 mm**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Water (KF) | ≤4,0 % |
| Pore volume | ≥1,05 ml/g |
| Specific surface | 285-355 $m^2/g$ |
| pH value | 6,0-8,0 |
| Volatile parts (950 °C) | ≤13,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content | ≤0,10 % |
| Particle-size distribution: | |
| <0,63 mm | ≤5,0 % |
| >1,40 mm | ≤5,0 % |

| | | | |
|---|---|---|---|
| **9856.1** | 250 g | plastic | 28,95 € |
| **9856.2** | 500 g | plastic | 51,50 € |
| Original pack 6 x 500 g | | | 48,93/500 g |
| **9856.3** | 1 kg | plastic | 83,75 € |
| Original pack 6 x 1 kg | | | 79,56/1 kg |
| **9856.4** | 2,5 kg | plastic | 155,90 € |

## Silica gel 250

Silicic acid amorphous, Siliciumdioxide
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

## Silica gel 250

**0,04-0,063 mm (400-230 mesh)**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Pore diameter | ~250 Å |
| Loss on drying (160 °C) | ≤6 % |
| Pore volume ($N_2$) | 1,60-1,95 ml/g |
| Specific surface | 280-355 $m^2/g$ |
| pH | 6,0-8,0 |
| Volatile parts (950 °C) | ≤13,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content | ≤0,10 % |
| Particle-size distribution: | |
| d12 | 23,4-41,1 µm |
| d50 | 48,2-65,3 µm |
| d90 | 75,5-96,0 µm |

| | | | |
|---|---|---|---|
| **5405.1** | 250 g | plastic | 49,35 € |
| **5405.2** | 500 g | plastic | 91,95 € |
| Original pack 6 x 500 g | | | 87,35/500 g |
| **5405.3** | 1 kg | plastic | 171,90 € |
| Original pack 6 x 1 kg | | | 163,31/1 kg |
| **5405.4** | 2,5 kg | plastic | 407,45 € |

## Silica gel 250

**0,07-0,2 mm**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Loss on drying (160 °C) | ≤6 % |
| Pore volume ($H_2O$) | 1,60-1,95 ml/g |
| Specific surface (BET) | 280-355 $m^2/g$ |
| pH value (5 % in $H_2O$) | 6,0-8,0 |
| Volatile parts (950 °C) | ≤13,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content (dry substance) | ≤0,10 % |
| Particle size: | |
| d10 | ≥80,0 µm |
| d90 | ≤300,0 µm |

| | | | |
|---|---|---|---|
| **0493.1** | 100 g | plastic | 26,80 € |
| **0493.2** | 250 g | plastic | 48,30 € |
| **0493.3** | 500 g | plastic | 85,90 € |
| Original pack 6 x 500 g | | | 81,61/500 g |
| **0493.4** | 1 kg | plastic | 160,20 € |
| Original pack 6 x 1 kg | | | 152,19/1 kg |

## Silica gel 250

**0,09-0,13 mm**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Pore diameter | 180-280 Å |
| Loss on drying (160 °C) | ≤6 % |
| Pore volume ($H_2O$) | 1,60-1,95 ml/g |
| Specific surface (BET) | 285-355 $m^2/g$ |
| pH value (5 % in $H_2O$) | 6,0-8,0 |
| Volatile parts (950 °C) | ≤13,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content (dry substance) | ≤0,10 % |
| Particle size: | |
| d10 | ≥75,0 µm |
| d50 | 102,0-120,0 µm |
| d90 | ≤174,0 µm |

| | | | |
|---|---|---|---|
| **0501.1** | 100 g | plastic | 32,15 € |
| **0501.2** | 250 g | plastic | 64,40 € |
| **0501.3** | 500 g | plastic | 111,80 € |
| Original pack 6 x 500 g | | | 106,21/500 g |
| **0501.4** | 1 kg | plastic | 203,20 € |
| Original pack 6 x 1 kg | | | 193,04/1 kg |

## Silica gel 500

Silicic acid amorphous, Siliciumdioxide
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

## Silica gel 500

**0,035-0,07 mm (400-220 mesh)**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Pore diameter | ~500 Å |
| Loss on drying (160 °C) | ≤6 % |
| Pore volume ($N_2$) | ≥1,0 ml/g |
| Specific surface | 70-90 $m^2/g$ |
| Volatile parts (950 °C) | ≤10,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content | ≤0,10 % |
| Particle-size distribution: | |
| d10 | ≥36 µm |
| d50 | 65-85 µm |
| d90 | ≤120 µm |

| | | | |
|---|---|---|---|
| **5407.5** | 100 g | plastic | 64,40 € |
| **5407.1** | 250 g | plastic | 203,20 € |
| **5407.2** | 500 g | plastic | 375,20 € |
| Original pack 6 x 500 g | | | 356,44/500 g |
| **5407.3** | 1 kg | plastic | 665,45 € |
| Original pack 6 x 1 kg | | | 632,18/1 kg |
| **5407.4** | 2,5 kg | plastic | 1568,45 € |

## Silica gel 500

**0,09-0,13 mm**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Loss on drying (160 °C) | ≤6 % |
| Pore volume ($H_2O$) | ≥1,0 ml/g |
| Specific surface (BET) | 70-90 $m^2/g$ |
| Volatile parts (950 °C) | ≤10,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content (dry substance) | ≤0,10 % |
| Particle size (µm): | |
| >65 | ≥96,0 % |
| >90 | ≥70,0 % |
| >125 | 20-45 % |
| >150 | ≤24,5 % |

| | | | |
|---|---|---|---|
| **0512.1** | 50 g | plastic | 53,65 € |
| **0512.2** | 100 g | plastic | 85,90 € |
| **0512.3** | 250 g | plastic | 181,70 € |
| **0512.4** | 500 g | plastic | 332,20 € |
| Original pack 6 x 500 g | | | 315,59/500 g |

## Silica gel 500

**0,1-0,3 mm**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Loss on drying (160 °C) | ≤6 % |
| Pore volume ($H_2O$) | ≥1,0 ml/g |
| Specific surface (BET) | 70-90 $m^2/g$ |
| Volatile parts (950 °C) | ≤10,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content (dry substance) | ≤0,10 % |
| Particle size (µm): | |
| <100 | ≤5,0 % |
| >315 | ≤2,0 % |
| >500 | 0 % |

| | | | |
|---|---|---|---|
| **0524.1** | 50 g | plastic | 53,65 € |
| **0524.2** | 100 g | plastic | 85,90 € |
| **0524.3** | 250 g | plastic | 181,70 € |
| **0524.4** | 500 g | plastic | 321,45 € |
| Original pack 6 x 500 g | | | 305,38/500 g |

## Silica gel 1000

Silicic acid amorphous, Siliciumdioxide
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

## Silica gel 1000

**0,016-0,024 mm**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Loss on drying (160 °C) | ≤6 % |
| Specific surface (BET) | 30-55 $m^2/g$ |
| Volatile parts (950 °C) | ≤10,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content (dry substance) | ≤0,10 % |
| Particle size (µm): | |
| >12,7 | ≥85,0 % |
| >32,0 | ≤7,0 % |

| | | | |
|---|---|---|---|
| **0533.1** | 10 g | plastic | 27,85 € |
| **0533.2** | 50 g | plastic | 70,85 € |
| **0533.3** | 100 g | plastic | 123,55 € |
| **0533.4** | 250 g | plastic | 246,20 € |

## Silica gel 1000

**0,035-0,07 mm (400-220 mesh)**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Pore diameter | ~1000 Å |
| Loss on drying (160 °C) | ≤6 % |
| Pore volume ($N_2$) | ≥1,0 ml/g |
| Specific surface | 30-55 $m^2/g$ |
| Volatile parts (950 °C) | ≤10 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content | ≥10,0 % |
| Particle-size distribution: | |
| d10 | ≥36 µm |
| d50 | 62-85 µm |

| | | | |
|---|---|---|---|
| **5409.5** | 100 g | plastic | 64,40 € |
| **5409.1** | 250 g | plastic | 189,10 € |
| **5409.2** | 500 g | plastic | 353,70 € |
| Original pack 6 x 500 g | | | 336,02/500 g |
| **5409.3** | 1 kg | plastic | 643,95 € |
| Original pack 6 x 1 kg | | | 611,75/1 kg |
| **5409.4** | 2,5 kg | plastic | 1482,45 € |

## Silica gel 1000

**0,09-0,13 mm**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Loss on drying (160 °C) | ≤6 % |
| Pore volume ($H_2O$) | ≥1,0 ml/g |
| Specific surface (BET) | 30-55 $m^2/g$ |
| Volatile parts (950 °C) | ≤10,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content (dry substance) | ≤0,10 % |
| Particle size (µm): | |
| >65 | ≥96 % |
| >90 | ≥70 % |
| >125 | 20-45 % |
| >150 | ≤24,5 % |

| | | | |
|---|---|---|---|
| **0153.1** | 10 g | plastic | 21,40 € |
| **0153.2** | 50 g | plastic | 53,65 € |
| **0153.3** | 100 g | plastic | 85,90 € |
| **0153.4** | 250 g | plastic | 192,45 € |

## Silica gel 1500

Silicic acid amorphous, Siliciumdioxide
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

## Silica gel 1500

**0,016-0,024 mm**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Loss on drying (160 °C) | ≤6 % |
| Specific surface (BET) | 20-30 $m^2/g$ |
| Volatile parts (950 °C) | ≤10,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content (dry substance) | ≤0,10 % |
| Particle size (µm): | |
| >12,7 | ≥85,0 % |
| >32,0 | ≤7,0 % |

| | | | |
|---|---|---|---|
| **0559.1** | 10 g | plastic | 26,80 € |
| **0559.2** | 50 g | plastic | 64,40 € |
| **0559.3** | 100 g | plastic | 117,20 € |
| **0559.4** | 250 g | plastic | 235,45 € |

## Silica gel 1500

**0,09-0,13 mm**

For column chromatography.

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Loss on drying (160 °C) | ≤6 % |
| Pore volume ($H_2O$) | ≥1,0 ml/g |
| Specific surface (BET) | 20-30 $m^2/g$ |
| Volatile parts (950 °C) | ≤10,0 % |
| $SiO_2$ content (dry substance) | ≥99,3 % |
| $Fe_2O_3$ content (dry substance) | ≤0,014 % |
| $Na_2O$ content (dry substance) | ≤0,15 % |
| $SO_4$ content (dry substance) | ≤0,10 % |
| Particle size (µm): | |
| >65 | ≥96 % |
| >90 | ≥70 % |
| >125 | 20-45 % |
| >150 | ≤24,5 % |

| | | | |
|---|---|---|---|
| **0171.1** | 10 g | plastic | 26,80 € |
| **0171.2** | 50 g | plastic | 75,15 € |
| **0171.3** | 100 g | plastic | 127,95 € |
| **0171.4** | 250 g | plastic | 321,45 € |

S

## Silica gel 2500

### Silica gel 2500

NEW

**0,09-0,13 mm**

For column chromatography.
Silicic acid amorphous, Siliciumdioxide
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

**Type analysis:**

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume ($H_2O$). ..... ≥1,0 ml/g
Specific surface (BET). ..... 12-18 $m^2/g$
Volatile parts (950 °C). ..... ≤10,0 %
$SiO_2$ content (dry substance). ..... ≥99,3 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content (dry substance). ..... ≤0,10 %
Particle size (µm):
>65. ..... ≥96 %
>90. ..... ≥70 %
>125. ..... 20-45 %
>150. ..... ≤24,5 %

| | | | |
|---|---|---|---|
| **0177.1** | 10 g | plastic | 26,80 € |
| **0177.2** | 50 g | plastic | 75,15 € |
| **0177.3** | 100 g | plastic | 127,95 € |

## Silica gel 4500

### Silica gel 4500

NEW

**0,1-0,3 mm**

For column chromatography.
Silicic acid amorphous, Siliciumdioxide
$SiO_2$
M 60,09 g/mol
[7631-86-9] • EC No. 231-545-4

**Type analysis:**

Appearance. ..... white powder
Loss on drying (160 °C). ..... ≤6 %
Pore volume ($H_2O$). ..... 0,9-1,2 ml/g
Specific surface (BET). ..... 8-12 $m^2/g$
Volatile parts (950 °C). ..... ≤13,0 %
$SiO_2$ content (dry substance). ..... ≥99,4 %
$Fe_2O_3$ content (dry substance). ..... ≤0,014 %
$Na_2O$ content (dry substance). ..... ≤0,15 %
$SO_4$ content (dry substance). ..... ≤0,10 %
Particle size (µm):
<100. ..... ≤5,0 %
>315. ..... ≤2,0 %
>500. ..... 0 %

| | | | |
|---|---|---|---|
| **0186.1** | 10 g | plastic | 32,15 € |
| **0186.2** | 50 g | plastic | 96,65 € |
| **0186.3** | 100 g | plastic | 170,95 € |

## Silica gel with humidity indicator


▶ Silica gel blue see p. 2256
▶ Silica gel orange see p. 2256


## Silica gel without humidity indicator


▶ Silica gel industry grade see p. 2256
▶ Silica gel white see p. 2256


## Silica gel blue

### Silica gel blue

**2-4 mm, with colour inidicator, pearls**

Drying agent.
Drying pearls blue; colour change from blue to pink.
[7631-86-9] • EC No. 231-545-4

**Type analysis:**

Particle size. ..... 2-4 mm
Adsorption capacity:
20 % rel. humidity. ..... approx. 8 %
50 % rel. humidity. ..... approx. 20 %
Filled under protective gas.
Change in colour from blue to fuchsia.
Regeneration at ~80-100 °C, approximately 2-4 hours.

| | | | |
|---|---|---|---|
| **2440.1** | 500 g | plastic | 17,75 € |
| Original pack 6 x 500 g | | | 16,86/500 g |
| **2440.2** | 1 kg | plastic | 27,45 € |
| Original pack 6 x 1 kg | | | 26,08/1 kg |
| **2440.3** | 2,5 kg | plastic | 54,75 € |
| **2440.4** | 10 kg | plastic | 181,70 € |

For further information, please see page 1677

## Silica gel industry grade

### Silica gel industry grade

**pearls, without indicator**

Universal drying agent, drying of buildings.
[1327-36-2]

**Type analysis:**

Appearance. ..... pearls, colourless to brown
Particle size. ..... 1-2,3 mm
BET-surface. ..... approx. 750 $m^2/g$
Adsorption capacity:
10 % rel. humidity. ..... approx. 6 weight %
80 % rel. humidity. ..... approx. 45 weight %
Regeneration at 130-150 °C.

| | | | |
|---|---|---|---|
| **CN70.1** | 1 kg | plastic | 39,25 € |
| Original pack 6 x 1 kg | | | 37,29/1 kg |
| **CN70.2** | 5 kg | plastic | 142,45 € |
| **CN70.3** | 10 kg | plastic | 256,95 € |
| **CN70.4** | 25 kg | plastic | 590,20 € |

For further information, please see page 1678

## Silica gel orange

### Silica gel orange

**2-5 mm, with colour indicator, pearls**

Drying agent.
Drying pearls orange; colour change from orange to colourless.

**Type analysis:**

Particle size. ..... 2-5 mm
BET-surface. ..... approx. 750 $m^2/g$
Adsorptive capacity:
10 % rel. humidity. ..... approx. 6,5 weight %
80 % rel. humidity. ..... approx. 42 weight %
Filled under protective gas. Colour change from orange to colourless at approx. 6 weight-% load.
Regeneration at 130 °C, approx. 4 hours.

| | | | |
|---|---|---|---|
| **P077.4** | 500 g | plastic | 25,30 € |
| Original pack 6 x 500 g | | | 24,04/500 g |
| **P077.1** | 1 kg | plastic | 38,20 € |
| Original pack 6 x 1 kg | | | 36,29/1 kg |
| **P077.2** | 2,5 kg | plastic | 74,10 € |
| **P077.3** | 10 kg | plastic | 224,70 € |

For further information, please see page 1677

## Silica gel orange desiccant sachet

▶ Desiccant sachet Silica gel orange see p. 1861

## Silica gel water resistant

### Silica gel water resistant

**2-5 mm, bead form**

Drying agent water resistant,
Drying pearls water resistant, Drying pearls WS
[1327-36-2] • EC No. 215-475-1
WGK 1

**Type analysis:**

Particle size. ..... 2-5 mm
BET-surface. ..... ca. 650 $m^2/g$
Absorption capacity:
10 % rel. humidity. ..... approx. 4 %
80 % rel. humidity. ..... approx. 42 %
Regeneration at 130-150 °C.

| | | | |
|---|---|---|---|
| **8109.1** | 500 g | plastic | 27,85 € |
| Original pack 6 x 500 g | | | 26,46/500 g |
| **8109.2** | 1 kg | plastic | 41,40 € |
| Original pack 6 x 1 kg | | | 39,33/1 kg |
| **8109.3** | 2,5 kg | plastic | 76,90 € |
| **8109.4** | 10 kg | plastic | 223,10 € |

## Silica gel white

$SiO_2$
[7631-86-9] • EC No. 231-545-4

### Silica gel white

**0,5-1 mm, granules**

Drying agent

**Type analysis:**

Bulk density. ..... 650-770 g/l
Absorption capacity:
10 % rel. humidity. ..... ≥5 weight %
80 % rel. humidity. ..... ≥28 weight %
Regeneration at ~130 °C, approximately 4 hours.

| | | | |
|---|---|---|---|
| **9376.1** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **9376.2** | 5 kg | plastic | 115,60 € |

### Silica gel white

**1-3 mm, granules**

Drying agent

**Type analysis:**

Absorption capacity:
10 % rel. humidity. ..... approx. 6 weight %
80 % rel. humidity. ..... approx. 32 weight %
Regeneration at ~130 °C, approximately 4 hours.

| | | | |
|---|---|---|---|
| **T858.1** | 1 kg | plastic | 37,55 € |
| Original pack 6 x 1 kg | | | 35,67/1 kg |
| **T858.2** | 5 kg | plastic | 121,40 € |

## Silica gel with colour indicator


▶ Silica gel blue see p. 2256
▶ Silica gel orange see p. 2256

## Silica sol

### Silica sol

**15 % in water**

D ~1,09

**Type analysis:**

pH value (25 °C). ..... ~9,9
Viscosity (25 °C). ..... ≤7 mPa s
Density (20 °C). ..... 1,09
Protect from frost.

| | | | |
|---|---|---|---|
| **8025.1** | 1 l | plastic | 26,35 € |
| Original pack 6 x 1 l | | | 25,03/1 l |

## Siliceous earth

▶ Infusorial earth see p. 2004

## Silicic acid

### Silicic acid

**for chromatography**

Acc. to Ramsey and Patterson.
Silicone dioxide
$SiO_2$
M 60,09 g/mol
[1343-98-2] • EC No. 215-683-2

**Type analysis:**

Loss on ignition. ..... ≤13 %

| | | | |
|---|---|---|---|
| **0201.1** | 250 g | plastic | 20,65 € |
| **0201.2** | 1 kg | plastic | 55,80 € |
| Original pack 6 x 1 kg | | | 53,01/1 kg |

## Silicon Standards

▶ Silicon AAS Standard Solution see p. 2296
▶ Silicon AAS Standard Solution see p. 2296
▶ Silicon ICP Standard Solution see p. 2304
▶ Silicon ICP Standard Solution see p. 2300

## Silicon dioxide

### Silicon dioxide

**ROTI®METIC 99,998 % (4N8)**

$SiO_2$
M 60,09 g/mol
D 2,2 • bp 2950 °C
mp 1713 °C
[60676-86-0] • EC No. 262-373-8

**Warning** H319-H335-H373

**Type analysis:**

Assay (metals basis). ..... 99,998 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5738.1** | 5 g | plastic | 42,50 € |
| **5738.2** | 25 g | plastic | 106,45 € |

## Silicon dioxide

▶ Silica gel 35 see p. 2250
▶ Silica gel 60 see p. 2250
▶ Silica gel 150 see p. 2253
▶ Silica gel 250 see p. 2254
▶ Silica gel 500 see p. 2254
▶ Silica gel 1000 see p. 2255
▶ Silica gel 1500 see p. 2255
▶ Silica gel 2500 see p. 2256
▶ Silica gel 4500 see p. 2256
▶ Silicic acid see p. 2257

## Silicone anti-foaming emulsion

### Silicone anti-foaming emulsion

NEW

Useful as anti-foaming agent in aqueous solutions of surfactants. The antifoam emulsion consists 30 % of polydimethylsiloxane in water and modified inorganic components. It applies to entire range of pH in non-ionic, cationic and anionic solutions. Admixture upwards of 30 ppm. The antifoam emulsion must be homogenized by shaking briefly prior to use. The antifoam emulsion must be homogenized by shaking briefly prior to use.

Shake well before using!

D 1,00
WGK 1

**Type analysis:**

Appearance. ..... white liquid
Defoaming effect (30 sec.). ..... ≤80 mm
Solids after 30 min./120 °C. ..... 42,0-49,0 %

| | | | |
|---|---|---|---|
| **0734.1** | 250 ml | plastic | 25,70 € |
| **0734.2** | 1 l | plastic | 64,40 € |
| Original pack 6 x 1 l | | | 61,18/1 l |
| **0734.3** | 2,5 l | plastic | 127,95 € |
| Original pack 4 x 2,5 l | | | 121,55/2,5 l |

## Silicone oils

**Thermal stability**

In the presence of air, silicone oils M are stable up to 150 °C for a long time. If you impede the air supply they are even stable up to higher temperatures. If you stop the air supply totally, i.e. the oil is used in a closed system or in an inert atmosphere, e.g. in an atmosphere of nitrogen or carbon dioxide, the oils can be used up to peak temperatures of about 300 °C, but the viscosity will decrease continously.

**Solubility**

All silicone oils M can be solved easily in aliphatic and aromatic hydrocarbons, higher alcohols, ether, ester and chlorinated hydrocarbons, e.g.

| | |
|---|---|
| petroleum benzin | ethyl acetate |
| benzene | butyl acetate |
| toluene | carbon tetrachloride |
| ether | chloroform |
| butyl alcohol | trichloroethylene |
| amyl alcohol | tetrachloroethane |

Silicon oils are not soluble in water, methanol and ethylene glycol. The solubility in organic solvents increases with decreasing viscosity. Therefore, in addition, silicone oils M 50 and M 100 are soluble in isopropanol and n-butanol and partially miscible with n-propanol. Silicone oils M with a viscosity below 20 mm · $s^{-1}$ can be solved in n-propanol and also in acetone and dioxane. Silicone oils M with a viscosity of 10 mm · $s^{-1}$ are even soluble in ethanol.

**Lubricant and gliding properties**

The lubrication properties of silicone oils M depend on the bearing material to a high degree. They give the best results with plastics, e.g. polyamides, polystyrene, phenol resins and with rubber. They are also suited as lubricants for some special combinations of metallic materials, e.g. steel combined with bronze, brass, chromium, zinc or cadmium, also chromium combined with bronze.

However there is no lubricity when you combine steel with steel in the range of the critical friction. In each case you have to decide whether the use of pure silicone oils M is to be taken into account. It is necessary to distinguish between the lubricity and the gliding properties of the oils. Silicone oils M are excellent gliding agents in many cases, e.g. in the treatment of special plastics and man-made fibres. This property is not due to the building up of a load-bearing lubrication film, but to the separation effect of the silicone oils M.

**Surface tension**

The surface tension of the silicone oils M is in the range of about 19-21 mM · $s^{-1}$ , so it is extremely low. It increases only a little with viscosity of the oils.

**Refractive index**

The refractive index of silicone oils M increases from 1,3941 for M 3 to 1,4000 for M 20, and it is almost constant at 1,4042 for M 1000 and higher.

**Density**

At 25 °C the densities of silicone oils M range between 0,90 and 0,97. So they are not very different from the density of water. With increasing viscosity the densities of the oils increase too. They depend on temperature nearly linear: The values mentioned above were measured between -40 °C and 175 °C.

**Chemical inertness**

Generally silicone oils M are inert. They are stable in contact with water, organic solvents, pure oxygen and many other chemicals. In contact with most metals they will not be changed, and on the other hand they will not corrode metals, wood, paper and plastics. Strong oxidising agents like concentrated nitric acid or elemental chlorine decompose silicone oils M especially at higher temperatures.

**Main properties of silicone oils:**

- Heat and cold resistance
- Low setting point
- Low temperature and pressure dependency of viscosity
- Low steam pressure
- Good dielectric strength, little depending on temperature and frequency
- High interfacial tension to water and organic polymers
- High surface activity
- High compressibility
- Chemical and physiological inertness

**Due to these properties silicone oils M are ideal as:**

- Heat transfer agents
- Hydraulic fluids
- Fluid dielectrics
- Surface agents
- Separating agents
- Gliding agents
- Defoamer
- Auxiliary agents in varnishes
- Damping fluids

S

## Silicone oil M-series

Polydimethyl siloxane
WGK 1

### Silicone oil M 3

**low viscous, 3 cSt**

**Type analysis:**

Viscosity (25 °C).....2,7-3,3 mm²/s
Density (25 °C).....~0,90
Pour point.....~-100 °C
Flash point.....>62 °C

| | | | |
|---|---|---|---|
| **4106.1** | 1 kg | plastic | 50,45 € |
| Original pack 6 x 1 kg | | | 47,93/1 kg |
| **4106.2** | 5 kg | plastic | 214,90 € |
| **4106.3** | 25 kg | plastic | 923,45 € |

### Silicone oil M 5

**low viscous, 5 cSt**

**Type analysis:**

Viscosity (25 °C).....4,5-5,5 mm²/s
Density (25 °C).....0,92
Pour point.....~-100 °C
Flash point.....>120 °C

| | | | |
|---|---|---|---|
| **7844.1** | 1 l | plastic | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **7844.2** | 5 l | plastic | 128,90 € |
| Original pack 2 x 5 l | | | 122,46/5 l |
| **7844.3** | 10 l | plastic | 248,90 € |
| **7844.4** | 25 l | plastic | 504,20 € |

### Silicone oil M 10

**low viscous, 10 cSt**

**Type analysis:**

Viscosity (25 °C).....9,0-11,0 mm²/s
Density (25 °C).....0,93
Pour point.....~-90 °C
Flash point.....>165 °C

| | | | |
|---|---|---|---|
| **4113.1** | 1 kg | plastic | 36,05 € |
| Original pack 6 x 1 kg | | | 34,25/1 kg |
| **4113.2** | 5 kg | plastic | 134,30 € |
| **4113.4** | 10 kg | plastic | 256,95 € |
| **4113.3** | 25 kg | plastic | 547,20 € |

### Silicone oil M 20

**low viscous, 20 cSt**

**Type analysis:**

Viscosity (25 °C).....18-22 mm²/s
Density (25 °C).....0,95-0,96
Pour point.....~-70 °C
Flash point.....~240 °C

| | | | |
|---|---|---|---|
| **4010.1** | 1 kg | plastic | 39,25 € |
| Original pack 6 x 1 kg | | | 37,29/1 kg |
| **4010.3** | 5 kg | plastic | 150,00 € |
| **4010.4** | 10 kg | plastic | 267,70 € |
| **4010.2** | 25 kg | plastic | 643,95 € |

### Silicone oil M 50

**medium viscous, 50 cSt**

**Type analysis:**

Viscosity (25 °C).....45-55 mm²/s
Density (25 °C).....~0,96
Pour point.....-55 °C
Flash point.....>250 °C

| | | | |
|---|---|---|---|
| **4020.1** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **4020.4** | 5 kg | plastic | 122,45 € |
| **4020.2** | 10 kg | plastic | 224,70 € |
| **4020.3** | 25 kg | plastic | 536,45 € |

### Silicone oil M 100

**medium viscous, 100 cSt**

**Type analysis:**

Viscosity (25 °C).....95-105 mm²/s
Density (25 °C).....0,97
Pour point.....~-55 °C
Flash point.....>275 °C

| | | | |
|---|---|---|---|
| **4025.5** | 250 ml | plastic | 18,20 € |
| **4025.1** | 1 kg | plastic | 29,60 € |
| Original pack 6 x 1 kg | | | 28,12/1 kg |
| **4025.2** | 5 kg | plastic | 107,40 € |
| **4025.3** | 10 kg | plastic | 188,15 € |
| **4025.4** | 25 kg | plastic | 418,20 € |

### Silicone oil M 200

**medium viscous, 200 cSt**

**Type analysis:**

Viscosity (25 °C).....190-210 mm²/s
Pour point.....~-50 °C
Flash point.....~310 °C

| | | | |
|---|---|---|---|
| **4030.1** | 1 kg | plastic | 40,35 € |
| Original pack 6 x 1 kg | | | 38,33/1 kg |
| **4030.2** | 5 kg | plastic | 161,25 € |
| **4030.3** | 10 kg | plastic | 295,65 € |
| **4030.4** | 25 kg | plastic | 686,95 € |

### Silicone oil M 350

**medium viscous, 350 cSt**

**Type analysis:**

Viscosity (25 °C).....333-368 mm²/s
Pour point.....~-50 °C
Flash point.....>300 °C

| | | | |
|---|---|---|---|
| **4035.6** | 250 ml | plastic | 18,85 € |
| **4035.1** | 1 kg | plastic | 30,65 € |
| Original pack 6 x 1 kg | | | 29,12/1 kg |
| **4035.5** | 2,5 kg | plastic | 64,00 € |
| **4035.2** | 5 kg | plastic | 114,50 € |
| **4035.4** | 10 kg | plastic | 206,95 € |
| **4035.3** | 25 kg | plastic | 489,15 € |

### Silicone oil M 500

**medium viscous, 500 cSt**

**Type analysis:**

Viscosity (25 °C).....475-525 mm²/s
Density (25 °C).....~0,97
Pour point.....-47 °C
Flash point.....>300 °C

| | | | |
|---|---|---|---|
| **4040.5** | 250 ml | plastic | 18,85 € |
| **4040.1** | 1 kg | plastic | 30,65 € |
| Original pack 6 x 1 kg | | | 29,12/1 kg |
| **4040.2** | 5 kg | plastic | 114,50 € |
| **4040.4** | 10 kg | plastic | 206,95 € |
| **4040.3** | 25 kg | plastic | 489,15 € |

### Silicone oil M 1000

**medium viscous, 1000 cSt**

**Type analysis:**

Viscosity (25 °C).....950-1050 mm²/s
Density (25 °C).....~0,97
Pour point.....~-50 °C
Flash point.....>300 °C

| | | | |
|---|---|---|---|
| **4045.5** | 250 ml | plastic | 18,85 € |
| **4045.1** | 1 kg | plastic | 30,65 € |
| Original pack 6 x 1 kg | | | 29,12/1 kg |
| **4045.4** | 5 kg | plastic | 114,50 € |
| **4045.3** | 10 kg | plastic | 206,95 € |
| **4045.2** | 25 kg | plastic | 489,15 € |

### Silicone oil M 5000

**high viscous, 5000 cSt**

**Type analysis:**

Viscosity (25 °C).....4705-5250 mm²/s
Density (25 °C).....0,97-0,98
Pour point.....~-50 °C
Flash point.....~320 °C

| | | | |
|---|---|---|---|
| **4050.1** | 1 kg | plastic | 57,95 € |
| Original pack 6 x 1 kg | | | 55,05/1 kg |
| **4050.2** | 5 kg | plastic | 220,95 € |
| **4050.3** | 10 kg | plastic | 342,95 € |
| **4050.4** | 25 kg | plastic | 729,95 € |

### Silicone oil M 10 000

**high viscous, 10 000 cSt**

**Type analysis:**

Viscosity (25 °C).....9500-11000 mm²/s
Density (25 °C).....0,97-0,98
Pour point.....~-50 °C
Flash point.....~320 °C

| | | | |
|---|---|---|---|
| **4055.5** | 250 ml | plastic | 22,05 € |
| **4055.1** | 1 kg | plastic | 45,70 € |
| Original pack 6 x 1 kg | | | 43,42/1 kg |
| **4055.2** | 5 kg | plastic | 172,55 € |
| **4055.4** | 10 kg | plastic | 274,15 € |
| **4055.3** | 25 kg | plastic | 654,70 € |

## Silicone oil M 20 000

**high viscous, 20 000 cSt**

**Type analysis:**

Viscosity (25 °C). ..... 19000-21000 $mm^2/s$
Density (25 °C). ..... 0,97-0,98
Pour point. ..... ~-50 °C
Flash point. ..... ~320 °C

| | | | |
|---|---|---|---|
| **4060.1** | 1 kg | plastic | 39,70 € |
| Original pack 6 x 1 kg | | | 37,72/1 kg |
| **4060.3** | 5 kg | plastic | 153,20 € |
| **4060.4** | 10 kg | plastic | 267,70 € |
| **4060.2** | 25 kg | plastic | 639,65 € |

## Silicone oil M 60 000

**high viscous, 60 000 cSt**

**Type analysis:**

Viscosity (25 °C). ..... 57000-63000 $mm^2/s$
Density (25 °C). ..... 0,97-0,98
Pour point. ..... ~-50 °C
Flash point. ..... ~320 °C

| | | | |
|---|---|---|---|
| **4080.1** | 1 kg | plastic | 45,70 € |
| Original pack 6 x 1 kg | | | 43,42/1 kg |
| **4080.2** | 5 kg | plastic | 170,95 € |
| **4080.3** | 10 kg | plastic | 274,15 € |
| **4080.4** | 25 kg | plastic | 654,70 € |

## Silicone oil M 100 000

**high viscous, 100 000 cSt**

**Type analysis:**

Viscosity (25 °C). ..... 95000-105000 $mm^2/s$
Density (25 °C). ..... 0,97-0,98
Pour point. ..... ~-50 °C
Flash point. ..... ~320 °C

| | | | |
|---|---|---|---|
| **4085.1** | 1 kg | plastic | 57,95 € |
| Original pack 6 x 1 kg | | | 55,05/1 kg |
| **4085.3** | 5 kg | plastic | 196,20 € |
| **4085.2** | 10 kg | plastic | 332,20 € |
| **4085.4** | 25 kg | plastic | 725,65 € |

## Silicone oil M 250 000

**high viscous, 250 000 cSt**

**Type analysis:**

Viscosity (25 °C). ..... 225000-275000 $mm^2/s$
Density (25 °C). ..... 0,97-0,98
Pour point. ..... ~-40 °C
Flash point. ..... ~320 °C

| | | | |
|---|---|---|---|
| **4112.1** | 1 kg | plastic | 111,70 € |
| Original pack 6 x 1 kg | | | 106,12/1 kg |
| **4112.2** | 5 kg | plastic | 482,70 € |
| **4112.3** | 10 kg | plastic | 912,70 € |

## Silicone oil M 500 000

**super-high viscous, 500 000 cSt**

**Type analysis:**

Viscosity (25 °C). ..... ~500000 $mm^2/s$
Density (25 °C). ..... 0,97-0,98
Pour point. ..... ~-40 °C
Flash point. ..... ~320 °C

| | | | |
|---|---|---|---|
| **4109.1** | 1 kg | plastic | 104,20 € |
| Original pack 6 x 1 kg | | | 98,99/1 kg |
| **4109.3** | 5 kg | plastic | 443,45 € |
| **4109.4** | 10 kg | plastic | 826,70 € |
| **4109.2** | 25 kg | plastic | 1929,65 € |

## Silicone oil M 1 000 000

**super-high viscous, 1 000 000 cSt**

**Type analysis:**

Viscosity (25 °C). ..... 900000-1100000 $mm^2/s$
Density (25 °C). ..... 0,97-0,98 $g/cm^3$
Pour point. ..... ~-40 °C
Flash point. ..... ~320 °C

| | | | |
|---|---|---|---|
| **9375.1** | 1 kg | plastic | 93,45 € |
| Original pack 6 x 1 kg | | | 88,78/1 kg |
| **9375.2** | 5 kg | plastic | 418,20 € |
| **9375.3** | 10 kg | plastic | 783,70 € |
| **9375.4** | 25 kg | plastic | 1816,75 € |

## Silicone oil M-series, pharma

Polydimethyl siloxane
WGK 1

## Silicone oil MPH 100

**medium viscous, pharma**

**Guarantee analysis:**

Appearance. ..... complies
Viscosity (25 °C). ..... 95-105 $mm^2/s$
Acid content (HCl). ..... ≤0,0001 %
Volatile parts (1 g, 2 h, 150 °C). ..... ≤0,3 %
Odour. ..... complies
IR-spectrum. ..... complies
UV-spectrum. ..... complies
Heavy metals (as Pb). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **6822.1** | 25 kg | plastic | 697,70 € |

## Silicone oil MPH 350

**medium viscous, pharma**

**Guarantee analysis:**

Appearance. ..... complies
Viscosity (25 °C). ..... 333-368 $mm^2/s$
Acid content (HCl). ..... ≤0,0001 %
Volatile parts (1 g, 2 h, 150 °C). ..... ≤0,3 %
Odour. ..... complies
IR-spectrum. ..... complies
UV-spectrum. ..... complies
Heavy metals (as Pb). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **6825.1** | 25 kg | plastic | 697,70 € |

## Silicone oil MPH 1000

**medium viscous, pharma**

**Guarantee analysis:**

Appearance. ..... complies
Viscosity (25 °C). ..... 950-1050 $mm^2/s$
Acid content (HCl). ..... ≤1 ppm
Volatile parts (1 g, 2 h, 150 °C). ..... ≤0,3 %
Odour. ..... complies
IR-spectrum. ..... complies
UV-spectrum. ..... complies
Heavy metals. ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **2190.3** | 25 kg | plastic | 697,70 € |

## Silicone oil, stabilised

Polydimethyl siloxane
WGK 1

## Silicone oil M 3

**stabilised, low viscous**

| | | | |
|---|---|---|---|
| **4217.1** | 25 kg | plastic | 854,65 € |

## Silicone oil M 5

**stabilised, low viscous**

| | | | |
|---|---|---|---|
| **A413.1** | 25 kg | plastic | 987,95 € |

## Silicone oil M 20

**stabilised, low viscous**

| | | | |
|---|---|---|---|
| **2188.1** | 25 kg | plastic | 897,65 € |

## Silicone oil M 50

**stabilised, medium viscous**

| | | | |
|---|---|---|---|
| **4212.2** | 5 kg | plastic | 174,70 € |
| **4212.1** | 25 kg | plastic | 783,70 € |

## Silicone oil M 100

**stabilised, medium viscous**

| | | | |
|---|---|---|---|
| **A528.1** | 25 kg | plastic | 725,65 € |

## Silicone oil, organofunctional

## Silicone oil OF-OH 50

**organo functional**
WGK 1

**Type analysis:**

Viscosity (25 °C). ..... 40-70 $mm^2/s$
OH-Assay. ..... 2,7-3,3 %
Water. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4076.1** | 25 kg | plastic | 2445,65 € |

S

## Silicone oil, phenylsubstituted

Polymethyl phenyl siloxane
WGK 1

### Silicone oil PN 200

**medium viscous, 200 cSt**

**Type analysis:**

Viscosity (25 °C).....180-220 $mm^2/s$
Density (25 °C).....~1,03
Pour point.....~-65 °C
Flash point.....~300 °C
Combustion point.....~360 °C

| | | | |
|---|---|---|---|
| **4130.1** | 1 kg | plastic | 122,05 € |
| Original pack 6 x 1 kg | | | 115,95/1 kg |
| **4130.2** | 5 kg | plastic | 514,95 € |
| **4130.3** | 25 kg | plastic | 2445,65 € |

### Silicone oil PN 1000

**medium viscous, 1000 cSt**

**Type analysis:**

Viscosity (25 °C).....925-1075 $mm^2/s$
Density (25 °C).....~1,07
Flash point.....~285 °C
Combustion point.....~425 °C

| | | | |
|---|---|---|---|
| **6826.1** | 1 kg | plastic | 122,05 € |
| Original pack 6 x 1 kg | | | 115,95/1 kg |
| **6826.2** | 5 kg | plastic | 514,95 € |
| **6826.3** | 25 kg | plastic | 2445,65 € |

## Silicone oil DC

WGK 1
H412

### Silicone oil DC 702

**~45 cSt**

| | | | |
|---|---|---|---|
| **0885.1** | 50 ml | glass | 42,90 € |

### Silicone oil DC 710

**~500 cSt**

| | | | |
|---|---|---|---|
| **0899.1** | 100 ml | plastic | 44,00 € |
| **0899.2** | 1 l | plastic | 267,70 € |
| Original pack 6 x 1 l | | | 254,32/1 l |

### Silicone paste

**Heat resistance**
Silicone pastes are stable within temperature range of -50 to +200 °C without any considerable change in their consistency.

**Chemical resistance**
Silicone pastes are resistant to steam, sulphur dioxide, diluted acids and alkaline solutions.They are chemically indifferent to metals and different kinds of metals.

**Application range:**

- Laboratory techniques as an antiseize agent and lubricant for stopcocks, taper ground joints and regulating valves. Also suitable for sealing various glass apparatus.
- Apparatus engineering
- Electrotechnology

## Silicone paste

bp >315 °C
flp >300 °C

### Silicone paste

**low viscous**

**Type analysis:**

Appearance.....whitish/translucent
Decrease in weight (30 h/200 °C).....<3 %
Penetration (acc. to Klein).....300 ±30
Consistency (30 h/200 °C).....stable

| | | | |
|---|---|---|---|
| **5872.3** | 500 g | plastic | 36,45 € |
| Original pack 6 x 500 g | | | 34,63/500 g |
| **5872.1** | 1 kg | plastic | 61,20 € |
| Original pack 6 x 1 kg | | | 58,14/1 kg |
| **5872.2** | 5 kg | plastic | 267,70 € |

### Silicone paste

**medium viscous**

**Type analysis:**

Appearance.....whitish/translucent
Decrease in weight (30 h/200 °C).....<3 %
Penetration (acc. to Klein).....270 ±30
Consistency (30 h/200 °C).....stable

| | | | |
|---|---|---|---|
| **5874.3** | 500 g | plastic | 36,45 € |
| Original pack 6 x 500 g | | | 34,63/500 g |
| **5874.1** | 1 kg | plastic | 61,20 € |
| Original pack 6 x 1 kg | | | 58,14/1 kg |
| **5874.2** | 5 kg | plastic | 267,70 € |

### Silicone paste

**high viscous**

**Type analysis:**

Appearance.....whitish/translucent
Decrease in weight (30 h/200 °C).....<3 %
Penetration (acc. to Klein).....200 ±30
Consistency (30 h/200 °C).....stable

| | | | |
|---|---|---|---|
| **5876.3** | 500 g | plastic | 36,45 € |
| Original pack 6 x 500 g | | | 34,63/500 g |
| **5876.1** | 1 kg | plastic | 61,20 € |
| Original pack 6 x 1 kg | | | 58,14/1 kg |
| **5876.2** | 5 kg | plastic | 267,70 € |

## Silicone stripping agent M

### Silicone stripping agent M

**Aerosol 400 ml**
UN No. 1950 • ADR 2.1 • WGK 2
**Danger**
H222-H229-H315-H336-H411

| | | | |
|---|---|---|---|
| **0895.1** | 400 ml | spray bottle | 8,95 € |

For further information, please see page 1141

## Silicone stripping agent SPM

### Silicone stripping agent SPM

WGK 1

| | | | |
|---|---|---|---|
| **1824.3** | 25 kg | plastic | 1601,75 € |

## Silvan

▶ 2-Methylfuran see p. 2074

## Silver

Ag
bp 2163 °C
mp 960 °C
[7440-22-4] • EC No. 231-131-3

### Silver sheet

**Sheet 100 x 100 x 0,1 mm**
Weight per sheet ~10,5 g

**Type analysis:**

Assay.....≥99,9 %

| | | | |
|---|---|---|---|
| **8816.1** | 1 sheet | cardboard | 72,60 € |

### Silver wire

**≥99,9 %, wire, Ø 0,1 mm**
Weight per meter ~0,082 g

**Type analysis:**

Assay.....≥99,9 %
Length (m).....310 m (~25 g)
Diameter.....0,1 mm

| | | | |
|---|---|---|---|
| **8819.1** | 310 m | plastic | 149,45 € |

### Silver wire

**≥99,9 %, wire Ø 0,5 mm**
Weight per meter ~2,062 g

**Type analysis:**

Assay.....≥99,9 %
Diameter.....0,5 mm

| | | | |
|---|---|---|---|
| **8821.1** | 25 g | plastic | 138,70 € |
| **8821.2** | 100 g | plastic | 461,20 € |

### Silver wool

**≥99,9 %, for elementary analysis**

**Type analysis:**

Assay (arg.).....≥99,9 %
Diameter.....~45-55 µm

| | | | |
|---|---|---|---|
| **9373.1** | 10 g | plastic | 67,65 € |

## Silver

▶ Sheets of silver see p. 2249

## Silver Standards

▶ Silver AAS Standard Solution see p. 2296
▶ Silver ICP Standard Solution see p. 2300
▶ Silver ICP Standard Solution see p. 2304

## Silver bromide

### Silver bromide
**ROTI®METIC 99,999 % (5N)**

AgBr
M 187,78 g/mol
D 6,47 • bp 700 °C
mp 432 °C
Solubility: ~0,14 mg/l ($H_2O$, 50 °C)
[7785-23-1] • EC No. 232-076-8

**Type analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5739.1** | 5 g | plastic | 60,10 € |
| **5739.2** | 25 g | plastic | 220,40 € |

## Silver chloride

AgCl
M 143,32 g/mol
D 5,56 • bp 1550 °C
mp 455 °C
Solubility: ~1,9 mg/l ($H_2O$, 25 °C)
[7783-90-6] • EC No. 232-033-3
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H410

### Silver chloride
**ROTI®METIC 99,9999 % (6N)**

**Type analysis:**
Assay (metals basis)..... 99,9999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

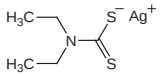
| | | | |
|---|---|---|---|
| **5302.1** | 1 g | plastic | 45,70 € |
| **5302.2** | 5 g | plastic | 81,20 € |
| **5302.3** | 25 g | plastic | 317,15 € |

### Silver chloride
**≥99 %**

**Type analysis:**
Assay..... ≥99 %
Assay (metals basis)..... 74,51-75,26 %
Water..... ≤0,2 %
In $NH_4OH$ insoluble matter..... ≤0,1 %

| | | | |
|---|---|---|---|
| **6877.1** | 10 g | plastic | 60,10 € |
| **6877.2** | 25 g | plastic | 107,40 € |
| **6877.3** | 100 g | plastic | 289,20 € |

## Silver diethyldithiocarbamate



### Silver diethyldithiocarbamate
**≥97 %, p.a.**

Reagent for arsenic.
Diethyldithiocarbamic acid silver salt
$C_5H_{10}AgNS_2$
M 256,14 g/mol
mp 178-183 °C
[1470-61-7] • EC No. 216-003-7
WGK 3

**Guarantee analysis:**
Assay (titr.)..... ≥97,0 %
Solubility (0,5 % in pyridine)..... clearly soluble
Suitability for determination of arsenic..... complies

| | | | |
|---|---|---|---|
| **KK25.1** | 5 g | glass | 44,00 € |
| **KK25.2** | 10 g | glass | 78,40 € |

## Silver iodide

### Silver iodide
**≥99 %, extra pure**

AgI
M 234,79 g/mol
mp 552 °C
[7783-96-2] • EC No. 232-038-0
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H400-H410

**Type analysis:**
Appearance..... fine bright yellow powder
Assay..... ≥99,5 %
Chloride (Cl)..... ≤0,0002 %
Sulphate ($SO_4$)..... ≤0,005 %
Lead (Pb)..... ≤0,001 %
Iron (Fe)..... ≤0,0002 %
Copper (Cu)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **6630.1** | 25 g | glass | 82,70 € |
| **6630.2** | 100 g | glass | 267,70 € |

## Silver nitrate

$AgNO_3$
M 169,88 g/mol
D 4,35 • bp 290-440 °C (dec.)
mp 212 °C
Solubility: 2160 g/l ($H_2O$, 20 °C)
[7761-88-8] • EC No. 231-853-9
UN No. 1493 • ADR 5.1 II • WGK 3

**Danger** H272-H314-H400-H410

### Silver nitrate
**ROTI®METIC 99,9999 % (6N)**

**Type analysis:**
Assay (metals basis)..... 99,9999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **4500.1** | 10 g | plastic | 71,95 € |
| **4500.2** | 50 g | plastic | 327,90 € |

### Silver nitrate
**≥99,9 %, p.a., ultra quality**

**Type analysis:**
Appearance..... colorless to white cryst.powder
Assay..... ≥99,9 %
Water content..... ≤0,1 %
pH value (10 % in $H_2O$)..... 3,6-5,0
Nitrite ($NO_2$)..... ≤0,0002 %
Chloride (Cl)..... ≤0,001 %
Antimony (Sb)..... ≤0,00001 %
Bismuth (Bi)..... ≤0,00001 %
Cadmium (Cd)..... ≤0,00001 %
Calcium (Ca)..... ≤0,0005 %
Chromium (Cr)..... ≤0,00002 %
Copper (Cu)..... ≤0,00001 %
Gold (Au)..... ≤0,000001 %
Iridium (Ir)..... ≤0,0000005 %
Iron (Fe)..... ≤0,00004 %
Lead (Pb)..... ≤0,00002 %
Manganese (Mn)..... ≤0,00001 %
Nickel (Ni)..... ≤0,00002 %
Palladium (Pd)..... ≤0,000001 %
Platinum (Pt)..... ≤0,0000005 %
Potassium (K)..... ≤0,0005 %
Rhodium (Rh)..... ≤0,0000005 %
Ruthenium (Ru)..... ≤0,0000003 %
Selenium (Se)..... ≤0,00001 %
Sodium (Na)..... ≤0,008 %
Sulphur (S)..... ≤0,0008 %
Tellur (Te)..... ≤0,00004 %
Tin (Sn)..... ≤0,00001 %
Zinc (Zn)..... ≤0,00001 %
Particle size..... >250 µm

| | | | |
|---|---|---|---|
| **6874.1** | 10 g | plastic | 37,10 € |
| **6874.2** | 50 g | plastic | 141,80 € |
| **6874.3** | 250 g | plastic | 514,95 € |

### Silver nitrate
**≥99,9 %, p.a.**

For detection of halogenides. For volumetric solutions in argentometry. For protein staining. For molecular biology.

**Guarantee analysis:**
Assay..... ≥99,9 %
Water..... ≤0,1 %
Sulphate ($SO_4$)..... ≤0,002 %
Lead (Pb)..... ≤0,0001 %
Cadmium (Cd)..... ≤0,0001 %
Calcium (Ca)..... ≤0,0005 %
Iron (Fe)..... ≤0,0001 %
Potassium (K)..... ≤0,0005 %
Copper (Cu)..... ≤0,0001 %
Sodium (Na)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **7908.1** | 50 g | plastic | 113,85 € |
| **7908.2** | 250 g | plastic | 471,95 € |
| **7908.3** | 1 kg | plastic | 1666,25 € |
| Original pack 6 x 1 kg | | | 1582,94/1 kg |

S

## Silver nitrate

**≥99 %, Ph.Eur., extra pure**

**Guarantee analysis:**

Assay (titr.). ..... 99,0-100,5 %
Identity. ..... complies
pH value (10 % in $H_2O$). ..... 4,0-6,0
Appearance of solution. ..... complies
Acid or alkaline react. substances. ..... complies
Foreign salts. ..... ≤0,3 %
Al, Pb, Cu, Bi. ..... complies
Water content. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **9370.4** | 10 g | plastic | 27,45 € |
| **9370.1** | 50 g | plastic | 96,65 € |
| **9370.2** | 250 g | plastic | 396,70 € |
| **9370.3** | 1 kg | plastic | 1483,50 € |
| Original pack 6 x 1 kg | | | 1409,33/1 kg |

For further information, please see page 1442

## Silver nitrate

**≥99,9 %, for staining of proteins, Proteicolor®**

**Guarantee analysis:**

Assay. ..... ≥99,9 %
Tested for protein gel staining.

| | | | |
|---|---|---|---|
| **6207.1** | 50 g | plastic | 131,70 € |

For further information, please see page 1184

## Silver nitrate solution (5 %)

### Silver nitrate solution

**5 %**

[7761-88-8] • EC No. 231-853-9
UN No. 1760 • ADR 8 II • WGK 3

**Danger** H314-H410

| | | | |
|---|---|---|---|
| **N053.1** | 250 ml | plastic | 39,25 € |

## Silver nitrate solution (0,01 N)

### Silver nitrate solution

**0,01 mol/l - 0,01 N volumetric standard solution**

[7761-88-8] • EC No. 231-853-9
UN No. 3082 • ADR 9 III • WGK 3

**Danger** H411

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... 0,01 mol/l ±0,2 %
Titer. ..... 0,9980-1,0020

| | | | |
|---|---|---|---|
| **6838.1** | 250 ml | plastic | 15,60 € |
| **6838.2** | 500 ml | plastic | 20,65 € |
| **6838.3** | 1 l | plastic | 30,00 € |
| Original pack 6 x 1 l | | | 28,50/1 l |
| **6838.4** | 2,5 l | plastic | 60,10 € |
| Original pack 4 x 2,5 l | | | 57,10/2,5 l |

## Silver nitrate solution (0,05 N)

### Silver nitrate solution

**0,05 mol/l - 0,05 N volumetric standard solution**

[7761-88-8] • EC No. 231-853-9
UN No. 3082 • ADR 9 III • WGK 2

**Warning** H400-H410

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... 0,05 mol/l ±0,2 %
Titer. ..... 0,9980-1,0020

| | | | |
|---|---|---|---|
| **6835.1** | 250 ml | plastic | 33,25 € |
| **6835.2** | 500 ml | plastic | 39,70 € |
| **6835.3** | 1 l | plastic | 56,90 € |
| Original pack 6 x 1 l | | | 54,06/1 l |
| **6835.4** | 2,5 l | plastic | 103,10 € |
| Original pack 4 x 2,5 l | | | 97,95/2,5 l |

## Silver nitrate solution (0,1 N)

### Silver nitrate solution

**0,1 mol/l - 0,1 N volumetric standard solution**

$AgNO_3$
M 169,88 g/mol
D 1,005
[7761-88-8] • EC No. 231-853-9
UN No. 3082 • ADR 9 III • WGK 3

**Warning** H315-H319-H400-H410

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... 0,1 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **K713.2** | 250 ml | plastic | 34,30 € |
| **K713.4** | 500 ml | plastic | 44,65 € |
| **K713.1** | 1 l | plastic | 74,10 € |
| Original pack 6 x 1 l | | | 70,40/1 l |
| **K713.3** | 2,5 l | plastic | 114,50 € |
| Original pack 4 x 2,5 l | | | 108,78/2,5 l |

For further information, please see page 1622

## Silver nitrate solution (0,1 N)

### Silver nitrate solution

**0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.**

$AgNO_3$
M 169,88 g/mol
[7761-88-8] • EC No. 231-853-9
UN No. 3082 • ADR 9 III • WGK 3

**Warning** H315-H319-H410

**Type analysis:**

Amount-of-substance conc.. ..... 0,1 mol/l
Measurement uncertainty. ..... ±0,2 %

| | | | |
|---|---|---|---|
| **9526.1** | 1 l | glass | 96,65 € |
| Original pack 6 x 1 l | | | 91,82/1 l |

## Silver nitrate solution (0,1 N)

### Silver nitrate solution

**ROTI®VOLUM 0,1 mol/l - 0,1 N**

Ampoule for preparation of 1000 ml volumetric solution.
$AgNO_3$
M 169,88 g/mol
[7761-88-8] • EC No. 231-853-9
UN No. 1760 • ADR 8 II • WGK 3

**Danger** H290-H314-H410

**Type analysis:**

Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN66.1** | 1 piece | plastic ampoule | 61,20 € |

For further information, please see page 1623

## Silver nitrate solution (0,5 N)

### Silver nitrate solution

**0,5 mol/l - 0,5 N volumetric standard solution**

[7761-88-8] • EC No. 231-853-9
UN No. 1760 • ADR 8 II • WGK 3

**Danger** H314-H400-H410

**Type analysis:**

Amount-of-substance conc. (20 °C)....0,5 mol/l ±0,2 %
Titer. ..... 0,9980-1,0020

| | | | |
|---|---|---|---|
| **6839.1** | 250 ml | plastic | 56,90 € |
| **6839.2** | 500 ml | plastic | 91,30 € |
| **6839.3** | 1 l | plastic | 170,95 € |
| Original pack 6 x 1 l | | | 162,40/1 l |

## Silver nitrate solution (1 N)

### Silver nitrate solution

**1 mol/l - 1 N volumetric standard solution**

$AgNO_3$
M 169,88 g/mol
[7761-88-8] • EC No. 231-853-9
UN No. 1760 • ADR 8 II • WGK 3

**Danger** H314-H400-H410

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 1 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **6841.1** | 250 ml | plastic | 103,75 € |
| **6841.2** | 500 ml | plastic | 155,90 € |
| **6841.3** | 1 l | plastic | 295,65 € |
| Original pack 6 x 1 l | | | 280,87/1 l |

## Silver nitrite

### Silver nitrite
**ROTI®METIC 99,99 % (4N)**
$AgNO_2$
M 153,87 g/mol
D 4,453
mp 140 °C (dec.)
[7783-99-5] • EC No. 232-041-7
UN No. 2627 • ADR 5.1 II • WGK 3
**Danger**
H272-H302-H315-H319-H400-H410

**Type analysis:**
Assay (metals basis)..... 99,99 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5065.1** | 10 g | plastic | 149,45 € |
| **5065.2** | 50 g | plastic | 493,45 € |

## Silver oxide

### Silver oxide
**≥99 %, p.a.**
$Ag_2O$
M 231,74 g/mol
D 7,2
mp 230 °C (dec.)
[20667-12-3] • EC No. 243-957-1
UN No. 3085 • ADR 5.1 (8) II • WGK 2
**Danger** H272-H314-EUH044

**Type analysis:**
Assay (calculated on Ag)..... 99,0-101,0 %
Silver (Ag)..... 92,2-94,0 %
Copper (Cu)..... ≤0,005 %
Iron (Fe)..... ≤0,001 %
Aluminium (Al)..... ≤0,001 %
Cadmium (Cd)..... ≤0,001 %
Cobalt (Co)..... ≤0,001 %
Chromium (Cr)..... ≤0,001 %
Mercury (Hg)..... ≤0,01 %
Iridium (Ir)..... ≤0,01 %
Potassium (K)..... ≤0,005 %
Magnesium (Mg)..... ≤0,005 %
Manganese (Mn)..... ≤0,001 %
Sodium (Na)..... ≤0,01 %
Nickel (Ni)..... ≤0,001 %
Osmium (Os)..... ≤0,01 %
Lead (Pb)..... ≤0,005 %
Palladium (Pd)..... ≤0,01 %
Platinum (Pt)..... ≤0,01 %
Rhodium (Rh)..... ≤0,01 %
Ruthenium (Ru)..... ≤0,01 %
Zinc (Zn)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **5309.1** | 10 g | glass | 51,50 € |
| **5309.2** | 50 g | glass | 177,40 € |

## Silver staining

- Roti®-Black N see p. 2203
- Roti®-Black NSeq see p. 2203
- Roti®-Black P see p. 2203


## Silver sulphate

### Silver sulphate
**≥99 %, p.a.**
For COD analysis.
$Ag_2SO_4$
M 311,80 g/mol
D 5,45 • bp 1085 °C (dec.)
mp 655 °C • flp 27 °C
Solubility: 8 g/l ($H_2O$, 25 °C)
[10294-26-5] • EC No. 233-653-7
UN No. 3077 • ADR 9 III • WGK 3
**Danger** H318-H410

**Guarantee analysis:**
Assay..... ≥99,0 %
Water..... ≤0,2 %
Lead (Pb)..... ≤0,0005 %
Cadmium (Cd)..... ≤0,0005 %
Iron (Fe)..... ≤0,0005 %
Copper (Cu)..... ≤0,0005 %
Nickel (Ni)..... ≤0,0005 %
Zinc (Zn)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **6791.1** | 25 g | plastic | 115,60 € |
| **6791.2** | 100 g | plastic | 407,45 € |

## Silver sulphate solution (10 g/l)

### Silver sulphate solution
**10 g/l in sulphuric acid, for determination of COD**
According to DIN 38409 part H41-1.
UN No. 3264 • ADR 8 II • WGK 3
**Danger** H290-H314-H410

| | | | |
|---|---|---|---|
| **X870.1** | 1 l | glass | 64,40 € |
| Original pack 6 x 1 l | | | 61,18/1 l |

For further information, please see page 1622

## Silver sulphide

### Silver sulphide
**≥98 %**
$Ag_2S$
M 247,80 g/mol
D 7,23
mp 845 °C
Solubility: insoluble ($H_2O$, 20 °C)
[21548-73-2] • EC No. 244-438-2
WGK 2

**Type analysis:**
Assay (calculated on Ag)..... ≥98 %

| | | | |
|---|---|---|---|
| **5311.1** | 10 g | glass | 166,65 € |
| **5311.2** | 50 g | glass | 643,95 € |

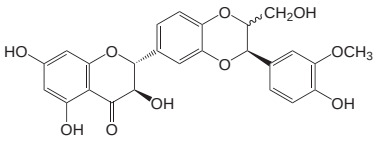
## Silvosol®

### Silvosol®
**removes silver nitrate and iodine stains**
bp 100 °C
UN No. 3264 • ADR 8 III • WGK 2
**Warning** H290-H351-H361d-H412

| | | | |
|---|---|---|---|
| **0047.1** | 250 ml | plastic | 17,15 € |
| **0047.2** | 1 l | plastic | 35,45 € |

For further information, please see page 1121

## Silybin




$C_{25}H_{22}O_{10}$
M 482,43 g/mol
mp 167 °C
[22888-70-6] • EC No. 245-302-5
WGK 3

### Silybin
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤5,0 %
Water (KF)..... ≤5,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE31.1** | 50 mg | glass | 510,65 € |

### Silybin
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC31.1** | 100 mg | glass | 181,70 € |

### Silybin
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Sylibum marianum*.
Diastereomere mixture of Silybin A and B.
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC)..... >98 %

| | | | |
|---|---|---|---|
| **1215.1** | 50 mg | glass | 407,45 € |

## Silybin

**ROTICHROM® TLC**

Reference substance for thin layer chromatography.

Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **5578.1** | 100 mg | glass | 61,20 € |

## Silyl 991

▶ N,O-Bis(trimethylsilyl)-trifluoroacetamide with 1 % trimethylchlorosilane see p. 1777

## Simmons Citrate Agar

### Simmons Citrate Agar

**ISO 10273, for microbiology**

For differentiation of microorganisms on the basis of citrate utilization.

Application: Use 24,3 g for 1 l agar.

Koser Citrate Agar (modified)

Storage temp.: +20 °C

WGK 1

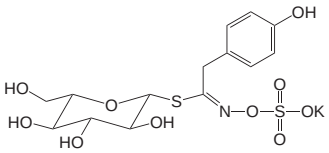
**Guarantee analysis:**

Sodium chloride..... 5 g/l
Sodium citrate..... 2 g/l
Ammonium dihydrogen phosphate..... 1 g/l
di-Potassium hydrogen phosphate..... 1 g/l
Magnesium sulphate..... 0,2 g/l
Bromothymol blue..... 0,08 g/l
Agar..... 15 g/l
pH value..... 6,9 ±0,2

| | | | |
|---|---|---|---|
| **5774.1** | 500 g | plastic | 134,40 € |
| Original pack 6 x 500 g | | | 127,68/500 g |

For further information, please see page 1398

## Sinalbin potassium salt



### Sinalbin potassium salt

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Sinapis alba*.

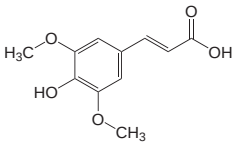
$C_{14}H_{18}NO_{10}S_2K$
M 463,52 g/mol
Storage temp.: +4 °C
[16411-05-5]
WGK 3

**Type analysis:**

Purity (HPLC)..... ≥97 %

| | | | |
|---|---|---|---|
| **6694.1** | 20 mg | glass | 252,65 € |

## Sinapic acid



### Sinapic acid

**≥98 %**

3,5-Dimethoxy-4-hydrocinnamic acid
$C_{11}H_{12}O_5$
M 224,22 g/mol
mp 203-205 °C (dec.)
[530-59-6] • EC No. 208-487-3
WGK 1

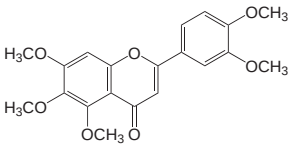
**Warning** H315-H319-H335

**Type analysis:**

Appearance..... whitish to pale yellow powder
Assay..... ≥98,0 %
Loss on drying..... ≤0,5 %

| | | | |
|---|---|---|---|
| **5317.1** | 1 g | glass | 73,00 € |
| **5317.2** | 10 g | glass | 536,45 € |

## Sinensetin



### Sinensetin

**ROTICHROM® HPLC**

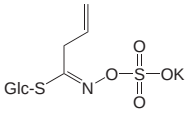
Reference substance for HPLC.
3',4',5,6,7-Pentamethoxyflavone
$C_{20}H_{20}O_7$
M 372 g/mol
Storage temp.: +4 °C
[2306-27-6]

**Type analysis:**

Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **3497.2** | 10 mg | glass | 342,95 € |

## Sinigrin monohydrate



Potassium myronate
$C_{10}H_{16}NO_9S_2K \cdot H_2O$
M 415,49 g/mol
mp ~128 °C
Storage temp.: +4 °C
[3952-98-5] • EC No. 223-545-8

### Sinigrin monohydrate

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Sinapis nigra*.

**Type analysis:**

Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **4542.2** | 50 mg | glass | 321,45 € |

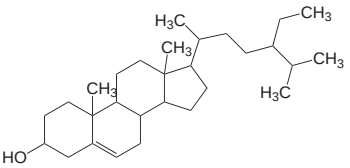
### Sinigrin monohydrate

**ROTICHROM® CHR**

Reference substance for HPLC.
From *Sinapis nigra*.

| | | | |
|---|---|---|---|
| **5319.1** | 250 mg | glass | 94,10 € |

## β-Sitosterol



### β-Sitosterol

**≥80 % (HPLC)**

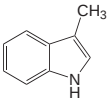
$C_{29}H_{50}O$
M 414,72 g/mol
mp 140°C
Storage temp.: +4 °C
[83-46-5] • EC No. 201-480-6

**Type analysis:**

Appearance..... white to beige powder
Assay (HPLC)..... ≥80 %
Melting point..... 135-140 °C

| | | | |
|---|---|---|---|
| **A540.1** | 100 mg | glass | 181,70 € |

## Skatole



### Skatole

**>99 %**

3-Methyl-indole
$C_9H_9N$
M 131,18 g/mol
bp 265-266 °C
mp 95 °C • flp 132 °C
[83-34-1] • EC No. 201-471-7
WGK 2

**Warning** H315-H319-H335

**Type analysis:**

Assay..... >99 %

| | | | |
|---|---|---|---|
| **4696.1** | 10 g | glass | 81,60 € |

## Skimmed milk powder

▶ Powdered milk see p. 2176

## Slaked lime

▶ Calcium hydroxide see p. 1805

## Slanetz-Bartley Media

Storage temp.: +20 °C
WGK 1

**Warning** H302-H412

### Slanetz-Bartley Agar

**for microbiology**

For detection and enumeration of faecal *streptococci* by membrane filtration method or by direct plating.

Application: Use 41,5 g for 1 l agar.

**Formulation:**

Tryptose. ..... 20 g/l
Yeast extract. ..... 5 g/l
Glucose. ..... 2 g/l
Dipotassium phosphate. ..... 4 g/l
Sodium azide. ..... 0,4 g/l
Tetrazolium chloride (TTC). ..... 0,1 g/l
Agar. ..... 10 g/l
pH value. ..... 7,2 ±0,1

| | | | |
|---|---|---|---|
| **X935.1** | 500 g | plastic | 149,45 € |
| Original pack 6 x 500 g | | | 141,98/500 g |

For further information, please see page 1398

### Slanetz-Bartley Medium (with tetrazolium chloride)

**DEV, ISO 7899-2:2000, for microbiology**

For detection and enumeration of intestinal enterococci from water samples.

Application: Use 41,5 g for 1 l agar.
Sterilise by sterile filtration, do not autoclave.

**Guarantee analysis:**

Tryptose. ..... 20 g/l
Yeast extract. ..... 5 g/l
Glucose. ..... 2 g/l
di-Potassium hydrogen phosphate. ..... 4 g/l
Sodium azide. ..... 0,4 g/l
Tetrazolium chloride (TTC). ..... 0,1 g/l
Agar. ..... 10 g/l
pH value. ..... 7,2 ±0,1

| | | | |
|---|---|---|---|
| **CP68.1** | 500 g | plastic | 163,95 € |
| Original pack 6 x 500 g | | | 155,75/500 g |

For further information, please see page 1398

## SLS


▶ SDS see p. 2244
▶ Roti®fair SDS 0.5g see p. 2214
▶ Roti®fair 10% SDS see p. 2214


## SMAC-Agar

▶ Sorbitol MacConkey Agar see p. 2291

## SOB Broth

### SOB Broth

**for molecular biology**

Application: Use 26,64 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

**Formulation:**

Tryptone. ..... 20 g/l
Yeast extract. ..... 5 g/l
Magnesium chloride. ..... 0,96 g/l
Sodium chloride (NaCl). ..... 0,5 g/l
Potassium chloride (KCl). ..... 0,186 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **AE27.1** | 500 g | plastic | 65,50 € |
| Original pack 6 x 500 g | | | 62,23/500 g |

For further information, please see page 1417

## Soda

▶ Sodium carbonate see p. 2267

## Soda lime

### Soda lime

**granulated, 2-4 mm, with indicator**

Calcaria natronata
[1305-62-0] • EC No. 215-137-3
WGK 1

**Danger** H290-H314-H335

**Type analysis:**

Granulation. ..... ~2-4 mm
Bulk density. ..... ~900 g/l
1 Litre absorbs more than 120 l $CO_2$.
$CO_2$-absorption in rebreathing anesthesia systems with indicator, colour changes to blue. Mixture of calcium hydroxide with small amounts of NaOH and KOH.

| | | | |
|---|---|---|---|
| **8652.1** | 1 l | plastic | 41,85 € |
| Original pack 6 x 1 l | | | 39,76/1 l |
| **8652.3** | 5 l | plastic | 128,90 € |
| Original pack 2 x 5 l | | | 122,46/5 l |

## Soda monohydrate

▶ Sodium carbonate monohydrate see p. 2268

## Sodium

### Sodium

**≥99 %, rods, in paraffin oil**

Na
D 0,97 • bp 881 °C
mp 98 °C
[7440-23-5] • EC No. 231-132-9
UN No. 1428 • ADR 4.3 I • WGK 1

**Danger** H260-H314-EUH014

**Type analysis:**

Assay (Na). ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **4469.1** | 250 g | plastic | 153,20 € |

## Sodium Standards


▶ Sodium AAS Standard Solution see p. 2296
▶ Sodium ICP Standard Solution see p. 2300
▶ Sodium ICP Standard Solution see p. 2305
▶ Sodium IC Standard Solution see p. 2312


## Sodium acetate

$NaCH_3COO$
M 82,03 g/mol
D 1,52 • bp >400 °C
mp 324 °C • flp >250 °C
Solubility: 365 g/l ($H_2O$, 20 °C)
[127-09-3] • EC No. 204-823-8
WGK 1

### Sodium acetate

**ROTI®METIC 99,99 % (4N), anhydrous**

**Type analysis:**

Assay (metals basis). ..... 99,99 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5380.1** | 25 g | plastic | 80,55 € |

### Sodium acetate

**≥99 %, p.a., ACS, anhydrous**

Dehydrating agent, for molecular biology

**Guarantee analysis:**

Assay (titr.). ..... ≥99 %
pH value (5 % solution). ..... 7,5-9,2
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,002 %
Sulphate ($SO_4$). ..... ≤0,003 %
Phosphate ($PO_4$). ..... ≤0,001 %
Ammonium ($NH_4$). ..... ≤0,001 %
Aluminium (Al). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,002 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,02 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,0005 %
Heavy metals. ..... ≤0,001 %
Zinc (Zn). ..... ≤0,0005 %
Loss on drying (120 °C). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **6773.1** | 250 g | plastic | 24,65 € |
| **6773.2** | 1 kg | plastic | 64,40 € |
| Original pack 6 x 1 kg | | | 61,18/1 kg |
| **6773.3** | 2,5 kg | plastic | 134,95 € |
| **6773.5** | 25 kg | plastic | 891,20 € |

### Sodium acetate

**≥98,5 %, extra pure, anhydrous**

**Type analysis:**

Assay (dry substance). ..... ≥98,5 %
pH value (1 % solution). ..... 8,0-9,5
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Mercury (Hg). ..... ≤0,0001 %
Loss on drying (120 °C/4 h). ..... ≤2,0 %
Oxidizable impurities. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **X891.1** | 500 g | plastic | 16,05 € |
| Original pack 6 x 500 g | | | 15,25/500 g |
| **X891.2** | 1 kg | plastic | 24,65 € |
| Original pack 6 x 1 kg | | | 23,42/1 kg |
| **X891.3** | 2,5 kg | plastic | 50,45 € |
| **X891.5** | 25 kg | plastic | 321,45 € |

## Sodium acetate powder (pouch)

▶ Roti®fair Na-Acetate 5.2 see p. 2212

## Sodium acetate solution (0,1 N)

### Sodium acetate solution

**0,1 mol/l - 0,1 N volumetric standard solution in acetic acid**

D 1,05 • bp 103 °C
flp 43 °C
UN No. 2789 • ADR 8 II • WGK 1

NEW

**Danger** H226-H290-H314

**Type analysis:**

Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **0151.1** | 1 l | plastic | 38,60 € |
| Original pack 6 x 1 l | | | 36,67/1 l |

S

## Sodium acetate trihydrate

$NaCH_3COO \cdot 3\ H_2O$
M 136,08 g/mol
D 1,42
mp 58 °C
Solubility: 408 g/l ($H_2O$, 20 °C)
[6131-90-4] • EC No. 204-823-8
WGK 1

### Sodium acetate trihydrate

**≥99,5 %, p.a., ACS, ISO**

For molecular biology, component of acetate buffer; neutralization of mineral acids. Neutral to potassium permanganate.

**Guarantee analysis:**

| | |
|---|---|
| Assay (titr.) | ≥99,5 % |
| pH value (5 % solution) | 7,5-9,0 |
| Appearance of solution (10 %, water) | complies |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Chloride (Cl) | ≤0,0005 % |
| Sulphate ($SO_4$) | ≤0,002 % |
| Phosphate ($PO_4$) | ≤0,0002 % |
| Total nitrogen (as N) | ≤0,001 % |
| Aluminium (Al) | ≤0,0005 % |
| Arsenic (As) | ≤0,00005 % |
| Lead (Pb) | ≤0,0005 % |
| Cadmium (Cd) | ≤0,0005 % |
| Calcium (Ca) | ≤0,001 % |
| Iron (Fe) | ≤0,0003 % |
| Potassium (K) | ≤0,005 % |
| Cobalt (Co) | ≤0,0005 % |
| Copper (Cu) | ≤0,0003 % |
| Magnesium (Mg) | ≤0,0005 % |
| Nickel (Ni) | ≤0,005 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Zinc (Zn) | ≤0,0005 % |
| Ca, Mg and $Me_2O_3$-precipitate | ≤0,01 % |
| $KMnO_4$ reducing matter (as HCOOH) | ≤0,005 % |

| | | | |
|---|---|---|---|
| **6779.2** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **6779.1** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **6779.3** | 5 kg | plastic | 103,75 € |
| **6779.5** | 25 kg | plastic | 413,90 € |

### Sodium acetate trihydrate

**CELLPURE® ≥99,5 %**

For cell culture and biochemistry.

**Guarantee analysis:**

| | |
|---|---|
| Endotoxins | ≤3,0 I.U./g |
| Assay (dry substance) | ≥99,5 % |
| Appearance of solution | complies |
| pH value (5 % solution) | 7,5-9,0 |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Chloride (Cl) | ≤0,005 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Aluminium (Al) | ≤0,00002 % |
| Arsenic (As) | ≤0,0002 % |
| Lead (Pb) | ≤0,0002 % |
| Iron (Fe) | ≤0,0005 % |
| Mercury (Hg) | ≤0,0001 % |

| | | | |
|---|---|---|---|
| **HN05.1** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **HN05.2** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **HN05.3** | 2,5 kg | plastic | 67,20 € |

### Sodium acetate trihydrate

**≥99 %, Ph.Eur., USP**

**Guarantee analysis:**

| | |
|---|---|
| Appearance | colourless crystals |
| Assay (dry substance) | 99,0-101,0 % |
| Identity | complies |
| Insoluble in water | ≤0,05 % |
| pH value (5 %) | 7,5-9,0 |
| Alkalinity | complies |
| Chloride (Cl) | ≤0,02 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Arsenic (As) | ≤0,0002 % |
| Calcium and Magnesium (as Ca) | ≤0,005 % |
| Iron (Fe) | ≤0,001 % |
| Potassium (K) | complies |
| Heavy metals (as Pb) | ≤0,001 % |
| Reducing substances | complies |
| Loss on drying (130 °C) | 39,0-40,5 % |

| | | | |
|---|---|---|---|
| **3856.1** | 1 kg | plastic | 17,10 € |
| Original pack 6 x 1 kg | | | 16,25/1 kg |
| **3856.2** | 5 kg | plastic | 59,05 € |
| **3856.5** | 25 kg | plastic | 223,10 € |

## Sodium alginate

▶ Alginic acid sodium salt see p. 1716

## Sodium ammonium hydrogen phosphate tetrahydrate

### Sodium ammonium hydrogen phosphate tetrahydrate

**≥99 %, p.a.**

Reagent for Mg; phosphorus salt bead.

Ammonium sodium phosphate, sec-Sodium ammonium phosphate
$NaNH_4HPO_4 \cdot 4\ H_2O$
M 209,07 g/mol
D 0,85
mp 79 °C
Solubility: 167 g/l ($H_2O$, 20 °C)
[7783-13-3] • EC No. 235-860-8
WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥99,0 % |
| In $NH_4OH$ insoluble matter | ≤0,01 % |
| Chloride (Cl) | ≤0,002 % |
| Sulphate ($SO_4$) | ≤0,01 % |
| Nitrate ($NO_3$) | ≤0,002 % |
| Arsenic (As) | ≤0,0001 % |
| Lead (Pb) | ≤0,001 % |
| Iron (Fe) | ≤0,001 % |
| Copper (Cu) | ≤0,001 % |
| Nickel (Ni) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **T882.1** | 500 g | plastic | 64,40 € |
| Original pack 6 x 500 g | | | 61,18/500 g |
| **T882.2** | 1 kg | plastic | 95,15 € |
| Original pack 6 x 1 kg | | | 90,39/1 kg |
| **T882.3** | 2,5 kg | plastic | 213,95 € |

## sec. Sodium ammonium phosphate

▶ Sodium ammonium hydrogen phosphate tetrahydrate see p. 2266

## Sodium L(+)-ascorbate

▶ L(+)-Ascorbic acid sodium salt see p. 1753

## Sodium azide

$NaN_3$
M 65,01 g/mol
mp 275 °C (dec.)
Solubility: 420 g/l ($H_2O$, 17 °C)
[26628-22-8] • EC No. 247-852-1
UN No. 1687 • ADR 6.1 II • WGK 2

**Danger**

H300+H310-H373-H410-EUH032

### Sodium azide

**≥99 %, p.a.**

**Guarantee analysis:**

| | |
|---|---|
| Appearance | colourless to white fine cryst. powder |
| Assay (cerim.) | ≥99,0 % |
| In $H_2O$ insoluble matter | ≤0,05 % |
| Chloride (Cl) | ≤0,005 % |
| Total sulphur (as $SO_4$) | ≤0,005 % |
| Free alkali (as NaOH) | ≤0,2 % |
| Aluminium (Al) | ≤0,0005 % |
| Arsenic (As) | ≤0,00001 % |
| Barium (Ba) | ≤0,0005 % |
| Lead (Pb) | ≤0,0005 % |
| Bismuth (Bi) | ≤0,0005 % |
| Cadmium (Cd) | ≤0,0005 % |
| Calcium (Ca) | ≤0,005 % |
| Chromium (Cr) | ≤0,0005 % |
| Kobalt (Co) | ≤0,0005 % |
| Iron (Fe) | ≤0,0005 % |
| Potassium (K) | ≤0,005 % |
| Copper (Cu) | ≤0,0005 % |
| Lithium (Li) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,001 % |
| Manganese (Mn) | ≤0,0005 % |
| Molybdenum (Mo) | ≤0,0005 % |
| Nickel (Ni) | ≤0,0005 % |
| Strontium (Sr) | ≤0,0005 % |
| Zinc (Zn) | ≤0,0005 % |
| Loss on drying | ≤0,2 % |
| pH value | ~10 |

| | | | |
|---|---|---|---|
| **K305.1** | 100 g | plastic | 42,90 € |
| **K305.2** | 250 g | plastic | 76,90 € |
| **K305.3** | 500 g | plastic | 138,70 € |
| Original pack 6 x 500 g | | | 131,77/500 g |
| **K305.4** | 1 kg | plastic | 213,95 € |
| Original pack 6 x 1 kg | | | 203,25/1 kg |

### Sodium azide

**≥98 %, for synthesis**

**Type analysis:**

| | |
|---|---|
| Assay (cerim.) | ≥98 % |
| Water insoluble residue | ≤0,1 % |
| Iron (Fe) | ≤0,001 % |
| pH value | ~10,0 |

| | | | |
|---|---|---|---|
| **4221.1** | 100 g | plastic | 22,50 € |
| **4221.2** | 500 g | plastic | 74,75 € |
| Original pack 6 x 500 g | | | 71,01/500 g |
| **4221.3** | 1 kg | plastic | 137,10 € |
| Original pack 6 x 1 kg | | | 130,25/1 kg |
| **4221.4** | 2,5 kg | plastic | 321,45 € |

## Sodium benzoate

▶ Benzoic acid sodium salt see p. 1767

## Sodium bicarbonate

▶ Sodium hydrogen carbonate see p. 2274

## Sodium bicarbonate solution

▶ Roti®-CELL Bicarbonate solution
see p. 2204

## Sodium biphosphate

▶ Sodium dihydrogen phosphate see p.
▶ Sodium dihydrogen phosphate monohydrate see p. 2271
▶ Sodium dihydrogen phosphate dihydrate see p. 2272

## Sodium bismuthate

### Sodium bismuthate

**≥85 %, p.a.**
Oxidation reagent, determination of manganese in iron and steel.
Sodium bismuth oxide
$NaBiO_3$
M 279,97 g/mol
Solubility: insoluble in water
[12232-99-4] • EC No. 235-455-6
WGK 1

**Warning** H302

**Guarantee analysis:**

| | |
|---|---|
| Assay (iodom.) | ≥85,0 % |
| Soluble Peroxides (as O) | ≤0,008 % |
| Chloride (Cl) | ≤0,002 % |
| Nitrate ($NO_3$) | ≤0,004 % |
| Manganese (Mn) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **4401.1** | 50 g | plastic | 46,15 € |
| **4401.2** | 100 g | plastic | 85,50 € |
| **4401.3** | 250 g | plastic | 185,45 € |

## Sodium bismuth oxide

▶ Sodium bismuthate see p. 2267

## Sodium bisulphate

▶ Sodium hydrogen sulphate see p. 2275

## Sodium bisulphite solution

### Sodium bisulphite solution

**≥37 %, in water**
Sodium hydrogen sulphite
$NaHSO_3$
M 104,06 g/mol
D 1,36 • bp 146 °C
[7631-90-5] • EC No. 231-548-0
WGK 1

**Warning** H302-EUH031

**Type analysis:**

| | |
|---|---|
| Assay (iodom.) | 37,0-42,2 % |
| Density (20 °C) | 1,310-1,380 |

| | | | |
|---|---|---|---|
| **2372.1** | 1 l | plastic | 16,70 € |
| Original pack 6 x 1 l | | | 15,87/1 l |
| **2372.2** | 5 l | plastic | 41,40 € |
| Original pack 2 x 5 l | | | 39,33/5 l |

## Sodium borodeuteride

### Sodium borodeuteride

**98 Atom%D**
For nuclear magnetic resonance spectroscopy.
$NaBD_4$
M 41,88 g/mol
mp >300 °C
[15681-89-7] • EC No. 239-764-7
UN No. 1426 • ADR 4.3 I • WGK 2

**Danger** H260-H301+H311-H314

**Guarantee analysis:**

| | |
|---|---|
| Deuterising degree | ≥98 % |

| | | | |
|---|---|---|---|
| **HN89.1** | 1 g | glass | 62,25 € |

## Sodium borohydride

### Sodium borohydride

**≥97 %**
Reducing agent
Sodium tetrahydroborate
$NaBH_4$
M 37,83 g/mol
D 1,074
mp >220 °C (dec.) • flp 250 °C
Solubility: 550 g/l ($H_2O$, 25 °C)
[16940-66-2] • EC No. 241-004-4
UN No. 1426 • ADR 4.3 I • WGK 2

**Danger**
H260-H301-H314-H332-H360FD-EUH014

**Type analysis:**

| | |
|---|---|
| Appearance | white, hygroscopic powder |
| Assay | ≥97 % |

| | | | |
|---|---|---|---|
| **4051.1** | 25 g | tin | 33,25 € |
| **4051.2** | 100 g | tin | 70,45 € |

## Sodium bromide

NaBr
M 102,9 g/mol
D ~3,2 • bp 1390 °C
mp 755 °C
Solubility: 905 g/l ($H_2O$, 20 °C)
[7647-15-6] • EC No. 231-599-9
WGK 1

### Sodium bromide

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,999 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5086.1** | 25 g | plastic | 146,10 € |

### Sodium bromide

**≥99 %, p.a., ACS**

**Guarantee analysis:**

| | |
|---|---|
| Assay (arg.) | ≥99,0 % |
| In $H_2O$ insoluble matter | ≤0,005 % |
| pH value (5 % solution) | 5,0-8,8 |
| Bromate ($BrO_3$) | ≤0,001 % |
| Chloride (Cl) | ≤0,2 % |
| Sulphate ($SO_4$) | ≤0,002 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Barium (Ba) | ≤0,002 % |
| Calcium (Ca) | ≤0,002 % |
| Iron (Fe) | ≤0,0005 % |
| Potassium (K) | ≤0,1 % |
| Magnesium (Mg) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **HN15.1** | 250 g | plastic | 15,60 € |
| **HN15.2** | 1 kg | plastic | 38,60 € |
| Original pack 6 x 1 kg | | | 36,67/1 kg |
| **HN15.3** | 2,5 kg | plastic | 80,10 € |

## Sodium 2-bromoethanesulfonate

▶ 2-Bromoethanesulfonic acid sodium salt see p. 1788

## Sodium-1-butane sulphonate

▶ Butane-1-sulphonic acid sodium salt see p. 1794

## Sodium cacodylate

▶ Cacodylic acid sodium salt trihydrate see p. 1800

## Sodium dimethylarsonate

▶ Cacodylic acid sodium salt trihydrate see p. 1800

## Sodium carbonate

Anhydrous soda, Soda
$Na_2CO_3$
M 105,99 g/mol
D 2,53
mp 854 °C
Solubility: 220 g/l ($H_2O$, 20 °C)
[497-19-8] • EC No. 207-838-8
WGK 1

**Warning** H319

### Sodium carbonate

**ROTI®METIC 99,999 % (5N), anhydrous**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,999 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5740.1** | 5 g | plastic | 44,00 € |
| **5740.2** | 25 g | plastic | 149,45 € |

## Sodium carbonate

**≥99,5 %, p.a., ACS, anhydrous**

Dissolving agent/soda extraction; molecular biology; glass industry.

**Guarantee analysis:**

Assay (acidim., dry substance).....≥99,5 %
In $H_2O$ insoluble matter.....≤0,005 %
Loss on drying (285 °C).....≤1,0 %
Total sulphur (as $SO_4$).....≤0,003 %
Total nitrogen (as N).....≤0,001 %
Chloride (Cl).....≤0,001 %
Phosphate ($PO_4$).....≤0,001 %
Silicate ($SiO_2$).....≤0,005 %
Heavy metals.....≤0,0005 %
Aluminium (Al).....≤0,001 %
Calcium (Ca).....≤0,005 %
Potassium (K).....≤0,005 %
Arsenic (As).....≤0,0001 %
Copper (Cu).....≤0,0005 %
Iron (Fe).....≤0,0005 %
Lead (Pb).....≤0,0005 %
Magnesium (Mg).....≤0,002 %

| | | | |
|---|---|---|---|
| **A135.1** | 500 g | plastic | 19,90 € |
| Original pack 6 x 500 g | | | 18,91/500 g |
| **A135.2** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **A135.3** | 5 kg | plastic | 133,85 € |

For further information, please see page 1269

## Sodium carbonate

**≥99,5 %, Ph.Eur., USP, BP, anhydrous**

**Guarantee analysis:**

Assay (dry substance).....99,5-100,5 %
Appearance of solution.....complies
Identity.....complies
In $H_2O$ insoluble matter.....≤0,025 %
Loss on drying.....≤0,5 %
Total nitrogen (as N).....≤0,005 %
Sulphate ($SO_4$).....≤0,025 %
Alkali hydroxide and alkali hydrogen carbonate.
.....complies
Volatile organic impurities.....complies
Chloride (Cl).....≤0,01 %
Phosphate ($PO_4$).....≤0,005 %
Arsenic (As).....≤0,0003 %
Lead (Pb).....≤0,001 %
Calcium (Ca).....≤0,01 %
Iron (Fe).....≤0,001 %
Potassium (K).....≤0,05 %
Magnesium (Mg).....≤0,01 %
Heavy metals (as Pb).....≤0,001 %

| | | | |
|---|---|---|---|
| **P028.1** | 500 g | plastic | 15,60 € |
| Original pack 6 x 500 g | | | 14,82/500 g |
| **P028.2** | 1 kg | plastic | 27,45 € |
| Original pack 6 x 1 kg | | | 26,08/1 kg |
| **P028.3** | 5 kg | plastic | 91,30 € |
| **P028.5** | 25 kg | plastic | 321,45 € |

## Sodium carbonate

**≥99 %, anhydrous**

**Type analysis:**

Assay.....≥99,0 %
Loss on drying.....≤0,5 %
Sodium chloride (NaCl).....≤0,15 %
Ferric oxide ($Fe_2O_3$).....≤0,002 %

| | | | |
|---|---|---|---|
| **8563.1** | 1 kg | plastic | 16,05 € |
| Original pack 6 x 1 kg | | | 15,25/1 kg |
| **8563.2** | 10 kg | plastic | 60,10 € |
| **8563.5** | 25 kg | plastic | 112,90 € |

## Sodium carbonate monohydrate

Soda monohydrate
$Na_2CO_3 \cdot H_2O$
M 124,00 g/mol
D 2,25
mp 100 °C
Solubility: 210 g/l ($H_2O$, 20 °C)
[5968-11-6] • EC No. 207-838-8
WGK 1

**Warning** H319

## Sodium carbonate monohydrate

**≥99,5 %, p.a., ACS**

**Guarantee analysis:**

Assay (acidim.).....≥99,5 %
In $H_2O$ insoluble matter.....≤0,01 %
Loss on drying (150 °C).....13,0-15,0 %
Total nitrogen (N).....≤0,001 %
Total sulphur (as $SO_4$).....≤0,004 %
Chloride (Cl).....≤0,001 %
Phosphate ($PO_4$).....≤0,0005 %
Silicate ($SiO_2$).....≤0,005 %
Substances precipitated by ammonia.....≤0,01 %
Heavy metals (as Pb).....≤0,0005 %
Arsenic (As).....≤0,0001 %
Calcium (Ca).....≤0,03 %
Iron (Fe).....≤0,0005 %
Potassium (K).....≤0,005 %
Magnesium (Mg).....≤0,005 %

| | | | |
|---|---|---|---|
| **2597.1** | 100 g | plastic | 16,70 € |
| **2597.2** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |

## Sodium carbonate monohydrate

NEW

**≥99 %, pure**

**Type analysis:**

Assay (dry substance).....≥99,0 %
Heavy metals (as Pb).....≤0,01 %
Loss on drying (105 °C, 4 h).....12,0-15,0 %

| | | | |
|---|---|---|---|
| **0474.1** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **0474.2** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **0474.3** | 2,5 kg | plastic | 69,80 € |
| **0474.4** | 5 kg | plastic | 117,20 € |

## Sodium carbonate decahydrate

Soda
$Na_2CO_3 \cdot 10\ H_2O$
M 286,14 g/mol
D 1,44
mp 33 °C
Solubility: 210 g/l ($H_2O$, 20 °C)
[6132-02-1] • EC No. 207-838-8
WGK 1

**Warning** H319

## Sodium carbonate decahydrate

**≥99 %, p.a., ISO**

**Guarantee analysis:**

Assay (acidim.).....≥99 %
Chloride (Cl).....≤0,001 %
Phosphate ($PO_4$).....≤0,001 %
Total sulphur (as $SO_4$).....≤0,003 %
Total nitrogen (as N).....≤0,0005 %
Aluminium (Al).....≤0,0005 %
Lead (Pb).....≤0,0005 %
Calcium (Ca).....≤0,003 %
Iron (Fe).....≤0,0003 %
Potassium (K).....≤0,005 %
Copper (Cu).....≤0,0005 %
Magnesium (Mg).....≤0,0003 %
Heavy metals (as Pb).....≤0,0005 %

| | | | |
|---|---|---|---|
| **K303.2** | 500 g | plastic | 21,40 € |
| Original pack 6 x 500 g | | | 20,33/500 g |
| **K303.1** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **K303.3** | 2,5 kg | plastic | 73,65 € |

## Sodium carbonate decahydrate

**≥99,5 %, Ph.Eur.**

**Guarantee analysis:**

Appearance.....colourless crystals
Assay.....≥99,5 %
Assay ($Na_2CO_3$).....36,7-40,0 %
Identity.....complies
Appearance of solution.....complies
Alkali hydroxide and alkali bicarbonate.....complies
Loss on drying.....55-65 %
Heavy metals (as Pb).....≤0,001 %
Arsenic (As).....≤0,0002 %
Lead (Pb).....≤0,0002 %
Iron (Fe).....≤0,002 %
Mercury (Hg).....≤0,0001 %
Chloride (Cl).....≤0,003 %
Sulphate ($SO_4$).....≤0,01 %

| | | | |
|---|---|---|---|
| **8566.3** | 1 kg | plastic | 22,05 € |
| Original pack 6 x 1 kg | | | 20,95/1 kg |
| **8566.1** | 2,5 kg | plastic | 41,40 € |
| **8566.2** | 10 kg | plastic | 142,45 € |

## Sodium carbonate solution (0,1 N)

## Sodium carbonate solution

NEW

**0,05 mol/l - 0,1 N volumetric standard solution**

**Type analysis:**

Amount-of-substance conc. (20 °C)..0,05 mol/l ±0,2 %
Titer.....0,998-1,002

| | | | |
|---|---|---|---|
| **0187.1** | 1 l | plastic | 96,65 € |
| Original pack 6 x 1 l | | | 91,82/1 l |

For further information, please see page 1622

## Sodium carbonate solution (1 N)

## Sodium carbonate solution

NEW

**0,5 mol/l - 1 N volumetric standard solution**

**Type analysis:**

Amount-of-substance conc. (20 °C)... 0,5 mol/l ±0,2 %
Titer.....0,998-1,002

| | | | |
|---|---|---|---|
| **0211.1** | 1 l | plastic | 96,65 € |
| Original pack 6 x 1 l | | | 91,82/1 l |

For further information, please see page 1622

## Sodium carboxymethylcellulose

▶ Carboxymethylcellulose sodium salt see p. 1813

## Sodium-Casein

### Sodium-Casein

**≥89 % lactoprotein**

Casein-sodium
[9005-46-3]

**Type analysis:**

Appearance. ..... off-white powder
Protein. ..... ≥89 %
Water . ..... ≤6 %
pH value. ..... 6,5-7,0
Ash. ..... 3,0-4,5 %
Fat. ..... ≤1,85 %

| | | | |
|---|---|---|---|
| **8569.2** | 500 g | plastic | 27,45 € |
| Original pack 6 x 500 g | | | 26,08/500 g |
| **8569.1** | 1 kg | plastic | 41,85 € |
| Original pack 6 x 1 kg | | | 39,76/1 kg |
| **8569.3** | 2,5 kg | plastic | 92,35 € |

## Sodium chlorate

### Sodium chlorate

**≥98 %, pure**

$NaClO_3$
M 106,46 g/mol
D 2,49 • bp 300 °C (dec.)
mp 255 °C
Solubility: 916 g/l ($H_2O$, 20 °C)
[7775-09-9] • EC No. 231-887-4
UN No. 1495 • ADR 5.1 II • WGK 2

**Danger** H271-H302-H411

**Type analysis:**

Appearance. ..... white, crystalline
Assay ..... ≥98 %
Sodium chloride (NaCl). ..... ≤0,1 %
In $H_2O$ insoluble. ..... ≤0,005 %
Water . ..... ≤0,05 %
Calcium (Ca). ..... ≤0,10 %
Potassium (K). ..... ≤0,10 %
Chromium (Cr). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **8572.3** | 500 g | plastic | 25,70 € |
| Original pack 6 x 500 g | | | 24,42/500 g |
| **8572.1** | 1 kg | plastic | 30,65 € |
| Original pack 6 x 1 kg | | | 29,12/1 kg |
| **8572.2** | 5 kg | plastic | 89,15 € |

## Sodium chloride

Common salt
NaCl
M 58,44 g/mol
D 2,17 • bp 1461 °C
mp 801 °C
Solubility: 358 g/l ($H_2O$, 20 °C)
[7647-14-5] • EC No. 231-598-3
WGK 1

### Sodium chloride

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5741.1** | 5 g | plastic | 37,10 € |
| **5741.2** | 25 g | plastic | 73,65 € |
| **5741.3** | 100 g | plastic | 256,95 € |

### Sodium chloride

**≥99,5 %, p.a., ACS, ISO**

For freezing mixtures; salting-out soap.
For molecular biology.

**Guarantee analysis:**

Assay (arg.). ..... ≥99,5 %
Appearance of solution. ..... complies
pH value (5 % in water). ..... 5,0-8,0
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chlorate and nitrate (as $NO_3$). ..... ≤0,003 %
Hexacyanoferrate (II) $[Fe(CN)_6]$ ..... ≤0,0001 %
Total nitrogen (as N). ..... ≤0,0005 %
Phosphate ($PO_4$). ..... ≤0,0005 %
Sulphate ($SO_4$). ..... ≤0,001 %
Bromide (Br). ..... ≤0,005 %
Iodide (I). ..... ≤0,001 %
Iodide (I). ..... complies
Aluminium (Al). ..... ≤0,0002 %
Arsenic (As). ..... ≤0,00004 %
Barium (Ba). ..... ≤0,001 %
Barium (Ba). ..... complies
Calcium (Ca). ..... ≤0,002 %
Iron (Fe). ..... ≤0,0001 %
Potassium (K). ..... ≤0,005 %
Copper (Cu). ..... ≤0,0002 %
Magnesium (Mg). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Magnesium, alkaline-earth metals (as Ca). .. ≤0,001 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **3957.3** | 500 g | plastic | 16,05 € |
| Original pack 6 x 500 g | | | 15,25/500 g |
| **3957.1** | 1 kg | plastic | 17,75 € |
| Original pack 6 x 1 kg | | | 16,86/1 kg |
| **3957.2** | 5 kg | plastic | 64,40 € |
| **3957.4** | 10 kg | plastic | 98,80 € |
| **3957.5** | 25 kg | plastic | 192,45 € |

### Sodium chloride

**CELLPURE® ≥99,8 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤5 I.U./g
Assay (dry substance). ..... ≥99,8 %
Appearance of solution. ..... complies
Loss on drying. ..... ≤0,1 %
Bromide (Br). ..... ≤0,005 %
Iodide (I). ..... complies
Sulphate ($SO_4$). ..... ≤0,02 %
Phosphate ($PO_4$). ..... ≤0,002 %
Calcium, magnesium, alkaline-earth metals (as Ca). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,0005 %
Aluminium (Al). ..... ≤0,00002 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,0002 %

| | | | |
|---|---|---|---|
| **HN00.1** | 500 g | plastic | 19,25 € |
| Original pack 6 x 500 g | | | 18,29/500 g |
| **HN00.2** | 1 kg | plastic | 25,30 € |
| Original pack 6 x 1 kg | | | 24,04/1 kg |
| **HN00.3** | 5 kg | plastic | 84,95 € |

### Sodium chloride

**≥99 %, Ph.Eur., USP**

**Guarantee analysis:**

Assay (dry substance). ..... 99,0-100,5 %
Chloride (Cl). ..... complies
Sodium (Na). ..... complies
Appearance of solution. ..... complies
Loss on drying (105 °C). ..... ≤0,5 %
Acid or alkaline react. substances. ..... complies
Bromide (Br). ..... ≤0,01 %
Iodide (I). ..... complies
Hexacyanoferrate (II) $[Fe(CN)_6]$ . ..... complies
Phosphate ($PO_4$). ..... ≤0,0025 %
Nitrite ($NO_2$). ..... complies
Sulphate ($SO_4$). ..... ≤0,02 %
Calcium, magnesium, alkaline-earth metals (as Ca). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,0005 %
Aluminium (Al). ..... ≤0,00002 %
Barium (Ba). ..... complies
Iron (Fe). ..... ≤0,0002 %
Arsenic (As). ..... ≤0,0001 %
Potassium (K). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **P029.1** | 500 g | plastic | 11,30 € |
| Original pack 6 x 500 g | | | 10,74/500 g |
| **P029.2** | 1 kg | plastic | 13,45 € |
| Original pack 6 x 1 kg | | | 12,78/1 kg |
| **P029.3** | 5 kg | plastic | 41,40 € |
| **P029.4** | 10 kg | plastic | 69,80 € |
| **P029.5** | 25 kg | plastic | 130,65 € |

### Sodium chloride

NEW

**≥99 %**

**Type analysis:**

Assay (dry substance). ..... ≥99,0 %
Phosphate ($PO_4$). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,05 %
Aluminium (Al). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **0601.1** | 1 kg | plastic | 10,65 € |
| Original pack 6 x 1 kg | | | 10,12/1 kg |
| **0601.2** | 5 kg | plastic | 32,15 € |
| **0601.3** | 10 kg | plastic | 53,65 € |
| **0601.4** | 25 kg | plastic | 107,40 € |

S

## Sodium chloride

**≥99,8 %, extra fine, with anticaking**

**Type analysis:**

Assay (dry substance). ..... ≥99,8 %
Calcium (Ca). ..... ≤0,05 %
Magnesium (Mg). ..... ≤0,005 %
Stripping agent. ..... ≤0,005 %
Loss on drying (110 °C). ..... ≤0,15 %
Particle-size distribution:
<63 µm. ..... ≤10 %
>355 µm. ..... ≤5 %

| | | | |
|---|---|---|---|
| **0962.1** | 1 kg | plastic | 11,00 € |
| Original pack 6 x 1 kg | | | 10,45/1 kg |
| **0962.2** | 5 kg | plastic | 30,65 € |
| **0962.3** | 25 kg | plastic | 107,40 € |

## Sodium chloride

**>99,8 %, with anticaking**

**Type analysis:**

Assay. ..... >99,8 %
Calcium (Ca). ..... <0,01 %
Magnesium (Mg). ..... <0,002 %
Stripping agent. ..... <0,0015 %
Bulk density. ..... 1100-1300 kg/m$^3$

| | | | |
|---|---|---|---|
| **9265.1** | 1 kg | plastic | 10,25 € |
| Original pack 6 x 1 kg | | | 9,74/1 kg |
| **9265.2** | 5 kg | plastic | 28,50 € |
| **9265.3** | 10 kg | plastic | 52,60 € |
| **9265.5** | 25 kg | plastic | 109,55 € |
| **9265.4** | 50 kg | card board | 166,65 € |

## Sodium chloride powder (pouch)

▶ Roti®fair 3M NaCl see p. 2212
▶ Roti®fair 5M NaCl see p. 2212

## Sodium chloride solution 0,9 %

### Sodium chloride solution 0,9 %

NEW

**CELLPURE®**

**Type analysis:**

pH value. ..... 4,5-7,0
Endotoxins. ..... ≤0,5 I.U./ml

For research use only. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* diagnostics.

| | | | |
|---|---|---|---|
| **8607.1** | 500 ml | plastic | 16,05 € |
| **8607.2** | 1 l | plastic | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |

## Sodium chloride solution (0,1 N)

### Sodium chloride solution

**ROTI®VOLUM 0,1 mol/l - 0,1 N**

Ampoule for preparation of 1000 ml volumetric solution.
NaCl
M 58,44 g/mol
[7647-14-5]
WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C). .. 0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN67.1** | 1 piece | plastic ampoule | 19,05 € |

For further information, please see page 1623

## Sodium chloride solution (1 N)

### Sodium chloride solution

**1 mol/l - 1 N volumetric standard solution**

WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... 1 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **8115.1** | 1 l | plastic | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |

## Sodium chloride (tablet)

▶ Roti®fair 0.9% NaCl see p. 2212

## Sodium chlorite

### Sodium chlorite

**~80 %, techn.**

$NaClO_2$
M 90,44 g/mol
mp 180-200 °C (dec.)
Solubility: 572 g/l ($H_2O$, 20 °C)
[7758-19-2] • EC No. 231-836-6
UN No. 1496 • ADR 5.1 II • WGK 2

**Danger** H271-H301-H310-H314-H373-H410-EUH032-EUH071

**Type analysis:**

Appearance. ..... white powder
Assay. ..... 80-83 %

| | | | |
|---|---|---|---|
| **4352.1** | 250 g | plastic | 18,20 € |
| **4352.2** | 1 kg | plastic | 38,60 € |
| Original pack 6 x 1 kg | | | 36,67/1 kg |
| **4352.3** | 5 kg | plastic | 152,55 € |

## Sodium cholate

▶ Cholic acid sodium salt see p. 1831

## Mono sodium citrate

### Mono sodium citrate

**≥99 %, extra pure, anhydrous**

Citric acid monosodium salt
$C_6H_7NaO_7$
M 214,11 g/mol
mp ~210 °C
[18996-35-5] • EC No. 242-734-6
WGK 1

**Type analysis:**

Assay (dry substance). ..... ≥99 %
Appearance of solution. ..... complies
pH value (10 % solution). ..... 3,4-3,8
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,015 %
Oxalate (as $C_2H_2O_4$). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,001 %
Reaction with $H_2SO_4$. ..... complies
Loss on drying (120 °C). ..... ≤0,4 %

| | | | |
|---|---|---|---|
| **HN13.1** | 100 g | plastic | 14,55 € |
| **HN13.2** | 500 g | plastic | 37,10 € |
| Original pack 6 x 500 g | | | 35,25/500 g |
| **HN13.3** | 1 kg | plastic | 56,90 € |
| Original pack 6 x 1 kg | | | 54,06/1 kg |

For further information, please see page 1269

## tri-Sodium citrate dihydrate

Citric acid trisodium salt dihydrate
$C_6H_5Na_3O_7 \cdot 2\ H_2O$
M 294,1 g/mol
D 1,76
Solubility: ~720 g/l ($H_2O$, 25 °C)
[6132-04-3] • EC No. 200-675-3
WGK 1

### tri-Sodium citrate dihydrate

**≥99 %, p.a., ACS**

Reagent for buffers; sequestring agent.

**Guarantee analysis:**

Assay (perchloric acidim). ..... ≥99,0 %
pH value (5 %, water). ..... 7,5-9,0
In $H_2O$ insoluble matter. ..... ≤0,003 %
Chloride (Cl). ..... ≤0,003 %
Phosphate ($PO_4$). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,005 %
Oxalate (as $C_2H_2O_4$). ..... ≤0,01 %
Ammonium ($NH_4$). ..... ≤0,001 %
Arsenic (As). ..... ≤0,00004 %
Lead (Pb). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **3580.4** | 250 g | plastic | 20,35 € |
| **3580.3** | 500 g | plastic | 26,80 € |
| Original pack 6 x 500 g | | | 25,46/500 g |
| **3580.1** | 1 kg | plastic | 42,90 € |
| Original pack 6 x 1 kg | | | 40,76/1 kg |
| **3580.2** | 5 kg | plastic | 181,70 € |
| **3580.5** | 25 kg | plastic | 428,95 € |

## tri-Sodium citrate dihydrate

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins ≤6,0 E.U./g
Assay (dry substance) ≥99 %
Appearance of solution complies
Acidity or alkalinity complies
Chloride (Cl) ≤0,005 %
Sulphate ($SO_4$) ≤0,015 %
Oxalate (as $C_2H_2O_4$) ≤0,03 %
Heavy metals (as Pb) ≤0,001 %
Reaction with $H_2SO_4$ complies

| | | | |
|---|---|---|---|
| **HN12.1** | 250 g | plastic | 21,40 € |
| **HN12.2** | 500 g | plastic | 38,60 € |
| Original pack 6 x 500 g | | | 36,67/500 g |
| **HN12.3** | 1 kg | plastic | 61,20 € |
| Original pack 6 x 1 kg | | | 58,14/1 kg |
| **HN12.4** | 2,5 kg | plastic | 119,90 € |

## tri-Sodium citrate dihydrate

**≥99 %, Ph.Eur.**

**Guarantee analysis:**

Appearance white cryst. powder
Assay (dry substance) 99,0-100,5 %
Identity complies
Appearance of solution clear, colourless
Acidity or alkalinity complies
Reaction with $H_2SO_4$ complies
pH value (5 % solution) 7,5-9,0
Water 11,0-13,0 %
Sulphate ($SO_4$) ≤0,01 %
Chloride (Cl) ≤0,005 %
Oxalate (as $C_2H_2O_4$) ≤0,01 %
Arsenic (As) ≤0,0001 %
Lead (Pb) ≤0,00005 %
Mercury (Hg) <0,00005 %
Heavy metals ≤0,0005 %

| | | | |
|---|---|---|---|
| **4088.3** | 500 g | plastic | 13,45 € |
| Original pack 6 x 500 g | | | 12,78/500 g |
| **4088.1** | 1 kg | plastic | 22,50 € |
| Original pack 6 x 1 kg | | | 21,38/1 kg |
| **4088.2** | 5 kg | plastic | 87,65 € |
| **4088.5** | 25 kg | plastic | 244,60 € |

## Sodium cobalt nitrite

▶ Sodium hexanitrocobaltate(III) see p. 2273

## Sodium cyclamate

▶ Cyclohexane sulphamic acid sodium salt see p. 1852

## Sodium-1-decane sulphonate

▶ Decane-1-sulphonic acid sodium salt see p. 1858

## Sodium deoxycholate

▶ Deoxycholic acid sodium salt (DOC) see p. 1860

## Sodium deuterium oxide 30 % solution in $D_2O$

### Sodium deuterium oxide 30 % solution in $D_2O$

**99,5 Atom%D**

For nuclear magnetic resonance spectroscopy.
NaOD
D 1,462
[14014-06-3] • EC No. 237-825-2
UN No. 1824 • ADR 8 II • WGK 1

**Danger** H290-H314

**Guarantee analysis:**

Deuterising degree ≥99,5 %
Assay (mass %) ≥30 %

| | | | |
|---|---|---|---|
| **HN90.1** | 10 ml | glass | 60,10 € |

## Sodium diacetate

### Sodium diacetate

**extra pure**

Sodium hydrogen diacetate
$C_4H_7NaO_4$
M 142,09 g/mol
D 1,4
Solubility: 1000 g/l ($H_2O$, 20 °C)
[126-96-5] • EC No. 204-814-9
WGK 1

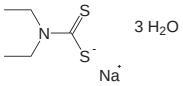
**Danger** H318

**Type analysis:**

Assay ($CH_3COONa$) 58,0-60,0 %
Free acid (as $CH_3COOH$) 39,0-41,0 %
pH value (10 %) 4,5-5,0
Arsenic (As) ≤0,0005 %
Lead (Pb) ≤0,0005 %
Mercury (Hg) ≤0,0001 %
Water ≤2,0 %

| | | | |
|---|---|---|---|
| **9485.1** | 500 g | plastic | 23,15 € |
| Original pack 6 x 500 g | | | 21,99/500 g |
| **9485.2** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **9485.3** | 2,5 kg | plastic | 64,40 € |

## Sodium diethyldithiocarbamate trihydrate




### Sodium diethyldithiocarbamate trihydrate

**p.a., ACS**

Reagent for copper
Diethyldithiocarbamic acid sodium salt, Sodium diethyldithiocarbamate, Cupral, DDTC
$C_5H_{10}NNaS_2 \cdot 3\ H_2O$
M 225,31 g/mol
mp 95-99 °C
Solubility: 600 g/l ($H_2O$, 20 °C)
[20624-25-3] • EC No. 205-710-6
UN No. 3077 • ADR 9 III • WGK 3

**Warning** H302-H410

**Guarantee analysis:**

Melting point 92-96 °C
Solubility in $H_2O$ complies
Sodium (as $Na_2SO_4$) 30,5-32,5 %
Suitability as reagent for copper complies

| | | | |
|---|---|---|---|
| **2601.1** | 25 g | plastic | 22,05 € |
| **2601.2** | 100 g | plastic | 39,25 € |
| **2601.3** | 500 g | plastic | 131,70 € |
| Original pack 6 x 500 g | | | 125,12/500 g |

## Sodium dihydrogen phosphate monohydrate

Sodium phosphate, monobasic; Sodium biphosphate, Monosodium phosphate
$NaH_2PO_4 \cdot H_2O$
M 137,99 g/mol
D 2,04
mp 100 °C
Solubility: 850 g/l ($H_2O$, 20 °C)
[10049-21-5] • EC No. 231-449-2
WGK 1

### Sodium dihydrogen phosphate monohydrate

**≥98 %, p.a., ACS**

Molecular biology. For softening water. Additive for galvanic baths.

**Guarantee analysis:**

Assay (acidim.) 98,0-102,0 %
pH value (5 % in water) 4,1-4,5
In $H_2O$ insoluble matter ≤0,01 %
Total nitrogen (as N) ≤0,001 %
Chloride (Cl) ≤0,0005 %
Sulphate ($SO_4$) ≤0,003 %
Arsenic (As) ≤0,00005 %
Lead (Pb) ≤0,0005 %
Cadmium (Cd) ≤0,0005 %
Calcium (Ca) ≤0,005 %
Iron (Fe) ≤0,0005 %
Potassium (K) ≤0,005 %
Cobalt (Co) ≤0,0005 %
Copper (Cu) ≤0,0005 %
Magnesium (Mg) ≤0,005 %
Nickel (Ni) ≤0,0005 %
Heavy metals ≤0,0005 %

| | | | |
|---|---|---|---|
| **K300.1** | 500 g | plastic | 26,80 € |
| Original pack 6 x 500 g | | | 25,46/500 g |
| **K300.2** | 1 kg | plastic | 39,70 € |
| Original pack 6 x 1 kg | | | 37,72/1 kg |
| **K300.3** | 2,5 kg | plastic | 80,10 € |
| **K300.5** | 25 kg | plastic | 557,95 € |

## Sodium dihydrogen phosphate monohydrate

**≥98 %, USP, BP**

**Guarantee analysis:**

Assay (acidim., dry substance). ..... 98,0-100,5 %
Identity. ..... complies
pH value (5 % solution). ..... 4,2-4,5
Appearance of solution. ..... clear, colourless
In $H_2O$ insoluble matter. ..... ≤0,01 %
Loss on drying (130 °C). ..... 11,5-14,5 %
Chloride (Cl). ..... ≤0,014 %
Sulphate ($SO_4$). ..... ≤0,03 %
Al, Ca and related elements. ..... complies
Arsenic (As). ..... ≤0,0002 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Volatile organic impurities. ..... complies
$KMnO_4$ reducing substances (as O). ..... complies

| | | | |
|---|---|---|---|
| **T878.1** | 500 g | plastic | 25,30 € |
| Original pack 6 x 500 g | | | 24,04/500 g |
| **T878.2** | 1 kg | plastic | 38,20 € |
| Original pack 6 x 1 kg | | | 36,29/1 kg |
| **T878.3** | 2,5 kg | plastic | 75,15 € |
| **T878.4** | 5 kg | plastic | 121,40 € |

## Sodium dihydrogen phosphate dihydrate

Sodium phosphate, monobasic;
Sodium biphosphate, Monosodium phosphate
$NaH_2PO_4 \cdot 2\ H_2O$
M 156,01 g/mol
D 1,91
mp 60 °C
Solubility: 850 g/l ($H_2O$, 20 °C)
[13472-35-0] • EC No. 231-449-2
WGK 1

## Sodium dihydrogen phosphate dihydrate

**≥99 %, p.a.**

For molecular biology.

**Guarantee analysis:**

Assay (acidim.). ..... ≥99,0 %
pH value (5 % solution). ..... 4,2-4,5
In $H_2O$ insoluble matter. ..... ≤0,005 %
Total nitrogen (as N). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,0005 %
Sulphate ($SO_4$). ..... ≤0,003 %
Arsenic (As). ..... ≤0,00005 %
Lead (Pb). ..... ≤0,0002 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0002 %
Magnesium (Mg). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **T879.1** | 500 g | plastic | 23,15 € |
| Original pack 6 x 500 g | | | 21,99/500 g |
| **T879.2** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **T879.3** | 2,5 kg | plastic | 72,60 € |
| **T879.5** | 25 kg | plastic | 600,95 € |

For further information, please see page 1269

## Sodium dihydrogen phosphate dihydrate

**≥98 %, Ph.Eur., USP**

**Guarantee analysis:**

Assay. ..... 98,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
In $H_2O$ insoluble matter. ..... ≤0,01 %
pH value (5 % in water). ..... 4,2-4,5
Loss on drying (130 °C). ..... 21,5-24,0 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,03 %
Fluoride (F). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0001 %
Mercury (Hg). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,001 %
$Na_2O$. ..... 19,7-20,0 %
$P_2O_5$. ..... 45,0-45,7 %
Reducing substances ..... complies
Al, Ca and related elements. ..... complies

| | | | |
|---|---|---|---|
| **2370.3** | 500 g | plastic | 16,70 € |
| Original pack 6 x 500 g | | | 15,87/500 g |
| **2370.1** | 1 kg | plastic | 26,80 € |
| Original pack 6 x 1 kg | | | 25,46/1 kg |
| **2370.2** | 2,5 kg | plastic | 51,50 € |
| **2370.5** | 25 kg | plastic | 370,90 € |

## Sodium diphenylaminesulfonate

▶ Diphenylamine-4-sulphonic acid sodium salt see p. 1887

## tetra-Sodium diphosphate decahydrate

tetra-Sodium pyrophosphate, TSPP
$Na_4P_2O_7 \cdot 10\ H_2O$
M 446,06 g/mol
D 1,82
Solubility: ~60 g/l ($H_2O$, 20 °C)
[13472-36-1] • EC No. 231-767-1
WGK 1

**Warning** H319

## tetra-Sodium diphosphate decahydrate

**≥99 %, p.a.**

**Guarantee analysis:**

Assay (acidim.). ..... ≥99,0 %
pH value (5 % solution). ..... 9,5-10,7
In $H_2O$ insoluble matter. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,005 %
Nitrate ($NO_3$). ..... ≤0,003 %
Arsenic (As). ..... ≤0,0003 %
Lead (Pb). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,01 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,01 %
Nickel (Ni). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **T883.1** | 500 g | plastic | 30,00 € |
| Original pack 6 x 500 g | | | 28,50/500 g |
| **T883.2** | 1 kg | plastic | 42,90 € |
| Original pack 6 x 1 kg | | | 40,76/1 kg |
| **T883.3** | 2,5 kg | plastic | 77,95 € |

## tetra-Sodium diphosphate decahydrate

**≥98 %, extra pure**

**Type analysis:**

Assay (acidim., dry substance). ..... ≥98,0 %
pH value (5 % solution). ..... 9,5-10,8
In $H_2O$ insoluble matter. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,05 %
Iron (Fe). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **0269.1** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **0269.2** | 1 kg | plastic | 26,80 € |
| Original pack 6 x 1 kg | | | 25,46/1 kg |
| **0269.3** | 2,5 kg | plastic | 59,05 € |
| **0269.5** | 25 kg | plastic | 418,20 € |

## Sodium-1-dodecane sulphonate

▶ Dodecane-1-sulphonic acid sodium salt see p. 1893

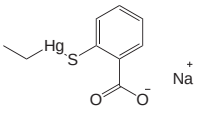
## Sodium dodecyl sulphate

▶ SDS see p. 2244
▶ Roti®fair SDS 0.5g see p. 2214
▶ Roti®fair 10% SDS see p. 2214

## Sodium EDTA solution

▶ EDTA disodium salt solution (0,1 N) see p. 1900

## Sodium ethylmercurithiosalicylate




## Sodium ethylmercurithiosalicylate

**≥97 %**

Merthiolate, Thiomerosal, Thiomersalate
$C_9H_9HgNaO_2S$
M 404,82 g/mol
mp 232-233 °C (dec.)
[54-64-8] • EC No. 200-210-4
UN No. 2025 • ADR 6.1 II • WGK 3

**Danger**

H300+H310+H330-H373-H400-H410

**Type analysis:**

Assay (dry substance). ..... ≥97 %
Loss on drying. ..... ≤0,5 %
Mercury ions. ..... ≤0,7 %

| | | | |
|---|---|---|---|
| **6389.1** | 10 g | plastic | 68,70 € |
| **6389.2** | 50 g | plastic | 260,70 € |

## Sodium fluoride

NaF
M 41,99 g/mol
D 2,78 • bp 1704 °C
mp 993 °C
Solubility: 42 g/l ($H_2O$, 20 °C)
[7681-49-4] • EC No. 231-667-8
UN No. 1690 • ADR 6.1 III • WGK 1
**Danger** H301-H315-H319-EUH032

### Sodium fluoride
**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**
Assay (metals basis)..... 99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **4503.1** | 10 g | plastic | 54,75 € |
| **4503.2** | 50 g | plastic | 170,95 € |

### Sodium fluoride
**≥99 %, p.a., ACS, ISO**

**Guarantee analysis:**
Assay (compl.)..... ≥99,0 %
In $H_2O$ insoluble matter..... ≤0,005 %
Loss on drying (150 °C)..... ≤0,2 %
Acidity..... ≤0,025 meq/g
Alkalinity..... ≤0,01 meq/g
Sodium hexafluorosilicate ($Na_2SiF_6$)..... ≤0,1 %
Chloride (Cl)..... ≤0,003 %
Sulphate ($SO_4$)..... ≤0,01 %
Sulphite ($SO_3$)..... ≤0,005 %
Lead (Pb)..... ≤0,001 %
Iron (Fe)..... ≤0,002 %
Potassium (K)..... ≤0,01 %
Copper (Cu)..... ≤0,0005 %
Nickel (Ni)..... ≤0,003 %
Heavy metals (as Pb)..... ≤0,001 %

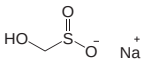
| | | | |
|---|---|---|---|
| **P756.1** | 500 g | plastic | 50,00 € |
| Original pack 6 x 500 g | | | 47,50/500 g |
| **P756.2** | 1 kg | plastic | 89,80 € |
| Original pack 6 x 1 kg | | | 85,31/1 kg |
| **P756.3** | 2,5 kg | plastic | 192,45 € |

### Sodium fluoride
**≥99 %, extra pure**

**Type analysis:**
Assay (titr.)..... ≥99,0 %
Free alkali (as NaOH)..... ≤0,1 %
Sodium hexafluorosilicate ($Na_2SiF_6$)..... ≤0,02 %
Chloride (Cl)..... ≤0,01 %
Sulphate ($SO_4$)..... ≤0,02 %
Heavy metals (as Pb)..... ≤0,001 %
Arsenic (As)..... ≤0,00005 %
Lead (Pb)..... ≤0,0001 %
Iron (Fe)..... ≤0,005 %
Loss on drying (150 °C)..... ≤0,1 %

| | | | |
|---|---|---|---|
| **2618.1** | 500 g | plast. | 25,30 € |
| Original pack 6 x 500 g | | | 24,04/500 g |
| **2618.2** | 1 kg | plast. | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |
| **2618.3** | 2,5 kg | plast. | 60,10 € |

## Sodium formaldehyde sulphoxylate



### Sodium formaldehyde sulphoxylate
**>98 %, for synthesis**
Rongalit®
$CH_3NaO_3S$
M 118,08 g/mol
[149-44-0] • EC No. 205-739-4
WGK 1
**Warning** H341-H361d-EUH031

**Type analysis:**
Assay..... >98 %

| | | | |
|---|---|---|---|
| **4553.2** | 500 g | plastic | 21,00 € |
| Original pack 6 x 500 g | | | 19,95/500 g |
| **4553.1** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |

## Sodium formate

### Sodium formate
**≥99 %, p.a., ACS**
Precipitant for noble metals, extraction reagent for the determination of phosphate in soil samples.
Formic acid sodium salt
HCOONa
M 68,01 g/mol
mp 253 °C
Solubility: 550 g/l ($H_2O$, 20 °C)
[141-53-7] • EC No. 205-488-0
WGK 1

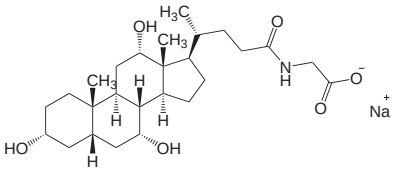
**Guarantee analysis:**
Assay (iodom.)..... ≥99,0 %
pH value (5 % in $H_2O$)..... 7,0-8,5
In $H_2O$ insoluble matter..... ≤0,005 %
Chloride (Cl)..... ≤0,001 %
Oxalate ($C_2O_4$)..... ≤0,05 %
Phosphate ($PO_4$)..... ≤0,002 %
Sulphate ($SO_4$)..... ≤0,001 %
Calcium (Ca)..... ≤0,005 %
Iron (Fe)..... ≤0,0005 %
Copper (Cu)..... ≤0,0005 %
Heavy metals (as Pb)..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **4404.1** | 250 g | plastic | 26,35 € |
| **4404.2** | 500 g | plastic | 45,70 € |
| Original pack 6 x 500 g | | | 43,42/500 g |
| **4404.3** | 1 kg | plastic | 79,05 € |
| Original pack 6 x 1 kg | | | 75,10/1 kg |

## Sodium gluconate
▶ Gluconic acid sodium salt see p. 1955

## Sodium glucuronate hydrate
▶ D-Glucuronic acid sodium salt monohydrate see p. 1957

## Sodium glycocholate



### Sodium glycocholate
**≥98 %, for biochemistry**
Glycocholic acid sodium salt
$C_{26}H_{42}NO_6Na$
M 487,62 g/mol
[863-57-0] • EC No. 212-730-9
WGK 1

**Type analysis:**
Assay (titr.)..... ≥98 %
Solution (5 % in water)..... colourless to light yellowish, clear
Water (KF)..... ≤10 %
Specific rotation $[\alpha]_D^{20}$
(c=2 in $H_2O$, dry substance)..... +26° to +30°

| | | | |
|---|---|---|---|
| **4181.1** | 250 mg | glass | 37,55 € |
| **4181.2** | 1 g | glass | 115,60 € |

## Sodium-1-heptane sulphonate
▶ Heptane-1-sulphonic acid sodium salt see p. 1974

## Sodium-1-hexane sulphonate
▶ Hexane-1-sulphonic acid sodium salt see p. 1979

## Sodium hexanitrocobaltate(III)

### Sodium hexanitrocobaltate(III)
**p.a., ACS**
Determination of potassium.
Cobalt(III) sodium nitrite, Sodium cobaltnitrite
$Na_3Co(NO_2)_6$
M 403,94 g/mol
Solubility: 720 g/l ($H_2O$, 20 °C)
[13600-98-1] • EC No. 237-077-7
UN No. 1479 • ADR 5.1 III • WGK 2
**Danger** H272-H317-H351

**Guarantee analysis:**
In diluted acetic acid insoluble matter. ..... ≤0,02 %
Suitability for determination of potassium..... complies

| | | | |
|---|---|---|---|
| **4409.1** | 25 g | plastic | 19,25 € |
| **4409.2** | 100 g | plastic | 52,60 € |
| **4409.3** | 250 g | plastic | 107,40 € |

S

## Sodium hydrogen carbonate

Sodium bicarbonate
$NaHCO_3$
M 84,01 g/mol
D 2,22
mp 50 °C (dec.)
Solubility: 95,5 g/l ($H_2O$, 20 °C)
[144-55-8] • EC No. 205-633-8
WGK 1

### Sodium hydrogen carbonate

**≥99,5 %, p.a., ACS, ISO**
Neutralizing agent, buffer substance.

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥99,5 % |
| In $H_2O$ insoluble matter | ≤0,01 % |
| Chloride (Cl) | ≤0,001 % |
| Phosphate ($PO_4$) | ≤0,001 % |
| Silicate ($SiO_2$) | ≤0,005 % |
| Total nitrogen (as N) | ≤0,0005 % |
| Sulphur containing parts (as $SO_4$) | ≤0,003 % |
| Iodine reducing substances (as I) | ≤0,005 % |
| Heavy metals | ≤0,0005 % |
| Arsenic (As) | ≤0,00004 % |
| Lead (Pb) | ≤0,0005 % |
| Calcium (Ca) | ≤0,01 % |
| Iron (Fe) | ≤0,0005 % |
| Potassium (K) | ≤0,005 % |
| Copper (Cu) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,005 % |
| Nickel (Ni) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **6885.2** | 500 g | plastic | 15,60 € |
| Original pack 6 x 500 g | | | 14,82/500 g |
| **6885.1** | 1 kg | plastic | 23,55 € |
| Original pack 6 x 1 kg | | | 22,37/1 kg |
| **6885.3** | 5 kg | plastic | 83,75 € |
| **6885.5** | 25 kg | plastic | 342,95 € |

### Sodium hydrogen carbonate

**CELLPURE® ≥99,5 %**
For cell culture and biochemistry.

**Guarantee analysis:**

| | |
|---|---|
| Endotoxins | ≤6 I.U./g |
| Assay | ≥99,5 % |
| Appearance of solution | complies |
| Loss on drying | ≤0,25 % |
| pH value (5 % solution) | ≤8,6 |
| Chloride (Cl) | ≤0,01 % |
| Sulphate ($SO_4$) | ≤0,015 % |
| Ammonium ($NH_4$) | ≤0,0005 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Aluminium (Al) | ≤0,0001 % |
| Arsenic (As) | ≤0,0002 % |
| Calcium (Ca) | ≤0,01 % |
| Iron (Fe) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **HN01.1** | 500 g | plastic | 14,95 € |
| Original pack 6 x 500 g | | | 14,20/500 g |
| **HN01.2** | 1 kg | plastic | 22,80 € |
| Original pack 6 x 1 kg | | | 21,66/1 kg |
| **HN01.3** | 5 kg | plastic | 71,95 € |

### Sodium hydrogen carbonate

**≥99 %, Ph.Eur., extra pure**

**Guarantee analysis:**

| | |
|---|---|
| Appearance | white to off-white, cryst. powder |
| Assay (titr.) | 99,0-100,5 % |
| Identity | complies |
| pH value (5 %, water) | ≤8,6 |
| Appearance of solution | complies |
| Chloride (Cl) | ≤0,015 % |
| Sulphate ($SO_4$) | ≤0,015 % |
| Ammonium ($NH_4$) | ≤0,002 % |
| Carbonate ($CO_3$) | complies |
| Heavy metals (as Pb) | ≤0,0005 % |
| Arsenic (As) | ≤0,0002 % |
| Iron (Fe) | ≤0,0005 % |
| Calcium (Ca) | ≤0,01 % |

| | | | |
|---|---|---|---|
| **8551.1** | 1 kg | plastic | 18,20 € |
| Original pack 6 x 1 kg | | | 17,29/1 kg |
| **8551.2** | 5 kg | plastic | 47,85 € |
| **8551.5** | 25 kg | plastic | 138,70 € |

### Sodium hydrogen carbonate

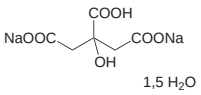
**≥99 %**

**Type analysis:**

| | |
|---|---|
| Assay | ≥99 % |
| Loss on drying | ≤0,25 % |
| Arsenic (As) | ≤0,0002 % |
| Calcium (Ca) | ≤0,01 % |
| Iron (Fe) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **0965.1** | 500 g | plastic | 11,30 € |
| Original pack 6 x 500 g | | | 10,74/500 g |
| **0965.2** | 1 kg | plastic | 15,60 € |
| Original pack 6 x 1 kg | | | 14,82/1 kg |
| **0965.3** | 5 kg | plastic | 39,70 € |

## di-Sodium hydrogen citrate 1,5-hydrate




### di-Sodium hydrogen citrate 1,5-hydrate

**≥99 %, cryst.**
$C_6H_6Na_2O_7 \cdot 1,5\ H_2O$
M 263,11 g/mol
mp 149 °C (dec.)
[6132-05-4] • EC No. 205-623-3
WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Assay (dry substance) | ≥99,0 % |
| pH value (1 % solution) | 4,9-5,2 |
| Water | ≤13 % |
| Chloride (Cl) | ≤0,05 % |
| Sulphate ($SO_4$) | ≤0,15 % |
| Oxalate (as $C_2H_2O_4$) | ≤0,01 % |
| Heavy metals (as Pb) | ≤0,0020 % |
| Arsenic (As) | ≤0,0001 % |
| Lead (Pb) | ≤0,0001 % |
| Mercury (Hg) | ≤0,0001 % |
| Reaction with $H_2SO_4$ | complies |

| | | | |
|---|---|---|---|
| **2611.1** | 250 g | plastic | 20,35 € |
| **2611.2** | 500 g | plastic | 26,35 € |
| Original pack 6 x 500 g | | | 25,03/500 g |
| **2611.3** | 1 kg | plastic | 41,85 € |
| Original pack 6 x 1 kg | | | 39,76/1 kg |

## Sodium hydrogen diacetate

▶ Sodium diacetate see p. 2271

## di-Sodium hydrogen phosphate

Sodium phosphate, dibasic;
Sodium monohydrogen phosphate;
di-Sodium orthophosphate, Sodium phosphate
$Na_2HPO_4$
M 141,96 g/mol
mp 250 °C (dec.)
Solubility: 77 g/l ($H_2O$, 20 °C)
[7558-79-4]
WGK 1

### di-Sodium hydrogen phosphate

**≥99 %, p.a., ACS, anhydrous**
Molecular biology ; Reagent for the detection of Mg, Li, Pb and uric acid.

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥99,0 % |
| pH value (5 % in water) | 8,7-9,3 |
| In $H_2O$ insoluble matter | ≤0,01 % |
| Loss on drying (105 °C) | ≤0,2 % |
| Total nitrogen (as N) | ≤0,002 % |
| Chloride (Cl) | ≤0,002 % |
| Pyrophosphate ($P_2O_7$) | ≤0,2 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Arsenic (As) | ≤0,00005 % |
| Lead (Pb) | ≤0,001 % |
| Cadmium (Cd) | ≤0,0005 % |
| Calcium (Ca) | ≤0,001 % |
| Kobalt (Co) | ≤0,0005 % |
| Iron (Fe) | ≤0,001 % |
| Potassium (K) | ≤0,01 % |
| Copper (Cu) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,001 % |
| Manganese (Mn) | ≤0,0005 % |
| Nickel (Ni) | ≤0,0005 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Zinc (Zn) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **P030.1** | 500 g | plastic | 31,10 € |
| Original pack 6 x 500 g | | | 29,55/500 g |
| **P030.2** | 1 kg | plastic | 50,00 € |
| Original pack 6 x 1 kg | | | 47,50/1 kg |
| **P030.3** | 2,5 kg | plastic | 94,10 € |

### di-Sodium hydrogen phosphate

**≥98 %, Ph.Eur., USP, anhydrous**

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim., dry substance) | 98,0-100,5 % |
| Identity | complies |
| pH value (5 % solution) | 8,7-9,4 |
| In $H_2O$ insoluble matter | ≤0,025 % |
| Appearance of solution | complies |
| Loss on drying (105 °C) | ≤1,0 % |
| Total nitrogen (as N) | ≤0,003 % |
| Chloride (Cl) | ≤0,005 % |
| Sulphate ($SO_4$) | ≤0,03 % |
| Arsenic (As) | ≤0,0001 % |
| Iron (Fe) | ≤0,002 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Sodium dihydrogen phosphate | complies |
| $KMnO_4$ reducing substances (as O) | complies |

| | | | |
|---|---|---|---|
| **T876.1** | 500 g | plastic | 24,20 € |
| Original pack 6 x 500 g | | | 22,99/500 g |
| **T876.2** | 1 kg | plastic | 37,10 € |
| Original pack 6 x 1 kg | | | 35,25/1 kg |
| **T876.3** | 5 kg | plastic | 144,60 € |

## di-Sodium hydrogen phosphate dihydrate

Sodium phosphate, dibasic;
Sodium monohydrogen phosphate;
di-Sodium orthophosphate, Sodium phosphate
$Na_2HPO_4 \cdot 2\ H_2O$
M 177,99 g/mol
D 2,1
mp 92,5 °C
Solubility: 93 g/l ($H_2O$, 20 °C)
[10028-24-7] • EC No. 231-448-7
WGK 1

### di-Sodium hydrogen phosphate dihydrate

**≥99,5 %, p.a.**

Reagent for the preparation of phosphate buffers.

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥99,5 % |
| pH value (5 % solution) | 9,0-9,2 |
| In $H_2O$ insoluble matter | ≤0,01 % |
| Chloride (Cl) | ≤0,001 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Total nitrogen (as N) | ≤0,001 % |
| Arsenic (As) | ≤0,0001 % |
| Lead (Pb) | ≤0,0001 % |
| Cadmium (Cd) | ≤0,0005 % |
| Calcium (Ca) | ≤0,001 % |
| Chromium (Cr) | ≤0,0005 % |
| Iron (Fe) | ≤0,001 % |
| Potassium (K) | ≤0,006 % |
| Cobalt (Co) | ≤0,0005 % |
| Copper (Cu) | ≤0,0003 % |
| Magnesium (Mg) | ≤0,001 % |
| Manganese (Mn) | ≤0,0005 % |
| Nickel (Ni) | ≤0,0005 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Zinc (Zn) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **4984.2** | 500 g | plastic | 26,35 € |
| Original pack 6 x 500 g | | | 25,03/500 g |
| **4984.1** | 1 kg | plastic | 44,00 € |
| Original pack 6 x 1 kg | | | 41,80/1 kg |
| **4984.3** | 2,5 kg | plastic | 95,15 € |
| **4984.4** | 5 kg | plastic | 131,70 € |
| **4984.5** | 10 kg | plastic | 220,40 € |

### di-Sodium hydrogen phosphate dihydrate

**≥98 %, Ph.Eur., USP**

**Guarantee analysis:**

| | |
|---|---|
| Appearance | colourless crystals |
| Assay (acidim., dry substance) | 98,0-101,0 % |
| Identity | complies |
| Appearance of solution | complies |
| In $H_2O$ insoluble matter | ≤0,4 % |
| Loss on drying (130 °C) | 19,5-21,0 % |
| Sulphate ($SO_4$) | ≤0,1 % |
| Chloride (Cl) | ≤0,04 % |
| Arsenic (As) | ≤0,0004 % |
| Iron (Fe) | ≤0,004 % |
| Heavy metals (as Pb) | ≤0,002 % |
| Sodium dihydrogen phosphate | ≤0,025 |
| $KMnO_4$ reducing substances (as O) | complies |

| | | | |
|---|---|---|---|
| **T877.2** | 500 g | plastic | 22,80 € |
| Original pack 6 x 500 g | | | 21,66/500 g |
| **T877.1** | 1 kg | plastic | 36,05 € |
| Original pack 6 x 1 kg | | | 34,25/1 kg |
| **T877.3** | 5 kg | plastic | 149,45 € |

## di-Sodium hydrogen phosphate heptahydrate

### di-Sodium hydrogen phosphate heptahydrate

**≥98 %, p.a., ACS**

Sodium phosphate, dibasic;
Sodium monohydrogen phosphate;
di-Sodium orthophosphate, Sodium phosphate
$Na_2HPO_4 \cdot 7\ H_2O$
M 268,03 g/mol
D ~1,68
mp 48 °C
Solubility: 154 g/l ($H_2O$, 20 °C)
[7782-85-6] • EC No. 231-448-7
WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | 98,0-102,0 % |
| In $H_2O$ insoluble matter | ≤0,005 % |
| pH value (5 % solution) | 8,7-9,3 |
| Chloride (Cl) | ≤0,001 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Iron (Fe) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **X987.1** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **X987.2** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **X987.3** | 2,5 kg | plastic | 69,35 € |

## di-Sodium hydrogen phosphate dodecahydrate

Sodium phosphate, dibasic;
Sodium monohydrogen phosphate;
di-Sodium orthophosphate, Sodium phosphate
$Na_2HPO_4 \cdot 12\ H_2O$
M 358,14 g/mol
D 1,52
mp 35 °C
Solubility: 218 g/l ($H_2O$, 20 °C)
[10039-32-4] • EC No. 231-448-7
WGK 1

### di-Sodium hydrogen phosphate dodecahydrate

**≥99 %, p.a., ISO**

Buffer substance.

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | 99,0-102,0 % |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Nitrogen compounds (as N) | ≤0,001 % |
| Chloride (Cl) | ≤0,0005 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Arsenic (As) | ≤0,00005 % |
| Lead (Pb) | ≤0,0005 % |
| Cadmium (Cd) | ≤0,0005 % |
| Calcium (Ca) | ≤0,001 % |
| Chloride (Cl) | ≤0,0005 % |
| Iron (Fe) | ≤0,0005 % |
| Potassium (K) | ≤0,01 % |
| Cobalt (Co) | ≤0,0005 % |
| Copper (Cu) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,001 % |
| Manganese (Mn) | ≤0,0005 % |
| Nickel (Ni) | ≤0,0005 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Zinc (Zn) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **T106.1** | 500 g | plastic | 20,35 € |
| Original pack 6 x 500 g | | | 19,33/500 g |
| **T106.2** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **T106.3** | 2,5 kg | plastic | 72,60 € |

### di-Sodium hydrogen phosphate dodecahydrate

**≥98 %, Ph.Eur., USP**

**Type analysis:**

| | |
|---|---|
| Appearance | colourless crystals |
| Assay (acidim.) | 98,5-100,5 % |
| Identity | complies |
| Appearance of solution | clear, colourless |
| In $H_2O$ insoluble matter | ≤0,4 % |
| Loss on drying (130 °C) | 57- 61 % |
| Water | 57-61 % |
| Sodium dihydrogen phosphate | ≤2,5 % |
| Sulphate ($SO_4$) | ≤0,05 % |
| Chloride (Cl) | ≤0,02 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Arsenic (As) | ≤0,0002 % |
| Iron (Fe) | ≤0,002 % |
| $KMnO_4$ red. matter | complies |

| | | | |
|---|---|---|---|
| **N350.1** | 1 kg | plastic | 24,65 € |
| Original pack 6 x 1 kg | | | 23,42/1 kg |
| **N350.2** | 5 kg | plastic | 82,25 € |
| **N350.5** | 25 kg | plastic | 267,70 € |

## Sodium hydrogen sulphate

### Sodium hydrogen sulphate

**≥93 %, pearls**

Sodium bisulphate
$NaHSO_4$
mp >315 °C (dec.)
[7681-38-1] • EC No. 231-665-7
WGK 1

**Danger** H318

**Type analysis:**

| | |
|---|---|
| Appearance | white to light yellow pearls |
| Assay (titr.) | ≥93 % |
| Water | ≤0,2 % |
| Iron (Fe) | ≤0,015 % |

| | | | |
|---|---|---|---|
| **2373.1** | 1 kg | plastic | 18,20 € |
| Original pack 6 x 1 kg | | | 17,29/1 kg |
| **2373.2** | 5 kg | plastic | 39,25 € |

## Sodium hydrogen sulphite solution

▶ Sodium bisulphite solution see p. 2267

## Sodium hydroxide

NaOH
M 40,0 g/mol
D 2,13 • bp 1390 °C
mp 323 °C
Solubility: 1090 g/l ($H_2O$, 20 °C)
[1310-73-2] • EC No. 215-185-5
UN No. 1823 • ADR 8 II • WGK 1

**Danger** H290-H314

### Sodium hydroxide

**≥99 %, p.a., ISO, in pellets**

Reagent for the preparation of sodium hydroxide solution.

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥99 % |
| Carbonate (as $Na_2CO_3$) | ≤1 % |
| Total nitrogen (as N) | ≤0,0003 % |
| Chloride (Cl) | ≤0,0005 % |
| Sulphate ($SO_4$) | ≤0,0005 % |
| Phosphate ($PO_4$) | ≤0,0005 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Aluminium (Al) | ≤0,0005 % |
| Calcium (Ca) | ≤0,001 % |
| Iron (Fe) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,0005 % |
| Potassium (K) | ≤0,05 % |
| Copper (Cu) | ≤0,0005 % |
| Nickel (Ni) | ≤0,0005 % |
| Lead (Pb) | ≤0,0005 % |
| Arsenic (As) | ≤0,0001 % |
| Zinc (Zn) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **6771.3** | 500 g | plastic | 17,10 € |
| Original pack 6 x 500 g | | | 16,25/500 g |
| **6771.1** | 1 kg | plastic | 25,70 € |
| Original pack 6 x 1 kg | | | 24,42/1 kg |
| **6771.2** | 5 kg | plastic | 92,35 € |
| **6771.5** | 25 kg | plastic | 332,20 € |

### Sodium hydroxide

**≥98 %, Ph.Eur., USP, BP, in pellets**

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | 98,0-100,5 % |
| Identity | complies |
| Appearance of solution | complies |
| Carbonate (as $Na_2CO_3$) | ≤1,0 % |
| Total nitrogen (as N) | ≤0,002 % |
| Chloride (Cl) | ≤0,02 % |
| Phosphate ($PO_4$) | ≤0,002 % |
| Sulphate ($SO_4$) | ≤0,02 % |
| Iron (Fe) | ≤0,001 % |
| Potassium (K) | complies |
| Heavy metals (as Pb) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **P031.1** | 500 g | plastic | 17,45 € |
| Original pack 6 x 500 g | | | 16,58/500 g |
| **P031.2** | 1 kg | plastic | 26,35 € |
| Original pack 6 x 1 kg | | | 25,03/1 kg |
| **P031.3** | 5 kg | plastic | 94,50 € |

### Sodium hydroxide

**≥99 %**

Pearls, Reagent for neutralization.

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| Aluminium (Al) | ≤0,0001 % |
| Arsenic (As) | ≤0,0001 % |
| Lead (Pb) | ≤0,00005 % |
| Cadmium (Cd) | ≤0,00005 % |
| Calcium (Ca) | ≤0,001 % |
| Chromium (Cr) | ≤0,0002 % |
| Iron (Fe) | ≤0,001 % |
| Copper (Cu) | ≤0,00005 % |
| Nickel (Ni) | ≤0,001 % |
| Mercury (Hg) | ≤0,000001 % |
| Sodium carbonate ($Na_2CO_3$) | ≤0,4 % |
| Sodium chloride (NaCl) | ≤0,02 % |
| Sodium sulphate ($Na_2SO_4$) | ≤0,02 % |

| | | | |
|---|---|---|---|
| **9356.1** | 1 kg | plastic | 14,55 € |
| Original pack 6 x 1 kg | | | 13,82/1 kg |
| **9356.3** | 5 kg | plastic | 36,45 € |
| **9356.2** | 10 kg | plastic | 64,40 € |
| **9356.5** | 25 kg | plastic | 112,90 € |

## Sodium hydroxide solution 50 %

### Sodium hydroxide solution 50 %

**50 %, extra pure**

Caustic soda lye
NaOH
M 40,01 g/mol
D 1,52
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

| | |
|---|---|
| Assay (NaOH) | 49,0-51,0 % |
| Density (20 °C) | ≥1,5160 g/cm³ |
| Sodium carbonate | ≤0,2 % |
| Sodium chloride | ≤0,01 % |
| Iron (Fe) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **8655.1** | 1 l | plastic | 19,25 € |
| Original pack 6 x 1 l | | | 18,29/1 l |
| **8655.3** | 2,5 l | plastic | 26,80 € |
| Original pack 4 x 2,5 l | | | 25,46/2,5 l |
| **8655.4** | 5 l | plastic | 39,70 € |
| Original pack 2 x 5 l | | | 37,72/5 l |
| **8655.2** | 10 l | plastic | 52,60 € |
| **8655.5** | 25 l | plastic | 104,85 € |

## Sodium hydroxide solution 45 %

### Sodium hydroxide solution 45 %

**45 %, extra pure**

Neutralization of acids, water treatment.
Caustic soda lye
NaOH
M 40,01 g/mol
D ~1,48
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

| | |
|---|---|
| Assay (NaOH) | 44,0-46,0 % |
| Density (20 °C) | 1,468-1,488 g/cm³ |
| Sodium carbonate | ≤0,2 % |
| Sodium chloride | ≤0,01 % |
| Iron (Fe) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **0993.1** | 1 l | plastic | 16,70 € |
| Original pack 6 x 1 l | | | 15,87/1 l |
| **0993.2** | 2,5 l | plastic | 24,20 € |
| Original pack 4 x 2,5 l | | | 22,99/2,5 l |
| **0993.3** | 10 l | plastic | 52,15 € |
| **0993.4** | 25 l | plastic | 104,20 € |

## Sodium hydroxide solution 40 %

### Sodium hydroxide solution 40 %

**40 %, extra pure**

Caustic soda lye
NaOH
M 40,01 g/mol
D ~1,43
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

| | |
|---|---|
| Assay | 39,0-41,0 % |
| Density (20 °C) | 1,4201-1,4397 |
| Carbonate ($CO_3$) | ≤0,2 % |
| Chloride (Cl) | ≤0,01 % |
| Iron (Fe) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **4347.1** | 1 l | plastic | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |
| **4347.2** | 2,5 l | plastic | 23,15 € |
| Original pack 4 x 2,5 l | | | 21,99/2,5 l |
| **4347.3** | 10 l | plastic | 50,45 € |
| **4347.4** | 25 l | plastic | 101,60 € |

## Sodium hydroxide solution 32 %

Caustic soda lye
NaOH
M 40,0 g/mol
D 1,35
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1
**Danger** H314-H290

### Sodium hydroxide solution 32 %

**ROTIPURAN® ≥32 %, p.a.**
For determination of nitrogen acc. to Kjeldahl; absorption of $CO_2$.

**Guarantee analysis:**
Assay (acidim.)....≥32 %
Heavy metals (as Pb)....≤0,0005 %
Total nitrogen (as N)....≤0,0001 %
Chloride (Cl)....≤0,001 %
Sulphate ($SO_4$)....≤0,0005 %
Phosphate ($PO_4$)....≤0,0005 %
Silicate ($SiO_2$)....≤0,001 %
Aluminium (Al)....≤0,0005 %
Carbonate (as $Na_2CO_3$)....≤0,5 %
Iron (Fe)....≤0,0005 %

| | | | |
|---|---|---|---|
| **T196.1** | 1 l | plastic | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |
| **T196.2** | 2,5 l | plastic | 55,80 € |
| Original pack 4 x 2,5 l | | | 53,01/2,5 l |
| **T196.3** | 5 l | plastic | 88,05 € |
| Original pack 2 x 5 l | | | 83,65/5 l |

### Sodium hydroxide solution 32 %

**≥32 %, extra pure**
Neutralizing and disintegrating agent

**Type analysis:**
Assay (NaOH)....≥32 %
Density (20 °C)....1,339-1,366 g/cm³
Sodium carbonate....≤0,2 %
Sodium chloride....≤0,01 %
Iron (Fe)....≤0,0005 %

| | | | |
|---|---|---|---|
| **T197.1** | 1 l | plastic | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |
| **T197.2** | 2,5 l | plastic | 23,15 € |
| Original pack 4 x 2,5 l | | | 21,99/2,5 l |
| **T197.4** | 5 l | plastic | 33,90 € |
| Original pack 2 x 5 l | | | 32,21/5 l |
| **T197.3** | 10 l | plastic | 48,95 € |
| **T197.5** | 30 l | plastic | 79,45 € |

## Sodium hydroxide solution 25 %

### Sodium hydroxide solution 25 %

**25 %, extra pure**
Caustic soda lye
NaOH
M 40,01 g/mol
D ~1,27
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1
**Danger** H314-H290

**Type analysis:**
Assay....24,0-26,0 %
Density (20 °C)....1,2629-1,2848
Carbonate ($CO_3$)....≤0,1 %
Chloride (Cl)....≤0,005 %
Iron (Fe)....≤0,0005 %

| | | | |
|---|---|---|---|
| **4351.1** | 1 l | plastic | 14,55 € |
| Original pack 6 x 1 l | | | 13,82/1 l |
| **4351.2** | 2,5 l | plastic | 22,50 € |
| Original pack 4 x 2,5 l | | | 21,38/2,5 l |
| **4351.3** | 10 l | plastic | 48,30 € |
| **4351.4** | 25 l | plastic | 92,35 € |

## Sodium hydroxide solution 20 %

### Sodium hydroxide solution 20 %

**20 %, extra pure**
Caustic soda lye
NaOH
M 40,01 g/mol
D ~1,22
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1
**Danger** H314-H290

**Type analysis:**
Assay....19,0-21,0 %
Density (20 °C)....1,208-1,231 g/cm³
Sodium carbonate ($Na_2CO_3$)....≤0,1 %
Sodium chloride (NaCl)....≤0,01 %
Iron (Fe)....≤0,0005 %

| | | | |
|---|---|---|---|
| **4357.1** | 1 l | plastic | 13,90 € |
| Original pack 6 x 1 l | | | 13,21/1 l |
| **4357.2** | 2,5 l | plastic | 22,05 € |
| Original pack 4 x 2,5 l | | | 20,95/2,5 l |
| **4357.3** | 10 l | plastic | 45,70 € |
| **4357.4** | 25 l | plastic | 89,15 € |

## Sodium hydroxide solution 10 %

### Sodium hydroxide solution 10 %

**10 %, extra pure**
Caustic soda lye
NaOH
M 40,01 g/mol
D ~1,11
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1
**Danger** H314-H290

**Type analysis:**
Assay....9,0-11,0 %
Density (20 °C)....1,0979-1,1199
Carbonate ($CO_3$)....≤0,05 %
Chloride (Cl)....≤0,005 %
Iron (Fe)....≤0,0001 %

| | | | |
|---|---|---|---|
| **4358.1** | 1 l | plastic | 13,45 € |
| Original pack 6 x 1 l | | | 12,78/1 l |
| **4358.2** | 2,5 l | plastic | 20,35 € |
| Original pack 4 x 2,5 l | | | 19,33/2,5 l |
| **4358.3** | 10 l | plastic | 40,35 € |
| **4358.4** | 25 l | plastic | 76,90 € |

## Sodium hydroxide solution 5 %

### Sodium hydroxide solution 5 %

**5 %, extra pure**
Caustic soda lye
NaOH
M 40,01 g/mol
D ~1,05
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1
**Danger** H290-H314

**Type analysis:**
Assay....4,5-5,5 %
Density (20 °C)....1,0483-1,0593
Carbonate ($CO_3$)....≤0,05 %
Chloride (Cl)....≤0,001 %
Iron (Fe)....≤0,0001 %

| | | | |
|---|---|---|---|
| **4359.1** | 1 l | plastic | 13,15 € |
| Original pack 6 x 1 l | | | 12,49/1 l |
| **4359.2** | 2,5 l | plastic | 19,25 € |
| Original pack 4 x 2,5 l | | | 18,29/2,5 l |
| **4359.3** | 10 l | plastic | 36,45 € |
| **4359.4** | 25 l | plastic | 68,30 € |

## Sodium hydroxide solution (0,1 N)

### Sodium hydroxide solution

**0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.**
UN No. 1824 • ADR 8 III
**Warning** H290

**Type analysis:**
Amount-of-substance conc. (20 °C)....0,1 mol/l
Measurement uncertainty....±0,1 %

| | | | |
|---|---|---|---|
| **6783.1** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |

## Sodium hydroxide solution (0,1 N)

### Sodium hydroxide solution

**ROTI®VOLUM 0,1 mol/l - 0,1 N**
Ampoule for preparation of 1000 ml volumetric solution.
NaOH
M 40,0 g/mol
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1
**Danger** H314-H290

**Type analysis:**
Amount-of-substance conc. (20 °C)... 0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN56.1** | 1 piece | plastic ampoule | 19,05 € |

For further information, please see page 1623

S

## Sodium hydroxide solution (0,01 N)

### Sodium hydroxide solution

**0,01 mol/l - 0,01 N volumetric standard solution**

EC No. 215-185-5

**Type analysis:**

Amount-of-substance conc. (20 °C)..0,01 mol/l ±0,2 %
Titer. .....0,998-1,002

| | | | |
|---|---|---|---|
| **N073.1** | 1 l | plastic | 19,60 € |
| Original pack 6 x 1 l | | | 18,62/1 l |

For further information, please see page 1622

## Sodium hydroxide solution (0,05 N)

### Sodium hydroxide solution

**0,05 mol/l - 0,05 N volumetric standard solution**

UN No. 1824 • ADR 8 III

**Warning** H290

NEW

**Type analysis:**

Amount-of-substance conc. (20 °C)..0,05 mol/l ±0,2 %
Titer. .....0,998-1,002

| | | | |
|---|---|---|---|
| **0224.1** | 1 l | plastic | 19,25 € |
| Original pack 6 x 1 l | | | 18,29/1 l |

For further information, please see page 1622

## Sodium hydroxide solution (0,1 N)

### Sodium hydroxide solution

**0,1 mol/l - 0,1 N volumetric standard solution**

EC No. 215-185-5

UN No. 1824 • ADR 8 III

**Warning** H290

**Type analysis:**

Amount-of-substance conc. (20 °C)....0,1 mol/l ±0,2 %
Titer. .....0,998-1,002

| | | | |
|---|---|---|---|
| **K020.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **K020.2** | 5 l | plastic | 56,90 € |
| Original pack 2 x 5 l | | | 54,06/5 l |
| **K020.3** | 5 l | ROTI®CUBE | 60,10 € |
| Original pack 2 x 5 l | | | 57,10/5 l |
| **K020.4** | 10 l | ROTI®CUBE | 90,20 € |

For further information, please see page 1622

## Sodium hydroxide solution (0,2 N)

### Sodium hydroxide solution

**0,2 mol/l - 0,2 N volumetric standard solution**

EC No. 215-185-5

UN No. 1824 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

Amount-of-substance conc. (20 °C). ..0,2 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **N074.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **N074.2** | 5 l | ROTI®CUBE | 60,10 € |
| Original pack 2 x 5 l | | | 57,10/5 l |
| **N074.3** | 10 l | ROTI®CUBE | 90,20 € |

For further information, please see page 1622

## Sodium hydroxide solution (0,25 N)

### Sodium hydroxide solution

**0,25 mol/l - 0,25 N volumetric standard solution**

UN No. 1824 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

Amount-of-substance conc. (20 °C). 0,25 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **P711.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **P711.2** | 5 l | ROTI®CUBE | 60,10 € |
| Original pack 2 x 5 l | | | 57,10/5 l |
| **P711.3** | 10 l | ROTI®CUBE | 90,20 € |

For further information, please see page 1622

## Sodium hydroxide solution (0,5 N)

### Sodium hydroxide solution

**0,5 mol/l - 0,5 N volumetric standard solution**

UN No. 1824 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

Amount-of-substance conc. (20 °C). ..0,5 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **P710.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **P710.2** | 5 l | plastic | 56,90 € |
| Original pack 2 x 5 l | | | 54,06/5 l |
| **P710.3** | 5 l | ROTI®CUBE | 60,10 € |
| Original pack 2 x 5 l | | | 57,10/5 l |
| **P710.4** | 10 l | ROTI®CUBE | 90,20 € |

For further information, please see page 1622

## Sodium hydroxide solution (0,5 N)

### Sodium hydroxide solution

**ROTI®VOLUM 0,5 mol/l - 0,5 N**

Ampoule for preparation of 1000 ml volumetric solution.

NaOH

M 40,0 g/mol

[1310-73-2] • EC No. 215-185-5

UN No. 1824 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

Amount-of-substance conc. (20 °C)... 0,5 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN57.1** | 1 piece | plastic ampoule | 19,05 € |

For further information, please see page 1623

## Sodium hydroxide solution (1 N)

### Sodium hydroxide solution

**1 mol/l - 1 N volumetric standard solution**

EC No. 215-185-5

UN No. 1824 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 1 mol/l ±0,2 %
Titer.....0,998-1,002

| | | | |
|---|---|---|---|
| **K021.1** | 1 l | plastic | 18,85 € |
| Original pack 6 x 1 l | | | 17,91/1 l |
| **K021.2** | 5 l | plastic | 56,45 € |
| Original pack 2 x 5 l | | | 53,63/5 l |
| **K021.3** | 5 l | ROTI®CUBE | 60,75 € |
| Original pack 2 x 5 l | | | 57,71/5 l |
| **K021.4** | 10 l | ROTI®CUBE | 90,20 € |

For further information, please see page 1622

## Sodium hydroxide solution (1 N)

### Sodium hydroxide solution

**1 mol/l - 1 N volumetric standard solution, Reag. Ph.Eur.**

UN No. 1824 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 1 mol/l
Measurement uncertainty. .....±0,1 %

| | | | |
|---|---|---|---|
| **6785.1** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |

S

## Sodium hydroxide solution (1 N)

### Sodium hydroxide solution
**ROTI®VOLUM 1 mol/l - 1 N**
Ampoule for preparation of 1000 ml volumetric solution.
NaOH
M 40,0 g/mol
[1310-73-2] • EC No. 215-185-5
UN No. 1824 • ADR 8 II • WGK 1
**Danger** H314-H290

**Type analysis:**
Amount-of-substance conc. (20 °C).....1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN58.1** | 1 piece | plastic ampoule | 19,05 € |

For further information, please see page 1623

## Sodium hydroxide solution (2 N)

### Sodium hydroxide solution
**2 mol/l - 2 N volumetric standard solution**
UN No. 1824 • ADR 8 II • WGK 1
**Danger** H314-H290

**Type analysis:**
Amount-of-substance conc. (20 °C).....2 mol/l ±0,2 %
Titer. .....0,998-1,002

| | | | |
|---|---|---|---|
| **T135.1** | 1 l | plastic | 19,25 € |
| Original pack 6 x 1 l | | | 18,29/1 l |
| **T135.2** | 5 l | plastic | 63,35 € |
| Original pack 2 x 5 l | | | 60,18/5 l |
| **T135.3** | 5 l | ROTI®CUBE | 68,70 € |
| Original pack 2 x 5 l | | | 65,27/5 l |

For further information, please see page 1622

## Sodium hydroxide solution (4 N)

### Sodium hydroxide solution
**4 mol/l - 4 N, volumetric standard solution**
UN No. 1824 • ADR 8 II • WGK 1
**Danger** H314-H290

**Type analysis:**
Amount-of-substance conc. (20 °C).....4 mol/l ±0,2 %
Titer. .....0,998-1,002

| | | | |
|---|---|---|---|
| **T198.1** | 1 l | plastic | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |

For further information, please see page 1622

## Sodium hydroxide solution (5 N)

### Sodium hydroxide solution
**5 mol/l - 5 N volumetric standard solution**
UN No. 1824 • ADR 8 II • WGK 1
**Danger** H314-H290

**Type analysis:**
Amount-of-substance conc. (20 °C). .....5 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **KK71.1** | 1 l | plastic | 28,50 € |
| Original pack 6 x 1 l | | | 27,08/1 l |

For further information, please see page 1622

## Sodium hydroxide solution (6 N)

### Sodium hydroxide solution
NEW
**6 mol/l - 6 N volumetric standard solution**
UN No. 1824 • ADR 8 II • WGK 1
**Warning** H290-H314

**Type analysis:**
Amount-of-substance conc. (20 °C). .....6 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **0214.1** | 1 l | plastic | 96,65 € |
| Original pack 6 x 1 l | | | 91,82/1 l |

For further information, please see page 1622

## Sodium hypochlorite solution

$NaClO + H_2O$
M 74,45 + aq g/mol
D 1,22
mp ~-25 °C
[7681-52-9] • EC No. 231-668-3
UN No. 1791 • ADR 8 II • WGK 2
**Danger** H290-H314-H400-EUH031

### Sodium hypochlorite solution
**12 % Cl, techn.**

**Type analysis:**
Assay (active Cl in g/l). ..... 150-182
Assay (active Cl in %)..... 12,3-14,9
Free alkali (as NaOH)..... ≤2,0 %
Daily loss of active chlorine in g/l: 5,6 g at 35 °C; 3,2 g at 30 °C; 2,0 g at 25 °C; 1,1 g at 20 °C

| | | | |
|---|---|---|---|
| **9062.3** | 1 l | plastic | 17,75 € |
| Original pack 6 x 1 l | | | 16,86/1 l |
| **9062.4** | 2,5 l | plastic | 26,35 € |
| Original pack 4 x 2,5 l | | | 25,03/2,5 l |
| **9062.1** | 10 l | plastic | 35,40 € |
| **9062.2** | 33 kg | plastic | 85,90 € |

### Sodium hypochlorite solution
**5-10 % Cl, techn.**

**Type analysis:**
Assay (active Cl). .....5-10 %

| | | | |
|---|---|---|---|
| **6846.1** | 1 l | plastic | 13,15 € |
| Original pack 6 x 1 l | | | 12,49/1 l |
| **6846.2** | 2,5 l | plastic | 18,20 € |
| Original pack 4 x 2,5 l | | | 17,29/2,5 l |
| **6846.3** | 10 l | plastic | 27,45 € |
| **6846.4** | 33 kg | plastic | 53,25 € |

## Sodium iodate

### Sodium iodate
**≥99 %, p.a.**
Oxidant
$NaIO_3$
M 197,89 g/mol
D ~4,28
Solubility: 81 g/l ($H_2O$, 20 °C)
[7681-55-2] • EC No. 231-672-5
UN No. 1479 • ADR 5.1 II • WGK 1
**Danger** H272-H302-H317-H334

**Guarantee analysis:**
Assay (iodom.). .....≥99,0 %
In $H_2O$ insoluble matter. .....≤0,005 %
Chloride, chlorate, bromide, bromate (as Cl). .≤0,02 %
Total nitrogen (N). .....≤0,003 %
Iodide (I). .....≤ 0,002 %
Sulphate ($SO_4$). .....≤0,005 %
Lead (Pb). .....≤0,0005 %
Iron (Fe). .....≤0,001 %
Potassium (K). .....≤0,02 %
Nickel (Ni). .....≤0,0005 %

| | | | |
|---|---|---|---|
| **HN17.1** | 50 g | plastic | 40,35 € |
| **HN17.2** | 100 g | plastic | 70,85 € |

## Sodium iodide

NaI
M 149,89 g/mol
D 3,667 • bp 1304 °C
mp 661 °C
Solubility: 1790 g/l ($H_2O$, 20 °C)
[7681-82-5] • EC No. 231-679-3
UN No. 3077 • ADR 9 III • WGK 1
**Warning** H400

### Sodium iodide
**≥99,5 %, p.a., ACS**

**Guarantee analysis:**
Assay (titr.). .....≥99,5 %
pH value (5 % in water). .....6,0-9,0
Chloride and bromide (as Cl). .....≤0,01 %
In $H_2O$ insoluble matter. .....≤0,01 %
Phosphate ($PO_4$). .....≤0,001 %
Sulphate ($SO_4$). .....≤0,005 %
Iodate ($IO_3$). .....≤0,0003 %
Barium (Ba). .....≤0,002 %
Calcium (Ca). .....≤0,002 %
Potassium (K). .....≤0,01 %
Iron (Fe). .....≤0,0005 %
Magnesium (Mg). .....≤0,001 %
Heavy metals (as Pb). .....≤0,0005 %

| | | | |
|---|---|---|---|
| **A134.3** | 100 g | plastic | 85,50 € |
| **A134.1** | 250 g | plastic | 193,00 € |
| **A134.2** | 1 kg | plastic | 740,70 € |
| Original pack 6 x 1 kg | | | 703,67/1 kg |

## Sodium iodide

**≥99 %, Ph.Eur.**

**Guarantee analysis:**

Appearance. ..... colourless crystals
Assay. ..... 99,0-100,5 %
Identity. ..... complies
Appearance of solution. ..... complies
Loss on drying (105 °C). ..... ≤3,0 %
Alkaline reacting substances. ..... complies
Iodate ($IO_3$). ..... complies
Sulphate ($SO_4$). ..... ≤0,015 %
Thiosulphate. ..... complies
Iron (Fe). ..... ≤0,002 %
Heavy metals. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **8783.1** | 250 g | plastic | 67,65 € |
| **8783.2** | 1 kg | plastic | 220,40 € |
| Original pack 6 x 1 kg | | | 209,38/1 kg |
| **8783.3** | 2,5 kg | plastic | 493,45 € |

## Sodium lauryl sulphate

▶ SDS see p. 2244
▶ Roti®fair SDS 0.5g see p. 2214
▶ Roti®fair 10% SDS see p. 2214

## Sodium lignosulphonate

▶ Lignosulphonic acid sodium salt see p. 2036

## Sodium metabisulphite

Sodium pyrosulphite
$Na_2S_2O_5$
M 190,11 g/mol
D 2,36
mp 150 °C (dec.)
Solubility: 650 g/l ($H_2O$, 20 °C)
[7681-57-4] • EC No. 231-673-0
WGK 1

**Danger** H318-H302-EUH031

### Sodium metabisulphite

**≥97 %, p.a., ACS**
Bleaching agent

**Guarantee analysis:**

Assay (iodom.). ..... ≥97,0 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,005 %
Phosphate ($PO_4$). ..... ≤0,002 %
Thiosulphate. ..... ≤0,05 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Copper (Cu). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **P755.1** | 500 g | plastic | 19,60 € |
| Original pack 6 x 500 g | | | 18,62/500 g |
| **P755.2** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |
| **P755.3** | 2,5 kg | plastic | 55,40 € |
| **P755.4** | 5 kg | plastic | 97,30 € |
| **P755.5** | 25 kg | plastic | 317,15 € |

### Sodium metabisulphite

**≥97 %, extra pure**

**Type analysis:**

Assay. ..... ≥97 %
Sulphur dioxide ($SO_2$). ..... ≥65 %

| | | | |
|---|---|---|---|
| **8554.1** | 1 kg | plastic | 19,25 € |
| Original pack 6 x 1 kg | | | 18,29/1 kg |
| **8554.2** | 5 kg | plastic | 53,25 € |
| **8554.5** | 25 kg | plastic | 130,65 € |

## Sodium meta periodate

▶ Sodium periodate see p. 2282

## Sodium metaphosphate

### Sodium metaphosphate

**extra pure, acidic**
Sodium polyposphate
$(NaPO_3)_n$
M $(101,97)_n$ g/mol
mp ~550 °C
[68915-31-1] • EC No. 272-808-3
WGK 1

**Type analysis:**

$P_2O_5$. ..... 67,5-69,0 %
$Na_2O$. ..... 29,0-30,5 %
pH value (1 % solution). ..... 5,4-5,9
Water (KF). ..... ≤1,0 %
Fluoride (F). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,01 %
Cadmium (Cd). ..... ≤0,0001 %
Insoluble in water. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **4356.1** | 1 kg | plastic | 23,15 € |
| Original pack 6 x 1 kg | | | 21,99/1 kg |
| **4356.2** | 5 kg | plastic | 81,20 € |
| **4356.5** | 25 kg | plastic | 321,45 € |

## Sodium metasilicate pentahydrate

### Sodium metasilicate pentahydrate

**pure**
$Na_2SiO_3 \cdot 5\ H_2O$
M 212,16 g/mol
mp 72 °C
[10213-79-3] • EC No. 229-912-9
UN No. 3253 • ADR 8 III • WGK 1

**Danger** H314-H335

**Type analysis:**

pH value (1 % solution). ..... 12,5 ±0,5
$Na_2O$. ..... 29,0 ±1,0 %
$SiO_2$. ..... 28,3 ±0,5 %
Water. ..... 43 ±1,0 %

| | | | |
|---|---|---|---|
| **7370.2** | 1 kg | plastic | 25,30 € |
| Original pack 6 x 1 kg | | | 24,04/1 kg |
| **7370.1** | 2,5 kg | plastic | 35,40 € |
| **7370.3** | 10 kg | plastic | 96,25 € |

## Sodium metatungstate

▶ Sodium polytungstate hydrate see p. 2283

## Sodium molybdate dihydrate

### Sodium molybdate dihydrate

**≥99,5 %, p.a.**
Reagent for alkaloids and for biochemical purposes.
$Na_2MoO_4 \cdot 2\ H_2O$
M 241,95 g/mol
D ~3,28
mp 100 °C (dec.)
Solubility: 650 g/l ($H_2O$, 25 °C)
[10102-40-6] • EC No. 231-551-7
WGK 1

**Guarantee analysis:**

Assay (based on Mo). ..... ≥99,5 %
Assay (Mo). ..... ≥39,5 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,01 %
Ammonium ($NH_4$). ..... ≤0,005 %
Al (Aluminium). ..... ≤0,001 %
Ca (Calcium). ..... ≤0,001 %
Cu (Copper). ..... ≤0,001 %
Cr (Chrom). ..... ≤0,001 %
Fe (Iron). ..... ≤0,001 %
Mg (Magnesium). ..... ≤0,001 %
Mn (Manganese). ..... ≤0,001 %
Ni (Nickel). ..... ≤0,001 %
Pb (Lead). ..... ≤0,001 %
Phosphorus (P). ..... ≤0,001 %
Silicon (Si). ..... ≤0,001 %
Ti (Titanium). ..... ≤0,001 %
V (Vanadium). ..... ≤0,001 %
Zn (Zinc). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **0274.1** | 50 g | plastic | 18,20 € |
| **0274.2** | 100 g | plastic | 26,35 € |
| **0274.3** | 250 g | plastic | 47,20 € |
| **0274.4** | 1 kg | plastic | 170,95 € |
| Original pack 6 x 1 kg | | | 162,40/1 kg |

## Sodium monohydrogen phosphate

▶ di-Sodium hydrogen phosphate see p. 2274
▶ di-Sodium hydrogen phosphate dihydrate see p. 2275
▶ di-Sodium hydrogen phosphate heptahydrate see p. 2275
▶ di-Sodium hydrogen phosphate dodecahydrate see p. 2275

## tri-Sodium monovanadate

### tri-Sodium monovanadate

NEW

**≥99 %, pure**

Sodium orthovanadate, Sodium vanadium oxide, Sodium vanadate(V)

$Na_3VO_4$

M 183,91 g/mol

D 2,72

[13721-39-6] • EC No. 237-287-9

WGK 2

**Warning** H302+H312+H332-H412

**Type analysis:**

Appearance. ..... off-white to slightly yellow powder
Assay. ..... ≥99,0 %
Chloride (Cl). ..... ≤0,01%
Iron (Fe). ..... ≤0,05 %
Silicon (Si). ..... ≤0,05 %
Heavy metals. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **0735.1** | 10 g | plastic | 32,15 € |
| **0735.2** | 50 g | plastic | 85,90 € |
| **0735.3** | 100 g | plastic | 138,70 € |

## Sodium nitrate

Chile saltpeter

$NaNO_3$

M 84,99 g/mol

D 2,26

mp 308 °C

Solubility: 874 g/l ($H_2O$, 20 °C)

[7631-99-4] • EC No. 231-554-3

UN No. 1498 • ADR 5.1 III • WGK 1

**Warning** H272-H319

### Sodium nitrate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5742.1** | 25 g | plastic | 169,35 € |

### Sodium nitrate

**≥99 %, p.a., ACS, ISO**

Oxidizing dissolving agent

**Guarantee analysis:**

Assay (acidim.). ..... ≥99,0 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
pH value (5 % in water). ..... 5,5-8,0
Iodate ($IO_3$). ..... ≤0,0005 %
Nitrite ($NO_2$). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,003 %
Phosphate ($PO_4$). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,005 %
Potassium (K). ..... ≤0,005 %
Ammonium ($NH_4$). ..... ≤0,002 %
Heavy metals. ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0002 %
Arsenic (As). ..... ≤0,00004 %
Cadmium (Cd). ..... ≤0,0002 %
Cobalt (Co). ..... ≤0,0002 %
Copper (Cu). ..... ≤0,0002 %
Magnesium (Mg). ..... ≤0,001 %
Lead (Pb). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **A136.1** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **A136.2** | 1 kg | plastic | 45,70 € |
| Original pack 6 x 1 kg | | | 43,42/1 kg |
| **A136.3** | 2,5 kg | plastic | 100,55 € |

### Sodium nitrate

**≥99 % cryst.**

**Type analysis:**

Assay. ..... ≥99 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Water ..... ≤0,2 %
Sodium nitrite ($NaNO_2$). ..... ≤0,005 %
Sodium carbonate ($Na_2CO_3$). ..... ≤0,04 %
Sodium chloride (NaCl). ..... ≤0,025 %
Sodium sulphate ($Na_2SO_4$). ..... ≤0,03 %
Product with anticaking agent.

| | | | |
|---|---|---|---|
| **8601.2** | 1 kg | plastic | 17,10 € |
| Original pack 6 x 1 kg | | | 16,25/1 kg |
| **8601.1** | 2,5 kg | plastic | 30,65 € |
| **8601.5** | 25 kg | plastic | 166,65 € |

## Sodium nitrilotriacetate tribasic monohydrate

▶ Nitrilotriacetic acid trisodium salt monohydrate see p. 2098

## Sodium nitrite

$NaNO_2$

M 69,00 g/mol

D 2,17 • bp 320°C (dec.)

mp 271 °C

Solubility: 820 g/l ($H_2O$, 20 °C)

[7632-00-0] • EC No. 231-555-9

UN No. 1500 • ADR 5.1 (6.1) III • WGK 3

**Danger** H272-H301-H400

### Sodium nitrite

**≥98 %, p.a., ACS**

Reagent for diazotisation

**Guarantee analysis:**

Assay (perm.). ..... ≥98,0 %
In $H_2O$ insoluble matter. ..... ≤0,003 %
Chloride (Cl). ..... ≤0,002 %
Sulphate ($SO_4$). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,001 %
Aluminium (Al). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,00004 %
Barium (Ba). ..... ≤0,0005 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,0025 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,005 %
Cobalt (Co). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,0025 %
Manganese (Mn). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,001 %
Zinc (Zn). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4411.1** | 100 g | plastic | 12,05 € |
| **4411.2** | 500 g | plastic | 26,35 € |
| Original pack 6 x 500 g | | | 25,03/500 g |
| **4411.3** | 1 kg | plastic | 41,85 € |
| Original pack 6 x 1 kg | | | 39,76/1 kg |
| **4411.4** | 2,5 kg | plastic | 85,90 € |

### Sodium nitrite

**≥99 %, cryst.**

**Type analysis:**

Assay (titr.). ..... ≥99,0 %
Water . ..... ≤0,2 %
Sodium carbonate ($Na_2CO_3$). ..... ≤0,06 %
Sodium chloride (NaCl). ..... ≤0,03 %
Sodium sulphate ($Na_2SO_4$). ..... ≤0,03 %
Water insoluble residue ..... ≤0,005 %
Product with anticaking agent.

| | | | |
|---|---|---|---|
| **8604.1** | 1 kg | plastic | 14,75 € |
| Original pack 6 x 1 kg | | | 14,01/1 kg |
| **8604.2** | 5 kg | plastic | 45,70 € |
| **8604.5** | 25 kg | plastic | 150,00 € |

## Sodium nitroprusside dihydrate

### Sodium nitroprusside dihydrate

**≥99 %, p.a., ACS**

Reagent for Zn, $SO_2$, aldehydes.

Disodium pentacyanonitrosylferrate(III) dihydrate, Nitroprusside sodium, Sodiumnitrosopentacyanoferrate(III)

$Na_2[Fe(CN)_5NO] \cdot 2\ H_2O$

M 297,95 g/mol

D 1,71

Solubility: 400 g/l ($H_2O$, 20 °C)

[13755-38-9] • EC No. 238-373-9

UN No. 1588 • ADR 6.1 III • WGK 1

**Danger** H301

**Guarantee analysis:**

Assay (arg.). ..... ≥99,0 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,01 %
Hexacyanoferrate(II). ..... ≤0,02 %
Hexacyanoferrate(III). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **HN34.1** | 25 g | plastic | 27,45 € |
| **HN34.2** | 100 g | plastic | 72,60 € |
| **HN34.3** | 500 g | plastic | 282,20 € |
| Original pack 6 x 500 g | | | 268,09/500 g |

## Sodiumnitrosopentacyano-ferrate(III)

▶ Sodium nitroprusside dihydrate see p. 2281

## Sodium nucleinate

▶ Ribonucleic acid sodium salt see p. 2200

## Sodium-1octane sulphonate

▶ Octane-1-sulphonic acid sodium salt see p. 2108

## Sodium oleate

▶ Oleic acid sodium salt see p. 2122

S

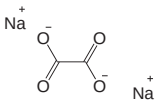
## di-Sodium orthophosphate


- ▶ di-Sodium hydrogen phosphate see p. 2274
- ▶ di-Sodium hydrogen phosphate dihydrate see p. 2275
- ▶ di-Sodium hydrogen phosphate heptahydrate see p. 2275
- ▶ di-Sodium hydrogen phosphate dodecahydrate see p. 2275


## Sodium orthovanadate


- ▶ tri-Sodium monovanadate see p. 2281


## di-Sodium oxalate



Oxalic acid di-sodium salt
$C_2Na_2O_4$
M 134,00 g/mol
D 2,27
mp 250-270 °C (dec.)
Solubility: ~37 g/l ($H_2O$, 20 °C)
[62-76-0] • EC No. 200-550-3
WGK 1

**Warning** H302+H312

### di-Sodium oxalate

**≥99,5 %, p.a., ACS**

For manganometric and acidimetric analysis.

**Guarantee analysis:**

| | |
|---|---|
| Assay (perm.) | ≥99,5 % |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Loss on drying (105 °C) | ≤0,01 % |
| Dark coloured substance with $H_2SO_4$ | complies |
| Neutrality | complies |
| Chloride (Cl) | ≤0,002 % |
| Phosphate ($PO_4$) | ≤0,005 % |
| Sulphate ($SO_4$) | ≤0,002 % |
| Ammonium ($NH_4$) | ≤0,002 % |
| Heavy metals (as Pb) | ≤0,002 % |
| Copper (Cu) | ≤0,001 % |
| Iron (Fe) | ≤0,001 % |
| Potassium (K) | ≤0,005 % |
| Nickel (Ni) | ≤0,001 % |
| Lead (Pb) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **HN39.1** | 100 g | plastic | 25,30 € |
| **HN39.2** | 250 g | plastic | 49,35 € |
| **HN39.3** | 500 g | plastic | 85,90 € |
| Original pack 6 x 500 g | | | 81,61/500 g |

### di-Sodium oxalate

**≥99 %**

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Assay | ≥99,0 % |
| Identity | complies |
| Chloride (Cl) | ≤0,03 % |
| Sulphate ($SO_4$) | ≤0,01 % |
| Iron (Fe) | ≤0,01 % |
| Heavy metals (as Pb) | ≤0,01 % |

| | | | |
|---|---|---|---|
| **4267.3** | 500 g | plastic | 22,05 € |
| Original pack 6 x 500 g | | | 20,95/500 g |
| **4267.1** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **4267.4** | 2,5 kg | plastic | 66,55 € |
| **4267.2** | 10 kg | plastic | 246,20 € |

## Sodium-1-pentane sulphonate


- ▶ Pentane-1-sulphonic acid sodium salt see p. 2136


## Sodium periodate

Sodium meta periodate
$NaIO_4$
M 213,89 g/mol
D 3,87
mp 300 °C (dec.)
Solubility: 144 g/l ($H_2O$, 25 °C)
[7790-28-5] • EC No. 232-197-6
UN No. 3085 • ADR 5.1 I • WGK 3

**Danger**
H271-H314-H372-H410

### Sodium periodate

**≥99,8 %, p.a., ACS**

**Guarantee analysis:**

| | |
|---|---|
| Assay (dry substance) | 99,8-100,3 % |
| pH value | 4,0-5,0 |
| Solubility | complies |
| Other halogens (as Cl) | ≤0,02 % |
| Manganese (Mn) | ≤0,0003 % |
| Loss on drying | ≤0,5 % |

| | | | |
|---|---|---|---|
| **2603.1** | 50 g | plastic | 41,40 € |
| **2603.2** | 250 g | plastic | 144,60 € |
| **2603.3** | 500 g | plastic | 263,40 € |
| Original pack 6 x 500 g | | | 250,23/500 g |

### Sodium periodate

NEW

**≥99 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay | ≥99 % |
| Chloride (Cl) | ≤0,05 % |
| Iodide (I) | ≤0,005 % |
| Sulphate ($SO_4$) | ≤0,05 % |
| Lead (Pb) | ≤0,005 % |
| Iron (Fe) | ≤0,005 % |
| pH value (5 %) | 3,0-4,5 |

| | | | |
|---|---|---|---|
| **0294.1** | 100 g | plastic | 42,90 € |
| **0294.2** | 500 g | plastic | 127,95 € |
| Original pack 6 x 500 g | | | 121,55/500 g |
| **0294.3** | 1 kg | plastic | 213,95 € |
| Original pack 6 x 1 kg | | | 203,25/1 kg |

## Sodium peroxide

### Sodium peroxide

**≥95 %, p.a., ACS, granulated**

Powerful oxidising agent, decomposition reagent for organic and inorganic samples.
$Na_2O_2$
M 77,98 g/mol
D 2,80
mp 460 °C
Solubility: 100 g/l ($H_2O$, 20 °C)
[1313-60-6] • EC No. 215-209-4
UN No. 1504 • ADR 5.1 I • WGK 1

**Danger** H271-H314

**Guarantee analysis:**

| | |
|---|---|
| Assay (perm.) | ≥95,0 % |
| Chloride (Cl) | ≤0,002 % |
| Phosphate ($PO_4$) | ≤0,0005 % |
| Sulphate ($SO_4$) | ≤0,001 % |
| Total nitrogen (N) | ≤0,003 % |
| Lead (Pb) | ≤0,001 % |
| Cadmium (Cd) | ≤0,001 % |
| Iron (Fe) | ≤0,002 % |
| Cobalt (Co) | ≤0,001 % |
| Zinc (Zn) | ≤0,001 % |
| Heavy metals (as Pb) | ≤0,002 % |

| | | | |
|---|---|---|---|
| **4412.1** | 100 g | plastic | 57,95 € |
| **4412.2** | 250 g | plastic | 130,65 € |
| **4412.3** | 500 g | plastic | 235,45 € |
| Original pack 6 x 500 g | | | 223,68/500 g |

## Sodium peroxodisulphate


- ▶ Sodium persulphate see p. 2282


## Sodium persulphate

### Sodium persulphate

**≥99 %**

Sodium peroxodisulphate
$Na_2S_2O_8$
M 238,10 g/mol
D 1,2
mp >148 °C
Solubility: 545 g/l ($H_2O$, 20 °C)
[7775-27-1] • EC No. 231-892-1
UN No. 1505 • ADR 5.1 III • WGK 1

**Danger**
H272-H334-H302-H335-H315-H319-H317

**Type analysis:**

| | |
|---|---|
| Appearance | white cryst. powder |
| Assay (persulphate) | ≥99,0 % |
| Active oxygen | ≥6,5 % |

| | | | |
|---|---|---|---|
| **4365.2** | 500 g | plastic | 19,25 € |
| Original pack 6 x 500 g | | | 18,29/500 g |
| **4365.1** | 1 kg | plastic | 28,50 € |
| Original pack 6 x 1 kg | | | 27,08/1 kg |
| **4365.3** | 2,5 kg | plastic | 51,10 € |

## Sodium phenylpyruvate


- ▶ Phenylpyruvic acid sodium salt see p. 2149

## Sodium phosphate, monobasic

- Sodium dihydrogen phosphate see p. 2271
- Sodium dihydrogen phosphate monohydrate see p. 2271
- Sodium dihydrogen phosphate dihydrate see p. 2272

## sec. Sodium phosphate

- di-Sodium hydrogen phosphate see p. 2274
- di-Sodium hydrogen phosphate dihydrate see p. 2275
- di-Sodium hydrogen phosphate heptahydrate see p. 2275
- di-Sodium hydrogen phosphate dodecahydrate see p. 2275

## tert. Sodium phosphate

- tri-Sodium phosphate dodecahydrate see p. 2283

## Sodium phosphate, dibasic

- di-Sodium hydrogen phosphate see p. 2274
- di-Sodium hydrogen phosphate dihydrate see p. 2275
- di-Sodium hydrogen phosphate heptahydrate see p. 2275
- di-Sodium hydrogen phosphate dodecahydrate see p. 2275

## tri-Sodium phosphate dodecahydrate

Sodium phosphate, tribasic;
Trisodium phosphate
$Na_3PO_4 \cdot 12\ H_2O$
M 380,12 g/mol
D 1,62
mp 60 °C
Solubility: 285 g/l ($H_2O$, 20 °C)
[10101-89-0] • EC No. 231-509-8
WGK 1

**Warning** H315-H319-H335

### tri-Sodium phosphate dodecahydrate

**≥98 %, p.a., ACS**

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | 98,0-102,0 % |
| In $H_2O$ insoluble matter | ≤0,01 % |
| Free alkali (as NaOH) | ≤2,5 % |
| Total nitrogen (as N) | ≤0,001 % |
| Chloride (Cl) | ≤0,001 % |
| Sulphate ($SO_4$) | ≤0,01 % |
| Heavy metals (as Pb) | ≤0,001 % |
| Arsenic (As) | ≤0,0005 % |
| Lead (Pb) | ≤0,0005 % |
| Cadmium (Cd) | ≤0,0005 % |
| Calcium (Ca) | ≤0,005 % |
| Iron (Fe) | ≤0,0005 % |
| Cobalt (Co) | ≤0,0005 % |
| Copper (Cu) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,0005 % |
| Manganese (Mn) | ≤0,0005 % |
| Nickel (Ni) | ≤0,0005 % |
| Zinc (Zn) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **T107.2** | 500 g | plastic | 23,15 € |
| Original pack 6 x 500 g | | | 21,99/500 g |
| **T107.1** | 1 kg | plastic | 37,10 € |
| Original pack 6 x 1 kg | | | 35,25/1 kg |
| **T107.3** | 2,5 kg | plastic | 83,35 € |

### tri-Sodium phosphate dodecahydrate

**pure**

**Type analysis:**

| | |
|---|---|
| $P_2O_5$ | 18,5-19,5 % |
| $Na_2O$ | 26-27 % |
| pH value (1 %) | 11,8-12,2 |
| Loss on ignition | <56,5 % |

| | | | |
|---|---|---|---|
| **8613.3** | 1 kg | plastic | 21,00 € |
| Original pack 6 x 1 kg | | | 19,95/1 kg |
| **8613.1** | 2,5 kg | plastic | 44,00 € |
| **8613.2** | 10 kg | plastic | 113,85 € |

## Sodium phosphate powder (pouch)

- Roti®fair 1M Na-Phosphate 6.5 see p. 2213
- Roti®fair 1M Na-Phosphate 7.2 see p. 2213
- Roti®fair 0.02M Na-Phosphate 7.0 see p. 2212

## Sodium phosphate, tribasic

- tri-Sodium phosphate dodecahydrate see p. 2283

## Sodium polyphosphate

- Sodium metaphosphate see p. 2280

## Sodium polytungstate hydrate

### Sodium polytungstate hydrate

**≥99,9 %**

For the preparation of heavy liquid.
Sodium metatungstate
$3\ Na_2WO_4 \cdot 9\ WO_3 \cdot H_2O$
M 2986,01 g/mol
D 5,47
Solubility: >1000 g/l ($H_2O$, 20 °C)
[12141-67-2] • EC No. 412-770-9
WGK 2

**Danger** H302-H318-H412

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,9 % |
| Assay ($WO_3$) | ≥85 % |
| Tubidity (density 2,80 g/ml) | <10 NTU |
| Max. attainable density (25 °C) | <3,1 g/ml |

| | | | |
|---|---|---|---|
| **8828.1** | 50 g | plastic | 46,15 € |
| **8828.2** | 250 g | plastic | 170,95 € |
| **8828.3** | 1 kg | plastic | 618,15 € |
| Original pack 6 x 1 kg | | | 587,24/1 kg |

For further information, please see page 1651

## Sodium polytungstate solution

### Sodium polytungstate solution

**3,00 g/cm³**

Heavy liquid for separation of minerals.
WGK 2

**Danger** H302-H318-H412

NEW

**Type analysis:**

| | |
|---|---|
| Density (20 °C) | 3,00 ±0,02 g/cm³ |
| Turbidity (density 3,00 g/ml) | <10 NTU |
| pH-value (density 3,00 g/ml) | 2,5-3,5 |

| | | | |
|---|---|---|---|
| **0741.1** | 100 ml | plastic | 213,95 € |
| **0741.2** | 500 ml | plastic | 858,95 € |

## Sodium-1-propane sulphonate

- Propane-1-sulphonic acid sodium salt see p. 2179

## tetra- Sodium pyrophosphate

- tetra-Sodium diphosphate decahydrate see p. 2272

## Sodium pyrosulphite

- Sodium metabisulphite see p. 2280

## Sodium pyruvate

- Pyruvic acid sodium salt see p. 2187

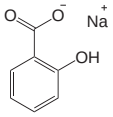
## Sodium pyruvate solution

- Roti®-CELL Pyruvate solution see p. 2208

## Sodium rhodanide

- Sodium thiocyanate see p. 2286

## Sodium salicylate




Salicylic acid sodium salt
$C_7H_5NaO_3$
M 160,11 g/mol
D 0,56
mp 213 °C
Solubility: 1000 g/l ($H_2O$, 20 °C)
[54-21-7] • EC No. 200-198-0
WGK 1

**Warning** H302-H319

### Sodium salicylate

**≥99 %, p.a.**

Preservative; for determination of glucose at urine.

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| Identity | complies |
| Appearance of solution (10 %, $H_2O$) | complies |
| Loss on drying (105 °C) | ≤0,5 % |
| Heavy metals (as Pb) | ≤0,002 % |
| Chloride (Cl) | ≤0,02 % |
| Sulphate ($SO_4$) | ≤0,06 % |
| Calcium (Ca) | ≤0,005 % |
| Copper (Cu) | ≤0,0005 % |
| Iron (Fe) | ≤0,001 % |
| Potassium (K) | ≤0,005 % |
| Magnesium (Mg) | ≤0,001 % |
| Manganese (Mn) | ≤0,0005 % |
| Nickel (Ni) | ≤0,001 % |
| Lead (Pb) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **CP39.1** | 250 g | plastic | 26,35 € |
| **CP39.2** | 1 kg | plastic | 79,05 € |
| Original pack 6 x 1 kg | | | 75,10/1 kg |

S

## Sodium salicylate

NEW

**≥98 %, extra pure**

**Type analysis:**

Assay (dry substance). ..... ≥98 %
Chloride (Cl). ..... ≤0,05 %
Sulphate ($SO_4$). ..... ≤0,1 %
Heavy metals. ..... ≤0,005 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **0140.1** | 500 g | plastic | 26,80 € |
| Original pack 6 x 500 g | | | 25,46/500 g |
| **0140.2** | 1 kg | plastic | 42,90 € |
| Original pack 6 x 1 kg | | | 40,76/1 kg |
| **0140.3** | 2,5 kg | plastic | 85,90 € |

# Sodium silicate

## Sodium silicate

**extra pure**

Water glass
D 1,37
[1344-09-8] • EC No. 215-687-4
WGK 1

**Type analysis:**

$Na_2O$ ..... 7,80-8,50 %
$SiO_2$. ..... 25,80-28,50 %
Density ..... 1,34-1,38
Viscosity. ..... 50-260 mPa s

| | | | |
|---|---|---|---|
| **7561.1** | 1 l | plastic | 14,55 € |
| Original pack 6 x 1 l | | | 13,82/1 l |
| **7561.2** | 5 l | plastic | 34,30 € |
| Original pack 2 x 5 l | | | 32,59/5 l |

## Sodium stearate

▶ Stearic acid sodium salt see p. 2316

## Sodium succinate

▶ Succinic acid disodium salt hexahydrate see p. 2320

# Sodium sulphate

$Na_2SO_4$
M 142,04 g/mol
D 2,7
mp 888 °C
Solubility: 170 g/l ($H_2O$, 20 °C)
[7757-82-6] • EC No. 231-820-9
WGK 1

## Sodium sulphate

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis) ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5076.1** | 10 g | plastic | 74,20 € |
| **5076.2** | 25 g | plastic | 155,90 € |

## Sodium sulphate

**≥99 %, p.a., ACS, ISO, powdered, anhydrous**

Drying agent for solvents.

**Guarantee analysis:**

Assay. ..... ≥99,0 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
pH value (5 %, water). ..... 5,2-8,0
Chloride (Cl). ..... ≤0,001 %
Phosphate ($PO_4$). ..... ≤0,001 %
Total nitrogen (as N). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,005 %
Magnesium (Mg). ..... ≤0,001 %
Loss on ignition (800 °C). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8560.3** | 500 g | plastic | 25,30 € |
| Original pack 6 x 500 g | | | 24,04/500 g |
| **8560.1** | 1 kg | plastic | 34,95 € |
| Original pack 6 x 1 kg | | | 33,20/1 kg |
| **8560.2** | 5 kg | plastic | 143,55 € |
| **8560.5** | 25 kg | plastic | 510,65 € |

## Sodium sulphate

**≥99 %, p.a., ACS, granules, anhydrous**

For molecular biology, drying agent.

**Guarantee analysis:**

Assay. ..... ≥99,0 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
pH value (5 % in $H_2O$). ..... 5,2-8,0
Chloride (Cl). ..... ≤0,001 %
Phosphate ($PO_4$). ..... ≤0,001 %
Total nitrogen (N). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,0001 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,01 %
Calcium (Ca). ..... ≤0,002 %
Magnesium (Mg). ..... ≤0,0025 %
Loss on ignition (800 °C). ..... ≤0,5 %
Particle size. ..... ~0,1-0,4 mm

| | | | |
|---|---|---|---|
| **0966.1** | 500 g | plastic | 20,65 € |
| Original pack 6 x 500 g | | | 19,62/500 g |
| **0966.2** | 1 kg | plastic | 30,00 € |
| Original pack 6 x 1 kg | | | 28,50/1 kg |
| **0966.3** | 5 kg | plastic | 124,20 € |

## Sodium sulphate

**≥98,5 %, Ph.Eur., anhydrous**

**Guarantee analysis:**

Appearance ..... white cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity ..... complies
Appearance of solution ..... complies
Loss on drying (130 °C). ..... ≤0,5 %
Acid or alkaline react. substances. ..... complies
Chloride (Cl). ..... ≤0,045 %
Heavy metals (as Pb). ..... ≤0,0045 %

| | | | |
|---|---|---|---|
| **P032.1** | 500 g | plastic | 13,90 € |
| Original pack 6 x 500 g | | | 13,21/500 g |
| **P032.2** | 1 kg | plastic | 20,35 € |
| Original pack 6 x 1 kg | | | 19,33/1 kg |
| **P032.3** | 5 kg | plastic | 85,90 € |
| **P032.5** | 25 kg | plastic | 238,15 € |

## Sodium sulphate

**≥99 %, anhydrous**

**Type analysis:**

Assay. ..... ≥99 %
pH value (10 % in $H_2O$). ..... 4,0-6,0
Iron (Fe). ..... ≤0,002 %
Water . ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **8631.2** | 1 kg | plastic | 14,95 € |
| Original pack 6 x 1 kg | | | 14,20/1 kg |
| **8631.1** | 2,5 kg | plastic | 32,15 € |
| **8631.5** | 25 kg | plastic | 103,10 € |

# Sodium sulphate decahydrate

$Na_2SO_4 \cdot 10\ H_2O$
M 322,19 g/mol
D 1,46
mp 32,4 °C
Solubility: ~420 g/l ($H_2O$, 20 °C)
[7727-73-3] • EC No. 231-820-9
WGK 1

## Sodium sulphate decahydrate

**≥99 %, p.a., ACS**

For freezing mixtures.

**Guarantee analysis:**

Assay. ..... ≥99,0 %
pH value (5 % solution). ..... 5,2-8,2
In $H_2O$ insoluble matter. ..... ≤0,005 %
Total nitrogen (as N). ..... ≤0,0003 %
Chloride (Cl). ..... ≤0,0005 %
Phosphate ($PO_4$). ..... ≤0,0005 %
Aluminium (Al). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,0001 %
Barium (Ba). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0003 %
Cadmium (Cd). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,002 %
Chromium (Cr). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,002 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Lithium (Li). ..... ≤0,002 %
Magnesium (Mg). ..... ≤0,001 %
Manganese (Mn). ..... ≤0,0005 %
Nickel (Ni). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,0003 %
Strontium (Sr). ..... ≤0,0005 %
Thallium (Tl). ..... ≤0,0005 %
Zinc (Zn). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **T108.2** | 500 g | plastic | 18,20 € |
| Original pack 6 x 500 g | | | 17,29/500 g |
| **T108.1** | 1 kg | plastic | 27,45 € |
| Original pack 6 x 1 kg | | | 26,08/1 kg |
| **T108.3** | 2,5 kg | plastic | 55,80 € |

## Sodium sulphate decahydrate

**≥98,5 %, Ph.Eur.**

**Guarantee analysis:**

Appearance. ..... colourless crystals
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Acidity/alkalinity. ..... complies
Chloride (Cl). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,002 %
Loss on drying (130 °C). ..... 52,0-57,0 %

| | | | |
|---|---|---|---|
| **X892.1** | 500 g | plastic | 17,10 € |
| Original pack 6 x 500 g | | | 16,25/500 g |
| **X892.2** | 1 kg | plastic | 26,80 € |
| Original pack 6 x 1 kg | | | 25,46/1 kg |
| **X892.3** | 2,5 kg | plastic | 55,40 € |

## Sodium sulphide hydrate

## Sodium sulphide hydrate

**60 %, in flakes**

$Na_2S \cdot x\ H_2O$
M 78,04 + x $H_2O$ g/mol
mp 90 °C
[27610-45-3] • EC No. 215-211-5
UN No. 1849 • ADR 8 II • WGK 2

**Danger** H290-H301+H311-H314-H400-EUH031-EUH071

**Type analysis:**

Assay ..... >60 %

| | | | |
|---|---|---|---|
| **8634.1** | 1 kg | plastic | 19,60 € |
| Original pack 6 x 1 kg | | | 18,62/1 kg |
| **8634.2** | 5 kg | plastic | 41,40 € |

## Sodium sulphite

$Na_2SO_3$
M 126,04 g/mol
D 2,63
mp >500 °C
Solubility: 220 g/l ($H_2O$, 20 °C)
[7757-83-7] • EC No. 231-821-4
WGK 1

## Sodium sulphite

**≥98 %, p.a., ACS, anhydrous**

For removal of chlorine and dissolution of cellulose, reagent for detection of iodate in the presence of chlorate and bromate, for absorption of $NO_x$ in gas analysis.

**Guarantee analysis:**

Assay (iodom.) ..... ≥98,0 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Acidity ..... complies
Alkalinity. ..... 0,03 meq/g
Thiosulphate. ..... complies
Chloride (Cl). ..... ≤0,01 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,001 %
Calcium (Ca) ..... ≤0,013 %
Iron (Fe). ..... ≤0,001 %
Potassium (K). ..... ≤0,05 %
Copper (Cu). ..... ≤0,001 %
Magnesium (Mg) ..... ≤0,013 %
Nickel (Ni). ..... ≤0,001 %
Heavy metals (as Pb) ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **P033.1** | 500 g | plastic | 18,85 € |
| Original pack 6 x 500 g | | | 17,91/500 g |
| **P033.2** | 1 kg | plastic | 27,85 € |
| Original pack 6 x 1 kg | | | 26,46/1 kg |
| **P033.3** | 2,5 kg | plastic | 50,00 € |

## Sodium sulphite

**≥98 %, anhydrous**

Photographic quality

**Type analysis:**

Assay $Na_2SO_3$ ..... ≥98 %
pH value (50 g/l). ..... 9,0-10,6
Iron (Fe) ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **8637.1** | 1 kg | plastic | 21,40 € |
| Original pack 6 x 1 kg | | | 20,33/1 kg |
| **8637.3** | 5 kg | plastic | 54,75 € |
| **8637.2** | 10 kg | plastic | 99,90 € |
| **8637.4** | 25 kg | plastic | 187,60 € |

## di-Sodium tartrate dihydrate

Tartaric acid disodium salt
$C_4H_4Na_2O_6 \cdot 2\ H_2O$
M 230,08 g/mol
D ~1,81
Solubility: 290 g/l ($H_2O$, 20 °C)
[6106-24-7] • EC No. 212-773-3
WGK 1

## di-Sodium tartrate dihydrate

**≥99 %, p.a.**

**Guarantee analysis:**

Assay (perchloric acidim). ..... 99,0-101,0 %
pH value (5 % solution). ..... 7,0-9,0
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chloride (Cl). ..... ≤0,0005 %
Phosphate ($PO_4$). ..... ≤0,0005 %
Sulphate ($SO_4$). ..... ≤0,002 %
Ammonium ($NH_4$). ..... ≤0,003 %
Heavy metals (as Pb). ..... ≤0,0005 %
Arsenic (As) ..... ≤0,00005 %
Lead (Pb). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe) ..... ≤0,0005 %
Potassium (K). ..... ≤0,002 %
Copper (Cu). ..... ≤0,0005 %
Nickel (Ni) ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **T110.1** | 500 g | plastic | 52,70 € |
| Original pack 6 x 500 g | | | 50,07/500 g |
| **T110.2** | 1 kg | plastic | 93,00 € |
| Original pack 6 x 1 kg | | | 88,35/1 kg |
| **T110.3** | 2,5 kg | plastic | 213,95 € |
| **T110.5** | 25 kg | plastic | 1773,75 € |

## di-Sodium tartrate dihydrate

**≥99 %, extra pure**

**Type analysis:**

Appearance ..... white to off-white crystals
Assay (titr.). ..... ≥98,0 %
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe) ..... ≤0,01 %
Calcium (Ca). ..... ≤0,1 %
Potassium (K). ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **0254.1** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **0254.2** | 1 kg | plastic | 55,40 € |
| Original pack 6 x 1 kg | | | 52,63/1 kg |
| **0254.3** | 5 kg | plastic | 235,45 € |

## di-Sodium tetraborate

## di-Sodium tetraborate

**≥99 %, extra pure, anhydrous**

For qualitative analysis, decomposition reagent in organic and inorganic chemistry.

Borax
$Na_2B_4O_7$
M 201,22 g/mol
D 2,37 • bp 1575 °C (dec.)
mp 741 °C
Solubility: 25 g/l ($H_2O$, 20 °C)
[1330-43-4] • EC No. 215-540-4
WGK 1

**Danger** H360FD

**Type analysis:**

Assay (acidim.). ..... ≥99,0 %
Water content. ..... ≤1,0 %
Sulphate ($SO_4$) ..... ≤0,015 %
Iron (Fe). ..... ≤0,004 %

| | | | |
|---|---|---|---|
| **4403.1** | 250 g | plastic | 12,80 € |
| **4403.2** | 500 g | plastic | 17,75 € |
| Original pack 6 x 500 g | | | 16,86/500 g |
| **4403.3** | 1 kg | plastic | 27,85 € |
| Original pack 6 x 1 kg | | | 26,46/1 kg |
| **4403.4** | 2,5 kg | plastic | 52,60 € |

## di-Sodium tetraborate decahydrate

Borax
$Na_2B_4O_7 \cdot 10\ H_2O$
M 381,37 g/mol
D 1,72
mp 75 °C
Solubility: 51,5 g/l ($H_2O$, 20 °C)
[1303-96-4] • EC No. 215-540-4
WGK 1

**Danger** H360FD

## di-Sodium tetraborate decahydrate

**≥99,5 %, p.a., ACS, ISO**

For qualitative analysis. Decomposition agent.

**Guarantee analysis**

Assay (acidim.). ..... ≥99,5 %
pH value (0,01 mol/l sol.) ..... 9,15-9,20
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chloride (Cl) ..... ≤0,001 %
Phosphate ($PO_4$) ..... ≤0,001 %
Sulphate ($SO_4$) ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,005 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **T880.1** | 500 g | plastic | 31,10 € |
| Original pack 6 x 500 g | | | 29,55/500 g |
| **T880.2** | 1 kg | plastic | 46,15 € |
| Original pack 6 x 1 kg | | | 43,84/1 kg |
| **T880.3** | 2,5 kg | plastic | 90,20 € |

S

## di-Sodium tetraborate decahydrate

**≥99 %, Ph.Eur., BP, NF**

**Guarantee analysis:**

Assay (acidim.) ..... 99,0-103,0 %
Identity ..... complies
Appearance of solution ..... complies
pH value (4 % solution) ..... 9,0-9,6
Sulphate ($SO_4$) ..... ≤0,005 %
Ammonium ($NH_4$) ..... ≤0,001 %
Carbonate, bicarbonate ..... complies
Heavy metals (as Pb) ..... ≤0,002 %
Arsenic (As) ..... ≤0,0005 %
Calcium (Ca) ..... ≤0,01 %
Volatile organic impurities ..... complies

| | | | |
|---|---|---|---|
| **CN07.1** | 500 g | plastic | 17,75 € |
| Original pack 6 x 500 g | | | 16,86/500 g |
| **CN07.2** | 1 kg | plastic | 25,30 € |
| Original pack 6 x 1 kg | | | 24,04/1 kg |
| **CN07.3** | 2,5 kg | plastic | 54,75 € |

## di-Sodium tetraborate decahydrate

**≥99 %, powdered**

**Type analysis:**

Assay ..... ≥99 %
Sulphate ($SO_4$) ..... ≤0,015 %
Chloride (Cl) ..... ≤0,01 %
Iron (Fe) ..... ≤0,0015 %

| | | | |
|---|---|---|---|
| **8643.1** | 1 kg | plastic | 17,75 € |
| Original pack 6 x 1 kg | | | 16,86/1 kg |
| **8643.2** | 5 kg | plastic | 54,75 € |
| **8643.5** | 25 kg | plastic | 220,40 € |

## Sodium tetrahydroborate

▶ Sodium borohydride see p. 2267

## Sodium tetraphenyl borate

### Sodium tetraphenyl borate

**≥99,5 %, p.a., ACS**

Reagent for K, Pb, Cs, $NH_4$ and Alkaloids.
Tetraphenylboron sodium
$C_{24}H_{20}BNa$
M 342,23 g/mol
mp >300 °C
[143-66-8] • EC No. 205-605-5
UN No. 2811 • ADR 6.1 III • WGK 2

**Danger** H301-H412

**Guarantee analysis:**

Assay (dry substance) ..... ≥99,5 %
Clarity of solution (ACS-test) ..... complies
Test of suitability for potassium assay ..... complies
Loss on drying ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **4385.1** | 10 g | plastic | 40,75 € |
| **4385.2** | 25 g | plastic | 89,15 € |
| **4385.3** | 100 g | plastic | 278,45 € |

## Sodium thiocyanate

### Sodium thiocyanate

**≥98 %, p.a., ACS**

Analytical reagent
Sodium rhodanide
NaSCN
M 81,07 g/mol
D 1,74
mp 310 °C
Solubility: 1200 g/l ($H_2O$, 20 °C)
[540-72-7] • EC No. 208-754-4
WGK 1

**Warning**
H302+H312+H332-H412-EUH032

**Guarantee analysis:**

Assay ..... ≥98,0 %
Carbonate (as $Na_2CO_3$) ..... ≤0,2 %
In $H_2O$ insoluble matter ..... ≤0,005 %
Chloride (Cl) ..... ≤0,01 %
Sulphate ($SO_4$) ..... ≤0,01 %
Sulphide (S) ..... ≤0,001 %
Ammonium ($NH_4$) ..... ≤0,002 %
Heavy metals (as Pb) ..... ≤0,0005 %
Iron (Fe) ..... ≤0,0002 %

| | | | |
|---|---|---|---|
| **2724.1** | 100 g | plastic | 17,10 € |
| **2724.2** | 500 g | plastic | 40,35 € |
| Original pack 6 x 500 g | | | 38,33/500 g |
| **2724.3** | 1 kg | plastic | 65,50 € |
| Original pack 6 x 1 kg | | | 62,23/1 kg |

## Sodium thiosulphate

### Sodium thiosulphate

**≥99 %, p.a., anhydrous**

Fixing salt
$Na_2O_3S_2$
M 158,11 g/mol
D 1,67
Solubility: ~209 g/l ($H_2O$, 20 °C)
[7772-98-7] • EC No. 231-867-5
WGK 1

**Guarantee analysis:**

Assay (iodom.) ..... ≥99 %
pH value (5 % solution) ..... 6,0-8,4
In $H_2O$ insoluble matter ..... ≤0,01 %
Loss on drying (105 °C) ..... ≤1 %
Chloride (Cl) ..... ≤0,05 %
Sulphate and sulphite (as $SO_4$) ..... ≤0,5 %
Sulphide (S) ..... ≤0,0005 %
Calcium (Ca) ..... ≤0,004 %
Cadmium (Cd) ..... ≤0,001 %
Cobalt (Co) ..... ≤0,001 %
Copper (Cu) ..... ≤0,001 %
Iron (Fe) ..... ≤0,001 %
Potassium (K) ..... ≤0,01 %
Nickel (Ni) ..... ≤0,001 %
Lead (Pb) ..... ≤0,001 %
Zinc (Zn) ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **HN25.1** | 250 g | plastic | 21,00 € |
| **HN25.2** | 500 g | plastic | 30,65 € |
| Original pack 6 x 500 g | | | 29,12/500 g |
| **HN25.3** | 1 kg | plastic | 54,30 € |
| Original pack 6 x 1 kg | | | 51,59/1 kg |
| **HN25.4** | 2,5 kg | plastic | 114,50 € |

## Sodium thiosulphate pentahydrate

$Na_2S_2O_3 \cdot 5\ H_2O$
M 248,18 g/mol
D 1,74
mp ~48 °C
Solubility: 701 g/l ($H_2O$, 20 °C)
[10102-17-7] • EC No. 231-867-5
WGK 1

### Sodium thiosulphate pentahydrate

**≥99,5 %, p.a., ACS**

Photographic fixer; for volumetric solutions in iodometry; for detection of hydrocyanic acid, quinine, chlorate hydrate and cobalt.

**Guarantee analysis:**

Assay (iodom.) ..... 99,5-101,0 %
pH value (5 % in water) ..... 6,0-8,4
In $H_2O$ insoluble matter ..... ≤0,005 %
Total nitrogen (as N) ..... ≤0,002 %
Chloride (Cl) ..... ≤0,02 %
Sulphate and sulphite (as $SO_4$) ..... ≤0,1 %
Sulphide (S) ..... ≤0,0001 %
Heavy metals (as Pb) ..... ≤0,0005 %
Calcium (Ca) ..... ≤0,002 %
Kobalt (Co) ..... ≤0,0005 %
Chromium (Cr) ..... ≤0,0005 %
Magnesium (Mg) ..... ≤0,001 %
Nickel (Ni) ..... ≤0,0005 %
Potassium (K) ..... ≤0,005 %
Cadmium (Cd) ..... ≤0,0005 %
Copper (Cu) ..... ≤0,0005 %
Iron (Fe) ..... ≤0,0005 %
Manganese (Mn) ..... ≤0,0005 %
Lead (Pb) ..... ≤0,0005 %
Zinc (Zn) ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **P034.1** | 500 g | plastic | 20,35 € |
| Original pack 6 x 500 g | | | 19,33/500 g |
| **P034.2** | 1 kg | plastic | 31,75 € |
| Original pack 6 x 1 kg | | | 30,16/1 kg |
| **P034.3** | 2,5 kg | plastic | 63,35 € |
| **P034.5** | 25 kg | plastic | 439,70 € |

### Sodium thiosulphate pentahydrate

**≥99 %, Ph.Eur., USP, BP**

Photographic fixer

**Guarantee analysis:**

Assay (iodom.) ..... 99,0-100,5 %
Identity ..... complies
pH value (10 % solution) ..... 6,0-8,4
Appearance of solution ..... complies
Loss on drying ..... 32,0-37,0 %
Total nitrogen (as N) ..... ≤0,01 %
Sulphate and sulphite (as $SO_4$) ..... ≤0,2 %
Sulphide (S) ..... complies
Chloride (Cl) ..... ≤0,02 %
Heavy metals (as Pb) ..... ≤0,001 %
Arsenic (As) ..... ≤0,0003 %
Lead (Pb) ..... ≤0,001 %
Copper (Cu) ..... ≤0,001 %
Magnesium (Mg) ..... ≤0,01 %
Calcium (Ca) ..... complies
Iron (Fe) ..... ≤0,001 %
Nickel (Ni) ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **T109.2** | 500 g | plastic | 14,95 € |
| Original pack 6 x 500 g | | | 14,20/500 g |
| **T109.1** | 1 kg | plastic | 22,50 € |
| Original pack 6 x 1 kg | | | 21,38/1 kg |
| **T109.3** | 5 kg | plastic | 74,75 € |

## Sodium thiosulphate pentahydrate

**≥98,5 % cryst.**

Photographic fixer

**Type analysis:**

Appearance. ..... white crystals
Assay ..... ≥98,5 %

| | | | |
|---|---|---|---|
| **8649.1** | 1 kg | plastic | 18,20 € |
| Original pack 6 x 1 kg | | | 17,29/1 kg |
| **8649.2** | 10 kg | plastic | 77,95 € |

## Sodium thiosulphate solution (0,01 N)

### Sodium thiosulphate solution

**0,01 mol/l - 0,01 N volumetric standard solution**

**Type analysis:**

Amount-of-substance conc. (20 °C) ..... 0,01 mol/l ±0,5 %
Titer. ..... 0,995-1,005

| | | | |
|---|---|---|---|
| **X869.1** | 1 l | glass | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |

For further information, please see page 1622

## Sodium thiosulphate solution (0,1 N)

### Sodium thiosulphate solution

**0,1 mol/l - 0,1 N volumetric standard solution**

**Type analysis:**

Amount-of-substance conc. (20 °C) ..... 0,1 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **K022.1** | 1 l | glass | 18,20 € |
| Original pack 6 x 1 l | | | 17,29/1 l |
| **K022.2** | 5 l | plastic | 48,30 € |
| Original pack 2 x 5 l | | | 45,89/5 l |
| **K022.3** | 5 l | ROTI®CUBE | 56,45 € |
| Original pack 2 x 5 l | | | 53,63/5 l |
| **K022.4** | 10 l | ROTI®CUBE | 84,40 € |

For further information, please see page 1622

## Sodium thiosulphate solution (0,1 N)

### Sodium thiosulphate solution

**0,1 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.**

**Type analysis:**

Amount-of-substance conc. (20 °C) ..... 0,1 mol/l
Measurement uncertainty. ..... ±0,2 %

| | | | |
|---|---|---|---|
| **6782.1** | 1 l | plastic | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |

## Sodium thiosulphate solution (0,1 N)

### Sodium thiosulfate solution

**ROTI®VOLUM 0,1 mol/l - 0,1 N**

Ampoule for preparation of 1000 ml volumetric solution.
$Na_2O_3S_2$
M 158,11 g/mol
[7772-98-7]
WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C). .. 0,1 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN55.1** | 1 piece | plastic ampoule | 19,05 € |

For further information, please see page 1623

## Sodium thiosulphate solution (1 N)

### Sodium thiosulphate solution

**1 mol/l - 1 N volumetric standard solution**

D 1,12
WGK 1

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... 1 mol/l ±0,2 %
Titer. ..... 0,9980-1,0020

| | | | |
|---|---|---|---|
| **9900.1** | 1 l | plastic | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |

## Sodium-2,2,3,3-trimethylsilylpropionate D4

▶ 3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4) see p. 2355

## Sodium tungstate dihydrate

### Sodium tungstate dihydrate

**≥99 %, p.a., ACS**

Tungstic acid sodium salt dihydrate
$Na_2WO_4 \cdot 2\ H_2O$
M 329,84 g/mol
D 3,23
mp 100 °C loss of crystallisation water
Solubility: 730 g/l ($H_2O$, 20 °C)
[10213-10-2] • EC No. 236-743-4
WGK 1

**Warning** H302

**Guarantee analysis:**

Assay (gravim.). ..... 99,0-101,0 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
Free alkali. ..... ≤0,02 meq/g
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,01 %
Heavy metals and iron (as Pb). ..... ≤0,001 %
Arsenic (As). ..... ≤0,0005 %
Molybdenum (Mo). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **2604.1** | 100 g | plastic | 39,70 € |
| **2604.2** | 250 g | plastic | 77,30 € |
| **2604.3** | 500 g | plastic | 138,70 € |
| Original pack 6 x 500 g | | | 131,77/500 g |

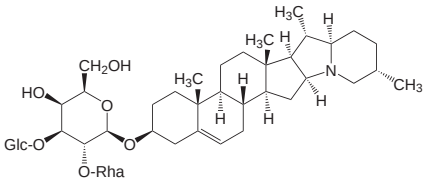
## Sodium vanadate(V)

▶ tri-Sodium monovanadate see p. 2281

## Sodium vanadium oxide

▶ tri-Sodium monovanadate see p. 2281

## α-Solanine




Solatunine
$C_{45}H_{73}NO_{15}$
M 868,04 g/mol
mp ~285 °C
Storage temp.: +4 °C
[20562-02-1] • EC No. 243-879-8
WGK 1

**Warning** H302

### α-Solanine

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Solanum tuberosum*.

**Type analysis:**

Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **2826.1** | 10 mg | glass | 252,65 € |

### α-Solanine

**ROTICHROM® TLC**

From *Solanum tuberosum*.

| | | | |
|---|---|---|---|
| **4180.1** | 10 mg | glass | 220,40 € |

## Solatunine

▶ α-Solanine see p. 2287

## Solidofix®-Cryo spray

### Solidofix®-Cryo spray

**for histology**

Freezing of histological specimens.
Cooling of paraffin blocks. Cooling to -45 °C.
UN No. 1950 • ADR 2

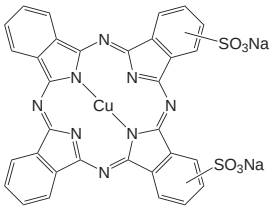
**Danger** H222-H229

| | | | |
|---|---|---|---|
| **T200.1** | 300 ml | spray bottle | 8,50 € |
| **T200.2** | 5 x 300 ml | spray bottle | 33,25 € |

For further information, please see page 1451

S

## Solvent blue 38 (C.I. 74180)




### Solvent blue 38 (C.I. 74180)

**for microscopy**
Luxol® Fast Blue MBSN
$C_{32}H_{12}CuN_8Na_2O_6S_2$
M 778,15 g/mol
[1328-51-4]
WGK 3

**Type analysis:**
Appearance. .....dark blue powder
Appearance of solution (0,1 % in MeOH)..... dark blue

| | | | |
|---|---|---|---|
| **7709.1** | 5 g | glass | 11,75 € |
| **7709.2** | 25 g | glass | 24,65 € |
| **7709.3** | 100 g | glass | 57,95 € |

## Solvent orange 1

▶ Sudan orange G (C.I. 11920) see p. 2320

## Solvent orange 7

▶ Sudan II (C.I. 12140) see p. 2320

## Solvent red 45

▶ Ethyl eosin (C.I. 45386) see p. 1919

## Solvents


| Art. No. | Description | Page |
|---|---|---|
| | ... for Ultra LC-MS | |
| | ... for LC-MS | |
| | ... for HPLC | |
| | ... for Headspace-GC | |
| | ... for Gaschromatograpy | |
| | ... for residue analysis | |
| | ... for UV/IR-spectroscopy | |
| | ... dried, in a septum bottle | |
| | ... dried | |
| | ... for analysis | |
| | ... in Pharmacopoeia Quality | |
| | ... for synthesis | |
| | ... for peptide synthesis | |
| | ... for DNA-synthesis | |
| | ... deuterised | |
| | ... with eluent additives | |


## Solvents for Ultra LC-MS


| Art. No. | Description | Page |
|---|---|---|
| HN40 | Acetonitrile | 1698 |
| HN41 | Methanol | 2067 |
| 0733 | 2-Propanol | 2179 |
| 0739 | Tetrahydrofuran | 2336 |
| HN43 | Water | 2375 |


## Solvents for LC-MS


| Art. No. | Description | Page |
|---|---|---|
| AE69 | Acetic acid ethyl ester | 1694 |
| AE70 | Acetonitrile | 1698 |
| AE71 | Methanol | 2067 |
| AE73 | 2-Propanol | 2179 |
| AE72 | Water | 2375 |


## Solvents for HPLC


| Art. No. | Description | Page |
|---|---|---|
| 7336 | Acetic acid ethyl ester | 1694 |
| 7328 | Acetone | 1697 |
| 7328 | Acetone | 1697 |
| T195 | Acetonitrile | 1699 |
| 8825 | Acetonitrile | 1699 |
| HN44 | Acetonitrile | 1699 |
| 7330 | Acetonitrile | 1699 |
| CN20 | Acetonitrile | 1699 |
| 6827 | Acetonitrile | 1699 |
| T178 | 1-Butanol | 1794 |
| T175 | tert-Butyl methyl ether | 1797 |
| 7333 | Cyclohexane | 1851 |
| 7334 | Dichloromethane | 1869 |
| 0702 | N,N-Dimethylformamide (DMF) | 1882 |
| 0728 | Dimethyl sulphoxide (DMSO) | 1884 |
| X949 | 1,4-Dioxane | 1886 |
| P076 | Ethanol | 1910 |
| 6828 | n-Heptane | 1973 |
| 7337 | n-Heptane | 1973 |
| 7339 | n-Hexane | 1978 |
| T176 | Isohexane | 2014 |
| 7340 | Isooctane | 2015 |
| X948 | Methanol | 2068 |
| 7342 | Methanol | 2068 |
| KK39 | Methanol | 2068 |
| P717 | Methanol | 2068 |
| CN99 | n-Pentane | 2135 |
| 0731 | Petroleum ether 40-60 °C | 2143 |
| T177 | 1-Propanol | 2179 |
| 7343 | 2-Propanol | 2180 |
| 7344 | Tetrahydrofuran | 2336 |
| 7346 | Toluene | 2347 |
| 7331 | Trichloromethane/Chloroform | 2351 |
| A511 | Water | 2375 |


## Solvents for Headspace-GC


| Art. No. | Description | Page |
|---|---|---|
| HN45 | N,N-Dimethylacetamide (DMA) | 1880 |
| HN46 | N,N-Dimethylformamide (DMF) | 1882 |
| HN48 | 1,3-Dimethyl-2-imidazolidinone (DMI) | 1883 |
| HN47 | Dimethyl sulphoxide (DMSO) | 1884 |


## Solvents for GC


| Art. No. | Description | Page |
|---|---|---|
| KK42 | Acetic acid ethyl ester | 1695 |
| KK40 | Acetone | 1697 |
| KK41 | Cyclohexane | 1851 |
| KK47 | Dichloromethane | 1869 |
| KK48 | n-Hexane | 1978 |
| KK44 | Methanol | 2068 |
| KK45 | n-Pentane | 2135 |
| KK46 | Toluene | 2347 |


## Solvents for residue analysis (Pestilyse® plus)


| Art. No. | Description | Page |
|---|---|---|
| 7565 | Acetic acid ethyl ester | 1695 |
| 7535 | Acetone | 1697 |
| 7542 | Cyclohexane | 1851 |
| 7562 | Dichloromethane | 1869 |
| 7566 | n-Heptane | 1973 |
| 7573 | n-Hexane | 1978 |
| 7567 | n-Hexane | 1978 |
| 7576 | Isohexane | 2014 |
| 7580 | Isooctane | 2015 |
| 7583 | Methanol | 2068 |
| 7587 | n-Pentane | 2135 |
| 7588 | Petroleum ether 40-60 °C | 2143 |
| 7590 | 2-Propanol | 2180 |
| 7591 | Toluene | 2347 |
| 7554 | Trichloromethane/Chloroform | 2351 |


## Solvents for residue analysis (Pestilyse®)


| Art. No. | Description | Page |
|---|---|---|
| T164 | Acetic acid ethyl ester | 1695 |
| T161 | Acetone | 1697 |
| T168 | Acetonitrile | 1699 |
| T163 | Cyclohexane | 1851 |
| T162 | Dichloromethane | 1869 |
| T900 | Diethyl ether | 1873 |
| X878 | n-Heptane | 1973 |
| T861 | n-Hexane | 1978 |
| T165 | n-Hexane | 1978 |
| T904 | Isohexane | 2014 |
| T167 | Isooctane | 2015 |
| T169 | Methanol | 2068 |
| T903 | n-Pentane | 2135 |
| T170 | Petroleum ether 40-60 °C | 2143 |
| T902 | 2-Propanol | 2180 |
| T166 | Toluene | 2347 |
| T901 | Trichloromethane/Chloroform | 2351 |
| T905 | Water | 2375 |


## Solvents for UV/IR spectroscopy


| Art. No. | Description | Page |
|---|---|---|
| 4442 | Acetic acid ethyl ester | 1695 |
| T906 | Acetone | 1697 |
| T907 | Acetonitrile | 1699 |
| CP81 | Cyclohexane | 1851 |
| 4433 | Dichloromethane | 1869 |
| AE04 | Diethyl ether | 1873 |
| CP79 | N,N-Dimethylformamide (DMF) | 1882 |
| AE02 | Dimethyl sulphoxide (DMSO) | 1884 |
| 4429 | 1,4-Dioxane | 1886 |
| CP78 | n-Heptane | 1974 |
| T908 | n-Hexane | 1978 |
| CP80 | Isooctane | 2015 |
| T909 | Methanol | 2068 |
| 4443 | n-Pentane | 2135 |
| T910 | 2-Propanol | 2180 |
| CP83 | Tetrachloroethylene | 2335 |
| CP82 | Tetrahydrofuran | 2336 |
| 4445 | Toluene | 2347 |
| 4432 | Trichloromethane/Chloroform | 2351 |

## Solvents, dried, in a septum bottle


| Art. No. | Description | Page |
|---|---|---|
| 5175 | Acetonitrile | 1699 |
| 5176 | Dichloromethane | 1869 |
| 5177 | Diethyl ether | 1873 |
| 5179 | Dimethyl sulphoxide (DMSO) | 1884 |
| 5180 | n-Hexane | 1978 |
| 5181 | Methanol | 2068 |
| 5182 | Tetrahydrofuran | 2336 |
| 5191 | Toluene | 2347 |


## Solvents, dried


| Art. No. | Description | Page |
|---|---|---|
| 4424 | Acetic acid ethyl ester | 1695 |
| AE00 | Acetonitrile | 1699 |
| AE03 | Dichloromethane | 1869 |
| AE04 | Diethyl ether | 1873 |
| AE02 | Dimethyl sulphoxide (DMSO) | 1884 |
| 4429 | 1,4-Dioxane | 1886 |
| AE05 | n-Hexane | 1978 |
| AE01 | Methanol | 2068 |
| AE07 | Tetrahydrofuran | 2336 |
| AE06 | Toluene | 2347 |
| 4423 | Trichloromethane/Chloroform | 2351 |


## Solvents for analysis


| Art. No. | Description | Page |
|---|---|---|
| CP28 | Acetic acid anhydride | 1693 |
| P036 | Acetic acid n-butyl ester | 1694 |
| 6784 | Acetic acid ethyl ester | 1695 |
| 9372 | Acetone | 1697 |
| 4722 | Acetonitrile | 1699 |
| 7173 | Benzene | 1765 |
| 0336 | Benzyl alcohol | 1769 |
| 7171 | 1-Butanol | 1794 |
| AE16 | tert-Butanol | 1795 |
| T920 | 2-Butanone | 1795 |
| 8462 | tert-Butyl methyl ether | 1797 |
| 6886 | Cyclohexane | 1851 |
| 6837 | 1,2-Dichloroethane | 1869 |
| 6053 | Dichloromethane | 1870 |
| 0332 | Diethanolamine | 1871 |
| 3495 | Diethylamine | 1872 |
| 3942 | Diethyl ether | 1873 |
| T919 | Diisopropyl ether | 1878 |
| T921 | N,N-Dimethylformamide (DMF) | 1882 |
| 4720 | Dimethyl sulphoxide (DMSO) | 1884 |
| 4626 | 1,4-Dioxane | 1886 |
| 9065 | Ethanol | 1910 |
| 0911 | Ethanol denatured | 1911 |
| T868 | Ethanol 70 % | 1912 |
| 0342 | Ethanolamine | 1912 |
| 6881 | Ethylene glycol | 1919 |
| 6749 | Formamide | 1940 |
| T174 | n-Heptane | 1974 |
| 4723 | n-Hexane | 1979 |
| T870 | Isoamyl alcohol | 2013 |
| 0338 | Isobutyl methylketone | 2014 |
| 6889 | Isooctane | 2015 |
| 4627 | Methanol | 2069 |
| CP08 | 2-Methoxyethanol | 2071 |
| 3926 | 2-Methylbutane | 2072 |
| 6772 | 2-Methyl-1-propanol | 2077 |
| 4978 | n-Pentane | 2135 |
| T173 | Petroleum ether 40-60 °C | 2144 |
| 6776 | 1-Propanol | 2179 |
| 6752 | 2-Propanol | 2180 |
| 9729 | Pyridine | 2185 |
| 6788 | Tetrahydrofuran | 2337 |
| 7115 | Toluene | 2347 |
| 3313 | Trichloromethane/Chloroform | 2351 |
| T172 | Water | 2375 |
| 4436 | Xylene (isomers) | 2381 |


## Solvents in Pharmacopoeia Quality


| Art. No. | Description | Page |
|---|---|---|
| CP42 | Acetic acid ethyl ester | 1695 |
| CP40 | Acetone | 1698 |
| 8657 | Benzyl alcohol | 1769 |
| 6724 | Bioethanol 96 % | 1773 |
| CP45 | Dichloromethane | 1870 |
| 8810 | Diethyl ether | 1873 |
| 5054 | Ethanol | 1911 |
| P075 | Ethanol 96 % | 1911 |
| 7301 | Ethanol 70 % | 1912 |
| 6967 | Glycerol | 1960 |
| 7530 | Glycerol | 1960 |
| 7533 | Glycerol 86 % | 1961 |
| CP43 | Methanol | 2069 |
| CP44 | Petroleum ether 40-60 °C | 2144 |
| CP41 | 2-Propanol | 2180 |
| 6340 | Trichloromethane/Chloroform | 2351 |
| 2652 | Water | 2376 |
| CN80 | Xylene (isomers) | 2381 |


## Solvents for synthesis


| Art. No. | Description | Page |
|---|---|---|
| 4483 | Acetic acid anhydride | 1693 |
| 4600 | Acetic acid n-butyl ester | 1694 |
| 7338 | Acetic acid ethyl ester | 1695 |
| 4370 | Acetic acid isobutyl ester | 1696 |
| 5025 | Acetone | 1698 |
| 4380 | Acetonitrile | 1700 |
| 4417 | Anisole | 1743 |
| 4372 | Benzaldehyde | 1764 |
| 5785 | Benzene | 1765 |
| 9498 | Benzoic acid benzyl ester | 1766 |
| 4478 | Benzyl alcohol | 1769 |
| 6726 | Bioethanol 96 % denatured | 1773 |
| 4211 | 1,4-Butanediol | 1793 |
| 7473 | 1,3-Butanediol | 1793 |
| 7724 | 1-Butanol | 1794 |
| KK02 | 2-Butanol | 1794 |
| 4323 | tert-Butanol | 1795 |
| 8403 | 2-Butanone | 1795 |
| 6746 | tert-Butyl methyl ether | 1797 |
| HN98 | γ-Butyrolactone | 1799 |
| KK01 | Chlorobenzene | 1826 |
| 6570 | Cyclohexane | 1851 |
| CP27 | Cyclohexanone | 1852 |
| 7763 | Cyclopentyl methyl ether | 1853 |
| 3475 | n-Decane | 1858 |
| 4374 | 1,2-Dichlorobenzene | 1868 |
| T869 | 1,2-Dichloroethane | 1869 |
| 8424 | Dichloromethane | 1870 |
| HN99 | Diethanolamine | 1871 |
| KK00 | Diethylamine | 1872 |
| 0968 | Diethylene glycol | 1872 |
| 5920 | Diethyl ether | 1873 |
| 0262 | Diethylketone | 1874 |
| 0660 | 1,4-Diisocyanatobutane | 1878 |
| 4369 | Diisopropylamine | 1878 |
| T899 | Diisopropyl ether | 1878 |
| 9986 | N,N-Dimethylcyclohexylamine | 1882 |
| 6251 | N,N-Dimethylformamide (DMF) | 1882 |
| 7349 | 2,2-Dimethyl-1,3-propanediol | 1884 |
| 0662 | N,N'-Dimethylpropylene urea | 1884 |
| 7029 | Dimethyl sulphoxide | 1884 |
| 4229 | 1,4-Dioxane | 1886 |
| 0447 | 1,3-Dioxolane | 1887 |
| 8786 | n-Dodecane | 1893 |
| 9853 | 1-Dodecanol | 1893 |
| 0974 | Dodecylbenzene | 1894 |
| K928 | Ethanol denatured | 1911 |
| T171 | Ethanol 96 % denatured | 1911 |
| T913 | Ethanol 70 % denatured | 1912 |
| 4376 | Ethanolamine | 1912 |
| 0272 | Ethylbenzene | 1914 |
| 4218 | Ethylenediamine | 1915 |
| 9516 | Ethylene glycol | 1919 |
| 0341 | Ethylene glycol monobutyl ether | 1919 |
| CN19 | N-Ethyl-2-pyrrolidone (NEP) | 1921 |
| 8654 | n-Heptane | 1974 |
| CP46 | n-Heptane | 1974 |
| 7725 | Heptane (isomers) | 1974 |
| CP47 | n-Hexane | 1979 |
| 7782 | Hexane (isomers) | 1979 |
| 3907 | n-Hexane | 1979 |
| 8930 | Isoamyl alcohol | 2013 |
| 4371 | Isobutyl methylketone | 2014 |
| 2667 | Isohexane | 2014 |
| 9860 | Isooctane | 2016 |
| 8388 | Methanol | 2069 |
| 9976 | Methanol 60 % | 2069 |
| 3927 | 2-Methylbutane | 2072 |
| 4379 | 2-Methyl-1-butanol | 2073 |
| N353 | 1-Methylimidazole | 2075 |
| CN17 | 2-Methyl-2,4-pentanediol | 2076 |
| CP09 | 2-Methyl-1-propanol | 2077 |
| 4306 | N-Methyl-2-pyrrolidone (NMP) | 2078 |
| 6845 | 2-Methyltetrahydrofuran | 2079 |
| 4310 | n-Nonane | 2104 |
| 8753 | n-Octane | 2108 |
| 4439 | 1-Octanol | 2109 |
| 0358 | N-Octyl-2-pyrrolidone (NOP) | 2109 |
| 8720 | n-Pentane | 2136 |
| 3747 | n-Pentane | 2136 |
| 3523 | Petroleum benzine 30-50 | 2141 |
| 8961 | Petroleum benzine 30-75 | 2141 |
| 9320 | Petroleum benzine 40-60 | 2141 |
| 8573 | Petroleum benzine 40-65 | 2141 |
| CP48 | Petroleum benzine 40-80 | 2141 |
| 0969 | Petroleum benzine 50-70 | 2141 |
| 9735 | Petroleum benzine 60-70 | 2142 |
| 8575 | Petroleum benzine 60-95 | 2142 |
| 5649 | Petroleum benzine 63-80 | 2142 |
| 3259 | Petroleum benzine 80-110 | 2142 |
| 9675 | Petroleum benzine 100-140 | 2142 |
| 8576 | Petroleum benzine 135-180 | 2142 |
| 8577 | Petroleum benzine 145-200 | 2143 |
| 8579 | Petroleum benzine 180-220 | 2143 |
| 8580 | Petroleum benzine 190-245 | 2143 |
| 8590 | Petroleum benzine 235-265 | 2143 |
| 4348 | 2-Phenoxyethanol | 2146 |
| 4422 | 2-Phenylethanol | 2147 |
| 0976 | Piperidine | 2154 |
| 0340 | 1,2-Propanediol | 2178 |
| 9866 | 2-Propanol | 2180 |
| CN09 | 2-Propanol 70 % | 2181 |
| CP07 | Pyridine | 2185 |
| 8779 | 2-Pyrrolidone | 2187 |
| 2641 | Styrene | 2319 |
| 4737 | Tetrachloroethylene | 2335 |

| | | |
|---|---|---|
| 4745 | Tetrahydrofuran | 2337 |
| 9558 | Toluene | 2347 |
| 9579 | Trichloroethylene | 2350 |
| Y015 | Trichloromethane/Chloroform | 2351 |
| X875 | Triethylamine (TEA) | 2352 |
| CP29 | 2,2,2-Trifluoroethanol | 2353 |
| 8781 | n-Undecane | 2365 |
| 9713 | Xylene (isomers) | 2381 |
| 2662 | Xylene (isomers) | 2381 |
| 8749 | o-Xylene | 2381 |
| 8817 | p-Xylene | 2381 |
| 3791 | m-Xylene | 2381 |

## Solvents for peptide synthesis

| Art. No. | Description | Page |
|---|---|---|
| 4380 | Acetonitrile | 1700 |
| P089 | Dichloromethane | 1870 |
| 2474 | N,N-Diisopropylethylamine (DIPEA) | 1879 |
| 3617 | N,N-Dimethylacetamide (DMA) | 1880 |
| A529 | N,N-Dimethylformamide (DMF) | 1883 |
| 2473 | 1,1,1,3,3,3-Hexafluoro-2-propanol | 1977 |
| P052 | N-Methyl-2-pyrrolidone (NMP) | 2078 |
| A122 | Piperidine | 2154 |
| P088 | Trifluoroacetic acid (TFA) | 2353 |
| 3478 | Water | 2376 |

## Solvents for DNA-synthesis

| Art. No. | Description | Page |
|---|---|---|
| AE00 | Acetonitrile | 1699 |
| 8824 | Acetonitrile | 1700 |
| 2216 | Acetonitrile | 1700 |
| 3620 | Acetonitrile | 1700 |
| A990 | Ammonia solution 32 % | 1728 |

## Solvents, deuterated

| Art. No. | Description | Page |
|---|---|---|
| AE51 | Acetone D6 | 1698 |
| 7909 | Acetone D6 | 1698 |
| 7911 | Acetonitrile D3 | 1700 |
| AE52 | Acetonitrile D3 | 1700 |
| 7912 | Benzene D6 | 1765 |
| AE53 | Benzene D6 | 1765 |
| HN93 | Bromobenzene D5 | 1786 |
| 9905 | Chlorobenzene D5 | 1827 |
| 5200 | Cyclohexane D12 | 1852 |
| HN81 | Deuterium oxide | 1862 |
| 6672 | Deuterium oxide | 1862 |
| HN82 | 1,2-Dichlorobenzene D4 | 1868 |
| 7913 | Dichloromethane D2 | 1870 |
| AE55 | Dichloromethane D2 | 1870 |
| 9907 | Diethyl ether D10 | 1874 |
| CP92 | N,N-Dimethylformamide D7 | 1883 |
| 7915 | Dimethyl sulphoxide D6 | 1885 |
| AE56 | Dimethyl sulphoxide D6 | 1885 |
| 7916 | Dimethyl sulphoxide D6 with TMS (0,03 vol.%) | 1885 |
| AE60 | Dimethyl sulphoxide D6 with TMS (0,03 vol.%) | 1885 |
| HN84 | Ethanol D1 | 1912 |
| CP93 | Ethanol D6 | 1912 |
| 9909 | 1,1,1,3,3,3-Hexafluoro-2-propanol D2 (HFIP-D2) | 1977 |
| HN86 | Methanol D1 | 2069 |
| 9910 | Methanol D3 | 2070 |
| 7918 | Methanol D4 | 2070 |
| AE57 | Methanol D4 | 2070 |
| 7919 | Methanol D4 with TMS (0,03 vol.%) | 2070 |
| 9913 | Methylcyclohexane D14 | 2073 |
| 9914 | Nitrobenzene D5 | 2100 |
| HN91 | Nitromethane D3 | 2101 |
| 9917 | 2-Propanol D1 | 2181 |
| 9919 | 2-Propanol D8 | 2181 |
| 7922 | Pyridine D5 | 2185 |
| CP94 | Pyridine D5 | 2185 |
| 9921 | Styrene D8 | 2319 |
| CP96 | 1,1,2,2-Tetrachloroethane D2 | 2335 |
| AE58 | Tetrahydrofuran D8 | 2337 |
| 7924 | Toluene D8 | 2347 |
| CP95 | Toluene D8 | 2347 |
| CP91 | Trichloromethane/Chloroform D1 | 2351 |
| 7903 | Trichloromethane/Chloroform D1 | 2351 |
| AE54 | Trichloromethane/Chloroform D1 | 2351 |
| 7905 | Trichloromethane/Chloroform D1 with TMS (0,03 vol.%) | 2352 |
| AE59 | Trichloromethane/Chloroform D1 with TMS (0,03 vol.%) | 2352 |

## Solvents with eluent additives

| Art. No. | Description | Page |
|---|---|---|
| CP00 | Acetonitrile with 0,1 % formic acid | 1700 |
| CP01 | Acetonitrile with 0,1 % Acetic acid | 1700 |
| CP02 | Acetonitrile with 0,1 % trifluoroacetic acid | 1700 |
| CP06 | Methanol with 0,1 % trifluoroacetic acid | 2070 |
| CP03 | Water with 0,1 % formic acid | 2376 |
| CP05 | Water with 0,1 % trifluoroacetic acid | 2376 |

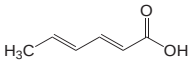
## Solvent Yellow 2

▶ Dimethyl yellow (C.I. 11020) see p. 1885

## Sophoretin

▶ Quercetin dihydrate see p. 2189
▶ Quercetin see p. 2189

## Sorbic acid



2,4-Hexadienoic acid
$C_6H_8O_2$
M 112,13 g/mol
D 1,20 • bp 190 °C (dec.)
mp 132-135 °C • flp 125 °C
Solubility: 1,6 g/l ($H_2O$, 20 °C)
[110-44-1] • EC No. 203-768-7
WGK 1

**Warning** H315-H319-H335

### Sorbic acid

**≥99 %, Ph.Eur., extra pure**
For biochemical applications.

**Guarantee analysis:**

Assay (acidim., dry substance). ..... 99,0-101,0 %
Identity..... complies
Water..... ≤1,0 %
Appearance of solution..... complies
Aldehydes. ..... ≤0,15 %
Heavy metals (as Pb). ..... ≤0,001 %
Ash content (as $SO_4$)..... ≤0,2 %

| | | | |
|---|---|---|---|
| **7158.1** | 250 g | plastic | 38,60 € |
| **7158.2** | 500 g | plastic | 67,65 € |
| Original pack 6 x 500 g | | | 64,27/500 g |
| **7158.3** | 1 kg | plastic | 124,20 € |
| Original pack 6 x 1 kg | | | 117,99/1 kg |

### Sorbic acid

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC). .....≥95,0 %
Residual solvents (GC). .....≤1,0 %
Water (KF). .....≤1,0 %
Assay (titr.).....≥95,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE15.1** | 100 mg | Glas | 729,95 € |

### Sorbic acid

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC). .....≥95,0 %
Identity. .....complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC15.1** | 100 mg | glass | 116,00 € |

## Sorbic acid potassium salt

▶ Potassium sorbate see p. 2175

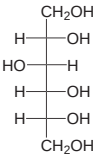
## D-Sorbit

▶ D-Sorbitol see p. 2290

## Sorbitan monooleate

▶ Span® 80 see p. 2291

## D-Sorbitol



### D-Sorbitol

**≥98 %, for biochemistry**
Microbiology
D-Sorbit
$C_6H_{14}O_6$
M 182,18 g/mol
bp 105 °C
mp 94-96 °C • flp >100 °C
Solubility: 2350 g/l ($H_2O$, 20 °C)
[50-70-4] • EC No. 200-061-5

**Type analysis:**

Assay (HPLC, dry substance). .....≥98 %
Water (KF). .....≤0,4 %
Reducing sugar.....≤0,2 %
Lead (Pb). .....≤0,00005 %
Nickel (Ni). .....≤0,0001 %

| | | | |
|---|---|---|---|
| **6213.1** | 1 kg | plastic | 24,65 € |
| Original pack 6 x 1 kg | | | 23,42/1 kg |
| **6213.2** | 5 kg | plastic | 68,70 € |
| **6213.3** | 10 kg | plastic | 124,60 € |

## Sorbitol MacConkey Agar

### Sorbitol MacConkey Agar

**for microbiology**

Selective and differential medium for detection of sorbitol-fermenting *E. coli* O157:H7.

Application: Use 51,5 g for 1 l agar.

MacConkey Agar with sorbitol, **SMAC Agar**

Storage temp.: +20 °C

WGK 1

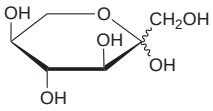
**Formulation:**

Gelatine peptone. ..... 20 g/l
Sorbitol. ..... 10 g/l
Sodium chloride. ..... 5 g/l
Bile salts No. 3. ..... 1,5 g/l
Neutral red. ..... 0,03 g/l
Crystal Violet. ..... 0,001 g/l
Agar. ..... 15 g/l
pH value. ..... 7,1 ±0,2

| | | | |
|---|---|---|---|
| **5778.1** | 500 g | plastic | 102,05 € |
| Original pack 6 x 500 g | | | 96,95/500 g |

For further information, please see page 1399

## L(-)-Sorbose



### L(-)-Sorbose

**≥98 %, for biochemistry**

$C_6H_{12}O_6$
M 180,16 g/mol
mp ~165 °C
Solubility: 550 g/l ($H_2O$, 20 °C)
[87-79-6] • EC No. 201-771-8

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in $H_2O$). ..... -45° to -41°

| | | | |
|---|---|---|---|
| **4028.2** | 25 g | plastic | 45,70 € |
| **4028.3** | 50 g | plastic | 78,40 € |
| **4028.1** | 100 g | plastic | 112,90 € |

## Soybean oil

### Soybean oil

**refined, extra pure**

Oleum Sojae
D ~0,92

**Type analysis:**

Appearance. ..... clear pale yellow liquid
Refractive index $n_D^{20}$. ..... 1,466-1,476
Density (20 °C). ..... 0,91-0,93
Free fatty acid. ..... ≤0,1 %
Peroxide value. ..... ≤5,0
Water. ..... ≤0,05 %
GC-fatty acid constituents:
C 16:0 Palmitic acid. ..... 8,0-13,5 %
C 18:0 Stearic acid. ..... 2,0-5,4 %
C 18:1 Oleic acid. ..... 17-30 %
C 18:2 Linoleic acid. ..... 48-59 %
C 18:3 Linolenic acid. ..... 4,5-11 %
Trans-isomer fatty acids. ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **3686.1** | 1 l | glass | 22,50 € |
| Original pack 6 x 1 l | | | 21,38/1 l |
| **3686.3** | 2,5 l | glass | 38,60 € |
| Original pack 4 x 2,5 l | | | 36,67/2,5 l |
| **3686.4** | 5 l | plastic | 57,95 € |
| Original pack 2 x 5 l | | | 55,05/5 l |
| **3686.2** | 10 l | plastic | 104,85 € |

## Soy Peptone Agar

▶ CASO Agar, granulated see p. 1816

## Soy peptone

▶ Peptone ex soya see p. 2138

## Soy Peptone Broth

▶ CASO Broth see p. 1817

## SPADNS

▶ 1,8-Dihydroxy-2-(4-sulfophenylazo)-naphthalene-3,6-disulfonic acid trisodium salt see p. 1877

## Span® 80

### Span® 80

**for synthesis**

Sorbitan monooleate
M 460 g/mol
D 1,0 • bp >100 °C
flp >149 °C
[1338-43-8] • EC No. 215-665-4
WGK 1

**Type analysis:**

Hydroxyl value. ..... 193-210 mg KOH/g
Acid value. ..... ≤8,0 mg KOH/g
Saponification value. ..... 145-160 mg KOH/g
Water ..... ≤1,5 %

| | | | |
|---|---|---|---|
| **9426.1** | 250 g | glass | 54,75 € |
| **9426.2** | 1 kg | glass | 170,95 € |
| Original pack 6 x 1 kg | | | 162,40/1 kg |

## Special Petroleum

▶ Petroleum benzine 50-70 see p. 2141

## Spectra/Gel™ Absorbent

### Spectra/Gel™ Absorbent

For concentration of dialysed proteins and microparticles.
mp 199 °C
Solubility: water-insoluble
[9033-79-8]
WGK 1

**Warning** H319

**Type analysis:**

Appearance. ..... granulated powder
Colour. ..... white
Density (20 °C). ..... 0,68 g/cm³
Steam pressure. ..... <10 mm Hg

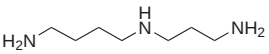
| | | | |
|---|---|---|---|
| **0115.1** | 500 g | plastic | 112,90 € |
| Original pack 6 x 500 g | | | 107,26/500 g |

For further information, please see page 1309

## Spermaceti

▶ Cetyl palmitate see p. 1823

## Spermidine



### Spermidine

**≥98 %, for biochemistry**

N-(3-Aminopropyl)-1,4-butanediamine
$C_7H_{19}N_3$
M 145,25 g/mol
bp 128-130 °C
mp 22-25 °C • flp 112 °C
Storage temp.: +4 °C
[124-20-9] • EC No. 204-689-0
UN No. 3259 • ADR 8 II • WGK 1

**Danger** H314

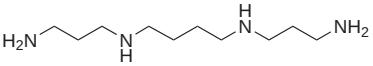
**Type analysis:**

Appearance. ..... colourless to yellowish liquid or white solid
Assay (titr.). ..... ≥98,0 %
Water (KF). ..... ≤20 %

| | | | |
|---|---|---|---|
| **7161.2** | 1 g | glass | 41,85 € |
| **7161.1** | 2,5 g | glass | 79,45 € |
| **7161.3** | 5 g | glass | 137,10 € |

For further information, please see page 1246

## Spermine



### Spermine

**≥99 %, for biochemistry**

Musculamine, Neuridine
$C_{10}H_{26}N_4$
M 202,35 g/mol
bp ~310 °C (dec.)
mp 55-60 °C • flp 110 °C
Storage temp.: +4 °C
[71-44-3] • EC No. 200-754-2
UN No. 3259 • ADR 8 II • WGK 1

**Danger** H314

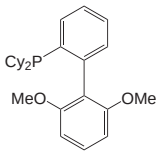
**Type analysis:**

Assay (GC). ..... ≥99,0 %
Water (KF). ..... ≤3,0 %

| | | | |
|---|---|---|---|
| **7162.2** | 1 g | glass | 36,45 € |
| **7162.1** | 2,5 g | glass | 78,40 € |
| **7162.3** | 5 g | glass | 124,60 € |

S

## SPhos




### SPhos

NEW

**≥98 %**
Phosphine ligand
2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl
$C_{26}H_{35}O_2P$
M 410,53 g/mol
mp 164-166° C
[657408-07-6]
WGK 1

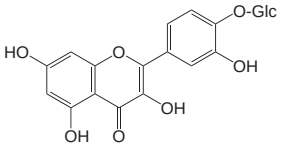
**Type analysis:**
Appearance. ..... white, cryst. powder
Assay (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **1911.1** | 1 g | glass | 25,70 € |
| **1911.2** | 5 g | glass | 96,65 € |

## Spinacene

▶ Squalene see p. 2292

## Spiraeoside




Quercetin-4'-glucoside
$C_{21}H_{20}O_{12}$
M 464,4 g/mol
mp 209-211 °C
Storage temp.: +4 °C
[20229-56-5]

**Warning** H302

### Spiraeoside

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Filipendula ulmaria*.

**Type analysis:**
Purity (HPLC). ..... >98 %

| | | | |
|---|---|---|---|
| **1216.1** | 20 mg | glass | 370,90 € |

### Spiraeoside

**ROTICHROM® ~CHR**

| | | | |
|---|---|---|---|
| **4564.1** | 10 mg | glass | 96,25 € |

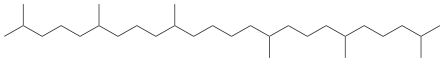
## Spirit

▶ Methylated spirit see p. 2072
▶ Ethanol absolut see p. 1910
▶ Rotisol® see p. 2232

## Spirits of wine

▶ Ethanol absolut see p. 1910
▶ Ethanol 96 % see p. 1911
▶ Ethanol 70 % see p. 1912

## Squalane



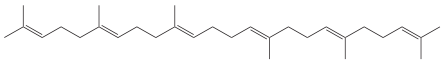
### Squalane

**≥98 %**
Perhydrosqualene, Cosbiol, Alkane C30
$C_{30}H_{62}$
M 422,83 g/mol
D 0,81 • bp 350 °C
mp -38 °C • flp 218 °C
[111-01-3] • EC No. 203-825-6

**Type analysis:**
Appearance. ..... clear, colourless, viscous liquid
Assay. ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **5339.1** | 100 ml | glass | 47,20 € |

## Squalene



Spinacene
$C_{30}H_{50}$
M 410,73 g/mol
D ~0,86 • bp 275 °C
mp -75 °C • flp ~200 °C
[111-02-4] • EC No. 203-826-1

### Squalene

**>98 %, for synthesis**

**Type analysis:**
Assay (GC, area %). ..... >98 %
Density (20 °C). ..... 0,855-0,880
Refractive index (20 °C). ..... 1,490-1,498
Peroxide value. ..... ≤5
Acid value. ..... ≤0,5 mg KOH/g

| | | | |
|---|---|---|---|
| **5341.1** | 100 ml | glass | 32,15 € |
| **5341.2** | 250 ml | glass | 73,00 € |
| **5341.3** | 500 ml | glass | 121,40 € |
| **5341.4** | 1 l | glass | 203,20 € |
| Original pack 6 x 1 l | | | 193,04/1 l |

### Squalene

**ROTICHROM® GC**
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**
Purity (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **3185.1** | 1 g | glass | 25,70 € |

## SSC buffer powder (pouch)

▶ Roti®fair 20x SSC see p. 2215

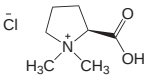
## 20 x SSC Ready-to-use solution

▶ Roti®-Stock 20x SSC see p. 2233

## SSPE buffer (tablets)

▶ Roti®fair SSPE see p. 2215

## Stachydrine hydrochloride



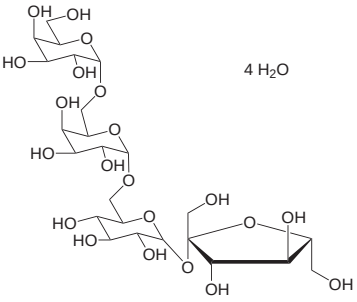

### Stachydrine hydrochloride

**ROTICHROM® ~CHR**
$C_7H_{13}NO_2 \cdot HCl$
M 179,65 g/mol
mp ~219 °C
[4136-37-2] • EC No. 223-957-8
WGK 1

**Warning** H332

| | | | |
|---|---|---|---|
| **9457.1** | 25 mg | glass | 267,70 € |

## Stachyose Hydrate




### Stachyose Hydrate

**>98 %**
Lupeose
$C_{24}H_{42}O_{21} \cdot x\ H_2O$
M 666,58 + x $H_2O$ g/mol
mp ~170 °C
[54261-98-2] • EC No. 207-427-3

**Type analysis:**
Appearance. ..... white, cryst. powder
Assay. ..... >98,0 %
Water (KF). ..... <11 %

| | | | |
|---|---|---|---|
| **9438.1** | 100 mg | glass | 81,60 € |

## Staining Solutions for Histology / Microscopy


| Art. No. | Description | Page |
|---|---|---|
| 1431 | Alcian blue 1 % in acetic acid 3 % | 1716 |
| CN00 | Carbol gentian violet solution | 1812 |
| A130 | Carbolic fuchsine solution | 1812 |
| 8275 | Elastica van Gieson staining kit | 1903 |
| X883 | Eosin Y solution 0,5 % in water | 1905 |
| 3139 | Eosin Y solution 1 % in methanol | 1905 |
| 3137 | Eosin Y solution 1 % in water | 1905 |
| HP46 | Ethidium bromide solution 0,5 % in dropper bottle | 1913 |
| T862 | Giemsa stock solution | 1951 |
| 3469 | Goldner's staining I | 1964 |
| 3470 | Goldner's staining II | 1964 |
| 3473 | Goldner's staining III | 1964 |
| CN02 | Gram's decolourising solution | 1964 |
| HP02 | Gram staining kit | 1964 |
| 9194 | H&E fast staining kit | 1970 |
| T865 | Hemalum solution acid acc. to Mayer | 1970 |
| CN03 | Hematoxylin solution acc. to Delafield | 1971 |
| CN04 | Hematoxylin solution acid acc. to Ehrlich | 1971 |
| T864 | Hematoxylin solution acc. to Gill II | 1971 |
| X903 | Hematoxylin solution acc. to Harris | 1971 |
| X906 | Hematoxylin solution A acc. to Weigert | 1971 |
| X907 | Hematoxylin solution B acc. to Weigert | 1971 |
| N052 | Iodine-potassium iodide solution acc. to Lugol | 2006 |
| 3097 | Lactophenol blue solution | 2026 |
| AE64 | LOEFFLER's methylene blue solution | 2042 |
| 3459 | Masson-Goldner's trichrome staining kit | 2059 |
| T863 | May-Gruenwald's solution | 2060 |
| 1433 | Methylene blue solution 0.1 %, aqueous | 2074 |
| 3463 | Neisser's solution I | 2090 |
| 3464 | Neisser's solution II | 2090 |
| 3466 | Neisser's solution III | 2090 |
| N069 | Nuclear fast red aluminium sulphate solution | 2106 |
| 6487 | Panoptical fast staining kit | 2129 |
| T867 | Papanicolaou-orange solution 2a (OG 6) | 2130 |
| AE62 | Papanicolaou solution 2b Orange II solution | 2130 |
| AE63 | Papanicolaou polychrome solution 3a (EA31) | 2130 |
| T866 | Papanicolaou polychrome solution 3b (EA 50) | 2130 |
| 9195 | PAP fast staining kit | 2130 |
| HP01 | PAS staining kit | 2131 |
| HP00 | Periodic acid solution 1 % | 2140 |
| X877 | Resorcinol-Fuchsine-solution acc. to Weigert | 2196 |
| CN01 | Safranin solution | 2238 |
| X900 | Schiff's reagent | 2243 |
| 3925 | Van Gieson's Solution | 2369 |
| 9193 | Van Gieson trichrome staining kit | 2370 |
| 9192 | Weigert's iron hematoxylin staining kit | 2377 |
| CN05 | Wright's eosin methylene blue solution | 2378 |
| 8276 | Ziehl-Neelsen staining kit | 2386 |
| 6395 | Zinc iodine chloride solution | 2387 |


## Standard Count Agar

### Standard Count Agar

**for microbiology**

For enumeration of aerobic bacteria in milk, water and wastewaters.

Application: Use 25 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

**Formulation:**

| | |
|---|---|
| Meat extract. | 3 g/l |
| Casein peptone. | 5 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Agar. | 12 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **AE91.1** | 500 g | plastic | 98,80 € |
| Original pack 6 x 500 g | | | 93,86/500 g |

For further information, please see page 1399

## Standard Nutrient Agar I

### Standard Nutrient Agar I

**for microbiology**

For cultivation and enumeration of fastidious bacteria. Also high-base for preparing special culture agars.

Application: Use 37 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

**Formulation:**

| | |
|---|---|
| Peptone. | 15 g/l |
| Yeast extract. | 3 g/l |
| Sodium chloride (NaCl). | 6 g/l |
| Glucose. | 1 g/l |
| Agar. | 12 g/l |
| pH value. | 7,5 ±0,2 |

| | | | |
|---|---|---|---|
| **AE93.1** | 500 g | plastic | 80,55 € |
| Original pack 6 x 500 g | | | 76,52/500 g |
| **AE93.2** | 1 kg | plastic | 139,75 € |
| Original pack 6 x 1 kg | | | 132,76/1 kg |

For further information, please see page 1399

## Standard Nutrient Agar I, granulated

### Standard Nutrient Agar I, granulated

NEW

**granulated, for microbiology**

For cultivation and enumeration of fastidious bacteria. Also base for preparing special culture agars.

Application: Use 37 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

**Formulation:**

| | |
|---|---|
| Peptone. | 15 g/l |
| Yeast extract. | 3 g/l |
| Sodium chloride (NaCl). | 6 g/l |
| Glucose. | 1 g/l |
| Agar. | 12 g/l |
| pH value. | 7,5 ±0,2 |

| | | | |
|---|---|---|---|
| **1524.1** | 500 g | plastic | 107,50 € |
| Original pack 6 x 500 g | | | 102,13/500 g |

For further information, please see page 1405

## Standard Nutrient Broth I

### Standard Nutrient Broth I

**for microbiology**

For cultivation and enumeration of fastidious bacteria. Also high-base for preparing special culture media.

Application: Use 25 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

**Formulation:**

| | |
|---|---|
| Peptone. | 15 g/l |
| Yeast extract. | 3 g/l |
| Sodium chloride (NaCl). | 6 g/l |
| Glucose. | 1 g/l |
| pH value. | 7,5 ±0,2 |

| | | | |
|---|---|---|---|
| **AE92.1** | 500 g | plastic | 77,30 € |
| Original pack 6 x 500 g | | | 73,44/500 g |
| **AE92.2** | 1 kg | plastic | 138,70 € |
| Original pack 6 x 1 kg | | | 131,77/1 kg |

For further information, please see page 1399

## Standard Nutrient Broth I, granulated

### Standard Nutrient Broth I, granulated

NEW

**granulated, for microbiology**

For cultivation and enumeration of fastidious bacteria. Also base for preparing special culture media.

Application: Use 25 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

**Formulation:**

| | |
|---|---|
| Peptone. | 15 g/l |
| Yeast extract. | 3 g/l |
| Sodium chloride (NaCl). | 6 g/l |
| Glucose. | 1 g/l |
| pH value. | 7,5 ±0,2 |

| | | | |
|---|---|---|---|
| **1533.1** | 500 g | plastic | 104,30 € |
| Original pack 6 x 500 g | | | 99,09/500 g |

For further information, please see page 1405

## Standards for AAS (Atom Absorption Spectroscopy): Element Standards 1000 mg/l, ready to use

### Aluminium AAS Standard Solution

**1000 mg/l Al**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Al) as $Al(NO_3)_3$ in 2 % $HNO_3$. ..... 1000 mg/l ±0,2 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2212.1** | 100 ml | HDPE | 18,20 € |
| **2212.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

### Antimony AAS Standard Solution

**1000 mg/l Sb**

UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290-H315-H319-H335

**Type analysis:**

c (Sb) as Sb in 20 % HCl. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2223.1** | 100 ml | HDPE | 18,20 € |
| **2223.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

### Arsenic AAS Standard Solution

**1000 mg/l As**

UN No. 3264 • ADR 8 III • WGK 3

**Danger** H290-H315-H319-H350

**Type analysis:**

c (As) as $As_2O_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2224.1** | 100 ml | HDPE | 18,20 € |
| **2224.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

### Barium AAS Standard Solution

**1000 mg/l Ba**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Ba) as $Ba(NO_3)_2$ in 1 % $HNO_3$. .... 1000 mg/l ±0,2 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2225.1** | 100 ml | HDPE | 18,20 € |
| **2225.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

### Beryllium AAS Standard Solution

**1000 mg/l Be**

UN No. 2922 • ADR 8 (6.1) III • WGK 2

**Danger**

H290-H302-H311-H315-H318-H350i-EUH208

**Type analysis:**

c (Be) as BeO in 2 % $HNO_3$ / 0,5 % HF. .....
.....1000 mg/l ±0,2 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2226.1** | 100 ml | HDPE | 87,00 € |
| **2226.2** | 500 ml | HDPE | 165,05 € |

For further information, please see page 1658

### Bismuth AAS Standard Solution

**1000 mg/l Bi**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Bi) as Bi in 3 % $HNO_3$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2227.1** | 100 ml | HDPE | 18,20 € |
| **2227.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

### Boron AAS Standard Solution

**1000 mg/l B**

**Type analysis:**

c (B) as $H_3BO_3$ in $H_2O$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2237.1** | 100 ml | HDPE | 18,20 € |
| **2237.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

### Cadmium AAS Standard Solution

**1000 mg/l Cd**

UN No. 3264 • ADR 8 III • WGK 2

**Warning** H290-H315-H319

**Type analysis:**

c (Cd) as Cd in 2 % $HNO_3$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2238.1** | 100 ml | HDPE | 18,20 € |
| **2238.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

### Caesium AAS Standard Solution

**1000 mg/l Cs**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Cs) as $CsNO_3$ in 2 % $HNO_3$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2239.1** | 100 ml | HDPE | 31,10 € |
| **2239.2** | 500 ml | HDPE | 48,95 € |

For further information, please see page 1658

### Calcium AAS Standard Solution

**1000 mg/l Ca**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Ca) as $CaCO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2240.1** | 100 ml | HDPE | 18,20 € |
| **2240.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

### Chromium AAS Standard Solution

**1000 mg/l Cr**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Cr) as $Cr(NO_3)_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2250.1** | 100 ml | HDPE | 18,20 € |
| **2250.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

### Cobalt AAS Standard Solution

**1000 mg/l Co**

UN No. 3264 • ADR 8 III • WGK 2

**Danger**

H290-H315-H319-H350i-EUH208

**Type analysis:**

c (Co) as Co in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2251.1** | 100 ml | HDPE | 18,20 € |
| **2251.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

### Copper AAS Standard Solution

**1000 mg/l Cu**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319-H412

**Type analysis:**

c (Cu) as Cu in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2329.1** | 100 ml | HDPE | 18,20 € |
| **2329.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

### Gold AAS Standard Solution

**1000 mg/l Au**

UN No. 1789 • ADR 8 III

**Warning** H290-EUH208

**Type analysis:**

c (Au) as Au in 2 % HCl. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2258.1** | 100 ml | glass | 76,25 € |
| **2258.2** | 500 ml | glass | 209,65 € |

For further information, please see page 1658

## Indium AAS Standard Solution

**1000 mg/l In**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (In) as In in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2284.1** | 100 ml | HDPE | 36,45 € |

For further information, please see page 1658

## Iron AAS Standard Solution

**1000 mg/l Fe**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Fe) as Fe in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2252.1** | 100 ml | HDPE | 18,20 € |
| **2252.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Lead AAS Standard Solution

**1000 mg/l Pb**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Pb) as Pb in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2228.1** | 100 ml | HDPE | 18,20 € |
| **2228.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Lithium AAS Standard Solution

**1000 mg/l Li**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Li) as $Li_2CO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2332.1** | 100 ml | HDPE | 18,20 € |
| **2332.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Magnesium AAS Standard Solution

**1000 mg/l Mg**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Mg) as Mg in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2333.1** | 100 ml | HDPE | 18,20 € |
| **2333.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Manganese AAS Standard Solution

**1000 mg/l Mn**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Mn) as Mn in 2 % $HNO_3$.....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2334.1** | 100 ml | HDPE | 18,20 € |
| **2334.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Mercury AAS Standard Solution

**1000 mg/l Hg**

UN No. 2031 • ADR 8 II • WGK 2

**Danger** H290-H314-H373-EUH071

**Type analysis:**

c (Hg) as Hg in 10 % $HNO_3$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2346.1** | 100 ml | glass | 18,20 € |
| **2346.2** | 500 ml | glass | 28,50 € |

For further information, please see page 1658

## Molybdenum AAS Standard Solution

**1000 mg/l Mo**

WGK 1

**Danger** H315-H318

**Type analysis:**

c (Mo) as $(NH_4)_6Mo_7O_{24}$ in 4 % $NH_3$.....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2335.1** | 100 ml | HDPE | 18,20 € |
| **2335.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Nickel AAS Standard Solution

**1000 mg/l Ni**

UN No. 3264 • ADR 8 III • WGK 2

**Danger** H290-H315-H317-H319-H350i-H360D-H373-H412

**Type analysis:**

c (Ni) as Ni in 2 % $HNO_3$.....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2339.1** | 100 ml | HDPE | 18,20 € |
| **2339.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Palladium AAS Standard Solution

**1000 mg/l Pd**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Pd) as Pd in 3 % $HNO_3$.....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2340.1** | 100 ml | glass | 120,95 € |

For further information, please see page 1658

## Phosphor AAS Standard Solution

**1000 mg/l P**

**Type analysis:**

c (P) as $H_3PO_4$ in $H_2O$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2599.1** | 100 ml | HDPE | 18,20 € |
| **2599.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Platinum AAS Standard Solution

**1000 mg/l Pt**

UN No. 1789 • ADR 8 III • WGK 1

**Warning**

H290-H315-H319-H335-EUH208

**Type analysis:**

c (Pt) as Pt in 10 % HCl. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2341.1** | 100 ml | glass | 131,70 € |
| **2341.2** | 500 ml | glass | 471,95 € |

For further information, please see page 1658

## Potassium AAS Standard Solution

**1000 mg/l K**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (K) as $KNO_3$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2327.1** | 100 ml | HDPE | 18,20 € |
| **2327.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Scandium AAS Standard Solution

**1000 mg/l Sc**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Sc) as $Sc_2O_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2347.1** | 100 ml | HDPE | 77,30 € |
| **2347.2** | 500 ml | HDPE | 231,15 € |

For further information, please see page 1658

## Selenium AAS Standard Solution

**1000 mg/l Se**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Se) as Se in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2348.1** | 100 ml | HDPE | 18,20 € |
| **2348.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Silicon AAS Standard Solution

**1000 mg/l Si**

WGK 1

**Type analysis:**

c (Si) as $(NH_4)_2SiF_6$ in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2350.1** | 100 ml | HDPE | 18,20 € |
| **2350.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Silicon AAS Standard Solution

**1000 mg/l Si**

UN No. 1824 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Si) as $Na_2SiO_3$ in 0,5 % NaOH. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2351.1** | 100 ml | HDPE | 18,20 € |

For further information, please see page 1658

## Silver AAS Standard Solution

**1000 mg/l Ag**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Ag) as $AgNO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2349.1** | 100 ml | HDPE | 18,20 € |
| **2349.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Sodium AAS Standard Solution

**1000 mg/l Na**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Na) as $Na_2CO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2337.1** | 100 ml | HDPE | 18,20 € |
| **2337.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Strontium AAS Standard Solution

**1000 mg/l Sr**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Sr) as $Sr(NO_3)_2$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2352.1** | 100 ml | HDPE | 18,20 € |
| **2352.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Tellurium AAS Standard Solution

**1000 mg/l Te**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Te) as Te in 2 % $HNO_3$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2353.1** | 100 ml | HDPE | 26,35 € |
| **2353.2** | 500 ml | HDPE | 47,20 € |

For further information, please see page 1658

## Thallium AAS Standard Solution

**1000 mg/l Tl**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Tl) as $TlNO_3$ in 2 % $HNO_3$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2354.1** | 100 ml | HDPE | 26,35 € |
| **2354.2** | 500 ml | HDPE | 47,20 € |

For further information, please see page 1658

## Tin AAS Standard Solution

**1000 mg/l Sn**

UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290-H315-H319-H335

**Type analysis:**

c (Sn) as Sn in 10 % HCl. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2384.1** | 100 ml | HDPE | 18,20 € |
| **2384.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Titanium AAS Standard Solution

**1000 mg/l Ti**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Ti) as Ti in 2 % $HNO_3$/0,1 % HF. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2355.1** | 100 ml | HDPE | 18,20 € |
| **2355.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Tungsten AAS Standard Solution

**1000 mg/l W**

WGK 1

**Danger** H315-H318

**Type analysis:**

c (W) as $WO_3$ in 4 % $NH_3$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2361.1** | 100 ml | HDPE | 26,80 € |
| **2361.2** | 500 ml | HDPE | 47,20 € |

For further information, please see page 1658

## Vanadium AAS Standard Solution

**1000 mg/l V**

UN No. 3264 • ADR 8 III • WGK 2

**Warning** H290-H315-H319

**Type analysis:**

c (V) as $NH_4VO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2360.1** | 100 ml | HDPE | 18,20 € |
| **2360.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Yttrium AAS Standard Solution

**1000 mg/l Y**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Y) as $Y_2O_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2371.1** | 100 ml | HDPE | 26,80 € |
| **2371.2** | 500 ml | HDPE | 47,20 € |

For further information, please see page 1658

## Zinc AAS Standard Solution

**1000 mg/l Zn**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Zn) as Zn in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2383.1** | 100 ml | HDPE | 18,20 € |
| **2383.2** | 500 ml | HDPE | 28,50 € |

For further information, please see page 1658

## Zirconium AAS Standard Solution

**1000 mg/l Zr**

UN No. 2922 • ADR 8 (6.1) III • WGK 1

**Danger** H290-H302-H311-H315-H319

**Type analysis:**

c (Zr) as $ZrOCl_2$ in 5 % HCl/0,5 % HF..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2396.1** | 100 ml | HDPE | 26,80 € |
| **2396.2** | 500 ml | HDPE | 47,20 € |

For further information, please see page 1658

## Standards for GF-AAS (Graphite Furnace Atom Absorption Spectroscopy): Multi-Element Standards

### GF AAS Multi-Element Standard Solution XVIII

**16 elements in 5 % nitric acid**

UN No. 3264 • ADR 8 II • WGK 1

**Danger** H290-H314-H317-EUH071

**Type analysis:**

Ag (Silver)..... 10 mg/l
Al (Aluminium)..... 100 mg/l
As (Arsenic)..... 100 mg/l
Ba (Barium)..... 50 mg/l
Be (Beryllium)..... 5 mg/l
Cd (Cadmium)..... 5 mg/l
Co (Cobalt)..... 50 mg/l
Cr (Chrom)..... 20 mg/l
Cu (Copper)..... 50 mg/l
Fe (Iron)..... 20 mg/l
Mn (Manganese)..... 20 mg/l
Ni (Nickel)..... 50 mg/l
Pb (Lead)..... 100 mg/l
Sb (Antimony)..... 100 mg/l
Se (Selenium)..... 100 mg/l
Tl (Thallium)..... 100 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **9778.1** | 100 ml | HDPE | 177,40 € |

For further information, please see page 1659

## Standards for ICP-OES: (Inductively Coupled Spectroscopy) Element Standards 1000 mg/l, ready to use

### Aluminium ICP Standard Solution

**1000 mg/l Al**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Al) as $Al(NO_3)_3$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2397.1** | 100 ml | HDPE | 50,00 € |
| **2397.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1660

### Antimony ICP Standard Solution

**1000 mg/l Sb**

UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290-H315-H319-H335

**Type analysis:**

c (Sb) as Sb in 20 % HCl..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2398.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1660

### Arsenic ICP Standard Solution

**1000 mg/l As**

UN No. 3264 • ADR 8 III • WGK 3

**Danger** H290-H315-H319-H350

**Type analysis:**

c (As) as $H_3AsO_4$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2399.2** | 30 ml | HDPE | 36,45 € |
| **2399.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1660

### Barium ICP Standard Solution

**1000 mg/l Ba**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Ba) as $Ba(NO_3)_2$ in 1 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2400.1** | 100 ml | HDPE | 50,00 € |
| **2400.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1660

### Beryllium ICP Standard Solution

**1000 mg/l Be**

UN No. 2922 • ADR 8 (6.1) III • WGK 2

**Danger**

H290-H302-H311-H315-H318-H350i-EUH208

**Type analysis:**

c (Be) as $Be_4O(C_2H_3O_2)_6$ in 2 % $HNO_3$/0,5 % HF..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2401.1** | 100 ml | HDPE | 89,80 € |

For further information, please see page 1660

### Bismuth ICP Standard Solution

**1000 mg/l Bi**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Bi) as Bi in 3 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2402.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1660

### Boron ICP Standard Solution

**1000 mg/l B**

**Type analysis:**

c (B) as $H_3BO_3$ in $H_2O$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2404.1** | 100 ml | HDPE | 50,00 € |
| **2404.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1660

### Cadmium ICP Standard Solution

**1000 mg/l Cd**

UN No. 3264 • ADR 8 III • WGK 2

**Warning** H290-H315-H319

**Type analysis:**

c (Cd) as Cd in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2405.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1660

### Caesium ICP Standard Solution

**1000 mg/l Cs**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Cs) as $CsNO_3$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2406.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1660

### Calcium ICP Standard Solution

**1000 mg/l Ca**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Ca) as $CaCO_3$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2407.1** | 100 ml | HDPE | 50,00 € |
| **2407.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1660

### Cerium ICP Standard Solution

**1000 mg/l Ce**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Ce) as $Ce(NO_3)_3$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2408.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1660

### Chromium ICP Standard Solution

**1000 mg/l Cr**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Cr) as $Cr(NO_3)_3$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2409.1** | 100 ml | HDPE | 50,00 € |
| **2409.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1660

## Cobalt ICP Standard Solution

**1000 mg/l Co**

UN No. 3264 • ADR 8 III • WGK 2

**Danger**

H290-H315-H319-H350i-EUH208

**Type analysis:**

c (Co) as Co in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2410.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1660

## Copper ICP Standard Solution

**1000 mg/l Cu**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319-H412

**Type analysis:**

c (Cu) as Cu in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2426.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1660

## Dysprosium ICP Standard Solution

**1000 mg/l Dy**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Dy) as $Dy_2O_3$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2411.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1660

## Erbium ICP Standard Solution

**1000 mg/l Er**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Er) as $Er_2O_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2413.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1660

## Europium ICP Standard Solution

**1000 mg/l Eu**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Eu) as $Eu_2O_3$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2414.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1660

## Gadolinium ICP Standard Solution

**1000 mg/l Gd**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Gd) as $Gd_2O_3$ in 2 % $HNO_3$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2416.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1660

## Gallium ICP Standard Solution

**1000 mg/l Ga**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Ga) as Ga in 2 % $HNO_3$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2418.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1660

## Germanium ICP Standard Solution

**1000 mg/l Ge**

UN No. 2922 • ADR 8 (6.1) III • WGK 1

**Danger** H290-H302-H311-H315-H319

**Type analysis:**

c (Ge) as Ge in 2 % $HNO_3$/0,5 % HF. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2419.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1660

## Gold ICP Standard Solution

**1000 mg/l Au**

UN No. 1789 • ADR 8 III

**Warning** H290-EUH208

**Type analysis:**

c (Au) as Au in 2 % HCl. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2420.1** | 100 ml | LDPE | 155,90 € |

For further information, please see page 1660

## Hafnium ICP Standard Solution

**1000 mg/l Hf**

UN No. 2922 • ADR 8 (6.1) III • WGK 1

**Danger** H290-H302-H311

**Type analysis:**

c (Hf) as $HfO_2$ in 2 % HCl/0,5 % HF.....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2421.1** | 100 ml | HDPE | 165,05 € |

For further information, please see page 1660

## Holmium ICP Standard Solution

**1000 mg/l Ho**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Ho) as $Ho_2O_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2422.1** | 100 ml | HDPE | 68,30 € |

For further information, please see page 1660

## Indium ICP Standard Solution

**1000 mg/l In**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (In) as In in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2423.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1660

## Iridium ICP Standard Solution

**1000 mg/l Ir**

UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290-H315-H319-H335

**Type analysis:**

c (Ir) as $IrCl_3$ in 10 % HCl..... 1000 mg/l

| | | | |
|---|---|---|---|
| **2424.1** | 100 ml | LDPE | 198,90 € |

For further information, please see page 1660

## Iron ICP Standard Solution

**1000 mg/l Fe**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Fe) as Fe $(NO_3)_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2412.1** | 100 ml | HDPE | 50,00 € |
| **2412.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1660

## Lanthanum ICP Standard Solution

**1000 mg/l La**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (La) as $La_2O_3$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2427.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1660

## Lead ICP Standard Solution

**1000 mg/l Pb**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Pb) as $Pb(NO_3)_2$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2403.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1660

## Lithium ICP Standard Solution

**1000 mg/l Li**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Li) as $Li_2CO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2428.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1660

## Lutetium ICP Standard Solution

**1000 mg/l Lu**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Lu) as $Lu_2O_3$ in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2429.1** | 100 ml | HDPE | 142,90 € |

For further information, please see page 1660

## Magnesium ICP Standard Solution

**1000 mg/l Mg**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Mg) as Mg in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2430.1** | 100 ml | HDPE | 50,00 € |
| **2430.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1660

## Manganese ICP Standard Solution

**1000 mg/l Mn**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Mn) as Mn in 2 % $HNO_3$..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2437.1** | 100 ml | HDPE | 50,00 € |
| **2437.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1660

## Mercury ICP Standard Solution

**1000 mg/l Hg**

UN No. 2031 • ADR 8 II • WGK 2

**Danger** H290-H314-H373-EUH071

**Type analysis:**

c (Hg) as HgO in 10 % $HNO_3$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2453.1** | 100 ml | LDPE | 50,00 € |

For further information, please see page 1661

## Molybdenum ICP Standard Solution

**1000 mg/l Mo**

WGK 1

**Danger** H315-H318

**Type analysis:**

c (Mo) as $MoO_3$ in 4 % $NH_3$. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2438.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Neodymium ICP Standard Solution

**1000 mg/l Nd**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Nd) as $Nd_2O_3$ in 2 % $HNO_3$.....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2443.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1661

## Nickel ICP Standard Solution

**1000 mg/l Ni**

UN No. 3264 • ADR 8 III • WGK 2

**Danger** H290-H315-H317-H319-H350i-H360D-H373-H412

**Type analysis:**

c (Ni) as Ni in 2 % $HNO_3$.....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2444.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Niobium ICP Standard Solution

**1000 mg/l Nb**

UN No. 2922 • ADR 8 (6.1) III • WGK 1

**Danger** H290-H315-H319-H302-H311

**Type analysis:**

c (Nb) as Nb in 2 % $HNO_3$/0,5 % HF. .....1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2445.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1661

## Osmium ICP Standard Solution

**1000 mg/l Os**

UN No. 1789 • ADR 8 III

**Warning** H290

**Type analysis:**

c (Os) as $OsCl_3$ in 2 % HCl..... 1000 mg/l

| | | | |
|---|---|---|---|
| **2446.2** | 30 ml | HDPE | 154,30 € |
| **2446.1** | 100 ml | HDPE | 284,90 € |

For further information, please see page 1661

## Palladium ICP Standard Solution

**1000 mg/l Pd**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Pd) as Pd in 3 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2447.1** | 100 ml | LDPE | 160,20 € |

For further information, please see page 1661

## Phosphorus ICP Standard Solution

**1000 mg/l P**

**Type analysis:**

c (P) as $NH_4H_2PO_4$ in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2451.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Platinum ICP Standard Solution

**1000 mg/l Pt**

UN No. 1789 • ADR 8 III • WGK 1

**Warning**

H290-H315-H319-H335-EUH208

**Type analysis:**

c (Pt) as Pt in 10 % HCl. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2448.1** | 100 ml | LDPE | 193,50 € |

For further information, please see page 1661

## Potassium ICP Standard Solution

**1000 mg/l K**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (K) as $KNO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2425.1** | 100 ml | HDPE | 50,00 € |
| **2425.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1661

## Praseodymium ICP Standard Solution

**1000 mg/l Pr**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Pr) as $Pr_6O_{11}$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2452.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1661

## Rhenium ICP Standard Solution

**1000 mg/l Re**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Re) as Re in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2454.1** | 100 ml | HDPE | 120,95 € |

For further information, please see page 1661

## Rhodium ICP Standard Solution

**1000 mg/l Rh**

UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**

c (Rh) as $RhCl_3$ in 5 % HCl. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2455.2** | 30 ml | HDPE | 235,45 € |
| **2455.1** | 100 ml | LDPE | 396,70 € |

For further information, please see page 1661

## Rubidium ICP Standard Solution

**1000 mg/l Rb**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Rb) as $RbNO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2456.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Ruthenium ICP Standard Solution

**1000 mg/l Ru**

UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**

c (Ru) as $RuCl_3$ in 5 % HCl. ..... 1000 mg/l

| | | | |
|---|---|---|---|
| **2457.1** | 100 ml | LDPE | 204,25 € |

For further information, please see page 1661

## Samarium ICP Standard Solution

**1000 mg/l Sm**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Sm) as $Sm_2O_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2458.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1661

## Scandium ICP Standard Solution

**1000 mg/l Sc**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Sc) as $Sc_2O_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2459.1** | 100 ml | HDPE | 105,25 € |

For further information, please see page 1661

## Selenium ICP Standard Solution

**1000 mg/l Se**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Se) as Se in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2461.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Silicon ICP Standard Solution

**1000 mg/l Si**

WGK 1

**Type analysis:**

c (Si) as $(NH_4)_2SiF_6$ in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2469.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Silver ICP Standard Solution

**1000 mg/l Ag**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Ag) as $AgNO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2468.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Sodium ICP Standard Solution

**1000 mg/l Na**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Na) as $NaNO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2439.1** | 100 ml | HDPE | 50,00 € |
| **2439.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1661

## Strontium ICP Standard Solution

**1000 mg/l Sr**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Sr) as $Sr(NO_3)_2$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2470.1** | 100 ml | HDPE | 50,00 € |
| **2470.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1661

## Sulphur ICP Standard Solution

**1000 mg/l S**

**Type analysis:**

c (S) as $(NH_4)_2SO_4$ in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2460.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Tantalum ICP Standard Solution

**1000 mg/l Ta**

UN No. 2922 • ADR 8 (6.1) III • WGK 2

**Danger** H290-H302-H311-H319-H315

**Type analysis:**

c (Ta) as Ta in 1 % $HNO_3$/0,5 % HF. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2471.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1661

## Tellurium ICP Standard Solution

**1000 mg/l Te**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Te) as Te in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2472.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1661

## Terbium ICP Standard Solution

**1000 mg/l Tb**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Tb) as $Tb_4O_7$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2476.1** | 100 ml | HDPE | 105,25 € |

For further information, please see page 1661

## Thallium ICP Standard Solution

**1000 mg/l Tl**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Tl) as $TlNO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2477.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Thulium ICP Standard Solution

**1000 mg/l Tm**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Tm) as $Tm_2O_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2478.1** | 100 ml | HDPE | 131,70 € |

For further information, please see page 1661

## Tin ICP Standard Solution

**1000 mg/l Sn**

UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290-H335-H315-H319

**Type analysis:**

c (Sn) as SnO in 10 % HCl. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2486.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Titanium ICP Standard Solution

**1000 mg/l Ti**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Ti) as $(NH_4)_2TiF_6$ in 2 % $HNO_3$/0,1 % HF. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2479.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Tungsten ICP Standard Solution

**1000 mg/l W**

WGK 1

**Danger** H315-H318

**Type analysis:**

c (W) as $WO_3$ in 4 % $NH_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2482.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1661

## Vanadium ICP Standard Solution

**1000 mg/l V**

UN No. 3264 • ADR 8 III • WGK 2

**Warning** H290-H315-H319

**Type analysis:**

c (V) as $NH_4VO_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2480.1** | 100 ml | HDPE | 50,00 € |

For further information, please see page 1661

## Ytterbium ICP Standard Solution

**1000 mg/l Yb**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Yb) as $Yb_2O_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2483.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1661

## Yttrium ICP Standard Solution

**1000 mg/l Y**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Y) as $Y_2O_3$ in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2484.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1661

## Zinc ICP Standard Solution

**1000 mg/l Zn**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Zn) as Zn in 2 % $HNO_3$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2485.1** | 100 ml | HDPE | 53,25 € |
| **2485.2** | 500 ml | HDPE | 109,55 € |

For further information, please see page 1661

## Zirconium ICP Standard Solution

**1000 mg/l Zr**

UN No. 2922 • ADR 8 (6.1) III • WGK 1

**Danger** H290-H302-H311-H315-H319

**Type analysis:**

c (Zr) as $ZrOCl_2$ in 5 % HCl/0,5 % HF. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2487.1** | 100 ml | HDPE | 53,25 € |

For further information, please see page 1661

## Standards for ICP-OES: (Inductively Coupled Spectroscopy) Element Standards 10000 mg/l, ready to use

## Aluminium ICP Standard Solution

**10000 mg/l Al**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Al) as $Al(NO_3)_3$ in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2488.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1660

## Antimony ICP Standard Solution

**10000 mg/l Sb**

UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290-H315-H319-H335

**Type analysis:**

c (Sb) as Sb in 20 % HCl. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2489.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1660

## Arsenic ICP Standard Solution

**10000 mg/l As**

UN No. 3264 • ADR 8 III • WGK 3

**Danger** H290-H315-H319-H350-H412

**Type analysis:**

c (As) as $H_3AsO_4$ in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2491.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1660

## Barium ICP Standard Solution

**10000 mg/l Ba**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Ba) as $Ba(NO_3)_2$ in 1 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2492.1** | 100 ml | HDPE | 89,15 € |
| **2492.2** | 500 ml | HDPE | 196,20 € |

For further information, please see page 1660

## Beryllium ICP Standard Solution

**10000 mg/l Be**

UN No. 2922 • ADR 8 (6.1) II • WGK 1

**Danger** H290-H302+H332-H311-H314-H317-H350i-H373-EUH071

**Type analysis:**

c (Be) as BeO in 5 % $HNO_3$/1 % HF..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2496.1** | 100 ml | HDPE | 332,20 € |

For further information, please see page 1660

## Bismuth ICP Standard Solution

**10000 mg/l Bi**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Bi) as Bi in 3 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2497.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1660

## Boron ICP Standard Solution

**10000 mg/l B**

WGK 1

**Danger** H360FD

**Type analysis:**

c (B) as $H_3BO_3$ in $H_2O$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2500.1** | 100 ml | HDPE | 89,15 € |
| **2500.2** | 500 ml | HDPE | 196,20 € |

For further information, please see page 1660

## Cadmium ICP Standard Solution

**10000 mg/l Cd**

UN No. 3264 • ADR 8 III • WGK 2

**Warning** H290-H315-H319-H412

**Type analysis:**

c (Cd) as $Cd(NO_3)_2$ in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2501.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1660

## Caesium ICP Standard Solution

**10000 mg/l Cs**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Cs) as $CsNO_3$ in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2502.1** | 100 ml | HDPE | 93,45 € |

For further information, please see page 1660

## Calcium ICP Standard Solution

**10000 mg/l Ca**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Ca) as $CaCO_3$ in 2 % $HNO_3$.....10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2503.1** | 100 ml | HDPE | 89,15 € |
| **2503.2** | 500 ml | HDPE | 196,20 € |

For further information, please see page 1660

## Cerium ICP Standard Solution

**10000 mg/l Ce**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Ce) as $Ce(NO_3)_3$ in 3 % $HNO_3$.....10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2504.1** | 100 ml | HDPE | 98,40 € |

For further information, please see page 1660

## Chromium ICP Standard Solution

**10000 mg/l Cr**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Cr) as $Cr(NO_3)_3$ in 3 % $HNO_3$. .....10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2505.1** | 100 ml | HDPE | 89,15 € |
| **2505.2** | 500 ml | HDPE | 196,20 € |

For further information, please see page 1660

## Cobalt ICP Standard Solution

**10000 mg/l Co**

UN No. 2031 • ADR 8 II • WGK 3

**Danger** H290-H315-H318-H350i-H360F-H412-EUH208

**Type analysis:**

c (Co) as Co in 3 % $HNO_3$. .....10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2506.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1660

## Copper ICP Standard Solution

**10000 mg/l Cu**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318-H411

**Type analysis:**

c (Cu) as Cu in 3 % $HNO_3$. .....10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2520.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1660

## Dysprosium ICP Standard Solution

**10000 mg/l Dy**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Dy) as $Dy_2O_3$ in 3 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2507.1** | 100 ml | HDPE | 103,10 € |

For further information, please see page 1660

## Erbium ICP Standard Solution

**10000 mg/l Er**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Er) as $Er_2O_3$ in 3 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2509.1** | 100 ml | HDPE | 98,40 € |

For further information, please see page 1660

## Europium ICP Standard Solution

**10000 mg/l Eu**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Eu) as $Eu_2O_3$ in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2510.1** | 100 ml | HDPE | 117,20 € |

For further information, please see page 1660

## Gadolinium ICP Standard Solution

**10000 mg/l Gd**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Gd) as $Gd_2O_3$ in 3 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2511.1** | 100 ml | HDPE | 105,90 € |

For further information, please see page 1660

## Gallium ICP Standard Solution

**10000 mg/l Ga**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Ga) as Ga in 3 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2512.1** | 100 ml | HDPE | 105,90 € |

For further information, please see page 1660

## Germanium ICP Standard Solution

**10000 mg/l Ge**

UN No. 2922 • ADR 8 (6.1) III • WGK 1

**Danger** H290-H302-H311-H315-H319

**Type analysis:**

c (Ge) as Ge in 2 % $HNO_3$/0,5 % HF..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2513.1** | 100 ml | HDPE | 117,20 € |

For further information, please see page 1660

## Gold ICP Standard Solution

**10000 mg/l Au**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H317-H315-H319

**Type analysis:**

c (Au) as Au in 5 % HCl..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2514.1** | 100 ml | LDPE | 553,65 € |

For further information, please see page 1660

## Hafnium ICP Standard Solution

**10000 mg/l Hf**

UN No. 2922 • ADR 8 (6.1) II • WGK 1

**Danger**

H290-H301+H311-H314-H332-EUH071

**Type analysis:**

c (Hf) as $HfO_2$ in 5 % $HNO_3$/2 % HF..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2515.1** | 100 ml | HDPE | 607,40 € |

For further information, please see page 1660

## Holmium ICP Standard Solution

**10000 mg/l Ho**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Ho) as $Ho_2O_3$ in 3 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2516.1** | 100 ml | HDPE | 105,90 € |

For further information, please see page 1660

## Indium ICP Standard Solution

**10000 mg/l In**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (In) as In in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2517.1** | 100 ml | HDPE | 105,90 € |

For further information, please see page 1660

## Iridium ICP Standard Solution

**10000 mg/l Ir**

UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290-H315-H319-H335

**Type analysis:**

c (Ir) as $IrCl_3$ in 10 % HCl. .....10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2518.1** | 100 ml | LDPE | 805,20 € |

For further information, please see page 1660

## Iron ICP Standard Solution

**10000 mg/l Fe**

UN No. 3264 • ADR 8 III • WGK 3

**Danger** H290-H315-H318

**Type analysis:**

c (Fe) as Fe in 4% $HNO_3$. .....10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2508.1** | 100 ml | HDPE | 89,15 € |
| **2508.2** | 500 ml | HDPE | 196,20 € |

For further information, please see page 1660

## Lanthanum ICP Standard Solution

**10000 mg/l La**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (La) as $La_2O_3$ in 3 % $HNO_3$. .....10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2521.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1660

## Lead ICP Standard Solution

**10000 mg/l Pb**

UN No. 1760 • ADR 8 III • WGK 2

**Danger**

H290-H315-H318-H360D-H373-H412

**Type analysis:**

c (Pb) as $Pb(NO_3)_2$ in 3 % $HNO_3$. .....10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2499.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1660

## Lithium ICP Standard Solution

**10000 mg/l Li**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Li) as $LiNO_3$ in 2 % $HNO_3$. .....10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2522.1** | 100 ml | HDPE | 91,40 € |

For further information, please see page 1660

## Lutetium ICP Standard Solution

**10000 mg/l Lu**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Lu) as $Lu_2O_3$ in 3 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2523.1** | 100 ml | HDPE | 499,90 € |

For further information, please see page 1660

## Magnesium ICP Standard Solution

**10000 mg/l Mg**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Mg) as Mg in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2524.1** | 100 ml | HDPE | 89,15 € |
| **2524.2** | 500 ml | HDPE | 196,20 € |

For further information, please see page 1660

## Manganese ICP Standard Solution

**10000 mg/l Mn**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Mn) as Mn in 3 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2525.1** | 100 ml | HDPE | 89,15 € |
| **2525.2** | 500 ml | HDPE | 196,20 € |

For further information, please see page 1660

## Mercury ICP Standard Solution

**10000 mg/l Hg**

UN No. 2922 • ADR 8 (6.1) II • WGK 2

**Danger** H290-H302+H332-H311-H314-H373-H412-EUH071

**Type analysis:**

c (Hg) as HgO in 10 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2537.1** | 100 ml | LDPE | 89,15 € |

For further information, please see page 1661

## Molybdenum ICP Standard Solution

**10000 mg/l Mo**

WGK 1

**Danger** H315-H318

**Type analysis:**

c (Mo) as $MoO_3$ in 4 % $NH_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2526.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Neodymium ICP Standard Solution

**10000 mg/l Nd**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Nd) as $Nd_2O_3$ in 3 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2528.1** | 100 ml | HDPE | 117,75 € |

For further information, please see page 1661

## Nickel ICP Standard Solution

**10000 mg/l Ni**

UN No. 3264 • ADR 8 III • WGK 3

**Danger** H290-H315-H317-H318-H334-H341-H350i-H360D-H372-H411

**Type analysis:**

c (Ni) as Ni in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2529.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Niobium ICP Standard Solution

**10000 mg/l Nb**

UN No. 2922 • ADR 8 (6.1) I • WGK 2

**Danger**

H290-H301+H331-H310-H314-EUH071

**Type analysis:**

c (Nb) as Nb in 5 % $HNO_3$/5 % HF. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2531.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Palladium ICP Standard Solution

**10000 mg/l Pd**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Pd) as Pd in 4 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2532.1** | 100 ml | LDPE | 575,15 € |

For further information, please see page 1661

## Phosphorus ICP Standard Solution

**10000 mg/l P**

WGK 1

**Type analysis:**

c (P) as $NH_4H_2PO_4$ in $H_2O$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2534.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Platinum ICP Standard Solution

**10000 mg/l Pt**

UN No. 1789 • ADR 8 III • WGK 1

**Danger**

H334-H290-H318-H335-H315-H317

**Type analysis:**

c (Pt) as Pt in 10 % HCl. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2533.1** | 100 ml | LDPE | 966,45 € |

For further information, please see page 1661

## Potassium ICP Standard Solution

**10000 mg/l K**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (K) as $KNO_3$ in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2519.1** | 100 ml | HDPE | 89,15 € |
| **2519.2** | 500 ml | HDPE | 196,20 € |

For further information, please see page 1661

## Praseodymium ICP Standard Solution

**10000 mg/l Pr**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Prb) as $Pr_6O_{11}$ in 3 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2536.1** | 100 ml | HDPE | 98,40 € |

For further information, please see page 1661

## Rhenium ICP Standard Solution

**10000 mg/l Re**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

c (Re) as Re in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2538.1** | 100 ml | HDPE | 439,70 € |

For further information, please see page 1661

## Rubidium ICP Standard Solution

**10000 mg/l Rb**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Rb) as $RbNO_3$ in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2539.1** | 100 ml | HDPE | 252,65 € |

For further information, please see page 1661

## Ruthenium ICP Standard Solution

**10000 mg/l Ru**

UN No. 1789 • ADR 8 III • WGK 1

**Danger** H290-H318-H335-H315

**Type analysis:**

c (Ru) as $RuCl_3$ in 10 % HCl. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2540.1** | 100 ml | LDPE | 439,70 € |

For further information, please see page 1661

## Samarium ICP Standard Solution

**10000 mg/l Sm**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Sm) as $Sm_2O_3$ in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2541.1** | 100 ml | HDPE | 115,60 € |

For further information, please see page 1661

## Selenium ICP Standard Solution

**10000 mg/l Se**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Se) as Se in 2 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2543.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Silicon ICP Standard Solution

**10000 mg/l Si**

WGK 2

**Warning** H302

**Type analysis:**

c (Si) as $(NH_4)_2SiF_6$ in $H_2O$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2546.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Silver ICP Standard Solution

**10000 mg/l Ag**

UN No. 1760 • ADR 8 II • WGK 2

**Danger** H290-H314-H410

**Type analysis:**

c (Ag) as $AgNO_3$ in 4 % $HNO_3$. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2544.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Sodium ICP Standard Solution

**10000 mg/l Na**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Na) as $NaNO_3$ in 2 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2527.1** | 100 ml | HDPE | 89,15 € |
| **2527.2** | 500 ml | HDPE | 196,20 € |

For further information, please see page 1661

## Strontium ICP Standard Solution

**10000 mg/l Sr**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Sr) as $Sr(NO_3)_2$ in 2 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2547.1** | 100 ml | HDPE | 89,15 € |
| **2547.2** | 500 ml | HDPE | 196,20 € |

For further information, please see page 1661

## Sulphur ICP Standard Solution

**10000 mg/l S**

WGK 1

**Type analysis:**

c (S) as $(NH_4)_2SO_4$ in $H_2O$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2542.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Tantalum ICP Standard Solution

**10000 mg/l Ta**

UN No. 2922 • ADR 8 (6.1) III • WGK 1

**Danger** H290-H302-H311-H315-H319

**Type analysis:**

c (Ta) as Ta in 1 % $HNO_3$/0,5 % HF..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2548.1** | 100 ml | HDPE | 98,40 € |

For further information, please see page 1661

## Tellurium ICP Standard Solution

**10000 mg/l Te**

UN No. 2031 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

c (Te) as Te in 20 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2549.1** | 100 ml | HDPE | 98,40 € |

For further information, please see page 1661

## Terbium ICP Standard Solution

**10000 mg/l Tb**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Tb) as $Tb_4O_7$ in 3 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2550.1** | 100 ml | HDPE | 220,40 € |

For further information, please see page 1661

## Thallium ICP Standard Solution

**10000 mg/l Tl**

UN No. 1760 • ADR 8 II • WGK 1

**Danger**

H290-H302+H332-H314-EUH071

**Type analysis:**

c (Tl) as $TlNO_3$ in 5 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2552.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Tin ICP Standard Solution

**10000 mg/l Sn**

UN No. 1789 • ADR 8 II • WGK 1

**Danger** H290-H314-H335

**Type analysis:**

c (Sn) as Sn in 20 % HCl..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2583.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Titanium ICP Standard Solution

**10000 mg/l Ti**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

c (Ti) as $(NH_4)_2TiF_6$ in 2 % $HNO_3$/0,1 % HF..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2561.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Tungsten ICP Standard Solution

**10000 mg/l W**

WGK 2

**Danger** H314-H335

**Type analysis:**

c (W) as $WO_3$ in 10 % $NH_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2571.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Vanadium ICP Standard Solution

**10000 mg/l V**

UN No. 1760 • ADR 8 II • WGK 2

**Danger** H290-H315-H318-H373-H412

**Type analysis:**

c (V) as $NH_4VO_3$ in 3 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2567.1** | 100 ml | HDPE | 89,15 € |

For further information, please see page 1661

## Ytterbium ICP Standard Solution

**10000 mg/l Yb**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Yb) as $Yb_2O_3$ in 3 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2572.1** | 100 ml | HDPE | 160,75 € |

For further information, please see page 1661

## Yttrium ICP Standard Solution

**10000 mg/l Y**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

**Type analysis:**

c (Y) as $Y_2O_3$ in 3 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2574.1** | 100 ml | HDPE | 98,40 € |

For further information, please see page 1661

## Zinc ICP Standard Solution

**10000 mg/l Zn**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H315-H318-H412

**Type analysis:**

c (Zn) as ZnO in 3 % $HNO_3$..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2576.1** | 100 ml | HDPE | 98,40 € |
| **2576.2** | 500 ml | HDPE | 196,20 € |

For further information, please see page 1661

## Zircon ICP Standard Solution

**10000 mg/l Zr**

UN No. 2922 • ADR 8 (6.1) III • WGK 2

**Danger**

H290-H302+H311-H315-H319

**Type analysis:**

c (Zr) as $ZrOCl_2$ in 5 % HCl/0,5 % HF. ..... 10000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2584.1** | 100 ml | HDPE | 107,00 € |

For further information, please see page 1661

## Standards for ICP (Inductively Coupled Spectroscopy): Multi-Element Standards

### ICP Multi-Element Standard Solution I

**19 elements in 5 % nitric acid**

UN No. 2031 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

| | |
|---|---|
| Ag (Silver) | 50 mg/l |
| Al (Aluminium) | 100 mg/l |
| B (Boron) | 15 mg/l |
| Ba (Barium) | 5 mg/l |
| Be (Beryllium) | 1 mg/l |
| Bi (Bismuth) | 200 mg/l |
| Cd (Cadmium) | 20 mg/l |
| Co (Cobalt) | 20 mg/l |
| Cr (Chromium) | 25 mg/l |
| Cu (Copper) | 20 mg/l |
| Fe (Iron) | 15 mg/l |
| Ga (Gallium) | 150 mg/l |
| In (Indium) | 200 mg/l |
| Mn (Manganese) | 5 mg/l |
| Ni (Nickel) | 50 mg/l |
| Pb (Lead) | 200 mg/l |
| Sr (Strontium) | 1 mg/l |
| Tl (Thallium) | 400 mg/l |
| Zn (Zinc) | 20 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2636.1** | 100 ml | HDPE | 142,90 € |

For further information, please see page 1662

### ICP Multi-Element Standard Solution III

**4 elements in 2 % nitric acid - 1000 mg/l**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

| | |
|---|---|
| Ba (Barium) | 1000 mg/l |
| Ca (Calcium) | 1000 mg/l |
| Mg (Magnesium) | 1000 mg/l |
| Sr (Strontium) | 1000 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2637.1** | 100 ml | HDPE | 110,20 € |

For further information, please see page 1662

### ICP Multi-Element Standard Solution IV

**23 elements in 2 % nitric acid - 1000 mg/l**

UN No. 3264 • ADR 8 III • WGK 2

**Danger** H290-H315-H317-H319-H350i-H360FD-H373-H412

**Type analysis:**

| | |
|---|---|
| Ag (Silver) | 1000 mg/l |
| Al (Aluminium) | 1000 mg/l |
| B (Boron) | 1000 mg/l |
| Ba (Barium) | 1000 mg/l |
| Bi (Bismuth) | 1000 mg/l |
| Ca (Calcium) | 1000 mg/l |
| Cd (Cadmium) | 1000 mg/l |
| Co (Cobalt) | 1000 mg/l |
| Cr (Chromium) | 1000 mg/l |
| Cu (Copper) | 1000 mg/l |
| Fe (Iron) | 1000 mg/l |
| Ga (Gallium) | 1000 mg/l |
| In (Indium) | 1000 mg/l |
| K (Potassium) | 1000 mg/l |
| Li (Lithium) | 1000 mg/l |
| Mg (Magnesium) | 1000 mg/l |
| Mn (Manganese) | 1000 mg/l |
| Na (Sodium) | 1000 mg/l |
| Ni (Nickel) | 1000 mg/l |
| Pb (Lead) | 1000 mg/l |
| Sr (Strontium) | 1000 mg/l |
| Tl (Thallium) | 1000 mg/l |
| Zn (Zinc) | 1000 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2638.1** | 100 ml | HDPE | 263,40 € |

For further information, please see page 1662

### ICP Multi-Element Standard Solution VIII

**24 elements in 2 % nitric acid – 100 mg/l**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H317-H319

**Type analysis:**

| | |
|---|---|
| Al (Aluminium) | 100 mg/l |
| B (Boron) | 100 mg/l |
| Ba (Barium) | 100 mg/l |
| Be (Beryllium) | 100 mg/l |
| Bi (Bismuth) | 100 mg/l |
| Ca (Calcium) | 100 mg/l |
| Cd (Cadmium) | 100 mg/l |
| Co (Cobalt) | 100 mg/l |
| Cr (Chromium) | 100 mg/l |
| Cu (Copper) | 100 mg/l |
| Fe (Iron) | 100 mg/l |
| Ga (Gallium) | 100 mg/l |
| K (Potassium) | 100 mg/l |
| Li (Lithium) | 100 mg/l |
| Mg (Magnesium) | 100 mg/l |
| Mn (Manganese) | 100 mg/l |
| Na (Sodium) | 100 mg/l |
| Ni (Nickel) | 100 mg/l |
| Pb (Lead) | 100 mg/l |
| Se (Selenium) | 100 mg/l |
| Sr (Strontium) | 100 mg/l |
| Te (Tellur) | 100 mg/l |
| Tl (Thallium) | 100 mg/l |
| Zn (Zinc) | 100 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2639.1** | 100 ml | HDPE | 263,40 € |

For further information, please see page 1662

### ICP Multi-Element Standard Solution IX

**9 elements in 2 % nitric acid – 100 mg/l**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319-H317

**Type analysis:**

| | |
|---|---|
| As (Arsenic) | 100 mg/l |
| Be (Beryllium) | 100 mg/l |
| Cd (Cadmium) | 100 mg/l |
| Cr (Chromium) | 100 mg/l |
| Hg (Mercury) | 100 mg/l |
| Ni (Nickel) | 100 mg/l |
| Pb (Lead) | 100 mg/l |
| Se (Selenium) | 100 mg/l |
| Tl (Thallium) | 100 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2640.1** | 100 ml | HDPE | 141,40 € |

For further information, please see page 1662

### ICP Multi-Element Standard Solution X

**23 elements in 2 % nitric acid**

For surface water testing.

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

| | |
|---|---|
| Ca (Calcium) | 35000 µg/l |
| Mg (Magnesium) | 15000 µg/l |
| Na (Sodium) | 8000 µg/l |
| K (Potassium) | 3000 µg/l |
| B (Boron) | 100 µg/l |
| Fe (Iron) | 100 µg/l |
| Mo (Molybdenum) | 100 µg/l |
| Sr (Strontium) | 100 µg/l |
| As (Arsenic) | 50 µg/l |
| Ba (Barium) | 50 µg/l |
| Ni (Nickel) | 50 µg/l |
| V (Vanadium) | 50 µg/l |
| Zn (Zinc) | 50 µg/l |
| Mn (Manganese) | 30 µg/l |
| Co (Cobalt) | 25 µg/l |
| Pb (Lead) | 25 µg/l |
| Be (Beryllium) | 20 µg/l |
| Cd (Cadmium) | 20 µg/l |
| Cr (Chromium) | 20 µg/l |
| Cu (Copper) | 20 µg/l |
| Bi (Bismuth) | 10 µg/l |
| Se (Selenium) | 10 µg/l |
| Tl (Thallium) | 10 µg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2642.1** | 100 ml | HDPE | 242,45 € |

For further information, please see page 1662

### ICP Multi-Element Standard Solution XI

**7 elements in 2 % nitric acid**

For sludge testing.

UN No. 3264 • ADR 8 III • WGK 1

**Warning**

H290-H315-H319-H317-H412

**Type analysis:**

| | |
|---|---|
| Cd (Cadmium) | 10 mg/l |
| Cr (Chromium) | 900 mg/l |
| Cu (Copper) | 800 mg/l |
| Hg (Mercury) | 8 mg/l |
| Ni (Nickel) | 200 mg/l |
| Pb (Lead) | 900 mg/l |
| Zn (Zinc) | 2500 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2643.1** | 100 ml | HDPE | 141,40 € |

For further information, please see page 1662

### ICP Multi-Element Standard Solution XIII

**15 elements in 2 % nitric acid**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H317-H319

**Type analysis:**

| | |
|---|---|
| Al (Aluminium) | 500 mg/l |
| As (Arsenic) | 100 mg/l |
| Be (Beryllium) | 100 mg/l |
| Cd (Cadmium) | 25,0 mg/l |
| Co (Cobalt) | 100 mg/l |
| Cr (Chromium) | 100 mg/l |
| Cu (Copper) | 100 mg/l |
| Fe (Iron) | 100 mg/l |
| Hg (Mercury) | 5,0 mg/l |
| Mn (Manganese) | 100 mg/l |
| Ni (Nickel) | 100 mg/l |
| Pb (Lead) | 100 mg/l |
| Se (Selenium) | 25,0 mg/l |

V (Vanadium)..... 250 mg/l
Zn (Zinc)..... 100 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2644.1** | 100 ml | HDPE | 284,90 € |

For further information, please see page 1662

## ICP Multi-Element Standard Solution XVI

**21 elements in 2 % nitric acid – 100 mg/l**

UN No. 3264 • ADR 8 III • WGK 3

**Warning** H290-H315-H317-H319

**Type analysis:**

As (Arsenic)..... 100 mg/l
Be (Beryllium)..... 100 mg/l
Ca (Calcium)..... 100 mg/l
Cd (Cadmium)..... 100 mg/l
Co (Cobalt)..... 100 mg/l
Cr (Chromium)..... 100 mg/l
Cu (Copper)..... 100 mg/l
Fe (Iron)..... 100 mg/l
Li (Lithium)..... 100 mg/l
Mg (Magnesium)..... 100 mg/l
Mn (Manganese)..... 100 mg/l
Mo (Molybdenum)..... 100 mg/l
Ni (Nickel)..... 100 mg/l
Pb (Lead)..... 100 mg/l
Sb (Antimony)..... 100 mg/l
Se (Selenium)..... 100 mg/l
Sr (Strontium)..... 100 mg/l
Ti (Titanium)..... 100 mg/l
Tl (Thallium)..... 100 mg/l
V (Vanadium)..... 100 mg/l
Zn (Zinc)..... 100 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2645.1** | 100 ml | HDPE | 241,90 € |

For further information, please see page 1662

## ICP Multi-Element Standard Solution XVII

**7 elements in 15 % hydrochloric acid – 100 mg/l**

UN No. 1789 • ADR 8 III • WGK 1

**Warning** H290-H335-H315-H319

**Type analysis:**

Hf (Hafnium)..... 100 mg/l
Ir (Iridium)..... 100 mg/l
Sb (Antimony)..... 100 mg/l
Sn (Tin)..... 100 mg/l
Ta (Tantal)..... 100 mg/l
Ti (Titanium)..... 100 mg/l
Zr (Zirconium)..... 100 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2646.1** | 100 ml | HDPE | 165,05 € |

For further information, please see page 1662

## ICP Multi-Element Standard Solution A

**24 elements in 5 % nitric acid**

UN No. 3264 • ADR 8 II • WGK 1

**Danger**

H290-H314-H317-H350i-H373-H412-EUH071

**Type analysis:**

Al (Aluminium)..... 1000 mg/l
As (Arsenic)..... 100 mg/l
B (Boron)..... 500 mg/l
Ba (Barium)..... 500 mg/l
Ca (Calcium)..... 1000 mg/l
Cd (Cadmium)..... 100 mg/l
Co (Cobalt)..... 500 mg/l
Cr (Chrom)..... 500 mg/l
Cu (Copper)..... 500 mg/l
Fe (Iron)..... 1000 mg/l
Hg (Mercury)..... 10 mg/l
K (Potassium)..... 1000 mg/l
Li (Lithium)..... 100 mg/l
Mg (Magnesium)..... 1000 mg/l
Mn (Manganese)..... 500 mg/l
Na (Sodium)..... 1000 mg/l
Ni (Nickel)..... 500 mg/l
Pb (Lead)..... 500 mg/l
Rb (Rubidium)..... 500 mg/l
Sr (Strontium)..... 500 mg/l
Te (Tellur)..... 500 mg/l
Ti (Titanium)..... 500 mg/l
V (Vanadium)..... 500 mg/l
Zn (Zinc)..... 500 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **8248.1** | 100 ml | HDPE | 446,15 € |

For further information, please see page 1662

## ICP Multi-Element Standard Solution B

**25 elements in 5 % nitric acid**

UN No. 3264 • ADR 8 II • WGK 1

**Danger** H290-H314-H317-EUH071

**Type analysis:**

Al (Aluminium)..... 200 mg/l
As (Arsenic)..... 5 mg/l
B (Boron)..... 20 mg/l
Ba (Barium)..... 50 mg/l
Ca (Calcium)..... 500 mg/l
Cd (Cadmium)..... 5 mg/l
Co (Cobalt)..... 20 mg/l
Cr (Chrom)..... 40 mg/l
Cu (Copper)..... 20 mg/l
Fe (Iron)..... 100 mg/l
Hg (Mercury)..... 0,5 mg/l
K (Potassium)..... 100 mg/l
Li (Lithium)..... 10 mg/l
Mg (Magnesium)..... 500 mg/l
Mn (Manganese)..... 10 mg/l
Na (Sodium)..... 100 mg/l
Ni (Nickel)..... 40 mg/l
P (Phosphorus)..... 40 mg/l
Pb (Lead)..... 10 mg/l
Rb (Rubidium)..... 10 mg/l
Sr (Strontium)..... 100 mg/l
Te (Tellur)..... 10 mg/l
Ti (Titanium)..... 10 mg/l
V (Vanadium)..... 40 mg/l
Zn (Zinc)..... 50 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **8249.1** | 100 ml | HDPE | 332,20 € |

For further information, please see page 1662

## ICP Multi-Element Standard Solution (9 elements, 1000 mg/l)

NEW

**9 elements in 5 % nitric acid - 1000 mg/l**

UN No. 3264 • ADR 8 II • WGK 3

**Danger** H290-H314-H317-H340-H350i-H360FD-H373-H412-EUH071

**Type analysis:**

As (Arsenic)..... 1000 mg/l
Cd (Cadmium)..... 1000 mg/l
Cr (Chrom)..... 1000 mg/l
Cu (Copper)..... 1000 mg/l
Mo (Molybdenum)..... 1000 mg/l
Ni (Nickel)..... 1000 mg/l
Sb (Antimony)..... 1000 mg/l
Se (Selenium)..... 1000 mg/l
Zn (Zinc)..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **9987.1** | 100 ml | HDPE | 241,90 € |

For further information, please see page 1662

## ICP Multi-Element Standard Solution (22 elements, 1 mg/l)

**22 elements in 5 % nitric acid – 1 mg/l**

UN No. 2031 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

As (Arsenic)..... 1 mg/l
Be (Beryllium)..... 1 mg/l
Bi (Bismuth)..... 1 mg/l
Ca (Calcium)..... 1 mg/l
Cd (Cadmium)..... 1 mg/l
Co (Cobalt)..... 1 mg/l
Cr (Chrom)..... 1 mg/l
Cu (Copper)..... 1 mg/l
Fe (Iron)..... 1 mg/l
Li (Lithium)..... 1 mg/l
Mg (Magnesium)..... 1 mg/l
Mn (Manganese)..... 1 mg/l
Mo (Molybdenum)..... 1 mg/l
Ni (Nickel)..... 1 mg/l
Pb (Lead)..... 1 mg/l
Sb (Antimony)..... 1 mg/l
Se (Selenium)..... 1 mg/l
Sr (Strontium)..... 1 mg/l
Ti (Titanium)..... 1 mg/l
Tl (Thallium)..... 1 mg/l
V (Vanadium)..... 1 mg/l
Zn (Zinc)..... 1 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2647.1** | 100 ml | HDPE | 64,00 € |

For further information, please see page 1662

## ICP Multi-Element Standard Solution (22 elements, 100 mg/l)

**22 elements in 5 % nitric acid – 100 mg/l**

UN No. 2031 • ADR 8 II • WGK 3

**Danger** H290-H314-H317-EUH071

**Type analysis:**

As (Arsenic)..... 100 mg/l
Be (Beryllium)..... 100 mg/l
Bi (Bismuth)..... 100 mg/l
Ca (Calcium)..... 100 mg/l
Cd (Cadmium)..... 100 mg/l
Co (Cobalt)..... 100 mg/l
Cr (Chromium)..... 100 mg/l
Cu (Copper)..... 100 mg/l
Fe (Iron)..... 100 mg/l
Li (Lithium)..... 100 mg/l
Mg (Magnesium)..... 100 mg/l
Mn (Manganese)..... 100 mg/l
Mo (Molybdenum)..... 100 mg/l
Ni (Nickel)..... 100 mg/l
Pb (Lead)..... 100 mg/l
Sb (Antimony)..... 100 mg/l
Se (Selenium)..... 100 mg/l
Sr (Strontium)..... 100 mg/l
Ti (Titanium)..... 100 mg/l
Tl (Thallium)..... 100 mg/l
V (Vanadium)..... 100 mg/l
Zn (Zinc)..... 100 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2648.1** | 100 ml | HDPE | 284,90 € |

For further information, please see page 1662

## ICP Multi-Element Standard Solution (28 elements, 1 mg/l)

**28 elements in 2 % nitric acid – 1 mg/l**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

| | |
|---|---|
| Al (Aluminium) | 1 mg/l |
| Ag (Silver) | 1 mg/l |
| As (Arsenic) | 1 mg/l |
| B (Boron) | 1 mg/l |
| Ba (Barium) | 1 mg/l |
| Be (Beryllium) | 1 mg/l |
| Bi (Bismuth) | 1 mg/l |
| Ca (Calcium) | 1 mg/l |
| Cd (Cadmium) | 1 mg/l |
| Co (Cobalt) | 1 mg/l |
| Cr (Chrom) | 1 mg/l |
| Cu (Copper) | 1 mg/l |
| Fe (Iron) | 1 mg/l |
| K (Potassium) | 1 mg/l |
| Li (Lithium) | 1 mg/l |
| Mg (Magnesium) | 1 mg/l |
| Mn (Manganese) | 1 mg/l |
| Mo (Molybdenum) | 1 mg/l |
| Na (Sodium) | 1 mg/l |
| Ni (Nickel) | 1 mg/l |
| Pb (Lead) | 1 mg/l |
| Sb (Antimony) | 1 mg/l |
| Se (Selenium) | 1 mg/l |
| Sr (Strontium) | 1 mg/l |
| Ti (Titanium) | 1 mg/l |
| Tl (Thallium) | 1 mg/l |
| V (Vanadium) | 1 mg/l |
| Zn (Zinc) | 1 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2649.1** | 100 ml | HDPE | 78,40 € |

For further information, please see page 1662

## ICP Multi-Element Standard Solution (28 elements, 100 mg/l)

**28 elements in 5 % nitric acid – 100 mg/l**

UN No. 2031 • ADR 8 II • WGK 3

**Danger** H290-H314-H317-EUH071

**Type analysis:**

| | |
|---|---|
| Al (Aluminium) | 100 mg/l |
| Ag (Silver) | 100 mg/l |
| As (Arsenic) | 100 mg/l |
| B (Boron) | 100 mg/l |
| Ba (Barium) | 100 mg/l |
| Be (Beryllium) | 100 mg/l |
| Bi (Bismuth) | 100 mg/l |
| Ca (Calcium) | 100 mg/l |
| Cd (Cadmium) | 100 mg/l |
| Co (Cobalt) | 100 mg/l |
| Cr (Chromium) | 100 mg/l |
| Cu (Copper) | 100 mg/l |
| Fe (Iron) | 100 mg/l |
| K (Potassium) | 100 mg/l |
| Li (Lithium) | 100 mg/l |
| Mg (Magnesium) | 100 mg/l |
| Mn (Manganese) | 100 mg/l |
| Mo (Molybdenum) | 100 mg/l |
| Na (Sodium) | 100 mg/l |
| Ni (Nickel) | 100 mg/l |
| Pb (Lead) | 100 mg/l |
| Sb (Antimony) | 100 mg/l |
| Se (Selenium) | 100 mg/l |
| Sr (Strontium) | 100 mg/l |
| Ti (Titanium) | 100 mg/l |
| Tl (Thallium) | 100 mg/l |
| V (Vanadium) | 100 mg/l |
| Zn (Zinc) | 100 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2650.1** | 100 ml | HDPE | 284,90 € |

For further information, please see page 1662

## Standards for ICP-MS Element Standards 10 mg/l, ready to use

### Mercury ICP-MS Standard Solution

NEW

**10 mg/l Hg**

UN No. 3264 • ADR 8 II • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

| | |
|---|---|
| c (Hg) in 5 % $HNO_3$ | 10 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **5017.1** | 100 ml | HDPE | 47,30 € |

For further information, please see page 1663

## Standards for ICP-MS Multi Element Standards

### ICP-MS Multi-Element Standard Solution (3 elements)

NEW

**3 elements in 2 % nitric acid**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

| | |
|---|---|
| Chromium (Cr) | 4 mg/l |
| Iron (Fe) | 20 mg/l |
| Strontium (Sr) | 4 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **0381.1** | 100 ml | HDPE | 90,30 € |
| **0381.2** | 500 ml | HDPE | 176,30 € |

For further information, please see page 1663

### ICP-MS Multi-Element Standard Solution (4 elements, 1000 mg/l)

NEW

**4 elements in 2 % nitric acid - 1000 mg/l**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

| | |
|---|---|
| Calcium (Ca) | 1000 mg/l |
| Magnesium (Mg) | 1000 mg/l |
| Potassium (K) | 1000 mg/l |
| Sodium (Na) | 1000 mg/l |

| | | | |
|---|---|---|---|
| **6803.1** | 100 ml | HDPE | 80,55 € |

For further information, please see page 1663

### ICP-MS Multi-Element Standard Solution (4 elements, 10 mg/l)

NEW

**4 elements in 2 % nitric acid and 0,1 % hydrofluoric acid - 10 mg/l**

UN No. 1760 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

| | |
|---|---|
| Molybdenum (Mo) | 10 mg/l |
| Antimony (Sb) | 10 mg/l |
| Tin (Sn) | 10 mg/l |
| Titanium (Ti) | 10 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **6807.1** | 100 ml | HDPE | 83,85 € |
| **6807.2** | 500 ml | HDPE | 165,55 € |

For further information, please see page 1663

### ICP-MS Calibration Standard Solution (5 elements, 1000 mg/l)

NEW

**5 elements in 2 % nitric acid - 1000 mg/l**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

| | |
|---|---|
| Calcium (Ca) | 1000 mg/l |
| Iron (Fe) | 1000 mg/l |
| Potassium (K) | 1000 mg/l |
| Magnesium (Mg) | 1000 mg/l |
| Sodium (Na) | 1000 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **0409.1** | 100 ml | HDPE | 95,70 € |
| **0409.2** | 500 ml | HDPE | 203,20 € |

For further information, please see page 1663

### ICP-MS Tuning Solution (5 elements, 10 mg/l)

**5 elements in 2 % nitric acid - 10 mg/l**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

NEW

**Type analysis:**

| | |
|---|---|
| Cerium (Ce) | 10 mg/l |
| Cobalt (Co) | 10 mg/l |
| Lithium (Li) | 10 mg/l |
| Thallium (Tl) | 10 mg/l |
| Yttrium (Y) | 10 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **6819.1** | 100 ml | HDPE | 84,95 € |

For further information, please see page 1663

## ICP-MS Tuning Solution (6 elements, 1 µg/l)

**6 elements in 2 % nitric acid - 1 µg/l**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319

NEW

**Type analysis:**

| | |
|---|---|
| Cerium (Ce) | 1 µg/l |
| Cobalt (Co) | 1 µg/l |
| Lithium (Li) | 1 µg/l |
| Magnesium (Mg) | 1 µg/l |
| Thallium (Tl) | 1 µg/l |
| Yttrium (Y) | 1 µg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **6806.1** | 100 ml | HDPE | 95,70 € |
| **6806.2** | 500 ml | HDPE | 176,30 € |

For further information, please see page 1663

## ICP-MS Tuning Solution A

NEW

**6 elements in 1 % nitric acid**

UN No. 3264 • ADR 8

**Warning** H290-H315-H319

**Type analysis:**

| | |
|---|---|
| Beryllium (Be) | 10 µg/l |
| Indium (In) | 2 µg/l |
| Bismuth (Bi) | 2 µg/l |
| Cerium (Ce) | 2 µg/l |
| Kobalt (Co) | 5 µg/l |
| Manganese (Mn) | 5 µg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **0900.2** | 250 ml | HDPE | 258,00 € |

For further information, please see page 1663

## ICP-MS Tuning Solution B

NEW

**6 elements in 1 % nitric acid**

UN No. 3264 • ADR 8

**Warning** H290-H315-H319

**Type analysis:**

| | |
|---|---|
| Beryllium (Be) | 1000 µg/l |
| Indium (In) | 200 µg/l |
| Bismuth (Bi) | 200 µg/l |
| Cerium (Ce) | 200 µg/l |
| Kobalt (Co) | 500 µg/l |
| Manganese (Mn) | 500 µg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **0902.1** | 100 ml | HDPE | 198,90 € |

For further information, please see page 1663

## ICP-MS Multi-Element Standard Solution (8 elements)

NEW

**8 elements in 2 % nitric acid**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

| | |
|---|---|
| Arsenic (As) | 2 mg/l |
| Cadmium (Cd) | 2 mg/l |
| Chromium (Cr) | 3 mg/l |
| Copper (Cu) | 10 mg/l |
| Iron (Fe) | 4 mg/l |
| Nickel (Ni) | 2 mg/l |
| Lead (Pb) | 5 mg/l |
| Zinc (Zn) | 10 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **6814.1** | 100 ml | HDPE | 106,45 € |
| **6814.2** | 500 ml | HDPE | 212,85 € |

For further information, please see page 1663

## ICP-MS Calibration Standard Solution (8 elements, 10 mg/l)

NEW

**8 elements in 2 % nitric acid and 0,1 % fluoric acid - 10 mg/l**

UN No. 1760 • ADR 8 III

**Warning** H290-H315-H319

**Type analysis:**

| | |
|---|---|
| Germanium (Ge) | 10 mg/l |
| Hafnium (Hf) | 10 mg/l |
| Molybdenum (Mo) | 10 mg/l |
| Antimony (Sb) | 10 mg/l |
| Tin (Sn) | 10 mg/l |
| Tellur (Te) | 10 mg/l |
| Tungsten (W) | 10 mg/l |
| Zirconium (Zr) | 10 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **6816.1** | 100 ml | HDPE | 95,70 € |
| **6816.2** | 500 ml | HDPE | 187,05 € |

For further information, please see page 1663

## ICP-MS Multi-Element Standard Solution (10 elements, 10 mg/l)

NEW

**10 elements in 10 % hydrochloric acid and 1 % nitric acid - 10 mg/l**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290-H315-H319-H335

**Type analysis:**

| | |
|---|---|
| Gold (Au) | 10 mg/l |
| Hafnium (Hf) | 10 mg/l |
| Iridium (Ir) | 10 mg/l |
| Palladium (Pd) | 10 mg/l |
| Platinum (Pt) | 10 mg/l |
| Rhodium (Rh) | 10 mg/l |
| Ruthenium (Ru) | 10 mg/l |
| Antimony (Sb) | 10 mg/l |
| Tin (Sn) | 10 mg/l |
| Tellur (Te) | 10 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **0429.1** | 100 ml | HDPE | 105,35 € |

For further information, please see page 1663

## ICP-MS Multi-Element Standard Solution (10 elements)

NEW

**10 elements in 2 % hydrochloric acid**

UN No. 3264 • ADR 8 III

**Warning** H290

**Type analysis:**

| | |
|---|---|
| Molybdenum (Mo) | 50 mg/l |
| Palladium (Pd) | 40 mg/l |
| Platinum (Pt) | 40 mg/l |
| Rhodium (Rh) | 40 mg/l |
| Antimony (Sb) | 80 mg/l |
| Silicon (Si) | 40 mg/l |
| Tin (Sn) | 80 mg/l |
| Tellur (Te) | 40 mg/l |
| Tungsten (W) | 40 mg/l |
| Zirconium (Zr) | 40 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **6815.1** | 100 ml | HDPE | 230,05 € |
| **6815.2** | 500 ml | HDPE | 461,20 € |

For further information, please see page 1663

## ICP-MS Interference Check Solution A - 6020 (12 elements)

NEW

**12 elements in 5 % nitric acid**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H314-EUH071

**Type analysis:**

| | |
|---|---|
| Chloride ($Cl^-$) | 20000 µg/ml |
| Calcium (Ca) | 3000 µg/ml |
| Iron (Fe) | 2500 µg/ml |
| Sodium (Na) | 2500 µg/ml |
| Carbon (C) | 2000 µg/ml |
| Aluminium (Al) | 1000 µg/ml |
| Magnesium (Mg) | 1000 µg/ml |
| Phosphorus (P) | 1000 µg/ml |
| Potassium (K) | 1000 µg/ml |
| Sulphur (S) | 1000 µg/ml |
| Molybdenum (Mo) | 20 µg/ml |
| Titanium (Ti) | 20 µg/ml |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **6808.1** | 100 ml | HDPE | 230,05 € |
| **6808.2** | 500 ml | HDPE | 481,60 € |

For further information, please see page 1663

## ICP-MS Multi-Element Standard Solution (12 elements)

NEW

**12 elements in 2 % nitric acid**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319-EUH208

**Type analysis:**

| | |
|---|---|
| Arsenic (As) | 2,5 mg/l |
| Barium (Ba) | 2,5 mg/l |
| Cadmium (Cd) | 0,5 mg/l |
| Chromium (Cr) | 5 mg/l |
| Copper (Cu) | 5 mg/l |
| Mercury (Hg) | 0,2 mg/l |
| Molybdenum (Mo) | 3 mg/l |
| Nickel (Ni) | 5 mg/l |
| Lead (Pb) | 5 mg/l |
| Antimony (Sb) | 0,5 mg/l |
| Selenium (Se) | 0,7 mg/l |
| Zinc (Zn) | 5 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **6810.1** | 100 ml | HDPE | 138,70 € |
| **6810.2** | 500 ml | HDPE | 267,70 € |

For further information, please see page 1663

## ICP-MS Multi-Element Standard Solution (16 elements, 10 mg/l)

NEW

**16 elements 5 % nitric acid - 10 mg/l**

UN No. 3264 • ADR 8 III • WGK 1

**Danger** H290-H314-EUH071-EUH208

**Type analysis:**

| | |
|---|---|
| Arsenic (As) | 10 mg/l |
| Beryllium (Be) | 10 mg/l |
| Kobalt (Co) | 10 mg/l |
| Chromium (Cr) | 10 mg/l |
| Cesium (Cs) | 10 mg/l |
| Copper (Cu) | 10 mg/l |
| Lithium (Li) | 10 mg/l |
| Manganese (Mn) | 10 mg/l |
| Nickel (Ni) | 10 mg/l |
| Lead (Pb) | 10 mg/l |
| Rubidium (Rb) | 10 mg/l |
| Scandium (Sc) | 10 mg/l |
| Selenium (Se) | 10 mg/l |
| Strontium (Sr) | 10 mg/l |
| Vanadium (V) | 10 mg/l |
| Zinc (Zn) | 10 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **0416.1** | 100 ml | HDPE | 144,05 € |
| **0416.2** | 500 ml | HDPE | 294,55 € |

For further information, please see page 1663

## ICP-MS Multi-Element Standard Solution (21 elements, 100 mg/l)

NEW

**21 elements in 5 % nitric acid - 100 mg/l**

UN No. 3264 • ADR 8 III • WGK 2

**Danger**

H290-H314-H317-H350-EUH071

**Type analysis:**

| | |
|---|---|
| Aluminium (Al) | 100 mg/l |
| Silver (Ag) | 100 mg/l |
| Arsenic (As) | 100 mg/l |
| Barium (Ba) | 100 mg/l |
| Beryllium (Be) | 100 mg/l |
| Cadmium (Cd) | 100 mg/l |
| Cobalt (Co) | 100 mg/l |
| Chromium (Cr) | 100 mg/l |
| Copper (Cu) | 100 mg/l |
| Iron (Fe) | 100 mg/l |
| Potassium (K) | 100 mg/l |
| Manganese (Mn) | 100 mg/l |
| Molybdenum (Mo) | 100 mg/l |
| Nickel (Ni) | 100 mg/l |
| Lead (Pb) | 100 mg/l |
| Antimony (Sb) | 100 mg/l |
| Selenium (Se) | 100 mg/l |
| Tin (Sn) | 100 mg/l |
| Thallium (Tl) | 100 mg/l |
| Vanadium (V) | 100 mg/l |
| Zinc (Zn) | 100 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **6811.1** | 100 ml | HDPE | 212,85 € |

For further information, please see page 1663

## ICP-MS Multi-Element Standard Solution (22 elements)

NEW

**22 elements in 2 % nitric acid**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H319-EUH208

**Type analysis:**

| | |
|---|---|
| Silver (Ag) | 5 mg/l |
| Aluminium (Al) | 30 mg/l |
| Arsenic (As) | 10 mg/l |
| Boron (B) | 30 mg/l |
| Barium (Ba) | 10 mg/l |
| Beryllium (Be) | 3 mg/l |
| Cadmium (Cd) | 3 mg/l |
| Cobalt (Co) | 5 mg/l |
| Chromium (Cr) | 10 mg/l |
| Copper (Cu) | 10 mg/l |
| Manganese (Mn) | 5 mg/l |
| Molybdenum (Mo) | 3 mg/l |
| Nickel (Ni) | 10 mg/l |
| Lead (Pb) | 5 mg/l |
| Selenium (Se) | 5 mg/l |
| Tin (Sn) | 10 mg/l |
| Strontium (Sr) | 100 mg/l |
| Tellur (Te) | 10 mg/l |
| Titanium (Ti) | 3 mg/l |
| Thallium (Tl) | 2 mg/l |
| Vanadium (V) | 10 mg/l |
| Zinc (Zn) | 100 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **0383.1** | 100 ml | HDPE | 273,05 € |
| **0383.2** | 500 ml | HDPE | 520,30 € |

For further information, please see page 1663

## ICP-MS Multi-Element Standard Solution (27 elements)

NEW

**27 elements in 2 % nitric acid**

UN No. 3264 • ADR 8 III

**Warning** H290-H315-H317-H319

**Type analysis:**

| | |
|---|---|
| Silver (Ag) | 50 mg/l |
| Aluminium (Al) | 80 mg/l |
| Arsenic (As) | 80 mg/l |
| Boron (B) | 40 mg/l |
| Barium (Ba) | 50 mg/l |
| Beryllium (Be) | 40 mg/l |
| Calcium (Ca) | 80 mg/l |
| Cadmium (Cd) | 40 mg/l |
| Cobalt (Co) | 50 mg/l |
| Chromium (Cr) | 50 mg/l |
| Copper (Cu) | 50 mg/l |
| Iron (Fe) | 50 mg/l |
| Indium (In) | 40 mg/l |
| Potassium (K) | 80 mg/l |
| Lithium (Li) | 40 mg/l |
| Magnesium (Mg) | 80 mg/l |
| Manganese (Mn) | 50 mg/l |
| Sodium (Na) | 80 mg/l |
| Nickel (Ni) | 50 mg/l |
| Phosphorus (P) | 200 mg/l |
| Lead (Pb) | 80 mg/l |
| Selenium (Se) | 40 mg/l |
| Strontium (Sr) | 50 mg/l |
| Titanium (Ti) | 40 mg/l |
| Thallium (Tl) | 40 mg/l |
| Vanadium (V) | 50 mg/l |
| Zinc (Zn) | 50 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **6813.1** | 100 ml | HDPE | 309,60 € |
| **6813.2** | 500 ml | HDPE | 563,30 € |

For further information, please see page 1663

## ICP-MS Multi-Element Standard Solution (28 elements, 10 mg/l)

NEW

**28 elements in 5 % nitric acid - 10 mg/l**

UN No. 3264 • ADR 8 II • WGK 2

**Danger** H290-H314-EUH071-EUH208

**Type analysis:**

| | |
|---|---|
| Aluminium (Al) | 10 mg/l |
| Arsenic (As) | 10 mg/l |
| Barium (Ba) | 10 mg/l |
| Beryllium (Be) | 10 mg/l |
| Bismuth (Bi) | 10 mg/l |
| Lead (Pb) | 10 mg/l |
| Calcium (Ca) | 10 mg/l |
| Cadmium (Cd) | 10 mg/l |
| Chromium (Cr) | 10 mg/l |
| Cesium (Cs) | 10 mg/l |
| Iron (Fe) | 10 mg/l |
| Gallium (Ga) | 10 mg/l |
| Indium (In) | 10 mg/l |
| Potassium (K) | 10 mg/l |
| Cobalt (Co) | 10 mg/l |
| Copper (Cu) | 10 mg/l |
| Lithium (Li) | 10 mg/l |
| Magnesium (Mg) | 10 mg/l |
| Manganese (Mn) | 10 mg/l |
| Sodium (Na) | 10 mg/l |
| Nickel (Ni) | 10 mg/l |
| Rubidium (Rb) | 10 mg/l |
| Selenium (Se) | 10 mg/l |
| Silver (Ag) | 10 mg/l |
| Strontium (Sr) | 10 mg/l |
| Thallium (Tl) | 10 mg/l |
| Vanadium (V) | 10 mg/l |
| Zinc (Zn) | 10 mg/l |

Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **6802.1** | 100 ml | HDPE | 402,05 € |

For further information, please see page 1663

## Standards for IC (Ion Chromatography): Anionic Standards 1000 mg/l, ready to use

## Acetate IC Standard Solution

**1000 mg/l $CH_3COO^-$**

**Type analysis:**

| | |
|---|---|
| c ($CH_3COO^-$) in $H_2O$ | 1000 mg/l |

Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **1989.1** | 100 ml | glass | 44,00 € |
| **1989.2** | 500 ml | glass | 81,20 € |

For further information, please see page 1584

## Benzoate IC Standard Solution

**1000 mg/l $C_6H_5COO^-$**

**Type analysis:**

| | |
|---|---|
| c ($C_6H_5COO^-$) in $H_2O$ | 1000 mg/l |

Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8168.1** | 100 ml | glass | 39,70 € |
| **8168.2** | 500 ml | glass | 82,70 € |

For further information, please see page 1584

## Bromate IC Standard Solution

**1000 mg/l $BrO_3^-$**

WGK 3

**Danger** H350

**Type analysis:**

c ($BrO_3^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8170.1** | 100 ml | HDPE | 39,70 € |
| **8170.2** | 500 ml | HDPE | 82,70 € |

For further information, please see page 1584

## Bromide IC Standard Solution

**1000 mg/l $Br^-$**

**Type analysis:**

c ($Br^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2655.1** | 100 ml | HDPE | 38,60 € |
| **2655.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1584

## Chlorate IC Standard Solution

**1000 mg/l $ClO_3^-$**

**Type analysis:**

c ($ClO_3^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8171.1** | 100 ml | HDPE | 39,70 € |
| **8171.2** | 500 ml | HDPE | 82,70 € |

For further information, please see page 1584

## Chloride IC Standard Solution

**1000 mg/l $Cl^-$**

**Type analysis:**

c ($Cl^-$) as KCl in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2656.1** | 100 ml | HDPE | 38,60 € |
| **2656.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1584

## Chlorite IC Standard Solution

**1000 mg/l $ClO_2^-$**

**Type analysis:**

c ($ClO_2^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **8172.1** | 100 ml | glass | 39,70 € |

For further information, please see page 1584

## Chromate IC Standard Solution

**1000 mg/l $Cr^{6+}$**

WGK 3

**Danger** H317-H334-H340-H350

**Type analysis:**

c ($Cr^{6+}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2657.1** | 100 ml | HDPE | 38,60 € |
| **2657.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1584

## Citrate IC Standard Solution

**1000 mg/l $C_3H_4(OH)(COO)_3^{3-}$**

**Type analysis:**

c ($C_3H_4(OH)(COO)_3^{3-}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8173.1** | 100 ml | glass | 39,70 € |
| **8173.2** | 500 ml | glass | 82,70 € |

For further information, please see page 1584

## Cyanide IC Standard Solution

**1000 mg/l $CN^-$**

UN No. 1760 • ADR 8 III • WGK 2

**Warning** H290-H412-EUH032

**Type analysis:**

c ($CN^-$) in 0,1 % KOH. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2658.1** | 100 ml | glass | 38,60 € |
| **2658.2** | 500 ml | glass | 75,15 € |

For further information, please see page 1584

## Fluoride IC Standard Solution

**1000 mg/l $F^-$**

**Type analysis:**

c ($F^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2659.1** | 100 ml | HDPE | 38,60 € |
| **2659.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1584

## Formate IC Standard Solution

**1000 mg/l $HCOO^-$**

**Type analysis:**

c ($HCOO^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **1999.1** | 100 ml | HDPE | 44,00 € |
| **1999.2** | 500 ml | HDPE | 81,20 € |

For further information, please see page 1584

## Iodate IC Standard Solution

**1000 mg/l $IO_3^-$**

**Type analysis:**

c ($IO_3^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8174.1** | 100 ml | HDPE | 38,60 € |
| **8174.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1584

## Iodide IC Standard Solution

**1000 mg/l $I^-$**

**Type analysis:**

c ($I^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2660.1** | 100 ml | HDPE | 38,60 € |
| **2660.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1584

## Lactate IC Standard Solution

**1000 mg/l $C_2H_4(OH)COO^-$**

**Type analysis:**

c ($C_2H_4(OH)COO^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8176.1** | 100 ml | glass | 39,70 € |
| **8176.2** | 500 ml | glass | 82,70 € |

For further information, please see page 1584

## Maleate IC Standard Solution

**1000 mg/l $C_2H_2(COO)_2^{2-}$**

**Type analysis:**

c ($C_2H_2(COO)_2^{2-}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8181.1** | 100 ml | glass | 39,70 € |
| **8181.2** | 500 ml | glass | 82,70 € |

For further information, please see page 1584

## Nitrate IC Standard Solution

**1000 mg/l $NO_3^-$**

**Type analysis:**

c ($NO_3^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2661.1** | 100 ml | HDPE | 38,60 € |
| **2661.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1584

## Nitrite IC Standard Solution

**1000 mg/l $NO_2^-$**

**Type analysis:**

c ($NO_2^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **2664.1** | 100 ml | HDPE | 38,60 € |
| **2664.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1584

## Oxalate IC Standard Solution

**1000 mg/l $C_2O_4^{2-}$**

**Type analysis:**

c ($C_2O_4^{2-}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **2008.1** | 100 ml | HDPE | 44,00 € |
| **2008.2** | 500 ml | HDPE | 81,20 € |

For further information, please see page 1584

## Perchlorate IC Standard Solution

**1000 mg/l $ClO_4^-$**

**Type analysis:**

c ($ClO_4^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **8186.1** | 100 ml | HDPE | 39,70 € |
| **8186.2** | 500 ml | HDPE | 82,70 € |

For further information, please see page 1584

## Phosphate IC Standard Solution

**1000 mg/l $PO_4^{3-}$**

**Type analysis:**
c ($PO_4^{3-}$) as $NH_4H_2PO_4$ in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2665.1** | 100 ml | HDPE | 38,60 € |
| **2665.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1584

## Propionate IC Standard Solution

**1000 mg/l $C_2H_5COO^-$**

**Type analysis:**
c ($C_2H_5COO^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8183.1** | 100 ml | glass | 39,70 € |
| **8183.2** | 500 ml | glass | 82,70 € |

For further information, please see page 1584

## Succinate IC Standard Solution

**1000 mg/l $C_2H_4(COO)_2^{2-}$**

**Type analysis:**
c ($C_2H_4(COO)_2^{2-}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8187.1** | 100 ml | glass | 39,70 € |
| **8187.2** | 500 ml | glass | 82,70 € |

For further information, please see page 1584

## Sulphate IC Standard Solution

**1000 mg/l $SO_4^{2-}$**

**Type analysis:**
c ($SO_4^{2-}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2666.1** | 100 ml | HDPE | 38,60 € |
| **2666.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1584

## Sulphite IC Standard Solution

**1000 mg/l $S^{4+}$**

Storage temp.: +4 °C

**Type analysis:**
c ($S^{4+}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8192.1** | 100 ml | glass | 39,70 € |
| **8192.2** | 500 ml | glass | 82,70 € |

For further information, please see page 1584

## Tartrate IC Standard Solution

**1000 mg/l $C_2H_4O_2(COO)_2^{2-}$**

**Type analysis:**
c ($C_2H_4O_2(COO)_2^{2-}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8201.1** | 100 ml | glass | 39,70 € |
| **8201.2** | 500 ml | glass | 82,70 € |

For further information, please see page 1584

## Thiocyanate IC Standard Solution

**1000 mg/l $SCN^-$**

**Type analysis:**
c ($SCN^-$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **8205.1** | 100 ml | glass | 39,70 € |
| **8205.2** | 500 ml | glass | 82,70 € |

For further information, please see page 1584

## Thiosulphate IC Standard Solution

**1000 mg/l $S_2O_3^{2-}$**

**Type analysis:**
c ($S_2O_3^{2-}$) in 0,1 % n-pentanol. ..... 1000 mg/l
Traceable to SRM from BAM.

| | | | |
|---|---|---|---|
| **8207.1** | 100 ml | glass | 39,70 € |
| **8207.2** | 500 ml | glass | 82,70 € |

For further information, please see page 1584

## Standards for IC (Ion Chromatography): Cationic Standards 1000 mg/l, ready to use

## Ammonium IC Standard Solution

**1000 mg/l $NH_4^+$**

**Type analysis:**
c ($NH_4^+$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2654.1** | 100 ml | HDPE | 38,60 € |
| **2654.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1585

## Barium IC Standard Solution

**1000 mg/l $Ba^{2+}$**

**Type analysis:**
c ($Ba^{2+}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **8167.1** | 100 ml | HDPE | 38,60 € |
| **8167.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1585

## Caesium IC Standard Solution

**1000 mg/l $Cs^+$**

**Type analysis:**
c ($Cs^+$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **8166.1** | 100 ml | HDPE | 38,60 € |

For further information, please see page 1585

## Calcium IC Standard Solution

**1000 mg/l $Ca^{2+}$**

**Type analysis:**
c ($Ca^{2+}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **1986.1** | 100 ml | HDPE | 38,60 € |
| **1986.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1585

## Lithium IC Standard Solution

**1000 mg/l $Li^+$**

**Type analysis:**
c ($Li^+$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **8158.1** | 100 ml | HDPE | 38,60 € |
| **8158.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1585

## Magnesium IC Standard Solution

**1000 mg/l $Mg^{2+}$**

**Type analysis:**
c ($Mg^{2+}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **1987.1** | 100 ml | HDPE | 38,60 € |
| **1987.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1585

## Potassium IC Standard Solution

**1000 mg/l $K^+$**

**Type analysis:**
c ($K^+$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **1985.1** | 100 ml | HDPE | 38,60 € |
| **1985.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1585

## Sodium IC Standard Solution

**1000 mg/l $Na^+$**

**Type analysis:**
c ($Na^+$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **1984.1** | 100 ml | HDPE | 38,60 € |
| **1984.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1585

## Strontium IC Standard Solution

**1000 mg/l $Sr^{2+}$**

**Type analysis:**
c ($Sr^{2+}$) in $H_2O$. ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **1988.1** | 100 ml | HDPE | 38,60 € |
| **1988.2** | 500 ml | HDPE | 75,15 € |

For further information, please see page 1585

## Standards for IC (Ion Chromatography): Ion Multi-Element Standards for IC

### Anion Multi-Element Standard I (IC)

**3 anions ($Cl^-$, $NO_3^-$, $SO_4^{2-}$) in water**

**Type analysis:**

Chloride ($Cl^-$). ..... 1000 mg/l
Nitrate ($NO_3^-$). ..... 1000 mg/l
Sulphate ($SO_4^{2-}$). ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2026.1** | 100 ml | HDPE | 131,70 € |
| **2026.2** | 500 ml | HDPE | 252,65 € |

For further information, please see page 1585

### Anion Multi-Element Standard II (IC)

**3 anions ($F^-$, $Br^-$, $PO_4^{3-}$) in water**

**Type analysis:**

Fluoride ($F^-$). ..... 1000 mg/l
Bromide ($Br^-$). ..... 1000 mg/l
Phosphate ($PO_4^{3-}$). ..... 1000 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2029.1** | 100 ml | HDPE | 138,70 € |
| **2029.2** | 500 ml | HDPE | 263,40 € |

For further information, please see page 1585

### Anion Multi-Element Standard (IC, 6 anions, 10 mg/l)

**6 anions ($F^-$, $Cl^-$, $Br^-$, $NO_3^-$, $PO_4^{3-}$, $SO_4^{2-}$) in water**

**Type analysis:**

Fluoride ($F^-$). ..... 10 mg/l
Chloride ($Cl^-$). ..... 10 mg/l
Bromide ($Br^-$). ..... 10 mg/l
Nitrate ($NO_3^-$). ..... 10 mg/l
Phosphate ($PO_4^{3-}$). ..... 10 mg/l
Sulphate ($SO_4^{2-}$). ..... 10 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2030.1** | 100 ml | HDPE | 89,80 € |
| **2030.2** | 500 ml | HDPE | 185,45 € |

For further information, please see page 1585

### Anion Multi-Element Standard (IC)

**7 Anions ($F^-$, $Cl^-$, $NO_2^-$, $Br^-$, $NO_3^-$, $PO_4^{3-}$, $SO_4^{2-}$) in water**

**Type analysis:**

Chloride ($Cl^-$). ..... 10 mg/l
Bromide ($Br^-$). ..... 25 mg/l
Fluoride ($F^-$). ..... 5 mg/l
Nitrate ($NO_3^-$). ..... 25 mg/l
Nitrite ($NO_2^-$). ..... 15 mg/l
Phosphate ($PO_4^{3-}$). ..... 40 mg/l
Sulphate ($SO_4^{2-}$). ..... 30 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2668.1** | 100 ml | HDPE | 77,30 € |
| **2668.2** | 500 ml | HDPE | 155,90 € |

For further information, please see page 1585

### Cation Multi-Element Standard (IC, 4 cations, 10 mg/l)

**4 cations ($Na^+$, $K^+$, $Mg^{2+}$, $Ca^{2+}$) in water**

**Type analysis:**

Sodium ($Na^+$). ..... 10 mg/l
Potassium ($K^+$). ..... 10 mg/l
Magnesium ($Mg^{2+}$). ..... 10 mg/l
Calcium ($Ca^{2+}$). ..... 10 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2032.1** | 100 ml | HDPE | 84,95 € |
| **2032.2** | 500 ml | HDPE | 166,65 € |

For further information, please see page 1585

### Cation Multi-Element Standard (IC)

**6 cations ($NH_4^+$, $Ca^{2+}$, $K^+$, $Li^+$, $Mg^{2+}$, $Na^+$) in 0,1 % nitric acid**

**Type analysis:**

Ammonium ($NH_4^+$). ..... 40 mg/l
Calcium ($Ca^{2+}$). ..... 40 mg/l
Potassium ($K^+$). ..... 20 mg/l
Lithium ($Li^+$). ..... 10 mg/l
Magnesium ($Mg^{2+}$). ..... 20 mg/l
Sodium ($Na^+$). ..... 20 mg/l
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2669.1** | 100 ml | HDPE | 77,30 € |
| **2669.2** | 500 ml | HDPE | 155,90 € |

For further information, please see page 1585

## Standards for conductivity measurement

### Conductivity Standard 5 µS/cm

**5 µS/cm (25 °C)**

**Type analysis:**

Conductivity (25 °C). ..... 5 µS/cm ±2 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2462.1** | 500 ml | plastic | 149,45 € |

For further information, please see page 1655

### Conductivity Standard 84 µS/cm

**84 µS/cm (25 °C)**

**Type analysis:**

Conductivity (25 °C). ..... 84 µS/cm ±1 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2432.1** | 500 ml | plastic | 27,45 € |
| **2432.2** | 1 l | plastic | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |

For further information, please see page 1655

### Conductivity Standard 100 µS/cm

**100 µS/cm (25 °C)**

**Type analysis:**

Conductivity (25 °C). ..... 100 µS/cm ±1 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2463.1** | 500 ml | plastic | 62,90 € |

For further information, please see page 1655

### Conductivity Standard 147 µS/cm

**147 µS/cm (25 °C)**

**Type analysis:**

Conductivity (25 °C). ..... 147 µS/cm ±1 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2433.1** | 500 ml | plastic | 27,45 € |
| **2433.2** | 1 l | plastic | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |

For further information, please see page 1655

### Conductivity Standard 500 µS/cm

**500 µS/cm (25 °C)**

**Type analysis:**

Conductivity (25 °C). ..... 500 µS/cm ±1 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2464.1** | 500 ml | plastic | 62,90 € |

For further information, please see page 1655

### Conductivity Standard 1000 µS/cm

**1000 µS/cm (25 °C)**

**Type analysis:**

Conductivity (25 °C). ..... 1000 µS/cm ±1 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2465.1** | 500 ml | plastic | 62,90 € |

For further information, please see page 1655

### Conductivity Standard 1413 µS/cm

**1413 µS/cm (25 °C)**

**Type analysis:**

Conductivity (25 °C). ..... 1413 µS/cm ±1 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2434.1** | 500 ml | plastic | 27,45 € |
| **2434.2** | 1 l | plastic | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |

For further information, please see page 1655

### Conductivity Standard 10000 µS/cm

**10000 µS/cm (25 °C)**

**Type analysis:**

Conductivity (25 °C). ..... 10000 µS/cm ±1 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2466.1** | 500 ml | plastic | 62,90 € |

For further information, please see page 1655

## Conductivity Standard 12880 µS/cm

**12880 µS/cm (25 °C)**

**Type analysis:**

Conductivity (25 °C)..... 12880 µS/cm ±1 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2435.1** | 500 ml | plastic | 27,45 € |
| **2435.2** | 1 l | plastic | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |

For further information, please see page 1655

## Conductivity Standard 500000 µS/cm

**500000 µS/cm (25 °C)**

UN No. 1789 • ADR 8 III

**Warning** H290-H315-H319-H335

**Type analysis:**

Conductivity (25 °C)..... 500000 µS/cm ±1 %
Traceable to SRM from NIST.

| | | | |
|---|---|---|---|
| **2467.1** | 500 ml | plastic | 62,90 € |

For further information, please see page 1655

## Standards for Determination of the Hydrocarbon Oil Index

## n-Alkane standard solution (C10-C40, all even)

**16 components (each 50 mg/l) in n-hexane**

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

Storage temp.: +4 °C

UN No. 1208 • ADR 8 II • WGK 2

**Danger**

H225-H304-H315-H336-H361f-H373-H411

**Type analysis:**

n-Decane..... 50 mg/l
n-Dodecane..... 50 mg/l
n-Tetradecane..... 50 mg/l
n-Hexadecane..... 50 mg/l
n-Octadecane..... 50 mg/l
n-Eicosane..... 50 mg/l
n-Docosane..... 50 mg/l
n-Tetracosane..... 50 mg/l
n-Hexacosane..... 50 mg/l
n-Octacosane..... 50 mg/l
n-Triacontane..... 50 mg/l
n-Dotriacontane..... 50 mg/l
n-Tetratriacontane..... 50 mg/l
n-Hexatriacontane..... 50 mg/l
n-Octatriacontane..... 50 mg/l
n-Tetracontane..... 50 mg/l

| | | | |
|---|---|---|---|
| **1772.1** | 1 ml | glass ampoule | 105,25 € |
| **1772.2** | 5 ml | glass ampoule | 155,90 € |

## n-Alkane standard solution (C10-C40, all even)

**16 components (each 100 mg/l) in n-hexane/petroleum ether (1/1)**

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

Storage temp.: +4 °C

UN No. 1208 • ADR 8 II • WGK 3

**Danger** H225-H304-H315-H336-H340-H350-H361f-H373-H411

**Type analysis:**

n-Decane..... 100 mg/l
n-Dodecane..... 100 mg/l
n-Tetradecane..... 100 mg/l
n-Hexadecane..... 100 mg/l
n-Octadecane..... 100 mg/l
n-Eicosane..... 100 mg/l
n-Docosane..... 100 mg/l
n-Tetracosane..... 100 mg/l
n-Hexacosane..... 100 mg/l
n-Octacosane..... 100 mg/l
n-Triacontane..... 100 mg/l
n-Dotriacontane..... 100 mg/l
n-Tetratriacontane..... 100 mg/l
n-Hexatriacontane..... 100 mg/l
n-Octatriacontane..... 100 mg/l
n-Tetracontane..... 100 mg/l

| | | | |
|---|---|---|---|
| **9331.1** | 5 ml | glass ampoule | 198,90 € |

## n-Alkane standard solution (C7, C8, C9, C10-C40, all even)

**19 components (each 50 mg/l) in isooctane**

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

Storage temp.: +4 °C

UN No. 1262 • ADR 8 II • WGK 2

**Danger**

H225-H304-H315-H336-H410

**Type analysis:**

n-Heptane..... 50 mg/l
n-Octane..... 50 mg/l
n-Nonane..... 50 mg/l
n-Decane..... 50 mg/l
n-Dodecane..... 50 mg/l
n-Tetradecane..... 50 mg/l
n-Hexadecane..... 50 mg/l
n-Octadecane..... 50 mg/l
n-Eicosane..... 50 mg/l
n-Docosane..... 50 mg/l
n-Tetracosane..... 50 mg/l
n-Hexacosane..... 50 mg/l
n-Octacosane..... 50 mg/l
n-Triacontane..... 50 mg/l
n-Dotriacontane..... 50 mg/l
n-Tetratriacontane..... 50 mg/l
n-Hexatriacontane..... 50 mg/l
n-Octatriacontane..... 50 mg/l
n-Tetracontane..... 50 mg/l

| | | | |
|---|---|---|---|
| **9629.1** | 5 ml | glass ampoule | 177,40 € |

## Extraction solvent stock solution

**20 µl/l n-decane and 20 mg/l n-tetracontane in n-hexane**

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

UN No. 1208 • ADR 8 II • WGK 2

**Danger**

H225-H304-H315-H336-H361f-H373-H411

**Type analysis:**

n-Decane..... 20 µl/l
n-Tetracontane..... 20 mg/l

| | | | |
|---|---|---|---|
| **1750.2** | 10 ml | glass ampoule | 87,65 € |

## Florisil® quality control standard

**1000 mg/l mineral oil and 1000 mg/l diesel in n-hexane**

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

UN No. 1208 • ADR 8 II • WGK 3

**Danger** H225-H304-H315-H336-H350-H361f-H373-H411

**Type analysis:**

Mineral oil..... 1000 mg/l
Diesel..... 1000 mg/l

| | | | |
|---|---|---|---|
| **9334.1** | 5 ml | glass ampoule | 61,85 € |

## Standard mixture of mineral oils

**5000 mg/l mineral oil and 5000 mg/l diesel in n-hexane**

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

Storage temp.: +4 °C

UN No. 1208 • ADR 8 II • WGK 2

**Danger** H225-H304-H315-H336-H350-H361f-H373-H411

**Type analysis:**

Mineral oil..... 5000 mg/l
Diesel..... 5000 mg/l

| | | | |
|---|---|---|---|
| **1773.2** | 5 ml | glass ampoule | 87,65 € |

## Standard mixture of mineral oils

**500 mg/l mineral oil and 500 mg/l diesel in acetone**

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

UN No. 1090 • ADR 8 II • WGK 1

**Danger** H225-H319-H336-EUH066

**Type analysis:**

Mineral oil..... 500 mg/l
Diesel..... 500 mg/l

| | | | |
|---|---|---|---|
| **1774.2** | 5 ml | glass ampoule | 99,90 € |

## Stearyl stearate test solution

**2000 mg/l in n-hexane**

For determination of hydrocarbon oil index according to ISO 9377-2-Mod.

Storage temp.: +4 °C

UN No. 1208 • ADR 8 II • WGK 2

**Danger**

H225-H304-H315-H336-H361f-H373-H411

**Type analysis:**

Stearyl stearate (in n-hexane)..... 2000 mg/l

| | | | |
|---|---|---|---|
| **1760.2** | 10 ml | glass ampoule | 117,20 € |

## Stannic oxide

▶ Tin(IV) oxide see p. 2344

## Stanniol

▶ Tin foil see p. 2343

## Starch from potatoes, soluble

### Starch from potatoes, soluble

NEW

**p.a., ACS**

$(C_6H_{10}O_5)_n$

M $(162,14)_n$ g/mol

D 1,04

mp 257 °C

Solubility: 50 g/l ($H_2O$, 90 °C)

[9005-84-9] • EC No. 232-686-4

WGK 1

**Guarantee analysis:**

Appearance..... white powder
pH (2 % in $H_2O$, 25 °C)..... 5,0-7,0
Ash content..... ≤0,4 %
Solubility..... complies
Sensitivity..... complies

| | | | |
|---|---|---|---|
| **2045.1** | 100 g | plastic | 21,40 € |
| **2045.2** | 250 g | plastic | 35,40 € |
| **2045.3** | 1 kg | plastic | 117,20 € |
| Original pack 6 x 1 kg | | | 111,34/1 kg |

## Starch, soluble

### Starch, soluble

**soluble**

Oxidized corn starch

$(C_6H_{10}O_5)_n$

M $(162,14)_n$ g/mol

[65996-62-5] • EC No. 232-679-6

WGK 1

**Type analysis:**

Appearance..... white to yellowish powder
pH value..... 5,5-7,5
Sulphated ash..... ≤0,6 %
Moisture..... ≤14 %
Sulphur dioxide ($SO_2$)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4701.1** | 1 kg | plastic | 23,15 € |
| Original pack 6 x 1 kg | | | 21,99/1 kg |
| **4701.2** | 5 kg | plastic | 78,40 € |

For further information, please see page 1420

## Starch

$(C_6H_{10}O_5)_n$

M $(162,14)_n$ g/mol

[9005-25-8] • EC No. 232-679-6

WGK 1

### Starch from corn

**extra pure**

**Type analysis:**

Appearance..... white, fine powder
pH value..... 4,0-7,0
Loss on drying..... ≤15 %
Sulphur dioxide ($SO_2$)..... ≤0,005 %
Sulphated ash..... ≤0,6 %
Oxidizing substances..... ≤0,002 %
Iron (Fe)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **9444.1** | 1 kg | plastic | 19,90 € |
| Original pack 6 x 1 kg | | | 18,91/1 kg |
| **9444.2** | 5 kg | plastic | 69,35 € |

### Starch from potatoes

**extra pure**

**Type analysis:**

Appearance..... white powder
pH value..... 5,0-8,0
Moisture..... ≤20 %
Sulphur dioxide ($SO_2$)..... ≤0,002 %
Heavy metals..... ≤0,0005 %
Protein..... ≤0,1 %
Ash..... ≤0,3 %

| | | | |
|---|---|---|---|
| **9441.1** | 1 kg | plastic | 17,75 € |
| Original pack 6 x 1 kg | | | 16,86/1 kg |
| **9441.2** | 5 kg | plastic | 54,30 € |

### Starch from rice

**extra pure**

**Type analysis:**

Appearance..... white powder
pH value..... 5,0-8,0
Loss on drying..... ≤10,0 %
Sulphur dioxide ($SO_2$)..... ≤0,005 %
Sulphated ash..... ≤1,0 %
Oxidizing substances..... ≤0,002 %
Iron (Fe)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **9368.1** | 1 kg | plastic | 26,35 € |
| Original pack 6 x 1 kg | | | 25,03/1 kg |
| **9368.2** | 5 kg | plastic | 96,65 € |

### Starch from wheat

**extra pure**

Weizenstärke

**Type analysis:**

Appearance..... white to yellowish powder
pH value..... 6,0-7,0
Moisture..... ≤13 %
Sulphur dioxide ($SO_2$)..... ≤0,001 %
Protein..... ≤0,35 %
Fat..... ≤0,1 %
Ash..... ≤0,25 %

| | | | |
|---|---|---|---|
| **9447.1** | 1 kg | plastic | 23,15 € |
| Original pack 6 x 1 kg | | | 21,99/1 kg |
| **9447.2** | 5 kg | plastic | 70,85 € |

## Starch gum

▶ Dextrin see p. 1865

## Starch 1 % indicator solution

### Starch 1 % indicator solution

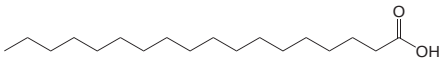
**in water, stabilized**

Starch solution

$(C_6H_{10}O_5)_n$

| | | | |
|---|---|---|---|
| **T133.1** | 500 ml | plastic | 24,20 € |

## Stearic acid



### Stearic acid

**≥98 %**

Octadecanoic acid

$C_{18}H_{36}O_2$

M 284,47 g/mol

D 0,94 • bp 383 °C

mp 66-69 °C • flp 196 °C

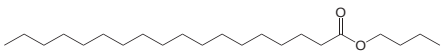
[57-11-4] • EC No. 200-313-4

**Type analysis:**

Assay (GC)..... ≥98 %
Acid value..... 194-199 mg KOH/g
Melting point..... 66-69 °C

| | | | |
|---|---|---|---|
| **9459.1** | 1 kg | plastic | 21,40 € |
| Original pack 6 x 1 kg | | | 20,33/1 kg |
| **9459.2** | 5 kg | plastic | 84,85 € |

## Stearic acid butyl ester



### Stearic acid butyl ester

**for synthesis**

Mixture of butyl stearate and butyl palmitate.

Butyl stearate, Butyl octadecanoate

$C_{22}H_{44}O_2$

M 340,60 g/mol

D 0,86 • bp 343 °C

mp 16 °C • flp 160 °C

Solubility: 3 g/l ($H_2O$, 25 °C)

[123-95-5] • EC No. 204-666-5

WGK 1

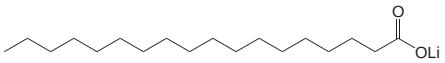
**Type analysis:**

Saponification value (mg KOH/g)..... 168-177
Water (KF)..... ≤0,1 %

| | | | |
|---|---|---|---|
| **8150.2** | 100 ml | glass | 13,45 € |
| **8150.1** | 1 l | glass | 39,25 € |
| Original pack 6 x 1 l | | | 37,29/1 l |
| **8150.3** | 2,5 l | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |

S

## Stearic acid lithium salt



### Stearic acid lithium salt

**pure**

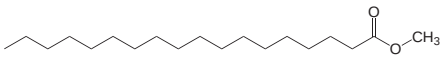
Lithium stearate, Lithium octadecanoate
$C_{18}H_{35}LiO_2$
M 290,40 g/mol
mp 190-210 °C
[4485-12-5] • EC No. 266-107-1
WGK 1

**Type analysis:**

Appearance. ..... white powder
Melting range. ..... 190-210 °C
Moisture. ..... ≤0,5 %
Metal content. ..... 2,2-2,5 %
Free fatty acid. ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **8238.1** | 500 g | plastic | 23,15 € |
| Original pack 6 x 500 g | | | 21,99/500 g |

## Stearic acid methyl ester



### Stearic acid methyl ester

**for synthesis**

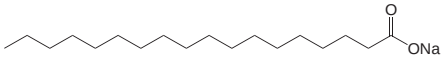
Methyl stearate, Methyl octadecanoate
$C_{19}H_{38}O_2$
M 298,51 g/mol
D 0,85 • bp 215 °C (20 hPa)
mp 37-39 °C • flp 150 °C
[112-61-8] • EC No. 203-990-4
WGK 1

**Type analysis:**

Saponification value (mg KOH/g). ..... 190-195
Acid value (mg KOH/g). ..... ≤1
Iodine value (g $I_2$/ 100 g). ..... ≤0,5
Mixture of methyl stearate, methyl palmitate and methyl myristate.

| | | | |
|---|---|---|---|
| **4704.1** | 5 g | glass | 35,40 € |
| **4704.2** | 25 g | glass | 70,45 € |
| **4704.3** | 50 g | glass | 104,20 € |

## Stearic acid sodium salt



### Stearic acid sodium salt

**88-92 %**

Sodium stearate, Sodium octadecanoate
$C_{18}H_{35}NaO_2$
M 306,45 g/mol
[822-16-2] • EC No. 212-490-5
WGK 1

**Type analysis:**

Appearance. ..... white to light yellowish powder
Assay (GC). ..... 88-92 %
Humidity. ..... ≤2,5 %
Free NaOH. ..... 0,05-0,2 %

| | | | |
|---|---|---|---|
| **8628.1** | 1 kg | plastic | 35,40 € |
| Original pack 6 x 1 kg | | | 33,63/1 kg |

## Stearic acid zinc salt

▶ Zinc stearate see p. 2388

## Stearic oil

### Stearic oil

**techn.**

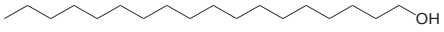
D 0,91
flp 200 °C
[112-80-1]
WGK 1

**Type analysis:**

Appearance. ..... pale yellow oil
Acid value (mg KOH/g). ..... 196-204
Iodine value (g $I_2$/ 100 g). ..... 110-120
Oleic acid. ..... 56-66 %
Linoleic acid. ..... 18-25 %
Linolenic acid. ..... 6-10 %

| | | | |
|---|---|---|---|
| **9460.1** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |

## Stearyl alcohol



### Stearyl alcohol

**≥95 %**

1-Octadecanol
$C_{18}H_{38}O$
M 270,50 g/mol
D 0,83 • bp 340-355 °C
mp 59 °C
[112-92-5] • EC No. 204-017-6

**Type analysis:**

Assay. ..... ≥95 %
Acid value. ..... ≤0,1
Saponification value. ..... ≤1
Iodine value. ..... ≤0,7
Hydroxyl value. ..... 200-210
Solidification range. ..... 55-59 °C
Distribution of carbon chains:
C-16. ..... 0-4 %
C-20. ..... 0-3 %

| | | | |
|---|---|---|---|
| **8663.2** | 500 g | plastic | 17,75 € |
| Original pack 6 x 500 g | | | 16,86/500 g |
| **8663.1** | 1 kg | plastic | 25,70 € |
| Original pack 6 x 1 kg | | | 24,42/1 kg |

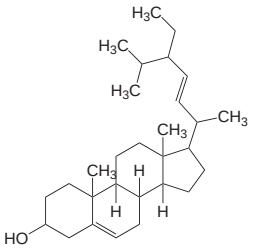
## Steel wool

▶ Iron wool see p. 2010

## Stibous chloride

▶ Antimony(III) chloride see p. 1747

## Stigmasterol



### Stigmasterol

**≥90 %**

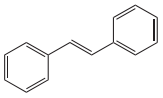
$C_{29}H_{48}O$
M 412,70 g/mol
mp ~168 °C
[83-48-7] • EC No. 201-482-7

**Type analysis:**

Appearance. ..... white powder
Assay. ..... ≥90 %

| | | | |
|---|---|---|---|
| **9468.1** | 1 g | glass | 25,70 € |

## trans-Stilbene



### trans-Stilbene

**≥97 %**

trans-1,2-Diphenylethylene
$C_{14}H_{12}$
M 180,25 g/mol
D 1,14 • bp 306-307 °C
mp 123-125 °C
[103-30-0] • EC No. 203-098-5
WGK 1

**Type analysis:**

Assay (HPLC). ..... ≥97,0 %
Solution (1 % in acetone). ..... colourless
Water (KF). ..... ≤0,5 %
Melting point. ..... 123-125 °C

| | | | |
|---|---|---|---|
| **5246.1** | 50 g | plastic | 39,25 € |
| **5246.2** | 100 g | plastic | 67,65 € |

## Storage solution for pH-electrodes

▶ Potassium chloride solution (3 N) see p. 2165
▶ Potassium chloride solution (3 N) with AgCl see p. 2165

## Streptavidin

### Streptavidin

**≥15 U/mg, lyophilized**

Recombinant from *Streptomyces avidinii*, expressed in *E. coli*

M ~55000 g/mol

Storage temp.: -20 °C •

Transport temp.: room temp.

[9013-20-1]

WGK 1

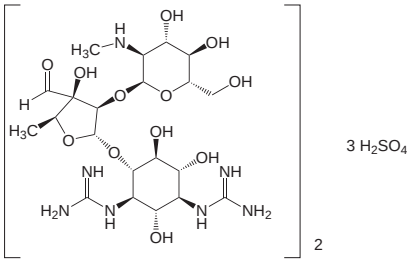
**Type analysis:**

Activity. ..... ≥15 U/mg

Activity: one unit (U) is defined as the amount of streptavidin that binds one microgram of D-biotin at pH 7,0.

| | | | |
|---|---|---|---|
| **6073.1** | 1 mg | plastic | 78,40 € |
| **6073.2** | 5 mg | plastic | 195,15 € |
| **6073.3** | 10 mg | plastic | 327,90 € |

## Streptomycin sulphate



$3\ H_2SO_4$

$C_{42}H_{84}N_{14}O_{36}S_3$

M 1457,38 g/mol

Storage temp.: +20 °C

[3810-74-0] • EC No. 223-286-0

WGK 1

**Warning** H302-H361d

### Streptomycin sulphate

**CELLPURE® ≥720 I.U./mg**

Bacteriostatic antibiotic.
For cell culture and biochemistry.

**Guarantee analysis:**

Assay. ..... ≥720 I.U./mg
pH value (25 % in $H_2O$). ..... 4,5-7,0
Sulphate ($SO_4$). ..... 18,0-21,5 %
Sulphated ash. ..... ≤1,0 %
Loss on drying. ..... ≤7,0 %
Streptomycin B. ..... ≤3,0 %
Colorimetric test. ..... ≥90 %
Endotoxins. ..... ≤0,25 I.U./mg

| | | | |
|---|---|---|---|
| **HP66.1** | 10 g | glass | 27,85 € |
| **HP66.2** | 25 g | glass | 40,75 € |
| **HP66.3** | 50 g | glass | 65,50 € |

For further information, please see page 1433

### Streptomycin sulphate

**>720 I.U./mg, for biochemistry**

Bacteriostatic antibiotic

**Type analysis:**

Assay. ..... >720 I.U./mg
pH value (25 % in $H_2O$). ..... 4,5-7,0
Sulphate ($SO_4$). ..... 18,0-21,5 %
Sulphated ash. ..... <1,0 %
Loss on drying. ..... <7,0 %

| | | | |
|---|---|---|---|
| **0236.1** | 10 g | glass | 20,35 € |
| **0236.2** | 25 g | glass | 30,65 € |
| **0236.3** | 50 g | glass | 48,30 € |

For further information, please see page 1434

## Streptothricine

▶ Nourseothricin dihydrogen sulphate see p. 2105

## Stripping Buffer

▶ Roti®-Free Stripping Buffer 2.2 plus see p. 2217
▶ Roti®-Free Stripping Buffer 2.0 see p. 2217
▶ Roti®-Free Stripping Buffer see p. 2217

## Strontium Standards

▶ Strontium AAS Standard Solution see p. 2296
▶ Strontium ICP Standard Solution see p. 2300
▶ Strontium ICP Standard Solution see p. 2305
▶ Strontium IC Standard Solution see p. 2312

## Strontium acetate hemihydrate

### Strontium acetate hemihydrate

**≥98 %, extra pure**

$C_4H_6O_4Sr \cdot ½\ H_2O$

M 214,72 g/mol

D 2,1

Solubility: 350 g/l ($H_2O$, 20 °C)

[543-94-2] • EC No. 208-854-8

WGK 1

**Type analysis:**

Assay. ..... ≥98,0 %
pH value (5 %). ..... 7,0-9,0
Chloride (Cl). ..... ≤0,05 %
Lead (Pb). ..... ≤0,001 %
Calcium (Ca). ..... ≤0,5 %
Iron (Fe). ..... ≤0,005 %
Loss on drying (105 °C, 2 h). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **9513.1** | 100 g | plastic | 21,40 € |
| **9513.2** | 500 g | plastic | 56,90 € |
| Original pack 6 x 500 g | | | 54,06/500 g |
| **9513.3** | 1 kg | plastic | 87,00 € |
| Original pack 6 x 1 kg | | | 82,65/1 kg |

## Strontium carbonate

### Strontium carbonate

**ROTI®METIC 99,998 % (4N8)**

$SrCO_3$

M 147,63 g/mol

D 3,50

mp >1200 °C

Solubility: 0,01 g/l ($H_2O$, 20 °C)

[1633-05-2] • EC No. 216-643-7

**Type analysis:**

Assay (metals basis). ..... 99,998 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5376.1** | 5 g | plastic | 50,00 € |
| **5376.2** | 25 g | plastic | 134,40 € |

## Strontium chloride hexahydrate

### Strontium chloride hexahydrate

**≥99 %, p.a.**

For the preparation of further strontium compounds.

$SrCl_2 \cdot 6\ H_2O$

M 266,62 g/mol

D 1,95

mp 61 °C

Solubility: 2058 g/l ($H_2O$, 40 °C)

[10025-70-4] • EC No. 233-971-6

WGK 1

**Danger** H318

**Guarantee analysis:**

Assay. ..... ≥99 %
pH value (5 %, 20 °C). ..... 5-7
Heavy metals (as Pb). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,01 %
Barium (Ba). ..... ≤0,02 %
Calcium (Ca). ..... ≤0,05 %
Iron (Fe). ..... ≤0,001 %
Sodium (Na). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **4473.1** | 100 g | plastic | 21,40 € |
| **4473.2** | 500 g | plastic | 54,75 € |
| Original pack 6 x 500 g | | | 52,01/500 g |
| **4473.3** | 1 kg | plastic | 91,95 € |
| Original pack 6 x 1 kg | | | 87,35/1 kg |

## Strontium nitrate

$Sr(NO_3)_2$
M 211,63 g/mol
D 2,99 • bp 645 °C
mp 570 °C
Solubility: 660 g/l ($H_2O$, 20 °C)
[10042-76-9] • EC No. 233-131-9
UN No. 1507 • ADR 5.1 III • WGK 2
**Danger** H272-H315-H319-H335

### Strontium nitrate
**ROTI®METIC 99,999 % (5N)**

**Type analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5078.1** | 25 g | plastic | 149,45 € |

### Strontium nitrate
**≥99 %, p.a., ACS**
Pyrotechnics, signal lights, manufacturing of matches

**Guarantee analysis:**
Assay (compl.)..... ≥99 %
pH value (5 % in $H_2O$)..... 5,0-7,0
In $H_2O$ insoluble matter..... ≤0,01 %
Loss on drying (105 °C)..... ≤0,1 %
Chloride (Cl)..... ≤0,002 %
Sulphate ($SO_4$)..... ≤0,005 %
Barium (Ba)..... ≤0,05 %
Calcium (Ca)..... ≤0,05 %
Iron (Fe)..... ≤0,0005 %
Sodium (Na)..... ≤0,1 %
Magnesium (Mg)..... ≤0,1 %
Heavy metals (as Pb)..... ≤0,0005 %

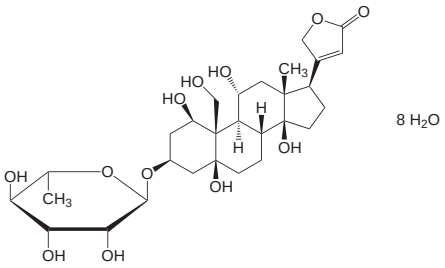
| | | | |
|---|---|---|---|
| **4413.1** | 100 g | plastic | 24,65 € |
| **4413.2** | 250 g | plastic | 46,15 € |
| **4413.3** | 500 g | plastic | 87,00 € |
| Original pack 6 x 500 g | | | 82,65/500 g |

### Strontium nitrate
**≥98 %, extra pure**

**Type analysis:**
Assay (compl.)..... ≥98 %
Loss on drying (105 °C)..... ≤0,5 %
Iron (Fe)..... ≤0,001 %
Sodium (Na)..... ≤0,1 %
Heavy metals (as Pb)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **2732.1** | 100 g | plastic | 24,65 € |
| **2732.2** | 500 g | plastic | 38,60 € |
| Original pack 6 x 500 g | | | 36,67/500 g |
| **2732.3** | 1 kg | plastic | 55,80 € |
| Original pack 6 x 1 kg | | | 53,01/1 kg |

## g-Strophanthin

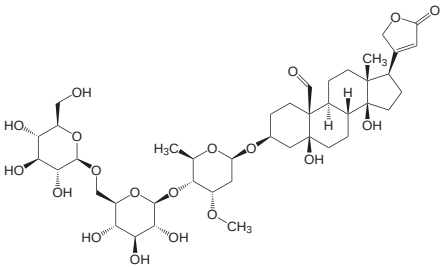



### g-Strophanthin
**≥98 %**
Ouabain-octahydrate
$C_{29}H_{44}O_{12} \cdot 8\ H_2O$
M 728,78 g/mol
[11018-89-6] • EC No. 211-139-3
UN No. 1544 • ADR 6.1 II • WGK 3
**Danger** H301+H331-H373

**Type analysis:**
Assay (dry substance)..... ≥98,0 %
Loss on drying..... ≤22,0 %

| | | | |
|---|---|---|---|
| **8048.1** | 1 g | glass | 327,90 € |

## K-Strophantoside

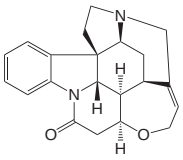


### K-Strophantoside
**≥85 %**
$C_{42}H_{64}O_{19}$
M 872,97 g/mol
mp 199-200 °C
[33279-57-1] • EC No. 251-439-1
UN No. 2811 • ADR 6.1 III • WGK 3
**Danger** H301+H331-H373

**Type analysis:**
Appearance..... white to yellowish powder
Assay (HPLC)..... ≥85 %

| | | | |
|---|---|---|---|
| **4078.1** | 50 mg | glass | 79,05 € |

## Strychnine

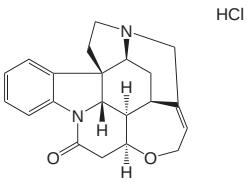


### Strychnine
**≥95 %, for biochemistry**
Strychnidin-10-one
$C_{21}H_{22}N_2O_2$
M 334,42 g/mol
mp 286-288 °C
[57-24-9] • EC No. 200-319-7
UN No. 1692 • ADR 6.1 I • WGK 3
**Danger** H300+H310-H400-H410

**Type analysis:**
Assay (HPLC)..... ≥95 %

| | | | |
|---|---|---|---|
| **4843.1** | 10 g | plastic | 17,10 € |

## Strychnine hydrochloride

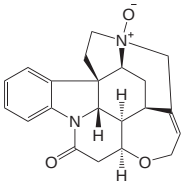



### Strychnine hydrochloride
**for biochemistry**
$C_{21}H_{22}N_2O_2 \cdot HCl$
M 370,87 g/mol
[1421-86-9] • EC No. 215-826-9
UN No. 1692 • ADR 6.1 I • WGK 3
**Danger** H300+H310+H330-H410

**Type analysis:**
Appearance..... white to off-white powder

| | | | |
|---|---|---|---|
| **4845.1** | 10 g | plastic | 20,65 € |

## Strychnine N-oxide



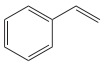
### Strychnine N-oxide
**ROTICHROM® ~CHR**
Aminoxystrychnine
$C_{21}H_{22}N_2O_3$
M 350,40 g/mol
mp 207-208 °C
[7248-28-4] • EC No. 230-656-5
UN No. 1692 • ADR 6.1 I • WGK 3
**Danger** H300+H330-H400-H410

| | | | |
|---|---|---|---|
| **4277.1** | 500 mg | glass | 46,80 € |

## Stylophorin

▶ Chelidonine see p. 1825

## Styrene



### Styrene

**≥99,5 %, for synthesis, stab.**

Vinyl benzene, Phenylethylene, Styrol
$C_8H_8$
M 104,15 g/mol
D 0,91 • bp 145 °C
mp -31 °C • flp 31 °C
Solubility: 0,24 g/l ($H_2O$, 20 °C)
[100-42-5] • EC No. 202-851-5
UN No. 2055 • ADR 3 III • WGK 2

**Danger**

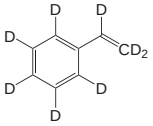
H226-H315-H319-H332-H361d-H372

**Type analysis:**

Assay (GC). ..... ≥99,5 %
Density (20 °C). ..... ~0,906 g/cm³
Polymer content. ..... ≤0,001 %
Stabilized with max. 10-15 ppm 4-tert-Butylcatechol (TBC)

| | | | |
|---|---|---|---|
| **2641.1** | 500 ml | glass | 20,35 € |
| **2641.2** | 1 l | glass | 29,60 € |
| Original pack 6 x 1 l | | | 28,12/1 l |
| **2641.3** | 2,5 l | glass | 53,65 € |
| Original pack 4 x 2,5 l | | | 50,97/2,5 l |

## Styrene D8



### Styrene D8

**99 Atom%D, stab. with 4-tert-Butylcatechol**

For nuclear magnetic resonance spectroscopy.
$C_8D_8$
M 112,22 g/mol
D 0,98 • bp 50 °C
mp -30 °C • flp 32 °C
Storage temp.: +4 °C
[19361-62-7] • EC No. 242-995-6
UN No. 2055 • ADR 3 III • WGK 2

**Danger**

H226-H315-H319-H332-H361d-H372

**Type analysis:**

Deuterising degree. ..... ≥99 %
Water (KF, $H_2O$+$D_2O$). ..... ≤0,05 %
4-tert. Butylcatechol (mass %). ..... 0,5 %

| | | | |
|---|---|---|---|
| **9921.1** | 1 g | glass ampoule | 113,85 € |

## Styrol

▶ Styrene see p. 2319

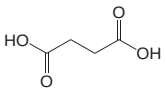
## Substrates


| Art. No. | Description | Page |
|---|---|---|
| 4001 | Acetylthiocholine iodide | 1704 |
| A155 | 5-Bromo-4-chloro-3-indolyl phosphate disodium salt | 1786 |
| 6368 | 5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt | 1786 |
| 4149 | 5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide | 1787 |
| 4152 | 5-Bromo-4-chloro-3-indoxyl-β-D-cellobioside | 1787 |
| 8434 | 5-Bromo-4-chloro-3-indoxyl-α-D-glucopyranoside | 1787 |
| 8452 | 2-Butyrylthiocholine iodide | 1799 |
| 4148 | L-Carnosine | 1814 |
| 4251 | 6-Chloro-3-indoxyl-β-D-galactopyranoside | 1828 |
| 4057 | 6-Chloro-3-indoxyl-β-D-glucuronic acid cyclohexylammonium salt | 1828 |
| 4247 | 6-Chloro-3-indoxyl phosphate p-toluidine salt | 1828 |
| 4104 | 4-Chloro-1-naphthol | 1829 |
| 4094 | Coelenterazine | 1839 |
| 8459 | Creatine phosphate disodium salt tetrahydrate | 1847 |
| CN75 | 3,3'-Diaminobenzidine tetrahydrochloride | 1866 |
| 8432 | 8-Hydroxyquinoline-β-D-glucuronic acid, sodium salt | 1996 |
| 4243 | 3-Indoxyl-β-D-glucopyranoside | 2004 |
| CN24 | D-Luciferin | 2042 |
| 4096 | D-Luciferin sodium salt | 2043 |
| 4203 | Luminol | 2043 |
| 7708 | Luminol sodium salt hemihydrate | 2043 |
| 4083 | 4-Methylumbelliferyl-N-acetyl-β-D-galactosaminide | 2079 |
| 4084 | 4-Methylumbelliferyl-β-D-galactopyranoside | 2079 |
| 4086 | 4-Methylumbelliferyl-α-D-glucopyranoside | 2080 |
| 4093 | 4-Methylumbelliferyl-β-D-glucopyranoside | 2080 |
| 6394 | 4-Methylumbelliferyl-β-D-glucuronide dihydrate | 2080 |
| 4103 | 4-Methylumbelliferyl phosphate | 2080 |
| KK26 | 1-Naphthyl phosphate monosodium salt monohydrate | |
| 4058 | 4-Nitrophenyl-N-acetyl-β-D-galactosaminide | 2102 |
| 4062 | 4-Nitrophenyl-N-acetyl-β-D-glucosaminide | 2102 |
| 4018 | 4-Nitrophenyl-α-L-fucopyranoside | 2102 |
| CN22 | 2-Nitrophenyl-β-D-galactopyranoside | 2102 |
| 4063 | 4-Nitrophenyl-α-D-galactopyranoside | 2102 |
| 4081 | 4-Nitrophenyl-β-D-galactopyranoside | 2103 |
| 4077 | 2-Nitrophenyl-β-D-glucopyranoside | 2103 |
| 4082 | 4-Nitrophenyl-β-D-glucopyranoside | 2103 |
| 4165 | 4-Nitrophenyl phosphate disodium salt hexahydrate | 2103 |
| 4079 | 4-Nitrophenyl-β-D-xyloside | 2103 |
| 4421 | p-Nitrotetrazolium blue chloride | 2104 |
| 8397 | Phosphoenolpyruvic acid, trisodium salt heptahydrate | 2149 |
| 9202 | Roti®-DAB Kit | 2209 |
| 1117 | Roti®fair pNPP 5mg | 2214 |
| 1128 | Roti®fair pNPP 20mg | 2214 |
| 3734 | Roti®-Lumin ultra | 2221 |
| 3692 | Roti®-Lumin plus | 2221 |
| P078 | Roti®-Lumin | 2221 |
| 6350 | 3,3',5,5'-Tetramethylbenzidine | 2337 |
| 4107 | 3,3',5,5'-Tetramethylbenzidine dihydrochloride | 2338 |
| HN36 | X-α-Gal | 2379 |
| 2315 | X-β-Gal | 2379 |
| 4041 | X-Glu | 2379 |
| 0018 | X-Gluc | 2379 |


## Succinate Standards

▶ Succinate IC Standard Solution see p. 2312

## Succinic acid



Butanedioic acid, Amber acid
$C_4H_6O_4$
M 118,09 g/mol
D 1,56 • bp 235 °C
mp 185-191 °C • flp 206 °C
Solubility: 58 g/l ($H_2O$, 20 °C)
[110-15-6] • EC No. 203-740-4
WGK 1

**Warning** H319

### Succinic acid

**≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay. ..... ≥99,0 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
Melting point. ..... 185-191 °C
Ash content. ..... ≤0,02 %
Solubility (10 g in 150 ml $H_2O$). ..... clear and complete
Chloride (Cl) ..... ≤0,001 %
Phosphate ($PO_4$) ..... ≤0,001 %
Sulphate ($SO_4$) ..... ≤0,003 %
Total nitrogen (as N). ..... ≤0,001 %
Heavy metals (as Pb) ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **2725.1** | 250 g | plastic | 26,35 € |
| **2725.2** | 500 g | plastic | 36,05 € |
| Original pack 6 x 500 g | | | 34,25/500 g |
| **2725.3** | 1 kg | plastic | 57,95 € |
| Original pack 6 x 1 kg | | | 55,05/1 kg |

### Succinic acid

**≥99,5 %**

**Type analysis:**

Appearance. ..... white, cryst. powder
Assay. ..... ≥99,5 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
Loss on drying ..... ≤0,5 %
Melting point. ..... 185-187 °C
Sulphate ($SO_4$) ..... ≤0,02 %
Chloride (Cl) ..... ≤0,005 %
Heavy metals. ..... ≤0,001 %
Iron (Fe). ..... ≤0,0005 %
Maleic acid + fumaric acid ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **8268.1** | 250 g | plastic | 25,70 € |
| **8268.2** | 1 kg | plastic | 57,55 € |
| Original pack 6 x 1 kg | | | 54,67/1 kg |

S

## Succinic acid disodium salt hexahydrate

### Succinic acid disodium salt hexahydrate

**≥99 %, for biochemistry**
Sodium succinate
$C_4H_4O_4Na_2 \cdot 6\ H_2O$
M 270,15 g/mol
mp 120 °C
Solubility: 349 g/l ($H_2O$, 25 °C)
[6106-21-4] • EC No. 205-778-7
WGK 1

**Type analysis:**
Assay (dry substance). ..... ≥99,0 %
Loss on drying (130 °C). ..... 38,0-42,0 %

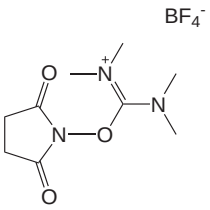
| | | | |
|---|---|---|---|
| **3195.1** | 100 g | plastic | 37,55 € |

For further information, please see page 1269

## di-(N-Succinimidyl) carbonate

▶ N,N'-Disuccinimidyl carbonate (DSC) see p. 1889

## O-(N-Succinimidyl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TSTU)




### O-(N-Succinimidyl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TSTU)

**≥99 %**
Coupling reagent for peptide synthesis
TSTU
$C_9H_{16}BF_4N_3O_3$
M 301,1 g/mol
mp 196-200 °C
Storage temp.: +4 °C
[105832-38-0]
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Assay (HPLC). ..... ≥99,0 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2130.1** | 5 g | glass | 50,00 € |
| **2130.2** | 25 g | glass | 195,15 € |

## D-Sucrose

▶ D(+)-Saccharose see p. 2237

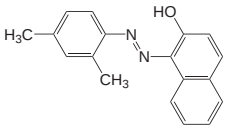
## Sucrose epichlorhydrin copolymer

▶ Polysucrose 400 see p. 2160

## Sucrose polymer

▶ Polysucrose 400 see p. 2160

## Sudan II (C.I. 12140)




### Sudan II (C.I. 12140)

**for microscopy**
Solvent Orange 7
$C_{18}H_{16}N_2O$
M 276,34 g/mol
[3118-97-6]
WGK 3

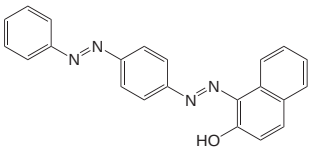
**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... orange red powder
Appearance of solution (1 % in $CHCl_3$)... orange to red

| | | | |
|---|---|---|---|
| **7732.1** | 5 g | glass | 11,75 € |
| **7732.2** | 25 g | glass | 24,65 € |
| **7732.3** | 100 g | glass | 57,95 € |

For further information, please see page 1467

## Sudan III (C.I. 26100)




### Sudan III (C.I. 26100)

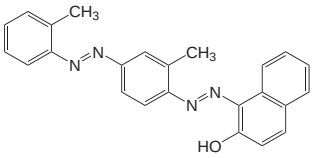
**for microscopy**
Sudan Red B
$C_{22}H_{16}N_4O$
M 352,39 g/mol
mp 199 °C (dec.)
[85-86-9] • EC No. 201-638-4
WGK 1

**Type analysis:**
Appearance. ..... dark-red, brownish powder
Dye content. ..... ≤75,0 %

| | | | |
|---|---|---|---|
| **4711.2** | 50 g | glass | 23,15 € |
| **4711.1** | 100 g | plastic | 44,00 € |

For further information, please see page 1467

## Sudan IV (C.I. 26105)




### Sudan IV (C.I. 26105)

**for microscopy**
Scarlet red, Fatty ponceau
$C_{24}H_{20}N_4O$
M 380,45 g/mol
mp 199 °C (dec.)
Solubility: 0,1 g/l ($H_2O$, 20 °C)
[85-83-6] • EC No. 201-635-8
WGK 1

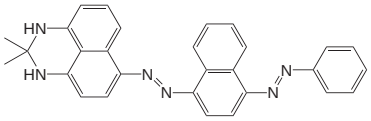
**Warning** H315-H319-H341

**Type analysis:**
Appearance. ..... dark red powder
Maximum absorption. ..... 520-523 nm

| | | | |
|---|---|---|---|
| **0327.1** | 25 g | glass | 22,50 € |
| **0327.2** | 50 g | glass | 32,15 € |

For further information, please see page 1467

## Sudan black B (C.I. 26150)




### Sudan black B (C.I. 26150)

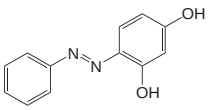
**for microscopy**
Neptune black, Rich black
$C_{29}H_{24}N_6$
M 456,55 g/mol
[4197-25-5] • EC No. 224-087-1
WGK 1

**Type analysis:**
Absorption max. ($C_2H_5OH$). ..... 590-610 nm
Loss on drying (110 °C). ..... ≤5 %
Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **0292.1** | 10 g | glass | 22,50 € |
| **0292.2** | 25 g | glass | 32,15 € |
| **0292.3** | 50 g | glass | 50,45 € |

For further information, please see page 1467

## Sudan orange G (C.I. 11920)




### Sudan orange G (C.I. 11920)

**for microscopy**
Solvent Orange 1
$C_{12}H_{10}N_2O_2$
M 214,22 g/mol
mp 143-146 °C
[2051-85-6]
WGK 3

**Type analysis:**
Appearance. ..... orange red powder

| | | | |
|---|---|---|---|
| **7733.1** | 5 g | glass | 11,75 € |
| **7733.2** | 25 g | glass | 24,65 € |
| **7733.3** | 100 g | glass | 57,95 € |

For further information, please see page 1467

## Sudanred B

▶ Sudan III (C.I. 26100) see p. 2320

## Sugar Determination


| Art. No. | Description | Page |
|---|---|---|
| HN35 | Adenosin-5'-triphosphate disodium salt (ATP) | 1709 |
| 2673 | Anthrone | 1743 |
| 0010 | Benedict's reagent | 1764 |
| 9944 | Carrez solution I | 1815 |
| 9950 | Carrez solution II | 1815 |
| 3958 | Citric acid monohydrate | 1836 |
| N055 | Fehling's solution I | 1927 |
| N056 | Fehling's solution II | 1927 |
| K024 | Hydrochloric acid (0,1 N) | 1988 |
| 2559 | Lead(II) acetate, basic | 2032 |
| X874 | Luff-Schoorl's solution | 2043 |
| P027 | Magnesium sulphate heptahydrate | 2051 |
| AE13 | NADP disodium salt | 2087 |
| K034 | Phenolphthalein indicator solution 1 % | 2145 |
| P745 | Potassium hexacyanoferrate(II) trihydrate | 2167 |
| 6750 | Potassium iodide | 2172 |
| 8087 | Potassium sodium tartrate tetrahydrate | 2174 |
| 4088 | tri-Sodium citrate dihydrate | 2271 |
| 6885 | Sodium hydrogen carbonate | 2274 |
| K020 | Sodium hydroxide solution (0,1 N) | 2278 |
| T135 | Sodium hydroxide solution (2 N) | 2279 |
| K022 | Sodium thiosulphate solution (0,1 N) | 2287 |
| T133 | Starch 1 % indicator solution | 2315 |
| 4804 | Triethanolamine hydrochloride | 2352 |
| T172 | Water | 2375 |
| K301 | Zinc sulphate heptahydrate | 2389 |


## Sugar of lead

▶ Lead(II) acetate trihydrate see p. 2032

## Sulfobetaine-8

▶ N-Octyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 2109

## Sulfobetaine-10

▶ N-Decyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 1859

## Sulfobetaine-12

▶ N-Dodecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 1894

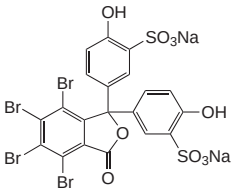
## Sulfobetaine-14

▶ N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 2335

## Sulfobetaine-16

▶ N-Hexadecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate see p. 1976

## Sulfobromophthalein disodium salt




### Sulfobromophthalein disodium salt

**≥95 %, for biochemistry**

Organic dye for microscopy.

Bromosulfalein, Phenoltetrabromophthalein disulfonic acid disodium salt

$C_{20}H_8Br_4O_{10}S_2Na_2$

M 838 g/mol

[71-67-0] • EC No. 200-761-0

WGK 2

**Danger** H334-H317

**Type analysis:**

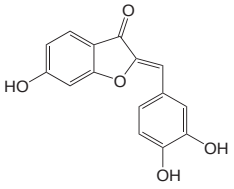
Assay. ..... ≥95 %
Solution (5 % in water). ..... colourless to yellowish, clear to slightly turbid
Loss on drying (3 h, 105 °C, vacuum). ..... ≤6,0 %
Sulphate ($SO_4$). ..... complies
Bromide (Br). ..... 36-39 %
Sulphur (S). ..... 7,4-8,2 %
Calcium (Ca). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **4033.1** | 1 g | glass | 38,60 € |
| **4033.2** | 5 g | glass | 145,15 € |

## Sulfur

▶ Sulphur see p. 2322

## Sulfuretin




### Sulfuretin

**ROTICHROM® HPLC**

Reference substance for HPLC.

$C_{15}H_{10}O_5$

M 270,24 g/mol

Storage temp.: +4 °C

[120-05-8] • EC No. 204-366-4

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7569.1** | 5 mg | glass | 284,90 € |

## Sulfurous acid

▶ Sulphurous acid see p. 2327

## Sulphamic acid




Amido sulphuric acid, Amido sulphonic acid

$H_3NO_3S$

M 97,09 g/mol

D 2,13

mp 205 °C (dec.)

Solubility: ~213 g/l ($H_2O$, 20 °C)

[5329-14-6] • EC No. 226-218-8

UN No. 2967 • ADR 8 III • WGK 1

**Warning** H315-H319-H412

### Sulphamic acid

**≥99,3 %, p.a., ACS**

Standard titrimetric substance.

**Guarantee analysis:**

Assay (acidimetric, dry substance). ..... ≥99,3 %
In $H_2O$ insoluble matter. ..... ≤0,01 %
Ash content. ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,05 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,001 %
Nickel (Ni). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **P725.1** | 500 g | plastic | 33,25 € |
| Original pack 6 x 500 g | | | 31,59/500 g |
| **P725.2** | 1 kg | plastic | 52,60 € |
| Original pack 6 x 1 kg | | | 49,97/1 kg |
| **P725.3** | 2,5 kg | plastic | 94,10 € |

### Sulphamic acid

**≥99 % cryst.**

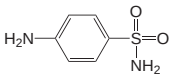
**Type analysis:**

Assay. ..... ≥99,8 %
Water . ..... ≤0,1 %
Sulphate ($SO_4$). ..... ≤0,1 %
Iron (Fe). ..... ≤0,005 %
Heavy metals. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4714.3** | 250 g | plastic | 14,55 € |
| **4714.1** | 1 kg | plastic | 20,35 € |
| Original pack 6 x 1 kg | | | 19,33/1 kg |
| **4714.2** | 5 kg | plastic | 83,75 € |

S

## Sulphanilamide



4-Aminobenzenesulphonamide
$C_6H_8N_2O_2S$
M 172,21 g/mol
D 1,08
mp 163-167 °C
Solubility: 7,5 g/l ($H_2O$, 25 °C)
[63-74-1] • EC No. 200-563-4
WGK 1

### Sulphanilamide
**≥99 %, for biochemistry**

**Type analysis:**
Assay.....≥99,0 %
Sulphated ash.....≤0,1 %
Heavy metals (as Pb).....≤0,002 %
Loss on drying (105 °C).....≤0,5 %

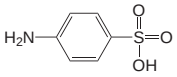
| | | | |
|---|---|---|---|
| **4716.1** | 100 g | plastic | 30,00 € |

### Sulphanilamide
**ROTI®CALIPURE Melting point standard 164-166 °C**

**Type analysis:**
Meniscus formation.....164-166 °C
Complete liquefaction.....164-166 °C

| | | | |
|---|---|---|---|
| **9734.1** | 1 g | glass | 30,00 € |

## Sulphanilic acid



### Sulphanilic acid
**≥98 %, p.a., ACS**
4-Aminobenzenesulphonic acid,
p-Anilinesulphonic acid
$C_6H_7NO_3S$
M 173,19 g/mol
D ~1,48
mp 288 °C (dec.)
Solubility: 10 g/l ($H_2O$, 20 °C)
[121-57-3] • EC No. 204-482-5
WGK 1

**Warning** H315-H319-H317

**Guarantee analysis:**
Assay (acidim.).....98,0-102,0 %
In $Na_2CO_3$ insoluble matter.....≤0,02 %
Ash content.....≤0,01 %
Chloride (Cl).....≤0,002 %
Nitrite ($NO_2$).....≤0,00005 %
Sulphate ($SO_4$).....≤0,01 %
Lead (Pb).....≤0,0005 %
Cadmium (Cd).....≤0,0005 %
Calcium (Ca).....≤0,001 %
Chromium (Cr).....≤0,0005 %
Iron (Fe).....≤0,001 %
Potassium (K).....≤0,005 %
Cobalt (Co).....≤0,0005 %
Copper (Cu).....≤0,0005 %
Magnesium (Mg).....≤0,0005 %
Manganese (Mn).....≤0,0005 %
Nickel (Ni).....≤0,0005 %
Sodium (Na).....≤0,005 %
Zinc (Zn).....≤0,0005 %

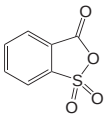
| | | | |
|---|---|---|---|
| **4496.1** | 100 g | plastic | 30,65 € |
| **4496.2** | 500 g | plastic | 117,20 € |
| Original pack 6 x 500 g | | | 111,34/500 g |

## Sulphanilic acid amide
▶ Sulphanilamide see p. 2322

## Sulphate Standards
▶ Sulphate IC Standard Solution see p. 2312

## Sulphite Standards
▶ Sulphite IC Standard Solution see p. 2312

## 2-Sulphobenzoic acid anhydride



### 2-Sulphobenzoic acid anhydride
**≥85 %, for biochemistry**
$C_7H_4O_4S$
M 184,17 g/mol
bp 184 °C (24 hPa)
mp 114 °C
[81-08-3] • EC No. 201-322-6
WGK 3

**Warning** H315-H319-H335

**Type analysis:**
Appearance.....off-white to light brown cryst. powder
Assay (titr.).....85,0-105,0 %
Appearance of solution (1 % in EtOH).....colourless to light brown
Water (KF).....≤1,0 %

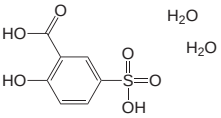
| | | | |
|---|---|---|---|
| **8399.1** | 25 g | glass | 35,40 € |
| **8399.2** | 100 g | glass | 89,80 € |

## o-Sulphobenzoic acid imide sodium salt
▶ o-Benzoic sulphimide sodium salt see p. 1767

## Sulphonic alizarin violet
▶ Pyrogallol red see p. 2187

## 3,3'-Sulphonyldianiline
▶ 3,3'-Diaminodiphenyl sulphone see p. 1867

## 5-Sulphosalicylic acid dihydrate



### 5-Sulphosalicylic acid dihydrate
**≥99 %, for biochemistry**
5-Salicylsulphonic acid
$C_7H_6O_6S \cdot 2\ H_2O$
M 254,22 g/mol
D 0,8
mp 105-109 °C • flp ~110 °C
[5965-83-3] • EC No. 202-555-6
UN No. 2585 • ADR 8 III • WGK 1

**Warning** H302-H315-H319-H335

**Type analysis:**
Assay (acidim.).....≥99,0 %
Loss on drying.....≤22,0 %
Chloride (Cl).....≤0,005 %
Sulphate ($SO_4$).....≤5,5 %

| | | | |
|---|---|---|---|
| **4119.1** | 100 g | plastic | 18,20 € |
| **4119.2** | 500 g | plastic | 50,45 € |
| Original pack 6 x 500 g | | | 47,93/500 g |

For further information, please see page 1630

## Sulphur

Sulfur, Sulphur flowers
S
D ~2,0 • bp 444 °C
mp 114-119 °C • flp 160 °C
[7704-34-9] • EC No. 231-722-6
UN No. 1350 • ADR 4.1 III • WGK 1

**Warning** H315

### Sulphur
**≥99,999%**

**Type analysis:**
Appearance.....yellow tablets
Assay.....≥99,999 %

| | | | |
|---|---|---|---|
| **4669.1** | 10 g | plastic | 60,10 € |

### Sulphur
**≥99,5 %, ground**

**Type analysis:**
Assay.....≥99,5 %
$CS_2$-insoluble.....≤0,03 %
Ash.....≤0,01 %
Water .....≤0,01 %
Acid content (as $H_2SO_4$).....≤0,01 %
Iron (Fe).....≤0,001 %
Melting range.....114,5-119,3 °C

| | | | |
|---|---|---|---|
| **9304.1** | 1 kg | plastic | 17,75 € |
| Original pack 6 x 1 kg | | | 16,86/1 kg |
| **9304.2** | 5 kg | cardboard | 54,75 € |
| **9304.5** | 25 kg | plastic | 150,50 € |

## Sulphur Standards

▶ Sulphur ICP Standard Solution see p. 2300
▶ Sulphur ICP Standard Solution see p. 2305

## Sulphur flowers

▶ Sulphur see p. 2322

## Sulphuric acid Ultra-quality

### Sulphuric acid Ultra-quality

**ROTIPURAN® Ultra 95 %**

Extra highpure acid (ppt quality) for sample preparation in ultra trace analysis.

$H_2SO_4$
M 98,08 g/mol
D ~1,84 • bp 330 °C
mp -15 °C
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

**Danger** H314-H290

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 93-98 % |
| Aluminium (Al) | ≤50 ppt |
| Antimony (Sb) | ≤50 ppt |
| Arsenic (As) | ≤500 ppt |
| Barium (Ba) | ≤10 ppt |
| Beryllium (Be) | ≤10 ppt |
| Lead (Pb) | ≤10 ppt |
| Cadmium (Cd) | ≤10 ppt |
| Cesium (Cs) | ≤10 ppt |
| Calcium (Ca) | ≤50 ppt |
| Cerium (Ce) | ≤10 ppt |
| Chromium (Cr) | ≤10 ppt |
| Dysprosium (Dy) | ≤10 ppt |
| Iron (Fe) | ≤50 ppt |
| Erbium (Er) | ≤10 ppt |
| Europium (Eu) | ≤10 ppt |
| Gadolinium (Gd) | ≤10 ppt |
| Gallium (Ga) | ≤10 ppt |
| Germanium (Ge) | ≤100 ppt |
| Hafnium (Hf) | ≤10 ppt |
| Holmium (Ho) | ≤10 ppt |
| Indium (In) | ≤10 ppt |
| Potassium (K) | ≤50 ppt |
| Cobalt (Co) | ≤10 ppt |
| Copper (Cu) | ≤10 ppt |
| Lanthanum (La) | ≤10 ppt |
| Lithium (Li) | ≤10 ppt |
| Lutetium (Lu) | ≤10 ppt |
| Magnesium (Mg) | ≤50 ppt |
| Manganese (Mn) | ≤10 ppt |
| Molybdenum (Mo) | ≤10 ppt |
| Sodium (Na) | ≤50 ppt |
| Neodymium (Nd) | ≤10 ppt |
| Nickel (Ni) | ≤50 ppt |
| Niobium (Nb) | ≤10 ppt |
| Praseodymium (Pr) | ≤10 ppt |
| Mercury (Hg) | ≤100 ppt |
| Rhodium (Rh) | ≤50 ppt |
| Rubidium (Rb) | ≤10 ppt |
| Samarium (Sm) | ≤10 ppt |
| Scandium (Sc) | ≤10 ppt |
| Selenium (Se) | ≤500 ppt |
| Silver (Ag) | ≤50 ppt |
| Strontium (Sr) | ≤10 ppt |
| Tellur (Te) | ≤50 ppt |
| Terbium (Tb) | ≤10 ppt |
| Thallium (Tl) | ≤10 ppt |
| Thorium (Th) | ≤10 ppt |
| Thulium (Tm) | ≤10 ppt |
| Titanium (Ti) | ≤50 ppt |
| Uranium (U) | ≤10 ppt |
| Vanadium (V) | ≤10 ppt |
| Bismuth (Bi) | ≤10 ppt |
| Tungsten (W) | ≤10 ppt |
| Ytterbium (Yb) | ≤10 ppt |
| Yttrium (Y) | ≤10 ppt |
| Zinc (Zn) | ≤50 ppt |
| Tin (Sn) | ≤50 ppt |
| Zirconium (Zr) | ≤10 ppt |

| | | | |
|---|---|---|---|
| **HN62.1** | 250 ml | plastic (FEP) | 374,00 € |
| **HN62.2** | 500 ml | plastic (FEP) | 534,85 € |
| **HN62.3** | 1 l | plastic (FEP) | 891,20 € |
| Original pack 6 x 1 l | | | 846,64/1 l |
| **HN62.4** | 2 l | plastic (FEP) | 1471,70 € |

For further information, please see page 1665

## Sulphuric acid Supra-quality

### Sulphuric acid Supra-quality

**ROTIPURAN® Supra 95 %**

Highpure acid (ppb quality) for sample preparation in trace analysis (e.g. using ICP, AAS, Ion chromatography etc.).

$H_2SO_4$
M 98,08 g/mol
D ~ 1,84 • bp 330 °C
mp -15 °C
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

**Danger** H314-H290

**Guarantee analysis:**

| | |
|---|---|
| Assay (w/w) | 93-98 % |
| Colour (APHA) | ≤10 |
| Chloride (Cl) | ≤0,00007 % |
| Total Phosphorous (P) | ≤0,000005 % |
| Nitrate ($NO_3$) | ≤0,00002 % |
| Aluminium (Al) | ≤1 ppb |
| Antimony (Sb) | ≤1 ppb |
| Arsenic (As) | ≤0,5 ppb |
| Barium (Ba) | ≤0,1 ppb |
| Beryllium (Be) | ≤0,1 ppb |
| Lead (Pb) | ≤0,1 ppb |
| Cadmium (Cd) | ≤0,5 ppb |
| Cesium (Cs) | ≤0,1 ppb |
| Calcium (Ca) | ≤1 ppb |
| Cerium (Ce) | ≤0,1 ppb |
| Chromium (Cr) | ≤0,5 ppb |
| Dysprosium (Dy) | ≤0,1 ppb |
| Iron (Fe) | ≤1 ppb |
| Erbium (Er) | ≤0,1 ppb |
| Europium (Eu) | ≤0,1 ppb |
| Gadolinium (Gd) | ≤0,1 ppb |
| Gallium (Ga) | ≤0,1 ppb |
| Germanium (Ge) | ≤1 ppb |
| Gold (Au) | ≤0,5 ppb |
| Hafnium (Hf) | ≤0,1 ppb |
| Holmium (Ho) | ≤0,1 ppb |
| Indium (In) | ≤0,1 ppb |
| Potassium (K) | ≤1 ppb |
| Cobalt (Co) | ≤0,5 ppb |
| Copper (Cu) | ≤0,5 ppb |
| Lanthanum (La) | ≤0,1 ppb |
| Lithium (Li) | ≤0,5 ppb |
| Lutetium (Lu) | ≤0,1 ppb |
| Magnesium (Mg) | ≤1 ppb |
| Manganese (Mn) | ≤0,5 ppb |
| Molybdenum (Mo) | ≤0,5 ppb |
| Sodium (Na) | ≤1 ppb |
| Neodymium (Nd) | ≤0,1 ppb |
| Nickel (Ni) | ≤0,5 ppb |
| Niobium (Nb) | ≤0,1 ppb |
| Praseodymium (Pr) | ≤0,1 ppb |
| Mercury (Hg) | ≤0,1 ppb |
| Rhodium (Rh) | ≤0,5 ppb |
| Rubidium (Rb) | ≤0,5 ppb |
| Samarium (Sm) | ≤0,1 ppb |
| Scandium (Sc) | ≤0,1 ppb |
| Selenium (Se) | ≤10 ppb |
| Silver (Ag) | ≤1 ppb |
| Strontium (Sr) | ≤0,5 ppb |
| Tellur (Te) | ≤0,1 ppb |
| Terbium (Tb) | ≤0,1 ppb |
| Thallium (Tl) | ≤0,1 ppb |
| Thorium (Th) | ≤0,1 ppb |
| Thulium (Tm) | ≤0,1 ppb |
| Titanium (Ti) | ≤1 ppb |
| Uranium (U) | ≤0,1 ppb |
| Vanadium (V) | ≤0,5 ppb |
| Bismuth (Bi) | ≤0,1 ppb |
| Tungsten (W) | ≤0,5 ppb |
| Ytterbium (Yb) | ≤0,1 ppb |
| Yttrium (Y) | ≤0,1 ppb |
| Zinc (Zn) | ≤1 ppb |
| Tin (Sn) | ≤1 ppb |
| Zirconium (Zr) | ≤0,5 ppb |
| $KMnO_4$ reducing substances | ≤0,002 % |

| | | | |
|---|---|---|---|
| **HN52.1** | 500 ml | plastic | 73,00 € |
| **HN52.2** | 1 l | plastic | 121,40 € |
| Original pack 6 x 1 l | | | 115,33/1 l |
| **HN52.5** | 2,5 l | plastic | 146,10 € |
| Original pack 4 x 2,5 l | | | 138,80/2,5 l |

For further information, please see page 1665

## Sulphuric acid 98 %

### Sulphuric acid 98 %

**ROTIPURAN® 98 %, for determination of nitrogen**

For determination of nitrogen acc. to Kjehldahl.

$H_2SO_4$
M 98,08 g/mol
D ~1,84
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

**Danger** H314-H290

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | 98 ±1 % |
| Ash content | ≤0,0005 % |
| Total nitrogen (N) | ≤0,0005 % |

| | | | |
|---|---|---|---|
| **X945.1** | 1 l | glass | 27,85 € |
| Original pack 6 x 1 l | | | 26,46/1 l |
| **X945.2** | 2,5 l | glass | 56,45 € |
| Original pack 4 x 2,5 l | | | 53,63/2,5 l |

S

## Sulphuric acid 95-98 %

### Sulphuric acid 95-98 %

**ROTIPURAN® 95-98 %, p.a., ISO, max. 0,005 ppm Hg**

Dissolving agent for organic and anorganic samples. For determination of mercury.

$H_2SO_4$
M 98,08 g/mol
D ~1,84
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

**Danger** H314-H290

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | 95,0-98,0 % |
| Colour (Hazen) | ≤10 |
| Chloride (Cl) | ≤0,00001 % |
| Nitrate ($NO_3$) | ≤0,00002 % |
| Phosphate ($PO_4$) | ≤0,00005 % |
| Ammonium ($NH_4$) | ≤0,0002 % |
| Mercury (Hg) | ≤0,0000005 % |
| Silver (Ag) | ≤0,000002 % |
| Aluminium (Al) | ≤0,000005 % |
| Arsenic (As) | ≤0,000001 % |
| Calcium (Ca) | ≤0,00002 % |
| Cadmium (Cd) | ≤0,000002 % |
| Cobalt (Co) | ≤0,000002 % |
| Chromium (Cr) | ≤0,000005 % |
| Copper (Cu) | ≤0,000001 % |
| Iron (Fe) | ≤0,00001 % |
| Potassium (K) | ≤0,00001 % |
| Lithium (Li) | ≤0,000002 % |
| Magnesium (Mg) | ≤0,000005 % |
| Manganese (Mn) | ≤0,000001 % |
| Sodium (Na) | ≤0,00005 % |
| Nickel (Ni) | ≤0,000002 % |
| Lead (Pb) | ≤0,000002 % |
| Strontium (Sr) | ≤0,000002 % |
| Zinc (Zn) | ≤0,000005 % |
| Ash content | ≤0,0005 % |
| $KMNO_4$ reducing matter (as $SO_2$) | ≤0,0002 % |

| | | | |
|---|---|---|---|
| **X944.1** | 1 l | glass | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **X944.2** | 2,5 l | glass | 64,00 € |
| Original pack 4 x 2,5 l | | | 60,80/2,5 l |

## Sulphuric acid 96 %

$H_2SO_4$
M 98,08 g/mol
D ~1,84
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

**Danger** H290-H314

### Sulphuric acid 96 %

**96 %, VLSI Grade**

**Guarantee analysis:**

| | |
|---|---|
| Assay | 95-97 % |
| Bead number (≥0,5 µm) | ≤250 p/ml |
| Colour (APHA) | ≤10 |
| Ammonium ($NH_4$) | ≤0,0002 % |
| Chloride (Cl) | ≤0,00001 % |
| Nitrate ($NO_3$) | ≤0,00002 % |
| Phosphate ($PO_4$) | ≤0,00005 % |
| $KMnO_4$ reducing substances | ≤0,0001 % |
| Ash content (as $SO_4$) | ≤0,0003 % |
| Aluminium (Al) | ≤50 ppb |
| Antimony (Sb) | ≤10 ppb |
| Arsenic (As) | ≤10 ppb |
| Barium (Ba) | ≤10 ppb |
| Beryllium (Be) | ≤10 ppb |
| Bismuth (Bi) | ≤20 ppb |
| Lead (Pb) | ≤10 ppb |
| Boron (B) | ≤20 ppb |
| Cadmium (Cd) | ≤10 ppb |
| Calcium (Ca) | ≤50 ppb |
| Chromium (Cr) | ≤10 ppb |
| Iron (Fe) | ≤50 ppb |
| Gallium (Ga) | ≤10 ppb |
| Gold (Au) | ≤10 ppb |
| Potassium (K) | ≤50 ppb |
| Cobalt (Co) | ≤10 ppb |
| Copper (Cu) | ≤10 ppb |
| Lithium (Li) | ≤10 ppb |
| Magnesium (Mg) | ≤20 ppb |
| Manganese (Mn) | ≤10 ppb |
| Molybdenum (Mo) | ≤10 ppb |
| Sodium (Na) | ≤50 ppb |
| Nickel (Ni) | ≤10 ppb |
| Silver (Ag) | ≤10 ppb |
| Strontium (Sr) | ≤20 ppb |
| Titanium (Ti) | ≤20 ppb |
| Vanadium (V) | ≤10 ppb |
| Zinc (Zn) | ≤20 ppb |
| Tin (Sn) | ≤20 ppb |
| Zirconium (Zr) | ≤10 ppb |

| | | | |
|---|---|---|---|
| **9789.1** | 2,5 l | plastic | 77,95 € |
| Original pack 4 x 2,5 l | | | 74,05/2,5 l |

For further information, please see page 1654

### Sulphuric acid 96 %

**ROTIPURAN® 96 %, p.a., ISO**

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | ≥95 % |
| Colour (APHA) | ≤10 |
| Chloride (Cl) | ≤0,00002 % |
| Nitrate ($NO_3$) | ≤0,00002 % |
| Phosphate ($PO_4$) | ≤0,00005 % |
| Ammonium ($NH_4$) | ≤0,0002 % |
| Silver (Ag) | ≤0,000002 % |
| Aluminium (Al) | ≤0,000005 % |
| Arsenic (As) | ≤0,000001 % |
| Beryllium (Be) | ≤0,000002 % |
| Calcium (Ca) | ≤0,00002 % |
| Cadmium (Cd) | ≤0,000002 % |
| Cobalt (Co) | ≤0,000002 % |
| Chromium (Cr) | ≤0,000005 % |
| Copper (Cu) | ≤0,000001 % |
| Iron (Fe) | ≤0,00001 % |
| Potassium (K) | ≤0,00001 % |
| Lithium (Li) | ≤0,000002 % |
| Magnesium (Mg) | ≤0,000005 % |
| Manganese (Mn) | ≤0,000001 % |
| Sodium (Na) | ≤0,00005 % |
| Nickel (Ni) | ≤0,000002 % |
| Lead (Pb) | ≤0,000002 % |
| Strontium (Sr) | ≤0,000002 % |
| Zinc (Zn) | ≤0,000005 % |
| Ash content | ≤0,0005 % |
| $KMNO_4$ reducing matter (as $SO_2$) | ≤0,0002 % |

| | | | |
|---|---|---|---|
| **4623.3** | 250 ml | glass | 18,85 € |
| **4623.1** | 1 l | glass | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |
| **4623.4** | 1 l | plastic | 27,85 € |
| Original pack 6 x 1 l | | | 26,46/1 l |
| **4623.2** | 2,5 l | glass | 61,20 € |
| Original pack 4 x 2,5 l | | | 58,14/2,5 l |
| **4623.5** | 2,5 l | plastic | 64,40 € |
| Original pack 4 x 2,5 l | | | 61,18/2,5 l |
| **4623.6** | 10 l | plastic | 117,20 € |

### Sulphuric acid 96 %

**95-98 %, Ph.Eur.**

**Guarantee analysis:**

| | |
|---|---|
| Assay (acidim.) | 95,0-98,0 % |
| Identity | complies |
| Appearance of solution | complies |
| Chloride (Cl) | ≤0,005 % |
| Nitrate ($NO_3$) | complies |
| Ammonium ($NH_4$) | ≤0,001 % |
| Ash content | ≤0,002 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Arsenic (As) | ≤0,0001 % |
| Iron (Fe) | ≤0,0025 % |

| | | | |
|---|---|---|---|
| **2609.1** | 1 l | glass | 28,50 € |
| Original pack 6 x 1 l | | | 27,08/1 l |
| **2609.2** | 2,5 l | glass | 47,20 € |
| Original pack 4 x 2,5 l | | | 44,84/2,5 l |
| **2609.3** | 10 l | plastic | 110,20 € |

### Sulphuric acid 96 %

**96 %, pure**

**Type analysis:**

| | |
|---|---|
| Appearance | clear, oily liquid |
| Assay | ≥95,5 % |
| Iron (Fe) | ≤0,0025 % |

| | | | |
|---|---|---|---|
| **9316.1** | 1 l | glass | 25,70 € |
| Original pack 6 x 1 l | | | 24,42/1 l |
| **9316.2** | 2,5 l | glass | 40,35 € |
| Original pack 4 x 2,5 l | | | 38,33/2,5 l |
| **9316.3** | 10 l | plastic | 66,55 € |

### Sulphuric acid 96 %

**96 %, techn.**

**Type analysis:**

| | |
|---|---|
| Assay | 95,0-97,0 % |

| | | | |
|---|---|---|---|
| **0971.1** | 1 l | plastic | 17,75 € |
| Original pack 6 x 1 l | | | 16,86/1 l |
| **0971.2** | 2,5 l | plastic | 26,35 € |
| Original pack 4 x 2,5 l | | | 25,03/2,5 l |
| **0971.3** | 10 l | plastic | 52,60 € |
| **0971.4** | 25 l | plastic | 110,20 € |

## Sulphuric acid for determination of viscosity

### Sulphuric acid 96 %

**for determination of viscosity acc. to DIN EN ISO 307**

$H_2SO_4$
M 98,08 g/mol
D ~1,84
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

| | |
|---|---|
| Assay (acidim.) | 95,85-96,15 % |

| | | | |
|---|---|---|---|
| **4363.1** | 1 l | plastic | 37,10 € |
| Original pack 6 x 1 l | | | 35,25/1 l |
| **4363.2** | 2,5 l | plastic | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |
| **4363.3** | 5 l | plastic | 141,40 € |
| Original pack 2 x 5 l | | | 134,33/5 l |
| **4363.4** | 10 l | plastic | 241,90 € |

## Sulphuric acid 90-91 %

### Sulphuric acid 90-91 %

**ROTIPURAN® 90-91 %, for determination of fat**

For determination of fat acc. to Gerber and determination of nitrates in milk.

$H_2SO_4$
M 98,08 g/mol
D ~1,818
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

**Danger** H314-H290

**Guarantee analysis:**

Assay (acidim.).....90-91 %
Density (d 20 °C/4 °C).....1,815-1,821
Nitrate ($NO_3$).....≤0,00005 %

| | | | |
|---|---|---|---|
| **X946.1** | 1 l | plastic | 21,40 € |
| Original pack 6 x 1 l | | | 20,33/1 l |
| **X946.2** | 2,5 l | plastic | 39,25 € |
| Original pack 4 x 2,5 l | | | 37,29/2,5 l |

## Sulphuric acid 75 %

### Sulphuric acid 75 %

**75 %, pure**

$H_2SO_4$
M 98,08 g/mol
D ~1,68
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

Assay.....74,0-76,0 %
Density (20 °C).....1,657-1,681
Iron (Fe).....≤0,01 %
Lead (Pb).....≤0,0005 %

| | | | |
|---|---|---|---|
| **4319.1** | 1 l | plastic | 17,10 € |
| Original pack 6 x 1 l | | | 16,25/1 l |
| **4319.2** | 2,5 l | plastic | 26,35 € |
| Original pack 4 x 2,5 l | | | 25,03/2,5 l |
| **4319.3** | 5 l | plastic | 45,05 € |
| Original pack 2 x 5 l | | | 42,80/5 l |
| **4319.4** | 10 l | plastic | 61,85 € |
| **4319.5** | 25 l | plastic | 117,20 € |

## Sulphuric acid 62 %

### Sulphuric acid 62 %

**ROTIPURAN® p.a., for determination of fat in cheese (d 1,52) acc to van Gulik**

$H_2SO_4$
M 98,08 g/mol
D ~1,52
[7664-93-9] • EC No. 231-639-5
UN No. 1830 • ADR 8 II • WGK 1

**Danger** H314-H290

**Guarantee analysis:**

Assay.....61,5-62,5 %

| | | | |
|---|---|---|---|
| **CN89.1** | 1 l | plastic | 24,65 € |
| Original pack 6 x 1 l | | | 23,42/1 l |
| **CN89.2** | 2,5 l | plastic | 40,75 € |
| Original pack 4 x 2,5 l | | | 38,71/2,5 l |
| **CN89.3** | 5 l | plastic | 66,55 € |
| Original pack 2 x 5 l | | | 63,22/5 l |
| **CN89.4** | 10 l | plastic | 110,20 € |
| **CN89.5** | 25 l | plastic | 238,15 € |

## Sulphuric acid 50 %

### Sulphuric acid 50 %

**50 %, pure**

$H_2SO_4$
M 98,08 g/mol
D ~1,40
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

Assay.....49,0-51,0 %
Density (20 °C).....1,3854-1,4049
Iron (Fe).....≤0,01 %
Lead (Pb).....≤0,0001 %

| | | | |
|---|---|---|---|
| **4318.1** | 1 l | plastic | 17,00 € |
| Original pack 6 x 1 l | | | 16,15/1 l |
| **4318.2** | 2,5 l | plastic | 25,30 € |
| Original pack 4 x 2,5 l | | | 24,04/2,5 l |
| **4318.3** | 5 l | plastic | 42,90 € |
| Original pack 2 x 5 l | | | 40,76/5 l |
| **4318.4** | 10 l | plastic | 58,60 € |

## Sulphuric acid 40 %

### Sulphuric acid 40 %

**40 %, pure**

$H_2SO_4$
M 98,08 g/mol
D ~1,30
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

Assay.....39,0-41,0 %
Density (20 °C).....1,2941-1,3116
Iron (Fe).....≤0,005 %

| | | | |
|---|---|---|---|
| **4316.1** | 1 l | plastic | 16,70 € |
| Original pack 6 x 1 l | | | 15,87/1 l |
| **4316.2** | 2,5 l | plastic | 24,65 € |
| Original pack 4 x 2,5 l | | | 23,42/2,5 l |
| **4316.3** | 10 l | plastic | 55,80 € |
| **4316.4** | 25 l | plastic | 102,70 € |

## Sulphuric acid 37 %

### Sulphuric acid 37 %

**37 %, techn. (battery acid, accumulator acid)**

$H_2SO_4$
M 98,08 g/mol
D ~1,28
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

Assay.....36,0-39,1 %
Density (20 °C).....1,2650-1,2950

| | | | |
|---|---|---|---|
| **4312.1** | 1 l | plastic | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |
| **4312.2** | 2,5 l | plastic | 22,50 € |
| Original pack 4 x 2,5 l | | | 21,38/2,5 l |
| **4312.3** | 10 l | plastic | 48,95 € |
| **4312.4** | 25 l | plastic | 98,80 € |

## Sulphuric acid 30 %

### Sulphuric acid 30 %

**30 %, pure**

$H_2SO_4$
M 98,08 g/mol
D ~1,22
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

**Danger** H290-H314

**Type analysis:**

Assay.....29,0-31,0 %
Density (20 °C).....1,210-1,227

| | | | |
|---|---|---|---|
| **X876.1** | 1 l | plastic | 15,60 € |
| Original pack 6 x 1 l | | | 14,82/1 l |
| **X876.2** | 2,5 l | plastic | 22,50 € |
| Original pack 4 x 2,5 l | | | 21,38/2,5 l |
| **X876.3** | 10 l | plastic | 53,65 € |

## Sulphuric acid 25 %

### Sulphuric acid 25 %

**25 %, extra pure**

$H_2SO_4$
M 98,08 g/mol
D ~1,18
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

**Danger** H290-H314

**Type analysis:**

Assay ($H_2SO_4$).....24,0-26,0 %
Chloride (Cl).....≤0,0001 %
Calcium (Ca).....≤0,00002 %
Iron (Fe).....≤0,0005 %
Mercury (Hg).....≤0,00001 %

| | | | |
|---|---|---|---|
| **0967.1** | 1 l | plastic | 16,05 € |
| Original pack 6 x 1 l | | | 15,25/1 l |
| **0967.2** | 2,5 l | plastic | 22,05 € |
| Original pack 4 x 2,5 l | | | 20,95/2,5 l |
| **0967.3** | 10 l | plastic | 41,40 € |
| **0967.4** | 25 l | plastic | 72,60 € |

## Sulphuric acid 20 %

### Sulphuric acid 20 %

**20 %, pure**

$H_2SO_4$
M 98,08 g/mol
D ~1,14
[7664-93-9] • EC No. 231-639-5
UN No. 2796 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

Assay.....19,0-21,0 %
Density (20 °C).....1,1318-1,1471
Iron (Fe).....≤0,002 %
Lead (Pb).....≤0,0001 %

| | | | |
|---|---|---|---|
| **4300.4** | 1 l | plastic | 14,95 € |
| Original pack 6 x 1 l | | | 14,20/1 l |
| **4300.1** | 2,5 l | plastic | 20,35 € |
| Original pack 4 x 2,5 l | | | 19,33/2,5 l |
| **4300.5** | 5 l | plastic | 30,00 € |
| Original pack 2 x 5 l | | | 28,50/5 l |
| **4300.2** | 10 l | plastic | 39,70 € |
| **4300.3** | 25 l | plastic | 71,50 € |

## Sulphuric acid (0,02 N)

### Sulphuric acid

**0,01 mol/l - 0,02 N volumetric standard solution**

UN No. 3264 • ADR 8 III

**Warning** H290

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,01 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **X872.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1622

## Sulphuric acid (0,1 N)

### Sulphuric acid

**0,05 mol/l - 0,1 N volumetric standard solution**

UN No. 3264 • ADR 8 III

**Warning** H290

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,05 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **K026.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **K026.2** | 5 l | plastic | 56,45 € |
| Original pack 2 x 5 l | | | 53,63/5 l |
| **K026.3** | 5 l | ROTI®CUBE | 61,20 € |
| Original pack 2 x 5 l | | | 58,14/5 l |
| **K026.4** | 10 l | ROTI®CUBE | 90,20 € |

For further information, please see page 1622

## Sulphuric acid (0,1 N)

### Sulphuric acid

**0,05 mol/l - 0,1 N volumetric standard solution, Reag. Ph.Eur.**

[7664-93-9] • EC No. 231-639-5

UN No. 3264 • ADR 8 III

**Warning** H290

**Type analysis:**

Amount-of-substance conc..... 0,05 mol/l
Measurement uncertainty. ..... ±0,1 %

| | | | |
|---|---|---|---|
| **6793.1** | 1 l | plastic | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |

## Sulphuric acid (0,1 N)

### Sulphuric acid

**ROTI®VOLUM 0,05 mol/l - 0,1 N**

Ampoule for preparation of 1000 ml volumetric solution.

$H_2SO_4$

M 98,08 g/mol

[7664-93-9] • EC No. 231-639-5

UN No. 2796 • ADR 8 II • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... 0,05 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN64.1** | 1 piece | plastic ampoule | 19,05 € |

For further information, please see page 1623

## Sulphuric acid (0,2 N)

### Sulphuric acid

**0,1 mol/l - 0,2 N volumetric standard solution**

[7664-93-9] • EC No. 231-639-5

UN No. 3264 • ADR 8 III

**Warning** H290

**Type analysis:**

Amount-of-substance conc. (20 °C). .. 0,1 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **N072.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **N072.2** | 5 l | plastic | 56,45 € |
| Original pack 2 x 5 l | | | 53,63/5 l |

For further information, please see page 1622

## Sulphuric acid (0,5 N)

### Sulphuric acid

**0,25 mol/l - 0,5 N volumetric standard solution**

[7664-93-9] • EC No. 231-639-5

UN No. 3264 • ADR 8 III

**Warning** H290

**Type analysis:**

Amount-of-substance conc. (20 °C). ..... .
..... 0,25 mol/l ±0,2 %
Titer. ..... 0,9980-1,0020

| | | | |
|---|---|---|---|
| **P709.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **P709.2** | 5 l | ROTI®CUBE | 61,20 € |
| Original pack 2 x 5 l | | | 58,14/5 l |
| **P709.3** | 10 l | ROTI®CUBE | 90,20 € |

For further information, please see page 1622

## Sulphuric acid (1 N)

### Sulphuric acid

**0,5 mol/l - 1 N volumetric standard solution**

UN No. 3264 • ADR 8 III • WGK 1

**Warning** H290

**Type analysis:**

Amount-of-substance conc. (20 °C). .. 0,5 mol/l ±0,2 %
Titer. ..... 0,998-1,002

| | | | |
|---|---|---|---|
| **K027.1** | 1 l | plastic | 19,05 € |
| Original pack 6 x 1 l | | | 18,10/1 l |
| **K027.2** | 5 l | plastic | 56,45 € |
| Original pack 2 x 5 l | | | 53,63/5 l |
| **K027.3** | 5 l | ROTI®CUBE | 61,20 € |
| Original pack 2 x 5 l | | | 58,14/5 l |
| **K027.4** | 10 l | ROTI®CUBE | 90,20 € |

For further information, please see page 1622

## Sulphuric acid (1 N)

### Sulphuric acid

**0,5 mol/l - 1 N volumetric standard solution, Reag. Ph.Eur.**

[7664-93-9] • EC No. 231-639-5

UN No. 3264 • ADR 8 III

**Warning** H290

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,5 mol/l
Measurement uncertainty. ..... ±0,1 %

| | | | |
|---|---|---|---|
| **6794.1** | 1 l | plastic | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |

## Sulphuric acid (1 N)

### Sulphuric acid

**ROTI®VOLUM 0,5 mol/l - 1 N**

Ampoule for preparation of 1000 ml volumetric solution.

$H_2SO_4$

M 98,08 g/mol

[7664-93-9] • EC No. 231-639-5

UN No. 2796 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**

Amount-of-substance conc. (20 °C)... 0,5 mol/l ±0,2 %

| | | | |
|---|---|---|---|
| **CN65.1** | 1 piece | plastic ampoule | 22,25 € |

For further information, please see page 1623

## Sulphuric acid (2 N)

### Sulphuric acid

**1 mol/l - 2 N volumetric standard solution**

[7664-93-9] • EC No. 231-639-5

UN No. 2796 • ADR 8 II • WGK 1

**Warning** H290-H315-H319

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 1 mol/l ±0,2 %
Titer..... 0,998-1,002

| | | | |
|---|---|---|---|
| **X873.1** | 1 l | plastic | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |

For further information, please see page 1622

## Sulphuric acid (4 N)

### Sulphuric acid

**2 mol/l - 4 N volumetric standard solution**

D 1,12

UN No. 2796 • ADR 8 II • WGK 1

**Danger** H290-H314

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 2 mol/l ±0,2 %
Titer..... 0,9980-1,0020

| | | | |
|---|---|---|---|
| **9896.1** | 500 ml | plastic | 25,70 € |
| **9896.2** | 1 l | plastic | 40,35 € |
| Original pack 6 x 1 l | | | 38,33/1 l |

## Sulphuric acid (5 N)

### Sulphuric acid

**2,5 mol/l - 5 N volumetric standard solution**
UN No. 2796 • ADR 8 II • WGK 1
**Danger** H290-H314

**Type analysis:**
Amount-of-substance conc. (20 °C)....2,5 mol/l ±0,2 %
Titer. ....0,998-1,002

| | | | |
|---|---|---|---|
| **KK74.1** | 1 l | plastic | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |

For further information, please see page 1622

## Sulphuric acid D2, 98 % solution in $D_2O$

### Sulphuric acid D2, 98 % solution in $D_2O$

**99,5 Atom%D**
For nuclear magnetic resonance spectroscopy.
$D_2SO_4$
M 100,09 g/mol
D ~1,84 • bp 360 °C
[13813-19-9] • EC No. 237-464-0
UN No. 1830 • ADR 8 II • WGK 1
**Danger** H290-H314

**Type analysis:**
Deuterising degree. ....≥99,5 %
Assay (mass %)....≥98 %

| | | | |
|---|---|---|---|
| **HN87.1** | 10 ml | glass | 36,45 € |
| **HN87.2** | 50 ml | glass | 149,45 € |

## Sulphuric ether

▶ Diethyl ether see p. 1873

## Sulphurous acid

### Sulphurous acid

**~6 % $SO_2$ in $H_2O$**
Sulfurous acid
$H_2SO_3$
M 82,02 g/mol
D 1,03
[7782-99-2] • EC No. 231-973-1
UN No. 1833 • ADR 8 II • WGK 1
**Danger** H314-H332

**Type analysis:**
Assay ($SO_2$)....~6 %

| | | | |
|---|---|---|---|
| **9328.1** | 1 l | glass | 25,70 € |
| Original pack 6 x 1 l | | | 24,42/1 l |
| **9328.2** | 10 l | tinplate | 157,50 € |

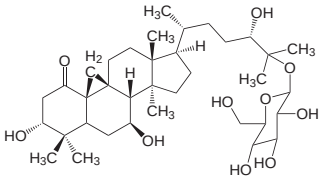
## Sulphurous acid dichloride

▶ Thionyl chloride see p. 2340

## Surfactants

▶ Detergents see p. 1862

## Sutherlandioside B



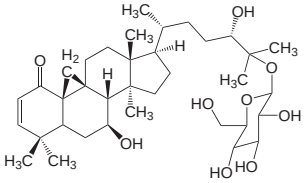
### Sutherlandioside B

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Sutherlandia frutescens.*
$C_{36}H_{60}O_{10}$
M 652,87 g/mol
mp 150-155 °C
Storage temp.: +4 °C
[1055329-47-9]
WGK 3

**Type analysis:**
Purity (HPLC). .... ≥97 %

| | | | |
|---|---|---|---|
| **6695.1** | 10 mg | glass | 310,70 € |

## Sutherlandioside D



### Sutherlandioside D

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Sutherlandia frutescens.*
$C_{36}H_{58}O_9$
M 634,77 g/mol
Storage temp.: +4 °C
[1055329-49-1]
WGK 3

**Type analysis:**
Purity (HPLC). .... ≥95 %

| | | | |
|---|---|---|---|
| **6696.1** | 10 mg | glass | 327,90 € |

## Sylvic acid

▶ Abietic acid see p. 1690

## Synergel™

### Synergel™

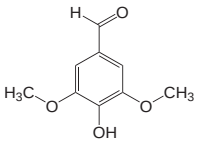
**≥99 %, for gel electrophoresis**
Agarose additive.
D 1,7
mp 260 °C
Solubility: max. 10 %
Storage temp.: +20 °C
[9000-40-2] • EC No. 232-541-5

**Type analysis:**
Colour....white to almost white powder
Odour. .... slightly salty
pH (1 % solution). .... 9
DNase, RNase. ....none detected

| | | | |
|---|---|---|---|
| **0184.2** | 10 g | plastic | 30,00 € |
| **0184.1** | 100 g | plastic | 209,65 € |

For further information, please see page 1164

## Syringaldehyde



### Syringaldehyde

**≥98 %**
4-Hydroxy-3,5-dimethoxybenzaldehyde
$C_9H_{10}O_4$
M 182,17 g/mol
bp 192-193 °C (19 hPa)
mp 109-112 °C
[134-96-3] • EC No. 205-167-5
WGK 1
**Warning** H315-H319-H335

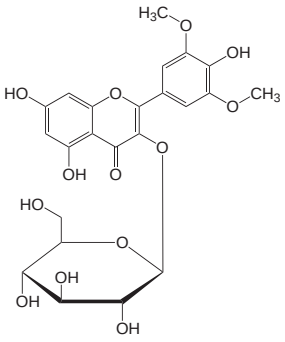
**Type analysis:**
Assay (HPLC). ....≥98 %
Melting point. ....110-113 °C

| | | | |
|---|---|---|---|
| **5359.1** | 5 g | glass | 46,80 € |

## Syringaresinol-4',4''-O-bis-β-D-glucoside

▶ Eleutheroside E see p. 1904

## Syringetin-3-glucoside



### Syringetin-3-glucoside

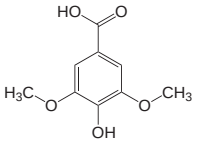
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{23}H_{24}O_{13}$
M 508,44 g/mol
Storage temp.: +4 °C
[40039-49-4]

**Type analysis:**
Purity (HPLC)....≥99 %

| | | | |
|---|---|---|---|
| **9432.1** | 5 mg | glass | 342,95 € |

S

## Syringic acid



### Syringic acid

**≥97 %**
$C_9H_{10}O_5$
M 198,18 g/mol
mp 204-207 °C
[530-57-4] • EC No. 208-486-8
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Assay (titr.). ..... ≥97 %

| | | | |
|---|---|---|---|
| **5361.1** | 10 g | glass | 64,40 € |

## Syringin, Syringoside

▶ Eleutheroside B see p. 1904

## TAA

▶ Thioacetamide see p. 2339

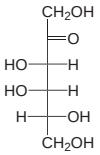
## TAE-buffer

▶ Rotiphorese® 10x TAE Buffer see p. 2228
▶ Rotiphorese® 50x TAE Buffer see p. 2228

## TAE powder (pouch)

▶ Roti®fair 50x TAE see p. 2215

## D-Tagatose



### D-Tagatose

**≥98,5 %, for biochemistry**
$C_6H_{12}O_6$
M 180,16 g/mol
mp 134-135 °C
[87-81-0] • EC No. 201-772-3

**Type analysis:**
Appearance. ..... white, cryst. powder
Assay (HPLC). ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$. ..... -5,5° ±1,0°

| | | | |
|---|---|---|---|
| **6161.1** | 1 g | glass | 177,40 € |
| **6161.2** | 5 g | glass | 772,95 € |

## Talcum

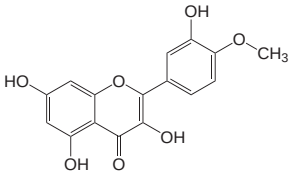
### Talcum

**Ph.Eur., USP, powdered**
Suitable as adsorbent.
Magnesium silicate
Solubility: insoluble ($H_2O$, 20 °C)
[14807-96-6] • EC No. 238-877-9

**Guarantee analysis:**
Appearance. ..... white to off-white, fatty
Identity. ..... complies
Substances soluble in $H_2O$. ..... ≤0,2 %
Acid or alkaline react. substances. ..... complies
Aluminium (Al). ..... ≤2,0 %
Calcium (Ca). ..... ≤0,9 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,25 %
Magnesium (Mg). ..... 17,0-19,5 %
Loss on ignition (1100 °C). ..... ≤7,0 %
Absence of Asbestos. ..... complies

| | | | |
|---|---|---|---|
| **9486.2** | 500 g | plastic | 13,15 € |
| Original pack 6 x 500 g | | | 12,49/500 g |
| **9486.3** | 1 kg | plastic | 17,75 € |
| Original pack 6 x 1 kg | | | 16,86/1 kg |
| **9486.1** | 2,5 kg | plastic | 32,15 € |

## Tamarixetin



### Tamarixetin

**ROTICHROM® HPLC**
Reference substance for HPLC.
Quercetin-4'-methylether
$C_{16}H_{12}O_7$
M 316,28 g/mol
Storage temp.: +4 °C
[603-61-2] • EC No. 210-050-7

**Type analysis:**
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7425.1** | 10 mg | glass | 252,65 € |

## 5-TAMRA-Azide

▶ 5-Carboxytetramethylrhodamine Azide (5-TAMRA-Azide) see p. 1813

## 5-TAMRA-PEG3-Azide

▶ 5-Carboxytetramethylrhodamine-PEG3-Azide (5-TAMRA-PEG3-Azide) see p. 1814

## Tanaceton

▶ α+β-Thujone see p. 2341

## Tannic acid

$C_{76}H_{52}O_{46}$
M 1701,20 g/mol
mp 218-219 °C
Solubility: 250 g/l ($H_2O$, 20 °C)
[1401-55-4] • EC No. 215-753-2
WGK 1

### Tannic acid

**≥86 %, p.a., ACS**

**Guarantee analysis:**
Assay. ..... ≥86 %
Identity. ..... complies
Loss on drying. ..... ≤12,0 %
Sugars, dextrin. ..... complies
Heavy metals (as Pb). ..... ≤0,003 %
Arsenic (As). ..... ≤0,0003 %
Zinc (Zn). ..... ≤0,005 %
Ash content. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **2726.1** | 100 g | plastic | 21,40 € |
| **2726.2** | 250 g | plastic | 36,45 € |
| **2726.3** | 500 g | plastic | 55,80 € |
| Original pack 6 x 500 g | | | 53,01/500 g |

### Tannic acid

**Ph.Eur., for biochemistry**

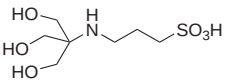
**Guarantee analysis:**
Appearance. ..... yellowish powder
Tannic acid (TA). ..... ≥95 %
Identity. ..... complies
Appearance of solution. ..... complies
Dextrine, rubber, salts, sugar. ..... complies
Resinous substances. ..... complies
Loss on drying. ..... ≤7,0 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4239.1** | 250 g | plastic | 33,25 € |
| **4239.2** | 1 kg | plastic | 102,05 € |
| Original pack 6 x 1 kg | | | 96,95/1 kg |

## Tantalum Standards

▶ Tantalum ICP Standard Solution see p. 2300
▶ Tantalum ICP Standard Solution see p. 2305

## TAPS



### TAPS

**PUFFERAN® ≥99 %**
N-Tris(hydroxymethyl)-methyl-3-amino-propane sulphonic acid
$C_7H_{17}NO_6S$
M 243,28 g/mol
mp 230-235 °C
[29915-38-6] • EC No. 249-954-1
WGK 1

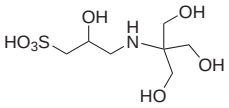
**Type analysis:**
Assay (titr.). ..... ≥99 %
Water (KF). ..... ≤1,0 %
pH value (5 % in $H_2O$). ..... 4,5-6,0
Heavy metals. ..... ≤0,001 %
UV-absorption (0,1 M in $H_2O$):
280 nm. ..... ≤0,01
260 nm. ..... ≤0,02

T

| | | | |
|---|---|---|---|
| **6982.1** | 10 g | plastic | 13,45 € |
| **6982.2** | 100 g | plastic | 42,90 € |
| **6982.3** | 250 g | plastic | 85,90 € |
| **6982.4** | 500 g | plastic | 152,15 € |
| Original pack 6 x 500 g | | | 144,54/500 g |

For further information, please see page 1269

## TAPSO



### TAPSO

**PUFFERAN® ≥99 %**

3-N-Tris(hydroxymethyl)-methylamino-2-hydroxypropanesulphonic acid

$C_7H_{17}NO_7S$

M 259,28 g/mol

mp 226 °C

[68399-81-5] • EC No. 269-993-8

WGK 1

**Warning** H315-H319-H335

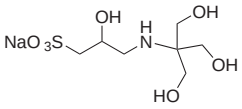
**Type analysis:**

Assay (titr.). ..... ≥99 %
Loss on drying. ..... ≤1,0 %
pH value (1 % solution). ..... 4,2-4,7
UV-absorption (0,1 M in $H_2O$):
280 nm ..... ≤0,02
260 nm ..... ≤0,04

| | | | |
|---|---|---|---|
| **6628.1** | 25 g | plastic | 30,00 € |
| **6628.2** | 100 g | plastic | 85,90 € |

For further information, please see page 1269

## TAPSO sodium salt



### TAPSO sodium salt

**PUFFERAN® ≥99 %**

3-N-Tris(hydroxymethyl)-methylamino-2-hydroxypropanesulphonic acid sodium salt

$C_7H_{16}NaNO_7S$

M 281,3 g/mol

[105140-25-8]

**Guarantee analysis:**

Appearance. ..... white powder
Assay (titr.). ..... ≥99 %
Water (KF). ..... ≤1 %
pH value (1 % solution). ..... 9,5-10,5

| | | | |
|---|---|---|---|
| **6974.1** | 25 g | plastic | 30,65 € |
| **6974.2** | 100 g | plastic | 93,00 € |

For further information, please see page 1269

## Taq DNA polymerase, recombinant


- Roti®-Pol Hot-TaqUltra see p. 2229
- Roti®-Pol Hot-TaqHY see p. 2229
- Roti®-Pol Hot-TaqS see p. 2229
- Roti®-Pol Hot-TaqS Mix (2x) see p. 2229
- Roti®-Pol Hot-TaqS Red-Mix (2x) see p. 2230
- Roti®-Pol TaqUltra see p. 2230
- Roti®-Pol TaqHY see p. 2230
- Roti®-Pol TaqS see p. 2230
- Roti®-Pol TaqS Mix (2x) see p. 2230
- Roti®-Pol TaqS Red-Mix (2x) see p. 2230

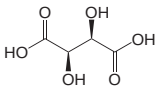

## Taq-Polymerasen



| Art. No. | Description | Page |
|---|---|---|
| 9350 | Roti®-Pol Hot-TaqUltra | 2229 |
| 9346 | Roti®-Pol Hot-TaqHY | 2229 |
| 9245 | Roti®-Pol Hot-TaqS | 2229 |
| 9248 | Roti®-Pol Hot-TaqS Mix (2x) | 2229 |
| 9256 | Roti®-Pol Hot-TaqS Red-Mix (2x) | 2230 |
| 9344 | Roti®-Pol ProofRead | 2230 |
| 9345 | Roti®-Pol TaqHY | 2230 |
| 9223 | Roti®-Pol TaqS | 2230 |
| 9239 | Roti®-Pol TaqS Mix (2x) | 2230 |
| 9241 | Roti®-Pol TaqS Red-Mix (2x) | 2230 |
| 9347 | Roti®-Pol TaqUltra | 2230 |



## D(-)-Tartaric acid



### D(-)-Tartaric acid

**≥99 %, for biochemistry**

$C_4H_6O_6$

M 150,09 g/mol

D 1,8

mp 166-169 °C • flp 210 °C

Solubility: 1394 g/l ($H_2O$, 20 °C)

[147-71-7] • EC No. 205-695-6

WGK 1

**Warning** H319

**Type analysis:**

Appearance. ..... white, cryst. powder
Assay. ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **5529.1** | 25 g | plastic | 49,35 € |

## DL-Tartaric acid

### DL-Tartaric acid

**≥99,5 %, anhydrous**

Grape acid

$C_4H_6O_6$

M 150,09 g/mol

mp 198-204 °C • flp 210 °C

Solubility: 215 g/l ($H_2O$, 25 °C)

[133-37-9] • EC No. 205-105-7

WGK 1

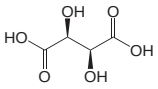
**Warning** H319

**Type analysis:**

Appearance. ..... white powder
Assay. ..... ≥99,5 %
Loss on drying. ..... ≤0,5 %
Ash content. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4891.2** | 25 g | plastic | 14,20 € |
| **4891.1** | 100 g | plastic | 25,30 € |
| **4891.3** | 500 g | plastic | 73,65 € |
| Original pack 6 x 500 g | | | 69,97/500 g |

## L(+)-Tartaric acid



$C_4H_6O_6$

M 150,09 g/mol

D 1,76

mp 166-169 °C • flp 210 °C

Solubility: 1390 g/l ($H_2O$, 20 °C)

[87-69-4] • EC No. 201-766-0

WGK 1

**Warning** H319

### L(+)-Tartaric acid

**≥99,5 %, p.a., ACS, ISO**

For the preparation of Fehling's solution.

**Guarantee analysis:**

Assay (acidim.). ..... ≥99,5 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Loss on drying (105 °C). ..... ≤0,2 %
Sulphated ash. ..... ≤0,01 %
Total sulphur (as $SO_4$) ..... ≤0,002 %
Chloride (Cl) ..... ≤0,0005 %
Oxalates ($C_2O_4$). ..... complies
Oxalic acid ($C_2H_2O_4$) ..... ≤0,04 %
Phosphate ($PO_4$). ..... ≤0,001 %
Sulphate ($SO_4$) ..... ≤0,015 %
Heavy metals (as Pb). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,0005 %
Calcium (Ca). ..... ≤0,002 %
Iron (Fe). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **K302.1** | 250 g | plastic | 24,65 € |
| **K302.2** | 1 kg | plastic | 72,60 € |
| Original pack 6 x 1 kg | | | 68,97/1 kg |
| **K302.5** | 25 kg | plastic | 1202,95 € |

## L(+)-Tartaric acid

**≥99,5 %, Ph.Eur.**

**Guarantee analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay (dry substance). ..... 99,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Specific rotation $[\alpha]_D^{20}$ (dry substance). ..... +12,0° to +12,8°
Oxalic acid. ..... ≤0,035 %
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,015 %
Calcium (Ca). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,001 %
Loss on drying. ..... ≤0,2 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4289.1** | 500 g | plastic | 27,85 € |
| Original pack 6 x 500 g | | | 26,46/500 g |
| **4289.2** | 1 kg | plastic | 46,15 € |
| Original pack 6 x 1 kg | | | 43,84/1 kg |
| **4289.3** | 5 kg | plastic | 188,15 € |
| **4289.4** | 25 kg | plastic | 783,70 € |

## L(+)-Tartaric acid

**≥99,7 %, for biochemistry**

**Type analysis:**

Appearance. ..... white crystals
Assay. ..... ≥99,7 %
Specific rotation $[\alpha]_D^{20}$. ..... +12,0° to +13,0°
Oxalate (as $C_2H_2O_4$). ..... ≤0,01 %
Heavy metals (as Pb). ..... ≤0,001 %
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,015 %
Calcium (Ca). ..... ≤0,02 %
Sulphated ash. ..... ≤0,1 %
Loss on drying. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **4890.3** | 500 g | plastic | 22,50 € |
| Original pack 6 x 500 g | | | 21,38/500 g |
| **4890.1** | 1 kg | plastic | 39,25 € |
| Original pack 6 x 1 kg | | | 37,29/1 kg |
| **4890.2** | 5 kg | plastic | 143,95 € |
| **4890.5** | 25 kg | plastic | 557,95 € |

## Tartaric acid diammonium salt

▶ di-Ammonium tartrate see p. 1739

## Tartaric acid disodium salt

▶ di-Sodium tartrate dihydrate see p. 2285

## Tartrate Standards

▶ Tartrate IC Standard Solution see p. 2312

## Tashiro's indicator solution

### Tashiro's indicator solution

**in ethanol, denatured**

pH indicator, mixed indicator
D 0,93
UN No. 1170 • ADR 3, III • WGK 1
**Warning** H226

Formulation: methyl red, methylene blue, ethanol denatured, water

| | | | |
|---|---|---|---|
| **2624.1** | 250 ml | plastic | 17,10 € |

## TAT Broth (Base)

### TAT Broth (Base)

**for microbiology**

For proliferation and regeneration of microorganisms from a variety of matters, e.g. from cosmetics, and matters contaminated with antimicrobial reagents.

Application: Use 25 g for 1 l broth. Before autoclaving add 40 ml Tween® 20 (polysorbate).

Casein peptone Lecithin Polysorbate Broth, **CPLP Broth**

Storage temp.: +20 °C

**Guarantee analysis:**

Casein peptone. ..... 20 g/l
Soya lecithin. ..... 5 g/l
pH value. ..... 7,1 ±0,2

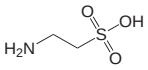
| | | | |
|---|---|---|---|
| **3935.1** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |
| **3935.2** | 1 kg | plastic | 190,85 € |
| Original pack 6 x 1 kg | | | 181,31/1 kg |

For further information, please see page 1399

## TATU

▶ O-(7-Azabenzotriazole-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TATU) see p. 1755

## Taurine



### Taurine

**≥99 %, for biochemistry**

2-Aminoethanesulphonic acid
$C_2H_7NO_3S$
M 125,2 g/mol
mp 300 °C (dec.)
Solubility: 65 g/l ($H_2O$, 12 °C)
[107-35-7] • EC No. 203-483-8
WGK 2

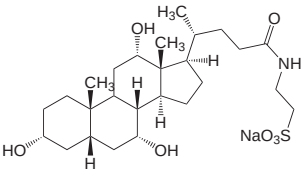
**Type analysis:**

Appearance. ..... white cryst. powder
Assay (titr.). ..... ≥99,0 %
Heavy metals. ..... ≤0,001 %
Loss on drying. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **4721.1** | 100 g | plastic | 19,25 € |
| **4721.2** | 500 g | plastic | 52,15 € |
| Original pack 6 x 500 g | | | 49,54/500 g |

For further information, please see page 1269

## Taurocholic acid sodium salt



$C_{26}H_{44}NNaO_7S$
M 537,68 g/mol
mp 230 °C
Storage temp.: +4 °C
[145-42-6] • EC No. 205-653-7
WGK 1

### Taurocholic acid sodium salt

**≥98 %, for biochemistry**

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,0 %
Water. ..... ≤5,0 %
Solubility (10 % in $H_2O$). ..... clear
Heavy metals (as Pb). ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **8149.1** | 500 mg | glass | 16,05 € |
| **8149.2** | 1 g | glass | 22,50 € |
| **8149.3** | 10 g | glass | 105,90 € |
| **8149.4** | 50 g | glass | 407,45 € |
| **8149.5** | 100 g | glass | 762,20 € |

### Taurocholic acid sodium salt

**ROTICHROM® TLC**

Reference substance for thin layer chromatography.

| | | | |
|---|---|---|---|
| **5817.1** | 100 mg | glass | 53,25 € |

## (+)-Taxifolin

▶ (+)-Dihydroquercetin see p. 1875

## TBA

▶ Tryptone Bile Salts Agar see p. 2360

## TBAB

▶ Tetrabutylammonium bromide (TBAB) see p. 2334

## TBAF

▶ Tetrabutylammoniumfluoride (TBAF) see p. 2334

## TBAH

▶ Tetrabutylammonium hydroxide (TBAH) see p. 2334

## TBAI

▶ Tetrabutylammonium iodide (TBAI) see p. 2334

## TBE powder (pouch)

▶ Roti®fair 10x TBE see p. 2215
▶ Roti®fair 5x TBE see p. 2215
▶ Roti®fair 1x TBE see p. 2215


## TBE-buffer

▶ Rotiphorese® 10x TBE Buffer see p. 2228


## TBME

▶ tert-Butyl methyl ether see p. 1797


## TBS powder (pouch)

▶ Roti®fair TBS 8.0 see p. 2215
▶ Roti®fair 10x TBS 8.0 see p. 2216


## 10x TBS ready-to-use solution

▶ Roti®-Stock 10x TBS see p. 2233


## TBS (tablet)

▶ Roti®fair TBS 7.6 see p. 2215


## 10x TBST ready-to-use solution

▶ Roti®-Stock 10x TBST see p. 2233


## TBST (tablet)

▶ Roti®fair TBST 7.6 see p. 2216


## TBTA

▶ Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA) see p. 2357


## TBTU

▶ O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TBTU) see p. 1768


## TBX chromogenic Agar

### TBX chromogenic Agar
**ISO 16649-2 and -3, for microbiology**

Selective agar for detection of *E.coli* in food samples.
Application: Use 36,6 g for 1 l agar.
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Casein peptone. | 20,0 g/l |
| Bile salts. | 1,5 g/l |
| x-β-D-Glucuronide. | 0,075 g/l |
| Agar. | 15,0 g/l |
| pH value. | 7,2 ±0,2 |

| | | | |
|---|---|---|---|
| **CL47.2** | 100 g | plastic | 94,10 € |
| **CL47.1** | 500 g | plastic | 338,65 € |
| Original pack 6 x 500 g | | | 321,72/500 g |

For further information, please see page 1400

## TCA

▶ Trichloroacetic acid see p. 2350


## TCA solution

▶ Trichloroacetic acid solution see p. 2350


## TCBS Agar

### TCBS Agar
**for microbiology**

For selective isolation of *Vibrio.*
Application: Use 88 g for 1 l agar.
Thiosulphate Citrate Bile Sucrose Agar, Cholera Medium TCBS, Cholera Agar
Storage temp.: +20 °C
WGK 1

**Formulation:**

| | |
|---|---|
| Sucrose. | 20 g/l |
| Sodium chloride (NaCl). | 10 g/l |
| Sodium thiosulphate. | 10 g/l |
| Sodium citrate. | 10 g/l |
| Meat peptone. | 5 g/l |
| Casein peptone. | 5 g/l |
| Yeast extract. | 5 g/l |
| Dehydrated ox bile. | 5 g/l |
| Sodium cholate. | 3 g/l |
| Ammonium iron(III) citrate. | 1 g/l |
| Thymol blue. | 0,04 g/l |
| Bromothymol blue. | 0,04 g/l |
| Agar. | 14 g/l |
| pH value. | 8,6 ±0,2 |

| | | | |
|---|---|---|---|
| **8333.1** | 500 g | plastic | 114,50 € |
| Original pack 6 x 500 g | | | 108,78/500 g |

For further information, please see page 1400

## TCC

▶ tri-Calcium dicitrate tetrahydrate see p. 1805


## TC100 cell culture medium

▶ Roti®-CELL TC100 see p. 2208


## TCE

▶ Trichloroethylene see p. 2350


## TCE-D2

▶ 1,1,2,2-Tetrachloroethane D2 see p. 2335


## TCTU

▶ O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate (TCTU) see p. 1827


## TDPA

▶ Tetradecylphosphonic acid see p. 2336


## TEA

▶ Triethylamine (TEA) see p. 2352
▶ Triethanolamine see p. 2352


## TE buffer powder (pouch)

▶ Roti®fair 10x TE see p. 2216


## Tellurium Standards

▶ Tellurium AAS Standard Solution see p. 2296
▶ Tellurium ICP Standard Solution see p. 2300
▶ Tellurium ICP Standard Solution see p. 2305


## Tellurium dioxide

▶ Tellurium(IV) oxide see p. 2331


## Tellurium(IV) oxide

Tellurium dioxide
$TeO_2$
M 159,61 g/mol
D 6,02 • bp 1245 °C
mp 733 °C
[7446-07-3] • EC No. 231-193-1
WGK 1

### Tellurium(IV) oxide
**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis). | 99,999 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5745.1** | 5 g | plastic | 42,90 € |
| **5745.2** | 10 g | plastic | 76,90 € |
| **5745.3** | 50 g | plastic | 252,65 € |

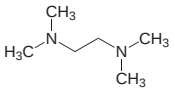
### Tellurium(IV) oxide
**≥99,9 %, p.a.** NEW

**Guarantee analysis:**

| | |
|---|---|
| Assay. | ≥99,9 % |
| Arsenic (As). | ≤0,005 % |
| Bismuth (Bi). | ≤0,001 % |
| Lead (Pb). | ≤0,001 % |
| Cadmium (Cd). | ≤0,001 % |
| Iron (Fe). | ≤0,005 % |
| Copper (Cu). | ≤0,001 % |
| Nickel (Ni). | ≤0,001 % |
| Silver (Ag). | ≤0,001 % |
| Zinc (Zn). | ≤0,001 % |
| Moisture. | ≤0,2 % |

| | | | |
|---|---|---|---|
| **0321.1** | 10 g | plastic | 32,15 € |
| **0321.2** | 25 g | plastic | 64,40 € |
| **0321.3** | 50 g | plastic | 117,20 € |

## TEMED



N,N,N',N'-Tetramethylethylenediamine,
1,2-Bis(dimethylamino)-ethane
$C_6H_{16}N_2$
M 116,21 g/mol
D 0,78 • bp 121 °C
mp -55 °C • flp 19 °C
[110-18-9] • EC No. 203-744-6
UN No. 2372 • ADR 3 II • WGK 1
**Danger** H225-H314-H302+H332

### TEMED

**≥99 %, p.a., for electrophoresis**

**Type analysis:**
Appearance. .....clear to slightly turbid solution
Assay.....≥99 %

| | | | |
|---|---|---|---|
| **2367.3** | 25 ml | glass | 19,25 € |
| **2367.1** | 100 ml | glass | 37,55 € |
| **2367.2** | 250 ml | glass | 75,15 € |

For further information, please see page 1156

### TEMED

**≥98,5 %, for synthesis**

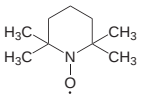
The solution may contain sediment. It can be filtered before use. Lot-specific colour variation may range from slight to considerable yellow.

**Type analysis:**
Assay.....≥98,5 %

| | | | |
|---|---|---|---|
| **8142.1** | 100 ml | glass | 26,35 € |
| **8142.2** | 500 ml | glass | 96,25 € |
| **8142.3** | 1 l | glass | 180,10 € |
| Original pack 6 x 1 l | | | 171,10/1 l |

For further information, please see page 1156

## TEMPO



NEW

### TEMPO

**≥98 %, for synthesis**

2,2,6,6-Tetramethylpiperidinyloxy (free radical), 2,2,6,6-Tetramethylpiperidine 1-oxyl, (2,2,6,6-Tetramethylpiperidin-1-yl)oxidanyl
$C_9H_{18}NO$
M 156,25 g/mol
D 0,91
mp 36-40° C • flp 67 °C
Solubility: 9,7 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[2564-83-2] • EC No. 219-888-8
UN No. 3263 • ADR 8 II • WGK 1
**Danger** H290-H314

**Type analysis:**
Assay (GC). .....≥98 %
Residual solvents (methanol). .....≤0,5 %

| | | | |
|---|---|---|---|
| **6801.1** | 1 g | glass | 13,90 € |
| **6801.2** | 5 g | glass | 26,80 € |
| **6801.3** | 25 g | glass | 64,40 € |

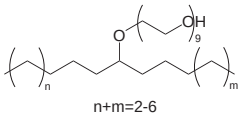
## Terbium Standards

▶ Terbium ICP Standard Solution see p. 2301
▶ Terbium ICP Standard Solution see p. 2305

## 100x TE ready-to-use solution

▶ Roti®-Stock 100x TE see p. 2233

## Tergitol™ 15-S-9



n+m=2-6

### Tergitol™ 15-S-9

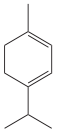
**extra pure**

Alternative to Triton® X-100, non-ionic detergent.
sec. Alcoxy polyethylene glycol, Polyethylene glycol ether, sec. Alcohol ethoxylate
D 1,02 • bp >250 °C
[68131-40-8] • EC No. 614-295-4
UN No. 3082 • ADR 9 III • WGK 2
**Warning** H302+H332-H411

**Type analysis:**
Appearance..... colourless to yellow liquid
Cloud point (1%, $H_2O$)..... 57,5-62,5 °C
pH value (1 % in $H_2O$). ..... 5,5-7,5
Water..... ≤0,50 %

| | | | |
|---|---|---|---|
| **9975.1** | 100 ml | glass | 17,10 € |
| **9975.2** | 500 ml | glass | 37,55 € |

## α-Terpinene



### α-Terpinene

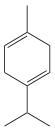
**ROTICHROM® GC**

Reference substance for GC.
$C_{10}H_{16}$
M 136,24 g/mol
D 0,84 • bp ~174 °C
flp 46 °C
Storage temp.: +4 °C
[99-86-5] • EC No. 202-795-1
UN No. 2319 • ADR 3 III • WGK 2
**Danger**
H304-H226-H302-H411

**Type analysis:**
Purity (GC). ..... ≥80 %

| | | | |
|---|---|---|---|
| **8038.2** | 100 mg | glass | 94,10 € |

## γ-Terpinene



### γ-Terpinene

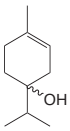
**ROTICHROM® GC**

Reference substance for GC.
$C_{10}H_{16}$
M 136,24 g/mol
D 0,85 • bp 182 °C
flp 51 °C
Storage temp.: +4 °C
[99-85-4] • EC No. 202-794-6
UN No. 2319 • ADR 3 III • WGK 2
**Danger** H304-H226

**Type analysis:**
Purity (GC). .....≥94,0 %

| | | | |
|---|---|---|---|
| **8039.2** | 100 mg | glass | 112,80 € |

## 4-Terpinenol




### 4-Terpinenol

**≥95 %**

$C_{10}H_{18}O$
M 154,24 g/mol
bp 211-213 °C
flp 79 °C
[562-74-3] • EC No. 209-235-5
WGK 2
**Warning** H302-H315-H319-H335

**Type analysis:**
Purity (HPLC). .....≥95 %

| | | | |
|---|---|---|---|
| **6309.1** | 1 g | plastic | 99,90 € |

## Terpineol

### Terpineol

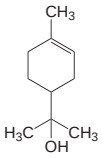
**pure**

$C_{10}H_{18}O$
M 154,24 g/mol
D ~0,93 • bp 214-217 °C
mp ~32 °C • flp 95 °C
[8000-41-7] • EC No. 232-268-1
WGK 2
**Warning** H315

**Type analysis:**
Appearance. .....clear, colourless oil
Density (20 °C)..... 0,929-0,933 g/cm³
Refractive index (20 °C). .....1,480-1,485
Optical rotation (20 °C)..... -20° to +10°
Remark: The product may crystallise.
Can be redissolved by heating (max. 60 °C).

| | | | |
|---|---|---|---|
| **8672.1** | 250 ml | glass | 20,35 € |
| **8672.2** | 1 l | glass | 59,05 € |
| Original pack 6 x 1 l | | | 56,10/1 l |

## α-Terpineol



p-Menth-1-en-8-ol
$C_{10}H_{18}O$
M 154,25 g/mol
D 0,932 • bp 216 °C
mp 33 °C • flp 90 °C
Solubility: insoluble in water
Storage temp.: +4 °C
[98-55-5] • EC No. 202-680-6
WGK 1

**Warning** H315-H319-H412

### α-Terpineol

**≥60 %, for synthesis**

**Type analysis:**
α-Terpineol. ..... ≥60 %
γ-Terpineol. ..... 5-20 %
Remark: The product may crystallise.
Can be redissolved by heating (max. 60 °C).

| | | | |
|---|---|---|---|
| **4418.1** | 5 ml | glass | 12,05 € |
| **4418.2** | 250 ml | glass | 27,45 € |
| **4418.3** | 1 l | glass | 76,90 € |
| Original pack 6 x 1 l | | | 73,06/1 l |

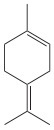
### α-Terpineol

**ROTICHROM® GC**
Reference substance for GC.

**Type analysis:**
Purity (GC). ..... ≥96 %

| | | | |
|---|---|---|---|
| **5152.2** | 100 mg | glass | 82,70 € |

## Terpinolene



### Terpinolene

**ROTICHROM® GC**
Reference substance for GC.
δ-Terpinene
$C_{10}H_{16}$
M 136,24 g/mol
D ~0,862 • bp 184 °C
flp 64 °C
Storage temp.: +4 °C
[586-62-9] • EC No. 209-578-0
UN No. 2541 • ADR 3 III • WGK 3

**Warning** H410

**Type analysis:**
Purity (GC). ..... ≥89 %

| | | | |
|---|---|---|---|
| **5166.2** | 100 mg | glass | 83,35 € |

## Terra infusoria

▶ Infusorial earth see p. 2004

## Terrific Broth

Storage temp.: +20 °C
WGK 1

### Terrific Broth

**for molecular biology**
Application: Use 50,8 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

**Formulation:**
Casein, enzymatically digested. ..... 12 g/l
Yeast extract. ..... 24 g/l
$K_2HPO_4$. ..... 12,54 g/l
$KH_2PO_4$. ..... 2,31 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **X972.1** | 500 g | plastic | 65,50 € |
| Original pack 6 x 500 g | | | 62,23/500 g |
| **X972.2** | 1 kg | plastic | 115,60 € |
| Original pack 6 x 1 kg | | | 109,82/1 kg |
| **X972.3** | 2,5 kg | plastic | 241,90 € |

For further information, please see page 1417

### Terrific Broth modified

**for molecular biology**
Application: Use 47,6 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

**Formulation:**
Casein, enzymatically digested. ..... 12 g/l
Yeast extract. ..... 24 g/l
$K_2HPO_4$. ..... 9,4 g/l
$KH_2PO_4$. ..... 2,2 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **HP61.1** | 500 g | plastic | 61,20 € |
| Original pack 6 x 500 g | | | 58,14/500 g |
| **HP61.2** | 1 kg | plastic | 109,15 € |
| Original pack 6 x 1 kg | | | 103,69/1 kg |

For further information, please see page 1417

### Terrific Broth vegetal

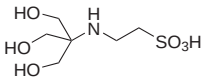
**for molecular biology, animal-free**
Application: Use 50,8 g for 1 l broth. Before autoclaving add 4 ml glycerol per litre medium.

**Formulation:**
Vegetable peptone . ..... 12 g/l
Yeast extract. ..... 24 g/l
$K_2HPO_4$. ..... 12,5 g/l
$KH_2PO_4$. ..... 2,3 g/l
pH value. ..... 7,2 ±0,2

| | | | |
|---|---|---|---|
| **0161.1** | 500 g | plastic | 77,30 € |
| Original pack 6 x 500 g | | | 73,44/500 g |

For further information, please see page 1418

## TES



### TES

**PUFFERAN® ≥99 %**
N-[Tris-(hydroxymethyl)-methyl]-2-aminoethane sulphonic acid
$C_6H_{15}NO_6S$
M 229,2 g/mol
mp 229-231 °C
[7365-44-8] • EC No. 230-906-3
WGK 1

**Guarantee analysis:**
Assay (titr.). ..... ≥99,0 %
pH value (1 % in $H_2O$). ..... 4,2-4,8
Loss on drying. ..... ≤1,0 %
UV-absorption (0,1 M in $H_2O$):
260 nm. ..... ≤0,02
280 nm. ..... ≤0,02

| | | | |
|---|---|---|---|
| **9137.1** | 10 g | plastic | 26,35 € |
| **9137.2** | 100 g | plastic | 138,70 € |
| **9137.3** | 500 g | plastic | 278,45 € |
| Original pack 6 x 500 g | | | 264,53/500 g |

For further information, please see page 1269

## Tetraammineplatinum(II) nitrate

### Tetraammineplatinum(II) nitrate

**ROTI®METIC 99,995 % (4N5)**
$Pt(NH_3)_4(NO_3)_2$
M 387,22 g/mol
[20634-12-2] • EC No. 243-929-9
UN No. 1479 • ADR 5.1 II • WGK 1

**Danger** H272-H315-H319-H317-H335

**Type analysis:**
Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5746.1** | 1 g | plastic | 321,45 € |

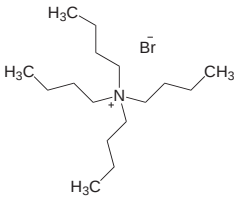
## 2',4',5',7'-Tetrabromoeosin ethyl ester potassium salt

▶ Ethyl eosin (C.I. 45386) see p. 1919

## 3,3',5,5'-Tetrabromophenol sulphonphthaleine

▶ Bromophenol blue see p. 1789

## Tetrabutylammonium bromide (TBAB)



### Tetrabutylammonium bromide (TBAB)

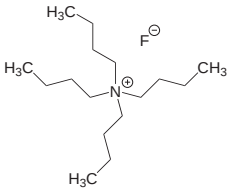
**≥99 %, for synthesis**
TBAB
$C_{16}H_{36}BrN$
M 322,4 g/mol
mp 102-106 °C
[1643-19-2] • EC No. 216-699-2
WGK 3

**Warning** H315-H319-H412

**Type analysis:**
Appearance. ..... white to off-white powder
Assay (titr.). ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **6633.1** | 50 g | plastic | 26,80 € |
| **6633.2** | 250 g | plastic | 75,15 € |
| **6633.3** | 500 g | plastic | 127,95 € |
| Original pack 6 x 500 g | | | 121,55/500 g |

## Tetrabutylammoniumfluoride (TBAF)



### Tetrabutylammoniumfluoride (TBAF)

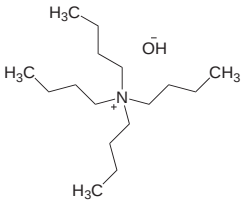
**1 mol/l in THF, stab.**
TBAF, Tetra-n-butylammonium fluoride
$(C_4H_9)_4NF$
M 261,46 g/mol
D 0,91
flp -17 °C
Storage temp.: +4 °C
[429-41-4] • EC No. 207-057-2
UN No. 2924 • ADR 3 (8) II • WGK 1

**Danger**
H225-H314-H351-H335-EUH019

**Type analysis:**
Appearance. ..... colourless to yellow liquid
Assay (titr.). ..... ≥1,0 mol/l
Water (KF). ..... 4,0-7,0 %
Stabilized with 250 ppm 2,6-di-tert-butyl-4-methyl-phenol (BHT).
Store under inert gas.

| | | | |
|---|---|---|---|
| **1448.1** | 25 ml | glass | 24,65 € |
| **1448.2** | 100 ml | glass | 73,00 € |
| **1448.3** | 250 ml | glass | 127,95 € |

## Tetrabutylammonium hydroxide (TBAH)



### Tetrabutylammonium hydroxide (TBAH)

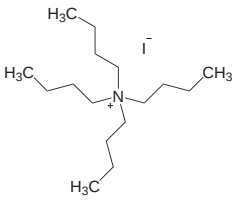
**40 % in water**
TBAH
$C_{16}H_{37}NO$
M 259,48 g/mol
D ~0,98
flp >230 °C
[2052-49-5] • EC No. 218-147-6
UN No. 3267 • ADR 8 II • WGK 1

**Danger** H314-H290

**Type analysis:**
Appearance. ..... colourless to yellowish liquid
Assay. ..... ~40 % in $H_2O$
Colour number (APHA). ..... ≤20
Remark: The product may crystallise.
Can be redissolved by heating (max. 40 °C).

| | | | |
|---|---|---|---|
| **5026.1** | 25 ml | glass | 23,15 € |
| **5026.2** | 100 ml | glass | 46,15 € |
| **5026.3** | 250 ml | glass | 83,35 € |
| **5026.4** | 1 l | glass | 278,45 € |
| Original pack 6 x 1 l | | | 264,53/1 l |

## Tetrabutylammonium iodide (TBAI)



### Tetrabutylammonium iodide (TBAI)

**≥99 %, p.a.**
TBAI
$C_{16}H_{36}IN$
M 369,38 g/mol
mp 144-146 °C
[311-28-4] • EC No. 206-220-5
WGK 1

**Warning** H302-H315-H319-H335

**Type analysis:**
Assay. ..... ≥99,0 %
Melting point. ..... 144-146 °C

| | | | |
|---|---|---|---|
| **4735.1** | 25 g | plastic | 14,95 € |
| **4735.2** | 100 g | plastic | 38,60 € |
| **4735.3** | 500 g | plastic | 160,20 € |
| Original pack 6 x 500 g | | | 152,19/500 g |

## Tetrachloroauric(III) acid trihydrate

$HAuCl_4 \cdot 3\ H_2O$
M 393,83 g/mol
D 3,9 • bp 200 °C (dec.)
mp ~30 °C
Solubility: 150 g/l ($H_2O$, 20 °C)
[16961-25-4] • EC No. 236-623-1
UN No. 3260 • ADR 8 III • WGK 1

**Danger** H314-H317

### Tetrachloroauric(III) acid trihydrate

**≥99,9 %, p.a., ultra quality**
Gold(III) chloride trihydrate, Gold trichloride trihydrate, Gold trichloride hydrochloride

**Guarantee analysis:**
Appearance. ..... orange to yellow-red powder
Assay. ..... ≥99,9 %
Gold (Au). ..... ≥50 %
Aluminium (Al). ..... ≤0,005 %
Calcium (Ca). ..... ≤0,005 %
Chromium (Cr). ..... ≤0,005 %
Iron (Fe). ..... ≤0,005 %
Copper (Cu). ..... ≤0,005 %
Magnesium (Mg). ..... ≤0,005 %
Manganese (Mn). ..... ≤0,005 %
Platinum (Pt). ..... ≤0,005 %
Ruthenium (Ru). ..... ≤0,005 %
Silver (Ag). ..... ≤0,005 %
Silicon (Si). ..... ≤0,005 %
Zinc (Zn). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **0689.1** | 500 mg | glass | 84,95 € |
| **0689.2** | 1 g | glass | 138,70 € |
| **0689.3** | 5 g | glass | 525,70 € |

### Tetrachloroauric(III) acid trihydrate

**≥99,5 %, p.a.**
Gold trichloride trihydrate,
Gold trichloride hydrochloride

**Guarantee analysis:**
Appearance. ..... yellow to red-yellow crystals
Assay (based on Au). ..... ≥99,5 %

| | | | |
|---|---|---|---|
| **3867.1** | 1 g | glass | 134,40 € |
| **3867.2** | 5 g | glass | 536,45 € |

For further information, please see page 1442

## 2,3,5,6-Tetrachloro-1,4-benzoquinone

▶ p-Chloranil see p. 1826

## 1,1,2,2-Tetrachloroethane D2

### 1,1,2,2-Tetrachloroethane D2
**99,6 Atom%D**
For nuclear magnetic resonance spectroscopy.
1,2-Dideutero-1,1,2,2-tetrachloroethane, TCE-D2
$C_2Cl_4D_2$
M 169,86 g/mol
D 1,60 • bp 146 °C
mp -43 °C
Solubility: 3 g/l ($H_2O$, 20 °C)
[33685-54-0] • EC No. 251-634-1
UN No. 1702 • ADR 6.1 II • WGK 3
**Danger** H310+H330-H411

**Guarantee analysis:**
Deuterising degree. ..... ≥99,6 %
Water (KF, $H_2O+D_2O$). ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **CP96.1** | 10 ml | glass | 92,35 € |
| **CP96.2** | 10 x 0,75 ml | glass ampoule | 93,45 € |

## Tetrachloroethylene



Perchloroethylene, Ethylene tetrachloride
$C_2Cl_4$
M 165,83 g/mol
D ~1,61 • bp 121,1 °C
mp -22 °C
Solubility: 0,16 g/l ($H_2O$, 20 °C)
[127-18-4] • EC No. 204-825-9
UN No. 1897 • ADR 6.1 III • WGK 3
**Warning** H351-H411

### Tetrachloroethylene
**ROTISOLV® ≥99,9 %, UV/IR-Grade**
For chromatography and spectroscopy.

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,05 %
Colour (Hazen). ..... ≤10
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Fluorescence (as quinine):
365 nm. ..... ≤2,0 ppb
Transmission:
305 nm. ..... ≥85 %
302 nm. ..... ≥80 %
297 nm. ..... ≥50 %
290 nm. ..... ≥10 %

| | | | |
|---|---|---|---|
| **CP83.1** | 2,5 l | glass | 81,20 € |
| Original pack 4 x 2,5 l | | | 77,14/2,5 l |

### Tetrachloroethylene
**≥99,5 %, for synthesis**

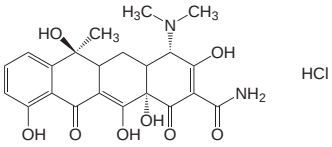
**Type analysis:**
Assay (GC). ..... ≥99,5 %
Density (20 °C). ..... 1,615-1,625

| | | | |
|---|---|---|---|
| **4737.1** | 1 l | glass | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |
| **4737.3** | 2,5 l | glass | 45,05 € |
| Original pack 4 x 2,5 l | | | 42,80/2,5 l |
| **4737.2** | 10 l | tinplate | 137,50 € |

## Tetrachlorostannane
▶ Tin(IV) chloride see p. 2344

## 1-Tetracosanol
▶ Lignoceryl alcohol see p. 2036

## Tetracycline hydrochloride



Achromycin hydrochloride
$C_{22}H_{25}Cl\,N_2O_8$
M 480,90 g/mol
mp 215-220 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[64-75-5] • EC No. 200-593-8
WGK 1
**Warning** H319-H361d

### Tetracycline hydrochloride
**CELLPURE® ≥900 µg/mg**
Bacteriostatic antibiotic. For cell culture, molecular biology and biochemistry.

**Guarantee analysis:**
Assay. ..... ≥900 µg/mg
Heavy metals. ..... ≤0,005 %
Loss on drying. ..... ≤2,0 %
pH value (1 % in $H_2O$). ..... 2,3 ±0,5
4-epi-anhydrotetracycline. ..... ≤2,0 %
Endotoxins (LAL). ..... ≤0,5 I.U./mg

| | | | |
|---|---|---|---|
| **HP63.1** | 10 g | glass | 24,20 € |
| **HP63.2** | 50 g | glass | 84,85 € |

For further information, please see page 1434

### Tetracycline hydrochloride
**≥900 µg/mg, for biochemistry and molecular biology**
Bacteriostatic antibiotic.

**Type analysis:**
Assay. ..... ≥900 µg/mg
Assay (dry substance). ..... ≥95,0 %
pH value (1 % in $H_2O$). ..... 1,8-2,8
Specific rotation $[\alpha]_D^{20}$ (0,5 % in 0,1 N HCl). ..... -255° to -240°
Heavy metals. ..... ≤0,005 %
Sulphated ash. ..... ≤0,5 %
Loss on drying. ..... ≤2,0 %

| | | | |
|---|---|---|---|
| **0237.1** | 25 g | glass | 29,60 € |
| **0237.2** | 50 g | glass | 51,10 € |
| **0237.3** | 100 g | glass | 89,80 € |

For further information, please see page 1434

## n-Tetradecane



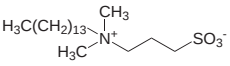
### n-Tetradecane
**ROTICHROM® GC**
Reference substance for GC.
$C_{14}H_{30}$
M 198,40 g/mol
D ~0,763 • bp 252-254 °C
mp 5,5 °C • flp 99 °C
Storage temp.: +4 °C
[629-59-4] • EC No. 211-096-0
WGK 1
**Danger** H304

**Type analysis:**
Purity (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **9024.1** | 1 g | plastic | 81,20 € |

## Tetradecanoic acid
▶ Myristic acid see p. 2086

## N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate



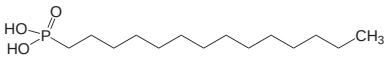
### N-Tetradecyl-N,N-dimethyl-3-ammonio-1-propane sulphonate
**≥98 %, for biochemistry**
Zwitterionic detergent.
Sulfobetaine-14, SB-14
$C_{19}H_{41}NO_3S$
M 363,6 g/mol
[14933-09-6]
WGK 1
**Warning** H315-H319-H335

**Type analysis:**
Assay (HPLC). ..... ≥98,0 %
Loss on drying. ..... ≤2,0 %
Ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **1822.1** | 5 g | glass | 28,50 € |
| **1822.2** | 25 g | glass | 76,90 € |
| **1822.3** | 100 g | glass | 256,95 € |

For further information, please see page 1274

## Tetradecylphosphonic acid



### Tetradecylphosphonic acid

Suitable for the production and modification of nanoparticles.

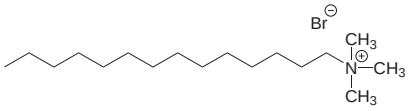
TDPA
$C_{14}H_{31}O_3P$
M 278,37 g/mol
mp 80-85 °C
Storage temp.: +4 °C
[4671-75-4] • EC No. 225-118-1
WGK 3

**Type analysis:**

Melting point. ..... 80-85 °C

| | | | |
|---|---|---|---|
| **8465.1** | 1 g | glass | 38,60 € |
| **8465.2** | 5 g | glass | 138,70 € |

## Tetradecyltrimethylammonium bromide (MTAB)



### Tetradecyltrimethylammonium bromide (MTAB)

**≥96 %, extra pure**

Cationic detergent

N,N,N-Trimethyl-1-tetradecanammonium bromide, Myristyltrimethylammonium bromide, MTAB
$C_{17}H_{38}BrN$
M 336,42 g/mol
bp 250 °C (dec.)
Solubility: 500 g/l ($H_2O$, 20 °C)
[1119-97-7] • EC No. 214-291-9
UN No. 3077 • ADR 9 III • WGK 3

**Danger**

H315-H318-H335-H373-H410

**Type analysis:**

Assay (arg., dry substance). ..... ≥96,0 %
Loss on drying. ..... ≤2,0 %
Sulphated ash. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7452.1** | 100 g | plastic | 38,60 € |
| **7452.2** | 500 g | plastic | 149,45 € |
| Original pack 6 x 500 g | | | 141,98/500 g |
| **7452.3** | 1 kg | plastic | 289,20 € |
| Original pack 6 x 1 kg | | | 274,74/1 kg |
| **7452.4** | 2,5 kg | plastic | 643,95 € |

## 1,2,3,4-Tetrahydrobenzene

▶ Cyclohexene see p. 1852

## Tetrahydrofuran



THF, Oxolane
$C_4H_8O$
M 72,11 g/mol
D ~0,89 • bp 65,5 °C
mp -108,5 °C • flp -21 °C
[109-99-9] • EC No. 203-726-8
UN No. 2056 • ADR 3 II • WGK 1

**Danger**

H225-H319-H335-H351-EUH019

### Tetrahydrofuran

**ROTISOLV® ≥99,9 %, Ultra LC-MS, not stabilized**

NEW

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,02 %
Acidity (as $CH_3COOH$). ..... ≤0,002 %
Alkalinity (as $NH_3$). ..... ≤0,0005 %
Evaporation residue. ..... ≤0,0001 %
Transmission:
310 nm. ..... ≥99 %
280 nm. ..... ≥95 %
275 nm. ..... ≥90 %
265 nm. ..... ≥80 %
Gradient test:
UV-absorption of the greatest eluated peak.
254 nm. ..... ≤0,01 AU
280 nm. ..... ≤0,003 AU
Fluorescence (as quinine):
254 nm. ..... ≤1 ppb
365 nm. ..... ≤1 ppb
Trace impurities:
Aluminium (Al). ..... ≤20 ppb
Calcium (Ca). ..... ≤50 ppb
Iron (Fe). ..... ≤20 ppb
Potassium (K). ..... ≤50 ppb
Magnesium (Mg). ..... ≤20 ppb
Sodium (Na). ..... ≤50 ppb
Filtered through a 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **0739.1** | 1 l | glass | 117,20 € |
| Original pack 6 x 1 l | | | 111,34/1 l |

### Tetrahydrofuran

**ROTISOLV® HPLC, not stabilized**

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,01 %
Free acid. ..... ≤0,001 %
Non volatile matter. ..... ≤0,0005 %
Transmission:
290-400 nm. ..... ≥99 %
275 nm. ..... ≥90 %
255 nm. ..... ≥70 %
235 nm. ..... ≥50 %
215 nm. ..... ≥10 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **7344.1** | 1 l | glass | 50,00 € |
| Original pack 6 x 1 l | | | 47,50/1 l |
| **7344.2** | 2,5 l | glass | 104,20 € |
| Original pack 4 x 2,5 l | | | 98,99/2,5 l |

For further information, please see page 1590

### Tetrahydrofuran

**ROTISOLV® ≥99,9 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Water (KF). ..... ≤0,02 %
Colour (Hazen). ..... ≤10
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,0005 %
Fluorescence (as quinine):
254 nm. ..... ≤1,0 ppb
365 nm. ..... ≤1,0 ppb
Transmission:
310 nm. ..... ≥98 %
275 nm. ..... ≥90 %
265 nm. ..... ≥80 %
245 nm. ..... ≥55 %
215 nm. ..... ≥10 %
Unstabilized.

| | | | |
|---|---|---|---|
| **CP82.1** | 2,5 l | glass | 93,45 € |
| Original pack 4 x 2,5 l | | | 88,78/2,5 l |

### Tetrahydrofuran

**ROTIDRY® Sept ≥99,8 % (≤10 ppm $H_2O$)**

Dried; in a septum bottle

**Guarantee analysis:**

Assay (GC). ..... ≥99,8 %
Colour (APHA). ..... ≤10
Water (KF). ..... ≤0,001 %
Acidity (as $CH_3COOH$). ..... ≤0,003 %
Evaporation residue. ..... ≤0,001 %
Stabilized with approx. 250 ppm BHT

| | | | |
|---|---|---|---|
| **5182.1** | 250 ml | glass | 50,00 € |

### Tetrahydrofuran

**ROTIDRY® ≥99,9 % (≤50 ppm $H_2O$)**

Dried; for analysis and organic synthesis.

**Guarantee analysis:**

Assay (GC). ..... ≥99,9 %
Colour (Hazen). ..... ≤10
Water (KF). ..... ≤0,005 %
Acidity. ..... ≤0,0005 meq/g
Evaporation residue. ..... ≤0,001 %
Stab. with approx. 250 ppm BHT
Filtered through a membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE07.1** | 1 l | glass | 47,85 € |
| Original pack 6 x 1 l | | | 45,46/1 l |

### Tetrahydrofuran

**ROTIPURAN® ≥99,5 %, p.a., ACS**

**Guarantee analysis:**

Assay (GC). ..... ≥99,5 %
Colour (Hazen). ..... ≤20
Water . ..... ≤0,05 %
Acidity. ..... ≤0,001 %
Peroxides (as $H_2O_2$). ..... ≤0,015 %
Evaporation residue. ..... ≤0,03 %
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00001 %
Boron (B). ..... ≤0,000002 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Tin (Sn). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00001 %
Stab. with 2,6-di-tert-butyl-4-methylphenol (BHT)

| | | | |
|---|---|---|---|
| **6788.1** | 1 l | glass | 48,30 € |
| Original pack 6 x 1 l | | | 45,89/1 l |
| **6788.2** | 2,5 l | glass | 103,75 € |
| Original pack 4 x 2,5 l | | | 98,56/2,5 l |
| **6788.4** | 5 l | plastic | 166,65 € |
| Original pack 2 x 5 l | | | 158,32/5 l |
| **6788.3** | 10 l | tinplate | 332,20 € |
| **6788.5** | 25 l | tinplate | 639,65 € |

## Tetrahydrofuran

**≥99,5 %, for synthesis**

**Type analysis:**

Appearance. ..... clear, colourless liquid
Assay ..... ≥99,5 %
Colour (Hazen) ..... ≤10
Water (KF) ..... ≤0,1 %
Refractive index $n_D^{20}$ ..... 1,406-1,408
Stab. with 2,6-di-tert-butyl-4-methylphenol (BHT)

| | | | |
|---|---|---|---|
| **4745.1** | 250 ml | glass | 22,05 € |
| **4745.2** | 1 l | glass | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **4745.3** | 2,5 l | glass | 73,65 € |
| Original pack 4 x 2,5 l | | | 69,97/2,5 l |
| **4745.4** | 10 l | tinplate | 233,85 € |
| **4745.5** | 25 l | tinplate | 353,70 € |

## Tetrahydrofuran D8

### Tetrahydrofuran D8

**99,5 Atom%D**

For nuclear magnetic resonance spectroscopy.
Octadeuterotetrahydrofuran, THF D8
$C_4D_8O$
M 80,17 g/mol
D 0,99 • bp ~65 °C
mp -106 °C • flp -17,5 °C
[1693-74-9] • EC No. 216-898-4
UN No. 2056 • ADR 3 II • WGK 1

**Danger**

H225-H319-H335-H351-EUH019

**Guarantee analysis:**

Deuterising degree. ..... ≥99,5 %
Water (KF, $H_2O+D_2O$) ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **AE58.3** | 5 ml | glass | 103,10 € |
| **AE58.1** | 10 ml | glass | 192,45 € |
| **AE58.2** | 10 ml | septum bottle | 194,50 € |
| **AE58.4** | 25 ml | glass | 418,20 € |
| **AE58.5** | 10 x 0,75 ml | glass ampoule | 195,55 € |

## Tetrahydro-1,4-oxazine

▶ Morpholine see p. 2084

## 3',4',5,7-Tetrahydroxyflavanone

▶ Eriodictyol see p. 1908

## 2',3,5,7-Tetrahydroxyflavone

▶ Datiscetin see p. 1857

## 3,3',4',7-Tetrahydroxyflavone

▶ Fisetin see p. 1928

## 3,4',5,7-Tetrahydroxyflavone

▶ Kaempferol see p. 2019

## 3',4',5,7-Tetrahydroxyflavone

▶ Luteolin see p. 2044

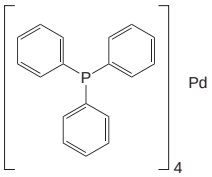
## 3',4',5,7-Tetrahydroxyflavylium chloride

▶ Luteolinidin chloride see p. 2044

## Tetraiodine fluorescein disodium salt

▶ Erythrosine B (C.I. 45430) see p. 1909

## Tetrakis(triphenylphosphine) palladium(0)




NEW

### Tetrakis(triphenylphosphine) palladium(0)

**≥98 %**

Catalyst
Palladium tetrakis(triphenylphosphine), $Pd(PPh_3)_4$
$Pd(P(C_6H_5)_3)_4$
M 1155,58 g/mol
Storage temp.: +4 °C
[14221-01-3] • EC No. 238-086-9
WGK 1

**Type analysis:**

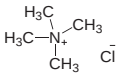
Appearance. ..... yellow to light-green powder
Assay ..... ≥98 %
Palladium (Pd) ..... ≥9,0 %
Gold (Au) ..... ≤0,01 %
Rhodium (Rh) ..... ≤0,01 %
Iridium (Ir) ..... ≤0,01 %
Store under inert gas.

| | | | |
|---|---|---|---|
| **0920.1** | 1 g | glass | 26,80 € |
| **0920.2** | 5 g | glass | 95,70 € |
| **0920.3** | 10 g | glass | 160,20 € |

## Tetrakis(triphenylphosphine) palladium(0)

▶ Tetrakis(triphenylphosphine)palladium(0) see p. 2337

## Tetramethylammonium chloride (TMACl)




### Tetramethylammonium chloride (TMACl)

**≥98 %, for synthesis**

TMACl
$C_4H_{12}ClN$
M 109,60 g/mol
D 1,17
mp >300 °C (dec.)
Solubility: ~660 g/l ($H_2O$, 20 °C)
[75-57-0] • EC No. 200-880-8
UN No. 2811 • ADR 6.1 II • WGK 3

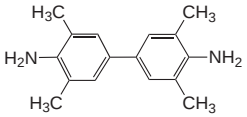
**Danger** H300-H311

**Type analysis:**

Appearance. ..... white crystals
Assay (arg.) ..... ≥98 %
Solubility (3 M sol. in $H_2O$) ..... clear, colourless to light yellow

| | | | |
|---|---|---|---|
| **4747.1** | 100 g | plastic | 16,05 € |
| **4747.2** | 500 g | plastic | 56,90 € |
| Original pack 6 x 500 g | | | 54,06/500 g |

## 3,3',5,5'-Tetramethylbenzidine




TMB
$C_{16}H_{20}N_2$
M 240,35 g/mol
mp 167-170 °C
Storage temp.: +4 °C
[54827-17-7] • EC No. 259-364-6
WGK 3

### 3,3',5,5'-Tetramethylbenzidine

**≥98 %, p.a.**

Substrate for peroxidase.

**Type analysis:**

Appearance. ..... beige cryst. powder
Assay (as nitrogen) ..... ≥98,0 %
Sulphated ash (600 °C) ..... ≤0,2 %
Loss on drying (105 °C) ..... ≤0,5 %
Can replace carcinogenic benzidine.

| | | | |
|---|---|---|---|
| **6350.1** | 1 g | glass | 52,60 € |
| **6350.2** | 5 g | plastic | 160,20 € |
| **6350.3** | 25 g | plastic | 736,40 € |

For further information, please see page 1291

T

## 3,3',5,5'-Tetramethylbenzidine

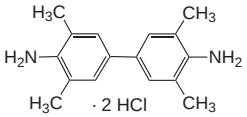
**≥98 %, for biochemistry**

**Type analysis:**

Appearance. ..... white to yellow powder
Assay. ..... ≥98 %
Ash content. ..... ≤0,2 %
Loss on drying. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6834.1** | 1 g | glass | 25,30 € |
| **6834.2** | 5 g | glass | 72,60 € |
| **6834.3** | 25 g | glass | 310,70 € |

## 3,3',5,5'-Tetramethylbenzidine dihydrochloride



## 3,3',5,5'-Tetramethylbenzidine dihydrochloride

**≥99 %, for biochemistry**

Water-soluble peroxidase substrate
TMB dihydrochloride, TMB · 2 HCl
$C_{16}H_{20}N_2 \cdot 2\ HCl$
M 313,27 g/mol
Storage temp.: +4 °C
[207738-08-7] • EC No. 264-769-6
WGK 1

**Guarantee analysis:**

Assay (titr.). ..... ≥99 %
Solution (1 % in methanol). . colourless to green yellow
Water (KF). ..... ≤5 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4107.1** | 500 mg | glass | 38,60 € |
| **4107.2** | 1 g | glass | 62,90 € |

For further information, please see page 1291

## Tetramethylenediamine

▶ Putrescin see p. 2184
▶ Putrescin dihydrochloride see p. 2184

## Tetramethylene diisocyanate

▶ 1,4-Diisocyanatobutane see p. 1878

## Tetramethylene glycol

▶ 1,4-Butanediol see p. 1793

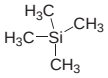
## N,N,N',N'-Tetramethyl-ethylenediamine

▶ TEMED see p. 2332

## 2,2,6,6-Tetramethylpiperidinyloxy (free radical)

▶ TEMPO see p. 2332

## Tetramethylsilane



## Tetramethylsilane

**≥99,9 %, for NMR-spectroscopy**

For the calibration of NMR spectra; calibration substance.
TMS
$C_4H_{12}Si$
M 88,22 g/mol
D 0,65 • bp 26-27 °C
mp -102 °C • flp -20 °C
Solubility: 0,02 g/l ($H_2O$, 25 °C)
Storage temp.: +4 °C
[75-76-3] • EC No. 200-899-1
UN No. 2749 • ADR 3 I • WGK 1

**Danger** H224

**Type analysis:**

Assay (GC). ..... ≥99,9 %
Aptitude for NMR-spectroscopy. ..... complies

| | | | |
|---|---|---|---|
| **CP18.1** | 25 ml | glass | 28,95 € |
| **CP18.2** | 100 ml | glass | 81,60 € |

## 3,6,9,12-Tetraoxapentadec-14-yn-1-amine

▶ $H_2N$-PEG4-Alkyne see p. 2132

## Tetraphenylboron sodium

▶ Sodium tetraphenyl borate see p. 2286

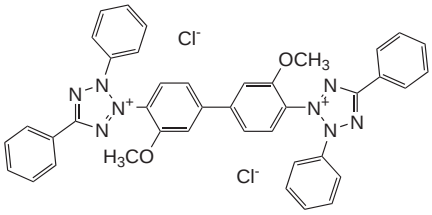
## Tetrathionate Broth

▶ Mueller Kauffmann Broth (Base) see p. 2085

## Tetrathionate Enrichment Broth

▶ Mueller Kauffmann Broth (Base) see p. 2085

## Tetrazolium blue chloride



## Tetrazolium blue chloride

**≥95 %, for biochemistry**

For vital staining of cells.
Blue tetrazolium chloride, BTC, 3,3'-Dianisole-4,4'-bis(3,5-diphenyltetrazolium chloride), 3,3'-(3,3'-Dimethoxy[1,1'biphenyl]-4,4'diyl)-bis(2,5-diphenyl-2H-tetrazolium) dichloride
$C_{40}H_{32}Cl_2N_8O_2$
M 727,64 g/mol
mp 265-270 °C (dec.)
Solubility: 3 g/l ($H_2O$, 20 °C)
[1871-22-3] • EC No. 217-488-8
WGK 3

**Danger** H350

**Type analysis:**

Appearance. ..... yellowish, cryst. powder
Assay (titr.). ..... ≥95,0 %
Solution (0,5 % in methanol). ..... light yellow to greenish yellow
Water (KF). ..... ≤3 %
Sulphated ash. ..... ≤0,1 %

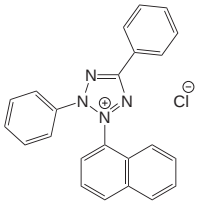
| | | | |
|---|---|---|---|
| **4176.1** | 1 g | glass | 55,40 € |
| **4176.2** | 5 g | glass | 209,65 € |

For further information, please see page 1467

## Tetrazolium red

▶ 2,3,5-Triphenyltetrazolium chloride see p. 2355

## Tetrazolium violet



## Tetrazolium violet

**for microscopy**

$C_{23}H_{17}ClN_4$
M 384,86 g/mol
mp 247-249 °C
[1719-71-7]
WGK 3

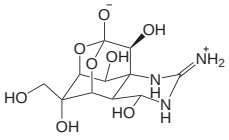
**Type analysis:**

Appearance. ..... off-white to light beige powder
Appearance of solution (50 mg/ml in MeOH). ..... clear, yellow to yellow green

| | | | |
|---|---|---|---|
| **7736.1** | 1 g | glass | 40,35 € |
| **7736.2** | 5 g | glass | 154,30 € |
| **7736.3** | 10 g | glass | 289,20 € |

For further information, please see page 1467

## Tetrodotoxin



## Tetrodotoxin

**≥99 %, free of citrate**

TTX
$C_{11}H_{17}N_3O_8$
M 319,3 g/mol
mp 220 °C
Storage temp.: +4 °C
[4368-28-9] • EC No. 224-458-8
UN No. 3462 • ADR 6.1 I • WGK 3

**Danger** H300+H310+H330

**Type analysis:**

Appearance. ..... white cryst. powder
Assay (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **6973.1** | 1 mg | plastic | 342,95 € |

## TFA
▶ Trifluoroacetic acid (TFA) see p. 2353

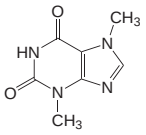
## TFAA
▶ Trifluoroacetic anhydride (TFAA) see p. 2353

## TFA-D
▶ Trifluoroacetic acid D see p. 2353

## TG buffer powder (pouch)
▶ Roti®fair TG-Western see p. 2216

## Thallium Standards
▶ Thallium AAS Standard Solution see p. 2296
▶ Thallium ICP Standard Solution see p. 2301
▶ Thallium ICP Standard Solution see p. 2305

## Theobromine



### Theobromine
**≥99 %, Ph.Eur., for biochemistry**
3,7-Dimethylxanthine
$C_7H_8N_4O_2$
M 180,16 g/mol
mp 357°C
Solubility: 330 mg/l ($H_2O$, 25 °C)
[83-67-0] • EC No. 201-494-2
WGK 1
**Warning** H302

**Guarantee analysis:**
Appearance. ..... white powder
Assay (titr., dry substance). ..... 99,0-101,0 %
Identity. ..... complies
Acid react. substance (0,01 N NaOH, 400 mg). ..... ≤0,2 ml
Heavy metals. ..... ≤0,002 %
Loss on drying (100 °C). ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %
Related substances. ..... complies

| | | | |
|---|---|---|---|
| **8963.1** | 10 g | plastic | 18,85 € |
| **8963.2** | 100 g | plastic | 75,15 € |

## Thermokitt Roth 1100 °C

### Thermokitt Roth 1100 °C
Heat resistant embedding medium, seals and glues metal, glass, ceramic, porcelain. Stands temperatures to +1100 °C
WGK 2
**Danger** H290-H302-H314-H372

| | | |
|---|---|---|
| **3040.1** | 200 g components 1 and 100 g components 2 | 38,60 € |

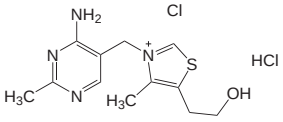
For further information, please see page 1142

## THF
▶ Tetrahydrofuran see p. 2336

## THF D8
▶ Tetrahydrofuran D8 see p. 2337

## Thiamine chloride hydrochloride
▶ Thiamine hydrochloride see p. 2339

## Thiamine hydrochloride



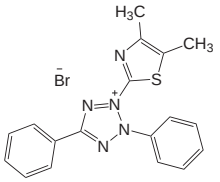
### Thiamine hydrochloride
**≥98,5 %, for biochemistry**
Thiamine chloride hydrochloride, Vitamin $B_1$ hydrochloride, Aneurine
$C_{12}H_{17}ClN_4OS \cdot HCl$
M 337,27 g/mol
mp 248 °C (dec.)
Solubility: 1000 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[67-03-8] • EC No. 200-641-8
WGK 1

**Type analysis:**
Appearance. ..... white to off-white, cryst. powder
Assay (titr. dry substance). ..... 98,5-101,0 %
pH value (2,5 % in $H_2O$). ..... 2,7-3,3
Water (KF). ..... ≤5,0 %
Sulphate ($SO_4$). ..... ≤0,03 %
Elemental impurities. ..... complies
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **T911.1** | 25 g | plastic | 16,05 € |
| **T911.2** | 100 g | plastic | 41,85 € |

## Thiazole yellow
▶ Titan yellow (C.I. 19540) see p. 2345

## Thiazolyl blue



### Thiazolyl blue
**≥98 %, for biochemistry**
3-(4,5-Dimethylthiazole-2-yl)-2,5-diphenyl-2H-tetrazolium bromide, MTT
$C_{18}H_{16}BrN_5S$
M 414,33 g/mol
mp 190-210 °C
Solubility: 20 g/l ($H_2O$, 20 °C)
[298-93-1] • EC No. 206-069-5
WGK 1
**Warning** H315-H319-H335-H341

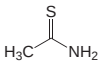
**Type analysis:**
Appearance. ..... yellow, cryst. powder
Assay (arg. titr.). ..... ≥98,0 %
Absorption max. (in $H_2O$). ..... 239-247 nm

| | | | |
|---|---|---|---|
| **4022.1** | 1 g | glass | 30,00 € |
| **4022.3** | 5 g | glass | 126,35 € |
| **4022.2** | 10 g | glass | 198,90 € |
| **4022.4** | 25 g | glass | 403,15 € |

For further information, please see page 1467

## Thimerosal
▶ Sodium ethylmercurithiosalicylate see p. 2272

## Thioacetamide



### Thioacetamide
**≥99 %, p.a.**
TAA, Thioacetimidic acid
$C_2H_5NS$
M 75,13 g/mol
D 1,37
mp 111-114 °C
Solubility: 163 g/l ($H_2O$, 20 °C)
[62-55-5] • EC No. 200-541-4
WGK 3
**Danger** H302-H315-H319-H350-H412

**Type analysis:**
Assay. ..... ≥99,0 %
Sulphated ash. ..... ≤0,05 %
Iron (Fe). ..... ≤0,0005 %
Heavy metals (as Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **8646.1** | 50 g | plastic | 34,30 € |
| **8646.2** | 100 g | plastic | 57,95 € |
| **8646.3** | 250 g | plastic | 126,35 € |
| **8646.4** | 500 g | plastic | 220,40 € |
| Original pack 6 x 500 g | | | 209,38/500 g |

## Thioacetimidic acid
▶ Thioacetamide see p. 2339

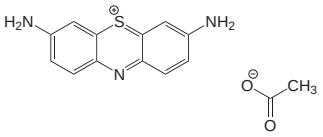
## Thiocarbamide
▶ Thiourea see p. 2340

## Thiocyanate Standards
▶ Thiocyanate IC Standard Solution see p. 2312

## Thioethyleneglycol
▶ 2-Mercaptoethanol see p. 2063

## Thiomersalate
▶ Sodium ethylmercurithiosalicylate see p. 2272

## Thionine (acetate) (C.I. 52000)



### Thionine (acetate) (C.I. 52000)

**for microscopy**

Nuclear dye

3,7-Diaminophenothiazin-5-ium acetate, Lauth's violet

$C_{14}H_{13}N_3O_2S$

M 287,34 g/mol

D 0,56

Solubility: 2,5 g/l ($H_2O$, 25 °C)

[78338-22-4]

WGK 1

**Type analysis:**

Assay (spectrophotometric)..... ≥85 %
Absorption max. (in $H_2O$)..... 598-600 nm
Loss on drying (110 °C)..... ≤7 %
Suitability for microscopy..... complies

| | | | |
|---|---|---|---|
| **9937.1** | 5 g | plastic | 84,95 € |
| **9937.2** | 10 g | plastic | 149,45 € |

For further information, please see page 1468

## Thionyl chloride



### Thionyl chloride

**≥98 %, for synthesis**

Sulphurous acid chloride, Dichlorosulfoxide

$SOCl_2$

M 118,97 g/mol

D ~1,63 • bp 75-76 °C

mp -104 °C

[7719-09-7] • EC No. 231-748-8

UN No. 1836 • ADR 8 I • WGK 1

**Danger**

H302-H314-H331-H335-EUH014-EUH029

**Type analysis:**

Assay..... ≥98 %

| | | | |
|---|---|---|---|
| **4024.2** | 100 ml | glass | 32,15 € |
| **4024.1** | 500 ml | glass | 81,20 € |

## DL-6,8-Thiooctic acid

▶ DL-6,8-Dithiooctanoic acid see p. 1889

## Thiosulphate Standards

▶ Thiosulphate IC Standard Solution see p. 2312

## Thiosulphate Citrate Bile Sucrose Agar

▶ TCBS Agar see p. 2331

## 2-Thiouracil



### 2-Thiouracil

**≥98 %, for biochemistry**

4-Hydroxy-2-mercaptopyrimidine

$C_4H_4N_2OS$

M 128,15 g/mol

mp >260 °C (dec.)

Solubility: 7,9 g/l ($H_2O$, 25 °C)

[141-90-2] • EC No. 205-508-8

WGK 1

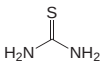
**Warning** H351

**Type analysis:**

Assay (HPLC)..... ≥98,0 %
Solution (5 % in 1 N NaOH)..... colourless to yellowish
Loss on drying..... ≤0,5 %
Heavy metals (as Pb)..... ≤0,002 %

| | | | |
|---|---|---|---|
| **5245.1** | 50 g | plastic | 43,55 € |
| **5245.2** | 100 g | plastic | 74,10 € |

## Thiourea



Thiocarbamide

$CH_4N_2S$

M 76,12 g/mol

D 1,41

mp 170-179 °C

Solubility: 137 g/l ($H_2O$, 20 °C)

[62-56-6] • EC No. 200-543-5

UN No. 3077 • ADR 9 III • WGK 2

**Warning**

H351-H361d-H302-H411

### Thiourea

**≥99 % p.a., ACS**

**Guarantee analysis:**

Assay..... ≥99,0 %
Solubility (water)..... clear, colourless
Loss on drying (105 °C)..... ≤0,5 %
Melting point..... 174-177 °C
Ash content (as $SO_4$)..... ≤0,1 %
Aluminium (Al)..... ≤0,005 %
Barium (Ba)..... ≤0,005 %
Lead (Pb)..... ≤0,005 %
Calcium (Ca)..... ≤0,005 %
Chromium (Cr)..... ≤0,005 %
Iron (Fe)..... ≤0,005 %
Potassium (K)..... ≤0,005 %
Copper (Cu)..... ≤0,005 %
Magnesium (Mg)..... ≤0,005 %
Manganese (Mn)..... ≤0,005 %
Sodium (Na)..... ≤0,005 %
Nickel (Ni)..... ≤0,005 %
Strontium (Sr)..... ≤0,005 %
Zinc (Zn)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **HN37.1** | 100 g | plastic | 18,20 € |
| **HN37.2** | 250 g | plastic | 32,15 € |
| **HN37.3** | 1 kg | plastic | 101,60 € |
| Original pack 6 x 1 kg | | | 96,52/1 kg |

### Thiourea

**≥99 %, extra pure**

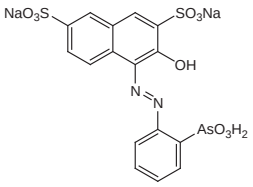
For chemical synthesis.

**Type analysis:**

Assay (iodom.)..... ≥99 %
Water..... ≤0,5 %
Water insoluble residue..... ≤0,05 %
Ash content (as $SO_4$)..... ≤0,3 %
Melting range..... 170-179 °C

| | | | |
|---|---|---|---|
| **9531.3** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **9531.1** | 1 kg | plastic | 45,70 € |
| Original pack 6 x 1 kg | | | 43,42/1 kg |
| **9531.2** | 5 kg | plastic | 184,40 € |

## Thorin



### Thorin

**p.a.**

Indicator for metal ions.

1-(2-Arsonophenylazo)-2-hydroxy-3,6-naphthalene-disulphonic acid sodium salt, 2-(2-Hydroxy-3,6-disulpho-1-naphthylazo-(1))-benzene-arsonic acid sodium salt

$C_{16}H_{11}AsN_2Na_2O_{10}S_2$

M 576,30 g/mol

[3688-92-4] • EC No. 222-993-1

UN No. 3465 • ADR 6.1 III • WGK 3

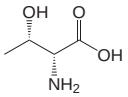
**Danger** H301+H331-H400-H410

**Guarantee analysis:**

Specific Extinction E (1%/1cm)..... ≥200
Absorption max. (in $H_2O$)..... 481,0-489,0 nm
Suitability for determination of barium..... complies

| | | | |
|---|---|---|---|
| **KK34.1** | 5 g | glass | 52,60 € |
| **KK34.2** | 10 g | glass | 85,90 € |

## D-Threonine



### D-Threonine

**≥98,5 % for biochemistry**

(*2R,3S*)-2-Amino-3-hydroxybutyric acid, H-D-Thr-OH

$C_4H_9NO_3$

M 119,1 g/mol

Storage temp.: +4 °C

[632-20-2] • EC No. 211-171-8

WGK 1

**Type analysis:**

Appearance..... white to off-white powder
Assay..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (c= 6 in $H_2O$)..... +27,2° to +29,0°
Loss on drying..... ≤0,2 %

| | | | |
|---|---|---|---|
| **7889.1** | 5 g | plastic | 24,65 € |
| **7889.2** | 25 g | plastic | 72,60 € |
| **7889.3** | 100 g | plastic | 231,15 € |

## DL-Threonine

### DL-Threonine

**≥98 %, for biochemistry**

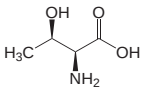
2-Amino-3-hydroxybutyric acid
$C_4H_9NO_3$
M 119,12 g/mol
mp ~245 °C (dec.)
Solubility: 200 g/l ($H_2O$, 25 °C)
[80-68-2] • EC No. 201-300-6
WGK 1

**Type analysis:**

Appearance. .....white to off-white powder
Assay. .....≥98,0 %
Heavy metals (as Pb). .....≤0,001 %
Ash content. .....≤0,1 %
Loss on drying. .....≤0,2 %

| | | | |
|---|---|---|---|
| **7532.1** | 10 g | plastic | 21,40 € |
| **7532.4** | 50 g | plastic | 47,85 € |
| **7532.2** | 100 g | plastic | 75,15 € |
| **7532.3** | 500 g | plastic | 321,45 € |
| Original pack 6 x 500 g | | | 305,38/500 g |

## L-Threonine



(*2S,3R*)-2-Amino-3-hydroxybutyric acid,
H-L-Thr-OH
$C_4H_9NO_3$
M 119,12 g/mol
mp 265-270 °C
Solubility: 90 g/l ($H_2O$, 20 °C)
[72-19-5] • EC No. 200-774-1
WGK 1

### L-Threonine

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. .....≤6,0 E.U./g
Assay. .....≥99 %
Loss on drying. .....≤0,5 %
Specific rotation $[\alpha]_D^{20}$. .....-29,0° to -27,6°
Foreign amino acids. .....complies
Ammonium ($NH_4$). .....≤0,02 %
Chloride (Cl). .....≤0,02 %
Sulphate ($SO_4$). .....≤0,03 %
Heavy metals (as Pb). .....≤0,001 %
Iron (Fe). .....≤0,001 %

| | | | |
|---|---|---|---|
| **1738.1** | 25 g | plastic | 19,25 € |
| **1738.2** | 100 g | plastic | 38,60 € |
| **1738.3** | 500 g | plastic | 155,90 € |
| Original pack 6 x 500 g | | | 148,11/500 g |

### L-Threonine

**≥99 %, Ph.Eur., for biochemistry**

**Guarantee analysis:**

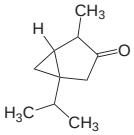
Appearance. .....white to off-white, cryst. powder
Assay (dry substance). .....99,0-101,0 %
Identity. .....complies
Specific rotation $[\alpha]_D^{20}$. .....-27,6° to -29,0°
pH value . .....5,0-6,5
Chloride (Cl). .....≤0,02 %
Sulphate ($SO_4$). .....≤0,03 %
Iron (Fe). .....≤0,001 %
Heavy metals. .....≤0,001 %
Foreign amino acids. .....complies
Ammonium ($NH_4$). .....≤0,02 %
Loss on drying. .....≤0,5 %
Sulphated ash. .....≤0,1 %

| | | | |
|---|---|---|---|
| **T206.1** | 25 g | plastic | 15,60 € |
| **T206.2** | 100 g | plastic | 31,10 € |
| **T206.4** | 250 g | plastic | 59,70 € |
| **T206.3** | 500 g | plastic | 110,65 € |
| Original pack 6 x 500 g | | | 105,12/500 g |

## THPTA

▶ Tris(3-hydroxypropyltriazolylmethyl)amine (THPTA) see p. 2358

## α+β-Thujone



### α+β-Thujone (isomers)

**pure**

Tanaceton, Absinthon
$C_{10}H_{16}O$
M 152,23 g/mol
bp 200-202 °C
flp 67 °C
[76231-76-0]
WGK 2

**Warning** H302-H317-H412

**Type analysis:**

Density (d 20 °C/20 °C). .....0,9150-0,9300
Refractive index $n_D^{20}$. .....1,4520-1,4540
Formulation: α-Thujone ~65 %, β-Thujone ~10 %

| | | | |
|---|---|---|---|
| **9540.1** | 5 g | glass | 20,35 € |
| **9540.2** | 50 g | glass | 136,00 € |

## Thulium Standards

▶ Thulium ICP Standard Solution see p. 2301

## Thulium(III) nitrate pentahydrate

### Thulium(III) nitrate pentahydrate

**ROTI®REMETIC 99,9 %**

$Tm(NO_3)_3 \cdot 5\ H_2O$
M 445,02 g/mol
Solubility: soluble ($H_2O$, 20 °C)
[36548-87-5] • EC No. 239-069-9
UN No. 1477 • ADR 5.1 II • WGK 3

**Danger** H272-H315-H319-H335

**Type analysis:**

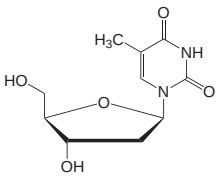
Assay (TREO*). .....99,9 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7282.1** | 1 g | plastic | 40,35 € |
| **7282.2** | 5 g | plastic | 145,05 € |

## Thyme camphor

▶ Thymol see p. 2342

## Thymidine



### Thymidine

**≥99 %, p.a.**

For biochemistry.
Thymine-2-deoxyriboside, 2'-Deoxythymidine
$C_{10}H_{14}N_2O_5$
M 242,23 g/mol
mp ~187 °C
[50-89-5] • EC No. 200-070-4
WGK 1

**Type analysis:**

Assay (HPLC). .....≥99,0 %
Specific rotation $[\alpha]_D^{20}$. .....+17,5° to +19,5°
Melting range. .....185-190 °C
Loss on drying. .....≤0,5 %

| | | | |
|---|---|---|---|
| **3005.2** | 500 mg | glass | 19,25 € |
| **3005.1** | 1 g | glass | 22,50 € |
| **3005.3** | 5 g | glass | 48,30 € |
| **3005.4** | 25 g | glass | 145,15 € |

## Thymidine-BCE-phosphoramidite

### Thymidine-BCE-phosphoramidite

**for DNA synthesis**

For DNA-synthesis with PerSeptive and PolyGen® Synthesizer.

DMT-T-P($OCH_2CH_2CN$)-N($iPr)_2$

$C_{40}H_{49}N_4O_8P$

M 744,6 g/mol

Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **K924.1** | 1 g | glass | 33,25 € |

For further information, please see page 1492

## Thymidine-CPG-Support

### Thymidine-CPG-Support

**500 Å pore size**

Support material for DNA-synthesis.

dT-lcaa-CPG

Storage temp.: +4 °C

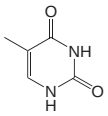
**Type analysis:**

Purity (HPLC)..... ≥98,0 %
CPG loading. ..... 30-40 µmol/g
Coupling efficiency. ..... ≥99 %

| | | | |
|---|---|---|---|
| **2321.3** | 1 g | plastic | 56,45 € |

For further information, please see page 1492

## Thymine



### Thymine

**≥99 %, for biochemistry**

5-Methyluracil

$C_5H_6N_2O_2$

M 126,11 g/mol

mp 320 °C

[65-71-4] • EC No. 200-616-1

WGK 1

**Type analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay (HPLC)..... ≥99 %
Heavy metals..... ≤0,001 %
Loss on drying. ..... ≤0,5 %
Residue on ignition. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **7289.1** | 5 g | glass | 24,20 € |
| **7289.2** | 25 g | plastic | 38,20 € |
| **7289.3** | 100 g | plastic | 83,75 € |

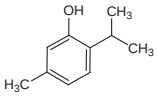
## Thymine-2-deoxyriboside

▶ Thymidine see p. 2341

## Thyminose

▶ 2-Deoxy-D-ribose see p. 1861

## Thymol



Thyme camphor, 3-Hydroxy-p-cymene, 2-Isopropyl-5-methylphenol

$C_{10}H_{14}O$

M 150,22 g/mol

D 0,98 • bp 233,0 °C

mp 49-50 °C • flp 104 °C

Solubility: 0,98 g/l ($H_2O$, 25 °C)

[89-83-8] • EC No. 201-944-8

UN No. 2430 • ADR 8 III • WGK 2

**Danger** H314-H302-H411

### Thymol

**≥99 %**

**Type analysis:**

Appearance..... colourless to white crystals
Assay (GLC)..... ≥99 %
Evaporation residue. ..... ≤0,05 %
Melting point..... ≥49,5 °C

| | | | |
|---|---|---|---|
| **5391.1** | 100 g | glass | 18,20 € |
| **5391.2** | 500 g | glass | 59,70 € |
| Original pack 6 x 500 g | | | 56,72/500 g |

### Thymol

**ROTICHROM® GC**

Reference substance for GC.

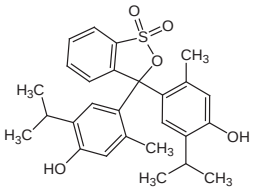
Storage temp.: +4 °C

**Type analysis:**

Purity (GC). ..... ≥96 %

| | | | |
|---|---|---|---|
| **3209.1** | 1 g | plastic | 81,20 € |

## Thymol blue



### Thymol blue

**p.a., ACS**

Indicator pH 1,2-2,8 and pH 8,0-9,2

Thymolsulphonephthaleine

$C_{27}H_{30}O_5S$

M 466,60 g/mol

mp 223 °C (dec.)

Solubility: 0,11 g/l ($H_2O$, 25 °C)

[76-61-9] • EC No. 200-973-3

WGK 2

**Guarantee analysis:**

Appearance of solution (ACS)..... complies
pH-transition range.....1,2 (red)-2,8 (yellow)
pH-transition range.....8,0 (yellow)-9,2 (blue)

| | | | |
|---|---|---|---|
| **KK16.1** | 5 g | glass | 17,10 € |
| **KK16.2** | 10 g | glass | 24,65 € |
| **KK16.3** | 25 g | glass | 50,00 € |

## Thymol blue indicator solution

### Thymol blue indicator solution

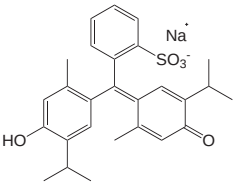
**0,1 % in ethanol denatured**

UN No. 1170 • ADR 3 II • WGK 1

**Danger** H225-H319

| | | | |
|---|---|---|---|
| **9954.1** | 250 ml | plastic | 42,50 € |

## Thymol blue sodium salt



### Thymol blue sodium salt

**p.a., ACS**

Indicator pH 1,2-2,8 and pH 8,0-9,2

Thymolsulphonephthaleine sodium salt

$C_{27}H_{29}NaO_5S$

M 488,58 g/mol

mp 283 °C (dec.)

[62625-21-2] • EC No. 263-650-6

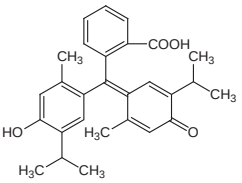
WGK 1

**Guarantee analysis:**

Appearance...orange brown to brownish-black powder
Appearance of solution. .....complies
Loss on drying.....≤8 %
pH-transition range. .....1,2 (red)-2,8 (yellow)
pH-transition range. ..... 8,0 (yellow)-9,2 (blue)

| | | | |
|---|---|---|---|
| **2606.1** | 5 g | glass | 20,35 € |
| **2606.2** | 25 g | glass | 52,15 € |

## Thymolphthalein



### Thymolphthalein

**p.a., ACS**

Indicator pH 8,8-10,5

$C_{28}H_{30}O_4$

M 430,55 g/mol

mp 253 °C

Solubility: nearly insoluble

[125-20-2] • EC No. 204-729-7

WGK 1

**Guarantee analysis:**

Appearance of solution. .....complies
pH-transition range. .....8,8 (clear)-10,5 (blue)

| | | | |
|---|---|---|---|
| **HN97.1** | 5 g | glass | 19,25 € |
| **HN97.2** | 10 g | glass | 32,15 € |
| **HN97.3** | 50 g | glass | 115,60 € |

T

## Thymolphthalein indicator solution

### Thymolphthalein indicator solution

**0,1 % in ethanol denatured**
D 0,79 • bp 78 °C
mp -114 °C • flp 12 °C
UN No. 1170 • ADR 3 II • WGK 1
**Danger** H225-H319

| | | | |
|---|---|---|---|
| **8152.1** | 500 ml | glass | 34,30 € |

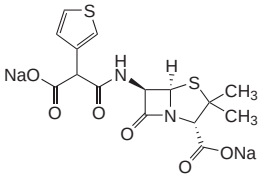
## Thymolsulphonephthaleine

▶ Thymol blue see p. 2342

## Thymolsulphonephthaleine sodium salt

▶ Thymol blue sodium salt see p. 2342

## Ticarcillin disodium salt



### Ticarcillin disodium salt

**≥90 %, for biochemistry**
β-Lactam antibiotic
α-Carboxy-α-3-thienylmethylpenicillin disodium salt, Ticarcillin · 2 Na
$C_{15}H_{14}N_2Na_2O_6S_2$
M 428,4 g/mol
Solubility: >1 g/ml
Storage temp.: +4 °C
[4697-14-7]
WGK 1
**Danger** H334-H335-H315-H319-H317

**Guarantee analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥85 % |
| Solution (5 % in water) | colourless to light yellowish |
| Water (KF) | ≤10 % |
| Specific rotation $[\alpha]_D^{20}$ (c=1 in $H_2O$) | +172° to +187° |
| pH value (c=1 in $H_2O$) | 5,5-7,5 |

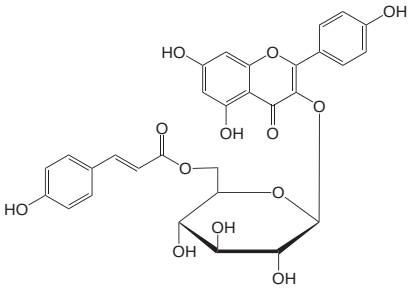
| | | | |
|---|---|---|---|
| **4161.1** | 500 mg | glass | 38,60 € |
| **4161.2** | 1 g | glass | 62,90 € |

For further information, please see page 1434

## Ticarcillin · 2 Na

▶ Ticarcillin disodium salt see p. 2343

## Tiliroside



### Tiliroside

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{30}H_{26}O_{13}$
M 594,52 g/mol
Storage temp.: +4 °C
[20316-62-5]

**Type analysis:**

| | |
|---|---|
| Purity (HPLC) | ≥98 % |

| | | | |
|---|---|---|---|
| **3268.1** | 10 mg | glass | 353,70 € |

## Tillman's reagent

▶ 2,6-Dichlorophenol-indophenol sodium salt hydrate see p. 1870

## Tin

Sn
M 118,71 g/mol
D 7,29 • bp 2260 °C
mp 231,9 °C
[7440-31-5] • EC No. 231-141-8

### Tin shot

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,999 % |
| Particle size | 3-6 mm |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5097.1** | 5 g | plastic | 78,40 € |
| **5097.2** | 10 g | plastic | 127,95 € |

### Tin granules

**≥99,8 %, p.a., granulated**
particle size ~4 mm

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,8 % |
| Antimony (Sb) | ≤0,02 % |
| Arsenic (As) | ≤0,001 % |
| Lead (Pb) | ≤0,005 % |
| Iron (Fe) | ≤0,005 % |
| Copper (Cu) | ≤0,001 % |
| Bismuth (Bi) | ≤0,004 % |

| | | | |
|---|---|---|---|
| **4016.2** | 50 g | plastic | 44,65 € |
| **4016.1** | 250 g | plastic | 166,65 € |

### Tin beads

**≥99,8 %, beads**

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,8 % |
| Particle size | 8-20 mesh |

| | | | |
|---|---|---|---|
| **2731.1** | 50 g | plastic | 36,45 € |
| **2731.2** | 100 g | plastic | 66,55 € |

## Tin foil

### Tin foil

**pure**
W: 40 cm, L: 10,7 m, D: 0,008 mm
Stanniol
Sn
[7440-31-5] • EC No. 231-141-8

**Type analysis:**

| | |
|---|---|
| Tin (Sn) | 97,5-98,5 % |
| Antimony (Sb) | 1,5-2,5 % |
| Lead (Pb) | ≤0,01 % |
| Other traces | ≤0,5 % |

W 40 cm; L 10,7 m; th. 0,008 mm

| | | | |
|---|---|---|---|
| **9296.1** | 1 roll | | 63,45 € |

## Tin Standards

▶ Tin AAS Standard Solution see p. 2296
▶ Tin ICP Standard Solution see p. 2301
▶ Tin ICP Standard Solution see p. 2305

## Tin(II) chloride dihydrate

Tin dichloride dihydrate, Stannous chloride
$SnCl_2 \cdot 2\,H_2O$
M 225,63 g/mol
D 2,71 • bp 623 °C
mp 38 °C
Solubility: 1780 g/l ($H_2O$, 10 °C)
[10025-69-1] • EC No. 231-868-0
UN No. 3260 • ADR 8 II • WGK 1
**Danger** H302-H314-H317-H412

### Tin(II) chloride dihydrate

**≥98 %, p.a., max. 0,005 ppm Hg**
For determination of mercury.

**Guarantee analysis:**

| | |
|---|---|
| Assay (iodom.) | 98,0-103,0 % |
| Sulphate ($SO_4$) | ≤0,002 % |
| Ammonium ($NH_4$) | ≤0,002 % |
| Mercury (Hg) | ≤0,000005 % |
| Arsenic (As) | ≤0,0001 % |
| Lead (Pb) | ≤0,01 % |
| Calcium (Ca) | ≤0,005 % |
| Iron (Fe) | ≤0,003 % |
| Potassium (K) | ≤0,005 % |
| Sodium (Na) | ≤0,01 % |

| | | | |
|---|---|---|---|
| **KK07.1** | 100 g | glass | 43,55 € |
| **KK07.2** | 250 g | glass | 96,25 € |

T

## Tin(II) chloride dihydrate

**≥98 %, p.a., ACS**

Reagent in analytical chemistry, e.g. on As, Au, Bi, Hg.

**Guarantee analysis:**

Assay (iodom.)..... 98,0-103,0 %
In HCl insoluble matter..... ≤0,005 %
Sulphate ($SO_4$)..... ≤0,002 %
Ammonium ($NH_4$)..... ≤0,002 %
Arsenic (As)..... ≤0,0001 %
Potassium (K)..... ≤0,005 %
Sodium (Na)..... ≤0,01 %
Calcium (Ca)..... ≤0,005 %
Iron (Fe)..... ≤0,003 %
Lead (Pb)..... ≤0,01 %
Cadmium (Cd)..... ≤0,0005 %
Nickel (Ni)..... ≤0,0005 %
Cobalt (Co)..... ≤0,0005 %
Magnesium (Mg)..... ≤0,005 %

| | | | |
|---|---|---|---|
| **4977.3** | 100 g | glass | 30,00 € |
| **4977.1** | 250 g | glass | 66,15 € |
| **4977.2** | 1 kg | glass | 213,95 € |
| Original pack 6 x 1 kg | | | 203,25/1 kg |

## Tin(II) chloride dihydrate

**≥98 %, extra pure**

**Type analysis:**

Assay..... ≥98,0 %
Sulphate ($SO_4$)..... ≤0,1 %
Arsenic (As)..... ≤0,005 %
Iron (Fe)..... ≤0,02 %
Heavy metals (as Pb)..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7350.1** | 100 g | glass | 17,75 € |
| **7350.2** | 500 g | glass | 56,90 € |
| Original pack 6 x 500 g | | | 54,06/500 g |
| **7350.3** | 1 kg | glass | 104,20 € |
| Original pack 6 x 1 kg | | | 98,99/1 kg |
| **7350.4** | 2,5 kg | glass | 239,20 € |

## Tin(IV) chloride

## Tin(IV) chloride

**≥98 %**

Tin tetrachloride, Tetrachlorostannane
$SnCl_4$
M 260,51 g/mol
D 2,23 • bp 114 °C
mp -33 °C
[7646-78-8] • EC No. 231-588-9
UN No. 1827 • ADR 8 II • WGK 1

**Danger** H314-H335-H412

**Type analysis:**

Assay..... ≥98 %

| | | | |
|---|---|---|---|
| **4305.1** | 500 g | glass | 177,40 € |
| Original pack 6 x 500 g | | | 168,53/500 g |

## Tin dioxide

▶ Tin(IV) oxide see p. 2344

## Tin(IV) oxide

## Tin(IV) oxide

**≥99,5 %, p.a.**

Stannic oxide, Flowers of tin, Tin dioxide
$SnO_2$
M 150,71 g/mol
D 6,95 • bp 1800-1900 °C (subl.)
mp 1630 °C
Solubility: insoluble
[18282-10-5] • EC No. 242-159-0

**Guarantee analysis:**

Assay..... ≥99,5 %
Tin oxide (SnO)..... ≤0,1 %
Lead (Pb)..... ≤0,1 %
Iron (Fe)..... ≤0,1 %
Nickel (Ni)..... ≤0,01 %
Tin (Sn)..... ≤0,05 %
Particle size..... ≤2,5 µm

| | | | |
|---|---|---|---|
| **9929.1** | 100 g | plastic | 21,40 € |
| **9929.2** | 500 g | plastic | 61,20 € |
| Original pack 6 x 500 g | | | 58,14/500 g |
| **9929.3** | 1 kg | plastic | 105,25 € |
| Original pack 6 x 1 kg | | | 99,99/1 kg |

## Tin(II) sulphate

## Tin(II) sulphate

**≥99 %, p.a.**

$SnSO_4$
M 214,77 g/mol
[7488-55-3] • EC No. 231-302-2
WGK 1

**Guarantee analysis:**

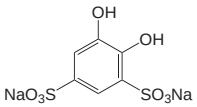
Assay..... ≥99,0 %
Arsenic (As)..... ≤0,01 %
Iron (Fe)..... ≤0,01 %
Heavy metals (as Pb)..... ≤0,02 %
Alkali and alkaline earth metals..... ≤0,15 %
In HCl insoluble matter..... ≤0,01 %

| | | | |
|---|---|---|---|
| **4382.1** | 100 g | plastic | 33,25 € |
| **4382.2** | 250 g | plastic | 61,20 € |
| **4382.3** | 1 kg | plastic | 188,15 € |
| Original pack 6 x 1 kg | | | 178,74/1 kg |

## Tin tetrachloride

▶ Tin(IV) chloride see p. 2344

## Tiron




## Tiron

**≥99 %, p.a.**

Indicator for complexometry
Pyrocatechol-3,5-disulfonic acid disodium salt
$C_6H_4Na_2O_8S_2$
M 314,21 g/mol
mp >360 °C
Solubility: 340 g/l ($H_2O$, 20 °C)
[149-45-1] • EC No. 205-741-5
WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Appearance..... off-white cryst. powder
Assay (HPLC)..... ≥99 %
Solution (5 % in water)..... slightly brownish, clear
Water (KF)..... 4,5-6,0 %

| | | | |
|---|---|---|---|
| **7302.1** | 10 g | glass | 19,25 € |
| **7302.2** | 25 g | glass | 26,35 € |
| **7302.3** | 100 g | glass | 64,40 € |

## TISAB solution I

## TISAB solution I

NEW

**for determination of fluoride**

Total ionic strength adjustment buffer
WGK 1

Formulation: Acetic acid, Sodium chloride, tri-Sodium citrate dihydrate, Water

| | | | |
|---|---|---|---|
| **0252.1** | 500 ml | plastic | 41,85 € |

## TISAB solution II

## TISAB solution II

**for determination of fluoride**

Total ionic strength adjustment buffer
D 1,08
WGK 1

**Type analysis:**

pH value..... 5,0-5,5
Formulation: Sodium chloride, tri-Sodium citrate dihydrate, Acetic acid, Water

| | | | |
|---|---|---|---|
| **9945.1** | 1 l | plastic | 55,80 € |
| Original pack 6 x 1 l | | | 53,01/1 l |

## TISAB solution III

## TISAB solution III

NEW

**for determination of fluoride**

Total ionic strength adjustment buffer
WGK 1

**Warning** H319

**Type analysis:**

pH value (20 °C)..... 5,0-5,5
Formulation: Ammonium chloride, CDTA, Water, Cresol red sodium salt

| | | | |
|---|---|---|---|
| **0259.1** | 500 ml | plastic | 94,50 € |

## TISAB solution IV

## TISAB solution IV

**for determination of fluoride**

Total ionic strength adjustment buffer
D 1,18
WGK 1

**Warning** H315-H319

Formulation: Hydrochloric acid, Tris-(hydroxymethyl)-aminomethane, Tartaric acid, Sodium hydroxide, Water

| | | | |
|---|---|---|---|
| **9951.1** | 1 l | plastic | 144,60 € |
| Original pack 6 x 1 l | | | 137,37/1 l |

## Titanium Standards

- Titanium AAS Standard Solution see p. 2296
- Titanium ICP Standard Solution see p. 2301
- Titanium ICP Standard Solution see p. 2305

## Titanium dioxide

- Titanium(IV) oxide see p. 2345
- Titanium(IV) oxide, nano see p. 2345

## Titanium(IV) oxide

Titanium dioxide
$TiO_2$
M 79,90 g/mol
D 4,23
mp 1855 °C
[13463-67-7] • EC No. 236-675-5

### Titanium(IV) oxide

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5747.1** | 5 g | plastic | 52,15 € |
| **5747.2** | 25 g | plastic | 156,85 € |

### Titanium(IV) oxide

NEW

**≥98 %, extra pure**

**Type analysis:**

Assay..... ≥98,0 %
Arsenic (As)..... ≤0,0001 %
Lead (Pb)..... ≤0,0001 %
Mercury (Hg)..... ≤0,0001 %
Loss on drying (105 °C)..... ≤0,5 %
Water-soluble content..... ≤0,5 %

| | | | |
|---|---|---|---|
| **9985.1** | 100 g | plastic | 16,70 € |
| **9985.2** | 500 g | plastic | 27,85 € |
| Original pack 6 x 500 g | | | 26,46/500 g |
| **9985.3** | 1 kg | plastic | 44,00 € |
| Original pack 6 x 1 kg | | | 41,80/1 kg |
| **9985.4** | 2,5 kg | plastic | 89,15 € |

## Titanium(IV) oxide, nano

### Titanium(IV) oxide, nano

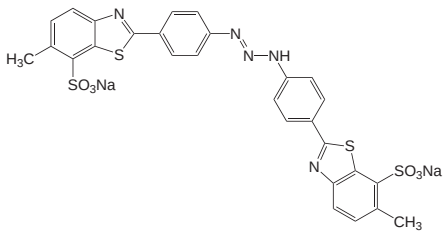
**ROTI®nanoMETIC ≥99,9 %, 4-8 nm**
Titanium dioxide
$TiO_2$
M 79,90 g/mol
D 4,23
mp 1843 °C
[13463-67-7] • EC No. 236-675-5

**Type analysis:**

Assay (metals basis)..... ≥99,9 %
Particle size..... 4-8 nm
Specific surface (BET)..... ~140 $m^2/g$
Pore volume ($N_2$)..... ~0,035 $cm^3/g$
Loss on drying (2h, 120 °C)..... ≤1 %
Phase..... Anatas
Stabilized with $HNO_3$

| | | | |
|---|---|---|---|
| **8254.1** | 10 g | glass | 55,80 € |
| **8254.2** | 50 g | glass | 224,70 € |

## Titan yellow (C.I. 19540)



### Titan yellow (C.I. 19540)

**extra pure**
Indicator pH 11,0-13,0
Thiazole yellow
$C_{28}H_{19}Na_2N_5O_6S_4$
M 695,73 g/mol
mp >250 °C
[1829-00-1] • EC No. 217-377-4
WGK 3

**Type analysis:**

Appearance..... rust colored powder
Solubility..... clear, complete
pH-transition range..... 11,0 (yellow)-13,0 (red)
Loss on drying..... ≤10 %

| | | | |
|---|---|---|---|
| **7739.1** | 5 g | glass | 11,75 € |
| **7739.2** | 25 g | glass | 24,65 € |
| **7739.3** | 100 g | glass | 60,10 € |

## Titration complex I

- Nitrilotriacetic acid see p. 2098

## Titration complex II

- Ethylenediamine tetraacetic acid see p. 1915

## Titration complex III

- Ethylenediamine tetraacetic acid disodium salt dihydrate see p. 1916

## Titration complex III-solution

- EDTA disodium salt solution (0,05 N) see p. 1900
- EDTA disodium salt solution (0,01 N) see p. 1900
- EDTA disodium salt solution (0,01 N) see p. 1900
- EDTA disodium salt solution (0,1 N) see p. 1900
- EDTA disodium salt solution (0,1 N) see p. 1900
- EDTA disodium salt solution (0,1 N) see p. 1900
- EDTA disodium salt solution (0,2 N) see p. 1900

## Titration complex IV

- trans-1,2-Diaminocyclohexane-N,N,N',N'-tetracetic acid monohydrate see p. 1866

## Titration complex V

- Diethylene triamine pentaacetic acid see p. 1873

## Titration complex VI

- EGTA see p. 1903

## TLC plates

- Chapter chromatography see p. 1573

## TLC spray solutions

- Chapter chromatography see p. 1579

## TLC Spray Solutions

| Art. No. | Description | Page |
|---|---|---|
| CP35 | Aniline phthalate spray solution | 1742 |
| CP36 | 2',7'-Dichlorofluorescein spray solution | 1869 |
| CP38 | 4-(Dimethylamino) benzaldehyde spray solution | 1880 |
| CP33 | Dragendorff-Munier spray solution | 1896 |
| CP34 | Iron(III) chloride spray solution | 2011 |
| CP31 | Molybdatophosphoric acid spray solution | 2082 |
| CP30 | Ninhydrin spray solution | 2095 |
| CP37 | Rhodamine B-spray solution | 2198 |
| CP32 | Rubeanic acid spray solution | 2235 |

## H-L-Tle-OMe · HCl

- L-tert-Leucine methylester hydrochloride see p. 2035

## TMACl

- Tetramethylammonium chloride (TMACl) see p. 2337

## TMB

- 3,3',5,5'-Tetramethylbenzidine see p. 2337
- 3,3',5,5'-Tetramethylbenzidine dihydrochloride see p. 2338

## TMB · 2 HCl

- 3,3',5,5'-Tetramethylbenzidine dihydrochloride see p. 2338

## TMCS

- Trimethylchlorosilane (TMCS) see p. 2354

## TMS

- Tetramethylsilane see p. 2338

## TMSDEA

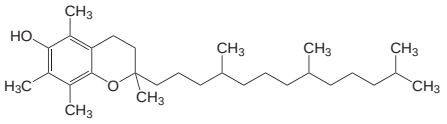
- N-(Trimethylsilyl)-diethylamine (TMSDEA) see p. 2354

## TMSH in methanol

- Trimethylsulfonium hydroxide in methanol see p. 2355

T

## DL-α-Tocopherol



Vitamin E
$C_{29}H_{50}O_2$
M 430,72 g/mol
[10191-41-0] • EC No. 233-466-0
WGK 1

### DL-α-Tocopherol

**≥96 %, Ph.Eur., oily**
Storage temp.: +4 °C •
Transport temp.: room temp.

**Guarantee analysis:**

| | |
|---|---|
| Appearance | yellow-brown, oily liquid |
| Assay (GC) | 96,0-102,0 % |
| Identity (IR) | complies |
| Optical rotation (10 % in abs. EtOH) | -0,01° to +0,01° |
| Related substances (GC) | complies |
| Related substances: | |
| Impurity A | ≤0,5 % |
| Impurity B | ≤1,5 % |
| Sum of impurities C and D | ≤1,0 % |
| Any other impurities | ≤0,25 % |
| Total impurities | ≤2,5 % |
| Residual solvents | complies |
| Elemental impurities | complies |

| | | | |
|---|---|---|---|
| **3806.1** | 100 g | glass | 66,55 € |

### DL-α-Tocopherol

**ROTI®STAR Primary Standard**
Storage temp.: -20 °C •
Transport temp.: cooled

**Type analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥92,0 % |
| Residual solvents (GC) | ≤1,0 % |
| Water (KF) | ≤1,0 % |
| Assay (qNMR) | ≥90,0 % |

Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE16.1** | 250 mg | glass | 729,95 € |

### DL-α-Tocopherol

**ROTICHROM® Working Standard**
Storage temp.: -20 °C •
Transport temp.: room temp.

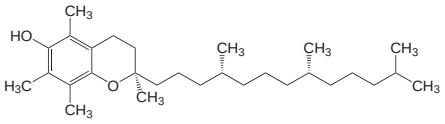
**Type analysis:**

| | |
|---|---|
| Assay (GC) | ≥90,0 % |
| Identity | complies |

Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC16.1** | 250 µl | glass | 116,00 € |

## RRR-α-Tocopherol



Vitamin E
$C_{29}H_{50}O_2$
M 430,7 g/mol
Storage temp.: -20 °C • Transport temp.: cooled
[59-02-9] • EC No. 200-412-2
WGK 1

### RRR-α-Tocopherol

**ROTI®STAR Primary Standard**

**Type analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥92,0 % |
| Residual solvents (GC) | ≤1,0 % |
| Water (KF) | ≤1,0 % |
| Assay (qNMR) | ≥85,0 % |

Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE18.1** | 250 mg | glass | 729,95 € |

### RRR-α-Tocopherol

**ROTICHROM® Working Standard**

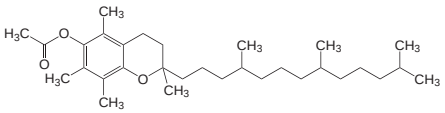
**Type analysis:**

| | |
|---|---|
| Assay (GC) | ≥85,0 % |
| Identity | complies |

Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC18.1** | 250 µl | glass | 116,00 € |

## DL-α-Tocopherol acetate



Vitamin E acetate
$C_{31}H_{52}O_3$
M 472,76 g/mol
D 0,959
[7695-91-2] • EC No. 231-710-0
WGK 1

### DL-α-Tocopherol acetate

**≥96,5 %, Ph.Eur., oily**
Storage temp.: +4 °C

**Guarantee analysis:**

| | |
|---|---|
| Appearance | greenish-yellow, oily liquid |
| Assay (GC) | 96,5-102,0 % |
| Identity | complies |
| Impurities (A, B, C) | complies |

| | | | |
|---|---|---|---|
| **3805.1** | 100 g | glass | 42,50 € |

### DL-α-Tocopherol acetate

**ROTI®STAR Primary Standard**

**Type analysis:**

| | |
|---|---|
| Assay (GC) | ≥95,0 % |
| Residual solvents (GC) | ≤1,0 % |
| Water (KF) | ≤1,0 % |
| Assay (qNMR) | ≥93,0 % |

Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE17.1** | 250 mg | glass | 729,95 € |

### DL-α-Tocopherol acetate

**ROTICHROM® Working Standard**

**Type analysis:**

| | |
|---|---|
| Assay (HPLC) | ≥90,0 % |
| Identity | complies |

Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC17.1** | 250 µl | glass | 116,00 € |

## Todd-Hewitt-Broth

### Todd-Hewitt-Broth

**for microbiology**
For cultivation of β-hemolytic streptococci for serological typing.
Application: Use 30 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

**Formulation:**

| | |
|---|---|
| Heart infusion | 3,1 g/l |
| Peptone | 20 g/l |
| Glucose | 2 g/l |
| Sodium carbonate | 2,5 g/l |
| Sodium chloride (NaCl) | 2 g/l |
| Disodium phosphate | 0,4 g/l |
| pH value | 7,8 ±0,2 |

| | | | |
|---|---|---|---|
| **X936.1** | 500 g | plastic | 88,05 € |
| Original pack 6 x 500 g | | | 83,65/500 g |

For further information, please see page 1400

## Toluene



Methylbenzene
$C_7H_8$
M 92,14 g/mol
D ~0,87 • bp 110-111 °C
mp -95 °C • flp 6 °C
Solubility: 520 mg/l ($H_2O$, 20 °C)
[108-88-3] • EC No. 203-625-9
UN No. 1294 • ADR 3 II • WGK 2

**Danger**
H225-H304-H361d-H373-H315-H336

### Toluene

**ROTISOLV® HPLC**

**Guarantee analysis:**

| | |
|---|---|
| Assay (GC) | ≥99,9 % |
| Water (KF) | ≤0,01 % |
| Free acid | 0,001 % |
| Non volatile matter | ≤0,0005 % |

Layer thickness d = 1 cm water in comparison

Transmission:
350 nm.....≥99 %
300 nm.....≥80 %
290 nm.....≥50 %
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **7346.2** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **7346.1** | 2,5 l | glass | 75,15 € |
| Original pack 4 x 2,5 l | | | 71,39/2,5 l |

For further information, please see page 1590

## Toluene
**ROTISOLV® ≥99,8 %, GC Ultra Grade**
For gaschromatographic residue analysis.

**Guarantee analysis:**
Assay (GC).....≥99,8 %
Colour (APHA).....≤10
Water (KF).....≤0,01 %
Free acid ($CH_3COOH$).....≤0,003 %
Evaporation residue.....≤0,0003 %
GC/ECD dioxins, furans and PCBs (as lindane).....≤5 ng/l
GC/ECD pesticides (as lindane).....≤5 ng/l
GC/NPD pesticides (as parathion).....≤5 ng/l
PAH-test (less than 2 ppb, HPLC).....complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **KK46.1** | 2,5 l | glass | 73,65 € |
| Original pack 4 x 2,5 l | | | 69,97/2,5 l |

## Toluene
**ROTISOLV® ≥99,8 %, Pestilyse® plus**
For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**
Assay (GC).....≥99,8 %
Colour (APHA).....≤10
Water (KF).....≤0,01 %
Free acid (as $CH_3COOH$).....≤0,003 %
Evaporation residue.....≤0,0003 %
GC/FID suitability (as 2-octanol).....≤25 ng/ml
GC/ECD suitability (as heptachloro epoxide).....≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane).....≤5 ng/l
GC/ECD pesticides (as lindane).....≤5 ng/l
GC/NPD pesticides (as parathion).....≤10 ng/l
Oil index (any hydrocarbon $C_{10}$-$C_{40}$).....≤0,1 mg/l
PAH-test (less than 2 ppb, HPLC).....complies
Fluorescence (as quinine):
254 nm.....≤1 ppb
365 nm.....≤1 ppb

| | | | |
|---|---|---|---|
| **7591.1** | 2,5 l | glass | 61,85 € |
| Original pack 4 x 2,5 l | | | 58,76/2,5 l |

## Toluene
**ROTISOLV® ≥99,8 %, Pestilyse®**
For residue and environmental analysis.

**Guarantee analysis:**
Assay (GC).....≥99,8 %
Water (KF).....≤0,02 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
GC/ECD (individual signal as lindane).....≤5 ng/l
GC/PND (individual signal as ethylparathion).....≤10 ng/l

| | | | |
|---|---|---|---|
| **T166.2** | 1 l | glass | 33,25 € |
| Original pack 6 x 1 l | | | 31,59/1 l |
| **T166.1** | 2,5 l | glass | 60,10 € |
| Original pack 4 x 2,5 l | | | 57,10/2,5 l |
| **T166.3** | 4 l | glass | 96,65 € |

## Toluene
**ROTISOLV® ≥99,8 %, UV/IR-Grade**
For chromatography and spectroscopy

**Guarantee analysis:**
Assay (GC).....≥99,8 %
Water (KF).....≤0,01 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
Transmission:
350 nm.....≥98 %
340 nm.....≥96 %
330 nm.....≥95 %
320 nm.....≥90 %

| | | | |
|---|---|---|---|
| **4445.1** | 2,5 l | glass | 57,95 € |
| Original pack 4 x 2,5 l | | | 55,05/2,5 l |

## Toluene
**ROTIDRY® Sept ≥99,5 % (≤30 ppm $H_2O$)**
Dried; in a septum bottle

**Guarantee analysis:**
Assay (GC).....≥99,5 %
Colour (APHA).....≤10
Water (KF).....≤0,003 %
Acidity (as $CH_3COOH$).....≤0,002 %
Evaporation residue.....≤0,001 %

| | | | |
|---|---|---|---|
| **5191.1** | 250 ml | glass | 37,55 € |

## Toluene
**ROTIDRY® ≥99,5 % (≤50 ppm $H_2O$)**
Dried; for analysis and organic synthesis.

**Guarantee analysis:**
Assay (GC).....≥99,5 %
Colour (Hazen).....≤10
Water (KF).....≤0,005 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
Filtered through a membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE06.1** | 1 l | glass | 39,25 € |
| Original pack 6 x 1 l | | | 37,29/1 l |

## Toluene
**ROTIPURAN® ≥99,5 %, p.a., ACS, ISO**

**Guarantee analysis:**
Assay (GC).....≥99,5 %
Acidity.....≤0,001 %
Alkalinity.....≤0,001 %
Colour (Hazen).....≤10
Water.....≤0,03 %
Benzene.....≤0,05 %
Thiophene.....≤0,0002 %
Sulphur compounds (as S).....≤0,003 %
Matter discoloured by $H_2SO_4$.....complies
Evaporation residue.....≤0,001%
Lead (Pb).....≤0,00001 %
Cadmium (Cd).....≤0,000005 %
Calcium (Ca).....≤0,00005 %
Chromium (Cr).....≤0,000002 %
Iron (Fe).....≤0,00001 %
Cobalt (Co).....≤0,000002 %
Copper (Cu).....≤0,000002 %
Magnesium (Mg).....≤0,00001 %
Manganese (Mn).....≤0,000002 %
Nickel (Ni).....≤0,000002 %
Zinc (Zn).....≤0,00001 %

| | | | |
|---|---|---|---|
| **7115.1** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **7115.2** | 2,5 l | glass | 71,95 € |
| Original pack 4 x 2,5 l | | | 68,35/2,5 l |
| **7115.3** | 5 l | aluminium | 101,60 € |
| Original pack 2 x 5 l | | | 96,52/5 l |
| **7115.4** | 25 l | tinplate | 289,20 € |

## Toluene
**≥99,5 %, for synthesis**

**Type analysis:**
Appearance.....clear, colourless
Assay (GC).....≥99,5 %
Density (15 °C).....0,865-0,873
Colour (Hazen).....≤20
Water (KF).....≤0,02 %

| | | | |
|---|---|---|---|
| **9558.1** | 1 l | glass | 25,30 € |
| Original pack 6 x 1 l | | | 24,04/1 l |
| **9558.3** | 2,5 l | glass | 40,75 € |
| Original pack 4 x 2,5 l | | | 38,71/2,5 l |
| **9558.2** | 10 l | tinplate | 90,85 € |
| **9558.4** | 25 l | tinplate | 169,35 € |

## Toluene
**ROTISOLV® LSC**
For liquid scintillation.

**Type analysis:**
Assay (GC).....≥99,5 %

| | | | |
|---|---|---|---|
| **3107.1** | 1 l | glass | 44,65 € |
| Original pack 6 x 1 l | | | 42,42/1 l |
| **3107.2** | 2,5 l | glass | 72,60 € |
| Original pack 4 x 2,5 l | | | 68,97/2,5 l |

## Toluene D8
Methylbenzene deuterated
$C_7D_8$
M 100,19 g/mol
D 0,94 • bp 109 °C
mp -85 °C • flp 4 °C
[2037-26-5] • EC No. 218-009-5
UN No. 1294 • ADR 3 II • WGK 2
**Danger**
H225-H304-H361d-H373-H315-H336

## Toluene D8
**99,8 Atom%D**
For nuclear magnetic resonance spectroscopy.

**Type analysis:**
Deuterising degree.....≥99,8 %
Water (KF, $H_2O$+$D_2O$).....≤0,02 %

| | | | |
|---|---|---|---|
| **7924.1** | 10 ml | glass | 120,30 € |
| **7924.2** | 10 x 0,75 ml | glass ampoule | 121,40 € |

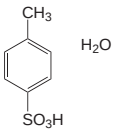
## Toluene D8
**99,5 Atom%D**
For nuclear magnetic resonance spectroscopy.

**Type analysis:**
Deuterising degree.....≥99,5 %
Water (KF, $H_2O$+$D_2O$).....≤0,03 %

| | | | |
|---|---|---|---|
| **CP95.1** | 10 ml | glass | 85,90 € |
| **CP95.2** | 10 x 0,75 ml | glass ampoule | 88,70 € |

## Toluene-4-sulphone chloramide sodium
▶ Chloramine T trihydrate see p. 1826

## p-Toluenesulphonic acid monohydrate



### p-Toluenesulphonic acid monohydrate

**≥98 %, for synthesis**
$C_7H_8O_3S \cdot H_2O$
M 190,22 g/mol
mp 56 °C • flp 180 °C
Solubility: 670 g/l ($H_2O$, 20 °C)
[6192-52-5] • EC No. 203-180-0
UN No. 2585 • ADR 8 III • WGK 1

**Warning** H315-H319-H335

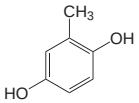
**Type analysis:**
Appearance. ..... colourless to pink crystals
Assay. ..... ≥98 %
Iron (Fe). ..... ≤0,001 %
Free sulphuric acid. ..... ≤0,3 %

| | | | |
|---|---|---|---|
| **4796.3** | 500 g | plastic | 17,10 € |
| Original pack 6 x 500 g | | | 16,25/500 g |
| **4796.1** | 1 kg | plastic | 26,35 € |
| Original pack 6 x 1 kg | | | 25,03/1 kg |
| **4796.2** | 10 kg | plastic | 149,45 € |

## α-Toluene sulphonyl fluoride

▶ Phenylmethyl sulphonyl fluoride (PMSF) see p. 2148

## Toluhydroquinone



### Toluhydroquinone

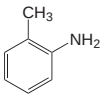
**≥99 %, for synthesis**
2-Methyl hydroquinone, 2,5-Dihydroxytoluene
$C_7H_8O_2$
M 124,14 g/mol
bp 285 °C
mp 125-128 °C • flp 172 °C
Solubility: 77 g/l ($H_2O$, 25 °C)
[95-71-6] • EC No. 202-443-7
UN No. 3077 • ADR 9 III • WGK 2

**Warning**
H302+H312-H315-H319-H410

**Type analysis:**
Assay. ..... ≥99,0 %
Melting point. ..... 125-128 °C
Ash content. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **4787.1** | 100 g | plastic | 33,25 € |
| **4787.2** | 500 g | plastic | 100,95 € |
| Original pack 6 x 500 g | | | 95,90/500 g |

## o-Toluidine



### o-Toluidine

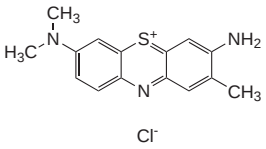
**≥99,5 %, p.a.**
For blood sugar analysis.
2-Methylaniline
$C_7H_9N$
M 107,16 g/mol
D ~0,998 • bp 200 °C
mp -27 °C • flp 85 °C
Solubility: 15 g/l ($H_2O$, 20 °C)
[95-53-4] • EC No. 202-429-0
UN No. 1708 • ADR 6.1 II • WGK 3

**Danger**
H301+H331-H350-H400-H319

**Guarantee analysis:**
Assay (GC). ..... ≥99,5 %
Water ..... ≤0,1 %
Ash content (as $SO_4$). ..... ≤0,005 %
p-Toluidine and m-Toluidine. ..... ≤0,4 %
Chloride (Cl). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0001 %
Heavy metals (as Pb). ..... ≤0,0001 %

| | | | |
|---|---|---|---|
| **4788.1** | 100 ml | glass | 20,35 € |
| **4788.2** | 500 ml | glass | 71,50 € |

## Toluidine blue O (C.I. 52040)



### Toluidine blue O (C.I. 52040)

**for microscopy**
Basic blue 17
$C_{15}H_{16}Cl\,N_3S$
M 305,83 g/mol
Solubility: 30 g/l ($H_2O$, 25 °C)
[92-31-9] • EC No. 202-146-2
WGK 2

**Type analysis:**
Appearance. ..... dark green to black powder
Dye content. ..... ≥65 %
Absorption max. (in $H_2O$). ..... 615-635 nm
Suitability for microscopy. ..... complies

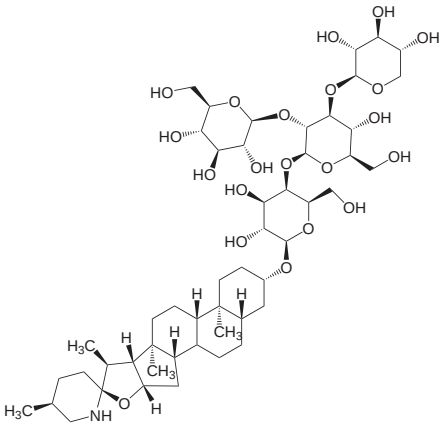
| | | | |
|---|---|---|---|
| **0300.1** | 5 g | glass | 18,20 € |
| **0300.2** | 10 g | glass | 27,85 € |
| **0300.3** | 25 g | glass | 52,60 € |
| **0300.4** | 100 g | glass | 149,45 € |

For further information, please see page 1468

## Toluylene red

▶ Neutral red (C.I. 50040) see p. 2092

## Tomatin



### Tomatin

**ROTICHROM® TLC**
Reference substance for thin layer chromatography.
$C_{50}H_{83}NO_{21}$
M 1034,22 g/mol
Storage temp.: +4 °C
[17406-45-0] • EC No. 241-429-5
WGK 1

**Warning** H302

| | | | |
|---|---|---|---|
| **5676.1** | 25 mg | glass | 46,15 € |

## Total ionic strength adjustment buffer

▶ TISAB solution I see p. 2344
▶ TISAB solution II see p. 2344
▶ TISAB solution III see p. 2344
▶ TISAB solution IV see p. 2344

## TOTU

▶ O-[(Ethoxycarbonyl)cyanomethylenamino]-N,N,N',N'-tetramethyluronium tetrafluoroborate (TOTU) see p. 1913

## Toxilic acid

▶ Maleic acid see p. 2052

## TPTZ

▶ 2,3,5-Triphenyltetrazolium chloride see p. 2355

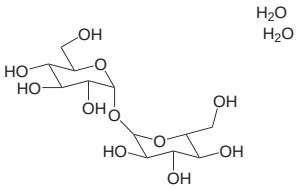
## Transfection reagents

▶ DEAE Dextran see p. 1857
▶ DOTAP see p. 1894
▶ Roti®-Fect see p. 2216
▶ Roti®-Fect Plus see p. 2216
▶ Roti®-Insectofect see p. 2220

## Transformation kit

▶ Roti®-Transform see p. 2235

## D(+)-Trehalose dihydrate



Mycose
$C_{12}H_{22}O_{11} \cdot 2\ H_2O$
M 378,24 g/mol
mp 97 °C
[6138-23-4] • EC No. 202-739-6
WGK 1

### D(+)-Trehalose dihydrate

**CELLPURE® ≥98 %**
For cell culture and biochemistry.

**Guarantee analysis:**

| | |
|---|---|
| Endotoxins | ≤2,4 E.U./g |
| Appearance | white to off-white, cryst. powder |
| Assay | 98,0-101,0 % |
| pH value (10 % in $H_2O$) | 4,5-6,5 |
| Water (KF) | 9,0-11,0 % |
| Specific rotation $[\alpha]_D^{20}$ (c=10 in $H_2O$) | +197° to 201° |
| Residue on ignition | ≤0,1 % |
| Chloride (Cl) | ≤0,05 % |
| Sulphate ($SO_4$) | ≤0,05 % |
| Heavy metals (as Pb) | ≤0,0005 % |
| Total nitrogen (as N) | ≤0,005 % |
| Ethanol | ≤0,5 % |
| Methanol | ≤0,5 % |

| | | | |
|---|---|---|---|
| **8897.1** | 10 g | plastic | 28,95 € |
| **8897.2** | 25 g | plastic | 48,95 € |
| **8897.3** | 50 g | plastic | 78,40 € |
| **8897.4** | 100 g | plastic | 138,70 € |

### D(+)-Trehalose dihydrate

**≥99 %, for biochemistry**

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Assay (dry substance) | ≥99,0 % |
| Water | ≤11,0 % |
| Ash content | ≤0,05 % |

| | | | |
|---|---|---|---|
| **5151.1** | 5 g | plastic | 13,45 € |
| **5151.2** | 25 g | plastic | 37,10 € |
| **5151.4** | 50 g | plastic | 62,25 € |
| **5151.3** | 250 g | plastic | 289,20 € |

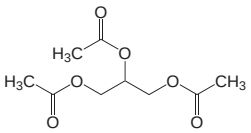
## Trethylene

▶ Trichloroethylene see p. 2350

## Tri

▶ Trichloroethylene see p. 2350

## Triacetin



### Triacetin

**≥99 %**
Glyceryl triacetate, 1,2,3-Triacetoxypropane
$C_9H_{14}O_6$
M 218,21 g/mol
D ~1,16 • bp 258-260 °C
mp -78 °C • flp 138 °C
Solubility: 64 g/l ($H_2O$, 20 °C)
[102-76-1] • EC No. 203-051-9
WGK 1

**Type analysis:**

| | |
|---|---|
| Appearance | clear, colourless liquid |
| Assay (GC) | ≥99,0 % |
| Density (d 20 °C/4 °C) | 1,156-1,160 |
| Refractive index $n_D^{20}$ | 1,430-1,432 |

| | | | |
|---|---|---|---|
| **6317.1** | 100 ml | glass | 26,35 € |

## 1,2,3-Triacetoxy-propane

▶ Triacetin see p. 2349

## sym-Triaminotriazine

▶ Melamine see p. 2061

## 2,4,6-Triamino-1,3,5-triazine

▶ Melamine see p. 2061

## 1,2,4-Triazine-3,5-(2H,4H)-dione

▶ 6-Azauracil see p. 1756

## 1,2,4-Triazole



### 1,2,4-Triazole

**≥99 %**
Pyrrodiazole
$C_2H_3N_3$
M 69,07 g/mol
D 1,15 • bp 259-261 °C
mp 119-121 °C • flp 170 °C
Solubility: 547 g/l ($H_2O$, 22 °C)
Storage temp.: +4 °C
[288-88-0] • EC No. 206-022-9
WGK 2

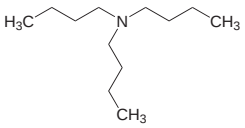
**Warning** H302-H319-H361d

**Type analysis:**

| | |
|---|---|
| Assay (titr.) | ≥99,0 % |
| Solution (10 % in ethanol) | colourless, clear |
| Water (KF) | ≤0,5 % |
| Melting point | 119-121 °C |

| | | | |
|---|---|---|---|
| **5242.1** | 25 g | plastic | 21,40 € |
| **5242.2** | 100 g | plastic | 60,10 € |

## Tributylamine



### Tributylamine

**≥99 %, for synthesis**
N,N-Dibutyl-1-butanamine
$C_{12}H_{27}N$
M 185,35 g/mol
bp 215 °C
mp <-70 °C • flp 70 °C
[102-82-9] • EC No. 203-058-7
UN No. 2542 • ADR 6.1 II • WGK 2

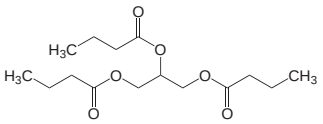
**Danger** H302-H310+H330-H315

**Type analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| Water | ≤0,2 % |
| Colour (APHA) | ≤20 |

| | | | |
|---|---|---|---|
| **4089.1** | 100 ml | glass | 15,60 € |
| **4089.2** | 500 ml | glass | 27,45 € |
| **4089.3** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |
| **4089.4** | 2,5 l | glass | 64,40 € |
| Original pack 4 x 2,5 l | | | 61,18/2,5 l |

## Tributyrin



### Tributyrin

**≥97,5 %, for biochemistry**
Glyceryl tributyrate
$C_{15}H_{26}O_6$
M 302,36 g/mol
D ~1,03 • bp 287-288 °C
mp -75 °C • flp 174 °C
Storage temp.: +4 °C
[60-01-5] • EC No. 200-451-5
WGK 1

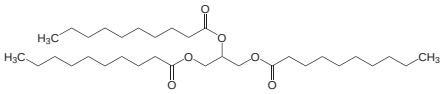
**Guarantee analysis:**
Appearance. ..... clear, colourless to yellow liquid
Assay (GC). ..... ≥97,5 %

| | | | |
|---|---|---|---|
| **4813.1** | 100 ml | glass | 79,05 € |

## Tricalcium citrate

▶ tri-Calcium dicitrate tetrahydrate see p. 1805

## Tricaprin



### Tricaprin

**≥98 %**
Glyceryl tricaproate
$C_{33}H_{62}O_6$
M 554,86 g/mol
mp ~31 °C
Storage temp.: +4 °C
[621-71-6] • EC No. 210-702-0

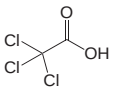
**Type analysis:**
Assay (GC). ..... ≥98 %
Melting point. ..... 31-35 °C

| | | | |
|---|---|---|---|
| **7252.1** | 10 g | glass | 124,20 € |

## Trichloroacetaldehyde hydrate

▶ Chloral hydrate see p. 1825

## Trichloroacetic acid



TCA
$CCl_3COOH$
M 163,40 g/mol
D 1,61 • bp 197 °C
mp 59 °C • flp >110 °C
Solubility: 1300 g/l ($H_2O$, 20 °C)
[76-03-9] • EC No. 200-927-2
UN No. 1839 • ADR 8 II • WGK 2

**Danger** H314-H400-H410-H335

### Trichloroacetic acid

**≥99 %, p.a.**
Protein precipitant, fixative for microscopy.

**Guarantee analysis:**
Appearance. ..... scales, almost colourless
Assay. ..... ≥99,0 %
Nitrate ($NO_3$). ..... ≤0,002 %
Phosphate ($PO_4$). ..... ≤0,0005 %
Sulphate ($SO_4$). ..... ≤0,02 %
Iron (Fe). ..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,002 %
Loss on drying. ..... ≤1,0 %
Sulphated ash. ..... ≤0,03 %

| | | | |
|---|---|---|---|
| **8789.2** | 500 g | glass | 53,25 € |
| Original pack 6 x 500 g | | | 50,59/500 g |
| **8789.1** | 1 kg | glass | 91,95 € |
| Original pack 6 x 1 kg | | | 87,35/1 kg |

### Trichloroacetic acid

**≥99 %, Ph.Eur, extra pure**
For biochemistry.

**Guarantee analysis:**
Assay. ..... ≥99,0 %
Appearance of solution. ..... complies
Identity. ..... complies
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,02 %
Heavy metals (as Pb). ..... ≤0,002 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **3744.2** | 500 g | glass | 52,15 € |
| Original pack 6 x 500 g | | | 49,54/500 g |
| **3744.1** | 1 kg | glass | 88,70 € |
| Original pack 6 x 1 kg | | | 84,27/1 kg |

## Trichloroacetic acid solution

TCA solution
$CCl_3COOH$
M 163,40 g/mol
[76-03-9] • EC No. 200-927-2
UN No. 2564 • ADR 8 II • WGK 2

**Danger** H314-H335-H411

### Trichloroacetic acid solution 20 %

**p.a., 20 % aqueous solution**
For removing protein from biological preparations.

| | | | |
|---|---|---|---|
| **7437.1** | 1 l | glass | 31,75 € |
| Original pack 6 x 1 l | | | 30,16/1 l |

### Trichloroacetic acid solution 10 %

**p.a., 10 % aqueous solution**
For removing protein from biological preparations

| | | | |
|---|---|---|---|
| **9383.2** | 1 l | glass | 25,70 € |
| Original pack 6 x 1 l | | | 24,42/1 l |
| **9383.1** | 10 l | plastic | 144,60 € |

## Trichlorobismuthine

▶ Bismuth(III) chloride see p. 1775

## Trichloroethene

▶ Trichloroethylene see p. 2350

## Trichloroethylene



### Trichloroethylene

**≥98 %, for synthesis, stab.**
Trichloroethene, Acetylene trichloride, Trethylene, TCE
$C_2HCl_3$
M 131,39 g/mol
D ~1,46 • bp 87 °C
mp -86,4 °C
Solubility: 1 g/l ($H_2O$, 20 °C)
[79-01-6] • EC No. 201-167-4
UN No. 1710 • ADR 6.1 III • WGK 3

**Danger**
H350-H341-H315-H319-H336-H412

**Type analysis:**
Assay (GC). ..... ≥98 %
Colour (Hazen). ..... ≤20
Density (20 °C). ..... 1,440-1,472
Water . ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **9579.1** | 1 l | glass | 46,80 € |
| Original pack 6 x 1 l | | | 44,46/1 l |
| **9579.3** | 2,5 l | glass | 91,30 € |
| Original pack 4 x 2,5 l | | | 86,74/2,5 l |
| **9579.2** | 10 l | tinplate | 299,95 € |

## Trichloromethane/Chloroform



Chloroform
$CHCl_3$
M 119,38 g/mol
D ~1,48 • bp 62 °C
mp -63 °C
Solubility: 8,2 g/l ($H_2O$, 20 °C)
[67-66-3] • EC No. 200-663-8
UN No. 1888 • ADR 6.1 III • WGK 3

**Danger**
H331-H372-H351-H361d-H302-H315-H319

### Trichloromethane/Chloroform

**ROTISOLV® HPLC**

**Guarantee analysis:**
Assay (GC). ..... ≥99,9 %
Water. ..... ≤0,005 %

Free acid.....≤0,0001 %
Non volatile matter.....≤0,0001 %
Transmission:
275 nm.....≥99 %
255 nm.....≥80 %
250 nm.....≥50 %
Filtered through 0,2 µm membrane and filled under protective gas.
Stabilized with 1 % ethanol.

| | | | |
|---|---|---|---|
| **7331.2** | 1 l | glass | 38,60 € |
| Original pack 6 x 1 l | | | 36,67/1 l |
| **7331.1** | 2,5 l | glass | 80,55 € |
| Original pack 4 x 2,5 l | | | 76,52/2,5 l |

For further information, please see page 1590

## Trichloromethane/Chloroform

**ROTISOLV® ≥99,9 %, Pestilyse® plus**

For determination of dioxins, furans, PCBs, pesticides, hydrocarbons etc.

**Guarantee analysis:**

Assay (GC).....≥99,9 %
Colour (APHA).....≤10
Water (KF).....≤0,01 %
Free acid (as HCl).....≤0,0005 %
Evaporation residue.....≤0,0003 %
GC/ECD suitability (as heptachloro epoxide).....≤10 ng/l
GC/ECD dioxins, furans and PCBs (as lindane).....≤5 ng/l
GC/ECD pesticides (as lindane).....≤5 ng/l
GC/NPD pesticides (as parathion).....≤10 ng/l
Oil index (any hydrocarbon $C_{10}$-$C_{40}$).....≤0,1 mg/l
PAH-test (less than 2 ppb, HPLC).....complies
Fluorescence (as quinine):
254 nm.....≤1 ppb
365 nm.....≤1 ppb
Stabilized with 30-60 ppm Amylene

| | | | |
|---|---|---|---|
| **7554.1** | 2,5 l | glass | 72,60 € |
| Original pack 4 x 2,5 l | | | 68,97/2,5 l |

## Trichloromethane/Chloroform

**ROTISOLV® ≥99,8 %, Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Assay (GC).....≥99,8 %
Water (KF).....≤0,01 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
GC/ECD (individual signal as lindane).....≤5 ng/l
GC/PND (individual signal as ethylparathion).≤10 ng/l
Stabilized with 1 % ethanol.

| | | | |
|---|---|---|---|
| **T901.1** | 2,5 l | glass | 71,50 € |
| Original pack 4 x 2,5 l | | | 67,93/2,5 l |

## Trichloromethane/Chloroform

**ROTISOLV® ≥99,8 %, UV/IR-Grade**

For chromatography and spectroscopy.

**Guarantee analysis:**

Assay (GC).....≥99,8 %
Water (KF).....≤0,01 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
Transmission:
280 nm.....≥98 %
260 nm.....≥90 %
250 nm.....≥50 %
Stabilized with approx. 1 % ethanol

| | | | |
|---|---|---|---|
| **4432.1** | 2,5 l | glass | 62,25 € |
| Original pack 4 x 2,5 l | | | 59,14/2,5 l |

## Trichloromethane/Chloroform

**ROTIDRY® ≥99,8 % (≤50 ppm $H_2O$)**

Dried, for analysis and organic synthesis.

**Guarantee analysis:**

Assay (GC).....≥99,8 %
Water (KF).....≤0,005 %
Acidity.....≤0,0005 meq/g
Evaporation residue.....≤0,0005 %
Stabilized with approx. 50 ppm amylene

| | | | |
|---|---|---|---|
| **4423.1** | 1 l | glass | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |

## Trichloromethane/Chloroform

**ROTIPURAN® ≥99 %, p.a.**

**Guarantee analysis:**

Assay (GC).....≥99 %
Other chlorinated compounds.....complies
Water (KF).....≤0,02 %
Chloride (Cl).....complies
Acids (HCl).....≤0,001 %
Aluminium (Al).....≤0,00005 %
Barium (Ba).....≤0,00001 %
Lead (Pb).....≤0,000005 %
Cadmium (Cd).....≤0,000005 %
Calcium (Ca).....≤0,00005 %
Chromium (Cr).....≤0,000002 %
Kobalt (Co).....≤0,000002 %
Iron (Fe).....≤0,00005 %
Copper (Cu).....≤0,00001 %
Manganese (Mn).....≤0,000002 %
Nickel (Ni).....≤0,00001 %
Zinc (Zn).....≤0,000005 %
Tin (Sn).....≤0,00001 %
Evaporation residue.....≤0,0015 %
Stabilized with 0,6-1% Ethanol

| | | | |
|---|---|---|---|
| **3313.4** | 100 ml | glass | 16,05 € |
| **3313.1** | 1 l | glass | 40,35 € |
| Original pack 6 x 1 l | | | 38,33/1 l |
| **3313.2** | 2,5 l | glass | 84,85 € |
| Original pack 4 x 2,5 l | | | 80,61/2,5 l |
| **3313.5** | 25 l | tinplate | 439,70 € |

## Trichloromethane/Chloroform

**≥99 %, DAB, BP, extra pure**

**Guarantee analysis:**

Assay (GC).....≥99,0 %
Identity.....complies
Density (d 20 °C/20 °C).....1,479-1,484
Boiling range.....59-62 °C
Appearance of the substance.....complies
Acidity/alkalinity.....complies
Free chlorine (Cl).....complies
Non volatile matter.....≤0,002 %
Chloride (Cl).....≤0,0005 %
Water.....≤0,05 %
Aldehydes.....complies
Other chlorinated compounds.....complies
Reaction with $H_2SO_4$.....complies
Foreign odour.....complies
Stabilized with 0,6-1% Ethanol

| | | | |
|---|---|---|---|
| **6340.4** | 100 ml | glass | 15,60 € |
| **6340.1** | 1 l | glass | 36,05 € |
| Original pack 6 x 1 l | | | 34,25/1 l |
| **6340.2** | 2,5 l | glass | 65,50 € |
| Original pack 4 x 2,5 l | | | 62,23/2,5 l |
| **6340.5** | 25 l | tinplate | 317,15 € |

## Trichloromethane/Chloroform

**≥99 %, for synthesis**

**Type analysis:**

Appearance.....clear, colourless liquid
Assay (GC).....≥99,0 %
Density (20 °C).....1,478-1,492
Water.....≤0,01 %
Stabilized with 20-55 ppm amylene.

| | | | |
|---|---|---|---|
| **Y015.1** | 1 l | glass | 24,20 € |
| Original pack 6 x 1 l | | | 22,99/1 l |
| **Y015.2** | 2,5 l | glass | 39,70 € |
| Original pack 4 x 2,5 l | | | 37,72/2,5 l |
| **Y015.3** | 10 l | tinplate | 127,95 € |
| **Y015.4** | 25 l | tinplate | 241,90 € |

## Trichloromethane/ Chloroform D1

Chloroform D1, Deutérochloroforme
$CCl_3D$
M 120,39 g/mol
D 1,50 • bp 60 °C
mp -64 °C
[865-49-6] • EC No. 212-742-4
UN No. 1888 • ADR 6.1 III • WGK 2

**Danger**

H331-H372-H351-H361d-H302-H315-H319

## Trichloromethane/ Chloroform D1

**100 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**

Deuterising degree.....≥99,95 %
Water (KF, $H_2O$+$D_2O$).....≤0,01 %

| | | | |
|---|---|---|---|
| **CP91.1** | 10 x 0,75 ml | glass ampoule | 28,95 € |

## Trichloromethane/ Chloroform D1

**99,8 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**

Deuterising degree.....≥99,8 %
Water (KF, $H_2O$+$D_2O$).....≤0,02 %

| | | | |
|---|---|---|---|
| **7903.1** | 10 x 0,75 ml | glass ampoule | 19,25 € |

## Trichloromethane/ Chloroform D1

**99,8 Atom%D, stab. with Ag**

For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**

Deuterising degree.....≥99,8 %
Water (KF, $H_2O$+$D_2O$).....≤0,02 %

| | | | |
|---|---|---|---|
| **AE54.4** | 25 ml | glass | 20,35 € |
| **AE54.1** | 100 ml | glass | 49,35 € |
| **AE54.3** | 100 ml | septum bottle | 51,50 € |
| **AE54.2** | 500 ml | glass | 224,70 € |

## Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)

Chloroform D1 with TMS
$CCl_3D$
M 120,39 g/mol
D 1,50 • bp 60 °C
mp -64 °C
[865-49-6] • EC No. 212-742-4
UN No. 1888 • ADR 6.1 III • WGK 3

**Danger**

H302-H331-H315-H319-H351-H361d-H372

### Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)

**99,8 Atom%D**

For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**

Deuterising degree. ..... ≥99,8 %
Water (KF, $H_2O+D_2O$). ..... ≤0,02 %
Trimethylsilane (TMS)..... 0,03 %

| | | | |
|---|---|---|---|
| **7905.1** | 10 x 0,75 ml | glass ampoule | 18,85 € |

### Trichloromethane/Chloroform D1 with TMS (0,03 vol.%)

**99,8 Atom%D, stab. with Ag**

For nuclear magnetic resonance spectroscopy.

**Guarantee analysis:**

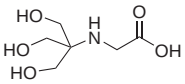
Deuterising degree. ..... ≥99,8 %
Water (KF, $H_2O+D_2O$). ..... ≤0,02 %
Tetramethylsilane (TMS). ..... 0,02-0,04 %

| | | | |
|---|---|---|---|
| **AE59.1** | 100 ml | glass | 48,30 € |

## Trichlorostibane

▶ Antimony(III) chloride see p. 1747

## TRICINE



### TRICINE

**PUFFERAN® ≥99 %**

N-Tris-(hydroxymethyl)-methyl-glycine
$C_6H_{13}NO_5$
M 179,2 g/mol
mp 187 °C
Solubility: 100 g/l ($H_2O$, 20 °C)
[5704-04-1] • EC No. 227-193-6
WGK 1

**Guarantee analysis:**

Assay..... ≥99 %
Loss on drying. ..... ≤1,0 %
pH value (1 % in $H_2O$, 25 °C). ..... 4,0-6,0
Solubility (0,1 M in $H_2O$)..... clear, soluble
UV-absorption (0,1 M in $H_2O$):
280 nm..... ≤0,02
260 nm..... ≤0,04

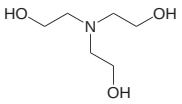
| | | | |
|---|---|---|---|
| **6977.1** | 50 g | plastic | 26,80 € |
| **6977.4** | 250 g | plastic | 106,35 € |
| **6977.2** | 500 g | plastic | 203,20 € |
| Original pack 6 x 500 g | | | 193,04/500 g |
| **6977.3** | 1 kg | plastic | 306,40 € |
| Original pack 6 x 1 kg | | | 291,08/1 kg |
| **6977.5** | 2,5 kg | plastic | 617,05 € |

For further information, please see page 1269

## Tricyclo[3.3.1.1$^{3,7}$]decane

▶ Adamantane see p. 1708

## Triethanolamine



### Triethanolamine

**≥99 %, for synthesis**

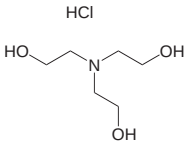
Tris(2-hydroxyethyl)-amine, TEA
$C_6H_{15}NO_3$
M 149,19 g/mol
D ~1,12 • bp 360 °C
mp 21 °C • flp 190 °C
[102-71-6] • EC No. 203-049-8
WGK 1

**Type analysis:**

Assay (GC)..... ≥99 %
Water ..... ≤0,1 %
Colour number (APHA)..... ≤30
Diethanolamine (GC)..... ≤0,4 %
2-Aminoethanol (GC). ..... ≤0,1 %
Highly boiling matter (GC). ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **6300.1** | 1 l | plastic | 25,30 € |
| Original pack 6 x 1 l | | | 24,04/1 l |
| **6300.3** | 2,5 l | plastic | 41,85 € |
| Original pack 4 x 2,5 l | | | 39,76/2,5 l |
| **6300.2** | 10 l | tinplate | 132,80 € |

## Triethanolamine hydrochloride



### Triethanolamine hydrochloride

**≥99 %, for biochemistry**

Tris-(2-hydroxyethyl)-ammoniumchloride
$C_6H_{15}NO_3 \cdot HCl$
M 185,65 g/mol
D ~1,12
mp 174-182 °C
[637-39-8] • EC No. 211-284-2
WGK 1

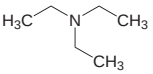
**Type analysis:**

Appearance..... white cryst. powder
Assay (titr. dry substance). ..... ≥99,0 %
Water (KF)..... ≤0,5 %
Melting point..... 174-182 °C

| | | | |
|---|---|---|---|
| **4804.1** | 100 g | plastic | 57,95 € |

For further information, please see page 1269

## Triethylamine (TEA)



### Triethylamine (TEA)

**≥99,5 %, for synthesis**

N,N-Diethylethane amine, TEA
$C_6H_{15}N$
M 101,19 g/mol
D 0,73 • bp 90 °C
mp -115 °C • flp -11 °C
[121-44-8] • EC No. 204-469-4
UN No. 1296 • ADR 3 (8) II • WGK 1

**Danger**

H225-H314-H302-H311+H331-H335

**Type analysis:**

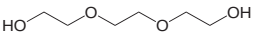
Assay (GC). ..... ≥99,5 %
Colour (APHA). ..... ≤15
Water . ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **X875.1** | 100 ml | glass | 11,75 € |
| **X875.2** | 500 ml | glass | 16,70 € |
| **X875.3** | 1 l | glass | 24,65 € |
| Original pack 6 x 1 l | | | 23,42/1 l |
| **X875.4** | 2,5 l | glass | 42,90 € |
| Original pack 4 x 2,5 l | | | 40,76/2,5 l |

## Triethylendiamine

▶ DABCO® see p. 1856

## Triethylene glycol



### Triethylene glycol

**≥98 %, for synthesis**

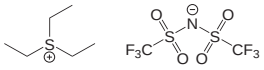
Triglycol
$C_6H_{14}O_4$
M 150,18 g/mol
D 1,12 • bp 285-295°C
mp -7°C • flp 117 °C
[112-27-6] • EC No. 203-953-2
WGK 1

**Type analysis:**

Assay (GC). ..... ≥98 %
Colour (APHA). ..... ≤50
Density (20 °C)..... 1,122-1,127
Refractive index $n_D^{20}$..... 1,453-1,459

| | | | |
|---|---|---|---|
| **4520.1** | 1 l | glass | 22,50 € |
| Original pack 6 x 1 l | | | 21,38/1 l |
| **4520.3** | 2,5 l | glass | 43,55 € |
| Original pack 4 x 2,5 l | | | 41,37/2,5 l |
| **4520.2** | 10 l | plastic | 123,65 € |

## Triethylsulfonium-bis-(trifluoromethylsulphonyl)-imide (S222 BTA)



### Triethylsulfonium-bis-(trifluoromethylsulphonyl)-imide (S222 BTA)

**≥99 %**
Ionic liquid
S222 BTA
$C_8H_{15}F_6NO_4S_3$
M 399,38 g/mol
D 1,462
[321746-49-0]
WGK 3

**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... clear, colourless
Assay. ..... ≥99 %
Water (KF). ..... ≤0,01 %
Halogens. ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **2096.1** | 25 g | glass | 428,95 € |
| **2096.2** | 100 g | glass | 772,95 € |

For further information, please see page 1531

## 2,2,2-Trifluor-N,O-bis(trimethylsilyl)-acetamide

▶ N,O-Bis(trimethylsilyl)-trifluoroacetamide see p. 1777

## Trifluoroacetic acid (TFA)



### Trifluoroacetic acid (TFA)

TFA
$C_2HF_3O_2$
M 114,02 g/mol
D 1,48 • bp 72 °C
mp -15 °C
[76-05-1] • EC No. 200-929-3
UN No. 2699 • ADR 8 I • WGK 2

**Danger** H290-H314-H332-H412

### Trifluoroacetic acid (TFA)

**≥99,9 %, for (peptide) synthesis**

**Guarantee analysis:**

Assay. ..... ≥99,9 %
Water . ..... ≤0,02 %
Non volatile matter. ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **P088.1** | 100 ml | glass | 61,85 € |
| **P088.2** | 500 ml | glass | 177,40 € |
| **P088.3** | 1 l | glass | 310,70 € |
| Original pack 6 x 1 l | | | 295,17/1 l |

### Trifluoroacetic acid (TFA)

**≥99,9 %**
Acid for biochemistry and synthesis.

**Type analysis:**

Appearance. ..... clear, colourless liquid
Assay. ..... ≥99,9 %
Water (KF). ..... ≤0,1 %
Chloride (Cl). ..... ≤0,001 %
Fluoride (F). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **6957.1** | 500 ml | glass | 110,20 € |
| **6957.2** | 1 l | glass | 192,45 € |
| Original pack 6 x 1 l | | | 182,83/1 l |
| **6957.3** | 2,5 l | glass | 418,20 € |
| Original pack 4 x 2,5 l | | | 397,29/2,5 l |

## Trifluoroacetic acid D

### Trifluoroacetic acid D

**99,5 Atom%D**
For nuclear magnetic resonance spectroscopy.
Deuterotrifluoroacetic acid, TFA-D
$C_2DF_3O_2$
M 115,03 g/mol
D 1,50 • bp 71 °C
mp -15 °C
[599-00-8] • EC No. 209-961-2
UN No. 2699 • ADR 8 I • WGK 2

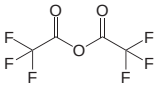
**Danger** H314-H290-H412-H332

**Guarantee analysis:**

Deuterising degree. ..... ≥99,5 %
Water (KF, $H_2O+D_2O$). ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **CP97.1** | 10 ml | glass ampoule | 57,95 € |

## Trifluoroacetic anhydride (TFAA)



### Trifluoroacetic anhydride (TFAA)

**≥99 %, for GC**
Acylation reagent
TFAA
$C_4F_6O_3$
M 210,03 g/mol
D 1,51 • bp ~40 °C
mp -65 °C
[407-25-0] • EC No. 206-982-9
UN No. 3265 • ADR 8 I • WGK 2

**Danger** H314-H332-H412-EUH014

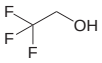
**Type analysis:**

Assay (titr.). ..... ≥99 %
Appearance. ..... clear, colourless liquid
Sulphate ($SO_4$). ..... ≤0,05 %
Chloride (Cl). ..... ≤0,005 %
Fluoride (F). ..... ≤0,005 %

| | | | |
|---|---|---|---|
| **0027.1** | 100 g | glass | 93,45 € |

For further information, please see page 1568

## 2,2,2-Trifluoroethanol



### 2,2,2-Trifluoroethanol

**>99,8 %, for synthesis**
β,β,β-Trifluoroethylalcohol
$CF_3CH_2OH$
M 100,04 g/mol
bp ~75 °C
mp -43,5 °C • flp 33 °C
[75-89-8] • EC No. 268-546-4
UN No. 1992 • ADR 3 (6.1) III • WGK 1

**Danger** H226-H301+H331-H361f-H373-H318-H312-H315

**Type analysis:**

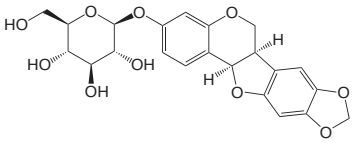
Appearance. ..... clear liquid
Assay (GC). ..... >99,8 %
Water (KF). ..... <0,1 %
Chloride (Cl). ..... <0,001 %

| | | | |
|---|---|---|---|
| **CP29.1** | 100 ml | glass | 35,40 € |
| **CP29.2** | 250 ml | glass | 64,40 € |
| **CP29.3** | 1 l | glass | 198,90 € |
| Original pack 6 x 1 l | | | 188,96/1 l |

## Trifoliin

▶ Isoquercitrin see p. 2016

## Trifolirhizin



### Trifolirhizin

**ROTICHROM® ~CHR**
$C_{22}H_{22}O_{10}$
M 446 g/mol
mp 142-144 °C
[6807-83-6]

| | | | |
|---|---|---|---|
| **4738.1** | 25 mg | glass | 170,95 € |

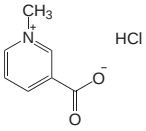
## Trifolitin

▶ Kaempferol see p. 2019

## Triglycol

▶ Triethylene glycol see p. 2352

## Trigonelline hydrochloride



### Trigonelline hydrochloride

**≥97,5 %, for biochemistry**
$C_7H_7NO_2 \cdot HCl$
M 173,61 g/mol
mp ~260 °C
[6138-41-6] • EC No. 228-119-5
WGK 1

**Type analysis:**
Appearance. ..... white crystals
Assay (arg. titr.). ..... ≥97,5 %

| | | | |
|---|---|---|---|
| **5413.1** | 1 g | glass | 71,50 € |

## 1,2,3-Trihydroxybenzene
▶ Pyrogallol see p. 2186

## 1,3,5-Trihydroxybenzene
▶ Phloroglucinol dihydrate see p. 2149

## 3,4,5-Trihydroxy benzoic acid
▶ Gallic acid see p. 1946
▶ Gallic acid monohydrate see p. 1946

## 4',5,7-Trihydroxyflavanone
▶ Naringenin see p. 2089

## 3,5,7-Trihydroxyflavone
▶ Galangin see p. 1946

## 4',5,7-Trihydroxyflavone
▶ Apigenin see p. 1747

## 5,6,7-Trihydroxyflavone
▶ Baicalein see p. 1760

## 4',5,7-Trihydroxyisoflavone
▶ Genistein see p. 1949

## 3,5,7-Trihydroxy-4'-methoxyflavonone
▶ Hesperetin see p. 1975

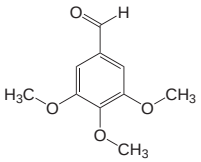
## 2,6,8-Trihydroxypurine
▶ Uric acid see p. 2367

## 2,4,6-Trihydroxypyrimidine
▶ Barbituric acid see p. 1761

## trans-3,4',5-Trihydroxystilbene
▶ Resveratrol see p. 2196

## Triiodmethane
▶ Iodoform see p. 2007

## 3,4,5-Trimethoxybenzaldehyde



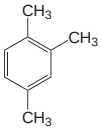
### 3,4,5-Trimethoxybenzaldehyde

**≥98 %**
$C_{10}H_{12}O_4$
M 196,21 g/mol
bp 163-165 °C
mp 73-76 °C
[86-81-7] • EC No. 201-701-6
WGK 1

**Type analysis:**
Assay (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **4831.1** | 25 g | glass | 59,05 € |

## 1,2,4-Trimethylbenzene



### 1,2,4-Trimethylbenzene

**ROTICHROM® GC**
Reference substance for GC.
Pseudocumene
$C_9H_{12}$
M 120,20 g/mol
D 0,89 • bp 168 °C
mp -44 °C • flp 48 °C
Solubility: 0,057 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[95-63-6] • EC No. 202-436-9
UN No. 3295 • ADR 3 III • WGK 2
**Warning**
H226-H332-H315-H319-H335-H411

**Type analysis:**
Purity (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **4913.1** | 1 g | glass | 24,65 € |

## (1R)-7,7,7-Trimethylbicyclo [2.2.1]heptan-2-one
▶ (+)-Camphor see p. 1808

## Trimethyl carbinol
▶ tert-Butanol see p. 1794

## Trimethylchlorosilane (TMCS)



### Trimethylchlorosilane (TMCS)

**≥99 %, for gas chromatography**
Silylation agent
TMCS, Trimethylsilyl chloride, Chlorotrimethylsilane, TMS-Cl
$C_3H_9ClSi$
M 108,64 g/mol
D 0,86 • bp +57 °C
mp -58 °C • flp -20 °C
[75-77-4] • EC No. 200-900-5
UN No. 1298 • ADR 3 (8) II • WGK 1
**Danger**
H225-H314-H335-H312-EUH014

**Type analysis:**
Appearance. ..... clear liquid
Assay (GC). ..... ≥99,0 %

| | | | |
|---|---|---|---|
| **2338.1** | 25 g | glass | 47,20 € |

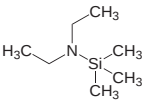
For further information, please see page 1568

## (-)-1,3,3-Trimethyl-2-norbornanone
▶ (-)-Fenchone see p. 1927

## 2,2,4-Trimethylpentane
▶ Isooctane see p. 2015

## Trimethylsilylchloride
▶ Trimethylchlorosilane (TMCS) see p. 2354

## N-(Trimethylsilyl)-diethylamine (TMSDEA)



### N-(Trimethylsilyl)-diethylamine (TMSDEA)

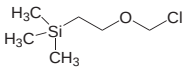
**≥98 %, for GC**
Silylation agent
TMSDEA
$C_7H_{19}NSi$
M 145,32 g/mol
D 0,76 • bp ~126 °C
mp -10 °C • flp 15 °C
[996-50-9] • EC No. 213-637-6
UN No. 2733 • ADR 3 (8) II • WGK 1
**Danger** H225-H314

**Type analysis:**
Assay. ..... ≥98 %

| | | | |
|---|---|---|---|
| **0013.1** | 25 g | glass | 131,05 € |

For further information, please see page 1568

## 2-(Trimethylsilyl)ethoxymethyl chloride



### 2-(Trimethylsilyl) ethoxymethyl chloride

NEW

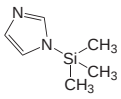
**≥95 %, for synthesis**
Protective group reagent
SEM-chloride, 2-(Chloromethoxy)ethyltrimethyl silane, Chloromethyl 2-trimethylsilylethyl ether, SEM-Cl
$SiC_6H_{15}OCl$
M 166,72 g/mol
D 0,94 • bp 171 °C
Storage temp.: +4 °C
[76513-69-4] • EC No. 278-483-4
UN No. 2920 • ADR 8 II • WGK 1

**Danger** H226-H314

**Type analysis:**
Appearance. ..... clear, colourless liquid
Assay (H-NMR). ..... ≥95 %

| | | | |
|---|---|---|---|
| **1444.1** | 1 ml | glass | 37,55 € |
| **1444.2** | 5 ml | glass | 96,65 € |

## N-(Trimethylsilyl)-imidazole (TSIM)



### N-(Trimethylsilyl)-imidazole (TSIM)

**≥97 %, for GC**
Silylation agent
TSIM
$C_6H_{12}N_2Si$
M 140,26 g/mol
D 0,95 • bp 212 °C (dec.)
mp -42 °C
[18156-74-6] • EC No. 242-040-3
UN No. 1993 • ADR 3 II • WGK 1

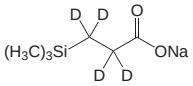
**Danger**
H225-H315-H319-H335-EUH014

**Type analysis:**
Assay (GC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **0012.1** | 10 g | glass | 41,85 € |

For further information, please see page 1568

## 3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4)



### 3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4)

**99 Atom%D**
For nuclear magnetic resonance spectroscopy.
TSP-D4, Sodium-2,2,3,3-trimethylsilyl-propionate D4
$(CH_3)_3SiCD_2CD_2CO_2Na$
M 172,27 g/mol
[24493-21-8] • EC No. 246-286-2
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Deuterising degree. ..... ≥99 %
Appearance. ..... white powder

| | | | |
|---|---|---|---|
| **9922.1** | 1 g | plastic | 127,95 € |

## Trimethylsulfonium hydroxide in methanol

### Trimethylsulfonium hydroxide in methanol

**~0,2 M, for GC**
Methylation reagent
TMSH in methanol
$C_3H_{10}SO$
M 94,18 g/mol
D 0,79 • bp 65 °C
flp 11 °C
Storage temp.: +4 °C
UN No. 1230 • ADR 3 (6.1) II • WGK 1

**Danger**
H225-H301+H311+H331-H370

**Type analysis:**
Appearance. ..... clear, colourless liquid
Methylation of Octanoic acid. ..... complies

| | | | |
|---|---|---|---|
| **9934.1** | 10 ml | septum bottle | 119,90 € |

## N,N,N-Trimethyl-1-tetradecanammonium bromide

▶ Tetradecyltrimethylammonium bromide (MTAB) see p. 2336

## N,N,N'-Trimethylthionin

▶ Azure B (C.I. 52010) see p. 1759

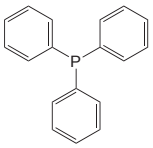
## 1,3,7-Trimethylxanthine

▶ Caffeine see p. 1802

## Triphenylphosphane

▶ Triphenylphosphine see p. 2355

## Triphenylphosphine



### Triphenylphosphine

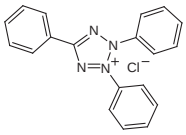
**≥99,5 %, for synthesis**
Triphenylphosphane, $PPh_3$
$P(C_6H_5)_3$
M 262,29 g/mol
D 1,19 • bp 360 °C
mp ~81 °C • flp 18 °C
[603-35-0] • EC No. 210-036-0
WGK 2

**Warning** H302-H317-H373-H413

**Type analysis:**
Appearance. ..... pastilles
Assay. ..... ≥99,5 %

| | | | |
|---|---|---|---|
| **4110.1** | 10 g | plastic | 12,40 € |
| **4110.2** | 100 g | plastic | 19,25 € |
| **4110.3** | 250 g | plastic | 34,30 € |
| **4110.4** | 1 kg | plastic | 102,15 € |
| Original pack 6 x 1 kg | | | 97,04/1 kg |

## 2,3,5-Triphenyltetrazolium chloride



### 2,3,5-Triphenyltetrazolium chloride

**≥98 %, p.a.**
For microbiology and histochemistry.
For vital staining of cells.
Tetrazolium red, TTC, TTZ, TPTZ
$C_{19}H_{15}ClN_4$
M 334,79 g/mol
mp 243 °C (dec.)
Solubility: ~150 g/l ($H_2O$, 25 °C)
Storage temp.: +4 °C
[298-96-4] • EC No. 206-071-6
WGK 3

**Warning** H315-H319-H335

**Guarantee analysis:**
Assay (arg., dry substance). ..... ≥98,0 %
Loss on drying (120 °C). ..... ≤2,0 %
Sulphated ash. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **KK13.1** | 10 g | glass | 51,50 € |
| **KK13.2** | 50 g | glass | 212,85 € |

For further information, please see page 1468

## Triple Sugar Iron Agar

### Triple Sugar Iron Agar

**Ph.Eur., for microbiology**

For identification and differentiation of enterobacteria and for determination of *Salmonellae*.

Application: Use 64.6 g for 1 l agar.

Agar medium M (Ph.Eur. 6.0), **TSI agar**

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Beef extract. | 3 g/l |
| Yeast extract. | 3 g/l |
| Beef- and casein peptone. | 20 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Lactose monohydrate. | 10 g/l |
| Saccharose. | 10 g/l |
| Glucose monohydrate. | 1 g/l |
| Ammonium iron(III) citrate. | 0,3 g/l |
| Sodium thiosulphate. | 0,3 g/l |
| Phenol red. | 0,025 g/l |
| Agar. | 12 g/l |
| pH value. | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **AE49.1** | 500 g | plastic | 79,45 € |
| Original pack 6 x 500 g | | | 75,48/500 g |

For further information, please see page 1400

## Tripropylene glycol




### Tripropylene glycol

**≥98 %, pure**

$C_9H_{20}O_4$

M 192,25 g/mol

D 1,02 • bp 268 °C

mp -30 °C • flp 140 °C

[24800-44-0] • EC No. 246-466-0

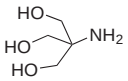
WGK 1

**Type analysis:**

| | |
|---|---|
| Assay (GC). | ≥98,0 % |
| Colour (Hazen). | ≤20 |

| | | | |
|---|---|---|---|
| **8698.1** | 1 l | glass | 41,40 € |
| Original pack 6 x 1 l | | | 39,33/1 l |
| **8698.2** | 2,5 l | glass | 80,10 € |
| Original pack 4 x 2,5 l | | | 76,10/2,5 l |

## TRIS




Tris(hydroxymethyl)-aminomethane

$C_4H_{11}NO_3$

M 121,14 g/mol

mp 168-172 °C

Solubility: 800 g/l ($H_2O$, 20 °C)

[77-86-1] • EC No. 201-064-4

WGK 2

**Warning** H315-H319-H335

### TRIS

**PUFFERAN® ≥99,9 %, p.a.**

For sensitive assays in molecular biology and cytology.

**Guarantee analysis:**

| | |
|---|---|
| Assay (dry substance). | ≥99,9 % |
| In $H_2O$ insoluble matter. | ≤0,005 % |
| pH value (5 % solution). | 10,0-11,5 |
| Melting point. | 168-172 °C |
| Water | ≤0,5 % |
| Sulphated ash. | ≤0,1 % |
| Sulphate ($SO_4$). | ≤0,001 % |
| Arsenic (As). | ≤0,0001 % |
| Lead (Pb). | ≤0,00005 % |
| Cadmium (Cd). | ≤0,00005 % |
| Iron (Fe). | ≤0,00005 % |
| Copper (Cu). | ≤0,00005 % |
| Zinc (Zn). | ≤0,00005 % |
| UV-absorption: | |
| 260 nm. | ≤0,03 |
| 280 nm. | ≤0,02 |
| 430 nm. | ≤0,004 |

| | | | |
|---|---|---|---|
| **4855.1** | 500 g | plastic | 50,45 € |
| Original pack 6 x 500 g | | | 47,93/500 g |
| **4855.2** | 1 kg | plastic | 89,15 € |
| Original pack 6 x 1 kg | | | 84,69/1 kg |
| **4855.5** | 2,5 kg | plastic | 185,45 € |
| **4855.3** | 5 kg | plastic | 370,90 € |
| **4855.4** | 10 kg | plastic | 704,15 € |

For further information, please see page 1269

### TRIS

**≥99,9 %, Blotting-Grade**

For Western blotting and immunodetection.

**Type analysis:**

| | |
|---|---|
| Appearance. | white cryst. powder |
| Assay (titr.). | ≥99,9 % |
| Loss on drying. | ≤0,5 % |
| pH value (5 % solution). | 10,8 ±0,8 |
| Solubility (40 % w/w in $H_2O$). | complies |
| In $H_2O$ insoluble matter. | ≤0,005 % |
| Sulphated ash. | ≤0,1 % |
| Lead (Pb). | ≤0,0001 % |
| Chloride (Cl). | ≤0,001 % |
| Protease. | none detected |

| | | | |
|---|---|---|---|
| **0188.1** | 250 g | plastic | 35,40 € |
| **0188.2** | 500 g | plastic | 60,75 € |
| Original pack 6 x 500 g | | | 57,71/500 g |
| **0188.3** | 1 kg | plastic | 98,80 € |
| Original pack 6 x 1 kg | | | 93,86/1 kg |
| **0188.4** | 2,5 kg | plastic | 188,15 € |

For further information, please see page 1224

### TRIS

**CELLPURE® ≥99,9 %**

For cell culture, tissue culture and biotechnology.

**Guarantee analysis:**

| | |
|---|---|
| Endotoxins. | ≤0,03 EU/mg |
| Assay (dry substance). | ≥99,9 % |
| Water. | ≤0,5 % |
| Chloride (Cl). | ≤0,01% |
| Arsenic (As). | ≤0,0002 % |
| Iron (Fe). | ≤0,0005 % |
| Heavy metals (as Pb). | ≤0,0001 % |
| Solubility (40 % w/w in $H_2O$). | clear and colourless |
| Absorption UV (10 % w/w in $H_2O$): | |
| 260 nm. | ≤0,03 |
| 280 nm. | ≤0,02 |
| DNases, RNases, Protease. | none detected |

| | | | |
|---|---|---|---|
| **3170.1** | 100 g | plastic | 25,30 € |
| **3170.2** | 500 g | plastic | 77,30 € |
| Original pack 6 x 500 g | | | 73,44/500 g |

For further information, please see page 1330

### TRIS

**PUFFERAN® ≥99,9 %, ultra quality**

For all standard applications.
Suitable for pharmaceutical research.

**Guarantee analysis:**

| | |
|---|---|
| Assay (dry substance). | ≥99,9 % |
| In $H_2O$ insoluble matter. | ≤0,005 % |
| pH value (5 % solution). | 10,0-11,5 |
| Melting point. | 168-172 °C |
| Water . | ≤0,5 % |
| Heavy metals (as Pb). | ≤0,0001 % |

| | | | |
|---|---|---|---|
| **5429.1** | 500 g | plastic | 44,00 € |
| Original pack 6 x 500 g | | | 41,80/500 g |
| **5429.3** | 1 kg | plastic | 81,20 € |
| Original pack 6 x 1 kg | | | 77,14/1 kg |
| **5429.5** | 2,5 kg | plastic | 175,80 € |
| **5429.2** | 5 kg | plastic | 332,20 € |
| **5429.4** | 10 kg | plastic | 643,95 € |

For further information, please see page 1269

### TRIS

**≥99 %, Ph.Eur., USP**

Pharmaceutical quality (Tromethamine)

**Guarantee analysis:**

| | |
|---|---|
| Appearance. | white crystals or white crystal powder |
| Assay (titr.). | 99,0-100,5 % |
| Identity. | complies |
| pH value (5 %, hydrous sol.). | 10,0-11,5 |
| Appearance of solution. | clear and colourless |
| Melting point. | 168-172 °C |
| Loss on drying (105 °C). | ≤0,5 % |
| Related substances. | ≤1,0 % |
| Sulphated ash. | ≤0,1 % |
| Chloride (Cl). | ≤0,01 % |
| Iron (Fe). | ≤0,001 % |
| Heavy metals (as Pb). | ≤0,001 % |
| Endotoxins. | ≤0,03 E.U./mg |

| | | | |
|---|---|---|---|
| **A411.1** | 500 g | plastic | 40,75 € |
| Original pack 6 x 500 g | | | 38,71/500 g |
| **A411.2** | 1 kg | plastic | 71,95 € |
| Original pack 6 x 1 kg | | | 68,35/1 kg |
| **A411.3** | 5 kg | plastic | 321,45 € |

For further information, please see page 1269

## TRIS

**PUFFERAN® ≥99,3 %, Buffer Grade**

For electrophoresis buffer and wash solutions.

**Guarantee analysis:**

Assay (dry substance). ..... ≥99,3 %
Water. ..... ≤0,5 %
pH value (5 % in $H_2O$). ..... 10,0-11,5
Melting point (dry substance). ..... 168-172 °C

| | | | |
|---|---|---|---|
| **AE15.1** | 500 g | plastic | 30,65 € |
| Original pack 6 x 500 g | | | 29,12/500 g |
| **AE15.2** | 1 kg | plastic | 54,75 € |
| Original pack 6 x 1 kg | | | 52,01/1 kg |
| **AE15.3** | 5 kg | plastic | 235,45 € |
| **AE15.4** | 10 kg | plastic | 411,20 € |
| **AE15.5** | 25 kg | plastic | 940,65 € |

For further information, please see page 1269

## TRIS

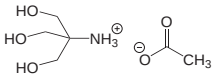
**≥99 %, cryst.**

**Type analysis:**

Appearance. ..... white cryst. powder
Assay. ..... ≥99,0 %
Water. ..... ≤1,0 %
pH value. ..... 10,0-11,5

| | | | |
|---|---|---|---|
| **2449.1** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **2449.2** | 1 kg | plastic | 45,70 € |
| Original pack 6 x 1 kg | | | 43,42/1 kg |
| **2449.3** | 5 kg | plastic | 204,25 € |
| **2449.4** | 10 kg | plastic | 385,95 € |
| **2449.5** | 25 kg | plastic | 848,20 € |

## TRIS acetate



## TRIS acetate

**PUFFERAN® ≥98 %**

Tris(hydroxymethyl)-aminomethane acetate
$C_6H_{15}NO_5$
M 181,19 g/mol
mp ~120 °C
[6850-28-8] • EC No. 229-939-6
WGK 1

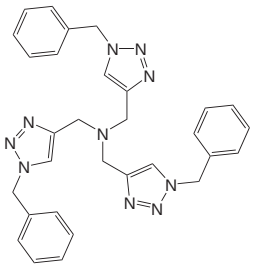
**Type analysis:**

Assay. ..... ≥98,0 %
pH value (1 % solution). ..... 6,0-7,0
Chloride (Cl). ..... ≤0,005 %
Sulphate ($SO_4$). ..... ≤0,005 %
Heavy metals (as Pb). ..... ≤0,0005 %
Absorption:
260 nm. ..... ≤0,1 %
280 nm. ..... ≤0,05 %

| | | | |
|---|---|---|---|
| **7125.1** | 25 g | plastic | 30,00 € |
| **7125.2** | 100 g | plastic | 104,85 € |

For further information, please see page 1269

## Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA)



TBTA
$C_{30}H_{30}N_{10}$
M 530,63 g/mol
mp 132-144 °C
Storage temp.: -20 °C
[510758-28-8]
WGK 3

## Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA)

**≥97 %, ROTI®click Grade**

Ligand for Click Chemistry.
Transport temp.: cooled

**Type analysis:**

Appearance. ..... white to tan powder
Assay (HPLC). ..... ≥97 %
Alkyne- and Azide-free. ..... complies

| | | | |
|---|---|---|---|
| **7814.1** | 5 mg | plastic | 33,25 € |
| **7814.2** | 10 mg | plastic | 47,85 € |
| **7814.3** | 50 mg | plastic | 82,70 € |
| **7814.4** | 100 mg | plastic | 138,15 € |

## Tris[(1-benzyl-1*H*-1,2,3-triazol-4-yl)methyl]amine (TBTA)

**≥97 %**

Ligand for Click Chemistry.
Transport temp.: room temp.

**Type analysis:**

Appearance. ..... off-white powder
Assay (HPLC). ..... ≥97 %
Identity. ..... complies

| | | | |
|---|---|---|---|
| **7380.1** | 50 mg | glass | 74,20 € |
| **7380.3** | 100 mg | glass | 133,85 € |
| **7380.2** | 500 mg | glass | 590,20 € |

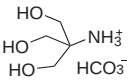
## Tris buffered saline

▶ Roti®fair TBS 7.6 see p. 2215
▶ Roti®fair TBS 8.0 see p. 2215

## Tris buffered saline with Tween

▶ Roti®fair TBST 7.6 see p. 2216

## TRIS carbonate



## TRIS carbonate

**PUFFERAN®**

Tris-(hydroxymethyl)-aminomethan-carbonat
$C_8H_{22}N_2O_6$
M 304,30 g/mol
Storage temp.: +4 °C
[68123-29-5]
WGK 1

**Warning** H315-H319-H335

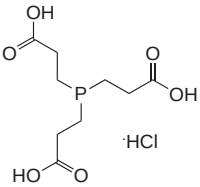
**Type analysis:**

Appearance. ..... white crystals
Solution (10 % in $H_2O$). ..... clear, colourless
pH value (1 % solution). ..... ~8,5

| | | | |
|---|---|---|---|
| **9158.1** | 50 g | plastic | 34,30 € |
| **9158.2** | 500 g | plastic | 113,45 € |
| Original pack 6 x 500 g | | | 107,78/500 g |

For further information, please see page 1269

## Tris-(2-carboxyethyl)-phosphine hydrochloride



## Tris-(2-carboxyethyl)-phosphine hydrochloride

**≥98 %, for biochemistry**

Reducing reagent.
TCEP · HCl
$C_9H_{15}O_6P \cdot HCl$
M 286,65 g/mol
Storage temp.: +4 °C
[51805-45-9]
UN No. 3261 • ADR 8 II • WGK 2

**Danger** H314

**Guarantee analysis:**

Assay (titr.). ..... ≥98,0 %
Solution (1 % in $H_2O$). ..... colourless, clear
Loss on drying (80 °C, Vakuum). ..... ≤ 1,0 %

| | | | |
|---|---|---|---|
| **HN95.1** | 1 g | glass | 51,50 € |
| **HN95.2** | 5 g | glass | 166,55 € |

For further information, please see page 1306

## Tris(carboxymethyl)-amine

▶ Nitrilotriacetic acid see p. 2098

## 2,4,6-Tris(dimethylamino-methyl)-phenol

▶ Glycidether Accelerator DMP-30 see p. 1961

## TRIS-EDTA-BUFFER

▶ Roti®-Stock 100x TE see p. 2233

## Tris-glycine buffer

▶ Roti®fair TG-Western see p. 2216

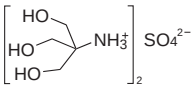
## Tris-glycine-SDS buffer

▶ Roti®fair SDS-PAGE see p. 2215
▶ Rotiphorese® 10x SDS-PAGE see p. 2228

## Tris-HCl

▶ TRIS hydrochloride see p. 2358

## TRIS hemisulphate



### TRIS hemisulphate

**PUFFERAN® ≥98 %**

Tris(hydroxymethyl)-aminomethane hemisulphate

$C_4H_{11}NO_3 \cdot 0{,}5\ H_2SO_4$

M 170,18 g/mol

[6992-38-7] • EC No. 230-259-7

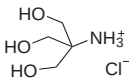
**Type analysis:**

Assay (titr.). ..... ≥98 %
Water (KF). ..... ≤1,0 %
pH value (1 % solution). ..... 4,5-5,1

| | | | |
|---|---|---|---|
| **6986.1** | 25 g | plastic | 20,35 € |
| **6986.2** | 100 g | plastic | 47,85 € |

For further information, please see page 1269

## TRIS hydrochloride



### TRIS hydrochloride

**PUFFERAN® ≥99 %, p.a.**

Ideal for all molecular biological applications.

Tris(hydroxymethyl)aminomethane hydrochloride, Tris-HCl

$C_4H_{11}NO_3 \cdot HCl$

M 157,60 g/mol

mp 150-153 °C

[1185-53-1] • EC No. 214-684-5

WGK 1

**Warning** H315-H319-H335

**Guarantee analysis:**

Appearance. ..... white powder
Assay (titr., dry substance). ..... ≥99,0 %
pH value ..... 3,5-5,0
Solubility (1 M in $H_2O$). ..... clear, colourless
Loss on drying. ..... ≤1,0 %
Iron (Fe). ..... ≤0,0001 %
Heavy metals (as Pb). ..... ≤0,0005 %
Melting point. ..... 150-153 °C
UV-Absorption (0,5 M in $H_2O$):
260 nm. ..... ≤0,02
280 nm. ..... ≤0,02

| | | | |
|---|---|---|---|
| **9090.1** | 50 g | plastic | 13,90 € |
| **9090.2** | 500 g | plastic | 87,65 € |
| Original pack 6 x 500 g | | | 83,27/500 g |
| **9090.3** | 1 kg | plastic | 129,55 € |
| Original pack 6 x 1 kg | | | 123,07/1 kg |
| **9090.5** | 2,5 kg | plastic | 274,15 € |
| **9090.4** | 5 kg | plastic | 525,70 € |

For further information, please see page 1269

## Tris-(2-hydroxyethyl)-amine

▶ Triethanolamine see p. 2352

## Tris-(2-hydroxyethyl)-ammonium chloride

▶ Triethanolamine hydrochloride see p. 2352

## Tris-(hydroxymethyl)-amino methane

▶ TRIS see p. 2356

## Tris-(hydroxymethyl)-aminomethane acetate

▶ TRIS acetate see p. 2357

## Tris-(hydroxymethyl)-aminomethane carbonate

▶ TRIS carbonate see p. 2357

## Tris-(hydroxymethyl)-aminomethane hemisulphate

▶ TRIS hemisulphate see p. 2358

## Tris-(hydroxymethyl)-aminomethane hydrochloride

▶ TRIS hydrochloride see p. 2358

## Tris-(hydroxymethyl)-aminomethane maleate

▶ TRIS maleate see p. 2358

## N-Tris(hydroxymethyl)methyl-2-aminoethanesulphonic acid

▶ TES see p. 2333

## 3-N-Tris-(hydroxymethyl)-methylamino-2-hydroxypropanesulphonic acid sodium salt

▶ TAPSO see p. 2329
▶ TAPSO sodium salt see p. 2329

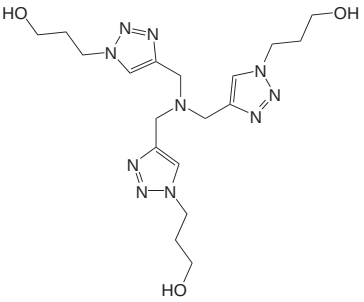
## N-Tris(hydroxymethyl)-methyl-3-amino-propane sulphonic acid

▶ TAPS see p. 2328

## N-Tris(hydroxymethyl)-methyl-glycine

▶ TRICINE see p. 2352

## Tris(3-hydroxypropyl-triazolylmethyl)amine (THPTA)



### Tris(3-hydroxypropyl-triazolylmethyl)amine (THPTA)

**≥95 %, ROTI®click Grade**

Ligand for Click Chemistry.

THPTA

$C_{18}H_{30}N_{10}O_3$

M 434,50 g/mol

Storage temp.: -20 °C •
Transport temp.: cooled

[760952-88-3]

WGK 3

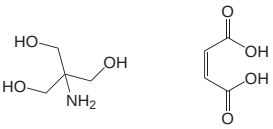
**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... white powder
Assay (HPLC). ..... ≥95 %
Solubility. ..... $H_2O$, DMSO/t-Butanol Solvent
For a 0,1 M solution: add 230 µl to 10 mg.

| | | | |
|---|---|---|---|
| **7822.1** | 5 mg | plastic | 33,25 € |
| **7822.2** | 10 mg | plastic | 47,85 € |
| **7822.3** | 50 mg | plastic | 82,70 € |
| **7822.4** | 100 mg | plastic | 138,15 € |

## TRIS maleate



### TRIS maleate

**PUFFERAN® ≥98 %**

Tris(hydroxymethyl)-aminomethane maleate

$C_8H_{15}NO_7$

M 237,21 g/mol

[72200-76-1] • EC No. 276-455-6

**Type analysis:**

Appearance. ..... white solid
Assay. ..... ≥98,0 %

| | | | |
|---|---|---|---|
| **6991.1** | 100 g | plastic | 96,25 € |

For further information, please see page 1269

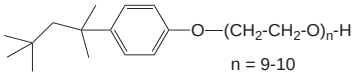
## Trisodium phosphate

▶ tri-Sodium phosphate dodecahydrate see p. 2283

## Tris powder (pouch)

▶ Roti®fair 1M Tris 7.4 see p. 2216
▶ Roti®fair 1M Tris 8.0 see p. 2216
▶ Roti®fair 1M Tris 8.3 see p. 2216

## Triton® X 100




Polyethylene glycol alkylphenyl ether
$C_{33}H_{60}O_{10}$
M 624 g/mol
bp 270 °C
flp 251 °C
WGK 1

**Danger** H302-H318

### Triton® X 100

**extra pure**
Non-ionic detergent.
For biochemistry and molecular biology.

**Type analysis:**
Appearance. ..... clear, colourless to ight yellow viscous liquid
Cloud point (1%, $H_2O$). ..... 63-69 °C

| | | | |
|---|---|---|---|
| **3051.3** | 250 ml | plastic | 17,10 € |
| **3051.4** | 500 ml | plastic | 22,05 € |
| **3051.2** | 1 l | plastic | 30,65 € |
| Original pack 6 x 1 l | | | 29,12/1 l |
| **3051.1** | 10 l | plastic | 192,45 € |

### Triton® X 100

**for scintillation**
Non-ionic detergent.

| | | | |
|---|---|---|---|
| **6683.1** | 1 l | plastic | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **6683.2** | 10 l | plastic | 246,20 € |

## Trochol

▶ Betulin(ol) see p. 1771

## Tropaeolin OO

▶ Orange IV sodium salt (C.I. 13080) see p. 2124

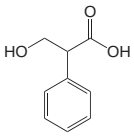
## Tropaeolin O sodium salt

▶ Resorcinol yellow (C.I. 14270) see p. 2196

## 3-α-Tropanol

▶ Tropine see p. 2359

## DL-Tropic acid



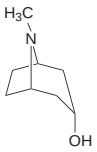

### DL-Tropic acid

**≥97 %, for biochemistry**
2-Phenylhydracrylic acid
$C_9H_{10}O_3$
M 166,17 g/mol
mp 116-118 °C
Solubility: 20 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[529-64-6] • EC No. 208-465-3
WGK 2

**Type analysis:**
Appearance. ..... white powder
Assay (acidim.). ..... ≥97 %

| | | | |
|---|---|---|---|
| **4052.1** | 25 g | plastic | 134,40 € |

## Tropine




### Tropine

**≥99 %, pure**
3α-Tropanol
$C_8H_{15}NO$
M 141,21 g/mol
D 1,04 • bp 232-234 °C
mp 49-52 °C
Solubility: 100 g/l ($H_2O$, 20 °C)
[120-29-6] • EC No. 204-384-2
WGK 3

**Warning** H302+H332

**Type analysis:**
Appearance. ..... white to off-white, cryst. powder
Assay (GC). ..... ≥99,0 %
Identity. ..... complies

| | | | |
|---|---|---|---|
| **4049.1** | 10 g | glass | 42,90 € |

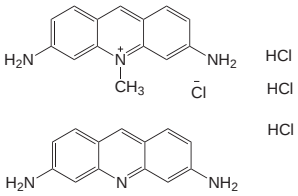
## Tropine mandelate hydrobromide

▶ DL-Homatropine hydrobromide see p. 1982

## H-DL-Trp-OH

▶ DL-Tryptophan see p. 2361

## Trypaflavine




### Trypaflavine

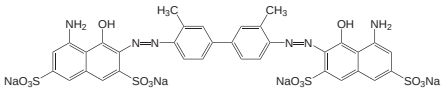
**>99 %, for biochemistry**
Acriflavinium chloride, Acriflavinium hydrochloride, Neutral acriflavine
[8063-24-9]
UN No. 3077 • ADR 9 III • WGK 2

**Danger** H302-H318-H410

**Type analysis:**
Appearance. ..... red-brown, cryst. powder
Assay (dry substance). ..... ≥99,0 %
Sulphated ash. ..... ≤1,0 %
Loss on drying. ..... ≤6,5 %

| | | | |
|---|---|---|---|
| **9621.1** | 10 g | glass | 24,20 € |
| **9621.2** | 50 g | glass | 71,50 € |

## Trypan blue (C.I. 23850)




### Trypan blue (C.I. 23850)

**for microscopy and cell staining**
For vital and histological staining.
Benzamine blue, Tolidin-diazo-bis-8-amino-1-naphthol-3,6-disulphonic acid tetrasodium salt
$C_{34}H_{24}N_6Na_4O_{14}S_4$
M 960,82 g/mol
mp >300 °C (dec.)
Solubility: 10 g/l ($H_2O$, 25 °C)
[72-57-1] • EC No. 200-786-7
WGK 3

**Danger** H350

**Type analysis:**
Dye content. ..... ≥80 %
Loss on drying. ..... ≤10 %
Absorption max. (50:50 $H_2O$:ethanol). ..... 590-610 nm

| | | | |
|---|---|---|---|
| **CN76.1** | 10 g | glass | 23,15 € |
| **CN76.2** | 25 g | glass | 41,85 € |
| **CN76.3** | 50 g | glass | 75,15 € |

For further information, please see page 1468

## Trypsin

M ~24,000 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[9002-07-7] • EC No. 232-650-8
WGK 1
**Danger** H334-H335-H315-H319

### Trypsin

**5000 USP-U/mg, free from salt**
Isolated from porcine pancreas, lyophilised.

**Type analysis:**
Activity. ..... ~5000 USP-U/mg

| | | | |
|---|---|---|---|
| **2193.1** | 100 mg | glass | 28,95 € |
| **2193.2** | 500 mg | glass | 89,15 € |

For further information, please see page 1334

### Trypsin

**≥2500 USP-U/mg, cryst.**
Isolated from porcine pancreas, lyophilised.

**Type analysis:**
Appearance. ..... beige to light brown hygroscopic powder
Activity. ..... ≥2500 USP-U/mg Trypsin
Ash content. ..... ≤3,0 %
Loss on drying (60 °C). ..... <5 %

| | | | |
|---|---|---|---|
| **5455.1** | 100 mg | glass | 24,65 € |
| **5455.2** | 1 g | glass | 103,10 € |

For further information, please see page 1334

## Trypsin inhibitor

[9035-81-8] • EC No. 232-906-9

### Trypsin inhibitor

**≥10000 BAEE U/mg**
Made from soybeans. High-activity inhibitor of trypsin, chymotrypsin, and other proteolytic enzymes.
Storage temp.: +4 °C

**Type analysis:**
Colour. ..... beige to light yellow
Dry extract. ..... >930 mg/g
Proteins. ..... >740 mg/g
pH value (1 % solution). ..... 7,0 ±0,8
Activity. ..... ≥10000 BAEE U/mg

| | | | |
|---|---|---|---|
| **2949.1** | 25 mg | plastic | 30,65 € |
| **2949.2** | 100 mg | plastic | 77,95 € |
| **2949.3** | 250 mg | plastic | 160,20 € |
| **2949.4** | 500 mg | plastic | 274,15 € |
| **2949.5** | 1 g | plastic | 461,20 € |

For further information, please see page 1334

### Trypsin inhibitor

**≥7000 BAEE U/mg, salt free**
Made from soybeans. Inhibition of trypsin, chymotrypsin, plasmin, kallikrein, thrombin and other proteolytic enzymes; free from salt.
Storage temp.: -20 °C •
Transport temp.: room temp.

**Type analysis:**
Appearance. ..... white to beige powder
Activity. ..... ≥7000 BAEE U/mg

| | | | |
|---|---|---|---|
| **5279.1** | 100 mg | glass | 18,85 € |
| **5279.4** | 250 mg | glass | 36,45 € |
| **5279.5** | 500 mg | glass | 63,35 € |
| **5279.2** | 1 g | glass | 110,65 € |
| **5279.3** | 5 g | glass | 461,20 € |

For further information, please see page 1334

## Trypticase Soy Agar

▶ CASO Agar, granulated see p. 1816

## Tryptic Soy Broth

▶ CASO Broth see p. 1817

## Tryptone Bile Salts Agar

### Tryptone Bile Salts Agar

**DEV, EN ISO 9308-1:2000, for microbiology**
For detection and enumeration of *E. coli* in foods and water samples.
Application: Use 36,5 g for 1 l agar.
**TBA**
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**
Tryptone. ..... 20 g/l
Bile salts. ..... 1,5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,1

| | | | |
|---|---|---|---|
| **CP69.1** | 500 g | plastic | 118,80 € |
| Original pack 6 x 500 g | | | 112,86/500 g |

For further information, please see page 1400

## Tryptone/Peptone ex casein

Similar to NZamine
Solubility: 200 g/l
Storage temp.: +20 °C
[91079-40-2] • EC No. 293-428-4
WGK 1

### Tryptone/Peptone ex casein

**pancreatic digest, for microbiology**

**Type analysis:**
Total nitrogen. ..... ≥10 %
Amino nitrogen. ..... ≥3,9 %
Loss on drying. ..... ≤6 %
Ash. ..... ≤15 %
pH (2 % solution). ..... 6,5-7,5

| | | | |
|---|---|---|---|
| **8952.1** | 250 g | plastic | 51,10 € |
| **8952.3** | 500 g | plastic | 89,80 € |
| Original pack 6 x 500 g | | | 85,31/500 g |
| **8952.2** | 1 kg | plastic | 154,30 € |
| Original pack 6 x 1 kg | | | 146,59/1 kg |
| **8952.4** | 2,5 kg | plastic | 338,65 € |
| **8952.5** | 5 kg | plastic | 585,90 € |

For further information, please see page 1422

### Tryptone/Peptone ex casein, granulated

**granulated, pancreatic digest, for microbiology**

**Type analysis:**
Total nitrogen. ..... ≥10 %
Amino nitrogen. ..... ≥3,9 %
Loss on drying. ..... ≤6 %
Ash. ..... ≤15 %
pH (2 % solution). ..... 6,5-7,5
Granulation. ..... complies

| | | | |
|---|---|---|---|
| **6681.1** | 250 g | plastic | 64,40 € |
| **6681.2** | 500 g | plastic | 110,65 € |
| Original pack 6 x 500 g | | | 105,12/500 g |
| **6681.3** | 1 kg | plastic | 193,40 € |
| Original pack 6 x 1 kg | | | 183,73/1 kg |
| **6681.4** | 2,5 kg | plastic | 387,00 € |
| **6681.5** | 5 kg | plastic | 729,95 € |

For further information, please see page 1422

## Tryptone Soy Agar

### Tryptone Soy Agar

**DEV, EN ISO 9308-1:2000, for microbiology**
For the detection and enumeration of *E. coli* and other coliform bacteria in foods and water samples.
Application: Use 40 g for 1 l agar.
**TSA**, Trypticase-Soya-Agar
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**
Casein, tryptic digest. ..... 15 g/l
Soy peptone. ..... 5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,1

| | | | |
|---|---|---|---|
| **CP70.1** | 500 g | plastic | 80,55 € |
| Original pack 6 x 500 g | | | 76,52/500 g |

For further information, please see page 1400

## Tryptone Soy Agar Letheen

▶ CASO Agar with Lecithin/Polysorbate 80 see p. 1816

## D-Tryptophan

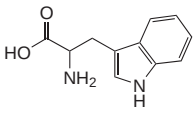
### D-Tryptophan

**≥98,5 %, for biochemistry**
2-Amino-3-(3-indolyl)propionic acid, H-D-Trp-OH
$C_{11}H_{12}N_2O_2$
M 204,23 g/mol
[153-94-6] • EC No. 205-819-9
WGK 1

**Type analysis:**
Appearance. ..... white to whitish powder
Assay. ..... 98,5-102,0 %
Ash. ..... ≤0,1 %
Specific rotation $[\alpha]_D^{20}$ (1 % in $H_2O$). ..... +30° to +33°
Loss on drying. ..... ≤0,2 %
Enantiomeric purity. ..... ≤0,3 % L-Enantiomer

| | | | |
|---|---|---|---|
| **7700.1** | 5 g | plastic | 47,85 € |
| **7700.2** | 25 g | plastic | 138,70 € |

## DL-Tryptophan



### DL-Tryptophan

**≥98 %, for biochemistry**

DL-2-Amino-3-(3-indolyl)propionic acid,
3-β-Indolylalanine, H-DL-Trp-OH

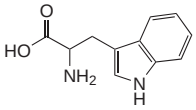
$C_{11}H_{12}N_2O_2$
M 204,23 g/mol
mp 289-290 °C
Storage temp.: +4 °C
[54-12-6] • EC No. 200-194-9
WGK 1

**Type analysis:**

Assay (titr.). ..... ≥98,0 %
Solution (1 % in 1 N HCl). ..... colourless to yellow
Loss on drying. ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **5236.1** | 10 g | plastic | 14,95 € |
| **5236.2** | 25 g | plastic | 28,95 € |
| **5236.3** | 100 g | plastic | 93,00 € |

## L-Tryptophan



L-2-Amino-3-(3-indolyl)propionic acid,
H-L-Trp-OH

$C_{11}H_{12}N_2O_2$
M 204,23 g/mol
mp ~290 °C
Solubility: ~10 g/l ($H_2O$, 20 °C)
[73-22-3] • EC No. 200-795-6
WGK 1

### L-Tryptophan

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. ..... ≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... -33,0° to -30,0°
Foreign amino acids. ..... complies
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,002 %

| | | | |
|---|---|---|---|
| **1739.1** | 25 g | plastic | 28,95 € |
| **1739.2** | 100 g | plastic | 85,50 € |
| **1739.3** | 500 g | plastic | 353,70 € |
| Original pack 6 x 500 g | | | 336,02/500 g |

### L-Tryptophan

**≥98,5 %, Ph.Eur., for biochemistry**

**Guarantee analysis:**

Appearance. ..... white to yellowish, cryst. powder
Assay (titr. dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Specific rotation $[\alpha]_D^{20}$ (dry substance). ..... -33,0° to -30,0°
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,03 %
Ammonium ($NH_4$). ..... ≤0,02 %
Iron (Fe). ..... ≤0,002 %
Impurity A, related substances. ..... complies

| | | | |
|---|---|---|---|
| **4858.1** | 10 g | glass | 14,55 € |
| **4858.2** | 100 g | plastic | 70,45 € |
| **4858.4** | 250 g | plastic | 147,85 € |
| **4858.3** | 1 kg | plastic | 525,70 € |
| Original pack 6 x 1 kg | | | 499,42/1 kg |

## Tryptophane Culture Broth

### Tryptophane Culture Broth

**DEV, EN ISO 9308-1:2000, for microbiology**

For the detection of *E. coli* in foods and water samples by indole production.

Application: Use 16 g for 1 l broth.
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**

Casein, tryptic digest. ..... 10 g/l
L-Tryptophan. ..... 1 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,5 ±0,1

| | | | |
|---|---|---|---|
| **CP71.1** | 500 g | plastic | 163,95 € |
| Original pack 6 x 500 g | | | 155,75/500 g |

For further information, please see page 1400

## Tryptose Soy Citrate Agar

▶ TSC Agar (Base) see p. 2361

## TSA

▶ Tryptone Soy Agar see p. 2360

## TSA Letheen

▶ CASO Agar with Lecithin/Polysorbate 80 see p. 1816

## TSB Agar

▶ CASO Agar, granulated see p. 1816

## TSB Broth

▶ CASO Broth see p. 1817

## TSC Agar (Base)

### TSC Agar (Base)

**DEV, EN ISO 7937:2004, for microbiology**

For detection and enumeration of *Clostridium perfringens* in foods and animal feed.

Application: Use 42 g for 1 l agar.
After autoclaving add 2 vials (4 ml) reconstituted Clostridium perfringens Supplement (Art. No. CL52.1).
Add 50 ml egg yolk emulsion (Art. No. 0402.1).
Tryptose Soy Citrate Agar, Perfringens Agar, Clostridium perfringens Agar
Storage temp.: +20 °C
WGK 1

⚠ **Warning** H319

**Guarantee analysis:**

Tryptose. ..... 15 g/l
Soy peptone. ..... 5 g/l
Yeast extract. ..... 5 g/l
Sodium bisulfite. ..... 1 g/l
Ammonium iron(III) citrate. ..... 1 g/l
Agar. ..... 15,0 g/l
pH value. ..... 7,6 ±0,2

| | | | |
|---|---|---|---|
| **CL51.1** | 500 g | plastic | 115,60 € |
| Original pack 6 x 500 g | | | 109,82/500 g |

For further information, please see page 1401

## TSIM

▶ N-(Trimethylsilyl)-imidazole (TSIM) see p. 2355

## TSP-D4

▶ 3-(Trimethylsilyl)propionic-2,2,3,3 acid sodium salt D4 (TSP-D4) see p. 2355

## TSPP

▶ tetra-Sodium diphosphate decahydrate see p. 2272

## TSTU

▶ O-(N-Succinimidyl)-N,N,N',N'-tetramethyl-uronium tetrafluoroborate (TSTU) see p. 2320

## TTC

▶ 2,3,5-Triphenyltetrazolium chloride see p. 2355

## TTC Chapman Agar (with sodium heptadecylsulphate) (Base)

### TTC Chapman Agar (with sodium heptadecylsulphate) (Base)

**DEV, EN ISO 9308-1:2000, for microbiology**

For isolation and enumeration of coliform bacteria from water samples.

Application: Use 56,2 g for 1 l agar. Contains Tergitol. After autoclaving add TTC solution (Art. No. CP72.1) to 0,0025 %.

**Chapman TTC Agar**, Chapman Lactose Agar, TTC Tergitol 7 Agar

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Lactose. ..... 20 g/l
Peptone. ..... 10 g/l
Yeast extract. ..... 6 g/l
Meat extract. ..... 5 g/l
Bromothymol blue. ..... 0,05 g/l
Sodium heptadecyl sulphate (Tergitol 7). ..... 0,1 g/l
Agar. ..... 15 g/l
pH value. ..... 7,2 ±0,1

| | | | |
|---|---|---|---|
| **CP65.1** | 500 g | plastic | 81,60 € |
| Original pack 6 x 500 g | | | 77,52/500 g |

For further information, please see page 1401

## TTC-Supplement

### TTC-Supplement

**lyophilised**

Media supplement for identification of coliform enterobacteria.

One box of 10 x 50 mg TTC-Supplement is sufficient for 20 l TTC Chapman Agar.

2,3,5-Triphenyl-tetrazolium chloride, Red tetrazolium

mp 243-245 °C (dec.)

Storage temp.: +4 °C

[298-96-4] • EC No. 206-071-6

WGK 3

**Warning** H315-H319-H335

**Guarantee analysis:**

Triphenyltetrazolium chloride (per vial). ..... 50 mg

| | | | |
|---|---|---|---|
| **CP72.1** | 10 vials | glass | 74,10 € |

For further information, please see page 1409

## TTX

▶ Tetrodotoxin see p. 2338

## TTZ

▶ 2,3,5-Triphenyltetrazolium chloride see p. 2355

## Tulipanin

▶ Delphinidin 3-rutinoside chloride see p. 1859

## Tungsten

### Tungsten

**≥99 %, powder**

W

M 183,84 g/mol

D 19,25 • bp 5930 °C

mp 3422 °C

[7440-33-7] • EC No. 231-143-9

UN No. 3089 • ADR 4.1 II

**Danger** H228-H315-H319

**Type analysis:**

Assay. ..... ≥99,0 %
Particle size:
325 mesh. ..... ≥90 %

| | | | |
|---|---|---|---|
| **9835.1** | 50 g | plastic | 22,05 € |
| **9835.2** | 100 g | plastic | 40,35 € |
| **9835.3** | 500 g | plastic | 166,65 € |
| Original pack 6 x 500 g | | | 158,32/500 g |

## Tungsten Standards

▶ Tungsten AAS Standard Solution see p. 2296
▶ Tungsten ICP Standard Solution see p. 2301
▶ Tungsten ICP Standard Solution see p. 2305

## Tungsten(VI) oxide

Tungsten trioxide, Tungstic anhydride, Tungstic oxide

$WO_3$

M 231,84 g/mol

D 7,27 • bp ~1700 °C

mp 1473 °C

Solubility: <0,02 g/l ($H_2O$, 20 °C)

[1314-35-8] • EC No. 215-231-4

### Tungsten(VI) oxide

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**

Assay (metals basis). ..... 99,995 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5399.1** | 50 g | plastic | 274,15 € |
| **5399.2** | 100 g | plastic | 461,20 € |

### Tungsten(VI) oxide

NEW

**≥99,5 %, p.a.**

**Type analysis:**

Assay. ..... ≥99,5 %
Loss on ignition (1,5 h, 750 °C). ..... ≤0,5
Chloride (Cl). ..... ≤0,001 %
Fluoride (F). ..... ≤0,001 %
Aluminium (Al). ..... ≤0,0005 %
Arsenic (As). ..... ≤0,0005 %
Boron (B). ..... ≤0,0005 %
Iron (Fe). ..... ≤0,0005 %
Carbon (C). ..... ≤0,005 %
Molybdenum (Mo). ..... ≤0,001 %
Sodium (Na). ..... ≤0,0005 %
Phosphorus (P). ..... ≤0,001 %
Sulphur (S). ..... ≤0,001 %
Silicon (Si). ..... ≤0,005 %
Vanadium (V). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **0760.1** | 50 g | plastic | 30,00 € |
| **0760.2** | 100 g | plastic | 42,90 € |
| **0760.3** | 500 g | plastic | 170,95 € |
| Original pack 6 x 500 g | | | 162,40/500 g |

## Tungsten trioxide

▶ Tungsten(VI) oxide see p. 2362

## Tungstic acid

### Tungstic acid

NEW

**≥99 %, p.a.**

Orthotungstic acid

$H_2WO_4$

M 249,85 g/mol

D 5,5

mp 100 °C (dec.)

Solubility: insoluble

[7783-03-1] • EC No. 231-975-2

WGK 1

**Type analysis:**

Assay (based on $WO_3$). ..... ≥99,0 %
Assay ($WO_3$). ..... ≥92,0 %
Loss on ignition (2 h, 750 °C). ..... ≤8,0 %
Aluminium (Al). ..... ≤0,001 %
Arsenic (As). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %
Copper (Cu). ..... ≤0,0005 %
Molybdenum (Mo). ..... ≤0,005 %
Sodium (Na). ..... ≤0,005 %
Silicon (Si). ..... ≤0,005 %
Titanium (Ti). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **0747.1** | 25 g | plastic | 26,80 € |
| **0747.2** | 100 g | plastic | 42,90 € |
| **0747.3** | 500 g | plastic | 149,45 € |
| Original pack 6 x 500 g | | | 141,98/500 g |

## Tungstic acid sodium salt dihydrate

▶ Sodium tungstate dihydrate see p. 2287

## Tungstic anhydride

▶ Tungsten(VI) oxide see p. 2362

## Tungstic oxide

▶ Tungsten(VI) oxide see p. 2362

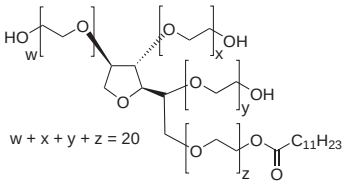
## Tungstophosphoric acid

▶ Phosphotungstic acid hydrate see p. 2152

## Turbidity Standard

▶ McFarland BSS 0,5 see p. 2060
▶ McFarland PMS 0,5 see p. 2060

## Tween® 20




### Tween® 20

**Ph.Eur.**

Non-ionic detergent.

Polyoxyethylene-20-sorbitan monolaurate, Polysorbate 20

D ~1,1 • bp >100 °C • flp >149 °C

[9005-64-5]

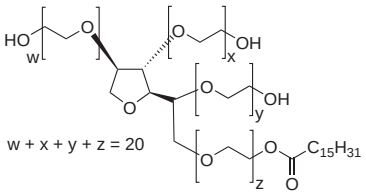
WGK 1

**Guarantee analysis:**

Appearance. ..... yellow clear to light turbid liquid
Identity ..... complies
Hydroxyl number (mg KOH/g) ..... 96-108
Acid value (mg KOH/g) ..... ≤2
Peroxide value ..... ≤5
Saponification value (mg KOH/g) ..... 40-50
Water ..... ≤3 %
Sulphated ash ..... ≤0,2 %
Heavy metals ..... ≤0,001 %
Volatile organic impurities ..... complies
1,4-Dioxane ..... ≤0,001 %
Free ethylene oxide ..... ≤0,0001 %
Fatty acid compound ..... complies

| | | | |
|---|---|---|---|
| **9127.1** | 250 g | plastic | 20,35 € |
| **9127.2** | 1 kg | plastic | 51,50 € |
| Original pack 6 x 1 kg | | | 48,93/1 kg |
| **9127.3** | 2,5 kg | plastic | 89,15 € |

## Tween® 40




### Tween® 40

**Ph.Eur.**

Non-ionic detergent.

Polyoxyethylene-40-sorbitan monopalmitate, Polysorbate 40

D 1,08 • bp >100 °C

[9005-66-7]

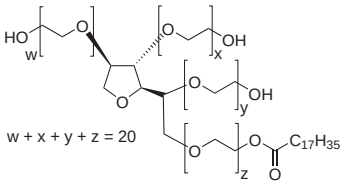
WGK 1

**Guarantee analysis:**

Appearance. ..... yellowish to brownish-yellow, oily, viscous liquid
Identity. ..... complies
Hydroxyl number (mg KOH/g). ..... 89-105
Acid value (mg KOH/g). ..... ≤2,0
Peroxide value. ..... ≤10
Saponification value (mg KOH/g). ..... 41-52
Water . ..... ≤3,0 %
Sulphated ash. ..... ≤0,25 %
Heavy metals. ..... ≤0,001 %
Volatile organic impurities. ..... complies
1,4-Dioxane. ..... ≤0,001 %
Free ethylene oxide. ..... ≤0,0001 %
Fatty acid compound. ..... complies

| | | | |
|---|---|---|---|
| **8240.1** | 250 g | plastic | 21,40 € |
| **8240.2** | 500 g | plastic | 37,55 € |
| Original pack 6 x 500 g | | | 35,67/500 g |
| **8240.3** | 1 kg | plastic | 56,90 € |
| Original pack 6 x 1 kg | | | 54,06/1 kg |

## Tween® 60




### Tween® 60

**Ph.Eur.**

Non-ionic detergent.

Polyoxyethylene-60-sorbitan monostearate, Polysorbate 60

D 1,1 • bp >100 °C • flp >149 °C

[9005-67-8]

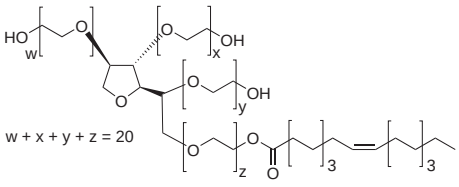
WGK 1

**Guarantee analysis:**

Appearance..... yellowish-brown gelatinous substance
Identity..... complies
Hydroxyl number (mg KOH/g). ..... 81-96
Acid value (mg KOH/g)..... ≤2,0
Peroxide value..... ≤10
Saponification value (mg KOH/g). ..... 45-55
Water ..... ≤3,0 %
Sulphated ash. ..... ≤0,25 %
Heavy metals..... ≤0,001 %
Volatile organic impurities..... complies
1,4-Dioxane..... ≤0,001 %
Free ethylene oxide..... ≤0,0001 %
Fatty acid compound..... complies

| | | | |
|---|---|---|---|
| **9694.1** | 250 g | plastic | 21,40 € |
| **9694.2** | 500 g | plastic | 37,55 € |
| Original pack 6 x 500 g | | | 35,67/500 g |
| **9694.3** | 1 kg | plastic | 56,90 € |
| Original pack 6 x 1 kg | | | 54,06/1 kg |

## Tween® 80




Polyoxyethylene-80-sorbitan monooleate, Polysorbate 80

D ~1,08 • bp >100 °C • flp >149 °C

[9005-65-6]

WGK 1

### Tween® 80

**Ph.Eur.**

Non-ionic detergent.

**Guarantee analysis:**

Appearance..... yellow, viscous liquid
Identity..... complies
Hydroxyl number (mg KOH/g) ..... 65-80
Acid value (mg KOH/g)..... ≤2
Peroxide value..... ≤5
Saponification value (mg KOH/g) ..... 45-55
Water ..... ≤3,0 %
Total ash..... ≤0,25 %
Heavy metals..... ≤0,001 %
Volatile organic impurities..... complies
1,4-Dioxane..... ≤0,001 %
Free ethylene oxide..... ≤0,0001 %
Fatty acid compound..... complies

| | | | |
|---|---|---|---|
| **9139.1** | 250 g | plastic | 22,05 € |
| **9139.3** | 500 g | plastic | 37,55 € |
| Original pack 6 x 500 g | | | 35,67/500 g |
| **9139.2** | 1 kg | plastic | 61,85 € |
| Original pack 6 x 1 kg | | | 58,76/1 kg |

### Tween® 80

**extra pure**

For bacteriology.

**Type analysis:**

Appearance. ..... yellow, viscous liquid
Water. ..... ≤3,0 %
Heavy metals. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **4859.1** | 25 g | glass | 18,85 € |

## Tylose®

▶ Methylcellulose see p. 2073

## Tyramine

### Tyramine

**≥98 %, for biochemistry**

2-(4-Hydroxyphenyl)-ethylamine

$C_8H_{11}NO$

M 137,18 g/mol

mp 159-163 °C

[51-67-2] • EC No. 200-115-8

WGK 1

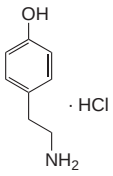
**Warning** H315-H319-H335

**Type analysis:**

Appearance. ..... beige powder
Assay (titr.). ..... ≥98,0 %
Melting point. ..... 159-163 °C
Water (KF). ..... ≤1,0 %

| | | | |
|---|---|---|---|
| **4862.2** | 1 g | glass | 14,95 € |
| **4862.1** | 5 g | glass | 23,15 € |
| **4862.3** | 25 g | glass | 57,95 € |

## Tyramine hydrochloride




### Tyramine hydrochloride

**≥98 %, for biochemistry**

4-(2-Aminoethyl)phenol hydrochloride, 4-Hydroxyphenylethylamine hydrochloride, Tyrosamine hydrochloride

$C_8H_{12}ClNO$

M 173,64 g/mol

mp 274-280 °C

[60-19-5] • EC No. 200-462-5

WGK 1

**Warning** H315-H319-H335

**Type analysis:**

Assay (titr.). ..... ≥98,0 %
Solution (5 % in $H_2O$). ..... colourless
Water (KF). ..... ≤1,0 %
Melting point. ..... 274-280 °C

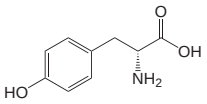
| | | | |
|---|---|---|---|
| **5234.1** | 5 g | plastic | 17,10 € |
| **5234.2** | 25 g | plastic | 52,60 € |
| **5234.3** | 50 g | plastic | 90,20 € |

T

## Tyrosamine hydrochloride

▶ Tyramine hydrochloride see p. 2363

## D-Tyrosine



### D-Tyrosine

**≥98 %, for biochemistry**

*(R)*-2-Amino-3-(4-hydroxyphenyl)-propionic acid, H-D-Tyr-OH
$C_9H_{11}NO_3$
M 181,2 g/mol
Storage temp.: +4 °C
[556-02-5] • EC No. 209-112-6
WGK 1

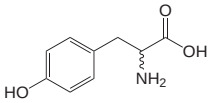
**Warning** H315-H319-H335

**Type analysis:**

Assay.....98,0-101,0 %
Specific rotation $[\alpha]_D^{20}$ (c=5 in 1 N HCl). ..... +10,5° to +12,3°
Loss on drying. .....≤0,2 %

| | | | |
|---|---|---|---|
| **7890.1** | 1 g | glass | 21,40 € |
| **7890.2** | 5 g | plastic | 64,40 € |
| **7890.3** | 25 g | plastic | 192,45 € |

## DL-Tyrosine



### DL-Tyrosine

**≥98,5 %, for biochemistry**

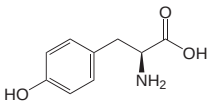
4-Hydroxyphenylalanine
$C_9H_{11}NO_3$
M 181,19 g/mol
mp >300 °C
Storage temp.: +4 °C
[556-03-6] • EC No. 209-113-1
WGK 1

**Type analysis:**

Appearance. .....white to off-white powder
Assay.....≥98,5 %
Identity (IR). .....complies
Loss on drying. .....≤0,5 %

| | | | |
|---|---|---|---|
| **8608.1** | 10 g | plastic | 24,20 € |
| **8608.2** | 50 g | plastic | 70,45 € |
| **8608.3** | 250 g | plastic | 267,70 € |

## L-Tyrosine



*(S)*-2-Amino-3-(4-hydroxyphenyl)-propionic acid, H-L-Tyr-OH
$C_9H_{11}NO_3$
M 181,19 g/mol
D 1,46
mp 297-298 °C (dec.)
Solubility: ~0,4 g/l ($H_2O$, 20 °C)
[60-18-4] • EC No. 200-460-4

### L-Tyrosine

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins. .....≤6,0 E.U./g
Assay. ..... ≥99 %
Loss on drying. ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$. ..... -12,3° to -11,0°
Foreign amino acids. ..... complies
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,03 %
Heavy metals (as Pb). ..... ≤0,001 %
Iron (Fe)..... ≤0,001 %

| | | | |
|---|---|---|---|
| **1741.1** | 25 g | plastic | 23,15 € |
| **1741.2** | 100 g | plastic | 61,20 € |
| **1741.3** | 500 g | plastic | 241,90 € |
| Original pack 6 x 500 g | | | 229,81/500 g |

### L-Tyrosine

**≥99 %, Ph.Eur., for biochemistry**

**Guarantee analysis:**

Appearance.....white to off-white, cryst. powder
Assay (dry substance)..... 99,0-101,0 %
Identity..... complies
Specific rotation $[\alpha]_D^{20}$. ..... -12,3° to -11,0°
Ammonium ($NH_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %
Sulphate ($SO_4$). ..... ≤0,03 %
Iron (Fe)..... ≤0,001 %
Heavy metals (as Pb). ..... ≤0,001 %
Foreign amino acids. ..... complies
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **T207.1** | 25 g | plastic | 15,60 € |
| **T207.2** | 100 g | plastic | 38,60 € |
| **T207.3** | 500 g | plastic | 153,20 € |
| Original pack 6 x 500 g | | | 145,54/500 g |

## UBA

▶ Universal Beer Agar (Base) see p. 2365

## Ubiquinone 50

▶ Coenzyme Q 10 see p. 1839

## Ultrasonic cleaner EC 10

### Ultrasonic cleaner EC 10

**pH ~12,3**

Alkalic cleaning concentrate.
D 1,045 • bp >100 °C
flp 52 °C
UN No. 1824 • ADR 8 III • WGK 1

**Danger** H290-H315-H318

| | | | |
|---|---|---|---|
| **CC48.1** | 1 l | plastic | 16,15 € |

For further information, please see page 1102

## Ultrasonic cleaner EC 60

### Ultrasonic cleaner EC 60

**pH <1**

Acidic instruments cleaner for the laboratory and workshop.
D 1,45 • bp >100 °C
UN No. 1805 • ADR 8 III • WGK 1

**Danger** H290-H314

| | | | |
|---|---|---|---|
| **CC44.1** | 1 l | plastic | 23,65 € |

For further information, please see page 1102

## Ultrasonic cleaner Elma clean 65

### Ultrasonic cleaner Elma clean 65

**pH ~7**

Gentle neutral cleansers with corrosion inhibitor.
D 1,04 • bp >100 °C
flp 59 °C
WGK 2

**Danger** H318

| | | | |
|---|---|---|---|
| **CC45.1** | 1 l | plastic | 14,55 € |

For further information, please see page 1102

## Ultrasonic cleaner Elma clean 70

### Ultrasonic cleaner Elma clean 70

**pH ~13**

Alkalic, universal cleaning concentrate.
D 1,132 • bp >100 °C
WGK 1

**Danger** H315-H318

| | | | |
|---|---|---|---|
| **CC46.1** | 1 l | plastic | 14,55 € |

For further information, please see page 1102

## Ultrasonic cleaner Elma clean 75

### Ultrasonic cleaner Elma clean 75

**pH ~10,5**

Ammoniacal cleaning concentrate for use in the laboratory, in workshops and for cleaning jewellery.

D 0,99
flp 36 °C
WGK 2

**Danger** H315-H318-H336-H412

| | | | |
|---|---|---|---|
| **CC47.1** | 1 l | plastic | 16,15 € |

For further information, please see page 1102

## Ultrasonol® 11 alkaline

### Ultrasonol® 11 alkaline

**Liquide concentrate, pH 12,9**

For cleaning non-corroding objects.

D 1,09
UN No. 1824 • ADR 8 III • WGK 1

**Danger** H290-H314-EUH031

**Type analysis:**

Dry residue. ..... 8,8-10,8 %

| | | | |
|---|---|---|---|
| **5354.1** | 1 l | plastic | 14,75 € |
| **5354.2** | 5 l | plastic | 55,50 € |

For further information, please see page 1102

## Ultrasonol® 7 - neutral

### Ultrasonol® 7 - neutral

**Liquide concentrate, pH 7**

For cleaning sensitive objects in Ultrasonic baths.

D 1,07
WGK 1

**Warning** H319

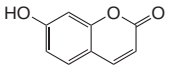
**Type analysis:**

Dry residue. ..... 12,5-13,5 %

| | | | |
|---|---|---|---|
| **5356.1** | 1 l | plastic | 15,60 € |
| **5356.2** | 5 l | plastic | 56,55 € |
| **5356.4** | 20 kg | plastic | 176,65 € |

For further information, please see page 1102

## Umbelliferone



### Umbelliferone

**≥96 %, for biochemistry**

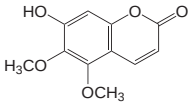
7-Hydroxycoumarin, Fluorescence indicator
$C_9H_6O_3$
M 162,14 g/mol
mp ~229 °C (dec.)
[93-35-6] • EC No. 202-240-3

**Type analysis:**

Appearance..... off-white powder
Assay (HPLC)..... ≥96 %
Sulphated ash. ..... <0,1 %
Loss on drying (3 h, 105 °C). ..... <0,3 %

| | | | |
|---|---|---|---|
| **5437.1** | 10 g | plastic | 36,45 € |
| **5437.2** | 100 g | plastic | 213,95 € |

## Umckalin



### Umckalin

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Pelargonium sidoides*.
7-Hydroxy-5,6-dimethoxycoumarin
$C_{11}H_{10}O_5$
M 222,19 g/mol
Storage temp.: +4 °C
[43053-62-9]
WGK 1

**Type analysis:**

Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **2827.1** | 5 mg | glass | 256,95 € |

## n-Undecane



### n-Undecane

**≥95 %, for synthesis**

$C_{11}H_{24}$
M 156,31 g/mol
bp 195 °C
mp -26 °C • flp 67 °C
[1120-21-4] • EC No. 214-300-6
UN No. 2330 • ADR 3 III • WGK 1

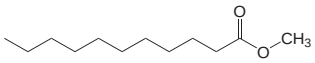
**Danger** H304-EUH066

**Type analysis:**

Appearance..... clear colourless liquid
Assay. ..... ≥95,0 %
Density (15 °C). ..... 0,741-0,747
Aromatic compounds. ..... ≤0,1 %
Refractive index $n_D^{20}$. ..... 1,414-1,420

| | | | |
|---|---|---|---|
| **8781.1** | 100 ml | glass | 18,20 € |
| **8781.2** | 500 ml | glass | 77,30 € |
| **8781.3** | 1 l | glass | 138,70 € |
| Original pack 6 x 1 l | | | 131,77/1 l |

## Undecanoic acid methyl ester



### Undecanoic acid methyl ester

**≥98 %**

$C_{12}H_{24}O_2$
M 200,32 g/mol
D 0,87 • bp 247-249 °C
mp -10 °C • flp 115 °C
Storage temp.: +4 °C
[1731-86-8] • EC No. 217-053-2

**Type analysis:**

Purity (GC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **4866.1** | 10 ml | glass | 64,40 € |

## Universal absorber Rotisorb®

### Universal absorber Rotisorb®

Ideal for absorption of inflammable, oily, and agressive liquids.

| | | |
|---|---|---|
| **1710.1** | 800 g (in square HDPE container) | 23,45 € |
| **1710.2** | 25 kg (in PE flat bag) | 85,90 € |

For further information, please see page 693

## Universal Beer Agar (Base)

### Universal Beer Agar (Base)

**for microbiology**

For cultivation of beer spoiling microorganisms.
Application: Use 55 g for 1 l agar. Add 250 ml beer.

**UBA**

Storage temp.: +20 °C
WGK 1

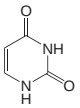
**Formulation:**

Peptonised milk..... 15 g/l
Yeast extract. ..... 10 g/l
Dextrose. ..... 10 g/l
Tomato juice. ..... 7 g/l
Potassium phosphate. ..... 0,5 g/l
Dipotassium phosphate. ..... 0,5 g/l
Sodium chloride (NaCl). ..... 0,01 g/l
Magnesium sulphate ($MgSO_4$). ..... 0,01 g/l
Manganese sulphate. ..... 0,01 g/l
Iron sulphate. ..... 0,01 g/l
Agar. ..... 12 g/l
pH value. ..... 6,3 ±0,2

| | | | |
|---|---|---|---|
| **8337.1** | 500 g | plastic | 107,40 € |
| Original pack 6 x 500 g | | | 102,03/500 g |

For further information, please see page 1401

## Uracil



### Uracil

**≥99 %, for biochemistry**

$C_4H_4N_2O_2$
M 112,09 g/mol
mp >300 °C
[66-22-8] • EC No. 200-621-9
WGK 1

**Type analysis:**

Appearance. ..... white to off-white powder
Assay. ..... ≥99,0 %
Chloride (Cl). ..... ≤0,01 %
Sulphate ($SO_4$). ..... ≤0,5 %
Heavy metals (as Pb). ..... ≤0,002 %
Loss on drying. ..... ≤0,3 %

| | | | |
|---|---|---|---|
| **7288.1** | 5 g | glass | 14,95 € |
| **7288.2** | 25 g | plastic | 26,35 € |
| **7288.3** | 100 g | plastic | 64,40 € |

## Uracil-6-carboxylic acid

▶ Orotic acid see p. 2125
▶ Orotic acid Monohydrate see p. 2125

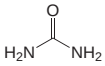
## Uracil-1-β-D-ribofuranoside

▶ Uridine see p. 2367

## Uranin

▶ Fluorescein disodium salt see p. 1931

## Urea



Carbamide
$CH_4N_2O$
M 60,06 g/mol
D 1,32
mp 132-135 °C
Solubility: 1080 g/l ($H_2O$, 20 °C)
[57-13-6] • EC No. 200-315-5
WGK 1

### Urea

**≥99,5 %, p.a., BioScience-Grade**
For molecular biology and biochemistry.

**Guarantee analysis:**

Appearance. ..... white, small crystals
Assay (TLC). ..... ≥99,5 %
Chloride (Cl). ..... ≤0,001 %
Sulphate ($SO_4$). ..... ≤0,001 %
Melting point (TLC). ..... 132-135 °C
Heavy metals (as Pb). ..... ≤0,001 %
UV-absorption (8 M solution):
260 nm. ..... ≤0,1
280 nm. ..... ≤0,1
DNases (exo-and endonucleases). ..... not detected
Ribonucleases activity. ..... not detected

| | | | |
|---|---|---|---|
| **2317.3** | 500 g | plastic | 30,00 € |
| Original pack 6 x 500 g | | | 28,50/500 g |
| **2317.1** | 1 kg | plastic | 52,60 € |
| Original pack 6 x 1 kg | | | 49,97/1 kg |
| **2317.4** | 2,5 kg | plastic | 115,60 € |
| **2317.2** | 5 kg | plastic | 203,20 € |

### Urea

**≥99,5 %, p.a.**
For molecular biology and biochemistry.

**Guarantee analysis:**

Assay (ex $N_2$). ..... ≥99,5 %
In $C_2H_5OH$ insoluble matter. ..... ≤0,01 %
Melting range. ..... 132-135 °C
Sulphated ash. ..... ≤0,01 %
Chloride (Cl). ..... ≤0,007 %
Sulphate ($SO_4$). ..... ≤0,001 %
Ammonium ($NH_4$). ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,0003 %
Arsenic (As). ..... ≤0,00005 %
Iron (Fe). ..... ≤0,0001 %
Copper (Cu). ..... ≤0,0001 %
Biuret. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **3941.3** | 500 g | plastic | 14,55 € |
| Original pack 6 x 500 g | | | 13,82/500 g |
| **3941.1** | 1 kg | plastic | 25,30 € |
| Original pack 6 x 1 kg | | | 24,04/1 kg |
| **3941.2** | 5 kg | plastic | 103,10 € |

### Urea

**≥99,5 %, Ph.Eur., cryst.**
For molecular biology and biochemistry.

**Guarantee analysis:**

Appearance. ..... fine, white crystals
Assay (dry substance). ..... ≥99,5 %
Identity. ..... complies
Appearance of solution. ..... complies
Melting range. ..... 132-135 °C
Alkaline reacting substances. ..... complies
Loss on drying. ..... ≤1,0 %
Sulphated ash. ..... ≤0,1 %
Ammonium ($NH_4$). ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,0003 %
Biuret. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **X999.1** | 500 g | plastic | 13,90 € |
| Original pack 6 x 500 g | | | 13,21/500 g |
| **X999.2** | 1 kg | plastic | 20,35 € |
| Original pack 6 x 1 kg | | | 19,33/1 kg |
| **X999.3** | 5 kg | plastic | 85,90 € |

### Urea

**≥99,5 %, cryst.**

**Type analysis:**

Appearance. ..... white crystals
Assay. ..... ≥99,5 %
In $H_2O$ insoluble matter. ..... ≤0,001 %
Water (KF). ..... ≤0,2 %
Heavy metals. ..... ≤0,0003 %
Iron (Fe). ..... ≤0,0001 %
Biuret. ..... ≤0,1 %

| | | | |
|---|---|---|---|
| **7638.1** | 1 kg | plastic | 19,25 € |
| Original pack 6 x 1 kg | | | 18,29/1 kg |
| **7638.2** | 5 kg | plastic | 73,00 € |
| **7638.5** | 25 kg | cardboard | 232,75 € |

## Urea Agar acc. to Christensen (Base)

### Urea Agar acc. to Christensen (Base)

**ISO 6579, ISO 19250, for microbiology**
For differentiation of enterobacteria on the basis of urease production.
Application: Use 29 g for 1 l medium. Add 15 g Agar.
Christensen Agar
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**

Urea. ..... 20 g/l
Sodium chloride (NaCl). ..... 5 g/l
Potassium phosphate. ..... 2 g/l
Gelatine peptone. ..... 1 g/l
Dextrose. ..... 1 g/l
Phenol red. ..... 0,012 g/l
pH value. ..... 6,8 ±0,2

| | | | |
|---|---|---|---|
| **8320.1** | 500 g | plastic | 120,95 € |
| Original pack 6 x 500 g | | | 114,90/500 g |

For further information, please see page 1401

## Urea for electrophoresis

▶ Rotiphorese® NF-Urea see p. 2227

## Urea-hydrogen peroxide

### Urea-hydrogen peroxide

**in tablet form**
Oxidation, bleach and fixing agent
$CH_4N_2O \cdot H_2O_2$
M 94,07 g/mol
mp 75-85 °C
[124-43-6] • EC No. 204-701-4
UN No. 1511 • ADR 5.1 (8) III • WGK 2
**Danger** H272-H315-H318-H335

| | | | |
|---|---|---|---|
| **7641.1** | 500 tablets (= 500 g) | plastic | 37,10 € |

## Urease

M ~480000 g/mol
Storage temp.: -20 °C •
Transport temp.: room temp.
[9002-13-5] • EC No. 232-656-0
WGK 1

### Urease

**≥220 Nessler U/mg material**
From jack beans, freeze-dried

**Type analysis:**

Appearance. ..... white material
Activity. ..... ≥220 Nessler U/mg material

| | | | |
|---|---|---|---|
| **6065.1** | 0,25 MU | plastic | 161,25 € |

For further information, please see page 1279

## Urease

**~1 U/mg, for biochemistry**
From jack beans *Canavalia ensiformis*.

**Type analysis:**
Appearance. .....slightly cream-coloured powder
Activity. ..... 0,8-1,2 U/mg

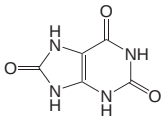
| | | | |
|---|---|---|---|
| **7537.1** | 5 g | plastic | 127,95 € |

For further information, please see page 1279

## 5-Ureidohydantoin

▶ Allantoin see p. 1718

## Uric acid



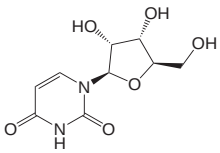
### Uric acid

**≥99 %, for biochemistry**
2,6,8-Trihydroxypurine
$C_5H_4N_4O_3$
M 168,11 g/mol
mp >300 °C
[69-93-2] • EC No. 200-720-7
WGK 2

**Type analysis:**
Assay (HPLC). .....≥99,0 %
Loss on drying (105 °C). .....≤0,5 %
Heavy metals (as Pb).....≤0,001 %

| | | | |
|---|---|---|---|
| **4999.1** | 25 g | glass | 34,30 € |
| **4999.2** | 50 g | glass | 54,75 € |
| **4999.3** | 100 g | glass | 83,75 € |
| **4999.4** | 250 g | glass | 160,20 € |

## Uridine



### Uridine

**≥99 %, for biochemistry**
Uracil-1-β-D-ribofuranoside
$C_9H_{12}N_2O_6$
M 244,20 g/mol
mp 165-168 °C
[58-96-8] • EC No. 200-407-5
WGK 1

**Type analysis:**
Assay.....≥99,0 %
Heavy metals. .....≤0,001 %

| | | | |
|---|---|---|---|
| **0714.1** | 5 g | plastic | 20,35 € |
| **0714.2** | 10 g | plastic | 28,95 € |
| **0714.3** | 25 g | plastic | 54,75 € |

## Uridine-5'-triphosphate

▶ UTP see p. 2367

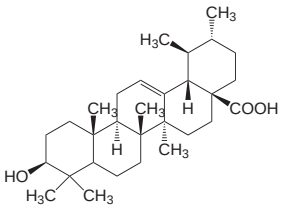
## Urinary Tract Infection chromogenic Agar

▶ UTI chromogenic Agar see p. 2367

## Urotropin

▶ Hexamethylene tetramine see p. 1977

## Ursolic acid



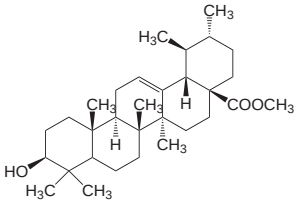
### Ursolic acid

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Arctostaphylos uva ursi.*
$C_{30}H_{48}O_3$
M 456,68 g/mol
mp 291 °C (dec.)
Storage temp.: +4 °C
[77-52-1] • EC No. 201-034-0

**Type analysis:**
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7429.1** | 10 mg | glass | 160,20 € |

## Ursolic acid methyl ester



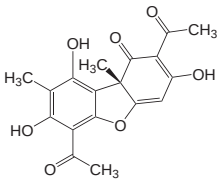
### Ursolic acid methyl ester

**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{31}H_{50}O_3$
M 470,74 g/mol
mp ~286 °C
Storage temp.: +4 °C
[32208-45-0] • EC No. 250-953-3

**Type analysis:**
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **7430.2** | 10 mg | glass | 192,45 € |

## (+)-Usnic acid



### (+)-Usnic acid

**ROTICHROM® ~CHR**
$C_{18}H_{16}O_7$
M 344,31 g/mol
[7562-61-0] • EC No. 231-456-0
WGK 1

**Warning** H302

| | | | |
|---|---|---|---|
| **4565.1** | 10 g | plastic | 99,45 € |

## UTI chromogenic Agar

### UTI chromogenic Agar

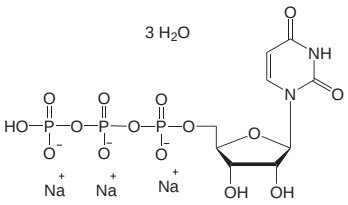
**for microbiology**
For detection and differentiation of microorganisms causing urinary tract infections.
Application: Use 47,5 g for 1 l agar.
Urinary Tract Infection chromogenic Agar
Storage temp.: +4 °C

**Formulation:**
Nutrients. ..... 13 g/l
Peptone. ..... 16 g/l
Tryptophane..... 2 g/l
Chromogene Mixture. ..... 0,5 g/l
Agar. ..... 16 g/l
pH value.....7,2 ±0,2

| | | | |
|---|---|---|---|
| **3089.1** | 100 g | plastic | 143,95 € |

For further information, please see page 1401

## UTP



### UTP

**≥90 %, lyophilised**
Uridine-5'-triphosphate tri-sodium salt
$C_9H_{12}N_2O_{15}P_3Na_3 \cdot 3\,H_2O$
M 604,12 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
[19817-92-6] • EC No. 243-347-5
WGK 1

| | | | |
|---|---|---|---|
| **K055.1** | 100 mg | plastic | 57,65 € |
| **K055.2** | 500 mg | plastic | 139,25 € |
| **K055.3** | 1 g | plastic | 230,60 € |

For further information, please see page 1262

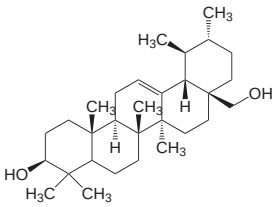
## UTP solution

### UTP solution
**≥99 %, 100 mM solution**
Uridine-5'-triphosphate
$C_9H_{12}N_2O_{15}P_3$
M 481,11 g/mol
Storage temp.: -20 °C •
Transport temp.: cooled
[19817-92-6] • EC No. 243-347-5
WGK 1

| | | | |
|---|---|---|---|
| **K046.1** | 25 µmol (250 µl) | plastic | 40,75 € |

For further information, please see page 1261

## Uvaol



### Uvaol
**ROTICHROM® HPLC**
Reference substance for HPLC.
$C_{30}H_{50}O_2$
M 442,73 g/mol
Storage temp.: +4 °C
[545-46-0] • EC No. 208-888-3

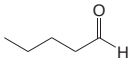
**Type analysis:**
Purity (HPLC)..... ≥98 %

| | | | |
|---|---|---|---|
| **7433.1** | 5 mg | glass | 166,65 € |

## Valeral

▶ n-Valeraldehyde see p. 2368

## n-Valeraldehyde

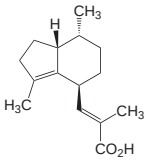


### n-Valeraldehyde
**≥96,5 %**
1-Pentanal, Valeral
$C_5H_{10}O_2$
M 86,13 g/mol
D ~0,81 • bp 102-104 °C
mp -91,5 °C • flp 7 °C
Solubility: 14 g/l ($H_2O$, 20 °C)
Storage temp.: +4 °C
[110-62-3] • EC No. 203-784-4
UN No. 2058 • ADR 3 II • WGK 1
**Danger** H225-H317-H319-H332-H335

**Type analysis:**
Appearance. ..... colourless to pale yellow liquid
Assay (GC). ..... ≥96,5 %

| | | | |
|---|---|---|---|
| **4873.1** | 100 ml | glass | 27,45 € |

## Valerenic acid



$C_{15}H_{22}O_2$
M 234,34 g/mol
mp ~140 °C
[3569-10-6]
WGK 3

### Valerenic acid
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF)..... ≤3,0 %
Assay (qNMR)..... ≥90,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE32.1** | 25 mg | glass | 869,70 € |

### Valerenic acid
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC)..... ≥90,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC32.1** | 50 mg | glass | 289,20 € |

### Valerenic acid
**with analytical records**
From *Valeriana officinalis*.
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC). ..... ≥99,0 %
Analytical records: HPLC, TLC, $^1$H- NMR, $^{13}$C- NMR, UV, IR, MS, elementary analysis, melting point.

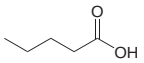
| | | | |
|---|---|---|---|
| **4712.2** | 50 mg | glass | 557,95 € |
| **4712.1** | 100 mg | glass | 1030,95 € |

### Valerenic acid
**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Valeriana officinalis*.
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC). ..... >99 %

| | | | |
|---|---|---|---|
| **4488.1** | 25 mg | glass | 375,20 € |
| **4488.2** | 50 mg | glass | 628,90 € |

## n-Valeric acid

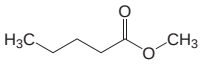


### n-Valeric acid
**≥98 %**
Pentanoic acid
$C_5H_{10}O_2$
M 102,14 g/mol
D ~0,94 • bp ~186 °C
mp -32 °C • flp 86 °C
[109-52-4] • EC No. 203-677-2
UN No. 3265 • ADR 8 III • WGK 1
**Danger** H314-H412

**Type analysis:**
Appearance. ..... colourless liquid
Assay (GC, area %). ..... ≥98 %
Density (d 20 °C/4 °C)..... 0,938-0,940

| | | | |
|---|---|---|---|
| **4874.1** | 250 ml | glass | 30,65 € |

## n-Valeric acid methyl ester

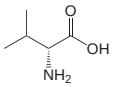


### n-Valeric acid methyl ester
**≥98 %**
Methyl-valerate
$C_6H_{12}O_2$
M 116,16 g/mol
D ~0,89 • bp 126-128 °C
mp -91 °C • flp 27 °C
Solubility: 5 g/l ($H_2O$, 25 °C)
[624-24-8] • EC No. 210-838-0
UN No. 3272 • ADR 3 II • WGK 2
**Danger** H225-H332

**Type analysis:**
Assay (GC). ..... ≥98,0 %
Density (20 °C)..... 0,8880-0,8920
Refractive index $n_D^{20}$..... 1,3960-1,3990

| | | | |
|---|---|---|---|
| **4876.1** | 100 ml | glass | 53,65 € |

## D-Valine



### D-Valine
**≥98,5 %, for biochemistry**
D-α-Aminoisovaleric acid, H-D-Val-OH
$C_5H_{11}NO_2$
M 117,2 g/mol
Storage temp.: +4 °C
[640-68-6] • EC No. 211-368-9
WGK 1

**Type analysis:**
Appearance. ..... white to off-white powder
Assay. ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (c= 2 in 6 N HCl)..... -29,0° to -26,0°
Loss on drying..... ≤0,5 %

| | | | |
|---|---|---|---|
| **7891.1** | 5 g | plastic | 24,65 € |
| **7891.2** | 25 g | plastic | 73,00 € |
| **7891.3** | 100 g | plastic | 231,15 € |

## DL-Valine

### DL-Valine

**≥99 %, for biochemistry**

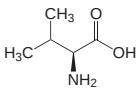
DL-α-Aminoisovaleric acid
$C_5H_{11}NO_2$
M 117,15 g/mol
mp 295-300 °C
[516-06-3] • EC No. 208-220-0
WGK 1

**Type analysis:**

Assay.....≥99,0 %
Heavy metals.....≤0,002 %

| | | | |
|---|---|---|---|
| **7540.1** | 50 g | plastic | 28,50 € |
| **7540.2** | 100 g | plastic | 49,35 € |
| **7540.3** | 250 g | plastic | 96,65 € |

## L-Valine



L-α-Aminoisovaleric acid, H-L-Val-OH
$C_5H_{11}NO_2$
M 117,15 g/mol
D 1,23
mp ~315 °C
Solubility: 85 g/l ($H_2O$, 20 °C)
[72-18-4] • EC No. 200-773-6
WGK 1

### L-Valine

**CELLPURE® ≥99 %**

For cell culture and biochemistry.

**Guarantee analysis:**

Endotoxins.....≤6,0 E.U./g
Assay.....≥99 %
Loss on drying.....≤0,2 %
Specific rotation $[\alpha]_D^{20}$.....+27,6° to +28,7°
Foreign amino acids.....complies
Ammonium ($NH_4$).....≤0,02 %
Chloride (Cl).....≤0,02 %
Sulphate ($SO_4$).....≤0,02 %
Heavy metals (as Pb).....≤0,001 %
Iron (Fe).....≤0,001 %

| | | | |
|---|---|---|---|
| **1742.1** | 25 g | plastic | 20,35 € |
| **1742.2** | 100 g | plastic | 40,35 € |
| **1742.3** | 500 g | plastic | 149,45 € |
| Original pack 6 x 500 g | | | 141,98/500 g |

### L-Valine

**≥98,5 %, USP, for biochemistry**

**Guarantee analysis:**

Appearance.....white cryst. powder
Assay (dry substance).....98,5-101,5 %
Identity.....complies
pH value (5 % in water).....5,5-7,0
Specific rotation $[\alpha]_D^{25}$ (8 % in HCl 6 N).....+26,6° to +28,8°
Ash content.....≤0,1 %
Loss on drying (105 °C, 3 h).....≤0,3 %
Foreign amino acids.....complies
Heavy metals (as Pb).....≤0,001 %
Chloride (Cl).....≤0,05 %
Sulphate ($SO_4$).....≤0,03 %
Ammonium ($NH_4$).....≤0,02 %
Iron (Fe).....≤0,003 %

| | | | |
|---|---|---|---|
| **4879.1** | 25 g | plastic | 16,70 € |
| **4879.3** | 100 g | plastic | 38,60 € |
| **4879.4** | 250 g | plastic | 73,00 € |
| **4879.5** | 500 g | plastic | 117,20 € |
| Original pack 6 x 500 g | | | 111,34/500 g |
| **4879.2** | 1 kg | plastic | 213,95 € |
| Original pack 6 x 1 kg | | | 203,25/1 kg |

## Vanadium Standards


- Vanadium AAS Standard Solution see p. 2296
- Vanadium ICP Standard Solution see p. 2301
- Vanadium ICP Standard Solution see p. 2305


## Vanadium(V) oxide

Vanadium pentoxide
$V_2O_5$
M 181,88 g/mol
D 3,35 • bp 1750 °C (dec.)
mp 690 °C
Solubility: 0,7 g/l ($H_2O$, 20 °C)
[1314-62-1] • EC No. 215-239-8
UN No. 2862 • ADR 6.1 III • WGK 3

**Danger**

H302+H332-H335-H341-H361d-H372-H411

### Vanadium(V) oxide

**ROTI®METIC 99,995 % (4N5)**

**Type analysis:**

Assay (metals basis).....99,995 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5370.1** | 5 g | plastic | 75,15 € |
| **5370.2** | 25 g | plastic | 299,95 € |

### Vanadium(V) oxide

NEW

**≥99,5 %, pure**

**Type analysis:**

Assay.....≥99,5 %
Iron (Fe).....≤0,05 %
Potassium (K).....≤0,05 %
Sodium (Na).....≤0,05 %

| | | | |
|---|---|---|---|
| **0308.1** | 10 g | plastic | 16,05 € |
| **0308.2** | 100 g | plastic | 32,15 € |
| **0308.3** | 500 g | plastic | 53,65 € |
| Original pack 6 x 500 g | | | 50,97/500 g |
| **0308.4** | 1 kg | plastic | 96,65 € |
| Original pack 6 x 1 kg | | | 91,82/1 kg |

## Vanadium pentoxide

▶ Vanadium(V) oxide see p. 2369

## Vancomycin hydrochloride

### Vancomycin hydrochloride

**CELLPURE® ≥900 U/mg**

Bacteriostatic antibiotic.
For cell culture and biochemistry.
Glycopeptide antibiotic
$C_{66}H_{75}Cl_2N_9O_{24} \cdot HCl$
M 1485,73 g/mol
Storage temp.: +4 °C
[1404-93-9]
WGK 1

**Warning** H317

**Type analysis:**

Assay.....≥93,0 %
Activity.....≥900 U/mg
pH value.....2,5-4,5
Water.....≤5,0 %
Endotoxins.....≤0,33 E.U./mg

| | | | |
|---|---|---|---|
| **0242.1** | 250 mg | glass | 33,25 € |
| **0242.2** | 500 mg | glass | 53,65 € |
| **0242.3** | 1 g | glass | 96,65 € |

For further information, please see page 1434

## Van Gieson's picrofuchsin

▶ Van Gieson's Solution see p. 2369

## Van Gieson's Solution

### Van Gieson's Solution

**for microscopy**

For visualising connective tissue during van Gieson trichrome staining and Elastica van Gieson staining.
Van Gieson's picrofuchsin
WGK 1
EUH001

| | | | |
|---|---|---|---|
| **3925.1** | 500 ml | glass | 25,30 € |
| **3925.2** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |

For further information, please see page 1457

## Van Gieson trichrome staining kit

### Van Gieson trichrome staining kit

**for microscopy**

Staining kit for visualising connective tissue, incl. instructions for use.

Storage temp.: +20 °C

UN No. 1219 • ADR 3 II

**Danger**

H225-H318-H336-EUH001

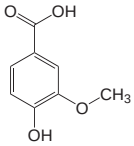
**Formulation:**

Hematoxylin solution A acc. to Weigert (Art. No. X906) ..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907) ..... 500 ml
Van Gieson's Solution (Art.-No. 3925) ..... 500 ml

| | | | |
|---|---|---|---|
| **9193.1** | 1 kit | glass | 94,10 € |

For further information, please see page 1457

## Vanillic acid



### Vanillic acid

**≥98 %**

4-Hydroxy-3-methoxybenzoic acid

$C_8H_8O_4$

M 168,14 g/mol

mp 208-212 °C

[121-34-6] • EC No. 204-466-8

WGK 1

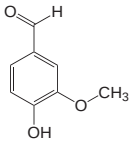
**Warning** H319

**Type analysis:**

Assay (acidim.) ..... ≥98 %
Melting range ..... 208-212 °C

| | | | |
|---|---|---|---|
| **3685.1** | 10 g | plastic | 37,55 € |

## Vanillin



4-Hydroxy-3-methoxybenzaldehyde

$C_8H_8O_3$

M 152,15 g/mol

D 1,06 • bp 285 °C

mp 81-83 °C • flp 153 °C

Solubility: 10 g/l ($H_2O$, 20 °C)

[121-33-5] • EC No. 204-465-2

WGK 1

**Warning** H302-H319

### Vanillin

**≥99 %, for biochemistry**

**Type analysis:**

Appearance ..... cryst. powder
Assay (HPLC) ..... ≥99 %
Arsenic (As) ..... ≤0,0003 %
Heavy metals (as Pb) ..... ≤0,001 %
Sulphated ash ..... ≤0,05 %
Loss on drying ..... ≤0,06 %

| | | | |
|---|---|---|---|
| **7887.1** | 100 g | plastic | 17,10 € |
| **7887.2** | 1 kg | plastic | 85,90 € |
| Original pack 6 x 1 kg | | | 81,61/1 kg |

### Vanillin

**ROTI®CALIPURE Melting point standard 81-83 °C**

**Type analysis:**

Meniscus formation ..... 81-83 °C
Complete liquefaction ..... 81-83 °C

| | | | |
|---|---|---|---|
| **9714.1** | 1 g | glass | 30,00 € |

### Vanillin

**ROTICHROM® GC**

Reference substance for GC.

Storage temp.: +4 °C

**Type analysis:**

Purity (GC) ..... ≥96 %

| | | | |
|---|---|---|---|
| **5108.1** | 1 g | plastic | 81,60 € |

## 6-Vanilloylcatalpol

▶ Picrosid II see p. 2153

## Vaseline

### Vaseline

**Ph.Eur.**

flp >150 °C

[8009-03-8] • EC No. 232-384-2

WGK 1

**Guarantee analysis:**

Appearance ..... white to off-white
Identity ..... complies
Solidification point ..... 50-55 °C
Viscosity (100 °C) ..... 7,5-10 $mm^2/s$
Aromatic polycyclic hydrocarbons ..... complies
Sulphated ash ..... ≤0,05 %
Consistency ..... 165-185 1/10 mm
Acid or alkaline react. substances ..... complies

| | | | |
|---|---|---|---|
| **5775.2** | 500 g | plastic | 17,75 € |
| Original pack 6 x 500 g | | | 16,86/500 g |
| **5775.1** | 1 kg | plastic | 24,65 € |
| Original pack 6 x 1 kg | | | 23,42/1 kg |
| **5775.4** | 10 kg | plastic | 122,05 € |

## Vaseline oil

### Vaseline oil

**techn., white**

D 0,86

mp -15 °C • flp >190 °C

WGK 1

H413

**Type analysis:**

Viscosity (40 °C) ..... 18-25 $mm^2/s$

| | | | |
|---|---|---|---|
| **9336.1** | 1 l | plastic | 23,15 € |
| Original pack 6 x 1 l | | | 21,99/1 l |
| **9336.2** | 2,5 l | plastic | 40,35 € |
| Original pack 4 x 2,5 l | | | 38,33/2,5 l |
| **9336.3** | 5 l | plastic | 64,40 € |
| Original pack 2 x 5 l | | | 61,18/5 l |

## Venice turpentine

### Venice turpentine

**natural**

From *Larix decidua.*

Terebinthina veneta.

D 1,0

flp 42 °C

[90046-19-8] • EC No. 304-455-9

UN No. 1272 • ADR 3 III • WGK 2

**Warning**

H226-H315-H317-H319-H335-H410

**Type analysis:**

Appearance ..... dark viscous, light brownish oil

| | | | |
|---|---|---|---|
| **4485.1** | 250 g | glass | 70,85 € |

## Veratric acid

▶ 3,4-Dimethoxybenzoic acid see p. 1879

## Veratric aldehyde

▶ 3,4-Dimethoxybenzaldehyde see p. 1879

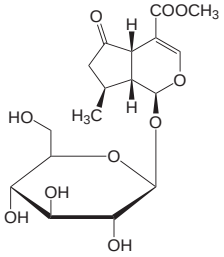
## Veratryl alcohol

▶ 3,4-Dimethoxybenzyl alcohol see p. 1879

## Verbascoside

▶ Acteoside see p. 1707

## Verbenalin



### Verbenalin

**ROTICHROM® ~CHR**
Verbenaloside, Cornin
$C_{17}H_{24}O_{10}$
M 388,37 g/mol
[548-37-8]

| | | | |
|---|---|---|---|
| **9450.2** | 10 mg | glass | 235,45 € |

## Verbenaloside

▶ Verbenalin see p. 2371

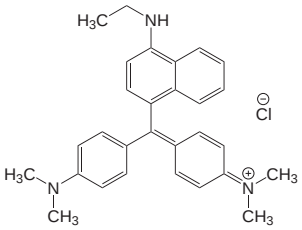
## Versene®/DPBS

▶ Roti®-CELL DPBS/EDTA see p. 2205

## Vesuvin R

▶ Bismarck brown R (C.I. 21010) see p. 1775

## Victoria blue R (C.I. 44040)



### Victoria blue R (C.I. 44040)

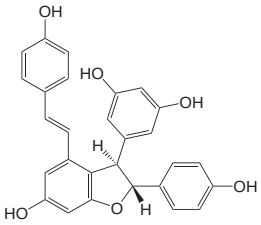
**extra pure**
Basic blue 11
$C_{29}H_{32}N_3Cl$
M 458,04 g/mol
[2185-86-6] • EC No. 218-572-7
WGK 1

**Warning** H302

**Type analysis:**
Appearance. ..... dark blue powder

| | | | |
|---|---|---|---|
| **7742.1** | 5 g | glass | 13,45 € |
| **7742.2** | 25 g | glass | 23,15 € |
| **7742.3** | 100 g | glass | 56,90 € |

## ε-Viniferin



### ε-Viniferin

**ROTICHROM® HPLC**
Reference substance for HPLC.
From *Vitis vinifera.*
trans-ε-Viniferin
$C_{28}H_{22}O_6$
M 454,48 g/mol
Storage temp.: +4 °C
[62218-08-0]
WGK 3

**Type analysis:**
Purity (HPLC). ..... ≥98 %

| | | | |
|---|---|---|---|
| **6697.1** | 20 mg | glass | 493,45 € |

## Vinyl benzene

▶ Styrene see p. 2319

## Violet Red Bile Agar with Dextrose and Lactose

### Violet Red Bile Agar with Dextrose and Lactose

**Ph.Eur., for microbiology**
For detection and enumeration of enterobacteria.
Application: Use 51,5 g for 1 l agar.
Agar Medium F (Ph.Eur. 6.0)
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Yeast extract. | 3 g/l |
| Pancreas hydrolysate made from gelatin. | 7 g/l |
| Cholate. | 1,5 g/l |
| Lactose monohydrate. | 10 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Glucose monohydrate. | 10 g/l |
| Neutral red. | 0,03 g/l |
| Crystal Violet. | 0,002 g/l |
| Agar. | 15 g/l |
| pH value. | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **AE45.1** | 500 g | plastic | 79,45 € |
| Original pack 6 x 500 g | | | 75,48/500 g |

For further information, please see page 1402

## Violet Red Bile Agar with Glucose

### Violet Red Bile Agar with Glucose

**ISO 21528, Ph.Eur., for microbiology**
For cultivation and enumeration of enterobacteria in water, foods and other materials.
Application: Use 41,5 g for 1 l agar.
Violet Red Bile Glucose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), VRBD Agar
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**

| | |
|---|---|
| Yeast extract. | 3 g/l |
| Pancreas hydrolysate made from gelatin. | 7 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Bile salts. | 1,5 g/l |
| Glucose monohydrate. | 10 g/l |
| Neutral red. | 0,03 g/l |
| Crystal Violet. | 0,002 g/l |
| Agar. | 15 g/l |
| pH value. | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **X939.1** | 500 g | plastic | 76,25 € |
| Original pack 6 x 500 g | | | 72,44/500 g |
| **X939.2** | 1 kg | plastic | 132,80 € |
| Original pack 6 x 1 kg | | | 126,16/1 kg |
| **X939.3** | 2,5 kg | plastic | 263,40 € |

For further information, please see page 1402

## Violet Red Bile Agar with Glucose, granulated

### Violet Red Bile Agar with Glucose, granulated

NEW

**granulated, Ph.Eur., for microbiology**
For cultivation and enumeration of enterobacteria in water, foods and other materials.
Application: Use 38,53 g for 1 l agar.
Violet Red Bile Glucose Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0), VRBD Agar
Storage temp.: +20 °C
WGK 3

**Guarantee analysis:**

| | |
|---|---|
| Yeast extract. | 3 g/l |
| Peptone. | 7 g/l |
| Sodium chloride (NaCl). | 5 g/l |
| Bile salts. | 1,5 g/l |
| Glucose monohydrate. | 10 g/l |
| Neutral red. | 0,03 g/l |
| Crystal Violet. | 0,002 g/l |
| Agar. | 12 g/l |
| pH value. | 7,4 ±0,2 |

| | | | |
|---|---|---|---|
| **1525.1** | 500 g | plastic | 106,45 € |
| Original pack 6 x 500 g | | | 101,13/500 g |

For further information, please see page 1405

## Violet Red Bile Agar with Lactose

### Violet Red Bile Agar with Lactose

**ISO 4832, for microbiology**

For detection and enumeration of coliforms in milk, foods and other materials.

Application: Use 41,5 g for 1 l agar.

VRB Agar

Storage temp.: +20 °C

WGK 1

**Guarantee analysis:**

Yeast extract..... 3 g/l
Gelatine peptone..... 7 g/l
Sodium chloride (NaCl)..... 5 g/l
Bile salts..... 1,5 g/l
Lactose..... 10 g/l
Neutral red..... 0,03 g/l
Crystal Violet..... 0,002 g/l
Agar..... 15 g/l
pH value..... 7,4 ±0,2

| | | | |
|---|---|---|---|
| **X940.1** | 500 g | plastic | 73,65 € |
| Original pack 6 x 500 g | | | 69,97/500 g |

For further information, please see page 1402

## β-Viscol

▶ Lupeol see p. 2043

## Vitamins

| Art. No. | Description | Page |
|---|---|---|
| 0979 | 4-Aminobenzoic acid | 1724 |
| 3525 | L(+)-Ascorbic acid | 1752 |
| 6288 | L(+)-Ascorbic acid | 1752 |
| NE00 | L(+)-Ascorbic acid | 1752 |
| NC00 | L(+)-Ascorbic acid | 1752 |
| 3149 | L(+)-Ascorbic acid sodium salt | 1753 |
| 7819 | L(+)-Ascorbic acid sodium salt | 1753 |
| 3822 | D(+)-Biotin | 1773 |
| 3812 | Calcium D(+)-pantothenate | 1807 |
| T912 | Folic acid | 1939 |
| 3815 | Nicotinic acid | 2094 |
| T914 | Pyridoxine hydrochloride | 2185 |
| 9607 | Riboflavine | 2198 |
| T911 | Thiamine hydrochloride | 2339 |
| 3806 | DL-α-Tocopherol | 2346 |
| NE16 | DL-α-Tocopherol | 2346 |
| NC16 | DL-α-Tocopherol | 2346 |
| NE18 | RRR-α-Tocopherol | 2346 |
| NC18 | RRR-α-Tocopherol | 2346 |
| 3805 | DL-α-Tocopherol acetate | 2346 |
| NE17 | DL-α-Tocopherol acetate | 2346 |
| NC17 | DL-α-Tocopherol acetate | 2346 |
| T915 | Vitamin $B_{12}$ | 2372 |
| 3804 | Vitamin $K_1$ | 2372 |

## Vitamin $B_1$ hydrochloride

▶ Thiamine hydrochloride see p. 2339

## Vitamin $B_2$

▶ Riboflavine see p. 2198

## Vitamin $B_3$

▶ Nicotinic acid see p. 2094

## Vitamin $B_5$

▶ Calcium D(+)-pantothenate see p. 1807

## Vitamin $B_5$ calcium salt

▶ Calcium D(+)-pantothenate see p. 1807

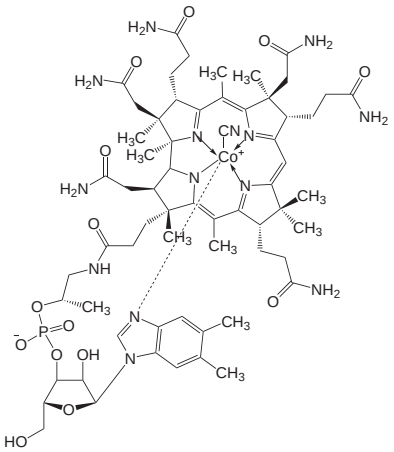
## Vitamin $B_6$ hydrochloride

▶ Pyridoxine hydrochloride see p. 2185

## Vitamin $B_{10}$

▶ 4-Aminobenzoic acid see p. 1724

## Vitamin $B_{12}$



### Vitamin $B_{12}$

**≥96 %, for biochemistry**

Cyanocobalamin

$C_{63}H_{88}CoN_{14}O_{14}P$

M 1355,4 g/mol

Solubility: 12 g/l ($H_2O$, 25 °C)

Storage temp.: +4 °C

[68-19-9] • EC No. 200-680-0

WGK 1

**Type analysis:**

Appearance..... dark-red cryst. powder
Assay (dry substance)..... 96,0-102,0 %
Related substances..... ≤5 %
Loss on drying..... ≤12,0 %

| | | | |
|---|---|---|---|
| **T915.1** | 500 mg | glass | 42,50 € |
| **T915.2** | 1 g | glass | 71,50 € |

## Vitamin C

▶ L(+)-Ascorbic acid see p. 1752

## Vitamin E

▶ DL-α-Tocopherol see p. 2346
▶ RRR-α-Tocopherol see p. 2346

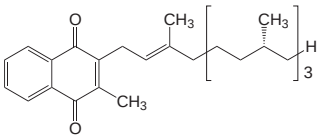
## Vitamin E acetate

▶ DL-α-Tocopherol acetate see p. 2346

## Vitamin H

▶ D(+)-Biotin see p. 1773

## Vitamin $K_1$



### Vitamin $K_1$

**≥97 %, for biochemistry**

Phytomenadione, Phylloquinone

$C_{31}H_{46}O_2$

M 450,68 g/mol

D 0,97

mp -20 °C • flp 110 °C

Storage temp.: +4 °C

[84-80-0] • EC No. 201-564-2

WGK 1

H413

**Type analysis:**

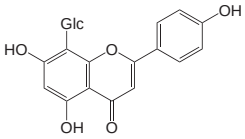
Appearance..... gold-yellow, viscous oil
Assay (HPLC)..... 97,0-103,0 %
Refractive index (20 °C)..... 1,523-1,526
Sulphated ash..... ≤0,1 %

| | | | |
|---|---|---|---|
| **3804.1** | 1 g | glass | 28,95 € |
| **3804.2** | 10 g | glass | 159,00 € |

## Vitexicarpin

▶ Casticin see p. 1817

## Vitexin



Orientoside, Apigenin-8-glucoside

$C_{21}H_{20}O_{10}$

M 432,36 g/mol

[3681-93-4] • EC No. 222-963-8

WGK 3

### Vitexin

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤3,0 %
Water (KF)..... ≤5,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE56.1** | 10 mg | glass | 693,40 € |

### Vitexin

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC)..... ≥85,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC56.1** | 25 mg | glass | 600,95 € |

## Vitexin
**ROTICHROM® HPLC**
Reference substance for HPLC.
Storage temp.: +4 °C

**Type analysis:**
Purity (HPLC)..... ≥99 %

| | | | |
|---|---|---|---|
| **6418.1** | 5 mg | glass | 206,95 € |

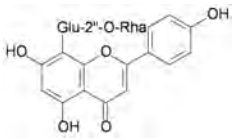
## Vitexin
**ROTICHROM® TLC**
Reference substance for thin layer chromatography.
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **5579.1** | 10 mg | glass | 39,70 € |

## Vitexin
**ROTICHROM® ~CHR**
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **4173.1** | 10 mg | glass | 37,55 € |

## Vitexin-2''-O-rhamnoside




$C_{27}H_{30}O_{14}$
M 578,53 g/mol
[64820-99-1]
WGK 3

## Vitexin-2''-O-rhamnoside
**ROTI®STAR Primary Standard**

**Type analysis:**
Assay (HPLC)..... ≥95,0 %
Residual solvents (GC)..... ≤5,0 %
Water (KF)..... ≤8,0 %
Assay (qNMR)..... ≥85,0 %
Proof of identity by $^{1}$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE34.1** | 10 mg | glass | 729,95 € |

## Vitexin-2''-O-rhamnoside
**ROTICHROM® Working Standard**

**Type analysis:**
Assay (HPLC)..... ≥80,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC34.1** | 25 mg | glass | 418,20 € |

## Vitexin-2''-O-rhamnoside
**ROTICHROM® TLC**
Reference substance for thin layer chromatography.
Storage temp.: +4 °C

| | | | |
|---|---|---|---|
| **5819.1** | 10 mg | glass | 84,85 € |

## VLSI products


| Art. No. | Description | Page |
|---|---|---|
| 9780 | Acetone | 1697 |
| 0051 | 2-Butanone | 1795 |
| 9787 | Hydrochloric acid 37 % | 1985 |
| 9790 | Hydrogen peroxide 30 % | 1991 |
| 0061 | Isobutyl methylketone | 2013 |
| 0036 | L(-)-Lactic acid ethyl ester | 2026 |
| 9785 | Methanol | 2069 |
| 9786 | N-Methyl-2-pyrrolidone (NMP) | 2077 |
| 9788 | ortho-Phosphoric acid 85 % | 2150 |
| 9781 | 2-Propanol | 2180 |
| 9789 | Sulphuric acid 96 % | 2324 |


## Volumetric Karl Fischer solutions


- Karl Fischer methanol see p. 2021
- Karl Fischer Roti®hydroquant C2 see p. 2020
- Karl Fischer Roti®hydroquant C5 K see p. 2020
- Karl Fischer Roti®hydroquant S see p. 2021
- Karl Fischer Roti®hydroquant T see p. 2021


## Volumetric solutions in ampoules


- Chapter Anorganic and Analytical Reagents see p. 1623


## Volumetric solutions, ready to use


- Chapter Anorganic and Analytical Reagents see p. 1621


## Volumetric Solutions in Ampoules


| Art. No. | Description | Page |
|---|---|---|
| CN50 | Ammonium thiocyanate solution (0,1 N) | 1740 |
| CN52 | EDTA disodium salt solution (0,01 N) | 1900 |
| CN51 | EDTA disodium salt solution (0,1 N) | 1900 |
| CN61 | Hydrochloric acid (0,1 N) | 1988 |
| CN62 | Hydrochloric acid (0,5 N) | 1988 |
| CN63 | Hydrochloric acid (1 N) | 1988 |
| CN60 | Nitric acid (1 N) | 2098 |
| CN59 | Oxalic acid solution (0,1 N) | 2127 |
| CN53 | Potassium hydroxide solution (0,1 N) | 2170 |
| CN66 | Silver nitrate solution (0,1 N) | 2262 |
| CN67 | Sodium chloride solution (0,1 N) | 2270 |
| CN56 | Sodium hydroxide solution (0,1 N) | 2277 |
| CN57 | Sodium hydroxide solution (0,5 N) | 2278 |
| CN58 | Sodium hydroxide solution (1 N) | 2279 |
| CN55 | Sodium thiosulphate solution (0,1 N) | 2287 |
| CN64 | Sulphuric acid (0,1 N) | 2326 |
| CN65 | Sulphuric acid (1 N) | 2326 |


## Volumetric Solutions ready to use


| Art. No. | Description | Page |
|---|---|---|
| KK62 | Acetic acid (1N) | 1693 |
| 9883 | Acetic acid (2 N) | 1693 |
| 9897 | Ammonia solution (4 N) | 1730 |
| KK60 | Ammonium iron(II) sulphate solution (0,12 N) | 1736 |
| P718 | Ammonium thiocyanate solution (0,1 N) | 1740 |
| 0468 | Barium chloride solution (0,1 N) | 1762 |
| N054 | Barium hydroxyde solution (0,1 N) | 1762 |
| KK61 | Bariumperchlorate solution (0,005 N) | 1763 |
| 9217 | Benzethonium chloride solution (0,004 M) | 1766 |
| 8131 | Bromide bromate solution (0,1 N) | 1786 |
| 0243 | CDTA disodium salt solution (0,1 N) | 1818 |
| P719 | Cerium(IV) sulphate solution (0,1 N) | 1822 |
| 9948 | Copper(II) sulphate solution (0,1 N) | 1846 |
| CN34 | EDTA disodium salt solution (0,01 N) | 1900 |
| KK75 | EDTA disodium salt solution (0,05 N) | 1900 |
| K714 | EDTA disodium salt solution (0,1 N) | 1900 |
| 8084 | EDTA disodium salt solution (0,2 N) | 1900 |
| T136 | EDTA disodium salt solution A (0,1 N) | 1900 |
| T137 | EDTA disodium salt solution B (0,01783 N) | 1900 |
| KK63 | Hanus solution (0,2 N) | 1968 |
| N075 | Hydrochloric acid (0,01 N) | 1987 |
| 8085 | Hydrochloric acid (0,05 N) | 1988 |
| K024 | Hydrochloric acid (0,1 N) | 1988 |
| 4120 | Hydrochloric acid (0,2 N) | 1988 |
| P708 | Hydrochloric acid (0,5 N) | 1988 |
| K025 | Hydrochloric acid (1 N) | 1988 |
| T134 | Hydrochloric acid (2 N) | 1989 |
| N076 | Hydrochloric acid (4 N) | 1989 |
| 0281 | Hydrochloric acid (6 N) | 1989 |
| 0226 | Hydrochloric acid (10 N) | 1989 |
| KK65 | Iodid-iodate solution (1/64 N) | 2006 |
| 0228 | Iodid-iodate solution (0,1 N) | 2006 |
| K016 | Iodine solution (0,1 N) | 2006 |
| X868 | Iodine solution (1 N) | 2007 |
| KK72 | Mercury(II) nitrate solution (0,1 N) | 2064 |
| X871 | Mercury(II) sulphate solution 80 g/l | 2065 |
| KK73 | Nitric acid (0,1 N) | 2098 |
| N070 | Nitric acid (1 N) | 2098 |
| 9887 | Nitric acid (2 N) | 2098 |
| CN35 | Oxalic acid solution (0,1 N) | 2127 |
| K023 | Perchloric acid (0,1 N) | 2139 |
| 8089 | ortho-Phosphoric acid (0,3 N) | 2151 |
| 8091 | ortho-Phosphoric acid (0,5 N) | 2151 |
| 8141 | ortho-Phosphoric acid (3 N) | 2151 |
| 8130 | Potassium bromide solution (0,1 N) | 2163 |
| 4117 | Potassium chloride solution (0,2 N) | 2165 |
| T138 | Potassium chloride solution (3 N) | 2165 |
| 9880 | Potassium chloride solution (3 N) with AgCl | 2165 |
| P722 | Potassium dichromate solution (0,1 N) | 2166 |
| P720 | Potassium dichromate solution (0,12 N) | 2166 |
| P721 | Potassium dichromate solution (0,25 N) | 2166 |
| K018 | Potassium hydroxide solution (0,1 N) | 2170 |
| N071 | Potassium hydroxide solution (0,5 N) | 2171 |
| K017 | Potassium hydroxide solution (1 N) | 2171 |
| P706 | Potassium hydroxide solution in ethanol (0,1 N) | 2171 |
| P707 | Potassium hydroxide solution in ethanol (0,5 N) | 2171 |
| KK68 | Potassium hydroxide solution in isopropanol (0,1 N) | 2171 |

| | | |
|---|---|---|
| KK66 | Potassium hydroxide solution in methanol (0,1 N) | 2171 |
| KK67 | Potassium hydroxide solution in methanol (0,5 N) | 2171 |
| 9898 | Potassium nitrate solution (1 N) | 2173 |
| K019 | Potassium permanganate solution (0,1 N) | 2173 |
| KK69 | Potassium permanganate solution (0,5 N) | 2174 |
| 9899 | Potassium thiocyanate solution (1 N) | 2176 |
| 6835 | Silver nitrate solution (0,05 N) | 2262 |
| K713 | Silver nitrate solution (0,1 N) | 2262 |
| 6838 | Silver nitrate solution (0,2 N) | 2262 |
| 6839 | Silver nitrate solution (0,5 N) | 2262 |
| 6841 | Silver nitrate solution (1 N) | 2262 |
| X870 | Silver sulphate solution (10 g/l) | 2263 |
| 0151 | Sodium acetate solution (0,1 N) | 2265 |
| 0187 | Sodium carbonate solution (0,1 N) | 2268 |
| 0211 | Sodium carbonate solution (1 N) | 2268 |
| 8115 | Sodium chloride solution (1 N) | 2270 |
| N073 | Sodium hydroxide solution (0,01 N) | 2278 |
| 0224 | Sodium hydroxide solution (0,05 N) | 2278 |
| K020 | Sodium hydroxide solution (0,1 N) | 2278 |
| N074 | Sodium hydroxide solution (0,2 N) | 2278 |
| P711 | Sodium hydroxide solution (0,25 N) | 2278 |
| P710 | Sodium hydroxide solution (0,5 N) | 2278 |
| K021 | Sodium hydroxide solution (1 N) | 2278 |
| T135 | Sodium hydroxide solution (2 N) | 2279 |
| T198 | Sodium hydroxide solution (4 N) | 2279 |
| KK71 | Sodium hydroxide solution (5 N) | 2279 |
| 0214 | Sodium hydroxide solution (6 N) | 2279 |
| X869 | Sodium thiosulphate solution (0,01 N) | 2287 |
| K022 | Sodium thiosulphate solution (0,1 N) | 2287 |
| 9900 | Sodium thiosulphate solution (1 N) | 2287 |
| X872 | Sulphuric acid (0,02 N) | 2326 |
| K026 | Sulphuric acid (0,1 N) | 2326 |
| N072 | Sulphuric acid (0,2 N) | 2326 |
| P709 | Sulphuric acid (0,5 N) | 2326 |
| K027 | Sulphuric acid (1 N) | 2326 |
| X873 | Sulphuric acid (2 N) | 2326 |
| 9896 | Sulphuric acid (4 N) | 2326 |
| KK74 | Sulphuric acid (5 N) | 2327 |
| CN36 | Wijs-solution (0,2 N) | 2377 |
| 9901 | Zinc chloride solution (0,1 N) | 2387 |
| P723 | Zinc sulphate solution (0,1 N) | 2389 |

## Volumetric Solutions Reag. Ph.Eur.

| Art. No. | Description | Page |
|---|---|---|
| 6764 | EDTA disodium salt solution (0,1 N) | 1900 |
| 6789 | Hydrochloric acid (0,1 N) | 1988 |
| 6792 | Hydrochloric acid (1 N) | 1988 |
| 6765 | Iodine solution (0,1 N) | 2007 |
| 6769 | Iodine solution (1 N) | 2007 |
| 9525 | Perchloric acid 0,1 N | 2139 |
| 9522 | Potassium hydroxide solution (1 N) | 2171 |
| 9523 | Potassium permanganate solution (0,1 N) | 2174 |
| 9526 | Silver nitrate solution (0,1 N) | 2262 |
| 6783 | Sodium hydroxide solution (0,1 N) | 2277 |
| 6785 | Sodium hydroxide solution (1 N) | 2278 |
| 6782 | Sodium thiosulphate solution (0,1 N) | 2287 |
| 6793 | Sulphuric acid (0,1 N) | 2326 |
| 6794 | Sulphuric acid (1 N) | 2326 |

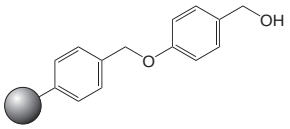
## VRB Agar

▶ Violet Red Bile Agar with Lactose see p. 2372

## VRBD Agar

▶ Violet Red Bile Agar with Glucose see p. 2371
▶ Violet Red Bile Agar with Glucose, granulated see p. 2371

## Wang resin




### Wang resin

**100-200 mesh, 1 % DVB**
For peptide synthesis
4-Benzyloxybenzyl alcohol resin
Storage temp.: +4 °C
WGK 3

**Type analysis:**

Appearance..... colourless to yellow beads
Loading. ..... 1,0-1,4 mmol/g
Identity (IR). ..... complies
Swelling..... 4,0-7,0 ml/g (DMF, 24 h)
Swelling..... 4,0-8,0 ml/g ($CH_2Cl_2$, 24 h)
Kaiser test. ..... negative
Loss on drying. ..... ≤2 %

| | | | |
|---|---|---|---|
| **7506.1** | 1 g | glass | 14,95 € |
| **7506.2** | 5 g | plastic | 33,25 € |
| **7506.3** | 25 g | plastic | 117,20 € |

## Water Ultra-quality

### Water Ultra-quality

**ROTIPURAN® Ultra**
Extra highpure water (ppt quality) for sample preparation in ultra trace analysis.
$H_2O$
M 18,02 g/mol
D 1,0 • bp 100 °C
mp 0 °C
[7732-18-5] • EC No. 231-791-2

**Guarantee analysis:**

Colour (APHA)..... ≤10
Chloride (Cl). ..... ≤1 ppb
Phosphate ($PO_4$). ..... ≤1 ppb
Sulphate ($SO_4$). ..... ≤1 ppb
Aluminium (Al). ..... ≤20 ppt
Antimony (Sb). ..... ≤10 ppt
Arsenic (As)..... ≤10 ppt
Barium (Ba). ..... ≤10 ppt
Beryllium (Be)..... ≤10 ppt
Lead (Pb). ..... ≤10 ppt
Boron (B)..... ≤20 ppt
Cadmium (Cd)..... ≤10 ppt
Cesium (Cs). ..... ≤10 ppt
Calcium (Ca). ..... ≤10 ppt
Cerium (Ce)..... ≤10 ppt
Chromium (Cr)..... ≤10 ppt
Dysprosium (Dy). ..... ≤1 ppt
Iron (Fe). ..... ≤10 ppt
Erbium (Er)..... ≤1 ppt
Europium (Eu)..... ≤1 ppt
Gadolinium (Gd)..... ≤1 ppt
Gallium (Ga)..... ≤10 ppt
Germanium (Ge). ..... ≤10 ppt
Gold (Au). ..... ≤10 ppt
Hafnium (Hf)..... ≤1 ppt
Holmium (Ho)..... ≤1 ppt
Indium (In)..... ≤1 ppt
Potassium (K). ..... ≤10 ppt
Cobalt (Co). ..... ≤10 ppt
Copper (Cu). ..... ≤10 ppt
Lanthanum (La)..... ≤1 ppt
Lithium (Li). ..... ≤10 ppt
Lutetium (Lu)..... ≤1 ppt
Magnesium (Mg)..... ≤10 ppt
Manganese (Mn)..... ≤10 ppt
Molybdenum (Mo)..... ≤10 ppt
Sodium (Na)..... ≤10 ppt
Neodymium (Nd)..... ≤1 ppt
Nickel (Ni). ..... ≤10 ppt
Niobium (Nb)..... ≤10 ppt
Palladium (Pd). ..... ≤10 ppt
Platinum (Pt). ..... ≤10 ppt
Praseodymium (Pr). ..... ≤10 ppt
Mercury (Hg)..... ≤20 ppt
Rhenium (Re)..... ≤10 ppt
Rhodium (Rh)..... ≤10 ppt
Rubidium (Rb)..... ≤10 ppt
Ruthenium (Ru)..... ≤10 ppt
Samarium (Sm)..... ≤10 ppt
Scandium (Sc). ..... ≤10 ppt
Selenium (Se). ..... ≤50 ppt
Silver (Ag). ..... ≤10 ppt
Strontium (Sr)..... ≤10 ppt
Tantal (Ta). ..... ≤10 ppt
Tellur (Te). ..... ≤1 ppt
Terbium (Tb). ..... ≤10 ppt
Thallium (Tl). ..... ≤10 ppt
Thorium (Th). ..... ≤1 ppt
Thulium (Tm)..... ≤10 ppt
Titanium (Ti)..... ≤10 ppt
Uranium (U). ..... ≤1 ppt
Vanadium (V). ..... ≤10 ppt
Bismuth (Bi). ..... ≤10 ppt
Tungsten (W). ..... ≤10 ppt
Ytterbium (Yb)..... ≤10 ppt
Yttrium (Y)..... ≤1 ppt
Zinc (Zn). ..... ≤10 ppt
Tin (Sn). ..... ≤10 ppt
Zirconium (Zr). ..... ≤10 ppt

| | | | |
|---|---|---|---|
| **HN68.1** | 500 ml | LDPE | 50,00 € |
| **HN68.2** | 1 l | LDPE | 74,10 € |
| Original pack 6 x 1 l | | | 70,40/1 l |
| **HN68.3** | 2 l | LDPE | 139,65 € |

For further information, please see page 1665

## Water

$H_2O$
M 18,02 g/mol
D 1,0 • bp 100 °C
mp 0 °C
[7732-18-5] • EC No. 231-791-2

### Water
**ROTIPURAN® Low organic**

High-purity water for sample preparation in organic trace analysis and for molecular biology.

**Guarantee analysis:**

TOC (Total Organic Carbon)..... ≤20 ppb
Spec. electric resistance
(at time of preparation)..... ≥18 MΩ·cm
Colour (APHA)..... ≤5
Evaporation residue..... ≤0,0001 %
Fluorescence (as quinine)..... ≤100 ppt
Optical absorbance:
200 nm..... ≤0,01
254 nm..... ≤0,005
300 nm..... ≤0,005
400 nm..... ≤0,005
LC-gradient suitability test..... complies

| | | | |
|---|---|---|---|
| **HN57.1** | 1 l | glass | 64,00 € |
| Original pack 6 x 1 l | | | 60,80/1 l |
| **HN57.2** | 4 l | glass | 104,85 € |

For further information, please see page 1263

### Water
**ROTISOLV® Ultra LC-MS**

**Guarantee analysis:**

Spec. electric resistance
(at time of preparation)..... ≥18,2 MΩ·cm
Free acid (as $CH_3COOH$)..... ≤0,0002 %
Free alkali (as $NH_3$)..... ≤0,00005 %
Non volatile matter..... ≤0,0001 %
TOC (Total Organic Carbon)..... ≤10 ppb
Gradient test:
UV-absorption of the greatest eluated peak.
210 nm..... ≤0,003 AU
254 nm..... ≤0,0005 AU
Fluorescence (as quinine):
254 nm..... ≤0,5 ppb
365 nm..... ≤0,5 ppb
Trace impurities:
Aluminium (Al)..... ≤20 ppb
Calcium (Ca)..... ≤100 ppb
Iron (Fe)..... ≤30 ppb
Potassium (K)..... ≤50 ppb
Magnesium (Mg)..... ≤20 ppb
Sodium (Na)..... ≤100 ppb
Filtered through 0,1 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **HN43.1** | 1 l | glass | 36,25 € |
| Original pack 6 x 1 l | | | 34,44/1 l |
| **HN43.2** | 2,5 l | glass | 77,30 € |
| Original pack 4 x 2,5 l | | | 73,44/2,5 l |

### Water
**ROTISOLV® LC-MS Grade**

**Guarantee analysis:**

Spec. electric resistance
(at time of preparation)..... ≥18,2 MΩ·cm
Free acid (as $CH_3COOH$)..... ≤0,001 %
Free alkali (as $NH_3$)..... ≤0,0005 %
Non volatile matter..... ≤0,0001 %
Transmission:
230 nm..... ≥99 %
200 nm..... ≥95 %
Gradient test:
UV-absorption of the greatest eluated peak.
210 nm..... ≤3,0 mAU
365 nm..... ≤1,0 mAU
Fluorescence (as quinine):
254 nm..... ≤0,5 ppb
365 nm..... ≤0,5 ppb
Trace impurities:
Aluminium (Al)..... ≤0,05 ppm
Calcium (Ca)..... ≤0,05 ppm
Iron (Fe)..... ≤0,05 ppm
Potassium (K)..... ≤0,05 ppm
Magnesium (Mg)..... ≤0,05 ppm
Sodium (Na)..... ≤0,05 ppm
LC-MS suitability test..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **AE72.1** | 1 l | plastic | 28,95 € |
| Original pack 6 x 1 l | | | 27,50/1 l |
| **AE72.3** | 2,5 l | glass | 70,85 € |
| Original pack 4 x 2,5 l | | | 67,31/2,5 l |
| **AE72.2** | 5 l | plastic | 131,05 € |
| Original pack 2 x 5 l | | | 124,50/5 l |

### Water
**ROTISOLV® HPLC, Gradient Grade**

**Guarantee analysis:**

Spec. electric resistance
(at time of preparation)..... ≥18,2 MΩ·cm
Evaporation residue..... ≤0,0003 %
Free acid (as $CH_3COOH$)..... ≤0,0002 %
Free alkali (as $NH_3$)..... ≤0,0002 %
Gradient test (Gradient water / acetonitrile):
UV absorption of the greatest eluated peak
210 nm..... ≤5,0 mAU
254 nm..... ≤0,5 mAU
Fluorescence (as quinine):
254 nm..... ≤1,0 ppb
365 nm..... ≤0,5 ppb
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **A511.1** | 1 l | glass | 17,45 € |
| Original pack 6 x 1 l | | | 16,58/1 l |
| **A511.2** | 2,5 l | glass | 31,75 € |
| Original pack 4 x 2,5 l | | | 30,16/2,5 l |
| **A511.3** | 5 l | plastic | 59,05 € |
| Original pack 2 x 5 l | | | 56,10/5 l |

For further information, please see page 1590

### Water
**ROTISOLV® Pestilyse®**

For residue and environmental analysis.

**Guarantee analysis:**

Spec. electric resistance
(at time of preparation)..... ≥18,2 MΩ·cm
Acidity..... ≤0,0003 meq/g
Evaporation residue..... ≤0,0002 %
Heavy metals (as Pb)..... ≤0,000001 %
TOC (Total Organic Carbon)..... ≤0,000005 %
GC/ECD
(individual signal as lindane)..... ≤5 ng/l
GC/PND
(individual signal as ethylparathion)..... ≤10 ng/l

| | | | |
|---|---|---|---|
| **T905.1** | 2,5 l | glass | 46,80 € |
| Original pack 4 x 2,5 l | | | 44,46/2,5 l |

### Water
**ROTIPURAN® p.a., ACS**

Water for varied applications in analytical chemistry (e.g. as solvent and diluent).

**Guarantee analysis:**

pH value..... 5,0-8,0
Specific conductivity
(25 °C, at the time of preparation)..... ≤1 µS/cm
$KMnO_4$ reducing substances (as O)..... complies
Evaporation residue..... ≤0,0001 %
Ash content..... ≤0,0002 %
Chloride (Cl)..... ≤0,00001 %
Nitrate ($NO_3$)..... ≤0,00002 %
Phosphate ($PO_4$)..... ≤0,000005 %
Sulphate ($SO_4$)..... ≤0,0001 %
Aluminium (Al)..... ≤0,000002 %
Ammonium ($NH_4$)..... ≤0,000001 %
Barium (Ba)..... ≤0,000001 %
Beryllium (Be)..... ≤0,000002 %
Lead (Pb)..... ≤0,000001 %
Cadmium (Cd)..... ≤0,000001 %
Calcium (Ca)..... ≤0,00001 %
Chromium (Cr)..... ≤0,000001 %
Iron (Fe)..... ≤0,000001 %
Potassium (K)..... ≤0,000005 %
Cobalt (Co)..... ≤0,000001 %
Copper (Cu)..... ≤0,000001 %
Lithium (Li)..... ≤0,000002 %
Magnesium (Mg)..... ≤0,000005 %
Manganese (Mn)..... ≤0,000001 %
Sodium (Na)..... ≤0,00001 %
Nickel (Ni)..... ≤0,000001 %
Heavy metals (as Pb)..... ≤0,000001 %
Silver (Ag)..... ≤0,000001 %
Strontium (Sr)..... ≤0,000005 %
Zinc (Zn)..... ≤0,000005 %
A 254 nm (in $H_2O$)..... ≤0,01
Silicates ($SiO_2$)..... ≤0,000001 %
ISO 3696: 1987 (Type 2)..... complies
The water complies to ISO: 3696:1987

| | | | |
|---|---|---|---|
| **T172.1** | 1 l | plastic | 11,00 € |
| Original pack 6 x 1 l | | | 10,45/1 l |
| **T172.2** | 2,5 l | plastic | 21,75 € |
| Original pack 4 x 2,5 l | | | 20,66/2,5 l |
| **T172.3** | 5 l | plastic | 31,10 € |
| Original pack 2 x 5 l | | | 29,55/5 l |
| **T172.5** | 30 l | plastic | 117,20 € |

## Water

**purified, Ph.Eur., USP**

**Guarantee analysis:**

Properties. ..... complies
pH value. ..... 5,0-7,0
Chloride (Cl). ..... complies
Sulphate ($SO_4$). ..... complies
Nitrate ($NO_3$). ..... ≤0,00002 %
Ammonium ($NH_4$). ..... ≤0,00002 %
Calcium and Magnesium (as Ca). ..... complies
Heavy metals (as Pb). ..... ≤0,00001 %
Total organic carbon. ..... ≤0,50 mg/l
Acid or alkaline react. substances. ..... complies
Oxidizable matter. ..... complies
Evaporation residue. ..... ≤0,001 %
Conductivity. ..... complies
Microbiological impurities. ..... complies
Meets in all aspects the demands of Ph.Eur. for Aqua purificata (purified water).

| | | | |
|---|---|---|---|
| **2652.1** | 1 l | plastic | 9,90 € |
| Original pack 6 x 1 l | | | 9,41/1 l |
| **2652.2** | 10 l | plastic | 55,80 € |
| **2652.3** | 20 l | plastic | 100,55 € |

## Water

**hypotonic, sterile, free from pyrogen**

**Guarantee analysis:**

Pyrogenity (LAL-Test). ..... complies
pH value. ..... 4,0-7,0
Heavy metals. ..... ≤0,1 ppm
Evaporation residue. ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **3255.1** | 1 l | plastic | 9,15 € |
| Original pack 6 x 1 l | | | 8,69/1 l |

For further information, please see page 1330

## Water

**redistilled**

Bidest

**Type analysis:**

Appearance. ..... clear, colourless
pH value ..... 5,0-7,0
Conductivity. ..... <2,0 µS/cm
After demineralisation in a borosilicate apparatus, the water is distilled twice.

| | | | |
|---|---|---|---|
| **3478.1** | 1 l | plastic | 6,80 € |
| Original pack 6 x 1 l | | | 6,46/1 l |
| **3478.4** | 5 l | plastic | 19,60 € |
| Original pack 2 x 5 l | | | 18,62/5 l |
| **3478.2** | 10 l | plastic | 31,10 € |
| **3478.3** | 30 l | plastic | 80,10 € |

## Water

**demineralised, not sterile**

**Type analysis:**

Appearance. ..... clear, colourless
pH value ..... 6,2-7,5
Conductivity. ..... <5,0 µS/cm

| | | | |
|---|---|---|---|
| **3175.1** | 10 l | plastic | 18,85 € |
| **3175.2** | 30 l | plastic | 42,50 € |

## Water

**BioScience Grade, nuclease-free, steam sterilised, DEPC treated water**

For molecular biology.

| | | | |
|---|---|---|---|
| **T143.1** | 250 ml | glass | 25,70 € |
| **T143.2** | 500 ml | glass | 28,95 € |
| **T143.3** | 1 l | glass | 34,30 € |
| Original pack 6 x 1 l | | | 32,59/1 l |
| **T143.4** | 50 x 1 ml | plastic | 89,15 € |
| **T143.6** | 50 x 1 ml | glass ampoule | 103,10 € |
| **T143.5** | 5 x 20 ml | glass | 20,35 € |

## Water D2

▶ Deuterium oxide see p. 1862

## Water with 0,1 % formic acid

## Water with 0,1 % formic acid

**ROTISOLV® LC-MS Grade**

Eluent mixture for high performance liquid chromatography.

Water mixture

$H_2O$

M 18,01 g/mol

**Guarantee analysis:**

Formic acid (v/v). ..... 0,095-0,105 %
pH value. ..... 2,6-2,8
Transmission:
254 nm. ..... ≥99 %
230 nm. ..... ≥45 %
210 nm. ..... ≥5 %
Gradient test:
210 nm. ..... ≤0,05 AU
254 nm. ..... ≤0,01 AU
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **CP03.1** | 1 l | glass | 42,90 € |
| Original pack 6 x 1 l | | | 40,76/1 l |
| **CP03.2** | 2,5 l | glass | 77,95 € |
| Original pack 4 x 2,5 l | | | 74,05/2,5 l |

## Water with 0,1 % trifluoroacetic acid

## Water with 0,1 % trifluoroacetic acid

**ROTISOLV® LC-MS-Grade**

Eluent mixture for high performance liquid chromatography.

Water mixture

$H_2O$

M 18,01 g/mol

**Guarantee analysis:**

Trifluoroacetic acid (v/v). ..... 0,095-0,105 %
pH value. ..... 1,8-2,0
Transmission:
254 nm. ..... ≥98 %
230 nm. ..... ≥85 %
210 nm. ..... ≥25 %
Gradient test:
210 nm. ..... ≤0,05 AU
254 nm. ..... ≤0,01 AU
Trace impurities:
Aluminium (Al). ..... ≤0,05 ppm
Calcium (Ca). ..... ≤0,05 ppm
Iron (Fe). ..... ≤0,05 ppm
Potassium (K). ..... ≤0,05 ppm
Magnesium (Mg). ..... ≤0,05 ppm
Sodium (Na). ..... ≤0,05 ppm
LC-MS suitability test. ..... complies
Filtered through 0,2 µm membrane and filled under protective gas.

| | | | |
|---|---|---|---|
| **CP05.2** | 2,5 l | glass | 84,85 € |
| Original pack 4 x 2,5 l | | | 80,61/2,5 l |

## Water determination acc. to Karl Fischer


- ▶ Karl Fischer Roti®hydroquant Working Medium K see p. 2021
- ▶ Karl Fischer Roti®hydroquant C2 see p. 2020
- ▶ Karl Fischer Roti®hydroquant C5 see p. 2020
- ▶ Karl Fischer Roti®hydroquant C5 K see p. 2020
- ▶ Karl Fischer Roti®hydroquant coulo A see p. 2020
- ▶ Karl Fischer Roti®hydroquant coulo AG see p. 2021
- ▶ Karl Fischer Roti®hydroquant coulo CG see p. 2021
- ▶ Karl Fischer Roti®hydroquant coulo Oil see p. 2021
- ▶ Karl Fischer methanol see p. 2021
- ▶ Karl Fischer Roti®hydroquant S see p. 2021
- ▶ Karl Fischer Roti®hydroquant S CM see p. 2021
- ▶ Karl Fischer Roti®hydroquant T see p. 2021
- ▶ Karl Fischer Roti®hydroquant standard sodium tartrate dihydrate see p. 2022
- ▶ Karl Fischer Roti®hydroquant water standard 1.0 see p. 2022
- ▶ Karl Fischer Roti®hydroquant water standard 10.0 see p. 2022


## Water for cell culture

▶ Roti®-CELL Water see p. 2208

## Water glass

▶ Sodium silicate see p. 2284

## Water hardness kit

### Water hardness kit

Test reagent in dropping bottle.
bp 82 °C
UN No. 1993 • ADR 3 III • WGK 1
**Warning** H226-H319-H336

| | | |
|---|---|---|
| **0519.1** | 2 x 15 ml | 19,60 € |

For further information, please see page 820

## Weigert's Hematoxylin solution

▶ Hematoxylin solution A acc. to Weigert see p. 1971

## Weigert's iron hematoxylin staining kit

### Weigert's iron hematoxylin staining kit

**for microscopy**

Staining kit for acid resistant staining of nuclei, incl. instructions for use.
Storage temp.: +20 °C
UN No. 1219 • ADR 3 II
**Danger** H225-H318-H336

**Formulation:**

Hematoxylin solution A acc. to Weigert (Art. No. X906)..... 500 ml
Hematoxylin solution B acc. to Weigert (Art. No. X907)..... 500 ml

| | | | |
|---|---|---|---|
| **9192.1** | 1 kit | glass | 72,60 € |

For further information, please see page 1456

## Weigert's Resorcinol-Fuchsine solution

▶ Resorcinol-Fuchsine-solution acc. to Weigert see p. 2196

## Wheat germ oil

### Wheat germ oil

**Ph.Eur., refined**

D ~0,93
[8006-95-9]

**Guarantee analysis:**

Relative density (20 °C)..... ~0,925
Refractive index $n_D^{20}$..... ~1,475
Acid value (mg KOH/g)..... ≤0,9
Peroxide value..... ≤10
Water..... ≤0,1 %
Unsaponifiable matter..... ≤5 %
Alkaline reacting substances..... complies
Brassicasterol..... ≤0,3 %
GC fatty acid constituents:
C 16:0 Palmitic acid..... 14-19 %
C 18:0 Stearic acid..... ≤2 %
C 18:1 Oleic acid..... 12-23 %
C 18:2 Linoleic acid..... 52-59 %
C 18:3 Linolenic acid..... 3-10 %
C 20:1 Eicosenoic acid..... ≤2 %
Isolated from the germs of wheat.

| | | | |
|---|---|---|---|
| **4242.1** | 1 l | glass | 59,05 € |
| Original pack 6 x 1 l | | | 56,10/1 l |

## White spirit

▶ Petroleum benzine 80-110 see p. 2142

## White spirit

▶ Petroleum benzine 135-180 see p. 2142
▶ Petroleum benzine 145-200 see p. 2143
▶ Petroleum benzine 180-220 see p. 2143
▶ Petroleum benzine 190-245 see p. 2143
▶ Petroleum benzine 235-265 see p. 2143

## Wijs-solution (0.2 N)

### Wijs-solution

**0,1 mol ICl/l - 0,2 N**

For determination of the iodine number [DIN 53241-1].
Iodine solution according to Wijs.
EC No. 200-580-7
UN No. 2789 • ADR 8 (3) II • WGK 2
**Danger** H314-H226-H290

**Type analysis:**

Amount-of-substance conc. (20 °C)..... 0,1 mol/l ±2 %
Titer..... 0,98-1,02

| | | | |
|---|---|---|---|
| **CN36.1** | 1 l | glass | 75,15 € |
| Original pack 6 x 1 l | | | 71,39/1 l |

For further information, please see page 1622

## William's E cell culture medium

▶ Roti®-CELL William's E see p. 2208

## Woods metal

▶ Alloy acc. to Wood see p. 1718

## Wood sugar

▶ D(+)-Xylose see p. 2382

## Wool fat

▶ Lanolin see p. 2027

## Woolgreen S

▶ Lissamine green B (C.I. 44090) see p. 2038

## Working Standards

| Art. No. | Description | Page |
|---|---|---|
| NC36 | Acetoxyvalerenic acid | 1701 |
| NC37 | Apigenin | 1747 |
| NC19 | Apigenin-7-glucoside | 1748 |
| NC00 | L(+)-Ascorbic acid | 1752 |
| NC01 | Benzaldehyde | 1764 |
| NC03 | Benzoic acid | 1766 |
| NC11 | Benzoic acid sodium salt | 1767 |
| NC02 | Benzyl alcohol | 1769 |
| NC04 | Butylated hydroxyanisole | 1796 |
| NC05 | Butylated hydroxytoluene | 1797 |
| NC08 | Caffeic acid | 1802 |
| NC39 | Casticin | 1817 |
| NC06 | Chlorogenic acid | 1828 |
| NC55 | (+)-Dihydroquercetin | 1875 |
| NC52 | 3,4-Dihydroxybenzoic acid | 1877 |
| NC40 | Echinacoside | 1899 |
| NC41 | (-)-Epicatechin | 1906 |
| NC42 | Eriocitrin | 1907 |
| NC43 | Ginkgolide A | 1951 |
| NC44 | Ginsenoside Rb1 | 1952 |
| NC45 | Ginsenoside Re | 1953 |
| NC62 | Ginsenoside Rg1 | 1953 |
| NC21 | Harpagoside | 1968 |
| NC46 | Hederacoside C | 1969 |
| NC47 | Herniarin | 1975 |
| NC07 | 4-Hydroxybenzoic acid ethyl ester | 1993 |
| NC10 | 4-Hydroxybenzoic acid methyl ester | 1993 |
| NC13 | 4-Hydroxybenzoic acid propyl ester | 1994 |
| NC48 | Hydroxyvalerenic acid | 1997 |
| NC22 | Hypericin | 1998 |
| NC23 | Hyperoside | 1998 |
| NC24 | Isoquercitrin | 2016 |
| NC25 | Isovitexin | 2018 |
| NC26 | Kaempferol | 2019 |
| NC49 | Luteolin | 2044 |
| NC50 | Oleanolic acid | 2122 |
| NC51 | Osthol | 2126 |
| NC12 | 2-Phenoxyethanol | 2146 |
| NC09 | Potassium sorbate | 2175 |
| NC27 | Quercetin dihydrate | 2189 |
| NC28 | Quercetin-3-O-ß-Glucuronide | 2190 |
| NC30 | Rosmarinic acid | 2202 |
| NC14 | Rutin trihydrate | 2236 |
| NC53 | Sennoside A | 2247 |
| NC54 | Sennoside B | 2247 |
| NC31 | Silybin | 2263 |
| NC15 | Sorbic acid | 2290 |
| NC16 | DL-α-Tocopherol | 2346 |
| NC18 | RRR-α-Tocopherol | 2346 |
| NC17 | DL-α-Tocopherol acetate | 2346 |
| NC32 | Valerenic acid | 2368 |
| NC56 | Vitexin | 2372 |
| NC34 | Vitexin-2''-O-rhamnoside | 2373 |
| NC35 | Xanthohumol | 2378 |

## Wort Agar (Base)

### Wort Agar (Base)

**for microbiology**

For cultivation and enumeration of yeasts.
Application: Use 48,25 g for 1 l agar.
Add 2,35 g (1,9 ml) glycerol.
Storage temp.: +20 °C
WGK 1

**Formulation:**

Malt extract..... 15 g/l
Maltose..... 12,75 g/l
Dextrine..... 2,75 g/l
di-Potassium hydrogen phosphate..... 1 g/l
Ammonium chloride..... 1 g/l
Peptone..... 0,75 g/l
Agar..... 15 g/l
pH value..... 4,8 ±0,2

| | | | |
|---|---|---|---|
| **CL04.1** | 500 g | plastic | 154,30 € |
| Original pack 6 x 500 g | | | 146,59/500 g |

For further information, please see page 1402

## Wort Broth

### Wort Broth

**for microbiology**

For cultivation and enumeration of fungi, particularly of yeast.

Application: Use 33 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

**Formulation:**

Malt extract. ..... 15 g/l
D-Maltose. ..... 12,5 g/l
Dextrine. ..... 2,5 g/l
Casein peptone. ..... 1 g/l
Dipotassium hydrogen phosphate. ..... 1 g/l
Ammonium chloride. ..... 1 g/l
pH value. ..... 4,8 ±0,2

| | | | |
|---|---|---|---|
| **5779.1** | 500 g | plastic | 133,85 € |
| Original pack 6 x 500 g | | | 127,16/500 g |

For further information, please see page 1402

## Wright's eosin methylene blue solution

### Wright's eosin methylene blue solution

**for microscopy**

For differental staining of blood and bone marrow smears.

Wrights staining solution, eosin methylene blue solution acc. to Wright.

UN No. 1230 • ADR 3 (6.1) II • WGK 1

**Danger**

H225-H370-H301+H311+H331

**Type analysis:**

Suitability for microscopy. ..... complies

| | | | |
|---|---|---|---|
| **CN05.1** | 500 ml | glass | 25,70 € |
| **CN05.2** | 1 l | glass | 36,45 € |
| Original pack 6 x 1 l | | | 34,63/1 l |

For further information, please see page 1453

## Wright's stain

### Wright's stain

**for microscopy**

Eosin methylene blue

[68988-92-1]

WGK 3

**Type analysis:**

Appearance. ..... green cryst. powder
Appearance of solution (0,1 % in MeOH)..... clear, blue

| | | | |
|---|---|---|---|
| **7744.1** | 5 g | glass | 13,90 € |
| **7744.2** | 25 g | glass | 24,65 € |
| **7744.3** | 100 g | glass | 60,10 € |

For further information, please see page 1468

## Xanthan

### Xanthan

**extra pure**

Xanthan gum

[11138-66-2] • EC No. 234-394-2

WGK 1

**Type analysis:**

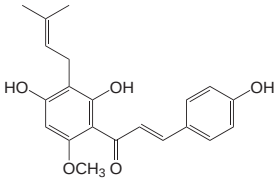
Appearance...cream-coloured, yellowish/white powder
Moisture. ..... <15 %
pH value (1 % solution). ..... 6,0-8,0
Viscosity (1 % KCl solution)..... 1200-1800 mPas
Lead (Pb). ..... ≤0,0002 %
Particle size. ..... ~80 mesh

| | | | |
|---|---|---|---|
| **3557.2** | 100 g | plastic | 21,40 € |
| **3557.1** | 500 g | plastic | 64,40 € |
| Original pack 6 x 500 g | | | 61,18/500 g |

### Xanthan gum

▶ Xanthan see p. 2378

## Xanthohumol




$C_{21}H_{22}O_5$
M 354,40 g/mol
[6754-58-1]
WGK 3

### Xanthohumol

**ROTI®STAR Primary Standard**

**Type analysis:**

Assay (HPLC)..... ≥95,0 %
Residual solvents (GC). ..... ≤2,0 %
Water (KF)..... ≤2,0 %
Assay (qNMR)..... ≥95,0 %
Proof of identity by $^1$H-NMR, $^{13}$C-NMR, MS, UV.
The certificate includes all results of analytical tests and validations.

| | | | |
|---|---|---|---|
| **NE35.1** | 10 mg | glass | 772,95 € |

### Xanthohumol

**ROTICHROM® Working Standard**

**Type analysis:**

Assay (HPLC)..... ≥95,0 %
Identity..... complies
Traceable to a primary reference standard. With proof of identity and batch specific certificate of analysis.

| | | | |
|---|---|---|---|
| **NC35.1** | 25 mg | glass | 256,95 € |

### Xanthohumol

**ROTICHROM® HPLC**

Reference substance for HPLC.
From *Humulus lupulus*.
Storage temp.: +4 °C

**Type analysis:**

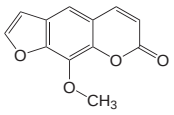
Purity (HPLC). ..... ≥99 %

| | | | |
|---|---|---|---|
| **2828.1** | 10 mg | glass | 203,20 € |

## Xanthophyll

▶ Lutein see p. 2044

## Xanthotoxin




### Xanthotoxin

**≥98 %**

Ammoidin, Methoxsalen, 8-Methoxypsoralen

$C_{12}H_8O_4$
M 216,19 g/mol
mp 142-148 °C
[298-81-7] • EC No. 206-066-9
WGK 2

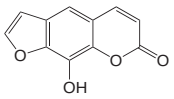
**Warning** H302-H317

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (HPLC). ..... ≥98,0 %
Water (KF). ..... ≥0,5 %

| | | | |
|---|---|---|---|
| **5497.1** | 250 mg | glass | 20,35 € |
| **5497.2** | 1 g | glass | 34,30 € |
| **5497.3** | 5 g | glass | 121,40 € |

## Xanthotoxol




### Xanthotoxol

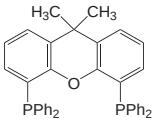
**ROTICHROM® ~CHR**

$C_{11}H_6O_4$
M 202,16 g/mol
mp ~250 °C
[2009-24-7] • EC No. 217-923-1
WGK 1

**Warning** H302

| | | | |
|---|---|---|---|
| **7499.2** | 25 mg | glass | 203,20 € |

## Xantphos



### Xantphos

NEW

**≥98 %**

Phosphine ligand

4,5-Bis(diphenylphosphino)-9,9-dimethyl-xanthene

$C_{39}H_{32}OP_2$

M 578,62 g/mol

mp 226-229 °C

[161265-03-8]

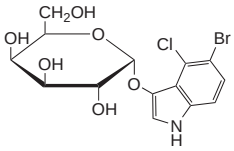
WGK 1

**Type analysis:**

Appearance. ..... white to light yellow solid
Assay (HPLC). ..... ≥98 %
Melting point. ..... 226-229 °C

| | | | |
|---|---|---|---|
| **2058.1** | 1 g | glass | 32,15 € |
| **2058.2** | 5 g | glass | 107,40 € |

## X-α-Gal



### X-α-Gal

**≥98 %, for biochemistry**

Colorimetric substrate of α-galactosidase.

5-Bromo-4-chloro-3-indolyl-α-D-galacto-pyranoside

$C_{14}H_{15}BrClNO_6$

M 405,63 g/mol

mp ~223 °C

Storage temp.: -20 °C •

Transport temp.: room temp.

[107021-38-5]

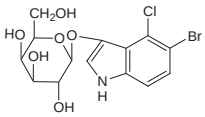
**Type analysis:**

Assay. ..... ≥98 %
Water. ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$. ..... +140° to +150°

| | | | |
|---|---|---|---|
| **HN36.1** | 25 mg | glass | 71,95 € |
| **HN36.2** | 100 mg | glass | 217,70 € |
| **HN36.3** | 250 mg | glass | 504,20 € |

For further information, please see page 1292

## X-β-Gal



### X-β-Gal

**≥99 %, BioScience-Grade**

Colorimetric substrate of β-galactosidase. For biochemistry and molecular biology.

5-Bromo-4-chloro-3-indoxyl-β-D-galactoside

$C_{14}H_{15}BrClNO_6$

M 408,6 g/mol

mp 225-230 °C

Storage temp.: -20 °C •

Transport temp.: room temp.

[7240-90-6] • EC No. 230-640-8

WGK 1

**Guarantee analysis:**

Appearance. ..... white powder
Assay (HPLC). ..... ≥99 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF/$H_2O$ 1:1). ...-62° ±2°
Water (KF). ..... ≤0,2 %
DNases, RNases, Protease. ..... none detected

| | | | |
|---|---|---|---|
| **2315.1** | 100 mg | glass | 20,45 € |
| **2315.2** | 500 mg | glass | 58,60 € |
| **2315.3** | 1 g | glass | 109,55 € |
| **2315.4** | 5 g | glass | 370,90 € |

For further information, please see page 1292

## X-Glc

▶ X-Glu see p. 2379

## X-GlcA

▶ X-Gluc see p. 2379

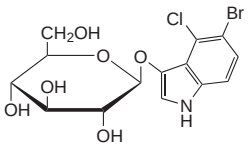
## X-β-D-Glc

▶ X-Glu see p. 2379

## X-β-D-GlcNAc

▶ 5-Bromo-4-chloro-3-indoxyl-N-acetyl-β-D-glucosaminide see p. 1787

## X-Glu



### X-Glu

**≥98 %, for biochemistry**

Glycosidase substrate

5-Bromo-4-chloro-3-indoxyl-β-D-gluco-pyranoside, X-Glu, X-β-D-glucoside, X-β-D-Glu

$C_{14}H_{15}BrClNO_6$

M 408,64 g/mol

Storage temp.: -20 °C •

Transport temp.: room temp.

[15548-60-4] • EC No. 239-603-0

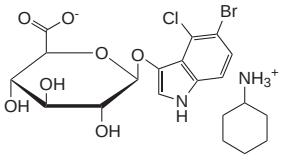
WGK 1

**Type analysis:**

Assay (HPLC). ..... ≥98,0 %
Solution (5 % in DMF). ..... colourless
Water (KF). ..... ≤0,5 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF). ..... -81,0° ±2°

| | | | |
|---|---|---|---|
| **4041.1** | 50 mg | glass | 38,60 € |
| **4041.2** | 100 mg | glass | 64,40 € |

## X-Gluc



### X-Gluc

**≥99 %, for microbiology**

Glucuronidase substrate

5-Bromo-4-chloro-3-indolyl-β-D-glucuronide cyclohexyl ammonium salt monohydrate, X-GlcA

$C_{20}H_{26}N_2O_7ClBr \cdot H_2O$

M 539,81 g/mol

Storage temp.: -20 °C •

Transport temp.: room temp.

[114162-64-0]

WGK 1

**Guarantee analysis:**

Appearance. ..... white to off-white powder
Purity (HPLC). ..... ≥99,0 %
Water (KF). ..... ≤5,0 %
Specific rotation $[\alpha]_D^{20}$ (c=1 in DMF/water 1:1). ..... -91,0° to -87,0°
Solution (1% in DMF/Wasser 1:1). ..... colourless, clear

| | | | |
|---|---|---|---|
| **0018.1** | 100 mg | glass | 99,90 € |
| **0018.2** | 500 mg | glass | 375,20 € |
| **0018.3** | 1 g | glass | 633,20 € |

For further information, please see page 1294

## XLD-Agar

### XLD-Agar

**Ph.Eur., for microbiology**

For isolation of enteropathogenic bacteria, especially from the genera *Shigella* and *Salmonella*.

Application: Use 55,2 g for 1 l agar.

Agar medium K (Ph.Eur. 6.0), Xylose Lysine Desoxycholate Agar (Ph.Eur. 6.3, 7.0, 8.0 and 9.0)

Storage temp.: +20 °C

WGK 1

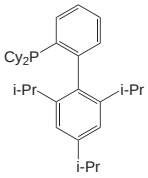
**Guarantee analysis:**

Xylose. ..... 3,5 g/l
Lactose monohydrate. ..... 7,5 g/l
L-Lysin. ..... 5 g/l
Saccharose. ..... 7,5 g/l
Sodium chloride (NaCl). ..... 5 g/l
Yeast extract. ..... 3 g/l
Phenol red. ..... 0,08 g/l
Ammonium iron(III) citrate. ..... 0,8 g/l
Sodium deoxycholate. ..... 2,5 g/l
Sodium thiosulphate. ..... 6,8 g/l
Agar. ..... 13,5 g/l
pH value. ..... 7,4 ±0,2

| | | | |
|---|---|---|---|
| **X941.1** | 500 g | plastic | 112,35 € |
| Original pack 6 x 500 g | | | 106,73/500 g |
| **X941.2** | 1 kg | plastic | 196,20 € |
| Original pack 6 x 1 kg | | | 186,39/1 kg |

For further information, please see page 1403

## XPhos




### XPhos

NEW

**≥97 %**

Phosphine ligand

2-Dicyclohexylphosphino-2',4',6'-triisopropylbiphenyl

$C_{33}H_{49}P$

M 476,72 g/mol

mp 187-190 °C

[564483-18-7]

WGK 1

**Type analysis:**

Appearance. ..... white powder
Assay (HPLC). ..... ≥97 %

| | | | |
|---|---|---|---|
| **1445.1** | 1 g | glass | 26,80 € |
| **1445.2** | 5 g | glass | 96,65 € |
| **1445.3** | 10 g | glass | 160,20 € |

## X-Phos

▶ 5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt see p. 1786

## X-Phos disodium salt

▶ 5-Bromo-4-chloro-3-indolyl phosphate disodium salt see p. 1786

## X-Phosphate disodium salt

▶ 5-Bromo-4-chloro-3-indolyl phosphate disodium salt see p. 1786

## Xylan

$(C_5H_8O_4)_n$

M $(132)_n$ g/mol

mp >300 °C

[9014-63-5] • EC No. 232-760-6

WGK 1

### Xylan

**from beechwood**

**Type analysis:**

Appearance. ..... cream-coloured powder
Specific Rotation (c=1, NaOH 5 %). ..... -60 to -79 °C
Sulphated ash. ..... ≤10 %
Loss on drying (3 h, 110 °C). ..... ≤10,0 %

| | | | |
|---|---|---|---|
| **4414.2** | 10 g | plastic | 26,80 € |
| **4414.1** | 50 g | plastic | 56,90 € |
| **4414.3** | 100 g | plastic | 96,65 € |
| **4414.4** | 250 g | plastic | 203,20 € |

### Xylan

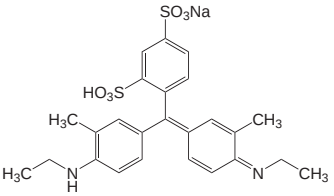
**≥95 % xylooligosaccharides, from corncob**

**Type analysis:**

Appearance. ..... white to off-white powder
Assay (XOs, HPLC). ..... ≥95 %
pH value. ..... 3,5-6,5
Loss on drying. ..... ≤5,0 %
Loss on ignition. ..... ≤0,5 %

| | | | |
|---|---|---|---|
| **8659.2** | 10 g | plastic | 14,95 € |
| **8659.1** | 50 g | plastic | 35,40 € |
| **8659.3** | 250 g | plastic | 138,70 € |

## Xylene cyanole




### Xylene cyanole (C.I. 42135)

**for histology and electrophoresis**

Staining agent for visualisation of running distance in gel electrophoresis.

$C_{25}H_{27}N_2NaO_6S_2$

M 538,6 g/mol

Solubility: 1 g/l ($H_2O$, 20 °C)

[2650-17-1] • EC No. 220-167-5

WGK 2

**Warning** H319

**Type analysis:**

Maximum absorption. ..... 600-620 nm
Loss on drying (110 °C). ..... ≤5,0 %

| | | | |
|---|---|---|---|
| **A513.2** | 5 g | glass | 24,65 € |
| **A513.1** | 10 g | glass | 39,70 € |
| **A513.3** | 25 g | glass | 72,60 € |
| **A513.4** | 50 g | glass | 117,20 € |

## Xylene (isomers)

Dimethylbenzene

$C_8H_{10}$

M 106,17 g/mol

D ~0,87 • bp 137-140 °C

mp -5-13 °C • flp 25 °C

Solubility: 200 mg/l ($H_2O$, 20 °C)

[1330-20-7] • EC No. 215-535-7

UN No. 1307 • ADR 3 III • WGK 2

**Danger** H226-H312+H332-H304-H315-H319-H335-H373

### Xylene (isomers)

**ROTIPURAN® ≥99 %, p.a., ACS, ISO**

**Guarantee analysis:**

Total content of $C_8H_{10}$-isomeres (GC). ..... ≥99,0 %
Colour (Hazen). ..... ≤10
Water . ..... ≤0,03 %
Acidity. ..... ≤0,00025 meq/g
Alkalinity. ..... ≤0,00025 meq/g
Density (d 20 °C/4 °C). ..... 0,862-0,869
Evaporation residue. ..... ≤0,001 %
Benzene (GC). ..... ≤0,1 %
Toluene (GC). ..... ≤0,1 %
Ethylbenzene (GC). ..... ≤25 %
Aluminium (Al). ..... ≤0,00005 %
Barium (Ba). ..... ≤0,00001 %
Lead (Pb). ..... ≤0,00001 %
Boron (B). ..... ≤0,000002 %
Cadmium (Cd). ..... ≤0,000005 %
Calcium (Ca). ..... ≤0,00005 %
Chromium (Cr). ..... ≤0,000002 %
Iron (Fe). ..... ≤0,00001 %
Cobalt (Co). ..... ≤0,000002 %
Copper (Cu). ..... ≤0,000002 %
Magnesium (Mg). ..... ≤0,00001 %
Manganese (Mn). ..... ≤0,000002 %
Nickel (Ni). ..... ≤0,000002 %
Tin (Sn). ..... ≤0,00001 %
Zinc (Zn). ..... ≤0,00001 %
Thiophene. ..... complies
Sulphur compounds (as S). ..... ≤0,003 %
Matter discoloured by $H_2SO_4$ (Hazen). ..... complies

| | | | |
|---|---|---|---|
| **4436.1** | 1 l | glass | 37,55 € |
| Original pack 6 x 1 l | | | 35,67/1 l |
| **4436.2** | 2,5 l | glass | 82,70 € |
| Original pack 4 x 2,5 l | | | 78,57/2,5 l |
| **4436.3** | 5 l | aluminium | 117,20 € |
| Original pack 2 x 5 l | | | 111,34/5 l |

## Xylene (isomers)

**≥98,5 %, Ph.Helv., extra pure**

**Guarantee analysis:**

Assay (GC, isomers)..... ≥98,5 %
Identity..... complies
Identity (IR)..... complies
Boiling range..... 137-143 °C
Density (d 20 °C/4 °C)..... 0,85-0,87
Water..... ≤0,05 %
Evaporation residue..... ≤0,01 %
Acid or alkaline react. substances..... complies
Sulphuric acid assay..... complies
Foreign odour..... complies

| | | | |
|---|---|---|---|
| **CN80.1** | 1 l | glass | 26,80 € |
| Original pack 6 x 1 l | | | 25,46/1 l |
| **CN80.2** | 2,5 l | glass | 47,85 € |
| Original pack 4 x 2,5 l | | | 45,46/2,5 l |
| **CN80.5** | 5 l | aluminium | 74,10 € |
| Original pack 2 x 5 l | | | 70,40/5 l |
| **CN80.3** | 10 l | tinplate | 129,55 € |
| **CN80.4** | 25 l | tinplate | 252,65 € |

## Xylene (isomers)

**>98 %, pure, for histology**

Ideal for dewaxing of microtome sections.

**Type analysis:**

Appearance..... clear, colourless, liquid
Assay (GC)..... >98,0 %
Colour (Hazen)..... ≤20
Water..... ≤0,5 %
Benzene..... ≤0,05 %
Refractive index $n_D^{20}$..... 1,493-1,500
Mixture of isomers o-Xylene, m-Xylene, p-Xylene and benzene..... complies

| | | | |
|---|---|---|---|
| **9713.1** | 1 l | glass | 25,30 € |
| Original pack 6 x 1 l | | | 24,04/1 l |
| **9713.3** | 2,5 l | glass | 46,80 € |
| Original pack 4 x 2,5 l | | | 44,46/2,5 l |
| **9713.5** | 5 l | aluminium | 70,45 € |
| Original pack 2 x 5 l | | | 66,93/5 l |
| **9713.2** | 10 l | tinplate | 119,90 € |
| **9713.4** | 25 l | tinplate | 223,10 € |

For further information, please see page 1441

## Xylene (isomers)

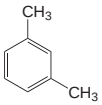
**≥97 %, for synthesis**

**Type analysis:**

Assay..... ≥97,0 %
Water..... ≤0,02 %

| | | | |
|---|---|---|---|
| **2662.1** | 1 l | glass | 20,35 € |
| Original pack 6 x 1 l | | | 19,33/1 l |
| **2662.2** | 2,5 l | glass | 31,10 € |
| Original pack 4 x 2,5 l | | | 29,55/2,5 l |
| **2662.5** | 5 l | aluminium | 54,30 € |
| Original pack 2 x 5 l | | | 51,59/5 l |
| **2662.3** | 10 l | tinplate | 85,90 € |
| **2662.4** | 25 l | tinplate | 177,40 € |

## m-Xylene



1,3-Dimethylbenzene
$C_8H_{10}$
M 106,17 g/mol
D ~0,86 • bp ~139 °C
mp -47,9 °C • flp 25 °C
[108-38-3] • EC No. 203-576-3
UN No. 1307 • ADR 3 III • WGK 2
**Danger** H226-H304-H312+H332-H315-H319-H335-H373

### m-Xylene

**≥99 %, for synthesis**

**Type analysis:**

Appearance..... clear, colourless liquid
Assay (GC)..... ≥99,0 %
Ethylbenzene (GC)..... ≤0,1 %
Free acid (as HCl)..... ≤0,002 %
Refractive index $n_D^{20}$..... 1,496-1,498

| | | | |
|---|---|---|---|
| **3791.3** | 100 ml | glass | 16,05 € |
| **3791.4** | 500 ml | glass | 31,10 € |
| **3791.1** | 1 l | glass | 47,85 € |
| Original pack 6 x 1 l | | | 45,46/1 l |
| **3791.2** | 2,5 l | glass | 96,25 € |
| Original pack 4 x 2,5 l | | | 91,44/2,5 l |

### m-Xylene

**ROTICHROM® GC**

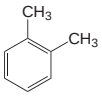
Reference substance for GC.
Storage temp.: +4 °C

**Type analysis:**

Purity (GC)..... ≥99 %

| | | | |
|---|---|---|---|
| **4912.1** | 1 g | glass | 26,35 € |

## o-Xylene



### o-Xylene

**≥98 %, for synthesis**

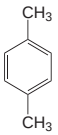
1,2-Dimethyl benzene
$C_8H_{10}$
M 106,17 g/mol
bp 143-145 °C
mp 25 °C • flp 31 °C
[95-47-6] • EC No. 202-422-2
UN No. 1307 • ADR 3 III • WGK 2
**Danger** H226-H304-H312+H332-H315-H319-H335-H373

**Type analysis:**

Appearance..... clear colourless liquid
Assay..... ≥98,0 %
Density (d 20 °C/4 °C)..... 0,878-0,881
Refractive index $n_D^{20}$..... ~1,505

| | | | |
|---|---|---|---|
| **8749.1** | 100 ml | glass | 13,15 € |
| **8749.2** | 500 ml | glass | 24,20 € |
| **8749.3** | 1 l | glass | 35,40 € |
| Original pack 6 x 1 l | | | 33,63/1 l |
| **8749.4** | 2,5 l | glass | 57,95 € |
| Original pack 4 x 2,5 l | | | 55,05/2,5 l |

## p-Xylene



### p-Xylene

**≥99 %, for synthesis**

1,4-Dimethylbenzene
$C_8H_{10}$
M 106,17 g/mol
bp 138 °C
mp 12-15 °C • flp 30 °C
[106-42-3] • EC No. 203-396-5
UN No. 1307 • ADR 3 III • WGK 2
**Danger** H226-H304-H312+H332-H315-H319-H335-H373

**Type analysis:**

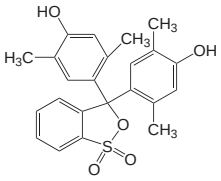
Appearance..... clear colourless liquid
Assay..... ≥99,0 %
Density (d 20 °C/4 °C)..... 0,860-0,862
Refractive index $n_D^{20}$..... ~1,495

| | | | |
|---|---|---|---|
| **8817.1** | 100 ml | glass | 13,90 € |
| **8817.2** | 500 ml | glass | 26,80 € |
| **8817.3** | 1 l | glass | 40,75 € |
| Original pack 6 x 1 l | | | 38,71/1 l |
| **8817.4** | 2,5 l | glass | 81,60 € |
| Original pack 4 x 2,5 l | | | 77,52/2,5 l |

## Xylene substitutes

▶ Roti®-Histol see p. 2219
▶ Roticlear® see p. 2208

## Xylenolblue



### Xylenolblue

**p.a.**

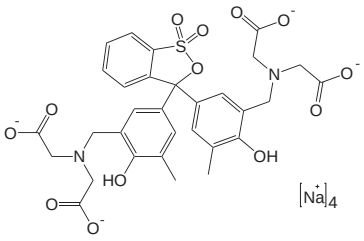
Indicator pH 1,2-2,8 and pH 8,0-9,8
$C_{23}H_{22}O_5S$
M 410,49 g/mol
mp 212 °C (dec.)
[125-31-5] • EC No. 204-736-5
WGK 3
**Warning** H315-H319-H335

**Type analysis:**

Appearance..... dark brown to purple powder
pH-transition range..... 1,2 (red)-2,8 (yellow)
pH-transition range..... 8,0 (yellow)-9,8 (violet)

| | | | |
|---|---|---|---|
| **7746.1** | 1 g | glass | 14,20 € |
| **7746.2** | 5 g | glass | 35,40 € |
| **7746.3** | 10 g | glass | 60,10 € |

## Xylenol orange tetrasodium salt



### Xylenol orange tetrasodium salt

**p.a., ACS**

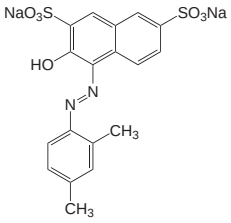
Indicator for metal titration.
3,3'-Bis[N,N-bis(carboxymethyl)aminomethyl]-o-cresolsulfonephthalein tetrasodium salt
$C_{31}H_{28}N_2Na_4O_{13}S$
M 760,59 g/mol
mp 210 °C (dec.)
Solubility: 510 g/l ($H_2O$, 20 °C)
[3618-43-7] • EC No. 222-805-8
WGK 1

**Guarantee analysis:**

Appearance of solution. ..... complies
Loss on drying (110 °C). ..... ≤10 %
Suitability for zinc titration. ..... complies

| | | | |
|---|---|---|---|
| **2727.1** | 1 g | glass | 27,85 € |
| **2727.2** | 5 g | glass | 63,35 € |
| **2727.3** | 10 g | glass | 102,05 € |
| **2727.4** | 50 g | glass | 364,45 € |

## Xylidine Ponceau 2R (C.I. 16150)



### Xylidine Ponceau 2R (C.I. 16150)

**for microscopy**

Xylidine red, Ponceau de Xylidine
$C_{18}H_{14}N_2Na_2O_7S_2$
M 480,40 g/mol
[3761-53-3]
WGK 3

**Warning** H351

**Type analysis:**

Appearance. ..... red powder
Appearance of solution (0,1 % in $H_2O$). ..... clear, red
Loss on drying (1 h, 110 °C). ..... ≤5 %

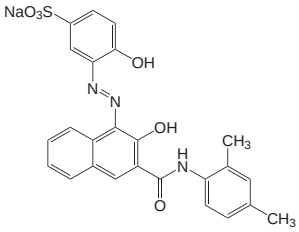
| | | | |
|---|---|---|---|
| **7747.1** | 5 g | glass | 14,55 € |
| **7747.2** | 25 g | glass | 24,20 € |
| **7747.3** | 100 g | glass | 60,10 € |

For further information, please see page 1468

## Xylidine red

▶ Xylidine Ponceau 2R (C.I. 16150) see p. 2382

## Xylidyl blue sodium salt



### Xylidyl blue sodium salt

**≥88 %, p.a.**

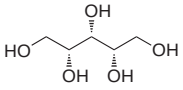
Indicator for metal ions.
Magnesium reagent acc. to Mann and Yoe
$C_{25}H_{20}N_3NaO_6S$
M 513,51 g/mol
Solubility: slightly soluble ($H_2O$, 20 °C)
[14936-97-1] • EC No. 239-012-8
WGK 2

**Type analysis:**

Appearance. ..... violet to brown cryst. powder
Assay. ..... ≥88,0 %
Absorption max. (in $H_2O$). ..... 520,0-530,0 nm

| | | | |
|---|---|---|---|
| **KK35.1** | 1 g | glass | 39,25 € |
| **KK35.2** | 5 g | glass | 166,65 € |

## Xylitol



### Xylitol

**≥98,5 %, Ph.Eur., for biochemistry**

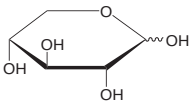
$C_5H_{12}O_5$
M 152,15 g/mol
mp 92-96 °C
[87-99-0] • EC No. 201-788-0

**Guarantee analysis:**

Appearance. ..... white to off-white, cryst. powder
Assay (dry substance). ..... 98,5-101,0 %
Identity. ..... complies
Appearance of solution. ..... complies
Water. ..... ≤1,0 %
Related substances. ..... complies
Melting temperature. ..... 92-96 °C
Conductivity. ..... ≤20 µS/cm
Lead (Pb). ..... ≤0,00005 %
Nickel (Ni). ..... ≤0,0001 %
Reducing sugar. ..... ≤0,2 %

| | | | |
|---|---|---|---|
| **9711.1** | 250 g | plastic | 22,05 € |
| **9711.3** | 500 g | plastic | 41,85 € |
| Original pack 6 x 500 g | | | 39,76/500 g |
| **9711.2** | 1 kg | plastic | 81,20 € |
| Original pack 6 x 1 kg | | | 77,14/1 kg |
| **9711.4** | 2,5 kg | plastic | 155,90 € |

## D(+)-Xylose



### D(+)-Xylose

**≥98,5 %, for biochemistry**

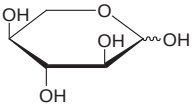
Wood sugar
$C_5H_{10}O_5$
M 150,13 g/mol
D 1,53
mp 146-152 °C
Solubility: 550 g/l ($H_2O$, 20 °C)
[58-86-6] • EC No. 200-400-7
WGK 1

**Type analysis:**

Appearance. ..... white, fine powder
Assay (HPLC). ..... ≥98,5 %
Solubility (c=10, $H_2O$). ..... clear, colourless
Specific rotation $[\alpha]_D^{20}$ (c=10 in $H_2O$)....+18,5° to +19,5°
Loss on drying. ..... ≤0,5 %
Sulphated ash. ..... ≤0,05 %
Heavy metals (as Pb). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **5537.1** | 100 g | plastic | 22,50 € |
| **5537.2** | 500 g | plastic | 71,95 € |
| Original pack 6 x 500 g | | | 68,35/500 g |
| **5537.3** | 1 kg | plastic | 111,70 € |
| Original pack 6 x 1 kg | | | 106,12/1 kg |

## L-Xylose



### L-Xylose

**≥99 %, for biochemistry**

Microbiology
$C_5H_{10}O_5$
M 150,13 g/mol
mp ~150 °C
[609-06-3] • EC No. 210-174-1
WGK 1

**Guarantee analysis:**

Assay (HPLC). ..... ≥99 %
Solution (10 % in $H_2O$). ..... colourless to light coloured, clear to light turbid
Loss on drying (3 h, 60 °C, vacuum). ..... ≤1,0 %
Specific rotation $[\alpha]_D^{20}$ (c=10 in $H_2O$, after 24 h). ..... -20° ±1,0°
Ash content. ..... ≤0,2 %
Heavy metals (as Pb). ..... ≤0,0005 %
Sulphate ($SO_4$). ..... ≤0,02 %
Chloride (Cl). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **4061.3** | 1 g | glass | 28,50 € |
| **4061.1** | 5 g | glass | 107,40 € |
| **4061.2** | 10 g | glass | 165,05 € |

## Xylose Lysine Desoxycholate Agar

▶ XLD-Agar see p. 2380

## Yeast Extract

Storage temp.: +20 °C
[8013-01-2] • EC No. 232-387-9

### Yeast Extract
**powdered, for bacteriology**

**Guarantee analysis:**
Total nitrogen. ≥8 %
Amino nitrogen. 4,8-6,3 %
Ratio AN/TN. 41-60
Loss on drying. ≤6 %
Ash. ≤18 %
pH (5 % in $H_2O$). 6,4-7,4
Solubility (5 %, water). clear

| | | | |
|---|---|---|---|
| **2363.1** | 250 g | plastic | 42,90 € |
| **2363.3** | 500 g | plastic | 78,40 € |
| Original pack 6 x 500 g | | | 74,48/500 g |
| **2363.2** | 1 kg | plastic | 150,40 € |
| Original pack 6 x 1 kg | | | 142,88/1 kg |
| **2363.4** | 2,5 kg | plastic | 278,45 € |
| **2363.5** | 5 kg | plastic | 499,90 € |

For further information, please see page 1419

### Yeast Extract, micro-granulated
**micro-granulated, for bacteriology**

**Type analysis:**
Total nitrogen. ≥10 %
Amino nitrogen. ≥4,5 %
Dry substance. ≥94 %
Ash. ≤16 %
pH (2 % solution). 6,8-7,2

| | | | |
|---|---|---|---|
| **2904.1** | 250 g | plastic | 48,30 € |
| **2904.2** | 500 g | plastic | 87,00 € |
| Original pack 6 x 500 g | | | 82,65/500 g |
| **2904.3** | 1 kg | plastic | 170,95 € |
| Original pack 6 x 1 kg | | | 162,40/1 kg |
| **2904.4** | 2,5 kg | plastic | 317,15 € |
| **2904.5** | 5 kg | plastic | 564,40 € |

For further information, please see page 1420

## Yeast Extract Agar

### Yeast Extract Agar
**DEV, EN ISO 6222, for microbiology**
For the isolation and enumeration of microorganisms in general, e.g. bacteria, moulds, or yeast. Particularly for count of microorganisms isolated from water samples.
Application: Use 24 g for 1 l agar.
Water Plate Count Agar, **WPCA**
Storage temp.: +20 °C

**Guarantee analysis:**
Tryptone. 6 g/l
Yeast extract. 3 g/l
Agar. 15 g/l
pH value. 7,2 ±0,2

| | | | |
|---|---|---|---|
| **CP63.1** | 500 g | plastic | 88,70 € |
| Original pack 6 x 500 g | | | 84,27/500 g |

For further information, please see page 1403

## Yeast Glucose Agar (with chloroamphenicol), granulated

### Yeast Glucose Agar (with chloroamphenicol), granulated
**granulated, for microbiology**
NEW
Selective medium for enumeration of yeasts and mould in milk and dairy products.
Application: Use 40,1 g for 1 l agar.
YGC Agar
Storage temp.: +20 °C
WGK 1

**Formulation:**
Yeast extract. 5 g/l
Glucose. 20 g/l
Chloroamphenicol. 0,1 g/l
Agar. 15 g/l
pH value. 6,6 ±0,2

| | | | |
|---|---|---|---|
| **1526.1** | 500 g | plastic | 126,35 € |
| Original pack 6 x 500 g | | | 120,03/500 g |

## Yeast Glucose Agar (with chloroamphenicol)

### Yeast Glucose Agar (with chloroamphenicol)
**for microbiology**
Selective medium for enumeration of yeasts and mould in milk and dairy products.
Application: Use 40,2 g for 1 l agar.
YGC Agar
Storage temp.: +20 °C
WGK 2

**Formulation:**
Yeast extract. 5 g/l
Glucose. 20 g/l
Chloroamphenicol. 0,2 g/l
Agar. 15 g/l
pH value. 6,6 ±0,2

| | | | |
|---|---|---|---|
| **CL00.1** | 500 g | plastic | 88,70 € |
| Original pack 6 x 500 g | | | 84,27/500 g |
| **CL00.2** | 1 kg | plastic | 152,15 € |
| Original pack 6 x 1 kg | | | 144,54/1 kg |

For further information, please see page 1403

## Yeast-Nitrogen-Base (without Amino Acids)

### Yeast-Nitrogen-Base (without Amino Acids)
**for molecular biology**
For yeast classification based on amino acid and carbohydrate requirements.
Application: Add 6,7 g for 100 ml broth for 10x stock solution. Use selected sugar/amino acid. Do not boil, do not autoclave! Sterilise by sterile filtration!
**YNB Medium**
Storage temp.: +20 °C
WGK 2

**Formulation:**
Ammonium sulphate. 5,0 g/l
Potassium phosphate. 1,0 g/l
Magnesium sulphate. 0,5 g/l
Calcium chloride. 0,1 g/l
Sodium chloride (NaCl). 0,1 g/l
Inositol. 2,0 mg/l
Boric acid. 0,5 mg/l
Niacin. 0,4 mg/l
Thiamine hydrochloride. 0,4 mg/l
Pyridoxin hydrochloride. 0,4 mg/l
Calcium pantothenate. 0,4 mg/l
Manganese sulphate. 0,4 mg/l
Zinc sulphate. 0,4 mg/l
P-Aminobenzoic acid. 0,2 mg/l
Iron chloride. 0,2 mg/l
Riboflavine. 0,2 mg/l
Sodium molybdate. 0,2 mg/l
Potassium iodide. 0,1 mg/l
Copper sulphate. 0,04 mg/l
Biotin. 0,002 mg/l
Folic acid. 0,002 mg/l
pH value. 5,4 ±0,2

| | | | |
|---|---|---|---|
| **HP26.1** | 500 g | plastic | 142,45 € |
| Original pack 6 x 500 g | | | 135,33/500 g |

For further information, please see page 1416

## Yellow prussiate of potash

▶ Potassium hexacyanoferrate(II) trihydrate see p. 2167

## Yersinia Agar acc. to Schiemann

▶ Yersinia Selective Agar (Base) see p. 2383

## Yersinia Selective Agar (Base)

### Yersinia Selective Agar (Base)
**ISO 10273, for microbiology**
Selective medium for isolation of *Yersinia*, particularly *Y. enterocolitica.*
Application: Use 58 g for 1 l agar. After cooling add 2 vials (2x5 ml) reconstituted Yersinia Supplement (Art. No. 4880.1).
**CIN Agar**, Yersinia Agar acc. to Schiemann
Storage temp.: +20 °C
WGK 1

**Guarantee analysis:**
D-Mannitol. 20 g/l
Gelatine peptone. 17 g/l
Peptone mixture. 3 g/l
Yeast extract. 2 g/l
Sodium pyruvate. 2 g/l
Sodium chloride. 1 g/l
Sodium deoxycholate. 0,5 g/l
Neutral red. 0,03 g/l
Magnesium sulphate anhydrous. 0,01 g/l
Crystal Violet. 0,001 g/l
Agar. 12,5 g/l
pH value. 7,4 ±0,2

| | | | |
|---|---|---|---|
| **5780.1** | 500 g | plastic | 110,65 € |
| Original pack 6 x 500 g | | | 105,12/500 g |

For further information, please see page 1403

## Yersinia Supplement

### Yersinia Supplement

**lyophilised**

Media supplement for selective isolation of *Yersinia enterocolitica*

One box of 10 vials Yersinia Supplement is sufficient for 10 x 500 ml Yersinia Selective Agar.

**CIN Supplement**

Storage temp.: +4 °C

UN No. 3077 • ADR 9 III • WGK 2

**Danger**

H315-H317-H319-H334-H400-H410

**Formulation:**

Cefsulodin. ..... 7,5 mg
Novobiocin..... 1,25 mg
Irgasan..... 2 mg
per vial

| | | | |
|---|---|---|---|
| **4880.1** | 10 vials | glass | 107,00 € |

For further information, please see page 1409

## YGC Agar

▶ Yeast Glucose Agar (with chloroamphenicol) see p. 2383
▶ Yeast Glucose Agar (with chloroamphenicol), granulated see p. 2383

## δ-Yohimbine

▶ Ajmalicine see p. 1713

## α-Yohimbine hydrochloride

▶ Rauwolscine hydrochloride see p. 2192

## YPD Agar

### YPD Agar

**for molecular biology**

Application: Use 65 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

**Formulation:**

Peptone. ..... 20 g/l
Yeast extract. ..... 10 g/l
Glucose. ..... 20 g/l
Agar-Agar. ..... 15 g/l
pH value. ..... 6,5 ±0,2

| | | | |
|---|---|---|---|
| **X971.1** | 500 g | plastic | 76,90 € |
| Original pack 6 x 500 g | | | 73,06/500 g |
| **X971.2** | 1 kg | plastic | 132,80 € |
| Original pack 6 x 1 kg | | | 126,16/1 kg |
| **X971.3** | 2,5 kg | plastic | 303,70 € |

For further information, please see page 1418

## YPD Broth

### YPD Broth

**for molecular biology**

Application: Use 50 g for 1 l broth.

Storage temp.: +20 °C

WGK 1

**Formulation:**

Peptone. ..... 20 g/l
Yeast extract. ..... 10 g/l
Glucose. ..... 20 g/l
pH value. ..... 6,5 ±0,2

| | | | |
|---|---|---|---|
| **X970.1** | 500 g | plastic | 60,10 € |
| Original pack 6 x 500 g | | | 57,10/500 g |
| **X970.2** | 1 kg | plastic | 104,85 € |
| Original pack 6 x 1 kg | | | 99,61/1 kg |
| **X970.3** | 2,5 kg | plastic | 233,85 € |

For further information, please see page 1417

## 2xYT Agar

### 2xYT Agar

**for molecular biology**

Application: Use 46 g for 1 l agar.

Storage temp.: +20 °C

WGK 1

**Formulation:**

Tryptone. ..... 16 g/l
Yeast extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
Agar..... 15 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X967.1** | 500 g | plastic | 78,40 € |
| Original pack 6 x 500 g | | | 74,48/500 g |

For further information, please see page 1418

## 2xYT Broth

WGK 1

### 2xYT Broth

**for molecular biology**

Application: Use 31 g for 1 l broth.

Storage temp.: +20 °C

**Formulation:**

Tryptone. ..... 16 g/l
Yeast extract. ..... 10 g/l
Sodium chloride (NaCl). ..... 5 g/l
pH value. ..... 7,0 ±0,2

| | | | |
|---|---|---|---|
| **X966.1** | 500 g | plastic | 65,05 € |
| Original pack 6 x 500 g | | | 61,80/500 g |
| **X966.2** | 1 kg | plastic | 112,90 € |
| Original pack 6 x 1 kg | | | 107,26/1 kg |
| **X966.3** | 2,5 kg | plastic | 263,40 € |

For further information, please see page 1418

### 2x YT Broth, granulated

**granulated, for molecular biology**

Application: Use 31 g for 1 l broth.

**Formulation:**

Tryptone..... 16 g/l
Yeast extract. ..... 10 g/l
Sodium chloride (NaCl)..... 5 g/l
pH value..... 7,0 ±0,2
Granulation. ..... complies

| | | | |
|---|---|---|---|
| **6676.1** | 500 g | plastic | 98,80 € |
| Original pack 6 x 500 g | | | 93,86/500 g |
| **6676.2** | 1 kg | plastic | 166,65 € |
| Original pack 6 x 1 kg | | | 158,32/1 kg |
| **6676.3** | 2,5 kg | plastic | 381,65 € |

For further information, please see page 1415

## Ytterbium Standards

▶ Ytterbium ICP Standard Solution see p. 2301
▶ Ytterbium ICP Standard Solution see p. 2305

## Ytterbium(III) chloride hexahydrate

### Ytterbium(III) chloride hexahydrate

**ROTI®METIC 99,999 % (5N)**

Ytterbium trichloride

$YbCl_3 \cdot 6\ H_2O$

M 387,49 g/mol

D 2,57

mp 160 °C (dec.)

[10035-01-5] • EC No. 237-632-3

WGK 1

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5749.1** | 10 g | plastic | 174,15 € |

## Ytterbium(III) oxide

Diytterbium trioxide

$Yb_2O_3$

M 394,08 g/mol

D 9,2 • bp 4070 °C

mp 2355 °C

[1314-37-0] • EC No. 215-234-0

WGK 2

**Warning** H315-H319-H335

### Ytterbium(III) oxide

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5303.1** | 5 g | plastic | 81,60 € |
| **5303.2** | 25 g | plastic | 278,45 € |

## Ytterbium(III) oxide

**ROTI®REMETIC 99,99 %**

**Type analysis:**
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7353.1** | 10 g | plastic | 88,05 € |
| **7353.2** | 25 g | plastic | 149,45 € |
| **7353.3** | 50 g | plastic | 267,70 € |

## Yttrium Standards


- ▶ Yttrium AAS Standard Solution see p. 2296
- ▶ Yttrium ICP Standard Solution see p. 2301
- ▶ Yttrium ICP Standard Solution see p. 2305


## Yttrium(III) carbonate hydrate

### Yttrium(III) carbonate hydrate

**ROTI®REMETIC 99,99 %**

$Y_2(CO_3)_3 \cdot x\ H_2O$
M 357,84 + x $H_2O$ g/mol
[38245-39-5] • EC No. 227-585-7
WGK 3

**Type analysis:**
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7284.1** | 25 g | plastic | 112,35 € |
| **7284.2** | 50 g | plastic | 203,20 € |

## Yttrium(III) oxide

Diyttrium trioxide
$Y_2O_3$
M 225,81 g/mol
D 5,01 • bp 4300 °C
mp 2438 °C
[1314-36-9] • EC No. 215-233-5

### Yttrium(III) oxide

**ROTI®METIC 99,999% (5N)**

**Type analysis:**
Assay (metals basis)..... 99,999 %
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5751.1** | 10 g | plastic | 66,15 € |
| **5751.2** | 50 g | plastic | 197,30 € |

### Yttrium(III) oxide

**ROTI®REMETIC 99,99 %**

**Type analysis:**
Assay (TREO*). ..... 99,99 %
*Total rare earth oxide
Chemical analysis (ICP, AAS):
specified trace impurities in ppm range

| | | | |
|---|---|---|---|
| **7352.1** | 25 g | plastic | 59,05 € |
| **7352.2** | 100 g | plastic | 149,45 € |

## Zaponlack varnish

### Zaponlack varnish

**liquid**

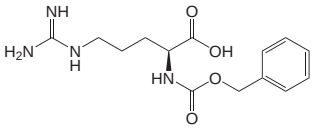
Clear varnish on a nitrocellulose base for sealing.
bp 78 °C
flp 13 °C
UN No. 1263 • ADR 3 II • WGK 1

**Danger**
H225-H315-H318-H336-H412-EUH066

| | | | |
|---|---|---|---|
| **6804.1** | 500 ml | glass | 34,95 € |

For further information, please see page 1141

## Z-L-Arginine



NEW

### Z-L-Arginine

**≥98,5 %, for biochemistry**

Z-L-Arg-OH, $N_\alpha$-Benzyloxycarbonyl-L-arginine, $N_\alpha$-Carbobenzyloxy-L-arginine, Cbz-L-Arginine
$C_{14}H_{20}N_4O_4$
M 308,34 g/mol
mp 167-177 °C
[1234-35-1] • EC No. 214-973-6
WGK 1

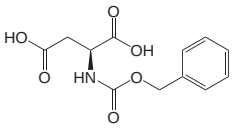
**Type analysis:**
Appearance..... white to off-white powder
Purity (HPLC). ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (4 % in 1 N HCl)....-11,0° to -7,0°
Water (KF)..... ≤2,0 %
Enantiomeric purity..... ≤0,5 % D-Enantiomer

| | | | |
|---|---|---|---|
| **1914.1** | 5 g | plastic | 16,05 € |
| **1914.2** | 25 g | plastic | 42,90 € |
| **1914.3** | 100 g | plastic | 107,40 € |

## Z-L-Asp-OH

▶ Z-L-Aspartic acid see p. 2385

## Z-L-Aspartic acid



NEW

### Z-L-Aspartic acid

**≥98,5 %, for biochemistry**

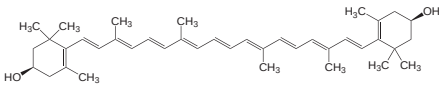
Z-L-Asp-OH, $N_\alpha$-Benzyloxycarbonyl-L-aspartic acid, $N_\alpha$-Carbobenzyloxy-L-aspartic acid, Cbz-L-Aspartic acid
$C_{12}H_{13}NO_6$
M 267,23 g/mol
mp 115-120 °C
[1152-61-0] • EC No. 214-568-4
WGK 1

**Warning** H315-H319-H335

**Type analysis:**
Appearance. ..... white to off-white powder
Purity (HPLC). ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (2 % in AcOH). ... +8,0° to +10,0°
Water (KF). ..... ≤2,0 %
Enantiomeric purity. ..... ≤0,5 % D-Enantiomer

| | | | |
|---|---|---|---|
| **1894.1** | 5 g | plastic | 18,20 € |
| **1894.2** | 25 g | plastic | 52,60 € |
| **1894.3** | 100 g | plastic | 138,70 € |

## Zeaxanthin



### Zeaxanthin

**ROTICHROM® TLC**

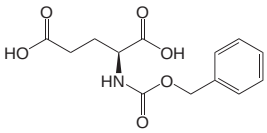
Reference substance for thin layer chromatography.
$C_{40}H_{56}O_2$
M 568,85 g/mol
mp ~215 °C
Storage temp.: -20 °C •
Transport temp.: room temp.
[144-68-3] • EC No. 205-636-4
WGK 1

| | | | |
|---|---|---|---|
| **5672.1** | 1 mg | glass | 220,40 € |
| **5672.2** | 5 mg | glass | 396,70 € |

## Zephiran chloride

▶ Benzalkonium chloride see p. 1765

## Z-L-Glutamic acid



NEW

### Z-L-Glutamic acid

**≥98,5 %, for biochemistry**

Z-L-Glu-OH, $N_\alpha$-Benzyloxycarbonyl-L-glutamic acid, $N_\alpha$-Carbobenzyloxy-L-glutamic acid, Cbz-L-Glutamic acid
$C_{13}H_{15}NO_6$
M 281,26 g/mol
mp 116-122 °C
[1155-62-0] • EC No. 214-584-1
WGK 1

**Type analysis:**
Appearance. ..... white to off-white powder
Purity (HPLC). ..... ≥98,5 %
Specific rotation $[\alpha]_D^{20}$ (4 % in AcOH). ..... -8,5 ° to -6,5 °
Water (KF). ..... ≤2,0 %
Enantiomeric purity. ..... ≤0,5 % D-Enantiomer

| | | | |
|---|---|---|---|
| **1885.1** | 5 g | plastic | 16,05 € |
| **1885.2** | 25 g | plastic | 42,90 € |
| **1885.3** | 100 g | plastic | 127,95 € |

## Ziehl-Neelsen staining kit

### Ziehl-Neelsen staining kit

**for microscopy**

Staining kit for visualising acid-fast bacteria (e.g. pathogen of TB *Mycobacterium tuberculosis*), incl. instructions for use.

Storage temp.: +20 °C

UN No. 1760 • ADR 8 II • WGK 2

**Danger** H314-H341-H371

**Formulation:**

Löffler's methylene blue solution (Art. No. AE64). ..... 500 ml
Carbol fuchsine solution (Art. No. A130)..... 500 ml

| | | | |
|---|---|---|---|
| **8276.1** | 1 kit | glass | 44,65 € |

For further information, please see page 1459

## Zinc

Zn
M 65,37 g/mol
D 7,14 • bp 906 °C
mp 419 °C
[7440-66-6] • EC No. 231-175-3

### Zinc granule

**≥99,99 %, p.a., particle size: 5-15 mm**

Reducing agent, Arsenic detection

**Type analysis:**

Assay (Zinc)..... ≥99,99 %
Aluminium (Al). ..... ≤0,001 %
Lead (Pb). ..... ≤0,003 %
Cadmium (Cd). ..... ≤0,003 %
Iron (Fe). ..... ≤0,002 %
Copper (Cu). ..... ≤0,001 %
Tin (Sn). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **AE99.1** | 250 g | plastic | 31,10 € |
| **AE99.2** | 500 g | plastic | 50,45 € |
| Original pack 6 x 500 g | | | 47,93/500 g |
| **AE99.3** | 1 kg | plastic | 83,75 € |
| Original pack 6 x 1 kg | | | 79,56/1 kg |

### Zinc shot

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis)..... 99,999 %
Particle size. ..... ~3-6 mm
Chemical analysis (ICP, AAS):
up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5345.1** | 25 g | plastic | 44,65 € |
| **5345.2** | 100 g | plastic | 138,70 € |

## Zinc dust

### Zinc dust

**≥98 %, particle size <63 µm, stab.**

Zn
D 7,14 • bp 908 °C
mp 419 °C
[7440-66-6] • EC No. 231-175-3
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H410

**Type analysis:**

Assay (metals basis). ..... ≥98 %
Lead (Pb). ..... ≤0,003 %
Iron (Fe)..... ≤0,002 %
Cadmium (Cd)..... <0,003 %

| | | | |
|---|---|---|---|
| **9524.2** | 500 g | glass | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **9524.3** | 1 kg | glass | 40,75 € |
| Original pack 6 x 1 kg | | | 38,71/1 kg |
| **9524.1** | 2,5 kg | glass | 71,95 € |

### Zinc Standards


- Zinc AAS Standard Solution see p. 2296
- Zinc ICP Standard Solution see p. 2301
- Zinc ICP Standard Solution see p. 2305


## Zinc acetate

### Zinc acetate

**≥95 %, pure, anhydrous**

$C_4H_6O_4Zn$
M 183,48 g/mol
D 1,84
Solubility: 430 g/l ($H_2O$, 20 °C)
[557-34-6] • EC No. 209-170-2
UN No. 3077 • ADR 9 III • WGK 3

**Warning** H319-H400-H410

**Type analysis:**

Assay. ..... ≥95,0 %
pH value (5 %)..... ~7
Lead (Pb). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **9625.1** | 100 g | plastic | 17,10 € |
| **9625.2** | 500 g | plastic | 34,30 € |
| Original pack 6 x 500 g | | | 32,59/500 g |
| **9625.3** | 1 kg | plastic | 46,15 € |
| Original pack 6 x 1 kg | | | 43,84/1 kg |

### Zinc acetate and acetic acid solution


- Carrez solution I see p. 1815


## Zinc acetate dihydrate

$Zn(CH_3COO)_2 \cdot 2\ H_2O$
M 219,49 g/mol
D 1,74
mp 237 °C
Solubility: 430 g/l ($H_2O$, 20 °C)
[5970-45-6] • EC No. 209-170-2
UN No. 3077 • ADR 9 III • WGK 3

**Warning** H302-H410

### Zinc acetate dihydrate

**≥99,5 %, p.a., ACS**

**Guarantee analysis:**

Assay (compl.). ..... ≥99,5 %
In $H_2O$ insoluble matter. ..... ≤0,005 %
Chloride (Cl)..... ≤0,0005 %
Total nitrogen (as N). ..... ≤0,005 %
Sulphate ($SO_4$)..... ≤0,002 %
Nitrate ($NO_3$). ..... ≤0,005 %
Arsenic (As). ..... ≤0,00005 %
Calcium (Ca). ..... ≤0,005 %
Cadmium (Cd). ..... ≤0,001 %
Iron (Fe). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,005 %
Sodium (Na)..... ≤0,01 %
Copper (Cu). ..... ≤0,001 %
Potassium (K). ..... ≤0,01 %
Manganese (Mn)..... ≤0,001 %
Lead (Pb). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **P035.1** | 500 g | plastic | 44,00 € |
| Original pack 6 x 500 g | | | 41,80/500 g |
| **P035.2** | 1 kg | plastic | 71,95 € |
| Original pack 6 x 1 kg | | | 68,35/1 kg |

### Zinc acetate dihydrate

**≥99 %, Ph.Eur.**

**Guarantee analysis:**

Appearance. ..... white cryst. powder
Assay (compl.). ..... 99,0-101,0 %
Identity. ..... complies
pH value (5 % solution). ..... 5,8-7,0
Appearance of solution. ..... complies
Chloride (Cl)..... ≤0,005 %
Sulphate ($SO_4$)..... ≤0,01 %
Aluminium (Al)..... ≤0,0005 %
Arsenic (As). ..... ≤0,0002 %
Lead (Pb). ..... ≤0,001 %
Iron (Fe). ..... ≤0,005 %
Copper (Cu). ..... ≤0,005 %
Cadmium (Cd). ..... ≤0,0002 %
Reducing substances ..... complies

| | | | |
|---|---|---|---|
| **X893.1** | 500 g | plastic | 20,65 € |
| Original pack 6 x 500 g | | | 19,62/500 g |
| **X893.2** | 1 kg | plastic | 34,30 € |
| Original pack 6 x 1 kg | | | 32,59/1 kg |
| **X893.3** | 5 kg | plastic | 122,45 € |

## Zinc bromide

### Zinc bromide

**≥98 %**

$ZnBr_2$
M 225,21 g/mol
D 4,20 • bp 697 °C
mp 394 °C
Solubility: 4470 g/l ($H_2O$, 20 °C)
[7699-45-8] • EC No. 231-718-4
UN No. 3260 • ADR 8 III • WGK 3

**Danger**
H314-H302-H317-H400-H410

**Type analysis:**

| | |
|---|---|
| Assay | ≥98 % |
| Sulphate ($SO_4$) | ≤0,01 % |
| Barium (Ba) | ≤0,001 % |
| Lead (Pb) | ≤0,005 % |
| Calcium (Ca) | ≤0,01 % |
| Iron (Fe) | ≤0,001 % |
| Potassium (K) | ≤0,01 % |
| Magnesium (Mg) | ≤0,01 % |
| Sodium (Na) | ≤0,01 % |

| | | | |
|---|---|---|---|
| **9743.1** | 250 g | glass | 106,45 € |

## Zinc chloride

$ZnCl_2$
M 136,28 g/mol
D 2,91 • bp 732 °C
mp 283 °C
Solubility: 3680 g/l ($H_2O$, 20 °C)
[7646-85-7] • EC No. 231-592-0
UN No. 2331 • ADR 8 III • WGK 3

**Danger** H314-H400-H410-H302

### Zinc chloride

**≥97 %, p.a.**

Analytical reagent; starting material for the preparation of zinc iodine chloride solution.

**Guarantee analysis:**

| | |
|---|---|
| Assay (arg.) | ≥97,0 % |
| In HCl insoluble matter | ≤0,005 % |
| Ammonium ($NH_4$) | ≤0,01 % |
| Nitrate ($NO_3$) | ≤0,003 % |
| Sulphate ($SO_4$) | ≤0,01 % |
| Lead (Pb) | ≤0,005 % |
| Calcium (Ca) | ≤0,06 % |
| Iron (Fe) | ≤0,001 % |
| Magnesium (Mg) | ≤0,01 % |
| Sodium (Na) | ≤0,05 % |

| | | | |
|---|---|---|---|
| **T887.1** | 500 g | plastic | 52,60 € |
| Original pack 6 x 500 g | | | 49,97/500 g |
| **T887.2** | 1 kg | plastic | 79,45 € |
| Original pack 6 x 1 kg | | | 75,48/1 kg |

### Zinc chloride

**≥97 % cryst.**

**Type analysis:**

| | |
|---|---|
| Assay | ≥97 % |
| Lead (Pb) | ≤0,002 % |
| Cadmium (Cd) | ≤0,002 % |
| Iron (Fe) | ≤0,002 % |
| Copper (Cu) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **3533.1** | 1 kg | plastic | 21,00 € |
| Original pack 6 x 1 kg | | | 19,95/1 kg |
| **3533.3** | 2,5 kg | plastic | 40,75 € |
| **3533.2** | 10 kg | plastic | 138,70 € |

## Zinc chloride solution (0,1 N)

### Zinc chloride solution

**0,1 mol/l - 0,1 N volumetric standard solution**

D 1,01
WGK 2

**Warning** H315-H319-H412

**Type analysis:**

| | |
|---|---|
| Amount-of-substance conc. (20 °C) | 0,1 mol/l ±0,4 % |
| Titer | 0,9960-1,0040 |

| | | | |
|---|---|---|---|
| **9901.1** | 500 ml | plastic | 89,15 € |

## Zinc EDTA disodium salt dihydrate

▶ Ethylenediamine tetraacetic acid zinc disodium salt dihydrate see p. 1918

## Zinc iodide

$ZnI_2$
M 319,18 g/mol
D 4,74 • bp 624 °C
mp 445 °C
Solubility: 4500 g/l ($H_2O$, 20 °C)
[10139-47-6] • EC No. 233-396-0
UN No. 3077 • ADR 9 III • WGK 2

**Warning** H315-H319-H335-H410

### Zinc iodide

**≥99 %, p.a.**

**Guarantee analysis:**

| | |
|---|---|
| Assay | ≥99,0 % |
| Iodate ($IO_3$) | ≤0,1 % |
| Sulphate ($SO_4$) | ≤0,01 % |
| Lead (Pb) | ≤0,005 % |
| Cadmium (Cd) | ≤0,005 % |
| Calcium (Ca) | ≤0,01 % |
| Iron (Fe) | ≤0,005 % |
| Potassium (K) | ≤0,01 % |
| Cobalt (Co) | ≤0,005 % |
| Copper (Cu) | ≤0,005 % |
| Sodium (Na) | ≤0,01 % |
| Nickel (Ni) | ≤0,005 % |

| | | | |
|---|---|---|---|
| **9839.1** | 50 g | glass | 34,30 € |
| **9839.2** | 100 g | glass | 64,40 € |
| **9839.3** | 250 g | glass | 122,45 € |

### Zinc iodide

**≥98 %, powder**

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Assay | ≥98,0 % |
| Lead (Pb) | ≤0,01 % |
| Iron (Fe) | ≤0,01 % |
| Copper (Cu) | ≤0,01 % |
| Sodium (Na) | ≤0,05 % |

| | | | |
|---|---|---|---|
| **2730.1** | 25 g | glass | 23,15 € |
| **2730.2** | 100 g | glass | 50,45 € |
| **2730.3** | 250 g | glass | 106,35 € |

## Zinc iodine chloride solution

### Zinc iodine chloride solution

**acc. to Behrens, for microscopy**

Reagent for cellulose.
D ~1,3
UN No. 1840 • ADR 8 III • WGK 3

**Danger**
H302-H314-H373-H410

**Type analysis:**

| | |
|---|---|
| Appearance | yellowish-brown solution |

| | | | |
|---|---|---|---|
| **6395.1** | 100 ml | glass | 25,30 € |

For further information, please see page 1461

## Zinc nitrate hexahydrate

### Zinc nitrate hexahydrate

**≥99 %, p.a.**

$Zn(NO_3)_2 \cdot 6\ H_2O$
M 297,47 g/mol
mp 36,4 °C
Solubility: 1800 g/l ($H_2O$, 20 °C)
[10196-18-6] • EC No. 231-943-8
UN No. 1514 • ADR 5.1 II • WGK 3

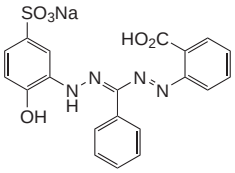
**Danger**
H272-H302-H315-H319-H335-H410

**Guarantee analysis:**

| | |
|---|---|
| Appearance | white cryst. powder |
| Assay | 99,0-101,0 % |
| Insoluble matter | ≤0,005 % |
| Sulphate ($SO_4$) | ≤0,005 % |
| Lead (Pb) | ≤0,005 % |
| Iron (Fe) | ≤0,0005 % |
| Copper (Cu) | ≤0,0005 % |
| pH (5 % $H_2O$, 25 °C) | 3,5-6,0 |

| | | | |
|---|---|---|---|
| **6634.1** | 100 g | plastic | 19,60 € |
| **6634.2** | 500 g | plastic | 40,75 € |
| Original pack 6 x 500 g | | | 38,71/500 g |
| **6634.3** | 1 kg | plastic | 62,25 € |
| Original pack 6 x 1 kg | | | 59,14/1 kg |

## Zincon




### Zincon

**≥95 %, p.a.**

For determination of Cu and Zn.

2-Carboxy-2'-hydroxy-5'-sulphoformazyl-benzene-monosodium salt, 2-[5-(2-Hydroxy-5-sulphophenyl)-3-phenyl-1-formazyl]-benzoic acid-monosodium salt

$C_{20}H_{15}N_4NaO_6S$

M 462,41 g/mol

Storage temp.: +4 °C

[62625-22-3] • EC No. 263-651-1

WGK 3

**Guarantee analysis:**

Appearance. ..... brown to brownish red cryst. powder
Assay (titr.). ..... ≥95,0 %
Solution (1 % in 0,1 N NaOH). ... brown to brownish red
Loss on drying. ..... ≤10,0 %

| | | | |
|---|---|---|---|
| **5563.1** | 1 g | glass | 37,55 € |
| **5563.2** | 5 g | plastic | 124,60 € |

## Zinc oxide

ZnO

M 81,37 g/mol

D ~5,61

mp 1975 °C

Solubility: 0,0016 g/l ($H_2O$, 20 °C)

[1314-13-2] • EC No. 215-222-5

UN No. 3077 • ADR 9 III • WGK 2

**Warning** H400-H410

### Zinc oxide

**ROTI®METIC 99,999 % (5N)**

**Type analysis:**

Assay (metals basis). ..... 99,999 %
Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range

| | | | |
|---|---|---|---|
| **5421.1** | 25 g | plastic | 117,20 € |
| **5421.2** | 100 g | plastic | 385,95 € |

### Zinc oxide

**≥99 %, p.a., ACS**

**Guarantee analysis:**

Assay (compl.). ..... ≥99,0 %
In $H_2SO_4$ insoluble matter. ..... ≤0,01 %
Alkalinity. ..... complies
Sulphur compounds (as $SO_4$). ..... ≤0,01 %
Chloride (Cl). ..... ≤0,001 %
Nitrate ($NO_3$). ..... ≤0,002 %
Arsenic (As). ..... ≤0,0001 %
Lead (Pb). ..... ≤0,005 %
Cadmium (Cd). ..... ≤0,002 %
Calcium (Ca). ..... ≤0,005 %
Iron (Fe). ..... ≤0,0005 %
Potassium (K). ..... ≤0,005 %
Cobalt (Co). ..... ≤0,0005 %
Copper (Cu). ..... ≤0,0005 %
Magnesium (Mg). ..... ≤0,005 %
Manganese (Mn). ..... ≤0,0005 %
Sodium (Na). ..... ≤0,005 %
Nickel (Ni). ..... ≤0,0005 %

| | | | |
|---|---|---|---|
| **T114.1** | 500 g | plastic | 64,40 € |
| Original pack 6 x 500 g | | | 61,18/500 g |
| **T114.2** | 1 kg | plastic | 93,45 € |
| Original pack 6 x 1 kg | | | 88,78/1 kg |

### Zinc oxide

**≥99 %, extra pure**

**Type analysis:**

Assay. ..... ≥99 %
Lead (Pb). ..... ≤0,002 %
Cadmium (Cd). ..... ≤0,001 %
Iron (Fe). ..... ≤0,001 %

| | | | |
|---|---|---|---|
| **9348.2** | 500 g | plastic | 19,25 € |
| Original pack 6 x 500 g | | | 18,29/500 g |
| **9348.1** | 1 kg | plastic | 33,25 € |
| Original pack 6 x 1 kg | | | 31,59/1 kg |
| **9348.3** | 2,5 kg | plastic | 64,40 € |

### Zinc oxide

**≥99 %, Ph.Eur., USP**

**Type analysis:**

Appearance. ..... white to slightly yellowish powder
Assay. ..... 99-100,5 %
Identity. ..... complies
Solubility. ..... complies
Alkaline reacting substances. ..... complies
Carbonate and acid insoluble matters. ..... complies
Loss on ignition. ..... ≤1,0 %
Arsenic (As). ..... ≤0,0005 %
Lead (Pb). ..... ≤0,005 %
Cadmium (Cd). ..... ≤0,001 %
Iron (Fe). ..... ≤0,02 %

| | | | |
|---|---|---|---|
| **5297.1** | 250 g | plastic | 20,35 € |
| **5297.2** | 500 g | plastic | 30,65 € |
| Original pack 6 x 500 g | | | 29,12/500 g |
| **5297.3** | 1 kg | plastic | 47,20 € |
| Original pack 6 x 1 kg | | | 44,84/1 kg |
| **5297.4** | 2,5 kg | plastic | 95,60 € |

## Zinc oxide, nano

### Zinc oxide, nano

**ROTI®nanoMETIC ≥99,5 %, 25 nm**

ZnO

M 81,37 g/mol

D ~5,61

mp 1975 °C

Solubility: 0,0016 g/l ($H_2O$, 20 °C)

[1314-13-2] • EC No. 215-222-5

UN No. 3077 • ADR 9 III • WGK 2

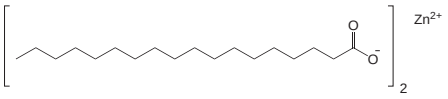
**Warning** H400-H410

**Type analysis:**

Assay (dry substance). ..... ≥99,5 %
Particle size. ..... ~25 nm

| | | | |
|---|---|---|---|
| **8278.1** | 10 g | glass | 28,95 € |
| **8278.2** | 50 g | glass | 110,65 € |
| **8278.3** | 100 g | glass | 203,20 € |

## Zinc stearate




### Zinc stearate

**powder**

Stearic acid zinc salt

$C_{36}H_{70}O_4Zn$

M 632,29 g/mol

D 1,10

mp 120-122 °C • flp 277 °C

[557-05-1] • EC No. 209-151-9

**Type analysis:**

Appearance. ..... powder
Ash. ..... 13,2-14,0 %
Free fatty acid. ..... ≤1,0 %
Melting point. ..... 120-122 °C
Particle size. ..... ≥99 % <71 µm

| | | | |
|---|---|---|---|
| **9295.1** | 1 kg | plastic | 40,35 € |
| Original pack 6 x 1 kg | | | 38,33/1 kg |
| **9295.5** | 25 kg | plastic | 385,95 € |

## Zinc sulphate monohydrate

### Zinc sulphate monohydrate

**≥97 %, pure**

$ZnSO_4 \cdot H_2O$

M 179,49 g/mol

D 3,2

mp 740 °C

Solubility: 350 g/l ($H_2O$, 20 °C)

[7446-19-7] • EC No. 231-793-3

UN No. 3077 • ADR 9 III • WGK 3

**Danger** H302-H318-H410

**Type analysis:**

Assay. ..... 97,0 %
pH value (5 %). ..... 3,0-6,5
Chloride (Cl). ..... ≤0,05 %
Iron (Fe). ..... ≤0,01 %

| | | | |
|---|---|---|---|
| **9466.1** | 250 g | plastic | 19,60 € |
| **9466.2** | 500 g | plastic | 28,95 € |
| Original pack 6 x 500 g | | | 27,50/500 g |
| **9466.3** | 1 kg | plastic | 46,80 € |
| Original pack 6 x 1 kg | | | 44,46/1 kg |

## Zinc sulphate heptahydrate

White vitriol
$ZnSO_4 \cdot 7\ H_2O$
M 287,54 g/mol
D 1,97
mp 40 °C
Solubility: 965 g/l ($H_2O$, 20 °C)
[7446-20-0] • EC No. 231-793-3
UN No. 3077 • ADR 9 III • WGK 3
**Danger** H302-H318-H400-H410

### Zinc sulphate heptahydrate

**≥99,5 %, p.a., ACS**
For removing protein from blood and urine.

**Guarantee analysis:**

| | |
|---|---|
| Assay (compl.) | ≥99,5 % |
| pH value (5 % in $H_2O$) | 4,4-6,0 |
| In $H_2O$ insoluble matter | ≤0,005 % |
| Total nitrogen (as N) | ≤0,0005 % |
| Chloride (Cl) | ≤0,0005 % |
| Arsenic (As) | ≤0,00005 % |
| Lead (Pb) | ≤0,002 % |
| Cadmium (Cd) | ≤0,001 % |
| Calcium (Ca) | ≤0,001 % |
| Iron (Fe) | ≤0,0005 % |
| Potassium (K) | ≤0,005 % |
| Cobalt (Co) | ≤0,0005 % |
| Copper (Cu) | ≤0,0005 % |
| Magnesium (Mg) | ≤0,001 % |
| Manganese (Mn) | ≤0,0003 % |
| Sodium (Na) | ≤0,005 % |

| | | | |
|---|---|---|---|
| **K301.1** | 500 g | plastic | 24,20 € |
| Original pack 6 x 500 g | | | 22,99/500 g |
| **K301.2** | 1 kg | plastic | 42,50 € |
| Original pack 6 x 1 kg | | | 40,38/1 kg |
| **K301.3** | 2,5 kg | plastic | 77,30 € |
| **K301.5** | 25 kg | plastic | 643,95 € |

### Zinc sulphate heptahydrate

**≥99 %, Ph.Eur., USP, BP**

**Guarantee analysis:**

| | |
|---|---|
| Assay (compl.) | 99,0-104,0 % |
| Identity | complies |
| pH value (5 % solution) | 4,4-5,6 |
| Appearance of solution | complies |
| Free acid | complies |
| Chloride (Cl) | ≤0,03 % |
| Alkali and alkaline earth metals | ≤0,5 % |
| Arsenic (As) | ≤0,0002 % |
| Lead (Pb) | ≤0,001 % |
| Calcium (Ca) | ≤0,02 % |
| Iron (Fe) | ≤0,005 % |
| Residual solvents | complies |

| | | | |
|---|---|---|---|
| **T884.1** | 500 g | plastic | 32,15 € |
| Original pack 6 x 500 g | | | 30,54/500 g |
| **T884.2** | 1 kg | plastic | 53,65 € |
| Original pack 6 x 1 kg | | | 50,97/1 kg |
| **T884.3** | 5 kg | plastic | 235,45 € |

### Zinc sulphate heptahydrate

**≥97 %, extra pure**

**Type analysis:**

| | |
|---|---|
| Assay | ≥97,0 % |
| Chloride (Cl) | ≤0,5 % |
| Lead (Pb) | ≤0,001 % |
| Iron (Fe) | ≤0,005 % |
| Nickel (Ni) | ≤0,001 % |

| | | | |
|---|---|---|---|
| **7316.1** | 500 g | plastic | 17,75 € |
| Original pack 6 x 500 g | | | 16,86/500 g |
| **7316.2** | 1 kg | plastic | 27,45 € |
| Original pack 6 x 1 kg | | | 26,08/1 kg |
| **7316.3** | 2,5 kg | plastic | 56,45 € |

## Zinc sulphate solution (0,1 N)

### Zinc sulphate solution

**0,1 mol/l - 0,1 M volumetric standard solution**
UN No. 3082 • ADR 9 III • WGK 2
**Warning** H319-H411

**Type analysis:**

| | |
|---|---|
| Amount-of-substance conc. (20 °C) | 0,1 mol/l ±0,4 % |
| Titer | 0,996-1,004 |

| | | | |
|---|---|---|---|
| **P723.1** | 1 l | plastic | 26,35 € |
| Original pack 6 x 1 l | | | 25,03/1 l |

For further information, please see page 1622

## Zirconium Standards


- Zirconium AAS Standard Solution see p. 2296
- Zirconium ICP Standard Solution see p. 2301
- Zircon ICP Standard Solution see p. 2305


## Zirconium(IV) oxide

### Zirconium(IV) oxide

**≥99 %**
$ZrO_2$
M 123,22 g/mol
D 5,70 • bp ~5000 °C
mp ~2680 °C
[1314-23-4] • EC No. 215-227-2

**Type analysis:**

| | |
|---|---|
| Appearance | white powder |
| Assay | ≥99 % |
| Iron (Fe) | ≤0,1 % |
| Titanium (Ti) | ≤0,1 % |

| | | | |
|---|---|---|---|
| **9303.2** | 100 g | plastic | 41,85 € |
| **9303.1** | 500 g | plastic | 166,65 € |
| Original pack 6 x 500 g | | | 158,32/500 g |

## Zirconium(IV) oxide, nano

### Zirconium(IV) oxide, nano

**ROTI®nanoMETIC ≥92,5 %, 10-30 nm**
$ZrO_2$
M 123,22 g/mol
mp 2715 °C
[1314-23-4] • EC No. 215-227-2

**Type analysis:**

| | |
|---|---|
| Assay | ≥92,5 % |
| Particle size | 10-30 nm |
| Specific surface (BET) | 35-55 $m^2/g$ |
| Aluminium oxide ($Al_2O_3$) | ≤0,1 % |
| Hafnium dioxide ($HfO_2$) | ≤2,0 % |
| Yttrium oxide ($Y_2O_3$) | ≤5,5 % |

| | | | |
|---|---|---|---|
| **8255.1** | 10 g | glass | 27,85 € |
| **8255.2** | 50 g | glass | 107,40 € |
| **8255.3** | 100 g | glass | 198,90 € |

## Zirconium oxynitrate

▶ Zirconyl nitrate hydrate see p. 2389

## Zirconyl chloride octahydrate

### Zirconyl chloride octahydrate

**ROTI®METIC 99,995 % (4N5)**
$ZrOCl_2 \cdot 8\ H_2O$
M 322,25 g/mol
D 1,91
mp 400 °C (dec.)
[13520-92-8]
UN No. 3260 • ADR 8 II • WGK 1
**Danger** H314

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,995 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **4502.1** | 10 g | plastic | 60,10 € |

## Zirconyl nitrate hydrate

### Zirconyl nitrate hydrate

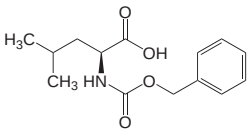
**ROTI®METIC 99,99 % (4N)**
Zirkonium oxynitrate
$ZrO(NO_3)_2 \cdot x\ H_2O$
M 231,23 + x $H_2O$ g/mol
[14985-18-3] • EC No. 237-529-3
UN No. 3085 • ADR 5.1 (8) II • WGK 1
**Danger** H272-H314

**Type analysis:**

| | |
|---|---|
| Assay (metals basis) | 99,99 % |
| Chemical analysis (ICP, AAS): up to 60 specified trace metal impurities in ppm range | |

| | | | |
|---|---|---|---|
| **5415.1** | 25 g | plastic | 235,45 € |
| **5415.2** | 100 g | plastic | 719,20 € |

## Z-L-Leucine



NEW

### Z-L-Leucine

**≥94 %, for biochemistry**

Z-L-Leu-OH, $N_\alpha$-Benzyloxycarbonyl-L-leucine, $N_\alpha$-Carbobenzyloxy-L-leucine, Cbz-L-Leucine

$C_{14}H_{19}NO_4$

M 265,30 g/mol

[2018-66-8] • EC No. 217-960-3

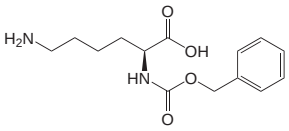
WGK 1

**Type analysis:**

Appearance..... colourless-yellowish liquid
Assay (acidim.)..... ≥94,0 %
Purity (HPLC)..... ≥97,5 %
Spec. rotation $[\alpha]_D^{20}$ (2 % in Ethanol)..... -18,5° to -16,5°
Free amino acids..... ≤0,2 %
Water (KF)..... ≤1,0 %
Enantiomeric purity..... ≤0,5 % D-Enantiomer

| | | | |
|---|---|---|---|
| **1859.1** | 5 g | glass | 16,05 € |
| **1859.2** | 25 g | glass | 38,60 € |
| **1859.3** | 100 g | glass | 107,40 € |

## Z-L-Lysine



NEW

### Z-L-Lysine

**≥98 %, for biochemistry**

Z-L-Lys-OH, $N_\alpha$-Benzyloxycarbonyl-L-lysine, $N_\alpha$-Carbobenzyloxy-L-lysine, Cbz-L-Lysine

$C_{14}H_{20}N_2O_4$

M 280,32 g/mol

mp 210-230 °C

[2212-75-1] • EC No. 218-662-6

WGK 1

**Type analysis:**

Appearance..... white to off-white powder
Purity (HPLC)..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (2 % in 0,2 N HCl)..... -15,0° to -11,0°
Water (KF)..... ≤2,0 %
Enantiomeric purity..... ≤0,5 % D-Enantiomer

| | | | |
|---|---|---|---|
| **1907.1** | 1 g | glass | 21,40 € |
| **1907.2** | 5 g | plastic | 64,40 € |
| **1907.3** | 10 g | plastic | 107,40 € |

## Z-L-Phe-OH

▶ Z-L-Phenylalanine see p. 2390

## Z-L-Phenylalanine

### Z-L-Phenylalanine

NEW

**≥98 %, for biochemistry**

Z-L-Phe-OH, $N_\alpha$-Benzyloxycarbonyl-L-phenylalanine, $N_\alpha$-Carbobenzyloxy-L-phenylalanine, Cbz-L-Phenylalanine

$C_{17}H_{17}NO_4$

M 299,32 g/mol

mp 80-90 °C

[1161-13-3] • EC No. 214-599-3

WGK 1

**Type analysis:**

Appearance..... white to off-white powder
Purity (HPLC)..... ≥98,0 %
Specific rotation $[\alpha]_D^{20}$ (2 % in AcOH)..... +3,5° to +6,5°
Water (KF)..... ≤2,0 %
Enantiomeric purity..... ≤0,5 % D-Enantiomer

| | | | |
|---|---|---|---|
| **1865.1** | 5 g | plastic | 21,40 € |
| **1865.2** | 25 g | plastic | 53,65 € |
| **1865.3** | 100 g | plastic | 138,70 € |

## Zymolyase® 20T

### Zymolyase® 20T

**≥20 U/mg, for biochemistry and molecular biology**

For lysis of yeast cells.
Isolated from *Arthrobacter luteus*.
Lyticase, β-1,3-glucan laminaripentaohydrolase
Storage temp.: +4 °C
Transport temp.: cooled
[37340-57-1]
WGK 1

**Type analysis:**

Appearance..... lyophilised powder
Activity..... ≥20 000 U/g

| | | | |
|---|---|---|---|
| **9324.1** | 100 mg | glass | 77,30 € |
| **9324.2** | 500 mg | glass | 220,40 € |
| **9324.3** | 1 g | glass | 385,95 € |

For further information, please see page 1279

## Zymolyase® 100T

### Zymolyase® 100T

**≥100 U/mg, for biochemistry and molecular biology**

For lysis of yeast cells.
Isolated from *Arthrobacter luteus*.
Lyticase, β-1,3-glucan laminaripentaohydrolase
Storage temp.: +4 °C
Transport temp.: cooled
[37340-57-1]
WGK 1

**Type analysis:**

Appearance..... lyophilised powder
Activity..... ≥100 000 U/g

| | | | |
|---|---|---|---|
| **9329.1** | 100 mg | glass | 278,45 € |
| **9329.2** | 500 mg | glass | 880,45 € |

For further information, please see page 1279

## Information on purity and application

| | |
|---|---|
| ▷ | see |
| [ ] | Chemical Abstracts Registry Number (CAS) |
| > | more than |
| < | less than |
| min | minimum |
| max | maximum |
| µm | 0,001 mm |
| ~ | approximate |
| $[\alpha]_D^{20}$ | specific rotation |
| +4°C | storage in refrigerating room |
| -20°C | storage in deep-freeze room |
| ® | registered symbol, registered trade mark |
|  | corrosive |
|  | explosive |
|  /  | highly flammable / extremely flammable |
|  | fire-activating, oxidizing |
|  /  | toxic / very toxic |
|  n | harmful |
|  i | irritant |
|  | dangerous for the environment |
|  | GHS01 exploding bomb |
|  | GHS02 flame |
|  | GHS03 flame over circle |
|  | GHS04 gas cylinder |
|  | GHS05 corrosion |
|  | GHS06 skull and crossbones |
|  | GHS07 exclamation mark |
|  | GHS08 health hazard |
|  | GHS09 environment |
| Å | Ångström = $10^{-10}$ m |
| ACS | American Chemical Society |
| ADR | European agreement on international road transport of hazardous goods |
| AW | atomic weight |
| Amp. | ampoule |
| aq | water |
| art. | artificial |
| asym. | asymmetrical |
| AT | argentometric titration |
| BP | British Pharmacopoeia |
| bp | boiling point, boiling range |
| $bp_{12}$ | boiling point at 12 torr |
| c | amount-of-substance concentration |
| CAS | Chemical Abstract Service |
| CELLPURE® | suitable for cell culture |
| CHR | A compound in this catalogue is designated as being thin-layer chromatographically pure (CHR) if no impurities can be detected during test conditions with 20 µg sample. |
| ~CHR | For products with impurities which under our conditions, (see CHR), allow the main compound to be designated; such products can be identified as being "almost thin-layer chromatographically pure" (~CHR). |
| C.I. No | colour index number |
| conc. | concentrated |
| cP | centipoise |
| cryst. | crystallized |
| cSt | centistoke |
| D | density |
| DAB | Deutsches Arzneibuch (German Pharmacopoeia) |
| DAC | Deutscher Arzneimittel-Codex (German Drugs Codex) |
| DC | thin-layer chromatography |
| dec. | decomposition |
| depur. | depuratum, purified quality |
| dest. | distilled |
| DIN | German Industrial Standards |
| E No | number codes for food additives that have been assessed for use within the EC |
| EC No | the official number of a chemical substance that is commercially available within the EC |
| extra pure | suitable for laboratory use |
| F | melting point, melting range |
| FCC | Food chemical codex |
| FIP | Fédération Internationale Pharmaceutique |
| Flp | flash point |
| g | gramme |
| GC | gas chromatography |
| (GC) | content defined by gas chromatography |
| H | Hazard statement acc. to regulation (EC) No 1272/2008 (CLP, GHS) |
| HPLC | high performance liquid chromatography |
| IE | international unit (Internationale Einheit) |
| ISO | International Organization for Standardization |
| IU | international unit |
| JP | Japanese Pharmacopoeia |
| kg | kilogramme |
| l, ltr | litre |
| Lit. | literature |
| LSC | liquid scintillation counting |
| lyophil. | lyophilized (readily soluble form) |
| M or mol/l | molarity, amount-of-substance concentration |

# Abbreviations and Symbols

| | |
|---|---|
| M | molecular weight or molar mass |
| mg | milligramm |
| ml | mililitre |
| Mol.% | molar percent |
| nat. | natural |
| $n_D$ | refractive index |
| o.r. | on request |
| P | Precautionary statement acc. to regulation (EC) No 1272/2008 (CLP, GHS) |
| Pa s | Pascal second |
| p.a. | pro analysi = for analytical purposes |
| Pestilyse® | solvent, suitable for residue analysis (environmental, water and food analysis) |
| pH | pH value |
| pKa | pKa value |
| pharm. | pharmaceutical quality, for pharmaceutical purposes |
| Ph.Eur. | European Pharmacopoeia |
| ppb | parts per billion = 1 µg per kg |
| ppm | parts per million = 0,0001 %, 1 mg per kg |
| ppt | parts per trillion = 1 ng per kg |
| prim. | primary |
| PUFFERAN® | can be used as buffer |
| pulv. | pulverised |
| pure | suitable for synthesis and laboratory use |
| puriss. | purissimum, especially pure quality. Products with such designation have a content of at least 99%, unless a different content is stated in %. Their appearance and characteristic data correspond to the appertaining literature or deviate only slightly from it. They are suitable for purposes requiring a high degree of purity. With a number of products having this degree of purity, analysis certificates plus guarantee will be supplied or attached to the container. Delicate products are packaged under protective gas. |
| purum | chemically pure quality. Products having the purity designation "purum" have a content of at least 97%, unless a different content is stated, and their colour and characteristic data, apart from minor deviations, correspond to the literature. This degree of purity is recommended for laboratory work such as syntheses, which are subject to purity requirements. Delicate products are packaged under protective gas. |
| R | Risk statement acc. to regulation 67/548/EEC |
| rect. | rectification |
| redest. | redistilled |
| resubl. | resublimated |
| ROTICHROM® | suitable as standard in chromatography |
| ROTICHROM®GC | reference substance for gas chromatography, delivered with GC chromatogram |
| ROTICHROM®HPLC | reference substance for HPLC, delivered with HPLC chromatogram |
| ROTICHROM®TLC | reference substance for thin-layer chromatography, delivered with thin-layer chromatogram |
| ROTICUBE® | Combi-box of 5 litre or 10 litre, consisting of a stable outer card box with inner bag made of PE; comes with stopcock. |
| ROTIDRY® | dried solvents, filled under protective gas |
| ROTIDRY®SEPT | dried solvents, in a septum bottle |
| ROTIGEN® | product is suitable for DNA-synthesis |
| ROTIPHORESE® | product is suitable for electrophoresis |
| ROTIPURAN® | highly pure product |
| ROTISOLV® | solvent for specific use - brand name Roth |
| ROTITAINER® | Stackable containers which can also be handled easily by female workers. Matching safety pumps are available. Solid substances are delivered in plastic buckets. |
| S | Safety statement acc. to regulation 67/548/EEC |
| sec. | secondary |
| sicc. | dry, anhydrous (siccus) |
| sine $H_2O$ | water free |
| stab. | stabilized |
| subl. | sublimated |
| sym. | symmetrical |
| synth. | synthetic |
| techn. | technical quality. Products with the purity designation "technicum" feature a different content. They are generally mass produced and may have a slightly foreign odour and colour. They are used for general technical purposes. |
| tert. | tertiary; standard for thin-layer chromatograhy (TLC) |
| TLC | thin layer chromatography |
| U | unit |
| USP | United States Pharmacopoeia |
| WGK | water hazard class |
| WGK 1 | generally not water hazardous |
| WGK 2 | water hazardous |
| WGK 3 | extremely water hazardous |

## Hazard Pictograms

The hazard pictogram on the designation label indicates the main hazard arising from a substance. If there are several hazardous qualitiies, several symbols are necessary.

Each pictogram is allocated a hazard designation and coding that do **not** appear on the designation label.



GHS01
exploding bomb



GHS02
flame



GHS03
flame over circle



GHS04
gas cylinder



GHS05
corrosion



GHS06
skull and crossbones



GHS07
exclamation mark



GHS08
health hazard



GHS09
environment

## Hazard Statements H Codes

### Hazard statements for physical hazards

| | |
|---|---|
| H200 | Unstable explosives. |
| H201 | Explosive; mass explosion hazard. |
| H202 | Explosive, severe projection hazard. |
| H203 | Explosive; fire, blast or projection hazard. |
| H204 | Fire or projection hazard. |
| H205 | May mass explode in fire. |
| H220 | Extremely flammable gas. |
| H221 | Flammable gas. |
| H222 | Extremely flammable aerosol. |
| H223 | Flammable aerosol. |
| H224 | Extremely flammable liquid and vapour.j |
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H228 | Flammable solid. |
| H229 | Pressurised container: May burst if heated. |
| H230 | May react explosively even in the absence of air. |
| H231 | May react explosively even in the absence of air at elevated pressure and/or temperature. |
| H240 | Heating may cause an explosion. |
| H241 | Heating may cause a fire or explosion. |
| H242 | Heating may cause a fire. |
| H250 | Catches fire spontaneously if exposed to air. |
| H251 | Self-heating; may catch fire. |
| H252 | Self-heating in large quantities; may catch fire. |
| H260 | In contact with water releases flammable gases which may ignite spontaneously. |
| H261 | In contact with water releases flammable gases. |
| H270 | May cause or intensify fire; oxidiser. |
| H271 | May cause fire or explosion; strong oxidiser. |
| H272 | May intensify fire; oxidiser. |
| H280 | Contains gas under pressure; may explode if heated. |
| H281 | Contains refrigerated gas; may cause cryogenic burns or injury. |
| H290 | May be corrosive to metals. |

### Hazard statements for health hazards

| | |
|---|---|
| H300 | Fatal if swallowed. |
| H301 | Toxic if swallowed. |
| H302 | Harmful if swallowed. |
| H304 | May be fatal if swallowed and enters airways. |
| H310 | Fatal in contact with skin. |
| H311 | Toxic in contact with skin. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |

| | |
|---|---|
| H330 | Fatal if inhaled. |
| H331 | Toxic if inhaled. |
| H332 | Harmful if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |
| H340 | May cause genetic defects. |
| H341 | Suspected of causing genetic defects. |
| H350 | May cause cancer. |
| H350i | May cause cancer by inhalation. |
| H351 | Suspected of causing cancer. |
| H360 | May damage fertility or the unborn child. |
| H360F | May damage fertility. |
| H360D | May damage the unborn child. |
| H360FD | May damage fertility. May damage the unborn child. |
| H360Fd | May damage fertility. Suspected of damaging the unborn child. |
| H360Df | May damage the unborn child. Suspected of damaging fertility. |
| H361 | Suspected of damaging fertility or the unborn child. |
| H361f | Suspected of damaging fertility . |
| H361d | Suspected of damaging the unborn child. |
| H361fd | Suspected of damaging fertility.<br>Suspected of damaging the unborn child. |
| H362 | May cause harm to breast-fed children. |
| H370 | Causes damage to organs. |
| H371 | May cause damage to organs. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H300+H310 | Fatal if swallowed or in contact with skin. |
| H300+H330 | Fatal if swallowed or if inhaled. |
| H310+H330 | Fatal in contact with skin or if inhaled. |
| H300+H310+H330 | Fatal if swallowed, in contact with skin or if inhaled. |
| H301+H311 | Toxic if swallowed or in contact with skin. |
| H301+H331 | Toxic if swallowed or if inhaled. |
| H311+H331 | Toxic in contact with skin or if inhaled. |
| H301+H311+H331 | Toxic if swallowed, in contact with skin or if inhaled. |
| H302+H312 | Harmful if swallowed or in contact with skin. |
| H302+H332 | Harmful if swallowed or if inhaled. |
| H312+H332 | Harmful in contact with skin or if inhaled. |
| H302+H312+H332 | Harmful if swallowed, in contact with skin or if inhaled. |

### Hazard statements for environmental hazards

| | |
|---|---|
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects. |
| H413 | May cause long lasting harmful effects to aquatic life. |
| H420 | Harms public health and the environment by destroying ozone in the upper atmosphere. |

## Supplemental Hazard Information H Codes

| | |
|---|---|
| EUH001 | Explosive when dry. |
| EUH006 | Explosive with or without contact with air. |
| EUH014 | Reacts violently with water. |
| EUH018 | In use may form flammable/explosive vapour-air mixture. |
| EUH019 | May form explosive peroxides. |
| EUH029 | Contact with water liberates toxic gas. |
| EUH031 | Contact with acids liberates toxic gas. |
| EUH032 | Contact with acids liberates very toxic gas. |
| EUH044 | Risk of explosion if heated under confinement. |
| EUH066 | Repeated exposure may cause skin dryness or cracking. |
| EUH070 | Toxic by eye contact. |
| EUH071 | Corrosive to the respiratory tract. |
| EUH201<br>EUH201A | Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.<br>Warning! Contains lead. |
| EUH202 | Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children. |
| EUH203 | Contains chromium (VI). May produce an allergic reaction. |
| EUH204 | Contains isocyanates. May produce an allergic reaction. |
| EUH205 | Contains epoxy constituents. May produce an allergic reaction. |
| EUH206 | Warning! Do not use together with other products. May release dangerous gases (chlorine). |
| EUH207 | Warning! Contains cadmium. Dangerous fumes are formed during use. See information supplied by the manufacturer. Comply with the safety instructions. |
| EUH208 | Contains (name of sensitising substance). May produce an allergic reaction. |
| EUH209<br>EUH209A | Can become highly flammable in use.<br>Can become flammable in use. |
| EUH210 | Safety data sheet available on request. |
| EUH401 | To avoid risks to human health and the environment, comply with the instructions for use. |

| Classification | | | Labelling | | | |
|---|---|---|---|---|---|---|
| Hazard class | Category codes | | Pictogram, code | Signal word | Hazard statements | |
| Explosive | Unstable explosives | Unst. Expl. |  GHS01 | Danger | H200 | Unstable explosives. |
| | Divisions 1.1 | Expl. 1.1 | | | H201 | Explosive; mass explosion hazard. |
| | Divisions 1.2 | Expl. 1.2 | | | H202 | Explosive, severe projection hazard. |
| | Divisions 1.3 | Expl. 1.3 | | | H203 | Explosive; fire, blast or projection hazard. |
| | Divisions 1.4 | Expl. 1.4 | | Warning | H204 | Fire or projection hazard. |
| | Divisions 1.5 | Expl. 1.5 | No pictogram | Danger | H205 | May mass explode in fire. |
| | Divisions 1.6 | Expl. 1.6 | No pictogram, no signal word, no hazard statement | | | |
| Flammable gas | Category 1 | Flam. gas 1 |  GHS02 | Danger | H220 | Extremely flammable gas. |
| | Category 2 | Flam. gas 2 | No pictogram | Warning | H221 | Flammable gas. |
| Flammable aerosol | Category 1 | Flam. aerosol 1 |  GHS02 | Danger | H222 | Extremely flammable aerosol. |
| | Category 2 | Flam. aerosol 2 | | Warning | H223 | Flammable aerosol. |
| Oxidising gas | Category 1 | Ox. gas 1 |  GHS03 | Danger | H270 | May cause or intensify fire; oxidiser. |
| Gas under pressure | Compressed gas | Press. gas |  GHS04 | Warning | H280 | Contains gas under pressure; may explode if heated. |
| | Dissolved gas | | | | | |
| | Liquefied gas | | | | | |
| | Refrigerated liquefied gas | | | | H281 | Contains refrigerated gas; may cause cryogenic burns or injury. |
| Flammable liquid | Category 1 | Flam. Liq. 1 |  GHS02 | Danger | H224 | Extremely flammable liquid and vapour. |
| | Category 2 | Flam. Liq. 2 | | | H225 | Highly flammable liquid and vapour. |
| | Category 3 | Flam. Liq. 3 | | Warning | H226 | Flammable liquid and vapour. |
| Flammable solid | Category 1 | Flam. Sol. 1 | | Danger | H228 | Flammable solid. |
| | Category 2 | Flam. Sol. 2 | | Warning | | |

# Classification & Labelling acc. to (EC) 1272/2008

| Classification | | | Labelling | | | |
|---|---|---|---|---|---|---|
| **Hazard class** | **Category codes** | | **Pictogram, code** | **Signal word** | **Hazard statements** | |
| **Self-reactive substance or mixture** | Type A | Self-react. A |  GHS01 | Danger | H240 | Heating may cause an explosion. |
| | | Org. Perox. A | | | | |
| | Type B | Self-react. B |  GHS01 + GHS02 | | H241 | Heating may cause a fire or explosion. |
| | | Org. Perox. B | | | | |
| **Organic peroxide** | Type C and D | Self-react. CD |  GHS02 | Danger | H242 | Heating may cause a fire. |
| | | Org. Perox. CD | | | | |
| | Type E and F | Self-react. EF | | Warning | | |
| | | Org. Perox. EF | | | | |
| | Type G | Self-react. G | No pictogram, no signal word, no hazard statement | | | |
| | | Org. Perox. G | | | | |
| **Pyrophoric liquid** | Category 1 | Pyr. Liq. 1 |  GHS02 | Danger | H250 | Catches fire spontaneously if exposed to air. |
| **Pyrophoric solid** | Category 1 | Pyr. Sol. 1 | | | | |
| **Self-heating substance or mixture** | Category 1 | Self-heat. 1 | | Danger | H251 | Self-heating; may catch fire. |
| | Category 2 | Self-heat. 2 | | Warning | H252 | Self-heating in large quantities; may catch fire. |
| **Substance or mixture which in contact with water emits flammable gas** | Category 1 | Water-react. 1 | | Danger | H260 | In contact with water releases flammable gases which may ignite spontaneously. |
| | Category 2 | Water-react. 2 | | Danger | H261 | In contact with water releases flammable gases. |
| | Category 3 | Water-react. 3 | | Warning | | |
| **Oxidising liquid** **Oxidising solid** | Category 1 | Ox. Liq. 1 |  GHS03 | Danger | H271 | May cause fire or explosion; strong oxidiser. |
| | | Ox. Sol. 1 | | | | |
| | Category 2 | Ox. Liq. 2 | | Danger | H272 | May intensify fire; oxidiser. |
| | | Ox. Sol. 2 | | | | |
| | Category 3 | Ox. Liq. 3 | | Warning | | |
| | | Ox. Sol. 3 | | | | |
| **Substance or mixture corrosive to metals** | Category 1 | Met. Corr. 1 |  GHS05 | Warning | H290 | May be corrosive to metals. |
| **Acute toxicity** | Category 1 | Acute Tox. 1 |  GHS06 | Danger | H300<br>H310<br>H330 | Fatal if swallowed.<br>Fatal in contact with skin.<br>Fatal if inhaled. |
| | Category 2 | Acute Tox. 2 | | | | |
| | Category 3 | Acute Tox. 3 | | | H301<br>H311<br>H331 | Toxic if swallowed.<br>Toxic in contact with skin.<br>Toxic if inhaled. |
| | Category 4 | Acute Tox. 4 |  GHS07 | Warning | H302<br>H312<br>H332 | Harmful if swallowed.<br>Harmful in contact with skin.<br>Harmful if inhaled. |

| Classification | | | Labelling | | | |
|---|---|---|---|---|---|---|
| Hazard class | Category codes | | Pictogram, code | Signal word | Hazard statements | |
| Skin corrosion/ irritation | Category 1A | Skin Corr. 1A |  GHS05 | Danger | H314 | Causes severe skin burns and eye damage. |
| | Category 1B | Skin Corr. 1B | | | | |
| | Category 1C | Skin Corr. 1C | | | | |
| | Category 2 | Skin Irrit. 2 |  GHS07 | Warning | H315 | Causes skin irritation. |
| Serious eye damage/ eye irritation | Category 1 | Eye Dam. 1 |  GHS05 | Danger | H318 | Causes serious eye damage. |
| | Category 2 | Eye Irrit. 2 |  GHS07 | Warning | H319 | Causes serious eye irritation. |
| Respiratory sensitization | Category 1<br>Category 1A<br>Category 1B | Resp. Sens. 1<br>Resp. Sens. 1A<br>Resp. Sens. 1B |  GHS05 | Danger | H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Skin sensitization | Category 1<br>Category 1A<br>Category 1B | Skin Sens. 1<br>Skin Sens. 1A<br>Skin Sens. 1B |  GHS07 | Warning | H317 | May cause an allergic skin reaction. |
| Germ cell mutagenicity | Category 1A | Muta. 1A |  GHS08 | Danger | H340 | May cause genetic defects. (*) |
| | Category 1B | Muta. 1B | | | | |
| | Category 2 | Muta. 2 | | Warning | H341 | Suspected of causing genetic defects. (*) |
| Carcinogenicity | Category 1A | Carc. 1A | | Danger | H350<br>H350i | May cause cancer. (*)<br>May cause cancer by inhalation. |
| | Category 1B | Carc. 1B | | | | |
| | Category 2 | Carc. 2 | | Warning | H351 | Suspected of causing cancer. (*) |
| | (*) state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard | | | | | |
| Reproductive toxicity | Category 1A | Repr. 1A |  GHS08 | Danger | H360<br>H360F<br>H360D<br>H360FD | May damage fertility or the unborn child. (*)<br>May damage fertility. (*)<br>May damage the unborn child. (*)<br>May damage fertility. May damage the unborn child. (*) |
| | Category 1B | Repr. 1B | | | | |
| | Category 2 | Repr. 2 | | Warning | H361<br>H361f<br>H361d<br>H361fd | Suspected of damaging fertility or the unborn child.<br>Suspected of damaging fertility.<br>Suspected of damaging the unborn child.<br>Suspected of damaging fertility. Suspected of damaging the unborn child. |
| | Additional category for effects on or via lactation | Lact. | No pictogram | No signal word | H362 | May cause harm to breast-fed children. |
| | (*) state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard | | | | | |

# Classification & Labelling acc. to (EC) 1272/2008

| Classification | | | Labelling | | | |
|---|---|---|---|---|---|---|
| **Hazard class** | **Category codes** | | **Pictogram, code** | **Signal word** | **Hazard statements** | |
| **Specific target organ toxicity – single exposure** | Category 1 | STOT SE 1 |  GHS08 | Danger | H370 | Causes damage to organs. (*) |
| | Category 2 | STOT SE 2 | | Warning | H371 | May cause damage to organs. (*) |
| | Category 3 | STOT SE 3 |  GHS07 | Warning | H335 | May cause respiratory irritation. |
| | | | | | H336 | May cause drowsiness or dizziness. |
| **Specific target organ toxicity – repeated exposure** | Category 1 | STOT RE 1 |  GHS08 | Danger | H372 | Causes damage to organs through prolonged or repeated exposure. (*) |
| | Category 2 | STOT RE 2 | | Warning | H373 | May cause damage to organs through prolonged or repeated exposure. (*) |
| | (*) state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard | | | | | |
| **Aspiration hazard** | Category 1 | Asp. Tox. 1 |  GHS08 | Danger | H304 | May be fatal if swallowed and enters airways. |
| **Acute aquatic hazard** | Acute 1 | Aquatic Acute 1 |  GHS09 | Warning | H400 | Very toxic to aquatic life. |
| **Long-term aquatic hazard** | Chronic 1 | Aquatic Chronic 1 | | Warning | H410 | Very toxic to aquatic life with long lasting effects. |
| | Chronic 2 | Aquatic Chronic 2 | | No signal word | H411 | Toxic to aquatic life with long lasting effects. |
| | Chronic 3 | Aquatic Chronic 3 | No pictogram | No signal word | H412 | Harmful to aquatic life with long lasting effects. |
| | Chronic 4 | Aquatic Chronic 3 | | | H413 | May cause long lasting harmful effects to aquatic life. |
| **Hazardous for the ozone layer** | Category 1 | Ozone 1 |  GHS07 | Warning | H420 | Harms public health and the environment by destroying ozone in the upper atmosphere. |

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# Trade Marks

| | |
|---|---|
| 3M® | 3M Company |
| ABI™ | Applied Biosystems |
| ABI Prism® | Applied Biosystems |
| accu-jet® | BRAND GmbH + Co. KG |
| AccuTech® | Ansell Limited |
| Actidione® | Upjohn |
| Actiomedic® | GRAMM Medical Healthcare GmbH |
| Acura® | Socorex ISBA S.A. |
| Adventurer™ | Ohaus GmbH |
| Aerosil® | Bush Beach Ltd. |
| Aesculap® | B. Braun Melsungen AG |
| ÄKTA™ | GE Healthcare Bio-Sciences Corp. |
| AlphaTec® | Ansell Limited |
| aluderm® | W. Söhngen GmbH |
| ALUGRAM® | Machery-Nagel |
| AMBERJET™ | Rohm & Haas Co. |
| APIEZON® | M & I Materials |
| Applied Biosystems® | Applied Biosystems |
| Aquadur® | Machery-Nagel |
| Aquadri™ | Ansell Limited |
| Aquastop ROTH® | Carl Roth GmbH + Co. KG |
| Aradur® | Huntsman Advanced Materials GmbH |
| Araldit® | Huntsman Advanced Materials GmbH |
| AR-Glas® | Schott AG |
| aspirette® | Hirschmann Laborgeräte GmbH & Co. KG |
| ATCC® | American Type Culture Collection™ |
| Aura™ | 3M Company |
| AVICEL® | FMC Corporation |
| Bacillol® | Bode Chemie GmbH |
| Bag Mixer® | Interscience |
| Bake Tags™ | Diversified Biotech |
| Baktolan® | Bode Chemie GmbH |
| Baktolin® | Bode Chemie GmbH |
| Ballistol® | F.W.Klever GmbH |
| Barrier® | Ansell Limited |
| Bead Beater® | Biospec Products |
| Beesana® | Karl Beese GmbH & Co. KG |
| Bel-Blotter™ | Bel-Art Products |
| Bi-Colour™ | Ansell Limited |
| BIO-CERT® | BRAND GmbH + Co. KG |
| Bioclean® | Ritter GmbH |
| Biomek® | Beckman Instruments |
| BioMetra® | Biometra GmbH |
| Bio-pure™ | Diversified Biotech |
| Bio-Rad® | BioRad Laboratories, Inc. |
| Biotips® | Sorenson, BioScience, Inc. |
| BlueVertical™ | Serva |
| BRAND plates® | BRAND GmbH + Co. KG |
| Brij® | ICI |
| Brita® | Brita GmbH |
| Butoject® | KCL GmbH |
| BX™ | 3M Company |
| Calibra® | Socorex ISBA S.A. |
| Camapur® | KCL GmbH |
| Camapren® | KCL GmbH |
| Camatril® | KCL GmbH |
| CAMEO™ | GVS S.p.A. |
| Celite® Hyflo Super Cel® | Johns-Manville |
| Celite® Standard Super Cel® | Johns-Manville |
| Celite® | Johns-Manville |
| CellOx® | Nova Analytics Corporation |
| CELLPURE® | Carl Roth GmbH + Co. KG |
| CELLSTAR® | Greiner Bio-One |
| CenterGuide™ | Chromatory Research Supplies |
| ceramus® | Hirschmann Laborgeräte GmbH & Co. KG |
| Ceran® | Schott Instruments GmbH |

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| CertoClav® | CertoClav GmbH |
| Charguard™ | Showa Glove Co. |
| Checker® | Hanna Instruments |
| CHROMABOND® | Machery-Nagel |
| CHROMAFIL® | Machery-Nagel |
| Chromotrop® | Chroma |
| Cimarec | Thermo Fisher Scientific Inc. |
| Clavies™ | Bel Art Products |
| Compact Dry | NISSUI PHARMACEUTICAL CO., LTD. |
| Comply™ | 3M Company |
| COMU® | Luxembourg Biotechnologies Ltd. |
| Concentryl | Walter Becker GmbH |
| Coomassie® | ICI |
| CORIO™ | Julabo GmbH |
| Cryo-Clear™ | Diversified Biotech |
| Cryo-Gloves® | Tempshield Inc |
| Cryo-Industrial® | Tempshield Inc |
| Cryo-Tags® | Diversified Biotech |
| Cryule® | WHEATON |
| Cultura® | Almedica AG |
| Cutasept® | Bode Chemie GmbH |
| Cutfix® | B. Braun Melsungen AG |
| Cy3™, Cy5™ | GE Healthcare |
| CytoSep™ | Simport Scientific |
| DABCO® | Air Products & Chemicals Inc. |
| Dafilon® | B. Braun Melsungen AG |
| Decalin® | DuPont |
| Decontex® | Kind Arbeitssicherheit |
| Delta™ | Heathrow Scientific LLC |
| Dermashield® | Ansell Limited |
| Dermatril® | KCL GmbH |
| Dispensette® | BRAND GMBH + Co. KG |
| Distriman® | Gilson Inc. |
| DNA AWAY® | Molecular Bio-Products. Inc. |
| Dosys™ | Socorex ISBA S.A. |
| Dowex® | Dow Chemicals |
| Dualin® | Physioderm GmbH + Co. KG |
| Dulux® | Osram |
| Dumostar® | Dumont SA |
| Dumont® | Dumont SA |
| Dumoxel® | Dumont SA |
| DuraMesh® | MOLDEX-METRIC AG & Co. KG |
| Durapore® | Merck KGaA |
| DuraPorter™ | Heathrow Scientific LLC |
| Dura Seal® | Diversified Biotech |
| DURAN® | DWK Life Sciences GmbH |
| DUROPLAN® | DWK Life Sciences GmbH |
| DynaGard® | Spectrum®Labs |
| Dyneema® | Royal DSM N.V. |
| Durobax® | Schott AG |
| E-A-R Caps™ | 3M Company |
| Eastar® | Eastman Chemical Company |
| Ecostak® | Sorenson, BioScience, Inc. |
| Élastify® | Rösner-Mautby Meditrade GmbH |
| Ecosurf™ | Dow Chemical Company |
| eLINE® | Sartorius Biohit Liquid Handling Oyj |
| Entellan® | Merck KGaA |
| Entris® | Sartorius Lab Instruments GmbH & Co. KG |
| Entsorger-Set-ROTH® | Carl Roth GmbH + Co. KG |
| Eriochrome® | Huntsman Petrochemical, LLC |
| Eukitt® | O. Kindler GmbH & Co. |
| Euparal | ANSCO Laboratories Manchester |
| euroMatic® | Sarstedt AG & Co (Rigling) |
| EvaGreen® | Biotium |
| Explorer™ | Ohaus GmbH |
| Fahrenheit™ | 3M Company |
| Ficoll® | GE Healthcare Bio-Sciences Corp. |

# Trade Marks

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| Finnpipette® | Thermo Fisher Scientific Inc. |
| Fiolax® | Schott AG Mainz |
| fish-clip® | Bürkle GmbH |
| FiveGo™ | Mettler Toledo |
| FiveEasy™ | Mettler Toledo |
| FiveEasyPlus™ | Mettler Toledo |
| Flexi Freez'Pack® | Coleman® |
| FlexSeal® | Bacou-Dalloz |
| Flip & Grip™ | Heathrow Scientific LLC |
| Flip Tube® | Semadeni AG |
| Florisil® | Floridin Company |
| FlowMesh™ | Diversified Biotech |
| FLUOROSORB-ROTH® | Carl Roth GmbH + Co. KG |
| FLURAN® | Saint-Gobain Performance Plastics Corp. |
| FLUXX® | SABEU Kunststoffwerk Northeim GmbH |
| Fold'N Cool™ | Coleman® |
| FPLC™ | GE Healthcare Bio-Sciences Corp. |
| Freez'Box™ | Coleman® |
| Freez'Pack® | Coleman® |
| Fresco® | Thermo Electron Led GmbH |
| FTA® | GE Healthcare Bio-Sciences Corp. |
| GASTIGHT® | Hamilton Company |
| Gelix One® | Biostep GmbH |
| Gel Handler® | Diversified Biotech |
| Gelrite® | Kelco Biopolymers |
| Gene Assembler® | Pharmacia AB |
| Genie™ | Scientific Industries Inc. |
| Gensura® | Gensura |
| Gentle Med® | Rösner-Mautby Meditrade GmbH |
| Grab Rack™ | Heathrow Scientific LLC |
| Granopent® | Carl Roth GmbH + Co. KG |
| Granulopent® | Carl Roth GmbH + Co. KG |
| Gusto™ | Heathrow Scientific LLC |
| GyroMini™ | Labnet International |
| GyroTwister™ | Labnet International |
| HandyStep® | Brand GmbH & Co. KG |
| Hansaplast® | Beiersdorf AG |
| Helipur® | B. Braun Melsungen |
| Hepasamin® | Carl Roth GmbH + Co. KG |
| Heratherm® | Thermo Electron LED GmbH |
| Histobond® | Paul Marienfeld GmbH & Co. KG |
| Hostalen® | Lyondell Basell Industries |
| Hyamine® | Rohm & Haas Co. |
| HyFlex® | Ansell Limited |
| HygroPalm® | Rotronic AG |
| Hytrel® | DuPont |
| Ice-Grip® | KCL GmbH |
| Immobilon-P® | Merck KGaA |
| Injekt® | B. Braun Melsungen AG |
| InLab® | Mettler-Toledo |
| Isotemp® | Heinrich Vorndamme O.H.G. |
| Iso-Versinic® | Saint-Gobain Performance Plastics Corp. |
| Jax® | Vang |
| Kalrez® | DuPont Dow Elastomers |
| KarboTECT® | KCL GmbH |
| Karl-Fischer-Roti®hydroquant | Carl Roth GmbH + Co. KG |
| Keck® | Dr. H. Keck & Partner |
| Kel®-F | 3M Deutschland GmbH |
| Kevlar® | DuPont |
| Key®-C | Hanna Instruments |
| KIMTECH® | Kimberly-Clark |
| Kimwipes® | Kimberly-Clark |
| Kleen Eyes® | Gateway Safety Products |
| Kleenex® | Kimberly-Clark |
| Kleenguard® | Kimberly-Clark |
| K-MEX® | KCL GmbH |
| K-TEX® | KCL GmbH |

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| Kohrsolin® | Bode Chemie GmbH |
| Komplexon® | CU Chemie Uetikon AG |
| KORASILON® | Kurt Obermeier GmbH & Co. KG |
| Korsolex® | Bode Chemie GmbH |
| LABOPORT® | KNF Neuberger GmbH |
| LaboPlast® | Bürkle GmbH |
| LABOXACT® | KNF Neuberger GmbH |
| La Moulinette® | SEB S.A |
| Lapren® | KCL GmbH |
| LASER LITE® | Sperian Hearing Protection, LLC |
| LAUDA Microcool® | LAUDA DR. R. WOBSER GMBH & CO. KG |
| Leukoplast® | BSN medical GmbH |
| Leukosilk® | BSN medical GmbH |
| Limesoil, Supergrenzschmiermittel® | Carl Roth GmbH + Co. KG |
| LINDESA® | Peter Greven Physioderm GmbH |
| LIQUIPORT® | KNF Neuberger GmbH |
| Loctite® | Loctite Corporation |
| LuciPac® | Kikkoman |
| Luer-Lok™ | Becton Dickinson and Company |
| Lupolen® | Lyondell Basell Industries |
| Lutrol® | BASF |
| Luxol® | Akzo Nobel Coatings International B.V. |
| Multi® | Sorenson, BioScience, Inc. |
| MultiFlex® | Sorenson, BioScience, Inc. |
| MultiGuard® | Sorenson, BioScience, Inc. |
| MultiLowBinding® | Sorenson, BioScience, Inc. |
| MultiMiniFlex® | Sorenson, BioScience, Inc. |
| Majola® | Lysoform Desinfektion AG |
| Makrolon® | Bayer AG |
| Marigold® | Ansell Limited |
| Marly Skin® | Marly products |
| Max® | Sperian GmbH + Co. KG |
| Medibox® | B. Braun Melsungen AG |
| MegaBACE® | Molecular Dynamics |
| Megafuge® | Thermo Electron LED GmbH |
| Meliseptol® | B. Braun Melsungen AG |
| MelLows® | MOLDEX-METRIC AG & Co. KG |
| Mercurisorb-ROTH® | Carl Roth GmbH + Co. KG |
| Metaflux® | Metaflux International AG |
| Mikrobac® | Bode Chemie GmbH |
| Micro DispoDialyzer® | Spectrum |
| Microflex | Microflex Corporation |
| MicroGuard® | Sorenson, BioScience, Inc. |
| MICROLITER® | Hamilton Company |
| MICROMAN® | Gilson Inc. |
| Micropur® | Katadyn GmbH |
| Millennia® | Dalloz Safety |
| Millex™ | Merck KGaA |
| Millipore Express® | Merck KGaA |
| MiniFlex® | Sorenson, BioScience, Inc. |
| MiniMix™ | Labnet International |
| mLINE® | Sartorius Biohit Liquid Handling Oyj |
| Mowiol® | Kuraray Europe GmbH |
| Multipette® | Eppendorf AG |
| Nadir® | Nadir Filtration GmbH |
| Nalgene® | Thermo Fisher Scientific Inc. |
| Nanocolor® | Macherey-Nagel |
| Navigator™ | Ohaus GmbH |
| neodisher® | Chemische Fabrik Dr. Weigert |
| NeoTouch® | Ansell Limited |
| Neox® | Ansell Limited |
| NevoCut® | KCL GmbH |
| NFT® | Midas Safety Innovations Ltd. |
| NitoPren® | KCL GmbH |
| Nitril® | Rösner-Mautby Meditrade GmbH |
| Nomad® | 3M Company |
| Nomex® | DuPont |

# Trade Marks

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|---|---|
| Norprene® | Saint-Gobain Performance Plastics Corp. |
| Novex® | Life Technologies Corporation |
| NUCLEODUR® | Macherey-Nagel |
| Omni-Vial® | WHEATON |
| Omnican® | B. Braun Melsungen AG |
| Omnifix® | B. Braun Melsungen AG |
| OneTouch™ | Sorenson, BioScience, Inc. |
| Optifix® | Poulten & Graf GmbH |
| OPTIME™ | 3M Company |
| opus® | Hirschmann Laborgeräte GmbH & Co. KG |
| OTAL® | Bürkle |
| Owl Penguin™ | Thermo Scientific |
| Palatinose® | Südzucker |
| PAGEr® | Lonza Group Ltd. |
| PARAFILM® | Pechiney Plastic Packaging Inc. |
| Paraloid® | Rohm & Haas Co. |
| Paraplast® | Leica |
| Pefabloc® | Pentapharm AG, Basel |
| PEHANON® | Machery-Nagel |
| Peltor™ | 3M Company |
| Perfect Blue™ | peQLab |
| PerfTape™ | Diversified Biotech |
| Perhydrol® | Merck KGaA |
| Pestilyse® | Carl Roth GmbH + Co. KG |
| PetriSticker™ | Diversified Biotech |
| Pharmacia Gene Assembler® | Pharmacie Biotech Europe GmbH |
| PharMed® | Saint-Gobain Performance Plastics Corp. |
| pHep® | Hanna Instruments |
| Physio® | Physioderm GmbH+Co. KG |
| Physioderm® | Physioderm GmbH+Co. KG |
| Phytohistol® | Carl Roth GmbH + Co. KG |
| Pico® | Thermo Electron Led GmbH |
| Pioneer™ | Ohaus GmbH |
| Pipetman® | Gilson Inc. |
| pipetus® | Hirschmann Laborgeräte GmbH & Co. KG |
| pi-pump® | Glasfirn GmbH & Co. KG |
| PLASTIBRAND® | Brand GmbH |
| Plastigas® | Linde Aktiengesellschaft |
| Plexiglas® | Evonik Röhm GmbH |
| Plexit® | Evonik Röhm GmbH |
| Plumbex-ROTH® | Carl Roth GmbH + Co. KG |
| Plumbtesmo® | Machery-Nagel |
| Polar Safe™ | Argos Technology, Inc. |
| Polyfix® | Poulten & Graf GmbH |
| Polyfoil™ | Bel-Art Products |
| PolyGen® | Polygen GmbH |
| POLYGRAM® | Machery-Nagel |
| Poly-Lite® | Coleman® |
| Poly-Pak® | Glen Research Corporation |
| Polysine® | Menzel Gläser |
| polysteribox® | Ritter GmbH |
| Polytex® | ZVG Zellstoff-Vertriebs-GmbH & Co. KG |
| PolyTRIX® | KCL GmbH |
| Polytron® | Kinematica AG |
| Pop-up™ | Heathrow Scientific LLC |
| PowerFlex® | Ansell Limited |
| PRIME | Bibby Scientific/Techne |
| Practum® | Sartorius Lab Instruments GmbH & Co. KG |
| Proline® | Sartorius Biohit Liquid Handling Oyj |
| PROTEAN® | Bio-Rad Laboratories, Inc. |
| Proteicolor® | Carl Roth GmbH + Co. KG |
| Protran® | GE Healthcare Bio-Sciences Corp. |
| PUFFERAN® | Carl Roth GmbH + Co. KG |
| Pump-it® | Bürkle |
| PURA™ | Julabo GmbH |
| PVA® | Ansell Limited |
| PXM® | Eschenbach Optik |

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| PyBOP® | Merck KGaA |
| PyBrOP® | Merck KGaA |
| PyClock® | Luxembourg Industries Ltd. |
| Pyracidosorb-ROTH® | Carl Roth GmbH + Co. KG |
| QUANTOFIX® | Machery-Nagel |
| Quintix® | Sartorius Lab Instruments GmbH & Co. KG |
| Radtape® | Diversified Biotech |
| Raney® | W. R. Grace |
| RBS® | Carl Roth GmbH + Co. KG |
| Ranger® | Ohaus GmbH |
| Ready Gel® | Bio-Rad Laboratories, Inc. |
| Resmer® | Nalge Nunc International |
| RewoMech® | KCL GmbH |
| ReZist® | GE Healthcare Bio-Sciences Corp.0 |
| RiboFlow® | SY-LAB |
| Ringcaps® | Hirschmann® Laborgeräte GmbH + Co. |
| Ripette® | Ritter GmbH |
| Riplate® | Ritter GmbH |
| Ritips® | Ritter GmbH |
| RNase Away® | Molecular Bio-Products Inc. |
| Rota Filler 3000™ | Heathrow Scientific LLC |
| rotarus® | Hirschmann Laborgeräte GmbH & Co. KG |
| Roti® | Carl Roth GmbH + Co. KG |
| Rotibox® | Carl Roth GmbH + Co. KG |
| ROTI®CAP | Carl Roth GmbH + Co. KG |
| ROTICHROM® | Carl Roth GmbH + Co. KG |
| Roticlear® | Carl Roth GmbH + Co. KG |
| ROTI®CUBE | Carl Roth GmbH + Co. KG |
| ROTIDERM® | Carl Roth GmbH + Co. KG |
| ROTIDRY® | Carl Roth GmbH + Co. KG |
| ROTIFLUID® | Carl Roth GmbH + Co. KG |
| Rotifluoroszint® | Carl Roth GmbH + Co. KG |
| ROTIGEL® | Carl Roth GmbH + Co. KG |
| Rotilabo® | Carl Roth GmbH + Co. KG |
| Rotiphorese® | Carl Roth GmbH + Co. KG |
| Roti-Plasticlean® | Carl Roth GmbH + Co. KG |
| ROTIPROTECT® | Carl Roth GmbH + Co. KG |
| ROTIPURAN® | Carl Roth GmbH + Co. KG |
| ROTISILON® | Carl Roth GmbH + Co. KG |
| ROTISOL® | Carl Roth GmbH + Co. KG |
| ROTISOLV® | Carl Roth GmbH + Co. KG |
| Rotisorb® | Carl Roth GmbH + Co. KG |
| Rotiszint® | Carl Roth GmbH + Co. KG |
| ROTITAINER® | Carl Roth GmbH + Co. KG |
| Rotitest® | Carl Roth GmbH + Co. KG |
| Rotitherm® | Carl Roth GmbH + Co. KG |
| Rotizell® | Carl Roth GmbH + Co. KG |
| Roti®ZOL | Kirin Holdings |
| runVIEW® | Cleaver Scientific Ltd. |
| Ryton® | Chevron Phillips Chemical. |
| Safe-Knit® | Ansell Limited |
| Safe Seal® | Sorenson, BioScience, Inc. |
| SafetyPrime™ | BRAND GMBH + Co. KG |
| Safil® | B. Braun Melsungen AG |
| Sahara® | KCL GmbH |
| Salvequick® | Cederroth International AB |
| Salzkotten® | Rheinnadel GmbH |
| Sampule® | WHEATON |
| Sanifil® | Carl Roth GmbH + Co. KG |
| Saniwip® | Physioderm GmbH+Co. KG |
| Scorpio® | Ansell Limited |
| Scotch-Brite™ | 3M Company |
| Scout™ | Ohaus GmbH |
| Scrintec® | Scrint GmbH |
| Sea Star™ | Heathrow Scientific LLC |
| Secura® | Sartorius Lab Instruments GmbH & Co. KG |
| secutex® | ZVG Zellstoff-Vertriebs GmbH & Co. KG |

# Trade Marks

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|---|---|
| Sekuroka® | Carl Roth GmbH + Co. KG |
| Sempercare® | Semperit Technische Produkte GmbH & Co. KG |
| Semperguard® | Semperit Technische Produkte GmbH & Co. KG |
| SENSEO® | Philips GmbH |
| SensiLite® | Ansell Limited |
| SensorBagless™ | BSH Hausgeräte GmbH |
| SenTix® | WTW GmbH |
| Seripettor® | Brand GmbH + Co KG |
| SevenExcellence™ | Mettler Toledo |
| SevenGo® | Mettler Toledo |
| Seven2Go® | Mettler Toledo |
| Sharkfin™ | Heathrow Scientific LLC |
| Sharpie® | Berol Corporation |
| SilenceSound System™ | BSH Hausgeräte GmbH |
| Silicoderm® | Bayer AG |
| Silkam® | B. Braun Melsungen AG |
| Silvosol® | Pharmaton AG |
| SIMDOS® | KNF Neuberger GmbH |
| Sineprint® | Physioderm GmbH & Co. KG |
| Snorkel® | Ansell Limited |
| Softa-Man® | B. Braun Melsungen AG |
| solarus® | Hirschmann Laborgeräte GmbH & Co. KG |
| Sol-Vex® | Ansell Limited |
| Solidofix® | Carl Roth GmbH + Co. KG |
| Solitaire® | MAG Instruments |
| SoloBand® | MOLDEX-METRIC AG & Co. KG |
| Solofix® | B. Braun Melsungen AG |
| SnapTwist™ | Simport Scientific |
| Span® | ICI |
| Spark-Plug® | MOLDEX-METRIC AG & Co. KG |
| SPARTAN® | GE Healthcare Bio-Sciences Corp. |
| Speci-Sponge® | Nasco |
| SpecTainer™ | Simport Scientific |
| Spectra/Gel® | Spectrum®Labs |
| Spectra/Por® | Spectrum®Labs |
| Spectrosil® | Thermal Syndicate |
| Sprayflon® | Saint-Gobain Performance Plastics Corp. |
| Staubex Entstaubespray® | Carl Roth GmbH + Co. KG |
| Stepper™ | Socorex ISBA S.A. |
| Sterican® | B. Braun Melsungen AG |
| Stericup® | Merck KGaA |
| Steriflip® | Merck KGaA |
| Sterigage™ | 3M Company |
| Sterillium® | Bode Chemie GmbH |
| Sterillium-Tissue® | Bode Chemie GmbH |
| Steripak™ | Merck KGaA |
| Steriplan® | DWK Life Sciences GmbH |
| SteriPlast® | Bürkle GmbH |
| Steritop™ | Merck KGaA |
| Sterivex™ | Merck KGaA |
| Stomacher® | Seward Limited |
| Stringknits® | Ansell Limited |
| SUAVEL® | Rösner-Mautby Meditrade GmbH |
| Superfrost® | Menzel-Gläser |
| Superfrost Ultra Plus® | Menzel-Gläser |
| SureLock® | Life Technologies Corporation |
| Swingsette™ | Simport Scientific |
| SYBR® | Life Technologies Corporation |
| SYNERGEL™ | Diversified Biotech |
| TabTop® | Sorenson, BioScience, Inc. |
| Teflon® | DuPont |
| Tergitol™ | Dow Chemical Company |
| tesa® | tesa SE |
| tesaband® | tesa SE |
| tesa Easy Cut® | tesa SE |
| tesafilm® | tesa SE |
| tesapack® | tesa SE |
| TetraCon® | WTW GmbH |
| Texas Red® | Molecular Probes |
| ThermaStat® | DuPont |
| Thinsulate® | 3M Company |
| Thio-Bag® | Nasco |
| Tissue-sol-ROTH® | Carl Roth GmbH + Co. KG |
| Titrette® | BRAND GmbH & Co. KG |
| TitroLine® | SI Analytics GmbH |
| TNT® | Ansell Limited |
| Topscrub® | Physioderm GmbH & Co. KG |
| TORX® | Camcar, Div. of Textron Inc. |
| Touch N Tuff® | Ansell Limited |
| Tough Spots™ | Diversified Biotech |
| Tough Tags™ | Diversified Biotech |
| Transferpette® | BRAND GmbH & Co. KG |
| Tricopren® | KCL GmbH |
| Tricotril® | KCL GmbH |
| Tri-Sure® | American Flange & Manufactoring Co. Inc. |
| Triton® | Rohm & Haas Co. |
| True North™ | Heathrow Scientific LLC |
| Tubenboy® | Hausmann-Vertrieb GmbH (Deutschland) |
| TurboMix® | Scientific Industries Inc. |
| Tween® | ICI |
| Twist-Top® | Sorenson, BioScience, Inc. |
| Tychem® | DuPont |
| Tygon® | Saint-Gobain Performance Plastics Corp. |
| Tylose® | SE TYLOSE GmbH & Co. KG |
| Tyvek® | DuPont |
| Ultrafree® | Merck KGaA |
| ULTRASONOL® | Carl Roth GmbH + Co. KG |
| Ultra-Turrax® | Ika-Werke GmbH & Co. KG |
| Uvicator™ | 3M Company |
| Uritainer™ | Simport |
| Variomag® | Thermo Electron LED GmbH |
| VersaCool™ | Thermo Electron LED GmbH |
| Versene® | The Dow Chemical Company |
| Versilic® | Saint-Gobain Performance Plastics Corporation |
| Vibrax® | IKA-Werke GmbH & Co. KG |
| Virtex™ | Ansell Limited |
| Virtua™ | 3M Company |
| Visking® | Viskase |
| Visma® | B. Braun Melsungen AG |
| VISOCOLOR® | Machery-Nagel |
| Vitoject® | KCL GmbH |
| Viton® | DuPont Dow Elastomers |
| Voltalef® | ARKEMA FRANCE |
| Wapersol® | Carl Roth GmbH + Co. KG |
| Wash-N-Dry™ | Diversified Biotech |
| Wash-off Labels | Diversified Biotech |
| WaveBand® | MOLDEX-METRIC AG & Co. KG |
| WetGrip™ | Diversified Biotech |
| Whatman® | GE Healthcare Bio-Sciences Corp. |
| Whirl-Pak® | Nasco |
| Winter Monkey Grip® | Ansell Limited |
| Work2Store™ | Heathrow Scientific LLC |
| WorkGuard® | Ansell Limited |
| Write-Protect™ | Diversifed Bio |
| Wypall® | Kimberly-Clark |
| XCell® | Life Technologies Corporation |
| Xtreme® | Coleman® |
| ZETEX™ | Newtex Industries, Inc |
| Zetsorb® | ZVG Zellstoff-Vertriebs GmbH & Co. KG |
| Zitex® | Saint-Gabain Performance Plastics Corporation |
| Zymolyase® | Kirin Hildings |

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# Terms of Sale and Delivery

**- These sales and delivery terms and conditions also apply for all future deliveries -**

## 1 Validity for future business transactions - Validity of contrary general terms and conditions - Validity for companies only

1. Validity for future business transactions - Validity of contrary general terms and conditions - Validity for companies only

1.1. Our sales and delivery terms and conditions apply exclusively. They shall also apply to all in future deliveries, even when no special reference is made thereto. We do not accept contrary terms and conditions or client terms and conditions which differ from our delivery terms and conditions unless we have expressly agreed to the validity thereof in writing. Our delivery terms and conditions shall also apply when we unconditionally make the delivery to the client, but are aware of conflicting terms and conditions or those which differ from our delivery terms and conditions.

1.2. Our conditions of sale shall only apply to companies (pursuant to Section 14 of the German Civil Code), legal persons governed by public law or a separate legal entity under public law.

## 2. Quotes, conclusion of contract

2.1. Our quotes are subject to change and are non-binding unless they have been explicitly declared binding or include a specific period of acceptance.

2.2. The ordering of goods by the client shall be deemed to be a binding contractual offer. Orders are only binding upon us if we confirm them in writing within two weeks, or if we fulfil them within two weeks through shipment of the ordered goods.

2.3. The legal relationship between the client and us shall be governed exclusively by the written contract, including these Terms of Sale and Delivery. Verbal agreements made by us before the conclusion of the contract are not legally binding and verbal understandings between the contracting parties are superseded by the written contract, unless it is expressly stated therein that such agreements will continue to apply.

2.4. Amendments and modifications to the agreements made, including these general Terms of Sale and Delivery, must be made in writing in order to be valid. With the exception of managing directors and holders of commercial powers of attorney, our employees are not authorised to make oral agreements which are contrary to the cited provisions.

2.5. The information we provide on the item to be supplied (e.g. weights, dimensions, quantities and functional values), as well as our descriptions of the item to be supplied, are only approximations, unless use for the purpose intended by the contract requires full conformity. These are not guaranteed physical characteristics, rather descriptions or characterisations of the product. Deviations that are customary in the trade and deviations that are the result of legal provisions are permissible provided that they do not impair usability for the contractually agreed purpose. Refer below to Article 10 of these terms and conditions.

## 3. Prices, price adjustments

3.1. Our prices are quoted "ex works" Karlsruhe, in accordance with INCOTERMS, plus packaging, tariffs where export shipments are concerned, statutory VAT, fees and other public duties.

3.2. We reserve the right to amend the listed prices upon which the contract is based accordingly if cost reductions or increases arise as a result of tariff agreements, or if the price of materials increases after the contract is concluded. These shall be verified to the client upon request.
A price adjustment shall not be effected in cases where delivery is made as contractually stipulated within four months of conclusion of the contract.

## 4. Payment terms and conditions, payment arrears

4.1. To avoid accounting errors and the resulting erroneous issue of dunning notices, we rely on receiving the correct invoice number, invoice date and individual invoiced amounts with incoming payments. This data can be found on all of our invoices. If the payer is not the same as the invoice recipient, the name stated on the relevant invoice must also be given. If we receive payments without this information, we cannot guarantee that payments will be assigned correctly.

4.2. The invoiced amount becomes payable upon receipt of the goods. Unless otherwise specified in writing, it is payable within thirty days without any deduction. In the event that the date on which the invoice or an equivalent payment schedule was received is disputed, the client is considered to be in default 30 days after receipt of the goods at the latest, in accordance with Section 286(4) of the German Civil Code. The payment is considered settled on the date on which we receive it. Otherwise, the statutory regulations on defaults of payment apply.

4.3. For payment within eight days from date of invoice, a 2% discount shall be granted. The precondition for any discount shall be the settlement of all other client payables arising from the business relationship with us that are older than 30 days.

4.4. For new clients, we reserve the right to require that payment be made prior to delivery or by cash on delivery.

## 5. Off-setting, retention

The off-setting of counter-demands by the client or the retention of payment due to such demands shall only be permissible if such demands are indisputable, or if their validity has been legally established.

## 6. Shipping, packaging, transfer of risk

6.1. The shipping method and the packaging shall be subject to our due discretion.

6.2. The risk of accidental loss or accidental deterioration of the delivered goods is, at the latest, transferred to the client upon hand-over of the goods to the forwarding agent, the carrier, or any other third party charged with the task of performing shipment (applicable from commencement of loading). This also applies in the case of partial deliveries, and with respect to each partial delivery.

6.3. The shipment is only insured against theft, breakage, transport, fire and water damage or other insurable risks at the express request of the client and at the client's expense.

## 7. Delivery time

7.1. The promised deadlines and dates are only binding upon us if we have confirmed them in writing. The delivery dates indicated on our website during the ordering process or in our catalogue do not constitute such confirmation. Compliance with our delivery obligation requires the timely and proper fulfilment of the client's obligations. If shipping has been agreed, delivery dates and deadlines refer to the time of transfer to the forwarder, carrier, or other third party assigned to transport the goods.

7.2. We cannot be held liable should a delivery prove impossible or in the case of delays in delivery due to force majeure or other events that were unforeseeable on conclusion of the contract (e.g. fire, explosion, strikes, lawful lockout, complications in procuring materials or energy, war, unrest, government rejection or renunciation of import and export licences, shortage of raw materials and/or other products and/or constituent parts), and for which we are not accountable. We reserve the right to withdraw from the contract if such occurrences substantially complicate delivery or make delivery impossible, and if the disruption is not merely of a temporary nature. If the disruption is of a temporary nature, delivery times shall be extended to take account of the period of disruption and a reasonable start-up period. We shall notify the client of the start and end of such circumstances as promptly as possible. If such a delay makes acceptance of delivery unreasonable for the client, the client shall be entitled to withdraw from the contract by issuing immediate written notice.

7.3. If we are in default of delivery or performance, or are unable to carry out delivery or performance, for any reason whatsoever, our liability is limited to the extent set out in Article 13 of these Terms of Sale and Delivery.

7.4. We cannot be held liable for the impossibility of, or delay in, performance of delivery obligations if, and to the extent that, such an impossibility or delay arises from circumstances caused by the client, in particular if the client fails to comply with public law obligations in connection with the European Regulations on Chemical Substances (REACH).

## 8. Partial deliveries

8.1. In the absence of any special agreement, we may provide partial deliveries if

- the partial delivery can be used by the client in the context of the contractually agreed intended use,
- delivery of the remaining goods is ensured and
- this causes no extensive additional effort or additional costs to the client.

8.2. A partial delivery made under these conditions is considered a complete delivery with regard to the agreed delivery date.

## 9. Default of acceptance

Should the client be in default of acceptance or culpably in breach of other duties to cooperate, we shall be entitled to charge for the resulting damages, including any additional costs incurred. In this case, the risk of accidental loss or incidental deterioration of the purchased goods also passes over to the client at such time as the client falls into default of acceptance, provided that our delivery obligation has already been met with regard to the goods to be delivered.

## 10. Intended use of the goods, obligations of the client, liability

10.1. If we have made a pledge for certain products to effect delivery contingent upon their intended use, the customer shall be liable for any and all disadvantages which we may suffer as a result of incorrect statements made. In the case of toxins and other substances which may only be used within the scope of legal or official provisions, the client's order shall also serve as a statement that these substances shall be used for a purpose permissible under the foregoing terms and conditions. The consumers of our goods are obliged to apply to our products the laboratory directives of the professional association of the chemical industry. They shall observe the legal regulations for handling the substances. Private persons cannot be supplied with chemicals.

10.2. Information given concerning the usability of goods does not constitute any assurance or guarantee of suitability for such use. Relevant identified uses according to Regulation (EC) No. 1907/2006 (REACH REGULATION) in the applicable version do not represent a contractual guarantee of any characteristic or a use stipulated in the contract.

10.3. Our products must be checked by the user with respect to their specific suitability, particularly prior to use for medical purposes, for food and beverage processing, plant cultivation and similar applications. This applies in particular to natural substances, which are always subject to slight variation in content. We therefore cannot assume any liability for any such use.

10.4. Insofar as we provide the client with advice - whether verbally, in writing or as a result of tests - such advice is provided to the best of our knowledge but without liability on our part, and does not release the client from their obligation to check the delivered goods with respect to their suitability for the intended processes and purposes. Application, use and processing of goods are carried out beyond the scope of our control and are therefore the sole responsibility of the client.

## 11. REACH clause

If the customer notifies us of a use in accordance with Article 37.2 of the Regulation (EC) No.1907/2006 of the European Parliament and the Council for the Registration, Evaluation, Approval and Control of chemical substances (REACH Regulation) which requires updating of the registration or the chemical safety report or results in another obligation according to the REACH Regulation, the customer shall reimburse us all expenses for which evidence is provided. We shall not be liable for delays in delivery caused by the notification of this form of use and performance of the applicable obligations as stipulated by the REACH Regulation. If, for reasons of health and safety or environmental protection, we are unable to consider this use an identified use and should the client, against our advice, intend to use the goods in the manner which have advised against, we shall be entitled to withdraw from the contract.

## 12. Warranty for defects, obligation to give notice of defect, material defects

12.1. Claims relating to material defects will be barred one year after delivery to the client. In the event that approval is required, they will be barred from the point of approval. This period shall not apply to damage claims by the client in the case of fatalities, physical injuries, or damage to health or deliberate or grossly negligent breach of duties on our part or on the part of our agents; such claims expire in accordance with statutory provisions.

12.2. The statute of limitations in case of delivery regress according to Sections 478, 479 of the German Civil Code remains unaffected.

12.3. The delivered goods must be carefully inspected immediately upon delivery to the client or to a third party designated by the client. Approval shall be deemed given if we do not receive a written notice of defect with regard to visible defects or other defects detectable during an immediate and careful inspection within seven working days after delivery of the goods. With regard to other defects, the delivered goods shall be deemed approved by the client if we do not receive notice of a defect within seven working days after the discovery of the defect. If the defect was noticeable by the client during normal use at an earlier point in time, however, this earlier point in time shall define the commencement of the defect notification period.

12.4. Rejected goods must no longer be used without our explicit consent. Upon request, the defective delivery item shall be returned to us freight paid. If the notice of defect is justified, we shall reimburse the cost of the cheapest shipping method. This shall not apply if the cost increases because the delivery item is transferred to a place other than the designated place of delivery.

12.5. Insofar as we are liable for a defect in goods purchased from us, we are entitled to correct the fault or replace the relevant product at our option and within a reasonable period of time. If the correction/repair or replacement delivery fails, i.e. if it is not possible, unreasonable, rejected or unreasonably delayed, the client shall be entitled to withdraw from the contract or to reduce the purchase price by a reasonable amount.

12.6. In cases where faults are attributable to us, the client shall be entitled to claim for damages subject to the provisions defined in Article 13.

## 13. Liability, special provisions for compensation for damages, exclusions, limitations

13.1. Our liability for damages, regardless of the legal basis, in particular for impossible, late, defective or incorrect delivery, breach of contract, violation of obligations during contractual negotiations and unlawful actions, provided that fault is established, shall be governed by the provisions of this Article 13, notwithstanding Article 12 above.

13.2. We cannot be held liable in the event of simple negligence by our executive bodies, legal representatives, employees or other vicarious agents, unless essential contractual obligations are breached. Obligations essential to the contract are those that give the contract its specific character and upon which the contracting partner can rely. They are therefore essential rights and obligations, which create the preconditions for execution of the contract and are indispensable for fulfilment of the contractual purpose.

13.3. Insofar as we are liable to pay compensation for damages under the terms of Article 13(2), this liability shall be limited to such damage that was foreseeable as a possible consequence of breach of an obligation at the time of execution of contract, or which we should have been able to foresee had we applied due diligence. Indirect damage and consequential damage arising from defects in the delivered goods shall only be eligible for compensation to the extent that such damage can be typically expected when using the delivered goods as intended.

13.4. Insofar as we issue technical information or provide consulting services, and such information or consulting services are not part of our contractual duties, this assistance will be rendered free of charge and shall be exempt from any liability.

13.5. The above exemptions and limitations of liability apply analogously to our institutions, legal representatives, employees and other vicarious agents.

**13.6. The foregoing restrictions as stipulated under Article 13 do not apply to our liability with regard to wilful conduct, guaranteed features, culpable injury to life, limb or health and under the German Product Liability Act. Mandatory statutory liability provisions shall remain unaffected.**

## 14. Withdrawal by client

If the purchased item is defective, the legal right of the purchaser to withdraw from the contract shall not be subject to our culpability. In all other cases, the client shall only be entitled to withdraw in the event that we are in breach of obligations for which we are accountable.

## 15. Consequences of deterioration in the financial circumstances of the client

15.1. In the case of default and justified doubt regarding the solvency or credit-worthiness of the client, we shall - notwithstanding our other rights - be entitled to request guarantees or advance payments for outstanding deliveries and demand immediate payment of all claims resulting from the business relationship.

15.2. We may withdraw from the contract in the event that we become aware of suspension of payments, the opening of insolvency or judicial settlement proceedings, the refusal of insolvency due to lack of assets, bill protests or cheque protests or any other tangible indications that the financial circumstances of the client have deteriorated.

15.3. We are also entitled, at any time, to obtain information relevant to the financial circumstances of the client in order to establish whether a business relationship is justified or whether it should be continued.

## 16. Retention of title

16.1. The retention of title agreed to hereinafter serves to safeguard all existing and future claims that we may have against the client as a result of the business relationship between both parties.

16.2. We, the seller, will retain the right to ownership of the goods delivered to the client until full payment has been made for all secured receivables. The goods and any goods taking their place and subject to reservation of title under the following provisions shall hereinafter be referred to as "Reserved Goods".

16.3. The client shall ensure the safekeeping of the Reserved Goods on our behalf at no charge.

16.4. The client is entitled to process and resell the Reserved Goods in normal business transactions until such time as a claim is brought against it. It is not permitted to pledge Reserved Goods or to use Reserved Goods as collateral.

16.5. If the Reserved Goods are processed by the client, it is agreed that they will be processed in our name and for our account and that we will acquire direct title to them or ? if they are processed together with items from more than one owner or the value of the processed item is greater than the value of the Reserved Goods - we will acquire (partial) joint ownership of the newly-created item. In the event that we do not acquire such title to goods, the client shall herewith transfer future ownership or, to the extent specified above, joint ownership of the newly-created item to us as a security. If the Reserved Goods are compounded or inseparably combined with other items and if one of the other items is considered the main item, then, insofar as the main item belongs to us, we shall transfer the co-ownership in the combined item proportionally to the client in the ratio stated in sentence 1.

16.6. In the event of the resale of Reserved Goods, the client shall, by way of a security, herewith transfer the resulting accounts receivable from the buyer or our pro-rata share - in the case of joint ownership - to us. The same shall apply to any other claims that take the place of Reserved Goods or otherwise accrue with respect to reserved goods, such as insurance claims or claims arising from unauthorised actions in case of loss or irreparable damage. We hereby revocably authorise the client to collect receivables assigned to us on its own behalf. We shall only be entitled to revoke this authorisation for collection in the event that a claim is made.

16.7. Where third parties lay claim to the Reserved Goods, particularly through garnishment, the client shall notify us in writing without delay, so that we can take action to enable the assertion of our ownership rights. Unless the third party is in a position to reimburse us for legal expenses and out-of-court settlement costs, the client shall be liable for our loss.

16.8. We shall undertake to release the Reserved Goods, as well as any goods or claims superseding the Reserved Goods, should their value exceed the amount of the secured receivables by more than 50%. The selection of the securities subsequently to be released shall be incumbent upon us.

16.9. Should we withdraw from a contract due to a breach of contract on the part of the client, particularly with regard to delayed payment, then we shall be entitled to demand the return of the Reserved Goods.

## 17. Use of client data

17.1. We are entitled to process and save client data stemming from the contractual relationship to the extent necessary to implement and process the purchase contract and for as long as we are required to keep such data in accordance with statutory regulations.

17.2. We reserve the right to disclose client personal data to rating agencies to the extent necessary for credit checking purposes, provided that the client provides their express consent for us to do so in the individual case. We shall otherwise not divulge personal client data to third parties unless explicitly agreed by the client, with the exception of cases in which we are legally obliged to release such data.

17.3. The collection and/or transfer of client data, or processing by other means, for purposes other than those stated in Article 16, shall not be permissible.

## 18. Place of fulfilment, place of jurisdiction, choice of law

18.1. Unless otherwise specified in the order confirmation, the place of performance for all obligations arising from the contractual relationship shall be Karlsruhe.

18.2. If the client is a merchant, a legal person under public law or a special fund under public law, the exclusive place of jurisdiction for all disputes arising from the contract shall be the court of our registered office. However, we are also entitled to bring action against the client in their domicile court. Peremptory legal provisions concerning the exclusive place of jurisdiction for disputes shall not be affected by this provision.

18.3. The laws of the Federal Republic of Germany exclusively govern the relationship between us and our client. The United Nations Convention of 11th April 1980 on the International Sale of Goods (KEGS) does not apply.

**Carl Roth GmbH + Co. KG**

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